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BRUCE DONATION

ON THE  
METEOROLOGY OF ENGLAND,

DURING THE

Quarter ending March 31, 1860.

BY JAMES GLAISHER, ESQ., F.R.S.  
SECRETARY OF THE BRITISH METEOROLOGICAL SOCIETY.

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1860.



Remarks on the weather, during the Quarter ending 31st of March 1860. By JAMES GLAISHER, Esq., F.R.S., &c., Secretary of the British Meteorological Society.

The weather during the past quarter has been remarkable for a long continuance of low temperature; frequent and great changes in the pressure of the atmosphere, and an almost continuous succession of gales of wind.

The warm period which set in on December 24th 1859, continued to January 24th 1860; the excess of the temperature on the 1st day of the year was  $16^{\circ}$ , that of the 2d  $11^{\circ}$ , and of the 3d was  $13^{\circ}$ , and from January 1st to the 24th it averaged  $4^{\circ} \cdot 1$  daily; on the 25th a cold period set in, at first not severely, but became so afterwards, and continued, with very few and trifling exceptions, to the end of the quarter, the average defect of the 67 days ending March 31st was  $1\frac{1}{2}^{\circ}$  daily below the average.

The mean high day temperature of January was  $1^{\circ} \cdot 9$  above, of February was  $2^{\circ} \cdot 2$  below, and of March was  $0^{\circ} \cdot 8$  below their averages.

The mean low night temperature of January was  $1^{\circ} \cdot 2$  above, of February was  $3^{\circ} \cdot 4$  below, and of March was  $0^{\circ} \cdot 3$  below their averages.

Therefore both the days and nights in January were warm; in February were both cold, particularly the nights, and both were cold in March, but the nights less so than the days.

The mean temperature of January was  $1\frac{1}{2}^{\circ}$  in excess, of February was  $3^{\circ}$  nearly in defect, and of March  $\frac{3}{4}^{\circ}$  in defect as compared with the average of the preceding 19 years. As compared with the year 1859 January was  $\frac{3}{4}^{\circ}$ , February  $7\frac{1}{2}^{\circ}$ , and March  $5\frac{1}{4}^{\circ}$  colder.

At many places the month of January was the warmest in the quarter; at extreme southern stations February was  $4^{\circ} \cdot 9$  colder than January; at places situated between the parallels  $50\frac{1}{2}^{\circ}$  and  $52^{\circ}$  it was  $4^{\circ}$  colder, between  $52$  and  $53^{\circ}$  it was  $3^{\circ}$  colder, and north of  $53^{\circ}$  it was  $2\frac{1}{2}^{\circ}$  colder.

March was warmer than February by  $4^{\circ} \cdot 8$  at extreme southern stations; by  $5^{\circ} \cdot 3$  at stations between the parallels  $50\frac{1}{2}^{\circ}$  and  $52^{\circ}$ ; by  $5^{\circ}$  at those between  $52^{\circ}$  and  $53^{\circ}$ , and by  $3^{\circ} \cdot 5$  at extreme northern stations.

The decrease of mean temperature for the quarter was about  $1^{\circ}$  for an increase of  $1^{\circ}$  in latitude.

During the whole of the quarter the pressure of the atmosphere was constantly varying, the following is an account of the principal changes.

At the level of the sea the reading of the barometer on January 2d was  $29^{\circ} \cdot 85$  in.; this reading decreased to  $28^{\circ} \cdot 82$  in. by the 5th; increased to  $30^{\circ} \cdot 38$  in. by the 8th; decreased to  $29^{\circ} \cdot 82$  in. by the 15th; then there was an increase of pressure amounting to  $0^{\circ} \cdot 5$  in. by the next day; followed by a decrease to  $28^{\circ} \cdot 96$  in. by the 21st; then an increase of  $\frac{1}{2}$  in. took place by the 23d, and from the 23d to the 24th there was a decrease of  $\frac{3}{4}$  in., the reading being  $28^{\circ} \cdot 73$  in. on the latter day; an increase of nearly  $1\frac{1}{4}$  in. took place by the 26th, the reading being  $29^{\circ} \cdot 89$  in., when a sudden decrease of  $\frac{3}{4}$  in. took place by the 27th, and as sudden an increase to the same amount by the next day, the reading on the 28th being  $30^{\circ} \cdot 16$  in., when it changed to decrease and was  $28^{\circ} \cdot 95$  in. on the 30th, showing a decrease of  $1\frac{1}{2}$  in. nearly; as sudden an increase then took place of nearly  $1\frac{1}{2}$  in. by February 3d, the reading being  $30^{\circ} \cdot 38$  in.; there was a decrease of  $\frac{1}{2}$  in. by the 6th, the reading being  $29^{\circ} \cdot 88$  in.; this reading increased to  $30^{\circ} \cdot 25$  in. by the next day, there was then a sudden decrease to  $29^{\circ} \cdot 60$  in. by the 8th; an increase of  $\frac{1}{2}$  in. took place by the 10th, the reading being  $30^{\circ} \cdot 14$  in., which decreased to  $29^{\circ} \cdot 82$  in. by the 11th; then there was an increase of  $\frac{3}{4}$  in. by the 14th, the reading being  $30^{\circ} \cdot 60$  in.; a decrease of  $\frac{1}{2}$  in. then took place by the 16th, followed by an increase of  $\frac{1}{4}$  in. by the 17th, the reading being  $30^{\circ} \cdot 45$  in.; there was a decrease of  $1$  in. by the 20th, the reading being  $29^{\circ} \cdot 48$  in.; there was an increase to  $30^{\circ} \cdot 27$  in. by the 23d; then a decrease to  $29^{\circ} \cdot 21$  in. by the 27th; followed by an increase of nearly  $\frac{1}{2}$  in. on the same day, the reading being  $29^{\circ} \cdot 66$  in.; then a decrease to  $29^{\circ} \cdot 30$  in. on the 28th; an increase of  $\frac{3}{4}$  in. then took place by March 1st, the reading being  $30^{\circ} \cdot 12$  in.; this reading decreased to  $29^{\circ} \cdot 69$  in. by the 4th; then increased to  $30^{\circ} \cdot 57$  in. by the 6th; decreased to  $30^{\circ} \cdot 13$  in. by the next day; increased to  $30^{\circ} \cdot 41$  in. by the 8th; there was then a decrease of almost  $1$  in. by the 12th, the reading being  $29^{\circ} \cdot 50$  in.; which increased to  $29^{\circ} \cdot 67$  in. by the next day; decreased to  $29^{\circ} \cdot 44$  in. by the 14th; then there was an increase of  $\frac{3}{4}$  in. by the 19th; followed by a decrease to the same amount by the 21st, the reading being  $29^{\circ} \cdot 46$  in.; then an increase took place of  $\frac{1}{2}$  in. by the next day, the reading being  $29^{\circ} \cdot 94$  in.; which decreased to  $29^{\circ} \cdot 07$  in. by the 24th; then there was an increase of  $\frac{3}{4}$  in. by the 26th, the reading being  $29^{\circ} \cdot 78$  in.; then a decrease of  $\frac{1}{4}$  in. to  $29^{\circ} \cdot 51$  in. by the 29th; followed by an increase to the same amount by the next day, the reading being  $29^{\circ} \cdot 78$  in.; which decreased rapidly to  $28^{\circ} \cdot 80$  in. by the 31st, being a decrease of  $1$  in. in the day.

The mean pressure of the atmosphere in January and March was below its average by  $\frac{1}{4}$  in.; in February it was slightly in excess, as found from the preceding 19 years, and within this period the mean reading of the barometer has not been so low in January as it was in this year.

The decrease of mean pressure of the atmosphere was about  $0^{\circ} \cdot 03$  in. for an increase of  $1^{\circ}$  of latitude.

The range of the barometer in January at extreme southern stations was  $1^{\circ} \cdot 6$  in., in February was  $1^{\circ} \cdot 0$  in., and in March was  $1^{\circ} \cdot 7$  in., these values gradually increased going northwards to  $1^{\circ} \cdot 8$  in. in January, and to  $2$  in. nearly, both in February and March.

The temperature of the dew point in January was  $\frac{3}{4}^{\circ}$  in excess, differing but little from the excess of the mean temperature of the month, and therefore the degree of humidity was very nearly that of the average for the month. In February and March the temperature of the dew point was more below its average than the temperature of the air was below its average, and therefore the air was drier in both months than their averages.

The temperature of vegetation, as indicated by a thermometer placed on grass, was below  $30^{\circ}$  on 58 nights during the quarter; of these 16 were in February. Vegetation is very backward.

The wind. The air has been in rapid motion for one hour out of two throughout the quarter; a succession of gales of wind of unusual duration have been frequent. From January 20 the wind blew continuously for 40 hours, and pressures of 18lbs. on the square foot were recorded; pressures to the same amount took place on the 23d day, when the wind blew without ceasing for 23 hours. For 40 hours following February 1, 9h. A.M., the wind was in rapid motion; and again for 46 hours

from the 5th, and pressures of 12lbs. were recorded; again for 30 hours following February 7d. 2h., for 47 hours following February 15d. 4h., for 57 hours continuously from February 19d. 4h. A.M.; and for 42 hours following February 27d. 10h. A.M.; in this gale a pressure of 28lbs. was registered; and this kind of stormy weather continued to the end of the quarter.

The mean temperature of the air at Greenwich for the three months ending February, constituting the three winter months, was  $37^{\circ} \cdot 4$ , being  $0^{\circ} \cdot 4$  below the average of 89 years.

1860. MONTHS.	Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
	Air.		Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames.		Mean.	Diff. from average of 19 years.	Mean.	Diff. from average of 19 years.
	Mean.	Diff. from average of 19 years.	Mean.	Diff. from average of 19 years.	Mean.	Diff. from average of 19 years.	Mean.	Diff. from average of 19 years.						
Jan.	39.7	+3.6	38.2	+1.5	38.2	+1.1	38.2	+0.8	0	0	in.	in.	grs.	gr.
Feb.	35.7	-2.6	33.6	-2.8	30.4	-3.4	30.4	-1.2	42.1	36.6	214	+0.09	2.5	+0.1
Mar.	41.1	+0.2	38.4	-0.7	35.0	-1.4	35.0	-1.4	42.3	36.6	204	-0.03	2.0	-0.3
Mean	38.8	+0.4	36.7	-1.1	33.9	-1.6	33.9	-1.6	40.3	36.6	196	-0.02	2.3	-0.1

1860. MONTHS.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Reading of Thermometer on Grass.				
	Mean.	Diff. from average of 19 years.	Mean.	Diff. from average of 19 years.	Mean.	Diff. from average of 19 years.	Amount.	Diff. from average of 45 years.	Number of Nights it was			Lowest Reading at Night.	Highest Reading at Night.
									At or below 30°.	Between 30° and 40°.	Above 40°.		
Jan. .	88	- 1	in. 29.514	in. - 248	grs. 548	grs. - 6	in. 1.8	in. 0.0	15	13	3	0	0
Feb. .	80	- 6	29.537	+ 0.74	559	+ 5	1.1	- 0.5	26	3	0	18.3	48.0
Mar. .	79	- 3	29.655	- 145	549	- 2	1.9	+ 0.4	17	11	3	9.5	33.5
Mean .	82	- 3	29.675	- 106	552	- 1	Sum 4.8	Sum -0.1	Sum 58	Sum 27	Sum 6	Lowest 9.5	Highest 48.0

NOTE.—In reading this table it will be borne in mind that the sign (-) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred or thunder was heard and lightning seen on the 16th of January at St. Paul's Parsonage; on the 20th at Rose Hill; and on the 23d, 24th, and 30th at Guernsey. On the 26th of February at Barnstable; on the 27th at Exeter. On the 21st of March at Clifton.

Thunder was heard but lightning was not seen on the 1st of January at Helston; on the 4th at Clifton; and on the 26th at Grantham. On the 5th of February at Manchester; and on the 25th at Nottingham. On the 4th of March at Nottingham.

Lightning was seen but thunder not heard on the 1st of January at Clifton; on the 13th at Truro; on the 15th at Rose Hill; on the 16th at Nottingham; on the 20th at Clifton; on the 21st at Helston; on the 23d at Little Bridg, Clifton, and Nottingham; on the 24th at Osborne, Fairlight, Aldershot, Camden Town, and Nottingham; on the 26th at Aspley; and on the 27th at Rose Hill. On the 25th of February at Nottingham; and on the 26th at the Isle of Man.

Aurora were seen on January 4, 11, 21, 27, 28; February 1, 12, 16, 20, 21, 22, 23; March 5, 12, 13, 14, 18, 22, and 25.

Solar halos were seen on 8 days in January, 2 days in February, and 10 days in March.

Lunar halos were seen on 13 nights in January, 6 nights in February, and 5 nights in March.

Snow fell on 16 days in January and throughout the country during the greater part of the months of February and March.

Hail fell at different parts of the country on 15 days in January, on 18 days in February, and on 14 days in March.

Fog prevailed on 33 days during the quarter.

The pear was in blossom at Guernsey on the 7th of March; and at Helston on the 29th.

The peach was in blossom at Guernsey on the 3d of March; at Helston on the 8th; at Rose Hill near Oxford on the 26th of March; and at Exeter and Nottingham on the 28th.

The elm was in leaf at Helston on the 23d of March; at Exeter on the 28th; and at Hawarden on the 29th.

The horse-chestnut was in leaf at Hawarden on the 29th of February; at Grantham on the 10th; at the Isle of Man on the 25th; at Helston on the 27th; at Guernsey on the 30th; and at Clifton on the 31st.

The scyamore was in leaf at Hawarden on the 29th of February; and at Clifton on the 31st of March.

The hawthorn was in leaf on the 16th of March at Hawarden; on the 19th at Manchester; on the 25th at Grantham and the Isle of Man; on the 28th at Guernsey; and on the 31st at Clifton and Cardington.

The honeysuckle was in flower on the 26th of February at Wakefield.

The lilac was in leaf on the 26th of February at Wakefield; and on the 15th of March at Manchester.

The poplar was in leaf at Helston on the 19th of March.

Thrushes were seen at Gloucester on the 25th of January; and at Wakefield on the 26th of February.

Larks were seen at Gloucester on the 26th of January; and at Wakefield on the 26th of February.



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in rays of Sun.	Mean Reading of Minimum on Grass.	Mean estimated Strength.	WIND.				Mean Amount of Cloud.	Number of Days on which it fell.	RAIN.
																			Relative Proportion of						
																			N.	E.	S.	W.			
Guernsey	29.681	54.5	27.5	27.0	46.1	39.2	21.6	6.9	50.0	42.0	0.83	0.04	0.04	86	78.8	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Helston	29.687	56.0	28.0	28.0	50.0	38.0	19.6	11.7	47.3	40.3	0.87	0.04	0.04	87	78.8	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Truro	29.682	56.0	28.0	28.0	48.7	37.4	19.0	11.3	43.8	33.4	0.87	0.04	0.04	87	78.8	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Torquay	29.709	58.0	30.0	32.0	45.3	36.1	12.5	9.0	41.7	34.5	0.87	0.04	0.04	87	78.8	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Exeter, Elm Brook.	29.683	55.7	27.0	27.0	45.3	35.7	17.2	9.7	40.3	33.4	0.87	0.04	0.04	87	78.8	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Exeter, 200 High-st.	29.683	55.7	27.0	27.0	45.3	35.7	17.2	9.7	40.3	33.4	0.87	0.04	0.04	87	78.8	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Ventnor	29.648	54.0	26.0	26.0	46.8	36.0	17.7	10.8	41.2	32.7	0.87	0.04	0.04	85	75.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Osborne	29.668	55.9	27.0	27.0	46.3	34.7	24.6	8.7	42.0	35.7	0.87	0.04	0.04	87	78.8	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Worthing	29.680	54.2	26.0	26.0	44.3	33.1	12.8	11.8	40.0	33.5	0.87	0.04	0.04	87	78.8	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Fairlight	54.0	51.8	32.5	32.5	42.2	32.6	27.1	9.6	37.7	23.5	0.87	0.04	0.04	85	55.0	55.4	32.4	0.8	8	4	6	12	4.6	63	31
Little Briny	29.680	54.0	27.0	27.0	46.3	36.0	19.2	12.3	39.0	33.0	0.87	0.04	0.04	86	78.8	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Barnstaple	29.649	55.0	26.0	28.0	47.5	35.9	26.6	10.6	41.4	33.7	0.87	0.04	0.04	86	78.8	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Aldershot Camp	29.692	58.0	33.5	34.5	45.2	36.9	18.5	10.6	39.0	33.1	0.87	0.04	0.04	86	78.8	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Clifton	29.638	56.0	21.7	24.3	45.2	34.2	24.2	11.0	35.9	33.5	0.87	0.04	0.04	85	75.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Royal Observatory	29.693	57.5	26.2	26.3	45.5	35.3	31.4	12.2	35.8	33.8	0.87	0.04	0.04	86	78.8	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
St. Thomas's Hospital	29.697	57.5	26.2	26.3	45.5	35.3	31.4	12.2	35.8	33.8	0.87	0.04	0.04	86	78.8	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
St. John's Wood	29.693	57.5	26.2	26.3	45.5	35.3	31.4	12.2	35.8	33.8	0.87	0.04	0.04	86	78.8	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Guildhall	29.641	58.3	25.9	32.4	47.4	36.1	29.9	11.7	39.5	33.1	0.87	0.04	0.04	85	75.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Whitehall	29.707	60.2	23.8	36.4	46.2	34.2	29.7	12.0	39.9	33.1	0.87	0.04	0.04	87	78.8	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Camden Town	29.646	57.8	23.2	34.6	44.7	33.5	26.1	11.2	39.9	33.1	0.87	0.04	0.04	86	78.8	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Battersea	29.629	58.0	24.0	34.0	45.5	33.4	26.5	12.1	39.9	33.5	0.87	0.04	0.04	86	78.8	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Rose Hill	29.687	58.1	17.0	41.1	44.8	31.6	32.4	13.2	35.3	30.5	0.87	0.04	0.04	85	75.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Oxford	29.590	56.0	17.5	38.5	44.2	32.8	30.8	14.1	38.5	33.4	0.87	0.04	0.04	85	75.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Bicester	29.554	56.0	19.0	40.0	45.3	32.2	32.7	13.7	38.5	33.5	0.87	0.04	0.04	85	75.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Hartwell House	29.599	56.0	19.0	40.0	45.3	32.2	32.7	13.7	38.5	33.5	0.87	0.04	0.04	85	75.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Hartwell Rectory	29.620	56.6	19.8	38.0	49.1	32.1	32.7	14.0	38.5	33.4	0.87	0.04	0.04	86	78.8	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Royston	29.648	57.8	18.3	39.8	45.4	32.4	31.4	12.1	38.1	33.4	0.87	0.04	0.04	84	74.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Gloucester	29.642	63.5	20.0	43.5	46.3	31.0	33.8	15.5	39.7	34.8	0.87	0.04	0.04	84	74.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Cardington	29.628	60.0	19.0	40.0	46.4	32.2	32.1	12.6	38.3	33.9	0.87	0.04	0.04	84	74.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Aspley	29.645	53.2	23.5	29.7	41.4	34.4	33.4	7.0	37.8	33.6	0.87	0.04	0.04	84	74.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Bedford	29.623	60.0	17.5	37.5	45.1	32.5	30.6	12.3	38.8	33.4	0.87	0.04	0.04	85	75.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Lampeter	29.683	54.4	17.6	38.8	45.7	32.1	33.1	13.6	38.5	33.5	0.87	0.04	0.04	85	75.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Norwich	29.604	58.8	15.0	43.0	45.0	32.5	32.3	15.5	39.0	33.9	0.87	0.04	0.04	84	74.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Grantham	29.608	56.3	17.0	43.0	43.9	32.9	33.3	10.1	38.8	33.4	0.87	0.04	0.04	84	74.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Belvoir Castle	29.595	58.0	20.3	39.7	42.8	33.7	28.9	9.1	37.7	33.5	0.87	0.04	0.04	85	75.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Derby	29.592	56.0	22.0	34.0	47.1	32.8	33.5	11.3	36.7	33.6	0.87	0.04	0.04	84	74.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Holkham	29.566	56.5	11.0	45.5	43.3	32.1	32.1	11.9	39.9	34.1	0.87	0.04	0.04	84	74.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Nottingham	29.607	57.8	19.8	38.0	44.1	33.6	31.3	12.8	38.7	33.5	0.87	0.04	0.04	85	75.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Hawarden	29.575	57.5	24.0	33.3	45.1	33.8	29.1	11.3	38.8	33.4	0.87	0.04	0.04	85	75.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Liverpool Observat.	29.670	54.5	28.4	29.1	44.1	36.6	21.5	7.5	39.9	33.5	0.87	0.04	0.04	84	74.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Manchester	29.594	55.6	19.0	36.1	44.2	31.4	32.0	12.8	37.3	33.1	0.87	0.04	0.04	83	73.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Wakefield	29.594	55.6	19.0	36.1	44.2	31.4	32.0	12.8	37.3	33.1	0.87	0.04	0.04	83	73.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Leeds	29.554	57.5	19.0	38.5	44.8	31.2	34.1	13.6	37.8	33.5	0.87	0.04	0.04	83	73.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Stonbury	29.552	53.1	17.7	35.0	44.0	32.3	31.0	11.1	38.9	33.2	0.87	0.04	0.04	83	73.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Ben Rhydding	29.569	54.0	15.0	35.0	42.9	31.4	32.8	11.1	36.1	33.4	0.87	0.04	0.04	82	72.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
York	29.642	55.5	14.0	41.0	41.5	31.5	35.0	10.1	36.1	34.1	0.87	0.04	0.04	82	72.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Scarborough	29.659	57.0	24.0	33.0	41.0	33.7	25.1	7.9	39.7	33.5	0.87	0.04	0.04	85	75.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Isle of Man	29.586	52.5	22.0	30.0	41.0	33.4	25.9	9.5	39.7	33.5	0.87	0.04	0.04	83	73.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
North Shields	29.618	54.0	18.9	35.1	41.0	32.1	28.3	8.9	36.7	33.6	0.87	0.04	0.04	83	73.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
St. Paul's Parsonage	29.532	53.4	18.8	34.6	41.1	32.8	30.8	11.3	36.8	33.4	0.87	0.04	0.04	84	74.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
Bewell	29.556	57.0	21.0	36.0	43.2	32.1	30.6	12.2	37.6	33.4	0.87	0.04	0.04	83	73.0	12.0	1.0	1.0	2	5	7	10	4.7	54	10.0
High House Farm (Alnwick).	29.456	54.0	21.0	33.0	42.8	30.3	28.6	12.3	36.6	33.0	0.88	0.04	0.04	88	88.0	12.0</									



Meteorological Table, Quarter ending March 31st, 1860.

Year 1860.	Month.	Names of Stations and Observers.	Pressure of Atmosphere in Month.			Temperature of Air in Month.			Mean Tem- perature.	Mean Reading of Thermometer.	Wind.			Mean Amount of Cloud.	Number of Days it fell.	Rain.											
			Mean.	Range.	In.	Lowest.	Highest.	Range.			Mean.	Relative Proportion of															
												N.	S.				W.										
Jan.	29	ST. JOHN'S WOOD (Literary Insti- tution), Mr. JOHN CARTER, Librarian.	1.060	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Feb.	29	GUILDHALL (City of London), WILLIAM HAYWOOD, Esq., C.E.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Mar.	29	WHITEHALL, J. C. HALL, Esq., F.R.S., Surveyor and Draughts- man, Local Government Act Office.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Jan.	29	CAMDEN TOWN, G. J. SMITH, Esq., M.R.M.S.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Feb.	29	BATTESEA TRAINING SCHOOL, REV. SAMUEL CLARE, M.A., M.B.M.S.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Mar.	29	ST. MARY'S HOSPITAL (Paddington), BERNARD FITZPATRICK, Esq., L.S.A., &c.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Jan.	29	ROSE HILL (near Oxford), REV. JOHN SLATTERY, M.A., F.R.A.S., M.B.M.S.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Feb.	29	OXFORD OBSERVATORY, C. A. QUERRING, Esq.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Mar.	29	BICESTER, W. JOHNSON, Esq., F.R.A.S.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Jan.	29	HARTWELL HOUSE, MR. HORTON, Assistant to Dr. LEE, F.R.S., V.P. R.A.S., M.B.M.S.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Feb.	29	HARTWELL RECTORY, REV. CHARLES LOWNDEN, M.A., F.R.A.S.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Mar.	29	ROYSTON (Hertfordshire), H. W. WATMAN, Esq., F.R.A.S., M.R.M.S.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Jan.	29	GLOUCESTER, W. W. WILLIAMS, Esq., M.D., F.R.S.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Feb.	29	CARDINGTON (near Bedford), J. MACLAREN, M.B.M.S., Assistant to S.C. J. WHITBREAD, Esq., F.R.S., M.B.M.S.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Mar.	29	ASPLEY (Bedford), REV. G. W. MAHON, M.A.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Jan.	29	BEDFORD, T. H. BAKER, Esq., M.D., F.R.C.S., M.B.M.S.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Feb.	29	HEREFORD INFIRMARY, J. E. SMITH, Esq., M.R.C.S.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Mar.	29	LAMPETER (Cardiganshire), REV. PROF. J. MATTHEWS, M.A.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26

Meteorological Table, Quarter ending March 31st, 1860.

Jan.	29	NORWICH PRIORY, WILLIAM BROOKE, Esq., F.R.A.S., GRANTHAM.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Feb.	29	BELVOIR CASTLE, WILLIAM INGRAM, Esq., M.B.M.S.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Mar.	29	DERBY, JOHN DAVIS, Esq.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Jan.	29	HOLKHAM, S. SHELLEMEAR, Esq., M.B.M.S., As- sistant to the EARL OF LEICESTER.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Feb.	29	NOTTINGHAM, E. J. LOWE, Esq., F.R.A.S., M.B.M.S.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Mar.	29	HAWARDEN, THOMAS MOFFAT, Esq., M.D., F.R.A.S., M.B.M.S.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Jan.	29	LIVERPOOL OBSERVATORY, JOHN HARTNUP, Esq., F.R.A.S.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Feb.	29	MANCHESTER, GEORGE VERNON, Esq., F.R.A.S., M.B.M.S.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Mar.	29	WAKEFIELD PRISON, WILLIAM RALPH, MILNER, Esq., M.R.C.S., M.B.M.S.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Jan.	29	LEEDS PHILOSOPHICAL HALL, HENRY DENBY, Esq., A.L.S.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Feb.	29	STONYHURST COLLEGE, REV. ALFRED WELD, M.A., F.R.A.S., M.B.M.S.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Mar.	29	BEN RHYDDING, R. C. TAYLOR, Esq.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Jan.	29	YORK, JOHN FORD, Esq.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Feb.	29	SCARBOROUGH, J. W. WOODALL, Esq., B.A.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Mar.	29	ISLE OF MAN, JAMES BURNAN, Esq., F.R.A.S.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Jan.	29	NORTH SHIELDS, ROBERT SPENCE, Esq.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Feb.	29	ST. PAUL'S PARSONAGE, REV. F. KELLY, M.A., M.R.M.S.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Mar.	29	BYWELL, MR. JOHN DAWSON, under the direction of T. SORWICK, Esq., F.R.S., M.B.M.S.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Jan.	29	ALLENHEADS, THOMAS REWICK, Esq., C.E., Assistant to T. Sop- er, Esq., M.B.M.S., &c.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26
Feb.	29	HIGH HOUSE, for His Grace the Duke of Northumberland.	1.063	54.0	27.4	27.4	54.0	27.4	27.4	45.0	33.0	40.1	38.7	216	2.5	2.5	0.4	88	549	47.5	38.7	0	12	5	10	0.2	26

Second rain gauge was placed at Clifton, 50 feet above the ground, the amount collected was 7.2 inches; at Guildhall, 77 feet, 3.8 inches; at Rose Hill, 7 feet, 3.9 inches; at Cardington, 36 feet, 4.7 inches; at Norwich, 31 feet, 6.5 inches; at Holkham, 4 feet, 7.1 inches; at North Shields, 33 feet, 10.8 inches.

In the Quarterly Report ending Dec. 31, 1859, Lowest temperature at Lampeter, for 2nd read - 2.0°.

Number of days rain fell at Manchester, for 16 read 49.

Amount of rain at Manchester, for 3.1 in. read 9.2 in.

Amount of rain at Gurnsey, for 5.4 in. read 18.4 in.

sum of the three months, for 13 read 11.

sum of the three months, for 32 read 31.

number of nights it was above 40° for 10 read 9.

sum of the three months for 64 read 63.



ON THE  
METEOROLOGY OF ENGLAND,

DURING THE

*Quarter ending June 30, 1860.*

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BY JAMES GLAISHER, ESQ., F.R.S.  
SECRETARY OF THE BRITISH METEOROLOGICAL SOCIETY.

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1860.



Remarks on the weather, during the Quarter ending 30th of June 1860. By JAMES GLAISHER, ESQ., F.R.S., &c., Secretary of the British Meteorological Society.

The cold weather which set in on January 25, and which was prevalent to the end of the last quarter, continued, with the exception of the 19 days following May 8, till the end of the present quarter. The mean daily deficiency of temperature for the 38 days beginning April 1 amounted to  $3\frac{1}{2}^{\circ}$ , and for the 34 days ending June 30 was as large at  $4\frac{1}{2}^{\circ}$ ; the average daily deficiency for these 72 days was  $3\frac{1}{2}^{\circ}$ . The remaining 19 days, viz., from May 8 to May 26, were warm, and their temperatures were daily in excess over their averages to the amount of  $3\frac{1}{2}^{\circ}$ .

The mean high day temperature in April was  $3^{\circ}\cdot 3$  below; in May was  $1^{\circ}\cdot 2$  above; and in June was the very large amount of  $6^{\circ}\cdot 5$  below their respective averages.

The mean low night temperature in April was  $3^{\circ}\cdot 2$  below; in May was  $0^{\circ}\cdot 5$  above; and in June was  $1^{\circ}\cdot 8$  below their averages.

Therefore, both the days and nights in April were remarkably cold, and to an almost equal amount; in May both were somewhat warmer than usual; and in June both were cold, particularly the high day temperatures, which were distinguished by being of lower value than in May, when usually they are higher to the amount of 7 degrees, and being lower than any as far back as 1840, which is as far as trustworthy records extend.

The mean temperature of April was  $3^{\circ}\cdot 6$  in defect; in May was  $1^{\circ}\cdot 0$  in excess; and in June was  $4^{\circ}\cdot 4$  in defect as compared with their respective averages of the preceding 19 years. As compared with the year 1859, April was  $3^{\circ}\cdot 7$  colder; May was  $0^{\circ}\cdot 7$  warmer; and June was  $6^{\circ}\cdot 6$  colder.

The month of April was colder than any April since the year 1839, and we must travel back to the year 1821 to find so cold a June.

The temperature of the month of May exceeded that of April everywhere, to the amount of  $7^{\circ}$ ,  $8^{\circ}$ , and  $9^{\circ}$  at extreme northern stations, and of  $9^{\circ}$ ,  $10^{\circ}$ , and  $11^{\circ}$  at midland and southern stations.

The month of June was colder than May at Guernsey, in Cornwall and Devonshire, and near the sea south of latitude  $53^{\circ}$ ; and was somewhat warmer at places situated north of this parallel.

The mean pressure of the atmosphere in April was a little above; in May was a little below; and in June was much below, their averages. The pressure was less than in any June since 1852. The changes of pressure of the atmosphere have been constant during the last quarter as in the preceding quarter.

The range of the barometer readings at extreme southern stations was  $1\cdot 2$  inch in April;  $1\cdot 0$  inch in May; and somewhat less than an inch in June; these values gradually increased going northward to  $1\cdot 9$  inch in April; to  $1\cdot 3$  inch in May; and something more than an inch in June at extreme northern stations.

The temperatures of the dew point in April was  $3^{\circ}\cdot 4$  in defect, being very nearly the same in amount as that of the air; and therefore the degree of humidity was of its average value; in May it was  $0\cdot 8$  in excess, being somewhat less than the excess of temperature of the air, and the air was slightly drier than the average; in June its defect was  $1^{\circ}\cdot 3$ , whilst that of the air was  $4^{\circ}\cdot 4$ , so that the air in June was remarkably humid.

The fall of rain at Greenwich in April was  $0\cdot 8$  in. in defect; in May was  $1\cdot 8$  in. in excess, and in June was  $3\cdot 9$  inches in excess. The total fall in the quarter was  $10\cdot 7$  in., being  $4\cdot 9$  in. over the average for those three months. The fall of rain since 1st January is  $15\cdot 5$  in., being  $4\cdot 8$  in. in excess, all of which fell in May and June; the fall in the latter month was  $5\cdot 8$  in., and is three times the average fall for the month. The fall in the month of June from the year 1815 is shown in the following table:—

FALL OF RAIN in the Month of JUNE at GREENWICH, from 1815 to 1860.

Years.	Amount in Inches.	Years.	Amount in Inches.	Years.	Amount in Inches.	Years.	Amount in Inches.	Years.	Amount in Inches.	Years.	Amount in Inches.
1815	1.9	1823	1.2	1831	2.1	1839	1.9	1847	1.5	1855	1.0
1816	2.4	1824	3.8	1832	3.3	1840	1.5	1848	3.5	1856	0.7
1817	1.4	1825	0.8	1833	2.2	1841	2.7	1849	0.2	1857	1.6
1818	0.7	1826	1.1	1834	1.5	1842	1.0	1850	0.9	1858	2.7
1819	2.5	1827	0.7	1835	2.4	1843	1.3	1851	1.3	1859	1.2
1820	2.6	1828	2.2	1836	1.1	1844	1.8	1852	4.6	1860	5.8
1821	2.4	1829	1.7	1837	1.0	1845	1.9	1853	2.8		
1822	0.9	1830	2.6	1838	5.1	1846	0.5				

From this table it will be seen that from the years 1815 to 1837, there was no instance of a fall so large as 4 in.; in 1838 there was one of  $5\cdot 1$  in.; and in the year 1852 one of  $4\cdot 6$  in., but back to 1815 there is no instance of a fall so large as in the present June.

This large fall was, however, greatly exceeded at stations situated south of Greenwich, and particularly in Hampshire. The following table shows the amounts at various places, arranged in order of fall, beginning with Southampton, where the amount was largest:—

FALL OF RAIN at different Places in JUNE 1860.

Stations.	Amount collected.	Stations.	Amount collected.	Stations.	Amount collected.	Stations.	Amount collected.
Southampton	9.0	Manchester	6.0	Hartwell Rectory	5.1	Holkham	4.3
Petersfield (Hants)	8.9	Ben Rhydding	5.9	Aspley	5.1	Cardington	4.2
Little Bredy	7.5	Greenwich	5.8	Guernsey	5.0	Hawarden	4.2
Lampeter	7.5	Guildhall	5.8	Worthing	5.0	St. Paul's Parsonage	3.8
Truro	7.4	Bicester	5.8	Isle of Man	4.9	Belvoir Castle	3.7
Exeter (Elmbrook)	7.1	Battersea	5.6	Helston	4.9	Fairlight	3.5
Clifton	7.1	Aldershot	5.6	Rose Hill, near Oxford	4.9	Liverpool	3.5
Barnstaple	7.0	Camden Town	5.5	Hartwell House	4.9	Nottingham	3.3
Exeter (200 High St.)	6.9	Osborne	5.4	Ventnor	4.8	High House (Alnwick)	3.1
Allenheads	6.5	Gloucester	5.3	Wakefield	4.8	North Shields	3.0
Stonyhurst	6.4	Whitehall	5.2	Bywell	4.6	Carlisle	2.9
St. John's Wood	6.2	St. Thomas's Hospital	5.1	Norwich	4.5	Scarborough	1.8
Great Berkhamstead	6.0	Oxford	5.1	Leeds	4.4		

The temperature of vegetation, as indicated by a thermometer placed on grass, was below  $30^{\circ}$  on 15 nights; was between  $30^{\circ}$  and  $40^{\circ}$  on 35 nights. In April it was as low as  $20^{\circ}$ ; in May as  $27^{\circ}$ , and in June, on 3 nights it but slightly exceeded  $30^{\circ}$ . These averages are for the quarter.

The wind, which was remarkable in the preceding quarter for long-continued rapid motion, has been, although less continuously rapid, as remarkable for the season of the year; during each month the air was moving quickly for one hour out of three, night and day. In April it blew mostly from N.E., and was continuous for 70 hours, beginning the 18th; for 66 hours from the 24th, and for considerable periods at other times. The greatest pressure was 12 lbs. on the square foot. In May the direction was S.W., blowing strongly from 10 hours to 20 hours at different times, and for 90 hours following 26th May, during which gale pressures of 23 lbs. were recorded. In June it blew from S.W. mostly, for 40 hours continuously on two occasions, and for 60 hours from 27th June. On 2d June pressure of 23 lbs. were recorded. This kind of windy weather has been prevalent all this year.

The mean temperature of the air at Greenwich for the three months ending May, constituting the three spring months, was  $45^{\circ}\cdot 9$ , being  $0^{\circ}\cdot 5$  below the average of the preceding 89 years.

Average of the preceding 89 years.														
1860. MONTHS.	Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
	Air.		Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames.					
	Mean.	Diff. from average of 89 years.	Diff. from average of 19 years.	Mean.	Diff. from average of 19 years.	Mean.	Diff. from average of 19 years.	Mean.		Diff. from average of 19 years.	Mean.	Diff. from average of 19 years.		
	Mean.	Diff. from average of 89 years.	Diff. from average of 19 years.	Mean.	Diff. from average of 19 years.	Mean.	Diff. from average of 19 years.	Mean.		Diff. from average of 19 years.	Mean.	Diff. from average of 19 years.		
April .	42.9	-2.9	-3.6	40.1	-3.4	36.7	-3.4	18.1	-0.1	46.2	in.	grs.		
May .	53.8	+1.3	+1.0	50.0	+0.9	46.2	+0.8	20.9	+0.7	54.0	in.	grs.		
June .	54.8	-3.3	-4.4	52.2	-2.7	49.7	-1.3	16.5	-4.8	59.2	in.	grs.		
Mean .	50.5	-1.6	-2.3	47.4	-1.7	44.2	-1.3	18.5	-1.4	296	-0.02	3.3		

1860. MONTHS.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Reading of Thermometer on Grass.				
	Mean.	Diff. from average of 19 years.	Mean.	Diff. from average of 19 years.	Mean.	Diff. from average of 19 years.	Amount.	Diff. from average of 45 years.	Number of Nights it was			Lowest Reading at Night.	Highest Reading at Night.
									At or below 30°.	Between 30° and 40°.	Above 40°.		
April .	79	0	in.	29.796	in.	549	in.	1.0	13	16	1	19.8	41.0
May .	75	-1	29.746	-0.016	536	-2	3.9	+1.8	2	16	13	25.8	49.7
June .	82	+9	29.613	-0.190	532	+1	5.8	+3.9	0	3	27	30.3	55.0
Mean .	79	+3	29.718	-0.047	539	+1	Sum 10.7	Sum +4.9	Sum 15	Sum 35	Sum 41	Lowest 19.8	Highest 55.0

NOTE.—In reading this table it will be borne in mind that the sign (-) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred or thunder was heard and lightning seen on the 1st of April at Helston; on the 4th at Bywell and Allenheads; and on the 9th at Cardington. On the 11th of May at Hawarden, Manchester, York, Stonyhurst, Ben Rhydding, Scarborough, and North Shields; on the 12th and 13th at Cardington and Hawarden; on the 14th at Grantham and Stonyhurst; on the 15th at Aldershot Camp, Royston, Cardington, Holkham, Belvoir Castle, Stonyhurst, and Hawarden; on the 17th at Scarborough; on the 18th at Norwich and Scarborough; on the 19th at Hawarden; on the 23d at Norwich and Wakefield; and on the 26th at Norwich, Belvoir Castle, Bicester, Hartwell, Leeds, North Shields, Bywell, and Allenheads. On the 1st of June at Scarborough; on the 5th at Holkham; on the 6th at Holkham and York; on the 7th at Hartwell, Hawarden, and Allenheads; on the 9th at Manchester and Carlisle; on the 10th at Oxford, Bicester, and Hartwell; on the 11th at Scarborough, Bywell, and Carlisle; on the 15th at Manchester, Stonyhurst, and Bywell; on the 16th at Osborne, Clifton, Oxford, Bicester, Hartwell, Manchester, and Allenheads; on the 18th at Cardington and Hawarden; on the 20th at Berkhamstead, Cardington, Bicester, Hartwell, Holkham, York, and Liverpool; on the 21st at Gloucester, Cardington, Hartwell, York, Scarborough, and Bywell; on the 25th at Stonyhurst, Scarborough, Bywell, and Allenheads; on the 28th at Scarborough; and on the 29th at Fairlight, Hartwell, and Bywell.

Thunder was heard but lightning was not seen on 2 days in April, 9 in May, and 16 in June, at different parts of the country.

Lightning was seen but thunder not heard on the 9th of April at Aldershot Camp and Manchester. On the 10th of May at Guernsey; on the 12th at Royston; and on the 23d at Clifton and Cardington. On the 10th of June at Holkham and Stonyhurst; and on the 15th at Clifton.

Solar halos were seen on 12 days during the quarter, of which 14 were in April, 6 in May, and 8 in June.

Lunar halos were seen on 8 nights in April, on the 2d of May at Grantham, Manchester, and Stonyhurst; and on the 27th of June at Truro.

Aurora were seen on April 8, 9, 10, 16, 18, 21, 23; and on May 6, 8, 9, 18.

Snow fell on 16 days in April, between the 1st and 24th, generally over the country; on the 21st at Guernsey; and on the 27th, 28th, and 29th of May.

Fog prevailed on 12 nights in April, 16 days in May, and 10 days in June.

Swallows were first seen on 10th April at Royston and Barnstaple.

Cuckoo was first heard on 4th April at Aspley; and on the 6th at Hartwell.

The Lime was in leaf between 20th April and 4th May; the Chesnut between 3d and 30th April; the Hawthorn between 4th and 28th April; the Oak about 24th April; the Elm about 29th April.

Lilac in blossom 14th to 26th May, remarkably late. The Apple in blossom 21st April to 17th May; the Pear from 2d April to 3d May; the Plum 3d April to 3d May; and the Cherry 15th April to 1st May, at different parts of the country.



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Days of Sun.	Mean Reading of Minimum on Grass.	Mean Estimated Strength.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.	Number of Days on which it fell.	RAIN.	
																			Relative Proportion of								
																			N.	E.	S.	W.					
Guernsey	29.619	68.5	35.0	33.5	55.8	46.5	21.1	9.3	59.6	53.0	47.8	0.6	0.6	90	539	539	539	539	1.0	8	5	7	10	4.9	4.4	50	11.3
Helston	29.641	72.0	30.0	32.0	52.0	48.0	22.0	10.0	60.0	54.0	49.0	0.7	0.7	90	540	540	540	540	1.0	8	5	7	10	4.9	4.4	50	11.3
Truro	29.677	72.0	27.0	45.0	59.0	45.0	23.0	10.0	62.0	56.0	51.0	0.8	0.8	90	540	540	540	540	1.0	8	5	7	10	4.9	4.4	50	11.3
Exeter, 200 High-st.	29.590	74.2	32.4	34.0	54.0	50.0	24.0	11.0	62.0	56.0	51.0	0.8	0.8	90	540	540	540	540	1.0	8	5	7	10	4.9	4.4	50	11.3
Ventnor	29.603	66.0	34.0	32.0	56.0	46.0	24.0	10.0	54.0	48.0	43.0	0.6	0.6	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Osborne	29.609	73.5	28.2	35.0	50.0	43.0	22.0	10.0	54.0	48.0	43.0	0.6	0.6	90	539	539	539	539	1.0	8	5	7	10	4.9	4.4	50	11.3
Worthing	29.611	69.6	31.8	37.8	57.7	43.7	21.0	14.0	50.2	44.8	39.6	0.5	0.5	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Fairlight	29.622	72.0	27.4	14.6	58.1	42.4	34.7	15.7	48.9	43.6	38.4	0.4	0.4	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Little Briddy	29.567	78.6	37.0	37.0	52.0	47.0	24.0	10.0	54.0	48.0	43.0	0.6	0.6	90	539	539	539	539	1.0	8	5	7	10	4.9	4.4	50	11.3
Barnstaple	29.573	79.0	27.0	32.0	61.0	45.4	32.2	14.7	51.1	45.7	41.1	0.5	0.5	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Alldershot Camp	29.573	79.0	27.0	32.0	61.0	45.4	32.2	14.7	51.1	45.7	41.1	0.5	0.5	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Clifton	29.573	72.0	36.0	35.1	59.0	45.8	23.2	12.1	49.0	43.6	38.4	0.4	0.4	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Royal Observatory	29.590	76.5	28.2	48.3	61.4	42.9	34.7	13.5	53.8	48.4	44.0	0.5	0.5	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
St. Thomas's Hospital	29.599	77.8	34.0	38.2	52.8	47.1	24.0	10.0	54.0	48.0	43.0	0.6	0.6	90	539	539	539	539	1.0	8	5	7	10	4.9	4.4	50	11.3
St. John's Wood	29.568	74.5	29.4	45.1	60.9	43.3	22.2	17.6	50.5	44.9	39.8	0.5	0.5	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Guildhall	29.564	72.7	34.7	38.2	52.9	48.2	26.0	13.0	51.1	45.7	41.3	0.5	0.5	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Wh. tehall	29.618	72.0	30.8	30.2	57.9	44.8	36.3	13.1	52.4	43.1	38.5	0.3	0.3	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Camden Town	29.568	77.0	27.0	48.2	61.3	43.3	36.3	17.9	51.0	43.1	38.5	0.3	0.3	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Battersea	29.568	77.0	27.0	48.2	61.3	43.3	36.3	17.9	51.0	43.1	38.5	0.3	0.3	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Rose Hill	29.547	73.2	28.8	45.4	58.7	42.6	35.2	16.0	50.0	44.1	31.7	0.3	0.3	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Oxford	29.547	73.2	28.8	45.4	58.7	42.6	35.2	16.0	50.0	44.1	31.7	0.3	0.3	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Bicester	29.525	77.5	24.0	51.0	59.7	40.9	30.0	18.3	49.3	43.8	31.8	0.3	0.3	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Great Berkhamstead	29.582	73.8	25.0	48.0	59.9	41.7	30.0	18.2	49.2	43.7	31.5	0.3	0.3	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Hartwell House	29.585	73.8	25.0	48.0	59.9	41.7	30.0	18.2	49.2	43.7	31.5	0.3	0.3	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Hartwell Rectory	29.546	76.8	26.7	52.3	61.3	41.8	38.3	19.5	50.4	44.9	39.2	0.3	0.3	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Royston	29.620	76.3	29.0	39.0	61.8	41.7	36.0	20.1	50.0	43.6	39.0	0.2	0.2	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Gloucester	29.555	75.0	28.2	47.0	60.8	41.7	33.2	19.1	52.1	44.3	39.6	0.3	0.3	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Cardington	29.576	75.0	28.2	47.0	60.8	41.7	33.2	19.1	52.1	44.3	39.6	0.3	0.3	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Aspley	29.582	75.0	28.2	47.0	60.8	41.7	33.2	19.1	52.1	44.3	39.6	0.3	0.3	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Bedford	29.568	78.0	29.0	49.0	61.1	44.1	37.4	18.1	49.4	44.0	39.4	0.3	0.3	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Lampeter	29.577	74.0	25.2	48.8	60.1	42.0	45.1	18.7	51.0	42.9	38.5	0.3	0.3	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Norwich	29.543	74.0	30.1	44.0	59.9	43.0	31.1	16.4	50.3	45.7	39.3	0.2	0.2	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Grantham	29.586	74.0	30.1	44.0	59.9	43.0	31.1	16.4	50.3	45.7	39.3	0.2	0.2	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Belvoir Castle	29.530	77.3	23.0	30.8	59.5	41.1	33.8	18.4	48.8	45.1	40.6	0.3	0.3	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Holkham	29.561	70.0	32.4	13.7	57.4	43.0	31.2	14.4	48.7	44.8	40.2	0.4	0.4	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Hawarden	29.661	71.0	25.0	37.0	57.2	42.3	32.4	14.9	48.2	40.1	35.4	0.3	0.3	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Liverpool Observat.	29.627	69.0	34.0	34.0	54.0	50.0	24.0	11.0	62.0	56.0	51.0	0.8	0.8	90	540	540	540	540	1.0	8	5	7	10	4.9	4.4	50	11.3
Manchester	29.578	78.0	29.0	39.0	61.8	41.7	36.0	20.1	50.0	43.6	39.0	0.2	0.2	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Wakefield	29.570	76.7	27.0	51.0	57.9	41.6	37.3	20.5	51.3	44.3	39.2	0.3	0.3	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Leeds	29.570	77.0	29.0	48.0	59.6	42.3	34.1	19.1	49.3	42.5	37.3	0.3	0.3	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Stonbury	29.529	73.6	28.4	45.2	60.6	42.0	34.5	18.3	50.5	44.6	39.8	0.3	0.3	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Ben Rhydding	29.633	73.8	25.0	45.0	58.6	40.4	31.9	18.2	47.7	43.4	38.0	0.3	0.3	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3
Bywell	29.626	68.1	31.0	37.0	57.0	43.0	24.0	10.0	54.0	48.0	43.0	0.6	0.6	90	539	539	539	539	1.0	8	5	7	10	4.9	4.4	50	11.3
Isle of Man	29.550	69.0	30.0	39.0	57.2	42.0	24.0	10.0	54.0	48.0	43.0	0.6	0.6	90	539	539	539	539	1.0	8	5	7	10	4.9	4.4	50	11.3
North Shields	29.626	67.0	28.0	39.0	55.1	41.3	24.0	10.0	54.0	48.0	43.0	0.6	0.6	90	539	539	539	539	1.0	8	5	7	10	4.9	4.4	50	11.3
St. Paul's Parsonage	29.543	70.4	28.1	42.3	57.2	40.0	24.0	10.0	54.0	48.0	43.0	0.6	0.6	90	539	539	539	539	1.0	8	5	7	10	4.9	4.4	50	11.3
Allenhead	29.511	76.0	32.0	42.3	58.9	43.6	24.0	10.0	54.0	48.0	43.0	0.6	0.6	90	539	539	539	539	1.0	8	5	7	10	4.9	4.4	50	11.3
High House Farm (Alnwick)	29.566	71.0	23.0	48.0	58.2	39.0	33.0	18.7	47.1	44.3	39.6	0.3	0.3	91	541	541	541	541	1.0	8	5	7	10	4.9	4.4	50	11.3

The highest temperatures of the air were at Whitehall, 81°; Aldershot, 79°; Hartwell House, 78°; Barnstaple, 78°; Bedford and at High House, Alnwick, 78°; Great Berkhamstead, Hawarden, and Wakefield, 77°. The lowest were 26°; 0. Holkham, 26°; Bicester, 26°; Ventnor, 26°; Liverpool, 26°; and Helston, 26°. The greatest daily ranges were at Wakefield, 25°; 7; Guernsey, 20°; 2; Hartwell Rectory, 20°; 1; Rose Hill, 19°; 9; Hartwell House, 19°; 5; and Aldershot Camp, 19°; 3. The least were at days at Allenhead, 75°; Exeter, 69



GRANTHAM.	April	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
WILLIAM JEANS, Esq.,	May	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
M.R.S. J. M.C.S., F.R.A.S., M.B.M.S.	June	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
BEI VOIR CASTLE, Esq.,	April	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
WILLIAM INGRAM, Esq., M.B.M.S.	May	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
HOLKHAM,	June	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
S. SHILLABEAR, Esq., M.B.M.S., As-	April	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
stant to the EARL OF LINCOLN.	May	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
NOTTINGHAM,	June	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
E. J. LOWE, Esq., F.R.A.S., M.B.M.S.	April	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
HAWARDEN,	May	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
THOMAS MOFFAT, Esq., M.D.,	June	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
F.R.A.S., M.B.M.S.	April	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
LIVERPOOL OBSERVATORY,	May	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
JOHN HARTNETT, Esq., F.R.A.S.	June	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
MANCHESTER,	April	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
GEORGE VENABLES VERNON, Esq.,	May	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
WAKEFIELD CHURCH,	June	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
WILLIAM RALPH MILLNER, Esq.,																														
M.R.C.S., M.B.M.S.																														
LEEDS PHILOSOPHICAL HALL,	April	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
HENRY DENNY, Esq., A.L.S.	May	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
STONYHURST COLLEGE,	June	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
REV. ALBERT WELB, M.A., F.R.A.S.,	April	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
M.B.M.S.	May	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
R.B.D.S.	June	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
BEN RHYDDING,	April	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
R. C. TAYLOR, Esq.	May	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
YORK,	June	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
JOHN FORD, Esq.	April	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SCARBOROUGH,	May	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
R. CHAMPEL, Esq.	June	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
ISLE OF MAN,	April	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
JAMES BURNAN, Esq., F.R.A.S.	May	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
NORTH SHIELDS,	June	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
ROBERT SPENCE, Esq.	April	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
ST. PAUL'S PARSONAGE,	May	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
near SILFORTH, CUMBERLAND,	June	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
REV. F. REIDFORD, M.A., M.B.M.S.,	April	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
CARLISLE,	May	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
L. CARTMELL, Esq.	June	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RYWELL, Mr. JOHN DAWSON,	April	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
under the direction of T. SOWWITH,	May	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Esq., F.R.S., M.B.M.S.	June	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
ALEX. HADEN, THOMAS BEWICK,	April	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
WITH, Esq., F.R.S., Assistant to T. SOW-	May	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
WITH, Esq., F.R.S., Esq.	June	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
HIGH HOUSE (Alnwick).	April	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Mr. SCOTT, for His Grace the Duke	May	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
of Northumberland.	June	29	78	50	60	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

second. Rain gages were placed—At Ellinbrook, Exeter, 37 feet above the ground, the amount collected was 8·8 inches; at Clifton, 20 feet, 10·9 inches; at Guildhall, 77 feet, 9·3 inches; at Rose Hill, 7 feet, 10·2 inches; at Cardington, 48 feet, 7·0 inches; at Holkham, 4 feet, 8·5 inches; at Holkham, 4 feet, 8·5 inches; at Nottingham, 25 feet, 7·1 inches; and at North Shields, 88 feet, 10·7 inches. In the Quarterly Return for March 31st, 1880, insert the rain fall at Camden Town for March 1·8 inch, and it fell on 16 days.



ON THE  
METEOROLOGY OF ENGLAND,

DURING THE  
*Quarter ending September 30, 1860.*

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BY JAMES GLAISHER, ESQ., F.R.S.  
SECRETARY OF THE BRITISH METEOROLOGICAL SOCIETY.

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1860.



## 2 On the Weather during the Quarter ending September 30th, 1860.

Remarks on the weather, during the Quarter ending 30th of September 1860. By JAMES GLAISHER, ESQ., F.R.S., &c., Secretary of the British Meteorological Society.

The weather during the past quarter has been very remarkable for continued low temperature, frequent rain, large amount of cloud, little sunshine, and bad weather generally.

The temperature within the three months reached its average on 9 days only, and fell short on 83 days; the mean excess on the 9 days was less than  $\frac{1}{4}^{\circ}$ ; whilst the average daily deficiency for the 83 days exceeded  $4^{\circ}$ .

The mean high day temperature in July was  $4^{\circ}8$ ; in August  $5^{\circ}9$ ; and in September  $4^{\circ}3$  below their averages; whilst in June it was as large as  $6^{\circ}5$ . The average deficiency of high day temperature for the four months ending September was  $5\frac{1}{4}^{\circ}$ . This large deficiency for these months is, I believe, unprecedented.

The mean low night temperature in July was  $3^{\circ}2$ ; in August  $1^{\circ}7$ ; and in September  $3^{\circ}3$  below their averages.

In the four months ending September both days and nights have been remarkably cold, and almost always below their averages.

The mean temperature of July was  $4^{\circ}3$ ; in August  $3^{\circ}8$ ; and in September  $3^{\circ}7$  in defect, as compared with their respective averages from the preceding 19 years. As compared with the year 1859, July was  $10^{\circ}5$ ; August  $5^{\circ}8$ ; and September  $3^{\circ}3$  colder.

The mean temperature of the three months ending September was  $56^{\circ}2$ ; and once only, viz., in 1817 has the mean temperature of the same months been so low since the year 1771.

The mean temperature of the four months ending September is still more remarkable; its value was  $55^{\circ}9$ , and there is no other instance, as far as trustworthy records extend, of a temperature of so low a value for these four important months.

The following Table shows the average temperature at Greenwich of these three and four months respectively in every year since 1771.

MEAN TEMPERATURE of July, August, and September, and of Four Months ending September, at Greenwich, from 1771 to 1860.

Year.	Mean Temperature.		Year.	Mean Temperature.		Year.	Mean Temperature.		Year.	Mean Temperature.		Year.	Mean Temperature.	
	July, Aug., Sept.	June, July, Aug., Sept.		July, Aug., Sept.	June, July, Aug., Sept.		July, Aug., Sept.	June, July, Aug., Sept.		July, Aug., Sept.	June, July, Aug., Sept.		July, Aug., Sept.	June, July, Aug., Sept.
1771	56.6	56.0	1794	59.5	59.0	1817	56.2	56.9	1839	58.2	58.4	1860	56.2	55.9
1772	58.2	58.5	1795	60.2	58.6	1818	56.2	56.9	1840	58.1	58.4			
1773	57.7	57.2	1796	59.2	58.4	1819	61.2	60.0	1841	58.8	58.2			
1774	58.9	59.8	1797	59.0	57.9	1820	57.5	57.1	1842	60.7	61.2			
1775	60.7	61.2	1798	59.7	60.1	1821	59.7	58.3	1843	60.8	59.7			
1776	59.3	59.2	1799	57.2	56.8	1822	59.9	60.6	1844	58.7	59.2			
1777	60.3	59.3	1800	61.4	60.0	1823	58.1	57.4	1845	56.9	57.9			
1778	61.3	61.3	1801	60.6	60.0	1824	60.1	58.8	1846	62.6	63.3			
1779	63.2	61.9	1802	59.4	59.0	1825	62.3	61.5	1847	60.6	60.0			
1780	62.7	61.8	1803	59.3	58.5	1826	61.8	62.1	1848	58.6	58.6			
1781	61.7	61.9	1804	59.8	60.2	1827	59.8	59.3	1849	61.3	60.4			
1782	60.3	57.3	1805	60.0	58.7	1828	59.5	59.6	1850	59.6	59.9			
1783	60.3	59.9	1806	59.9	59.9	1829	57.0	57.5	1851	59.8	59.6			
1784	57.7	57.3	1807	60.1	59.5	1830	58.2	57.5	1852	61.8	60.4			
1785	58.8	59.0	1808	61.2	60.4	1831	61.3	60.9	1853	58.5	58.5			
1786	56.4	57.2	1809	58.2	58.0	1832	59.6	59.5	1854	59.8	58.8			
1787	59.0	58.7	1810	60.3	59.8	1833	58.7	58.0	1855	60.4	59.6			
1788	58.8	58.8	1811	59.1	58.8	1834	61.6	61.5	1856	60.0	59.6			
1789	57.9	57.1	1812	56.8	56.1	1835	61.6	61.2	1857	63.3	63.0			
1790	57.9	57.4	1813	57.2	56.8	1836	58.4	58.6	1858	61.0	62.0			
1791	59.2	58.8	1814	58.9	57.0	1837	58.8	58.6	1859	62.8	62.4			
1792	58.7	57.7	1815	60.9	60.2	1838	58.2	57.9	1860	56.2	55.9			
1793	58.9	58.0	1816	57.1	56.1									

The temperature of August differed but little from that of July at all stations south of the latitude  $53^{\circ}$ ; north of this parallel August was colder than July, gradually increasing to  $3^{\circ}$  and  $4^{\circ}$  at extreme northern stations. September was from  $3^{\circ}$  to  $4^{\circ}$  colder than August at all stations.

The mean pressure of the atmosphere in July was a little above, in August much below, and in September below their respective averages. The pressure in August was less than in any August in the preceding 20 years.

The pressure was less in August than in July at extreme southern stations by  $0.25$  in., increasing gradually to  $0.40$  in. at northern stations. It was greater in September than in August by  $0.15$  in., at southern stations gradually increasing to  $0.33$  in. at extreme northern stations.

The temperature of the dew point was below its average, in July and August to the amount of  $1^{\circ}6$ , and in September to  $0^{\circ}9$ .

The fall of rain in July was  $2.8$  in.; in August  $3.7$  in.; and in September  $3.1$  in.; amounting in the three months to  $9.6$  in., and being  $2.1$  in. in excess. The fall of rain from January 1 is  $25.1$  in., being  $6.9$  in. in excess.

The following Table shows the fall of rain at Greenwich in the nine months ending September, from the year 1815.

FALL OF RAIN at GREENWICH in the Nine Months ending September, from 1815 to 1860.

Years.	Amount of Rain in the first 9 Months of each Year.	Years.	Amount of Rain in the first 9 Months of each Year.	Years.	Amount of Rain in the first 9 Months of each Year.	Years.	Amount of Rain in the first 9 Months of each Year.	Years.	Amount of Rain in the first 9 Months of each Year.	Years.	Amount of Rain in the first 9 Months of each Year.
1815	16.1	1823	18.1	1831	21.1	1839	20.9	1847	11.8	1854	13.3
1816	21.2	1824	25.4	1832	14.0	1840	13.3	1848	22.9	1855	13.7
1817	20.6	1825	15.2	1833	14.6	1841	21.2	1849	17.3	1856	18.3
1818	19.5	1826	16.9	1834	16.8	1842	16.3	1850	14.5	1857	15.4
1819	22.0	1827	15.6	1835	18.1	1843	17.6	1851	18.6	1858	14.2
1820	21.0	1828	26.5	1836	18.7	1844	16.2	1852	22.9	1859	17.2
1821	22.0	1829	21.8	1837	15.4	1845	16.6	1853	22.5	1860	25.1
1822	17.1	1830	21.8	1838	16.8	1846	17.6				

## 3 On the Weather during the Quarter ending September 30th, 1860.

From the foregoing Table it will be seen that the fall of rain up to this time has been larger than any since the year 1828. The following Table shows the rain-fall for the first nine months of the year 1860 at several stations over England.

FALL OF RAIN at different Places in the Nine Months ending September 1860.

Stations.	Amount collected.	Stations.	Amount collected.	Stations.	Amount collected.	Stations.	Amount collected.
Guernsey	in. 33.9	Clifton	in. 31.0	Hartwell Rectory	in. 21.9	Hawarden	in. 20.1
Helston	29.1	Greenwich	25.1	Royston	23.3	Liverpool	20.4
Truro	33.4	St. Thomas's Hospital	27.7	Gloucester	22.1	Wakefield	24.9
Exeter	28.2	Guildhall	23.0	Cardington	22.4	Leeds	21.6
Exeter (High Street)	25.7	Whitehall	22.0	Aspley	22.4	Stonyhurst	36.4
Ventnor	27.0	Camden Town	24.8	Lampeter	42.6	Ben Rhydding	27.4
Osborne	26.5	Battersea	21.8	Norwich	23.1	Scarborough	35.8
Worthing	25.9	Rose Hill, near Oxford	19.7	Belvoir Castle	23.1	North Shields	23.0
Fairlight	23.2	Oxford	23.7	Holkham	24.6	St. Paul's Parsonage	23.8
Little Bridy	38.8	Hartwell House	25.3	Nottingham	34.9	High House (Alnwick)	23.2
Aldershot	25.4						

The temperature of vegetation, as indicated by a thermometer placed on grass, was below  $40^{\circ}$  on 32 nights, and above  $40^{\circ}$  on 60 nights.

The wind in July was in rapid motion for 72 hours, mostly from S.W. and N., it blew for 14 hours from N.N.W. from July 24th at noon; this was the longest continuous wind in the month. The greatest pressure on the square foot was  $5\frac{1}{2}$  lbs. In August the air was in sensible motion for 317 hours, and was almost continuously so from the 18th to the 24th, with pressures of 6 lbs. and 7 lbs. on the square foot. In September there was less continuous wind, the air was in quick motion for 131 hours during the month, and this was mostly between the 15th and 28th.

The mean temperature of the air at Greenwich for the three months ending August, constituting the three summer months, was  $56^{\circ}7$ , being  $3^{\circ}4$  below the average of the preceding 89 years.

1860. MONTHS.		Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
		Air.		Evaporation.		Dew Point.		Air— Daily Range.		Water of the Thames.					
		Mean.	Diff. from ave- rage of 19 years.	Mean.	Diff. from ave- rage of 19 years.	Mean.	Diff. from ave- rage of 19 years.	Mean.	Diff. from ave- rage of 19 years.			Mean.	Diff. from ave- rage of 19 years.	Mean.	Diff. from ave- rage of 19 years.
July	57.6	-3.8	0	54.8	0	32.3	-1.6	19.1	0	62.6	in. .333	grs. .025	grs. 4.4	gr. -0.2	
Aug.	57.7	-3.0	0	55.0	-2.6	32.5	-1.6	15.4	0	60.9	.336	-.027	4.4	-0.3	
Sept.	58.4	-3.0	0	51.8	-2.2	50.2	-0.9	17.6	0	58.4	.364	-.019	4.1	-0.1	
Mean	58.2	-3.3	0	53.9	-2.6	51.7	-1.4	17.4	-2.3	60.6	.384	-.024	4.3	-0.2	

1860. MONTHS.		Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Hori- zontal move- ment of the Air.		Reading of Thermometer on Grass.				
		Mean.	Diff. from ave- rage of 19 years.	Mean.	Diff. from ave- rage of 19 years.	Mean.	Diff. from ave- rage of 19 years.	Amount.	Diff. from ave- rage of 19 years.			Number of Nights it was			Low- est Read- ing at Night.	Highest Read- ing at Night.
		Mean.	Diff. from ave- rage of 19 years.	Mean.	Diff. from ave- rage of 19 years.	Mean.	Diff. from ave- rage of 19 years.	Amount.	Diff. from ave- rage of 19 years.	Miles.	At or below 30°.	Be- tween 30° and 40°	Above 40°.			
July	83	+7	in. 29.845	+0.013	grs. 504	+7	in. 2.8	in. +0.1	172	0	9	22	0	0		
Aug.	83	+6	in. 29.556	-0.244	grs. 528	0	in. 3.7	in. +1.3	—	0	6	25	32.0	51.7		
Sept.	88	+7	in. 29.761	-0.071	grs. 537	+3	in. 3.1	in. +0.7	—	1	16	13	37.0	55.0		
Mean	85	+7	in. 29.721	-0.001	grs. 533	+3	Sum 9.6	Sum +2.1	—	Sum 1	Sum 31	Sum 60	Lowest 28.0	Highest 55.0		

NOTE.—In reading the barometer, the height of the mercury is taken at the top of the scale.

NOTE.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred or thunder was heard and lightning seen on 9 days in July; on 6 days in August; and on 4 days in September.

Thunder was heard but lightning was not seen on 31 days during the quarter, of which 17 were in July, 8 in August, and 6 in September.

Lightning was seen but thunder was not heard on 2 days in July; and on 5 days in August.

Solar halos were seen on 5 days in July; on 11 days in August; and on 4 days in September.

Lunar halos were seen on one night in July; on 5 nights in August; and on 7 nights in September.

Aurora were seen on the 16th of August at Clifton and on the 26th at Wakefield; on the 2d and 4th of September at Nottingham; on the 6th at Oxford; on the 7th and 8th at Newcastle; on the 10th at Nottingham; and on the 17th, 19th, and 20th at St. Paul's Parsonage.

Hail fell on 13 days during the quarter.

Fog prevailed on 41 days during the quarter, of which 16 were in July, and 11 in August.

Wheat was in flower at some places on the 1st of July, and not until the latter end of the month at others; it was cut on 6th August at a few places, but some was uncut at the end of the quarter;

Barley was cut at the beginning of August in Cornwall, and not until the 17th of Sept. at Alnwick.

Oats were cut about the latter end of August in the south, and not until the latter end of September in the north; a great deal being still uncut at the beginning of October.

Apples were ripe on 15th September at Nottingham and on the 20th at North Shields.

The season has been very backward owing to the cold and wet spring and summer. In some places the grass was left unmown until about the middle of September. Barley and oats promise good crops, and wheat is on the whole a better crop than was expected. The potato disease is not



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	Mean Estimated Strength.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.
																			Relative Proportion of					
																			N.	E.	S.	W.		
Guernsey	29.543	68.0	47.0	21.0	60.2	50.6	9.6	9.6	57.1	51.2	37.4	4.2	1.0	79	535	88.3	47.2	1.0	8	4	6	12	7.0	7.0
Helston	29.506	75.0	40.0	35.0	60.0	53.2	6.8	6.8	52.0	48.0	40.1	4.0	1.0	85	543	—	—	—	—	—	—	—	—	—
Truro	29.534	75.0	34.0	41.0	65.0	49.7	31.0	15.3	57.4	49.5	331	4.0	1.4	75	534	—	—	—	—	—	—	—	—	—
Torquay	74.0	42.0	32.0	60.5	50.6	22.5	9.9	55.7	50.0	373	4.3	0.8	86	—	—	—	—	—	—	—	—	—	—	—
Exeter (St. Leonard's)	29.503	78.5	36.0	42.5	62.2	49.6	24.0	12.8	56.6	50.9	373	4.2	0.9	80	539	85.0	47.2	1.3	12	6	9	16	6.6	—
Exeter, 200 High-st.	29.537	78.9	36.0	39.3	65.5	51.0	27.2	14.5	56.9	50.7	370	4.2	1.0	79	532	—	—	—	—	—	—	—	—	—
Ventnor	29.519	70.0	41.0	29.0	61.8	53.7	27.8	8.4	57.6	52.0	389	4.3	0.6	82	531	—	—	—	—	—	—	—	—	—
Osborne	29.488	75.0	42.0	33.0	63.5	51.4	28.2	11.0	56.4	51.8	372	4.2	0.9	82	532	82.5	48.0	1.8	8	5	4	7	12	6.7
Worthing	29.445	75.1	42.6	32.5	62.0	51.9	27.2	10.7	56.7	51.1	371	4.2	0.9	82	535	—	—	—	—	—	—	—	—	—
Fairlight	—	71.0	40.5	30.5	62.0	49.1	25.6	13.3	57.6	52.2	391	4.4	0.3	93	—	—	—	—	—	—	—	—	—	—
Little Briny	29.518	70.0	39.7	39.3	64.4	47.4	31.0	17.0	55.1	51.7	385	4.3	0.6	89	530	98.1	43.7	2.3	7	4	7	13	6.7	6.7
Barnstaple	29.547	76.5	38.0	38.5	64.1	50.1	29.6	14.0	57.1	50.6	370	4.1	1.4	79	535	—	—	—	—	—	—	—	—	—
Aldershot Camp	29.537	80.5	36.0	44.5	66.4	51.1	33.0	15.3	55.9	52.3	393	4.3	0.6	87	531	79.2	43.8	0.3	7	5	5	13	1.9	6.8
Clifton	29.518	70.5	39.1	41.5	64.7	49.9	29.0	14.8	59.0	54.4	367	4.1	0.9	83	532	—	—	—	—	—	—	—	—	—
Royal Observatory	29.504	75.0	35.7	39.3	55.6	49.2	30.0	17.4	56.2	51.6	384	4.4	0.4	84	533	102.0	43.4	—	—	—	—	—	—	—
Regent's Park	29.504	71.9	39.5	32.4	63.9	49.5	24.0	15.5	56.1	51.8	382	4.3	0.9	83	530	—	—	—	—	—	—	—	—	—
St. John's Wood	29.491	75.0	35.7	39.3	55.6	49.2	30.0	16.8	56.6	51.4	382	4.2	0.9	82	532	—	—	—	—	—	—	—	—	—
Goldhill	29.509	72.0	43.0	29.0	64.3	52.9	29.5	11.4	56.8	53.6	416	4.6	0.6	88	534	—	—	—	—	—	—	—	—	—
Whitehall	29.517	78.5	36.0	42.5	63.5	50.8	27.8	17.7	58.0	54.0	388	3.8	1.5	70	534	87.0	—	—	—	—	—	—	—	—
Camden Town	29.524	75.0	39.4	39.5	60.6	49.7	31.5	16.9	56.3	50.1	366	4.0	1.1	78	533	100.0	46.5	—	—	—	—	—	—	—
Battersea	29.491	72.5	38.9	33.4	58.2	48.2	23.0	14.3	55.9	51.5	386	4.3	0.7	86	535	85.7	47.4	2.0	4	3	11	12	2.3	6.7
Radcliffe Observatory	29.508	78.5	36.0	42.5	62.2	50.6	22.5	12.7	55.5	50.0	370	4.4	0.7	84	533	76.0	48.6	—	—	—	—	—	—	—
Bicester	29.480	76.0	37.5	43.1	63.0	47.2	32.0	18.5	56.4	51.1	372	4.2	0.9	83	530	—	—	—	—	—	—	—	—	—
Great Berkhamstead	29.527	75.5	38.1	44.5	65.2	47.3	33.2	17.5	55.4	50.2	351	3.9	0.8	81	530	—	—	—	—	—	—	—	—	—
Hartwell House	29.490	74.0	32.0	42.0	61.2	45.3	33.7	15.8	54.7	50.4	363	4.1	0.7	85	533	—	—	—	—	—	—	—	—	—
Hartwell Rectory	29.487	75.0	37.5	37.5	65.0	49.2	23.7	15.8	55.5	50.4	393	4.2	0.8	83	528	—	—	—	—	—	—	—	—	—
Royston	29.498	78.5	36.0	42.5	64.5	47.7	33.5	18.2	55.5	50.9	374	4.2	0.6	86	532	—	—	—	—	—	—	—	—	—
Gloucester	29.502	77.0	34.0	43.0	55.0	48.3	30.0	16.0	55.5	51.5	382	4.8	0.8	84	533	81.0	—	—	—	—	—	—	—	—
Cardington	29.492	76.0	37.5	43.1	63.0	47.2	32.0	17.2	56.1	50.9	400	4.5	0.5	92	532	—	—	—	—	—	—	—	—	—
Aspley	29.518	78.5	36.0	42.5	62.2	50.6	22.5	11.0	56.5	51.8	382	4.2	0.9	82	530	—	—	—	—	—	—	—	—	—
Bedford	29.491	80.0	34.0	46.0	63.0	50.0	29.2	16.3	56.5	50.6	379	4.4	0.9	82	533	80.9	48.1	—	—	—	—	—	—	—
Norwich	29.490	75.0	34.0	41.0	64.2	49.7	37.8	14.0	55.6	51.5	382	4.2	0.6	85	533	84.0	46.5	—	—	—	—	—	—	—
Lampeter	29.510	78.0	39.0	38.6	64.1	47.5	38.4	16.7	54.7	52.9	403	4.5	0.3	93	530	76.7	—	—	—	—	—	—	—	—
Belvoir Castle	29.527	77.0	33.0	44.0	64.5	47.0	37.4	17.5	54.4	52.3	395	4.4	0.3	93	532	—	—	—	—	—	—	—	—	—
Derby	29.536	72.0	32.0	40.0	64.3	47.0	30.0	16.5	54.5	49.6	282	3.6	1.4	70	529	—	—	—	—	—	—	—	—	—
Holkham	29.504	79.2	35.0	39.0	62.0	49.0	29.0	13.4	54.5	50.9	363	4.2	0.6	85	533	92.8	44.5	—	—	—	—	—	—	—
Nottingham	29.528	77.0	36.0	35.0	60.0	47.7	34.0	12.5	55.9	48.9	383	3.8	1.4	74	531	78.0	45.0	—	—	—	—	—	—	—
Hawarden	29.523	73.5	36.0	36.1	61.6	49.0	25.8	11.7	57.5	48.2	372	3.9	0.9	82	533	70.2	45.1	—	—	—	—	—	—	—
Liverpool Observat.	29.520	74.1	41.2	32.9	62.6	52.8	21.8	9.8	56.2	48.7	378	3.8	1.2	76	538	—	—	—	—	—	—	—	—	—
Wakefield	29.490	77.2	39.0	38.3	65.4	49.9	30.0	10.8	48.5	44.9	340	3.9	0.9	75	537	75.7	44.3	—	—	—	—	—	—	—
Leeds	29.494	78.0	33.0	45.0	64.0	48.3	32.0	15.1	48.5	48.2	339	3.8	1.3	76	533	—	—	—	—	—	—	—	—	—
Stonyhurst	29.444	75.0	34.7	41.3	66.6	47.8	36.5	18.8	53.3	47.8	379	4.0	0.7	88	526	82.2	—	—	—	—	—	—	—	—
Ben Rhydding	29.443	73.0	37.0	39.0	60.9	48.4	32.2	13.8	51.5	46.7	321	3.6	0.4	84	529	77.6	42.3	—	—	—	—	—	—	—
York	29.442	73.0	37.0	39.0	60.9	48.4	32.2	13.8	51.5	46.7	321	3.6	0.4	84	529	77.6	42.3	—	—	—	—	—	—	—
Scarborough	29.517	69.7	40.0	29.7	57.9	50.0	20.7	7.9	63.9	49.1	4.0	0.7	86	—	—	—	—	—	—	—	—	—	—	—
North Shields	29.515	74.2	35.8	38.4	59.9	40.8	28.5	13.1	54.3	48.8	365	3.9	0.8	82	532	—	—	—	—	—	—	—	—	—
St. Paul's Parsonage	29.462	78.2	32.4	45.8	63.1	46.4	34.8	16.7	54.9	49.8	344	3.9	0.9	79	535	78.5	44.0	—	—	—	—	—	—	—
Bywell	29.462	75.0	37.0	38.8	63.8	50.2	25.5	15.6	55.5	49.9	320	4.1	0.8	82	533	82.5	41.4	—	—	—	—	—	—	—
Alnhead	29.469	68.5	54.0	34.5	58.5	45.1	23.9	12.9	49.3	44.1	290	3.3	0.6	83	515	95.0	38.0	—	—	—	—	—	—	—
Carlisle	29.462	76.8	31.8	45.0	64.0	47.8	33.0	16.2	54.3	48.8	346	3.9	0.9	83	533	77.8	45.2	—	—	—	—	—	—	—
High House Farm (Alnwick)	29.498	77.0	32.0	43.0	62.0	49.8	33.0	17.1	53.3	51.1	375	4.2	0.3	92	529	—	—	—	—	—	—	—	—	—

The highest temperatures of the air were at Aldershot, 80.5°; Bedford, 80°; Exeter, 78°; Whitehall, 78.5°; St. Paul's Parsonage, 78.5°; Royston, Lampeter, and Leeds, 78°; Wakefield, 77.0°; Gloucester, Belvoir Castle, Nottingham, and High House, 77.0°. The lowest were at Great Berkhamstead, 31.0°; Carlisle, 31.0°; Hartwell House, Cardington, Derby, Nottingham, and High House, 32.0°. The greatest daily ranges were at Stonyhurst, 18.0°; Wakefield, 17.0°; Nottingham, 18.0°; Royston, 18.0°; Whitehall, 17.0°; Great Berkhamstead and Belvoir Castle, 17.0°; Greenwick, 17.0°; Carlisle, 17.0°; Little Br







ON THE  
METEOROLOGY OF ENGLAND,

DURING THE  
*Quarter ending December 31, 1860.*

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BY JAMES GLAISHER, ESQ., F.R.S.  
SECRETARY OF THE BRITISH METEOROLOGICAL SOCIETY.

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1861.



Remarks on the Weather, during the Quarter ending 31st of December 1860. By JAMES GLAISIER, ESQ., F.R.S., &c., Secretary of the British Meteorological Society.

With the exception of the last ten days in October, and the first ten days in December, the weather has been cold throughout the quarter. The deficiency of temperature was large about the 12th of October, was about 3° below the daily average in November, and was very large from the 18th to the 29th of December, the cold having been singularly severe between these days, exhibiting a great contrast to the weather at the beginning of the month. On December 5th and 6th the excess of temperature above the average was 9°; from the 18th to the 23d it was from 7° to 10° below each day; as large as 15° on the 24th; 16° on the 25th; and 14° on the 29th. On the 7th day the temperature in the neighbourhood was as high as 54°, and on the 25th and 29th was as low as 7° and 8°. These latter temperatures are very remarkable for December.

Passing now to different parts of the country, on Christmas Day the lowest temperature at Guernsey was 30°; at Helston was 32°; at Truro 26°; at Ventnor 24°; and on the south coast of England from 17° to 20°; these temperatures gradually decreased to 6°, 7°, and 8° in the latitude of 51½°; and to 0° (Zero) at lat. 51° 50'; was between 0° and -3° between the parallels 52° and 54°; at Nottingham the lowest reading was noted as -8°; and above the parallel 54° the readings gradually increased from 0° to 12° at Alnwick; the temperature at the Isle of Man was 15°; on the West Coast of Dumfries, and the east coast of England from Scarborough to Edinburgh, being about 16°, the temperature of the sea being about 44° at the same time.

The range of temperature in December was very large at all places. The extreme readings at the different places and ranges of temperatures are shown in the following Table.

TABLE of the Maxima Temperatures in the Month and Minima Temperatures on the 25th and 29th of DECEMBER 1860.

Names of Stations.	Highest.	Lowest on the 25th.	Lowest on the 29th.	Range.	Names of Stations.	Highest.	Lowest on the 25th.	Lowest on the 29th.	Range.
Guernsey	54°	30°	29°	25°	St John's Wood	53°	11°	17°	42°
Helston	55°	32°	38°	23°	Battersea	54°	10°	12°	43°
Truro	55°	26°	29°	29°	Camden Town	53°	6°	12°	47°
Exeter (St. Leonard's)	54°	13°	18°	39°	Pembroke Dockyard	53°	22°	29°	31°
Exeter (High St.)	54°	13°	20°	38°	Cobham Lodge	53°	10°	6°	—
Ventnor	53°	24°	30°	29°	Rose Hill (Oxford)	53°	18°	6°	47°
Osborne	53°	18°	25°	34°	Leyton (Essex)	51°	16°	4°	39°
Worthing	52°	17°	33°	31°	Oxford	53°	0°	—	33°
Fairlight	51°	20°	24°	31°	Great Berkhamstead	53°	10°	29°	43°
Little Bridy	52°	16°	21°	36°	Hartwell Rectory	53°	10°	6°	47°
St. John's College (Brighton)	53°	8°	5°	50°	Royton	52°	1°	14°	51°
Peterfield	51°	15°	7°	43°	Gloucester	53°	1°	8°	52°
Barnstable	50°	13°	12°	44°	Cardington	54°	3°	10°	50°
Aldershot Camp	54°	10°	8°	44°	Aspley (Beds.)	50°	13°	22°	38°
Clifton	53°	11°	7°	46°	Beckford	50°	6°	12°	44°
Lewisham	54°	7°	7°	47°	Lampeter	51°	5°	24°	46°
Royal Observatory	54°	8°	10°	46°	Norwich	52°	1°	11°	51°
Guildhall	53°	—	19°	—	Diss (Norfolk)	52°	-3°	8°	35°
Whitehall	54°	12°	7°	41°	Grantham	51°	3°	13°	48°
Regent's Park	53°	10°	14°	42°	Belvoir Castle	51°	-1°	12°	52°

The range temperature in the month of December has therefore varied from 23° at Helston to 60° at Nottingham.

In the year 1846 the mean temperature of December was 32°·9, being 3°·4 lower than the month just passed. The hottest December in the 20 years was 47°·6 in the year 1852, and which was 11°·3 warmer than that of 1860.

The mean high day temperature in October was 58°·6, being ½° above; of November was 46°·7, being 2°·7 below; and of December was 40½° being 4°·7 below their respective averages.

The mean low night temperature of October was 44½°, being 1° above; of November was 35½°, being 2½° below, and of December was 31°·9, being 3½° below their respective averages.

The mean temperature of October was 1° above; of November was 2½° below; and of December was 4° below their averages as found from the observations of the preceding 19 years.

The pressure of the atmosphere was slightly above its average in October, and below both in November and December, being smaller in December than in any December for 20 years.

The fall of rain was slightly deficient in the quarter, and amounted to 32 in. in the year. This was exceeded in the years 1821, 1824, and 1852, but is greater than in all other years since 1815, as is shown in the following Table.

FALL OF RAIN at GREENWICH in each Year from 1815 to 1860.

Years.	Fall of Rain.	Years.	Fall of Rain.	Years.	Fall of Rain.	Years.	Fall of Rain.	Years.	Fall of Rain.
Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
1815	22·5	1833	27·1	1851	30·8	1869	20·6	1847	17·8
1816	30·1	1834	36·3	1852	19·3	1840	18·3	1848	30·2
1817	29·0	1835	24·5	1853	22·0	1841	33·3	1849	23·9
1818	25·7	1836	23·0	1854	19·6	1842	22·6	1850	19·7
1819	31·1	1837	24·9	1855	24·9	1843	24·8	1851	21·6
1820	27·7	1838	31·5	1856	27·1	1844	24·9	1852	34·2
1821	31·5	1839	25·2	1857	21·0	1845	22·4	1853	29·0
1822	27·7	1840	27·2	1858	23·8	1846	25·3	1854	32·0

The fall of rain at the different stations over the country was large, the amounts are shown in the following Table:—

FALL OF RAIN at various Stations during the Year 1860.

Stations.	No. of days it fell.	Amount collected.	Stations.	No. of days it fell.	Amount collected.	Stations.	No. of days it fell.	Amount collected.	Stations.	No. of days it fell.	Amount collected.
in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
Guernsey	290	48·0	Aldershot	183	33·4	Royston	274	29·4	Liverpool	181	23·7
Helston	203	32·7	Clifton	221	40·6	Gloucester	196	28·1	Manchester	225	35·5
Truro	225	50·7	Royal Observatory	192	32·0	Cardington	196	25·3	Wakefield	243	33·6
Exeter	228	38·4	St. John's Wood	236	34·4	Aspley (Beds.)	190	31·4	Leeds	220	28·2
Exeter (High Street)	231	35·9	Guildhall	165	27·9	Lampeter	215	34·3	Stonchurst	252	50·4
Ventnor	183	34·2	Whitehall	175	27·5	Norwich	151	33·2	Ben Rhydding	187	37·3
Osborne	148	35·5	Camden Town	196	30·1	Grantham	214	25·1	Scarborough	187	37·6
Worthing	173	34·5	Battersea	165	27·7	Belvoir Castle	188	29·1	St. Paul's Parsonage	—	—
Fairlight	151	29·4	Rose Hill (Oxford)	182	25·7	Oxford	181	33·3	Broughton in Furness	—	—
Little Bridy	237	48·8	Oxford	182	31·1	Holkham	211	37·5	Bywell	—	—
Barnstable	220	50·0	Hartwell House	115	32·3	Hawarden	151	28·8	High House (Alnwick)	186	36·8
Cobham (Surrey)	—	31·6	Hartwell Rectory	139	38·1						

The amounts have varied from 25·3 in. at Cardington and Scarborough to 54·3 in. at Lampeter.

The mean temperature of the air at Greenwich for the three months ending November, constituting the three autumn months, was 48°·3, being 1°·1 below the average of the preceding 89 years.

Temperature of														Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
1880. MONTHS.	Air.		Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames.	Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.					
	Mean.	Diff. from average of 89 years.	Mean.	Diff. from average of 19 years.	Mean.	Diff. from average of 19 years.	Mean.	Diff. from average of 19 years.		Mean.	Diff. from average of 19 years.	Mean.	Diff. from average of 19 years.				
Oct.	50·6	+1·2	0	+0·9	49·1	+0·9	47·6	+1·7	14·1	-0·5	51·3	in.	grs.				
Nov.	40·8	-1·6	0	-2·7	39·9	-2·0	38·9	-1·3	11·4	-0·2	46·1	+·019	3·7				
Dec.	36·3	-2·7	0	-4·0	35·2	-3·6	33·5	-3·6	8·6	-0·9	39·6	-·035	2·7				
Mean	42·6	-1·0	-1·9	41·4	-1·6	40·0	-1·1	11·4	-0·5	45·8	·253	-·012	2·9				

1880. MONTHS.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.	Reading of Thermometer on Grass.			
	Mean.	Diff. from average of 19 years.	Mean.	Diff. from average of 19 years.	Mean.	Diff. from average of 19 years.	Amount.	Diff. from average of 45 years.		Number of Nights it was		Lowest Reading at Night.	Highest Reading at Night.
Oct.	89	+ 2	in.	in.	ETS.	ETS.	in.	in.	Miles.	At or below 30°.	Between 30° and 40°.	Above 40°.	°
Nov.	93	+ 4	29·856	+0·174	541	+ 2	1·6	-1·2	230	3	15	13	27·0
Dec.	92	+ 3	29·696	-0·064	539	+ 3	2·5	+0·1	184	16	12	2	50·7
Mean	91	+ 3	29·491	-0·330	551	- 1	2·8	+0·9	187	19	10	2	42·0
										Sum	Sum	Sum	Lowest
										210	210	210	Highest

NOTE.—In reading this table it will be borne in mind that the sign (-) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred or thunder was heard and lightning seen on November 27th at Helston; and on December 19th at Truro and North Shields; and on the 21st at North Shields.

Lightning was seen but thunder was not heard on October 8th at Fairlight and Scarborough, and on the 20th at Allenheads. On November 17th at Clifton, and on the 28th at Truro; and on December 3d at Exeter.

Aurora were seen on October 4th at Helston; on November 2d at Clifton and Grantham; on December 10th at Little Bridy; and on the 15th at Little Bridy and North Shields.

Solar halos were seen on the 3d October at Clifton and Great Berkhamstead; on the 4th at Little Bridy, Clifton, and Grantham; on the 8th at Little Bridy, Clifton, and Berkhamstead; on the 12th at Little Bridy, Clifton, Berkhamstead, and Grantham; on the 21st at Lampeter; on the 23d at Clifton; on the 25th at Little Bridy, Clifton, and Berkhamstead; and on the 29th at Leyton; and on the 18th at Leyton. On December 1st at Leyton and Berkhamstead; on the 16th at Clifton and 19th at Berkhamstead; on the 21st and 24th at Camden Town; on the 25th at Little Bridy, Camden Town, Berkhamstead, Cardington, and Lampeter.

Lunar halos were seen on 13 nights in October, 5 in November, and 9 in December.

Hail fell on 6 days in October, 11 in November, and 9 in December.

Fog prevailed on 61 days during the quarter, of which 14 were in October, 23 in November, and the remaining 24 in December.

Snow fell on the 10th and 11th of October at Allenheads; and on the 12th at Diss, Scarborough, and Allenheds. On November 14th at Lampeter; on the 16th at Stonyhurst; on the 17th throughout the greater part of the country; on the 18th at Grantham, Leeds, Stonyhurst, and York, and on the 26th at Little Bridy, Clifton, Berkhamstead, and Rose Hill (near Oxford), and throughout the greater part of the country during the latter part of December.



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.			
																		Relative Proportion of								
																		N.	E.	S.	W.					
Guernsey	29.524	61.5	29.0	32.5	50.3	20.0	30.0	10.0	47.0	43.0	0.30	0.00	0.00	80	82.5	54.0	54.0	1.7	8	7	8	7	4.1	6.5	14	
Helston	29.524	61.5	29.0	32.5	50.3	20.0	30.0	10.0	47.0	43.0	0.30	0.00	0.00	80	82.5	54.0	54.0	1.7	8	7	8	7	4.1	6.5	14	
Truro	29.520	65.0	11.0	55.0	52.0	40.0	32.0	11.0	48.0	40.0	0.30	0.00	0.00	80	82.5	54.0	54.0	1.7	8	7	8	7	4.1	6.5	14	
Torquay	29.520	61.1	22.0	39.0	49.7	41.1	22.3	7.7	44.0	41.1	0.260	0.023	0.023	91	91	260	260	0.023	91	91	260	260	0.023	91	91	260
Exeter (St. Leonard's)	29.600	67.0	13.0	54.0	49.0	38.0	33.0	11.2	44.0	38.0	0.234	0.026	0.026	91	91	540	540	0.026	91	91	540	540	0.026	91	91	540
Exeter, 200 High-st.	29.580	65.5	15.0	49.0	49.0	38.0	28.0	9.0	44.0	41.1	0.271	0.031	0.031	91	91	540	540	0.031	91	91	540	540	0.031	91	91	540
Venator	29.580	61.5	22.0	39.0	49.8	42.0	29.0	11.2	44.0	41.1	0.269	0.030	0.030	89	89	540	540	0.030	89	89	540	540	0.030	89	89	540
Osborne	29.538	66.0	18.0	48.0	47.0	38.0	29.0	8.0	44.0	41.1	0.254	0.030	0.030	91	91	540	540	0.030	91	91	540	540	0.030	91	91	540
Worthing	29.557	65.5	17.0	47.0	44.0	39.0	29.0	8.0	44.0	40.0	0.254	0.030	0.030	91	91	540	540	0.030	91	91	540	540	0.030	91	91	540
Fairlight	29.557	65.5	17.0	47.0	44.0	39.0	29.0	8.0	44.0	40.0	0.254	0.030	0.030	91	91	540	540	0.030	91	91	540	540	0.030	91	91	540
Little Bridy	29.580	66.0	16.0	49.0	49.0	38.0	34.0	10.0	43.0	41.1	0.263	0.031	0.031	91	91	540	540	0.031	91	91	540	540	0.031	91	91	540
Petersfield	29.604	61.1	7.5	38.0	51.1	35.0	44.0	15.7	42.0	39.0	0.241	0.026	0.026	86	86	546	546	0.026	86	86	546	546	0.026	86	86	546
Barstaple	29.515	66.7	12.0	54.1	50.0	39.0	36.0	11.1	45.0	40.0	0.261	0.026	0.026	85	85	546	546	0.026	85	85	546	546	0.026	85	85	546
Aldershot Camp	29.550	62.5	8.0	49.0	48.0	37.0	37.0	1.0	42.0	38.0	0.238	0.028	0.028	85	85	542	542	0.028	85	85	542	542	0.028	85	85	542
Clifton	29.590	62.5	12.0	50.0	47.0	37.0	37.0	1.0	42.0	39.0	0.246	0.028	0.028	89	89	546	546	0.028	89	89	546	546	0.028	89	89	546
Pembroke	29.578	63.0	18.0	45.0	50.0	40.0	26.0	11.7	42.0	40.0	0.223	0.024	0.024	91	91	547	547	0.024	91	91	547	547	0.024	91	91	547
Royal Observatory	29.608	64.5	8.0	60.0	48.0	37.0	38.0	1.0	43.0	40.0	0.251	0.028	0.028	87	87	546	546	0.028	87	87	546	546	0.028	87	87	546
Recent's Park	29.602	62.0	10.0	51.1	48.0	38.0	38.0	1.0	43.0	40.0	0.256	0.029	0.029	87	87	546	546	0.029	87	87	546	546	0.029	87	87	546
St. John's Wood	29.577	66.2	11.0	55.0	48.0	38.0	32.0	10.0	43.0	40.0	0.260	0.029	0.029	88	88	547	547	0.029	88	88	547	547	0.029	88	88	547
Guildhall	29.608	61.5	14.0	47.0	48.0	40.0	29.0	7.0	44.0	40.0	0.230	0.026	0.026	85	85	547	547	0.026	85	85	547	547	0.026	85	85	547
Camden Town	29.621	65.2	6.0	58.0	48.0	33.0	24.0	10.0	42.0	39.0	0.232	0.026	0.026	85	85	546	546	0.026	85	85	546	546	0.026	85	85	546
Battersea	29.640	64.5	10.0	54.0	48.0	33.0	24.0	10.0	42.0	39.0	0.232	0.026	0.026	85	85	546	546	0.026	85	85	546	546	0.026	85	85	546
Rose Hill (Oxford)	29.590	63.5	1.0	41.0	42.0	34.0	37.0	1.0	41.0	38.0	0.235	0.028	0.028	85	85	546	546	0.028	85	85	546	546	0.028	85	85	546
Oxford	29.602	63.0	10.0	63.0	47.0	37.0	15.0	10.0	41.0	37.0	0.241	0.029	0.029	83	83	548	548	0.029	83	83	548	548	0.029	83	83	548
Great Berkhamstead	29.607	66.0	4.0	62.0	47.0	33.0	29.0	11.0	41.0	37.0	0.242	0.029	0.029	88	88	543	543	0.029	88	88	543	543	0.029	88	88	543
Hartwell House	29.553	66.0	10.0	56.0	49.0	38.0	34.0	12.0	42.0	39.0	0.242	0.029	0.029	88	88	544	544	0.029	88	88	544	544	0.029	88	88	544
Hartwell Rectory	29.563	66.1	6.0	60.0	47.0	36.0	24.0	10.0	41.0	37.0	0.235	0.029	0.029	86	86	546	546	0.029	86	86	546	546	0.029	86	86	546
Royston	29.611	66.0	1.0	64.0	47.0	33.0	30.0	11.0	41.0	37.0	0.242	0.029	0.029	88	88	546	546	0.029	88	88	546	546	0.029	88	88	546
Gloucester	29.504	64.0	1.0	63.0	47.0	33.0	33.0	11.0	42.0	38.0	0.242	0.029	0.029	88	88	546	546	0.029	88	88	546	546	0.029	88	88	546
Cardington	29.608	64.0	3.0	60.0	47.0	33.0	35.0	11.0	41.0	38.0	0.242	0.029	0.029	89	89	549	549	0.029	89	89	549	549	0.029	89	89	549
Aspley	29.596	58.5	13.0	45.0	44.0	38.0	27.0	6.0	41.0	39.0	0.217	0.023	0.023	82	82	550	550	0.023	82	82	550	550	0.023	82	82	550
Bedford	29.590	66.0	6.0	60.0	47.0	34.0	34.0	8.0	42.0	37.0	0.226	0.026	0.026	81	81	548	548	0.026	81	81	548	548	0.026	81	81	548
Lampeter	29.568	68.0	0.0	67.0	48.0	34.0	39.0	13.0	41.0	37.0	0.238	0.027	0.027	87	87	547	547	0.027	87	87	547	547	0.027	87	87	547
Disa (Norfolk)	29.616	67.0	10.0	68.0	47.0	37.0	17.0	11.0	42.0	38.0	0.236	0.027	0.027	86	86	548	548	0.027	86	86	548	548	0.027	86	86	548
Norwich	29.616	65.1	1.0	64.0	47.0	33.0	37.0	9.0	42.0	38.0	0.236	0.029	0.029	86	86	549	549	0.029	86	86	549	549	0.029	86	86	549
Grantham	29.600	63.0	3.0	60.0	48.0	38.0	41.0	1.0	45.0	41.0	0.241	0.029	0.029	87	87	549	549	0.029	87	87	549	549	0.029	87	87	549
Belvoir Castle	29.560	67.0	1.0	68.0	46.0	33.0	37.0	10.0	41.0	37.0	0.220	0.026	0.026	86	86	546	546	0.026	86	86	546	546	0.026	86	86	546
Derby	29.624	64.1	2.0	62.0	45.0	36.0	30.0	9.0	42.0	34.0	0.208	0.024	0.024	84	84	548	548	0.024	84	84	548	548	0.024	84	84	548
Holkham	29.609	61.2	0.0	62.0	47.0	36.0	35.0	10.0	42.0	38.0	0.230	0.027	0.027	87	87	547	547	0.027	87	87	547	547	0.027	87	87	547
Nottingham	29.637	61.0	8.0	74.0	46.0	35.0	11.0	11.0	41.0	36.0	0.239	0.028	0.028	85	85	548	548	0.028	85	85	548	548	0.028	85	85	548
Hawarden	29.640	61.4	5.0	57.0	45.0	34.0	10.0	11.0	41.0	38.0	0.240	0.029	0.029	86	86	546	546	0.029	86	86	546	546	0.029	86	86	546
Liverpool Observat.	29.640	61.4	10.0	60.0	47.0	37.0	12.0	12.0	41.0	38.0	0.240	0.029	0.029	87	87	549	549	0.029	87	87	549	549	0.029	87	87	549
Manchester	29.596	63.8	3.0	65.0	46.0	35.0	38.0	11.0	41.0	38.0	0.220	0.027	0.027	87	87	549	549	0.027	87	87	549	549	0.027	87	87	549
Wakefield	29.609	66.0	4.0	69.0	46.0	34.0	30.0	11.0	41.0	36.0	0.218	0.026	0.026	87	87	549	549	0.026	87	87	549	549	0.026	87	87	549
Leeds	29.627	63.0	3.0	60.0	46.0	36.0	32.0	10.0	42.0	36.0	0.218	0.026	0.026	87	87	549	549	0.026	87	87	549	549	0.026	87	87	549
Stonyhurst	29.538	59.0	6.0	53.0	45.0	36.0	11.0	7.0	41.0	37.0	0.213	0.026	0.026	85	85	543	543	0.026	85	85	543	543	0.026	85	85	543
Oler	29.600	62.0	3.0	57.0	45.0	36.0	11.0	7.0	40.0	34.0	0.227	0.026	0.026	89	89	548	548	0.026	89	89	548	548	0.026	89	89	548
Ren Rhidding	29.554	59.0	3.0	50.0	44.0	35.0	23.0	8.0	39.0	36.0	0.212	0.026	0.026	90	90	542	542	0.026	90	90	542	542	0.026	90	90	542
York	29.602	6																								



[illegible]

GRANTHAM,	Oct. 29, 1880	Nov. 5, 1880	Nov. 12, 1880	Nov. 19, 1880	Nov. 26, 1880	Dec. 3, 1880	Dec. 10, 1880	Dec. 17, 1880	Dec. 24, 1880	Dec. 31, 1880	Jan. 7, 1881	Jan. 14, 1881	Jan. 21, 1881	Jan. 28, 1881	Feb. 4, 1881	Feb. 11, 1881	Feb. 18, 1881	Feb. 25, 1881	Mar. 4, 1881	Mar. 11, 1881	Mar. 18, 1881	Mar. 25, 1881	Apr. 1, 1881	Apr. 8, 1881	Apr. 15, 1881	Apr. 22, 1881	Apr. 29, 1881	May 6, 1881	May 13, 1881	May 20, 1881	May 27, 1881	Jun 3, 1881	Jun 10, 1881	Jun 17, 1881	Jun 24, 1881	Jul 1, 1881	Jul 8, 1881	Jul 15, 1881	Jul 22, 1881	Jul 29, 1881	Aug 5, 1881	Aug 12, 1881	Aug 19, 1881	Aug 26, 1881	Sep 2, 1881	Sep 9, 1881	Sep 16, 1881	Sep 23, 1881	Sep 30, 1881	Oct 7, 1881	Oct 14, 1881	Oct 21, 1881	Oct 28, 1881	Nov 4, 1881	Nov 11, 1881	Nov 18, 1881	Nov 25, 1881	Dec 2, 1881	Dec 9, 1881	Dec 16, 1881	Dec 23, 1881	Dec 30, 1881	Jan 6, 1882	Jan 13, 1882	Jan 20, 1882	Jan 27, 1882	Feb 3, 1882	Feb 10, 1882	Feb 17, 1882	Feb 24, 1882	Mar 2, 1882	Mar 9, 1882	Mar 16, 1882	Mar 23, 1882	Mar 30, 1882	Apr 6, 1882	Apr 13, 1882	Apr 20, 1882	Apr 27, 1882	May 4, 1882	May 11, 1882	May 18, 1882	May 25, 1882	Jun 1, 1882	Jun 8, 1882	Jun 15, 1882	Jun 22, 1882	Jun 29, 1882	Jul 6, 1882	Jul 13, 1882	Jul 20, 1882	Jul 27, 1882	Aug 3, 1882	Aug 10, 1882	Aug 17, 1882	Aug 24, 1882	Aug 31, 1882	Sep 7, 1882	Sep 14, 1882	Sep 21, 1882	Sep 28, 1882	Oct 5, 1882	Oct 12, 1882	Oct 19, 1882	Oct 26, 1882	Nov 2, 1882	Nov 9, 1882	Nov 16, 1882	Nov 23, 1882	Nov 30, 1882	Dec 7, 1882	Dec 14, 1882	Dec 21, 1882	Dec 28, 1882	Jan 4, 1883	Jan 11, 1883	Jan 18, 1883	Jan 25, 1883	Feb 1, 1883	Feb 8, 1883	Feb 15, 1883	Feb 22, 1883	Feb 29, 1883	Mar 6, 1883	Mar 13, 1883	Mar 20, 1883	Mar 27, 1883	Apr 3, 1883	Apr 10, 1883	Apr 17, 1883	Apr 24, 1883	Apr 30, 1883	May 7, 1883	May 14, 1883	May 21, 1883	May 28, 1883	Jun 4, 1883	Jun 11, 1883	Jun 18, 1883	Jun 25, 1883	Jul 2, 1883	Jul 9, 1883	Jul 16, 1883	Jul 23, 1883	Jul 30, 1883	Aug 6, 1883	Aug 13, 1883	Aug 20, 1883	Aug 27, 1883	Sep 3, 1883	Sep 10, 1883	Sep 17, 1883	Sep 24, 1883	Sep 30, 1883	Oct 7, 1883	Oct 14, 1883	Oct 21, 1883	Oct 28, 1883	Nov 4, 1883	Nov 11, 1883	Nov 18, 1883	Nov 25, 1883	Dec 2, 1883	Dec 9, 1883	Dec 16, 1883	Dec 23, 1883	Dec 30, 1883	Jan 6, 1884	Jan 13, 1884	Jan 20, 1884	Jan 27, 1884	Feb 3, 1884	Feb 10, 1884	Feb 17, 1884	Feb 24, 1884	Mar 2, 1884	Mar 9, 1884	Mar 16, 1884	Mar 23, 1884	Mar 30, 1884	Apr 6, 1884	Apr 13, 1884	Apr 20, 1884	Apr 27, 1884	May 4, 1884	May 11, 1884	May 18, 1884	May 25, 1884	Jun 1, 1884	Jun 8, 1884	Jun 15, 1884	Jun 22, 1884	Jun 29, 1884	Jul 6, 1884	Jul 13, 1884	Jul 20, 1884	Jul 27, 1884	Aug 3, 1884	Aug 10, 1884	Aug 17, 1884	Aug 24, 1884	Aug 31, 1884	Sep 7, 1884	Sep 14, 1884	Sep 21, 1884	Sep 28, 1884	Oct 5, 1884	Oct 12, 1884	Oct 19, 1884	Oct 26, 1884	Nov 2, 1884	Nov 9, 1884	Nov 16, 1884	Nov 23, 1884	Nov 30, 1884	Dec 7, 1884	Dec 14, 1884	Dec 21, 1884	Dec 28, 1884	Jan 4, 1885	Jan 11, 1885	Jan 18, 1885	Jan 25, 1885	Feb 1, 1885	Feb 8, 1885	Feb 15, 1885	Feb 22, 1885	Feb 29, 1885	Mar 6, 1885	Mar 13, 1885	Mar 20, 1885	Mar 27, 1885	Apr 3, 1885	Apr 10, 1885	Apr 17, 1885	Apr 24, 1885	Apr 30, 1885	May 7, 1885	May 14, 1885	May 21, 1885	May 28, 1885	Jun 4, 1885	Jun 11, 1885	Jun 18, 1885	Jun 25, 1885	Jul 2, 1885	Jul 9, 1885	Jul 16, 1885	Jul 23, 1885	Jul 30, 1885	Aug 6, 1885	Aug 13, 1885	Aug 20, 1885	Aug 27, 1885	Sep 3, 1885	Sep 10, 1885	Sep 17, 1885	Sep 24, 1885	Sep 30, 1885	Oct 7, 1885	Oct 14, 1885	Oct 21, 1885	Oct 28, 1885	Nov 4, 1885	Nov 11, 1885	Nov 18, 1885	Nov 25, 1885	Dec 2, 1885	Dec 9, 1885	Dec 16, 1885	Dec 23, 1885	Dec 30, 1885	Jan 6, 1886	Jan 13, 1886	Jan 20, 1886	Jan
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*Second*.—*Reins* 7 angles were *placed*.—At St Leonard's, Exeter, 20 feet above the ground, the amount collected was 9.3 inches; at Clifton, 5 feet, 8.2 inches; Guildhall, 77 feet, 3.4 inches; 15 feet, 4.7 inches; Oxford, 22 feet, 8 inches; Norwich, 31 feet, 7.2 inches; Liverpool, 25 feet, 5.5 inches; and Alenheads, 7 feet, 13.3 inches.



ON THE  
METEOROLOGY OF ENGLAND,

DURING THE  
*Quarter ending March 31, 1861.*

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BY JAMES GLAISHER, ESQ., F.R.S.  
SECRETARY OF THE BRITISH METEOROLOGICAL SOCIETY.

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1861.



Remarks on the Weather, during the Quarter ending 31st of March 1861. By JAMES GLAISHER, ESQ., F.R.S., &c., Secretary of the British Meteorological Society.

The rapid thaw which set in on December 30th, 1860, and which was mentioned in the last Quarterly Report, continued only till the 1st of January 1861; the temperature on this day (January 1st) rose to 47°; it fell by midnight to 32°, and to 28° by the morning of the 2d; it then rose to 34°, and fell to 25° by midnight. It was as low as 11° on the 9th day.

From January 2d the weather was cold, on the 6th, 8th, 9th, and 10th days the departures below their averages were 12°·4, 11°·0, 10°·4, and 14°·0 respectively, and the average daily deficiency to the 23d day was 3°·7; a warm period set in on the 24th and continued for the most part till the end of the Quarter; the average daily excess for the 67 days ending March 31st was 3°·3.

The mean temperature of the 10th day was 21°·7, being lower than any day during the first half of January since 1835.

The mean temperature of the first half of January was remarkable; its mean value was 28°·3, being smaller in value than in any year for more than 20 years, as will be seen by the following table:—

The mean temperature of the first half of January in—

1841 was 29°·2	1848 was 37°·9	1855 was 41°·3
1842 " 30°·7	1849 " 36°·9	1856 " 37°·3
1843 " 35°·6	1850 " 34°·7	1857 " 38°·2
1844 " 38°·6	1851 " 44°·5	1858 " 36°·5
1845 " 39°·9	1852 " 41°·4	1859 " 37°·6
1846 " 39°·6	1853 " 45°·4	1860 " 40°·9
1847 " 36°·6	1854 " 34°·0	1861 " 28°·3

Going further back, the period was cold in 1838, its value was 29°·5. The next was in 1826, its value was 28°·7; and back to 1814 there are only two cases exceeding in severity the first half of January in this year, viz., in 1814 and 1820; their values were 25°·6 and 24°·9 respectively.

Therefore the cold of the first half of January this year was more rigorous than in any corresponding period since 1820, that is in 41 years; and was exceeded in severity twice only back to 1814, that is in 48 years.

From the preceding facts the month of January 1861 is exceptional, and it is a matter of interest to trace back with a view of ascertaining the relative frequency of severe Januaries in comparison with those at the beginning of this century.

The following table gives instances of the temperature of the month of January equal to or less than that of January in the present year.

The mean temperature of January in the year —

1771 was 29°·9	1795 was 23°·9	1826 was 32°·0
1772 " 32°·2	1799 " 33°·3	1827 " 33°·4
1774 " 31°·5	1802 " 32°·9	1829 " 31°·7
1776 " 27°·0	1803 " 33°·4	1830 " 30°·7
1777 " 33°·9	1811 " 32°·8	1838 " 28°·9
1780 " 28°·6	1814 " 26°·9	1841 " 33°·6
1784 " 29°·2	1815 " 31°·9	1842 " 32°·9
1789 " 33°·4	1820 " 31°·7	1850 " 33°·7
1794 " 33°·3	1823 " 31°·8	1861 " 33°·9

From these numbers it appears that the coldest January was in 1795, the next in order of severity were 1814, 1776, 1780, 1838. Of these remarkably low temperatures for January, eleven occurred in the 30 years ending 1801, and eleven in the next 30 years; but five only in the 30 years ending 1861.

The range of temperature in January was large at all places. The extreme readings at different places are shown in the following table:—

TABLE of the Maximum and Minimum Temperatures during the Month of JANUARY 1861.

Names of Stations.	Highest.	Lowest.	Range.	Names of Stations.	Highest.	Lowest.	Range.	Names of Stations.	Highest.	Lowest.	Range.
Guernsey - - -	52°·0	25°·0	27°·0	Camden Town - -	56°·4	14°·3	39°·1	Hawarden - - -	57°·5	19°·0	38°·5
Helston - - -	59°·0	28°·0	31°·0	Battersea - - -	53°·4	15°·2	38°·2	Thelwall near War-	51°·3	16°·2	35°·1
Truro - - -	57°·0	24°·0	33°·0	Leyton (Essex) -	51°·3	12°·9	38°·4	Liverpool - - -	55°·0	23°·9	31°·1
Teignmouth - -	57°·0	13°·3	43°·7	Pembroke Dockyard	54°·6	14°·8	39°·8	Manchester - - -	55°·0	15°·0	40°·0
Exeter (St. Leonards)	59°·7	19°·7	39°·0	Rose Hill (Oxford) -	51°·7	17°·1	34°·6	Wakefield - - -	59°·3	9°·0	50°·3
Exeter (High St.) -	59°·7	11°·9	47°·8	Oxford - - -	52°·7	17°·0	35°·7	Harrogate - - -	55°·0	14°·0	41°·0
Osborne - - -	54°·5	20°·7	33°·8	Great Berkhamstead	51°·0	10°·3	40°·7	Leeds - - -	57°·0	12°·0	45°·0
Ventnor - - -	52°·0	24°·0	28°·0	Hartwell House - -	46°·8	18°·3	28°·5	Stonyhurst - - -	57°·4	12°·4	45°·0
Worthing - - -	46°·8	22°·0	24°·8	Hartwell Rectory -	51°·8	18°·0	33°·8	Kingsley Parsonage	55°·5	15°·0	40°·5
Fairlight - - -	48°·0	19°·7	28°·3	Royston - - -	54°·0	14°·4	39°·6	York - - -	53°·5	14°·5	41°·4
Little Bridy - -	56°·3	16°·5	39°·8	Gloucester - - -	55°·0	11°·0	44°·0	Scarborough - -	50°·0	14°·0	36°·0
St. John's College (Brighton) - -	53°·0	15°·0	38°·0	Cardington - - -	53°·0	10°·0	43°·0	Ben Rhydding - -	53°·5	10°·5	43°·0
Petersfield - - -	52°·0	13°·0	39°·0	Aspley - - -	49°·2	20°·5	28°·7	Otley - - -	53°·8	15°·3	38°·5
Barnstable - - -	59°·0	10°·6	48°·4	Lampeter - - -	58°·0	4°·2	53°·8	Isle of Man - - -	59°·5	20°·5	39°·0
Aldershot Camp -	53°·0	14°·0	39°·0	Bedford - - -	53°·0	14°·0	39°·0	St. Paul's Parsonage	57°·2	9°·4	47°·8
Clifton - - -	57°·1	9°·7	47°·4	Llandudno - - -	57°·5	22°·3	35°·2	Carlisle - - -	52°·0	9°·0	43°·0
Lewisham - - -	58°·0	11°·0	44°·0	Norwich - - -	52°·0	4°·0	48°·0	North Shields -	52°·0	9°·0	43°·0
Royal Observatory -	55°·0	16°·0	39°·0	Diss (Norfolk) - -	51°·0	1°·0	52°·0	High House - - -	57°·0	17°·0	40°·0
Regent's Park - -	52°·0	12°·0	40°·0	Grantham - - -	53°·4	18°·9	34°·5				
St. John's Wood - -	53°·0	18°·5	34°·5	Belvoir Castle - -	54°·5	15°·0	39°·5				
Guildhall - - -	51°·6	21°·9	30°·7	Holkham - - -	54°·0	18°·0	36°·0				
Whitehall - - -	54°·5	19°·7	34°·8	Nottingham - - -	56°·0	3°·3	49°·7				

The mean high day temperature in January was 3½° below, in February 3½° above, and in March 2½° above, their respective averages of the preceding 20 years.

The mean low night temperature in January was 5° below, in February 3½° above, and in March 1½° above, their respective averages. Therefore, both the days and nights in January were extremely cold, especially at the beginning of the month; and in February and March both were warm.

The mean pressure of the atmosphere in January was a little above, and in February and March below their respective averages of the past 20 years.

The temperature of the dew point in January was 5°·3 below, and in February and March was 5°·0 above their averages.

The fall of rain in January was 0·5 inch, in February 1·8 inch, and in March 2·2 inches. The sum for the three months was 4·5 inches, being 0·5 inch below the average.

The temperature of vegetation as indicated by a thermometer placed on grass was below 40° on 84 nights, and above 40° on 6 nights.

The wind was in rapid motion for 15 hours following 9 A.M. on February 21st. Between 9 A.M. and 5 P.M. it blew with pressures varying from 3 lbs. to 12 lbs. on the square foot; from 5 P.M. to 9 P.M. with pressures varying from 13 lbs. to 25 lbs., passing with a velocity of fully 70 miles per hour, and great damage was done, many trees being blown up by the roots; after this the gale gradually decreased to 5 lbs. by midnight.

The mean temperature of the air at Greenwich for the three months ending February, constituting the three winter months, was 34°·0, being ½° below the average of the preceding 90 years.

1861. MONTHS.	Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
	Air.		Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames.					
	Mean.	Diff. from average of 90 years.	Diff. from average of 20 years.	Mean.	Diff. from average of 20 years.	Mean.	Diff. from average of 20 years.	Mean.		Diff. from average of 20 years.	Mean.	Diff. from average of 20 years.	Mean.	Diff. from average of 20 years.
Jan. .	33·9	-2·2	0	32·5	0	36·1	-5·3	10·9	+1·3	34·3	in. .168	in. .168	grs. 1·9	
Feb. .	42·1	+2·9	+3·7	40·9	+4·1	39·4	+5·0	11·3	-0·1	42·5	·241	+·040	2·8	
March.	43·8	+2·9	+2·1	42·6	+3·3	41·2	+4·8	15·6	+0·9	44·4	·259	+·043	2·9	
Mean .	39·9	+1·8	+0·5	38·7	+1·0	36·9	+1·5	12·6	+0·7	40·4	·223	+·015	2·5	

1861. MONTHS.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.	Reading of Thermometer on Grass.				
	Mean.	Diff. from average of 20 years.	Mean.	Diff. from average of 20 years.	Mean.	Diff. from average of 20 years.	Amount.	Diff. from average of 40 years.		Number of Nights it was			Lowest Reading at Night.	Highest Reading at Night.
										At or below 30°.	Between 30° and 40°	Above 40°.		
Jan. .	85	-4	in. 30·011	+0·254	grs. 564	+11	in. 0·5	in. -1·3	Miles. 22	9	0	0		
Feb. .	91	+6	29·686	-0·101	548	-6	1·8	+0·2	10	15	3	4·0		
March.	90	+8	29·614	-0·179	545	-5	2·2	+0·6	13	15	3	4·0		
Mean .	89	+3	29·770	-0·009	552	0	Sum 4·5	Sum -0·5	Mean 256	Sum 45	Sum 39	Sum 6		

NOTE.—In reading this table it will be borne in mind that the sign (+) denotes above the average of the preceding 90 years.

NOTE.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred or thunder was heard and lightning seen on the 6th of February at Warrington and Scarborough; on the 1st of April at Stonyhurst and Scarborough; on the 4th at Diss; on the 11th at Norwich, Scarborough, and Warrington; on the 12th at Leyton, Diss, and Scarborough; on the 17th at Thelwall; and on the 21st at Belvoir.

Thunder was heard but lightning was not seen on March 1st at Otley; on the 12th at Fairlight and London; on the 17th at Manchester; on the 21st at Clifton; and on the 30th at Clifton and Gloucester.

Lightning was seen but thunder was not heard on February 12th at Brighton; on March 6th at Allenheads; on the 7th at Hartwell; on the 10th at Allenheads; on the 11th at Hartwell; on the 12th at Hartwell and York; on the 13th at Fairlight; on the 17th at Brighton; and on the 20th at Aspley.

Aurora were seen on January 6th at Stonyhurst. On February 1st at Little Bridy; on the 10th at Stonyhurst; and on the 27th and 28th throughout the greater part of the country north of latitude 51½°. On the 1st of March at Thelwall near Warrington; on the 9th throughout Carlisle; on the 15th at St. Paul's Parsonage. On the 12th, and also on the 21st at

Solar halos were seen on 28 days during the quarter, of which 6 were in January, 9 in February, and the remaining 13 were in March.

Lunar halos were seen in different parts of the country on 10 nights in January, 9 in February, and 8 in March.

Snow fell on 38 days during the quarter, of which 15 each were in January and March, and the remainder in February.

Hail fell on January 1st at Otley; on the 13th at Little Bridy and Grantham; and on the 15th, 16th, and 19th at Otley. It also fell on 8 days in February, and 16 in March.

Fog prevailed throughout the country during the greater part of the month of January, and also on 16 days in February, and on 6 days in March.



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.		
																		Relative Proportion of.	N.	E.	S.			W.	
Guernsey	29.715	55.0	25.0	30.0	46.3	39.1	21.1	7.2	42.6	40.3	30.8	0.378	0.13	91	548	58.0	35.0	2.3	6	6	9	8	3.0	5.0	
Helston	29.689	50.0	28.0	22.0	39.0	31.0	21.0	8.0	39.0	37.0	28.0	0.38	0.13	91	548	58.0	35.0	2.7	6	6	5	9	8	3.0	5.0
Truro	29.651	58.0	26.0	32.0	42.0	34.0	28.0	14.0	44.0	41.0	31.0	0.38	0.13	91	548	58.0	35.0	2.7	8	4	9	8	7.0	7.0	
Teignmouth	29.705	58.0	26.0	32.0	42.0	34.0	28.0	14.0	44.0	41.0	31.0	0.38	0.13	91	548	58.0	35.0	0.5	5	6	7	10	7.0	7.0	
Exeter (St. Leonard's)	29.689	59.0	27.0	32.0	48.0	40.3	37.0	10.7	45.0	43.0	33.0	0.38	0.13	91	548	58.0	35.0	1.2	6	5	6	7	10	7.0	7.0
Exeter, 200 High-st.	29.705	58.0	26.0	32.0	42.0	34.0	28.0	14.0	44.0	41.0	31.0	0.38	0.13	91	548	58.0	35.0	1.2	9	5	8	11	5.0	5.0	
Ventnor	29.672	53.0	21.0	32.0	37.0	29.0	28.0	9.0	37.0	35.0	26.0	0.38	0.13	91	548	58.0	35.0	1.2	6	6	9	9	—	6.0	
Osborne	29.729	57.0	20.0	37.0	40.0	32.0	31.0	9.0	42.0	39.0	31.0	0.38	0.13	91	548	58.0	35.0	0.8	4	5	10	11	—	—	
Fairlight	29.702	56.0	19.0	37.0	40.0	32.0	31.0	9.0	42.0	39.0	31.0	0.38	0.13	91	548	58.0	35.0	1.2	6	5	11	9	6.0	6.0	
Little Bridy	29.702	56.0	19.0	37.0	40.0	32.0	31.0	9.0	42.0	39.0	31.0	0.38	0.13	91	548	58.0	35.0	0.9	5	4	9	10	6.0	6.0	
St. John's College, near Brighton.	29.705	56.0	19.0	37.0	40.0	32.0	31.0	9.0	42.0	39.0	31.0	0.38	0.13	91	548	58.0	35.0	1.5	4	5	10	11	—	—	
Petersfield	29.757	63.0	13.0	50.0	49.0	33.4	33.0	15.6	45.8	43.5	35.4	0.4	0.15	92	558	60.0	36.0	1.2	7	5	10	9	—	6.0	
Barnstable	29.733	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.2	7	5	10	9	—	6.0	
Aldershot Camp	29.733	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.2	7	5	10	9	—	6.0	
Clifton	29.733	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	0.5	6	5	8	10	2.0	6.0	
Royal Observatory	29.727	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	7.0	1	2	7	—	—	—	
Recent's Park	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.2	7	5	10	9	—	6.0	
St. John's Wood	29.727	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.2	7	5	10	9	—	6.0	
Guilford	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.2	7	5	10	9	—	6.0	
Whitehall	29.740	62.0	17.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.2	7	5	10	9	—	6.0	
Camden Town	29.740	62.0	17.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.2	7	5	10	9	—	6.0	
Battersea	29.739	59.0	15.0	44.0	45.0	33.1	32.0	12.9	45.9	43.6	35.6	0.4	0.15	92	558	60.0	36.0	1.0	9	5	10	9	—	6.0	
Leyton, Essex	29.740	62.0	17.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Pembroke	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Rose Hill (Oxford)	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Oxford	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Great Berkhamstead	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Hartwell House	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Hartwell Rectory	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Royston	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Gloucester	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Cardington	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Aspley	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Bedford	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Llandudno	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Lampeter	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Norwich	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Diss (Norfolk)	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Grantham	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Belvoir Castle	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Derby	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Holkham	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Nottingham	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Hawarden	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Liverpool Observat.	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Manchester	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Wakfield	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Kingsley Parsonage, near Frodsham.	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Leeds	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Stonyhurst	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Osley	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Pen Rhudding	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	6.0	
Thelwall, near Warrington	29.735	61.0	16.0	45.0	46.0	38.0	37.0	9.0	47.0	44.0	38.0	0.38	0.13	91	548	58.0	35.0	1.0	9	5	10	9	—	</	



Year 1861.	Names of Stations and Observers.	Pressure of Atmosphere in Month.			Temperature of Air in Month.			Mean Tem- perature.		Vapour.			Mean Reading of Thermometer.	Wind.			Mean Amount of Cloud.	Rain.			
		Mean.	Range.	Highest.	Lowest.	Range.	Mean.		Air.	Dew Point.	Elastic Force.	In a cubic foot of Air.		Short of Saturation.	Mean Degree of Humi- dity, Sat. = 100.	Mean Weight of a cubic foot of Air.			Relative Proportion of		
							N.	E.											S.	W.	
Jan.	GUILDHALL, W. HAYWOOD, Esq., C.E.	30.067	31.944	32.9	31.9	30.7	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Feb.	30.710	31.933	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Mar.	30.710	31.933	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Apr.	30.710	31.933	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
May.	30.710	31.933	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
June.	30.710	31.933	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
July.	30.710	31.933	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Aug.	30.710	31.933	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Sept.	30.710	31.933	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Oct.	30.710	31.933	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Nov.	30.710	31.933	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Dec.	30.710	31.933	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Jan.	CAMDEN TOWN, G. J. STOKES, Esq., M.B.M.S.	30.728	31.933	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4			
Feb.	30.728	31.933	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Mar.	30.728	31.933	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Apr.	30.728	31.933	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
May.	30.728	31.933	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
June.	30.728	31.933	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
July.	30.728	31.933	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Aug.	30.728	31.933	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Sept.	30.728	31.933	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Oct.	30.728	31.933	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Nov.	30.728	31.933	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Dec.	30.728	31.933	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Jan.	BATTERSEA TRAINING COLLEGE, REV. SAMUEL CLARK, M.A., M.B.M.S.	30.718	31.934	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4			
Feb.	30.718	31.934	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Mar.	30.718	31.934	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Apr.	30.718	31.934	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
May.	30.718	31.934	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
June.	30.718	31.934	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
July.	30.718	31.934	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Aug.	30.718	31.934	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Sept.	30.718	31.934	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Oct.	30.718	31.934	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Nov.	30.718	31.934	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Dec.	30.718	31.934	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Jan.	LEYTON (Essex), J. E. BARCLAY, Esq., F.R.A.S.	30.079	31.948	31.2	32.9	30.7	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Feb.	30.709	31.948	31.2	32.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Mar.	30.709	31.948	31.2	32.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Apr.	30.709	31.948	31.2	32.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
May.	30.709	31.948	31.2	32.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
June.	30.709	31.948	31.2	32.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
July.	30.709	31.948	31.2	32.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Aug.	30.709	31.948	31.2	32.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Sept.	30.709	31.948	31.2	32.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Oct.	30.709	31.948	31.2	32.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Nov.	30.709	31.948	31.2	32.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Dec.	30.709	31.948	31.2	32.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Jan.	PEMBROKE DOCKYARD, E. CHEVALLIER, Esq.	30.780	31.984	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4			
Feb.	30.780	31.984	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Mar.	30.780	31.984	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Apr.	30.780	31.984	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
May.	30.780	31.984	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
June.	30.780	31.984	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
July.	30.780	31.984	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Aug.	30.780	31.984	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Sept.	30.780	31.984	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Oct.	30.780	31.984	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Nov.	30.780	31.984	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Dec.	30.780	31.984	32.0	31.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Jan.	ROSE HILL (near Oxford), REV. JOHN SCATTEE, M.A., F.R.A.S.	30.705	31.718	31.4	32.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4			
Feb.	30.705	31.718	31.4	32.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Mar.	30.705	31.718	31.4	32.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Apr.	30.705	31.718	31.4	32.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
May.	30.705	31.718	31.4	32.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
June.	30.705	31.718	31.4	32.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
July.	30.705	31.718	31.4	32.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Aug.	30.705	31.718	31.4	32.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Sept.	30.705	31.718	31.4	32.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Oct.	30.705	31.718	31.4	32.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Nov.	30.705	31.718	31.4	32.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Dec.	30.705	31.718	31.4	32.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4				
Jan.	RADCLIFFE OBSERVATORY, (Oxford), REV. R. MAIN, M.A.	30.712	31.729	31.0	32.9	30.7	31.0	35.8	35.8	32.0	31.0	32.0	0.27	0.02	82	564	12	0.4			
Feb.	30.712	31.729	31.0	32.9	30.7	31.0	35.8	35.8	32.0	31.0	32										

[illegible]



ON THE  
METEOROLOGY OF ENGLAND,

DURING THE  
*Quarter ending June 30, 1861.*

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BY JAMES GLAISHER, ESQ., F.R.S.  
SECRETARY OF THE BRITISH METEOROLOGICAL SOCIETY.

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1861.



Remarks on the Weather, during the Quarter ending 30th of June 1861. By JAMES GLAISHER, ESQ., F.R.S., &c., Secretary of the British Meteorological Society.

The weather was cold till the middle of May, the mean daily temperatures of the air for the 44 days ending May 14th being  $3^{\circ}\cdot 0$  below the average for this period. On the 15th and 16th of May the days were comparatively warm; the excess of temperature was  $5^{\circ}\cdot 5$  on the former, and  $8^{\circ}\cdot 5$  on the latter; these, however, were followed by 3 cold days: the deficiency of temperature on the 17th, 18th, and 19th was  $5\frac{1}{2}^{\circ}$  daily. From the 20th of May to the end of June the weather was generally warm; the average daily excess of temperature of the last 42 days was  $1^{\circ}$ . On May 23d the temperature reached  $80^{\circ}$ ; the highest temperature in the year 1860 took place on the same day of the year, viz. the 23d of May, but it was  $76^{\circ}\cdot 5$  only.

In June the temperature reached  $82^{\circ}$  nearly; in the preceding June the highest point reached was  $74^{\circ}$ . On June 14th the mean temperature of the whole day was  $67^{\circ}$ , exceeding by  $4\frac{1}{2}^{\circ}$  that of the warmest day in the preceding year.

The mean high day temperature in April was  $1\frac{3}{4}^{\circ}$ , in May  $1^{\circ}$ , and in June  $0^{\circ}\cdot 4$  below their respective averages for the preceding 20 years; therefore the high day temperatures were too low throughout the quarter.

The mean low night temperature in April was  $2\frac{1}{2}^{\circ}$  below, in May  $1^{\circ}\cdot 2$  below, and in June  $1^{\circ}\cdot 1$  above their respective averages for the preceding 20 years. Therefore the nights in April and May were cold, and in June were warm.

The mean temperature of the air for the months of April and May was a little below their average values, and that of June differed but very little from its average.

The mean temperature of the dew point in April was  $0^{\circ}\cdot 3$  above, in May was  $1^{\circ}\cdot 9$  below, and in June was  $2^{\circ}\cdot 3$  above their averages.

The mean pressure of the atmosphere in April exceeded its average by  $\frac{1}{4}$  inch, in May by  $\frac{1}{8}$  inch, and in June differed but little from its average pressure.

The temperature of vegetation, as indicated by a thermometer placed on grass, was below  $40^{\circ}$  on 48 nights, and above  $40^{\circ}$  on 43 nights; the highest reading at night during the quarter was  $55\frac{1}{2}^{\circ}$ , and the lowest  $14^{\circ}\cdot 0$ .

The fall of rain in April was  $0\cdot 8$  inch, in May was  $1\cdot 8$  inch, and in June was  $1\cdot 9$  inch. The total fall during the quarter was  $4\cdot 5$  inches, being  $1\cdot 3$  inch below the average of the preceding 46 years.

The mean temperature of the air at Greenwich for the three months ending May, constituting the three spring months, was  $46^{\circ}\cdot 7$ , being  $0^{\circ}\cdot 3$  above the average of the preceding 90 years.

three spring months, was 2.67, being 0.15

1861. MONTHS.	Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
	Air.		Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames.	Mean.	Diff. from average of 20 years.	Mean.	Diff. from average of 20 years.	
	Mean.	Diff. from average of 90 years.	Mean.	Diff. from average of 20 years.	Mean.	Diff. from average of 20 years.	Mean.	Diff. from average of 20 years.						
April .	44.3	-1.5	42.4	-0.9	40.2	+0.3	19.0	+0.8	48.9	.249	+0.002	grs. 2.9	gr. 0.0	
May .	51.9	-0.6	47.8	-1.3	43.6	-1.9	20.5	+0.3	56.3	.284	-0.016	3.2	-0.2	
June .	59.1	+1.0	56.0	+1.2	53.1	+2.3	19.5	-1.5	62.8	.404	+0.031	4.6	+0.4	
Mean .	51.8	-0.4	48.7	-0.3	45.6	+0.2	19.7	-0.1	56.0	.312	+0.006	3.6	+0.1	

1861. MONTHS.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.	Reading of Thermometer on Grass.				
	Mean.	Diff. from average of 20 years.	Mean.	Diff. from average of 20 years.	Mean.	Diff. from average of 20 years.	Amount.	Diff. from average of 46 years.		Number of Nights it was			Lowest Reading at Night.	Highest Reading at Night.
										At or below 30°.	Between 30° and 40°.	Above 40°.		
April .	85	+ 6	29.999	+0.264	grs. 531	+ 7	in. 0.8	-1.0	Miles. 189	19	11	0	14.0	39.0
May .	74	- 2	29.924	+0.162	542	+ 4	1.8	-0.3	201	7	10	14	23.9	30.0
June .	81	+ 7	29.782	-0.011	531	0	1.9	0.0	196	0	1	23	35.5	55.2
Mean .	80	+ 4	29.902	+0.138	541	+ 4	Sum 4.5	Sum -1.3	Mean 195	Sum 26	Sum 22	Sum 43	Lowest 14.0	Highest 55.2

...times below the average, and that the

NOTE.—In reading this table it will be borne in mind that the sign (-) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred or thunder was heard and lightning seen on May 11th at Fairlight and Brighton; on the 16th at Cardington, Grantham, and Belvoir; on the 20th at Norwich, York, and Scarborough; and on the 23d at Aldershot Camp, Norwich, Grantham, and Belvoir. On the 1st of June at Banbury; on the 4th at Gloucester; on the 5th throughout the Midland counties; on the 14th at Helston and Little Bridy; on the 15th at Teignmouth and Barnstaple; on the 16th

at Barnstaple; on the 17th at Teignmouth and Little Bridy; on the 19th at Guernsey, Teignmouth, Bywell, and Otley; on the 20th over the greater part of the country; on the 21st from the greater part of the counties of Northumberland, Yorkshire, Lancashire, and Cumberland; on the 22d and 23d over the greater part of the country north of the latitude of  $51^{\circ}$ ; on the 25th at Belvoir; on the 26th and 27th over the greater part of the north of England; and on the 28th and 29th at Little Bridy.

Thunder was heard but lightning was not seen on the 1st of April at Little Bridy and Aldershot; on the 3d at Little Bridy; and on the 23d at Osborne and Alnwick. On May 3d at Otley; on the 16th at Petersfield, Brighton, and Berkhamstead; on the 18th at Frodsham; on the 20th at Otley and Harrogate; on the 23d and 27th at Brighton and Banbury; and on the 31st at Petersfield.

Thunder was heard on June 2d at Cardington; on the 5th at the Isle of Wight, Devonshire, Aldershot, Brighton, Gloucester, and Belvoir Castle; on the 6th at Brighton; on the 8th at Little Bridy; on the 15th at Helston; on the 17th at Truro, Exeter, and Little Bridy; on the 18th and 19th at Otley; on the 20th at Stonyhurst and Bywell; on the 21st at Guernsey, Little Bridy, Banbury, Stonyhurst, Otley, and Bywell; on the 22d at Berkhamstead, Otley, Frodsham, and Thelwall; on the 23d at Royston, Cardington, Grantham, Otley, and Allenheads; on the 24th at Grantham; on the 25th at Gloucester and Allenheads; on the 26th at Clifton, Banbury, and Royston; on the 27th at Exeter, Osborne, Clifton, and Aldershot; on the 28th at Little Bridy; on the 29th at Brighton, Royston, Cardington, and Bywell; and on the 30th at Royston.

Lightning was seen but thunder was not heard on April 10th at Allenheads. On May 28th at Fairlight. On June 2d at Leeds; on the 14th at Truro; on the 15th at Guernsey, Exeter, and Clifton; on the 16th at Brighton; on the 18th and 19th at Leyton; and on the 23d and 26th at Royston.

Aurora were seen on April 7th at Cardington and Warrington; and on the 8th and 9th at North Shields and Warrington. On May 4th at Stonyhurst; and 27th at Warrington.

Solar halos were seen on April 3rd at Leyton; on the 6th at Little Bridy; on the 20th at Little Bridy and Leyton; on the 21st at Clifton; and on the 24th at Leyton. On May the 1st and 4th at Berkhamstead; on the 5th at Clifton; on the 6th at Grantham; on the 10th at Clifton; on the 16th at Clifton and Berkhamstead; on the 20th and 21st at Berkhamstead and Lampeter; on the 27th at Clifton, Berkhamstead, Lampeter, and Grantham; on the 28th at Lampeter and Grantham; and on the 30th at Berkhamstead; on June 7th at Grantham; and on the 10th, 22d, and 23rd at Leyton.

Lunar halos were seen on April 18th at Stonyhurst; on the 19th at Stonyhurst and Bywell; on the 20th at York, Harrogate, North Shields, and Bywell; and on the 21st at Belvoir, Stonyhurst, York, Harrogate, and Bywell; on June 14th at Stonyhurst; on the 15th at Stonyhurst and York; on the 16th at Banbury and Stonyhurst; and on the 20th at Aldershot, Berkhamstead, Grantham, and Stonyhurst.

Hail fell on April 1st at Helston, Aldershot, Clifton, and Banbury; on the 2d at Helston, Petersfield, Berkhamstead, North Shields, and Allenheads; on the 3d at Royston and Cardington; on the 7th at Berkhamstead; and on the 26th at Bywell. On May 2d at Leeds; on the 3d at Brighton, Cardington, York, and Allenheads; on the 7th at Scarborough, North Shields, and Allenheads; and on the 9th at North Shields and Carlisle.

Snow fell on April the 26th at Grantham and Allenheads; on the 27th over the greater part of the country north of  $51^{\circ}$ ; and on the 28th at Allenheads. On May 3d at North Shields; on the 14th at Brighton, Banbury, Berkhamstead, and Bywell; on the 7th at North Shields and Allenheads; on the 8th over the greater part of the north of England; on the 9th at North Shields and Allenheads; on the 10th at Allenheads; on the 11th at Lampeter; and on the 12th at Lampeter and Allenheads.

Fog or mist prevailed in different parts of the country, but principally at Wakefield and Allenheads, on April the 1st, 2d, 3rd, 4th, 5th, 6th, 7th, 8th, 11th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 19th, 22d, 24th, and 28th; on May 6th at Banbury; on the 10th at Wakefield; on the 11th at Aldershot; on the 12th at Allenheads; on the 14th at Helston, Wakefield, Stonyhurst, and Scarborough; on the 15th at Helston and Berkhamstead; on the 16th at Scarborough; on the 17th at Belvoir Castle and Allenheads; on the 22d at Truro and Pembroke Dockyard; on the 23d at Clifton; and on the 31st at Helston, Scarborough, and Allenheads; on June the 2d, 3rd, 4th, 7th, and 8th at Berkhamstead and Allenheads; on the 10th, 12th, 15th, and 16th at Allenheads; on the 17th and 18th at Guernsey; on the 19th at Teignmouth and Warrington; on the 20th at Guernsey; on the 21st at Little Bridy, Leyton, Banbury, and Warrington; on the 22d at Helston, Little Bridy, Berkhamstead, and Allenheads; on the 23d at Little Bridy; and on the 27th at Helston and Teignmouth.

The Cuckoo and Swallow arrived at Fairlight, Clifton, and Exeter about the 22d of April; at Gloucester on the 12th.

The Cherry and Plum trees were in blossom at Fairlight on the 18th; at Gloucester about the middle of the month; at Berkhamstead the blossom on these trees is abundant, and a good crop may be expected. At Grantham it was remarked that the vegetation was very backward; but that which had appeared above the ground was very healthy and promising, whilst in the neighbourhood of Belvoir Castle, which is not many miles from Grantham, the report is quite contrary. At Thelwall the crops are looking well, and there is every appearance of an abundant harvest; the oak trees at this place have suffered in a remarkable manner from the frost of last winter.



NAMES OF STATIONS.	Mean Pressure at dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Days of Sun.	Mean Reading of Minimum on Grass.	Mean Estimated Strength.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.	Number of Days on which it fell.	Rain.		
																			Relative Proportion of									
																			N.	E.	S.	W.						
Guernsey	29.755	71.5	40.0	31.5	56.0	46.7	24.3	9.3	50.8	47.5	33.9	3.9	0.3	88	54.5	—	—	—	—	1.3	12	6	4	8	4.6	3.8	24	
Helston	29.752	79.0	34.0	45.0	62.1	46.3	30.0	15.2	52.7	46.8	34.0	3.7	0.7	81	54.3	81.1	44.0	—	—	1.9	12	8	7	7	1.9	5.1	23	
Truro	29.756	77.0	34.0	48.0	62.4	46.3	37.0	16.1	55.2	45.7	31.0	3.4	1.5	71	53.9	—	—	—	—	2.3	12	8	7	3	6.1	5.4	30	
Teignmouth	29.767	75.3	39.5	42.8	52.4	45.5	32.4	16.7	54.1	48.5	29.6	3.4	0.4	141	54.1	—	—	—	—	0.5	9	12	3	8	6.6	5.9	28	
Exeter (St. Leonard's)	29.767	83.5	31.5	42.8	50.4	44.3	41.6	19.9	54.1	48.5	32.5	3.3	1.0	79	53.9	83.6	40.2	—	—	1.3	10	9	3	3	6.4	4.4	39	
Exeter, 200 High-st.	29.769	81.5	32.1	48.4	63.7	46.7	36.8	17.0	53.2	45.7	33.4	3.4	1.1	76	33.1	—	—	—	—	0.9	12	8	5	6	5.9	4.4	44	
Venator	29.778	75.0	39.0	39.0	59.3	45.8	23.6	10.5	54.0	45.3	31.0	3.5	1.1	71	53.8	—	—	—	—	3	12	5	9	—	—	—	31	
Osborne	29.779	81.1	39.5	51.6	53.0	45.2	37.4	7.8	50.1	46.7	32.8	4.2	0.4	78	53.9	85.2	41.4	—	—	0.4	8	9	5	8	6.6	5.2	25	
Worthing	29.756	81.0	34.2	47.6	59.8	46.2	35.2	14.6	52.1	47.9	33.8	3.8	0.7	86	54.2	—	—	—	—	1.1	12	7	5	6	6.4	5.6	29	
Fairlight	—	77.1	32.0	45.5	57.8	45.2	33.6	15.6	49.5	46.8	33.0	3.7	0.3	89	53.7	70.4	40.4	0.8	11	10	3	7	6	6.6	5.6	30	20	
Little Brilly	29.757	83.7	—	—	62.1	43.5	—	18.6	52.9	—	33.4	3.8	0.7	83	54.3	99.1	38.8	0.6	11	8	4	6	5	6	5.2	6.2	26	
St. John's Col. nr. Brighton	29.751	84.5	25.5	50.6	64.1	43.8	45.7	18.0	52.9	45.4	33.2	3.9	0.7	77	54.0	—	—	—	—	12	8	5	6	—	5.6	—	—	
Barnstaple	29.764	82.5	32.0	53.2	60.8	45.2	42.9	16.1	53.0	45.0	33.8	3.3	1.0	77	53.9	—	—	—	—	1.3	8	4	9	—	4.1	28	—	
Petersfield	29.769	82.5	28.0	50.6	64.3	43.2	40.1	17.1	53.1	45.5	33.8	3.3	1.0	77	53.9	75.0	40.1	0.4	10	12	4	5	1	6.9	6.2	25	—	
Aldershot Camp	29.769	82.5	28.0	50.6	64.3	43.2	40.1	17.1	53.1	45.5	33.8	3.3	1.0	77	53.9	75.0	40.1	0.4	10	12	4	5	1	6.9	6.2	25	—	
Clifton	29.762	83.5	29.0	50.6	63.2	44.0	40.4	19.2	51.9	46.3	33.2	3.6	0.8	81	53.9	—	—	—	—	4.0	0.3	10	4	8	3.1	5.3	25	
Royal Observatory	29.768	81.8	38.8	53.0	63.1	43.4	40.8	19.7	51.8	45.6	33.2	3.6	0.8	80	54.1	97.7	39.8	0.1	11	10	4	5	7	7.4	6.3	24	—	
Regent's Park	29.763	77.9	39.3	47.6	59.8	44.8	34.0	15.0	51.3	43.5	28.7	3.2	1.1	80	54.2	—	—	—	—	—	—	—	—	—	—	—	—	
St. John's Wood	29.762	80.6	30.5	50.1	62.6	45.1	38.3	17.6	53.6	46.7	33.6	3.6	0.9	79	53.8	—	—	—	—	11	9	3	8	—	8.2	35	—	
Guilford	29.759	82.0	36.4	45.5	59.2	46.5	33.2	12.7	51.9	48.0	34.3	3.8	0.5	86	54.2	—	—	—	—	—	—	—	—	—	—	—	—	
Whitehall	29.763	82.0	36.4	45.5	59.2	46.5	33.2	12.7	51.9	48.0	34.3	3.8	0.5	79	54.2	75.6	—	—	—	11	8	4	7	—	—	—	—	
Camden Town	29.770	83.8	37.8	55.8	66.1	43.4	43.4	13.1	52.4	45.1	30.8	3.5	0.9	76	54.1	98.6	39.1	—	—	7	3	8	3	5	6.9	5.1	—	
Battersea	29.762	79.6	39.0	50.6	61.5	44.9	38.0	16.6	53.4	44.4	33.0	3.4	0.9	75	54.2	84.1	41.7	0.7	9	7	4	7	1	5.9	5.1	—	—	
Leyton, Essex	29.765	82.5	32.0	53.2	62.3	43.3	41.1	18.8	51.7	44.8	33.4	3.4	0.9	77	54.2	85.1	37.8	0.2	11	10	3	6	—	6.0	43	—	—	
Pembroke	29.764	81.2	39.0	49.2	64.0	45.1	38.1	18.9	53.6	47.6	33.5	3.3	0.8	80	54.0	80.0	44.7	0.4	13	7	4	6	—	5.3	33	—	—	
Rose Hill (Oxford)	29.767	80.0	37.0	53.0	62.5	41.4	41.0	21.1	52.7	45.5	33.6	0.8	80	53.7	74.1	39.6	1.4	8	8	5	8	—	1.7	3.3	—	—	—	
Oxford	29.767	80.0	37.0	53.0	61.0	43.3	39.6	17.6	51.2	44.1	29.7	3.3	0.8	76	54.1	75.1	42.5	1.4	13	7	3	5	4	2	6.6	32	—	
Banbury	29.763	82.5	28.0	53.0	61.6	41.7	44.7	19.9	52.4	44.8	33.0	3.6	1.0	76	53.7	—	—	—	—	1.5	12	8	4	6	6.1	32	—	
Great Berkhampstead	29.762	81.5	24.0	57.5	61.7	42.0	44.0	15.1	51.0	42.7	28.2	3.1	1.1	75	53.8	—	—	—	—	0.7	12	8	3	6	6.5	31	—	
Hartwell House	29.772	81.7	30.0	55.7	62.6	40.8	40.8	15.1	51.2	45.2	29.9	3.2	0.9	77	54.0	—	—	—	—	0.7	8	9	10	4	6	6.2	34	
Hartwell Rectory	29.769	81.2	28.0	53.2	63.3	44.2	42.4	16.1	51.1	47.6	33.5	3.5	0.6	86	54.3	—	—	—	—	0.3	8	9	8	7	6.0	—	—	
Royston	29.770	85.3	27.0	57.4	62.0	41.4	43.9	20.6	51.5	45.1	33.8	3.5	0.9	79	54.0	—	—	—	—	13	8	3	7	4	6.1	6.0	—	
Gloucester	29.768	81.4	27.0	57.4	64.2	43.7	43.2	20.4	53.1	46.3	32.2	3.6	0.9	76	54.2	78.0	46.0	—	—	9	12	3	5	2	5.4	24	—	
Cardington	29.771	84.0	27.0	57.0	62.3	43.1	43.2	19.2	51.5	43.8	29.4	3.3	1.1	79	54.2	93.7	36.7	0.7	11	8	3	7	—	7.0	34	—	—	
Aspley	29.772	83.5	32.0	53.2	61.5	45.2	27.8	9.4	49.8	45.1	30.6	3.4	0.6	81	53.6	87.2	41.9	—	—	10	1	8	1	—	4.2	33	—	
Bedford	29.767	85.0	29.0	56.0	62.4	44.4	41.5	18.0	52.2	43.0	28.5	3.2	1.2	72	54.2	82.2	42.9	—	—	—	—	—	1.2	6.8	31	—	—	
Lampeter	29.763	82.5	32.0	53.2	63.8	41.7	45.6	22.1	52.4	45.3	33.1	3.7	0.8	81	53.5	—	—	—	—	0.6	8	5	7	2	4	4.5	25	—
Llandudno	29.765	79.8	39.0	50.6	63.8	43.7	28.4	9.4	50.9	45.3	31.0	3.5	0.9	77	54.0	—	—	—	—	0.4	6	10	12	4	—	—	—	
Norwich	29.765	79.8	39.0	50.6	61.0	43.8	39.6	17.1	51.2	45.1	30.8	3.5	0.9	82	54.7	81.7	39.5	—	—	1.8	8	9	8	2	7.0	—	—	
Diss (Norfolk)	29.763	82.0	32.0	53.2	63.3	44.2	42.9	16.1	51.0	44.4	33.2	3.2	0.8	78	54.3	—	—	—	—	12	6	5	8	2	6.9	11	—	
Grantham	29.762	82.0	32.0	53.2	63.3	44.2	44.2	16.1	51.0	44.4	33.2	3.2	0.9	79	54.2	69.9	40.9	0.2	11	8	4	7	1	7	6.1	—	—	
Belvoir Castle	29.770	78.0	39.0	50.6	60.2	41.5	39.5	18.7	50.6	46.0	31.6	3.5	0.5	83	54.0	—	—	—	—	4.7	1	10	5	6	8	—	—	
Derby	29.766	79.0	39.0	50.6	60.2	41.5	39.6	17.7	52.4	39.5	24.6	2.8	1.6	81	54.0	—	—	—	—	—	—	—	—	—	—	—	—	
Holkham	29.765	75.7	34.0	51.7	57.7	43.1	39.7	14.6	49.2	45.1	30.7	3.4	0.5	86	54.6	96.4	37.0	0.9	17	7	2	3	—	6.4	36	—	—	
Nottingham	29.767	82.8	26.5	56.3	62.8	42.4	42.9	20.4	51.4	45.8	33.4	3.5	0.9	77	54.1	73.8	40.8	0.2	10	3	9	1	2	7	7.1	40	—	
Hawarden	29.763	81.0	32.0	48.5	58.8	44.9	33.5	13.9	50.1	43.8	29.1	3.2	0.8	79	54.2	70.2	36.7	1.8	10	7	5	8	1	6.3	23	—	—	
Liverpool Observat.	29.764	77.2	39.0	47.1	60.1	48.0	27.7	12.1	52.4	45.5	30.8	3.5	0.9	78	54.1	—	—	—	—	1.1	—	—	—	—	6.2	29	—	
Manchester	29.769	84.2	25.5	57.0	61.2	41.9	39.0	17.3	51.8	44.7	29.4	3.3	1.0	75	54.2	77.0	35.8	—	—	8	7	4	10	—	6.5	—	—	
Wakefield	29.771	85.2	25.7	57.0	60.7	41.4	39.7	17.3	50.6	46.1	31.5	3.5	0.8	80	54.2	71.0	34.9	1.6	11	7	3	11	—	6.8	42	—	—	
Kingsley Parsonage, near Frodsham.	29.774	79.7	28.3	51.4	59.9	41.4	38.0	17.3	50.6	44.8	30.3	3.4	0.8	80	54.2	78.6	39.4	1.3	8	7	5	10	4	2	5.9	40	—	
Leeds	29.776	83.0	31.0	52.0	61.2	42.4	39.0	19.2	51.4	41.9	27.1	3.0	1.2	70	54.2	72.7	—	—	—	1.9								



[illegible]







TABLE of the FALL of RAIN during the Nine Months ending September 30th, 1861.

Stations.	Amount.	Stations.	Amount.	Stations.	Amount.	Stations.	Amount.
Guernsey - - -	19.9	St. John's Wood - -	12.7	Bedford - - -	18.4	Leeds - - -	17.2
Helston - - -	23.8	Guildhall - - -	13.3	Lampeter - - -	13.5	Stonyhurst - - -	24.3
Truro - - -	23.9	Whitehall - - -	13.1	Norwich - - -	16.8	York - - -	16.5
Teignmouth - -	14.4	Camden Town - -	15.2	Diss - - -	14.7	Ben Rhydding - -	20.6
Exeter, St. Leonards	19.9	Battersea - - -	15.0	Belvoir Castle - -	17.2	Otley - - -	20.3
Exeter, 200, High St.	18.8	Leyton - - -	13.9	Derby - - -	17.3	Thelwall - - -	22.0
Ventnor - - -	17.0	Rose Hill (Oxford) -	18.1	Holkham - - -	14.4	Scarborough - -	13.1
Osborne - - -	17.0	Oxford - - -	17.0	Nottingham - -	17.5	Isle of Man - -	23.1
Fairlight - - -	19.0	Great Berkhamstead	17.2	Hawarden - - -	15.9	St. Paul's Parsonage	27.4
Little Bridy - -	26.2	Hartwell House - -	14.0	Liverpool - - -	16.4	Carlisle - - -	19.7
Petersfield - -	24.6	Hartwell Rectory - -	13.2	Manchester - - -	22.7	Bywell - - -	21.0
Barnstaple - -	25.0	Royston - - -	13.9	Wakefield - - -	17.9	Allenheads - -	35.9
Aldershot Camp -	15.3	Gloucester - - -	16.4	Kingsley Parsonage,	16.4	North Shields -	18.2
Clifton - - -	22.0	Cardington - - -	14.5	Frodsham - - -	22.8	High House (Alnwick)	20.9
Greenwich - - -	13.4	Aspley (Beds.) - -	17.6				

The temperature of vegetation, as indicated by a thermometer placed on grass, was below 40° on 12 nights, and above 40° on 82 nights; the lowest was 31°·8 in September, and the highest 57°·0 in July.

The mean temperature of the air at Greenwich for the three months ending August, constituting the three summer months, was 61°·0, being 1°·0 above the average of the preceding 90 years.

1861. MONTHS.		Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
		Air.		Evaporation.		Dew Point.		Air— Daily Range.		Water of the Thames.					
		Mean.	Diff. from ave- rage of 20 years.	Mean.	Diff. from ave- rage of 20 years.	Mean.	Diff. from ave- rage of 20 years.	Mean.	Diff. from ave- rage of 20 years.						
July .	60.9	-0.5	-1.0	57.1	-0.5	53.7	-0.2	18.9	-1.7	65.5	.413	in.	grs.		
August .	63.2	+2.5	+1.9	58.9	+1.4	55.2	+1.1	21.8	+2.4	65.6	.436	+0.04	4.6		
Sept. .	57.1	+0.7	+0.2	53.8	-0.1	50.7	-0.4	20.1	+1.6	61.9	.370	+0.12	4.9		
Mean .	60.4	+0.9	+0.4	56.6	+0.3	53.2	+0.2	20.3	+0.8	64.3	.406	-0.01	4.5		

1861. MONTHS.		Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.	Reading of Thermometer on Grass.						
		Mean.	Diff. from ave- rage of 20 years.	Mean.	Diff. from ave- rage of 20 years.	Mean.	Diff. from ave- rage of 20 years.	Amount.	Diff. from ave- rage of 46 years.		Number of Nights it was		Low- est Read- ing at Night.	High- est Read- ing at Night.			
											At or below 30°.				Be- tween 30° and 40°		
July .	78	+2	in.	in.	grs.	grs.	in.	in.	Miles.	0	0	31	42.0				
August .	76	-1	29.606	-0.198	526	-2	2.2	-0.5	277	0	3	23	39.7				
Sept. .	79	-2	29.585	+0.077	528	0	0.6	-1.8	270	0	9	21	31.8				
Mean .	78	-0.3	29.729	-0.078	529	-1	Sum	Sum	Mean	Sum	Sum	Sum	Sum				
							4.3	-3.3	254	0	12	80	31.8				
												Lowest	Highest				
												31.8	57.0				

NOTE.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred or thunder was heard and lightning seen on July 5th at Norwich and Leeds; on the 6th at Belvoir and Stonyhurst; on the 7th at Brighton, Oxford, Banbury, Bedford, Diss, Belvoir, Wakefield, Leeds, Stonyhurst, and Frodsham; on the 8th at Petersfield, Oxford, Banbury, Berkhamstead, Bedford, Norwich, Belvoir, York, and Warrington; on the 9th at York; on the 13th at Frodsham; on the 14th and 15th at Truro; on the 16th at Banbury, Royston, and Belvoir; on the 18th at Wakefield; on the 20th at Diss and Norwich; on the 21st at Clifton, Belvoir, Stonyhurst, York, Allenheads, Ben Rhydding, Warrington, and Frodsham; on the 25th at Belvoir; on the 26th at Banbury, Royston, Bedford, Belvoir, North Shields, and Warrington; on the 27th at Barnstaple, Belvoir, Stonyhurst, York, North Shields, Bywell, Otley, Warrington, and Frodsham; on the 28th at York and North Shields; and on the 30th and 31st at Belvoir. On the 2d of August at Clifton, Banbury, Stonyhurst, and Warrington. On the 1st of September at Little Bridy; on the 13th at Aldershot; on the 23d at Osborne, Clifton, and Stonyhurst; on the 24th at Osborne, Brighton, and Cardington; and on the 25th at Clifton, Brighton, York, and Isle of Man.

Thunder was heard but lightning was not seen on the 1st of July at Little Bridy and Banbury; on the 2d at Banbury, Scarborough, and Bywell; on the 5th at Scarborough, Warrington, and Allenheads; on the 6th at Bywell and North Shields; on the 7th at Aldershot, Leyton, Royston, Norwich, Ben Rhydding, Otley, Warrington, and Allenheads; on the 8th at Brighton, Leyton, Oxford, Otley, and Warrington; on the 13th at Banbury and Stonyhurst; on the 14th at Aldershot

and Stonyhurst; on the 16th at Berkhamstead and Norwich; on the 17th at Little Bridy and Otley; on the 18th at Leeds; on the 21st at Leeds, Ben Rhydding, and Warrington; on the 25th at Bedford and Bywell; on the 26th at Little Bridy, Berkhamstead, Royston, and Leeds; on the 27th at Helston, Banbury, Berkhamstead, Royston, Bedford, and Allenheads; on the 28th at Aldershot and Banbury; and on the 30th at Little Bridy. On the 1st of August at Belvoir Castle; on the 2d at Oxford, Cardington, and Belvoir Castle; on the 3d at Berkhamstead; on the 4th at Guernsey; and on the 30th at Banbury. On the 14th and 15th of September at Aldershot; on the 24th at Bedford; on the 25th at Grantham; and on the 29th at Gloucester.

Lightning was seen but thunder was not heard on July 1st at Leyton; on the 7th at Royston; on the 8th at Berkhamstead; on the 12th at Oxford, Royston, Diss, and Norwich; on the 13th at Aldershot; and on the 16th at Osborne. On the 2d of August at Berkhamstead; and on the 5th at Cardington. On the 6th of September at Clifton and Stonyhurst; on the 8th at St. Paul's Parsonage and Carlisle; on the 12th at Stonyhurst; on the 22d at Truro and Warrington; on the 23d at Helston, Truro, Exeter, Little Bridy, and Otley; and on the 24th at Helston, Truro, and Osborne.

Solar halos were seen on seven days in July; four days in August; and on eight days in September.

Lunar halos were seen on five nights in August and eight in September.

Hail fell on five days during the quarter.

Fog prevailed on seven days in July; fourteen in August; and fifteen in September.

Dr. Barker, of Worthing, says in the second week in August the harvest was generally over south of the Downs. Where the soil is alluvial it is supposed to be quite an average crop, but in the weald of Sussex, where the soil is stiff and clayey, owing to the wet season, much of the seed has perished, and crops are below their average; oats and barley are abundant.

Mr. Eaton, of Little Bridy, Dorsetshire, remarks that the potato disease proved to be worse than was anticipated. The fine August after the wet July produced a very abundant crop of grass. He also remarked that no damage was done by the frost during the preceding winter; even myrtles escaped. Figs and bays, which suffered severely in Devonshire, were untouched by the frost, the figs having produced an abundant crop of fruit. No hazel nuts nor haws this year.

At Berkhamstead, Mr. Squire remarks that the grain crops were healthy, and that the harvest was finished by the end of August; early oats were cut in July. Potatoes were affected with blight during the last fortnight in July, which spread rapidly; black blight was prevalent among beans.

Mr. Ingram, of Belvoir Castle, says hay-making was in progress during the whole of July, much of it was, however, injured by the wet weather. The wheat crop, which was very uncertain during July, owing to the wet, improved very much in August, approaching maturity in the more favourable situations about the middle of August; cutting commenced about the 17th, and was finished by the second week in September, the grain being excellent in quality, although a light crop. Barley suffered very much from wet weather in July, and was a thin crop on clay land; the quality uneven, but weighty. The oat crop is excellent. Beans and peas are good crops. Turnips were attacked by grubs in July, but improved during August. Potato blight appeared about July 10th, and spread rapidly, the fine weather in August coming too late to save the general crop, which is very much diseased. In some cases, however, of late planting and exceeding hardihood of constitution the disease has been resisted. Stock is healthy. Apples, pears, and fruit of all kinds are scarce.

Mr. Atkinson, of Thelwall, near Warrington, says the hay crops were fair in quantity, but that a great deal was gathered in a very indifferent condition, in consequence of the wet weather which prevailed during the month of July. The wheat crop is rather light, but very good. Oats are a heavy crop. On the whole the harvest may be considered a very favourable one, the crop being an average one in quantity, and above an average in quality. There has been an almost total absence of butterflies this summer in this district. Insects generally have been fewer than usual, the unusual severity of last winter will no doubt account for this circumstance.

At Harrogate, Mr. Coupland remarks that he has not seen a single grasshopper or peacock butterfly during the summer.

At Bywell, Mr. Dawson says the weather was fine for growing crops; perhaps there was a little too much rain in July for potatoes, in which disease showed itself during the last fortnight in August. Hay-making was over by the middle of July, the crop was good. A great quantity of grain has been secured in good condition. Crops fair, and quality good.

At Allenheads, Mr. Bewick remarks that the hay harvest was gathered in good condition by the middle of August.

At North Shields, Mr. Spence says in July the following plants were in blossom: white rose, bee larkspur, pencilled geranium, fuchsia, brown calceolaria, and minor convolvulus, the greater number of these being out during the first fortnight. In August the weather was beautiful for harvest operation, which has been at least a month earlier than last year. During the months the following plants were in blossom: mignonette, sweet peas, carnations, anemone, japonica, African marigold, holyhock, and American balsam.

At Culloden, A. Forbes, Esq., says that the frequent and heavy falls of rain during July proved so injurious to the turnip crop that in some places a second sowing has been found necessary. Hay is a light crop, and there is a deficiency of clover. Oats in general are a heavy crop, and on some farms the yield will be greater than for some years past, both in length of straw and in weight of grain. The wheat crop has suffered from the constant rains and want of sunshine, the quality will be unequal, and in many cases the colour bad. Barley will, it is hoped, turn out well, and be equal in quality, if not in quantity, to the crop of last year. Potatoes began to give way in gardens on August 3rd; a few days later early varieties on some farms became more or less affected, and by the end of the month scarcely a field in the lower districts had escaped.



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Mean Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.	Rain in Number of Days on which it fell.
															Relative Proportion of						
															N.	E.	S.	W.			
Guernsey	29.330	73.0	48.0	25.0	63.2	54.3	10.6	8.9	58.2	54.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Helston	29.532	77.0	41.0	36.0	67.8	53.0	14.8	14.8	58.8	53.5	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Truro	29.347	79.0	37.0	42.0	67.8	54.3	13.8	13.8	60.0	53.5	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Teignmouth	29.360	76.0	38.0	37.0	63.0	55.0	8.0	8.0	60.0	53.5	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Exeter (St. Leonard's)	29.368	84.0	33.0	51.0	68.7	51.6	17.1	17.1	60.0	53.5	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Exeter (200 High-st.)	29.370	80.0	42.0	38.0	68.8	54.2	14.8	14.8	59.0	53.5	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Ventnor	29.414	71.0	47.0	24.0	65.0	56.4	19.8	8.0	58.0	54.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Osborne	29.487	78.0	43.0	35.0	69.1	53.0	16.1	16.1	60.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Worthing	29.494	72.0	43.0	29.0	66.9	56.0	10.9	10.9	60.0	53.7	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Fairlight	29.534	73.0	42.0	31.0	64.0	56.0	8.0	8.0	57.0	54.0	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Little Bridy	29.510	78.0	40.0	38.0	67.1	51.6	15.5	15.5	58.0	53.3	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
St. John's Col. nr. Brighton	29.507	83.0	38.0	45.0	69.0	52.0	17.0	17.0	61.0	53.3	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Barnstaple	29.493	81.0	40.0	41.0	66.0	54.0	12.0	12.0	60.0	53.3	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Petersfield	29.504	84.0	34.0	50.0	72.6	50.8	21.8	21.8	63.9	53.3	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Aldershot Camp	29.504	85.0	40.0	45.0	69.0	54.0	15.0	15.0	60.0	53.3	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Clifton	29.506	78.0	38.0	40.0	67.4	51.9	13.3	13.3	55.8	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Royal Observatory	29.507	82.0	37.0	45.0	67.0	51.6	15.4	15.4	58.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Regent's Park	29.507	82.0	37.0	45.0	67.0	51.6	15.4	15.4	58.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
St. John's Wood	29.504	86.0	40.0	45.0	69.0	54.0	15.0	15.0	60.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Guilford	29.503	85.0	40.0	45.0	69.0	54.0	15.0	15.0	60.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Whitehall	29.502	85.0	40.0	45.0	69.0	54.0	15.0	15.0	60.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Camden Town	29.490	89.0	42.0	46.0	73.4	59.0	14.4	14.4	66.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Battersea	29.490	89.0	42.0	46.0	73.4	59.0	14.4	14.4	66.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Leyton, Essex	29.493	85.0	40.0	45.0	69.0	54.0	15.0	15.0	60.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Oxford	29.481	81.0	38.0	43.0	67.0	54.0	13.0	13.0	58.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Banbury	29.490	81.0	38.0	43.0	67.0	54.0	13.0	13.0	58.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Great Berkhamstead	29.487	84.0	33.0	55.0	69.0	50.0	19.0	19.0	60.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Hartwell House	29.483	80.0	37.0	43.0	69.0	54.0	15.0	15.0	60.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Hartwell Rectory	29.486	83.0	41.0	42.0	69.0	54.0	15.0	15.0	60.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Royston	29.495	85.0	41.0	45.0	69.0	54.0	15.0	15.0	60.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Gloucester	29.485	80.0	39.0	41.0	69.0	52.0	17.0	17.0	60.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Cardington	29.492	85.0	40.0	45.0	69.0	54.0	15.0	15.0	60.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Aspley	29.489	77.0	37.0	40.0	63.0	54.0	9.0	9.0	58.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Bedford	29.478	85.0	40.0	46.0	70.4	52.0	18.4	18.4	60.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Lampeter	29.469	75.0	34.0	41.0	67.0	54.0	13.0	13.0	58.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Llandudno	29.468	72.0	32.0	40.0	64.0	52.0	12.0	12.0	57.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Norwich	29.445	70.0	30.0	40.0	60.0	50.0	10.0	10.0	55.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Diss (Norfolk)	29.445	70.0	30.0	40.0	60.0	50.0	10.0	10.0	55.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Belvoir Castle	29.445	70.0	30.0	40.0	60.0	50.0	10.0	10.0	55.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Derby	29.445	70.0	30.0	40.0	60.0	50.0	10.0	10.0	55.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Holkham	29.445	70.0	30.0	40.0	60.0	50.0	10.0	10.0	55.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Nottingham	29.445	70.0	30.0	40.0	60.0	50.0	10.0	10.0	55.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Hawarden	29.437	75.0	34.0	41.0	67.0	54.0	13.0	13.0	58.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Liverpool Observatory	29.450	75.0	34.0	41.0	67.0	54.0	13.0	13.0	58.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Wakefield (Frodsham)	29.442	72.0	33.0	40.0	64.0	52.0	12.0	12.0	57.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Kingsley Parsonage, near Leeds	29.432	77.0	35.0	42.0	66.0	50.0	16.0	16.0	57.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Stonyhurst	29.434	80.0	36.0	40.0	68.0	54.0	14.0	14.0	60.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Otley	29.382	77.0	35.0	42.0	66.0	50.0	16.0	16.0	57.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Ben Rhydding	29.395	76.0	36.0	42.0	65.0	51.0	14.0	14.0	58.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Thelwall, near Warrington	29.395	76.0	36.0	42.0	65.0	51.0	14.0	14.0	58.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
York	29.385	78.0	41.0	37.0	66.0	52.0	14.0	14.0	60.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Scarborough	29.404	73.0	40.0	33.0	62.0	51.6	10.5	10.5	57.0	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Isle of Man	29.300	71.4	42.9	28.5	55.2	49.0	5.9	5.9	53.6	49.0	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
St. Paul's Parsonage	29.389	77.2	36.2	41.0	64.5	50.5	14.0	14.0	57.2	52.0	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Carlisle	29.349	75.0	38.2	36.8	64.8	54.1	10.7	10.7	56.4	52.1	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Exwell	29.350	76.0	38.0	37.0	63.0	51.6	12.6	12.6	54.1	51.5	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
Allenheads	29.345	71.0	35.5	35.9	59.0	51.8	7.2	7.2	52.0	48.4	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
North Shields	29.421	75.2	40.0	34.2	62.2	49.3	5.9	5.9	52.0	48.4	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45
High House Farm (Alnwick.)	29.400	73.0	40.0	33.0	64.0	46.6	17.4	17.4	55.8	53.6	33.0	1.7	88.8	88.8	88.8	88.8	10	11	11	11	45



[illegible]

The reading of the barometer at Derby for July has been altered conjecturally, from 29·654 inches to 29·554 inches, the former being evidently wrong.



Year 1861.	Month.	Names of Stations and Observers.	Pressure of Atmosphere in Month.			Temperature of Air in Month.			Mean Temperature.		Vapour.		Mean Reading of Thermometer.		Wind.			Rain. Number of Days it fell. Amount col- lected.				
			Mean.	Range.	Highest.	Lowest.	Range.	Of all Highest.	Of all Lowest.	Daily Range.	Air.	Dew Point.	Elastic Force.	Mean.	In a Cubic foot of Air.	Short of Saturation.	Mean Dry Air, = 100.		Relative Proportion of			
																			N.	E.	S.	W.
July	29	LEEDS PHILOSOPHICAL HALL, HENRY DENBY, Esq., A.L.S.	29.429	29.429	29.429	29.429	29.429	29.429	29.429	29.429	29.429	29.429	29.429	29.429	29.429	29.429	29.429	29.429	29.429	29.429	29.429	
Aug.	29	LEEDS PHILOSOPHICAL HALL, HENRY DENBY, Esq., A.L.S.	29.440	29.440	29.440	29.440	29.440	29.440	29.440	29.440	29.440	29.440	29.440	29.440	29.440	29.440	29.440	29.440	29.440	29.440	29.440	
Sept.	29	LEEDS PHILOSOPHICAL HALL, HENRY DENBY, Esq., A.L.S.	29.450	29.450	29.450	29.450	29.450	29.450	29.450	29.450	29.450	29.450	29.450	29.450	29.450	29.450	29.450	29.450	29.450	29.450	29.450	
July	29	STONYPURST COLLEGE, REV. S. PERRY, M.A.	29.460	29.460	29.460	29.460	29.460	29.460	29.460	29.460	29.460	29.460	29.460	29.460	29.460	29.460	29.460	29.460	29.460	29.460	29.460	
Aug.	29	STONYPURST COLLEGE, REV. S. PERRY, M.A.	29.470	29.470	29.470	29.470	29.470	29.470	29.470	29.470	29.470	29.470	29.470	29.470	29.470	29.470	29.470	29.470	29.470	29.470	29.470	
Sept.	29	STONYPURST COLLEGE, REV. S. PERRY, M.A.	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	
July	29	YORK, JOHN FORD, Esq.	29.490	29.490	29.490	29.490	29.490	29.490	29.490	29.490	29.490	29.490	29.490	29.490	29.490	29.490	29.490	29.490	29.490	29.490	29.490	
Aug.	29	YORK, JOHN FORD, Esq.	29.500	29.500	29.500	29.500	29.500	29.500	29.500	29.500	29.500	29.500	29.500	29.500	29.500	29.500	29.500	29.500	29.500	29.500	29.500	
Sept.	29	YORK, JOHN FORD, Esq.	29.510	29.510	29.510	29.510	29.510	29.510	29.510	29.510	29.510	29.510	29.510	29.510	29.510	29.510	29.510	29.510	29.510	29.510	29.510	
July	29	BEN RHYDDING, R. C. TAYLOR, Esq.	29.520	29.520	29.520	29.520	29.520	29.520	29.520	29.520	29.520	29.520	29.520	29.520	29.520	29.520	29.520	29.520	29.520	29.520	29.520	
Aug.	29	BEN RHYDDING, R. C. TAYLOR, Esq.	29.530	29.530	29.530	29.530	29.530	29.530	29.530	29.530	29.530	29.530	29.530	29.530	29.530	29.530	29.530	29.530	29.530	29.530	29.530	
Sept.	29	BEN RHYDDING, R. C. TAYLOR, Esq.	29.540	29.540	29.540	29.540	29.540	29.540	29.540	29.540	29.540	29.540	29.540	29.540	29.540	29.540	29.540	29.540	29.540	29.540	29.540	
July	29	OTLEY, H. W. THOMAS, Esq.	29.550	29.550	29.550	29.550	29.550	29.550	29.550	29.550	29.550	29.550	29.550	29.550	29.550	29.550	29.550	29.550	29.550	29.550	29.550	
Aug.	29	OTLEY, H. W. THOMAS, Esq.	29.560	29.560	29.560	29.560	29.560	29.560	29.560	29.560	29.560	29.560	29.560	29.560	29.560	29.560	29.560	29.560	29.560	29.560	29.560	
Sept.	29	OTLEY, H. W. THOMAS, Esq.	29.570	29.570	29.570	29.570	29.570	29.570	29.570	29.570	29.570	29.570	29.570	29.570	29.570	29.570	29.570	29.570	29.570	29.570	29.570	
July	29	THE WALK NEAR WARRINGTON, J. ATKINSON, Esq.	29.580	29.580	29.580	29.580	29.580	29.580	29.580	29.580	29.580	29.580	29.580	29.580	29.580	29.580	29.580	29.580	29.580	29.580	29.580	
Aug.	29	THE WALK NEAR WARRINGTON, J. ATKINSON, Esq.	29.590	29.590	29.590	29.590	29.590	29.590	29.590	29.590	29.590	29.590	29.590	29.590	29.590	29.590	29.590	29.590	29.590	29.590	29.590	
Sept.	29	THE WALK NEAR WARRINGTON, J. ATKINSON, Esq.	29.600	29.600	29.600	29.600	29.600	29.600	29.600	29.600	29.600	29.600	29.600	29.600	29.600	29.600	29.600	29.600	29.600	29.600	29.600	
July	29	SCARBOROUGH, R. CHAMPEL, Esq.	29.610	29.610	29.610	29.610	29.610	29.610	29.610	29.610	29.610	29.610	29.610	29.610	29.610	29.610	29.610	29.610	29.610	29.610	29.610	
Aug.	29	SCARBOROUGH, R. CHAMPEL, Esq.	29.620	29.620	29.620	29.620	29.620	29.620	29.620	29.620	29.620	29.620	29.620	29.620	29.620	29.620	29.620	29.620	29.620	29.620	29.620	
Sept.	29	SCARBOROUGH, R. CHAMPEL, Esq.	29.630	29.630	29.630	29.630	29.630	29.630	29.630	29.630	29.630	29.630	29.630	29.630	29.630	29.630	29.630	29.630	29.630	29.630	29.630	
July	29	HARROGATE (Yorkshire), J. COUPLAND, Esq.	29.640	29.640	29.640	29.640	29.640	29.640	29.640	29.640	29.640	29.640	29.640	29.640	29.640	29.640	29.640	29.640	29.640	29.640	29.640	
Aug.	29	HARROGATE (Yorkshire), J. COUPLAND, Esq.	29.650	29.650	29.650	29.650	29.650	29.650	29.650	29.650	29.650	29.650	29.650	29.650	29.650	29.650	29.650	29.650	29.650	29.650	29.650	
Sept.	29	HARROGATE (Yorkshire), J. COUPLAND, Esq.	29.660	29.660	29.660	29.660	29.660	29.660	29.660	29.660	29.660	29.660	29.660	29.660	29.660	29.660	29.660	29.660	29.660	29.660	29.660	
July	29	ISLE OF MAN, JAMES BURMAN, Esq., F.R.A.S.	29.670	29.670	29.670	29.670	29.670	29.670	29.670	29.670	29.670	29.670	29.670	29.670	29.670	29.670	29.670	29.670	29.670	29.670	29.670	
Aug.	29	ISLE OF MAN, JAMES BURMAN, Esq., F.R.A.S.	29.680	29.680	29.680	29.680	29.680	29.680	29.680	29.680	29.680	29.680	29.680	29.680	29.680	29.680	29.680	29.680	29.680	29.680	29.680	
Sept.	29	ISLE OF MAN, JAMES BURMAN, Esq., F.R.A.S.	29.690	29.690	29.690	29.690	29.690	29.690	29.690	29.690	29.690	29.690	29.690	29.690	29.690	29.690	29.690	29.690	29.690	29.690	29.690	
July	29	ST. PAUL'S PARSONAGE, near SILKLOTH, CUMBERLAND, REV. F. REDFORD, M.A., M.B.M.S.	29.700	29.700	29.700	29.700	29.700	29.700	29.700	29.700	29.700	29.700	29.700	29.700	29.700	29.700	29.700	29.700	29.700	29.700	29.700	
Aug.	29	ST. PAUL'S PARSONAGE, near SILKLOTH, CUMBERLAND, REV. F. REDFORD, M.A., M.B.M.S.	29.710	29.710	29.710	29.710	29.710	29.710	29.710	29.710	29.710	29.710	29.710	29.710	29.710	29.710	29.710	29.710	29.710	29.710	29.710	
Sept.	29	ST. PAUL'S PARSONAGE, near SILKLOTH, CUMBERLAND, REV. F. REDFORD, M.A., M.B.M.S.	29.720	29.720	29.720	29.720	29.720	29.720	29.720	29.720	29.720	29.720	29.720	29.720	29.720	29.720	29.720	29.720	29.720	29.720	29.720	
July	29	CARLISLE, L. CARTMILL, Esq., M.B.M.S.	29.730	29.730	29.730	29.730	29.730	29.730	29.730	29.730	29.730	29.730	29.730	29.730	29.730	29.730	29.730	29.730	29.730	29.730	29.730	
Aug.	29	CARLISLE, L. CARTMILL, Esq., M.B.M.S.	29.740	29.740	29.740	29.740	29.740	29.740	29.740	29.740	29.740	29.740	29.740	29.740	29.740	29.740	29.740	29.740	29.740	29.740	29.740	
Sept.	29	CARLISLE, L. CARTMILL, Esq., M.B.M.S.	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	
July	29	BYWELL, Mr. JOHN DAWSON, under the direction of T. SORWICK, Esq., F.R.S., M.B.M.S.	29.760	29.760	29.760	29.760	29.760	29.760	29.760	29.760	29.760	29.760	29.760	29.760	29.760	29.760	29.760	29.760	29.760	29.760	29.760	
Aug.	29	BYWELL, Mr. JOHN DAWSON, under the direction of T. SORWICK, Esq., F.R.S., M.B.M.S.	29.770	29.770	29.770	29.770	29.770	29.770	29.770	29.770	29.770	29.770	29.770	29.770	29.770	29.770	29.770	29.770	29.770	29.770	29.770	
Sept.	29	BYWELL, Mr. JOHN DAWSON, under the direction of T. SORWICK, Esq., F.R.S., M.B.M.S.	29.780	29.780	29.780	29.780	29.780	29.780	29.780	29.780	29.780	29.780	29.780	29.780	29.780	29.780	29.780	29.780	29.780	29.780	29.780	
July	29	ALLENHEADS, THOMAS BEWICK, Esq., C.E., Assistant to T. SOR- WICK, Esq., F.R.S., &c.	29.790	29.790	29.790	29.790	29.790	29.790	29.790	29.790	29.790	29.790	29.790	29.790	29.790	29.790	29.790	29.790	29.790	29.790	29.790	
Aug.	29	ALLENHEADS, THOMAS BEWICK, Esq., C.E., Assistant to T. SOR- WICK, Esq., F.R.S., &c.	29.800	29.800	29.800	29.800	29.800	29.800	29.800	29.800	29.800	29.800	29.800	29.800	29.800	29.800	29.800	29.800	29.800	29.800	29.800	
Sept.	29	ALLENHEADS, THOMAS BEWICK, Esq., C.E., Assistant to T. SOR- WICK, Esq., F.R.S., &c.	29.810	29.810	29.810	29.810	29.810	29.810	29.810	29.810	29.810	29.810	29.810	29.810	29.810	29.810	29.810	29.810	29.810	29.810	29.810	
July	29	NORTH SHIELDS, ROBERT SHENCK, Esq.	29.820	29.820	29.820	29.820	29.820	29.820	29.820	29.820	29.820	29.820	29.820	29.820	29.820	29.820	29.820	29.820	29.820	29.820	29	

Second Rain gauges were placed at Exeter, 20 feet above the ground, the amount collected was 5.7 inches; at Clifton, 2



The mean temperature of the air at Greenwich for the three months ending November, constituting the three autumn months, was 50°·9, being 1°·5 above the average of the preceding 90 years.

1861. MONTHS.		Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.		
		Air.			Evaporation.		Dew Point.		Air— Daily Range.							Water of the Thames.
		Mean.	Diff. from ave- rage of 90 years.	Diff. from ave- rage of 20 years.	Mean.	Diff. from ave- rage of 20 years.	Mean.	Diff. from ave- rage of 20 years.	Mean.	Diff. from ave- rage of 20 years.						
October	54·9	+5·4	+4·7	53·1	+4·9	51·4	+5·4	16·4	+1·8	57·8	·379	in.	grs.			
Novem.	40·8	-1·6	-2·6	39·2	-2·6	37·1	-3·0	13·2	+1·6	44·5	·221	+·067	4·2			
Decem.	41·0	+2·1	+0·9	39·4	+0·8	37·3	+0·4	9·9	+0·4	—	·223	+·034	2·6			
Mean .	45·5	+2·0	+1·0	43·9	+1·0	41·9	+0·9	13·2	+1·3	—	·274	+·002	3·1			

1861. MONTHS.		Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horiz- ontal move- ment of the Air.	Reading of Thermometer on Grass.					
		Mean.	Diff. from ave- rage of 20 years.	Mean.	Diff. from ave- rage of 20 years.	Mean.	Diff. from ave- rage of 20 years.	Amount.	Diff. from ave- rage of 46 years.		Number of Nights it was		Low- est Read- ing at Night.	High- est Read- ing at Night.		
											At or below 30°.	Be- tween 30° and 40°.				
October	87	0	29·842	+0·152	536	-3	0·9	-1·9	Miles.	0	8	23	30·3			
Novem.	87	-2	29·561	-0·195	547	0	5·2	+2·8	180	18	9	3	16·5			
Decem.	87	-2	29·974	+0·169	555	+3	1·3	-0·7	320	12	17	1	19·6			
Mean .	87	-1	29·792	+0·042	546	0	Sum	Sum	220	Sum	Sum	Sum	Lowest			
							7·4	+0·2	246	30	34	27	16·5			

NOTE.—In reading this table it will be borne in mind that the sign (-) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred or thunder was heard and lightning seen on the 1st of October at Clifton, Brighton, Greenwich, Gloucester, and Grantham; on the 8th at Fairlight, Harrogate, Scarborough, Bywell, and North Shields; on the 11th at Aldershot, Brighton, Battersea, Rose Hill near Oxford, Diss, Norwich, Harrogate, and North Shields; and on the 22d at Belvoir Castle, Grantham. On the 1st of November at Guernsey and Pembroke; on the 2d at Guernsey; on the 6th at Hurstpierpoint; on the 7th and 8th at Guernsey; on the 9th at Exeter and Pembroke; on the 10th at Guernsey and Battersea; on the 11th at Guernsey, Clifton, and Fairlight; on the 15th at Guernsey; on the 16th at Pembroke, Bywell, and Allenheads; on the 17th at North Shields; and on the 23d and 24th at Guernsey. On the 8th of December at Helston, Truro, Little Bridy, and St. Paul's Parsonage; and on the 9th at Helston and St. Paul's Parsonage.

Thunder was heard but lightning was not seen on the 11th of October at Cardington and Bywell; on the 12th at Rose Hill near Oxford. On the 1st of November at Llandudno and Alnwick; on the 2d at Pembroke; on the 5th at Osborne; on the 10th at Pembroke and Greenwich; and on the 14th and 15th at Truro.

Lightning was seen but thunder was not heard on the 1st of October at Oxford and Cardington; on the 8th throughout the greater part of the country; on the 9th at Otley; on the 10th at Oxford; on the 11th at Clifton and Berkhamstead; and on the 14th at Harrogate. On the 1st of November at Clifton, Osborne, Brighton, Fairlight, Greenwich, Harrogate, Stonyhurst, and North Shields; on the 2d at Helston, Clifton, and Osborne; on the 15th at Allenheads, Stonyhurst, Ben Rhydding and North Shields; on the 6th at Greenwich, Cardington, and Leeds; on the 7th at Greenwich; on the 8th at Osborne, Fairlight, and Leeds; on the 9th at Teignmouth and Osborne; on the 10th at Helston, Brighton, and Rose Hill; on the 12th at Harrogate; on the 16th at Fairlight and North Shields; on the 23d at Truro and Brighton; and on the 30th at Brighton. On the 8th of December at Scarborough; and on the 9th at Truro.

Aurora were seen on the 10th of October at Greenwich and Brighton; on the 23d at Norwich; on the 25th at Allenheads; and on the 28th at Clifton, Pembroke, Diss, and Liverpool. On the 7th of November throughout the greater part of the country; on the 23d at Harrogate; and on the 24th at Greenwich. On the 1st of December at Fairlight and Bywell; on the 4th at Greenwich and Diss; on the 5th at Greenwich and St. Paul's Parsonage; on the 7th at Bywell; on the 10th at North Shields; on the 18th at Llandudno; on the 19th at Aldershot and Greenwich; and on the 20th at Greenwich and Bywell.

Solar halos were seen on the 5th of October at Berkhamstead; on the 6th at North Shields; on the 13th and 15th at Berkhamstead; and on the 22d at Grantham. On the 13th and 14th of November at Oxford; on the 15th at Clifton, Berkhamstead, and Cardington; and on the 22d at Nottingham. On the 9th of December at Oxford.

Lunar halos were seen on the 10th of October at Stonyhurst; on the 13th at North Shields; on the 14th at Lampeter, Liverpool, Stonyhurst, Bywell, and North Shields; on the 15th and 16th at Bywell; on the 17th at Stonyhurst and North Shields; on the 22d at Nottingham; on the 23d at North Shields; and on the 24th at Truro. On the 9th of November at Oxford, Berkhamstead,

Grantham, Nottingham, Harrogate, and Stonyhurst; on the 11th at Stonyhurst; on the 12th at Helston, Fairlight, Gloucester, Cardington, and Stonyhurst; on the 13th at North Shields; on the 14th at Hurstpierpoint, Oxford, Cardington, Nottingham, Thelwall, Stonyhurst, and North Shields; on the 15th at Berkhamstead, Cardington, and Nottingham; on the 16th and 17th at Stonyhurst and North Shields; on the 18th at Stonyhurst; on the 19th at Hurstpierpoint, Cardington, Nottingham, and Stonyhurst; on the 20th at Gloucester and Allenheads; on the 21st at Gloucester; on the 23d at Nottingham; on the 26th at Grantham; and on the 27th at Stonyhurst. On the 8th of December at Stonyhurst and Harrogate; on the 9th at Oxford, Stonyhurst, Harrogate, Belvoir Castle, Kingsley Parsonage near Frodsham, Nottingham, and Liverpool; on the 10th at Oxford; on the 11th at Osborne, Cardington, Leyton, Oxford, and Diss; on the 12th at Cardington; on the 13th at Rose Hill near Oxford; on the 14th at Aldershot, Oxford, and North Shields; on the 15th at Aldershot and Oxford; on the 16th at Aldershot; and on the 20th at Bywell and North Shields.

Snow fell on the 16th of October at Liverpool; on the 1st of November at Exeter, Oxford, Gloucester, Stonyhurst, Ben Rhydding, Otley, Scarborough, Allenheads, and Alnwick; on the 2d throughout the greater part of the country; on the 3d at Rose Hill; on the 5th at Nottingham; on the 10th at Harrogate and Allenheads; on the 11th at Grantham, Harrogate, Stonyhurst, Ben Rhydding, and Allenheads; on the 14th at Guernsey and Allenheads; on the 15th at Grantham, Bywell, and Allenheads; on the 16th throughout the greater part of the country; on the 17th at Pembroke, Greenwich, Berkhamstead, Norwich, Diss, Harrogate, Holkham, Otley, Scarborough, Bywell, Allenheads, and North Shields; on the 22d at Allenheads; on the 23d at Llandudno, Harrogate, Bywell, Allenheads, and North Shields; on the 24th at Gloucester; and on the 27th at Allenheads; on the 6th of December at Allenheads; and on the 22d at Fairlight.

Hail fell on the 11th of October at Grantham and Harrogate; on the 22d at Grantham; and on the 31st at Lampeter, Otley, and Stonyhurst. On the 1st of November at Guernsey, Helston, Pembroke, Liverpool, Alnwick, and North Shields; on the 2d at Helston, Truro, Exeter, Pembroke, Llandudno, and North Shields; on the 3d at Truro; on the 4th at Aldershot and Pembroke; on the 5th at Helston, Truro, Aldershot, Pembroke, Berkhamstead, and Harrogate; on the 6th at Truro and Hurstpierpoint near Brighton; on the 8th at Guernsey, Allenheads, and North Shields; on the 9th at Teignmouth, Exeter, Clifton, and North Shields; on the 10th at Guernsey, Hurstpierpoint, and Royston; on the 11th at Guernsey, Helston, Truro, Clifton, Berkhamstead, and Gloucester; on the 14th at Helston, Truro, Battersea, Scarborough, and North Shields; on the 15th at Guernsey, Truro, Scarborough, Bywell, and North Shields; on the 16th at Guernsey, in the south-west of England generally, at Grantham, Scarborough, and North Shields; on the 17th at North Shields; on the 21st at Harrogate and Otley; on the 22d and 23d at Harrogate, Otley, Stonyhurst and Liverpool, Llandudno and Scarborough; on the 24th at Stonyhurst; on the 26th at Allenheads; and on the 27th and 30th at Stonyhurst. On the 1st of December at Rose Hill, Oxford, and Liverpool; on the 5th at Stonyhurst; on the 8th at Little Bridy, Gloucester, and Allenheads; on the 9th at Berkhamstead and St. Paul's Parsonage; on the 11th at Rose Hill; and on the 19th at Guernsey.

Fog prevailed on 68 days during the quarter, of which 28 were in October, 16 in November, and 24 in December.

Dr. Hoskins, of Guernsey, remarks that the elm, lime, sycamore, and chesnut trees were in full leaf on the 15th of November.

Mr. Squire, of Berkhamstead, has remarked that the poplars were divested of leaves by the 7th of November; the sycamore and chesnut trees by the 10th; the lime and hazel by the 15th; the hawthorn by the end of the month. The elm and oak trees were divested of leaves by the 5th of December.

Mr. Jeans, of Grantham, remarked that the month of November was fine though stormy, and a more than average fall of rain; the autumnal tints were most beautiful, the leaves of most trees falling almost at the same time.

Mr. Ingram, of Belvoir Castle, remarked that the weather in October was favourable for farming operations; wheat-sowing was in progress during the early portion of November, and its growth has been healthy and regular, and it continues to bear a promising appearance. The best crops this year were those sown early last autumn; the result of the wheat crop so developed by increased threshing still exhibits an infirm crop in quantity, but the grain is good, and there is little waste. The turnip crop has proved an abundant one. The importance of this crop under the present system of farming has been well evidenced during the last two years, presenting the opposite results of a bad and good crop; the failure or deficiency of turnips in 1860 depressed the value of live stock, and deprived the land of the advantages given by stock when fed upon it; an abundant crop, however, this year, caused cattle to be everywhere sought for and their being considerably enhanced, more being in some instances given for sheep than their value in weight would have been to the butcher. Heliotrope and verbenas continued to blossom up to the end of October uninjured by the frost. Apples are exceedingly scarce and dear.

Rev. S. Perry, at Stonyhurst, remarked that a pear-tree was in blossom in the neighbourhood on the 8th of November, also strawberries.

Mr. Bewick, of Bywell, remarks that the weather during October was favourable for ploughing and getting the land in order for wheat sowing; little was done in November on the land, farmers being busy in securing their turnips, and supplying the markets with grain and potatoes.

Mr. Forbes, of Culloden, remarks that harvest operations in the upper districts concluded under favourable circumstances about the middle of October. Potatoes safely lifted, but the crop in itself much under an average yield; the roots, where not diseased, being small in size and few in number.



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Mean Reading of the Thermometer.	Mean Reading of the Thermometer in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.	Number of Days on which Rain fell.	Rain.	
																	Relative Proportion of								
																	N.	E.	S.	W.					
Guernsey	29.649	71.5	31.5	40.0	32.9	46.5	21.3	59.4	50.7	30.9	3.6	0.6	86	541	—	—	1.1	7	8	8	8	5.0	5.0	10	1.2
Helston	29.638	71.0	31.0	40.0	32.9	46.5	21.3	59.4	50.7	30.9	3.6	0.6	86	541	—	—	1.1	7	8	8	8	5.0	5.0	10	1.2
Truro	29.628	73.0	31.0	40.0	32.9	46.5	21.3	59.4	50.7	30.9	3.6	0.6	86	543	60.3	40.9	1.9	8	5	10	2.3	6.1	7.1	—	—
Torquay	29.640	71.5	31.5	40.0	32.9	46.5	21.3	59.4	50.7	30.9	3.6	0.6	86	543	—	—	1.9	8	6	8	8	—	—	—	—
Teignmouth	29.644	66.1	24.2	42.3	32.5	42.0	29.2	50.7	40.7	22.0	3.8	0.8	84	547	—	—	2.2	—	—	—	—	4.8	—	—	—
Exeter (St. Leonard's)	29.628	74.0	19.5	54.5	53.0	49.0	35.7	13.8	16.7	42.0	290	3.2	0.5	546	—	—	1.0	6	6	12	6.7	7.1	4.7	—	—
Exeter (200 High-st.)	29.636	66.7	21.2	45.5	35.1	40.8	26.0	59.1	49.5	36.6	34	1.5	86	546	61.6	36.8	1.2	8	5	6	8	4.3	5.4	6.1	—
Venator	—	68.0	30.0	38.0	32.7	45.5	25.0	7.3	10.1	41.1	—	—	—	543	—	—	0.8	8	5	9	9	—	5.5	—	—
Osborne	29.640	73.5	24.9	43.0	33.6	41.1	29.0	12.4	14.7	34.5	—	—	—	543	—	—	2.0	5	9	7	6	5.5	5.9	—	—
Worthing	29.626	67.2	28.1	39.1	31.1	46.2	24.9	8.7	14.7	24.0	—	—	—	546	—	—	1.0	11	6	6	7	4.0	5.9	6.9	—
Fairlight	29.640	73.0	31.0	40.0	32.9	46.5	21.3	59.4	50.7	30.9	3.6	0.6	86	546	—	—	1.0	11	6	6	7	4.0	5.9	6.9	—
Little Bridy	29.630	68.9	24.1	37.5	29.5	42.4	23.6	9.2	14.5	24.8	—	—	—	546	—	—	0.8	5	9	7	6	5.5	5.9	6.9	—
St. John's Col. nr. Brighton	29.636	75.5	19.0	57.5	55.3	50.2	35.5	12.9	16.5	44.2	—	—	—	546	—	—	0.9	5	8	7	11	6.9	6.8	5.4	—
Barnstable	29.647	73.0	19.0	54.0	53.3	54.1	35.2	11.1	17.4	44.1	—	—	—	545	—	—	1.4	7	8	8	8	—	5.2	—	—
Petersfield	29.722	73.0	18.8	54.2	51.3	53.8	34.2	12.8	15.1	41.1	—	—	—	546	—	—	1.4	7	8	8	8	—	5.1	—	—
Aldershot Camp	29.699	74.5	21.5	53.3	51.6	50.9	34.3	11.7	13.3	42.1	—	—	—	543	62.5	33.6	1.5	5	8	9	9	—	5.7	—	—
Clifton	29.672	69.0	24.9	45.0	37.0	41.0	31.0	10.6	14.9	41.0	—	—	—	546	—	—	1.3	6	8	8	8	1.5	6.3	5.3	—
Pembroke Dockyard	29.683	70.0	25.5	45.5	33.8	41.1	28.7	11.5	16.6	42.7	—	—	—	546	—	—	1.5	4	6	6	5	8	6.4	5.5	—
Royal Observatory	29.698	75.0	23.3	52.4	52.4	50.3	34.7	13.1	15.6	41.9	—	—	—	546	—	—	1.7	3	14	4	—	—	6.6	3.5	—
Regent's Park	29.684	71.0	21.0	48.0	37.0	43.0	30.5	10.6	14.9	41.7	—	—	—	546	—	—	1.3	6	7	8	8	—	—	—	—
St. John's Wood	29.701	72.0	20.5	48.5	37.5	43.0	30.5	10.6	14.9	41.7	—	—	—	546	—	—	1.3	6	7	8	8	—	—	—	—
Guilford	29.688	67.0	28.7	35.0	29.0	42.0	25.1	8.9	17.0	35.4	—	—	—	545	—	—	—	6	7	8	10	—	7.0	4.4	—
Camden Town	29.682	74.7	21.6	53.1	52.0	53.7	34.2	13.3	15.5	43.0	—	—	—	546	—	—	—	6	7	8	11	0.4	6.0	—	—
Battersea	29.705	75.0	21.8	53.5	52.0	53.9	34.5	12.6	16.0	41.7	—	—	—	546	—	—	—	6	7	8	9	4.4	4.3	—	—
Leyton (Essex)	29.687	74.0	20.3	53.3	51.7	53.7	34.7	13.7	14.9	41.9	—	—	—	546	—	—	—	6	7	8	9	—	—	—	—
Rose Hill near Oxford	29.648	75.5	18.8	56.7	50.1	53.2	36.6	14.9	18.3	39.4	—	—	—	546	—	—	1.7	3	6	13	9	—	6.1	3.3	—
Oxford	29.689	71.3	20.8	50.5	50.9	50.9	33.1	11.0	14.9	40.5	—	—	—	546	—	—	1.4	7	5	10	9	2.7	7.1	3.8	—
Banbury	29.693	73.0	18.5	55.5	50.8	52.8	33.5	11.2	14.9	40.8	—	—	—	546	—	—	1.4	6	7	10	8	—	6.5	3.8	—
Great Berkhamstead	29.640	73.4	19.0	53.5	51.8	53.7	33.2	11.2	15.0	41.1	—	—	—	546	—	—	0.7	7	7	8	8	5.0	6.1	4.7	—
Hartwell House	29.672	74.1	21.2	52.8	51.1	50.8	33.8	13.2	14.4	43.0	—	—	—	546	—	—	0.8	9	4	11	6	5.6	5.6	4.1	—
Hartwell Rectory	29.699	73.5	21.5	54.1	52.3	53.8	33.6	13.3	14.7	41.3	—	—	—	546	—	—	0.9	5	8	10	—	6.0	—	—	—
Royston	29.645	70.5	21.0	45.1	35.0	42.0	25.1	8.9	17.0	35.4	—	—	—	545	—	—	—	5	11	10	4	8	5.9	4.7	—
Gloucester	29.677	74.0	19.0	55.0	51.7	53.7	33.8	13.6	14.4	40.8	—	—	—	546	—	—	1.0	6	7	9	—	—	6.5	4.0	—
Cardington	29.658	73.0	18.2	52.8	48.2	44.1	29.4	7.2	14.8	40.8	—	—	—	546	—	—	—	7	7	12	—	—	3.5	4.4	—
Aspley	29.653	73.0	19.0	51.5	41.1	39.3	34.7	12.1	15.5	40.8	—	—	—	546	—	—	—	7	7	12	—	—	6.7	5.5	—
Bedford	29.645	68.4	19.4	34.4	26.0	35.3	23.5	13.3	14.6	40.9	—	—	—	545	—	—	0.5	8	9	10	7	3.7	7.2	—	—
Lampeter	29.697	73.0	23.5	49.5	50.7	50.8	33.1	11.8	14.9	40.7	—	—	—	546	—	—	0.5	8	9	10	7	3.7	7.2	—	—
Llandudno	29.722	74.0	22.0	52.0	51.1	50.8	32.7	12.5	12.6	44.0	—	—	—	546	—	—	1.5	4	6	10	9	1.7	6.2	3.9	—
Norwich	29.693	71.0	22.2	49.5	49.2	41.1	32.7	8.2	14.4	41.3	—	—	—	546	—	—	0.5	7	11	18	1.4	6.6	6.6	—	—
Diss (Norfolk)	29.628	73.0	18.8	54.1	51.7	53.8	34.4	13.2	14.4	43.0	—	—	—	544	—	—	1.5	4	2	15	10	—	6.7	4.8	—
Grantham	29.699	73.0	18.8	54.1	51.7	53.8	34.4	13.2	14.4	43.0	—	—	—	544	—	—	1.5	4	2	15	10	—	6.7	4.8	—
Belvoir Castle	29.699	73.0	18.8	54.1	51.7	53.8	34.4	13.2	14.4	43.0	—	—	—	544	—	—	1.5	4	2	15	10	—	6.7	4.8	—
Derby	29.699	73.0	18.8	54.1	51.7	53.8	34.4	13.2	14.4	43.0	—	—	—	544	—	—	1.5	4	2	15	10	—	6.7	4.8	—
Holkham	29.699	73.0	18.8	54.1	51.7	53.8	34.4	13.2	14.4	43.0	—	—	—	544	—	—	1.5	4	2	15	10	—	6.7	4.8	—
Nottingham	29.699	73.0	18.8	54.1	51.7	53.8	34.4	13.2	14.4	43.0	—	—	—	544	—	—	1.5	4	2	15	10	—	6.7	4.8	—
Harwarden	29.699	73.0	18.8	54.1	51.7	53.8	34.4	13.2	14.4	43.0	—	—	—	544	—	—	1.5	4	2	15	10	—	6.7	4.8	—
Liverpool Observatory	29.679	67.0	28.8	41.1	25.1	44.7	26.7	8.4	16.1	24.1	—	—	—	546	—	—	1.6	5	8	11	1.4	—	4.1	—	—
Wakefield	29.650	71.7	19.5	55.2	49.6	53.6	38.9	13.3	13.7	40.0	—	—	—	546	—	—	1.1	7	5	12	6	—	6.7	4.8	—
Manchester (Frodham)	29.614	70.2	19.0	51.1	25.0	46.3	26.5	13.6	14.3	40.4	—	—	—	546	—	—	1.1	7	5	12	6	—	6.7	4.8	—
Kingsley Parsonage, near Leeds	29.651	60.9	19.1	49.8	49.8	47.7	36.5	12.2	14.3	39.7	—	—	—	546	—	—	1.1	7	5	12	6	—	6.7	4.8	—
Harrogate	29.620	64.9	0.0	47.2	35.4	41.0	11.4	13.3	39.7	29.0	—	—	—	546	—	—	1.6	5	8	11	1.4	—	4.1	—	—
Stonyhurst	29.611	70.5	15.8	43.5	37.7	36.0	30.9	10.1	12.6	39.3	—	—	—	546	—	—	1.1	7	5	12	6	—	6.7	4.8	—
Otley	29.615	64.8	25.5	39.8	48.3	33.3	23.0	9.7	15.5	40.3	—	—	—	546	—	—	1.3	2	7	4	15	—	6.7	4.8	—
Stonley	29.625	70.0	22.0	48.0	49.1	53.8	33.3	10.6	13.3	40.6	—	—	—	546	—	—	1.3	2	7	4	15	—	6.7	4.8	—
York	29.642	67.8	19.0	53.8	49.5	53.8	33.3	10.6	13.3	40.6	—	—	—	546	—	—	1.3	2							



[illegible][illegible]



Year 1861.	Month.	Pressure of Atmosphere in Month.		Temperature of Air in Month.			Mean Temperature.		Vapour.		Mean Dew Point.		Mean Reading of Thermometer.		Wind.		Rain.	
		Mean.	Range.	Highest.	Lowest.	Range.	Or all Highest.	Or all Lowest.	Mean.	Elastic Force.	Air.	Dew Point.	Maximum in Shade.	Minimum on Grass.	Direction.	Force.	Amount of Days.	Amount collected.
LEEDS PHILOSOPHICAL HALL, HENRY DENNY, Esq., A.L.S.	Oct.	29.551	1.000	69.0	32.0	37.0	51.0	41.5	12.5	30.2	44.4	44.4	57.6	48.0	8	14	14	1.5
	Nov.	29.289	1.270	53.0	20.0	33.0	43.0	32.0	13.0	29.4	33.9	33.9	54.4	45.0	9	14	14	1.2
	Dec.	29.743	1.354	53.0	20.0	33.0	43.0	32.0	13.0	29.4	33.9	33.9	54.4	45.0	9	14	14	1.2
	Mean.	29.527	1.174	53.0	20.0	33.0	43.0	32.0	13.0	29.4	33.9	33.9	54.4	45.0	9	14	14	1.2
STONTHURST COLLEGE, REV. S. PERRY, M.A.	Oct.	29.552	1.181	70.5	33.0	37.5	58.7	44.8	13.9	31.6	47.4	47.4	58.5	48.0	9	14	14	1.5
	Nov.	29.163	1.317	55.7	19.1	36.6	44.9	33.4	11.5	29.0	34.9	34.9	52.1	43.0	7	13	13	1.0
	Dec.	29.652	1.410	54.1	15.8	38.3	44.3	34.4	9.9	29.3	33.6	33.6	52.1	43.0	7	13	13	1.0
	Mean.	29.455	1.324	56.8	22.6	37.8	46.3	34.2	11.8	29.8	35.3	35.3	52.1	43.0	7	13	13	1.0
YORK, JOHN FORD, Esq.	Oct.	29.266	1.082	70.0	34.0	36.0	49.1	46.7	12.4	32.3	46.9	46.9	54.1	45.0	9	14	14	1.5
	Nov.	29.382	1.306	56.5	24.0	32.5	46.7	34.5	11.2	29.4	35.7	35.7	54.1	45.0	9	14	14	1.5
	Dec.	29.608	1.408	56.0	22.0	34.0	46.7	34.5	11.2	29.4	35.7	35.7	54.1	45.0	9	14	14	1.5
	Mean.	29.418	1.265	57.2	27.0	34.2	47.4	37.1	11.3	29.9	37.2	37.2	54.1	45.0	9	14	14	1.5
SCARBOROUGH, R. CHAMPEL, Esq.	Oct.	29.548	1.300	65.0	42.0	23.0	55.6	48.9	6.7	32.7	50.3	50.3	54.1	45.0	9	14	14	1.5
	Nov.	29.528	1.300	65.0	42.0	23.0	55.6	48.9	6.7	32.7	50.3	50.3	54.1	45.0	9	14	14	1.5
	Dec.	29.628	1.100	57.0	25.0	32.0	44.1	37.1	7.0	32.7	50.3	50.3	54.1	45.0	9	14	14	1.5
	Mean.	29.574	1.234	57.3	30.7	28.0	45.8	38.0	6.6	32.7	50.3	50.3	54.1	45.0	9	14	14	1.5
BEN RHYDDING, R. C. TAYLOR, Esq.	Oct.	29.385	1.005	69.0	35.0	34.0	57.7	44.9	12.8	31.5	48.7	48.7	53.9	45.0	9	14	14	1.5
	Nov.	29.001	1.004	54.0	20.0	34.0	44.8	34.1	10.7	29.1	38.0	38.0	53.9	45.0	9	14	14	1.5
	Dec.	29.720	1.088	64.8	37.0	27.8	55.5	45.8	9.8	30.9	47.7	47.7	53.9	45.0	9	14	14	1.5
	Mean.	29.368	1.031	62.6	30.7	30.6	51.0	41.9	11.1	30.3	45.8	45.8	53.9	45.0	9	14	14	1.5
H. W. THOMAS, Esq.	Oct.	29.720	1.088	64.8	37.0	27.8	55.5	45.8	9.8	30.9	47.7	47.7	53.9	45.0	9	14	14	1.5
	Nov.	29.380	1.130	60.0	27.0	33.0	45.2	35.0	10.8	29.7	37.8	37.8	53.9	45.0	9	14	14	1.5
	Dec.	29.873	1.054	61.5	25.0	36.5	45.0	36.1	8.9	30.9	47.7	47.7	53.9	45.0	9	14	14	1.5
	Mean.	29.658	1.091	62.1	29.0	30.8	48.6	38.6	9.5	30.5	45.8	45.8	53.9	45.0	9	14	14	1.5
THE WALL NEAR WARRINGTON, J. ATKINSON, Esq.	Oct.	29.875	1.102	67.8	32.0	35.8	50.5	44.8	14.7	32.1	49.1	49.1	54.1	45.0	9	14	14	1.5
	Nov.	29.584	1.464	55.6	29.0	26.6	44.8	34.0	10.3	29.8	38.6	38.6	54.1	45.0	9	14	14	1.5
	Dec.	29.794	1.388	53.8	29.0	24.8	44.3	34.0	10.3	29.8	38.6	38.6	54.1	45.0	9	14	14	1.5
	Mean.	29.754	1.318	55.7	30.3	27.1	46.4	34.3	11.8	29.9	40.5	40.5	54.1	45.0	9	14	14	1.5
HARROGATE (Yorkshire), J. COULLAND, Esq.	Oct.	29.573	1.086	67.0	35.0	32.0	53.5	44.6	11.9	30.2	48.1	48.1	54.1	45.0	9	14	14	1.5
	Nov.	29.160	1.386	52.7	23.0	29.7	42.3	34.7	10.7	29.8	38.6	38.6	54.1	45.0	9	14	14	1.5
	Dec.	29.680	1.404	54.2	21.5	32.7	42.3	34.7	10.7	29.8	38.6	38.6	54.1	45.0	9	14	14	1.5
	Mean.	29.474	1.292	54.6	26.4	30.8	42.3	34.7	10.7	29.8	38.6	38.6	54.1	45.0	9	14	14	1.5
ST. PAUL'S PARSONAGE, near SILLOTH, CUMBERLAND, REV. F. REDFORD, M.A., M.B.M.S.	Oct.	29.523	1.287	70.2	32.1	38.1	53.9	44.9	13.9	31.5	48.7	48.7	54.1	45.0	9	14	14	1.5
	Nov.	29.548	1.371	54.0	18.3	35.7	44.9	34.8	10.1	29.8	38.6	38.6	54.1	45.0	9	14	14	1.5
	Dec.	29.629	1.632	54.0	16.0	38.0	43.2	34.2	9.0	29.8	38.6	38.6	54.1	45.0	9	14	14	1.5
	Mean.	29.567	1.430	56.0	22.1	37.3	44.0	34.6	11.0	29.8	38.6	38.6	54.1	45.0	9	14	14	1.5
L. CARMELL, Esq., M.B.M.S.	Oct.	29.840	1.125	65.0	32.5	32.5	53.3	44.0	14.3	31.0	46.9	46.9	54.1	45.0	9	14	14	1.5
	Nov.	29.868	1.184	70.0	32.0	38.0	53.0	42.8	16.4	31.2	44.7	44.7	54.1	45.0	9	14	14	1.5
	Dec.	29.432	1.541	55.0	20.0	35.0	45.1	33.1	13.0	29.5	38.6	38.6	54.1	45.0	9	14	14	1.5
	Mean.	29.710	1.284	61.7	27.5	35.0	50.4	43.4	14.6	30.4	43.8	43.8	54.1	45.0	9	14	14	1.5
Mr. JOHN DAWSON, under the direction of T. SOWTH, Esq., F.R.S., M.B.M.S.	Oct.	29.875	1.102	67.8	32.0	35.8	50.5	44.8	14.7	32.1	49.1	49.1	54.1	45.0	9	14	14	1.5
	Nov.	29.584	1.464	55.6	29.0	26.6	44.8	34.0	10.3	29.8	38.6	38.6	54.1	45.0	9	14	14	1.5
	Dec.	29.794	1.388	53.8	29.0	24.8	44.3	34.0	10.3	29.8	38.6	38.6	54.1	45.0	9	14	14	1.5
	Mean.	29.754	1.318	55.7	30.3	27.1	46.4	34.3	11.8	29.9	40.5	40.5	54.1	45.0	9	14	14	1.5
ALLENHEADS, THOMAS REWICK, Esq., C.E., Assistant to T. SOWTH, with Esq., F.R.S., &c.	Oct.	29.573	1.086	67.0	35.0	32.0	53.5	44.6	11.9	30.2	48.1	48.1	54.1	45.0	9	14	14	1.5
	Nov.	29.160	1.386	52.7	23.0	29.7	42.3	34.7	10.7	29.8	38.6	38.6	54.1	45.0	9	14	14	1.5
	Dec.	29.680	1.404	54.2	21.5	32.7	42.3	34.7	10.7	29.8	38.6	38.6	54.1	45.0	9	14	14	1.5
	Mean.	29.474	1.292	54.6	26.4	30.8	42.3	34.7	10.7	29.8	38.6	38.6	54.1	45.0	9	14	14	1.5
NORTH SHIELDS, ROBERT SPENCE, Esq.	Oct.	29.920	1.201	69.2	34.2	35.0	56.4	45.1	11.3	30.1	46.6	46.6	54.1	45.0	9	14	14	1.5
	Nov.	29.920	1.201	69.2	34.2	35.0	56.4	45.1	11.3	30.1	46.6	46.6	54.1	45.0	9	14	14	1.5
	Dec.	29.920	1.201	69.2	34.2	35.0	56.4	45.1	11.3	30.1	46.6	46.6	54.1	45.0	9	14	14	1.5
	Mean.	29.920	1.201	69.2	34.2	35.0	56.4	45.1	11.3	30.1	46.6	46.6	54.1	45.0	9	14	14	1.5
HIGH HOUSE (Aberwick), MR. SCOTT, for His Grace the Duke of Northumberland.	Oct.	29.548	1.104	64.0	36.0	28.0	53.1	41.7	11.4	48.2	44.7	44.7	54.1	45.0	9	14	14	1.5
	Nov.	29.548	1.104	64.0	36.0	28.0	53.1	41.7	11.4	48.2	44.7	44.7	54.1	45.0	9	14	14	1.5
	Dec.	29.548	1.104	64.0	36.0	28.0	53.1	41.7	11.4	48.2	44.7	44.7	54.1	45.0	9	14	14	1.5
	Mean.	29.548	1.104	64.0	36.0	28.0	53.1	41.7	11.4	48.2	44.7	44.7	54.1	45.0	9	14	14	1.5

Second Rain gauge was placed at Exeter, 20 feet above the ground, the amount collected was 7.7 inches; at Clifton, 50 feet, 7.7 inches; at Guildhall, 77 feet, 6.1 inches; at Cardington, 36 feet, 4.6 inches; at Exeter, 22 feet, 5.2 inches; at Dis, 5.8 inches; at Halkham, 4 feet, 5.9 inches; at Nottingham, 25 feet, 4.6 inches; at Allenheads, 63 feet, 10.9 inches; at Hartwell Rectory, 4 feet, 1.1 inch; and at Harrogate, 34 feet, 1.1 inch.

ERRATA.—In the Quarterly Report for the Quarter ending September 30th 1861, the mean reading of the barometer, at Liverpool, for 28.691 inches, read 29.691 inches; also the rain-fall at Clifton, for July and August, for 4.2 read 4.5, and for 2.3 read 2.6 inches; and in the Table of Rain, for the Quarter ending September 30th 1861, the amount collected, at Exeter, for 7.7 read 7.2 inches; at Clifton, for 7.7 read 7.2 inches; at Guildhall, for 6.1 read 6.1 inches; at Cardington, for 4.6 read 4.6 inches; at Exeter, for 5.2 read 5.2 inches; at Dis, for 5.8 read 5.8 inches; at Halkham, for 4.0 read 4.0 inches; at Nottingham, for 25.0 read 25.0 inches; at Allenheads, for 63.0 read 63.0 inches; at Hartwell Rectory, for 4.0 read 4.0 inches; and at Harrogate, for 34.0 read 34.0 inches.

## ON THE METEOROLOGY OF ENGLAND, DURING THE QUARTER ENDING MARCH 31, 1862.

REMARKS ON THE WEATHER during the QUARTER ending 31st of MARCH 1862. By JAMES GLAISHER, Esq., F.R.S., &c., Secretary of the British Meteorological Society.

Till the 6th of January the mean daily temperature of the air was  $3^{\circ}$  below the average; from the 7th to the 15th was  $7\frac{1}{2}^{\circ}$  above; then for the next six days was  $8^{\circ}$  below. A period of warm weather followed extending to the 6th of February; within which some of the days were as much as  $13^{\circ}$  to  $15^{\circ}$  in excess, and the average daily excess for the 15 days was  $8^{\circ}$ . From the 7th of February to the 16th was cold; the daily defect of temperature was  $3\frac{1}{2}^{\circ}$ . The next six days were in excess to the amount of  $8^{\circ}$  daily; then from the 24th of February to the 5th of March there was a daily deficiency of  $5\frac{1}{2}^{\circ}$ , followed by a period of nine days whose daily average was  $7^{\circ}$  in excess; this period was succeeded by another ending the 21st of March, of deficient temperature to the amount of  $2\frac{1}{2}^{\circ}$  daily; and from the 21st of March to the end of the quarter there was an excess of temperature to the amount of  $6^{\circ}$  daily. Therefore during the whole of the past three months the temperature of the air has been for a few days together cold, and then for a few days together warm, and so on alternately; the former or cold periods have varied from five to nine days, and been of somewhat longer duration than the cold periods, and have also been generally more in excess of the average than the cold periods have been in defect, so that upon the quarter the temperature has been in excess, and would class as a warm period. I have no recollection of such a succession of hot and cold periods of nearly equal lengths.

The mean high day temperature in January averaged  $3\frac{3}{4}^{\circ}$ , and February  $1\frac{3}{4}^{\circ}$  above, whilst in March it was  $0^{\circ} \cdot 1$  below their respective averages.

The mean low night temperature in January was  $1^{\circ}$  nearly, in February  $3\frac{1}{4}^{\circ}$ , and in March  $3^{\circ}$ , in excess of their respective averages.

Therefore the days in January and February were warm, and in March of just average temperature; whilst the nights were warm in January, and much more so in both February and March.

The mean temperature of the air was  $0^{\circ} \cdot 9$  in excess in January,  $2\frac{1}{2}^{\circ}$  in excess in February, and  $10^{\circ} \cdot 3$  in March, as compared with the averages of the preceding 21 years, chiefly due to the warm nights in February.

The mean temperature of the dew point was  $0^{\circ} \cdot 6$  below its average in January,  $2^{\circ}$  above in February, and  $2^{\circ} \cdot 9$  above in March. The mean for the quarter was nearly  $1\frac{1}{2}^{\circ}$  in excess; therefore the amount of water mixed with the air was less in January and greater in February and March.



1862. MONTHS.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.	Reading of Thermometer on Grass.				
	Mean.	Diff. from average of 21 years.	Mean.	Diff. from average of 21 years.	Mean.	Diff. from average of 21 years.	Amount.	Diff. from average of 46 years.		Number of Nights it was			Lowest Reading at Night.	Highest Reading at Night.
										At or below 30°.	Between 30° and 40°.	Above 40°.		
January	85	- 4	in. 29.705	-0.064	grs. 552	- 2	in. 1.9	-0.1	Miles. 255	18	10	3	0	0
February	84	- 1	29.905	+0.122	553	0	0.5	-1.1	223	7	15	6	13.4	43.1
March	86	+ 4	29.498	-0.286	544	- 6	3.7	+2.2	237	8	13	10	14.0	48.0
Mean	85	0	29.703	-0.076	549	- 3	Sum 6.1	Sum +1.2	Mean 238	Sum 33	Sum 38	Sum 19	Lowest 13.4	Highest 48.0

NOTE.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred or thunder was heard and lightning seen on the 9th of January at Bywell and North Shields; on the 23d at Helston and Gloucester; on the 24th at Exeter, Little Bridy, Bath, Rose Hill, Gloucester, Bedford, and Grantham; on the 27th at Pembroke; and on the 28th at Bath and Pembroke. On February the 20th at Stonyhurst; and the 24th at Banbury. On March 3d at Guernsey; on the 9th at Hurstpierpoint near Brighton; on the 23d at Guernsey; and on the 31st at Grantham.

Thunder was heard but lightning was not seen on the 23d of January at Truro and Little Bridy; and on the 28th at Clifton. On the 18th of February at Bournemouth near Poole; and on the 20th at Otley. On the 19th of March at Aldershot; on the 25th at Little Bridy; and on the 31st at Downside near Bath.

Lightning was seen but thunder was not heard on the 4th of January at Guernsey; on the 8th at Stonyhurst and St. Paul's Parsonage; on the 9th at St. Paul's Parsonage and Culloden; on the 20th at Exeter; on the 23d at Clifton and Pembroke; and on the 24th at Clifton and Cardington. On the 2d of February at Hurstpierpoint near Brighton, and Harrogate; and on the 8th of March at Aldershot, Clifton, Hurstpierpoint near Brighton, Greenwich, Camden Town, Leyton, Oxford and Royston.

Aurora were seen on the 25th of January at Clifton. On the 8th of February at Royston; on the 18th at Hurstpierpoint near Brighton; on the 26th at Thelwall near Warrington; on the 27th at Harrogate; and on the 28th at Grantham, Belvoir Castle, Stonyhurst, Otley, Thelwall, and Harrogate. On the 2d of March at Thelwall.

Solar halos were seen on the 12th, 16th, and 17th of January at Berkhamstead; and on the 23d at Clifton. On the 6th of February at Berkhamstead, Royston, and Thelwall near Warrington; on the 7th at Leyton; on the 15th at Oxford; on the 16th at Leyton and Berkhamstead; on the 19th at Oxford; on the 21st at Leyton and Oxford; and on the 28th at Little Bridy. On the 4th of March at Oxford; on the 5th at Leyton, Cardington, Grantham, and North Shields; on the 6th at Leyton; on the 7th at Leyton and Oxford; on the 8th at Leyton; on the 11th at Little Bridy; on the 12th at Leyton; on the 16th at Lampeter; on the 22d at Clifton, Downside near Bath, and Lampeter; on the 25th at Leyton; on the 27th at Leyton and Berkhamstead; on the 29th at Leyton; on the 30th at Little Bridy, Royston, Leyton, and Lampeter; and on the 31st at Leyton.

Lunar halos were seen at different stations on the evenings of January 4th, 5th, 6th, 7th, 9th, 10th, 11th, 12th, 13th, 14th, 17th, 21st, and 23d. On February 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, and 16th. On March 7th, 8th, 9th, 10th, 11th, 12th, 15th, 21st, and 23d.

Snow fell on the 5th of January at Norwich and Allenheads; on the 6th at Norwich and Kingsley; on the 14th at Allenheads; on the 15th at Oxford, Bradford, and Allenheads; on the 16th at North Shields; on the 17th at Bywell; on the 18th at Stonyhurst, Silloth, and Allenheads; on the 19th at Hurstpierpoint near Brighton, Llandudno, and Silloth; on the 20th at Guernsey, Clifton, Pembroke, Oxford, Banbury, Llandudno, Norwich, Grantham, Scarborough, Harrogate, Allenheads, and North Shields; on the 21st at Bournemouth near Poole, Osborne, Fairlight, Little Bridy, Aldershot, Clifton, Petersfield, Downside near Bath, Greenwich, Camden Town, Pembroke, Rose Hill, Berkhamstead, Banbury, Royston, Gloucester, Cardington, Llandudno, Grantham, Bradford, Scarborough, Harrogate, Allenheads, and North Shields; on the 22d at Camden Town, Grantham, Liverpool, Wakefield, Bradford, Stonyhurst, Harrogate, and Allenheads; on the 23d at Wakefield; on the 25th at Culloden; and on the 27th at Berkhamstead. On the 6th of February at Harrogate, Allenheads, North Shields, Alnwick, and Culloden; on the 7th at London, Leyton, Cardington, Norwich, Diss, Grantham, Bradford, Stonyhurst, Scarborough, Otley, Bywell, Allenheads, North Shields, Alnwick and Culloden; on the 8th at Fairlight, Brighton, Leyton, Berkhamstead, Banbury, Royston, Norwich, and Belvoir; on the 9th at Brighton, Leyton, Oxford, Berkhamstead, Banbury, Royston, Cardington, Grantham, and Belvoir; on the 10th at Fairlight and Cardington; on the 11th at Grantham; on the 13th at Berkhamstead; on the 15th at Allenheads; on the 16th at Grantham and Allenheads; on the 22d at Oxford; on the 24th at Allenheads; on the 25th at Otley and Allenheads; on the 26th at Bradford and Harrogate; on the 27th at Grantham, Bradford, Stonyhurst, Harrogate, Bywell, Allenheads, North Shields, and Culloden; and on the 28th at Allenheads. On the 1st of March at Exeter, Aldershot, and North Shields; on the 2d at Little Bridy, Barnstaple, Lampeter, Bradford, Stonyhurst, Otley, Silloth, and North Shields; on the 3d throughout the greater part of the country; on the 4th at Guernsey, Truro, Exeter, Little Bridy, Llandudno, Norwich, Grantham, Liverpool, Eccles near Manchester, Bradford, Kingsley, Stonyhurst, Otley, Thelwall, Harrogate, Silloth, and North Shields; on the 5th at Berkhamstead, Grantham, Liverpool, Bradford, Stony-

hurst, Otley, Harrogate, and North Shields; on the 7th at Clifton; on the 17th at Downside near Bath, Gloucester, and North Shields; on the 20th, 21st, and 23d throughout the greater part of the country; on the 24th and 25th at Harrogate; on the 26th at Silloth; and on the 30th and 31st at Gloucester.

Hail fell on the 5th of January at North Shields; on the 8th at Stonyhurst, Otley, Allenheads, and Bradford; on the 9th at Bywell, Allenheads, and North Shields; on the 10th at Bradford; on the 11th at Berkhamstead and Allenheads; on the 14th at Helston; on the 17th at Thelwall near Warrington and North Shields; on the 20th at North Shields; on the 21st at Guernsey; on the 22d at Helston, Little Bridy, and Petersfield; on the 23d at Truro; on the 24th at Little Bridy, Downside near Bath, Gloucester and Grantham; and on the 28th at Downside. On the 3d and 4th of February at Helston; on the 6th at Grantham and Culloden; on the 7th at Stonyhurst, Thelwall near Warrington, and North Shields; on the 8th and 9th at London; on the 20th at Exeter, Little Bridy, Rose Hill near Oxford, Oxford, Banbury, Liverpool, and North Shields; and on the 27th at Guernsey. On the 2d of March at Barnstaple; on the 3d at Truro, Exeter, Lampeter, Llandudno, and North Shields; on the 4th at Helston, Truro, and North Shields; on the 5th at Silloth; on the 13th at Harrogate; on the 18th at Thelwall near Warrington; on the 19th at North Shields; on the 20th and 21st at Otley, Bradford, and North Shields; on the 23d at Berkhamstead, Scarborough, and Harrogate; on the 24th at Rose Hill; and on the 31st at Rose Hill near Oxford, Oxford, Royston, and Cardington.

Fog was prevalent on 68 days during the quarter, of which 25 were in January, 19 in February, and 24 in March.

At Fairlight a missel thrush was heard singing on the 30th of January, and a blackbird on the 15th of February; laurels were blossoming on the 12th of February; a willow palm was in leaf, and periwinkle, stonecrop, and blind nettle were in flower on the 23d.

At Berkhamstead vegetation is rather forward; mezerion, aconite, spurge laurel, snowdrop, and heath were in flower at the end of January; white aconite on the 3d of February; crocus on the 19th; leaf buds of hawthorns first appeared on the 8th of March, and of limes on the 25th of March; peach trees were in blossom on the 25th and apricots on the 27th; bees were first seen on the 20th of February, a missel thrush was heard singing on the same day; and blackbirds on the 24th of March.

At Gloucester apricot trees were in blossom on the 7th of March; a flock of martins arrived on the 25th.

At Aspley a brimstone butterfly was caught on the 4th of January.

At Guernsey field elms were in leaf on the 20th of March; leaf buds of sycamore, horse chesnut, and hawthorn trees first appeared on the 20th, they were in full leaf by the end of the month; peach and plum trees were in blossom on the 25th.

At Helston hawthorn trees were in leaf on the 17th of March; pear and plum trees in blossom on the 28th; a cuckoo was seen on the 24th of March.

At Hurstpierpoint near Brighton the hawthorn and horse chesnut trees were in blossom by the 25th of March.

At Little Bridy, in March, the excessive rain prevented all agricultural operations being undertaken. Horse chesnut trees were in leaf on the 23d of March.

At Clifton leaf buds of sycamore trees were advanced by the 31st of March; the leaves of chesnut trees were opening about the same time; apple and pear trees were in blossom by the end of the month; almond trees generally in blossom about the middle of the month.

At Battersea apricot trees were in blossom on the 16th of March, peach and plum trees by the 29th, and pear trees by the 31st.

At Leyton the leaf buds of the horse chesnut trees first appeared on the 1st of March, birch and field elm on the 19th, maple on the 22d. The leaves of hazel trees were open on the 25th; apricots in full blossom on the 19th; chiffchaff arrived on the 25th, and blackcap on the 26th.

At Cardington peach trees were in blossom on the 25th of March.

At Thelwall near Warrington agricultural operations in a very forward state for the season. Leaf buds of chesnut and hawthorn trees made their first appearance on the 19th of March.

At Stonyhurst an apple tree was in blossom on the 26th of February; swallows arrived on the 25th of March.

At Culloden ploughing of land on many farms was completed about the middle of January. Wheat looks well; the plant, however, is tender from the early and rapid growth it has made. Snowdrops in flower on the 15th of January; thrushes were heard singing on the 30th of the same month.

At Belvoir Castle the land during the months of January and February was in excellent condition for farming operations. Spring corn sowing was continued up to the middle of March, and retarded and prevented all out-door work. Wheat varies in appearance, in the favourable situations it looks well. The lambing season has been an anxious one, and the fall of lambs short. The turnip crop was very abundant; there is still a good store. Influenza was prevalent amongst horses during the months of January and February, proving fatal in many cases. The abundance of food causes all store stock to be dear. Potatoes are keeping well.

At North Shields the following plants were in blossom during the quarter: Christmas rose on the 28th of January, polyanthus on the 29th, and snowdrop on the 30th; double snowdrop on the 3d of February, blue hepatica on the 5th, red and white hepatica on the 13th, double red hepatica on the 15th; yellow and white crocus on the 20th; heath on the 21st; white rock cress on the 26th; saxifraga oppositifolia on the 27th; wallflower on the 1st of March, purple crocus on the 7th; double primrose on the 8th, blue squill on the 11th, double blue hepatica on the 15th, common yellow primrose on the 16th, jonquil on the 23d, leopard's bane on the 27th, and hyacinth on the 28th.

A flock of wild geese was seen passing southwards on the 13th of February.

At Harrogate vegetation very forward. Mezerion in flower on the 23d of February.

At Bywell the weather has been dry, and the land in good working condition.



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.	Number of Days on which it fell.	Rain.
																		Relative Proportion of							
																		N.	E.	S.	W.				
Guernsey	29.616	59.0	29.0	30.0	47.2	40.8	26.2	6.4	43.7	40.0	18.8	0.4	87	456	56.3	50.0	1.0	6	8	9	9	4.1	5.9	43	14
Helston	29.602	59.0	29.0	31.0	50.8	41.9	28.0	8.9	46.3	42.7	17.4	0.4	86	545	56.3	50.0	1.0	6	8	9	9	3.5	7.0	28	14
Truro	29.625	61.0	34.0	37.0	41.0	41.3	32.0	9.7	46.1	41.8	26.5	0.5	86	544	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Exeter (St. Leonard's)	29.581	60.7	30.3	40.4	40.3	38.8	34.6	10.5	43.6	40.7	24.0	0.5	86	546	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Exeter (200 High-st.)	29.598	58.1	22.8	35.3	47.0	39.7	29.7	8.2	43.6	40.7	24.0	0.5	86	546	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Bournemouth	29.592	70.0	20.0	50.0	48.4	37.2	23.2	11.2	42.3	39.2	24.7	0.9	83	549	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Osborne	29.628	58.45	19.0	36.2	46.3	36.9	24.3	7.0	43.2	35.8	21.0	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Ventnor	29.615	59.8	22.6	37.2	48.3	37.3	33.2	11.0	42.8	41.2	25.8	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Osborne	29.615	59.8	22.6	37.2	48.3	37.3	33.2	11.0	42.8	41.2	25.8	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Worthing	29.611	59.2	22.5	34.0	45.4	37.6	27.1	7.8	41.4	39.2	23.1	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Fairlight	29.611	59.2	22.5	34.0	45.4	37.6	27.1	7.8	41.4	39.2	23.1	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Little Briny	29.616	62.7	18.4	44.3	47.4	39.7	35.1	10.7	41.8	38.9	23.6	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
St. John's Col. nr. Brighton	29.582	29.0	29.0	40.0	33.9	29.0	10.1	41.0	38.2	23.2	23.6	0.3	80	549	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Petersfield	29.634	61.5	19.0	45.5	47.7	39.3	32.4	10.8	41.0	38.2	23.6	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Barnstaple	29.605	61.4	22.2	39.2	48.3	43.5	33.6	10.6	41.1	38.7	23.6	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Aldershot Camp	29.603	61.4	22.2	39.2	48.3	43.5	33.6	10.6	41.1	38.7	23.6	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Clifton	29.616	60.7	30.3	40.4	40.3	38.8	34.6	10.5	43.6	40.7	24.0	0.5	86	546	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Downside College	29.586	61.8	19.4	42.5	45.6	35.8	36.4	9.5	41.1	38.7	23.4	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Royal Observatory	29.650	63.6	20.4	44.2	46.8	36.4	35.8	10.4	41.0	38.9	23.9	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Regent's Park	29.630	59.8	22.6	37.2	48.3	37.3	33.2	11.0	42.8	41.2	25.8	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
St. John's Wood	29.612	63.6	20.4	44.2	46.8	36.4	35.8	10.4	41.0	38.9	23.9	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Guildhall	29.612	63.6	20.4	44.2	46.8	36.4	35.8	10.4	41.0	38.9	23.9	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Camden Town	29.612	63.6	20.4	44.2	46.8	36.4	35.8	10.4	41.0	38.9	23.9	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Battersea	29.612	63.6	20.4	44.2	46.8	36.4	35.8	10.4	41.0	38.9	23.9	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Leyton (Essex)	29.612	63.6	20.4	44.2	46.8	36.4	35.8	10.4	41.0	38.9	23.9	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Radcliffe Observatory	29.600	60.7	21.0	39.5	46.0	37.7	34.9	8.3	41.2	38.2	23.2	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Great Berkhamstead	29.603	63.2	17.0	43.5	45.4	35.5	36.6	9.9	40.0	37.0	23.0	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Banbury	29.612	63.2	17.0	43.5	45.4	35.5	36.6	9.9	40.0	37.0	23.0	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Hartwell House	29.612	63.2	17.0	43.5	45.4	35.5	36.6	9.9	40.0	37.0	23.0	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Hartwell Rectory	29.612	63.2	17.0	43.5	45.4	35.5	36.6	9.9	40.0	37.0	23.0	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Korston	29.612	63.2	17.0	43.5	45.4	35.5	36.6	9.9	40.0	37.0	23.0	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Gloucester	29.612	63.2	17.0	43.5	45.4	35.5	36.6	9.9	40.0	37.0	23.0	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Cardington	29.612	63.2	17.0	43.5	45.4	35.5	36.6	9.9	40.0	37.0	23.0	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Aspley	29.612	63.2	17.0	43.5	45.4	35.5	36.6	9.9	40.0	37.0	23.0	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Bedford	29.612	63.2	17.0	43.5	45.4	35.5	36.6	9.9	40.0	37.0	23.0	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Lampeter	29.612	63.2	17.0	43.5	45.4	35.5	36.6	9.9	40.0	37.0	23.0	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Llandudno	29.612	63.2	17.0	43.5	45.4	35.5	36.6	9.9	40.0	37.0	23.0	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Norwich Priory	29.612	63.2	17.0	43.5	45.4	35.5	36.6	9.9	40.0	37.0	23.0	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Diss (Norfolk)	29.612	63.2	17.0	43.5	45.4	35.5	36.6	9.9	40.0	37.0	23.0	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Grantham	29.612	63.2	17.0	43.5	45.4	35.5	36.6	9.9	40.0	37.0	23.0	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Belvoir Castle	29.612	63.2	17.0	43.5	45.4	35.5	36.6	9.9	40.0	37.0	23.0	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Derby	29.612	63.2	17.0	43.5	45.4	35.5	36.6	9.9	40.0	37.0	23.0	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Holkham	29.612	63.2	17.0	43.5	45.4	35.5	36.6	9.9	40.0	37.0	23.0	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Nottingham	29.612	63.2	17.0	43.5	45.4	35.5	36.6	9.9	40.0	37.0	23.0	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Hawarden	29.612	63.2	17.0	43.5	45.4	35.5	36.6	9.9	40.0	37.0	23.0	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Liverpool Observatory	29.612	63.2	17.0	43.5	45.4	35.5	36.6	9.9	40.0	37.0	23.0	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Ollerenshaw	29.612	63.2	17.0	43.5	45.4	35.5	36.6	9.9	40.0	37.0	23.0	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Manchester	29.612	63.2	17.0	43.5	45.4	35.5	36.6	9.9	40.0	37.0	23.0	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Wakefield	29.612	63.2	17.0	43.5	45.4	35.5	36.6	9.9	40.0	37.0	23.0	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Bradford	29.612	63.2	17.0	43.5	45.4	35.5	36.6	9.9	40.0	37.0	23.0	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
Kingsley	29.612	63.2	17.0	43.5	45.4	35.5	36.6	9.9	40.0	37.0	23.0	0.7	77	548	57.4	34.6	1.0	10	9	8	8	5.7	6.4	28	14
The Wall, near Warrington	29.612	63.2	17.0	43.5	45.4	35.5	36.6	9.9	40.0	37.0	23.0	0.													



Year 1862.	Month.	Names of Stations and Observers.	Pressure of Atmosphere in Month.			Temperature of Air in Month.			Mean Temperature.	Vapour.			Mean Reading of Thermometer.			Wind.			Rain.							
			Mean.	Range.	In.	Lowest.	Highest.	Range.		Mean.		Air.	Dew Point.	Elastic Force.	Mean.	In a cubic foot of Air.	Short of Saturation.	Mean Weight of a cubic foot of Air.	Maximum in Days of Sun.	Minimum in Grass.	Relative Proportion of	Mean Amount of Cloud.	Number of Days it fell.	Amount collected.		
										Or all Highest.	Or all Lowest.														Daily Range.	N.
Jan.	29-536	ALDERSHOT CAMP, M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Feb.	29-718	JOHN ARNOLD, Esq., M.S.C.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Mar.	29-739	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Jan.	29-569	CLIFTON (Bristol), W. C. Raper, Esq., F.R.A.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Feb.	29-817	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Mar.	29-834	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Jan.	29-184	DOWNSIDE COLLEGE (near Bath), Rev. J. D. Tidmarsh.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Feb.	29-783	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Mar.	29-783	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Jan.	29-165	ROYAL OBSERVATORY, THE ASTRONOMER ROYAL.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Feb.	29-905	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Mar.	29-426	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Jan.	29-720	41, YORK TERRACE (Regent's Park), Dr. R. D. Thomson, F.R.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Feb.	29-807	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Mar.	29-433	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Jan.	29-635	ST. JOHN'S WOOD (Literary Institution), Mr. John Carter, Librarian.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Feb.	29-888	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Mar.	29-474	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Jan.	29-800	GUILDHALL, W. Haywood, Esq., C.E.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Feb.	29-977	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Mar.	29-588	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Jan.	29-770	CAMDEN TOWN, G. J. Stross, Esq., M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Feb.	29-930	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Mar.	29-546	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Jan.	29-864	BATTERSEA TRAINING COLLEGE, Rev. Samuel Clark, M.A., M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Feb.	29-037	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Mar.	29-679	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Jan.	29-760	LEYTON (Essex), J. G. Barker, Esq., F.R.A.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Feb.	29-988	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Mar.	29-398	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Jan.	29-771	PENBROKE DOCKYARD, E. Chevallier, Esq., M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Feb.	29-786	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Mar.	29-786	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Jan.	29-024	RADCLIFFE OBSERVATORY, Rev. R. Main, M.A.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Feb.	29-774	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Mar.	29-774	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Jan.	29-458	GREAT BERKHAMSTEAD, William Squire, Esq., M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Feb.	29-078	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Mar.	29-265	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Jan.	29-460	BANBURY (Oxon), J. W. Statter, Esq., F.R.A.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Feb.	29-707	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Mar.	29-901	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Jan.	29-566	MARTWELL HOUSE, Mr. W. Statter, M.A., F.R.A.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Feb.	29-708	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9
Mar.	29-708	M.B.M.S.	30.0	37.0	37.0	31.2	41.5	4.3	34.3	39.3	29.3	29.3	0.75	0.75	61.5	90	49.0	29.4	0.6	5	6	9	11	7.5	11	1.9



Year 1862.	Month.	Names of Stations and Observers.	Pressure of Atmosphere in Month.			Temperature of Air in Month.			Mean Tem- perature.		Vapour.		Mean Reading of Thermometer.		Wind.			Mean Amount of Ozone.	Rain. Amount col- lected.		
			Mean.	Range.	Highest.	Lowest.	Range.	Of all Highest.	Of all Lowest.	Daily Range.	Air.	Dew Point.	Elastic Force.	Mean. Short of Saturation.	Mean Degree of Humi- dity, 32° F. = 100.	Mean Weight of a cubic foot of air.	Relative Proportion of				
																	N.			E.	S.
Jan.	29-573	KINGSLEY PARSONAGE, near FRODSHAM, Rev. R. TYAS, M.A., M.B.M.S.	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	
Feb.	29-583	THE WALL NEAR WARRINGTON, J. ATKINSON, Esq., F.G.S.	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	
Mar.	29-584	LEEDS PHILOSOPHICAL HALL, HENRY DENT, Esq., A.L.S.	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	
Jan.	29-580	STONYHURST COLLEGE, REV. S. PERRY, M.A.	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	
Feb.	29-585	YORK, JOHN FORD, Esq.	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	
Mar.	29-588	SCARBOROUGH, R. CHAMPEL, Esq.	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	
Jan.	29-533	OTLEY, H. W. THOMAS, Esq.	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	
Feb.	29-542	HARROGATE (Yorkshire), J. COUPLAND, Esq.	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	
Mar.	29-544	ST. PAUL'S PARSONAGE, near SILLOTH, CUMBERLAND, Rev. F. REDFORD, M.A., M.B.M.S.	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	
Jan.	29-689	BYWELL, Mr. JOHN DAWSON, under the direction of T. SOWTHILL, Esq., F.R.S., M.B.M.S.	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	
Feb.	29-692	ALLENHEADS, THOMAS PEWICK, Esq., G.E. M.B.M.S. Assistant to T. SOWTHILL, Esq., F.R.S., &c.	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	
Mar.	29-693	NORTH SHIELDS, ROBERT SPENCER, Esq.	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	
Jan.	29-679	HIGH HOUSE (Alnwick), Mr. SCOTT, for His Grace the Duke of Northumberland.	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	
Feb.	29-683	CULLODEN, A. FORBES, Esq., M.B.M.S.	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	
Mar.	29-587		30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	30.73	

Second. Rain gauges were placed at Exeter, 20 feet above the ground, the amount collected was 7.2 inches; at Clifton, 50 feet, 6.0 inches; at Guildhall, 77 feet, 4.7 inches; at Cardington, 36 feet, 3.4 inches; at Oxford, 22 feet, 6.0 inches; at Greenwich, 31 feet, 5.6 inches; at Harrogate, 24 feet, 6.0 inches.

The mean reading of the barometer at Exeter in February has been altered from 29.92 inches to 29.94 inches; at Clifton, from 29.92 inches to 29.94 inches; at Guildhall, from 29.92 inches to 29.94 inches; at Cardington, from 29.92 inches to 29.94 inches; at Oxford, from 29.92 inches to 29.94 inches; at Greenwich, from 29.92 inches to 29.94 inches; at Harrogate, from 29.92 inches to 29.94 inches.

ON THE

## METEOROLOGY OF ENGLAND,

DURING THE QUARTER ENDING JUNE 30, 1862.

REMARKS ON THE WEATHER during the QUARTER ending 30th of JUNE 1862. By JAMES GLAISHER, Esq., F.R.S., &c., Secretary of the British Meteorological Society.

The warm weather which set in on the 24th of March continued only till the 7th of April; the mean daily excess from the 1st of April was 5°. On the 8th of April a cold period set in which continued till the 16th, the mean daily defect being 5°. This was succeeded by a period of very warm weather, which continued, with the exception of the 3d, 9th, 13th, 14th, 15th, 21st, and 22d May, and the 5th of June, until the 8th of June; the mean daily excess of the 53 days ending the 8th of June was 3° nearly. On several days during this period the weather was above its average to large amounts, as on the 25th of April it was 12°·6 in excess; the 4th, 5th, and 6th of May were 8°·5, 11°·1, and 13°·6 in excess. On the 9th of June a cold period set in, which continued till the end of the month, the mean daily defect being greater than 4°. The average temperature for the month of April was 48°·4 being 4° higher than in 1861, and higher than in any April since 1854. That for May was 55°·4, being 3½° higher than in 1861, and higher than any May since 1848. In June it was 56°·3, being 3° lower than in 1861, and lower than any June since 1854.

The mean high day temperature in April was 60°·8 in excess, in May 2° in excess, and in June 4°·1 in defect of their respective averages.

The mean low night temperature in April was 3°·2 above, in May 3°·8 above, and in June 0°·9 below their respective averages.

Therefore both the days and nights in April and May were warm, the night more so than the days; and in June both were cold, the nights less in amount than the days.

The mean temperature of the air was 2°·1 in excess in April, 2°·6 in excess in May, and 2°·9 in defect in June; and this is the first month in the present year in which the mean temperature has been below its average.

The mean temperature of the dew point was 3°·1 in excess in April, 4°·9 in excess in May, and 1°·6 in defect in June; the mean for the quarter was a little more than 2° in excess.

The mean pressure of the atmosphere was 0·1 inch in excess in April, 0·04 inch in defect in May, and 0·08 inch in defect in June.

The fall of rain in April and May was 2·8 inches, in each month, and in June was 1·8 inch; the total fall for the quarter was nearly 7½ inches, exceeding the average of the preceding 43 years by a little more than 1½ inch.

The mean temperature of the air at Greenwich in the three months ending May, constituting the three spring months, was 48°·9, being 2°·5 in excess of the average of the preceding 91 years.

1862. MONTHS.	Temperature of						Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.		
	Air.		Evaporation.		Dew Point.		Mean.	Diff. from ave- rage of 21 years.	Mean.	Diff. from ave- rage of 21 years.	
	Mean.	Diff. from ave- rage of 21 years.	Mean.	Diff. from ave- rage of 21 years.	Mean.	Diff. from ave- rage of 21 years.					
April	48·4	+2·6	45·8	+2·5	43·0	+3·1	15·8	-2·4	50·5	+0·2	grs.
May	55·4	+2·9	52·8	+3·7	50·3	+4·9	18·5	-1·8	58·0	+0·6	gr.
June	56·3	-1·8	52·9	-2·1	49·3	-1·6	17·8	-3·1	60·2	-0·2	
Mean	53·3	+1·2	50·4	+1·3	47·5	+2·1	17·3	-2·4	56·2	+0·2	



1862. MONTHS.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.	Reading of Thermometer on Grass.				
	Mean.	Diff. from average of 21 years.	Mean.	Diff. from average of 21 years.	Mean.	Diff. from average of 21 years.	Amount.	Diff. from average of 43 years.		Number of Nights it was			Lowest Reading at Night.	Highest Reading at Night.
										At or below 30°.	Between 30° and 40°.	Above 40°.		
April -	81	+ 2	in. 29.847	+0.100	grs. 545	+ 3	in. 2.8	in. +1.0	Miles. 259	5	12	13	29.5	48.0
May -	84	+ 8	29.726	-0.044	534	- 4	2.8	+0.7	218	0	5	26	30.6	54.5
June -	77	+ 3	29.718	-0.075	533	+ 2	1.8	-0.1	263	0	6	24	33.4	53.0
Mean -	80	+ 4	29.763	-0.006	537	0	Sum 7.4	Sum +1.6	Mean 232	Sum 5	Sum 23	Sum 63	Lowest 29.5	Highest 54.5

NOTE.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred or thunder was heard and lightning seen on the 3d of April at Gloucester, Eccles near Manchester, and Thelwall near Warrington; on the 22d at Downside near Bath; on the 25th at Hurstpierpoint near Brighton; and on the 30th at Guernsey. On the 1st of May at Hurstpierpoint near Brighton, Bywell, Allenheads, and North Shields; on the 3d at Norwich; on the 5th at Downside; on the 6th at Osborne, Little Bridy, Aldershot, Hurstpierpoint, Downside, Leyton, Great Berkhamstead, Cardington, Aspley, Grantham, Bradford, York, Scarborough, Otley, and Harrogate; on the 7th throughout the greater part of the country; on the 8th at Gloucester, Grantham, York, and Scarborough; on the 9th at Gloucester, Bywell, Allenheads, and North Shields; on the 10th at Norwich; on the 21st at Truro and Cardington; on the 29th at Little Bridy, Clifton, Downside, Gloucester, and Stonyhurst; and on the 30th at Gloucester, Kingsley near Frodsham, and Leeds. On the 3d of June at Banbury, Hartwell, Royston, and Cardington; on the 8th at Petersfield, Grantham, Belvoir, Eccles, Scarborough, Otley, and Thelwall; on the 9th at Worthing, Camden Town, Berkhamstead, Banbury, Royston, Gloucester, Cardington, Belvoir, Kingsley, and Scarborough; on the 10th at St. Paul's Parsonage near Silloth and Cockermouth; on the 11th throughout the greater part of the North of England; on the 14th at Aldershot; on the 16th at Eccles; and on the 27th throughout the greater part of the country.

Thunder was heard but lightning was not seen on the 3d of April at Kingsley; on the 22d at Clifton; and on the 25th at Osborne and Aldershot; and on the 1st of May at Stonyhurst; on the 5th at Bournemouth; on the 6th at Bournemouth, Grantham, and Bywell; on the 8th and 9th at Harrogate; on the 10th at Berkhamstead; on the 12th at Clifton and Downside; on the 21st at Osborne, Brighton, and Berkhamstead; and on the 30th at Berkhamstead, Grantham, and Bradford; on the 3d of June at Berkhamstead and Grantham; on the 8th and 9th throughout the greater part of the country; on the 10th at Stonyhurst; on the 11th at Eccles and Harrogate; on the 16th at Hartwell; and on the 27th at Royston, Eccles, and Harrogate.

Lightning was seen but thunder was not heard on the 2d of April at Hurstpierpoint near Brighton; on the 1st of May at Leyton, Stonyhurst, Otley, and Harrogate; on the 3d at Osborne and Royston; on the 5th at Battersea and all parts of London; on the 6th at Royston, Grantham, and North Shields; on the 7th and 8th at North Shields; on the 21st at Little Bridy; on the 29th at Bournemouth, Exeter, and Hurstpierpoint; on the 30th at Little Bridy; and on the 2d of June at Hartwell.

Aurora were seen on the 28th of April at Eccles near Manchester. On the 19th of May at Clifton, Brighton, Downside near Bath, Greenwich, and Gloucester; and on the 31st at Gloucester.

Solar halos were seen on the 3d of April at Leyton and North Shields; on the 5th, 10th, and 16th at Leyton; on the 17th at Clifton; on the 18th at Leyton; on the 20th at Cardington and North Shields; and on the 24th, 26th, and 30th at Berkhamstead. On May 3d and 20th at Leyton; on the 6th, 8th, 11th, 19th, 20th, and 25th at Berkhamstead; and on the 31st at Lampeter. On the 7th of June at Berkhamstead; on the 10th and 23d at Clifton; and on the 17th at Grantham.

Lunar halos were seen on the 3d and 4th of April at Stonyhurst; on the 10th at Leyton and Stonyhurst; and on the 14th at Cardington. On the 3d of May at Stonyhurst and Allenheads; on the 5th at Clifton; and on the 20th at Leyton. On the 4th of June at Leyton and Norwich; and on the 5th at Stonyhurst.

Snow fell on April 5th at Allenheads; on the 11th at North Shields; on the 12th and 13th throughout the greater part of the country; on the 14th at Guernsey, Brighton, and Allenheads; and on the 15th at Brighton and North Shields; and on May 9th at Grantham.

Hail fell on April 12th at Truro, Gloucester, Diss, Thelwall, and Bradford; on the 13th at Guernsey, Helston, Truro, Greenwich, and Diss; on the 15th at Cardington and Grantham; on May 6th at Cardington; on the 7th at Grantham, Wakefield, Leeds, Otley, Bywell, and Bradford; on the 9th at Exeter, Gloucester, and Allenheads; on the 10th at Cardington; on the 11th at Osborne, Cardington, Aspley, Grantham, and Scarborough; on the 21st at Helston, Bournemouth, Exeter, Little Bridy, Clifton, Brighton, and Scarborough; on the 22d at Helston, Bournemouth, and Bradford; on the 9th throughout the greater part of the country, more particularly at stations to the north of the parallel 51½°; on the 10th and 11th at Harrogate; and on the 27th throughout the greater part of the country.

Fog was prevalent on April 1st, 2d, 5th, 6th, 7th, 8th, 9th, 10th, 15th, 20th, 21st, 25th, 26th, 27th, 28th, and 30th; on May 1st, 3d, 4th, 5th, 7th, 10th, 15th, 16th, 17th, 19th, 20th, 23d, 27th, 28th, 29th; and on June 1st, 2d, 3d, 4th, 15th, 16th, 17th.

At Guernsey oak and lime trees were in leaf on April 22d; apple trees in blossom on the 17th, and lilac on the 18th; a wryneck was seen for the first time on the 1st, swallows on the 13th, and cuckoo on the 15th.

At Helston apple trees were in blossom on the 9th of April; lilac on the 24th; and laburnum on the 26th; swallows were seen on the 18th.

At Petersfield at the end of April and beginning of May the lilac and syringa were just coming into blossom, and vegetation forward and promising; plum trees were in blossom by April 14th; and apple, pear, and cherry trees by the 20th; lime and horse chesnut trees were in leaf by the 30th.

At Clifton elm, horse chesnut, and sycamore trees were partially in leaf by the end of April; apple and lilac trees were in blossom about the middle of May; swallows arrived on April 26th; and the cuckoo the next day.

At Berkhamstead up to April 30th the spring was very favourable for the blossoming of fruit and vegetation generally; apple blossom is remarkably fine and plentiful, and other fruits, &c. are promising. The frosts about the middle of April did no material injury, except to young roses and tender shrubs, but from which they are now recovering.

At Leyton the leaf buds of plane trees first appeared on April 6th; and of walnut trees on the following day. Sycamore trees were in leaf on the 2d; elm and beech trees on the 3d; lime on the 12th; and oak on the 29th; wall pear trees were in blossom on the 3d; plum trees on the 4th; peach on the 6th; cherry and hardy pear on the 8th; apple on the 22d; yellow broom on the 27th; lilac and hawthorn on the 28th. The willow-wren arrived on the 4th; swallows on the 6th; redstart on the 7th; nightingale on the 15th; and cuckoo on the 27th. Westeria was in flower on May 1st, and lilac on the 20th.

At Regent's-park lilac trees were in blossom on April 27th; in 1861 not until the middle of May. Laburnum flowered on May 7th, or thirteen days earlier than in 1861.

At Belvoir Castle, wet and dull weather in June, caused considerable delay in preparing the land for turnips. Wheat appeared in ear very irregularly, commencing early in the month; the development of the ears was incomplete in many fields at the end of the month. The flowering was equally unsatisfactory. Barley has been checked in its progress, and looks unpromising. Oats not much better. Beans and peas look promising. Turnips sown in some places by the middle of June.

At Grantham pear trees were in blossom on April 23d; cherry on the 29th; and apple on the 30th. Swallows arrived on the 18th, and nightingale on the 21st. Blossom of all kinds was most profuse; the country is looking extremely well, and everything at present promises abundance.

At Bangor, Carmarthenshire, hawthorn trees were in leaf on the 5th of April, and field elm on the 20th; pear trees were in blossom on the 5th; cherry on the 15th; and yellow broom on the 20th. Swallows were seen for the first time on the 14th; nightingale on the 24th; and cuckoo on the 25th.

At Thelwall near Warrington spring very fine, but rather backward. Hawthorn in leaf on April 27th; elm and lime trees on the 28th; apple and pear trees in blossom on the same day. Swallows were seen on the 23d; a cornerake on the 28th; and a cuckoo on the 30th. May was a very favourable month for vegetation, and everything grew with great rapidity. By the 4th all the forest trees were in leaf, except the ash and one species of elm. On the 6th the laburnum and hawthorn trees were in blossom. The cuckoo has not been heard since May 23d.

At Bywell, with the exception of severe frosts on April 12th, 13th, 14th, the weather has been very beneficial for the growing crops, which in this district are looking well. There is already a good supply of grass. The fruit trees and berry bearing bushes are looking well, and give promise of plenty. Little or no damage was done by the frost. In May the weather was all that could be desired for the growing crops; everything has made great progress and looks well.

At Allenheads the foliage of the trees and bushes is very full, and so far as the season is advanced there is every prospect of a heavy crop of grass.

At Cockermouth farming operations very much retarded. In many instances turnips could not be sown, on account of the wet state of land. The oat crops have suffered considerably from the grub. Grass crops are good, but haymaking kept back for want of sun; very little hay was secured by the end of the quarter. The potato disease has made its appearance amongst the early varieties.

At North Shields apple trees were in blossom on May 4th; cherry trees on the 5th; double saxifrage on the 6th; tulip on the 7th; narcissus on the 8th; white and purple lilac on the 19th.

At Culloden the weather during April and May was very favourable for vegetation, and everything is well advanced for the season. The young wheat and barley shoots are particularly flourishing, and in gardens there has not been such a show of blossom for many years. Apple blossom has been unusually rich and large, and the fruit seems to have set well.



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	Mean Estimated Strength.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.	Number of Days on which it fell.	Rain.
																			Relative Proportion of							
																			N.	E.	S.	W.				
																			Mean Amount of							
Guernsey	29.640	77.5	35.0	42.5	56.3	47.2	23.3	9.1	51.3	47.6	33.2	3.6	0.5	88	79	539	5.1	8	4	8	10	5.1	4.4	3.2	1.5	
Helston	29.612	71.0	30.0	41.0	61.0	47.4	24.0	13.1	54.1	46.9	32.9	3.6	1.2	74	538	2.7	11	10	4	6	10	3.0	5.9	3.0	2.4	
Truro	29.612	71.0	30.0	41.0	61.0	47.4	24.0	13.1	54.1	46.9	32.9	3.6	1.2	74	538	2.7	11	10	4	6	10	3.0	5.9	3.0	2.4	
Exeter (St. Leonard's)	29.622	76.0	30.0	46.0	64.0	47.3	24.0	13.1	53.0	46.0	31.4	3.5	1.0	79	537	2.8	10	4	6	10	5.4	5.5	4.7	1.9		
Exeter (200 High-st.)	29.631	72.5	32.1	40.4	62.0	47.4	24.0	13.1	53.2	46.0	31.4	3.5	1.0	77	537	2.8	10	4	6	10	5.4	5.5	4.7	1.9		
Bournemouth	29.636	75.0	32.0	43.0	63.0	47.4	24.0	13.1	53.2	46.0	31.4	3.5	1.0	77	537	2.8	10	4	6	10	5.4	5.5	4.7	1.9		
Ventnor	29.636	66.0	32.0	34.0	58.4	49.4	24.3	9.0	53.9	45.8	31.1	3.4	1.2	75	538	2.8	10	4	6	10	5.4	5.5	4.7	1.9		
Osborne	29.594	73.5	29.1	44.0	62.0	47.3	23.9	15.6	53.1	49.9	36.1	4.0	0.5	88	536	3.4	37.4	0.9	6	4	8	12	7.4	6.7	3.3	
Worthing	29.615	71.0	31.0	40.0	61.0	47.3	23.9	15.6	53.1	49.9	36.1	4.0	0.5	88	536	3.4	37.4	0.9	6	4	8	12	7.4	6.7	3.3	
Little Brilly	29.616	71.0	31.0	40.0	61.0	47.3	23.9	15.6	53.1	49.9	36.1	4.0	0.5	88	536	3.4	37.4	0.9	6	4	8	12	7.4	6.7	3.3	
St. John's Col. ex. Brighton	29.594	84.0	26.0	55.0	62.0	47.3	23.9	15.6	53.1	49.9	36.1	4.0	0.5	88	536	3.4	37.4	0.9	6	4	8	12	7.4	6.7	3.3	
Barnstaple	29.634	73.0	32.0	41.0	60.0	46.3	23.6	14.6	53.8	47.4	31.6	3.6	0.9	82	536	3.4	37.4	0.9	6	4	8	12	7.4	6.7	3.3	
Aldershot Camp	29.627	77.0	32.0	45.0	61.0	46.1	23.9	15.6	53.1	49.9	36.1	4.0	0.5	88	536	3.4	37.4	0.9	6	4	8	12	7.4	6.7	3.3	
Clifton	29.608	73.0	32.0	41.0	60.0	46.3	23.6	14.6	53.8	47.4	31.6	3.6	0.9	82	536	3.4	37.4	0.9	6	4	8	12	7.4	6.7	3.3	
Downside College	29.611	80.0	27.0	52.0	61.8	44.7	16.9	13.7	51.5	47.4	31.6	3.6	0.9	82	536	3.4	37.4	0.9	6	4	8	12	7.4	6.7	3.3	
Royal Observatory	29.612	81.5	26.7	54.0	63.0	46.3	23.6	14.6	53.8	47.4	31.6	3.6	0.9	82	536	3.4	37.4	0.9	6	4	8	12	7.4	6.7	3.3	
Regent's Park	29.616	75.0	32.0	43.0	60.0	46.3	23.6	14.6	53.8	47.4	31.6	3.6	0.9	82	536	3.4	37.4	0.9	6	4	8	12	7.4	6.7	3.3	
St. John's Wood	29.614	79.0	36.5	52.0	63.0	46.3	23.6	14.6	53.8	47.4	31.6	3.6	0.9	82	536	3.4	37.4	0.9	6	4	8	12	7.4	6.7	3.3	
Guildhall	29.616	74.0	32.0	42.0	61.8	45.9	23.7	9.0	54.2	46.6	32.0	3.6	1.1	75	535	3.5	—	—	—	—	—	—	—	—	—	
Camden Town	29.620	77.0	32.0	45.0	64.0	46.4	23.9	15.6	53.1	49.9	36.1	4.0	0.5	88	536	3.4	37.4	0.9	6	4	8	12	7.4	6.7	3.3	
Battersea	29.616	74.0	32.0	42.0	61.8	45.9	23.7	9.0	54.2	46.6	32.0	3.6	1.1	75	535	3.5	—	—	—	—	—	—	—	—	—	
Leyton (Essex)	29.636	78.0	32.0	46.0	64.0	46.4	23.9	15.6	53.1	49.9	36.1	4.0	0.5	88	536	3.4	37.4	0.9	6	4	8	12	7.4	6.7	3.3	
Radcliffe Observatory	29.593	74.0	32.0	44.0	61.0	46.0	23.4	14.2	52.5	47.6	32.7	3.6	1.0	78	534	3.5	72.2	1.6	6	3	8	13	5.9	7.7	3.3	
Great Berkhamstead	29.591	76.0	34.3	41.7	62.1	45.2	21.2	16.6	52.2	45.5	34.7	3.6	0.9	78	534	3.5	72.2	1.6	6	3	8	13	5.9	7.7	3.3	
Banbury	29.596	75.0	37.1	47.0	60.0	42.3	18.3	17.0	52.4	48.2	34.3	3.6	0.7	87	534	3.5	—	2.0	7	3	9	11	6.0	4.3	1.1	
Hartwell Rectory	29.585	76.0	36.0	50.0	62.0	45.8	20.0	17.0	52.7	47.3	32.7	3.6	1.1	82	535	3.5	—	1.7	4	10	10	—	7.0	4.3	1.1	
Royston	29.617	80.0	36.3	54.3	61.7	43.6	18.0	17.0	52.2	47.8	33.5	3.6	1.0	85	535	3.5	—	8.2	7	12	4.6	7.2	5.8	2.3		
Cardington	29.599	77.0	37.0	50.0	63.0	45.5	20.0	17.0	53.3	46.0	31.7	3.6	1.0	78	535	3.5	39.8	1.0	7	3	6	13	7.3	5.1	1.1	
Aspley	29.596	77.0	37.0	50.0	63.0	45.5	20.0	17.0	53.3	46.0	31.7	3.6	1.0	78	535	3.5	39.8	1.0	7	3	6	13	7.3	5.1	1.1	
Bedford	29.596	78.0	38.5	49.5	63.0	45.5	20.0	17.0	53.3	46.0	31.7	3.6	1.0	78	535	3.5	39.8	1.0	7	3	6	13	7.3	5.1	1.1	
Lampeter	29.579	74.0	32.0	43.0	64.0	46.3	23.6	14.6	53.8	47.4	31.6	3.6	0.9	82	537	3.5	82.8	0.6	3	9	12	—	3.0	7.5	4.6	
Disa (Norfolk)	29.597	84.5	27.2	57.3	63.3	45.1	14.1	17.2	52.5	46.3	31.4	3.5	0.7	85	534	3.5	42.5	0.7	5	4	9	10	4.0	7.2	5.0	
Grantham	29.587	74.0	32.0	43.0	60.0	46.3	23.6	14.6	53.8	47.4	31.6	3.6	0.9	82	535	3.5	—	4.2	8	2	6	—	3.1	5.9	3.3	
Derby	29.598	76.0	36.0	50.0	62.0	45.8	20.0	17.0	52.7	47.3	32.7	3.6	1.0	82	535	3.5	—	4.5	7	14	—	4.0	7.6	5.7	2.7	
Holkham	29.584	79.0	36.0	43.0	63.0	46.3	23.6	14.6	53.8	47.4	31.6	3.6	0.7	82	540	88.2	34.1	1.5	8	3	9	10	—	6.5	4.0	
Nottingham	29.588	77.0	37.0	50.0	62.0	44.2	18.5	52.8	54.7	40.3	32.5	3.6	1.0	77	539	73.5	40.4	0.3	8	5	8	9	2.4	6.7	4.5	
Hawarden	29.602	71.0	31.0	40.0	60.0	45.5	20.0	13.1	54.0	48.5	30.2	3.4	0.8	83	536	70.9	41.3	2.3	5	8	13	3.7	7.0	3.3		
Liverpool Observatory	29.577	74.0	32.0	43.0	62.0	45.8	20.0	13.1	52.5	45.9	30.9	3.6	0.8	79	536	—	—	1.5	7	3	7	13	7.5	5.6	2.8	
Eccles	29.583	78.0	32.0	43.0	62.0	45.8	20.0	13.1	52.5	45.9	30.9	3.6	0.8	79	536	—	—	1.5	7	3	7	13	7.5	5.6	2.8	
Wakefield	29.583	78.0	32.0	43.0	62.0	45.8	20.0	13.1	52.5	45.9	30.9	3.6	0.8	79	536	—	—	1.5	7	3	7	13	7.5	5.6	2.8	
Bradford	29.570	73.0	33.0	44.0	64.0	47.4	24.0	13.1	54.1	46.9	32.9	3.6	1.0	76	537	83.6	43.0	1.7	5	8	10	—	7.2	5.1	1.1	
Kingsley	29.571	73.0	33.0	44.0	64.0	47.4	24.0	13.1	54.1	46.9	32.9	3.6	1.0	76	537	83.6	43.0	1.7	5	8	10	—	7.2	5.1	1.1	
Thelwall, near Warrington	29.580	73.0	33.0	44.0	64.0	47.4	24.0	13.1	54.1	46.9	32.9	3.6	1.0	76	537	83.6	43.0	1.7	5	8	10	—	7.2	5.1	1.1	
Harrington	29.548	71.0	32.0	43.0	63.0	47.4	24.0	13.1	54.1	46.9	32.9	3.6	1.0	76	537	83.6	43.0	1.7	5	8	10	—	7.2	5.1	1.1	
Stonyhurst	29.586	71.0	32.0	43.0	63.0	47.4	24.0	13.1	54.1	46.9	32.9	3.6	1.0	76	537	83.6	43.0	1.7	5	8	10	—	7.2	5.1	1.1	
Scarborough	29.584	71.0	32.0	43.0	63.0	47.4	24.0	13.1	54.1	46.9	32.9	3.6	1.0	76	537	83.6	43.0	1.7	5	8	10	—	7.2	5.1	1.1	
Osley	29.531	70.0	30.0	40.0	60.0	47.4	24.0	13.1	54.1	46.9	32.9	3.6	1.0	76	537	83.6	43.0	1.7	5	8	10	—	7.2	5.1	1.1	
St. Paul's Parsonage	29.540	74.0	32.0	43.0	63.0	47.4	24.0	13.1	54.1	46.9	32.9	3.6	1.0	76	537	83.6	43.0	1.7	5	8	10	—	7.2	5.1	1.1	
Bywell	29.549	75.0	36.0	46.0	66.0	43.9	13.7	15.1	50.6	44.5	29.6	3.6	1.0	79	540	71.3	41.3	1.4	3	6	7	14	7.7	6.6	4.5	
Allenheads	29.548	69.0	22.1	46.0	65.4	40.0	16.2	14.9	46.0	43.3	26.1	3.6	1.0	79	540	—	38.9	1.3	7	8	5	10	—	5.0	5.0	
North Shields	29.552	72.0	36.0	46.0	66.0	43.9	13.7	15.1	50.6	44.5	29.6	3.6	1.0	79	540	—	38.9	1.3	7	8	5	10	—	5.0	5.0	
High House	29.565	73.0	32.0	43.0	63.0	47.4	24.0	13.1	54.1	46.9	32.9	3.6	1.0	79	540	—	38.9	1.3	7	8	5	10	—	5.0	5.0	
Cockermouth	29.545	74.0	32.0	43.0	63.0	47.4	24.0	13.1	54.1	46.9	32.9	3.6	1.0	79	540	—	38.9	1.3	7	8	5	10	—	5.0	5.0	
Alnwick	29.565	73.0	32.0	43.0	63.0	47.4	24.0	13.1	54.1	46.9	32.9	3.6	1.0	79	540	—	38.9	1.3	7							



Year 1862.	Month.	Names of Stations and Observers.	Pressure of Atmosphere in Month.			Temperature of Air in Month.			Mean Temperature.			Vapour.			Mean Reading of Thermometer in Shade.	Wind.			Mean Amount of Precipitation.			Rain. in In.			
			Mean.	Range.	Highest.	Lowest.	Range.	Of all Highest.	Of all Lowest.	Daily Range.	Air.	Air Point.	Elastic Force.	Mean.		Short of Saturation.	Mean Degree of Humidity.	Mean Weight of a cubic foot of Air.	Maximum in Shade.	Minimum on Grass.	Estimated Direction.		Relative Proportion of		
																							N.	S.	W.
April	29.77	0.30	74.5	28.2	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
May	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
June	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
July	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
August	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
September	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
October	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
November	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
December	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
January	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
February	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
March	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
April	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
May	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
June	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
July	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
August	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
September	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
October	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
November	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
December	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
January	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
February	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
March	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
April	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
May	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
June	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
July	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
August	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
September	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
October	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
November	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
December	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
January	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
February	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
March	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
April	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
May	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
June	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
July	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
August	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
September	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
October	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
November	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
December	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
January	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
February	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
March	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
April	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
May	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
June	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
July	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
August	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
September	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
October	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539	73.2	38.7	0.5	8	13	1.4	6.5	16	36	in.
November	29.57	0.30	73.0	28.5	43.7	53.6	43.5	10.1	49.8	42.8	.276	3.2	0.9	77	539										

[illegible]



Year 1862.	Month.	Names of Stations and Observers.	Pressure of Atmosphere in Month.			Temperature of Air in Month.			Vapour.		Mean Thermometer.	Wind.				Mean Amount of Cloud.		Rain.
			Mean.	Range.	In.	Highest.	Lowest.	Range.	Of all Highest.	Of all Lowest.	Mean.	Direction.	Force.	Mean.	Direction.	Mean.	Direction.	
April	April	LEEDS PHILOSOPHICAL HALL, HENRY DENST, Esq., A.L.S.	29.618	29.618	29.618	29.618	29.618	29.618	29.618	29.618	29.618	29.618	29.618	29.618	29.618	29.618	29.618	29.618
May	May	STONTHURST COLLEGE, REV. S. PERRY, M.A.	29.512	29.512	29.512	29.512	29.512	29.512	29.512	29.512	29.512	29.512	29.512	29.512	29.512	29.512	29.512	29.512
June	June	YORK, JOHN FORD, Esq.	29.775	29.775	29.775	29.775	29.775	29.775	29.775	29.775	29.775	29.775	29.775	29.775	29.775	29.775	29.775	29.775
April	April	SCARBOROUGH, R. CHAMFLEY, Esq.	29.792	29.792	29.792	29.792	29.792	29.792	29.792	29.792	29.792	29.792	29.792	29.792	29.792	29.792	29.792	29.792
May	May	OTLEY, H. W. THORNS, Esq.	29.728	29.728	29.728	29.728	29.728	29.728	29.728	29.728	29.728	29.728	29.728	29.728	29.728	29.728	29.728	29.728
June	June	HARROGATE (Yorkshire), J. COUPLAND, Esq.	29.472	29.472	29.472	29.472	29.472	29.472	29.472	29.472	29.472	29.472	29.472	29.472	29.472	29.472	29.472	29.472
April	April	COCKERMOUTH, HENRY DOUGLASS.	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772
May	May	ST. PAUL'S PARSONAGE, near SILLOTH, CUMBERLAND.	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772
June	June	ST. PAUL'S PARSONAGE, near SILLOTH, CUMBERLAND.	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772
April	April	CARLISLE, MR. JOHN DAWSON, under the direction of T. SOPWITH, Esq., F.R.S., M.B.M.S.	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772
May	May	ALLENHEADS, THOMAS BEWICK, Esq., C.E., M.B.M.S., Assistant to T. SOPWITH, Esq., F.R.S., &c.	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772
June	June	NORTH SHIELDS, ROBERT SPENCE, Esq.	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772
April	April	HIGH HOUSE (Alnwick), Mr. SCOTT, for His Grace the Duke of Northumberland.	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772
May	May	CULLODEN, A. FORBES, Esq., M.B.M.S.	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772
June	June		29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772	29.772

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# ON THE METEOROLOGY OF ENGLAND, DURING THE QUARTER ENDING SEPTEMBER 30, 1862.

REMARKS ON THE WEATHER during the QUARTER ending 30th of SEPTEMBER 1862. By JAMES GLAISHER, Esq., F.R.S., &c., Secretary of the British Meteorological Society.

The cold weather which set in on the 9th of June continued with but few and trifling exceptions till the 12th of September; the average daily deficiency of temperature during these 96 days was  $2^{\circ}4$ . Within this long period there were 12 days only on which the temperature of the air reached or exceeded its average value; and the excess above the average, on the very few days so distinguished, was generally less than  $3^{\circ}$ ; and on one day only, viz., the 8th of September, it was as large as  $5^{\circ}$ . Within this period of 96 days rain fell on 40 days to the amount of 7 inches. The wind blew from the North or a compound of the North on 26 days, from the S.W. on 35 days, the West on 28 days, South 3 days, and from the S.E. and E. 4 days. From the 13th of September the weather was warm, and for the 18 days ending the 30th of September the average daily excess over their averages was  $2^{\circ}3$ .

The mean temperature of the air in July was  $59^{\circ}1$ , being  $1^{\circ}8$  lower than in 1861, and lower than in any July to 1841, with the exception of that of 1860, which was  $57^{\circ}6$ .

The mean temperature of August was  $59^{\circ}5$ , being  $3^{\circ}3$  lower than in 1861, and lower than all back to 1845, with the exception of 1860, which was  $57^{\circ}4$ .

The mean temperature of September was  $57^{\circ}7$ , being  $0^{\circ}6$  warmer than in 1861, and  $4^{\circ}3$  warmer than in 1860.

The mean high day temperature of the air was  $2^{\circ}9$  in defect in July,  $1^{\circ}9$  in defect in August, and  $0^{\circ}1$  in excess in September, as compared with the averages of the preceding 21 years.

The mean low night temperature of the air was  $2^{\circ}4$  in defect in July,  $2^{\circ}0$  in defect in August, and  $1^{\circ}2$  in excess in September.

Therefore both the days and nights in July and August were cold, and in September the nights were warm, the days being of their average warmth only.

The mean temperature of the air was  $2^{\circ}7$  in defect in July,  $1^{\circ}9$  in defect in August, and  $0^{\circ}8$  in excess in September.

The mean temperature of the dew point was  $1^{\circ}5$  in defect in July,  $0^{\circ}6$  in defect in August, and  $1^{\circ}4$  in excess in September.

The degree of humidity was at all times above its average value. Although there was less water present in the air in the months of July and August the relative humidity was greater than usual owing to the low temperature of these two months.

The pressure of the atmosphere in each month was very nearly of its average value.

The fall of rain in July was 1.7 inch, in August 3.0 inches, and in September 1.6 inch, the total fall for the quarter was 6.3 inches, being 1.2 inch below the average of the preceding 43 years.

The mean temperature of the air at Greenwich in the three months ending August, constituting the three summer months, was  $53^{\circ}9$ , being  $0^{\circ}4$  below the average of the preceding 91 years.

1862. Months.	Temperature of							Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
	Air.		Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames.	Mean.	Diff. from average of 21 years.
	Mean.	Diff. from average of 91 years.	Mean.	Diff. from average of 21 years.	Mean.	Diff. from average of 21 years.	Mean.	Diff. from average of 21 years.			
July	59.1	-2.3	55.6	-1.9	59.4	-1.5	0.0	0.0	61.5	in.	in.
Aug.	59.5	-1.1	56.3	-1.3	59.5	-0.6	19.5	+0.1	63.7	in.	in.
Sept.	57.7	+1.4	55.0	+1.1	57.5	+1.4	17.5	-1.1	60.9	in.	in.
Mean	58.7	-0.7	55.6	-0.7	58.8	-0.2	19.0	-0.5	62.0	4.00	4.5



1862. MONTHS.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.	Reading of Thermometer on Grass.				
	Mean.	Diff. from average of 21 years.	Mean.	Diff. from average of 21 years.	Mean.	Diff. from average of 21 years.	Amount.	Diff. from average of 43 years.		Number of Nights it was			Lowest Reading at Night.	Highest Reading at Night.
										At or below 30°.	Between 30° and 40°.	Above 40°.		
July -	78	+ 2	in. 29.762	in. -0.033	grs. 531	grs. + 3	in. 1.7	in. -1.0	Miles. 261	0	2	29	0	
Aug. -	81	+ 4	29.785	-0.006	530	+ 2	3.0	+0.6	199	0	1	30	37.5	
Sept. -	83	+ 2	29.859	+0.036	534	0	1.6	-0.8	172	0	6	24	39.7	
Mean -	81	+ 3	29.802	-0.001	532	+ 2	Sum 6.3	Sum -1.2	Mean 210	Sum 0	Sum 9	Sum 83	Lowest 32.0	Highest 56.1

NOTE.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred or thunder was heard and lightning seen on the 2d of July at Cocker-mouth; on the 4th at Scarborough and North Shields; on the 6th at Bradford, Scarborough, and Harrogate; on the 7th at Downside near Bath and Cardington; on the 10th at Oxford, Berk-hampstead, and Hartwell; on the 15th at Belvoir and Scarborough; on the 16th at Greenwich, London, Leyton, Oxford, Berkhamstead, Hartwell, Royston, Gloucester, Cardington, Aspley, Belvoir, Scarborough, and Harrogate; on the 26th at Norwich; and on the 29th at Leeds. On the 5th of August at Liverpool, St. Paul's Parsonage, Carlisle, and Cocker-mouth; on the 6th at Grantham, Belvoir, Bradford, Stonyhurst, Scarborough, and Otley; on the 7th at Scarborough; on the 8th at Aldershot and High House, Alnwick; on the 11th and 12th at Otley; on the 14th at North Shields; on the 15th at Berkhamstead, Hartwell, Cardington, Norwich, Belvoir, Bradford, Kingsley, Otley, Thelwall, and Harrogate; on the 16th at Exeter and Little Bridy; on the 28th and 29th at Little Bridy; and on the 31st at Exeter. On the 2d of September at Cardington, Grantham, Leeds, Stonyhurst, Otley, and Thelwall; on the 3d at Royston and Liverpool; on the 10th at St. Paul's Parsonage; on the 24th at Guernsey; on the 26th at Scarborough; on the 28th at Llandudno, Stonyhurst, and Carlisle; and on the 29th at St. Paul's Parsonage and Allenheads.

Thunder was heard but lightning was not seen on the 2d and 5th of July at Brighton; on the 6th at Stonyhurst, Otley, and North Shields; on the 7th at Brighton, London, Oxford, Gloucester, and Hartwell; on the 8th at North Shields; on the 10th at Greenwich and St. Paul's Parsonage; on the 12th at Greenwich; on the 15th at Downside near Bath and Eccles; on the 16th at Brighton, Berkhamstead, Aspley, and North Shields; on the 19th at Thelwall; on the 22d at Berkhamstead; on the 24th at Kingsley; and on the 25th and 26th at Little Bridy. On 4th of August at Little Bridy; on the 5th at Eccles, Bradford, Stonyhurst, Otley, Harrogate, Bywell, Allenheads, and North Shields; on the 6th at Oxford and Berkhamstead; on the 8th at Hartwell; on the 12th at Thelwall; on the 15th at Hartwell, Grantham, Holkham, and Stonyhurst; on the 24th at Scarborough; on the 28th at Bradford and Harrogate; and on the 31st at Helston and Exeter. On the 1st of September at Downside near Bath; on the 2d at Brighton, Gloucester, Eccles, Kingsley, Otley, and Harrogate; on the 3d at Allenheads; on the 7th at Exeter; on the 10th at Carlisle; on the 15th at Cardington; on the 26th at Harrogate; on the 27th at Brighton and Cardington; on the 28th at Cardington; and on the 30th at Helston.

Lightning was seen but thunder was not heard on the 22d and 28th of July at Little Bridy; and on the 29th at Guernsey and Little Bridy. On the 5th of August at Allenheads; on the 15th at Little Bridy; on the 21st at Hurstpierpoint; on the 26th at Guernsey; on the 29th at Exeter and Oxford; and on the 30th at Little Bridy. On the 1st of September at Hurstpierpoint; on the 2d at Helston; on the 3d at Little Bridy; on the 15th at Cardington; on the 26th at Kingsley and North Shields; on the 27th and 28th throughout the greater part of the South of England; and on the 30th at Guernsey and Bournemouth near Poole.

Aurora were seen on the 18th and 31st of July at Leighton; on the 24th, 25th, 27th, and 30th at Aspley near Bedford. On the 4th of August at Greenwich; on the 9th at Thelwall; on the 19th at Oxford; and on the 23d at Kingsley. On the 12th of September at St. Paul's Parsonage; and on the 27th at Petersfield.

Solar halos were seen on the 2d of July at Oxford; on the 3d at Clifton; on the 8th at Harrogate and Culloden; on the 11th at Little Bridy, Clifton, Oxford, Berkhamstead, and Thelwall; on the 17th at Oxford; on the 18th at Little Bridy and Clifton; on the 22d at Clifton; and on the 29th at Harrogate. On the 2d of August at Little Bridy, Clifton, and Oxford; on the 3d and 5th at Oxford; on the 8th at Clifton; on the 18th at Culloden; on the 21st at Little Bridy; on the 24th at Cardington; on the 25th at Berkhamstead and Allenheads; on the 26th at Eccles; and on the 28th at Brighton and Berkhamstead. On the 10th, 11th, and 24th at Grantham; and on the 22d at Oxford.

Lunar halos were seen on the 11th of July at Berkhamstead. On the 9th of August at Oxford; on the 15th at Leyton. On the 6th of September at Greenwich and Leyton; on the 7th at Grantham and Stonyhurst; and on the 8th at Leyton.

Hail fell on the 2d of July at Otley, Harrogate, St. Paul's Parsonage, Allenheads, North Shields, Cocker-mouth, and Culloden; on the 4th at Eccles, Allenheads, and North Shields; on the 7th and 15th at Downside; on the 16th at Leyton, Royston, and Thelwall; and on the 26th at Norwich. On the 6th of August at Oxford; and on the 8th at Osborne. On the 3d September at Truro; on the 4th at Allenheads; and on the 30th at Guernsey and Downside near Bath.

Fog was prevalent on the 5th, 6th, 7th, 9th, 12th, 13th, 23d, and 24th of July. On 12th, 13th, 14th, 15th, 16th, 17th, 18th, 19th, 20th, 21st, 26th, 27th, 28th, 29th, 30th, and 31st of August. And on the 1st, 2d, 3d, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 15th, 16th, 17th, 18th, 19th, 20th, 21st, 24th, 25th, 26th, 27th, 28th, 29th, and 30th of September.

Snow fell on the 2d of July on Ben Wyvis, Ross-shire, 3,720 feet above the level of the sea, and remained partly unmelted all day.

At Guernsey barley and rye were cut on 26th of July; wheat on the 30th. The harvest was finished by the end of August.

At Helston wheat was cut on 2d of August; barley and oats on the 9th.

At Hurstpierpoint, near Brighton, wheat was cut on the 4th of August.

At Worthing wheat was cut on 27th of July; the harvest became very general by the 4th of August; the grain was all housed by the end of the month. Altitude in this neighbourhood seems to influence the crops very much. Corn is now grown on the downs 700 feet above the sea level.

At Clifton wheat was cut on 7th of August.

At Royston wheat was cut on 24th of July; and barley on the 26th of July.

At Berkhamstead the lime was in flower on the 8th of July; and the early sorts of apples and pears were ripe by the 31st. Plums were ripe on the 20th of August, and peaches on the 31st. Wheat was cut on 9th of August. The greater part of the harvest was got in by the end of August. Mildew was prevalent in some fields, but upon the whole the crops are not much under the average. The potatoes are but little affected with blight in this vicinity, the crops being in general very fine; on the low grounds to the west of the Chiltern Hills the disease is more prevalent.

At Cardington wheat was cut on the 31st of July.

At Belvoir wheat cutting commenced in the second week in August; the crop is rather a light one, the ears being imperfectly filled. Oats are more promising. The hay crop was well got in, the quality never better, and a good medium crop in bulk. Stock generally healthy. Orchard fruit variable. Potatoes much affected by disease.

At Grantham the harvest in this vicinity is late and irregular, some wheat was cut and carried early in August, some was still standing in the middle of September, parts of that, which is cut, have ripened very irregularly, the same may be said of other grains; the yield will not be bad.

At Thelwall oats were cut on the 21st of August, and wheat on the 25th. Both look well. The quantity is fully an average, and the quality seems to be good. A considerable breadth of both kinds of grain has been cut in the valley of the Mersey. Fruit deficient and small. Plums were ripe on 20th September. Swallows left on the 23d.

At Harrogate hay crops generally very good and well secured. Corn much improved and promising a fair crop.

At Stonyhurst most of the crops are more or less failing this year, especially potatoes, turnips, cabbages, and oats. The wheat is more promising. The hay is abundant, and of good quality.

At Cocker-mouth agricultural operations, especially hay making, much retarded by the unseasonable weather in July. Many meadows yet covered with hay, some not mown. Barley cutting commenced on the 26th of August; wheat and oats on the 28th. From 14th to 24th September the harvest progressed with great rapidity. Owing to the unsettled state of the weather afterwards, there was much grain still uncut at the end of the quarter. Crops about an average.

At Bywell the hay, which is a good crop, was all secured by the end of July. Oats and barley were cut early in August. There is every promise of a good crop. Wheat about an average. Turnips look well. Potatoes partially diseased. Much damage was done to the crops by the wind on the 25th of July. Most of the crops on the banks of the Tyne were secured by the middle of September. In the higher grounds there are many fields not yet fit to cut.

At Allenheads the hay harvest was finished about the middle of August, and most of it in good condition. The grain crops are generally up to the average.

At North Shields hay harvest commenced generally about the 1st of July. Fuschias were in flower on the 14th. Strawberries were ripe on the 15th. Scarlet lupines were in flower on the 18th. Currants were ripe on the 19th. Cabbage roses were in flower on the 21st. Wheat and barley were cut on the 26th August.

At Culloden barley and oat cutting commenced on the 10th and 16th of September respectively. Wheat harvest commenced on the 24th. Many fields were secured in good condition, but some are very deficient.



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.	Rain.			
																		Relative Proportion of									
																		N.	E.	S.	W.						
																		Mean Amount of									
Guernsey	29.584	71.0	49.0	22.0	62.3	53.6	19.0	8.7	57.8	54.1	420	4.6	0.7	87	533	53.3	48.0	1.4	9	7	10	4.1	4.2	34			
Helston	29.603	75.0	44.0	31.0	66.4	42.9	27.7	13.5	58.5	55.6	451	4.6	0.7	87	533	53.3	48.0	1.4	9	7	10	4.1	4.2	34			
Truro	29.587	75.0	44.0	31.0	66.4	42.9	27.7	13.5	58.5	55.6	451	4.6	0.7	87	533	53.3	48.0	1.4	9	7	10	4.1	4.2	34			
Exeter (St. Leonard's)	29.588	77.5	42.0	35.5	69.4	42.0	32.0	14.4	56.4	53.5	416	4.6	0.7	87	533	53.3	48.0	1.4	9	7	10	4.1	4.2	34			
Exeter (200 High-st.)	29.580	74.2	44.0	30.2	67.0	52.7	27.6	14.3	58.5	55.2	433	4.6	0.9	81	532	53.3	48.0	1.1	8	8	12	—	6.6	54			
Bournemouth	29.584	78.0	40.0	38.0	68.8	51.1	31.4	10.4	57.8	54.5	425	4.7	0.8	87	533	—	—	1	4	2	10	15	4.3	32			
Ventnor	29.580	70.0	49.0	22.0	66.4	55.5	20.9	9.1	60.1	53.6	413	4.7	1.2	79	528	—	—	4	5	8	14	—	—	42			
Osborne	29.581	70.4	42.1	34.4	66.3	51.8	31.4	10.5	59.1	53.5	448	4.9	0.6	89	531	90.1	45.5	0.5	6	8	12	6.8	6.1	25			
Worthing	29.577	70.0	44.5	27.3	63.0	52.2	23.0	9.2	58.7	52.3	393	4.3	1.1	78	534	—	—	12	12	3	10	11	6.3	4.9	43		
Little Bridy	29.583	70.0	40.7	35.5	66.0	50.2	32.1	16.6	57.5	52.9	401	4.5	0.7	85	529	—	—	6	5	6	13	6.2	6.3	44			
Petersfield	29.583	70.0	36.0	43.0	63.9	50.2	37.7	18.7	58.3	49.1	338	4.6	0.9	75	535	—	—	1	4	5	10	11	—	4.5	60		
Barstaple	29.591	75.1	42.2	32.9	67.6	52.8	29.9	13.7	58.3	53.4	404	4.6	0.9	81	535	—	—	1	4	5	10	11	—	4.5	60		
Aldershot Camp	29.598	70.2	39.1	40.4	64.7	50.8	34.4	14.8	57.5	52.7	337	4.4	1.1	81	529	80.1	47.1	0.3	6	5	7	13	6.9	5.9	27		
Clifton	29.589	75.0	41.1	23.3	63.8	51.5	30.6	14.8	57.3	50.9	373	4.2	1.1	79	529	—	—	0.3	6	5	14	5.7	6.4	39			
Downside College	—	84.0	38.5	45.5	63.8	48.9	37.9	19.4	56.8	53.5	407	4.6	0.7	88	525	102.3	47.0	0.5	7	4	9	11	6.7	6.9	36		
Royal Observatory	29.582	79.9	39.2	40.7	69.8	50.8	38.4	19.0	58.8	52.8	400	4.6	1.1	81	532	106.7	46.7	0.5	5	8	12	1.2	7.3	48			
Recent's Park	29.598	77.3	43.9	33.6	65.5	52.5	26.8	13.1	57.8	53.4	409	4.5	0.8	85	532	—	—	0.5	5	9	12	1.2	7.3	48			
St. John's Wood	29.583	78.3	45.4	45.0	69.1	53.1	33.3	18.2	59.4	51.5	381	4.3	1.4	74	530	—	—	6	4	6	14	—	7.0	45			
Guilford	29.571	70.2	40.0	27.2	59.3	50.1	31.7	18.5	58.5	51.7	385	4.3	1.3	77	532	—	—	—	—	—	—	—	—	49			
Camden Town	29.585	80.2	38.8	41.4	60.9	50.3	38.1	18.8	58.5	50.4	372	4.2	1.4	75	533	102.7	46.8	—	6	5	8	12	1.4	5.7	49		
Battersea	29.585	79.2	38.5	40.7	60.8	50.9	35.6	15.9	57.6	52.0	404	4.5	0.7	85	535	92.9	42.9	0.9	5	6	7	13	1.0	5.9	41		
Leyton (Essex)	29.579	78.2	38.7	39.5	70.4	49.3	34.6	20.1	59.0	52.5	396	4.5	1.1	79	531	85.0	—	0.4	6	7	9	14	—	5.8	39		
Radcliffe Observatory	29.577	70.7	39.6	37.1	66.8	50.1	33.1	19.2	57.6	50.9	373	4.2	1.2	76	532	76.4	44.4	1.2	7	3	9	10	4.6	7.8	38		
Hartwell House	29.571	79.0	38.0	41.0	61.9	49.7	35.5	16.4	59.2	52.1	390	4.3	1.2	77	529	—	—	0.4	7	3	11	10	3.2	6.4	—		
Hartwell Rectory	29.573	70.6	39.0	37.7	68.4	50.0	33.4	18.4	57.9	51.1	386	4.4	1.0	82	529	—	—	0.9	5	5	7	13	—	6.5	25		
Royston	29.572	80.0	41.3	38.8	67.1	48.8	33.2	19.9	57.6	50.8	371	4.2	1.1	78	532	—	—	8	4	6	13	4.6	6.3	42			
Cardington	29.579	80.0	38.0	40.0	69.8	50.2	37.2	18.6	58.8	—	—	—	—	—	103.0	40.6	1.2	7	5	7	12	—	6.5	36			
Aspley	29.571	70.5	43.7	24.8	62.6	51.3	20.9	19.8	58.5	50.4	366	4.1	0.9	84	529	—	—	44.0	0.6	2	7	12	10	—	7.2	33	
Lampeter	29.573	75.0	43.4	41.6	66.0	49.2	38.2	19.8	58.5	50.4	404	4.5	1.0	81	536	49.0	—	6	4	10	10	2.7	5.8	36			
Norwich	29.587	74.5	43.0	31.1	56.8	52.2	28.5	14.4	58.4	53.3	404	4.5	1.0	81	536	49.0	—	6	4	10	10	2.7	5.8	36			
Diss (Norfolk)	29.584	79.0	41.5	37.7	55.9	51.9	33.2	17.6	59.2	52.6	393	4.3	1.2	79	539	—	—	7	6	4	10	10	2.7	5.8	36		
Derby	29.577	75.0	43.3	39.0	67.6	53.2	30.7	15.0	59.3	47.4	329	3.8	1.8	79	531	—	—	—	—	—	—	—	—	—	—		
Holkham	29.577	77.8	37.0	40.4	64.6	51.1	33.2	18.3	56.9	50.6	336	4.1	1.0	80	535	100.1	41.7	6	5	7	12	—	7.0	38			
Liverpool Observatory	29.579	69.8	47.6	22.2	64.1	54.4	18.6	9.7	57.7	49.7	357	4.0	1.3	74	536	—	—	1.2	—	—	—	—	7.1	39			
Manchester	29.574	74.1	36.6	37.5	62.9	46.8	32.9	16.1	55.3	49.2	351	3.9	1.6	79	533	77.4	47.8	0.3	4	5	8	13	1.5	7.7	34		
Eccles	29.576	77.7	34.5	42.2	65.2	47.1	36.3	18.1	56.7	45.1	374	4.2	1.0	81	533	93.6	47.3	1.6	7	7	9	9	—	6.9	48		
Wakefield	29.579	69.7	45.2	25.8	62.3	32.0	33.5	9.7	50.4	45.2	342	4.1	1.1	83	530	84.5	—	1.7	5	6	7	12	—	7.2	41		
Bradford	29.576	69.3	45.2	25.8	62.3	32.0	33.5	9.7	50.4	45.2	342	4.1	1.1	83	530	84.5	—	1.7	5	6	7	12	—	7.2	41		
Kingsley	29.568	74.9	39.4	38.5	64.4	47.7	31.1	16.7	59.2	50.4	360	4.1	0.9	83	530	84.5	—	1.7	5	6	7	12	—	7.2	41		
Thelwall, near Warrington	29.568	76.8	35.8	35.1	61.4	48.8	32.0	15.8	55.4	51.0	374	4.2	0.9	82	534	79.4	47.0	0.5	5	5	11	4.3	6.0	50			
Leeds	29.555	73.0	38.0	35.0	64.4	49.4	28.7	15.1	55.6	49.9	360	4.1	0.9	82	532	76.4	47.0	1.6	6	5	10	10	—	7.6	44		
Stonbury	29.555	70.0	39.0	33.0	63.5	45.0	20.7	14.5	55.5	45.6	369	4.2	0.8	83	530	82.9	45.3	0.5	7	5	12	—	7.7	36			
Scarborough	29.560	70.0	44.5	25.5	59.0	50.1	26.1	8.9	54.5	52.4	394	4.4	0.3	93	537	—	—	3.0	5	8	10	8	—	—	—		
Harrogate	29.566	72.0	42.0	35.0	61.1	50.4	24.1	10.7	54.6	49.9	358	4.0	0.7	84	534	—	—	1.2	4	7	3	17	—	6.2	28		
Cockermouth	29.558	72.0	41.0	31.0	63.5	49.1	26.6	14.4	55.0	49.3	356	3.9	1.0	82	530	—	—	0.8	7	6	9	3.3	3.6	45			
St. Paul's Parsonage	29.553	72.0	40.5	32.0	62.3	48.0	23.7	13.8	55.9	50.7	371	4.2	0.9	83	533	—	—	6	6	7	12	0.3	6.7	45			
Bywell	29.558	76.0	42.0	34.0	64.4	47.9	29.7	15.5	55.7	49.8	358	4.0	1.0	79	536	76.8	45.0	1.2	5	6	8	14	7.9	6.1	37		
Allenheads	29.551	70.0	39.2	32.8	61.9	45.9	29.9	12.3	58.3	49.2	347	3.6	0.6	80	531	—	—	42.5	1.2	5	6	4	15	—	5.2	47	
Carlisle	29.552	71.0	39.0	36.0	64.4	49.9	29.9	12.3	55.1	50.5	368	4.2	0.7	84	533	80.9	43.6	0.2	5	5	10	13	3.6	6.8	53		
North Shields	29.567	70.0	39.0	36.2	64.1	48.2	26.1	12.2	54.3	49.7	357	4.0	0.8	84	538	—	—	4.6	1	9	8	5	6	12	—	6.0	41
Alnwick	29.555	67.2	43.9	23.3	59.8	51.1	20.8	8.6	54.8	49.6	355	4.0	0.7	84	535	89.7	45.4	0.3	5	6	11	9	7.8	6.2	53		
Culloden	29.555	67.2	43.9	23.3	59.8	51.1	20.8	8.6	54.8	49.6	355	4.0	0.7	84	535	89.7	45.4	0.3	5	6	11	9	7.8	6.2	53		

The highest temperatures of the air were at Downside College, 84°; Camden Town, 80°2'; Royston and Cardington, 80°; Royal Observatory, 79°2'; Battersea, 79°2'; Petersfield, Hartwell House, and Diss, 79°. The lowest temperatures were at Allenheads, 33°; Lampeter, 33°4';



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*Second Rain gauges are placed*.—At Exeter, 20 feet above the ground, the amount collected was 6·5 inches; at Clifton, 50 feet, 5·6 inches; at Guildhall, 77 feet, 6·6 inches; at Cardington, 36 feet, 4·8 inches; at Oxford, 23 feet, 4·9 inches; at Hartwell Rectory, 4 feet, 5·6 inches; at Holkham, 4 feet, 7·3 inches; at Nottingham, 25 feet, 6·1 inches; at Norwich, 31 feet, 5·3 inches; at Harrogate, 24 feet, 7·4 inches; and at Almonds, 7 feet, 8·9 inches.

At Cardington, in July, readings of dry thermometer at 3h. P.M. are erroneous on several days, and, therefore, the observations of the dry and wet thermometers at these hours have not been used.

At Gloucester, in July, the readings of the wet thermometer are much too high, and no use has been made of them.

At Scarborough, in August, the readings of the dry and wet thermometers are discordant, and have not been used. On August 30th, at 6h. P.M., the reading of the barometer has been altered from 28·800 to 28·805.

At St. John's College, on August 9th, the maximum temperature has been altered from 64°·5 to 74°·5.  
At Battersea, on August 9th, at 2 hr. m., the reading of the barometer has been altered from 29°·620 inches to 29°·626 inches.  
At Marlborough, on April 23d, at 2 p. m., the reading of the thermometer has been altered from 59°·293 inches to 59°·705 inches.

DURING THE QUARTER ENDING DECEMBER 31, 1862.

REMARKS ON THE WEATHER during the QUARTER ending 31st of DECEMBER  
1862. By JAMES GLAISHER, ESQ., F.R.S., &c., Secretary of the British  
Meteorological Society.

From the beginning of the quarter to the 17th the weather was warm, the excess of temperature amounting to  $4\frac{1}{2}$  daily; and to  $3\frac{1}{2}$  for the 35 days ending October 17th. On the 8th a variable period set in and continued to the 30th, the average deficiency of temperature was  $1\frac{1}{2}$  daily. This was followed by a week of warm weather; a cold period set in on November 6th and continued to December 2d, a deficiency of temperature being experienced of  $4\frac{1}{2}$  daily; and from December 3d to the end of the quarter there was an average excess to the same amount, viz.,  $4\frac{1}{2}$  daily.

The mean temperature of the month of October was  $51^{\circ} \cdot 8$ , being higher than any October since 1847, with the exception of 1857 and 1861, which were  $52^{\circ} \cdot 9$  and  $54^{\circ} \cdot 9$  respectively.

The mean temperature of the month of November was  $39^{\circ} \cdot 8$ , being lower than any November since 1829, with the exception of 1851 and 1858, which were  $37^{\circ} \cdot 9$  and  $39^{\circ} \cdot 6$  respectively.

The mean temperature of the month of December was  $43^{\circ}6$ , being higher than any December since 1843, excepting the years 1848, 1852, and 1857, which were  $44^{\circ}0$ ,  $47^{\circ}6$ , and  $45^{\circ}1$  respectively.

The mean high day temperature was  $1^{\circ}9$  in excess in October,  $3^{\circ}4$  in defect in November, and  $3^{\circ}0$  in excess in December.

The mean low night temperature was  $1^{\circ}7$  in excess in October,  $3^{\circ}2$  in defect in November, and  $3^{\circ}1$  in excess in December.

Therefore both the days and nights in October and December were warm, and in November both were cold.

The mean temperature of the air was  $^{\circ}4$  in excess in October,  $4^{\circ}4$  in defect in November.

The mean temperature of the dew point was  $2^{\circ}\cdot 4$  in excess in October,  $2^{\circ}\cdot 6$  in defect in November, and  $3^{\circ}\cdot 5$  in excess in December.

The degree of humidity was above its average in the months of October and November, and in defect in December.

The pressure of the atmosphere was 0.03 inch in excess in October, 0.05 inch in excess in November, and 0.05 inch in excess in December.

The fall of rain was 4.0 inches in October, 1.0 inch in November, and 1.6 inch in December.

the total fall for the quarter was 6.6 inches, being  $\frac{1}{2}$  an inch above the average of the preceding 43 years.

The total fall of rain for the year is 26.2 inches, being 1.2 inches above the average. The following table shows the annual fall of rain for 1861 in different parts of the country.

TABLE showing the FALL of RAIN at various Stations in the Year 1862.

TABLE showing the FALL of RAIN at various Stations in the Year 1862.

Stations.	Amount.	Stations.	Amount.	Stations.	Amount.	Stations.	Amount.
Guernsey	in.	Downside College	in.	Aspley (Deds)	in.	Leeds	in.
Helson	32.9	near Bath	45.6	Lampeter	25.7	Stonyhurst	21.6
Truro	38.3	Royal Observatory,		Llandudno	43.2	York	54.4
Exeter, St. Leonard's	44.5	Greenwich	26.2	Norwich	32.6	Scarborough	21.8
Exeter, 299, High St.	51.3	St. John's Wood	26.2	Diss (Norfolk)	23.7	Otley	20.4
Bournemouth	28.6	Camden Town	25.2	Grantham	23.4	Thelwall, near War-	
Osborne	23.9	Guidhall	27.6	Belvoir Castle	21.4	ington	35.7
Worthing	30.0	Battersea	28.1	Derry	26.5	Harrogate	32.0
Little Bridy	30.5	Leyton	25.9	Boikham	24.9	St. Paul's-Parsonage,	
St. John's College,	32.6	Oxford	27.0	Hawarden	23.4	near Silloth	43.9
Hurstpierpoint	37.2	Great Berkhamstead	29.4	Liverpool	30.3	Bywell	26.1
Petersfield	28.6	Hartwell House	26.1	Manchester	37.4	Allenhead	45.7
Barnstable	26.7	Hartwell Rectory	22.5	Walsford	30.8	North Shields	27.8
Aldershot	43.7	Royston	23.9	Bradford	30.9	High House (Alnwick)	31.0
Clifton	27.3	Gloucester	26.4	King's Parsonage,			
	32.6	Carvington	22.2	near Frodsham	37.1		

The fall of rain for the year 1862 has varied from 20·4 inches at Scarborough, to 54·4 inches at Stonyhurst.



The mean temperature of the air at Greenwich in the three months ending November, constituting the three autumn months, was 49°·8, being 0°·4 above the average of the preceding 91 years.

Temperature of														Elastic Force of Vapour.	Weight of Vapour in a Cubic Foot of Air.
1862. MONTHS	Air.		Evaporation.		Dew Point.		Air— Daily Range.		Water of the Thames.						
	Mean.	Diff. from ave- rage of 91 years.	Diff. from ave- rage of 21 years.	Mean.	Diff. from ave- rage of 21 years.	Mean.	Diff. from ave- rage of 21 years.								
								Mean.		Diff. from ave- rage of 21 years.	Mean.	Diff. from ave- rage of 21 years.	Mean.	Diff. from ave- rage of 21 years.	Mean.
Oct. -	51·8	+2·3	+1·4	50·2	+1·8	48·6	+2·4	14·9	+0·2	55·4	·343	+·028	3·8		
Nov. -	39·8	-2·6	-4·4	38·8	-2·9	37·4	-2·6	11·5	-0·2	44·1	·224	-·029	2·5		
Dec. -	43·6	+4·6	+3·5	42·1	-3·5	40·3	+3·4	9·4	-0·1	42·2	·250	+·029	2·8		
Mean -	45·0	+1·4	+0·2	43·7	+0·8	42·1	+1·0	11·9	0·0	47·2	·272	+·009	3·0		

1862. MONTHS.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Hor- izontal move- ment of the Air.	Reading of Thermometer on Grass.			
	Mean.	Diff. from ave- rage of 21 years.	Mean.	Diff. from ave- rage of 21 years.	Mean.	Diff. from ave- rage of 21 years.	Amount.	Diff. from ave- rage of 46 years.		Number of Nights it was		Low- est Read- ing at Night.	
										At or below 30°.	Be- tween 30° and 40°.		Above 40°.
Oct. -	89	+2	29·736	+0·029	538	-1	4·0	+2·2	Miles. 288	3	9	19	25·0
Nov. -	92	+3	29·793	+0·046	533	+6	1·0	-1·4	172	14	12	4	18·0
Dec. -	88	-1	29·865	+0·052	550	-2	1·6	-0·3	324	9	15	7	27·6
Mean -	89	+1	29·795	+0·042	547	+1	Sum 6·6	Sum +0·5	Mean 261	Sum 26	Sum 36	Sum 30	Lowest 18·0

NOTE.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred or thunder was heard and lightning seen on October 10th at Aldershot, Brighton, and Camden Town; on the 11th at Osborne, Brighton, Leyton, and Royston; on the 15th at Banbury, Belvoir, Scarborough, and Otley; on the 16th at Manchester; on the 17th at Liverpool, Bradford, Stonyhurst, and Thelwall; on the 18th at Eccles; on the 20th at Guernsey, Helston, Truro, Royston, Norwich, Nottingham, Liverpool, and Eccles; on the 21st at Liverpool; on the 22d at Nottingham; on the 23d at Bradford; and on the 24th at Eccles. On November 10th at Guernsey, Clifton, Downside near Bath, Eccles, Manchester, and Stonyhurst; on the 11th at Liverpool and Eccles; on the 14th and 20th at Guernsey; and on December 20th at Eccles, Manchester, and Bradford.

Thunder was heard but lightning was not seen on October 13th and 14th at Nottingham; on the 15th at Clifton, Grantham, and Bradford; on the 17th at Harrogate; on the 18th at Kingsley; on the 19th at Nottingham and Allenheads; on the 21st at Helston and Bradford; and on the 24th at Brighton. On November the 11th at Liverpool. On December 3d at Harrogate; on the 19th at Otley; and on the 21st at Diss.

Lightning was seen but thunder was not heard on October 10th at Osborne, Greenwich, and Oxford; on the 11th at Leyton; on the 12th at St. Paul's Parsonage and Cockermouth; on the 13th at Grantham; on the 14th at Aldershot; on the 15th at Allenheads and Cockermouth; on the 16th at Guernsey, Norwich, and Nottingham; on the 17th at Norwich, Nottingham, Kingsley, and Otley; on the 18th at Grantham and Nottingham; on the 19th at Harrogate; on the 20th at Aldershot, Greenwich, Leyton, Oxford, Nottingham, Eccles, Bradford, Leeds, Stonyhurst, Otley, and Allenheads. On November the 3d at Banbury; on the 10th at Exeter, Oxford, Grantham, Thelwall, and Allenheads; on the 16th at Banbury; and on the 20th of December at Otley.

Aurora were seen on October 2d at Grantham; on the 3d at Leyton, Oxford, Belvoir, North Shields; on the 4th at Stonyhurst and Allenheads; on the 7th at Eccles; on the 8th at North Shields; on the 9th at Cockermouth; on the 12th at Harrogate; on the 19th and 20th at Truro; on the 22d at Clifton, Oxford, Royston, Nottingham, Bradford, Otley, Harrogate, St. Paul's Parsonage, and North Shields; on the 23d at Clifton and St. Paul's Parsonage; and on the 26th at Nottingham and Thelwall. On November 17th and 27th at Allenheads. On December 14th throughout the whole of the country; on the 15th at Nottingham; on the 17th at Lampeter; on the 21st at Diss; and on the 25th at Clifton.

Solar halos were seen on October 1st at Eccles; on the 13th at Nottingham; on the 19th at 27th at Berkhamstead; on the 28th at Nottingham. On November 2d at Nottingham; on the 3d at Clifton, Lampeter, and Harrogate; on the 8th at Nottingham; on the 10th at Berkhamstead; on the 25th at Clifton and Berkhamstead. On December 2d at Oxford; on the 7th at Lampeter; on the 11th at Berkhamstead; on the 17th at Nottingham; on the 18th at Hawarden; and on the 22d at Berkhamstead.

Lunar halos were seen on October 1st at Camden Town, Oxford, and Berkhamstead; on the 4th at Eccles; on the 5th at Liverpool, Stonyhurst, and Alnwick; on the 7th at Stonyhurst; on the 10th at Oxford and Liverpool; and on the 28th at Nottingham and Stonyhurst. On November

2d at Camden Town, Berkhamstead, Royston, Cardington, Grantham, and Nottingham; on the 3d at Battersea; on the 4th at Stonyhurst; on the 5th at Harrogate and Carlisle; on the 6th at Clifton and Lampeter; on the 7th at Stonyhurst; on the 8th at Brighton; on the 11th and 25th at Allenheads; on the 26th at Downside near Bath. On December 1st at Leyton; on the 3d at North Shields; on the 6th at Liverpool, Eccles, Bradford, Kingsley, Thelwall, Harrogate, and at Hawarden; on the 7th at Oxford, Nottingham, and Bradford; on the 8th at Oxford; on the 11th at the 26th at Eccles, Bradford, and Carlisle; on the 16th at Stonyhurst; on the 19th at Hawarden; on the 26th at Eccles, Bradford, and Carlisle; on the 27th at Osborne and Liverpool; on the 28th at Cardington; on the 29th at Osborne, Brighton, Camden Town, Leyton, Oxford, Berkhamstead, Cardington, Grantham, Nottingham, Bradford, and North Shields; and on the 31st at Oxford.

Snow fell on October 17th, 18th, 23d, and 28th at Allenheads; on the 20th at Otley; and on the 21st and 29th at Cockermouth. November 9th at Otley and Allenheads; on the 10th at Downside near Bath, Nottingham, Hawarden, Eccles, Manchester, Wakefield, Bradford, Kingsley, Stonyhurst, Scarborough, Otley, Thelwall, Harrogate, Bywell, Allenheads, and North Shields; on the 11th at Exeter, Downside near Bath, Eccles, Manchester, Bradford, Stonyhurst, Thelwall, Bywell, and Allenheads; on the 12th at North Shields; on the 22d at Hurstpierpoint near Hurstpierpoint near Brighton; on the 25th at Hartwell, Grantham, Otley, and Harrogate; on the 26th at Stonyhurst, Otley, Harrogate, and Bywell; on the 27th at Grantham, Nottingham, Eccles, Wakefield, Bradford, Kingsley, Stonyhurst, Harrogate, and Allenheads. On December 8th and 11th at Allenheads; on the 19th at Otley and Allenheads; on the 20th at Exeter, Clifton, Cardington, and Bradford; on the 22d at Berkhamstead, Banbury, Hartwell, Royston, Cardington, Grantham, Belvoir, Nottingham, Stonyhurst, Otley, and North Shields; and on the 24th at Aldershot.

Hail fell on October 15th at Helston; on the 16th at Guernsey and Helston; on the 17th at Clifton, Liverpool, Kingsley, Stonyhurst, Harrogate, Allenheads, North Shields, Bradford, and Cockermouth; on the 18th at Kingsley, Harrogate, Allenheads, and Bradford; on the 19th at Lampeter, Harrogate, Carlisle, and North Shields; on the 20th at Guernsey, Helston, Clifton, Downside near Bath, Banbury, Cardington, Royston, Lampeter, Liverpool, Eccles, Wakefield, Stonyhurst, Otley, Thelwall near Warrington, Harrogate, Carlisle, Bywell, Allenheads, North Shields, and Bradford; on the 21st at Lampeter, Nottingham, Eccles, Stonyhurst, and Thelwall near Warrington; on the 22d at Aldershot, Lampeter, Stonyhurst, and Cockermouth; on the 23d at Petersfield, Berkhamstead, Lampeter, Stonyhurst, Allenheads, and Bradford; on the 24th at Truro, Petersfield, Pembroke, Berkhamstead, Banbury, Nottingham, Liverpool, Thelwall near Warrington, Bradford, and Cockermouth; on the 26th at Stonyhurst and Cockermouth; and on the 28th at Stonyhurst. It also fell on November 9th, 10th, 11th, 12th, 18th, 19th, 20th, 21st, 22d, 23d, 24th, 25th, 26th, 27th; December 7th, 11th, 13th, 17th, 19th, 20th, 21st, 22d, 23d, 29th.

Fog prevailed on the following days during the quarter; October 2d, 3d, 4th, 5th, 6th, 8th, 9th, 10th, 11th, 13th, 29th, 30th, 31st. November 1st, 2d, 3d, 4th, 5th, 6th, 7th, 8th, 9th, 11th, 12th, 13th, 14th, 15th, 17th, 18th, 19th, 20th, 21st, 22d, 23d, 24th, 25th, 26th, 27th, 28th, 29th, 30th. December 1st, 2d, 3d, 4th, 5th, 6th, 7th, 9th, 11th, 12th, 14th, 15th, 16th, 22d, 23d, 24th, 26th, 27th, 29th, 30th.

Guernsey. Lime trees divested of leaves on October 25th, and horse chesnuts on October 28th. Woodcocks arrived on November 2d.

Helston. Swallows left on October 22d. Woodcocks arrived on the 8th, and fieldfares on the 25th.

Bournemouth. Fieldfares arrived on November 5th.

St. John's College, Hurstpierpoint. Swallows departed on October 15th. Fieldfares arrived on November 3d.

Great Berkhamstead. Swallows remained in this neighbourhood much longer than usual; they were seen in large numbers on October 28th, and a few were flying about as late as November 3d. Lime trees, sycamores, and common poplars were divested of their leaves on the 10th; Walnut trees on the 1st. Field elm and oaks were not divested of leaves until December 5th.

Grantham. Swallows departed on October 6th; some were seen, however, as late as November 10th or 12th. Fieldfares arrived on November 21st.

Belvoir Castle. Wheat sowing began about the middle of October, and a large quantity was sown before the end of the month; the seed time has, on the whole, been very good. Turnips, which seemed good at the commencement of the quarter, turned out very indifferent before the end. Very extraordinary crop of acorns. Potatoes going off. Horse chesnut and poplar trees divested of leaves on November 8th.

Oxford. Fieldfares were first seen on October 28th. Swallows and martins left on October 31st. Lime, hawthorn, and elm trees were leafless on November 9th; horse chesnut on the 6th; plane, poplar, ash, and sycamore on the 10th.

Hawarden. Swallows last seen on October 16th. Fieldfares arrived on the 8th, and woodcocks on the 24th.

Thelwall near Warrington. Hawthorn trees were leafless on November 13th.

Harrogate. Fieldfares arrived on November 4th.

Bywell. The grain crops were secured along the banks of the Tyne early in October; they are in good condition, the yield being about the average. On high grounds there was grain uncut in the month of November. Potatoes much below an average crop; the quality is good, but there is a partial disease. Turnips are looking well, and a fair crop.



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	WIND.				Mean Amount of Onions.	Mean Amount of Cloud.
																		Relative Proportion of					
																		N.	E.	S.	W.		
Guernsey	29.710.69.0	37.0	32.0	5.0	32.2	46.1	12.0	6.1	49.3	34.1	3.03	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Helston	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Truro	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Exeter (St. Leonard's)	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Exeter (300 High-st.)	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Bournemouth	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Ventnor	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Osborne	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Worthing	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Little Bredy	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
St. John's Col. nr. Brighton	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Petersfield	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Barnstaple	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Aldershot Camp	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Clifton	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Downside College	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Royal Observatory	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Regent's Park	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
St. John's Wood	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Guildhall	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Camden Town	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Battersea	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Leighton (Essex)	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Oxford	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Great Berkhamstead	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Banbury	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Hartwell House	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Hartwell Rectory	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Royston	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Gloucester	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Cardington	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Aspley	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Bedford	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Lampeter	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Llandudno	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Norwich	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Diss (Norfolk)	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Grantham	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Belvoir Castle	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Derby	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Holkham	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Nottingham	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Liverpool Observatory	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Manchester	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Eccles	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Walsley	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Bradford	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Kingsley Parsonage	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Thelwall, near Warrington	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Leeds	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Stonyhurst	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
York	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Scarborough	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Orley	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Barnegata	29.708.67.0	31.0	36.0	5.0	34.3	43.8	9.5	9.5	48.8	43.7	31.0	3.3	0.7	83	546	546	546	546	546	546	546	546	546
Cockermouth	29.708.67.0	31.0	36.																				



Station	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
ASPLEY (Redfordshire) Rev. C. W. MAHON, M.A.	29.733	29.738	29.743	29.748	29.753	29.758	29.763	29.768	29.773	29.778	29.783	29.788	29.793	29.798	29.803	29.808	29.813	29.818	29.823	29.828	29.833	29.838	29.843	29.848	29.853	29.858	29.863	29.868	29.873	29.878	29.883	29.888	29.893	29.898	29.903	29.908	29.913	29.918	29.923	29.928	29.933	29.938	29.943	29.948	29.953	29.958	29.963	29.968	29.973	29.978	29.983	29.988	29.993	29.998	30.003	30.008	30.013	30.018	30.023	30.028	30.033	30.038	30.043	30.048	30.053	30.058	30.063	30.068	30.073	30.078	30.083	30.088	30.093	30.098	30.103	30.108	30.113	30.118	30.123	30.128	30.133	30.138	30.143	30.148	30.153	30.158	30.163	30.168	30.173	30.178	30.183	30.188	30.193	30.198	30.203	30.208	30.213	30.218	30.223	30.228	30.233	30.238	30.243	30.248	30.253	30.258	30.263	30.268	30.273	30.278	30.283	30.288	30.293	30.298	30.303	30.308	30.313	30.318	30.323	30.328	30.333	30.338	30.343	30.348	30.353	30.358	30.363	30.368	30.373	30.378	30.383	30.388	30.393	30.398	30.403	30.408	30.413	30.418	30.423	30.428	30.433	30.438	30.443	30.448	30.453	30.458	30.463	30.468	30.473	30.478	30.483	30.488	30.493	30.498	30.503	30.508	30.513	30.518	30.523	30.528	30.533	30.538	30.543	30.548	30.553	30.558	30.563	30.568	30.573	30.578	30.583	30.588	30.593	30.598	30.603	30.608	30.613	30.618	30.623	30.628	30.633	30.638	30.643	30.648	30.653	30.658	30.663	30.668	30.673	30.678	30.683	30.688	30.693	30.698	30.703	30.708	30.713	30.718	30.723	30.728	30.733	30.738	30.743	30.748	30.753	30.758	30.763	30.768	30.773	30.778	30.783	30.788	30.793	30.798	30.803	30.808	30.813	30.818	30.823	30.828	30.833	30.838	30.843	30.848	30.853	30.858	30.863	30.868	30.873	30.878	30.883	30.888	30.893	30.898	30.903	30.908	30.913	30.918	30.923	30.928	30.933	30.938	30.943	30.948	30.953	30.958	30.963	30.968	30.973	30.978	30.983	30.988	30.993	30.998	31.003	31.008	31.013	31.018	31.023	31.028	31.033	31.038	31.043	31.048	31.053	31.058	31.063	31.068	31.073	31.078	31.083	31.088	31.093	31.098	31.103	31.108	31.113	31.118	31.123	31.128	31.133	31.138	31.143	31.148	31.153	31.158	31.163	31.168	31.173	31.178	31.183	31.188	31.193	31.198	31.203	31.208	31.213	31.218	31.223	31.228	31.233	31.238	31.243	31.248	31.253	31.258	31.263	31.268	31.273	31.278	31.283	31.288	31.293	31.298	31.303	31.308	31.313	31.318	31.323	31.328	31.333	31.338	31.343	31.348	31.353	31.358	31.363	31.368	31.373	31.378	31.383	31.388	31.393	31.398	31.403	31.408	31.413	31.418	31.423	31.428	31.433	31.438	31.443	31.448	31.453	31.458	31.463	31.468	31.473	31.478	31.483	31.488	31.493	31.498	31.503	31.508	31.513	31.518	31.523	31.528	31.533	31.538	31.543	31.548	31.553	31.558	31.563	31.568	31.573	31.578	31.583	31.588	31.593	31.598	31.603	31.608	31.613	31.618	31.623	31.628	31.633	31.638	31.643	31.648	31.653	31.658	31.663	31.668	31.673	31.678	31.683	31.688	31.693	31.698	31.703	31.708	31.713	31.718	31.723	31.728	31.733	31.738	31.743	31.748	31.753	31.758	31.763	31.768	31.773	31.778	31.783	31.788	31.793	31.798	31.803	31.808	31.813	31.818	31.823	31.828	31.833	31.838	31.843	31.848	31.853	31.858	31.863	31.868	31.873	31.878	31.883	31.888	31.893	31.898	31.903	31.908	31.913	31.918	31.923	31.928	31.933	31.938	31.943	31.948	31.953	31.958	31.963	31.968	31.973	31.978	31.983	31.988	31.993	31.998	32.003	32.008	32.013	32.018	32.023	32.028	32.033	32.038	32.043	32.048	32.053	32.058	32.063	32.068	32.073	32.078	32.083	32.088	32.093	32.098	32.103	32.108	32.113	32.118	32.123	32.128	32.133	32.138	32.143	32.148	32.153	32.158	32.163	32.168	32.173	32.178	32.183	32.188	32.193	32.198	32.203	32.208	32.213	32.218	32.223	32.228	32.233	32.238	32.243	32.248	32.253	32.258	32.263	32.268	32.273	32.278	32.283	32.288	32.293	32.298	32.303	32.308	32.313	32.318	32.323	32.328	32.333	32.338	32.343	32.348	32.353	32.358	32.363	32.368	32.373	32.378	32.383	32.388	32.393	32.398	32.403	32.408	32.413	32.418	32.423	32.428	32.433	32.438	32.443	32.448	32.453	32.458	32.463	32.468	32.473	32.478	32.483	32.488	32.493	32.498	32.503	32.508	32.513	32.518	32.523	32.528	32.533	32.538	32.543	32.548	32.553	32.558	32.563	32.568	32.573	32.578	32.583	32.588	32.593	32.598	32.603	32.608	32.613	32.618	32.623	32.628	32.633	32.638	32.643	32.648	32.653	32.658	32.663	32.668	32.673	32.678	32.683	32.688	32.693	32.698	32.703	32.708	32.713	32.718	32.723	32.728	32.733	32.738	32.743	32.748	32.753	32.758	32.763	32.768	32.773	32.778	32.783	32.788	32.793	32.798	32.803	32.808	32.813	32.818	32.823	32.828	32.833	32.838	32.843	32.848	32.853	32.858	32.863	32.868	32.873	32.878	32.883	32.888	32.893	32.898	32.903	32.908	32.913	32.918	32.923	32.928	32.933	32.938	32.943	32.948	32.953	32.958	32.963	32.968	32.973	32.978	32.983	32.988	32.993	32.998	33.003	33.008	33.013	33.018	33.023	33.028	33.033	33.038	33.043	33.048	33.053	33.058	33.063	33.068	33.073	33.078	33.083	33.088	33.093	33.098	33.103	33.108	33.113	33.118	33.123	33.128	33.133	33.138	33.143	33.148	33.153	33.158	33.163	33.168	33.173	33.178	33.183	33.188	33.193	33.198	33.203	33.208	33.213	33.218	33.223	33.228	33.233	33.238	33.243	33.248	33.253	33.258	33.263	33.268	33.273	33.278	33.283	33.288	33.293	33.298	33.303	33.308	33.313	33.318	33.323	33.328	33.333	33.338	33.343	33.348	33.353	33.358	33.363	33.368	33.373	33.378	33.383	33.388	33.393	33.398	33.403	33.408	33.413	33.418	33.423	33.428	33.433	33.438	33.443	33.448	33.453	33.458	33.463	33.468	33.473	33.478	33.483	33.488	33.493	33.498	33.503	33.508	33.513	33.518	33.523	33.528	33.533	33.538	33.543	33.548	33.553	33.558	33.563	33.568	33.573	33.578	33.583	33.588	33.593	33.598	33.603	33.608	33.613	33.618	33.623	33.628	33.633	33.638	33.643	33.648	33.653	33.658	33.663	33.668	33.673	33.678	33.683	33.688	33.693	33.698	33.703	33.708	33.713	33.718	33.723	33.728	33.733	33.738	33.743	33.748	33.753	33.758	33.763	33.768	33.773	33.778	33.783	33.788	33.793	33.798	33.803	33.808	33.813	33.818	33.823	33.828	33.833	33.838	33.843	33.848	33.853	33.858	33.863	33.868	33.873	33.878	33.883	33.888	33.893	33.898	33.903	33.908	33.913	33.918	33.923	33.928	33.933	33.938	33.943	33.948	33.953	33.958	33.963	33.968	33.973	33.978	33.983	33.988	33.993	33.998	34.003	34.008	34.013	34.018	34.023	34.028	34.033	34.038	34.043	34.048	34.053	34.058	34.063	34.068	34.073	34.078	34.083	34.088	34.093	34.098	34.103	34.108	34.113	34.118	34.123	34.128	34.133	34.138	34.143	34.148	34.153	34.158	34.163	34.168	34.173	34.178	34.183	34.188	34.193	34.198	34.203	34.208	34.213	34.218	34.223	34.228	34.233	34.238	34.243	34.248	34.253	34.258	34.263	34.268	34.273	34.278	34.283	34.288	34.293	34.298	34.303	34.308	34.313	34.318	34.323	34.328	34.333	34.338	34.343	34.348	34.353	34.358	34.363	34.368	34.373	34.378	34.383	34.388	34.393	34.398	34.403	34.408	34.413	34.418	34.423	34.428	34.433	34.438	34.443	34.448	34.453	34.458	34.463	34.468	34.473	34.478	34.483	34.488	34.493	34.498	34.503	34.508	34.513	34.518	34.523	34.528	34.533	34.538	34.543	34.548	34.553	34.558	34.563	34.568	34.573	34.578	34.583	34.588	34.593	34.598	34.603	34.608	34.613	34.618	34.623	34.628	34.633	34.638	34.643	34.648	34.653	34.658	34.663	34.668	34.673	34.678	34.683	34.688	34.693	34.698	34.703	34.708	34.713	34.718	34.723	34.728	34.733	34.738	34.743	34.748	34.753	34.758	34.763	34.768	34.773	34.778	34.783	34.788	34.793	34.798	34.803	34.808	34.813	34.818	34.823	34.828	34.833	34.838	34.843	34.848	34.853	34.858	34.863	34.868	34.873	34.878	34.883	34.888	34.893	34.898	34.903	34.908	34.913	34.918	34.923	34.928	34.933	34.938	34.943	34.948	34.953	34.958	34.963	34.968	34.973	34.978	34.983	34.988	34.993	34.998	35.003	35.008	35.013	35.018	35.023	35.028	35.033	35.038	35.043	35.048	35.053	35.058	35.063	35.068	35.073	35.078	35.083	35.088	35.093	35.098	35.103	35.108	35.113	35.118	35.123	35.128	35.133	35.138	35.143	35.148	35.153	35.158	35.163	35.168	35.173	35.178	35.183	35.188	35.193	35.198	35.203	35.208	35.213	35.218	35.223	35.228	35.233</



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METEOROLOGY OF ENGLAND.

DURING THE QUARTER ENDING MARCH 31, 1863.

REMARKS ON THE WEATHER during the QUARTER ending 31st of MARCH  
1863. By JAMES GLAISHER, ESQ., F.R.S., &c., Secretary of the British  
Meteorological Society.

With the exception of the period between March 9th and 19th, when the daily temperature of the air was below the average to the amount of  $2\frac{1}{2}$  daily, the weather was warm throughout the quarter, averaging a daily excess of  $4\frac{3}{4}$  of temperature for the remaining 79 days. The temperature of the preceding month, viz., December, was in excess, and the mean temperature of the three winter months, viz., December, January, and February, was  $42^{\circ}.5$ , and is distinguished by being one of the warmest on record. In the preceding 92 years the warmest winter of all was that of 1795, its mean temperature was  $43^{\circ}.2$ ; this was closely approached in the years 1834 and 1846, in each of which this value was  $43^{\circ}.1$ ; and these are the only instances of a higher temperature since the year 1771. In the year 1848 the temperature for the same period was  $42^{\circ}.4$ , closely approximating to the present. The month of March this year was also warm, which was not the case in the year 1795.

The mean temperature of the months January, February, and March, this year, was  $42^{\circ}6$ ; in the year 1834 it was  $42^{\circ}9$ ; in 1846 it was  $43^{\circ}6$ ; and these are the only instances, so far as trustworthy records extend, of an excess over the temperature of the first three months of the present year.

The mean temperature of the four months ending March of this year is  $42^{\circ} \cdot 9$ ; in the year 1846 it was  $43^{\circ} \cdot 1$ ; and in 1834 it was  $43^{\circ} \cdot 3$ ; so that the temperature we have lately had may be considered as high as has ever been experienced at this season of the year.

The mean temperature of January was  $41^{\circ} \cdot 3$ , being higher than any January since 1853. The mean temperature of February was  $42^{\circ} \cdot 1$ , being the same as in 1861; one degree lower than in 1859; but, with these exceptions, the highest since the year 1850.

The mean temperature of March was  $43^{\circ}\cdot9$ , with the exception of 1859, when it was  $46^{\circ}\cdot4$ , was the warmest since the year 1842.

The mean high day temperature was in excess to the amount of  $3^{\circ} \cdot 8$ ,  $4^{\circ} \cdot 6$ , and  $3^{\circ} \cdot 7$  respectively in these three months.

The mean low night temperature was in excess to the amount of  $3^{\circ} \cdot 8$ ,  $4^{\circ} \cdot 6$ , and  $3^{\circ} \cdot 7$  respectively in these months.

Therefore both the days and nights were warm in the months of January and February; in March the days were warm and the nights were cool.

The mean temperature of the air in January was  $-8^{\circ}6$  in Bhubaneswar.

The mean temperature of the air in January was  $5^{\circ} \cdot 2$ , in February was  $3^{\circ} \cdot 6$ , and in March

The temperature of the dew point was  $2^{\circ} \cdot 4$ ,  $3^{\circ} \cdot 2$ , and  $0^{\circ} \cdot 9$ , above the average in the months of January, February, and March respectively, as found from the observations of the preceding 22 years.

The degree of humidity was less than its average in January and March, and above its average in February, and March respectively, as found from the observations of the preceding 22 years.

The degree of humidity was less than its average in January and March, and nearly of its average value in February.

The fall of rain in the extreme southern parts of England in January was somewhat in defect, north

was a little over its average about London, but north of  $53^{\circ}$  it was in excess, and very much so at northern stations.

All over the country the weather in February and March was remarkably fine and mild.

The mean temperature of the air at Greenwich in the three months ending February, constituting the three winter months, was  $42^{\circ} \cdot 5$  being  $41^{\circ} \cdot 2$  above the zero of Fahrenheit's thermometer.

1863. MONTHS.		Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.		
		Air.		Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames.	Mean.	Diff. from average of 22 years.	Mean.	Diff. from average of 22 years.		
		Mean.	Diff. from average of 92 years.	Diff. from average of 22 years.	Mean.	Diff. from average of 22 years.	Mean.	Diff. from average of 22 years.	Mean.						Diff. from average of 22 years.	
Jan.	-	41·8	+5·3	o	o	37·6	+2·4	10·3	o	o	41·5	in.	225	+·022	2·6	+0·2
Feb.	-	42·1	+3·9	+3·7	39·9	+3·0	+3·2	13·8	+2·4	o	41·5	in.	225	+·025	2·6	+0·3
March.	-	43·9	+3·0	+3·4	40·2	+3·1	+3·2	18·0	+3·5	o	43·1	in.	225	+·006	2·6	+0·1
Mean	-	42·6	+4·2	+3·0	40·3	+2·4	37·7	+2·2	14·0	+2·2	43·2	in.	225	+·016	2·6	+0·2



1863. MONTHS.	Degrees of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.	Reading of Thermometer on Grass.				
	Mean.	Diff. from average of 22 years.	Mean.	Diff. from average of 22 years.	Mean.	Diff. from average of 22 years.	Amount.	Diff. from average of 46 years.		Number of Nights it was			Lowest Reading at Night.	Highest Reading at Night.
										At or below 30°.	Between 30° and 40°.	Above 40°.		
			in.	in.	grs.	grs.	in.	in.	Miles.				°	°
Jan. -	85	- 4	29.619	-0.147	547	- 7	2.6	+0.8	337	10	19	2	23.3	43.8
Feb. -	86	+ 1	30.141	+0.333	537	+ 4	0.6	-1.0	254	12	14	2	19.5	44.7
March -	78	- 5	29.715	-0.056	547	- 2	0.7	-0.8	237	16	14	1	22.5	42.4
Mean -	83	- 3	29.825	+0.050	550	- 2	Sum 3.9	Sum -1.0	283	Sum 38	Sum 47	Sum 5	Lowest 19.5	Highest 44.7

NOTE.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred or thunder was heard and lightning seen on January 20th at Diss, Norwich, Wisbeach, and Liverpool; on the 23d at Exeter and Hartwell House; on the 24th at Exeter, Clifton, Bath, Great Berkhamstead, Hartwell, Reading, Gloucester, and Bradford. On February 4th at Scarborough, Silloth, Bywell, and North Shields; and on March 15th at Guernsey.

Thunder was heard but lightning was not seen on January 23d at Otley. February 20th at Allenheads; on the 21st at Cockermouth; on the 24th at Reading. On March 5th at Great Berkhamstead; and on the 8th at Guernsey.

Lightning was seen but thunder was not heard on January 20th at Holkham, Silloth, and Allenheads; on the 23d at Guernsey, Lampeter, and Eccles. On February 4th at Allenheads, Cockermouth, and Alnwick; on the 8th at Leyton. On March 8th at Helston and Banbury; on the 11th at Alnwick; and on the 13th at Helston.

Solar halos were seen on January 4th at St. John's College, near Brighton, and Great Berkhamstead; on the 21st at Grantham; on the 28th at Clifton, Great Berkhamstead, and Eccles; on the 30th at Hawarden. On February 2d at Hawarden; on the 3d at Nottingham; on the 9th at Clifton, Great Berkhamstead, Hawarden, and Nottingham; on the 11th at Grantham and Nottingham; on the 21st at Clifton; on the 23d at Leyton; on the 25th at Leyton; and on the 31st at Guernsey. On March 4th at Great Berkhamstead; on the 7th at Leyton, Great Berkhamstead, and Nottingham; on the 9th at Clifton, Leyton, Great Berkhamstead, Hartwell, and Lampeter; on the 10th at Leyton; on the 14th at Leyton and Great Berkhamstead; on the 15th at Nottingham; on the 16th at Leyton; on the 19th at Clifton and North Shields; on the 24th, 25th, and 31st at Leyton; and on the 28th at Nottingham.

Lunar halos were seen on January 1st at Grantham and Harrogate; on the 2d at Helston, Brighton, Leyton, and Grantham; on the 3d at Brighton, Leyton, Berkhamstead, Royston, Cardington, Grantham, Belvoir, Bradford, Silloth, and Nottingham; on the 4th throughout the greater part of the country; on the 5th at Hawarden and Thelwall; on the 9th at Truro and Nottingham; on the 11th and 23d at Leyton; on the 25th at Camden Town and Hawarden; on the 26th at Great Berkhamstead and Grantham; on the 27th at Clifton and Bywell; on the 28th at Nottingham; on the 29th at Camden Town, Leyton, Great Berkhamstead, Bywell, Wisbeach, and Nottingham; on the 30th at Grantham and Bywell; on the 31st at Leyton. On February 1st at Camden Town, Hawarden, Thelwall, and Allenheads; on the 2d at Grantham, Hawarden, Bradford, Kingsley, Stonyhurst, and Nottingham; on the 3d at Leyton, Carlisle, Wisbeach, Nottingham, and Cockermouth; on the 10th at Truro and Grantham; on the 22d at Leeds; on the 25th at Grantham; on the 26th at Wisbeach; on the 28th at Bywell and Cockermouth. On March 1st at Great Berkhamstead and Nottingham; on the 2d at Nottingham and Stonyhurst; on the 3d at Hawarden, Stonyhurst, and Eccles; on the 4th at Guernsey, Berkhamstead, Oxford, Cardington, Grantham, and Nottingham; on the 5th at Guernsey; on the 7th at Leyton; on the 26th at Clifton, Gloucester, and Stonyhurst; on the 27th at Cardington and North Shields; on the 28th and 29th at Bywell.

Aurora were seen on January 18th at Cockermouth; on the 24th at Clifton, Leyton, Gloucester, Lampeter, Bywell, and Nottingham; on the 25th and 30th at Nottingham; on the 31st at Leyton; on February 6th at St. Paul's Parsonage, Silloth; on the 8th throughout the greater part of the country. On the 10th at Clifton and Silloth; on the 22d at Clifton, Stonyhurst, and Eccles; on the 27th and 28th at Leyton. On March 14th at Otley; on the 21st in different parts of the country; on the 22d at North Shields; and on the 23d at Camden Town.

Snow fell on January 1st, 2d, 3d, 4th, 7th, 9th, 12th, 13th, 18th, 19th, 20th, 21st, 23d, 24th, and 27th. February 1st, 3d, 7th, 8th, 21st, and 28th. March 2d, 7th, 8th, 9th, 10th, 11th, 12th, 15th, 17th, 18th, and 30th. It fell only on two or three of these days at places situated south of latitude 52°; on one day only, viz., 7th January, at Guernsey; and on twelve of the days mentioned in January at Allenheads.

Hail fell on January 2d, 3d, 4th, 8th, 13th, 18th, 19th, 20th, 21st, 23d, 24th, 26th, 27th, 28th, 29th, and 30th; on February 1st, 3d, 4th, 8th, 18th, 21st; on March 1st, 3d, 6th, 7th, 8th, 9th, 10th, 11th, 14th, 15th, 16th.

Fog prevailed on January 3d, 5th, 6th, 7th, 8th, 9th, 11th, 12th, 13th, 14th, 15th, 16th, 17th, 19th, 20th, 28th. February 5th, 6th, 7th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 19th, 20th, 21st, 23d, 24th, 25th, 28th; and on March 3d, 4th, 5th, 6th, 9th, 10th, 11th, 12th, 13th, 14th, 15th, 18th, 22d, 23d, 24th, 25th, 29th, 30th.

Helston. Peach trees were in blossom on February 15th.

Battered. Pear and peach trees in blossom on March 25th, plum trees on the 31st.

Leyton. Leaf buds of the elm first appeared on February 20th; sycamore on the 28th; horse chesnut about the same time; hawthorn on March 8th. Plum trees in blossom on the 17th. The length of the chesnut tree leaves on March 1st was 1½ inch. Maple flowers open on the 6th, laurestinus on the 13th. Almond trees in full flower on the 18th. Leaf buds of beech trees appeared on the 19th.

Berkhamstead. Leaf buds of hawthorn first appeared on February 5th. Vegetation in a very forward state, but the cold nights during March kept back the buds. No injury was done by the frost.

Grantham. Wheat looking very healthy, fruit trees blossoming well.

Belvoir Castle. The unusually fine weather in January operated favourably on young wheat which was previously very backward, but regained its position, and at the end of the month was looking well and forward. Bean sowing was completed by the end of February. Oats and barley were also sown. The dry and fair weather in March facilitated tillage operations. The lambing season was a very favourable one. Beast and sheep are healthy. Primroses, hepatics, aconites, and rhododendrons were in flower in January. Thrushes were heard singing as in spring.

Wisbeach. Leaf buds of lime trees first seen on March 25th, and of the horse chesnut on the 30th. Peach trees in blossom on the 6th.

Thelwall near Warrington. Gorse in flower on January 15th. Vegetation at least a fortnight earlier than usual.

Kingsley near Frodsham. Leaf buds of the hawthorn first appeared on February 18th.

Harrogate. Vegetation very forward.

Stonyhurst. Pear trees in blossom on March 28th.

Silloth. Plum trees in blossom on March 21st.

Cockermouth. Large quantities of grain sown between March the 17th and the end of the month.

Bywell. Vegetation far advanced for the season, primroses and wall flowers in bloom. A great deal of wheat sown in February. The showers during the second week of March did much good by putting the land in order. Farmers since then have been very busy.

North Shields. Red hepatics were in flower on February 1st, purple crocus on the 14th, yellow crocus on the 16th, saxifrage and purple-striped crocus on the 21st, white crocus on the 25th, blue violet on the 27th, white periwinkle on the 28th. Hawthorn in leaf on March 1st, coltsfoot in flower on the 2d, white violets on the 3d, a flock of wild geese were seen going northwards on the 4th, and a second flock on the 17th. Double red daisy in flower on the 15th, jonquil on the 18th, and anemone on the 21st.

Culloden. Sycamore in leaf on February 28th, hawthorn on the 26th. Apricot trees in blossom on the 26th. Thrushes were heard singing on the 13th. Larch trees in leaf on March 10th, horse chesnut on the 20th, plane on the 29th. Red flowering currant trees in blossom on the 5th, gooseberry on the 6th, peach and nectarine on the 12th, pear on the 15th, plum on the 28th. Fieldfares left on the 20th, and widgeons on the 25th.



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	Mean Estimated Strength.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.	Number of Days on which it fell.	Rain.
																Relative Proportion of							
																N. E. S. W.							
																Mean Amount of							
Guernsey	29.807	56.0	34.0	22.0	48.5	41.3	10.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	7	5	8	10	4.7	4.5	4.5
Helston	29.797	61.0	28.0	33.0	51.8	40.7	20.7	11.1	46.6	42.9	11.1	46.6	42.9	11.1	46.6	4.7	5	8	10	4.7	4.5	4.5	
Truro	29.795	62.0	25.0	36.0	51.9	39.7	31.3	12.3	45.1	40.8	12.3	45.1	40.8	12.3	45.1	4.7	5	8	10	4.7	4.5	4.5	
Torquay	29.798	57.0	32.0	25.0	48.1	40.6	21.3	7.5	45.2	40.9	20.9	45.2	40.9	20.9	45.2	4.7	5	8	10	4.7	4.5	4.5	
Exeter (St. Leonard's)	29.796	55.0	35.0	20.0	51.1	38.3	32.3	12.6	44.2	39.9	12.6	44.2	39.9	12.6	44.2	4.7	5	8	10	4.7	4.5	4.5	
Exeter (200 High-st.)	29.808	59.3	37.3	29.6	49.3	39.0	26.0	10.4	44.0	38.4	10.4	44.0	38.4	10.4	44.0	4.7	5	8	10	4.7	4.5	4.5	
Bournemouth	29.800	63.0	24.0	36.0	49.1	41.0	20.3	8.1	45.0	37.7	8.1	45.0	37.7	8.1	45.0	4.7	5	8	10	4.7	4.5	4.5	
Venator	29.800	59.0	34.0	25.0	49.1	41.0	20.3	8.1	45.0	37.7	8.1	45.0	37.7	8.1	45.0	4.7	5	8	10	4.7	4.5	4.5	
Osborne	29.780	62.0	27.0	36.0	51.7	38.7	31.3	8.7	45.0	37.7	8.7	45.0	37.7	8.7	45.0	4.7	5	8	10	4.7	4.5	4.5	
Worthing	29.775	59.0	31.0	28.0	48.0	37.9	21.7	10.1	42.8	39.6	10.1	42.8	39.6	10.1	42.8	4.7	5	8	10	4.7	4.5	4.5	
Little Briny	29.774	65.0	22.0	37.0	49.7	36.9	31.9	12.8	42.9	39.9	12.8	42.9	39.9	12.8	42.9	4.7	5	8	10	4.7	4.5	4.5	
St. John's Col. nr. Brighton	29.767	65.0	22.0	42.0	50.6	35.7	32.0	14.8	43.6	34.3	14.8	43.6	34.3	14.8	43.6	4.7	5	8	10	4.7	4.5	4.5	
Petersfield	29.762	66.0	20.0	44.0	49.1	35.0	32.3	14.1	42.0	38.7	14.1	42.0	38.7	14.1	42.0	4.7	5	8	10	4.7	4.5	4.5	
Barnstaple	29.764	61.0	25.0	35.0	50.6	35.7	32.0	14.8	43.6	34.3	14.8	43.6	34.3	14.8	43.6	4.7	5	8	10	4.7	4.5	4.5	
Aldershot Camp	29.758	60.0	24.0	36.0	49.3	35.4	30.8	13.9	43.8	34.9	13.9	43.8	34.9	13.9	43.8	4.7	5	8	10	4.7	4.5	4.5	
Clifton	29.752	61.0	24.0	37.0	49.3	35.4	30.8	13.9	43.8	34.9	13.9	43.8	34.9	13.9	43.8	4.7	5	8	10	4.7	4.5	4.5	
Downside College	29.744	63.0	22.0	38.0	48.3	36.2	30.3	11.6	42.9	38.8	11.6	42.9	38.8	11.6	42.9	4.7	5	8	10	4.7	4.5	4.5	
Royal Observatory	29.744	63.0	22.0	38.0	48.3	36.2	30.3	11.6	42.9	38.8	11.6	42.9	38.8	11.6	42.9	4.7	5	8	10	4.7	4.5	4.5	
Regent's Park	29.732	67.0	27.0	30.0	48.2	37.0	25.9	11.2	42.9	38.8	11.2	42.9	38.8	11.2	42.9	4.7	5	8	10	4.7	4.5	4.5	
St. John's Wood	29.739	68.0	26.0	43.0	50.0	38.0	33.3	12.4	44.4	38.6	12.4	44.4	38.6	12.4	44.4	4.7	5	8	10	4.7	4.5	4.5	
Guilddall	29.765	57.0	32.0	25.0	48.3	36.2	30.3	11.6	42.9	38.8	11.6	42.9	38.8	11.6	42.9	4.7	5	8	10	4.7	4.5	4.5	
Camden Town	29.750	65.0	24.0	35.0	49.2	37.5	31.4	12.7	42.8	38.7	12.7	42.8	38.7	12.7	42.8	4.7	5	8	10	4.7	4.5	4.5	
Battersea	29.755	64.0	23.0	41.0	49.0	36.5	31.5	12.5	43.1	38.3	12.5	43.1	38.3	12.5	43.1	4.7	5	8	10	4.7	4.5	4.5	
Leyton (Essex)	29.754	64.0	23.0	41.0	49.0	36.5	31.5	12.5	43.1	38.3	12.5	43.1	38.3	12.5	43.1	4.7	5	8	10	4.7	4.5	4.5	
Oxford	29.752	64.0	23.0	41.0	49.0	36.5	31.5	12.5	43.1	38.3	12.5	43.1	38.3	12.5	43.1	4.7	5	8	10	4.7	4.5	4.5	
Great Berkhampstead	29.757	61.0	24.0	37.0	47.7	37.7	34.7	13.4	43.3	38.3	13.4	43.3	38.3	13.4	43.3	4.7	5	8	10	4.7	4.5	4.5	
Banbury	29.747	61.0	24.0	37.0	47.7	37.7	34.7	13.4	43.3	38.3	13.4	43.3	38.3	13.4	43.3	4.7	5	8	10	4.7	4.5	4.5	
Streatham Vicarage	29.740	61.0	24.0	37.0	47.7	37.7	34.7	13.4	43.3	38.3	13.4	43.3	38.3	13.4	43.3	4.7	5	8	10	4.7	4.5	4.5	
Hartwell House	29.756	63.0	23.0	38.0	48.3	36.2	30.3	11.6	42.9	38.8	11.6	42.9	38.8	11.6	42.9	4.7	5	8	10	4.7	4.5	4.5	
Hartwell Rectory	29.756	63.0	23.0	38.0	48.3	36.2	30.3	11.6	42.9	38.8	11.6	42.9	38.8	11.6	42.9	4.7	5	8	10	4.7	4.5	4.5	
Royston	29.720	63.4	25.5	37.7	48.4	35.6	30.7	12.8	41.7	36.7	12.8	41.7	36.7	12.8	41.7	4.7	5	8	10	4.7	4.5	4.5	
Gloucester	29.735	64.0	23.0	41.0	49.0	36.5	31.5	12.5	43.1	38.3	12.5	43.1	38.3	12.5	43.1	4.7	5	8	10	4.7	4.5	4.5	
Cardington	29.744	60.0	25.0	36.0	49.0	36.5	31.5	12.5	43.1	38.3	12.5	43.1	38.3	12.5	43.1	4.7	5	8	10	4.7	4.5	4.5	
Aspley	29.738	65.0	22.0	37.0	47.7	37.7	34.7	13.4	43.3	38.3	13.4	43.3	38.3	13.4	43.3	4.7	5	8	10	4.7	4.5	4.5	
Bedford	29.738	67.0	27.0	45.0	54.1	38.8	40.0	16.6	44.4	38.7	16.6	44.4	38.7	16.6	44.4	4.7	5	8	10	4.7	4.5	4.5	
Wisbeach	29.737	63.0	24.0	36.0	48.8	35.7	29.0	13.1	43.1	38.3	13.1	43.1	38.3	13.1	43.1	4.7	5	8	10	4.7	4.5	4.5	
Lampeter	29.748	62.0	24.0	36.0	48.8	35.7	29.0	13.1	43.1	38.3	13.1	43.1	38.3	13.1	43.1	4.7	5	8	10	4.7	4.5	4.5	
Llandudno	29.740	64.0	24.0	36.0	48.8	35.7	29.0	13.1	43.1	38.3	13.1	43.1	38.3	13.1	43.1	4.7	5	8	10	4.7	4.5	4.5	
Norwich	29.740	64.0	24.0	36.0	48.8	35.7	29.0	13.1	43.1	38.3	13.1	43.1	38.3	13.1	43.1	4.7	5	8	10	4.7	4.5	4.5	
Diss (Norfolk)	29.738	62.0	23.0	36.0	48.8	35.7	29.0	13.1	43.1	38.3	13.1	43.1	38.3	13.1	43.1	4.7	5	8	10	4.7	4.5	4.5	
Grantham	29.726	60.0	25.0	36.0	48.8	35.7	29.0	13.1	43.1	38.3	13.1	43.1	38.3	13.1	43.1	4.7	5	8	10	4.7	4.5	4.5	
Belvoir Castle	29.716	62.0	25.0	36.0	48.8	35.7	29.0	13.1	43.1	38.3	13.1	43.1	38.3	13.1	43.1	4.7	5	8	10	4.7	4.5	4.5	
Derby	29.710	65.0	22.0	37.0	47.7	37.7	34.7	13.4	43.3	38.3	13.4	43.3	38.3	13.4	43.3	4.7	5	8	10	4.7	4.5	4.5	
Holkham	29.710	65.0	22.0	37.0	47.7	37.7	34.7	13.4	43.3	38.3	13.4	43.3	38.3	13.4	43.3	4.7	5	8	10	4.7	4.5	4.5	
Nottingham	29.709	64.0	24.0	36.0	48.8	35.7	29.0	13.1	43.1	38.3	13.1	43.1	38.3	13.1	43.1	4.7	5	8	10	4.7	4.5	4.5	
Hawarden	29.708	63.0	23.0	38.0	48.8	35.7	29.0	13.1	43.1	38.3	13.1	43.1	38.3	13.1	43.1	4.7	5	8	10	4.7	4.5	4.5	
Liverpool Observatory	29.706	64.0	24.0	36.0	48.8	35.7	29.0	13.1	43.1	38.3	13.1	43.1	38.3	13.1	43.1	4.7	5	8	10	4.7	4.5	4.5	
Eccles	29.696	61.0	24.0	37.0	47.7	37.7	34.7	13.4	43.3	38.3	13.4	43.3	38.3	13.4	43.3	4.7	5	8	10	4.7	4.5	4.5	
Wakefield	29.695	63.0	23.0	38.0	48.8	35.7	29.0	13.1	43.1	38.3	13.1	43.1	38.3	13.1	43.1	4.7	5	8	10	4.7	4.5	4.5	
Bradford	29.690	60.0	25.0	36.0	48.8	35.7	29.0	13.1	43.1	38.3	13.1	43.1	38.3	13.1	43.1	4.7	5	8	10	4.7	4.5	4.5	
Kingsley Parsonage	29.704	62.0	23.0	38.0	48.8	35.7	29.0	13.1	43.1	38.3	13.1	43.1	38.3	13.1	43.1	4.7	5	8	10	4.7	4.5	4.5	
Thelwall, near Warrington	29.698	61.0	24.0	37.0	47.7	37.7	34.7	13.4	43.3	38.3	13.4	43.3	38.3	13.4	43.3	4.7	5	8	10	4.7	4.5	4.5	
Leeds	29.693	62.0	24.0	36.0	48.8	35.7	29.0	13.1	43.1	38.3	13.1	43.1	38.3	13.1	43.1	4.7	5	8	10	4.7	4.5	4.5	
Stonhyhurst	29.689	60.0	25.0	36.0	48.8																		



Year 1888.	Month.	Pressure of Atmosphere in Month.			Temperature of Air in Month.			Mean Temperature.	Vapour.	Mean Reading of Thermometer.	Wind.			Mean Amount of Precipitation.	Rain.				
		Range.	Highest.	Lowest.	Range.	Orall Highest.	Orall Lowest.				Relative Proportion of								
											N.	E.	W.						
Jan.	29-554	1-013	54.4	25.2	23.2	45.7	37.0	8.7	41.9	37.1	0.7	5	4	9	13	5.8	6.8	25	4.7
Feb.	29-086	0-941	54.2	25.1	28.1	45.9	38.2	8.7	42.5	38.2	0.4	9	4	5	7	4.0	5.9	14	0.8
Mar.	29-132	1-387	61.8	27.1	34.7	37.5	15.2	15.2	43.8	38.6	0.4	9	4	8	10	4.0	5.6	10	0.8
Jan.	29-122	1-223	53.3	27.0	23.0	44.3	35.6	8.7	40.0	37.9	0.7	3	8	13	20	7.2	9.3	23	6.3
Feb.	29-122	1-223	53.3	27.0	23.0	44.3	35.6	8.7	40.0	37.9	0.7	3	8	13	20	7.2	9.3	23	6.3
Mar.	29-218	1-800	63.0	25.5	37.5	48.4	37.0	11.4	43.6	37.5	0.7	6	4	5	13	2.7	6.5	9	1.5
Jan.	29-619	1-403	63.5	27.7	27.5	47.9	32.6	10.3	41.8	37.9	0.9	5	5	9	11	1.6	7.3	11	9.2
Feb.	29-014	0-924	54.3	27.2	28.5	45.9	35.7	10.3	41.8	37.9	0.9	5	5	9	11	1.6	7.3	11	9.2
Mar.	29-715	1-383	64.0	28.1	35.1	53.7	32.6	18.1	43.9	37.5	0.9	4	5	8	10	0.7	6.5	8	0.5
Jan.	29-641	1-433	53.3	27.7	27.5	47.9	32.6	10.3	41.8	37.9	0.9	5	5	9	11	1.6	7.3	11	9.2
Feb.	29-014	0-924	54.3	27.2	28.5	45.9	35.7	10.3	41.8	37.9	0.9	5	5	9	11	1.6	7.3	11	9.2
Mar.	29-715	1-383	64.0	28.1	35.1	53.7	32.6	18.1	43.9	37.5	0.9	4	5	8	10	0.7	6.5	8	0.5
Jan.	29-144	0-910	53.0	27.0	27.0	47.9	32.6	10.3	41.8	37.9	0.9	5	5	9	11	1.6	7.3	11	9.2
Feb.	29-014	0-924	54.3	27.2	28.5	45.9	35.7	10.3	41.8	37.9	0.9	5	5	9	11	1.6	7.3	11	9.2
Mar.	29-715	1-383	64.0	28.1	35.1	53.7	32.6	18.1	43.9	37.5	0.9	4	5	8	10	0.7	6.5	8	0.5
Jan.	29-639	1-433	53.3	27.7	27.5	47.9	32.6	10.3	41.8	37.9	0.9	5	5	9	11	1.6	7.3	11	9.2
Feb.	29-014	0-924	54.3	27.2	28.5	45.9	35.7	10.3	41.8	37.9	0.9	5	5	9	11	1.6	7.3	11	9.2
Mar.	29-715	1-383	64.0	28.1	35.1	53.7	32.6	18.1	43.9	37.5	0.9	4	5	8	10	0.7	6.5	8	0.5
Jan.	29-639	1-433	53.3	27.7	27.5	47.9	32.6	10.3	41.8	37.9	0.9	5	5	9	11	1.6	7.3	11	9.2
Feb.	29-014	0-924	54.3	27.2	28.5	45.9	35.7	10.3	41.8	37.9	0.9	5	5	9	11	1.6	7.3	11	9.2
Mar.	29-715	1-383	64.0	28.1	35.1	53.7	32.6	18.1	43.9	37.5	0.9	4	5	8	10	0.7	6.5	8	0.5
Jan.	29-639	1-433	53.3	27.7	27.5	47.9	32.6	10.3	41.8	37.9	0.9	5	5	9	11	1.6	7.3	11	9.2
Feb.	29-014	0-924	54.3	27.2	28.5	45.9	35.7	10.3	41.8	37.9	0.9	5	5	9	11	1.6	7.3	11	9.2
Mar.	29-715	1-383	64.0	28.1	35.1	53.7	32.6	18.1	43.9	37.5	0.9	4	5	8	10	0.7	6.5	8	0.5
Jan.	29-639	1-433	53.3	27.7	27.5	47.9	32.6	10.3	41.8	37.9	0.9	5	5	9	11	1.6	7.3	11	9.2
Feb.	29-014	0-924	54.3	27.2	28.5	45.9	35.7	10.3	41.8	37.9	0.9	5	5	9	11	1.6	7.3	11	9.2
Mar.	29-715	1-383	64.0	28.1	35.1	53.7	32.6	18.1	43.9	37.5	0.9	4	5	8	10	0.7	6.5	8	0.5
Jan.	29-639	1-433	53.3	27.7	27.5	47.9	32.6	10.3	41.8	37.9	0.9	5	5	9	11	1.6	7.3	11	9.2
Feb.	29-014	0-924	54.3	27.2	28.5	45.9	35.7	10.3	41.8	37.9	0.9	5	5	9	11	1.6	7.3	11	9.2
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Jan.	29-639	1-433	53.3	27.7	27.5	47.9	32.6	10.3	41.8	37.9	0.9	5	5	9	11	1.6	7.3	11	9.2
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Mar.	29-715	1-383	64.0	28.1	35.1	53.7	32.6	18.1	43.9	37.5	0.9	4	5	8	10	0.7	6.5	8	0.5
Jan.	29-639	1-433	53.3	27.7	27.5	47.9	32.6	10.3	41.8	37.9	0.9	5	5	9	11	1.6	7.3		

[illegible]

*Belford, Derby, Holkham, Nottingham, Haverden.*—The mean were only forwarded. I cannot, therefore, pledge myself of their accuracy.



Year 1868.	Month.	Names of Stations and Observers.	Pressure of Air in Month.			Mean Temperature.			Vapour.			Mean Reading of Thermometer.			Wind.			Rain.							
			Mean.	Range.	Highest.	Lowest.	Range.	Of all Highest.	Of all Lowest.	Daily Range.	Air.	Dew Point.	Elastic Force.	Mean. Short of Saturation.	Mean Degree of Humidity. dew. Weight of a cubic foot of air.	Relative Proportion of			Mean Amount of Ozone.	Mean Amount of Cloud.	Number of Days it fell.	Amount col- lected.			
																N.	S.	W.							
Jan.	1868.	THELWALL NEAR WARRINGTON, J. ATKINSON, Esq., F.G.S.	29.575	31.374	28.6	3.774	31.374	28.6	3.774	31.374	28.6	3.774	0.7	0.7	80	549	47.3	32.8	1.5	8	12	12	4.9	18	3.7
Feb.	1868.	LEEDS PHILOSOPHICAL HALL, HENRY DENST, Esq., A.L.S.	29.576	31.375	28.7	3.675	31.375	28.7	3.675	31.375	28.7	3.675	0.7	0.7	80	549	47.3	32.8	1.5	8	12	12	4.9	18	3.7
Mar.	1868.	STONYHURST COLLEGE, REV. S. PERRY, M.A.	29.577	31.376	28.8	3.576	31.376	28.8	3.576	31.376	28.8	3.576	0.7	0.7	80	549	47.3	32.8	1.5	8	12	12	4.9	18	3.7
Jan.	1868.	YORK, JOHN FORD, Esq.	29.578	31.377	28.9	3.477	31.377	28.9	3.477	31.377	28.9	3.477	0.7	0.7	80	549	47.3	32.8	1.5	8	12	12	4.9	18	3.7
Feb.	1868.	SCARBOROUGH, R. CHAMPEL, Esq.	29.579	31.378	29.0	3.378	31.378	29.0	3.378	31.378	29.0	3.378	0.7	0.7	80	549	47.3	32.8	1.5	8	12	12	4.9	18	3.7
Mar.	1868.	OTLEY, H. W. THORNS, Esq.	29.580	31.379	29.1	3.279	31.379	29.1	3.279	31.379	29.1	3.279	0.7	0.7	80	549	47.3	32.8	1.5	8	12	12	4.9	18	3.7
Jan.	1868.	HARROGATE (Yorkshire) J. COUPLAND, Esq.	29.581	31.380	29.2	3.180	31.380	29.2	3.180	31.380	29.2	3.180	0.7	0.7	80	549	47.3	32.8	1.5	8	12	12	4.9	18	3.7
Feb.	1868.	COCKERMOUTH, HENRY DODGSON.	29.582	31.381	29.3	3.081	31.381	29.3	3.081	31.381	29.3	3.081	0.7	0.7	80	549	47.3	32.8	1.5	8	12	12	4.9	18	3.7
Mar.	1868.	ST. PAUL'S PARSONAGE, near SILLOTH, CUMBERLAND, REV. F. REDFORD, M.A., M.B.M.S.	29.583	31.382	29.4	2.982	31.382	29.4	2.982	31.382	29.4	2.982	0.7	0.7	80	549	47.3	32.8	1.5	8	12	12	4.9	18	3.7
Jan.	1868.	CARLISLE, I. CAMMELL, Esq., M.B.M.S.	29.584	31.383	29.5	2.883	31.383	29.5	2.883	31.383	29.5	2.883	0.7	0.7	80	549	47.3	32.8	1.5	8	12	12	4.9	18	3.7
Feb.	1868.	BYWELL, MR. JOHN DAWSON, under the direction of T. SORWITH, Esq., F.R.S., M.B.M.S.	29.585	31.384	29.6	2.784	31.384	29.6	2.784	31.384	29.6	2.784	0.7	0.7	80	549	47.3	32.8	1.5	8	12	12	4.9	18	3.7
Mar.	1868.	ALLENHEADS, THOMAS BEWICK, Esq., C.E., M.B.M.S., Assistant to T. SORWITH, Esq., F.R.S., &c.	29.586	31.385	29.7	2.685	31.385	29.7	2.685	31.385	29.7	2.685	0.7	0.7	80	549	47.3	32.8	1.5	8	12	12	4.9	18	3.7
Jan.	1868.	NORTH SHIELDS, ROBERT SPENCE, Esq.	29.587	31.386	29.8	2.586	31.386	29.8	2.586	31.386	29.8	2.586	0.7	0.7	80	549	47.3	32.8	1.5	8	12	12	4.9	18	3.7
Feb.	1868.	HIGH HOUSE (Alwicks), Mr. SCOTT, for His Grace the Duke of Northumberland.	29.588	31.387	29.9	2.487	31.387	29.9	2.487	31.387	29.9	2.487	0.7	0.7	80	549	47.3	32.8	1.5	8	12	12	4.9	18	3.7
Mar.	1868.	CULLEN, A. FORBES, Esq., M.B.M.S.	29.589	31.388	30.0	2.388	31.388	30.0	2.388	31.388	30.0	2.388	0.7	0.7	80	549	47.3	32.8	1.5	8	12	12	4.9	18	3.7

# ON THE METEOROLOGY OF ENGLAND,

DURING THE QUARTER ENDING JUNE 30, 1863.

REMARKS ON THE WEATHER during the QUARTER ending 30th of June 1863. By JAMES GLAISHER, Esq., F.R.S., &c., Secretary of the British Meteorological Society.

Till May 17th, with the exception of two days at the beginning of April and five days at the end of April and the beginning of May, the temperature of the air was in excess to the average of 2° daily. A period of 9 days followed, comprised between May 18th and May 26th, during which the average daily deficiency was no less than 6°; this was succeeded by one of like duration but of opposite character, the average daily excess being 3°; and from June 5th to the end of the quarter there was a deficiency amounting on the average to 2° daily.

The average monthly temperature of the air, from December 1862 to April 1863, was 44°; in the years 1821 and 1822 the temperature for the same period was 44°·2, being practically the same as in the present year; in no other similar period, from 1771, has the temperature been so high, so that we may fairly conclude that the temperature for the five months ending April of this year is distinguished as having been as high as any on record. The nearest approach to this high temperature was in the period ending April 1796, when it was 43°·4; in 1854 it was 43°·6; in 1846 it was 43°·9; and in 1859 it was 43°·5.

The mean temperature of April was 49°·1, being higher than in any April since 1844. The mean temperature of May was 52°·0, being 3°·4 lower than in 1862, and of nearly the same value as in 1861.

The mean temperature of June was 58°·1, being 1°·8 higher than in 1862, and 1° lower than in 1861.

The mean high day temperature in April was 4° in excess; in May was nearly of its average value; and in June was 0°·9 in defect.

The mean low night temperature in April was 1° in excess; in May was 1° in defect; and of nearly its average value in June.

Therefore both the days and nights in April were warm, and the nights in May; and the days in June were cold.

The mean temperature of the air in April was 2° in excess; in May 1° in defect; and in June 1° in defect.

The mean temperature of the dew point in April was 2° in excess; in May 0°·5 in defect; and in June 0°·7 in defect.

The degree of humidity and the readings of the barometer differed but very little from their monthly average values in any of the months.

The mean temperature of the air at Greenwich in the three months ending May, constituting the three spring months, was 48°·3, being 1°·9 above the average of the preceding 92 years.

1863. Months.	Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
	Air.		Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames.		Mean.	Diff. from average of 92 years.	Mean.	Diff. from average of 92 years.
	Mean.	Diff. from average of 92 years.	Mean.	Diff. from average of 92 years.	Mean.	Diff. from average of 92 years.	Mean.	Diff. from average of 92 years.						
April	49.1	+3.3	46.0	+2.8	42.7	+2.6	21.1	+3.0	32.4	in.	274	+0.23	3.1	+0.2
May	52.0	-0.5	48.6	-0.2	45.2	-0.4	21.7	+1.5	33.3	in.	262	-0.01	3.4	-0.1
June	58.1	0.0	53.9	-0.8	50.2	-0.7	29.0	-0.8	61.8	in.	204	-0.09	4.1	-0.1
Mean	53.0	+0.9	49.5	+0.4	46.0	+0.5	20.9	+1.2	50.5		313	+0.05	3.5	0.0



1863. MONTHS.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.	Reading of Thermometer on Grass.				
	Mean.	Diff. from average of 22 years.	Mean.	Diff. from average of 22 years.	Mean.	Diff. from average of 22 years.	Amount.	Diff. from average of 46 years.		Number of Nights it was			Lowest Reading at Night.	Highest Reading at Night.
										At or below 30°.	Between 30° and 40°.	Above 40°.		
April -	78	- 1	in. 29.813	+0.061	grs. 548	+ 1	in. 0.4	-1.4	Miles. 260	9	15	6	19.4	46.7
May -	78	+ 1	29.857	+0.090	540	+ 2	1.3	-0.8	235	6	12	13	22.4	53.4
June -	75	0	29.727	-0.063	531	0	3.9	+2.0	207	0	6	24	36.1	58.4
Mean -	77	0	29.799	+0.029	538	+ 1	Sum 5.6	Sum -0.2	234	Sum 15	Sum 33	Sum 43	Lowest 19.4	Highest 58.4

NOTE.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred or thunder was heard and lightning seen on April 7th at Clifton, Bath, and Stonyhurst; on the 23d at North Shields; on the 28th at York, North Shields, and Carlisle. On May 13th at Bradford, Stonyhurst, and North Shields; on the 15th at Oxford and Royston; on the 16th at Bradford, Otley, and Banbury; and on the 17th at Eccles. On June 6th at Petersfield, Bath, Camden Town, Great Berkhamstead, Hartwell, and Cardington; on the 7th at Oxford, Thelwall, Eccles, and Wisbeach; on the 8th at Clifton, Great Berkhamstead, Scarborough, and Wisbeach; on the 10th at Clifton, Cardington, Wisbeach, and Reading; on the 12th at Liverpool, Wisbeach, and Thelwall; on the 13th at Grantham; on the 18th at Guernsey and Liverpool; on the 24th throughout the greater part of the country; on the 25th at Brighton; and on the 29th at Scarborough.

Thunder was heard but lightning was not seen on April 7th and 10th at Little Bridy. On June 2d at Cockermouth; on the 6th at Little Bridy, Oxford, and Grantham; on the 7th at Holkham, Norwich, Grantham, Bradford, Stonyhurst, and Harrogate; on the 8th at Holkham and Cockermouth; on the 9th at Stonyhurst, Scarborough, Bywell, and North Shields; on the 10th at Oxford; on the 11th at Wisbeach and Thelwall, near Warrington; on the 12th at Oxford and Stonyhurst; on the 13th at Stonyhurst; on the 16th at Bywell; on the 17th at North Shields; on the 23d at Oxford; on the 26th and 27th at Little Bridy; on the 28th at North Shields; on the 29th at Norwich; and on the 30th at North Shields.

Lightning was seen but thunder was not heard on April 10th at Brighton, Wisbeach, and Llandudno; and on the 28th at Guernsey and Eccles. On May 5th and 20th at Brighton. On June 7th at Petersfield and Wisbeach; on the 15th at Norwich; on the 24th at Clifton and Oxford; on the 25th at Berkhamstead.

Solar halos were seen on April 6th and 16th at Leyton; on the 17th at Berkhamstead and Grantham; on the 18th at Leyton; on the 21st and 27th at Clifton and Berkhamstead; and on the 22d and 30th at Leyton. On May 10th at Oxford; on the 11th at Little Bridy, Brighton, Leyton, Berkhamstead, and Banbury; on the 18th at Clifton; on the 21st at Leyton and Banbury; and on the 31st at North Shields. On June 3d at Little Bridy and Leyton; on the 8th at Berkhamstead; on the 9th at Clifton, Oxford, and Berkhamstead; on the 11th at Berkhamstead; on the 16th at Leyton; and on the 17th at Oxford.

Lunar halos were seen on April 3d at Lampeter, Bradford, Stonyhurst, and Eccles; on the 4th at Little Bridy and Clifton; on the 21st at Camden Town and Leyton; on the 22d at Stonyhurst; on the 27th at Brighton, Aldershot, Clifton, Greenwich, Camden Town, Leyton, Oxford, Berkhamstead, Gloucester, Cardington, and Grantham; on the 28th at North Shields; and on the 29th and 30th at Leyton. On May 2d at Leyton and Scarborough; and on the 28th at Leyton. On June 11th at Wisbeach; and on the 30th at Berkhamstead.

Auroræ were seen on April 7th at Thelwall and Silloth; on the 9th at Liverpool; on the 15th at Clifton, Hawarden, Silloth, and Cockermouth; on the 17th at Thelwall; on the 20th and 21st at Eccles. On May 8th throughout the greater part of the country. On June 9th at Liverpool.

Hail fell on April 4th, 5th, 6th, 7th, 14th, 22d, 23d, 27th, 28th, 29th, and 30th. May 3d, 7th, 10th, 15th, 17th, 22d, 28th, and 29th. June 6th, 7th, 8th, 9th, 11th, 12th, 17th, and 20th.

Snow fell on April 6th and 23d at Alnwick; on the 19th and 23d at Allenheads; on the 28th at Stonyhurst; and on the 29th at Aldershot.

Fog prevailed on 38 days during the quarter, viz, 14 each in April and May, and 10 in June.

The cuckoo was heard on April 12th at Berkhamstead; on the 13th at Hawarden; on the 14th at Leyton; on the 15th at Helston; on the 17th at Brighton, Little Bridy, and Hartwell; on the 20th at Aldershot and Otley; on the 21st at Holkham; on the 25th at Llandudno; on the 26th at Stonyhurst; and on the 30th at Grantham and Harrogate. On May 1st at Silloth and Allenheads; on the 8th at Thelwall; on the 12th at Culloden; and on the 13th at Cardington.

Swallows were seen on April 6th at Little Bridy; on the 7th at Berkhamstead; on the 11th at Osborne, Holkham, and Otley; on the 12th at Thelwall; on the 13th at Cockermouth; on the 14th at Banbury; on the 17th at Brighton; on the 18th at Grantham, Hawarden, and York; on

the 22d at Aldershot; on the 25th at Harrogate; on the 27th at Stonyhurst; and on the 30th at Eccles. On May 1st at Silloth; on the 6th at Allenheads and North Shields; on the 8th at Culloden; and on the 21st at Cardington.

The nightingale was heard on April 15th at Wisbeach; on the 17th at Brighton; on the 20th at Aldershot; on the 24th at Holkham; and on the 27th at Leyton. On May 12th at Cardington.

Apple trees were in blossom on April 12th at Helston; on the 15th at Holkham; on the 16th at Thelwall; on the 17th at Leyton; on the 18th at Cockermouth; on the 24th at Berkhamstead and Stonyhurst; and on the 28th at North Shields. On May 6th at Silloth.

Pear trees were in blossom on April 8th at Berkhamstead; on the 10th at Silloth; on the 11th at Thelwall; on the 12th at North Shields; on the 17th at Leyton; on the 18th at Cockermouth; and on the 28th at North Shields.

Plum trees were in blossom on April 8th at Berkhamstead.

Cherry trees were in blossom on April 1st at Holkham; on the 11th at Silloth; on the 12th at Cockermouth; on the 18th at Leyton; on the 21st at Berkhamstead; and on the 25th at North Shields. On May 3d at Lampeter. And on June 24th at Wisbeach.

Lilac trees were in blossom on April 18th at Leyton; on the 23d at Helston; on the 24th at Hartwell; and on the 25th at Berkhamstead. On May 3d at Cockermouth; on the 6th at Wisbeach; and on the 8th at Hawarden.

Laburnum trees were in blossom on April 15th at Leyton; and on the 25th at Helston. On May 3d at Wisbeach; on the 13th at Berkhamstead and Cockermouth; and on the 22d at Lampeter.

Oak trees were in leaf on April 16th at Berkhamstead and Holkham; on the 18th at Guernsey; on the 25th at Thelwall. And on May 25th at Culloden.

Elm trees were in leaf on April 5th at Thelwall; on the 11th at Holkham; on the 19th at Aspley; and on the 30th at Stonyhurst.

Lime trees in leaf on April 5th at Thelwall; on the 24th at Holkham; on the 25th at Berkhamstead. And on May 15th at Cockermouth.

Sycamore trees in leaf on April 6th at Berkhamstead; on the 13th at Holkham; and on the 14th at Cockermouth.

Horse-chestnut trees in leaf on April 5th at Thelwall; on the 6th at Berkhamstead. And on May 13th at Hawarden.

Hawthorn trees in leaf on April 7th at Cockermouth; on the 10th at Berkhamstead; on the 26th at Thelwall; and on the 28th at Brighton. On May 13th at Hawarden; and on the 14th at Silloth.

Hazel trees in leaf on April 25th at Berkhamstead.

Wheat was in ear on June 17th at Cardington; on the 19th at Hartwell; on the 20th at Wisbeach; on the 22d at Grantham and Culloden; on the 23d at Thelwall and Grantham; on the 24th at Helston; and on the 30th at Worthing.

Barley in ear on June 10th at Cardington; on the 20th at Grantham and Wisbeach; on the 23d at Helston.

At Belvoir Castle the dry weather in April was very favourable to farming. The wheat crop was somewhat checked by cutting winds and dry weather during May. Early sown barley, though suffering in a degree from drought, promised well, but late sown barley was so much injured that its recovery is doubtful. Oats were retarded by the prolonged drought; beans in many cases have failed. The hay crop will be light.

At Thelwall an unusually fine spring; every kind of plant and vegetable remarkably forward.

At Streatley the cold nights in April, even when there was no frost, greatly retarded vegetation, which was very forward.

At Grantham in consequence of the fine weather in May the land was extremely dry, and grass suffered in consequence. Wheat looks well. The frost did great damage to the fruit.

At Bywell the weather during May was very dry, with nine or ten days of cold easterly winds; vegetation did not make so much progress as usual.

At Wisbeach there has been an unusually large quantity of cole seed sown, which is very forward. Mustard seed shows a full plant, but it wants rain. This last suffers more than any other. Carrot seed is not promising.

At Great Berkhamstead crops are generally good, having been benefited by the heavy rain in the middle of June. Apples and pears are promising, but small fruit is scarce.



Meteorological Table, Quarter ending June 30th, 1863.

NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.	Rain.
																		Relative Proportion of						
																		N.	E.	S.	W.			
																		Mean Amount of						
Guernsey	29.684	71.0	43.5	27.5	55.9	46.5	9.4	50.7	46.8	32.2	3.6	0.5	83	47.8	54.1	54.1	54.1	6	9	9	4.9	3.1	9	
Helston	29.680	71.0	43.5	27.5	55.9	46.5	9.4	50.7	46.8	32.2	3.6	0.5	83	47.8	54.1	54.1	54.1	6	9	9	4.9	3.1	9	
Truro	29.685	72.0	43.0	28.0	55.0	46.0	9.0	50.0	46.0	32.0	3.5	0.5	80	48.0	54.0	54.0	54.0	6	9	9	4.9	3.1	9	
Torquay	29.684	72.0	43.0	28.0	55.0	46.0	9.0	50.0	46.0	32.0	3.5	0.5	80	48.0	54.0	54.0	54.0	6	9	9	4.9	3.1	9	
Exeter (St. Leonard's)	29.688	70.5	43.0	28.0	55.0	46.0	9.0	50.0	46.0	32.0	3.5	0.5	80	48.0	54.0	54.0	54.0	6	9	9	4.9	3.1	9	
Exeter (200 High-st.)	29.682	71.0	43.0	28.0	55.0	46.0	9.0	50.0	46.0	32.0	3.5	0.5	80	48.0	54.0	54.0	54.0	6	9	9	4.9	3.1	9	
Bournemouth	29.680	69.0	42.0	27.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Ventnor	29.680	69.0	42.0	27.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Osborne	29.676	78.0	43.0	28.0	55.0	46.0	9.0	50.0	46.0	32.0	3.5	0.5	80	48.0	54.0	54.0	54.0	6	9	9	4.9	3.1	9	
Worthing	29.673	78.0	43.0	28.0	55.0	46.0	9.0	50.0	46.0	32.0	3.5	0.5	80	48.0	54.0	54.0	54.0	6	9	9	4.9	3.1	9	
Little Bldy	29.670	74.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
St. John's Col. near Brighton	29.668	82.0	43.0	28.0	55.0	46.0	9.0	50.0	46.0	32.0	3.5	0.5	80	48.0	54.0	54.0	54.0	6	9	9	4.9	3.1	9	
Petersfield	29.660	80.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Barnstaple	29.650	73.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Alldershot Camp	29.650	73.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Clifton	29.650	73.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Downside College	29.650	73.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Royal Observatory	29.650	73.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Regent's Park	29.650	73.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
St. John's Wood	29.650	73.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Guildhall	29.650	73.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Camden Town	29.650	73.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Leighton (Essex)	29.650	73.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Oxford	29.650	73.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Great Berkhamstead	29.646	80.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Banbury	29.647	76.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Streatham Vicarage	29.647	76.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Hartwell House	29.645	79.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Hartwell Rectory	29.645	79.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Royston	29.643	77.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Cardington	29.643	77.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Aspley	29.640	70.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Bedford	29.645	80.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Woburn	29.644	79.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Lampeter	29.644	74.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Llandudno	29.644	74.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Norwich	29.643	76.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Die (Norfolk)	29.647	80.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Grantham	29.646	74.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Derby	29.634	76.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Holkham	29.627	78.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Hawarden	29.632	71.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Liverpool Observatory	29.632	60.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Manchester	29.636	74.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Eccles	29.637	76.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Walsley	29.637	76.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Bradford	29.634	70.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Kingsley Parsonage	29.630	71.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Thelwall, near Warrington	29.626	71.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Leeds	29.631	78.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Stonyhurst	29.636	69.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Scarborough	29.630	69.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Orley	29.627	71.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Harrogate	29.628	72.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Cockermouth	29.626	70.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
St. Paul's Parsonage	29.625	72.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6	9	9	4.9	3.1	9	
Carlisle	29.623	71.0	43.0	28.0	54.0	45.0	9.0	49.0	45.0	31.0	3.5	0.5	79	47.0	53.0	53.0	53.0	6						



*Batters.*—The readings of the barometer were all found to be erroneous; there must be air in the tube above the mercury. In June observations on 31 days were returned; no consecutive days were alike; so that I did not know which day to omit.

The returns from Ventnor, Little Breda, Bedford, Derby, and Harwarden for this quarter were Monthly Means only, for the correctness of which I cannot vouch myself.



Year 1863.	Month.	Pressure of Atmosphere in Month.			Temperature of Air in Month.			Mean Temperature.	Vapour.		Mean Reading of Thermometer.	Wind.				Mean Amount of Cloud.	Rain.			
		Range.	Mean.	Lowest.	Range.	Of all Highest.	Of all Lowest.		Daily Range.	Elastic Force.		In a Cubic foot of Air.	Mean Weight of a cubic foot of air.	Maximum in Rays of Sun.	Minimum on Grass.			Estimated.	Relative Proportion of	
																N.			E.	S.
NAMES OF STATIONS AND OBSERVERS.																				
LEEDS PHILOSOPHICAL HALL, HENRY DENBY, ESQ., A.L.S.																				
April	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
May	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
June	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
BRADFORD, J. MAC. LINDSAY, ESQ., C.E., F.G.S., M.B.M.S.																				
April	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
May	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
June	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
STONYHURST COLLEGE, REV. S. PEARCE, M.A.																				
April	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
May	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
June	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
OTLEY, H. W. THOMAS, ESQ.																				
April	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
May	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
June	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
YORK, JOHN FORD, ESQ.																				
April	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
May	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
June	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
HARROGATE (Yorkshire), J. COULLAND, ESQ.																				
April	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
May	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
June	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
SCARBOROUGH, R. CHAMPEL, ESQ.																				
April	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
May	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
June	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
ST. PAUL'S PARSONAGE, REV. F. REDFORD, M.A., M.B.M.S.																				
April	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
May	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
June	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
COCKERMOUTH, HENRY DODGSON, ESQ.																				
April	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
May	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
June	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
CARLISLE, J. CAMMELL, ESQ., M.B.M.S.																				
April	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
May	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
June	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
BYWELL, MR. JOHN DAWSON, under the direction of T. SOWTH, ESQ., F.R.S., M.B.M.S.																				
April	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
May	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
June	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
ALLENHEADS, THOMAS BEWICK, ESQ., C.E., M.B.M.S., Assistant to T. SOWTH, ESQ., F.R.S., &c.																				
April	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
May	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
June	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
NORTH SHIELDS, ROBERT SPENCE, ESQ.																				
April	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
May	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
June	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
HIGH HOUSE (Alnwick), MR. SCOTT, for His Grace the Duke of Northumberland.																				
April	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
May	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
June	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
CULLODEN, A. FOMBER, ESQ., M.B.M.S.																				
April	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
May	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			
June	29.683	63.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0			

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For Her Majesty's Stationery Office.

ON THE

## METEOROLOGY OF ENGLAND,

DURING THE QUARTER ENDING SEPTEMBER 30, 1863.

REMARKS ON THE WEATHER during the QUARTER ending 30th of September 1863. By JAMES GLAISHER, ESQ., F.R.S., &c., Secretary of the British Meteorological Society.

From July 1st to 15th, excepting two days, the temperature of the air was in excess of the average to the amount of  $2\frac{1}{2}^{\circ}$ . A cold period followed, which continued till the 1st August, during which the average daily deficiency amounted to  $3\frac{3}{4}^{\circ}$ , and was then followed by a warm period extending till the 16th August, the excess of temperature amounting to  $3\frac{3}{4}^{\circ}$ . On July 19th the temperature fell to  $32^{\circ}$  in the air and to much lower on the ground at most places north of London.

A generally cold period extended from the 17th August to the end of September, a period of 45 days, during which the daily deficiency amounted to  $2\frac{1}{2}^{\circ}$ . The mean temperature of July was  $60^{\circ}8$ , being higher than in 1862, when it was  $59^{\circ}1$ , and lower than in 1861, when it was  $60^{\circ}9$ .

The mean temperature of August was  $61^{\circ}9$ , being higher than any August since 1858, excepting the years 1859 and 1861, which were  $63^{\circ}5$  and  $63^{\circ}2$  respectively.

The mean temperature of September was  $53^{\circ}7$ , being lower than any September as far back as 1841, with the exception of 1845, when it was  $53^{\circ}6$ , and 1860, when it was  $53^{\circ}4$ .

The mean high day temperature in July was in excess to the amount of  $\frac{3}{4}^{\circ}$ , and in August to the amount of  $1^{\circ}$ ; in September it was  $4^{\circ}$  in defect.

The mean low night temperature in July was  $3\frac{3}{4}^{\circ}$  in defect; in August was  $\frac{1}{2}^{\circ}$  in excess; and in September was  $3^{\circ}$  in defect.

Therefore the days were warm in July and August, and the nights also in August; in September both the days and nights were cold.

The mean temperature of the air in July was  $\frac{3}{4}^{\circ}$  in defect; in August  $\frac{1}{2}^{\circ}$  in excess; and in September  $3\frac{1}{4}^{\circ}$  in defect.

The mean temperature of the dew point was in defect in each month of the quarter, to the amount of  $2^{\circ}$  in July,  $\frac{1}{2}^{\circ}$  in August, and  $4\frac{1}{4}^{\circ}$  in September.

The degree of humidity was also in defect during the quarter.

The pressure of the atmosphere was  $0.17$  inch in excess in July; and in defect in August and September to the respective amounts of  $0.05$  inch and  $0.13$  inch.

The fall of rain was  $0.9$  inch in July,  $1.8$  inch in August, and  $3.2$  inches in September; the total fall for the quarter was  $5.9$  inches, being  $1.6$  inch below the average of the preceding 47 years.

The mean temperature of the air at Greenwich in the three months ending August, constituting the three summer months, was  $60^{\circ}3$ , being  $0.2$  above the average of the preceding 92 years.

1863.	Month.	Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
		Air.		Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames.		Mean.	Diff. from average of 22 years.	Mean.	Diff. from average of 22 years.
		Mean.	Diff. from average of 22 years.	Mean.	Diff. from average of 22 years.	Mean.	Diff. from average of 22 years.	Mean.	Diff. from average of 22 years.	Mean.	Diff. from average of 22 years.				
July	—	60.8	0.6	—	—	—	—	—	—	—	—	in.	—	grs.	—
August	—	61.9	+0.7	55.9	-1.5	51.7	-2.1	24.9	+4.4	66.1	+0.3	in.	-0.032	4.3	-0.3
Sept.	—	59.7	-2.7	50.2	-3.7	46.8	-4.3	17.7	-0.8	61.7	-0.6	in.	-0.061	3.6	-0.6
Mean	—	58.8	-0.7	54.5	-1.8	50.7	-2.3	20.9	+1.4	64.4	-0.4	—	—	—	—

NOTE.—In reading this table it will be borne in mind that the sign (-) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred or thunder was heard and lightning seen on July 2d at Scarborough and Harrogate; on the 7th at Bradford, Stonyhurst, Scarborough, Otley, Thelwall, and at Eccles; on the 8th at Leeds; on the 21st at Bradford; on the 23d at Bywell; and on the 24th at Norwich.



On August 1st at Guernsey and Little Bridy; on the 2d at Wisbeach; on the 3d at Stonyhurst and Scarborough; on the 14th at St. Leonards and Exeter; on the 15th at Truro, St. Leonards, Exeter, and High Street Exeter; on the 17th at Oxford; on the 19th at St. John's College, Aldershot, Great Berkhamstead, and Cardington; on the 24th at Guildhall; on the 25th at Truro, Little Bridy, Downside College, Battersea, Oxford, Great Berkhamstead, Royston, Cardington, Bradford, Grantham, Wakefield, York, Otley, Bywell, and Wisbeach; on the 27th at St. Leonards, Exeter, Liverpool, York, Harrogate, and Eccles; on the 28th at St. John's College, Camden Town, Harrogate, and St. Paul's Parsonage; on the 30th at Little Bridy; and on the 31st at Castleton, Wakefield, Stonyhurst, York, Thelwall, Harrogate, St. Paul's Parsonage, North Shields, and Wisbeach. On September 2d at Bywell; on the 4th at Little Bridy, Oxford, Liverpool, Thelwall, and North Shields; on the 7th at Stonyhurst and Otley; on the 8th at Leeds; on the 10th at St. John's College, Petersfield, Clifton, Camden Town, Oxford, Great Berkhamstead, Cardington, and Nottingham; on the 10th at Little Bridy, Camden Town, Oxford, Great Berkhamstead, Norwich, Grantham, and Stonyhurst; on the 21st at Oxford and Cardington; on the 22d at Greenwich, Royston, Llandudno, Grantham, Hawarden, Scarborough, and Carlisle; on the 23d at York; on the 24th at Helston, Downside College, Oxford, Bywell, and North Shields; and on the 30th at Eccles.

Thunder was heard but lightning was not seen on July 2d at Grantham, North Shields, and Carlisle; on the 3d at Castleton; on the 11th at St. Leonards, Exeter, and High Street Exeter; on the 12th at Bradford; and on the 23d and 27th at North Shields. On August 1st at Helston and Truro; on the 2d at Streatley Vicarage; on the 3d at Harrogate; on the 5th at Eccles; on the 6th and 14th at Little Bridy; on the 16th at Norwich and Stonyhurst; on the 19th at Streatley Vicarage; on the 24th at Eccles; on the 25th at Helston, Osborne, Grantham, Hawarden, Stonyhurst, and Harrogate; on the 27th at Exeter High Street, Hawarden, Liverpool, Stonyhurst, and Otley; on the 28th at Harrogate; on the 30th at Truro and Exeter (High Street), and on the 31st at Little Bridy, Harrogate, and Nottingham. On September 2d at Harrogate; on the 4th at Truro, St. Leonard's, Exeter, Clifton, Hawarden, Liverpool, Stonyhurst, and Nottingham; on the 6th at Harrogate; on the 10th at Osborne, Thelwall, Eccles, Wisbeach, and Nottingham; on the 19th at Harrogate and Nottingham; on the 21st at Osborne, Royston, and Streatley Vicarage; on the 22d at Petersfield, Cardington, York, Harrogate, Bywell, and Nottingham; on the 23d at Great Berkhamstead and Bywell; on the 24th at Petersfield, Clifton, Hawarden, Stonyhurst, Bywell, and Streatley Vicarage; on the 26th at Norwich; on the 28th at St. Paul's Parsonage; and on the 30th at Bradford.

Lightning was seen but thunder was not heard on July 13th at Streatley Vicarage; and on the 21st at Thelwall and Banbury. On August 2d at St. Leonard's, Exeter, and Helston; on the 15th at Helston; on the 19th at Osborne, Camden Town, and Harrogate; on the 24th at Grantham; on the 28th at Petersfield, Stonyhurst, and Streatley Vicarage; and on the 30th at Exeter High Street. On September 9th at St. Leonard's, Exeter, Osborne, Little Bridy, Aldershot, and Stonyhurst; on the 10th at Osborne, Clifton, Great Berkhamstead, Cardington, York, Harrogate, Eccles, and Nottingham; on the 19th at Nottingham; on the 21st at St. John's College; on the 22d at St. John's College, Camden Town, Royston, Cardington, Holkham, Stonyhurst, and Thelwall; on the 23d at Little Bridy, St. John's College, Clifton, Camden Town, Royston, Cardington, Holkham, Scarborough, Wisbeach, and Streatley Vicarage; on the 24th at St. John's College and Camden Town; and on the 25th at Hawarden.

Solar halos were seen on July 1st at Great Berkhamstead and Nottingham; and on the 11th at Great Berkhamstead and Eccles. On August 1st at Nottingham; on the 7th, 12th, and 13th, at Great Berkhamstead; on the 16th at Little Bridy; on the 24th at Clifton; on the 25th and 27th at Oxford; and on the 30th at Great Berkhamstead. On September the 6th at Great Berkhamstead and Clifton; on the 7th at Oxford; on the 15th at Petersfield and Hawarden; on the 16th and 28th at Great Berkhamstead; on the 29th at Clifton; and on the 30th at Petersfield, Clifton, and Great Berkhamstead.

Lunar halos were seen on July 29th at Little Bridy; and on the 31st at Clifton. On August 2d and 3d at Great Berkhamstead; and on the 26th at North Shields. On September the 2d at Oxford; on the 22d at Eccles; on the 25th at St. John's College; on the 26th at Clifton; and on the 28th and 29th at North Shields.

Aurora were seen on July 22d at Nottingham. On August the 4th and 13th at Thelwall; and on the 21st at Eccles. On September the 9th at Clifton; and on the 10th at Hawarden.

Hail fell on July 8th, 18th, and 23d. August 16th, 19th, 25th, 27th, and 30th. September 4th, 7th, 8th, 9th, 10th, 19th, 20th, 21st, 22d, 23d, 24th, 25th, and 28th.

Snow fell on September 7th and 21st at Liverpool.

Fog prevailed on 43 days during the quarter, viz., 13 in July, 14 in August, and 16 in June.

Wheat in flower on July 2d at Cockermouth.

Wheat cut on July 17th at Royston; on the 24th at St. John's College, near Brighton, and Cardington; on the 25th at Worthing and Streatley Vicarage, Berks; on the 29th at Aldershot Camp; and on the 30th at Guernsey and Great Berkhamstead. On August 3d at Wisbeach; on the 4th at Helston; on the 6th at Grantham; on the 8th at Thelwall; on the 10th at Petersfield; on the 13th at North Shields; on the 17th at St. Paul's Parsonage, Silloth; and on the 24th at Stonyhurst.

Oats in flower on July 9th at Cockermouth.

Oats were cut on July 11th at Royston; on the 14th at Streatley Vicarage, Berks; on the 25th at Great Berkhamstead; and on the 31st at Aldershot Camp, and a few patches at Thelwall. On August 6th at Helston; and on the 20th at Stonyhurst.

Barley was cut on July 28th at Helston; and on the 30th at Aldershot Camp and Great Berkhamstead. On August 6th at Cardington; on the 13th at North Shields; and on the 25th at Grantham.

Rye was cut on July 21st at Royston; and on the 31st at Aldershot, and a few patches at Thelwall.

Early apples and pears ripe on July 31st at Great Berkhamstead.

Hardy apples and pears ripe on September 30th at Great Berkhamstead.

Cherries were ripe on July 1st at Helston.

Peaches were ripe on July 26th at Helston; and on August 17th at Great Berkhamstead.

Plums were ripe on July 29th at Helston; and on August 17th at Great Berkhamstead.

Currents were ripe on July 20th, raspberries on July 1st, and strawberries on July 15th, at Culloden.

Harvest began on July 25th at Worthing; and on the 31st at Hawarden. On August 20th at Bywell; and on the 29th at Cockermouth.

Harvest ended on August 25th at Thelwall; and on the 29th at Guernsey. On September 1st at Worthing.

Snipes arrived on August 24th at Helston.

Cuckoos departed on July 31st from Thelwall.

Swallows departed on October 8th from Nottingham.

At Great Berkhamstead the crops of wheat were all carried by the 31st of August in very good condition, and little more remains in the fields but barley and beans; the former is rather injured by sprouting, owing to the showery weather, but not to any great extent. Potatoes are fine and abundant, and no appearance of blight. The fruit was generally gathered by September 30th. Early apples are scarce; but the later sort are very plentiful. Pears of all descriptions are also abundant.

At Streatley Vicarage the harvest operations were generally suspended by the middle of August, by heavy rains commencing from then till the end of the month. There was no potato disease till August 25th, when nearly two inches of rain fell on that and the following day together; since that time its development has been rapid. Much injury by the rain has been done to the oats and barley, which culminated in the injury inflicted by the terrible thunderstorm which crossed the upper part of this parish on the night of September the 9th.

At Cardington the wheat crop is good in quality, and above the average, except on very light soil. Barley is above the average. Peas and beans are below the average. Potatoes are good, and free from disease. Fruit scarce.

At Wisbeach, during the month of September, there was a large crop of potatoes grown here, and the disease has affected some.

At Grantham the wheat harvest has been got in first rate condition, quality good, and quantity above the average. There is still some barley uncut, although the bulk is got; it is short in the straw and rather light in the yield.

At Belvoir Castle harvest work commenced in a few instances in July, but only became general in August, when favoured by remarkably fine weather were carried with unexampled rapidity. The crops of wheat, barley, and oats considerable, and the quality of the grain is excellent. Root crops unpromising, owing to the protracted dry weather. Grass land suffered equally from drought. The potato crop is abundant, and free from disease. Sheep are healthy and thriving. Apples, pears, and plums are abundant in some localities, but a total failure in others. The season has in some respects facilitated the operations of the farm. One of the advantages of a quick and early harvest is realized; the opportunity afforded by tillage operation on the early portion of land for the succeeding crop as one of the points of good husbandry. Wheat sowing commenced in September. An unusual breadth of winter tares and winter beans having been sown, owing to the partial failure of the clover crops, which failed owing to the prolonged drought in the summer. Wheat whenever thrashed out has yielded well. The turnip crop is affected. Stock is generally healthy. Short pastures have kept beasts low in condition. Potato crop is yielding well, and only slightly affected with disease. Potatoes are as low as 5s. 6d. per sack. Apples remarkably well ripened. Very few acorns or hawberries.

At Eccles the hay harvests are excellent; they have been cheaply housed owing to the excellence of the weather. The wheat and oats are looking well. Many potato crops in the neighbourhood of Chat Moss were injured by the frost on the evening of July 21st.

At Thelwall. Butterflies unusually scarce hitherto this summer. The heavy rain on the 21st and 22d of July beat down some patches of wheat and oats when the crops were very full, but the harvest is very promising upon the whole, and will be very easy if the weather is at all fine. A few patches of rye and oats were cut on the 31st. Harvest likely to be general in ten days or a fortnight. The wheat crop is remarkably fine in this neighbourhood; it is all cut, but not yet secured, and it is spoiling in the fields from the daily rain which has taken place during the latter part of August. September has been a remarkably cold and rainy month. The corn crops were nearly all carried by the 25th, but in a very indifferent condition, though better than was expected.

At Cockermouth July has been a month of very fine summer weather, highly favourable to hay-making, and likewise for collecting the grain crops, which are looking exceedingly well. The great bulk of the hay in this neighbourhood has now been cut and secured; a little, however, still remains. Reaping became general about August 24th, but has not made great progress, as the weather has been very unsettled since. Nearly all the grain is cut, but much still remains in the fields unsecured, owing to the extremely bad harvest weather during the month. Whilst ozone was only present on two days during the month of September in the centre of the town (of 6000 inhabitants), it was present much more frequently and in greater quantity immediately outside the town. The average being 1.60 in the latter and 0.14 in the former situation. The difference appears to be owing in a great measure to the bad sanitary state of the town.

At St. Paul's Parsonage, near Silloth, the harvest has been excellent. The potatoes in some damp places have suffered from night frosts.

At Bywell the grain crops are looking well, and in ten or twelve days some plots of barley will be ready for the sickle. Turnips and potatoes are healthy. Occasional showers are much required. The harvest here was perfectly general about the 20th of August; the crops are good on the whole. Fine settled weather is much required. Very little was cut last week, in consequence of the rain. If the weather does not clear up, much injury, I fear, will be done to the grain which is cut, for very little is secured.

At Allenheads the harvest was commenced about the middle of July, and nearly the whole now housed in remarkably good condition.

At North Shields the weather during the month of September has been variable and showery.

At Petersfield on August 25th a violent hurricane struck a house close to the station, ripped the lead off the roof, forced the slates to the distance of half an inch, completely unroofed a stable and cowshed, and carried part of the roof, weighing at least one cwt., across the road 30 yards. This tornado was local and confined to that part, and did no further damage.



# Meteorological Table, Quarter ending September 30th, 1863.

NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	WIND.				Mean Amount of Cloud.	Mean Number of Days in which it fell.	Rain.
														N.	E.	S.	W.			
Guernsey	29.612 74.5	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	4	4	4	4	4	4	4
Helston	29.539 85.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	4	4	4	4	4	4	4
Truro	29.581 80.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	4	4	4	4	4	4	4
Exeter (St. Leonard's)	29.608 82.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	4	4	4	4	4	4	4
Exeter (200 High-st.)	29.638 84.2	40.8	40.8	40.8	40.8	40.8	40.8	40.8	40.8	40.8	40.8	40.8	40.8	4	4	4	4	4	4	4
Bournemouth	29.585 80.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	4	4	4	4	4	4	4
Venator	29.658 74.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	4	4	4	4	4	4	4
Osborne	29.538 84.4	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	4	4	4	4	4	4	4
Worthing	29.582 77.5	40.3	40.3	40.3	40.3	40.3	40.3	40.3	40.3	40.3	40.3	40.3	40.3	4	4	4	4	4	4	4
Little Briny	29.556 83.7	35.8	35.8	35.8	35.8	35.8	35.8	35.8	35.8	35.8	35.8	35.8	35.8	4	4	4	4	4	4	4
St. John's Col. nr. Brighton	29.628 78.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	4	4	4	4	4	4	4
Petersfield	29.677 80.3	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	4	4	4	4	4	4	4
Barnstaple	29.558 85.5	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	4	4	4	4	4	4	4
Aldershot Camp	29.585 83.1	37.9	37.9	37.9	37.9	37.9	37.9	37.9	37.9	37.9	37.9	37.9	37.9	4	4	4	4	4	4	4
Clifton	29.561 85.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	4	4	4	4	4	4	4
Downside College	29.592 83.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	4	4	4	4	4	4	4
Royal Observatory	29.600 80.0	38.4	38.4	38.4	38.4	38.4	38.4	38.4	38.4	38.4	38.4	38.4	38.4	4	4	4	4	4	4	4
Regent's Park	29.586 83.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	4	4	4	4	4	4	4
St. John's Wood	29.606 80.0	38.4	38.4	38.4	38.4	38.4	38.4	38.4	38.4	38.4	38.4	38.4	38.4	4	4	4	4	4	4	4
Guildhall	29.586 83.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	4	4	4	4	4	4	4
Camden Town	29.586 83.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	4	4	4	4	4	4	4
Battersea, Train Coll.	29.555 80.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	4	4	4	4	4	4	4
Oxford	29.600 82.5	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	4	4	4	4	4	4	4
Great Berkhamstead	29.578 85.5	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	4	4	4	4	4	4	4
Banbury	29.623 79.4	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	4	4	4	4	4	4	4
Streatham Viarage	29.591 82.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	4	4	4	4	4	4	4
Hartwell House	29.591 82.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	4	4	4	4	4	4	4
Royston	29.591 82.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	4	4	4	4	4	4	4
Cardington	29.588 86.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	4	4	4	4	4	4	4
Aspley	29.529 90.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	4	4	4	4	4	4	4
Bedford	29.575 84.4	36.4	36.4	36.4	36.4	36.4	36.4	36.4	36.4	36.4	36.4	36.4	36.4	4	4	4	4	4	4	4
Lampeter	29.560 83.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	4	4	4	4	4	4	4
Llandudno	29.590 78.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	4	4	4	4	4	4	4
Norwich	29.558 80.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	4	4	4	4	4	4	4
Diss (Norfolk)	29.578 80.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	4	4	4	4	4	4	4
Holkham	29.549 82.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	4	4	4	4	4	4	4
Nottingham	29.595 77.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	4	4	4	4	4	4	4
Hawarden	29.591 74.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	4	4	4	4	4	4	4
Liverpool Observatory	29.525 82.0	38.7	38.7	38.7	38.7	38.7	38.7	38.7	38.7	38.7	38.7	38.7	38.7	4	4	4	4	4	4	4
Eccles	29.551 79.0	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	4	4	4	4	4	4	4
Wakfield	29.514 83.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	4	4	4	4	4	4	4
Bradford	29.570 70.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	4	4	4	4	4	4	4
Thelwall, near Warrington	29.536 78.4	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	4	4	4	4	4	4	4
Stonyhurst	29.499 78.8	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	4	4	4	4	4	4	4
York	29.552 82.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	4	4	4	4	4	4	4
Osley	29.514 73.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	4	4	4	4	4	4	4
Harrigate	29.537 83.5	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2	40.2	4	4	4	4	4	4	4
Cockermouth	29.520 76.8	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	4	4	4	4	4	4	4
St. Paul's Parsonage	29.533 70.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	4	4	4	4	4	4	4
Carlisle	29.496 85.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	4	4	4	4	4	4	4
Bywell	29.537 77.0	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	4	4	4	4	4	4	4
Allenheads	29.537 77.0	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	4	4	4	4	4	4	4
North Shields	29.537 77.0	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	4	4	4	4	4	4	4
Alnwick	29.537 77.0	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	4	4	4	4	4	4	4

The highest temperatures of the air were at Bedford, 90°; St. Leonard's, Exeter, 89°; St. John's College, 87°; and Nottingham, 87°. The lowest temperatures were at Great Berkhamstead, 20°; Petersfield, 31°; Allenheads, 32°; Streatham Viarage, 33°; St. John's College and Camden Town, 35°; Cardington, 38°; Hartwell House, 39°; Bedford, 21°; and Royston, 21°. The least daily ranges were at Venator, 92°; Aspley, 92°; Guernsey, 92°; and Liverpool, 92°. Rain fell on the greatest number of days at Allenheads, 66; Eccles, 57; Manchester, 55; and Liverpool, 52; and Cockerthorpe and Bywell, 48. The heaviest falls were at Lampeter, 18.0 in.; Stonyhurst, 15.7 in.; Cockerthorpe, 13.4 in.; Manchester, 12.2 in.; Eccles, 11.7 in.; and Thelwall, 11 in. The least falls were at Truro, 3.4 in.; Diss, 3.7 in.; Holkham, 4.3 in.; Banbury, 4.6 in.; Royston, 4.7 in.; and St. John's Wood, 5.1 in.

## QUARTERLY METEOROLOGICAL TABLE for different PARALLELS of LATITUDE.

PARALLELS OF LATITUDE, &c.		Mean Pressure of dry Air reduced to the level of the Sea.	Mean of all Highest Readings of the Thermometer.	Mean of all Lowest Readings of the Thermometer.	Mean Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	WIND.				Mean Amount of Ozone.	Mean Number of Days in which it fell.	RAIN.
																			Relative Proportion of						
																			N.	E.	S.	W.			
Guernsey	- - -	29.612	74.5	47.0	27.5	63.1	53.3	21.2	9.8	58.0	53.7	401	4.5	1.0	83	533	89.7	14.5	1.5	8	4	8	10	4.2	3.4
The Counties of Devon & Cornwall	- - -	29.595	81.8	37.5	27.5	53.3	53.3	21.2	17.1	58.9	54.9	390	4.4	1.3	78	533	89.7	14.5	1.5	7	3	8	10	4.2	3.4
Isle of Wight	- - -	29.610	76.2	41.8	27.4	59.7	53.3	22.3	17.9	60.0	54.2	422	4.7	1.1	80	531	100.3	14.4	0.5	2.5	5	3	13	5.4	5.6
South of Latitude 51°	- - -	29.588	83.4	35.2	26.8	56.5	53.3	22.7	18.9	63.8	58.5	350	4.4	1.1	79	531	96.9	15.4	1.3	5	3	9	13	4.7	3.4
Between (51° and 53°)	- - -	29.608	81.3	35.8	26.7	56.9	53.3	22.2	18.3	63.8	58.5	359	4.4	1.1	78	531	96.9	15.4	1.3	5	3	9	13	4.7	3.4
the (53° and 55°)	- - -	29.551	83.4	38.2	29.6	64.9	58.6	26.3	18.9	68.0	60.3	369	4.6	1.0	80	531	88.4	14.4	0.9	5	3	8	14	4.6	5.6
latitudes (53° and 54°)	- - -	29.545	79.2	39.2	29.1	64.1	49.3	14.8	15.7	62.8	48.2	361	4.0	1.0	79	540	85.1	13.3	1.5	4	6	9	13	3.9	6.0
North of Latitude 54°	- - -	29.520	78.3	33.7	54.0	7.62	46.4	34.8	17.9	54.1	47.2	341	3.8	1.0	79	540	88.1	13.3	1.5	4	6	9	15	4.7	4.9



Year 1863.	Month.	Names of Stations and Observers.	Pressure of Atmosphere in Month.		Temperature of Air in Month.			Mean Tem- perature.		Vapour.		Mean Reading of Thermometer.		Wind.		Mean Amount of Rain.	
			Mean.	Range.	Highest.	Lowest.	Range.	All Highest.	All Lowest.	Mean.	Dew Point.	Air.	Daily Range.	N.	S.	W.	Mean Amount of Rain.
July	29	CLIFTON (Bristol), W. C. BAKER, Esq., F.R.A.S., M.B.M.S.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Aug.	29	CLIFTON (Bristol), W. C. BAKER, Esq., F.R.A.S., M.B.M.S.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Sept.	29	CLIFTON (Bristol), W. C. BAKER, Esq., F.R.A.S., M.B.M.S.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
July	29	DOWNSIDE COLLEGE (near Bath), Rev. L. B. SNOW.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Aug.	29	DOWNSIDE COLLEGE (near Bath), Rev. L. B. SNOW.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Sept.	29	DOWNSIDE COLLEGE (near Bath), Rev. L. B. SNOW.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
July	29	ROYAL OBSERVATORY, THE ASTRONOMER ROYAL.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Aug.	29	ROYAL OBSERVATORY, THE ASTRONOMER ROYAL.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Sept.	29	ROYAL OBSERVATORY, THE ASTRONOMER ROYAL.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
July	29	41, YORK TERRACE (Regent's Park), Dr. R. D. THOMSON, F.R.S., L. and E., M.B.M.S.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Aug.	29	41, YORK TERRACE (Regent's Park), Dr. R. D. THOMSON, F.R.S., L. and E., M.B.M.S.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Sept.	29	41, YORK TERRACE (Regent's Park), Dr. R. D. THOMSON, F.R.S., L. and E., M.B.M.S.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
July	29	ST. JOHN'S WOOD (Literary Insti- tution), MR. JOHN CARTER, Librarian.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Aug.	29	ST. JOHN'S WOOD (Literary Insti- tution), MR. JOHN CARTER, Librarian.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Sept.	29	ST. JOHN'S WOOD (Literary Insti- tution), MR. JOHN CARTER, Librarian.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
July	29	GUILDHALL, W. HAYWOOD, Esq., C.E.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Aug.	29	GUILDHALL, W. HAYWOOD, Esq., C.E.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Sept.	29	GUILDHALL, W. HAYWOOD, Esq., C.E.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
July	29	CAMDEN TOWN, G. J. SYMONS, Esq., M.B.M.S.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Aug.	29	CAMDEN TOWN, G. J. SYMONS, Esq., M.B.M.S.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Sept.	29	CAMDEN TOWN, G. J. SYMONS, Esq., M.B.M.S.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
July	29	BATTERSEA TRAINING COLLEGE, J. B. FANTHOM, Esq.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Aug.	29	BATTERSEA TRAINING COLLEGE, J. B. FANTHOM, Esq.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Sept.	29	BATTERSEA TRAINING COLLEGE, J. B. FANTHOM, Esq.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
July	29	LEYTON (Essex), J. G. BARCLAY, Esq., F.R.A.S., M.B.M.S.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Aug.	29	LEYTON (Essex), J. G. BARCLAY, Esq., F.R.A.S., M.B.M.S.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Sept.	29	LEYTON (Essex), J. G. BARCLAY, Esq., F.R.A.S., M.B.M.S.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
July	29	RADCLIFFE OBSERVATORY, (Oxford), Rev. R. MAIN, M.A.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Aug.	29	RADCLIFFE OBSERVATORY, (Oxford), Rev. R. MAIN, M.A.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Sept.	29	RADCLIFFE OBSERVATORY, (Oxford), Rev. R. MAIN, M.A.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
July	29	GREAT PERKHAMPTON, WILLIAM SCURIE, Esq., M.B.M.S.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Aug.	29	GREAT PERKHAMPTON, WILLIAM SCURIE, Esq., M.B.M.S.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Sept.	29	GREAT PERKHAMPTON, WILLIAM SCURIE, Esq., M.B.M.S.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
July	29	BANBURY (Oxon), W. JOHNSON, Esq., F.R.A.S., M.B.M.S.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Aug.	29	BANBURY (Oxon), W. JOHNSON, Esq., F.R.A.S., M.B.M.S.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Sept.	29	BANBURY (Oxon), W. JOHNSON, Esq., F.R.A.S., M.B.M.S.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
July	29	STREATHLEY VICARAGE (Berks), Rev. J. SHATTO, M.A., M.B.M.S.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Aug.	29	STREATHLEY VICARAGE (Berks), Rev. J. SHATTO, M.A., M.B.M.S.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Sept.	29	STREATHLEY VICARAGE (Berks), Rev. J. SHATTO, M.A., M.B.M.S.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
July	29	HARTWELL HOUSE, Mr. HORTON, Assistant to Dr. LEE, F.R.S., F.R.A.S., M.B.M.S.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Aug.	29	HARTWELL HOUSE, Mr. HORTON, Assistant to Dr. LEE, F.R.S., F.R.A.S., M.B.M.S.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Sept.	29	HARTWELL HOUSE, Mr. HORTON, Assistant to Dr. LEE, F.R.S., F.R.A.S., M.B.M.S.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
July	29	ROYDON (Hertfordshire), MR. W. H. MANN, Esq., F.R.A.S., M.B.M.S.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Aug.	29	ROYDON (Hertfordshire), MR. W. H. MANN, Esq., F.R.A.S., M.B.M.S.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5
Sept.	29	ROYDON (Hertfordshire), MR. W. H. MANN, Esq., F.R.A.S., M.B.M.S.	29.882	1.003	83.1	40.9	42.2	73.9	54.7	29.1	60.1	60.1	29.1	10	8	3	0.5

Year	Month	Station	Barometer	Thermometer	Winds	Rain	Clouds	Humidity	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	Force	Amount	Direction	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Year 1863.	Month.	Names of Stations and Observers.	Pressure of Atmosphere in Month.				Temperature of Air in Month.				Mean Temperature.				Vapour.				Mean Reading of Thermometer.				Wind.				Rain.			
			Range.				Range.				Range.				Range.				Range.				Range.				Range.			
			Mean.	Max.	Min.	Diff.	Mean.	Max.	Min.	Diff.	Mean.	Max.	Min.	Diff.	Mean.	Max.	Min.	Diff.	Mean.	Max.	Min.	Diff.	Mean.	Max.	Min.	Diff.	Mean.	Max.	Min.	Diff.
July	29-756	LEEDS PHILOSOPHICAL HALL, HENRY DENNY, Esq., A.L.S.	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8
Aug.	29-758	STONTHURST COLLEGE, REV. S. PERRY, M.A.	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8
Sept.	29-759	YORK, JOHN FORD, Esq.	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8
Oct.	29-760	OTLEY, H. W. THOMAS, Esq.	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8
Nov.	29-761	HARROGATE (Yorkshire), J. COULPLAND, Esq.	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8
Dec.	29-762	COCKERMOUTH, HENRY DODGSON, Esq.	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8
Jan.	29-763	ST. PAUL'S PARSONAGE, near SILLOTH, CUMBERLAND, REV. F. REDFORD, M.A., M.B.M.S.	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8
Feb.	29-764	BYWELL, Mr. JOHN DAWSON, under the direction of T. SOWITH, Esq., F.R.S., M.B.M.S.	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8
Mar.	29-765	ALLENHEADS, THOMAS BEWICK, Esq., C.E., M.B.M.S., Assistant to T. SOWITH, Esq., F.R.S., &c.	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8
Apr.	29-766	NORTH SHIELDS, ROBERT SPENCE, Esq.	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8
May	29-767	CARLISLE, I. CANTRELL, Esq., M.B.M.S.	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8
June	29-768	ALNWICK (High House), Mr. SCOTT, for His Grace the Duke of Northumberland.	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8	59.0	67.8	50.0	17.8

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# METEOROLOGY OF ENGLAND, DURING THE QUARTER ENDING DECEMBER 31, 1863.

REMARKS ON THE WEATHER during the QUARTER ending 31st of December 1863. By  
JAMES GLAISHER, Esq., F.R.S., &c., Secretary of the British Meteorological Society.

Till October 9th the temperature was alternately warm and cold. On October 10th a warm period set in, and continued to the 22d inclusive, the average daily excess of mean temperature was nearly 5°; the weather then changed, and till November 13th the weather was variable with respect to warmth, some days being in excess of temperature to a considerable amount, and others below, but the latter preponderated; and the daily deficiency of warmth for the 22 days ending November 13th was rather more than 1° daily. From this time to the end of the quarter there was an excess of temperature over the average amounting, from these 48 days ending December 31st, to 4½ daily. The same excess of temperature extended over the country. The period from October 30th to the beginning of December was unusually stormy, even for the time of the year. Successive gales of wind occurred till November 4th. Other severe storms took place all over the country on November 21st and December 2d and 3d. On October 30th the heaviest pressure within the preceding 20 years took place, viz., one of 29½ lbs. on the square foot. On December 3d, at Greenwich, at 7h. 30m. A.M., the barometer reading was 28.79 in., and remained at this reading for 42 minutes, then turned to increase, and was 30.22 in. by noon on the 4th; at Castleton the increase was 1.1 in. in 13 hours; at Cuckermouth, between December 3d, at 9 A.M., and December 4th at 9 A.M., was 1.34 in. So that the increase from the 3d to the 4th all over the country was extraordinary. The variations of atmospheric pressures between October 27th and December 5th were very frequent and to large amounts.

The mean temperature of October was 51°·6, being nearly the same as in 1862, when it was 51°·8, and less than in 1861, when it was 54°·9.

The mean temperature of November was 45°·7, being higher than any November since 1857, which was 45°·8.

The mean temperature of December was 43°·2, being 0°·4 less than in 1862; higher than in 1861, which was 41°·0; and higher than in any other year back to 1857, which was 45°·1.

The mean high day temperature in October was that of the average for the month, in November was 2° in excess, and in December 3° in excess above the average.

The mean low night temperature in the three months was in excess to the amount of 2°·1 in October, 2°·9 in November, and 1°·1 in December.

Therefore the days in October were of the average value, and were warm in both November and December, and the nights were warm throughout the quarter.

The mean temperature of the air in October was 1°, in November was 1°·3, and in December was 3° nearly in excess over their respective averages of the preceding 22 years.

The mean temperature of the dew point was in excess in each month of the quarter to the amount of 1°·4, 2°·3, and 1°·3 in each month respectively.

The degree of humidity of the air was very nearly the same as its average value in the months of October and November, and was below its average in December.

The pressure of the atmosphere was a little below its average in Oct., and above in Nov. and Dec.

The fall of rain at Greenwich was below its average in each month, and to the amount of 2½ inches upon the quarter.

The mean temperature of the air at Greenwich in the three months ending November, constituting the three autumn months, was 50°·3, being 0°·9 above the average of the preceding 92 years.

1863. MONTHS.	Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
	Air.		Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames.		Mean.		Mean.	
	Mean.	Diff. from average of 92 years.	Mean.	Diff. from average of 92 years.	Mean.	Diff. from average of 92 years.	Mean.	Diff. from average of 92 years.	Mean.	Diff. from average of 92 years.	Mean.	Diff. from average of 92 years.	Mean.	Diff. from average of 92 years.
Oct.	51.6	+2.1	49.7	+1.2	47.8	+1.4	13.7	-2.0	54.8	+0.1	in.	8.7	grs.	6.9
Nov.	45.7	+3.3	44.2	+2.6	42.4	+2.6	10.5	-0.9	48.5	+0.1	in.	3.1	grs.	4.0
Dec.	43.2	+4.2	41.1	+2.3	38.5	+1.4	11.8	+3.3	41.0	+0.1	in.	2.7	grs.	4.1
Mean -	46.8	+3.2	45.0	+2.0	42.9	+1.8	11.8	-0.2	49.1	+0.1	in.	8.2	grs.	4.0

NOTE.—In reading this table it will be borne in mind that the sign (+) minus signifies below the average, and that the sign (+) plus signifies above the average.



Thunder storms occurred or thunder was heard and lightning seen on October 1st at Thelwall near Warrington, Harrogate, Bywell, and Eccles; on the 2d at Cockermouth; on the 4th at St. Paul's Parsonage; on the 7th at Osborne, St. John's College, and Oxford; on the 8th at Camden Town and Great Berkhamstead; on the 9th at Exeter (St. Leonard's) and Exeter (High Street); on the 10th at Oxford; on the 11th at Guernsey, Osborne, Liverpool, and Streteley Vicarage; on the 13th at Truro; on the 14th at Little Bridy, Hawarden, Liverpool, and Stonyhurst; on the 17th at Nottingham; on the 30th at Clifton, Stonyhurst, and Otley; and on the 31st at Guernsey, Truro, Clifton, and Downside College near Bath. On November 2d at Helston; and on the 10th at Stonyhurst. On December 3d at Thelwall near Warrington; and on the 8th at Liverpool, Stonyhurst; on the 13th at Little Bridy; and on the 14th at Thelwall and North Shields. On November 21st at Stonyhurst.

Thunder was heard but lightning was not seen on October 1st at Hawarden, Bradford, and Stonyhurst; on the 13th at Little Bridy; and on the 14th at Thelwall and North Shields. On November 21st at Stonyhurst.

Lightning was seen but thunder was not heard on October 9th at St. John's College, Hurstpierpoint, Aldershot Camp, Clifton, Camden Town, Oxford, Bedford, Norwich, and Wisbeach; on the 12th at Helston and Truro; on the 13th at Helston and Osborne; on the 14th at Truro and Oxford; on the 19th at Thelwall near Warrington; on the 29th at Culloden; and on the 30th at Truro, Oxford, Hawarden, Wakefield, Carlisle, and Culloden. On November 1st at Bedford; and on the 19th at Thelwall near Warrington. On December 3d at Stonyhurst and Otley; on the 5th at Grantham; and on the 16th at Stonyhurst.

Solar halos were seen on October 11th at Great Berkhamstead; on the 17th at Little Bridy and Hawarden; on the 24th at Aldershot; and on the 25th at Nottingham. On November 1st and 3d at Culloden; on the 6th at Nottingham; on the 20th at Nottingham; on the 22d at Oxford; and on the 23d at Hawarden. On December 3d at Leyton; on the 4th at Little Bridy and Leyton; and on the 27th and 30th at Little Bridy.

Lunar halos were seen on October 2d at Bradford; on the 22d at Grantham, Liverpool, Castleton, Moor Parsonage, Bradford, North Shields, Culloden, Eccles, and Carlisle; on the 23d at Otley; on the 25th at Battersea, Oxford, Great Berkhamstead, and Grantham; on the 27th at Grantham and Nottingham; on the 29th at Camden Town; and on the 30th at Truro. On November 16th at Cardington; on the 19th at North Shields; on the 20th at Grantham and North Shields; on the 21st at Little Bridy and Camden Town; on the 22d at Little Bridy, Camden Town, Oxford, Great Berkhamstead, and Grantham; on the 23d at Thelwall near Warrington, North Shields, and Culloden; on the 24th at Little Bridy; on the 25th at Worthing and Nottingham; and on the 26th at Stonyhurst, Otley, North Shields, and Carlisle. On December 2d at Nottingham; on the 19th at Leyton, Wakefield Prison, and Wisbeach; on the 20th at Leyton and Wisbeach; on the 21st at Leyton, Great Berkhamstead, Grantham, and North Shields; on the 22d at North Shields; on the 23d at Wakefield Prison, Stonyhurst, Otley, and Wisbeach; and on the 26th at Leyton.

Aurora were seen on October 14th at Hawarden. On November the 5th at Stonyhurst; on the 14th at Clifton, Oxford, Grantham, Wisbeach, Nottingham, and Culloden; and on the 17th at Wisbeach. On December 1st at Nottingham; on the 3d at Otley; on the 6th at Nottingham; on the 7th at Leyton; on the 9th at Thelwall near Warrington; on the 10th at Stonyhurst; on the 12th at Otley; and on the 17th at Stonyhurst.

Hail fell on October 1st, 2d, 5th, 8th, 11th, 12th, 14th, 17th, 27th, 29th, 30th, and 31st. November 1st, 2d, 9th, 10th, 11th, 12th, 21st and 30th. December 2d, 3d, 16th, 17th, 22d and 27th.

Snow fell on October 5th at Allenheads; on the 30th at Hawarden, Stonyhurst, and Allenheads; and on the 31st at Castleton Moor Parsonage. On November 2d at Culloden; on the 3d at Grantham; and on the 8th at Culloden. On December 2d at Streteley Vicarage; on the 3d at Downside College, Bath, Great Berkhamstead, Royston, Bedford, Belvoir Castle, Castleton, Moor Parsonage, Stonyhurst, Allenheads, North Shields, High House, Alnwick; on the 16th at North Shields; on the 22d at Great Berkhamstead, Royston, Bedford, Norwich, Diss, Norfolk, and Banbury; on the 27th at Bedford and North Shields; on the 28th at Camden Town, Great Berkhamstead, Royston, Grantham, Hawarden, Thelwall near Warrington, and Banbury; and on the 31st at Banbury.

Fog prevailed on 66 days during the quarter, viz., 24 days each in Oct and Nov, and 18 in Dec. Seallows departed on October 4th from Thelwall; on the 6th from St. Paul's Parsonage, Silloth; on the 16th from Grantham; and on the 20th from Great Berkhamstead. On November 12th from Helston; and on the 15th from Osborne.

Redwings arrived on November 9th at Cardington; and on the 18th at Helston.

Woodcocks arrived on October 15th at Helston; and on the 17th at Hawarden.

Fieldfares arrived on Nov. 9th at Cardington; and on the 16th at St. John's College, Hurstpierpoint.

Lime trees divested of leaves on October 15th at Wisbeach; on the 24th at Great Berkhamstead; and on the 30th at Thelwall. On November 25th at Culloden.

Sycamore trees divested of leaves on October 29th at Thelwall, and on the 31st at Great Berkhamstead. On November 6th at Culloden.

Oak trees divested of leaves on 25th Nov. at Great Berkhamstead; and on the 30th at Culloden.

Elm trees divested of leaves on 15th Nov. at Culloden; and on the 25th at Great Berkhamstead.

Hazel trees divested of leaves on November 10th at Great Berkhamstead.

Poplar trees divested of leaves on November 10th at Great Berkhamstead.

At Thelwall near Warrington both walnut and poplar trees were divested of leaves during the last week of November.

At Culloden the following trees were divested of leaves during the month of November: Horse chestnut on the 1st; plane on the 8th; ash on the 10th; birch on the 20th; beech and larch on the 25th; and hazel on the 30th.

Corn was cut on October 13th at Hawarden.

Winter wheat sown on November 30th at Culloden.

Apple trees in blossom on October 27th at St. John's College, Hurstpierpoint.

At Guernsey during the month of December very heavy gales occurred, from the 1st to the 3d; and again on the 31st, from 8h. A.M. to 1h. 30m. P.M. During the interval between these storms the air was remarkably still and the sky overcast.

At Osborne on November 30th there fell a tremendous shower of rain, obscuring objects at a distance of 200 yards; greatest pressure of the wind 14 lbs. On December 2d the wind was west

at noon, varying from west to west by north, with a pressure of 10 lbs. at one o'clock, and falling to 2 lbs. by five o'clock; on the 3d the wind commenced rising at about 3h. A.M., at 7h. A.M. the pressure was 11 lbs., and varied between 5 lbs. to 11 lbs. all day, falling to 2 lbs. at 9h. A.M. on the 4th. At Great Berkhamstead high winds prevailed all day on November 30th, accompanied with rain. Winter aconites, polyanthes, coloured primroses, coltsfoot, heaths, and a few roses were in bloom at the end of the year.

At Streteley Vicarage, Berks, the storm of October 8th was very severe, and the quantity of rain which fell washed up the roads in all directions. The season has been everywhere extremely mild; on Christmas day monthly roses, violets, carnations, and wallflowers were in blossom.

At Cardington the potatoes lifted in October were found to be diseased after being pitted. At Wisbeach on November 30th there were heavy squalls of wind, and on the 31st it increased to a gale with a pressure of 10 lbs. clear.

At Belvoir Castle, owing to the dry season and early harvest, the proportion of land for wheat and beans was in an advanced state earlier in the season than usual, and wheat sowing was proceeded with throughout the month (October). The first sown wheat vegetated quickly, and was up and looking well by the end of the month. The wet weather which prevailed this month benefited the turnip crops, which had suffered greatly from mildew and fly, and the deficiency will not be so great as was at one time anticipated. Mangold wurzel was also improved by the rains, but the crop is not likely to be large. Pastures afford sufficient keep; and stock is doing well. Wheat sowing was completed early in the month of November; it was sown under favourable circumstances, and the first sown is up and bears a promising appearance. The open weather and absence of frost favoured the turnip crop; the growth of white turnips continued throughout the month. Grass keep is abundant, and old sheep are doing well, but the loss of lambs has been rather serious in certain localities. Beasts, apart from those which have passed through market, are healthy; December the only circumstance that has unfavourably affected the agriculturist was the gale of wind on the 3d, which unroofed houses and did much mischief in stackyards, and in one or two instances spring cropping. Turnips improved during the month; and pastures afforded moderate keep to outlying stock. Wheat looked well up to the end of the month, and was not too forward. Water was much wanted, wells being very low. Beasts and sheep have done well, and are generally healthy. Hay was cheap, averaging 3l. 10s. per ton. Potatoes abundant and cheap. Apples scarce and dear. At Nottingham, dahlias, white roses, and mignonette were in good bloom on the 5th of November. Fearful gales occurred on December 3d, doing great damage; a number of trees were destroyed in this neighbourhood. Violets, primroses, daisies, and hepatics were still in flower on the last day of the year. At Eccles near Manchester during August, September, and October rain fell on 73 days, and the whole amount collected was 15.4 inches. This autumn has been the wettest known for many years in the neighbourhood.

At Cockermouth the strength of the wind is estimated by one of Robinson's anemometers, the velocity in miles per hour being converted into pressure by the formula given by Admiral Fitzroy in his "weather book." On the 29th of September there was a gale of wind, and the greatest speed indicated by Robinson's anemometer was 30 miles per hour, which is equal to a pressure of 4.5 lbs., whilst a direct pressure plate registered 33 lbs., the former being the average and the latter the greatest pressure. Owing to the rainy weather during the latter half of last and commencement of present month the grain crops were not all secured before October 10th. Potato crops are taken out of the ground and stored away. In some cases one half of the tubers have been thus rendered unfit for use.

At St. Paul's Parsonage, Silloth, the surrounding mountains were covered with snow in October. On November 6th a rainfall of 30 hours continued without intermission, and ceased at noon on the 7th. Primroses were in flower on December 11th, auricula on the 17th, and leafbuds of deciduous shrubs much expanded on the 24th.

At Bywell the weather during the month of October has been hindersome for preparing the land for autumn sowing. Potatoes which have been taken up are generally good and free from disease. Turnips look well. During the early part of November very little work was done on the land, but the latter part was favourable for ploughing and autumn sowing. There are a good crop of turnips on the whole, but not regular in size.

At North Shields, heavy rain and damp the first eight days of November; and cold, fine dry weather since that time. Red primroses were in flower in December.

At Carlisle the surrounding hills were covered with snow on October 6th. At Culloden potato lifting commenced on October 12th; crop excellent in quality and abundant in quantity. During the month of November wheat was sown under favourable circumstances, and farm labour generally well advanced.

At Miltown, Banbridge, Ireland, the month of October has been so wet that a great deal of harm has been done to the outstanding oats, of which there is still a considerable quantity to be brought in by small farmers and backward places. The potato crop has suffered very much, and if the flax had not turned out so well it would be a bad year for the farmers. The wet windy weather during the month of November has very much retarded bleaching, as the goods have not been suffered to remain spread and exposed to the air, but have been tossed and thrown together by the wind. At the Bann Reservoir, latitude 54° 15' N., longitude 6° 2' W., and 440 feet above the level of the sea, the rain fell on 19 days during the month of October, and the amount collected was 11.8 inches, 2.4 inches having fallen on the first day alone. Blowing almost a hurricane at noon on the 31st day, at 11 A.M. the barometer read 28.380 inches, and the temperature was 49°.

At Salt Hill, Galway, Ireland, the month of October has been very windy, particularly the 29th, 30th, and 31st.

The Earthquake of October 6th was felt at Helston at 3h. 30m. A.M.; at Truro; at Exeter at 3h. 8m. A.M. (local time); at Clifton at 3h. 15m. A.M.; at Great Berkhamstead the shock was very slight; at Aspley at 3h. 25h. or 30m., as a slight shock; at Lampeter at 3h. 20m. A.M.; at



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	WIND.				Mean Amount of Cloud.	Rain.								
															Relative Proportion of													
															Mean Amount of Ozone.													
															N.	E.	S.	W.										
Guernsey	29.731	62.5	53.7	5.2	56.1	47.3	17.5	5.8	49.8	45.7	308	3.4	0.6	86	gts.	0	0	1.8	6	5	10	10	4.0	5.3	1.4	30		
Helston	29.694	65.0	52.0	3.0	53.5	45.3	25.7	9.9	49.9	48.1	338	4.0	0.4	92	542	62.4	43.3	2.2	5	4	8	14	0.7	7.7	2.4	64		
Truro	29.679	61.0	52.0	3.0	54.7	44.0	27.0	8.7	49.7	44.6	296	3.3	0.7	84	544	—	—	2.4	5	8	10	10	—	7.7	2.4	64		
Exeter (St. Leonard's)	29.716	65.5	50.0	3.5	54.7	44.2	29.4	10.5	49.0	43.5	284	3.3	0.9	67	543	62.7	38.9	1.4	4	8	10	10	—	6.8	1.4	64		
Exeter (200 High-st.)	29.703	63.3	52.5	5.0	58.0	45.0	24.6	8.0	49.3	44.4	294	3.3	0.7	84	542	—	—	0.9	5	4	9	13	—	6.8	1.4	64		
Bournemouth	29.695	65.0	52.0	3.0	53.8	47.1	12.0	6.8	52.0	44.7	322	3.4	0.8	82	543	—	—	—	6	5	15	15	—	4.6	1.4	64		
Ventnor	29.748	61.0	50.0	3.0	55.8	47.1	12.1	6.8	52.0	44.7	322	3.4	0.8	82	543	—	—	—	6	5	15	15	—	4.6	1.4	64		
Osborne	29.719	64.3	57.1	1.3	57.2	54.3	43.1	27.7	11.2	48.5	45.3	305	3.1	0.4	89	540	67.0	38.8	1.0	4	4	9	14	5.8	7.3	2.4	64	
Worthing	29.717	62.0	52.8	2.2	52.5	44.2	22.2	8.3	49.5	44.2	292	3.3	0.6	81	543	—	—	—	11	2	9	17	—	5.3	1.4	64		
Little Brldy	29.701	64.6	52.9	2.3	58.4	45.5	42.4	29.8	11.1	47.7	45.0	301	3.5	0.3	91	550	65.4	38.4	0.8	4	7	12	11	8.7	7.3	2.4	64	
St. John's Col. nr. Brighton	29.690	62.5	51.5	5.0	56.9	41.6	32.4	12.3	47.8	43.5	255	3.2	0.6	86	543	—	—	—	1.0	5	8	12	—	4.8	1.4	64		
Barnstaple	29.687	65.0	50.0	3.5	55.4	44.5	12.0	9.3	49.4	45.2	303	3.4	0.6	86	544	—	—	—	1.5	5	11	10	—	4.8	1.4	64		
Aldershot Camp	29.685	65.0	50.0	3.0	52.9	41.8	30.0	10.4	46.5	44.4	294	3.3	0.9	91	543	38.7	38.4	3.0	3	4	8	16	1.3	6.4	1.4	64		
Clifton	29.690	62.0	52.6	3.4	52.5	42.8	28.8	9.8	47.2	43.3	282	3.2	0.7	87	543	—	—	—	4.5	10	12	15	—	4.5	6.4	1.4	64	
Downside College	29.688	65.0	52.6	3.3	55.2	40.4	30.4	11.2	45.8	42.9	279	3.2	0.7	89	537	66.7	37.2	0.9	2	5	9	15	2.2	6.7	1.4	64		
Royal Observatory	29.708	66.5	52.0	4.0	52.8	41.1	31.0	11.8	46.8	42.9	279	3.2	0.4	86	545	60.1	34.8	—	3	4	11	17	0.9	7.0	1.4	64		
Regent's Park	29.692	64.5	52.3	3.9	53.2	42.3	26.4	9.0	47.2	42.5	275	3.2	0.6	84	545	—	—	—	—	—	—	—	—	7.0	1.4	64		
St. John's Wood	29.644	65.0	52.5	3.5	54.9	41.7	39.7	13.3	47.6	42.8	276	3.1	0.7	83	543	—	—	—	4	5	11	11	—	7.0	1.4	64		
Guilford	29.678	63.0	52.5	3.5	54.9	41.7	39.7	13.3	47.6	42.8	276	3.1	0.7	83	543	—	—	—	—	—	—	—	—	7.0	1.4	64		
Camden Town	29.693	62.5	52.4	3.8	55.1	41.6	41.1	29.9	10.4	46.4	41.6	295	3.1	0.6	84	543	63.9	36.4	—	4	4	8	15	—	6.8	1.4	64	
Oxford	29.685	64.0	52.7	3.7	55.1	41.1	39.0	11.1	46.4	43.2	282	3.2	0.4	89	544	57.8	39.0	1.3	5	2	12	2	3.7	7.9	1.4	64		
Streatham Village	29.710	62.8	52.3	3.6	52.1	41.2	29.9	10.7	47.7	42.0	277	3.3	0.7	85	540	57.8	35.4	1.7	3	8	10	13	—	7.6	1.4	64		
Great Berkhamstead	29.686	64.7	52.0	4.1	51.1	40.9	32.3	11.7	45.3	41.1	269	3.0	0.5	86	543	—	—	—	0.9	4	9	15	—	6.6	1.4	64		
Royston	29.738	65.3	52.5	3.9	53.2	41.0	41.3	12.0	45.6	41.2	270	3.1	0.7	87	539	—	—	—	2	3	13	13	5.2	5.8	1.4	64		
Banbury	29.696	63.5	52.7	3.7	55.1	41.0	35.3	12.0	46.0	43.4	298	3.5	0.4	90	542	—	—	—	1.9	2	13	14	—	6.7	1.4	64		
Cardington	29.675	65.0	52.0	3.0	54.6	40.9	33.1	12.7	45.7	42.1	275	3.1	0.5	88	547	62.8	31.0	0.9	3	5	10	13	—	7.3	1.4	64		
Aspley	29.697	61.0	52.0	3.0	54.9	40.9	33.1	12.7	45.7	42.1	275	3.1	0.5	88	547	62.8	31.0	0.9	3	5	10	13	—	7.3	1.4	64		
Bedford	29.687	62.0	52.0	4.0	55.6	41.3	34.5	13.4	48.0	42.9	279	3.2	0.7	88	543	54.2	24.6	—	4	3	8	16	—	7.1	1.4	64		
Witchamere	29.698	65.0	52.6	3.8	54.2	42.1	30.7	13.0	46.4	43.6	286	3.2	0.3	90	548	57.3	37.4	0.4	3	5	12	11	3.6	6.7	1.4	64		
Lampeter	29.706	63.0	52.4	3.9	52.1	40.2	30.8	11.1	46.6	43.9	290	3.3	0.3	92	540	—	—	—	38.1	0.8	4	12	11	5.0	7.9	1.4	64	
Llandudno	29.693	64.0	53.0	5.0	53.3	43.0	25.3	10.3	48.0	42.4	268	3.1	0.7	82	544	—	—	—	—	—	—	—	—	6.2	1.4	64		
Norwich	29.644	65.0	53.1	3.4	52.5	41.7	27.3	10.7	47.3	43.8	288	3.3	0.5	86	546	—	—	—	—	—	—	—	—	6.2	1.4	64		
Diss (Norfolk)	29.717	66.5	52.7	3.0	59.7	41.1	31.3	10.6	46.1	41.7	267	3.0	0.5	85	547	—	—	—	—	—	—	—	—	6.2	1.4	64		
Grantham	29.664	63.7	52.7	3.5	57.1	41.1	28.8	8.6	45.8	42.2	269	3.1	0.7	87	545	—	—	—	42.0	0.3	4	2	13	12	1.8	6.7	1.4	64
Belvoir Castle	29.690	64.0	52.3	3.8	55.0	41.2	30.8	12.6	45.1	42.7	249	3.2	0.5	91	548	—	—	—	—	—	—	—	—	6.7	1.4	64		
Derby	29.645	65.0	52.7	3.0	53.9	42.5	29.9	12.6	47.7	42.1	270	3.1	0.5	88	541	—	—	—	1.3	1	15	14	—	6.6	1.4	64		
Holkham	29.644	65.7	52.7	3.7	51.8	40.6	29.3	11.3	46.6	41.6	265	3.0	0.6	84	545	65.4	33.9	1.7	—	—	—	—	—	6.6	1.4	64		
Nottingham	29.682	64.5	52.5	3.9	52.1	39.9	32.0	12.9	45.4	41.6	264	3.0	0.5	86	545	59.6	36.1	3.5	3	4	13	11	3.7	6.8	1.4	64		
Hardward	29.644	63.7	53.0	3.0	52.4	42.2	27.8	10.2	47.2	41.8	261	3.1	0.7	81	536	—	—	—	30.6	3.1	5	6	15	4.2	7.7	1.4	64	
Liverpool Observatory	29.665	60.7	53.3	2.9	52.6	44.7	21.2	7.7	47.8	40.7	274	3.2	0.6	81	542	—	—	—	1.4	4	11	12	—	7.7	1.4	64		
Manchester	29.625	62.8	50.2	3.6	53.8	42.9	29.5	12.7	45.6	41.9	267	3.1	0.6	86	546	53.8	35.3	—	3	7	15	6	1.8	8.1	1.4	64		
Eccles	29.659	60.7	52.5	3.5	52.9	40.9	33.0	11.1	45.4	41.2	259	2.9	0.5	86	546	56.8	36.7	0.1	5	4	10	12	0.6	7.1	1.4	64		
Castleton	29.719	61.7	52.0	3.7	57.9	46.3	39.0	9.9	44.2	40.6	253	2.9	0.4	83	541	—	—	—	37.0	3.1	4	5	10	12	7.1	1.4	64	
Wakfield	29.632	62.7	52.0	3.7	53.2	42.9	33.2	12.9	45.3	42.6	275	3.2	0.3	89	546	59.9	37.4	1.8	4	6	9	12	—	6.8	1.4	64		
Thetval, near Warrington	29.690	61.7	52.0	3.4	53.9	40.8	39.0	9.0	45.8	42.8	277	3.2	0.3	88	546	57.1	39.0	1.4	2	4	11	11	3.9	7.4	1.4	64		
Stonyhurst	29.610	62.0	52.0	3.0	54.0	40.0	26.9	9.4	49.4	48.8	304	3.4	0.4	87	541	56.5	33.5	0.7	9	7	4	13	—	6.8	1.4	64		
Onley	29.694	63.8	52.8	3.0	54.6	41.6	24.3	9.1	45.6	41.1	264	2.9	0.8	83	543	—	—	—	—	—	—	—	—	6.4	1.4	64		
Harrogate	29.606	59.6	52.7	2.3	54.9	39.4	25.7	10.1	44.3	40.0	249	2.9	0.8	82	542	—	—	—	—	—	—	—	—	6.2	1.4	64		
Cockermouth	29.585	64.0	52.6	3.8	54.0	41.9	30.1	9.9	46.0	41.4	269	3.0	0.6	83	543	60.8	40.6	0.4	3	5	10	13	0.7	6.8	1.4	64		
Silloth	29.576	62.7	52.0	3.1	55.1	41.0	33.3	10.1	45.8	41.3	261	2.9	0.6	83	547	58.2	36.4	0.8	2	8	7	14	8.7	5.7	1.4	64		
Bywell	29.575	65.0	52.0	4.5	54.0	39.6	31.1	14.7	46.1	39.2	241	2.8	0.7	74	544	—	—	—	32.2	1.4	5	6	15	—	5.5	1.4	64	
Allenheads	29.552	60.1	52.1	2.9	52.8	36.7	28.2	10.0	40.1	37.4	225	2.6	0.6	89	525	60.4	33.9	1.9	3	3	9	16	—	7.4	1.4	64		
North Shields	29.625	60.0	52.0	3.0	53.0	40.0	26.9	9.4	49.4	48.8	304	3.4	0.4	87	541	—	—	—	37.7	2.0	2	7	17	—	6.6	1.4	64	
Carlisle	29.628	61.2	52.0	3.8	53.9	40.0	26.9	9.4	49.4	48.8	304	3.4	0.4	87	541	—	—	—	38.4	32.7	0.2	4	6	11	4.9	5.8	1.4	64
Alnwick	29.634	62.4	53.0	5.0	54.0	38.6	29.3	12.2	44.1	40.3	259	2.9	0.6	89	530	—	—											

The highest temperatures of the air were at Greenwich, 66°5; St. John's College and Diss (Norfolk), 66°; and Cardington, 66°. The lowest temperatures were at Bywell, 20°2; Great Berkhamstead, 23°; and Cardington and Alnwick, 24°. The greatest daily ranges were at Bywell, 14°7; Bedford, 14°3; St. John's Wood, 13°3; and Nottingham, 12°9. The least daily ranges were at Guernsey, 8°8; and Bournemouth, Ventnor, and Aspley, 6°8. Rain fell on the greatest number of days at Allenheads, Truro, 63; and Castleton and Barnstaple, 60. The heaviest falls were at Stonbury, 19.6 in.; Milton, 15.9 in.; Lampeter, 14.9 in.; and Castleton, 14.8 in. The least falls were at Greenock, 4.6 in.; Guildhall, 4.8 in.; Camden Town, 4.9 in.; and St. John's Wood, 4.9 in.

QUARTERLY METEOROLOGICAL TABLE for different PARALLELS of LATITUDE.

PARALLELS OF  LATITUDE, &c.	Mean Pressure of dry Air reduced to the level of the Sea.	Mean of all Highest Read- ings of the Thermometer.	Mean of all Lowest Read- ings of the Thermometer.	Mean Range of Tempera- ture in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	WIND.					Mean Amount of Ozone.	Mean Amount of Cloud.	Mean Number of Rainy Days.	Rain.			
																Relative Pro- portion of											
																Mean Reading of Min- imum in Rays of Sun.											
																N.	E.	S.	W.								
Guernsey	in.	29.731	32.5	37.5	25.0	53.1	47.3	17.5	5.8	49.8	45.7	308	3.4	0.6	0.6	542	—	—	—	1.8	6	5	10	10	4.0	5.5	1.4
The Counties of Devon & Cornwall	—	29.697	32.5	37.5	23.0	53.0	44.7	22.0	8.8	49.4	45.1	307	3.5	0.7	0.7	543	62.5	41.1	1.7	7	4	8	12	13	3.3	5.3	1.4
Isle of Wight	—	29.733	32.6	38.5	34.1	54.3	45.5	25.7	9.0	50.0	45.9	310	3.3	0.6	0.6	543	70.7	38.8	1.7	0	5	7	14	18	5.0	5.7	1.4
South of latitude 51°	—	29.709	34.2	36.5	37.7	53.3	45.7	28.1	10.6	49.3	44.2	293	3.3	0.5	0.7	542	65.4	38.4	1.0	7	4	8	12	15	5.3	5.7	1.4
Between 51° and 52°	—	29.694	34.2	37.4	38.9	53.9	45.8	28.0	10.7	49.2	44.1	281	3.3	0.5	0.7	543	61.8	38.9	1.4	4	4	10	13	16	5.0	5.7	1.4
the 52° and 53°	—	29.698	34.2	38.8	39.8	54.1	46.1	30.2	11.4	49.6	44.5	284	3.2	0.5	0.6	544	66.2	39.0	1.3	4	5	10	12	17	5.0	5.7	1.4
latitudes 53° and 54°	—	29.686	34.1	37.3	38.4	53.8	45.4	28.7	10.7	49.5	44.5	284	3.0	0.5	0.6	543	66.8	38.1	1.6	4	5	7	10	12	4.8	5.0	1.4
North of latitude 54°	—	29.680	34.3	37.4	38.5	54.0	45.6	30.2	11.1	49.4	44.3	282	2.9	0.5	0.6	543	69.1	35.5	1.5	4	5	7	12	14	4.8	5.0	1.4



Year 1863.	Month.	Names of Stations and Observers.	Pressure of Atmosphere in Month.		Temperature of Air in Month.				Mean Temperature.		Mean Degree of Humidity.	Vapour.		Mean Reading of Thermometer.		Wind.			Mean Amount of Cloud.	Number of Days it fell.	Rain.				
			Mean.	Range.	Highest.	Lowest.	Range.	All Highest.	All Lowest.	Daily Range.		Air.	Dew Point.	Elastic Force.	Mean.	Short of Saturation.	Maximum in Rays of Sun.	Minimum on Grass.				Relative Proportion of			
																						N.	S.	W.	
Oct.	29	CLIFTON (Bristol), W. C. BURDEN, Esq., F.R.A.S., M.B.M.S.	29.732	1.200	62.9	38.8	24.1	38.8	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Nov.	29	CLIFTON (Bristol), W. C. BURDEN, Esq., F.R.A.S., M.B.M.S.	29.776	1.203	63.0	38.6	24.1	38.6	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Dec.	29	CLIFTON (Bristol), W. C. BURDEN, Esq., F.R.A.S., M.B.M.S.	29.887	1.208	63.1	38.7	24.1	38.7	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Oct.	29	DOWNSIDE COLLEGE (near Bath), Rev. J. H. SNOW.	29.710	1.142	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Nov.	29	DOWNSIDE COLLEGE (near Bath), Rev. J. H. SNOW.	29.737	1.142	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Dec.	29	DOWNSIDE COLLEGE (near Bath), Rev. J. H. SNOW.	29.742	1.142	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Oct.	29	ROYAL OBSERVATORY, The Astronomer Royal.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Nov.	29	ROYAL OBSERVATORY, The Astronomer Royal.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Dec.	29	ROYAL OBSERVATORY, The Astronomer Royal.	29.742	1.200	64.2	38.5	27.7	43.6	38.8	46.1	12.7	51.6	47.8	383	3.7	0.6	87	537	77.8	40.5	3	7	12	7.2	1.7
Oct.	29	41, YORK TERRACE (Regent's Park), Dr. R. D. THOMSON, F.R.S., L. and E. M.B.M.S.	29.737	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Nov.	29	41, YORK TERRACE (Regent's Park), Dr. R. D. THOMSON, F.R.S., L. and E. M.B.M.S.	29.737	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Dec.	29	41, YORK TERRACE (Regent's Park), Dr. R. D. THOMSON, F.R.S., L. and E. M.B.M.S.	29.737	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Oct.	29	ST. JOHN'S WOOD (Literary Institution), Mr. ALFRED CARTER, Librarian.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Nov.	29	ST. JOHN'S WOOD (Literary Institution), Mr. ALFRED CARTER, Librarian.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Dec.	29	ST. JOHN'S WOOD (Literary Institution), Mr. ALFRED CARTER, Librarian.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Oct.	29	GUILDHALL, W. HAYWOOD, Esq., C.E.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Nov.	29	GUILDHALL, W. HAYWOOD, Esq., C.E.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Dec.	29	GUILDHALL, W. HAYWOOD, Esq., C.E.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Oct.	29	CAMDEN TOWN, G. J. SIMONS, Esq., M.B.M.S.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Nov.	29	CAMDEN TOWN, G. J. SIMONS, Esq., M.B.M.S.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Dec.	29	CAMDEN TOWN, G. J. SIMONS, Esq., M.B.M.S.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Sept.	29	LEYTON (Essex), J. G. BARCLAY, Esq., F.R.A.S., M.B.M.S.	29.712	1.065	64.7	31.8	22.9	38.9	45.1	35.9	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Oct.	29	LEYTON (Essex), J. G. BARCLAY, Esq., F.R.A.S., M.B.M.S.	29.712	1.065	64.7	31.8	22.9	38.9	45.1	35.9	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Nov.	29	LEYTON (Essex), J. G. BARCLAY, Esq., F.R.A.S., M.B.M.S.	29.712	1.065	64.7	31.8	22.9	38.9	45.1	35.9	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Dec.	29	LEYTON (Essex), J. G. BARCLAY, Esq., F.R.A.S., M.B.M.S.	29.712	1.065	64.7	31.8	22.9	38.9	45.1	35.9	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Oct.	29	RADCLIFFE OBSERVATORY, (Oxford), Rev. R. MARK, M.A.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Nov.	29	RADCLIFFE OBSERVATORY, (Oxford), Rev. R. MARK, M.A.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Dec.	29	RADCLIFFE OBSERVATORY, (Oxford), Rev. R. MARK, M.A.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Oct.	29	GREAT BERRHAMPTON, WILLIAM SQUIRE, Esq., M.B.M.S.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Nov.	29	GREAT BERRHAMPTON, WILLIAM SQUIRE, Esq., M.B.M.S.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Dec.	29	GREAT BERRHAMPTON, WILLIAM SQUIRE, Esq., M.B.M.S.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Oct.	29	BANBURY (Oxon), W. WATSON, Esq., F.R.A.S., M.B.M.S.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Nov.	29	BANBURY (Oxon), W. WATSON, Esq., F.R.A.S., M.B.M.S.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Dec.	29	BANBURY (Oxon), W. WATSON, Esq., F.R.A.S., M.B.M.S.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Oct.	29	STREATHLEY VICARAGE (Berks), Rev. J. SLATTERY, M.A., M.B.M.S.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Nov.	29	STREATHLEY VICARAGE (Berks), Rev. J. SLATTERY, M.A., M.B.M.S.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Dec.	29	STREATHLEY VICARAGE (Berks), Rev. J. SLATTERY, M.A., M.B.M.S.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Oct.	29	ROYSTON (Hertfordshire), HALE WORTHAM, Esq., M.B.M.S.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Nov.	29	ROYSTON (Hertfordshire), HALE WORTHAM, Esq., M.B.M.S.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Dec.	29	ROYSTON (Hertfordshire), HALE WORTHAM, Esq., M.B.M.S.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Oct.	29	CARDINGTON (near Bedford), MR. J. M. CLAREN, M.B.M.S. Assistant S.C., WHITEHEAD, Esq., F.R.S. M.B.M.S.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Nov.	29	CARDINGTON (near Bedford), MR. J. M. CLAREN, M.B.M.S. Assistant S.C., WHITEHEAD, Esq., F.R.S. M.B.M.S.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Dec.	29	CARDINGTON (near Bedford), MR. J. M. CLAREN, M.B.M.S. Assistant S.C., WHITEHEAD, Esq., F.R.S. M.B.M.S.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Oct.	29	ASPLEY (Bedfordshire), Rev. G. W. MARON, M.A.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Nov.	29	ASPLEY (Bedfordshire), Rev. G. W. MARON, M.A.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.6	38.8	0.4	6	5.9	23	3.2	
Dec.	29	ASPLEY (Bedfordshire), Rev. G. W. MARON, M.A.	29.738	1.202	63.0	38.5	24.1	38.5	39.1	37.4	45.8	46.8	320	3.6	0.6	87	535	42.							



Year 1887.	Month.	Pressure of Atmosphere in Month.			Temperature of Air in Month.			Mean Temperature.		Vapour.			Mean Reading of Thermometer.	Wind.			Mean Amount of Ozone.	Mean Amount of Cloud.	Number of Days it fell.	Amount col-lected.								
		Mean.	Range.	Highest.	Lowest.	Mean.		Air.	Dew Point.	In a Cubic foot of Air.	Short of Saturation.	Mean Degree of Humidity, &c., = 100.		Mean Weight of a cubic foot of air.	Maximum in Days of Sun.	Minimum on Grass.					Relative Proportion of							
						N.	E.														S.	W.						
YORK, JOHN FORD, Esq.	Oct.	29.648	1.300	63.0	30.5	55.7	44.8	10.9	49.1	45.8	3.6	0.5	85	553	393	3	5	11	12	1	21	3.1						
	Nov.	29.896	1.690	39.0	37.5	59.0	39.2	9.8	43.8	40.7	2.9	0.4	89	549	354	1	6	10	13	1	16	1.9						
	Dec.	29.700	1.364	35.0	35.7	52.5	32.1	41.5	40.5	45.7	3.6	0.5	86	538	357	0	5	9	11	3.0	10	4.2						
	OTLEY, H. W. THOMAS, Esq.	Oct.	29.685	1.686	37.8	36.8	58.1	36.7	43.0	43.3	3.0	0.5	86	546	349	2	5	22	6	9	2.7	2.9	2.9					
HARROGATE (Yorkshire), J. COULLAND, Esq.	Dec.	29.737	1.720	32.5	33.8	53.7	31.1	39.0	43.0	39.3	1.6	0.7	76	548	309	4	3	8	17	5.2	6.5	12	2.2					
	Oct.	29.219	1.300	39.0	33.0	56.6	33.4	42.6	40.8	46.3	3.8	0.5	89	533	372	2	5	16	8	1.4	4.5	17	4.6					
	Nov.	29.475	1.475	35.0	34.5	55.3	34.1	43.7	43.0	45.7	2.9	0.3	90	543	343	1	5	14	4	4.2	16	3.4	3.4					
	Dec.	29.477	1.670	32.0	35.2	53.8	32.0	40.0	41.0	39.0	2.12	0.5	84	544	311	1	4	22	5	3.8	3.8	19	2.6					
COCKERMOUTH, HESEY DODGSON, Esq.	Oct.	29.514	1.492	64.0	32.6	51.4	35.1	45.1	40.0	43.6	3.84	3.2	0.9	79	535	72.7	36.4	0.4	3	7	0.9	6.7	20	5.1				
	Nov.	29.714	1.578	39.8	39.0	53.8	37.1	41.2	40.5	43.8	4.7	2.85	3.4	84	548	58.9	52.5	0.4	3	11	18.0	6.1	22	6.4				
	Dec.	29.812	1.624	31.9	36.8	55.1	34.9	39.6	45.8	38.8	2.56	2.8	0.5	83	549	50.8	32.8	0.4	3	18	7.5	20	4.4					
	ST. PAUL'S PARSONAGE, MR. J. H. HARRISON, A.M., M.R.M.S.	Oct.	29.671	1.603	67.5	39.5	58.0	36.2	43.5	42.7	49.2	4.3	2.85	3.2	0.9	81	540	63.1	38.4	0.4	3	8	8.0	4.9	21	4.8		
RYEVIEW, Mr. JOHN DAWSON, Under-Direction of T. SOPWITH, Esq., F.R.S., M.R.M.S.	Nov.	29.818	1.559	62.0	37.5	54.7	39.7	40.1	40.6	44.9	4.1	2.69	2.9	0.5	89	549	35.7	35.5	0.3	6	18	9.0	5.5	18	4.5			
	Dec.	29.900	1.600	53.0	35.5	56.5	36.4	39.4	47.0	43.2	3.91	2.68	2.7	0.5	84	543	50.6	35.1	1.6	3	5	18	9.2	3.7	3.9			
	Oct.	29.595	1.634	63.0	32.0	53.6	32.6	42.5	46.1	40.0	2.67	3.0	1.0	76	539	35.2	35.2	1.2	3	9	8	11	21	3.7				
	Nov.	29.779	1.604	57.0	35.0	53.0	33.6	44.4	41.0	38.9	2.57	2.8	0.5	79	546	31.2	31.2	1.2	3	9	8	11	21	3.7				
ALLEN HEADS, THOMAS BEWICK, Esq., C.E., M.R.M.S., Assistant to T. SOPWITH, Esq., F.R.S., &c.	Dec.	29.786	1.622	39.0	33.0	51.3	37.6	41.3	39.7	2.18	2.6	0.8	74	548	30.3	30.3	1.9	8	11	14	1.3	1.4	1.3					
	Oct.	28.234	1.387	69.4	31.1	29.3	20.8	40.1	41.0	45.1	2.92	3.0	0.7	91	519	71.6	37.2	1.5	2	6	11	12	—	—	—			
	Nov.	28.413	1.505	51.7	25.0	27.8	45.9	33.6	9.3	40.5	33.3	2.03	2.5	0.6	88	527	60.5	33.5	1.7	3	11	15	—	—	—			
	Dec.	28.413	1.622	48.6	21.2	27.4	43.6	33.5	10.1	38.4	33.2	2.06	2.4	0.4	89	529	49.1	33.0	2.4	3	1	4	23	—	—			
NORTH SHIELDS, ROBERT SPENCE, Esq.	Oct.	29.637	1.381	69.0	33.7	52.9	43.3	9.6	47.3	43.2	2.79	3.3	0.5	86	541	41.4	37.2	1.8	4	12	14	1.8	—	—	—			
	Nov.	29.822	1.383	59.0	30.0	23.0	48.1	29.3	8.8	43.8	41.2	2.69	3.0	0.2	94	550	39.9	37.8	1.8	4	2	8	16	—	—			
	Dec.	29.844	1.589	54.0	25.2	28.8	46.7	37.2	9.2	42.7	33.7	2.18	2.5	0.7	89	550	34.8	34.8	2.4	7	2	20	—	—				
	Oct.	29.758	1.470	30.0	34.1	55.1	42.6	12.5	49.5	44.4	2.93	3.3	0.6	86	539	69.1	35.2	0.2	5	10	10	6	4.6	8.6	92	3.9		
CARLISLE, L. CARTMELL, Esq., M.R.M.S.	Nov.	29.773	1.566	58.0	26.0	32.0	49.8	38.7	11.1	44.0	41.0	2.37	3.0	0.4	88	547	37.8	37.8	1.9	3	5	13	9	4.4	8.3	18	3.0	
	Dec.	29.824	1.804	57.5	31.1	47.9	37.7	10.2	42.9	39.2	2.40	2.8	0.4	86	550	48.4	31.4	0.2	3	2	11	15	5.8	8.9	15	2.4		
	Oct.	29.250	1.484	63.0	32.0	51.0	34.5	41.6	12.9	47.3	43.1	3.01	3.4	0.5	92	534	—	—	—	—	—	—	—	—	—			
	Nov.	29.391	1.410	55.0	29.0	26.0	49.1	38.1	11.0	48.5	38.7	2.35	2.8	0.5	81	541	—	—	—	—	—	—	—	—	—			
ALNWICK (High House), Mr. SCOTT, for His Grace the Duke of Northumberland.	Dec.	29.387	1.558	55.0	31.0	47.6	34.9	12.7	41.4	37.1	2.21	2.6	0.5	86	543	—	—	—	—	—	—	—	—	—	—			
	Oct.	29.470	1.918	57.8	33.5	24.3	40.8	45.4	7.4	46.7	43.2	2.79	3.2	0.4	90	540	82.2	25.1	0.3	—	—	—	—	—	—	—		
	Nov.	29.623	1.463	57.1	29.8	25.3	46.5	39.9	6.6	46.1	40.4	2.51	2.9	0.2	91	546	88.5	21.9	0.3	1	9	11	16	8.4	4.8	14	2.2	
	Oct.	29.399	1.442	67.0	32.0	53.4	30.9	44.4	2.93	3.2	44.3	2.93	3.2	0.4	90	537	—	—	—	—	—	—	—	—	—	—		
MILTONY (Banbridge, Ireland), JOHN SMITH, Esq., A.M.	Nov.	29.618	1.322	67.0	28.0	29.0	50.9	40.5	11.3	46.0	43.0	2.78	3.2	0.4	91	552	38.0	32.6	0.2	4	9	9	9	4.9	5.0	19	11.8	
	Dec.	29.752	1.371	53.0	29.0	24.0	47.8	37.9	9.9	43.2	39.8	2.45	2.8	0.4	90	548	34.0	34.0	0.2	4	2	16	9	6.1	6.0	18	2.3	

METEOROLOGY OF ENGLAND.

DURING THE QUARTER ENDING MARCH 31, 1864.

REMARKS ON THE WEATHER during the QUARTER ending 31st of March 1864. By JAMES GLAISHER, Esq., F.R.S., &c., Secretary of the British Meteorological Society.

The year 1863 closed with very fine weather for the season all over the country, and which had continued for several weeks. At the beginning of January 1864 the weather completely changed, and till the 9th day the weather was exceedingly cold, averaging a daily deficiency of  $8\frac{1}{2}^{\circ}$  or  $9^{\circ}$  temperature; on the 6th the deficiency was as large as  $15^{\circ}$ , and exceeded  $13^{\circ}$  on the 7th, and the temperature on grass at night was as low as  $6^{\circ}$  and  $7^{\circ}$ , checking the advance of vegetation. The frost broke up on the 10th, and a period of warm, damp, and foggy weather set in, and till February 3d there was an average daily excess of  $3\frac{1}{2}^{\circ}$  of temperature. On February 4th a cold period set in, snow fell in many parts of the country, and till the 11th day the deficiency of daily temperature was  $7\frac{1}{2}^{\circ}$ ; on some days within this period it exceeded  $10^{\circ}$ ; a period of five days followed, ending the 16th, during which the weather was warm; the average daily excess was  $6\frac{3}{4}^{\circ}$  nearly. From February 17th the weather was altogether of a wintry character, with frost, snow, and sleet at all parts of the country. The wind blew from the north and east, and the average daily deficiency of temperature for 16 days, ending March 3d, was  $4\frac{1}{2}^{\circ}$ . From March 4th to the 15th the weather was generally warm, there being an excess of  $2\frac{3}{4}^{\circ}$  daily; and from March 16th to the end of the quarter there was a daily deficiency to the average amount of  $2^{\circ}$ . During these three months there was an unusual number of alternations in temperature and change of weather from frost to thaw.

The mean temperature of January was  $36^{\circ} \cdot 5$ , being  $5^{\circ} \cdot 3$  colder than it was in 1862, and of lower temperature than any since 1861, when it was  $33^{\circ} \cdot 9$ .

The mean temperature of February was  $36^{\circ}\cdot 0$ , being  $6^{\circ}\cdot 1$  lower than in 1862, and colder than any since 1860, when it was  $35^{\circ}\cdot 7$ .

The mean temperature of March was  $41^{\circ} \cdot 3$ , being  $2^{\circ} \cdot 6$  colder than in 1862, and colder than any March since 1860, when it was  $41^{\circ} \cdot 1$ .

The temperature of the air decreased from December to January by  $4^{\circ}$  or  $5^{\circ}$  in Cornwall and Devonshire; at most other places by  $6^{\circ}$ ,  $7^{\circ}$ , or  $8^{\circ}$ ; at Liverpool the decrease was as large as  $10^{\circ}$ . The temperature of February was slightly higher than in January at places situated between  $51^{\circ}$  and  $53^{\circ}$ ; but both north and south of these parallels it was colder than in January. There was an increase of  $4^{\circ}$ ,  $5^{\circ}$ , or  $6^{\circ}$  in March at places south of  $53^{\circ}$ , and from  $2^{\circ}$  to  $3^{\circ}$  north of this latitude.

The mean high day temperature was below their averages to the amount of  $1^{\circ}9$ ;  $3^{\circ}6$ ; and  $0^{\circ}4$  respectively in these three months.

<sup>19.</sup> The mean low night temperature was below their averages to the amount of 1°·9; 2°·4; and 3° respectively.

Therefore both the days and nights were cold in these three months.

The mean temperature of the air in January was  $1^{\circ}8$ , in February  $2^{\circ}9$ , and in March  $5^{\circ}7$  below their respective averages of the preceding 23 years.

The mean temperature of the dew point was  $4^{\circ}\text{C}$ ,  $3^{\circ}\text{C}$ , and  $0.6^{\circ}\text{C}$  below their averages respectively, as compared with the results from the preceding 23 years.

The degree of humidity was less than its average in January and February, and a little above in March.

The pressure of the atmosphere was a little more than  $\frac{1}{4}$  in. in excess in January, somewhat in defect in February, and about  $\frac{1}{4}$  in. in March. The pressure of the atmosphere decreased from December to January at Guernsey and in Cornwall and Devonshire; and increased at all other places to small amounts at southern, and nearly to  $\frac{1}{4}$  in. at northern stations; from January to February there was a decrease everywhere, the largest being in the midland counties, and amounting to nearly 0.3 in.; and a further decrease took place from February to March to the amount of 0.25 in. nearly at all places.

The range of the Readings of the Barometer in January were about 0.7 in. at the southern parts of the country, increasing to 1.3 in. at extreme northern stations; in February they varied from 1.0 in. near the south coast, increased to 1.5 in. in Northumberland, and to 2.0 in. at Culloden; and in March they were about 1.3 in. everywhere.

The fall of rain was in defect in January and February to the amount of 0.9 in. and 0.8 in. respectively, and in excess to the amount of 1.2 in. in March.

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The mean temperature of the air at Greenwich in the three months ending February, constituting the three winter months, was  $38^{\circ} \cdot 6$ , being  $0^{\circ} \cdot 7$  above the average of the preceding 93 years.

Temperature of															Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
1864.		Air.		Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames.								
MONTHS.	Mean.	Diff. from average of 93 years.	Diff. from average of 23 years.	Mean.	Diff. from average of 23 years.	Mean.	Diff. from average of 23 years.	Mean.	Diff. from average of 23 years.	Mean.	Diff. from average of 23 years.	Mean.	Diff. from average of 23 years.	Mean.	Diff. from average of 23 years.			
Jan.	36.5	+0.3	-1.8	31.4	-2.7	31.3	-4.0	9.7	0.0	39.7	176	in.	-0.028	grs.	2.0			
Feb.	36.0	-2.3	-2.9	31.1	-3.1	31.3	-3.5	10.3	-1.2	38.5	176	-0.028	2.0	grs.	-0.4			
Mar.	41.3	+0.3	-0.7	39.1	-0.7	36.2	-0.6	15.5	+0.8	43.0	215	-0.004	2.5	grs.	0.0			
Mean	37.9	-0.6	-1.8	35.9	-2.2	32.9	-2.7	11.8	-0.1	40.4	189	-0.020	2.2	grs.	-0.3			

1864.		Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.		Reading of Thermometer on Grass.			
MONTHS.	Mean.	Diff. from average of 23 years.	Mean.	Diff. from average of 23 years.	Mean.	Diff. from average of 23 years.	Amount.	Diff. from average of 23 years.				Number of Nights it was		Lowest Reading at Night.	Highest Reading at Night.
												At or below 30°.	Between 30° and 40°	Above 40°.	
Jan.	82	-7	in. 30.044	in. +0.284	grs. 561	grs. +7	in. 0.9	in. -0.9	Miles. 214	18	10	3	0	49.1	
Feb.	88	-2	29.760	-0.044	557	+3	0.8	-0.8	270	13	11	0	12.1	37.3	
Mar.	83	+1	29.503	-0.266	546	-4	2.7	+1.2	281	18	12	1	19.6	41.0	
Mean	83	-3	29.769	-0.009	555	+2	Sum 4.4	Sum -0.5	Mean 255	Sum 51	Sum 33	Sum 4	Lowest 6.0	Highest 49.1	

NOTE.—In reading this table it will be borne in mind that the sign (-) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred or thunder was heard and lightning seen on February 7th at North Shields; and on the 16th at Kingsley and Liverpool. On March 11th at Clifton, Great Berkhamstead, Cardington, Belvoir Castle, Eccles, and Thelwall; on the 25th at Hawarden; and on the 28th at Guernsey, Clifton, and Bywell.

Thunder was heard but lightning was not seen on February 2d at Galway, Ireland; on the 3d at Silloth; on the 11th at Oxford; on the 12th at Culloden; and on the 23d at North Shields. On March 9th at Helston; on the 11th at Grantham and Belvoir Castle; on the 28th at Bath and North Shields; on the 29th at Cardington and Nottingham; on the 30th at Cardington; and on the 31st at Nottingham.

Lightning was seen but thunder was not heard on January 28th at Bradford. On February 2d at Carlisle; on the 3d at Cardington; and on the 6th at Allenheads. On March 6th at Truro; on the 11th at Oxford, Royston, and Castleton, at the latter place very brilliant; and on the 28th at Exeter (High Street), Banbury, Cardington, and Nottingham.

Solar halos were seen on January 8th, 10th, and 31st at Great Berkhamstead; and on the 31st at Little Bridy. On February 14th at Little Bridy; and on 29th at Lampeter. On March 2d at St. John's College, Hurstpierpoint, and Little Bridy; on the 3d at Eccles; on the 4th at St. John's College, Hurstpierpoint, and Little Bridy; on the 10th at St. John's College, Hurstpierpoint, and Clifton; on the 13th at Great Berkhamstead; on the 17th at Grantham; and on the 31st at Clifton and Great Berkhamstead.

Lunar halos were seen on January 16th at Stonyhurst; on the 17th at Clifton and Little Bridy; on the 19th at Eccles, Castleton, Bedford, Stonyhurst, and North Shields; on the 20th at Oxford; on the 21st at Grantham, Wakefield, and North Shields; on the 22d at Grantham, Wakefield, and Bywell; on the 23d at Bywell and Allenheads; on the 24th at Truro; on the 25th at Great Berkhamstead, Cardington, Wisbeach, Belvoir Castle, and Little Bridy; and on the 26th at Galway. On February 12th at Cardington; on the 13th at Llandudno; on the 14th at Guernsey, Osborne, Oxford, Cardington, Norwich, and Little Bridy; on the 15th at Wakefield, Bradford, and North Shields; on the 16th at Oxford, Nottingham, Stonyhurst, and Cockermonth; on the 17th at Norwich, Liverpool, and Cockermonth; on the 19th at Hawarden; on the 20th at Wakefield; on the 22d at Culloden; and on the 24th at Nottingham and Galway. On March 11th at Oxford and Eccles; on the 13th at Grantham and Eccles; on the 14th at North Shields; on the 15th at Cardington, Wisbeach, Norwich, Belvoir Castle, Nottingham, Kingsley Parsonage, Eccles, and Thelwall; on the 16th at Oxford and North Shields; on the 17th at Guernsey and Stonyhurst; on the 18th at Hawarden; and on the 19th at Guernsey and North Shields.

At Culloden on February 22d at 8h. P.M., the sky being perfectly free from cloud, a perpendicular band of light shot upward and downward in the line of the moon's meridian, and another and broader band passed from it horizontally to a mock moon on either side, about  $45^{\circ}$  apart from each other. This horizontal band of light seemed to pass through the mock moons, and stretched out far beyond them and terminating in a point. The appearance at that time was as though the face

of each mock moon was presented to the real one, and was surrounded by a beautiful fringe of prismatic colours, these colours assuming from time to time a greater or less brilliancy. At Dingwall and Elgin this phenomenon was also seen accompanied with luminous circles or halos. These were slightly visible at Inverness at about 11h. P.M.

Aurora were seen on February 9th at Stonyhurst, Cockermonth, Silloth, and Carlisle; on the 10th at Carlisle; and on the 25th at Culloden. On March 6th at Clifton and Thelwall; on the 10th at Clifton, Kingsley, Thelwall, and Silloth; on the 28th at North Shields; on the 29th at Hawarden; on the 30th at Hawarden and Cockermonth; and on the 31st at Hawarden, Thelwall, and Silloth.

At Cockermonth the aurora seen on February 9th was in the form of an arch with streamers of red and yellow light shooting up from it towards the zenith. At Carlisle it was very brilliant.

Hail fell on January 3d, 9th, 13th, 14th, 15th, 17th, 18th, 19th, and 27th. On February 1st, 2d, 3d, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 16th, 17th, 18th, 20th, and 29th. On March 4th, 7th, 10th, 11th, 12th, 13th, 18th, 26th, 27th, 28th, 29th, 30th, and 31st throughout the different parts of the country.

Snow fell on January 1st, 2d, 3d, 4th, 8th, 9th, 10th, 11th, 16th, 17th, 19th, 20th, and 21st. On February 2d, 3d, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 16th, 17th, 18th, 19th, 20th, 21st, 22d, 23d, 24th, 25th, 26th, 27th, and 28th. On March 1st, 3d, 4th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 13th, 15th, 16th, 17th, 26th, 27th, 28th, 29th, 30th, and 31st throughout the different parts of the country.

Fog was prevalent on January 1st, 2d, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 20th, 21st, 23d, 25th, 28th, 29th, and 30th. On February 2d, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 15th, 18th, 21st, 23d, 24th, 26th, 27th, 28th, and 29th. On March 1st, 2d, 3d, 4th, 5th, 6th, 7th, 8th, 9th, 18th, 19th, 20th, 21st, 24th, and 25th throughout the different parts of the country.

At Guernsey the adopted mean temperature of the air for January was  $1^{\circ} \cdot 9$  below the average. Amount of rain was 1.33 in. below the average; and the number of rainy days eight below the average.

At Eccles near Manchester on January 8th the thermometer fell to lower than on any day since Christmas Day of 1860, and the mean temperature of the week ending January 9th was lower than that of any week since February 1855.

At Guernsey the mean temperature of the air for February was  $4^{\circ} \cdot 3$  below the average; minimum reading for the month  $23^{\circ} \cdot 5$ , the lowest recorded since the year 1843. The mean temperature of the air for the month of March was  $1^{\circ} \cdot 0$  above the average of 21 years. Amount of rain  $2^{\circ} \cdot 27$  in. above the average; and the number of rainy days three above the average.

At Berkhamstead a dense fog prevailed from the 12th to the 18th of January, with no sunshine; it cleared off in the evening of the 18th; rain fell on the 12th and 13th. From the 19th to the 28th it was generally mild and overcast (except on the 24th, when the sky was nearly cloudless); heavy rain fell on the night of the 19th, and dense fog prevailed on the 25th till the afternoon; a faint lunar halo was seen in the evening. The three last days were cold but fine; there was a severe frost on the night of the 29th, the two following nights were also frosty; a solar halo was seen on the 31st. Cold weather prevailed during December and January, and vegetation is backward when compared with previous years. Snow fell on 15 days during February, but generally in quantities too small for measurement in the rain gauge.

At North Shields the month of February was a very stormy one; a few spring flowers re-appeared about the middle of the month, but were almost directly cut off by the severe weather.

At Culloden this has been the coldest February since the one of 1860; the average temperature coinciding with the mean of the same month in that year.

At Worthing vegetation was rather backward in March.

At Thelwall near Warrington the weather during the month of March was favourable for sowing spring corn. Vegetation very backward generally.

At North Shields vegetation, as compared with the last year or two, is very backward.

At Castleton Moor Parsonage on January 23d, about 4h. A.M., the Rev. J. Chadwick Bates was suddenly awakened by a violent gale from W.N.W., which shook the house, causing it to tremble for about 20 seconds; the servants experienced the same shock.

At Milltown (Banbridge, Ireland), there was a gale on January 11th from the south, at 3h. P.M.

At Eccles near Manchester on February 13th a violent storm raged from the S.W. to N.W. all day; it attained its maximum rate from 1h. to 1h. 30m. P.M., the average being 35 miles per hour (Dr. Robinson's Anemometer).

At Castleton near Manchester a violent gale on February 13th from the W.; blew hard from 12h. 30m. to 2h. P.M. On the 29th heavy rains from E.N.E.; 1.347 in. was collected in 24 hours.

At Thelwall near Warrington a very high wind prevailed all day on February 13th.

At Olley on February 13th violent cross winds blew at 1h. 30m. P.M.; very rainy and cold afternoon.

At Silloth there was a violent gale on February 13th, pressure 16 lbs.



At Carlisle a violent storm on February 13th at 12h. 30m. P.M. from the S.W.

At Culloden a very severe storm on February 13th occurred, heavier than any since the memorable hurricane of October 3d 1860, but not nearly so disastrous in its results in this district. All the morning there had been heavy rain and sleet from dark lurid cloud coming with a brisk breeze (having a force of 11 lbs.) from E.S.E. to S.S.E. By 9 o'clock it partly cleared up, but there were occasional showers of sleet, the wind gradually increasing in force and varying with the sun. At 11h. A.M. it was S.S.W., with a force of 9 lbs. on the square foot; and by noon S.W. to W.S.W., with a force of 16 lbs.; there were now a few gleams of sunshine, but they were quickly followed by very heavy sleet, which continued till well in the evening, the wind shifting to W. by 1h. P.M., and W.N.W. by 1h. 30m., from which time till nearly 3 o'clock it blew in tremendous squalls from this point in forces varying from 25 lbs. to 30 lbs. of pressure on the square foot. Beyond the blowing off of slates, chimney cans, and the breaking of glass at the railway station, Inverness, its neighbourhood, and the counties to the north of the Moray Firth, sustained little damage, but throughout the east and southern portions generally great destruction has been occasioned. Not far from Kingussie two houses were blown down, and in the woods of Bellville, Strathspey, Ballindalloch, and Athole, many thousands of trees have been blown over. The storm swept at the same time with great violence across the north and middle of England; and along the coasts there have been many shipwrecks with loss of life. No fewer than three ships belonging to Inverness have been lost with all on board to the number of 16 hands. The Rivers Ness and Carron have been much flooded. The following are the most marked oscillations of the barometer during the storm of the 13th (corrected and reduced to 32° Fahrenheit at 104 feet above the level of the sea). At 9h. 30m. A.M., 28.711 in.; at 1h. P.M., 28.354 in.; at 3h. P.M., 28.829 in.; and at 7h. P.M., 29.346 in.

At Helston there was a gale from the south on March 18th.

At Osborne on March 6th the wind rose from 5 A.M., and reached a pressure of 16 lbs. at 7h. 30m. P.M.; it then gradually fell to 9 lbs. at midnight. On the 7th the wind rose again from 2 lbs. at 3h. A.M. to 13 lbs. at 10h. 45m. A.M.; it then fell to 1 lb. at 9 P.M. On the 10th the wind reached a pressure of 7 lbs., and on the 11th to 12 lbs. On the 29th the wind rose, and in some gusts equalled a pressure of 11 lbs.

At Nottingham gales occurred on January 20th, 22d, and 23d. On February 1st, 2d, and 13th. And on March 5th, 7th, 11th, 14th, 15th, and 31st.

At Belvoir Castle on January 17th rain froze as it fell, coating the trees with ice.

At Culloden the snow which fell on the 27th, 28th, and 29th of December, and lay on the ground to the depth of two inches, was succeeded by an intense frost up to the 13th of January, more intense than in any winter since the severe one of 1860. The ground became frozen to a depth of 10 inches, and on the lawn pond ice formed to the thickness of 9 inches. The River Navin became frozen over, and along the shores of the Frith there was a "field" of ice extending for a considerable distance out to seaward (but only out about half as far as in the winter above alluded to), some of the blocks being from 3½ inches to 4 inches in thickness. Some kind of roses were injured by this frost, also turnips that were in fields in wet situations, and potatoes in some cases in pits.

At Cockermouth frost prevailed from the 4th to the 11th, and again from the 16th to the 27th of February.

At Belvoir Castle following a long period of warm dry weather frost occurred, and with such severity that it proved most destructive to unprotected turnip crops and garden vegetables, such as celery, broccoli, and lettuce; these were in many instances destroyed. The frost was of so penetrating a character that it reached through the clumps of potatoes, and those nearest the soil were injured. The ground was frozen to the depth of 15 inches. The total absence of snow exposed all crops more directly to the action of the weather. Much inconvenience was suffered through the scarcity of water springs, wells being in many instances dry, canal reservoirs nearly dry, and ponds very low. The rainfall in 1863 amounted to 18.87 inches, about 5 inches below the average. On January 6th ice was from 3 to 4 inches thick. Owing to the inclement weather wheat was less promising at the end of February than at the end of December. In light soils the dry weather caused the soil to be loose, and it was thrown from the wheat plant, the roots of which were exposed and the plants perished. Winter beans were greatly injured by frost. Turnips that had suffered from mildew in the autumn had decayed after the action of frost more rapidly than others. The crop altogether amongst roots has been considerable, and sheep-keep will be scarce, grass was eaten very close in autumn, so there is little food in pastures. Clover has failed in many instances, and the fields have been ploughed up. The stock of hay is still good, but prolonged wintry weather has increased its price. Potatoes are cheap and good. The combing season commenced in February. Stock generally healthy. The sowing of spring corn was delayed by bad weather in March, and it was not completed as it usually is during the month. Wheat made little progress in March, and many fields are thin and unpromising. Turnips were generally affected by frost, and rotted to a great extent. This loss, with the bareness of pastures, caused artificial food to be in greater request. Hay increased in price from 3s. 10d. to 4s. 10d. per ton. The lambing season was generally very unfortunate; an unusual number of ewes cast their lambs, and many lambs died, the produce of healthy ewes. In one case a farmer has only saved 150 lambs from 500 ewes. It is surmised that the turnips on which the sheep have fed had injuriously affected them. The season is generally late. Rain was in defect during the autumn and winter months in this locality, and during the first part of the year fever was alarmingly prevalent in Grantham and in the badly drained villages of the neighbourhood.

At Harrogate wheat looked vigorous on January 17th; pastures bare on 19th.

At Bywell the weather during the month of January was very dry, and the land in good condition for ploughing. But during the month of February snow fell more or less on 13 days, and rain on 10 days, making the land quite unfit for working. Fair weather is much wanted. The weather during the month of March has been very hindersome, and farmers in this neighbourhood are behind in their work. Dry weather is required.

At Great Berkhamstead vegetation is backward, owing to the cold nights. No fruit trees are yet in blossom (March 31st), excepting peaches, nectarines, and apricots. There is likely to be an abundance of bloom on apple and pear trees; plums and cherries do not at present appear so promising.

At Culloden in February farm, garden, and all out-door operations much retarded by the weather.

At Miltown (Banbridge, Ireland) field labour has been much retarded during March by severe weather.

Leaf buds first appeared on hawthorn tree at Great Berkhamstead on February 28th; at Guernsey on March 15th; at Holkham the 29th; and at Eccles near Manchester on the 20th.

Hawthorn in leaf on March 25th at Guernsey and Little Bridy, and at Culloden the buds expanded a good deal by January 20th.

Hazel buds a good deal expanded by January 31st at Culloden.

Sallow (*Salix Caprea*) in blossom on February 5th at Little Bridy.

Hardy pear tree buds much expanded by January 31 at Culloden.

Pear tree in blossom on March 13th at Guernsey.

Hardy apple and pear tree in blossom on March 24th at Helston.

Leaf buds first appeared on Oak trees at Guernsey on March 15th.

Leaf buds first appeared on Sycamore at Hawarden on February 12th. At Guernsey on March 27th.

Leaf buds first appeared on Chestnut trees at Hawarden on February 12th. At Guernsey on March 15th; at Helston on the 21st; and at Holkham on the 30th.

Horse Chestnut tree in leaf on March 27th at Little Bridy; and on 30th at Guernsey.

Leaf buds first appeared on Field Elm at Hawarden on February 12th. At Helston on March 23d; and at Miltown, Banbridge (Ireland) on 20th.

Black Poplar in flower on March 25th at Cardington.

Peach in blossom at Guernsey on March 13th; at Helston on the 1st; at Wisbeach on the 21st; at Nottingham on the 22d; and Miltown, Banbridge (Ireland), on the 21st.

Apricot buds much expanded at Culloden by January 31st.

Apricot in blossom on March 25th at Cardington; and on the 30th at Nottingham.

Plum tree in blossom on March 13th at Guernsey; and on the 30th at Holkham.

Sycamore in leaf on March 30th at Little Bridy.

The Aconite was in flower on January 23d at Silloth.

Snowdrops, and also a few daisies and primroses, in flower in January at Llandudno.

Snowdrops in flower on the 20th of January at Culloden.

At North Shields. The following plants were in flower on January 1st, polyanthus; sweet-william; white, red, and purple stock; red daisy; Christmas rose; lavender; common marigold; wall flower; white, red, and striped carnation; blue and white hepatica; anemone; german stock; yellow, blue, and red primrose. On February 15th yellow and white crocus and red hepatica; on the 16th red primroses were in flower. Dog's tooth violet was in flower on March 25th.

Swallows were seen on January 22d, three miles south of Grantham; on several occasions during month of March at Osborne.

Bittern (*ardea stellaris*) shot at Little Bridy, Dorset, January 5th (H. S. Eaton).

Cuckoo arrived on March 18th at Osborne.

House Martin seen March 19th at Little Bridy.

Sand Martin and Chiff Chaff seen on March 21st at Little Bridy.

Thrush heard singing on January 30th at Culloden.

At Culloden Brent geese more numerous than for several seasons.

At Miltown (Banbridge, Ireland,) the severe frost from the 5th to the 9th of January very much retarded bleaching operations by freezing up the goods which were laid out wet in the fields, and interfering with the regular working of the washing and pumping machinery. As the frost, however, assists the bleaching by expanding the thread of the goods, and rendering it more accessible to the bleaching stuffs, on the whole very little damage was done. Although we have had so much frost and a little snow during the month of February, yet bleaching operations have not been much interfered with, as the snow did not lie long, and the bright sunshine during the day softened the frozen lines, and enabled the men to lift them off the field; the air too was very dry, and absorbed the moisture in the linen, so that they did not freeze after the first night's exposure.



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of the Thermometer in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	Mean Estimated Strength.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.	Rain.
																			Relative Proportion of.						
																			N.	E.	S.	W.			
Guernsey	29.695	57.5	23.5	34.0	57.5	23.5	34.0	20.8	50.1	44.9	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Helston	29.707	59.0	24.0	35.0	59.0	24.0	35.0	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Truro	29.674	63.0	13.0	50.0	63.0	13.0	50.0	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Exeter (St. Leonard's)	29.734	64.3	10.5	53.8	64.3	10.5	53.8	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Exeter (200 High-st.)	29.735	62.0	21.0	41.0	62.0	21.0	41.0	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Ventnor	29.780	54.0	25.0	29.0	54.0	25.0	29.0	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Osborne	29.709	55.8	27.0	28.8	55.8	27.0	28.8	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Bournemouth	29.670	62.0	18.0	44.0	62.0	18.0	44.0	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Worthing	29.703	54.0	22.8	31.2	54.0	22.8	31.2	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
St. John's Col. nr. Brighton	29.617	61.7	15.0	46.7	61.7	15.0	46.7	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Barnstaple	29.699	62.5	21.5	41.0	62.5	21.5	41.0	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Medstead	29.728	62.0	14.0	48.0	62.0	14.0	48.0	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Aldershot Camp	29.691	62.0	13.0	49.0	62.0	13.0	49.0	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Bath	29.688	59.0	16.0	43.0	59.0	16.0	43.0	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Clifton	29.721	59.7	13.7	46.0	59.7	13.7	46.0	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Royal Observatory	29.763	53.0	14.3	38.7	53.0	14.3	38.7	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Guildhall	29.697	54.6	22.2	32.4	54.6	22.2	32.4	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Battersea	29.686	59.4	12.3	47.1	59.4	12.3	47.1	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Streatham Viaduct	29.710	60.5	15.1	45.4	60.5	15.1	45.4	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Camden Town	29.710	60.8	13.7	48.1	60.8	13.7	48.1	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Oxford	29.716	60.8	13.7	48.1	60.8	13.7	48.1	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Banbury	29.717	60.0	10.5	49.5	60.0	10.5	49.5	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Great Berkhampstead	29.714	59.5	10.5	49.5	59.5	10.5	49.5	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Aspley	29.714	59.5	10.5	49.5	59.5	10.5	49.5	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Royston	29.788	61.4	13.8	47.6	61.4	13.8	47.6	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Cardington	29.742	60.0	10.5	49.5	60.0	10.5	49.5	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Lampeter	29.686	60.0	10.5	49.5	60.0	10.5	49.5	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Bedford	29.701	60.5	10.5	49.5	60.5	10.5	49.5	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Diiss (Norfolk)	29.725	57.5	15.0	42.5	57.5	15.0	42.5	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Norwich	29.733	57.5	15.0	42.5	57.5	15.0	42.5	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Walsingham	29.737	60.7	13.1	45.6	60.7	13.1	45.6	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Belvoir Castle	29.688	56.3	10.0	46.3	56.3	10.0	46.3	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Grantham	29.725	55.6	12.7	42.9	55.6	12.7	42.9	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Derby	29.707	56.0	11.0	45.0	56.0	11.0	45.0	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Holkham	29.718	55.2	14.8	40.4	55.2	14.8	40.4	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Nottingham	29.779	58.1	7.7	50.4	58.1	7.7	50.4	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Hawarden	29.719	58.1	7.7	50.4	58.1	7.7	50.4	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Kingsley	29.719	58.0	9.1	48.9	58.0	9.1	48.9	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Thetford, near Warrington	29.718	57.0	12.2	44.8	57.0	12.2	44.8	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Liverpool Observatory	29.732	54.2	12.8	41.4	54.2	12.8	41.4	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Manchester	29.732	54.2	12.8	41.4	54.2	12.8	41.4	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Eccles	29.732	54.2	12.8	41.4	54.2	12.8	41.4	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Castleton	29.732	54.2	12.8	41.4	54.2	12.8	41.4	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Wakfield	29.714	55.0	12.0	43.0	55.0	12.0	43.0	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Stonyhurst	29.688	56.3	10.0	46.3	56.3	10.0	46.3	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Orley	29.675	58.8	17.0	41.8	58.8	17.0	41.8	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Cockermouth	29.678	58.3	14.0	36.3	58.3	14.0	36.3	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Allenheads	29.634	49.5	11.5	38.0	49.5	11.5	38.0	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Silloth	29.674	58.8	17.0	41.8	58.8	17.0	41.8	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Carlisle	29.675	58.8	17.0	41.8	58.8	17.0	41.8	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Bywell	29.635	57.0	16.0	41.0	57.0	16.0	41.0	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
North Shields	29.634	53.0	21.3	31.8	53.0	21.3	31.8	21.4	51.3	46.3	0.30	0.00	0.00	88	549	55.0	55.0	1.2	7	8	8	8	1.5	1.5	1.5
Alnwick																									



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Year 1861.	Month.	Pressure of Atmosphere in Month.		Temperature of Air in Month.			Mean Tem- perature.	Mean Barometer.	Wind.			Mean Amount of Rain.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
		Mean.	Range.	Highest.	Lowest.	Range.			Relative Proportion of		Mean Amount of																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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METEOROLOGY OF ENGLAND,

DURING THE QUARTER ENDING JUNE 30, 1864.

REMARKS ON THE WEATHER during the QUARTER ending 30th of June 1864. By JAMES GLAISHER, ESQ., F.R.S., &c., Secretary of the British Meteorological Society.

The quarter ending March closed with cold and changeable weather, which continued to the 8th of April; the average daily deficiency of temperature from March 16 to April 8th was  $1^{\circ} \cdot 8$ . A warm period set in on the 9th, and continued with slight exception to May 22d. The average daily excess of temperature for these 44 days was  $3\frac{1}{2}^{\circ}$  nearly. From May 23d to the end of the quarter the weather was cold, with the exception of the few days between June 6th and 10th, and the deficiency for the 39 days, ending June 30th, amounted to  $2\frac{1}{2}^{\circ}$  nearly daily.

At the beginning of April the weather was cold and bleak; but little progress could be made with field work. On the 9th of April the change in the weather was marked, and farmers took advantage of the change, and at the end of the month all over the country the crops were reported as being in a good state.

At the beginning of May rain fell frequently, and the cereal crops improved, and everywhere wore a healthy appearance. The change in the weather from heat to cold on the 23d, with frosts at night during the last week in May, somewhat checked the good appearance of those crops, but upon the whole they were satisfactory.

During the month of June the wind was from the east. It was too cold; there was a deficiency of rain; the weather was not generally good for agricultural purposes, and different reports from different parts of the country were received, some of them not good, and upon the whole the probable yield of this year's cereal crops would seem to fall short of that of last year's, and it will be later in the year before it can be gathered.

The mean temperature of April was  $48^{\circ} \cdot 2$ , being  $1^{\circ} \cdot 7$  above the average of the preceding 23 years, and  $0^{\circ} \cdot 9$  colder than in 1863.

The mean temperature of May was  $53^{\circ} \cdot 8$ , being  $0^{\circ} \cdot 9$  above the average of 23 years. It was  $1^{\circ} \cdot 8$  warmer than in 1863, but  $1^{\circ} \cdot 6$  colder than in 1862.

The mean temperature of June was  $57^{\circ} \cdot 4$ , being  $1^{\circ} \cdot 7$  below the average of 23 years,  $0^{\circ} \cdot 7$  below that of 1863, but higher than in the preceding year.

The temperature of the air increased from March to April by  $4^{\circ}$  at southern stations, gradually getting larger, proceeding northwards, where the increase was  $8^{\circ}$  or  $9^{\circ}$ . In May the temperature was  $5^{\circ}$  or  $6^{\circ}$  higher generally than in April, excepting in extreme northern stations, where the increase was much smaller. At Alnwick the increase was less than  $2^{\circ}$ . In June, at stations near the sea, the temperature was very nearly the same as in May; at inland and midland stations there was an increase from May of  $3^{\circ}$  or  $4^{\circ}$ . At elevated places inland the increase from May to June was very small.

The mean high day temperature for the months of April, May, and June were  $58^{\circ}\cdot3$ ,  $64^{\circ}\cdot8$ , and  $69^{\circ}\cdot5$ , being  $1^{\circ}\cdot3$  above,  $0^{\circ}\cdot3$  below, and  $1^{\circ}\cdot4$  below their respective averages.

The mean low night temperature for these three months were  $40^{\circ}$ ,  $44^{\circ} \cdot 9$ , and  $49^{\circ} \cdot 1$ , being  $1^{\circ} \cdot 3$  above,  $0^{\circ} \cdot 3$  below, and  $1^{\circ} \cdot 4$  below their respective averages.

The mean temperature of the dew point was  $0^{\circ} \cdot 2$  below its average in April, was the same as its average in May, and  $2^{\circ} \cdot 1$  below it in June.

The degree of humidity was very uniform and always its average; the mean of the quarter was 73, complete saturation being represented by 100. In the same months, in the year, 1844, 1848

complete saturation being represented by 100. In the same months, in the year, 1844, 1848, 1853, and 1858, the value of this element was the same, namely, 73; and it is the smallest value I can find back to 1841. In the years 1844, 1853, and 1858, this element, in June, was 67 or 68, in the year 1848; in May it was 63. The distinguishing feature of the present season in this element, as compared with those years, is therefore its uniform dryness.

The pressure of the atmosphere was in excess in the months of April and May; in the former (0·2 inch, and in the latter to less than 0·1 inch; in June it scarcely differed from its average value. The pressure of the atmosphere increased by 0·3 inch or 0·4 inch from March to April at all places; decreased from April to May by quantities less than 0·1 inch everywhere, excepting Norwich, where it was just 0·1 inch; but this value is not confirmed by Diss, Wisbeach, or Holkham stations in the same locality; but Diss, which gives 0·019 inch only, seems too small. In Ireland, Scotland, and the North of England the change from April to May was very small. From the month of May to June there was a decrease everywhere, very small in amount at southern stations, but increasing gradually proceeding northwards, where it amounted to 0·2 inch nearly.

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The range of the Readings of the Barometer in April were about 0.6 inch at Guernsey and the southern parts of the country, increasing to 1 inch at extreme northern stations; in May the amount was about 0.7 inch at all parts of the country; and in June they varied from 0.7 inch to 0.9 inch.

The fall of rain was in defect in each month. It was 0.7 inch in April, being 1.1 inch too small; 1.9 inch in May, being 0.2 inch in defect; and 0.9 inch in June, or 1 inch below the average. In June in 1855 the fall was 0.7 inch; in 1850 it was 0.9 inch; in 1849 it was 0.2 inch; in 1846 it was 0.5 inch; in 1827 it was 0.7 inch; in all other Junes since 1815 the fall has exceeded 1 inch; in 1863 the fall was 3.9 inches; in 1860 it was 5.8 inches; in 1852 it was 4.6 inches; in 1838 it amounted to 5.1 inches; and in 1825 to 3.8 inches. The average fall for the month is 1.9 inches.

The fall in the three months amounted to 3.5 inches, being 2.3 inches below the average for the same period; in 1855 the fall was 2.6 inches; in 1844 it was 2.6 inches; in 1842 it was 3.5 inches; in 1840 it was 3.7 inches; in 1837 it was 3.3 inches; in 1834 it was 3.0 inches; and in 1833 it amounted to 3.6 inches.

The fall from January 1st to June 30th was 7.9 inches. The average for these six months is 10.7 inches; the deficiency in the half-year is therefore 2.8 inches, of which 0.5 inch belongs to the first three months.

The mean temperature of the air at Greenwich in the three months ending May, constituting the three spring months, was 47° 8, being 1° 3 above the average of the preceding 93 years.

1864. MONTHS.		Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
		Air.		Evaporation.		Dew Point.		Air— Daily Range.		Water of the Thames.					
		Mean.	Diff. from ave- rage of 23 years.	Mean.	Diff. from ave- rage of 23 years.	Mean.	Diff. from ave- rage of 23 years.	Mean.	Diff. from ave- rage of 23 years.						
April -	48.2	+2.4	+1.7	44.3	+0.8	40.0	-0.2	18.3	+0.1	50.4	.248	in.	grs.	gr.	
May -	53.8	+1.3	+0.9	49.7	+0.5	45.6	0.0	19.9	-0.4	58.6	.306	+ .003	3.5	0.0	
June -	57.4	-0.7	-1.7	52.8	-1.9	48.7	-2.1	20.4	-0.3	61.4	.344	- .029	3.9	-0.3	
Mean -	53.1	+1.0	+0.3	48.9	-0.2	44.8	-0.8	19.5	-0.2	56.8	.299	- .009	3.4	-0.1	

1864. MONTHS.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.	Reading of Thermometer on Grass.				
	Mean.	Diff. from ave- rage of 23 years.	Mean.	Diff. from ave- rage of 23 years.	Mean.	Diff. from ave- rage of 23 years.	Amount.	Diff. from ave- rage of 47 years.		Number of Nights it was			Low- est Read- ing at Night.	High- est Read- ing at Night.
										At or below 30°.	Be- tween 30° and 40°	Above 40°.		
April -	74	- 5	in. 29.915	in. + 104	grs. 547	grs. + 4	in. 0.7	in. -1.1	Miles. 192	8	19	3	22.9	45.5
May -	73	- 4	29.837	+ 084	558	- 5	1.9	-0.2	193	3	9	19	23.4	48.9
June -	72	- 3	29.792	- 007	533	- 2	0.9	-1.0	246	0	12	18	32.1	56.2
Mean -	73	- 4	29.848	+ 080	539	- 1	Sum 3.5	Sum -2.3	Mean 210	Sum 11	Sum 40	Sum 40	Lowest 22.9	Highest 56.2

NOTE.—In reading this table it will be borne in mind that the sign (-) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred or thunder was heard and lightning seen on April 1st at Oxford. On May 4th at Castleton; on the 5th at Liverpool, Wakefield, and York; on the 7th at Helston, Osborne, and Royston; on the 15th at Hurstpierpoint, Aldershot, and Streatley; on the 16th at Llandudno, Castleton, Stonyhurst, Harrogate, Bywell, and Allenheads; on the 19th at Banbury, Lampeter, Wisbeach, Derby, and Miltown (Banbridge, Ireland); on the 20th at Exeter (St. Leonards), Aldershot, Camden Town, Battersea, Leyton, Oxford, Berkhamstead, Banbury, Streatley, Royston, Bedford, Wisbeach, Llandudno, Norwich, Grantham, Derby, Nottingham, Hawarden, Kingsley, Liverpool, Eccles, Castleton, Stonyhurst, York, Scarborough, Harrogate, Cockermouth, Bywell, Allenheads, North Shields, and Miltown (Banbridge, Ireland); and on the 21st at Hurstpierpoint. On June 6th at Harrogate; on the 8th at Miltown (Banbridge, Ireland); on the 9th at Royston, Abington (Cambridgeshire), Nottingham, Wakefield, Harrogate, and North Shields; on the 12th at Kingsley, Liverpool, and Carlisle; on the 13th at Berkhamstead, Royston, Cardington, Aspley, Abington, Wakefield, Harrogate, Bywell, Allenheads, and North Shields; on the 15th at Camden Town; and on the 23d at Cardington, Castleton, Cockermouth, and Sillith.

Thunder was heard but lightning was not seen on April 12th at Harrogate; and on the 29th at Banbury. On May the 3d at Grantham, Nottingham, and Harrogate; on the 4th at Nottingham and Eccles; on the 5th at Kingsley, Harrogate, and Bywell; on the 6th at Bywell; on the 15th at Oxford; on the 17th at Llandudno, Grantham, and Allenheads; on the 18th at Berkhamstead; on the 19th at Streatley, Royston, Bedford, Llandudno, Nottingham, Kingsley, Cockermouth, Carlisle, Bywell, and Allenheads; on the 20th at Royston, Lampeter, and Carlisle; on the 21st at

Streatley; and on the 22d at Helston. On June 1st at North Shields; on the 3d at Allenheads; on the 8th at Holkham; on the 9th at Royston, Cardington, Bedford, and Allenheads; on the 10th at Holkham and North Shields; on the 11th at Nottingham; on the 12th at Hawarden, Stonyhurst, and North Shields; on the 13th at Camden Town, Bedford, Wisbeach, Grantham, Nottingham, Hawarden, Eccles, Castleton, Stonyhurst, and Sillith; on the 14th at Grantham; on the 15th at Clifton, Berkhamstead, Cardington, and Grantham; on the 22d at Cardington; and on the 23d at Streatley, Wisbeach, Hawarden, Eccles, and Carlisle.

Lightning was seen but thunder was not heard on April 1st at Banbury. On May the 6th at North Shields; on the 16th at Cockermouth; on the 19th at Grantham; and on the 20th at Oxford.

Solar halos were seen on April 12th and 18th at Hawarden; on the 21st at Clifton and Nottingham; and on the 24th at Oxford. On May 6th at Hurstpierpoint and Berkhamstead; on the 7th at Lampeter and Nottingham; on the 8th at Grantham; on the 13th at Eccles; on the 14th at Hawarden; on the 15th at Lampeter; on the 24th at Clifton; on the 27th at Kingsley; and on the 30th at Nottingham. On June 1st at Oxford; on the 4th at Cockermouth; on the 5th at Hurstpierpoint and Berkhamstead; on the 8th at Nottingham; on the 11th at Oxford; on the 14th at Berkhamstead and Nottingham; on the 18th at Clifton, Berkhamstead, and Lampeter; and on the 25th at Berkhamstead.

Lunar halos were seen on April 11th at Oxford, Grantham, Eccles, Stonyhurst, and Cockermouth; on the 12th at Eccles, Bradford, and Cockermouth; on the 14th at Eccles; on the 17th at Osborne, Aldershot, Oxford, and Banbury; on the 18th at Oxford, Berkhamstead, Wisbeach, Grantham, Nottingham, Harrogate, and North Shields; and on the 20th at Clifton, Berkhamstead, Grantham, Nottingham, and Eccles. On May the 14th at Lampeter, Grantham, and Wakefield; on the 15th at Wakefield; and on the 23d at Nottingham. On June 16th at Eccles.

At Leyton on April 18th there were beautiful coloured rings round the moon.

At Oxford on April 2d zodiacal light at 8h. 30m. (bright).

At Clifton on May 21st at 10h. 40m. P.M. a remarkably fine lunar rainbow, a polar halo at 9h. P.M. on the 24th.

Aurora were seen on April 1st at Thelwall; on the 2d at Thelwall and North Shields; on the 26th at Grantham and Sillith; on the 27th at Thelwall and Cockermouth; on the 28th at Cockermouth; and on the 29th at Thelwall.

Hail fell on the 1st, 2d, 4th, 5th, 15th, 16th, and 17th of April. On the 3d, 5th, 6th, 7th, 16th, 19th, 20th, 21st, 29th, 30th, and 31st of May. On the 1st, 6th, 9th, 12th, 13th, 15th, 20th, 23d, 26th, and 30th of June.

Snow fell on the 1st, 2d, 4th, 5th, and 17th of April. On the 26th, 29th, and 30th of May.

Fog was prevalent on the 3d, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 13th, 15th, 16th, 23d, 24th, 26th, 27th, 28th, and 29th of April. On the 2d, 4th, 6th, 7th, 10th, 11th, 12th, 13th, 14th, 15th, and 18th of May. On the 3d, 6th, 7th, 9th, 17th, 23d, 25th, and 29th of June.

At Guernsey the mean temperature of the air for April, May, and June were respectively 1° 1 below, 1° 4 above, and 2° 7 below the average of 21 years. The amount of rain was in defect both in April and May by 1.35 in. in the former and 1.54 in. in the latter month. The number of rainy days in April and May were 4 and 8 below the average respectively. There was a great preponderance of northerly wind in May, and the weather after the 14th of June was variable and ungenial.

At Streatley a heavy thunder storm passed on the 19th of May at 6 P.M., 3 or 4 miles S. of this station, and another at the same time passing westward, which apparently joined the first. No rain within 2 miles of this place.

At Great Berkhamstead there were slight white frosts on the grass every morning from the 18th to the 26th of April. From the 1st to the 11th of May the sky was mostly overcast with rain at times; from the 14th to the 20th it was very fine, clear, hot summer weather, with heavy dews at night. On the 19th and 20th there were thunder storms, and the weather from the 21st to the 31st was much colder; white frosts were on the ground every morning from the 24th to the 30th.

On the 31st it rained most of the day, and was very cold, but the temperature during the night did not fall below 42° 8.

At Bedford (writes Dr. Barker) hot weather for May set in on Saturday the 14th, the maximum thermometer on that day being 77° 5; on the 15th it reached 84°, on the 16th, 81°, on the 17th, 83°, and on the 18th, 89°. This was within 1° of the highest reading of Bedford in 1863 (July 15th). During my 14 years observations I have recorded no such maximum reading in May as that on the 18th instant. The next highest was on the 25th of May 1855; viz. 85° 7. After the thunder storm on the 20th, the temperature decreased until the 26th, when the maximum was 59° only, and the minimum at night 36°. In the country places around Bedford the temperature was below freezing on that night. In this neighbourhood a tree was shivered by the lightning on the 20th instant.

At Norwich during the thunder storm on May 20th the lightning struck a cottage chimney, and a bullock shed at Rackheath, killing a bullock that was in it.

At Derby the temperature of the air for the month of May exceeded by 4° 8 the average of 20 years.

At Holkham the wheat crop appears to be very moderate, the barley unusually good, and the grass exceedingly scarce. The scarcity of the latter is probably owing to the small quantity of rain that fell in April and May, which, as will be seen, was very much under the average. Average fall of rain for 15 years for the month of April 1.62 in. Rain collected in April 1864 0.28 in., therefore the fall of rain in April was in defect to the amount of 1.34 in.



The average fall of rain for 15 years for the month of May was 1.97 in., and the amount collected in May 1864 was 1.40 in., showing a deficiency of 0.57 in.

The average fall of rain collected for 15 years from January 1st to June 30th was 10.47 in.; and the amount collected during the same period in 1864 was 7.28 in., or 3.19 in. below the average.

The mean annual fall of rain for 14 years was 26.16 in., and the rain collected in 1863 was 18.23 in., or 7.93 in. below the average.

At *Eccles* the weather in the month of April was remarkably fine, and though the low temperature of the previous months had retarded the growth of vegetation, yet the warm temperature of this month was such as to bring about the average development of leaves and buds for the time of the year. The mean temperature of the week ending the 21st of May was 70.3 above that of any corresponding week of the last 15 years, and the following week had a temperature only equalled for lowness in one of the corresponding weeks of the last 15 years, and that was in the week ending June 2d, 1855. On the 16th of this month two peals of thunder were heard, but no lightning was seen. After the thunder storm the wind retrograded from W.S.W. to S.S.E. On the 19th of this same month a heavy thunder storm commenced a little after noon, and continued between three and four hours. During the storm the wind veered from S.S.W. to N.W., and heavy showers of rain and hail fell. The lightning appeared to flit along the sky like immense chains of fire. The weather in June was generally seasonable throughout. The rain-fall being fairly distributed, and the average for the month fell.

At *Castleton* no ozone was detected in May until the 17th, from which day till the end of the month the weather was very beautiful, but the wind at times was cold, and from the 16th to the 24th backed from N.N.W. through all the points in regular succession, the anemometer showing a daily average horizontal movement of the atmosphere of 240 miles. On June 1st, ice was found nearly  $\frac{1}{8}$ th of an inch thick, and the ground covered with hoar frost; on the whole the weather during the month was cold, dull, and damp.

At *Cockermouth*, on the 21st, 22d, and 23d of April, the temperature was unusually high, accompanied with great dryness of the air. On the 22d at 3h. p.m. the reading of the dry-bulb thermometer was 68° 5, and that of the wet 53° 5, or a difference of 15° 0, the degree of humidity at that time being only 37. May was a month of very fine spring weather. From the 13th to the 20th the temperature was very much above the average; from the 20th to the end of the month it was much cooler, with N. or N.E. winds for the most part. The mean temperature of the week ending May 21st, was 63° 4, and that of the following week (ending May 28th) 50° 6, or 12° 8 less. At 2h. p.m. on the 19th, when the highest temperature was reached, the reading of the dry and wet bulb thermometers were respectively 82° 5 and 66° 4, a difference of 16° 1, indicating a degree of humidity of 40° only. The mean temperature of the month was 3° 9 above that of May 1863, and 0° 5 above May 1862. June was a month of showery, unsettled weather, with a deficiency of sun and warmth. The temperature of the month being 11° lower than June 1863.

At *Allenheads* the temperature was variable in May, and frost prevailed during the month. The temperature of the last eight days was especially low.

At *Bynoell* the temperature during May was very extreme; the highest reading in the shade on the 18th was 85° 0, and on the 29th, 53° 0. The nights were frosty during the last seven or eight days. There were severe thunder storms on the 16th and 20th, but not much damage was done to the crops, though two bridges were damaged by the great quantity of water from the hills, which must have fallen in heavy thunder storms. The temperature during June was low.

At *Culloden* the month of March was a cold and wintry one, with a temperature only slightly above that of January, and nearly as low as that in March 1862. Snow fell on twelve days, and was 8 inches deep on the low grounds on the 7th. Snow flakes were unusually large on the 11th. The mean temperature of April was above the average. The month of May was remarkable for the small range of the barometer, but the very great and unusual range of temperature which occurred between the 17th and the last day amounting to the large value of 33° 5; the thermometer having declined from 70° 1 on the former mentioned day to 36° 6 during the night of the latter. The thunderstorm of the 20th seems to have been the principal cause of this great reduction in temperature.

At *Berghampstead* on May 30th potatoes and french beans were cut, and injured by the frost, excepting in sheltered places; also leaves and tender plants. Grass was first cut on June 6th, and haymaking was completed by the end of the month. The grain crops are promising.

At *Cardington* all crops in June suffered from drought on light lands.

At *Wisbeach* in May the corn crops looked remarkably well. Mustard and other seeds vary; the produce will not be equal to the average. Fruits of all kinds, except pears, give promise of abundance.

At *Nottingham* most of the hay was harvested by the end of June without rain; the crop poor.

At *Hawarden* the hay harvest commenced on June 7th.

At *Grantham* french beans and potatoes were much nipped by the frost; gooseberries also falling; almost everything else looking well. In June pastures very parched and meadows very short.

At *Holkham* the wheat crop appears to be very moderate, the barley unusually good, and grass exceedingly scarce.

At *Eccles* the severe night frosts of the last week in May appears to have a very injurious effect upon the potato crops of this neighbourhood. Vegetation in June in this neighbourhood appears in excellent condition. The hay crops are likely to be above the average.

At *Castleton* on June 14th several fields of hay grass were cut.

At *Harrogate* crops were promising well in June, having been improved by the recent rains.

At *Cockermouth* the weather during the month of April (especially during the latter part of it) has been very favourable for tilling, cleaning, and sowing the land. Such of the crops as have been sown are coming up well, and looking healthy. Owing to the rain-fall in April and May being below the average, the rivers in this locality are extremely low, and there is a great want of rain both for cereal and green crops. The amount of evaporation during the month was almost double that of the rainfall. Ozone was present on one day only in the month, and that in small amount. First hay grass cut on or about the 18th of June; hay harvest not yet general, owing to the unfavourable state of the weather.

At *Bywell* the spring was rather late, and gentle showers were much required. The farmer was forward with his work, and vegetation was promising in general. Apple and pear trees, also berry-bearing bushes, were looking well in April, and there was an abundance of blossom. There was not any frost in April to do harm. The nights were frosty during the last seven or eight days in May, yet, notwithstanding this, the crops looked well, and vegetation in general was promising. In June gentle showers were wanted to assist the growth of turnips; those that were early sown are not looking so well as those sown later. The hay harvest is in full operation; old land an average crop, new land or seed not so good. The grain crops are looking well. Garden produce of all kinds promise abundance.

At *Milton*, as all the seed was well got in by April, the agricultural prospects are good. A great quantity of flax was sown this month. In May the crops all promised well, excepting flax, which was poor through want of rain, a little of which would improve everything. There is every appearance of a good supply of fruit this year. The crops seldom looked so well as they do now (June). The flax has completely recovered the bad effects of the dry weather by the influence of the rain. The hay harvest has commenced where the seed is not to be saved, and promises well. Fruit is abundant.

At *Culloden*, in March, farm work was greatly impeded by the weather, and oats were not sown till the 28th. Rooks did not build their nest till the 12th, being more than a week behind their usual time. Vegetation in general, but particularly that of trees, made unusually rapid progress during the fine, bright, sunny weather which prevailed after the 18th of April.

At *Cardington* white crowfoot was in flower on April 20th. The following aquatic plants were in flower in May and June: *menyanthes trifoliata* on May 15th; *equisetum pluviale* on the 16th; and *holtonia palustris* on the 17th. *Scirpus palustris* on June 2d; *comorum palustre* on the 6th; *myosotis palustris* on the 15th; *nymphora cutes* and *alba* on the 16th; *aira aquatica* on the 17th; *galium palustre* on the 20th; *butomum umbellatus* on the 28th; and *sylvestre* on the 30th.

At *North Shields* the following plants were in flower: on April 1st *pulmonaria*; on the 3d white violets; on the 8th wallflower, double white primrose, and double purple primrose; on the 9th daffodil, auricula, and white alpine; on the 10th purple arabis; on the 12th anemone; on the 15th hyacinth and single white narcissus. On May 5th tulips; on the 6th *dietytria*; on the 9th sweet scented woodroffe; on the 15th double white saxifrage and single and double wallflowers; on the 17th anemone stellaria, bachelor's buttons, and lilly of the valley; on the 19th purple lilac; on the 22d summer violet, catchfly, double narcissus, and musk; on the 30th marigold. On June 3d yellow yarrow; on the 9th gazania; on the 10th pencilled geranium; on the 12th yellow mimulus; on the 14th pink mimulus and blue nemophilæ; on the 16th day lily and aerolineum; on the 17th sweet william and white pink; on the 18th white foxglove and everlasting pea; on the 19th snap dragon, potentilla, purple foxglove, and wild thyme; on the 20th white thyme; and on the 24th blue campanula.

At *Culloden* crocus was in flower on March 15th.

Leaf-buds first appeared on the *Sycamore tree* on April 8th at Carlisle; on the 10th at Helston; on the 18th at Miltown, Banbridge (Ireland); and on the 21st at Thelwall.

Leaf-buds first appeared on the *Horse Chesnut tree* on April 3d at Carlisle; on the 6th at Culloden; on the 12th at Thelwall and Miltown; and on the 15th at Grantham.

Leaf-buds first appeared on the *Spanish Chesnut tree* on April 10th at Carlisle.

Leaf-buds first appeared on the *Lime* on April 5th at Oxford; on the 20th at Carlisle and Miltown, Banbridge (Ireland); and on the 24th at Thelwall.

Leaf-buds first appeared on the *Field Elm* on April 1st at Carlisle; on the 5th at Oxford; and on the 20th at Miltown.

Leaf-buds first appeared on the *Wych Elm* on April 1st at Carlisle; on the 7th at Thelwall; and on the 15th at Miltown.

Leaf-buds first appeared on the common *Poplar* on April 8th at Culloden; on the 26th at Miltown; and on the 30th at Carlisle.

Leaf-buds first appeared on the *Hawthorn tree* on April 1st at Carlisle; on the 4th at Miltown; and on the 10th at Thelwall.

Leaf-buds first appeared on the *Hazel* on April 15th at Miltown; on the 20th at Carlisle; and on the 29th at Medstead.

Leaf-buds first appeared on the *Oak* on April 20th at Thelwall; on the 25th at Miltown; and on the 30th at Carlisle.

Leaf-buds first appeared on the *Beech* on April 18th at Culloden; and on the 30th at Carlisle.

Leaf-buds first appeared on the *Occidental Plane* on April 7th at Culloden.

Leaf-buds first appeared on the *Oriental Plane* on April 5th at Culloden.

Leaf-buds first appeared on the *Larch* on April 10th at Culloden.

Leaf-buds first appeared on the *Birch* on April 6th at Culloden.



Leaf buds first appeared on the Walnut on April 13th at Carlisle.

Leaf buds first appeared on the Hornbeam on April 30th at Carlisle.

Leaves first appeared on the Sycamore on April 12th at Oxford; on the 19th at Great Berkhamstead; on the 21st at Cockermouth; on the 26th at Thelwall; and on May 5th at Carlisle.

Leaves first appeared on the Horse Chesnut tree on April 13th at Oxford; on the 14th at Culloden; on the 16th at Wisbeach; on the 17th at Berkhamstead; on the 21st at Nottingham and Thelwall; on the 22d at Cockermouth; and on May 5th at Carlisle.

Leaves first appeared on the Lime on April 19th at Wisbeach; on the 24th at Oxford; on the 30th at Berkhamstead; and on May 5th at Carlisle.

Leaves first appeared on the Field Elm on April 24th at Oxford; on the 25th at Streatley and Culloden; on May 1st at Great Berkhamstead; and on the 4th at Carlisle.

Leaves first appeared on the Wych Elm on April 20th at Thelwall; on the 28th at Culloden; and on May 4th at Carlisle.

Leaves first appeared on the common Poplar on April 24th at Oxford; on the 30th at Berkhamstead; and on May 12th at Culloden.

Leaves first appeared on the Hawthorn tree on April 4th at Helston; on the 12th at Culloden; on the 15th at Oxford; on the 16th at Thelwall; on the 17th at Great Berkhamstead; on the 21st at Cockermouth; on the 22d at Streatley; and on May 5th at Carlisle.

Leaves first appeared on the Hazel on April 11th at Helston; on May 4th at Great Berkhamstead; and on May 25th at Carlisle.

Leaves first appeared on the Oak on May 2d at Helston and Cockermouth; on the 4th at Great Berkhamstead; on the 25th at Carlisle; and on the 30th at Culloden.

Leaves first appeared on the Beech on April 24th at Culloden.

Leaves first appeared on Plane tree April 14th at Culloden; and on May 5th at Carlisle.

Leaves first appeared on the Larch on April 20th at Culloden.

Leaves first appeared on the Birch on April 22d at Culloden.

Leaves first appeared on the Walnut on April 29th at Wisbeach; on May 5th at Carlisle; on the 16th at Great Berkhamstead and Miltown; and on the 19th at Cockermouth.

Lilac trees were in blossom on April 18th at Guernsey; on the 20th at Helston; on the 28th at Streatley; and on the 30th at Oxford. On May 3d at Banbridge; on the 6th at Berkhamstead; on the 7th at Culloden; on the 8th at Wisbeach and Nottingham; on the 12th at Carlisle; on the 14th at Cardington and Hawarden; on the 16th at Grantham, Cockermouth, and Silloth; and on the 17th at North Shields.

The Larch was in flower on April 14th at Culloden.

Acacia trees were in blossom on June 4th at Oxford.

The Birch was in flower on April 12th at Culloden.

Yellow Broom trees were in blossom on April 25th at Aldershot; and on the 28th at Carlisle. On May 1st at Banbridge; on the 6th at Oxford; and on the 12th at Cardington.

The Plane was in flower on April 26th at Culloden.

White Broom trees were in blossom on April 20th at Culloden; on the 23d at Miltown; on the 26th at Carlisle; on the 28th at Aldershot; and on May 6th at Oxford.

Mountain Ash was in flower on May 8th at Oxford; on the 13th at Wisbeach; on the 15th at Miltown; on the 16th at Cardington; on the 18th at Great Berkhamstead and Cockermouth; and on the 23d at Carlisle.

Honeysuckle was in blossom on May 15th at Miltown (Ireland); on the 17th at Wisbeach; and on the 27th at Helston. On June 10th at Hawarden; on 16th at Great Berkhamstead; and on the 21st at Carlisle.

The Horse Chesnut tree was in flower on May 10th at Great Berkhamstead; and on the 13th at Hawarden.

The Laburnum was in blossom on April 20th at Helston. May 2d at Hawarden; on the 4th at Oxford and Galway (Ireland); on the 10th at Miltown (Ireland); on the 11th at Carlisle; on the 14th at Great Berkhamstead and Cardington; on the 16th at Grantham and Cockermouth; on the 17th at Nottingham and Silloth; and on the 18th at North Shields.

The Elm was in flower on May 15th at Culloden.

The Privet was in blossom on June 16th at Helston; on the 18th at Wisbeach; and on the 27th at Great Berkhamstead.

The Gean was in blossom on May 6th at Culloden.

Syringa trees were in blossom on May 22d at Oxford; on the 30th at Miltown (Ireland). And on June 4th at Wisbeach.

The Black Thorn was in blossom on April 23d at Silloth.

The White Thorn was in blossom on May 13th at Carlisle.

Apricot trees were in blossom on March 29th at Culloden.

Apple trees were in blossom on April 6th at Helston; on the 12th at Miltown; on the 25th at Streatley; on the 26th at Wisbeach; on the 28th at Oxford; and on the 30th at Great Berkhamstead. On May 4th at Nottingham; and on the 8th at Grantham and North Shields.

Cherry trees were in blossom on April 7th at Bywell; on the 12th at Thelwall; on the 17th at Stonyhurst; on the 18th at Cockermouth; on the 20th at Miltown (Ireland); on the 22d at Streatley, Silloth, and Culloden; on the 24th at Oxford; and on the 26th (Morello) at Great Berkhamstead. And on May 15th at North Shields.

Currant bushes were in blossom on April 20th at Culloden.

Red Flowering Currant was in flower on April 10th at Culloden.

Gooseberry bushes were in blossom on April 18th at Culloden.

Hawthorn tree was in flower on May 1st at Culloden; on the 13th at Helston; on the 15th at Nottingham; and on the 16th at Hawarden.

Nectarine trees were in blossom on April 18th at Culloden.

Plum trees were in blossom on April 6th at Oxford; on the 8th at Helston; on the 14th at Streatley; on the 16th at Silloth; on the 17th at Thelwall; on the 20th at Great Berkhamstead and Hawarden; on the 21st at Wisbeach; on the 22d at Miltown (Ireland); on the 24th at Nottingham; and on the 25th at Culloden.

Pear trees were in blossom on April 1st at Miltown; on the 4th at Bywell; on the 16th at Streatley; on the 19th at Wisbeach; on the 20th at Great Berkhamstead, Hawarden, and Grantham; on the 22d at Culloden; and on the 24th at Oxford and Nottingham.

Peach trees were in blossom on March 29th at Culloden. On April 2d at Carlisle; on the 7th at Streatley; and on the 15th at Oxford.

Raspberries were in blossom on May 12th at Culloden.

Hardy Apples and Pears were in blossom on April 20th at Carlisle; and on the 30th at Cockermouth.

Strawberries were in blossom on May 6th at Nottingham; on the 15th at North Shields; and on the 31st at Culloden.

Cherries were ripe on June 25th at Miltown (Banbridge, Ireland).

Currants were ripe on June 25th at Great Berkhamstead.

Strawberries were ripe on June 10th at Nottingham; and on the 13th at Great Berkhamstead.

Summer Apples were ripening by June 27th at Hawarden.

Oats were sown on April 4th at Culloden.

Potatoes and Turnips were sown on April 25th at Culloden.

Oats were above ground on April 16th at Culloden.

Wheat was in flower on May 14th at Helston. On June 13th at Aspley; on the 22d at Abington; and on the 23d at Hawarden.

Barley was in flower on June 20th at Aspley; and on the 23d at Hawarden.

Rye was in flower on June 7th at Aspley.

Oats were in flower on June 25th at Aspley.

Wheat was in ear on June 3d at Worthing; on the 6th at Helston; on the 8th at Wisbeach; on the 13th at Great Berkhamstead; on the 15th at Grantham; on the 16th at Hawarden; on the 19th at Eccles; on the 20th at Cockermouth; on the 21st at Otley; and on the 26th at Silloth.

Barley was in ear on June 18th at Grantham; on the 21st at Cockermouth; and on the 29th at Helston.

Oats were in ear on June 13th at Helston; on the 16th at Hawarden; on the 19th at Eccles; and on the 30th at Cockermouth. On July 6th at Nottingham.

The Cuckoo was heard on April 13th at Brighton; on the 15th at Guernsey, Oxford, and Great Berkhamstead; on the 16th at Wisbeach; on the 19th at Aspley and Banbury; on the 20th at Aldershot, Bath, Thelwall, Cardington, and Carlisle; on the 21st at Exeter, St. Leonards, Barnstaple, and Silloth; on the 22d at Truro and Lampeter; on the 23d at Hawarden and Miltown, Banbridge (Ireland); on the 25th at Harrogate; on the 26th at Stonyhurst; on the 28th at Cockermouth, Allenheads, Culloden, and Galway (Ireland). On May 3d at Castleton.

The Cuckoo departed from Aldershot on June 25th and from Aspley on the 28th.

Swallows were seen on April 6th at Grantham; on the 7th at Aspley, Cockermouth, and Bywell; on the 8th at Helston and Leyton; on the 9th at Cardington and Miltown, Banbridge (Ireland); on the 10th at Bath; on the 13th at Brighton, Thelwall, York, and Galway (Ireland); on the 14th at Barnstaple; on the 15th at Castleton; on the 16th at Medstead, Streatley, Nottingham, and Stonyhurst; on the 18th at Aldershot; on the 19th at Bradford; on the 20th at Wisbeach, Harrogate, Carlisle, and Culloden; on the 22d at Berkhamstead; on the 24th at Guernsey and Truro; on the 25th at Royston and Silloth; on the 29th at Allenheads; and on the 30th at Hawarden.

The Nightingale was heard on April 15th at Brighton; on the 16th at Oxford; on the 21st at Aldershot; and on the 22d at Streatley and Aspley.

The Willow Wren arrived at Leyton on April 1st.

The Redstart arrived at Leyton on April 14th.

The Redwing arrived at Carlisle on April 11th.

The Blackcap arrived at Leyton on April 8th.

The Wryneck arrived at Guernsey on April 4th.

The Martin arrived at Culloden on April 18th.

The Swift arrived at Culloden on April 25th.

The Cornrake arrived at Culloden on May 7th.

The Landrail heard at Nottingham on May 1st; and at Hawarden on the 8th.

The Whitethroat arrived at Nottingham on April 16th.



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	Mean Estimated Strength.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.	Rain.
																			Relative Proportion of						
																			N.	E.	S.	W.			
Guernsey	29.710	74.5	40.0	34.5	58.3	49.0	23.8	9.3	53.3	47.6	330	3.8	0.8	81	538	92.5	43.5	1.1	9	7	5	9	4.2	2.1	
Helston	29.711	85.0	36.0	49.0	63.5	47.5	33.7	16.2	53.9	50.4	369	4.2	0.7	86	538	92.5	43.5	2.3	5	9	5	11	4.2	2.1	
Truro	29.681	84.0	31.0	53.0	62.8	47.3	33.0	15.5	54.1	48.1	336	3.8	0.9	82	540	—	—	2.6	10	6	8	6	—	—	
Ventnor	29.788	74.0	39.0	35.0	59.7	49.7	24.7	10.0	54.6	45.1	301	3.4	1.4	70	539	—	—	—	4	11	4	11	—	—	
Osborne	29.689	83.8	33.8	50.0	63.6	45.6	43.5	21.3	53.1	48.8	345	4.0	0.7	85	538	101.6	38.9	0.5	5	9	5	11	7.9	5.6	
Bournemouth	29.646	79.0	32.0	47.0	65.1	44.4	39.0	20.7	53.1	45.1	301	3.4	1.4	70	541	—	—	—	—	8	7	9	9	—	
Worthing	29.673	74.0	34.0	39.0	61.0	47.2	28.5	13.8	52.9	49.1	312	3.6	0.8	78	541	—	—	—	—	0.8	8	4	10	6.5	
St. John's Col. nr. Brighton	29.588	85.0	30.0	55.0	64.8	44.3	45.1	20.5	53.6	49.8	321	3.6	0.8	78	537	—	—	—	—	1.0	7	8	6	9	
Barnstaple	29.670	89.0	34.5	54.5	65.5	47.3	43.2	18.2	55.0	49.6	356	4.0	0.8	82	539	—	—	—	—	0.7	4	6	8	12	
Aldershot Camp	29.607	83.5	32.5	51.0	65.5	44.5	41.8	20.7	53.0	46.1	312	3.5	1.0	77	532	86.0	39.7	0.8	7	8	5	10	1.2	0.7	
Clifton	29.708	84.5	34.8	49.7	63.6	46.1	13.7	11.7	53.1	45.3	303	3.5	1.0	74	537	—	—	—	—	44.2	7	6	5	12	
Royal Observatory	29.716	81.0	33.4	48.0	64.4	44.7	40.0	19.5	53.1	44.8	297	3.4	1.2	73	539	93.1	38.5	0.1	7	6	8	9	1.1	0.6	
Regent's Park	29.727	78.0	36.0	42.0	63.6	47.6	34.7	16.0	53.6	43.8	286	3.3	1.4	69	539	—	—	—	—	—	8	7	5	10	
St. John's Wood	29.683	83.0	33.0	50.0	65.6	45.3	42.0	21.3	54.0	44.4	263	3.3	1.4	70	536	—	—	—	—	—	7	9	4	10	
Guildhall	29.681	77.0	38.0	39.0	63.5	49.5	30.1	14.5	53.0	49.0	329	3.6	0.8	79	540	—	—	—	—	—	—	—	—	—	
Battersea	29.703	82.0	47.0	62.8	44.7	40.6	18.1	12.2	52.9	46.4	316	3.5	0.9	79	—	90.2	41.5	1.2	2	8	9	11	1.4	0.7	
Streatham Vicarage	29.645	—	—	—	62.5	45.0	—	—	53.8	47.2	325	3.7	—	—	—	53.8	74.1	40.6	1.5	8	6	6	10	—	
Camden Town	29.716	84.5	33.2	51.3	65.8	45.4	42.8	20.4	54.1	44.8	244	3.4	1.4	71	539	100.0	42.0	—	—	—	—	—	—	—	
Oxford	29.652	81.5	32.7	48.8	63.2	45.1	41.6	18.1	53.3	46.4	216	3.6	1.1	77	537	75.0	40.6	0.9	8	6	6	10	5.3	—	
Banbury	29.686	85.0	32.2	52.7	64.9	44.5	42.8	20.4	53.8	47.5	329	3.8	1.0	79	534	—	—	—	—	1.9	6	6	9	—	
Great Berkhamstead	29.741	82.0	38.5	53.5	63.8	44.5	46.2	20.3	52.7	42.3	270	3.1	1.4	69	535	—	—	—	—	0.9	6	5	10	—	
Hatwell	29.687	83.0	38.5	53.5	63.8	44.5	46.2	20.3	52.7	42.3	270	3.1	1.4	69	535	—	—	—	—	0.9	6	5	10	—	
Aspley	29.599	73.5	34.0	39.5	63.8	48.4	28.7	19.0	53.5	49.0	329	3.6	0.8	78	537	92.1	42.2	—	—	0.5	9	5	7	9	
Royston	29.749	88.0	31.4	54.9	63.7	43.8	47.6	21.9	52.9	44.4	266	3.4	1.2	74	536	—	—	—	—	—	6	5	7	3.2	
Abington Pigotts	29.670	84.5	32.6	55.6	65.1	43.3	49.5	22.8	52.7	47.8	343	3.8	0.8	84	538	108.6	41.7	—	—	6	9	6	9	—	
Cardington	29.728	83.8	33.1	52.9	64.9	44.4	44.9	20.4	53.7	43.5	293	3.3	1.3	70	540	97.5	37.7	1.7	10	9	7	5	9	—	
Lampeter	29.699	87.6	38.0	59.9	64.3	43.5	49.8	20.8	52.4	47.7	341	3.5	0.8	86	535	106.5	41.4	0.6	6	8	7	11	3.8	—	
Bedford	29.687	89.0	31.5	57.5	65.5	45.3	47.0	21.2	54.9	46.3	315	3.4	1.5	68	537	85.0	43.5	0.8	9	5	5	11	2.7	—	
Diss (Norfolk)	29.706	87.0	31.6	55.3	63.9	44.3	48.9	21.8	53.8	46.2	274	3.1	1.3	73	541	—	—	—	—	1.6	9	5	8	2.5	
Norwich	29.739	82.0	30.5	51.5	62.1	45.5	42.0	16.9	52.7	43.3	289	3.2	1.3	73	542	—	—	—	—	4.2	11	7	8	6	
Wisbeach	29.634	85.7	37.3	52.5	65.0	44.5	46.1	20.5	53.5	46.6	318	3.6	1.1	73	539	93.9	41.1	—	—	0.4	5	7	8	3.8	
Llandudno	29.735	79.2	35.0	44.2	62.2	47.0	35.8	15.2	53.5	44.4	266	3.4	1.3	73	542	—	—	—	—	—	4.5	7	4	14	
Grantham	29.696	80.9	34.4	46.5	62.4	45.5	41.0	16.6	52.2	45.4	261	3.1	1.1	75	535	—	—	—	—	40.0	0.1	6	7	11	
Derby	29.696	80.9	34.4	46.5	62.4	45.5	41.0	16.6	52.2	45.4	261	3.1	1.1	75	535	—	—	—	—	—	6	7	5	12	
Holkham	29.715	77.8	38.0	49.9	62.2	44.8	43.7	16.0	53.7	46.0	285	3.2	1.2	77	537	114.7	37.7	1.7	10	6	6	8	—		
Nottingham	29.713	80.9	30.5	58.8	65.6	43.8	48.9	21.8	53.8	46.2	274	3.1	1.3	73	541	97.5	37.6	0.2	6	8	8	10	3.1	—	
Hawarden	29.705	81.0	34.5	46.5	62.2	46.7	37.2	15.5	53.5	44.6	299	3.4	1.2	74	536	102.5	35.9	2.1	6	5	8	11	3.0		
Kingsley	29.696	80.9	34.4	46.5	62.4	45.5	41.0	16.6	52.2	45.4	261	3.1	1.1	75	535	108.5	39.5	0.5	3	9	6	12	3.2		
Liverpool Observatory	29.749	77.6	37.4	49.9	62.2	44.8	43.7	16.0	53.7	46.0	285	3.2	1.2	77	537	—	—	—	—	1.0	4	6	12	8	
Manchester	29.712	86.4	30.2	56.2	65.2	44.4	44.4	20.4	53.7	43.5	293	3.3	1.3	70	540	94.4	40.9	—	—	—	—	—	—	—	
Eccles	29.710	83.5	30.0	53.5	63.5	43.4	46.5	18.2	52.2	43.2	262	3.2	1.2	72	537	76.2	42.6	0.1	7	6	6	11	1.8		
Castleton Moor	29.727	81.0	31.4	54.9	63.7	43.8	47.6	21.9	52.9	44.4	266	3.4	1.2	74	536	89.8	40.9	0.5	7	5	8	10	—		
Wakefield	29.684	84.2	32.5	54.7	63.9	43.2	46.5	20.7	52.5	46.2	313	3.6	0.9	79	540	96.5	42.3	1.1	6	6	7	12	—		
Stonyhurst	29.731	82.5	31.5	51.5	60.0	43.5	41.9	16.5	50.4	45.0	277	3.0	1.2	74	536	79.9	39.5	0.6	7	6	5	12	—		
Otley	29.667	77.0	38.0	49.9	62.2	44.8	43.7	16.0	53.7	46.0	285	3.2	1.2	77	537	536	—	—	—	1.1	2	11	1	16	
Harrogate	29.701	83.0	32.0	51.5	61.5	43.5	41.9	16.5	50.4	45.0	277	3.0	1.2	74	536	—	—	—	—	—	0.8	8	7	9	
Cockermouth	29.681	82.5	31.4	48.5	60.3	34.7	39.9	15.6	51.3	43.4	281	3.2	1.1	75	540	94.5	36.1	—	—	—	—	—	—	0.8	
Allenheads	29.679	76.0	32.4	49.9	62.2	44.8	43.7	16.0	53.7	46.0	285	3.2	1.2	77	537	—	—	—	—	—	35.7	1	6	3	8
St. Paul's Parsonage	29.678	83.0	31.5	51.5	61.5	43.5	41.9	16.5	50.4	45.0	277	3.0	1.2	74	536	92.8	39.4	—	—	—	3	7	6	14	
Carlisle	29.645	78.0	30.5	47.5	60.3	43.3	41.3	17.0	50.5	46.6	318	3.6	0.8	86	534	92.2	37.7	0.2	3	5	8	14	4.4		
Bywell	29.733	72.0	32.6	39.0	46.5	43.6	33.5	12.9	48.0	40.2	282	3.2	0.8	83	546	—	—	—	—	38.5	1	2	7	8	
North Shields	29.733	72.0	32.6	39.0	46.5	43.6	33.5	12.9	48.0	40.2	282	3.2	0.8	83	546	—	—	—	—	—	4.2	8	1	6	7
Alnwick	29.615	77.0	30.0	47.0	60.9	41.8	39.7	17.4	48.9	43.9	287	3.3	0.6	84	537	—	—	—	—	—	1.8	6	9	3	
Milton, Banbridge, Ireland.	29.657	80.0	30.0	50.0	60.0	43.5	41.3	16.4	51.1	45.1	251	3.1	1.1	71	537	—	—	—	—	39.9	2.5	6	5	11	3.8



Year 1864.	Month.	Names of Stations and Observers.	Pressure of Atmosphere in Month.			Temperature of Air in Month.			Mean Temperature.		Mean Temperature.		Vapour.		Mean Reading of Thermometer.		Wind.			Rain.		
			Mean.	Range.	Highest.	Lowest.	Range.	Highest.	Lowest.	Mean.	Elastic Force.	In a cubic foot of Air.	Mean Weight of a cubic foot of Air.	Maximum in Days of Sun.	Minimum on Grass.	Relative Proportion of			Mean Amount of Cloud.		Number of Days it fell.	Amount collected.
																N.	E.	S.				
Mar.	29	41, YORK TERRACE (Regent's Park), Dr. R. D. Thomson, F.R.S., L. and E., M.B.M.S.	30.1	30.0	30.1	29.9	0.2	30.1	29.9	30.0	0.3	0.3	0.3	30.1	29.9	0.3	0.3	0.3	0.3	0.3		
Apr.	29	ST. JOHN'S WOOD (Literary Institution), Mr. Alfred Carter, Librarian.	30.1	30.0	30.1	29.9	0.2	30.1	29.9	30.0	0.3	0.3	0.3	30.1	29.9	0.3	0.3	0.3	0.3	0.3		
May	29	GUILDHALL.	30.1	30.0	30.1	29.9	0.2	30.1	29.9	30.0	0.3	0.3	0.3	30.1	29.9	0.3	0.3	0.3	0.3	0.3		
June	29	W. HAYWOOD, Esq., C.E.	30.1	30.0	30.1	29.9	0.2	30.1	29.9	30.0	0.3	0.3	0.3	30.1	29.9	0.3	0.3	0.3	0.3	0.3		
Mar.	29	BATTERSEA TRAINING COLLEGE, J.P. FAITHORPE, Esq.	30.1	30.0	30.1	29.9	0.2	30.1	29.9	30.0	0.3	0.3	0.3	30.1	29.9	0.3	0.3	0.3	0.3	0.3		
Apr.	29	STREATHLEY VICARAGE (Berk.), Rev. J. Swatzen, M.A., M.B.M.S.	30.1	30.0	30.1	29.9	0.2	30.1	29.9	30.0	0.3	0.3	0.3	30.1	29.9	0.3	0.3	0.3	0.3	0.3		
May	29	CAMDEN TOWN, G.J. STOKES, Esq., M.B.M.S.	30.1	30.0	30.1	29.9	0.2	30.1	29.9	30.0	0.3	0.3	0.3	30.1	29.9	0.3	0.3	0.3	0.3	0.3		
June	29	LEYTON (Essex), J.C. B. LAM, Esq., F.R.A.S., M.B.M.S.	30.1	30.0	30.1	29.9	0.2	30.1	29.9	30.0	0.3	0.3	0.3	30.1	29.9	0.3	0.3	0.3	0.3	0.3		
Mar.	29	RADCLIFFE OBSERVATORY, Rev. R. Main, M.A.	30.1	30.0	30.1	29.9	0.2	30.1	29.9	30.0	0.3	0.3	0.3	30.1	29.9	0.3	0.3	0.3	0.3	0.3		
Apr.	29	BANBURY (Oxon), W. JOHNSON, Esq., F.R.A.S., M.B.M.S.	30.1	30.0	30.1	29.9	0.2	30.1	29.9	30.0	0.3	0.3	0.3	30.1	29.9	0.3	0.3	0.3	0.3	0.3		
May	29	GREAT BERKHAMSTEAD, WILLIAM SCIRE, Esq., M.B.M.S.	30.1	30.0	30.1	29.9	0.2	30.1	29.9	30.0	0.3	0.3	0.3	30.1	29.9	0.3	0.3	0.3	0.3	0.3		
June	29	HARTWELL HOUSE, Mr. Horton, Assistant to Dr. Lee, F.R.S., F.R.A.S., M.B.M.S.	30.1	30.0	30.1	29.9	0.2	30.1	29.9	30.0	0.3	0.3	0.3	30.1	29.9	0.3	0.3	0.3	0.3	0.3		
Mar.	29	ASPLEY (Redfordshire), Rev. G. W. Mahon, M.A.	30.1	30.0	30.1	29.9	0.2	30.1	29.9	30.0	0.3	0.3	0.3	30.1	29.9	0.3	0.3	0.3	0.3	0.3		
Apr.	29	ROYSTON (Hertfordshire), HALE WORTHAM, Esq., F.R.A.S., M.B.M.S.	30.1	30.0	30.1	29.9	0.2	30.1	29.9	30.0	0.3	0.3	0.3	30.1	29.9	0.3	0.3	0.3	0.3	0.3		
May	29	ABINGDON FISCOT, G. MORTON, Esq., M.B.M.S.	30.1	30.0	30.1	29.9	0.2	30.1	29.9	30.0	0.3	0.3	0.3	30.1	29.9	0.3	0.3	0.3	0.3	0.3		
June	29	LAMPETER (Cardiganshire), Rev. F. J. Jones, J. Matthews, M.A.	30.1	30.0	30.1	29.9	0.2	30.1	29.9	30.0	0.3	0.3	0.3	30.1	29.9	0.3	0.3	0.3	0.3	0.3		
Mar.	29	REDFORD, J. BAKER, F.R.S., M.B.M.S.	30.1	30.0	30.1	29.9	0.2	30.1	29.9	30.0	0.3	0.3	0.3	30.1	29.9	0.3	0.3	0.3	0.3	0.3		
Apr.	29	DISS (Norfolk), Dr. W. Stewart, M.B.M.S.	30.1	30.0	30.1	29.9	0.2	30.1	29.9	30.0	0.3	0.3	0.3	30.1	29.9	0.3	0.3	0.3	0.3	0.3		
May	29	NORWICH, W. BROOKES, Esq., F.R.A.S., M.B.M.S.	30.1	30.0	30.1	29.9	0.2	30.1	29.9	30.0	0.3	0.3	0.3	30.1	29.9	0.3	0.3	0.3	0.3	0.3		
June	29	WISBEACH, S. L. MILLER, Esq., F.R.A.S.	30.1	30.0	30.1	29.9	0.2	30.1	29.9	30.0	0.3	0.3	0.3	30.1	29.9	0.3	0.3	0.3	0.3	0.3		

LAMPETER (Cardiganshire), Rev. F. J. Jones, J. Matthews, M.A.		BEDFORD, J. BAKER, F.R.S., M.B.M.S.		DISS (Norfolk), Dr. W. Stewart, M.B.M.S.		NORWICH, W. BROOKES, Esq., F.R.A.S., M.B.M.S.		WISBEACH, S. H. MILLER, Esq., F.R.A.S.		LLANDUDNO, J. NIOLO, Esq., M.D.		GRANTHAM, JAMES WILLIAM JAMES, Esq., M.B.M.S.		DERBY, JOHN DAVIS, Esq.		HOLKHAM, S. L. MILLER, Esq., M.B.M.S., Assistant to the Earl of Leicester.		NOTTINGHAM, E. J. LOWE, Esq., F.R.A.S., M.B.M.S.		HAWARDEN, T. M. D., F.R.A.S., F.O.S.		KINGSLEY PARSONAGE, Rev. R. T. A., M.B.M.S.		LIVERPOOL OBSERVATORY, JOHN HARTUP, Esq., F.R.A.S.		MANCHESTER, GEORGE ALEXANDER VERNON, Esq., F.R.A.S., M.B.M.S.		ECLES, T. MACRETH, Esq., M.B.M.S.		CASTLETON MOOR PARSONAGE, Rev. J. CHADWICK BATES, M.A., F.R.A.S., M.B.M.S.		WAKEFIELD PRISON, WILLIAM RALPH MILNER, Esq., M.B.M.S.		LEEDS PHILOSOPHICAL HALL, HENRY DENNY, Esq., A.L.S.		STONYHURST COLLEGE, Rev. S. PERRY, M.A.	
Year	Month	Year	Month	Year	Month	Year	Month	Year	Month	Year	Month	Year	Month	Year	Month	Year	Month	Year	Month	Year	Month	Year	Month	Year	Month	Year	Month	Year	Month	Year	Month	Year	Month	Year	Month	Year	Month
1864	April	1864	April	1864	April	1864	April	1864	April	1864	April	1864	April	1864	April	1864	April	1864	April	1864	April	1864	April	1864	April	1864	April	1864	April	1864	April	1864	April	1864	April	1864	April
29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	
30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	
30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	
30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	
29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	
29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	
30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	
30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	
29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	
0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	
29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	
30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	
30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	
29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
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29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	
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0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	
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Year 1864.	Months.	Names of Stations and Observers.	Pressure of Air in Month.			Temperature of Air in Month.			Mean Tem- perature.	Vapour.			Mean Reading of Thermometer.	Wind.			Mean Amount of Rain.																																																																																																																																																																																																																																																																																																	
			Mean.	Range.	Highest.	Lowest.	Range.	Highest.		Lowest.	Mean.	Short of Saturation.		Mean Dew Point.	Mean Dew Point.	Elastic Force.	In a Cubic foot of Air.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.	Mean Dew Point.

# METEOROLOGY OF ENGLAND,

## DURING THE QUARTER ENDING SEPTEMBER 30, 1864.

REMARKS ON THE WEATHER during the QUARTER ending 30th of September 1864. By JAMES GLAISHER, Esq., F.R.S., &c., Secretary of the British Meteorological Society.

For a period of 39 days preceding the close of the last quarter there was an average daily deficiency of  $2\frac{1}{2}^{\circ}$  of temperature, and the present quarter opened with a continuation of the same weather, with somewhat increased intensity; the deficiency of temperature to the middle of July being as large as  $3^{\circ}$  daily on the average. On the 17th July a warm period set in and continued for 25 days, and the daily temperature was in excess to  $3\frac{1}{2}^{\circ}$ ; this was succeeded by 20 days of very cold weather, viz., from 9th August to 28th August, whose average daily temperature was  $4^{\circ}$  in defect; and it is remarkable that this deficiency of temperature fell on the nights only, the days were of their average warmth but the nights were very cold, causing the extremes of temperature to range from great heat by day to almost frost at night, and quite to frost on vegetation. A period of 12 days followed of warmth, the average daily temperature being  $2\frac{3}{4}^{\circ}$  in excess; then the 10 days from September 10th to 20th, the temperature of the air was daily  $2^{\circ}$  below their average values, and the last 10 days of the quarter were in excess to  $1\frac{1}{4}^{\circ}$  daily.

The mean temperature of July was  $61\frac{3}{4}^{\circ}$ , being  $\frac{1}{4}^{\circ}$  above the average of the preceding 23 years, and but slightly different from that in 1863.

The mean temperature of August was  $59^{\circ}6$ , being  $1^{\circ}8$  below the average of the preceding 23 years, and  $1^{\circ}8$  colder than in 1863.

The mean temperature of September was  $56^{\circ}9$ , being of the same value as the average of the preceding 23 years, and exactly the same as in 1863.

The temperature of the air increased from June to July by  $3^{\circ}$  or  $4^{\circ}$  generally over the country. August was colder than July by  $2^{\circ}$  generally; and the decline of temperature from August to September was from  $1^{\circ}$  to  $3^{\circ}$  at most places.

The mean high day temperatures in the months of July, August, and September were  $75^{\circ}3$ ,  $72^{\circ}8$ , and  $67^{\circ}3$ , being  $1^{\circ}7$  above in July, and of the same values as the average in August and September.

The mean low night temperatures in the months of July, August, and September were  $51^{\circ}2$ ,  $48^{\circ}5$ , and  $49^{\circ}1$ , being  $1^{\circ}7$  below in July,  $4^{\circ}8$  below in August, and  $0^{\circ}3$  above in September.

Therefore the days were of a little higher than their average temperature in July, of the same as their averages in August and September, whilst the nights in July were a little lower than the average temperature, were remarkably cold in August, and differed but little from their averages in September.

The mean temperature of the dew points were  $2^{\circ}1$ ,  $6^{\circ}3$ , and  $1^{\circ}2$  below their respective average. That in August was  $47^{\circ}8$ . The lowest before recorded was  $51^{\circ}8$  on two or three occasions.

The degree of humidity of the air was very remarkable; it was 76, 65, and 77 for these three months; the averages are 76, 77, and 81, saturation being represented by 100. There is no other instance on record in the month of August of a humidity less than 69, which took place in 1849. In 1843 it was as high as 85.

In August the vapour in a cubic foot of air was 3.7 grains only, being short of saturation by 2 grains; the average is 4.7 grains. We have no instance on record in the month of August of there being less than 4.3 grains of water in a cubic foot of air; therefore the dryness of the air in this month is very remarkable indeed.

The weight of a cubic foot of air in August was 533 grains; the average is 528. The difference is great. The greatest previously recorded was in 1845, when it was 532 grains nearly.

The pressure of the atmosphere was in excess in the months of July and August, and slightly in defect in September. It increased from June to July by  $0^{\circ}02$  inch at southern, increasing gradually in amount to  $0^{\circ}14$  inch at northern stations; increased at all places from  $0^{\circ}06$  inch to  $0^{\circ}08$  inch from July to August, and decreased from August to September by  $0^{\circ}1$  inch at southern stations, to  $0^{\circ}3$  inch nearly at northern stations.

The range of the Readings of the Barometer in July was  $0^{\circ}5$  inch at southern stations, increasing to  $1^{\circ}0$  inch at northern. In August it varied from  $0^{\circ}8$  inch at southern, to  $1^{\circ}0$  inch at northern; and in September it differed but little from  $1^{\circ}0$  inch at all stations.

The fall of rain was in defect in July and August, and slightly in excess in September. It was  $0^{\circ}3$  inch in July, being  $2^{\circ}4$  inches in defect;  $1^{\circ}4$  inch in August, being  $1^{\circ}0$  inch deficient; and  $2^{\circ}8$  inches in September, being  $0^{\circ}4$  inch in excess.



In July 1863 the fall was 0.9 inch, 1856 was 0.9 inch, 1847 was 0.7 inch, 1855 was 0.3 inch, 1832 was 0.7 inch, 1825 was 0.1 inch, and in 1818 was 0.8 inch. In all other Julys since 1815 the fall has exceeded 1 inch, and amounted to 7 inches in 1828. In August the fall in 10 instances back to 1815 was less than in this year; the smallest was 0.1 inch in 1818 and 0.4 inch in 1819.

The fall in the nine months ending September 1864 was 12.4 inches; in 1863 it was 15.4 inches; 1861 was 13.3; 1858 was 14.2 inches; 1854 was 13.3 inches; 1847 was 11.8 inches; 1840 was 13.3 inches; and in 1815 was 16.1. In one instance only, viz., in 1847, has the fall of rain up to the end of September been smaller in amount than it has been in this year.

The fall of rain in the 21 months ending September 1864 was 32.4 inches; in the same period ending September 1858, the fall was 35.6; in that ending 1838 was 39.8; that in 1835 was 37.7 inches; and in that ending September 1833 was 33.9. In all other years back to 1815 the fall has exceeded 40 inches. So that for the long interval of 21 months this period is the driest on record. The wettest on record in the same period was that ending September 1853, which amounted to 56.7 inches. The average for these 21 months is 43.5 inches. The deficiency in the present, the driest period, is 11.1 inches; whilst the excess in the wettest period was 13.2 inches.

This year is therefore remarkable for its great dryness, particularly in the month of August; for the great ranges of temperature in that month, amounting in many inland places to 50°; and for its cold nights. At the end of the month pastures were mostly bare, many ponds and wells were dried up, and in many localities water was sold from one penny to threepence per bucket.

At the end of July, in the south of England, harvest work became general; and during the first week in August a very large extent of land was cleared of its cereal produce. The yield was variable; it being reported light on hilly, gravelly, and light soils; but a full average from clay soils. On 9th August cold and somewhat stormy weather set in. Harvest work had now extended to the midland counties, and daily proceeding northward. In the middle of September a large quantity of the cereal crops in the north remained uncut; and in backward districts both in the north of Ireland and in Scotland some were uncut at the end of the quarter. It would seem that on the whole the produce of the cereal harvest may be considered an average or nearly so, and of good quality. Barley on an average. Oats deficient. Potatoes are sound and of good quality, but small in size.

The mean temperature of the air at Greenwich in the three months ending August, constituting the three summer months, was 59°·6, being 0°·5 below the average of the preceding 93 years.

1864. MONTHS.	Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
	Air.		Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames.		Mean.	Diff. from average of 23 years.	Mean.	Diff. from average of 23 years.
	Mean.	Diff. from average of 23 years.	Mean.	Diff. from average of 23 years.	Mean.	Diff. from average of 23 years.	Mean.	Diff. from average of 23 years.						
July	61.8	+0.4	0.0	0.0	51.6	-2.1	24.1	+3.4	64.1	in.	382	-0.32	4.2	-0.4
Aug.	59.6	-1.1	1.8	33.3	47.8	-6.3	24.3	+4.8	63.8	in.	383	-0.89	3.7	-1.0
Sept.	56.9	-0.5	0.0	33.2	49.7	-1.2	18.2	-0.3	60.6	in.	357	-0.22	4.0	-0.9
Mean	59.4	-0.1	-0.5	54.3	49.7	-3.3	22.2	+2.6	62.8	in.	357	-0.48	4.9	-0.5

1864. MONTHS.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.	Reading of Thermometer on Grass.					
	Mean.	Diff. from average of 23 years.	Mean.	Diff. from average of 23 years.	Mean.	Diff. from average of 23 years.	Amount.	Diff. from average of 47 years.		Number of Nights it was			Lowest Reading at Night.	Highest Reading at Night.	
										At or below 30°.	Between 30° and 40°	Above 40°.			
			in.	in.	grs.	grs.	in.	in.	Miles.					°	°
July -	70	- 6	29.856	+0.055	529	+ 1	0.3	-2.4	217	0	8	23	35.8	57.7	
Aug. -	65	-12	29.918	+0.129	533	+ 5	1.4	-1.0	195	4	12	15	27.2	54.2	
Sept. -	77	- 4	29.777	-0.042	533	- 1	2.8	+0.4	233	1	10	19	29.0	62.0	
Mean -	71	- 7	29.850	+0.047	532	+ 2	Sum 4.5	Sum -3.0	Mean 215	Sum 5	Sum 30	Sum 57	Lowest 27.2	Highest 62.0	

NOTE.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred or thunder was heard and lightning seen on July 3d at Royston and Cardington; on the 17th at Great Berkhamstead, Streatley, Royston, Cardington, Abington, and Bedford; on the 28th at Miltown, Banbridge (Ireland), and Culloden; and on the 30th at Miltown (Banbridge). On August 9th at Castleton, Stonyhurst, and Silloth; on the 20th at Oxford and Norwich; on the 21st at Hurstpierpoint, Great Berkhamstead, Banbury, Royston, Aspley, Abington, Wisbeach, Holkham, Nottingham, Kingsley, and Silloth; on the 23d and 26th at Llandudno; and on the 29th at North Shields. On September 2d at Banbury, Cardington, Belvoir, and Castleton; on the 3d at Osborne, Clifton, Nottingham, Hawarden, Castleton, and

Manchester; on the 10th at Streatley; on the 11th at Great Berkhamstead; on the 15th at Helston; on the 16th at Wisbeach, Grantham, Hawarden, Liverpool, Stonyhurst, Bywell, and North Shields. On the 17th at Guernsey, Oxford, Cardington, Abington, Wisbeach, Belvoir, and Silloth; on the 18th at Carlisle; on the 19th at Osborne; and on the 22d at Norwich.

Thunder was heard but lightning was not seen on July 3d at Aldershot, Abington, Bedford, Norwich, and Holkham; on the 5th at Bootle; on the 17th at Aldershot, Clifton, and Oxford; on the 27th at Bootle; and on the 28th at Clifton and Miltown (Banbridge). On August 5th at Belvoir and Holkham; on the 9th at Cockermouth and Allenheads; on the 16th at Guernsey; on the 21st at Aldershot, Oxford, and Bedford; on the 23d at Nottingham; and on the 29th at Bywell. On September 2d at Abington, Nottingham, Manchester, Grantham, Stonyhurst, and North Shields; on the 3d at Hurstpierpoint, Aldershot, Streatley, and Cardington; on the 11th at Hurstpierpoint and Manchester; on the 12th at Helston; on the 15th at Truro; on the 16th at Truro, Cockermouth, Castleton, and Bywell; on the 17th at Stonyhurst and Carlisle; and on the 19th at Hurstpierpoint and North Shields.

Lightning was seen but thunder was not heard on August 5th at Abington; on the 8th at Abington and Eccles; on the 9th at Clifton; on the 13th at Oxford; on the 20th at Stonyhurst; on the 23d at Aldershot, Oxford, Nottingham, and Castleton; on the 24th at Hurstpierpoint, Holkham, and Carlisle; on the 25th at Abington, Wisbeach, and Holkham; on the 26th at Kingsley; on the 30th at Aldershot; and on the 31st at Aldershot and Cockermouth. On September 1st at Aldershot; on the 2d at Aldershot, Clifton, Oxford, Streatley, and Nottingham; on the 3d at Aldershot, Oxford, Streatley, Cardington, and Hawarden; on the 6th at Streatley; on the 11th at Hurstpierpoint, Grantham, and Nottingham; on the 12th at Hurstpierpoint, Royston, and Norwich; on the 13th at Norwich; on the 14th at Aldershot and Norwich; on the 17th at Hurstpierpoint, Grantham, and Cockermouth; on the 20th at Aldershot, Clifton, and Liverpool; and on the 22d at Bywell and North Shields.

Solar halos were seen on July 5th at Abington; on the 28th at Oxford; and on the 29th at Great Berkhamstead. On August 11th at Oxford; on the 12th at Hurstpierpoint, Great Berkhamstead, Abington, and Grantham; on the 20th at Hawarden; on the 22d at Oxford; and on the 27th at North Shields. On September 4th at Oxford; on the 10th at Great Berkhamstead; and on the 30th at Manchester.

Lunar halos were seen on August 22d at Nottingham. On September 10th at Truro; on the 16th at North Shields; on the 17th at Truro; and on the 21st at Abington.

Aurora were seen on August 23d at Grantham; and on the 31st at Castleton, Cockermouth, and Culloden.

Hail fell on July 3d and 28th. On August 8th, 9th, 20th, 21st, and 23d. On September 3d, 10th, 11th, 17th, and 21st.

Fog prevailed on 47 days during the quarter; viz., on July 2d, 8th, 9th, 10, 11th, 13th, 14th, 15th, 16th, 17th, 18th, 19th, 20th, 25th, and 31st. On August 3d, 4th, 5th, 7th, 12th, 13th, 15th, 18th, 19th, 20th, 22d, 25th, 26th, 27th, and 29th. On September 6th, 7th, 8th, 9th, 10th, 13th, 15th, 19th, 20th, 23d, 24th, 25th, 26th, 28th, 29th, and 30th.

At Guernsey the mean temperatures for the months July, August, and September were respectively 1°·4, 2°·0, and 0°·5 below the average of 21 years; amount of rain, 1.1 in. below and 0.4 in. and 1.3 in. above; and the number of rainy days were 2.6 and 6.3 below and 9.0 above the average of 21 years. In July there were frequent misty showers, but not much actual rain. August was a very fine month, with frequent fluctuations of temperature; there was a remarkable fall of rain of the 22d and 23d; and a very high reading of the minimum thermometer on the night of the 30th. In September there were frequent showers, with fine intervals, from the 1st to the 21st; after this the weather was remarkably fine. Heavy dews from the 23d to the 28th inclusive.

At Osborne on the 9th of August the wind commenced rising at 8h. A.M., reached 12 lbs. at 11h. P.M., lulled at 2½h. P.M., reached 12 lbs. again at 4h., and died away at 4½h. P.M.

At Great Berkhamstead July was remarkable for continued dry weather, less rain having been registered than in any previous month; nearly all the rain fell on the 3d. From the 1st to the 10th it was cool for the season, with N.W. winds; the rest of the month was mostly hot; on the 17th a thunder storm passed about five miles to the east of this place, the thunder was loud, and the continuous lightning was vivid, but only 0.01 inch of rain fell here. The dry weather continued with little intermission throughout the month of August, rain fell on the morning of the 9th to the depth of 0.38 in., which was the largest amount collected; the 20th, 28th, and 31st were also showery; thunder showers occurred on the 21st at about 7h. A.M. and 3h. P.M.; and light rain fell at times on the 23d, but in quantities too small for measurement. The air was cold for the season from the 17th to the 28th, with white frosts on several mornings. September was wet and unsettled till the 23d, but most of the rain fell in the night-hours or early in the morning. There was a heavy hailstorm on the 11th between 2h. and 3h. P.M., with thunder and lightning.

At Worthing, between 6h. and 7h. on Sunday morning the 21st of August, heavy and intermittent showers of rain fell, with the wind chiefly from the north-west; these showers continued till about 9h. 15m. A.M., terminating in a very heavy black cloud, which appeared to come chiefly from the north-west, and accompanied with a very heavy fall of rain and hail; some of the hailstones were as large as small walnuts, the average being the size of a large bean or nut; as this cloud passed from over the town towards the sea it burst, and formed a large well-defined and beautiful waterspout, which passed onwards towards Brighton, from the north-west to south-east. The cloud as it passed over the village of Augmering, which is to the north-west of Worthing, discharged its electricity



and struck a house, throwing down a chimney, perforating a thick wall, and damaging so completely the whole house as to render it necessary to almost entirely rebuild it; two persons were indoors, but with the exception of the servant being injured by a piece of fractured glass, they were unhurt. The storm occurred at Worthing about 9h. 15m., and afterwards the air was calm.

At *Hurstpierpoint* on the 22d August, hailstones fell at noon for a quarter of an hour, as large as marbles, and lay in shade for upwards of two hours. At *Newtimber*, four miles to the south-west, at the foot of the South Downs, they were found an inch in diameter half an hour after they fell. On the 11th September, in the afternoon, thunder was heard, but no lightning seen; in the evening lightning was seen, but no thunder was heard. A waterspout was seen on the 17th at 11 A.M.

At *Diss (Norfolk)*, on the 12th August at 5h. A.M., white frost and ice formed to the thickness of a shilling in a shallow trough, french beans blackened; on the 19th white frost about 5h. A.M., and ice remained in a shallow trough till 8h. A.M. There was a gale on the night of September 5th.

At *Belvoir Castle*, from the 25th to 30th of September, there was a period of very hot dry weather.

At *Nottingham* there were gales on July 31st, August 30th and 31st, and September 1st, 5th, and 9th. Severe hoar frost on August 27th, temperature on the grass  $24^{\circ} 3$ .

At *Derby* the rain-fall gives a mean of 3.02 in. for the month of July, and in no year since regular observations have been taken at this station had the rain-fall of July been so small, and this added to the paucity of rain in several preceding months, has reduced our fine pasture to the resemblance of a desert.

At *Castleton* the rain-fall in July was considerably below the average; only on two days was there any large amount of rain, the 2d and the 31st, when it rained very heavily, the amount of rain for the former day being 0.836 in., and for the latter 0.678 in. On the 9th September there was a heavy gale from 11h. A.M. to 5h. P.M., greatest velocity as shown by the anemometer was 45 miles in one hour; on the 11th at 10h. 15m. P.M., a beautiful lunar rainbow was seen, the colours were remarkably distinct, the inner edge being green, the centre orange, deepening into purple at the outer edge; it lasted about 10 minutes. This month has been very stormy, cold and wet, from the 1st to the 23d; there were 22 days on which rain was measured.

At *Bradford* there was a gale of wind in the afternoon and evening of July 31st.

At *Cockermouth*, from the 3d to the 21st of July, the weather was very fine, no rain fell during that period; showery and unsettled from the 21st to the end of the month. There was a brisk gale on the evening of the 21st; greatest speed of wind as indicated by a Robinson's anemometer, 26 miles per hour; greatest pressure 10 lbs. per square foot. No rain fell from the 9th to the 27th of August. The weather during that period was characterised by fine sunny days, with a considerable amount of cold at night; the thermometer on the grass being below freezing point on seven of these nights, with light north or north-east winds. Although there was great want of rain previous to the 27th there was no positive drought, our rivers not being so low as they were in May last. (Total rain-fall from January 1st to August 31st was 21.101 in.) The weather from the 1st till the 24th of September was very wet and unsettled, but after that date, fine and sunny.

At *North Shields* on July 31st there was a great storm of wind. The rain which fell here almost every day during the latter part of August was chiefly at night. Extreme heat from the 12th to the 16th, extremely cold from the 17th to the 27th, and again extremely hot from the 27th till the morning of the 31st.

At *Silloth* on July 31st there was a violent gale from the south-west, veering to west.

At *Milltown, Banbridge (Ireland)*, a hurricane from the south-west, which lasted from 6h. to 7.3h. P.M. on the last day of July, did a good deal of harm, several trees have been blown down, and a great many small branches broken, indeed sometimes the air seemed filled with small branches. The hay was very much blown about, and very large quantities of unripe apples and pears stripped off the trees. From a register kept at Bangor (latitude  $54^{\circ} 40' N.$ , longitude  $5^{\circ} 40' W.$ , and about 10 feet above the level of the sea), we learn that on Sunday, before and during the severe gale which blew on that day, the barometer showed some remarkable changes. At 9h. 10m. A.M. the height of the barometer was 29.85 in., from which point it fell to 29.82 in. at 10h. 45m. A.M., to 29.60 in. at 2h. 20m. P.M., to 29.34 in. at 5h. 30m. P.M., to 29.30 in. at 7h. P.M., and to 29.26 in. at 8h. P.M. This was the lowest point marked, the reading then turned to increase, though at first very slightly. The following are the changes up to midnight:—At 8h. 40m. P.M. the reading was 29.28 in., at 9h. 30m. P.M. 29.36 in., at 10h. 10m. P.M. 29.40 in., at 10h. 30m. P.M. 29.45 in. (wind abating), at 10h. 45m. P.M. 29.48 in., at midnight 29.56 in. The effects of the storm on the Lough gave the visitors an unusual sight. The waters were lashed into dreadful fury, and the foam rose into the air like mist. A small pleasure boat belonging to a Mr. Niell drifted from her anchors, and was on the point of being driven on the rocks on the Ballyholme side of the harbour, when two pilots, at great risk, went out in a boat and got the vessel safely into port. The shore was crowded all the evening with people watching the fierce rush of the boiling waters on the rocks. It was fortunate that the wind was not blowing from the sea, or the damage done to the shipping on the coast would have been very great.

At *Culloden* the weather during the month of July was very fine, without excessive heat. The fall of rain was only 1.90 in. for the month, being considerably under the average. The temperature though pretty equal, exceeded on no day  $71^{\circ} 5$  in the shade, and  $119^{\circ} 4$  in the sun. A sharp thunder-storm occurred from 3h. to 4h. 15m. P.M. on the 28th, accompanied with heavy rain and very large hailstones. Two women were struck down by the lightning while crossing the lower bridge over the Ness at Inverness, one of them killed; a dog was also killed when between some

people, about four miles to the south-east of the town. This storm came by south-south-west by south-west, and passed over to the north-east. Although the mean temperature of August has been considerably under the average, the weather generally has been fine, the droughts of the previous months of summer prevailing throughout, and the rain-fall measuring only 1.09 in.; many burns and even wells have in consequence completely dried up, and pasture land has a very as if shining through some dense haze or smoke. Cold weather soon came on after this state of the atmosphere, which has been remarked on former occasions.

Wheat was in flower on July 3d at Cockermouth.

Barley was in flower on July 5th at Abington.

Wheat was in ear on July 2d at Culloden, and on the 6th at Bootle, Cumberland.

Barley was in ear on July 6th at Culloden.

Oats were in ear on July 2d at Cockermouth, and on the 9th at Culloden.

Rye was in ear on July 2d at Culloden.

Wheat was cut on July 25th at Guernsey and Cardington; on the 26th at Abington; and on the 29th at Helston. On August 8th at Grantham; on the 9th at Medstead; on the 13th at Silloth; on the 15th at Eccles and Miltown, Banbridge (Ireland); and on the 23d at Cockermouth.

Barley was cut on July 21st at Helston; and on the 30th at Cardington. On August 1st at Royston; on the 9th at Medstead; on the 12th at Grantham and Silloth; on the 15th at Abington; and on the 16th at Cockermouth.

Oats were cut on July 20th at Helston; and on the 28th at Great Berkhamstead. On August 4th at Grantham; on the 15th at Eccles and Stonyhurst; on the 16th at Cockermouth; on the 18th at Medstead, Abington, and Culloden; and at Miltown, Banbridge (Ireland) on the 20th.

Rye was cut at Culloden on the 22d. At *Berkhamstead* rain is much wanted for vegetation, also for domestic purposes in many places, as on high grounds the wells are drying up. The harvest was nearly completed by the end of August, and the crops are generally good. Potatoes are free from blight, but very small; turnips are a general failure from want of rain. The crops of apples and pears have been the largest known for many years; plums are also plentiful. Vegetation much refreshed by the late rains.

At *Abington* the month of July was very dry, hot and frequently very oppressive; ground excessively dry; hay crops very short; all kinds of corn look well, but the yield will most probably be below an average on account of the drought.

At *Belvoir* vegetation made extraordinary progress in the hot period between the 12th and 21st of May (when a maximum temperature of  $83^{\circ}$  was attained), and escaped by the flush of sap and the rapidity of growth, the attacks of insects, which prevail most with a slow and retarded growth. The apple blossom was unusually abundant and healthy. Flowering shrubs, such as lilac, Dentzia, blossomed profusely. Hardy forest trees made a rapid growth, and produced a dense rich foliage, in fact all vegetation seemed to luxuriate in the heat and sunshine of the period. Corn crops promised well. There was a general failure in winter beans. Pastures improved generally in May. Clover was in many instances thin. Stock was healthy. Potatoes were touched on the 24th by frost; and crops were seriously checked by cold weather during the last week in May. Prolonged dry weather in June assisted the operation of fallowing and cleansing the ground of weeds. Wheat crops looking well on stony land, but thin on clover stubbles; checked by cold weather in the by imperfect setting of grain. Barley crops promise well on clays, but are deficient on light lands; the same with oats. Beans are not likely to afford a remunerative crop owing to the failure of the upper and lower tiers of blossom, due probably to the dry weather. Wurzel is thin, and languishing for moisture. Turnips cannot grow owing to the parched state of the ground. Hay crops light. Pastures very thin and bare. Stock healthy and thriving. Abundant crops of apples, pears, plums, apricots, currants, goosberries; raspberries and strawberries indifferent, owing to the dry weather. The extreme dryness of the weather in July hastened the ripening of the corn, and cutting was commenced towards the end of the month; the corn crops generally are a fair average, but not bulky. Wheat is the best crop; straw is short on light lands. Peas are good. Beans an indifferent crop. Turnips are either dormant, or when in growth starving and perishing for want of moisture, and fly has begun its ravages upon this important crop, and there is every prospect of a failure in it. Wurzel is looking pretty well. Pastures are dried up and as yellow and bare as a beaten road. Stock is being fed on straw. Water is very scarce; springs and ponds are failing. Potatoes are small, but sound. Fruit crops unusually abundant. Cereal crops were generally fit for cutting early in August; the early ripening of corn was promoted as much by the excessive dryness of the ground as by weather, which, though sometimes warm, was generally variable, and lighter land the yield will be less; four quarters per acre will be a general average. Barley on clay land is a good crop and of average quality, but on light land short in straw and variable in quality. Oats will not be an average crop. Beans are short in straw and only moderately corned. Peas on strong land produced a good crop, clean and free from mildew. Turnips are in a great measure a failure, owing to the prolonged drought and the attacks of fly and gnat. Mangold has stood the weather better, and although not a large is still an even crop. Pastures are utterly dried up, and the fields bare, brown, and eaten close to the ground. Ponds and wells never before known to dry have become so, and the scarcity of water is a serious drawback to farmers. Stock has been fed on straw and cake, both beasts and sheep have done better than might have been expected, and are



healthy. Potatoes are sound, but the crops are light in many cases. Frost in low situations killed potato tops and french beans and tender plants (on the 27th); at Messen, Stoke, Rochford, and Easton Hall, 5° of frost was recorded on the 27th of August. Clay land was so dry and intractable to the action of the ordinary farm implements that its preparation was in many instances retarded, and wheat sowing in consequence delayed. Farmers have sown and are preparing to sow more tares and rye than usual to supply green food in the spring. The turnip crop has very generally failed, and coupled with the loss of grass keep, a great scarcity of green food is experienced, and it has been necessary to resort to artificial food for sheep, oats, oil-cakes, beans, &c.; and stock has been foddered in straw yards. Mangold wurzel is likely to be a fair crop. Potatoes are small but free from disease. Apples are exceedingly abundant and in consequence cheap, much cheaper indeed than turnips and potatoes.

At Nottingham the last quarter has been remarkable for drought. Hay crop poor. Wheat and barley good; oats poor. Potatoes poor, but free from disease; scarcely any grass or turnips. Apples, pears, and plums in extraordinary abundance, only 3d. per peck. Many wasps. Mushrooms plentiful at the end of September. Caterpillars doing much damage to the roots of plants. All seeds have ripened splendidly. Walnuts, beech-nuts, hedge-berries, acorns in great abundance. Many flowers and shrubs killed by drought.

At Wisbeach the want of rain in July was severely felt, as the people depend very much upon rain-water for drinking. Water now (July and August) has to be brought up from Lynn and Downham by rail. Many are glad to obtain a few pailfuls from the engine tender as they come up to the railway station. The grass is withered and the stock have to be fed upon hay cabbages and cake, and some farmers have cut oats for present supply. The wheat crop is a full average, and excellent in quality. Peas the same; oats and beans much below the average crop; there is abundance of apples, and a good supply of most of the autumn fruits. The rains during the early part of September revived the grass, which had for weeks been sere, the meadows put on a verdant appearance, and the pastures continued good throughout the month. Stock in consequence improved in condition.

At Hawarden the harvest commenced on July 28th, and was completed by September 29th. At Eccles the hay crops have been well housed, but they are very thin, and the grass of the pasture lands are thin and parched for want of rain; this had the effect of diminishing the supply of milk from the cattle here. The wheat crop in the neighbourhood is about an average, but the oats are below the average. The long interval of dry weather has seriously hindered the growth of grass, inasmuch that there has been little pasture for cattle.

At Castleton nearly all the hay was got in by the 16th, and in most cases without a drop of rain. At Bootle (Cumberland). The harvest all over this part commenced on the beginning of the month, and is now finished. Crops generally light, one third less than in 1863, but got in in prime condition. A new disease to this part of the country; viz., a black kind of blight affected the blossoms of garden pears as also mildew. Apple crops suffered severely from the gale on the 31st of July. Orchards exposed to the gale were denuded of fruit. Vegetation has been slow during the month.

At Cockermouth about one half of the meadow hay was still unsecured at the end of July. Crops rather light and below the average, owing to the dry weather and deficient rain-fall in May. The hay harvest was concluded about the 13th of August, by which time the grain crops were nearly ready for cutting. The harvest becoming general about the 22d, more than one half of the crops are now (September 1st) cut, some being secured. Owing to the unfavourable weather the grain crops were not all cut until the 23d of September, on which date many fields were still unsecured, but these were all carried by the 29th. Oats (the principal grain crop in this neighbourhood) are about an average yield; wheat is below the average, and in many places much damaged by remaining in the rain after being cut.

At Allenheads July was a remarkably dry month; rain much wanted. Hay crop very light, probably 25 to 30 per cent. below the average. Hay harvest commenced about the 23d of July, and finished early in August.

At Silloth hay making was completed by the 23d of July. Cereal crops are above an average, green crops most excellent. Potatoes a fair crop and free from disease. The low temperature and frequent drying winds prevented the grain from sustaining much injury from the frequent rains. Harvest completed on the 30th of September.

At Bywell the weather during July was very dry. Gentle showers much required. The grain crops look very well, and some plots of barley will be ready in ten or twelve days, if the weather continue fine, though the general harvest will not be ready before the end of the month. Hay was well got. The turnips that are up are very irregular. The harvest was in full operation in August in this neighbourhood. Barley a good crop, wheat about an average, and oats below, with short straw. The present prospect of the turnip crop is far from good. Potatoes are small, but the quality good. The harvest is now (September 30th) quite finished, and on the whole got in good condition. Potatoes are pretty free from disease, and about an average crop. Turnips are improved by the rains in the early part of the month.

At Miltown, Banbridge (Ireland), in July the state of all crops is very good, nearly all the hay has been got in well, and the pulling of the flax, which is a very good crop, has commenced. The weather this month has not only been favourable to agriculture, but also to bleaching, and the only thing to be complained of is the scarcity of water. The greater part of the wheat and oat crops are cut, and have turned out better than was expected, even the oats being above an average, notwithstanding the long continuance of dry weather. The soil here, however, being of a changing

nature, prevents to a great extent it suffering from drought where it is lighter. The farmers felt the want of water for steeping flax very much until the late rains sent them relief. A great many fish have been killed in the rivers by the old flax water, which the farmers discharged when the rains came. On high grounds and other disadvantageous situations, there is still (September 30th) some oats to cut. A good deal of the flax crop has suffered from scarcity of water, as in many cases the same water was used twice in steeping. The bleaching has been much retarded by the pollution of the streams from flax water.

At Culloden the weather during July has been fine, without excessive heat, great drought prevailed from the 4th to the 28th, retarding the growth of the turnip crop, and having a very injurious effect on all pastures, and vegetation generally. Early sown turnips in many cases are promising, but the want of rain has prevented second sown fields (for in several instances this was last year found necessary), as well as all later varieties, from having almost any appearance. The potato crop looks healthy; there are, however, more failures than usual. In many cases the drills are not well filled up. Should this crop continue sound and free from disease all through August, a fair average return as to quantity, though perhaps not in money value may be expected. The hay crop is generally light; but as less than usual of the previous year's crop now remains, the crop of this year will be more valuable. The corn crops seem on the whole under the average. The dry weather in May, June, and July has greatly affected them. Wheat is the most promising, barley about equal to the last year, oats in many fields will be short in straw. Except in some early situations there will be no general harvest before the end of August. Early sown turnips have not improved, the continued want of moisture has retarded the swelling of the bulbs; in some cases the leaves are tainted with yellow, and have a faded look. The late sown varieties are much more vigorous and healthy, and with more moisture will yet turn out a fair crop. The potato crop remains in a healthy condition, and although the tubers are small, an average return may be expected.

Peaches were ripe on July 30th at Helston; and on August 31st at North Shields.  
Apples were ripe on July 31st at Great Berkhamstead; and on August 20th at Culloden.  
Pears were ripe on July 18th at Helston; on August 15th at Culloden; and on the 30th at Great Berkhamstead.

Plums were ripe on July the 21st at Great Berkhamstead; and on August 28th at Culloden.

Currants were ripe on July 20th at Culloden.

Raspberries were ripe on July 7th at Bootle; on the 20th at Culloden.

Strawberries were ripe on July 15th at Culloden.

Apricots were ripe on August 15th at Culloden.

Yellow Gooseberries were ripe on 3d July at Culloden.

China Aster in flower on July 27th at North Shields.

Hydrochris Mossis Romi in flower on July 30th at North Shields.

Poa Aquatiro in flower on August 1st at Cardington.

Bidens Tripartite in flower on August 24th at Cardington.

At North Shields a flock of wild geese seen going N.E. on July 25th.

Scaallows departed from Oxford on July 9th.

At Nottingham partridges more abundant than for years.

At Osborne on July 18th was warm and sultry, and at a quarter to three P.M. a flight of myriads of small greenish flies passed from the West in one continuous stream for about twenty minutes; persons two miles apart across the winds course noticed them.

At Clifton, on July 16th, a great quantity of winged cephides passed here.



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.	Number of Days on which it fell.	Rain.
																		Relative Proportion of							
																		N.	E.	S.	W.				
Guernsey	29.630	72.5	50.0	22.5	64.8	55.7	30.0	9.1	58.5	54.5	3.4	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Helston	29.654	80.0	42.0	38.0	60.9	53.5	33.7	16.1	60.1	54.6	4.2	0.11	0.11	82	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Truro	29.645	82.0	36.0	46.0	68.6	51.9	39.3	16.7	58.8	51.0	3.7	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Ventnor	29.638	72.0	45.0	27.0	58.5	51.9	39.3	16.7	58.8	51.0	3.7	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Osborne	29.635	84.5	40.0	44.5	62.0	55.0	36.3	21.8	59.0	53.0	4.7	0.12	0.12	80	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Bournemouth	29.601	81.0	40.0	41.0	60.5	53.3	36.8	21.8	59.0	53.0	4.7	0.12	0.12	80	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Worthing	29.651	74.0	44.2	29.8	59.5	53.3	36.8	21.8	59.0	53.0	4.7	0.12	0.12	80	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
St. John's Col. nr. Brighton	29.638	89.5	37.5	52.0	63.5	51.4	42.0	20.3	59.7	52.8	3.8	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Harastaple	29.606	86.0	40.0	46.0	70.7	51.8	36.5	21.8	59.0	53.0	4.7	0.12	0.12	80	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Aldershot Camp	29.602	87.0	38.0	49.0	62.5	51.9	39.3	16.7	58.8	51.0	3.7	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Clifton	29.647	84.3	33.0	24.5	58.9	50.0	36.0	18.2	58.5	50.0	3.6	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Royal Observatory	29.638	88.0	33.0	15.0	57.1	48.9	61.4	22.2	59.4	51.0	3.8	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Goldhill	29.613	78.5	47.0	31.5	60.8	53.5	12.8	13.8	60.1	50.6	3.6	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Battersea	29.647	86.0	34.5	51.5	67.0	49.5	41.1	19.0	58.9	51.9	3.8	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Camden Town	29.640	82.4	38.2	25.1	60.8	51.5	42.6	20.3	59.7	52.0	3.9	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Oxford	29.603	82.1	32.4	49.7	69.2	49.0	40.1	19.9	58.8	50.0	3.6	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Banbury	29.606	84.5	32.3	32.2	60.1	49.0	43.6	21.1	59.2	52.8	3.8	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Great Berkhamstead	29.672	85.7	32.5	32.3	60.7	48.8	42.8	22.2	59.4	51.0	3.8	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Hartwell	29.607	81.0	34.0	47.0	62.5	53.0	39.0	18.4	58.7	50.7	3.7	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Aspley	29.630	74.5	45.0	29.5	64.8	53.8	25.7	10.2	58.5	50.7	3.7	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Royston	29.606	86.9	36.1	15.0	57.2	49.2	42.8	22.2	59.4	51.0	3.8	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Abington Pigotts	29.608	88.0	33.0	55.0	72.7	64.7	74.7	24.9	58.9	48.9	3.7	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Cardington	29.632	87.0	34.0	43.0	61.3	54.8	42.8	22.4	59.8	54.0	4.0	0.11	0.11	84	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Lampeter	29.665	87.0	34.0	43.0	61.3	54.8	42.8	22.4	59.8	54.0	4.0	0.11	0.11	84	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Bedford	29.634	87.0	37.0	50.0	73.8	51.0	42.8	22.2	59.4	51.0	3.8	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Diss (Norfolk)	29.606	88.5	32.5	56.0	71.3	48.8	40.7	23.0	59.8	51.3	3.8	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Norwich	29.632	82.7	45.4	37.3	69.5	52.4	34.9	15.6	59.6	51.7	3.8	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Walsingham	29.600	86.0	36.0	30.0	61.0	49.1	43.9	15.6	59.6	51.7	3.8	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Landudno	29.634	78.0	42.0	36.0	60.0	51.0	40.0	14.0	58.0	51.0	3.8	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Belvoir Castle	29.638	85.0	33.0	32.0	60.0	51.0	40.0	14.0	58.0	51.0	3.8	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Grantham	29.640	81.7	36.7	45.0	60.7	50.8	36.9	16.7	57.9	49.0	3.6	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Derby	29.608	81.0	36.0	45.0	60.8	49.5	37.3	18.6	58.8	50.4	3.6	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Holkham	29.647	81.0	38.0	43.0	69.8	51.0	37.8	15.8	57.7	49.1	3.4	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Nottingham	29.644	83.5	23.0	32.0	60.0	49.0	33.0	21.0	58.2	49.5	3.5	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Hawarden	29.638	87.0	34.0	54.0	70.9	51.9	39.3	16.7	58.8	51.0	3.7	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Kingsley	29.632	87.0	36.0	47.0	69.8	52.4	40.4	19.2	56.0	48.7	3.6	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Liverpool Observatory	29.638	76.8	44.8	32.0	60.5	50.4	24.3	10.7	56.2	39.9	3.5	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Manchester	29.624	81.7	36.7	47.0	60.8	48.3	33.9	19.4	56.2	39.9	3.5	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Eccles	29.625	81.1	32.7	48.4	60.3	47.1	40.9	19.2	56.0	48.7	3.6	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Castleton Moor	29.631	78.5	43.3	24.5	63.3	44.0	36.8	16.5	53.9	46.4	3.1	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Wakfield	29.630	82.7	30.0	42.7	68.7	47.7	45.7	21.0	57.4	51.7	3.8	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Stonyhurst	29.632	80.0	36.0	44.0	65.3	47.3	46.3	17.7	54.9	49.2	3.5	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Otley	29.674	74.2	23.7	50.5	62.1	48.0	53.0	32.0	51.6	45.4	3.8	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
York	29.611	80.0	35.5	54.5	65.3	50.3	35.0	15.9	56.5	48.1	3.3	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Cockermouth	29.638	85.0	33.0	32.0	60.0	51.0	40.0	14.0	58.0	51.0	3.8	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Allenheads	29.608	75.5	33.7	41.8	61.1	48.5	36.5	18.5	53.7	46.3	3.4	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
St. Paul's Parsonage	29.631	79.9	35.5	44.4	56.6	48.1	13.6	18.1	56.1	49.2	3.4	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Carlisle	29.600	77.0	32.0	45.0	64.8	47.4	43.8	17.4	55.4	49.6	3.5	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Bywell	29.575	86.0	35.0	51.0	67.7	49.2	41.4	18.5	56.4	48.9	3.5	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
North Shields	29.683	75.5	33.7	41.8	62.1	48.6	32.6	18.5	53.7	46.6	3.1	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8	8	1.0
Milton, Banbridge, Ireland.	29.600	80.0	32.0	48.0	64.1	47.3	36.8	18.6	54.7	47.2	3.2	0.08	0.08	85	53.2	94.0	47.4	1.2	6	6	11	4.7	3.8		



[illegible][illegible]







1864. MONTHS.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.	Reading of Thermometer on Grass.				
	Mean.	Diff. from average of 23 years.	Mean.	Diff. from average of 23 years.	Mean.	Diff. from average of 23 years.	Amount.	Diff. from average of 47 years.		Number of Nights it was			Lowest Reading at Night.	Highest Reading at Night.
										At or below 30°.	Between 30° and 40°.	Above 40°.		
Oct. -	78	- 9	in. 29.684	-0.012	grs. 539	grs. 0	in. 1.1	in. -1.7	Miles. 248	4	15	11	27.7	51.8
Nov. -	86	- 3	29.626	-0.128	547	- 1	2.6	+0.2	245	13	16	1	18.0	41.6
Dec. -	80	- 2	29.863	+0.042	556	+ 4	0.6	-1.3	219	14	15	2	14.8	43.0
Mean -	83	- 5	29.724	-0.033	547	+ 1	Sum 4.3	Sum -2.8	Mean 226	Sum 32	Sum 46	Sum 14	Lowest 14.8	Highest 51.8

NOTE.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred or thunder was heard and lightning seen on 2d October at Guernsey. On 17th November at Guernsey; and on the 22d at Guernsey, Helston, and Truro.

Thunder was heard but lightning was not seen on December 16th, 17th, 18th, 19th, and 21st at North Shields.

Lightning was seen but thunder was not heard on 1st October at Aldershot; on the 19th at Banbury; on the 21st at Wakefield; on the 24th at Castleton; and on the 27th at Aldershot. On 5th November at Aldershot; on the 17th at Clifton, Oxford, and Banbury; on the 18th at Banbury; on the 21st at Allenheads; on the 22d at Clifton, Banbury, and Allenheads; on the 24th at Brighton, Oxford, Berkhamstead, and Banbury; on the 26th at Clifton, Banbury, and Holkham; and on the 30th at Culloden. On 17th December at Truro.

Solar halos were seen on 7th October at Culloden; on the 15th at Bywell and North Shields; and on the 21st at North Shields. On 1st November at Lampeter; on the 3d at Culloden; on the 6th at Oxford; on the 7th at Clifton and Berkhamstead; on the 11th at Oxford; on the 21st at Lampeter; on the 22d at Oxford; on the 23d at Great Berkhamstead and Culloden; and on the 24th, 25th, and 27th at Culloden. On 6th December at Great Berkhamstead; on the 7th at Oxford; on the 9th at Oxford and Lampeter; and on the 31st at Hawarden and North Shields.

Lunar halos were seen on 13th October at Stonyhurst; and on the 21st at Helston. On 5th November at Aldershot; on the 6th at Aldershot and Stonyhurst; on the 7th at Marlborough and Oxford; on the 8th at Culloden; on the 9th at Galway (Ireland); on the 10th at Wisbeach; on the 12th at Helston and Clifton; on the 14th at Clifton, Wisbeach, Belvoir, and Nottingham; on the 16th at Clifton; on the 17th at Nottingham; and on the 24th at Truro. On 6th December at Eccles and Penketh; on the 8th at Camden Town, Battersea, Royston, Abington, Wisbeach, and Silloth; on the 9th at Abington, Wisbeach, Cockermouth, Silloth, and North Shields; on the 10th at Cockermouth; and on the 12th at Guernsey.

Aurora were seen on the 1st and 14th October at Culloden. On 1st November at Wisbeach; on the 2d at Culloden; and on the 30th at Clifton and Bywell. On 23d December at Clifton; on the 29th at Hawarden; and on the 30th at Allenheads.

Hail fell on 20th October at Clifton and Stonyhurst. On the 14th and 17th November at Guernsey; on the 22d at Guernsey, Oxford, Liverpool, Castleton, and Galway; on the 23d at Great Berkhamstead, Cockermouth, and North Shields; on the 24th at Banbury and Lampeter; on the 25th at Lampeter, Nottingham, Liverpool, and Galway; on the 26th at Banbury, Stonyhurst, and Galway; on the 27th at Liverpool and Penrith; on the 28th at Lampeter and Stonyhurst; and on the 29th at Culloden. On 8th December at Guernsey; on the 9th at Wakefield; on the 13th at Guernsey and Wakefield; on the 17th at Guernsey; on the 18th at Wakefield; on the 19th at Great Berkhamstead; and on the 20th and 25th at Wakefield.

Snow fell on 24th November at Brighton and Marlborough. On 8th December at Silloth and Allenheads; on the 16th at Battersen, Abington, Wisbeach, Grantham, and Silloth; on the 17th and 18th generally over the country; on the 19th at Truro, Bath, Oxford, Great Berkhamstead, Banbury, Streatley, Hawarden, Eccles, Wakefield, Penketh, Stonyhurst, North Shields, and Banbridge; on the 21st at Belvoir; on the 22d at Camden Town, Grantham, and Stonyhurst; on the 24th at Allenheads; on the 29th at Aldershot; and on the 31st at Aldershot, Oxford, Great Berkhamstead, and Banbury.

Fog was prevalent on 66 days during the quarter. On October the 2d, 3d, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 18th, 19th, 20th, 21st, 23d, 24th, 25th, 26th, 28th, 29th, and 30th. On November the 1st, 3d, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 19th, 20th, 21st, 22d, 23d, 24th, 25th, and 29th. On December the 1st, 2d, 7th, 8th, 9th, 10th, 11th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 19th, 20th, 21st, 25th, 26th, 27th, and 28th.

At Guernsey the mean temperatures of the air were 50.9 below in October and November, and 3.1 below their averages in December. The falls of rain were respectively 3.5 in., 2.8 in., and 1.0 in. below their averages for 21 years; the number of days are 8 below, 3 above, and 4 below the averages of their respective months. In October the gales which visited this island were much less severe than those which occurred in the vicinity, although the barometer was remarkably low. The small amount of rain, and of the number of rainy days, is remarkable, as well as the preponderating easterly winds. The weather was fine till the 12th November, but from that day to the end of the month heavy falls of rain and frequent gales occurred. December was a fine month, air generally cool, but not very cold.

At Cockermouth no rain fell from 23d September till 15th October; on the 19th 1.2 in. fell. This was accompanied by a rapid fall of the barometer (0.772 in. in 26 hours), and followed by a gale from S. and S.W. At 9h. P.M. on the 19th the temperature of the air was 59.9, or 12

above the average temperature of the month at the same hour. The lowest reading of the barometer occurred at 11h. P.M. on the 19th, when it was 28.662 in., and temperature 58.5. Very little ozone during the month, none since the 22d. Ozone is never present at this station during the prevalence of easterly winds, although at Silloth (distant about 15 miles in a direct line) it is abundant with the wind in that quarter. The highest reading of the barometer in November was at 11h. A.M. on the 6th, when it was 30.618 in. There were three great depressions of the barometer this month, viz., on the 14th 28.45 in., on the 18th 28.44 in., and on the 25th 28.48 in. These extreme depressions of the mercurial column were not attended or followed by a gale here. The greatest pressure of the wind was on the last occasion (the 25th), but did not exceed 9 lbs. to the square foot. A gale from the W.S.W. and S.W. occurred on the night of the 29th and morning of the 30th, accompanied with heavy rain; greatest pressure of wind 23 lbs. Mean temperature of the month 2.7 below that of corresponding month last year, at 5.2 above that of November 1862. Heavy rain-falls occurred on 3d and 4th December, causing a great flood; the rivers Derwent and Cocker being higher than they have been since November 1862, though not quite so high as on that occasion. The rain-fall collected on three days (4th, 5th, and 6th) amounted to 3.4 in. Total rain-fall for the year at 6 inches above the ground, 41.330 in.; number of days on which it fell, 167. Total rain-fall for 1863, as collected at this station by the same gauge, was 54.6 in.

At Stonyhurst the range of temperature in October, 26.5, is the smallest observed in the month of October, excepting in the year 1856. The fall of rain in the month is 2.7 inches below the average. The total fall of rain between the 24th September and the 16th October was 0.127 inch.

At Silloth the rain-fall of the 19th October was greatly in excess of the heaviest ever observed here. On one day only in 10 years had the amount exceeded 2 inches, viz., 12th November 1861, when 2.09 inches fell within twenty-four hours, but on this occasion the amount was 2.91 inches. 21st December was the only day throughout the year 1864 on which there was no ozone.

At Bywell the barometer very variable during the month of November. The first half of the month was very favourable for preparing and working the land for the remainder of autumn sowing, which is now about completed in this neighbourhood. The springs are much the better for the late rains—water was very much wanted. I have not heard of any damage done by the rains in this neighbourhood. Some potatoes are still in the ground, but a few dry days will set the farmer to work again on the land. There is some autumn sowing yet to be done.

At Belvoir wheat was sown under favourable circumstances, and much of the earliest sown is up and looking well. The serious deficiency in the hay and turnip crops, the shortness of straw, and the bareness of pastures, caused a larger breadth than usual of tares and rye to be sown for spring feeding; mild weather and a rain-fall of two inches kept turnips in active growth and improved pastures, and relieved stock keepers in a slight degree. Stock in low condition is cheap; fat stock is dear, and in demand. The potato crop is sound and free from disease, but generally deficient in bulk. Apples are very abundant, and much cheaper than potatoes or turnips. Acorns, masts, haw-berries, and sloes unusually plentiful. A deficiency in the average annual fall of rain of about 8 inches influenced agricultural operations and results materially. There was a general deficiency in corn crops; on the clay land of this locality the results to the farmer were more satisfactory in regard to cereals, but the failure in roots was general. The hay crop was light but excellent in quality, and as an illustration of its scarcity it is now selling at 8l. per ton. Straw is scarce; farmers are grinding both wheat and barley for stock. The potato disease, which came with wet and cold seasons, has disappeared during a dry and warm season. The crops of apples and pears were very extraordinary. The appearance of the wheat crop in December was favourable. Stock was healthy. Ponds and springs still very low and water still scarce.

Field Elm divested of leaves on the 7th November at Oxford; on the 23d at Streatley; on the 24th at Culloden; on the 25th at Berkhamstead; and on the 27th at Guernsey.

Lime divested of leaves on the 20th October at Marlborough; and on the 25th at Berkhamstead and Abington. On the 7th November at Oxford; and on the 22d at Culloden.

Horse Chesnuts divested of leaves on the 22d October at Marlborough. On 3d November at Oxford and Abington; and on the 15th at Culloden.

Common Poplar divested of leaves on the 25th October at Helston; and on the 31st at Great Berkhamstead. On the 7th November at Oxford and Abington.

Sycamore divested of leaves on the 21st October at Helston; and on the 28th at Lampeter. On the 5th November at Culloden; and on the 11th at Abington.

Hawthorn divested of leaves on the 25th October at Helston; and on the 1st November at Marlborough.

Ash trees divested of leaves on the 4th November at Marlborough; and on the 25th at Culloden.

Oak trees divested of leaves on the 25th November at Great Berkhamstead.

Walnut trees divested of leaves on the 11th November at Abington.

Hazel trees divested of leaves on the 31st October at Great Berkhamstead.

Birch trees divested of leaves on the 10th November at Culloden.

Plane trees divested of leaves on the 20th November at Culloden.

Swallows departed on the 3d October from Abington; on the 14th from Grantham; on the 23d from Hawarden; on the 25th from Helston; and on the 29th from Clifton. On the 1st November from Brighton.

Fieldfares arrived on the 17th October at Abington; and on the 26th at Helston. On the 1st November at Culloden; and on the 30th at Hawarden.

Woodcocks arrived on the 7th October at Helston; and on the 19th at Abington. And on the 9th November at Hawarden.

Redwings arrived on the 8th October at Helston; and on the 14th at Abington.

Snipes arrived on the 6th October at Helston.

At North Shields a flock of wild geese were seen travelling south on 27th of November.



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.	Rain.
															Relative Proportion of						
															N. E. S. W.						
															Mean Amount of						
Guernsey	29.530	64.5	32.0	32.5	11.2	43.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Helston	29.505	65.0	32.0	33.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Truro	29.577	64.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Ventnor	29.579	62.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Osborne	29.577	64.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Bournemouth	29.574	71.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Worthing	29.573	62.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Hurstpierpoint	29.572	66.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Barnstaple	29.567	69.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Alldershot Camp	29.565	68.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Bath	29.563	62.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Marlborough College	29.557	62.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Clifton	29.557	62.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Royal Observatory	29.557	62.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Guildhall	29.557	62.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Battersea	29.557	62.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Streatham Vicarage	29.557	62.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Camden Town	29.554	67.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Oxford	29.581	64.8	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Banbury	29.627	61.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Great Berkhamstead	29.551	65.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Aspley	29.523	63.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Royston	29.523	63.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Abington Pigotts	29.523	63.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Cardington	29.523	63.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Lampeter	29.523	63.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Bedford	29.527	71.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Diss (Norfolk)	29.526	68.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Wisebeach	29.537	68.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Llandudno	29.524	65.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Belvoir Castle	29.576	61.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Grantham	29.625	62.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Derby	29.622	64.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Nottingham	29.677	67.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Hawarden	29.597	62.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Kingsley	29.610	62.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Penketh, near Warrington	29.628	62.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Liverpool Observatory	29.571	61.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Manchester	29.632	65.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Eccles	29.628	62.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Castleton Moor	29.638	61.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Wakefield	29.617	62.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Stonyhurst	29.550	59.8	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Orley	29.580	66.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Cockermouth	29.596	64.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Allenheads	29.578	56.8	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Silloth	29.593	64.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Carlisle	29.630	62.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Bywell	29.585	62.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
North Shields	29.679	59.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	
Milton, Banbridge, Ireland.	29.571	59.0	32.0	32.0	11.5	42.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8	

The highest temperatures of the air were at Bournemouth, 71° 0; Bedford, 71° 0; Barnstaple, 69° 0; Abington, 68° 1; Wisbeach, 68° 0; and Nottingham, 67° 7. The lowest temperatures of the air were at Castleton, 12° 0; Banbury and Lampeter, 14° 5; and Belvoir, 14° 3; Bywell, 14° 3; Diss, 13° 9; and Brighton, 13° 3. The least daily ranges were at Aspley, 5° 7; Guernsey and Royston, 6° 2; Lampeter, 7° 1; Ventnor, 7° 5; and North Shields, 7° 5. The greatest number of rainy days were at Allenheds, 72; Royston, Wakefield, and North Shields, 53; and Stonyhurst and Bywell, 53. The heaviest falls were at Allenheds, 16.9 in.; Truro, 14.2 in.; Bywell, 13.7 in.; Silloth, 11.7 in.; Helston, 11.6 in.; and Guernsey, 11.2 in. The least falls were at Wisbeach, 1.4 in.; Guildhall and Bedford, 1.3 in.; Abington, 3.6 in.; Diss, 3.7 in.; and Battersea and Camden Town, 4.0 in.

QUARTERLY METEOROLOGICAL TABLE FOR DIFFERENT PARALLELS OF LATITUDE.

PARALLELS OF  LATITUDE, &c.	Mean Pressure of dry Air reduced to the level of the Sea.	Mean all highest Readings of the Thermometer.	Mean of all Lowest Readings of the Thermometer.	Mean Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of humidity.	Mean Weight of a cubic foot of Air.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.	Mean Amount of Rain.
																Relative Proportion of						
																N.	E.	S.	W.			
																Z.	N.	E.	S.			
Guernsey	29.530	64.5	32.0	32.5	11.2	43.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8		
The Counties of Devon & Cornwall	29.530	64.5	32.0	32.5	11.2	43.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8		
Isle of Wight	29.530	64.5	32.0	32.5	11.2	43.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8		
South of latitude 51°	29.530	64.5	32.0	32.5	11.2	43.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8		
Between 51° and 52°	29.530	64.5	32.0	32.5	11.2	43.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8		
the 52° and 53°	29.530	64.5	32.0	32.5	11.2	43.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8		
latitudes 53° and 54°	29.530	64.5	32.0	32.5	11.2	43.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8		
North Shields	29.530	64.5	32.0	32.5	11.2	43.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8		
Miltoen, Banbridge (Ireland)	29.530	64.5	32.0	32.5	11.2	43.0	19.5	16.2	47.5	43.0	27.7	3.2	8.4	88	8	8	8	4.2	4.2	8		



[illegible][illegible]



Year Issd.	Names of Stations and Observers.	Pressure of Air in Month.				Temperature of Air in Month.				Mean Tem- perature.	Vapour.		Mean Reading of Thermometer.	Wind.			Mean Amount of Cloud.	Rain.				
		Mean.	Range.	Lowest.	Highest.	Range.	Lowest.	Highest.	Mean.		In a Cubic Foot of Air.	Mean Degree of Humi- dity, &c., = 100.		Mean Weight of a Cubic Foot of Air.	Maximum in Kays of Sun.	Minimum on Grass.			Estimated Strength.	Relative Proportion of		
																				N.	E.	W.
Oct.	OTLEY, H. W. THOMAS, Esq.	29.626	1.454	63.6	37.2	19.4	52.7	44.8	47.7	43.1	.278	in.	2.4	7.8	3	15	2.6					
Nov.		29.642	1.706	55.7	31.0	24.3	44.2	38.4	47.8	38.5	.283	3.2	2.4	8.5	13	2.5						
Dec.		29.712	1.186	56.6	24.5	34.1	41.2	33.4	48.8	33.6	.288	2.4	0.3	8.6	3	1.4						
Oct.	YORK, John Ford, Esq.	29.830	1.478	62.0	37.0	33.6	45.1	45.1	48.8	43.4	.283	3.2	0.6	8.2	15	2.6						
Nov.		29.693	1.085	60.0	32.0	21.3	46.7	36.3	41.3	38.3	.251	2.7	0.4	9.0	17	2.5						
Oct.		COCKERMOUTH, HENRY DODGSON, Esq.	29.769	1.680	64.4	31.9	32.5	53.8	42.2	48.4	41.7	.284	3.0	0.9	7.8	11	3.2					
Nov.	29.582		1.292	54.7	28.5	25.7	48.7	38.6	40.1	39.3	.240	2.8	0.4	8.4	12	3.5						
Dec.	29.735		1.225	59.3	23.4	28.9	44.5	33.8	47.7	40.6	.270	2.6	0.3	8.7	16	5.6						
Oct.	ALLENHEADS, THOMAS BEWICK, Esq., C. P., M. R. M. S., Assistant to T. SOPWITH, Esq., F. R. S., &c.	28.404	1.553	68.8	38.9	37.6	50.1	39.8	43.7	40.0	.247	2.8	0.4	8.6	10	3.0						
Nov.		28.288	2.013	49.9	39.1	23.8	43.1	34.1	38.5	33.3	.205	2.4	0.3	9.0	6	3.6						
Dec.		28.469	1.185	49.3	17.0	32.3	39.0	32.1	43.9	33.7	.194	2.2	0.2	9.5	2	3.6						
Oct.	ST. PAUL'S PARSONAGE, near SILFORTH, CUMBERLAND, Rev. F. REDFORD, M. A., M. B. M. S.	29.841	1.701	61.0	32.0	55.7	41.9	38.8	47.9	43.2	.270	3.1	0.7	8.2	14	4.8						
Nov.		29.648	1.288	64.5	29.5	25.5	48.5	37.5	49.9	42.5	.242	2.8	0.3	8.9	11	4.8						
Dec.		29.134	1.273	53.0	23.8	29.2	43.8	35.0	47.2	39.6	.254	2.5	0.4	8.1	17	4.8						
Oct.	CARLISLE, I. CARMELL, Esq., M. R. M. S.	29.813	1.702	62.5	39.5	33.0	54.3	40.9	48.4	43.7	.298	3.1	0.7	8.5	12	3.0						
Nov.		29.625	1.180	54.5	29.1	25.4	47.4	35.6	41.7	37.3	.238	2.6	0.4	8.5	13	1.8						
Dec.		29.880	1.278	55.5	23.5	29.5	42.9	33.5	48.4	41.7	.287	2.4	0.5	8.5	13	1.8						
Oct.	RYWELL, Mr. JOHN DAWSON, under the direction of T. SOPWITH, Esq., F. R. S., M. R. M. S.	29.770	1.646	65.0	34.0	31.0	56.8	43.4	48.8	45.0	.277	3.1	0.7	8.1	14	6						
Nov.		29.734	1.194	54.0	24.0	27.0	50.3	39.3	43.7	37.3	.253	2.6	0.6	8.3	15	7.5						
Dec.		29.890	1.178	55.0	29.0	27.1	42.8	34.8	40.0	35.4	.267	2.4	0.5	8.4	11	7.3						
Oct.	NORTH SHIELDS, ROBERT SPENCE, Esq.	29.820	1.688	59.0	34.0	25.0	52.8	44.9	47.9	42.8	.275	3.2	0.7	8.1	8	4.6						
Nov.		29.643	2.025	52.3	27.0	22.5	45.5	35.7	47.7	37.3	.233	2.4	0.3	8.5	10	4.6						
Dec.		29.913	1.220	54.0	25.0	22.0	43.7	35.6	40.1	35.5	.216	2.5	0.2	8.7	9	2.6						
Oct.	GALWAY, HENRY DEANE, Esq.	29.822	1.501	63.8	37.0	31.8	54.3	43.6	47.7	43.5	.285	3.5	0.3	93	16	3.1						
Nov.		29.649	1.269	58.7	30.5	25.2	49.9	39.7	44.5	41.9	.260	3.0	0.3	90	21	5.7						
Dec.		29.949	1.364	54.0	26.0	23.0	43.2	35.0	41.3	38.5	.233	2.7	0.8	78	5	4.4						
Oct.	MILTOWN (Banbridge, Ireland), JOHN SMITH, Esq., A. M.	29.649	1.560	59.0	39.0	35.0	47.2	36.0	41.2	38.5	.283	2.7	0.3	53	19	3.5						
Nov.		29.648	1.560	59.0	39.0	35.0	47.2	36.0	41.2	38.5	.283	2.7	0.3	53	19	3.5						
Dec.		29.949	1.364	54.0	26.0	23.0	43.2	35.0	41.3	38.5	.233	2.7	0.8	78	5	4.4						
Oct.	CULLODEN, A. FORBES, Esq., M. R. M. S.	29.785	1.784	53.4	34.6	20.8	49.7	42.3	47.4	43.1	.281	2.9	0.5	88	15	5.1						
Nov.		29.720	2.153	53.9	30.4	23.5	44.0	37.5	40.7	37.7	.236	2.7	0.3	89	16	5.1						
Dec.		29.940	1.454	54.0	25.5	25.4	42.6	37.5	40.6	34.8	.262	2.3	0.7	75	12	2.1						

The return for March from Lindalno has been received, but the observations of the wet-bulb thermometer are too incomplete for it to be published. The observations from Norwich for December have been submitted on account of their incompleteness. The returns from Searborough are so erroneous in the dry and wet bulb thermometer readings that they cannot be published. The readings of the barometer at Searborough are evidently wrong, and those at Aberdeen, South Shields, and Newcastle are also very erroneous.

METEOROLOGY OF ENGLAND.

DURING THE QUARTER ENDING MARCH 31, 1865.

REMARKS ON THE WEATHER during the QUARTER ending 31st of March 1865. By  
JAMES GLAISHER, ESQ., F.R.S., &c., Secretary of the British Meteorological Society.

From 17th Jany. to 19th Jany. The month of January opened with cold frosty weather; on the 4th day a warm period set in and continued to the 16th; the average daily excess of temperature being  $5\frac{1}{2}^{\circ}$ . During this period, although the weather was mild for the season, the sky was mostly cloudy and the wind was frequently blowing a gale; there were pressures of 21 lbs. on the square foot on the 6th, of 15 lbs. on the 12th; of  $17\frac{1}{2}$  lbs. on the 13th; and of no less than 29 lbs. on the 14th.

From 17th January to the end of the quarter, with the exception of a few days at the beginning and end of February, the weather was cold for the season, at times unpleasantly so, particularly after 20th of January, about the middle of February, and towards the end of March. At these times the temperature in January was as low as  $20^{\circ}$  at many places; in February from  $13^{\circ}$  to  $20^{\circ}$ , and as low as  $8^{\circ}$  at Birmingham; and in March at the time of the equinox it was as low as  $23^{\circ}$ . The deficiency of temperature on some days was as large as  $9^{\circ}$  to  $14^{\circ}$ , and for the 74 days ending 31st March was the very large average amount for so long a period as  $3^{\circ} \cdot 8$  daily.

In March was the very large average amount for so long a period as  $3^{\circ} \cdot 8$  daily. In January and February snow storms were frequent, producing a good supply of water, and thus relieved the farmers in many parts of England of the necessity of fetching water from a distance, which they had been compelled to do for months previously. The snow-falls extended all over England and Scotland. On several days at the end of February the weather was extremely wild and stormy. Snow to small amounts continued to fall, chiefly crystalline, in March, till after the equinox, and the month was cold and ungenial throughout, its mean temperature being the same as in February, and only  $1^{\circ}$  above that in January.

The mean temperature of January was  $36^{\circ} \cdot 3$ , being  $1^{\circ} \cdot 9$  below the average of the preceding years, and  $6^{\circ} \cdot 2$  less than that in 1864.

The mean temperature of February was  $36^{\circ}.6$ , being  $2^{\circ}.1$  below the average of the preceding 24 years, but  $0^{\circ}.6$  above that in 1864.

The mean temperature of March was  $36^{\circ}\cdot6$ , being  $5^{\circ}\cdot4$  below the average of the preceding 24 years, and  $4^{\circ}\cdot7$  below that of 1864.

The temperature in March is therefore very remarkable, as we have to go back 20 years to find one so cold, viz., in the year 1845, when it was  $35^{\circ}2$ ; in 1837 it was  $35^{\circ}8$ . The next very cold March was in 1814, when it was  $35^{\circ}1$ ; and for 25 years before that there was no instance of such low temperature; in 1789 it was  $34^{\circ}4$ ; in 1786 it was  $34^{\circ}2$ ; in 1785,  $33^{\circ}9$ ; in 1784,  $36^{\circ}2$ ; and in 1771 it was  $34^{\circ}7$ . From this it will be seen that the month of March was much more frequently cold towards the end of last century than lately.

Usually February is 2° warmer and March 5° warmer than January. This year the mean temperature of each month has been very nearly the same; the usual increase has not taken place.

The mean high day temperature was below their averages to the amounts of  $2^{\circ}3$ ,  $2^{\circ}7$ , and  $6^{\circ}2$  respectively, in these three months.

The mean low night temperature was below their averages to the amounts of  $1^{\circ}7$ ,  $1^{\circ}3$ , and  $4^{\circ}3$  respectively.

Therefore both the days and nights were very cold in these three months, particularly in March.

The mean temperature of the dew point was  $2^{\circ}.1$ ,  $2^{\circ}.6$ , and  $1^{\circ}.9$  below their respective averages in the preceding 24 years.

The degree of humidity was a little above its average in January, below in February, and the same as the average in March.

The pressure of the atmosphere was a little more than  $\frac{1}{8}$  inch in defect in January, and slightly in defect in February and March, it being very nearly of the same values in the last two months.

The range of Readings of the Barometer in January and February was about  $1\frac{1}{2}$  inch at

*Range of Readings of the Barometer* in January and February was about  $1\frac{1}{2}$  inch at about 1 inch at all stations.

Temperature of																Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
1865. Months.		Air.		Evaporation.		Dew Point.		Air— Daily Range.		Water of the Thames.									
	Mean.	Diff. from average of 94 years.	Diff. from average of 24 years.	Mean.	Diff. from average of 24 years.	Mean.	Diff. from average of 24 years.	Mean.	Diff. from average of 24 years.		Mean.	Diff. from average of 24 years.		Mean.	Diff. from average of 24 years.				
Jan. Feb. Mar.	36.3 36.6 36.6	+0.1 -1.7 -4.4	-1.9 -2.1 -5.4	0 35.0 34.7	-2.0 -2.4 -5.4	0 33.0 32.0	-2.1 -2.7 -6.2	0 9.1 10.0	-0.6 -1.4 -1.8	0 39.0 37.0	in. .188 .181	in. -0.015 -0.022	fts. 2.2 2.1	Mean.	36.5				
Mean	36.5	-2.0	-3.1	34.7	-3.2	31.8	-3.7	10.7	-1.3	38.6	.179	-.027	2.1	-0.3					

*Snow fell on 81 days during the quarter at one or other part of the country; on some days over the whole of the country at the same time.*



1865. MONTHS.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.	Reading of Thermometer on Grass.				
	Mean.	Diff. from average of 24 years.	Mean.	Diff. from average of 24 years.	Mean.	Diff. from average of 24 years.	Amount.	Diff. from average of 48 years.		Number of Nights it was			Lowest Reading at Night.	Highest Reading at Night.
										At or below 30°.	Between 30° and 40°	Above 40°.		
Jan. -	89	+ 1	in. 29° 405	-0° 397	grs. 550	- 4	in. 3° 3	in. +1° 6	Miles. 271	14	16	1	13° 1	43° 0
Feb. -	83	- 2	29° 722	-0° 080	555	+ 1	1° 9	+0° 3	311	14	14	0	15° 3	39° 7
Mar. -	82	0	29° 720	-0° 098	555	+ 5	0° 9	-0° 7	270	22	9	0	20° 5	39° 2
Mean -	85	0	29° 616	-0° 162	553	+ 1	Sum 6° 1	Sum +1° 2	Mean 284	Sum 50	Sum 39	Sum 1	Lowest 13° 1	Highest 43° 0

NOTE.—In reading this table it will be borne in mind that the sign (-) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred or thunder was heard and lightning was seen on 6th January at Castleton and Wakefield; on the 13th at Oxford; on the 17th at Lampeter; and on the 27th at North Shields. On 17th February at Guernsey and Liverpool; and on the 28th at Belvoir and Grantham. On 26th March at Wilton and Carlisle; and on the 27th at Carlisle.

Thunder was heard but lightning was not seen on 13th and 14th January at Streatley; and on the 24th at North Shields. On 17th February at Kingsley; and on the 19th at Abington. On 12th March at Norwich; and on the 29th at Holkham.

Lightning was seen but thunder was not heard on 12th January at Berkhamstead; on the 19th at Guernsey; and on the 31st at Guernsey and Clifton. On 9th February at Camden Town; on the 17th at Truro and Stonyhurst; on the 19th at Wisbeach; and on the 28th at Brighton, Camden Town, and Wisbeach. On 26th March at Silloth and North Shields.

Solar halos were seen on 5th January at Great Berkhamstead; on the 6th at Clifton; on the 10th at Hawarden; on the 15th at Great Berkhamstead; on the 21st at Oxford; on the 22d at Clifton and Great Berkhamstead; on the 23d at Clifton and Lampeter; on the 28th at Oxford; on the 29th at Oxford, Great Berkhamstead, and North Shields; and on the 30th at Oxford. On 12th February at Brighton; on the 15th at Oxford; and on the 16th at Grantham. On 6th March at Great Berkhamstead; on the 10th at Brighton; on the 21st at Clifton, Great Berkhamstead, Lampeter, Hawarden, and Eccles; on the 24th at Brighton; on the 25th at Brighton and Cardington; and on the 27th at Lampeter, Hawarden, and Penketh.

Lunar halos were seen on 4th January at Wisbeach and Belvoir; on the 5th at Belvoir; on the 7th at Oxford and Belvoir; on the 8th at Oxford; on the 11th at Clifton and North Shields; and on the 14th at Camden Town and Great Berkhamstead. On 4th February at Helston; on the 5th at Carlisle; on the 8th and 9th at Allenheads; on the 10th at Hawarden, Kingsley, and Allenheads; and on the 12th at Clifton. On 1st March at Allenheads; on the 2d at Carlisle; on the 3d at Marlborough, Cardington, Hawarden, Penketh, Liverpool, and Cockermouth; on the 4th at Hawarden, Penketh, and Liverpool; on the 5th at Banbury, Royston, Abington, Diss, Wisbeach, Grantham, and Holkham; on the 6th at Great Berkhamstead and Galway; on the 7th at Kingsley, Liverpool, and Silloth; and on the 8th at Camden Town; and on the 31st at Penketh.

Aurora were seen on 16th January at Clifton, Hawarden, Stonyhurst, and Silloth; on the 25th at Cockermouth and Allenheads; on the 28th at Brighton, Oxford, Cardington, Bedford, Hawarden, Silloth, Bywell, and North Shields; and on the 30th at Silloth. On 15th February at Allenheads, Carlisle, and North Shields; on the 17th at Aldershot, Clifton, Oxford, and Great Berkhamstead, Royston, Wisbeach, Grantham, and Hawarden; on the 18th at Hawarden; on the 20th at Clifton, Wisbeach, Hawarden, and North Shields; on the 22d and 24th at Clifton; and on the 25th at Bywell. On 1st March at Silloth; on the 20th at Brighton, Marlborough, Clifton, Camden Town, Great Berkhamstead, Royston, Abington, Cardington, Wisbeach, Grantham, Hawarden, Kingsley, Penketh, Eccles, Cockermouth, Silloth, Carlisle, and Galway; on the 21st at Banbury and Hawarden; and on the 26th at Abington.

At Guernsey the mean reading of the barometer for the month of January was 0.388 inch below the average of 21 years. The mean temperature of the air was 1° 8, 1° 9, and 4° 8 below the averages of 21 years respectively in these three months. The mean temperature of February was not very low, but more continuous than usual; that of March this year has been lower than that of any March during the last 21 years, with but two exceptions, which were in 1845 and 1853. The amount of rain collected was 4.05 inches in January and 1.90 inch in February above their respective averages. The immoderate quantity of rain which fell in January seems to have replaced snow, of which only a few flakes fell, and none settled on any object. The number of rainy days in January, above its average, was six; and in February five. There were frequent heavy gales, rain, and remarkable lulls in February; no snow settled during the month.

At Clifton snow fell to the depth of 5 inches on the 27th of January, and fell frequently at other times. At Osborne during the night of the 13th and early morning of the 14th of January the pressure of the wind on the square foot reached 23 lbs., when the anemometer connector broke. This was repaired by 2 P.M., and at 2h. 15m. P.M. an extraordinary strong gust of wind reached 32 lbs.; the pressure then continued between 10 lbs. and 14 lbs. during the remainder of the day.

At Downside College near Bath the barometer was very low during the month of January, falling down to 27.978 on the 14th. During the night of the 28th the fog froze on the trees and covered everything with ice, presenting a brilliant appearance in the sun, and causing great havoc among the branches of the trees through the weight of the ice; all the shrubs, laurels, &c. were prostrated on the ground by the weight of the ice and snow on their leaves.

At Aldershot there were 26 days of frost in January; on the 14th a tremendous gale raged from 11 A.M. till noon, blowing down several large trees: Robinson's anemometer recorded 74 miles per

hour. There were 16 days of frost in February; on the 19th a gale sprang up from the W., blowing with violence; at 3 P.M. it veered round to N.W. with increased fury, when a pressure of 27 lbs. on the square foot was registered. This gale continued with but little intermission during the following day. There were also violent gales on the 19th and 20th of March.

At Streatley on January 14th hail fell to the depth of 2 inches during a thunder storm.

At Great Berkhamstead from the 3d to the 16th of January it was mild for the season, with high winds, and from the 16th to the 31st it was cold and winterly; there were frequent heavy falls of snow. From February 1st to the 7th the weather was overcast, damp, and foggy; from the 8th to the 22d cold and frosty, with heavy falls of snow; high winds on the 18th, 19th, and 20th; from the 23d to the 28th mild, and rainy at times. The ground was covered with snow from the 10th to near the end of the month. March was very cold from the 3d to the 30th; the 31st was fine and warm. Snow fell on 15 days, but mostly in small quantities.

At Wisbeach there were gales on the 19th and 20th of February, pressure on the square foot 10 lbs. The greatest depth of snow during the winter was 6 inches on the 17th.

At Eccles there has not been so great a fall of snow as that which fell on the 16th and 17th of February since 4th March 1862. For nearly three hours at noon on the 19th a storm passed over this observatory, varying from 40 to 70 miles per hour (Dr. Robinson's anemometer, 32 feet from the ground). Much damage was done to house roofs in the neighbourhood. During the whole day the barometer reading increased at the rate of 0.05 inch per hour.

At Odey the River Wharfe was frozen over on the 29th and 30th of January, but began to thaw on the 30th.

At Cockermouth there was frost from the 19th to the 29th of the month. A remarkable depression of the barometer occurred on the 13th and 14th, the lowest reading being 28.172 in. at 8h. A.M. on the 14th, when the mercury was lower than it has been here during the last three years. There was no fall or light wind accompanying or following it: Wind from W.S.W. to S.S.W. There were two heavy falls of snow during the month of February, on the 11th and 17th, the depth being 4½ inches on each occasion. A remarkable rise in the barometer occurred on the 19th to the extent of 0.942 in. in 12 hours, between 9h. A.M. and 9h. P.M., or 1.339 in. from the morning of the 19th to the same hour on the 20th. Frost set in on the 9th, and, with one or two slight exceptions, continued till the 21st of the month. On the 4th March 0.9 in. of rain fell in 6 hours, being more than one-third of the total rain-fall during the month. The greatest depression of the barometer occurred during the same time, the extreme readings, highest and lowest, being within 48 hours. March was a dry, but cold month; no rain fell from the 13th to the 24th. Snow remained on the neighbouring mountains during the whole month.

At Silloth the longest extreme depression of the barometer ever observed here was between the 12th and 16th of January, when it was below 29 inches. On 5 days only in the last 12 years has the cold been more intense than it was on the 15th of February.

At Carlisle more snow fell during the month of February than at any time during several years.

At Culloden the mean temperature of February was about 20° below its average, and nearly as low as that of the previous month. Snow fell to a greater depth than in any previous winter within the last 30 years; on the night of the 16th the fall was fully 8 inches. The 19th was very stormy throughout, with more snow, and heavy drift, which blocked up all the roads and railways, and accumulated in wreaths of 5 and 6 feet in thickness, and on the 20th the total depth of snow on the ground where not drifted amounted to 16 inches.

At Miltoen Banbridge (Ireland) we have had a rather favourable winter for bleaching, as the frosts have not been so long nor so intense as usual. There has been a good deal of drying weather, which prepares the linens, after they have been lifted from the ground, for the chemicals.

Leaf buds first appeared on the Elm on 15th March at Guernsey.

Leaf buds first appeared on the Lime on 5th February at Oxford.

Leaf buds first appeared on the Horse Chesnut on 5th February at Oxford, 10th March at Guernsey, the 14th at Helston, and on the 29th at Galway (Ireland).

Leaf buds first appeared on the Hazel on 5th February at Oxford.

Leaf buds first appeared on the Hawthorn on 1st March at Oxford, 15th at Guernsey, and 20th at Helston.

Leaf buds first appeared on the Poplar on 2d March at Oxford.

Leaf buds first appeared on the Walnut on 7th March at Oxford.

Leaf buds first appeared on the Sycamore on 10th March at Guernsey and on the 21st at Galway.

The Peach was in blossom on 11th March at Helston and on the 30th at Guernsey.

The Plum was in blossom on 25th March at Guernsey.

A few Apricot blossoms just bursting on 31st March at Oxford.

The Yellow Crocus was in flower on 5th January at North Shields.

The Polianthus was in flower on 6th January at North Shields.

The Blue Hepatica was in flower on 8th January at North Shields.

The Pink Hepatica was in flower on 12th February at North Shields and on the 27th at Great Berkhamstead.

Pansy was in flower on 10th January at North Shields.

Snowdrops were in flower on 20th January at North Shields and Culloden, and on 4th February at Great Berkhamstead.

Lilac was in flower on 21st January at North Shields.

Crocuses were in flower on 1st February at North Shields, 24th at Silloth, and on the 27th at Great Berkhamstead.

Saxifrage was in flower on 20th February at North Shields.

Thrushes were heard singing on 25th February at Silloth and on the 28th at Culloden.

Larks were heard singing on 22d February at Culloden.

Chaffinches were heard singing on 26th February at Culloden.

At North Shields on 12th March a flock of wild ducks were seen travelling southwards.



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	Mean Estimated Strength.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.
																			N.	E.	S.	W.		
Guernsey	29.601.53.0	27.0	26.0	44.9	37.1	22.7	7.8	40.5	37.1	22.7	22.1	22.1	0.0	88	548	54.8	54.8	1.0	6	7	10	10	4.1	1.2
Helston	29.612.53.0	27.0	26.0	44.9	37.1	22.7	7.8	40.5	37.1	22.7	22.1	22.1	0.0	88	548	54.8	54.8	1.0	6	7	10	10	4.1	1.2
Truro	29.617.53.0	27.0	26.0	44.9	37.1	22.7	7.8	40.5	37.1	22.7	22.1	22.1	0.0	88	548	54.8	54.8	1.0	6	7	10	10	4.1	1.2
Ventnor	29.615.53.0	27.0	26.0	44.9	37.1	22.7	7.8	40.5	37.1	22.7	22.1	22.1	0.0	88	548	54.8	54.8	1.0	6	7	10	10	4.1	1.2
Osborne	29.623.54.0	17.0	37.0	45.8	32.3	33.7	13.5	39.5	34.3	19.8	53.9	53.9	0.0	88	552	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Bournemouth	29.640.50.0	24.0	26.0	42.5	33.5	25.9	9.0	37.7	36.1	21.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Worthing	29.640.50.0	24.0	26.0	42.5	33.5	25.9	9.0	37.7	36.1	21.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
St. John's Col. nr. Brighton	29.608.58.5	8.0	50.0	45.4	29.2	44.1	16.2	36.8	33.9	19.5	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Barnstaple	29.581.52.5	24.8	38.5	45.7	35.0	32.2	10.7	39.8	36.4	21.5	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Belvoir Camp	29.602.53.0	18.0	37.0	42.0	31.1	43.1	9.0	38.5	35.2	18.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Bath	29.617.52.0	25.0	27.0	44.1	35.2	23.0	8.9	39.7	37.1	22.7	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Marlborough College	29.618.51.7	5.8	45.0	41.1	28.3	35.5	12.3	34.8	31.9	19.4	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Clifton	29.600.52.9	13.5	36.4	42.0	32.4	31.7	11.0	37.7	35.2	18.6	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Royal Observatory	29.619.58.7	15.5	43.2	42.4	31.7	34.8	10.7	36.5	34.0	18.1	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Guildhall	29.606.51.0	24.0	27.0	42.0	33.4	23.3	7.4	38.1	35.4	20.7	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Battersea	29.626.55.0	14.5	50.5	44.4	30.0	39.0	14.3	36.8	33.8	19.4	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Streatham Vicarage	29.644.55.5	10.5	45.0	43.0	31.1	35.9	11.0	37.7	35.2	18.6	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Camden Town	29.607.57.8	15.4	42.4	40.0	30.5	34.4	8.7	36.4	33.8	19.0	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Oxford	29.638.52.0	6.0	46.0	41.1	32.7	38.5	9.0	36.8	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Banbury	29.633.54.0	5.7	48.0	41.1	30.8	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Great Berkhamstead	29.595.54.0	7.0	47.0	41.0	30.0	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Hartwell House	29.622.54.0	7.0	47.0	41.0	30.0	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Aspley	29.622.54.0	7.0	47.0	41.0	30.0	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Royston	29.622.54.0	7.0	47.0	41.0	30.0	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Abington Pigotts	29.622.54.0	7.0	47.0	41.0	30.0	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Cardington	29.630.55.0	11.0	45.0	41.1	32.7	38.5	9.0	36.8	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Lampeter	29.615.50.6	5.0	51.0	43.3	31.4	43.7	11.0	36.8	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Bedford	29.576.59.0	12.0	46.0	44.7	30.1	41.7	14.6	36.6	33.6	18.5	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Diss (Norfolk)	29.630.54.0	12.0	46.0	44.7	30.1	41.7	14.6	36.6	33.6	18.5	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Wisebeach	29.584.55.7	15.7	47.0	40.0	30.0	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Llandudno	29.530.55.0	10.0	40.0	30.0	20.0	20.0	0.0	30.0	30.0	20.0	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Belvoir Castle	29.619.58.7	15.5	43.2	42.4	31.7	34.8	10.7	36.5	34.0	18.1	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Grantham	29.633.54.0	5.7	48.0	41.1	30.8	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Derby	29.633.54.0	5.7	48.0	41.1	30.8	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Holkham	29.584.55.7	15.7	47.0	40.0	30.0	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Hawarden	29.584.55.7	15.7	47.0	40.0	30.0	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Kingsley	29.584.55.7	15.7	47.0	40.0	30.0	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Penketh, near Warrington	29.584.55.7	15.7	47.0	40.0	30.0	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Liverpool Observatory	29.584.55.7	15.7	47.0	40.0	30.0	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Manchester	29.584.55.7	15.7	47.0	40.0	30.0	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Eccles	29.584.55.7	15.7	47.0	40.0	30.0	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Castleton Moor	29.584.55.7	15.7	47.0	40.0	30.0	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Wakfield	29.584.55.7	15.7	47.0	40.0	30.0	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Stonyhurst	29.584.55.7	15.7	47.0	40.0	30.0	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Otley	29.584.55.7	15.7	47.0	40.0	30.0	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
York	29.584.55.7	15.7	47.0	40.0	30.0	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Cockermouth	29.584.55.7	15.7	47.0	40.0	30.0	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Allenheads	29.584.55.7	15.7	47.0	40.0	30.0	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Silloth	29.584.55.7	15.7	47.0	40.0	30.0	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Carlisle	29.584.55.7	15.7	47.0	40.0	30.0	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Bywell	29.584.55.7	15.7	47.0	40.0	30.0	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
North Shields	29.584.55.7	15.7	47.0	40.0	30.0	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1
Miltoyn, Banbridge, Ireland.	29.584.55.7	15.7	47.0	40.0	30.0	38.1	10.6	36.5	33.7	19.3	53.9	53.9	0.0	88	551	53.9	53.9	0.0	6	6	6	6	6.9	1.1

The highest temperatures of the air were at Wilton, 68°·5; Battersea, 6



[illegible]



Year 1885.	Month.	Pressure of Air in Month.		Temperature of Air in Month.			Mean Tem- perature.		Vapour.		Wind.		Rain.					
		Mean.	Range.	Highest.	Lowest.	Range.	Or all Highest.	Or all Lowest.	Mean.	Elastic Force.	Relative Proportion of		Mean Amount of	Number of Days it fell.	Amount col- lected.			
											N.	E.				S.	W.	
OTLEY, H. W. THORNS, Esq.	Jan.	29.238	1.530	51.0	21.5	59.1	59.1	31.2	grs.	grs.	4	4	18	7.3	1.1	1.1		
	Feb.	29.578	1.806	51.0	22.0	58.8	58.8	31.5	2.1	553	5	5	11	7.7	2.0	2.0		
	Mar.	29.682	0.988	49.3	27.1	59.2	40.6	33.2	2.1	556	10	10	4	5.9	1.1	1.1		
YORK, FIELDEN THORPE, Esq.	Jan.	29.444	1.830	52.0	20.0	52.0	39.9	39.6	0.4	522	4	4	7	15	1.6	1.6		
	Feb.	29.772	1.252	51.0	25.0	51.0	31.5	32.1	2.0	559	9	9	10	5	1.2	1.2		
	Mar.	29.888	1.268	51.0	25.5	51.0	31.5	31.7	2.0	559	10	10	8	—	1.9	1.2		
COCKERMOUTH, HENRY DODGSON, Esq.	Jan.	29.390	1.878	49.5	15.8	53.7	9.3	35.4	2.1	548	47.4	47.4	10	2.3	6.0	17		
	Feb.	29.665	1.924	47.9	9.5	58.4	41.3	30.3	2.1	555	63.4	63.4	7	1.2	5.9	14		
	Mar.	29.732	1.073	51.1	21.4	59.7	42.2	32.8	2.2	554	56.4	56.4	6	1.1	5.6	12		
ALLENHEADS, THOMAS BEWICK, Esq., C.E., M.B.M.S., Assistant to REV. F. REDFORD, M.A., M.B.M.S., ST. PAUL'S PARSONAGE, near SILLOTH, CUMBERLAND.	Jan.	29.384	1.739	46.8	18.7	53.1	35.8	26.5	1.9	529	15.6	15.6	8	12	7.6	29		
	Feb.	28.314	1.720	44.0	14.0	50.7	35.5	25.9	2.7	536	13.8	13.8	7	10	7.5	25		
	Mar.	28.378	0.964	48.7	23.4	53.3	28.0	10.3	32.0	1.67	535	16.7	16.7	2	8	7.1	25	
CARLISLE, I. CARTMELL, Esq., M.B.M.S.	Jan.	29.420	1.850	48.1	19.0	59.1	40.8	31.9	2.1	567	18.2	18.2	7	12	9.6	25		
	Feb.	29.741	1.912	50.3	10.3	40.2	29.7	11.5	34.6	32.9	2.1	568	64.2	64.2	8	9.0	5.5	13
	Mar.	29.873	1.068	51.0	24.1	59.9	45.0	31.9	34.1	38.0	2.1	573	78.3	78.3	4	10	7.4	14
BYWELL, Mr. JOHN DAWSON, under the direction of T. SOWITH, Esq., F.R.S., M.B.M.S.	Jan.	29.337	1.854	51.1	18.5	52.6	40.2	30.3	2.1	549	44.7	44.7	9	6	7.9	14		
	Feb.	29.726	1.862	49.5	13.5	56.0	40.1	31.2	33.8	37.3	53.8	28.1	28.1	3	7	8.4	18	
	Mar.	29.782	1.004	50.5	21.0	55.5	45.0	31.2	33.4	19.7	540	68.0	68.0	8	9	8.1	10	
NORTH SHIELDS, ROBERT SPENCE, Esq.	Jan.	29.335	1.713	52.0	15.0	57.0	42.7	29.9	2.4	549	17.6	17.6	6	15	5.8	23		
	Feb.	29.715	1.805	51.0	12.0	59.0	41.8	28.7	33.5	32.2	537	—	—	8	10	5.1	17	
	Mar.	29.775	1.004	50.0	25.0	59.0	45.0	31.0	36.7	35.0	556	—	—	7	10	5.1	21	
GALWAY, HENRY DEANE, Esq.	Jan.	29.386	1.918	51.8	20.3	51.6	39.8	31.5	2.1	550	19.3	19.3	9	6	13	1.8		
	Feb.	29.755	1.779	50.2	17.0	53.2	38.7	29.6	2.1	553	17.9	17.9	10	8	11	1.5		
MILTON, JOHN SMITH, Esq., A.M.	Jan.	29.225	1.912	51.0	18.0	53.0	40.0	29.8	2.7	532	—	—	9	4	7	2.0		
	Feb.	29.658	2.068	51.0	22.0	59.0	42.2	33.3	2.3	548	30.3	30.3	8	2	10	2.0		
CULLODEN, A. FORBES, Esq., M.B.M.S.	Jan.	29.223	1.873	46.8	17.6	59.2	37.9	30.9	2.3	549	42.6	42.6	6	4	10	1.7		
	Feb.	29.651	1.725	46.9	19.1	55.5	38.5	32.1	2.1	556	32.6	32.6	5	6	8.3	3.3		

The readings of the barometer at Brighton and Aspley seem to be too low, and those of January and March at Hawarden are evidently wrong. At Banbury, on several days in February and March, the readings of the wet bulb thermometer are too near those of the dry bulb. At Battersea the reading of the barometer on the 22d of March at 3 P.M. has been altered from 31·08 in. to 30·978 in. The returns from Norwich for January and Galway for February are too incomplete for publication.

*Second Rain-gauges are placed—*At Aldershot, 25 feet above the ground, the amount collected was 5.9 inches; at Clifton, 60 feet, 5.2 inches; at Guildhall, 40 feet, 4.7 inches; at Cardington, 36 feet, 5.2 inches; at Diss, 6 feet, 7.1 inches; at Wisbeach, 8 feet, 5.5 inches; at Kingsley, 13 feet, 3.9 inches; at Cockermouth, 6½ feet, 5.7 inches; at Allonheads, 6½ feet, 6.5 inches; and at Bann Reservoir (Ireland), latitude 54° 19' N., longitude 6° 2' W., and 440 feet above the level of the sea, 10.6 inches.

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in the quarter ending December 1924, omit the note about the barometer at Battersea.

METEOROLOGY OF ENGLAND,  
DURING THE QUARTER ENDING JUNE 30, 1865.

REMARKS ON THE WEATHER during the QUARTER ending 30th of June 1865. By  
JAMES GLAISHER, ESQ., F.R.S., &c., Secretary of the British Meteorological Society.

THE weather in the month of March was of unusual severity for the season, agricultural operations were very much interrupted, and vegetation had made but little progress. On 5th April a sudden change from wintry weather took place, and from this time till 10th June, a period of 67 days, the temperature, with few exceptions of short duration, was above the average, and at times to considerable amounts, the average daily excess of temperature for these 67 days was more than  $4\frac{1}{2}^{\circ}$ ; from 11th June, a period of a few days cold and a few days warm alternately set in, the former somewhat preponderating, the daily deficiency for this period of 20 days averaging less than  $\frac{3}{8}^{\circ}$ . The sudden change from the low winter temperature on 4th April to high summer temperature at the middle of April caused vegetation to revive very rapidly, and towards the end of the month the very warm temperature stimulated vegetation to a very rapid growth, and effaced every trace of the backward winter season. The fall of rain was small, the sky was mostly clear, and pastures and green crops greatly needed rain. At the beginning of May rain fell in the second week over the whole of the British Islands, and vegetation improved wonderfully; at the end of the month the corn crops were considered fully a fortnight in advance of last year in different parts of the country; haymaking proceeded satisfactorily. At the end of the quarter the harvest reports represented wheat as promising on heavy soils, while on light soils it is said to be short in quantity; oats in many places have failed; barley looked well but needed rain; the potato crop continued healthy, but root crops generally were suffering from the want of rain.

The average temperature of these three months was as high as  $56\frac{1}{4}^{\circ}$ , and there is no instance on record of such a high temperature. The nearest approaches to this value were  $55^{\circ}\cdot 5$  in 1775,  $55^{\circ}\cdot 1$  in 1844,  $55^{\circ}\cdot 7$  in 1846, and  $55^{\circ}\cdot 3$  in 1848.

The degree of humidity of the air in these months was not less remarkable; the air was always dry, the rain fell in heavy showers and in short times, and the air was upon the average 5 parts out of 100 drier than usual.

Notwithstanding the high temperatures, &c. there has not been a single meteorological choleraic symptom shown; there has been no blue mist, the air has been in very general motion, and I have seen none of those conditions so usual during the prevalence of cholera, and there have been none up to the time of writing this, viz., 17th July.

The mean temperature of April was  $52^{\circ} \cdot 3$ , being  $5^{\circ} \cdot 7$  above the average of the preceding 24 years, and  $4^{\circ} \cdot 1$  above that in 1864.

The mean temperature of May was  $56^{\circ}\cdot 1$ , being  $3^{\circ}\cdot 3$  above the average of the preceding

The mean temperature of June was  $60^{\circ} \cdot 2$ , being  $1^{\circ} \cdot 2$  above the average of the preceding 24 years, and  $2^{\circ} \cdot 8$  above that of last year.

The temperature in April, was remarkable indeed; there is no instance on record of one so warm; the nearest approach to this high temperature was in 1844, when it was  $51^{\circ}7$ ; the next was in 1821, viz.,  $50^{\circ}4$ ; and the only other instance, back to 1771, in which the mean temperature exceeded  $50^{\circ}$ , viz.,  $50^{\circ}7$ , was in the year 1779.

The temperature in May was also remarkable, as we have to go back 17 years to find one so warm, viz., in the year 1848; but there are ten other instances, going back to 1771, in which the temperature of this month has exceeded  $56^{\circ}$ .

The usual increase in the mean temperature from March to April is about  $5^{\circ}$ . In this year, at stations south of lat.  $53^{\circ}$ , April was from  $12^{\circ}$  to  $17^{\circ}$  warmer than March; and at stations north of  $53^{\circ}$  the increase was from  $8^{\circ}$  to  $10^{\circ}$ . This great increase is very remarkable.

The mean high day temperatures were above their averages to the amounts of  $9^{\circ}.3$ ,  $3^{\circ}.4$ , and  $2^{\circ}.7$  respectively.

The mean low night temperatures were above their averages in April and May to the amounts of  $2^{\circ}.7$  and  $2^{\circ}.1$  respectively, and below it in June to the amount  $0^{\circ}.2$ .

Therefore the day temperatures throughout the quarter have been above their averages, particularly in the month of April; and the night temperatures in April and May were also above their averages, but to much less amounts than the day excesses. In June the night temperatures were slightly colder than usual.

The daily range of temperature in April averaged  $25^{\circ}$  nearly, being nearly  $7^{\circ}$  greater than the average.

The fall of rain in April was very small; in May it was large, viz.,  $4\frac{1}{2}$  inches, being greater in amount than any collected in May, as far back as the year 1824, when the same amount was collected, which has only been exceeded on one occasion since the year 1815, viz., in 1817, when the rain-fall was as large as 4.6 inches. In June a little more than the average fell, but it fell heavily and nearly altogether. There were 26 dry, consecutive days, in this month without rain.



The mean temperature of the air at Greenwich in the three months ending May, constituting the three spring months, was  $48^{\circ} \cdot 3$ , being  $1^{\circ} \cdot 9$  above the average of the preceding 94 years.

Temperature of														Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
Air.		Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames.									
1865.	Mean.	Diff. from average of 24 years.	Diff. from average of 24 years.	Mean.	Diff. from average of 24 years.	Mean.	Diff. from average of 24 years.		Mean.	Diff. from average of 24 years.	Mean.	Diff. from average of 24 years.	Mean.	Diff. from average of 24 years.	Mean.	Diff. from average of 24 years.	
MONTHS.																	
April -	52.3	+6.5	+5.7	48.2	+4.7	44.0	+3.8	24.8	+6.6	52.5	.288	+0.039	3.3	+0.4			
May -	56.1	+3.6	+3.2	51.7	+2.5	47.5	+1.9	21.6	+1.4	59.8	.329	+0.026	3.6	+0.1			
June -	60.2	+2.1	+1.2	55.0	+0.4	50.4	-0.3	23.7	+3.0	65.5	.386	-0.006	4.1	-0.1			
Mean -	56.2	+4.1	+3.4	51.6	-2.5	47.3	+1.8	23.4	+3.7	59.3	.338	+0.020	3.7	+0.1			

Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.	Reading of Thermometer on Grass.				
1865.	Mean.	Diff. from average of 24 years.	Mean.	Diff. from average of 24 years.	Mean.	Diff. from average of 24 years.	Amount.		Diff. from average of 48 years.	Number of Nights it was		Lowest Reading at Night.	Highest Reading at Night.
										At or below 30°.	Between 30° and 40°.		
April -	73	- 6	in. 29.954	in. +0.193	grs. 542	grs. - 1	in. 0.4	in. -1.4	Miles. 169	2	17	11	29.8
May -	73	- 4	29.768	-0.006	534	- 8	4.4	+2.3	211	1	13	17	29.3
June -	70	- 5	30.029	+0.242	534	+ 3	2.4	+0.5	181	0	8	22	33.1
Mean -	72	- 5	29.917	+0.143	537	- 2	Sum 7.2	Sum +1.4	Mean 187	Sum 3	Sum 38	Sum 50	Lowest 29.3

NOTE.—In reading this table it will be borne in mind that the sign (-) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred or thunder was heard and lightning was seen on 9th April at Banbury, Belvoir, and Grantham; on the 11th at Guernsey and Wakefield; on the 12th at Llandudno, Castleton and York; on the 13th at North Shields; on the 16th at Wakefield; on the 17th at Liverpool and Stonyhurst. On 5th May at Wisbeach, Wakefield, Stonyhurst, and York; on the 7th at Brighton; on the 8th at Guernsey and Camden Town; on the 9th at Osborne, Little Brighton, Wilton, Aldershot, Bath, Clifton, Streatley, Oxford, Great Berkhamstead, Royston, Abington, Cardington, Norwich, and Wisbeach; on the 14th at Brighton; on the 21st at Guernsey, Camden Town, Hawarden, Kingsley, Penketh, Liverpool, Eccles, Castleton, Stonyhurst, Cockermouth, Silloth, and Miltown; on the 22d at Camden Town, Abington, Cardington, Bedford, Norwich, Grantham, Kingsley, Penketh, Manchester, York, Cockermouth, Allenheads, Carlisle, Bywell, and Culloden; on the 23d at Camden Town, Oxford, Great Berkhamstead, Aspley, Royston, Abington, Cardington, Bedford, Wisbeach, Llandudno, Hawarden, Penketh, Liverpool, Wakefield, Stonyhurst, Cockermouth, and Culloden; on the 24th at Allenheads; and on the 28th at Stonyhurst and York. On 3d June at Abington; on the 15th at Brighton, Marlborough, Streatley, Oxford, and Banbury; on the 29th at Wilton; and on the 30th at Silloth.

Thunder was heard but lightning was not seen on 12th April at Llandudno, Holkham, Stonyhurst, Cockermouth, and Allenheads; on the 13th at Eccles, Allenheads, and Bywell; on the 17th at Hawarden and Penketh; on the 18th at Aspley; and on the 27th at Guernsey. On 4th May at Norwich; on the 5th at Guernsey, Oxford, Abington, Llandudno, Grantham, and Penketh; on the 6th at North Shields; on the 9th at Aspley; on the 22d at Guernsey, Streatley, Oxford, Berkhamstead, Lampeter, Llandudno, Hawarden, Eccles, Castleton, Silloth, and North Shields; on the 23d at Streatley, Banbury, Grantham, Eccles, Castleton, and Silloth; on the 24th at Stonyhurst and Cockermouth; and on the 28th at Eccles. On 1st June at Guernsey and Brighton; on the 11th at Great Berkhamstead; on the 14th at Guernsey and Abington; on the 15th at Aspley, Cardington, Grantham, and Allenheads; on the 21st at Carlisle; on the 28th at Brighton; and on the 29th at Wilton.

Lightning was seen but thunder was not heard on 9th April at Oxford and Grantham; on the 12th at Wilton, Clifton, Oxford, and Stonyhurst; on the 13th at Cockermouth; on the 17th at Allenheads; on the 22d at Guernsey; and on the 27th at Stonyhurst. On 3d May at Guernsey and Norwich; on the 9th at Brighton; on the 20th at Aldershot; on the 21st at Brighton, Aldershot, Marlborough, Oxford, Banbury, Great Berkhamstead, Abington, Wakefield, Allenheads, Carlisle, and North Shields; on the 22d at Little Bridy; on the 28th at Cardington; and on the 29th at Brighton, Aldershot, Marlborough, and Aspley. On 1st and 2d June at Abington; and on the 28th at Guernsey and Clifton.

Solar halos were seen on 3d April at Brighton; on the 4th at Culloden; on the 6th at Oxford; on the 7th at Oxford; on the 10th at Liverpool; on the 12th at Brighton, Oxford, and Cardington; on the 13th at Oxford, Great Berkhamstead, and Grantham; on the 17th at Oxford; and on the

26th at Wisbeach and North Shields. On 2d and 3d May at Brighton; on the 4th at Clifton and Lampeter; on the 13th at Brighton, Clifton, and Great Berkhamstead; on the 15th, 16th, and 18th at Brighton; on the 19th at Brighton, Lampeter, and Grantham; on the 21st at Clifton; on the 22d and 24th at Oxford; and on the 31st at Brighton. On 1st June at Brighton; on the 6th at Clifton; on the 10th at Oxford; on the 11th at Abington and Cardington; on the 12th at Great Berkhamstead; on the 14th at Clifton; on the 15th at Oxford and Grantham; on the 23d at Clifton; on the 24th at Clifton and Grantham; on the 25th at Guernsey, Brighton, Clifton, and Oxford; and on the 26th at Oxford.

Lunar halos were seen on 4th April at Penketh, Liverpool, and Cockermouth; on the 5th at Wilton; on the 6th at Wilton, Oxford, Banbury, Aspley, Royston, Cardington, and Wisbeach; on the 7th at Wilton, Great Berkhamstead, Wisbeach, Penketh, Cockermouth, and North Shields; on the 8th at Liverpool; and on the 12th at Oxford and Cardington. On 1st May at Oxford, Penketh, and Eccles; on the 2d at Camden Town, Oxford, and Abington; on the 4th at Allenheads; and on the 5th at Wisbeach; and on the 8th at Oxford, Great Berkhamstead, and Abington.

Aurora were seen on 5th April at Oxford; on the 7th at Castleton; on the 16th at Hawarden and Eccles; on the 19th at Wisbeach; and on the 21st at Eccles. On 1st May at Eccles. On 7th and 18th June at Clifton; and on the 26th and 28th at Norwich.

Snow fell on the 14th and 29th April at Allenheads. Hail fell on one day in April, and on 8 days in May.

Fog was prevalent on 50 days during the quarter, 28 in April, 11 in May, and 11 in June.

At Guernsey the mean temperatures of the air for April, May, and June were  $2^{\circ} \cdot 7$ ,  $0^{\circ} \cdot 7$ , and  $0^{\circ} \cdot 4$  above their respective averages of 21 years. The amount of rain was  $0 \cdot 332$  inch above the average in May, and  $1 \cdot 852$  in. below in June. The number of rainy days in June was 7 below the average. The month of April was very fine, and remarkable for the long continuance of very gentle winds from the eastward. The weather in May was generally fine, with slight but frequent showers. June was remarkable for frequent variations of temperature.

At Osborne during the evening of 5th April low scud was seen, not a thousand feet high, flying past at about 30 miles an hour; wind on the ground hardly perceptible.

At Oxford purple lilac opened on 27th April but was checked by the cold days.

At Great Berkhamstead, from the 5th to the 28th of April, the weather was fine and warm, except a few showery days about the middle of the month; the two last were cold with east wind, and there was a sharp frost on the night of the 30th, the thermometer registering  $27^{\circ}$  on the 1st of May.

The first half of May was showery, and unsettled, the rest of the month fine and hot, with occasional thunder showers. A gale from the W. on the 30th. The month of June was very dry, no rain having fallen from the 3d to the 29th, and it was the warmest since 1859.

At Wisbeach the frosts in the latter part of April and beginning of May were detrimental to vegetation, the wheat in places turned yellow, and the grass was cut off. The thunderstorm of the 28th ult., between 9h. and 12h. P.M., was severely felt in this locality. Some beasts were killed at Upwell.

At Castleton on April 18th at 2h. 30m. P.M. an extraordinary darkness came on, so great as to require artificial light in the mills and schools.

At Eccles on the evening of 16th April a fine aurora illuminated half of the sky for two or three hours, from the magnetic pole to the ecliptic. Thick cumuli gathered beneath it from a kind of mist or nimbus. On the evening of the 21st aurora was visible again.

At Cockermouth during a thunderstorm on 23d May,  $0 \cdot 555$  inch of rain fell in 20 minutes. Heavy rain all day on the 29th. The amount collected between 2h. A.M. on the 29th and 4h. A.M. on the 30th was  $2 \cdot 535$  inches, of this  $1 \cdot 590$  inch fell between 9h. A.M. and 9h. P.M. on the 29th. No such heavy rain-fall has occurred here since November 1861. June was a month of very fine summer weather; rain fell only on 3 days during the month. The average mean temperature of the month in preceding 3 years was  $54^{\circ} \cdot 3$  or  $6^{\circ}$  lower than the present month. The readings of the barometer have been unusually high during the month; from the 4th to the 25th, both inclusive, the column stood above 30 inches. The night temperature between the 28th and 29th was unusually high, the reading of the minimum thermometer at 4 feet from the ground being  $61^{\circ} \cdot 0$ .

At Bywell and its neighbourhood the spring was rather late, but vegetation looks healthy and promising; the showers in the middle of the month were very beneficial, and have done much for the grass. Temperature very variable.

At Great Berkhamstead the blossom on plum trees was very abundant, apple and pear trees about the average; peaches and apricots were not so promising as in past years. It is very seldom that lilac is in bloom so early as April in this vicinity. Laburnum blossoms were generally destroyed by the frost on the 1st May, before they came into bloom. The crops of hay were light; wheat and barley appear promising. Early apples are short, the white frost on May-day having injured the blossom, but there is a better supply of the later sorts. Plums are very abundant, and pears an average crop.

At Bywell the temperature of May was very variable; extreme heat and cold, with heavy falls of rain. Grass is plentiful; garden crops are looking well, also the different kinds of grain are strong and healthy. Farmers are busy sowing turnips; potato planting is quite finished; those planted early are above ground and very promising. Haymaking is now occupying the farmers' time; old land a full average crop, seeds or new land above an average. Wheat, barley, and oats are looking well; potatoes also look pretty well; but turnips only look indifferent from the long drought and required for vegetation generally.

At Allenheads grass crops were in a forward state in May.



At *Cockermouth* the land in April was very dry and favourable for tillage and sowing grain crops. There is now a decided want of rain (1st May). May was a month of fine weather for the crops. Grass is more abundant this spring than it has been for several years past.

At *Silloth* haymaking was almost completed by the end of June—an abundant crop. Wheat crops are looking very promising; barley and oats rather thin from the drought of this month. Potatoes good and plentiful. Turnips have suffered from the fly and drought.

At *Miltown*, Banbridge, the weather in April was most favourable for sowing, which is almost over here, and the season has nearly pulled up what it lost in the early part of the year, as the trees and plants are as far on now as at the same time last year. Wheat and oats present a healthy and vigorous appearance, and early sown flax is coming up well. The grass is in a flourishing condition. June 30th hay crops very abundant, and a large quantity has been already cut. Flax generally requires rain to lengthen it. All the other crops promise well, and fruit is abundant, especially the strawberry. The bleaching has been good this month as there has been so much sunshine.

At *Wisbeach* the corn crops looked very well in April. There was a good show for fruit, the bloom on cherry and pear trees was luxurious, but rather scant on apple trees, with a few exceptions. Rain is much needed for the green crops. The frosts during the last few nights of April checked vegetation. June.—The hay and oat crops are light; the wheat looks very well and forward; an early harvest is anticipated. The rain at the end of the month was very timely as the pastures were very bare.

At *Belvoir* the dry and sunny weather in April exercised a favourable influence on the corn crops, all of which bear a promising appearance. Pastures improved rapidly during the month, and were stocked with cattle earlier than usual. A more favourable spring for garden and agricultural operations has seldom been enjoyed. The promise of blossom on apple and pear trees is less than usual. Plums are likely to be very abundant.

At *Penketh* and its neighbourhood the hay harvest has been successful. The crops have been very heavy, and owing to the very dry weather which has prevailed during the month have, with a few exceptions, been saved without a drop of rain. The potato crops are healthy and good, but the potatoes are small in consequence of the scarcity of rain; turnips, &c. want rain badly, but wheat and other grain are doing well, and there is every prospect of a plentiful and good harvest.

At *Eccles* the weather in April was of a remarkable character. At the commencement of the month there was hardly a leaf visible. Now (1st May) trees of all kinds, except ash, are covered with leaves or small buds.

At *Castleton* the month of April was on the whole very beautiful, and though rather dry vegetation has made rapid progress, and everything is healthy and promising.

Leaf buds first appeared on the *Field Elm* on 6th April at Oxford; and on the 14th at Holkham.

Leaf buds first appeared on the *Oak* on 17th April at Hawarden; on the 18th at Great Berkhamstead; and on the 23d at Helston. On 1st May at Abington; and on the 2d at Holkham.

Leaf buds first appeared on the *Lime* on 16th April at Marlborough; on the 20th at Holkham; and on the 27th at Carlisle.

Leaf buds first appeared on the *Sycamore* on 8th April at Holkham; and on the 17th at Marlborough.

Leaf buds first appeared on the *Horse Chesnut* on the 1st April; on the 6th at Marlborough; and on the 25th at Carlisle.

Leaf buds first appeared on the *Occidental Plane* on 9th April at Oxford.

Leaf buds first appeared on the *Hawthorn* on 7th April at Marlborough; on the 8th at Galway; and on the 11th at Holkham.

Leaf buds first appeared on the *Hazel* on 24th April at Marlborough.

Leaf buds first appeared on the *Walnut* on 27th April at Carlisle.

Leaf buds first appeared on the *Oriental Plane* on 23d April at Holkham; and on the 26th at Carlisle.

The *Hazel* was in leaf on 13th April at Helston; on the 14th at Banbridge; and on the 27th at Marlborough.

The *Walnut* was in leaf on 24th April at Oxford; on the 25th at Wisbeach; and on the 30th at Marlborough. On 18th May at Cockermouth; and on the 20th at Banbridge.

The *Birch* was in leaf on 26th April at Galway.

The *Beech* was in leaf on 26th April at Galway.

The *Ash* was in leaf on 5th April at Penketh.

The *Larch* was in leaf on 18th April at Culloden.

The *Field Elm* was in leaf on 11th April at Marlborough; on the 18th at Holkham; on the 19th at Oxford; on the 20th at Streatley and Hurstpierpoint; on the 21st at Wisbeach; on the 22d at Penketh and Banbridge; and on the 28th at Great Berkhamstead. On 4th May at Abington.

The *Wych Elm* was in leaf on 18th April at Kingsley; on the 24th at Banbridge; and on the 25th at Wisbeach. On 6th May at Abington.

The *Oak* was in leaf on 23d April at Guernsey; on the 25th at Penketh; on the 26th at Marlborough and Oxford; on the 28th at Hurstpierpoint; and on the 30th at Great Berkhamstead. On 4th May at Wisbeach; and on the 6th at Cockermouth.

The *Lime* was in leaf on 13th April at Helston; on the 19th at Wisbeach; on the 20th at Kingsley; on the 21st at Penketh; on the 23d at Guernsey; on the 24th at Oxford; and on the 25th at Great Berkhamstead and Banbridge. On 4th May at Abington.

The *Sycamore* was in leaf on 11th April at Helston; on the 12th at Oxford; on the 19th at Cockermouth; on the 20th at Kingsley and Banbridge; on the 21st at Wisbeach; on the 22d at Marlborough, Great Berkhamstead, and Holkham; on the 23d at Guernsey; and on the 28th at Streatley.

The *Horse Chesnut* was in leaf on 12th April at Miltown, Banbridge; on the 14th at Guernsey; on the 15th at Wisbeach, Holkham, and Kingsley; on the 16th at Oxford and Great Berkhamstead; on the 19th at Llandudno; on the 20th at Cockermouth and Galway; on the 21st at Helston; and on the 22d at Marlborough.

The common *Poplar* was in leaf on 18th April at Wisbeach; on the 19th at Oxford; on the 20th at Banbridge; and on the 25th at Great Berkhamstead.

The *Occidental Plane* was in leaf on 24th April at Oxford; and on the 25th at Galway. On 9th May at Holkham.

The *Hawthorn* was in leaf on 10th April at Marlborough; on the 12th at Aspley and Banbridge; on the 14th at Wisbeach; on the 15th at Penketh; on the 17th at Llandudno; on the 18th at Helston, Great Berkhamstead, and Cockermouth; on the 20th at Holkham; and on the 26th at Carlisle.

The *Apple tree* was in blossom on 7th April at Galway; on the 19th at Helston; on the 23d at Streatley; on the 25th at Marlborough; on the 26th at Great Berkhamstead and Oxford; on the 27th at Wisbeach; on the 29th at Allenheads; and on the 30th at Banbridge. On 2d May at Penketh; and on the 3d at Holkham and Cockermouth.

The *Pear tree* was in blossom on 7th April at Galway; on the 10th at Helston; on the 12th at Allenheads and Banbridge; on the 17th at Penketh; on the 19th at Great Berkhamstead; on the 20th at Holkham; on the 21st at Battersea; on the 23d at Streatley and Oxford; on the 25th at Marlborough, Bedford, and Wisbeach; and on the 29th at North Shields. On 3d May at Cockermouth.

The *Cherry tree* was in blossom on 9th April at Streatley; on the 11th at Hawarden; on the 12th at Galway; on the 15th at Holkham; on the 16th at Marlborough and Great Berkhamstead; on the 17th at Aspley; on the 18th at Oxford; on the 19th at Banbridge; on the 22d at Wisbeach, Kingsley, and Cockermouth; and on the 23d at Silloth.

The *Peach tree* was in blossom on 1st April at Banbridge; on the 6th at Wisbeach; on the 7th at Holkham; on the 9th at Great Berkhamstead and Streatley; on the 10th at Bedford and Penketh; on the 11th at Oxford; on the 13th at Aspley.

Plum trees were in blossom on 6th April at Galway; on the 9th at Helston, Marlborough, and Streatley; on the 11th at Oxford; on the 13th at Holkham; on the 15th at Silloth; on the 19th at Wisbeach and Kingsley; on the 20th at Hawarden; on the 21st at Banbridge; on the 22d at Penketh; and on the 30th at Carlisle.

Apricot trees were in blossom on 1st April at Wilton; and on the 9th at Great Berkhamstead.

Blackthorn was in blossom on 24th April at Silloth.

Lime trees were in flower on 22d June at Great Berkhamstead.

Lilac was in blossom on 26th April at Oxford and Galway; on the 27th at Guernsey; on the 28th at Helston and Streatley; and on the 29th at Great Berkhamstead. On 2d May at Llandudno; on the 6th at Wisbeach and Penketh; on the 7th at Banbridge; on the 11th at Cockermouth; on the 15th at Grantham; on the 19th at Hawarden; and on the 26th at North Shields.

Honeysuckle was in blossom on 26th April at Helston; and on the 29th at Marlborough. On 9th May, at Abington; on the 12th at Oxford; on the 18th at Wisbeach; on the 26th at Great Berkhamstead; and on the 31st at Galway. On 1st June at Miltown, Banbridge; and on the 12th at Penketh.

The *Privet* was in blossom on 7th June at Oxford; on the 10th at Wisbeach; on the 14th at Great Berkhamstead; and on the 30th at Miltown, Banbridge.

The *Mountain Ash* was in blossom on 3d May at Oxford; on the 15th at Great Berkhamstead; and on the 16th at Wisbeach and Banbridge.

The *Syringa* was in blossom on 21st May at Abington; on the 26th at Galway; and on the 28th at Wisbeach. On 10th June at Banbridge.

The *Laburnum* was in blossom on 27th April at Galway. On 3d May at Helston; on the 5th at Oxford; on the 7th at Wisbeach; on the 11th at Abington; on the 17th at Banbridge; on the 18th at Cockermouth and Hawarden; and on the 27th at North Shields.

The *Acacia* was in blossom on 5th June at Oxford; on the 6th at Wisbeach; and on the 14th at Banbridge.

The *Yellow Broom* was in blossom on 24th April at Holkham. On 3d May at Oxford; on the 9th at Banbridge; and on the 17th at Marlborough.

The *White Broom* was in blossom on 13th May at Banbridge.

The *Horse Chesnut* was in blossom on 25th April at Galway.

Wheat was in flower on 10th May at Cardington; on the 22d at Grantham; and on the 23d at Silloth. On 13th June at Oxford; and on the 21st at Guernsey.

Wheat was in ear on 27th May at Hurstpierpoint; on the 7th at Abington; on the 14th at Penketh and Kingsley; and on the 15th at Cockermouth and Aspley; on the 17th at Silloth; on the 18th at Banbridge; and on the 25th at Bywell.

Barley was in flower on 17th May at Cardington; on 11th June at Aspley.

Barley was in ear on 19th May at Marlborough; on 5th June at Cardington; on the 15th at Abington and Bywell; on the 16th at Grantham; on the 17th at Aspley; and on the 20th at Cockermouth.

Oats were in ear on 21st June at Penketh; and on the 27th at Cockermouth.



Rye was in ear on 13th May at Aspley.  
 Cherries were ripe on 18th June at Penketh; and on the 25th at Miltown, Banbridge.  
 Currants were ripe on 20th June at Great Berkhamstead.  
 Strawberries were ripe on 17th June at Great Berkhamstead.  
 White Hepatica in blossom on 2d April at North Shields.  
 Blue Violet in blossom on 9th April at North Shields.  
 Violet in blossom on 1st April at Aspley.  
 Primrose in blossom on 6th April at Aspley.  
 White Violet in blossom on 9th April at North Shields.  
 Primula in blossom on 9th April at Aspley.  
 Anemone in blossom on 9th April at Aspley; and on the 23d at North Shields.  
 Daffodil in blossom on 9th April at Aspley; and on the 11th at North Shields.  
 White Alpin Auricula in blossom on 11th April at North Shields.  
 Jerusalem Cowslip in blossom on 16th April at North Shields.  
 Flowering Currant in blossom on 17th April at North Shields.  
 Auricula in blossom on 21st April at North Shields.  
 Red Fumatory in blossom on 22d April at North Shields.  
 Purple Fumatory in blossom on 22d April at North Shields.  
 Double Red Daisy in blossom on 24th April at North Shields.  
 Blue Periwinkle in blossom on 27th April at North Shields.  
 Pyrus Japonica in blossom on 10th April at Aspley.  
 Ribes in blossom on 10th April at Aspley.  
 Gentiana Verna in flower on 3d May at North Shields.  
 Yellow Narcissus in flower on 5th May at North Shields.  
 Yellow Allysum in flower on 6th May at North Shields.  
 Wallflower in flower on 6th May at North Shields.  
 Primula Farinosa Narcissus in flower on 6th May at North Shields.  
 Dwarf Blue Iris in flower on 14th May at North Shields.  
 Double White Saxifrage in flower on 19th May at North Shields.  
 White Squil in flower on 19th May at North Shields.  
 Tulips were in flower on 20th May at North Shields.  
 Blue Hyacinth in flower on 20th May at North Shields.  
 London Pride in flower on 21st May at North Shields.  
 Geranium Pheum in flower on 21st May at North Shields.  
 White and Purple Lilac in flower on 23d May at North Shields.  
 Double White Narcissus in flower on 24th May at North Shields.  
 Laburnum in flower on 24th May at North Shields.  
 Swallows were first seen at Osborne on 4th April; at Wilton on the 5th; at Aspley, Holkham and Miltown on the 7th; at Helston and Grantham on the 6th; at Oxford on the 10th; at Alder shot, Castleton, and Silloth on the 13th; at Hurstpierpoint and Bywell on the 14th; at Streatham and Cockermouth on the 15th; at Galway on the 16th; at Cardington, Wisbeach, and Kingsley on the 17th; at Stonyhurst on the 18th; at Hawarden on the 19th; at Great Berkhamstead on the 20th; at Clifton and Llandudno on the 22d; at Truro and Penketh on the 23d; at Allenheads on the 24th; at Wakefield and Culloden on the 26th; and at Marlborough and Carlisle on the 28th.  
 The Cuckoo was first heard at Marlborough on 8th April; at Stonyhurst on the 10th; at Helston on the 12th; at Alderhot on the 13th; Hurstpierpoint, Barnstaple, Great Berkhamstead, and Wisbeach on the 14th; at Truro on the 16th; Osborne, Streatley, and Cardington on the 17th; at Holkham and Hawarden on the 18th; at Miltown on the 20th; at Llandudno and Allenheads on the 21st; at Penketh on the 23d; at Clifton and Culloden on the 24th; at Kingsley and Cockermouth on the 25th; at Galway on the 28th; and at Wakefield and Bywell on the 29th.  
 The Nightingale was first heard on 11th April at Cardington; on the 14th at Hurstpierpoint; on the 15th at Wisbeach; on the 16th at Royston; on the 17th at Aldershot; on the 18th at Aspley, and on the 23d at Holkham. On 23d May at Penketh.  
 The Hawfinch was first seen on 3d April at Marlborough.  
 The Corncrake was first seen on 28th April at Galway.

MONTHLY METEOROLOGICAL TABLE FOR THE QUARTER ENDING JUNE 30th, 1865.  
 The Observations have been reduced to Mean values by Glaisher's Barometrical and Diurnal Range Tables, and the Hygrometrical results have been deduced from his second edition of Hygrometrical Tables.

Year 1865.	Months.	Names of Stations and Observers.	Pressure of Atmosphere in Month.			Temperature of Air in Month.			Vapour.			Mean Reading of Thermometer.			Wind.			Rain.		
			Mean.	Range.	Mean.	Highest.	Lowest.	Range.	Mean.	Short of Saturation.	Elastic Force.	Maximum in Range of Sun.	Minimum on Grass.	Estimated Strength.	N.	E.	S.	W.	Mean Amount of Cloud.	Mean Amount of Rain.
April	29-876	QUERNEY	0.726	70.5	37.0	37.0	37.0	37.0	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4
May	29-737	SAMUEL ELLIOTT HOBKINS, Esq., M.D., F.R.S., M.B.M.S.	0.737	71.0	37.0	37.0	37.0	37.0	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4
June	29-904	HELSTON	0.737	71.0	37.0	37.0	37.0	37.0	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4
April	29-029	MATTHEW P. MOYLE, Esq., M.R.C.S.	0.729	70.5	37.0	37.0	37.0	37.0	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4
May	29-857	TRURO	0.757	71.0	37.0	37.0	37.0	37.0	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4
June	29-154	C. BARNHAM, Esq., M.D.	0.754	71.0	37.0	37.0	37.0	37.0	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4
April	29-003	VENTNOR (Isle of Wight), F.L.S.	0.703	70.5	37.0	37.0	37.0	37.0	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4
May	29-848	OSBORNE	0.748	71.0	37.0	37.0	37.0	37.0	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4
June	29-169	J. R. MANS, Esq.	0.769	71.0	37.0	37.0	37.0	37.0	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4
April	29-024	BOURNEMOUTH near Poole, M.B.M.S.	0.724	70.5	37.0	37.0	37.0	37.0	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4
May	29-879	W. S. FAULA, Esq., M.D., M.B.M.S.	0.779	71.0	37.0	37.0	37.0	37.0	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4
June	29-025	WORTHING, M.B.M.S.	0.725	70.5	37.0	37.0	37.0	37.0	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4
April	29-024	LITTLE BRIDY (Dorset), M.B.M.S.	0.724	70.5	37.0	37.0	37.0	37.0	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4
May	29-879	ST. JOHN'S COLLEGE (Hurstpierpoint), Rev. JOHN GORHAM, M.A.	0.779	71.0	37.0	37.0	37.0	37.0	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4
June	29-025	WILTON HOUSE, near Salisbury, T. CHALLIS, Esq.	0.725	70.5	37.0	37.0	37.0	37.0	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4
April	29-707	BARNSTAPLE, T. MACKRELL, Esq.	0.707	70.5	37.0	37.0	37.0	37.0	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4
May	29-534	ALDERSHOT CAMP, JOHN ARNOLD, M.S.C., M.B.M.S.	0.534	53.0	34.0	34.0	34.0	34.0	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4
June	29-748	DOWNSIDE COLLEGE (near Bath), Rev. J. E. SNOW.	0.748	74.0	37.0	37.0	37.0	37.0	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4



Year 1865.	Months.	Names of Stations and Observers.	Pressure of Atmosphere in Month.		Temperature of Air in Month.		Mean Temperature.		Mean Temperature.		Vapour.		Mean Reading of Thermometer.		Wind.		Rain.								
			Range.	Mean.	Range.	Lowest.	Highest.	Range.	Mean.	Lowest.	Highest.	Elastic Force.	Short of Saturation.	Mean Degree of Humidity.	Mean Weight of a cubic foot of Air.	Maximum in Days of Sun.	Minimum on Grass.	Estimated Strength.	Relative Proportion of		Mean Amount of Cloud.	Number of Days in Fall.	Amount collected.		
																			N.	E.				W.	
April	29-60	MARLBOROUGH COLLEGE, REV. THOMAS A. PRESTON, M.A., M.B.M.S.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
May	29-60	MARLBOROUGH COLLEGE, REV. THOMAS A. PRESTON, M.A., M.B.M.S.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
June	29-60	MARLBOROUGH COLLEGE, REV. THOMAS A. PRESTON, M.A., M.B.M.S.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
April	29-60	CLIFTON (Bristol), W.C. BURDER, Esq., F.R.A.S., M.B.M.S.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
May	29-60	CLIFTON (Bristol), W.C. BURDER, Esq., F.R.A.S., M.B.M.S.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
June	29-60	CLIFTON (Bristol), W.C. BURDER, Esq., F.R.A.S., M.B.M.S.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
April	29-60	ROYAL OBSERVATORY, THE ASTRONOMER ROYAL.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
May	29-60	ROYAL OBSERVATORY, THE ASTRONOMER ROYAL.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
June	29-60	ROYAL OBSERVATORY, THE ASTRONOMER ROYAL.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
April	29-60	GUILDHALL, W. HAYWOOD, Esq., C.E.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
May	29-60	GUILDHALL, W. HAYWOOD, Esq., C.E.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
June	29-60	GUILDHALL, W. HAYWOOD, Esq., C.E.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
April	29-60	BATTERSEA TRAINING COLLEGE, J.P. FAUTHOPE, Esq.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
May	29-60	BATTERSEA TRAINING COLLEGE, J.P. FAUTHOPE, Esq.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
June	29-60	BATTERSEA TRAINING COLLEGE, J.P. FAUTHOPE, Esq.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
April	29-60	STREATHLEY VICARAGE (Berke), Rev. J. Scatter, M.A., M.B.M.S.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
May	29-60	STREATHLEY VICARAGE (Berke), Rev. J. Scatter, M.A., M.B.M.S.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
June	29-60	STREATHLEY VICARAGE (Berke), Rev. J. Scatter, M.A., M.B.M.S.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
April	29-60	CAMDEN TOWN, G.J. SYMONS, Esq., M.B.M.S.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
May	29-60	CAMDEN TOWN, G.J. SYMONS, Esq., M.B.M.S.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
June	29-60	CAMDEN TOWN, G.J. SYMONS, Esq., M.B.M.S.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
April	29-60	RADCLIFFE OBSERVATORY, (Oxford), Rev. R. Main, M.A., F.R.S., F.R.A.S.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
May	29-60	RADCLIFFE OBSERVATORY, (Oxford), Rev. R. Main, M.A., F.R.S., F.R.A.S.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
June	29-60	RADCLIFFE OBSERVATORY, (Oxford), Rev. R. Main, M.A., F.R.S., F.R.A.S.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
April	29-60	BANBURY (Oxon), W. JOHNSON, Esq., F.R.A.S., M.B.M.S.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
May	29-60	BANBURY (Oxon), W. JOHNSON, Esq., F.R.A.S., M.B.M.S.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
June	29-60	BANBURY (Oxon), W. JOHNSON, Esq., F.R.A.S., M.B.M.S.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
April	29-60	GREAT BERRKHAMPTON, WILLIAM SQUIRE, Esq., M.B.M.S.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
May	29-60	GREAT BERRKHAMPTON, WILLIAM SQUIRE, Esq., M.B.M.S.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
June	29-60	GREAT BERRKHAMPTON, WILLIAM SQUIRE, Esq., M.B.M.S.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
April	29-60	HARTWELL HOUSE, Rev. R. Main, M.A., F.R.S., F.R.A.S.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
May	29-60	HARTWELL HOUSE, Rev. R. Main, M.A., F.R.S., F.R.A.S.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
June	29-60	HARTWELL HOUSE, Rev. R. Main, M.A., F.R.S., F.R.A.S.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
April	29-60	ASPLEY (Bedfordshire), Rev. G. W. MAHON, M.A.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
May	29-60	ASPLEY (Bedfordshire), Rev. G. W. MAHON, M.A.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
June	29-60	ASPLEY (Bedfordshire), Rev. G. W. MAHON, M.A.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60
April	29-60	ROYSTON (Hertfordshire), HALE WORTHAM, Esq., F.R.A.S., M.B.M.S.	29.60-29.60	29.60	29.60-29.60	29.60	29.60	29.60-29.60</																	







# METEOROLOGY OF ENGLAND,

DURING THE QUARTER ENDING SEPTEMBER 30, 1865.

REMARKS ON THE WEATHER during the QUARTER ending 30th of September 1865. By  
JAMES GLAISHER, ESQ., F.R.S., &c., Secretary of the British Meteorological Society.

During the first three weeks of this quarter the weather was unsettled; the temperature of the air was alternately in excess and defect. Rain fell frequently between the 6th and the 18th of July all over the British Islands, and during this period harvest work proceeded very slowly; some complaints were heard of bright mildew. The potato crop which had needed moisture became very promising after the rain. About the 20th of the month the period changed from a cloudy and wet to one clear and dry, which proved most beneficial to the growing as well as to the maturing crops. Till the 30th day the temperature was in excess to the amount of  $2^{\circ}$  daily. On the 31st the weather changed again to cold and wet; harvest work was a good deal interrupted, and up to this time no mention was made of the potato disease; but, in the first week of August indications of the disease were seen both in Ireland and England. The weather continued unsettled, rain fell heavily in various parts of the country, and the deficiency of daily temperature amounted to  $3^{\circ}$  daily. Harvest work for several days together was stopped, and much uneasiness was felt as to the crops being greatly damaged, as by far the larger portion of those of the United Kingdom was still standing. The potato crop also displayed increased symptoms of disease. On the 20th day the weather improved a little, rain fell, and there were intervals of bright sunshine. From the 20th day to the end of the month the temperature was in excess to the amount of  $1^{\circ}$  daily. The month of August was very unfavourable to the crops.

With the month of September came an auspicious change, the temperature was high, there was but little cloud, either night or day; the sun shone with great brilliancy, harvest work proceeded simultaneously over England, Ireland, and Scotland. In many places very little rain fell, not amounting in the whole month to one-tenth of an inch; the greatest fall at any place was 1.9 in. at Cockermouth in Cumberland. The reading of the barometer was remarkably high. The temperature frequently exceeded  $80^{\circ}$  at places south of  $53^{\circ}$  latitude, and in some cases to  $85^{\circ}$ ,  $86^{\circ}$ , and  $87^{\circ}$ . The average daily excess of temperature for the whole month was  $7\frac{1}{4}^{\circ}$ , and proved to be the hottest month of the year.

In consequence of this remarkable weather, the cereal harvest was completed in every part of the United Kingdom earlier than it has been for many years past. The yield of the wheat crop was spoken of as variable both in quality and quantity, and was thought to fall somewhat short of an average.

The barley crop was the largest of the cereals. At the end of the month rain was much needed to assist the working of the plough, and for cattle, as many ponds were dried up.

The mean temperature of these three months was  $62^{\circ}5$ ; in the year 1859 for the same period it was  $62^{\circ}8$ ; in 1857 was  $63^{\circ}3$ ; in 1846 it was  $62^{\circ}6$ ; in 1825 was  $62^{\circ}3$ ; in 1818 was  $63^{\circ}5$ ; in 1780 was  $62^{\circ}7$ , and in 1779 was  $63^{\circ}2$ . In all other years back to 1771 it was below  $62^{\circ}$ .

The mean temperature of July was  $63^{\circ}8$ , being  $2^{\circ}1$  above the average of the preceding 24 years, and  $2^{\circ}0$  above that of last year.

The mean temperature of August was  $59^{\circ}9$ , being  $1^{\circ}4$  below the average of the preceding 24 years, and  $0^{\circ}3$  above that of last year.

The mean temperature of September was  $63^{\circ}9$ , being  $7^{\circ}$  above the average of the preceding 24 years, and  $7^{\circ}$  above that of last year.

The temperature of September was remarkable indeed; back to 1771 there is no instance of one so warm; the nearest approach to this high temperature was  $60^{\circ}3$  in 1858;  $60^{\circ}1$  in 1846;  $60^{\circ}7$  in 1818;  $62^{\circ}3$  in 1815;  $60^{\circ}8$  in 1795; and  $60^{\circ}7$  in 1779; so that this month is more than  $1\frac{1}{2}^{\circ}$  of higher temperature than any on record.

Equally, if not more remarkable, is the average temperature of the six months ending September, which, notwithstanding the low temperature in August, which was  $1\frac{1}{4}^{\circ}$  nearly below its average, the period ranks higher than any on record. The mean temperature of the six months from April 1865 to September 1865 is  $59^{\circ}37$ ; in 1859 for the same period it was  $58^{\circ}23$ ; in 1857 it was  $58^{\circ}58$ ; in 1846 it was  $59^{\circ}13$ ; in 1818 was  $58^{\circ}58$ ; in 1775 it was  $58^{\circ}1$ ; and there is no other instance back to 1771 of a temperature reaching  $58^{\circ}$ . The only one closely approximate to the period just passed was in 1846, which was nearly  $0^{\circ}2$  lower; still this difference, though small, is considerable, considering the period is one half of a year.

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The mean high day temperatures were above their averages in July and September, to the amounts of  $2^{\circ}0$  and  $9^{\circ}1$ ; and below it in August to the amount of  $1^{\circ}9$ .

The mean low night temperatures were above their averages in July and September to the amounts of  $1^{\circ}5$  and  $4^{\circ}8$ , and below it in August to the amount of  $1^{\circ}6$ .

Therefore both the day and night temperatures were above their averages in July and September, and were both below in August. The excess of  $9^{\circ}$  by day and  $5^{\circ}$  by night in September are very remarkable, in both cases being higher than any before met with.

During the high temperature in September there was less than one half the usual amount of cloud; the air was bright and clear; there was no meteorological choleraic symptom whatever, and indeed there has been none in the exceptional period of six months from April.

The mean temperature of the air at Greenwich in the three months ending August, constituting the three summer months, was  $61^{\circ}3$ , being  $1^{\circ}2$  above the average of the preceding 94 years.

The daily ranges of temperature in July and August were nearly of their average values; in September they averaged  $23^{\circ}$  nearly, and were  $4\frac{1}{2}^{\circ}$  above their usual value.

The fall of rain in August exceeded its average by  $1\frac{1}{4}$  inch; in September was nearly  $2\frac{1}{4}$  inches less than the average for that month; and in the quarter was one seventh part deficient.

The pressure of the atmosphere was below its average, both in July and August, but exceeded it in September by  $\frac{1}{4}$  of an inch. The reading of the barometer in this month was higher than any on record in September, and was higher than in any month since February.

Temperature of															Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
1865. MONTHS.	Air.			Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames.								
	Mean.	Diff. from average of 24 years.	Diff. from average of 24 years.	Mean.	Diff. from average of 24 years.	Mean.	Diff. from average of 24 years.	Mean.	Diff. from average of 24 years.		Mean.	Diff. from average of 24 years.	Mean.	Diff. from average of 24 years.				
July	63.8	+2.4	+2.1	38.6	+1.3	54.2	+0.6	21.4	+0.6	65.9	in. .421	+0.008	grs. 4.7	gr. +0.1				
Aug.	69.9	+0.8	-1.4	59.4	-1.0	53.4	-0.4	19.4	-0.3	64.2	.409	-0.009	4.5	-0.1				
Sept.	63.9	+7.5	+7.0	59.5	+5.7	55.9	+5.0	22.8	+4.3	65.7	.447	+0.009	5.0	+0.8				
Mean	62.5	+3.0	+2.6	58.2	+2.0	54.5	+1.7	21.2	+1.5	65.3	.426	+0.023	4.7	+0.3				

1865. MONTHS.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.	Reading of Thermometer on Grass.				
	Mean.	Diff. from average of 24 years.	Mean.	Diff. from average of 24 years.	Mean.	Diff. from average of 24 years.	Amount.	Diff. from average of 50 years.		Number of Nights it was			Lowest Reading at Night.	Highest Reading at Night.
										At or below 30°.	Between 30° and 40°.	Above 40°.		
July	72	-6	in. 29.796	-0.007	grs. 527	-1	in. 2.3	-0.3	Miles. 212	0	1	30	39.2	60.8
Aug.	80	+3	29.712	-0.082	529	0	4.0	+1.6	210	5	5	26	36.1	55.3
Sept.	76	-5	30.071	+0.254	531	-3	0.2	-2.2	157	0	5	25	33.2	59.4
Mean	76	-3	29.860	+0.055	529	-1	Sum 6.5	Sum -0.9	Mean 193	Sum 0	Sum 11	Sum 81	Lowest 33.2	Highest 60.5

NOTE.—In reading this table it will be borne in mind that the sign (-) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred or thunder was heard and lightning was seen on July 6th at Guernsey, Brighton, Aldershot, Clifton, Streatley, Camden Town, Oxford, Great Berkhamstead, Royston, Abington, Cardington, Diss, Wisbeach, Belvoir, Grantham, Cockermouth, and Silloth; on the 7th at Abington, Cardington, Bedford, Diss, Wisbeach, Belvoir, Grantham, Manchester, and Silloth; on the 8th at Helston, Clifton, Great Berkhamstead, Royston, Abington, Cardington, Bedford, Diss, Norwich, Wisbeach, Belvoir, Grantham, Liverpool, and Castleton; on the 9th at Ensleigh, Great Berkhamstead, Royston, Abington, Cardington, Wisbeach, Belvoir, and Grantham; on the 10th at Streatley, Abington, Cardington, and Diss; on the 11th at Brighton, Ensleigh, Cardington, Diss, and Belvoir; on the 12th at Belvoir; on the 16th at Brighton, Camden Town, and Diss; on the 17th at Brighton, Cardington, Bedford, and Wisbeach; on the 18th and 19th at Castleton; and on the 24th at Royston, Abington, and Cardington. On 1st August at Diss; on the 2d at Llandudno; on the 3d at Brighton, Aldershot, Ensleigh, Streatley, Camden Town, Great Berkhamstead, Cardington, and Bedford; on the 6th at Kingsley, Penketh, Liverpool, Eccles, Castleton, and Stonyhurst; on the 7th at Diss; on the 10th at Brighton, Camden Town, Great Berkhamstead, Diss, and Llandudno; on the 11th at Aldershot and North Shields; on the 12th at Helston and Clifton; on the 13th at Grantham and North Shields; on the 16th at Clifton, Cardington, Grantham, Kingsley, Wakefield, and York; on the

23d at Guernsey; and on the 24th at Ensleigh, Clifton, Camden Town, Great Berkhamstead, Cardington, and Bedford. On 9th September at Brighton, Aldershot, and Camden Ton.

Thunder was heard but lightning was not seen on 6th July at Oxford, Bedford, Norwich, and Carlisle; on the 7th at Helston and Stonyhurst; on the 8th at Oxford, Diss, and Stonyhurst; on the 9th at Wilton, Brighton, and Diss; on the 10th at Brighton, Hawarden, Castleton, Stonyhurst, and North Shields; on the 11th at Wisbeach and Stonyhurst; on the 16th at Oxford; on the 17th at Guernsey, Wilton, Streatley, Great Berkhamstead, Royston, Abington, Diss, and Norwich; on the 18th at Carlisle; on the 19th at Liverpool, Stonyhurst, Allenheads, and Silloth; on the 20th at Miltown; on the 22d at Cardington; on the 24th at Oxford and Great Berkhamstead; on the 27th at Guernsey and Great Berkhamstead; and on the 28th at Leeds. On 1st August at Great Berkhamstead; on the 2d at Oxford and Great Berkhamstead; on the 3d at Oxford; on the 6th at Clifton and Eccles; on the 7th at North Shields; on the 10th at Guernsey; on the 11th at Oxford; on the 12th at Wakefield; on the 13th at Stonyhurst; on the 16th at Great Berkhamstead, Bedford, Hawarden, Penketh, and Miltown; on the 18th at Grantham; on the 22d at Silloth, Bywell, and North Shields; and on the 24th at Royston. On the 9th September at Streatley; and on the 28th at Guernsey.

Lightning was seen but thunder was not heard on 9th July at Brighton; on the 16th at Guernsey, Streatley, Abington, and Cardington; on the 17th at Camden Town; on the 18th at Hawarden; on the 19th at Allenheads; on the 21st at Royston; on the 22d at Brighton; and on the 26th at Royston. On the 1st August at North Shields; on the 2d at Guernsey and North Shields; on the 3d at Clifton; on the 10th at Oxford and Cardington; on the 11th at Cockerthorpe; on the 12th at Wilton, Aldershot, Camden Town, Oxford, Cardington, and Penketh; on the 13th at Helston and Llandudno; on the 16th at Brighton and Cardington; on the 22d at Brighton, Royston, Cardington, Penketh, Castleton, Stonyhurst, Cockerthorpe, Allenheads, and Carlisle; on the 24th at Brighton, Wilton, Oxford, and Wisbeach; and on the 27th at Oxford. On 9th September at Clifton and Great Berkhamstead; on the 15th at Clifton; on the 16th at Brighton; and on the 27th at Guernsey.

At Eccles on 8th July, during a thunderstorm, a horse was killed by the electric fluid near Peel Park, Salford, whilst passing with a cab. On the same day the electric fluid entered a house in Manchester, but did no damage.

Solar halos were seen on 5th July at Clifton and Grantham; on the 19th, 20th, and 21st at Oxford; on the 22d at Clifton; and on the 30th at Oxford. On the 6th at Brighton; on the 9th at Brighton and Oxford; on the 20th at Wisbeach; on the 21st at Clifton and Oxford; and on the 27th at Oxford. On 7th September at Penketh; on the 16th at Brighton and Wisbeach; on the 21st at Hawarden; and on the 22d at Brighton and Penketh.

Lunar halos were seen on 7th July at Truro; and on the 10th at Oxford. On the 10th August at Oxford. On the 30th September at Helston.

Aurora were seen on 2d August at Clifton, Diss, and Cockermouth; on the 3d at Clifton; on the 20th at Brighton and Hawarden; on the 25th at Cockermouth; on the 26th at Cardington, Bedford, Hawarden, Cockermouth, and Culloden; and on the 28th at Culloden. On 17th September at Hawarden.

Hail fell on 6th July at Clifton and Abington; on the 7th at Belvoir; on the 8th at Manchester; on the 10th at Streatley; and on the 19th at Carlisle. On 1st August at Oxford; on the 2d at Llandudno and Hawarden; on the 3d at Aldershot, Streatley, Great Berkhamstead, and Ensleigh; on the 6th at Liverpool; on the 16th at Llandudno and Hawarden; and on the 24th at Clifton and Apsley. On 21st September at Cardington.

Fog was prevalent on 40 days during the quarter. On July 4th, 8th, 18th, 24th, 26th, and 27th. On August 2d, 3d, 8th, 17th, 19th, 20th, 21st, 22d, 23d, 24th, 26th, 27th, 28th, and 31st. On September 1st, 3d, 4th, 5th, 6th, 7th, 12th, 13th, 14th, 16th, 17th, 18th, 19th, 20th, 25th, 26th, 27th, 28th, 29th, and 30th.

At Guernsey the mean temperature of the air in July was equal to the average of 21 years; in August it was  $1^{\circ}3$  below, and in September  $4^{\circ}6$  above their respective averages. The amounts of rain in July, August, and September were .01 in. below,  $1^{\circ}4$  in. above, and  $2^{\circ}77$  in. below their respective averages. About half the amount of rain collected in July fell in one night. The number of rainy days in July and September were below their respective averages to the amounts of  $3^{\circ}6$  and  $10^{\circ}$ . The weather in August was variable and stormy, but not unfavourable for the harvest. This September has been the hottest since 1846, and by far the driest for 22 years.

At Great Berkhamstead the month of July was mostly fine and hot from the 5th to the 18th; there were heavy thundershowers which proved serviceable to vegetation; rain fell heavily on the last day. The weather was rainy and unsettled throughout August, and the rainfall is above the average. On the evening of the 24th between 6h. and 8h. there was a violent thunderstorm and waterspout five miles east of this place; only a light shower fell here. September was very warm and dry, nearly all the rain having fallen on the 21st. The mean maximum temperature for the month is the highest recorded since July 1859; the nights were also warm with heavy dews.

At Derby the rainfall in September was less than has fallen there in any other month since regular observations have been taken. The mean of the last 24 years for September is  $2^{\circ}4$  inches.



The high temperature of the month is equally remarkable, as the following figures show. The average reading of the maximum thermometer in September for 21 years is  $63^{\circ} \cdot 2$ , of the minimum during the same period  $46^{\circ} \cdot 8$ . The mean maximum and minimum readings for the present month were  $72^{\circ}$  and  $52^{\circ}$  respectively. On two occasions this September the maximum rose to  $82^{\circ}$ , but in no instance in the above period did it exceed  $76^{\circ}$ , and only once reached that point.

At *Grantham* the month of September was very remarkable as regards temperature, dryness, absence of wind and freedom from cloud. There were some very heavy dews.

At *Eccles* the month of July was unusually hot and dry. The rain-fall here for August has been 1.4 inch. above the average for the month. Heavy dews fell on almost every night in September.

At *Silloth* the highest reading of the thermometer in the shade this summer occurred on the 8th September; and the highest reading of the thermometer in the sun this summer was observed on the 15th.

At *Cockermouth*, July was a month of fine summer weather, nearly of the same mean temperature, but not so dry as the preceding month. September was a month of hot and dry weather. Rain fell on five days only, and more than  $\frac{3}{4}$ ths of the entire amount falling in thirteen hours, during the night between the 9th and 10th. On the 15th the temperature in the shade reached  $81^{\circ} \cdot 3$ , being exactly the same as on the 18th of June, the hottest day during the summer. The heat in the rays of the sun was not, however, so great.

At *Culloden* the mean temperature of July was above the average, and there was some fine hot weather during the month. There were several heavy falls of rain, the most remarkable occurring on the 7th; when between 8h. 10m. A.M. and 8h. 14m. P.M. of that day there fell 2.16 inches, and by 8h. A.M. on the 8th this large amount was increased by 0.77 inch, making the total fall in twenty-four hours amount to 2.93 inches. The wind during this time blew gently from the N.E. to E.N.E., and veering to E.S.E. There had been thunder on the previous day (the 6th), followed by a thick fog at night. The mean temperature of August was below the average, and the weather was unsettled and showery, to the frequent interruption of the harvest. The weather throughout the month of September has been exceedingly fine, bright, and sunny, and unusually dry and hot, the mean temperature being  $2^{\circ} \cdot 69$  above that of the previous month (generally the hottest month of the year), slightly in excess of July, and considerably higher than the average temperature of any previous September within the last twenty-six years.

At *Guernsey* the harvest was ended by the 24th of August.

At *Worthing* the wheat crop is considered below the average, and from the want of rain both the barley and oats are considerably so; from the same cause the hay is also deficient, but root crops are looking tolerably well; the cattle disease prevails, but not extensively, in this district.

At *Wilton*, owing to the excessive dry weather during the last few weeks, the root crops have suffered severely; turnips, which promised well a month since, are now almost worthless. The farmer also complains of a great scarcity of green food for winter keep for their stock; the river and springs are lower than they have been for years at this season. The Jerusalem artichoke, which seldom blossoms naturally in this country, is now in full bloom here.

At *Great Berkhamstead* the harvest became general by the end of July; the crops are about an average. Potatoes are looking healthy, there being no appearance of blight. Strawberries are a general failure. The harvest was nearly completed by the end of August, having been delayed by the rainy weather, but no material injury was done to the corn. The potato disease appeared about the end of the month, but not to any great extent. There is a remarkably large crop of plums and a fair supply of apples and pears.

At *Wisbeach* the harvest commenced generally on 31st July. Red wheat this year produces a better grain than the white; beans well podded. The wheat is not of an average quality. Oats generally light. Root crops and pasture, good. Apples are barely equal to an average. Pears, plums, and wall fruit abundant.

At *Belvoir* harvest operations commenced early in August. Wheat and peas were first ready for the sickle. Rainy weather retarded harvest work, and it was proceeded with throughout the month as opportunities offered. As wheat was exposed, after ripening, to much bad weather, its quality was deteriorated. Barley was damaged in quality by being stained by wet. Oats, not a large crop, also injured by wet. Turnip crop made a healthy growth in August. Wurzel good. Potato disease appeared on the 25th of August, spread rapidly; deficient heat and excess of wet evidently the cause of the malady. Stock doing well, and free from disease; sheep healthy. The unbroken and marvellously fine weather which prevailed throughout September was the drawback of excessive dryness. Early in the month the wheat, barley, and oats, left out in consequence of bad weather in August, were carried. Towards the end of the month the dryness seriously affected turnips, and mildew and fly were destructive. Pastures lost their verdure, and though wonderfully full of grass in August, became bare in September. The potato disease more virulent and general than usual; three fourths of the crop having rotted. Stock healthy.

At *Penketh* several fields of wheat were cut before the end of July, but the wheat harvest was not general. Barley was cut at Hale, about 12 miles further down the river, on the 24th, but there was none cut in this neighbourhood before the 1st of August. The grain crops here generally are

very healthy, and the yield quite up to the average; but in Cheshire, on light sand soils, I have seen wheat very much diseased. Root crops have suffered very much from drought, but are now doing well. The fine weather which prevailed in September has been very unfavourable to root crops in this neighbourhood; turnips are very poor, and have suffered much from the ravages of insects, while the disease, which made its appearance about the middle of the month, has prevailed to a considerable extent among the potato crop.

At *Eccles* the wet weather during August delayed the gathering in of the harvest, though none of it appears to much extent damaged.

At *Cockermouth* the hay crop, which was generally very abundant, mostly secured in good condition by the end of July. Harvest began about the 3d of August, and became general by the middle of the month, the grain being mostly cut by the beginning of September, and all carried by the end of the first week. Crops about an average in this neighbourhood. The potato disease appeared about 10th September, and the farmers are now apprehensive of its being more extensive than last year.

At *Silloth* harvest work was completed about a fortnight earlier than usual. Cereal crops fully an average. Turnips and potatoes good; a little disease among the latter.

At *Culloden*, in consequence of the very fine weather in September, the harvest has been secured in excellent condition, but the dry hot weather of the summer has occasioned considerable deficiency in the bulk and "return" of the grain crops; this remark applies particularly to barley and oats. Potatoes have escaped disease, and promise well, but turnips have everywhere suffered from the long continued dry weather, and mildew is very prevalent.

Wheat was first cut on 22d July at Worthing; on the 24th at Brighton, Oxford, Streatley, Great Berkhamstead, Royston, Cardington, and Hawarden; on the 27th at Abingdon and Diss; on the 31st at Guernsey, Wisbeach, and Penketh; on the 4th August at Silloth; on the 10th at Milltown; on the 21st at Culloden; and on the 24th at North Shields.

Barley was first cut on 1st July at Streatley; on the 19th at Great Berkhamstead; on the 24th at Penketh; on the 26th at Oxford; and on the 29th at Cardington. On the 3d August at Silloth; on the 10th at Abingdon; on the 14th at Culloden; and on the 23d at North Shields. On the 16th September at Hawarden.

Oats were first cut on 25th July at Wisbeach. On the 14th at Abingdon, Stonyhurst, and Milltown; on the 17th at Silloth; on the 22d at Culloden; and on the 25th at Shields. On the 30th September at Hawarden.

Rye was first cut on 24th July at Penketh.

At *Culloden* the peaches, nectarines, and apricots were all grown in the open air, and were an excellent crop this season, the peaches in particular being very large and well-flavoured.

At *Culloden* strawberries were ripe on the 1st July, cherries on the 5th, raspberries on the 9th, currants on the 15th, and gooseberries on the 19th. Apricots on August the 10th, plums on the 22d, and nectarines and peaches on the 25th.

At *Great Berkhamstead* pears were ripe on 24th July, apples on August the 3d, plums on the 15th, and peaches on the 30th.

At *Milltown, Banbridge (Ireland)*, pears were ripe on August the 1st, apples on the 16th, and plums on the 22d.



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	Mean Estimated Strength.	WIND.			Mean Amount of Ozone.	Mean Amount of Cloud.	Rain.
																		N.	E.	W.			
Guernsey	29.593	70.0	51.0	19.0	67.8	57.9	9.9	20.5	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Helston	29.591	70.0	45.0	25.0	67.8	56.3	11.5	11.5	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Truro	29.611	82.0	43.0	39.0	69.8	55.4	14.4	14.4	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Ventnor	29.649	75.0	47.0	28.0	68.8	53.7	15.1	15.1	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Osborne	29.603	82.2	36.3	45.9	72.9	54.3	18.6	18.6	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Bournemouth	29.600	85.0	40.0	45.0	74.1	52.6	21.5	21.5	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Worthing	29.609	79.5	47.0	32.5	69.9	57.5	12.4	12.4	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
St. John's Col. nr. Brighton	29.489	87.2	39.5	50.7	74.4	52.5	21.9	21.9	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Wilton	29.553	82.0	38.0	44.0	75.2	49.6	25.6	25.6	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Barnstaple	29.593	83.0	44.0	39.0	71.3	53.3	18.0	18.0	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Aldershot Camp	29.595	83.5	42.0	41.5	73.1	51.3	21.8	21.8	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Bath	29.589	84.0	40.0	44.0	75.2	50.7	24.5	24.5	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Ensliegh Lansdowne, Bath	29.582	81.0	39.5	41.5	70.9	51.3	19.6	19.6	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Marlborough College	29.620	87.5	35.2	47.3	73.1	50.0	23.1	23.1	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Clifton	29.604	80.4	42.3	38.1	70.5	53.0	17.5	17.5	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Royal Observatory	29.614	80.0	40.0	40.0	74.4	53.1	21.3	21.3	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Guildhall	29.582	82.0	48.5	33.5	71.2	57.6	13.6	13.6	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Battersea	29.627	85.0	40.0	45.0	76.1	55.2	20.9	20.9	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Streatley Vicarage	29.593	85.0	41.5	43.5	73.1	53.9	19.2	19.2	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Camden Town	29.518	81.0	39.0	42.0	72.2	52.0	20.2	20.2	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Banbury	29.518	81.0	39.0	42.0	72.2	52.0	20.2	20.2	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Great Berkhamstead	29.512	84.2	38.0	46.2	72.7	51.1	21.6	21.6	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Hartwell House	29.512	84.2	38.0	46.2	72.7	51.1	21.6	21.6	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Royston	29.607	85.0	40.0	45.0	74.1	52.6	21.5	21.5	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Abington	29.606	87.1	35.4	51.7	75.7	50.9	24.8	24.8	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Cardington	29.598	84.4	39.0	45.4	73.3	52.3	21.0	21.0	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Lampeter	29.553	85.0	35.5	49.5	72.3	51.3	21.0	21.0	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Bedford	29.548	87.0	41.5	45.5	75.3	54.2	21.1	21.1	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Diss (Norfolk)	29.548	87.0	41.5	45.5	75.3	54.2	21.1	21.1	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Wishbech	29.537	84.0	40.0	44.0	73.3	52.3	21.0	21.0	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Llandudno	29.537	84.0	40.0	44.0	73.3	52.3	21.0	21.0	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Derby	29.538	83.0	40.0	43.0	71.0	51.1	20.0	20.0	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Hawarden	29.550	80.0	40.0	40.0	73.3	52.3	21.0	21.0	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Kingsley	29.598	82.1	41.3	40.8	72.5	51.4	21.1	21.1	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Pemketh, near Warrington	29.625	77.8	38.4	39.4	67.7	57.5	10.2	10.2	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Liverpool Observatory	29.625	77.8	38.4	39.4	67.7	57.5	10.2	10.2	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Manchester	29.625	77.8	38.4	39.4	67.7	57.5	10.2	10.2	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Eccles	29.603	82.8	39.8	43.0	70.5	51.5	19.0	19.0	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Wakefield	29.622	82.8	39.8	43.0	70.5	51.5	19.0	19.0	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Stonyhurst	29.552	80.0	39.0	41.0	68.0	50.0	18.0	18.0	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Otley	29.521	79.0	34.0	45.0	67.2	53.9	13.3	13.3	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
York	29.540	81.4	34.0	47.4	68.8	53.3	15.5	15.5	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Cookermouth	29.569	81.3	39.4	41.9	67.9	52.3	15.6	15.6	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Allenheads	29.582	78.0	34.0	44.0	67.4	53.4	14.0	14.0	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Silloth	29.557	79.0	33.0	46.0	67.3	51.2	16.1	16.1	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Carlisle	29.540	78.0	35.0	43.0	67.7	50.3	17.4	17.4	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Bywell	29.634	80.0	40.0	40.0	73.3	52.4	21.0	21.0	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
North Shields	29.643	75.7	42.3	33.4	65.1	52.6	12.5	12.5	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Milton, Banbridge	29.561	79.0	38.0	41.0	67.3	50.3	17.0	17.0	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10
Culloden	29.490	75.1	44.8	30.3	62.6	52.9	9.7	9.7	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	10	10	10

The highest temperatures of the air were at Diss, 87°·5; Brighton, 87°·2; Abington, 87°·1; Bedford, 87°·0; and Aldershot, 86°·9. The lowest temperatures of the air were at Hartwell House, 34°·0; Allenheads, 34°·7; Carlisle, 35°·0; Marlborough College, 35°·4; Abington, 35°·4; and Lampeter, 35°·5. The greatest daily ranges were at Eccles, 20°·7; Wilton, 20°·6; Marlborough College, 20°·1; and North Shields, 19°·5. The least daily ranges were at Ventnor, 9°·7; Guernsey, 9°·9; Liverpool, 10°·4; Culloden, 10°·6; Worthing, 12°·4; and North Shields, 12°·5. The greatest number of rainy days were at Allenheads, 54; Culloden, 44; Royston and Stonyhurst, each 43; Marlborough College, 42; and Eccles, 40. The heaviest falls occurred at Clifton, 12·8 in.; Truro, 10·3 in.; Stonyhurst, 10·1 in.; Lampeter, 9·9 in.; and Ensliegh Lansdowne (Bath), each 9·9 in.; and Helston, 9·3 in. The least falls were at Ventnor, 5·6 in.; Bournemouth, 5·4 in.; Milton, 4·5 in.; Streatley, 5·2 in.; and Wilton and North Shields, each 5·4 in.

QUARTERLY METEOROLOGICAL TABLE FOR THE QUARTER ENDING SEPTEMBER 30th, 1865.

PARALLELS OF  LATITUDE, &c.	Mean Pressure of dry Air reduced to the level of the Sea.	Mean of all Highest Read- ings of the Thermometer.	Mean of all Lowest Read- ings of the Thermometer.	Mean Range of Tempera- ture in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Reading of a Max- imum in Rays of Sun.	Mean Reading of Min- imum on Grass.	Mean Estimated Strength.	WIND.			Mean Amount of Ozone.	Mean Amount of Cloud. Mean of all.	Rain in Inches.			
																		Relative Pro- portion of								
																		N.	E.	W.						
Guernsey	29.593	70.0	51.0	19.0	67.8	57.9	9.9	20.5	60.9	56.3	52.8	4.6	85	85	52.9	52.9	52.9	1	7	6	8	10	10	4.0	38	
The Countess of Devon & Cornwall	29.601	80.5	44.0	36.5	70.4	55.8	8.1	17	14.6	66.6	57.3	4.70	5.1	10	86	539	92.8	52.6	2.0	4	5	7	11	10	4.0	38
Isle of Wight	29.626	78.4	41.7	36.7	70.7	58.5	5.0	18	14.2	62.9	56.6	4.49	5.0	1.4	79	529	111.6	43.4	0.6	4	5	7	12	10	4.0	38
South of latitude 51°	29.593	83.9	41.2	42.7	72.8	54.9	5.9	18	16.6	62.5	54.4	4.39	4.9	1.4	78	529	111.6	43.4	0.6	4	5	7	12	10	4.0	38
Between 51° and 52°	29.595	85.6	40.2	45.4	75.9	52.9	6.8	20.1	17.1	54.9	49.1	4.3	1.3	80	531	106.4	44.7	0.7	5	5	9	13	10	4.0	38	
the 52° and 53°	29.563	85.3	39.6	45.7	75.3	52.4	4.0	20.6	17.1	54.9	49.1	4.3	1.3	80	531	106.4	44.7	0.7	5	5	9	13	10	4.0	38	
latitudes 53° and 54°	29.585	81.4	41.9	39.5	70.8	52.7	3.5	18.1	15.9	58.3	49.2	4.06	4.5	1.3	80	531	106.4	44.7	0.7	5	5	9	13	10	4.0	38
54° and 55°	29.575	80.1	37.7	43.2	68.6	51.0	4.7	17.6	15.8	54.0	45.2	3.94	4.4	1.1	80	530	104.4	45.3	1.1	5	5	9	13	10	4.0	38
North Shields	29.643	75.7	42.5	33.1	59.2	49.3	12.9	15.7	73.5	61.6	58.1	4.3	1.0	81	535	104.4	45.3	1.1	5	5	9	13	10	4.0	38	
Milnew, Bantridge (Ireland)	29.561	79.0	38.6	40.4	67.7	51.1	39.7	16.3	55.2	59.7	57.0	4.1	1.3	76	531	103.9	47.4	2.5	4	4	13	10	10	4.0	38	
Culloden	29.400	73.1	44.5	28.6	63.5	53.9	24.8	16.3	55.2	59.7	57.0	4.03	4.5	0.8	85	532	90.7	47.4	2.5	4	6	11	10	10	4.0	38



Year 1865.	Months.	Names of Stations and Observers.	Pressure of Atmosphere in Month.			Temperature of Air in Month.			Mean Temperature.	Vapour.			Mean Thermometer.		Wind.			Rain. Number of Days it fell.	Amount col- lected.					
			Mean.	Range.	Highest.	Lowest.	Range.	Mean.		Short of Saturation.	Mean Weight of a cubic foot of Air.	Mean Amount of Ozone.	Mean Amount of Cloud.	Relative Proportion of		Estimated Strength.								
														N.	E.		S.			W.				
July	29-100	MARLBOROUGH COLLEGE, REV. THOMAS A. PRESTON, M.A., M.B.M.S. CLIFTON (Bristol).	0.632	0.632	41.4	40.7	74.0	51.8	22.2	61.0	0.8	57	622	0	44.4	0.3	8	13	3.8	17	2.6			
Aug.	29-101		0.632	0.632	41.4	40.7	74.0	51.8	22.2	61.0	0.8	57	622	0	44.4	0.3	8	13	3.8	17	2.6			
Sept.	29-772		0.632	0.632	41.4	40.7	74.0	51.8	22.2	61.0	0.8	57	622	0	44.4	0.3	8	13	3.8	17	2.6			
July	29-713	W.C. RIBBER, Esq., F.R.A.S., M.B.M.S. ROYAL OBSERVATORY, THE ASTRONOMER ROYAL.	0.800	0.800	48.7	30.9	71.7	51.6	17.7	61.5	33.5	40.0	4.6	1.5	52.5	0.4	4	9	5.1	13	4.2			
Aug.	29-633		0.824	0.824	48.7	30.9	71.7	51.6	17.7	61.5	33.5	40.0	4.6	1.5	52.5	0.4	4	9	5.1	13	4.2			
Sept.	29-586		0.875	0.875	48.7	30.9	71.7	51.6	17.7	61.5	33.5	40.0	4.6	1.5	52.5	0.4	4	9	5.1	13	4.2			
July	29-786	GUILDHALL, W. HAYWOOD, Esq., C.E. BATTERSEA TRAINING COLLEGE, J. P. FAUTHORPE, Esq.	0.739	0.739	48.7	30.9	71.7	51.6	17.7	61.5	33.5	40.0	4.6	1.5	52.5	0.4	4	9	5.1	13	4.2			
Aug.	29-810		0.814	0.814	48.7	30.9	71.7	51.6	17.7	61.5	33.5	40.0	4.6	1.5	52.5	0.4	4	9	5.1	13	4.2			
Sept.	29-884		0.739	0.739	48.7	30.9	71.7	51.6	17.7	61.5	33.5	40.0	4.6	1.5	52.5	0.4	4	9	5.1	13	4.2			
July	29-995	STREATHLEY VICARAGE (Berks). Rev. J. SLATTERY, M.A., M.B.M.S.	0.815	0.815	48.7	30.9	71.7	51.6	17.7	61.5	33.5	40.0	4.6	1.5	52.5	0.4	4	9	5.1	13	4.2			
Aug.	29-999		0.800	0.800	48.7	30.9	71.7	51.6	17.7	61.5	33.5	40.0	4.6	1.5	52.5	0.4	4	9	5.1	13	4.2			
Sept.	29-223		0.804	0.804	48.7	30.9	71.7	51.6	17.7	61.5	33.5	40.0	4.6	1.5	52.5	0.4	4	9	5.1	13	4.2			
July	29-817	CAMDEN TOWN. G. J. SIMONS, Esq., M.B.M.S.	0.669	0.669	45.6	33.3	71.9	54.6	16.3	60.7	55.7	44.4	5.1	1.5	52.5	0.4	4	9	5.1	13	4.2			
Aug.	29-744		0.761	0.761	45.6	33.3	71.9	54.6	16.3	60.7	55.7	44.4	5.1	1.5	52.5	0.4	4	9	5.1	13	4.2			
Sept.	29-840		0.795	0.795	45.6	33.3	71.9	54.6	16.3	60.7	55.7	44.4	5.1	1.5	52.5	0.4	4	9	5.1	13	4.2			
July	29-751	RADCLIFFE OBSERVATORY, (Oxford). Rev. R. MAIN, M.A., F.R.S., F.R.A.S. BANBURY (Oxon). W. JOHNSON, Esq., F.R.A.S., M.B.M.S.	0.787	0.787	43.4	35.3	71.7	51.8	19.6	60.9	55.7	44.4	5.1	1.5	52.5	0.4	4	9	5.1	13	4.2			
Aug.	29-771		0.787	0.787	43.4	35.3	71.7	51.8	19.6	60.9	55.7	44.4	5.1	1.5	52.5	0.4	4	9	5.1	13	4.2			
Sept.	29-118		0.468	0.475	43.5	35.5	76.4	54.5	21.9	63.3	54.8	45.0	4.8	1.7	75	632	1	15	14	2.2	5.2	10.1		
July	29-692	Rev. R. MAIN, M.A., F.R.S., F.R.A.S. BANBURY (Oxon). W. JOHNSON, Esq., F.R.A.S., M.B.M.S.	0.731	0.731	79.9	69.4	82.4	72.9	54.4	62.6	55.4	46.9	4.8	1.4	78	625	8	12	12	6.5	6.6	13	2.6	
Aug.	29-692		0.818	0.818	73.5	44.1	89.4	72.1	51.5	20.6	62.1	56.0	44.9	4.6	1.2	80	527	2	10	14	5.2	7.0	15	3.9
Sept.	29-948		0.613	0.613	80.4	49.1	89.4	72.1	51.5	20.6	62.1	56.0	44.9	4.6	1.2	80	527	8	7	8	4.1	3.7	4	0.2
July	29-590	GREAT BERKHAMSTEAD, WILLIAM SQUIRE, Esq., M.B.M.S. HARTWELL HOUSE Mr. HORTON, Assistant to Dr. LEE, F.R.S., F.R.A.S., M.B.M.S. ASPLEY (Bedfordshire). Rev. G. W. MAHON, M.A. ROYSTON (Hertfordshire). HALL WORTHAM, Esq., F.R.A.S., M.B.M.S.	0.710	0.710	84.0	47.0	87.0	73.7	54.3	19.4	63.0	55.3	48.7	4.8	1.6	75	623	6	5	10	4.8	11	3.5	
Aug.	29-497		0.854	0.854	77.0	39.0	85.0	73.7	54.3	19.4	63.0	55.3	48.7	4.8	1.6	75	623	3	8	13	4.8	6.9	16	3.5
Sept.	29-877		0.500	0.500	84.0	39.0	85.0	73.7	54.3	19.4	63.0	55.3	48.7	4.8	1.6	75	623	7	3	8	10	4.8	11	3.5
July	29-575	HARTWELL HOUSE Mr. HORTON, Assistant to Dr. LEE, F.R.S., F.R.A.S., M.B.M.S. ASPLEY (Bedfordshire). Rev. G. W. MAHON, M.A. ROYSTON (Hertfordshire). HALL WORTHAM, Esq., F.R.A.S., M.B.M.S.	0.744	0.744	83.5	45.0	83.5	73.7	54.3	19.4	63.0	55.3	48.7	4.8	1.6	75	623	1	8	13	4.8	6.9	16	3.5
Aug.	29-575		0.744	0.744	83.5	45.0	83.5	73.7	54.3	19.4	63.0	55.3	48.7	4.8	1.6	75	623	1	8	13	4.8	6.9	16	3.5
Sept.	29-833		0.548	0.548	84.0	39.0	85.0	73.7	54.3	19.4	63.0	55.3	48.7	4.8	1.6	75	623	7	3	8	10	4.8	11	3.5
July	29-616	Rev. G. W. MAHON, M.A. ROYSTON (Hertfordshire). HALL WORTHAM, Esq., F.R.A.S., M.B.M.S.	0.700	0.700	44.0	45.0	39.0	75.2	54.3	20.9	64.5	51.2	56.1	4.8	1.5	75	624	4	7	14	5.4	11	2.8	
Aug.	29-616		0.800	0.800	78.0	41.0	87.0	70.8	19.9	63.1	59.8	54.8	48.9	4.9	1.5	80	525	6	3	7	5.4	11	2.8	
Sept.	29-920		0.363	0.363	84.0	30.0	70.5	52.1	24.2	64.0	57.8	47.9	5.3	1.3	80	528	1	8	4	9	10	5.4	6	2.3
July	29-299	Rev. G. W. MAHON, M.A. ROYSTON (Hertfordshire). HALL WORTHAM, Esq., F.R.A.S., M.B.M.S.	0.520	0.520	72.5	20.0	22.5	66.3	57.9	64.4	60.6	53.7	43.3	4.6	1.3	78	621	3	10	12	4.5	15	3.1	
Aug.	29-692		0.702	0.702	83.5	40.0	75.3	53.7	21.6	62.3	55.6	44.8	4.9	1.3	79	626	5	3	10	4.5	15	3.1		
Sept.	29-977		0.769	0.769	78.5	40.2	88.3	70.7	20.4	63.6	53.9	41.6	4.7	1.0	82	531	4	9	13	5.7	18	3.7		
July	29-866	ARINGTON PIGotts, G. PIGOTT, Esq., M.B.M.S. CAMDEN TOWN (New Bedford). Rev. J. SLATTERY, M.A., M.B.M.S.	0.772	0.772	87.1	44.1	43.0	73.2	49.5	25.5	62.4	53.5	44.1	4.5	1.3	80	530	7	6	10	6.1	15	3.6	
Aug.	29-749		0.772	0.772	87.1	44.1	43.0	73.2	49.5	25.5	62.4	53.5	44.1	4.5	1.3	80	530	7	6	10	6.1	15	3.6	
Sept.	29-977		0.769	0.769	78.5	40.2	88.3	70.7	20.4	63.6	53.9	41.6	4.7	1.0	82	531	4	9	13	5.7	18	3.7		

[illegible]



Year 1865.	Months.	Names of Stations and Observers.	Pressure of Atmosphere in Month.			Temperature of Air in Month.			Mean Temperature.		Vapour.		Mean Reading of Thermometer.		Wind.			Mean Amount of		Rain.						
			Mean.	Range.	Highest.	Lowest.	Range.	Or all Highest.	Or all Lowest.	Mean.	Daily Range.	Air.	Dew Point.	Elastic Force.	In a Cubic foot of Air.	Short of Saturation.	Mean Weight of a cubic foot of air.	Maximum in Days of Sun.	Minimum on Grass.		Relative Proportion of			Mean Amount of	Number of Days in Month.	Amount of Rain.
																					N.	E.	S.			
July	1865.	STONYHURST COLLEGE, W. SIDGREAVES, Esq.	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	
Aug.			29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	
Sept.			29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	
Oct.			29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	
Nov.			29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	
Dec.			29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	
Mean			29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	29.480	

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# METEOROLOGY OF ENGLAND, DURING THE QUARTER ENDING DECEMBER 31, 1865.

REMARKS ON THE WEATHER during the QUARTER ending 31st of December 1865. By JAMES GLAISHER, ESQ., F.R.S., &c., Secretary of the British Meteorological Society.

The remarkable fine and dry weather which had prevailed in September continued during the first week in October; the barometer reading during this time was about 30 in.; at the beginning of the second week there were indications of a change, the temperature fell, and the barometer reading decreased on the 12th day to nearly 29 in.; then increased rapidly to 29.9 in. by the 15th, gales of wind were experienced; the weather continued stormy to the end of the month, rain falling in abundance. At the beginning of November there were frequent gales, and much stormy weather; at about the 10th day the weather assumed the aspect of a more settled character, the barometer reading ascended above the average, and was nearly 30.4 in. on the 12th; from the 17th to the 22d the barometer reading decreased very rapidly, and was 28.8 in. on the latter mentioned day, this was accompanied by a fearful gale, acting with ruinous effects on both land and sea. The reading of the barometer was very unsettled during the remainder of the month. The month of December opened with light S.E. winds, the air was mild and warm. The barometer reading increased by the 11th day to 30.8 in. About the middle of the month trees budded and daisies were in blossom. Towards the end of the month the barometer decreased quickly till it was 29.0 in. by the 29th. Frequent and violent gales occurred, causing many shipwrecks. The force of the wind on the last day reached 24 lbs. on the square foot, both at Greenwich and at Liverpool. The temperature during the whole quarter, with the exception of a few days about the middle of October, the beginning of November, and the middle of December, was in excess of the average, to the daily amount of 1.3°.

The mean temperature of October was 50° 9, being 0° 4 above the average of the preceding 24 years, and of the same value as last year.

The mean temperature of November was 44° 8, being 0° 8 above the average of the preceding 24 years, and 2° 8 above that of 1864.

The mean temperature of December was 42° 4, being 2° 1 above the average of the preceding 24 years, and 3° 9 higher than in 1864.

The temperature of the air decreased from September to October by 7° or 8° at Guernsey and Devonshire, but by 10° to 13° at all other parts of the country. November was colder than October by 6° or 7°, and the decrease from November to December was from 1° to 2° only; in some northern places December was even warmer than November.

The mean high day temperatures in the months of October, November, and December were 60° 50' 8, and 46° 7, being 1° 3, 1° 7, and 1° 5 above their respective averages.

The mean low night temperatures were 43° 7, 38° 7, and 38° 1 respectively in these three months. The fall of rain in October was 5.9 in., and in the quarter 9.4 in. The fall for the whole year was 29 in., being about 3.4 in. in excess of the average.

The mean temperature of the air at Greenwich in the three months ending November, constituting the three autumn months, was 53° 2, being 3° 3 above the average of the preceding 94 years.

1865.	MONTHS.	Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
		Air.		Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames.		Mean.	Diff. from average of 24 years.	Mean.	Diff. from average of 24 years.
		Mean.	Diff. from average of 24 years.	Mean.	Diff. from average of 24 years.	Mean.	Diff. from average of 24 years.	Mean.	Diff. from average of 24 years.	Mean.	Diff. from average of 24 years.				
Oct.	—	50.9	+1.2	0	0	0	0	0	0	0	0	in.	—	3.6	—
Nov.	—	44.8	+0.8	49.0	+0.5	47.0	+0.7	16.3	+1.7	35.4	+0.7	23.5	+0.07	3.0	+0.1
Dec.	—	42.4	+0.4	43.2	+1.6	41.4	+1.5	12.1	+0.4	43.9	+0.4	24.1	+0.09	2.0	+0.2
Mean	—	46.0	+2.3	44.4	+1.4	42.6	+1.5	12.3	+0.4	47.5	+0.7	27.5	+0.12	3.1	+0.1

NOTE.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.



Thunder storms occurred or thunder was heard and lightning was seen on October 8th at Osborne, Brighton, and Marlborough; on the 10th at Wilton; on the 11th at Hawarden; on the 17th at Abington and Grantham; on the 24th at Helston and Stonyhurst; on the 25th at Truro and Clifton; on the 26th at Helston and Osborne; on the 27th at Eccles; on the 29th at Truro, Clifton and Allenheads; and on the 30th at Brighton. On 21st November at Guernsey, and on the 24th at Truro. On 19th December at Stonyhurst; and on the 31st at Guernsey.

Thunder was heard but lightning was not seen on 8th October at Guernsey and Battersea; on the 9th at Guernsey; on the 11th at Wisbeach; on the 17th at Wisbeach and Belvoir; on the 27th at Helston, Clifton, and Stonyhurst; and on the 30th at Oxford and Lampeter. On 22d November at Lampeter; on the 25th at Guernsey and Lampeter; on the 26th at Holkham; and on the 31st at Guernsey.

Lightning was seen but thunder was not heard on 7th October at Helston; on the 8th at Guernsey, Truro, Wilton, Aldershot, Great Berkhamstead, Royston, Abington, and Belvoir; on the 9th at Wisbeach; on the 10th at Brighton; on the 11th at Truro, Osborne, Brighton, Wilton, Marlborough, Streatley, Oxford, and Llandudno; on the 14th at Diss; on the 15th at Clifton; on the 20th at Penketh; on the 22d at Halifax; on the 25th at Truro; on the 26th at Brighton, Battersea, Streatley, Kingsley, and Stonyhurst; on the 27th at Brighton, Aldershot, Abington, and Diss; on the 28th at Truro; on the 29th at Aldershot, Marlborough, Liverpool, Castleton, Stonyhurst, Cockermouth, Silloth, and Carlisle. On 4th and 5th November at Guernsey; on the 19th at Culloden; on the 21st at Guernsey, Brighton and Clifton; on the 22d at Brighton, Clifton, Banbury, Abington, Llandudno, Kingsley, and Castleton; on the 24th at Aldershot and Carlisle; on the 25th at Truro; and on the 26th at Guernsey and Brighton. On 1st December at Guernsey, and on the 16th at Marlborough.

Solar halos were seen on 7th October at Penketh; on the 29th at Clifton and Hawarden; on the 16th at Brighton and Grantham; on the 19th and 20th at Stonyhurst; on the 22d at Hawarden and Penketh; and on the 28th at Clifton. On 2d November at North Shields; on the 3d at Clifton and Hawarden; on the 7th at Penketh; on the 13th at Clifton; on the 18th at Oxford, Hawarden and Penketh; on the 20th, 21st, and 23d at Oxford; and on the 27th at Oxford, Penketh and Culloden. On 2d December at Royston, and on the 5th at Wisbeach and Grantham.

Lunar halos were seen on 2d October at Wilton; on the 7th at Penketh; on the 28th at Aldershot, Clifton, Oxford, Great Berkhamstead, Kingsley, Penketh, and Bywell; and on the 31st at Liverpool. On 1st and 2d November at Halifax; on the 3d at Great Berkhamstead; on the 4th at Galway; on the 6th at North Shields; on the 16th at Great Berkhamstead; on the 17th and 23d at Truro; on the 26th at Galway; on the 27th at Clifton, Oxford, Royston, Abington, Wisbeach, and North Shields; and on the 30th at Truro. On 1st December at North Shields; on the 2d at Marlborough and Abington; on the 3d at Wilton, Clifton, Oxford, Grantham, and Kingsley; on the 15th at North Shields; on the 25th at Oxford and Grantham; on the 26th at Aldershot, Oxford, Wisbeach and Grantham; on the 27th at Cardington; on the 28th at Oxford, Cardington, Wisbeach, Grantham, Kingsley, and North Shields; on the 30th at Clifton, Oxford, Royston, Abington, Grantham, and North Shields; and on the 31st at Oxford.

Aurora were seen on 6th October at Cockermouth; on the 7th at Penketh; on the 18th at Llandudno; on the 19th at Wilton, Marlborough, Clifton, Streatley, Oxford, Wisbeach, Belvoir, Grantham, Hawarden, Kingsley, Penketh, Cockermouth, Silloth, Carlisle, Bywell, and North Shields. On 8th November at Silloth and Culloden; on the 9th at Silloth; on the 11th and 15th at Culloden; on the 22d at Oxford; and on the 27th at Great Berkhamstead. On 13th December at North Shields.

At Eccles on Thursday evening the 19th of October at 7h. 30m. a fine Auroral arch of about a degree in width extended over the northern part of the heavens. Its apex, as seen from this station, was about 10 degrees above the horizon, and in the direction of the magnetic pole. Below its western limb, *Arcturus* was seen setting beautifully, and *Cor. Caroli* was brilliantly seen through the brightness of the arch. At eight o'clock the arch began to expand and to break up into streamers, which for more than an hour shot upwards into the sky. Some of the streamers attained the altitude of *Polaris*. The air was comparatively calm when the Aurora was first seen, but as it began to shoot forth into streamers, the wind, which was from the N., rose considerably, and the rays of the streams seemed to oscillate with the air. During the night the thermometer on the grass went down to 28° 7 degrees. This was the lowest reading this thermometer had reached this autumn.

At Cockermouth a remarkable Aurora was seen on the evening of the 19th of October. When first observed at 6h. 50m. it was in the form of a narrow band or arch of white light, spanning nearly the whole heavens from E. to W., commencing in the E. about 15° above the horizon (over the star *Arietis*), it extended to within nearly the same distance of the western horizon, passing over *Corona Borealis*; the crown or summit of the arch being at this time over *Polaris*. It gradually drifted southwards, but not uniformly so, the eastern moving more quickly than the western half, and giving it at one time the appearance of an italic *f*, the concavity of the E. portion being turned to the N., and that of the W. towards the S. The middle or most elevated portions of the band moved more rapidly than either extremity. The former moving from *Vulpecula* or *Delphinus*, whilst the latter only moved from a to *γ Arietis* in the E., and from *Corona* to *Ophiuchi* or a *Hercules* in the W. On reaching these last positions it became gradually fainter, and disappeared about 7h. 2m. P.M. It was a pretty uniform breadth of 5° or 6°, except at the extremities, the E. one tapering to a point, and the W. becoming wider and more diffused. When at its brightest, luminous waves traversed the band rapidly from E. towards W., but obliquely as to its length, each wave of light commencing on one side crossed over to the opposite after a certain distance. This Aurora was preceded by a similar one on the same evening. On the 26th, also, another Auroral arch was seen in the zenith, but could not be well observed owing to the cloudy state of the sky.

At Carlisle on 19th October there was a very brilliant display of the Aurora Borealis or Northern Lights. A segment of the heavens stretching from N.W. to N.E. was completely illuminated, and the Auroral streamers which shot up from the luminous arch towards the zenith, and which were constantly moving and changing their position, formed an object of considerable interest and beauty to the beholder; there was a similar display on the night of the 26th.

Snow fell on October 19th, 26th, and 27th at Allenheads; and on the 29th at Allenheads and Cockermouth; on the 3d at Cockermouth and Allenheads; on the 15th at Royston and Wisbeach; on the 29th at Allenheads; on the 30th at Marlborough, Penketh, Eccles, Allenheads, Bywell, North Shields, and Miltown, Banbridge, Ireland.

Hail fell on October 17th, 18th, 19th, 20th, 26th, 27th, 29th, 30th, and 31st. On November 8th, 21st, 22d, 26th, 27th, and 29th. On December 1st, 2d, 3d, 29th, 30th, and 31st.

Fog was prevalent on 74 days during the quarter; viz., 26 in October, 22 in November, and 25 in December.

At Guernsey the mean temperatures of the air in October and November were 2° 2 and 1° 2 above their respective averages; the fall of rain was also above the average in these two months, being 4° 0 inches in the former and 2° 3 inches in the latter, that of October being the heaviest fall in any month for the last 22 years. The number of rainy days in November was slightly above the average, and in December very much below. The first week in October was remarkably fine; the rest of the month was squally, with boisterous baffling winds. November was stormy, the wind frequently and extensively retrograde. In December the range of the barometer was excessive, with an unusual prevalence of S.E. winds.

At Great Berkhamstead the first week of October was fine and warm, afterwards the weather was wet and windy; more rain was collected than in any month since November 1852. November was fine for the season, till the 14th, afterwards rain fell almost every day; there were stormy gales of wind from the 22d to the 26th. December was overcast and gloomy on most days; a large amount of rain fell from the 28th to the 31st, chiefly in the night hours, with high wind.

At Wisbeach the weather from the 22d to the 23d of November was stormy; the maximum pressure on the 22d was 25 lbs.; on the 24th, 15 lbs.; and on the night of the 25th, 12 lbs.

At Streatley a very remarkable thing in December was the intense gloom caused by the thick coating of clouds, so thick that several days passed without the slightest indication of sun heat on the thermometer with black bulb in vacuo.

At Stonyhurst there was a gale on the 25th of November, the barometer falling from 28° 870 in. at 9 A.M. to 28° 295 in. at 9 P.M. The mean reading of the barometer in December was the highest recorded for that month during the last 18 years, excepting the year 1857. The maximum has been exceeded only in the year 1850, and was the highest reading of the barometer registered in any month since November 1857.

At Cockermouth, from the 20th to the 28th of November, the barometric reading was very low and unsteady; there being four distinct oscillations during that period. Rain fell on only four days during the first half of the month, but there was more or less rain every day from the 16th to 26th inclusive, with boisterous winds. The reading of the barometer at 10 A.M. on 11th December was 30° 766 in., the highest reading recorded here during the past four years. The temperature of December was 1° 7° above that of November.

At Allenheads the last three weeks of October were remarkable for the heavy and almost daily fall of rain.

At Silloth the fluctuations of the barometer from the 20th to the 25th of November are worthy of notice, the readings are corrected for temperature.

20th	-	9 A.M.	-	29° 513 inch.	23d	-	9 P.M.	-	29° 278 inch.
21st	-	9 A.M.	-	28° 951 "	24th	-	2 P.M.	-	28° 276 "
21st	-	9 A.M.	-	28° 859 "	24th	-	9 P.M.	-	29° 231 "
22d	-	11 P.M.	-	28° 470 "	25th	-	9 P.M.	-	28° 649 "
22d	-	11 A.M.	-	28° 470 "	25th	-	11 P.M.	-	28° 558 "
22d	-	9 P.M.	-	28° 760 "					

At 9 A.M. on 11th December the reading of the barometer corrected for temperature and reduced to the level of mean high water was 30° 766 inches. The only time this has been exceeded since 1853 was on the 13th of February 1860, when it was 30° 793 inches.

At Culloden the unusually dry and hot weather experienced in September continued to prevail till the 9th of October, after which day the temperature declined considerably, and the weather became broken and rainy. Snow fell on Ben Wyvis, Ross-shire (elevation 3422 feet), and other northern mountains on the night of the 18th. November continued generally mild throughout, with a dry atmosphere for the season, only 1° 98 in. having fallen; there were slight frosts occasionally during the month, but the temperature was not lower than 22°, and that on the grass. A small covering of snow lay on the ground on the night of the 26th, but it melted away early on the 29th before a fresh breeze from the S.W.

At Belvoir, wheat sowing was interrupted by wet weather, and but little ground could be sown in October, which may be recorded as a most unusual and unfortunate circumstance; the heavy rains benefited the turnip crops, which had suffered from mildew and fly, renewed growths took place, and an evident improvement was visible in both sweeties and white turnips by the end of the month. Mangold wurzel was secured and housed, and the crop was sound, good, and abundant. Potatoes were seriously affected with disease, and fully half the crop was lost. Carrots proved a great crop. Serious losses have occurred amongst lambs, from inflammation, and in some instances from worms in the throat; old sheep are healthy; beasts have escaped disease and are doing well; crops of apples not abundant. Spanish chesnuts ripened well, and were abundant. In November, operations were impeded by the heavy state of the land. Stock healthy.



Root crops tolerably abundant. Potatoes cheap. The weather in December was favourable for agricultural operations, arrears of wheat sowing were made up. Root crops were in good condition, and sufficiently abundant. Sheep healthy and thriving. Beasts, with the exception of one yard, healthy. The beasts in an isolated farm, that stood near Eaton, 3 miles from Belvoir, were attacked early in December with Rinderpest; Arsenicum, 3 dilution, had been given previously; two neighbouring Inspectors were called in, Messrs. Talbot and Goodall, and 13 beasts out of 20 attacked were saved, and are now doing well; great attention was paid to these beasts in the application of stimulants, and in the employment of coverings; the tolerably healthy are elevated perhaps 450 feet above the sea level.

The observer at Culloden says, the rains which fell from 13th October to the end of the month had a most beneficial effect on the turnip crop; mildew, which had previously been prevalent to a great extent, quite disappeared, the roots made considerable progress, increased in size, and put forth fresh leaves. The potato crop was lifted in very good condition; it is a fair average one, and without any appearance of disease. "Rinderpest" has fortunately not as yet broken out in any north country stock, but the fear created by its continued ravages elsewhere has made markets merely nominal, and it is a difficult matter to sell unknown stock. Owing to the absence of severe frost and high winds, all the trees retained their leaves for a longer period, during the autumn of the present year, than is usually the case. The nuts on many of the Spanish chesnuts are well filled, particularly so on trees freely exposed to the sun. The land in November was, as might be expected, in fine working order, and in almost all cases tillage is well advanced. The young wheats are showing well above ground, and where early planted are fresh and green, and otherwise promising. From the want of straw this season, rather over an average extent of land has in several instances been put under wheat. The weather being so dry has been most favourable for the lifting of turnips, and much has been done in this way. Pastures have lost little of their freshness, and sheep have, as yet, not much need for extra feeding.

The lime was divested of leaves on 28th October at Marlborough; on 2d November at Guernsey; on the 7th at Great Berkhamstead and Penketh; and on the 9th at Brighton.

The horse chesnut was divested of leaves on 25th October at Penketh; on 2d November at Marlborough; on the 5th at Guernsey; on the 9th at Helston; on the 12th at Brighton; and on the 18th at Great Berkhamstead.

The field elm was divested of leaves on 31st October at Penketh; on 19th November at Oxford; on the 20th at Guernsey; and on the 22d at Great Berkhamstead.

The sycamore was divested of leaves on 31st October at Penketh; on 4th November at Helston; on the 5th at Guernsey; on the 7th at Great Berkhamstead; and on the 17th at Brighton.

The common poplar was divested of leaves on 31st October at Penketh; on the 13th at Helston; on the 14th at Great Berkhamstead; and on the 15th at Brighton and Oxford.

The oak was divested of leaves on 15th November at Guernsey; on the 20th at Culloden; and on the 22d at Great Berkhamstead; and on the 24th at Penketh.

The hawthorn was divested of leaves on 12th November at Helston; and on the 22d at Penketh. The beech was divested of leaves on 12th November at Culloden; and on the 21st at Penketh.

The ash was divested of leaves on 8th November at Culloden; and on the 15th at Penketh. The laburnum on 4th October at Llandudno.

The hazel on 12th November at Helston. And the walnut on 13th November at Brighton.

Leaf buds appeared on the lime and horse chesnut on 20th October at Oxford. The apple tree was in blossom at Llandudno on 12th October.

Strauberrys were ripe on 10th October at Llandudno; and on the 14th at Marlborough. Raspberries were ripe on 28th October at Marlborough.

Swallows departed on 5th October from Hawarden; on the 6th from Helston; and on the 16th from Abington and York. They were seen on 2d December at Sidmouth in Devonshire.

Fieldfares arrived on 13th October at Abington; and on the 16th at Streatley. Woodcocks arrived on 2d October at Helston.

Redwings arrived on 7th October at Abington. At Cockermouth very little ozone was registered during October, none between the 16th September and 8th October. This is principally owing to the stillness of the air and prevalence of easterly winds.

# Meteorological Table, Quarter ending December 31st, 1865.

MONTHLY METEOROLOGICAL TABLE FOR THE QUARTER ENDING DECEMBER 31ST, 1865.  
The Observations have been reduced to Mean values by Glaisher's Barometrical and Diurnal Range Tables, and the Hygrometrical results have been deduced from his second edition of Hygrometrical Tables.

Year 1865.	Month.	Names of Stations and Observers.	Pressure of Atmosphere in Month.		Temperature of Air in Month.			Vapour.		Mean Dew Point.		Elastic Force.		Mean Reading of Thermometer.		Wind.		Mean Amount of Rain.	
			Mean.	Range.	Mean.			In a cubic foot of Air.	Short of Saturation.	Air.	Dew Point.	in.	in.	Maximum in Rays of Sun.	Minimum on Grass.	Estimated Strength.	Relative Proportion of Direction.	Mean Amount of Cloud.	Number of Days it fell.
					Of all Highest.	Of all Lowest.	Daily Range.												
Oct.	1865.	GUERNSEY.	29.400	29.400	59.0	59.0	0.0	4.3	0.8	58.4	58.4	384	384	0.0	0.0	1.7	6	4.2	20
Nov.	1865.	SAMUEL ELLIOTT HOSKINS, Esq., M.D., F.R.S., M.B.M.S.	29.676	29.676	59.0	59.0	0.0	4.3	0.8	58.4	58.4	384	384	0.0	0.0	1.7	6	4.2	20
Dec.	1865.	HELSTON.	29.778	29.778	59.0	59.0	0.0	4.3	0.8	58.4	58.4	384	384	0.0	0.0	1.7	6	4.2	20
Oct.	1865.	MATTHEW P. MOTTE, Esq., M.R.C.S.	29.778	29.778	59.0	59.0	0.0	4.3	0.8	58.4	58.4	384	384	0.0	0.0	1.7	6	4.2	20
Nov.	1865.	TRURO.	29.778	29.778	59.0	59.0	0.0	4.3	0.8	58.4	58.4	384	384	0.0	0.0	1.7	6	4.2	20
Dec.	1865.	C. BARNHAM, Esq., M.D.	29.778	29.778	59.0	59.0	0.0	4.3	0.8	58.4	58.4	384	384	0.0	0.0	1.7	6	4.2	20
Oct.	1865.	VENTNOR (Isle of Wight).	29.778	29.778	59.0	59.0	0.0	4.3	0.8	58.4	58.4	384	384	0.0	0.0	1.7	6	4.2	20
Nov.	1865.	GEORGE A. MARTIN, Esq., M.D., F.L.S.	29.778	29.778	59.0	59.0	0.0	4.3	0.8	58.4	58.4	384	384	0.0	0.0	1.7	6	4.2	20
Dec.	1865.	OSBORNE.	29.778	29.778	59.0	59.0	0.0	4.3	0.8	58.4	58.4	384	384	0.0	0.0	1.7	6	4.2	20
Oct.	1865.	J. R. MANN, Esq.	29.778	29.778	59.0	59.0	0.0	4.3	0.8	58.4	58.4	384	384	0.0	0.0	1.7	6	4.2	20
Nov.	1865.	BOURNEMOUTH, near Poole.	29.778	29.778	59.0	59.0	0.0	4.3	0.8	58.4	58.4	384	384	0.0	0.0	1.7	6	4.2	20
Dec.	1865.	W. S. FALLS, Esq., M.D., M.B.M.S.	29.778	29.778	59.0	59.0	0.0	4.3	0.8	58.4	58.4	384	384	0.0	0.0	1.7	6	4.2	20
Oct.	1865.	WORTHING.	29.778	29.778	59.0	59.0	0.0	4.3	0.8	58.4	58.4	384	384	0.0	0.0	1.7	6	4.2	20
Nov.	1865.	DR. W. G. BAKER, F.R.S., M.B.M.S.	29.778	29.778	59.0	59.0	0.0	4.3	0.8	58.4	58.4	384	384	0.0	0.0	1.7	6	4.2	20
Dec.	1865.	ST. JOHN'S COLLEGE (Hurstpierpoint).	29.778	29.778	59.0	59.0	0.0	4.3	0.8	58.4	58.4	384	384	0.0	0.0	1.7	6	4.2	20
Oct.	1865.	REV. JOHN GORHAM, M.A.	29.778	29.778	59.0	59.0	0.0	4.3	0.8	58.4	58.4	384	384	0.0	0.0	1.7	6	4.2	20
Nov.	1865.	WILTON HOUSE, near Salisbury.	29.778	29.778	59.0	59.0	0.0	4.3	0.8	58.4	58.4	384	384	0.0	0.0	1.7	6	4.2	20
Dec.	1865.	T. CHALLIS, Esq.	29.778	29.778	59.0	59.0	0.0	4.3	0.8	58.4	58.4	384	384	0.0	0.0	1.7	6	4.2	20
Oct.	1865.	BARNSTABLE.	29.778	29.778	59.0	59.0	0.0	4.3	0.8	58.4	58.4	384	384	0.0	0.0	1.7	6	4.2	20
Nov.	1865.	T. MACKRELL, Esq.	29.778	29.778	59.0	59.0	0.0	4.3	0.8	58.4	58.4	384	384	0.0	0.0	1.7	6	4.2	20
Dec.	1865.	ALDERSHOT CAMP.	29.778	29.778	59.0	59.0	0.0	4.3	0.8	58.4	58.4	384	384	0.0	0.0	1.7	6	4.2	20
Oct.	1865.	JOHN ARNOLD, M.S.C., M.B.M.S.	29.778	29.778	59.0	59.0	0.0	4.3	0.8	58.4	58.4	384	384	0.0	0.0	1.7	6	4.2	20
Nov.	1865.	DOWNSIDE COLLEGE (near Bath).	29.778	29.778	59.0	59.0	0.0	4.3	0.8	58.4	58.4	384	384	0.0	0.0	1.7	6	4.2	20
Dec.	1865.	Rev. I. B. SNOW.	29.778	29.778	59.0	59.0	0.0	4.3	0.8	58.4	58.4	384	384	0.0	0.0	1.7	6	4.2	20
Oct.	1865.	ENSLEIGH LANSLOWNE (Bath).	29.778	29.778	59.0	59.0	0.0	4.3	0.8	58.4	58.4	384	384	0.0	0.0	1.7	6	4.2	20
Nov.	1865.	CHAS. H. WESTON, Esq.	29.778	29.778	59.0	59.0	0.0	4.3	0.8	58.4	58.4	384	384	0.0	0.0	1.7	6	4.2	20
Dec.	1865.		29.778	29.778	59.0	59.0	0.0	4.3	0.8	58.4	58.4	384	384	0.0	0.0	1.7	6	4.2	20



Year 1865.	Month.	Names of Stations and Observers.	Pressure of Atmosphere in Month.		Temperature of Air in Month.			Mean Temperature.	Vapour.		Mean Reading of Thermometer.	Wind.			Rain.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
			Mean.	Range.	Highest.	Lowest.	Range.		Mean.			Mean Amount of Cloud.	Number of Days it fell.	Amount collected.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
								Of all Highest.	Of all Lowest.	Daily Range.	Air.				Dew Point.	Elastic Force.	Mean.	Short of Saturation.	Mean Degree of Humidity, Sat. = 100.	Mean Weight of Air.	Maximum in Rays of Sun.	Minimum on Grass.	East-nated Strength.	Relative Proportion of N. E. S. W.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
Oct.	29-139	MARLBOROUGH COLLEGE, M.B.M.S.	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218	1.218

Date.	Time.	In.	Bar.	Therm.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.	Rain.	Sun.	Moon.	Tide.	Wind.
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# METEOROLOGY OF ENGLAND,

DURING THE QUARTER ENDING MARCH 31, 1866.

REMARKS ON THE WEATHER during the QUARTER ending 31st of March 1866.  
By JAMES GLAISHER, ESQ., F.R.S., &c., Secretary of The Meteorological Society.

LONDON :  
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The weather at the beginning of the year was stormy, with gales of wind. The temperature was high for the season. On the 11th day there fell an unusual fall of sticking snow, of very great specific gravity. The street traffic in London was extremely difficult; the telegraphic wires were so loaded with snow, and the wind was so violent, that many poles gave way, and telegraphic communication all round London was greatly interrupted. So great was the destruction of wires and poles that at the end of the quarter all were not restored. The snow was of that unusual dense character that 6 inches in depth produced water to the depth of  $1\frac{1}{2}$  in. nearly. A very rapid thaw set in, and within two or three days all the snow disappeared, followed, however, by rivers overflowing their banks. All the low-lying lands along the valley of the Thames were under water. The weather continued changeable throughout January, with heavy rains and gales of wind. The characteristic feature of this month was its extraordinary warmth, it being  $6\frac{1}{4}^{\circ}$  above its average value from 50 years' observation. This unusual temperature continued till 12th February, and the average daily excess of temperature up to this time was  $6^{\circ}$  daily. From the 13th day of February till 15th March the weather was cold, and nearly constantly below the average for the season of the year. The average daily defect of temperature for this period was  $2^{\circ}\cdot 9$ ; four days of warm weather followed, each day being about  $2^{\circ}$  in excess of its average temperature. This was succeeded by four days of very cold weather, the defect averaging  $4\frac{1}{2}^{\circ}$  daily, and the quarter closed with eight days whose temperature exceeded their averages by  $6^{\circ}$ .

The extreme mild weather in January and the first part of February stimulated vegetation to a very unusual activity at this season. Hedges and early fruit trees were budding, and some were ready to burst into blossom.

The change in the middle of February, from so mild and damp to a colder and dryer atmosphere, prevented vegetation advancing too rapidly, and was otherwise beneficial to agricultural operations, by enabling farmers to do much field and farm work, which in many places, owing to the sodden state of the ground, were in a very backward state.

At the end of the quarter vegetation was sufficiently checked by the cold weather, and the growing crops generally were sufficiently advanced to render them secure from the danger of sudden frosts.

The mean temperature of January was  $42^{\circ}\cdot 6$ , being warmer than any January since that of 1851; the preceding month, December, was  $42^{\circ}\cdot 7$ , being  $2^{\circ}\cdot 4$  of higher temperature than the average; usually January is  $2^{\circ}\cdot 8$  colder than the preceding month, yet on this occasion it was  $0^{\circ}\cdot 1$  of lower temperature only. It was  $4\frac{1}{2}^{\circ}$  above the average of the preceding 25 Januaries, and  $6^{\circ}\cdot 3$  above the temperature of January 1865.

The mean temperature of February was  $40^{\circ}\cdot 5$ , being  $1^{\circ}\cdot 9$  above the average of the preceding 25 Februaries, and  $3^{\circ}\cdot 9$  above that of last year. Every month from September to this month inclusive has been of higher temperature than their averages, to the mean amount of  $3^{\circ}\cdot 9$  nearly.

The mean temperature of March was  $40^{\circ}\cdot 5$ , the same as in February, being  $1^{\circ}\cdot 2$  below the average of the preceding 25 years, and  $3^{\circ}\cdot 9$  above that of last year.

The mean high day temperatures were above their averages in January and February to the amounts of  $4^{\circ}\cdot 7$  and  $2^{\circ}\cdot 3$  respectively, and below in March to the amount of  $1^{\circ}\cdot 9$ .

The mean low night temperatures were above their averages in January and February to the amounts of  $3^{\circ}\cdot 3$  and  $1^{\circ}\cdot 2$  respectively, and below in March to the amount of  $0^{\circ}\cdot 8$ .

Therefore in January and February both the days and nights were warm, whilst in March both were cold.

The daily ranges of temperature were greater than their averages in January and February to the amounts of  $1^{\circ}\cdot 4$  and  $1^{\circ}\cdot 1$  respectively, and less in March to the amount of  $0^{\circ}\cdot 8$ .

The fall of rain exceeded its average value in both January and February, in the former by 2 inches and in the latter by  $2\frac{1}{2}$  inches; it was of its average value in March.

The mean temperature of the air at Greenwich in the three months ending February, constituting the three winter months, was  $41^{\circ}\cdot 8$ , being  $4^{\circ}\cdot 0$  above the average of the preceding 95 years.



1866. MONTHS.		Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
		Air.		Evaporation.		Dew Point.		Air— Daily Range.		Water of the Thames.					
		Mean.	Diff. from ave- rage of 35 years.	Diff. from ave- rage of 25 years.	Mean.	Diff. from ave- rage of 25 years.	Mean.	Diff. from ave- rage of 25 years.	Mean.			Diff. from ave- rage of 25 years.	Mean.	Diff. from ave- rage of 25 years.	Mean.
Jan. -	42.6	+6.4	44.5	40.7	+3.8	38.4	+3.4	11.1	+1.4	42.1	.224	+0.032	grs. 2.7		
Feb. -	40.5	+2.2	41.9	38.5	+1.5	35.9	+1.3	12.4	+1.1	40.5	.211	+0.009	2.4		
Mar. -	40.5	-0.5	41.2	38.0	-1.4	34.8	-1.7	13.9	-0.8	41.7	.202	-0.015	2.3		
Mean -	41.2	+2.7	41.7	39.1	+1.3	36.4	+1.0	12.5	+0.6	41.4	.216	+0.009	2.5		

1866. MONTHS.		Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horiz- ontal move- ment of the Air.	Reading of Thermometer on Grass.				
		Mean.	Diff. from ave- rage of 25 years.	Mean.	Diff. from ave- rage of 25 years.	Mean.	Diff. from ave- rage of 25 years.	Amount.	Diff. from ave- rage of 51 years.		Number of Nights it was				
											At or below 30°.	Be- tween 30° and 40°.	Above 40°.	Low- est Read- ing at Night.	
Jan. -	86	- 2	in. 29.701	-0.056	grs. 548	- 6	in. 3.7	in. +2.0	Miles. 361	10	15	6	20.4		
Feb. -	85	0	29.529	-0.229	547	- 7	4.0	+2.5	337	13	13	2	17.3		
Mar. -	81	- 1	29.527	-0.229	547	- 3	1.6	0.0	239	16	11	4	16.2		
Mean -	84	- 1	29.586	-0.185	547	- 5	Sum 9.3	Sum +4.5	Mean 312	Sum 39	Sum 39	Sum 12	Lowest 16.2		

NOTE.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred or thunder was heard and lightning was seen on 1st January at Hurst; on the 7th at Clifton; on the 9th at Downside College (Bath); and on the 1st at Guernsey. On 3d February at Helston, Truro, and Halifax; on the 4th at Osborne, Marlborough, Clifton, Streatley, Camden Town, Oxford, Cardington, Wisbeach, Grantham, Pe- Liverpool, Eccles, Castleton, Wakefield, Halifax, Cockermouth, and Miltown, Banbridge (Ire- on the 5th at Truro, Brighton, and Enleigh Lansdowne (Bath); on the 7th at Eccles, Cas- Halifax, and Stonyhurst; on the 10th at Silloth; on the 13th at Liverpool and Eccles; 14th at Belvoir; and on the 26th at Carlisle. On 7th March at Oxford; on the 8th at C- Town; and on the 18th at Oxford.

Thunder was heard but lightning was not seen on January 5th and 6th at Belvoir; on the 12 at Sidmouth; and on the 21st at Culoden. On 6th February at Wakefield; on the 7th and 8 at Carlisle; on the 9th at Sidmouth; and on the 13th at Castleton. On 6th March at Penketh on the 8th at Guernsey; on the 18th at Streatley; and on the 23d and 25th at Belvoir.

Lightning was seen but thunder was not heard on 1st January at Kingsley, Penketh, and Halifax; on the 5th at Wakefield; on the 7th at Enleigh Lansdowne (Bath); on the 8th at Guernsey, Helston, Brighton, Sidmouth, Enleigh Lansdowne (Bath), Abington, Diss, and Carlisle; on the 9th at Guernsey, Helston, Brighton, and Abington; on the 10th at Helston; on the 11th and 12th at Enleigh Lansdowne (Bath). On 3d February at Norwich and Halifax; on the 4th at Helston, Brighton, Sidmouth, Enleigh Lansdowne (Bath), Oxford, Royston, Abington, Llandudno, Grantham, Kingsley, Allenheads, Bywell, and North Shields; on the 5th at Aldershot, on the 7th at Penketh, Liverpool, Silloth, Bywell, and North Shields; on the 8th at Enleigh Lansdowne (Bath); on the 10th at Brighton, Cockermouth, and Allenheads; on the 12th at Osborne; on the 23d at Eccles; and on the 24th at Enleigh Lansdowne (Bath). On 7th March at Brighton and Diss; on the 8th at Guernsey; on the 12th at Diss; on the 16th at Wilton; and on the 17th at Cardington.

Solar halos were seen on 2d January at Cardington and Oxford; on the 3d at Oxford; on the 20th at Sidmouth; on the 22d at Hawarden; and on the 30th at North Shields. On February 1 at Hawarden; on the 8th at Sidmouth; on the 14th at Cardington, Wisbeach, and Grantham; on the 24th at Streatley, Oxford, and Hawarden; and on the 25th at Clifton, Oxford, and Abington. On 1st and 14th March at Clifton and Oxford; on the 15th at Brighton; on the 18th at Royston and Wisbeach; on the 22d at Llandudno and Hawarden; on the 23d at Brighton and Wisbeach; and on the 27th at Lampeter; and on the 29th and 30th at Oxford.

Lunar halos were seen on 1st January at Oxford; on the 4th at Streatley and Camden Town; on the 19th at Truro; on the 21st at Camden Town and Grantham; on the 22d at Camden Town, Abington, and Cardington; on the 23d at Sidmouth; on the 24th at Clifton and Culoden; on the 25th and 26th at North Shields; on the 28th at Abington and Wakefield; on the 29th at Clifton, Wisbeach, Belvoir, Grantham, and Silloth; on the 30th at Bywell; and on the 31st at Clifton, Abington, Bywell, and North Shields. On 1st February at Wilton, Clifton, Grantham, Kings-

Liverpool, and North Shields; on the 2d at Brighton; on the 6th at Belvoir; on the 18th at Abington; on the 19th at Royston, Diss, and Grantham; on the 22d at Brighton, Wilton, Marlborough, Oxford, and Cardington; on the 23d at Aldershot; on the 24th at Wilton, Marlborough, Clifton, Oxford, Royston, Abington, Cardington, Norwich, and Grantham; on the 25th at Aldershot, Camden Town, Oxford, Abington, Cardington, Norwich, and North Shields; on the 26th at Sidmouth, and on the 27th at Guernsey, Wilton, Aldershot, Camden Town, Royston, Abington, Grantham, Halifax, and North Shields.

Aurora were seen on January 4th, 8th, and 14th at Culoden; on the 15th at Clifton; and on the 28th at Wakefield. On 5th February at North Shields; on the 6th at Norwich; on the 7th at Clifton, Oxford, Royston, Cardington, Belvoir, Grantham, Liverpool, Eccles, Cockermouth, Carlisle, Bywell, and North Shields; on the 9th and 10th at Clifton; on the 12th at Penketh, Carlisle, and North Shields; on the 13th at Hawarden, Penketh, and North Shields; on the 17th and 18th at Cardington; on the 21st at Downside College (Bath) and Clifton; on the 23d at Oxford and the 7th at Diss; on the 25th at Penketh, Halifax, and Stonyhurst. On 6th March at Belvoir; on the 8th at Wisbeach and Cockermouth; and on the 18th at Cockermouth.

Snow fell on 49 days during the quarter, viz., 16 in January, 14 in February, and 19 in March.

Hail fell on 43 days during the quarter, viz., 12 in January, 19 in February, and 12 in March.

Fog was prevalent on 41 days during the quarter, viz., 11 in January, 10 in February, and 20 in March.

January 1866.—Guernsey. This island has been visited by a succession of storms, with but few, brief intermissions, ever since the morning of the 6th instant. The wind blowing hard from all points accompanied by heavy rain, hail, thunder, and lightning, but no snow, and no depression of temperature. The most violent of the gales (evidently recurrent cyclones) occurred between the 10th and 11th; on the former day at 9 A.M., the barometer, which had risen slightly the preceding day, stood at 29.23 in.; shortly after noon it began to fall, and at 10 P.M. its reading was 28.722 in.; the wind, which had been backing from W.N.W., blew violently from S.E. with heavy rain. The weather continued boisterous till past midnight. Early on the morning of the 11th there was a short lull at E.S.E., but the wind continued to back, a severe gale from E.N.E. succeeded, and at 9 A.M. the reading of the barometer, corrected and reduced to the level of the sea, was 28.444 in.; after this it rose rapidly. (This is the most violent gale, and the greatest depression of the barometer that has been known in this place for 23 years, i.e. since the commencement of this series of observations.) The wind having moderated slightly for a short time, backed to N.N.W., and blew more furiously than ever, and so continued the greater part of the day, uprooting or snapping off hundreds of trees, and injuring buildings extensively. At noon the barometer had risen to 28.556 in., and at 9 P.M. to 29.384 in. The wind moderated, and it was fine starlight night till past midnight. Early on the 12th there was a thunder storm, with squalls of hail and rain; a steady breeze prevailed all day, the weather being very fine. The wind veered in the evening through N. to E., then was slight breeze from about 8 P.M., and a moderate breeze during the night. There was a heavy gale from S.S.W. on the 13th, with rain all day. On the 14th there was rain and a moderate breeze. The 15th was remarkably fine and mild, with bright sunshine, but on the 16th a gale was blowing from the S.S.W. The mean hourly pressure on the 11th by Osler was 21 lbs., rising to 26 lbs. during the gusts. The mean observed velocity by Robinson's cups from 9 A.M. to 9 P.M. on the 12th was 70 miles.

In January:—

The mean temperature of the air was 2° 6 above the average of 21 years.

The range of the barometer was 0.981 in. above the average of 21 years.

The amount of rain was 4.194 in. above the average of 21 years.

The number of rainy days was 6 above the average of 21 years.

In February:—

The mean temperature of the air was 1° 9 above the average of 21 years.

The amount of rain was 3.465 in. above the average of 21 years.

The number of rainy days 11 above the average of 21 years.

In March:—

The mean temperature of the air was 1° 5 in. below the average of 21 years.

The amount of ozone was 2° 0 below the average of 21 years.

At Osborne the weather was very stormy on the 8th of January, the wind reaching a pressure of 18 lbs. at 4 A.M. There was a little lightning during the day.

At Brighton, on 30th January, blackbirds and thrushes were heard singing. Rooks building.

At Wisbeach, on 2d January, a gale of 15 lbs. maximum pressure, and on the 8th a pressure of 20 lbs. was recorded.

At Aldershot the month of January was very mild, the temperature of the air only fell to or below the freezing point on five nights. While it rose to or above 50° on 13 days; it has likewise been remarkably wet; the amount of rain being greater than has ever been recorded, with a constant succession of gales. The mean daily movement of the air has been 472 miles, and on the 8th a pressure of 30 lbs. on the square foot was registered. On the morning of the 11th snow covered the ground to a depth of 9 inches. Snowdrops, crocuses, and primroses were in flower about the middle of the month. The temperature of the air in February was high until the 12th, afterwards generally low, and like the previous months was succeeded by boisterous winds and heavy rains. Early on the



morning of the 11th a gale commenced from the south, and continued to blow with great fury until the following morning. During the afternoon there was an average pressure of 30 lbs. on the square foot, and it several times reached 36 lbs. At 9 A.M. the barometer had fallen to 28.230 in.; at noon it began to rise, and in the evening the wind veered to the W. Nearly an inch of rain fell during the 24 hours. The month of March was colder than the two preceding months. There was a furious gale on the 23d doing much damage to trees and buildings, the horizontal movement of the air being 926 miles during the 24 hours.

At *Belvoir* there were no further cases of Rinderpest in January. The young wheats, owing to continued open weather, have made considerable growth, and there has been no cessation in the growth of grass in pastures. Roots abundant, and hay cheap. In February the preparation and tillage of land was much retarded by frequent rain-falls. Springs were high, and the ground was surcharged with wet. There were no further cases of Rinderpest in the district during the month; in low and damp districts the disease was very fatal. Vaccination has been generally practised. There were severe frosts early in March, followed by frequent falls of snow and rain, which retarded farming operations and checked the progress of vegetation. Towards the end of the month some progress was made in sowing beans and peas, and in light land barley and oats were sown; on heavy lands the sowing of these grains was not completed in March. The young wheat was checked by frost and wintry weather early in March, but recovered and bore a promising appearance towards the end. Beasts free from disease in the *Belvoir* district; unusual care has been taken in housing and feeding beast stock. The fall of lambs has been very great, one farmer in the district had 33 lambs from 11 ewes; in several places losses in both ewes and lambs have occurred, but the result generally of the lambing season has been satisfactory. Pigs very dear, very many young pigs having been lost; from 35s. to 48s. has been commonly paid for pigs from 8 to 12 weeks old. Potatoes abundant and cheap.

At *Cockermouth* January was a month of very stormy weather, with high winds from the S.W. and much rain. The amount of rain that fell in the month was greater than has fallen in any month since October 1862. Ozone unusually abundant for this station, owing no doubt to the frequent S.W. gales. No Rinderpest in this locality. Mean temperature of the month was 3°·7 higher than the average of previous four years.

At *Bywell* farmers have not been able to get the land prepared for sowing till the last few days in March. Grass is beginning to spring, and the meadows are looking green. The neighbourhood keeps free from cattle plague.

At *Milton* it is worthy of remark that throughout the month of March the direction of the wind was from the western side of the meridian only; its force was very great, and consequently there is a large amount of ozone. On Sunday 4th February it blew a regular hurricane (W.), with heavy rain, and distant thunder and lightning. The roof was blown off one of the houses, and one cup blown off the anemometer by the breakage of one of the arms. "At Belfast and the neighbourhood for miles round, as far as Downpatrick on one side and Antrim and Ballymena on the other, the storm was of unprecedented violence; for 15 or 20 minutes it was positively awful. The morning had been lowering, and suddenly, about two o'clock, the clouds in the west became black almost as ink. Shortly after, forked lightning flashed with intense vividness, and peal after peal of thunder roared with the noise of a hundred cannon. The wind rose to a perfect hurricane, and the rain came down in a waterspout; not an ordinary rainfall, but really clouds of rain and hail swept along. It was impossible for any one to walk along the streets, as for upwards of half an hour no one could keep his or her feet to the ground. In many places chimneys were torn off houses, and slates whirled through the air like feathers. In the streets of the upper and most exposed parts of the town, windows were torn out, and the glass broken by the hail and rain, which by the high wind was carried with tremendous velocity and power. We have heard statements of the violence of the storm in the country around. On the Falls Road near Collin large trees were torn up, and on the roads stones were driven about like leaves off the trees; and we hear of similar accounts from other places. The storm abated in intensity in about half an hour, but continued during the evening with less violence. A great many of the streets of Belfast were flooded to the depth of two or three feet, the gratings not being sufficient to carry off the water." On the 24th of March there was a great storm of wind and rain, the barometer reading being 28.242 inches. Owing to the long continuance of wet and cold weather here the spring is late.

At *Culloden* the mean temperature of January was above the average, but mean atmospheric pressure considerably below the average, and subject to great and frequent oscillations, throughout the month. February was unfavourable for agricultural labour, in many cases the carting of manure being the only daily work done. From the snow and frost prevailing from the 12th to the close of the month, sheep generally have been ill off, and suffered considerably. There is now no prospect of an early seed time, and in the upland districts it must be late, for snow continues to lie deeply on all the high grounds. The lowest temperature on the grass was 12°·2 on the morning of the 16th. The rainfall (melted snow included) was not in excess for the month, 2.41 in. having been noted. The price of grain has improved since the opening of the year, and with the exception of potatoes (which can be had for cattle feeding at 9s. per boll, or 27s. a ton), grain will likely advance, particularly as seed time draws near. The turnip crop is now getting very scarce on all farms, likewise straw, and should farmers not be able to sell their young stock, as is usually the case at this season, in consequence of the cattle plague, many will be placed in positions of extreme difficulty. The North of Scotland continues perfectly free from all appearance of any outbreak of this terrible visitation, and it is now to be hoped that from the stringent measures adopted it may escape and continue healthy.

Pear in blossom at Helston on 30th March.

Cherry in blossom at Helston on 29th March.

Peach in blossom at Helston on 17th March; at Wisbeach on the 18th; and at Cardington on the 24th.

Plum in blossom at Helston on 28th March.

Gooseberry in blossom at Helston on 2d February.

Leaf buds first appeared on the Horse Chesnut on 14th February at Hawarden. On 10th March at Cardington; on the 25th at Guernsey; on the 27th at Helston; and on the 28th at Penketh.

Leaf buds first appeared on the Sycamore on 12th March at Cardington; on the 25th at Guernsey and Helston.

Leaf buds first appeared on the Hawthorn on 9th February at Oxford; on the 18th at Hawarden; and on the 14th at Cardington.

Leaf buds first appeared on the Field Elm on 20th March at Helston; and on the 25th at Guernsey.

Leaf buds first appeared on the Common Poplar on 9th February at Oxford. On 28th March at Helston.

Leaf buds first appeared on the Privet on 7th March at Guernsey.

Leaf buds first appeared on the Oak on 22d March at Helston.

Leaf buds first appeared on the Walnut on 23d March at Oxford.

Leaf buds first appeared on the Currant on 31st January at Sidmouth.

Honeysuckle in leaf at Helston on 16th February.

Hawthorn in leaf at Guernsey on 20th March.

Snowdrops in flower on 17th January at Culloden; on the 18th at Sidmouth; and on the 21st at Shields. On February 6th at Belvoir.

Crocuses in flower on 15th January at Sidmouth; on the 19th at Streatley; and on the 26th at Silloth. On 6th February at North Shields; and on the 20th at Belvoir.

Winter aconite in flower on 5th January at Streatley; and on the 24th at Silloth. On 1st February at Belvoir; on the 4th at North Shields; and on the 10th at Marlborough.

Hepatica in flower on 19th January at Streatley; and on the 27th at North Shields. On 10th February at Belvoir.

Primrose in flower on 18th January at Sidmouth. On 10th February at Belvoir. On 24th March at North Shields.

Auricula in flower on 31st March at North Shields.

Currant in flower on 23d March at Bath.

White arabis in flower on 22d February at Belvoir.

Blackthorn in flower on 28th March at Streatley.

Camelia in flower on 26th January at Sidmouth.

Periwinkle in flower on 19th January at Sidmouth.

Coltsfoot in flower on 5th January at Sidmouth. On 23d February at Marlborough.

Pansy in flower on 17th January at North Shields.

Christmas rose and rock cress in flower on 18th January at North Shields.

Polyanthus in flower on 28th January at North Shields.



# Meteorological Table, Quarter ending March 31st, 1866.

NAMES OF STATIONS.	in.	Air Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	Mean Estimated Strength.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.	Rain.
																				Relative Proportion of						
																				N.	E.	S.	W.			
Guernsey	29.525	55.5	32.5	23.0	48.6	41.3	20.8	7.3	44.0	41.0	237	3.0	0.4	89	544	—	—	1.7	7	4	8	11	6.0	7.9		
Helston	29.575	59.0	29.0	30.0	51.1	40.5	23.0	10.6	44.9	41.0	257	3.1	0.4	90	546	—	—	1.8	8	8	12	6.0	5.8			
Truro	29.575	58.0	24.0	34.0	50.3	39.3	23.0	11.0	43.9	40.1	257	3.1	0.5	87	547	—	—	1.6	8	3	5	12	6.0	5.8		
South of latitude 51°	29.488	59.5	27.0	32.5	49.9	37.4	23.0	12.0	43.3	38.0	229	2.7	0.6	82	550	—	—	1.7	7	4	4	12	6.0	6.2		
Between 51° and 52°	29.531	61.8	24.0	37.0	48.6	40.0	23.0	12.0	43.3	38.0	229	2.7	0.6	82	550	—	—	1.6	10	4	4	12	6.0	6.2		
the 52° and 53°	29.488	59.5	27.0	32.5	49.9	37.4	23.0	12.0	43.3	38.0	229	2.7	0.6	82	550	—	—	1.7	7	4	4	10	6.0	6.2		
latitudes 53° and 54°	29.531	61.8	24.0	37.0	48.6	40.0	23.0	12.0	43.3	38.0	229	2.7	0.6	82	550	—	—	1.6	10	4	4	10	6.0	6.2		
North Shields	29.500	62.3	18.0	44.3	47.0	35.5	23.0	12.0	43.3	38.0	229	2.7	0.6	82	550	—	—	1.7	7	4	4	10	6.0	6.2		
Milton, Banbridge (Ireland)	29.403	57.7	16.6	41.1	44.9	33.8	23.0	11.1	43.8	35.6	211	2.4	0.4	86	546	—	—	1.8	8	3	13	6.0	6.2			

The highest temperatures of the air were at Brighton, 66°·3; Camden Town, 65°·2; Abington, 64°·4; and Penketh, 64°·3. The lowest temperatures of the air were at Allenheads, 10°·2; Belvoir, 10°·5; Manchester, 13°·0; and Stonyhurst, 14°·5. The greatest rain-ranges were at Belvoir, 14°·5; Abington and Diss, 14°·0; and Stretey, 13°·7. The least daily ranges were at Guernsey, 7°·3; Liverpool, 7°·5; and Otley, 8°·2. The greatest number of rainy days were at Allenheads, 77; Stonyhurst, 69; Clifton and Bywell, 68; and Marlborough and Lampeter, 67. The heaviest falls were at Lampeter and Halifax, 18.9 in.; Bath, 17.2 in.; and Truro, 16.9 in. The least falls were at Grantham, 4.4 in.; Belvoir, 5.3 in.; York, 5.5 in.; and Wisbeach and Derby 5.6 in.

## QUARTERLY METEOROLOGICAL TABLE for different PARALLELS of LATITUDE.

PARALLELS OF  LATITUDE, &c.	Mean Pressure of dry Air reduced to the level of the Sea.	Mean of all Highest Read- ings of the Thermometer.	Mean of all Lowest Read- ings of the Thermometer.	Mean Range of Tempera- ture in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Max- imum in Rays of Sun.	Mean Reading of Min- imum on Grass.	Mean Estimated Strength.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.	Rain. Mean Amount of inches.
																			Relative Pro- portion of						
																			N.	E.	S.	W.			
Guernsey	in.	o	o	o	o	o	o	o	in.	grs.	gr.	grs.	o	o											
Devon and Cornwall	29.525	55.5	32.5	23.0	48.6	41.3	20.8	7.3	44.0	41.0	237	3.0	0.4	89	544			1.7	7	7	4	11	6.0	7.9	
Isle of Wight	29.546	60.4	28.7	32.5	50.4	39.1	19.9	5.1	43.3	44.0	257	3.0	0.5	86	548	80.9	38.1	1.2	7	9	8	5	12	5.6	6.1
South of latitude 51°	29.465	60.8	24.7	36.1	48.8	43.8	23.0	10.4	43.5	39.0	238	2.7	0.5	85	545	71.2	28.3	0.9	8	9	6	4	11	5.6	6.1
Between 51° and 52°	29.516	61.0	23.0	41.1	47.7	40.5	23.0	12.1	42.8	39.7	244	2.9	0.5	89	546			1.1	8	6	2	7	13	5.4	5.8
the 52° and 53°	29.500	62.3	18.0	44.3	47.0	35.5	23.0	12.0	43.8	35.8	218	2.6	0.4	87	545	67.3	31.3	1.3	6	3	8	13	4.4	5.8	
latitudes 53° and 54°	29.493	58.7	18.7	40.0	45.5	35.1	23.0	12.0	43.3	34.1	211	2.4	0.4	87	547	68.1	32.1	1.0	5	3	9	13	4.4	5.8	
North Shields	29.403	57.7	16.6	41.1	44.9	33.8	23.0	11.1	43.8	35.6	211	2.4	0.4	86	546	64.6	32.1	1.3	6	4	9	11	3.9	5.7	
Milton, Banbridge (Ireland)	29.464	57.5	20.4	36.8	47.8	34.2	23.0	9.6	43.8	36.4	207	2.3	0.4	87	543	65.4	28.4	1.2	5	4	8	13	3.7	5.6	
	29.397	59.0	19.0	40.0	45.5	33.8	23.0	10.0	43.8	36.4	207	2.3	0.4	86	550	32.5		1.2	5	4	7	12	3.1	5.2	

## Meteorological Table, Quarter ending March 31st, 1866.

MONTHLY METEOROLOGICAL TABLE FOR THE QUARTER ENDING MARCH 31st, 1866.  
The Observations have been reduced to Mean values by Glaisher's Barometrical and Diurnal Range Tables, and the Hygrometrical results have been deduced from his third edition of Hygrometrical Tables.

Year. 1866.	Months.	Pressure of Air in Month.	Temperature of Air in Month.			Mean Temp- perature.	Vapour. In a cubic foot of Air.	Mean Degree of Humi- dity, Sat., = 100.	Mean Weight of a cubic foot of Air.	Mean in Thermometer.		Estimated Strength.	Wind.				Mean Amount of Ozone.	Mean Amount of Cloud.	Rain.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
			Range.	Lowest.	Highest.					Range.	Of all Lowest.		Of all Highest.	Daily Range.	Air.	Elastic Force.				Mean.	Short of Saturation.	Mean Degree of Humi- dity, Sat., = 100.	Mean Weight of a cubic foot of Air.	Maximum in Rays of Sun.	Minimum on Grass.	Relative Proportion of	N.	S.	W.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		



Year 1866.	Months.	Pressure of Atmosphere in Month.			Temperature of Air in Month.			Mean Temp. perature.	Vapour.		Mean Degree of Humidity, Sat., = 100.	Mean Reading of Thermometer.		Wind.			Mean Amount of Ozone.	Mean Amount of Cloud.	Number of Days it fell.	Rain.				
		Range.			Range.				Mean.	In a cubic foot of Air.		Maximum in Days of Sun.	Minimum on Grass.	Estimated Strength.	Relative Proportion of									
		in.	Mean.	ft.	Highest.	Lowest.	Range.								All Highest.	All Lowest.					Daily Range.	Air.	New Point.	N.
BATH ROYAL LITERARY AND SCIENTIFIC INSTITUTION, CHAS. P. RUSSELL, Esq.	Jan.	29.768	1.730	54.0	23.7	39.3	47.7	37.7	10.0	43.2	39.7	67.4	88	57.8	2.1	8	2	7	19	7.7	25	5.5		
	Feb.	29.765	1.710	55.0	22.8	38.2	47.2	35.8	11.2	41.3	37.7	64.8	88	57.8	1.9	8	2	7	18	6.2	21	4.5		
	Mar.	29.610	1.360	58.0	23.5	34.7	47.3	35.1	12.2	40.6	35.5	54.9	88	54.9	1.6	7	3	10	6.4	15	2.0			
	Jan.	29.078	1.729	54.0	39.0	24.0	47.7	36.4	13.6	42.1	38.1	52.0	93	52.7	2.2	2	2	9	7.9	19	6.2			
	Feb.	28.966	1.399	55.0	32.0	32.0	46.0	32.4	13.6	39.3	33.6	52.7	93	52.7	1.7	2	2	9	9.8	6.1	20	4.8		
	Mar.	28.807	1.321	58.0	38.5	39.5	47.0	31.7	15.3	38.6	35.3	53.3	93	53.3	1.5	7	7	6	6.5	13	2.4			
	C.H. WESTON, Esq. B.A., F.R.S., F.G.S. (Lansdowne above Bath).	Jan.	29.375	1.778	58.8	18.1	42.7	47.4	34.7	13.2	41.4	38.9	53.1	93	53.1	0.2	6	1	6	3.5	7.6	24	7.3	
		Feb.	29.227	1.770	58.6	21.4	37.2	46.3	33.1	13.2	39.5	33.8	53.1	93	53.1	0.5	7	1	6	3.7	7.2	39	3.9	
		Mar.	29.251	1.340	61.6	15.3	46.3	47.4	32.5	14.9	39.0	33.1	53.1	93	53.1	0.4	9	8	6	3.0	7.4	20	2.3	
		Jan.	29.005	1.705	53.4	28.0	25.4	48.1	38.3	9.8	43.0	39.7	54.4	93	54.4	0.8	2	11	15	4.2	6.4	24	4.9	
		Feb.	29.462	1.745	54.7	23.0	39.8	46.0	35.5	11.0	40.6	39.3	54.4	93	54.4	0.7	2	13	23	6.0	24	2.1		
		Mar.	29.443	1.428	59.0	20.7	37.7	47.3	35.0	12.3	39.3	34.1	54.4	93	54.4	0.6	9	6	8	3.4	6.9	20	2.1	
ROYAL OBSERVATORY, THE ASTRONOMICAL, GUILDFORD, W. HAYWOOD, Esq. C.E.		Jan.	29.701	1.889	54.3	23.7	39.6	47.8	39.7	11.1	43.6	38.4	54.4	93	54.4	0.8	1	9	18	1.0	7.5	17	3.7	
		Feb.	29.529	1.613	57.0	24.2	32.8	47.1	34.7	12.4	40.5	35.9	54.4	93	54.4	1.0	6	1	7	1.0	7.2	18	4.0	
		Mar.	29.527	1.321	64.0	22.5	41.5	48.4	34.3	13.9	40.5	34.8	54.4	93	54.4	0.2	9	6	8	0.6	8.1	15	1.6	
		Jan.	29.800	—	53.0	29.0	24.0	47.7	39.9	7.8	43.5	39.9	54.4	93	54.4	—	—	—	—	—	—	18	3.8	
		Feb.	29.594	1.205	60.0	27.5	32.5	46.7	34.9	9.5	40.3	35.7	54.4	93	54.4	—	—	—	—	—	—	15	1.3	
		Mar.	29.845	1.884	53.0	24.0	29.0	47.4	34.9	19.5	49.3	40.9	54.4	93	54.4	—	—	—	—	—	—	15	1.3	
	BATTERSEA TRAINING COLLEGE, J. P. FAUTHORPE, Esq. B.A., F.R.G.S.	Jan.	29.745	1.684	53.0	24.0	31.0	47.7	34.3	12.4	43.7	38.7	54.4	93	54.4	2.2	3	0	15	1.9	8.4	15	2.4	
		Feb.	29.702	1.610	55.0	24.0	31.0	47.7	34.3	12.4	43.7	38.7	54.4	93	54.4	2.2	3	0	15	1.9	8.4	15	2.4	
		Mar.	29.674	1.321	62.0	21.0	41.0	47.8	33.4	14.4	40.0	35.7	54.4	93	54.4	1.2	7	10	7	9.2	6.6	10	1.5	
		Jan.	29.686	1.754	55.0	21.5	32.5	49.1	35.0	13.1	42.9	38.7	54.4	93	54.4	1.5	5	1	12	1.3	—	—	3.9	—
		Feb.	29.670	1.808	57.0	18.0	35.0	47.3	33.5	11.1	41.3	37.5	54.4	93	54.4	1.7	6	5	6	1.1	—	—	2.1	
		Mar.	29.565	1.389	63.4	20.3	42.1	48.2	34.0	14.2	41.6	37.3	54.4	93	54.4	1.6	—	—	—	—	—	—	—	
STRETLEY VICARAGE (Baths), Rev. J. SLATER, M.A., F.M.S.		Jan.	29.763	1.828	54.2	29.7	37.7	47.7	38.3	9.3	43.0	38.2	54.4	93	54.4	2.31	2	0	8	16	5.8	23	3.9	
		Feb.	29.568	1.444	55.5	25.5	30.5	47.9	34.1	11.3	41.3	36.8	54.4	93	54.4	2.18	2	0	8	16	5.8	23	3.9	
		Mar.	29.569	1.312	65.2	22.5	42.7	48.9	33.1	13.8	41.4	35.0	54.4	93	54.4	2.04	0	0	8	16	5.8	23	3.9	
		Jan.	29.573	1.962	55.4	29.5	37.5	47.4	38.0	9.4	42.8	39.3	54.4	93	54.4	2.8	0	0	8	16	5.8	23	3.9	
		Feb.	29.568	1.750	55.0	25.0	30.0	47.9	34.1	11.3	41.3	36.8	54.4	93	54.4	2.18	2	0	8	16	5.8	23	3.9	
		Mar.	29.569	1.312	65.2	22.5	42.7	48.9	33.1	13.8	41.4	35.0	54.4	93	54.4	2.04	0	0	8	16	5.8	23	3.9	
	RADCLIFFE OBSERVATORY, (Oxford), Rev. R. MAIN, M.A., F.R.S., F.R.A.S.	Jan.	29.433	1.704	55.0	25.0	32.0	47.3	34.1	11.3	41.3	36.8	54.4	93	54.4	2.18	2	0	8	16	5.8	23	3.9	
		Feb.	29.433	1.704	55.0	25.0	32.0	47.3	34.1	11.3	41.3	36.8	54.4	93	54.4	2.18	2	0	8	16	5.8	23	3.9	
		Mar.	29.433	1.704	55.0	25.0	32.0	47.3	34.1	11.3	41.3	36.8	54.4	93	54.4	2.18	2	0	8	16	5.8	23	3.9	
		Jan.	29.360	1.720	52.8	19.3	33.5	47.4	39.7	10.7	41.8	38.1	52.0	93	52.0	2.7	0	14	16	4.5	7.1	22	2.9	
		Feb.	29.411	1.784	53.0	23.0	32.0	47.0	35.5	11.5	40.4	36.7	52.8	93	52.8	2.2	0	14	16	4.5	7.1	22	2.9	
		Mar.	29.430	1.720	53.7	16.2	45.3	48.3	34.5	14.5	39.5	35.9	52.1	93	52.1	2.21	0	14	16	4.5	7.1	22	2.9	
FOYSTON (Hertfordshire), Rev. W. THAM, Esq., F.R.A.S., F.M.S.		Jan.	29.430	1.720	53.7	16.2	45.3	48.3	34.5	14.5	39.5	35.9	52.1	93	52.1	2.21	0	14	16	4.5	7.1	22	2.9	
		Feb.	29.411	1.784	53.0	23.0	32.0	47.0	35.5	11.5	40.4	36.7	52.8	93	52.8	2.2	0	14	16	4.5	7.1	22	2.9	
		Mar.	29.430	1.720	53.7	16.2	45.3	48.3	34.5	14.5	39.5	35.9	52.1	93	52.1	2.21	0	14	16	4.5	7.1	22	2.9	
		Jan.	29.711	1.732	53.5	29.2	33.3	46.9	35.1	11.8	41.0	38.0	52.0	93	52.0	2.6	0	4	9	5.0	6.6	10	1.2	
		Feb.	29.483	1.732	53.5	29.2	33.3	46.9	35.1	11.8	41.0	38.0	52.0	93	52.0	2.6	0	4	9	5.0	6.6	10	1.2	
		Mar.	29.483	1.732	53.5	29.2	33.3	46.9	35.1	11.8	41.0	38.0	52.0	93	52.0	2.6	0	4	9	5.0	6.6	10	1.2	
	LEIGHTON PIGOTS, G. PIGOTT, Esq., F.M.S.	Jan.	29.711	1.732	53.5	29.2	33.3	46.9	35.1	11.8	41.0	38.0	52.0	93	52.0	2.6	0	4	9	5.0	6.6	10	1.2	
		Feb.	29.483	1.732	53.5	29.2	33.3	46.9	35.1	11.8	41.0	38.0	52.0	93	52.0	2.6	0	4	9	5.0	6.6	10	1.2	
		Mar.	29.483	1.732	53.5	29.2	33.3	46.9	35.1	11.8	41.0	38.0	52.0	93	52.0	2.6	0	4	9	5.0	6.6	10	1.2	
		Jan.	29.724	1.636	54.0	22.6	31.4	47.0	36.0	11.0	41.8	37.7	52.6	93	52.6	2.4	0	5	8	5.0	6.0	20	2.5	
		Feb.	29.570	1.636	54.0	22.6	31.4	47.0	36.0	11.0	41.8	37.7	52.6	93	52.6	2.4	0	5	8	5.0	6.0	20	2.5	
		Mar.	29.597	1.320	62.0	23.0	43.0	47.3	35.6	14.3	40.3	35.4	52.4	93	52.4	2.07	2	0	5	8	5.0	6.0	20	2.5
Mr. J. MACLEARS, M.R.M.S. Assist. to S.C.W. WATERBURY, Esq., F.R.S., F.M.S.		Jan.	29.724	1.636	54.0	22.6	31.4	47.0	36.0	11.0	41.8	37.7	52.6	93	52.6	2.4	0	5	8	5.0	6.0	20	2.5	
		Feb.	29.570	1.636	54.0	22.6	31.4	47.0	36.0	11.0	41.8	37.7	52.6	93	52.6	2.4	0	5	8	5.0	6.0	20	2.5	
		Mar.	29.597	1.320	62.0	23.0	43.0	47.3	35.6	14.3	40.3	35.4	52.4	93	52.4	2.07	2	0	5	8	5.0	6.0	20	2.5
		Jan.	29.724	1.636	54.0	22.6	31.4	47.0	36.0	11.0	41.8	37.7	52.6	93	52.6	2.4	0	5	8	5.0	6.0	20	2.5	
		Feb.	29.570	1.636	54.0	22.6	31.4	47.0	36.0	11.0	41.8	37.7	52.6	93	52.6	2.4	0	5	8	5.0	6.0	20	2.5	
		Mar.	29.597	1.320	62.0	23.0	43.0	47.3	35.6	14.3	40.3	35.4	52.4	93	52.4	2.07	2	0	5	8	5.0	6.0	20	2.5
	LAMPVEY (Cumbria), Rev. F. W. J. MASTERS, M.A.	Jan.	29.724	1.636	54.0	22.6	31.4	47.0	36.0	11.0	41.8	37.7	52.6	93	52.6	2.4	0	5	8	5.0	6.0	20	2.5	
		Feb.	29.570	1.636	54.0	22.6	31.4	47.0	36.0	11.0	41.8	37.7	52.6	93	52.6	2.4	0	5	8	5.0	6.0	20	2.5	
		Mar.	29.597	1.320	62.0	23.0	43.0	47.3	35.6	14.3	40.3	35.4	52.4	93	52.4	2.07	2	0	5	8	5.0	6.0	20	2.5
		Jan.	29.724	1.636	54.0	22.6	31.4	47.0	36.0	11.0	41.8	37.7	52.6	93	52.6	2.4	0	5	8	5.0	6.0	20	2.5	
		Feb.	29.570	1.636	54.0	22.6	31.4	47.0	36.0	11.0	41.8	37.7	52.6	93	52.6	2.4	0	5	8	5.0	6.0	20	2.5	
		Mar.	29.597	1.320	62.0	23.0	43.0	47.3	35.6	14.3	40.3	35.4	52.4	93	52.4	2.07	2	0	5	8	5.0	6.0	20	2.5
Rev. F. W. J. MASTERS, M.A.		Jan.	29.724	1.636	54.0	22.6	31.4	47.0	36.0	11.0	41.8	37.7	52.6	93	52.6	2.4	0	5	8	5.0	6.0	20	2.5	
		Feb.	29.570	1.636	54.0	22.6	31.4	47.0	36.0	11.0	41.8	37.7	52.6	93	52.6	2.4	0	5	8	5.0	6.0	20	2.5	
		Mar.	29.597	1.320	62.0	23.0	43.0	47.3	35.6	14.3	40.3	35.4	52.4	93	52.4	2.07	2	0	5	8	5.0	6.0	20	2.5

[illegible]



Year 1866.	Month.	Names of Stations and Observers.	Pressure of Atmosphere in Month.		Temperature of Air in Month.			Mean Temperature.		Vapour.		Mean Reading of Thermometer.		Wind.			Mean Amount of Cloud.		Rain.								
			Mean.	Range.	Highest.	Lowest.	Range.	Of all Highest.	Of all Lowest.	Mean.	Daily Range.	Air.	Dew Point.	Elastic Force.	In a Cubic foot of Air.	Short of Saturation.	Mean Degree of Humidity.	Mean Weight of a cubic foot of air.		Maximum in Rays of Sun.	Minimum on Grass.	Estimated.	Relative Proportion of		Mean Amount of	Number of Days in full.	Amount collected.
																							N.	E.			
Jan.	29-278	1-767	53-0	18-7	53-0	18-7	34-3	45-7	35-8	9-9	8-9	40-8	37-2	2-22	2-6	0-4	88	54-5	50-0	32-9	1-0	4	1	2	7-9	27	6-3
Feb.	29-178	1-683	51-7	20-0	51-7	20-0	40-4	45-0	32-8	10-8	9-8	38-3	34-2	2-16	2-3	0-5	86	54-5	54-7	35-9	0-7	6	3	6	7-7	24	6-3
Mar.	29-245	1-684	54-9	14-5	54-9	14-5	40-4	45-0	32-8	12-2	12-2	38-0	34-2	2-16	2-3	0-5	87	54-4	58-8	35-9	0-7	9	7	8	7-7	18	9-5
Jan.	29-424	1-804	52-2	23-4	52-2	23-4	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-7	6	3	8	7-0	4-4	4-4
Feb.	29-323	1-783	52-0	23-5	52-0	23-5	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-5	6	4	8	7-0	3-8	3-8
Mar.	29-415	1-783	54-5	20-7	54-5	20-7	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-5	6	4	8	7-0	2-6	2-6
Jan.	29-318	1-816	54-5	21-0	54-5	21-0	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Feb.	29-312	1-783	52-0	23-5	52-0	23-5	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Mar.	29-401	1-821	51-9	16-8	51-9	16-8	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Jan.	29-417	1-816	54-5	21-0	54-5	21-0	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Feb.	29-417	1-816	54-5	21-0	54-5	21-0	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Mar.	29-505	1-827	54-5	18-9	54-5	18-9	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Jan.	29-417	1-816	54-5	21-0	54-5	21-0	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Feb.	29-417	1-816	54-5	21-0	54-5	21-0	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Mar.	29-505	1-827	54-5	18-9	54-5	18-9	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Jan.	29-417	1-816	54-5	21-0	54-5	21-0	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Feb.	29-417	1-816	54-5	21-0	54-5	21-0	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Mar.	29-505	1-827	54-5	18-9	54-5	18-9	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Jan.	29-417	1-816	54-5	21-0	54-5	21-0	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Feb.	29-417	1-816	54-5	21-0	54-5	21-0	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Mar.	29-505	1-827	54-5	18-9	54-5	18-9	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Jan.	29-417	1-816	54-5	21-0	54-5	21-0	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Feb.	29-417	1-816	54-5	21-0	54-5	21-0	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Mar.	29-505	1-827	54-5	18-9	54-5	18-9	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Jan.	29-417	1-816	54-5	21-0	54-5	21-0	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Feb.	29-417	1-816	54-5	21-0	54-5	21-0	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Mar.	29-505	1-827	54-5	18-9	54-5	18-9	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Jan.	29-417	1-816	54-5	21-0	54-5	21-0	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Feb.	29-417	1-816	54-5	21-0	54-5	21-0	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Mar.	29-505	1-827	54-5	18-9	54-5	18-9	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Jan.	29-417	1-816	54-5	21-0	54-5	21-0	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Feb.	29-417	1-816	54-5	21-0	54-5	21-0	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Mar.	29-505	1-827	54-5	18-9	54-5	18-9	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Jan.	29-417	1-816	54-5	21-0	54-5	21-0	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Feb.	29-417	1-816	54-5	21-0	54-5	21-0	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Mar.	29-505	1-827	54-5	18-9	54-5	18-9	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Jan.	29-417	1-816	54-5	21-0	54-5	21-0	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Feb.	29-417	1-816	54-5	21-0	54-5	21-0	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Mar.	29-505	1-827	54-5	18-9	54-5	18-9	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Jan.	29-417	1-816	54-5	21-0	54-5	21-0	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Feb.	29-417	1-816	54-5	21-0	54-5	21-0	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Mar.	29-505	1-827	54-5	18-9	54-5	18-9	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Jan.	29-417	1-816	54-5	21-0	54-5	21-0	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Feb.	29-417	1-816	54-5	21-0	54-5	21-0	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Mar.	29-505	1-827	54-5	18-9	54-5	18-9	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Jan.	29-417	1-816	54-5	21-0	54-5	21-0	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	54-4	54-4	35-9	1-1	8	11	3	9	1-0	6-8
Feb.	29-417	1-816	54-5	21-0	54-5	21-0	38-8	45-5	37-6	8-9	8-9	41-7	37-7	2-26	2-6	0-5	87	544									



1866. MONTHS.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.	Reading of Thermometer on Grass.				
	Mean.	Diff. from average of 25 years.	Mean.	Diff. from average of 25 years.	Mean.	Diff. from average of 25 years.	Amount.	Diff. from average of 51 years.		Number of Nights it was			Lowest Reading at Night.	Highest Reading at Night.
										At or below 30°.	Between 30° and 40°	Above 40°.		
April -	79	0	29.743	-0.026	543	0	2.4	+0.7	Miles. 292	2	20	8	28.3	45.3
May -	71	-5	29.813	+0.039	542	0	1.9	-0.2	240	7	18	6	26.0	47.1
June -	77	+3	29.774	-0.025	529	-2	3.6	+1.6	242	0	5	25	35.1	39.9
Mean -	76	-1	29.777	-0.004	538	-1	Sum 7.9	Sum +0.7	Mean 258	Sum 9	Sum 43	Sum 39	Lowest 26.0	Highest 45.3

NOTE.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred or thunder was heard and lightning was seen on the 6th April at Guernsey and Truro; on the 14th at Oxford, Norwich, and Belvoir Castle; on the 19th at Miltown, Banbridge (Ireland); and on the 27th at Durham and Bywell. On the 3d May at Aldershot; on the 4th at Wisbeach; on the 11th at Norwich, Belvoir, Grantham, Penketh, Castleton Moor, and Halifax; on the 12th at Hawarden and Penketh; on the 14th at Barnstaple; on the 27th at Wisbeach; and at Royston on the 31st day. At Marlborough College and Lampeter on the 1st June; on the 2d at Truro, Aldershot, Cockermouth, and Silloth; on the 3d at Abington Pigotts; on the 4th at Royston, Cardington, Wisbeach, Grantham, and Kingsley Parsonage near Frodsham; on the 5th at Battersea, Hawarden, Penketh, Eccles, Halifax, Stonyhurst, and Miltown Banbridge (Ireland); on the 12th at Downside College (Bath); on the 13th at Clifton and Bath; on the 14th at Downside College; on the 16th at Truro, Marlborough College, Oxford, Cardington, Penketh, Eccles, and Cockermouth; on the 17th at Marlborough College; on the 20th at Battersea; on the 21st at Osborne, Aldershot, Royston, Abington, and Cardington; on the 22d at Camden Town, and Norwich; on the 27th at Osborne, Wilton, Aldershot, Downside College (near Bath), Ensleigh, Lansdowne (above Bath), Bath (City), Marlborough College, Clifton, Streatley Vicarage, and Stonyhurst; on the 28th at Downside College and Silloth; on the 29th at Lampeter; and at Wilton, Downside College, Marlborough, Battersea, Camden Town, Royston, Abington, Cardington, Wisbeach, Wakefield, and Otley on the last day of the quarter.

Thunder was heard but lightning was not seen on the 4th of April at Norwich and Belvoir; on the 5th at Bath; on the 12th at Belvoir Castle; on the 14th at Cardington, Belvoir, and Grantham; and on the 27th at Stonyhurst. On 3d May at Grantham, Abington, and Cardington; on the 4th at Brighton; on the 11th at Eccles; on the 12th at Ensleigh Lansdowne above Bath; on the 26th at Wilton; on the 27th at Clifton and Bywell; and on the 31st day at Abington Pigotts. On the 1st of June at Ensleigh Lansdowne (above Bath) Streatley and Oxford; on the 2d at Hawarden and Stonyhurst; on the 4th at Hawarden, Halifax, and Cockermouth; on the 5th at Grantham; on the 6th at Halifax and Bywell; on the 10th at Allenheads; on the 12th at Penketh; on the 16th at Silloth; on the 19th at Bywell; on the 21st at Guernsey, Marlborough College, and Stonyhurst; on the 27th at Battersea, Camden Town, Oxford, Lampeter, Stonyhurst, and Bywell; on the 28th at Sidmouth, Marlborough College, Camden Town, Cardington, Penketh, Cockermouth, and Carlisle; on the 29th at Sidmouth, Marlborough College, Llandudno, Halifax, Allenheads, Silloth, and Carlisle; and on the 30th day at Aldershot Camp, Sidmouth, Streatley, Royston, and Halifax.

Lightning was seen but thunder was not heard on the 1st of April at Guernsey; 2nd at Abington and Wisbeach; on the 7th at Guernsey; on the 15th at Aldershot, Cardington, and Diss; on the 14th at Wisbeach and Grantham, and on the 26th at Osborne and Downside College, near Bath. On 4th May at Halifax; the 9th at Abington; on the 12th at Oxford and Halifax; and at Brighton on the 26th. On 4th June at Marlborough College, Oxford, and Penketh; on the 5th at Cardington; on the 16th at Wilton and Aldershot; on 27th at Oxford and Royston; on 28th at Abington Pigotts; and on the last day at Oxford.

Solar halos were seen on the 14th of April at Oxford; the 15th at Royston; on the 19th at Oxford and Royston; on the 20th at Guernsey and Oxford; on the 21st at Liverpool; and on the 25th day at Clifton and Lampeter. On 2nd May at Clifton, the 8th at Guernsey, Oxford, and Wisbeach; on 9th at Guernsey; on the 16th Penketh; on the 17th Hawarden; on the 29th at Lampeter, the 30th at Guernsey, Oxford, Lampeter, Wisbeach, and Penketh; and at North Shields; on the following day. On the 8th at Clifton; on the 9th at Clifton, Wisbeach, and North Shields; on 10th at Wisbeach; the 11th at Oxford and Wisbeach; on the 21st at Oxford; the 24th at Lampeter; on the 25th at Guernsey; and on the 28th at Cardington.

Lunar halos were seen at Kingsley Parsonage, near Frodsham, on the 9th April; on the 10th at Sidmouth, Grantham, and Penketh; on the 20th at Sidmouth; 21st and 22d at North Shields; on 24th at Sidmouth; on 26th at Sidmouth and Oxford; and on the 27th day at Camden Town and Oxford. On 2nd May at Abington Pigotts; the 27th at Oxford, and on the 30th at Hawarden. On the 2nd of June at Cardington.

Aurora were seen on April 5th and 6th at Eccles, and at Stonyhurst on the last day of the month.

Snow fell on 17 days during the quarter, viz., 9 in April, and 8 in May.

Hail fell on 32 days during the quarter, viz., 14 in April, 13 in May, and 5 in June.

Fog was prevalent on 39 days during the quarter, viz., 15 in April, 8 in May, and 16 days in the month of June.

At Guernsey in April the mean temperature of the air was 0.5 above the average.

" May " " 2.0 below the average.

" June " " the same as the average.

" in April the amount of rain collected was 0.14 in. below the average.

" May " " 0.10 in. above the average.

" June " " 0.68 in. below the average.

At Downside College, near Bath, the cold and wet weather experienced during the month of April was very unfavourable for seed operations, the farmer being at a stand-still till the 22nd, and by the end of the month scarcely any leaves were out.

Wisbeach. In April wheat and crops looked exceedingly well. Gooseberries and currants were much cut off by the cold nights in May. At the end of June the hay-crop had been got in in very good condition, and the crops in general looked well, especially wheat and peas.

Belvoir.—April. The sowing of spring corn was hindered by wet weather early in the month, and the ground was difficult for management in the latter part owing to the sudden drying of the land which hardened without pulverizing. Although the bulk of the spring corn was sown, owing to the difficulties attendant on the preparation of the land, the work was not in all cases completed. On rich dry land the wheat plant maintained a healthy appearance through all vicissitudes of weather, but on low lying dry land the plant suffered and turned yellow. Barley came up well, but it was checked by cold weather, and its appearance is unsatisfactory. Meadows show a good head of grass, but when the stock was turned on, owing to the frosted grass being trampled upon, much has been destroyed. Beans look well. Roots proved useful, and saved cake. Sheep are healthy and lambs thriving; the fall of lambs may be considered good. On the 27th a change of wind from N. and N.E. to W. was accompanied by a remarkable increase in temperature. The maximum thermometer recorded 76° on that day. The effect on vegetation was very remarkable, trees, peas, plums, and cherries burst into leaf and blossom in a few hours, and at 9h. A.M. on the 28th a depression as sudden followed the veering of the wind to N., and excessively cold weather succeeded. On the 30th day 7° of frost occurred, and destroyed the prospect of an abundant fruit crop.

May. The work of preparing land for barley was so tedious and expensive owing to dry weather and the hard and untractable character of the soil that the sowing of that grain was not fully completed until the first week in this month. Wheat during the early part of the month was seriously affected by frosty weather, and for some time it bore an unpromising appearance, but on extremely rich land it had recovered by the end of the month. Oats and barley were similarly affected by cold ungenial weather. The excessive dryness of the weather stopped the progress of sowing mangold wurzel; pastures were also much injured by frost and dry weather, and were even less luxuriant at the end than at the beginning of the month. Sheep have done well, and beast stock continue healthy. Gooseberries and currants are scarce, plums and peas destroyed by frost, but apples promise to be abundant.

Grantham. At this station a very remarkable change in the temperature took place on the 28th of April. At 9h. A.M. the dry-bulb thermometer stood at 63°·3, rising to 64°·8 before 10 o'clock. It then decreased very rapidly, and by half past 11 had fallen to 51°; at 4h. P.M. it had decreased to 43° only, and at 9h. P.M. was nearly the same. About 10h. A.M. on the 29th the wind veered to N. and N.E., and began to blow briskly and very cold.

At Bywell the temperature of the month of April was very variable. The severe frost on the night of the 29th did some harm to the blossom of fruit trees. Grass was looking well, but fine genial weather much required. During the month of May there was a great range of temperature, very severe hoar frosts occurring at night and great heat during the day, especially from the 19th to 27th days. The last few days were cold. The different grain plants were looking pretty well, but grass did not make much progress during the month. Early potatoes suffered by the frost, also berry-bearing fruit bushes. Apple blossom was plentiful. Vegetation generally very backward for the season, and rain much required. By the end of June hay making was in full operation; quality good but below the average; wheat, barley, and oats were very promising. Peas and beans also looked well, but rain was much required for turnips and the other green crops.



# Meteorological Table, Quarter ending June 30th, 1866.

NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	WIND.					Mean Amount of Ozone.	Mean Amount of Cloud.			
																Relative Proportion of									
																N.	E.	S.	W.						
Guernsey	29.535	76.5	33.5	43.0	58.6	48.3	10.3	10.3	51.2	48.4	340	0.0	0.0	90	828	87.1	43.9	1.2	8	9	6	7	2.5	3.7	
Helston	29.623	87.0	30.0	57.0	62.3	47.7	14.6	14.6	52.8	48.5	340	0.0	0.0	90	866	859	87.1	43.9	2.5	11	6	8	9	5.3	4.7
Truro	29.619	82.0	28.0	54.0	61.6	46.1	15.5	15.5	51.1	45.1	330	0.5	0.5	90	850	849	87.1	43.9	2.5	11	6	8	9	5.3	4.7
Sidmouth	29.677	81.8	32.8	49.0	60.6	45.5	15.1	15.1	50.8	45.7	330	0.6	0.6	90	843	843	87.1	43.9	2.5	6	8	11	6	7.7	3.8
Ventnor	29.644	78.0	38.0	40.0	60.1	49.4	10.7	10.7	54.8	47.4	328	0.8	0.8	90	843	843	87.1	43.9	1.4	5	11	5	13	—	—
Osborne	29.630	82.0	32.0	50.0	64.3	45.3	20.0	20.0	57.5	44.3	328	0.8	0.8	90	843	843	87.1	43.9	1.4	5	11	5	13	—	—
Bournemouth	29.626	82.0	33.0	49.0	64.3	45.3	20.0	20.0	57.5	44.3	328	0.8	0.8	90	843	843	87.1	43.9	1.4	5	11	5	13	—	—
Worthing	29.594	82.0	36.0	45.0	56.3	42.7	13.6	13.6	52.1	44.6	295	3.4	1.1	76	539	—	—	—	0.7	5	10	10	9	5.3	4.7
Wilton	29.628	89.0	27.8	61.2	63.4	42.0	21.4	21.4	52.9	44.6	299	3.5	1.2	75	538	—	—	—	0.7	5	10	10	9	5.3	4.7
Barstaple	29.505	87.5	32.0	55.5	63.5	46.9	16.6	16.6	54.0	46.4	316	3.6	1.2	76	538	115.5	339.6	1.4	4	6	10	9	7	2.7	3.8
Aldershot Camp	29.618	85.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	316	3.6	1.2	76	538	115.5	339.6	1.4	4	6	10	9	7	2.7	3.8
Downside College	29.550	85.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	316	3.6	1.2	76	538	115.5	339.6	1.4	4	6	10	9	7	2.7	3.8
Bath Literary Inst.	29.623	85.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	316	3.6	1.2	76	538	115.5	339.6	1.4	4	6	10	9	7	2.7	3.8
Marlborough College	29.638	84.0	30.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	316	3.6	1.2	76	538	115.5	339.6	1.4	4	6	10	9	7	2.7	3.8
Clifton	29.654	83.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	316	3.6	1.2	76	538	115.5	339.6	1.4	4	6	10	9	7	2.7	3.8
Royal Observatory	29.581	83.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	316	3.6	1.2	76	538	115.5	339.6	1.4	4	6	10	9	7	2.7	3.8
Guildhall	29.581	83.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	316	3.6	1.2	76	538	115.5	339.6	1.4	4	6	10	9	7	2.7	3.8
Battersea	29.598	83.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	316	3.6	1.2	76	538	115.5	339.6	1.4	4	6	10	9	7	2.7	3.8
Streatham Vicarage	29.632	84.1	33.0	51.0	63.5	45.1	18.4	18.4	53.0	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Camden Town	29.574	82.0	32.0	53.0	62.7	44.4	18.3	18.3	53.0	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Oxford	29.638	81.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Royston	29.649	83.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Cardington	29.641	87.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Abington	29.641	87.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Lampeter	29.654	90.0	23.0	47.0	64.0	43.8	20.2	20.2	53.0	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Diss (Norfolk)	29.607	84.0	29.0	55.0	64.7	43.0	18.7	18.7	52.9	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Norwich	29.639	83.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Witchamere	29.617	81.0	33.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Derby	29.638	84.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Holkham	29.637	87.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Hawarden	29.637	87.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Kingsley	29.632	84.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Penketh, near Warrington	29.714	90.0	23.0	47.0	64.0	43.8	20.2	20.2	53.0	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Liverpool Observatory	29.692	89.0	33.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Manchester	29.647	87.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Eccles	29.672	87.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Wakefield	29.672	87.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Halifax	29.672	87.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Stonyhurst	29.672	87.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Silloth	29.672	87.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Cockermouth	29.672	87.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Durham	29.672	87.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Allenheads	29.672	87.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Silloth	29.672	87.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Carlisle	29.672	87.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Bywell	29.672	87.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
North Shields	29.672	87.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	
Milton, Banbridge	29.672	87.0	32.0	53.0	64.0	43.9	20.1	20.1	52.4	44.6	317	3.7	1.0	78	535	113.9	341.0	0.5	5	8	9	8	2.0	2.7	

The highest temperatures of the air were at Manchester, 91° 3'; Royston, 91° 2'; Penketh, near Warrington, 90° 6'; and Lampeter, 90° 5'. The lowest temperatures of the air were at Downside College, near Bath, Lampeter, and Bywell, 23° 0'; Allenheads, 23° 0'; and Wakefield and Carlisle, 24° 5'. The greatest daily ranges were at Wilton, 24° 4'; Abington, 23° 9'; Downside College, 21° 0'; and Royston and Diss, 21° 7'. The least daily ranges were at Guernsey, 10° 3'; Ventnor, 10° 7'; Liverpool, 11° 3'; North Shields, 12° 0'; Hawarden, 13° 2'; Guildhall, 14° 2'; and Otley, 14° 4'. The greatest number of rainy days were at Allenheads, 57; Manchester, 49; Wilton, 48; Greenwich, 47; and Truro, Stonyhurst, and Bywell, 46. The least number of rainy days were at Lampeter, 28; Worthing, Abington, Wisbeach and Holkham, 31; and Manchester and Silloth, 32. The heaviest falls were at Truro, 9.7 in.; Allenheads, 8.6 in.; Stonyhurst, 8.1 in.; and Manchester and Silloth, 4.4 in.; and Worthing and Milton, Banbridge, 4.5 in.

## QUARTERLY METEOROLOGICAL TABLE FOR DIFFERENT PARALLELS OF LATITUDE.

PARALLELS OF LATITUDE, &c.	Mean Pressure of dry Air reduced to the level of the Sea.	Mean all Highest Read- ings of the Thermometer.	Mean all Lowest Read- ings of the Thermometer.	Mean Range of Temper- ature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Max- imum in Rays of Sun.	Mean Reading of Min- imum on Grass.	Mean Estimated Strength.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.
																			Relative Pro- portion of					
																			N.	E.	S.	W.		
	in.	°	°	°	°	°	°	°	°	°	in.	grs.	gr.	grs.	grs.	—	—	—	—	—	—	—	—	
Guernsey	29.535	76.5	33.5	43.0	58.6	48.3	3.20	2.10	51.2	48.4	240	3.8	0.5	90	538	—	—	—	—	—	—	—	—	
Devon and Cornwall	29.540	76.9	33.6	54.9	61.5	49.4	3.35	7.15	51.6	49.4	246	3.7	0.5	90	538	—	—	—	—	—	—	—	—	
Isle of Wight	29.637	83.9	33.6	54.9	61.5	49.4	3.35	7.15	51.6	49.4	246	3.7	0.5	90	538	—	—	—	—	—	—	—	—	
South of latitude 51°	29.610	82.0	34.8	47.2	61.9	48.0	2.34	1.47	53.6	47.4	328	3.8	1.0	83	541	87.1	43.9	1.2	8	9	6	7	5.5	
Between { 51° and 52°	29.624	84.5	29.6	54.9	63.4	44.3	4.27	19.1	52.8	46.8	322	3.7	0.9	82	539	—	—	—	—	—	—	—	—	
the { 52° and 53°	29.648	85.1	28.5	56.6	69.3	43.7	4.43	19.6	52.7	45.1	301	3.5	1.1	76	537	103.7	39.5	1.1	6	8	7	8	4.1	
Latitude { 53° and 54°	29.652	84.4	29.2	55.8	61.1	44.1	4.28	17.7	51.4	48.4	281	3.4	1.0	77	539	105.7	38.2	1.0	6	9	7	8	4.2	
South Shields	29.651	83.4	29.5	55.1	59.6	41.8	4.38	17.8	50.1	49.2	276	3.1	0.9	77	539	95.0	38.5	1.1	6	9	7	8	4.4	
North Shields	29.774	84.5	31.0	41.3	55.5	40.9	3.30	12.9	46.9	42.9	260	3.0	0.6	85	546	—	—	—	—	—	—	—	—	
Miltnau, Banbridge (Ireland)	29.539	80.0	29.2	55.0	58.7	42.0	4.18	16.7	49.7	40.9	259	3.0	1.1	72	540	101.5	37.7	2.6	8	12	5	8	5.3	



Year 1865.	Names of Stations and Observers.	Temperature of Air in Month.				Mean Temperature.		Vapour.				Mean Reading of Thermometer.		Wind.				Mean Amount of		Rain. Number of Days it fell.	Amount col- lected.								
		Range.				Mean.	In a cubic foot of Air.	Short of Saturation.	Mean Degree of Humi- dity. Sat. = 100.	Maximum in Days of Sun.	Minimum on Grass.	Estimated Strength.	Relative Proportion of				Mean Amount of Ozone.												
		High.	Low.	Range.	All High.								All Low.	Daily Range.	Air.	Dew Point.		Elastic Force.	N.			E.	S.	W.					
																									in.	in.	in.	in.	in.
April	BATH ROYAL LITERARY AND SCIENTIFIC INSTITUTION, CHAS. P. RUSSELL, Esq.	29-815	0-940	72-5	32-0	42-8	54-8	30-7	18-8	29-7	49-5	41-0	327	2-9	1-1	73	831	105-0	38-1	1-5	5	18	8	10	9-0	4-3	9	1-2	29
May	CHAS. P. RUSSELL, Esq.	29-860	0-960	70-9	29-7	45-2	58-7	37-7	21-0	47-9	37-4	324	4-2	0-8	85	540	100-6	82-6	0-4	4	12	7	7	2-8	6-5	21	7-4	19	
June	CHAS. P. RUSSELL, Esq.	29-843	0-730	80-2	34-0	41-2	70-0	41-3	69-1	49-7	50-9	373	4-9	1-2	78	527	111-0	42-2	0-6	3	14	9	1-3	6-3	18	3-2	11	3-2	
July	CHAS. P. RUSSELL, Esq.	29-843	0-730	80-2	34-0	41-2	70-0	41-3	69-1	49-7	50-9	373	4-9	1-2	78	527	111-0	42-2	0-6	3	14	9	1-3	6-3	18	3-2	11	3-2	
August	CHAS. P. RUSSELL, Esq.	29-843	0-730	80-2	34-0	41-2	70-0	41-3	69-1	49-7	50-9	373	4-9	1-2	78	527	111-0	42-2	0-6	3	14	9	1-3	6-3	18	3-2	11	3-2	
September	CHAS. P. RUSSELL, Esq.	29-843	0-730	80-2	34-0	41-2	70-0	41-3	69-1	49-7	50-9	373	4-9	1-2	78	527	111-0	42-2	0-6	3	14	9	1-3	6-3	18	3-2	11	3-2	
October	CHAS. P. RUSSELL, Esq.	29-843	0-730	80-2	34-0	41-2	70-0	41-3	69-1	49-7	50-9	373	4-9	1-2	78	527	111-0	42-2	0-6	3	14	9	1-3	6-3	18	3-2	11	3-2	
November	CHAS. P. RUSSELL, Esq.	29-843	0-730	80-2	34-0	41-2	70-0	41-3	69-1	49-7	50-9	373	4-9	1-2	78	527	111-0	42-2	0-6	3	14	9	1-3	6-3	18	3-2	11	3-2	
December	CHAS. P. RUSSELL, Esq.	29-843	0-730	80-2	34-0	41-2	70-0	41-3	69-1	49-7	50-9	373	4-9	1-2	78	527	111-0	42-2	0-6	3	14	9	1-3	6-3	18	3-2	11	3-2	
January	CHAS. P. RUSSELL, Esq.	29-843	0-730	80-2	34-0	41-2	70-0	41-3	69-1	49-7	50-9	373	4-9	1-2	78	527	111-0	42-2	0-6	3	14	9	1-3	6-3	18	3-2	11	3-2	
February	CHAS. P. RUSSELL, Esq.	29-843	0-730	80-2	34-0	41-2	70-0	41-3	69-1	49-7	50-9	373	4-9	1-2	78	527	111-0	42-2	0-6	3	14	9	1-3	6-3	18	3-2	11	3-2	
March	CHAS. P. RUSSELL, Esq.	29-843	0-730	80-2	34-0	41-2	70-0	41-3	69-1	49-7	50-9	373	4-9	1-2	78	527	111-0	42-2	0-6	3	14	9	1-3	6-3	18	3-2	11	3-2	
April	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-430	0-986	72-8	30-0	42-8	54-8	30-7	18-8	29-7	49-5	41-0	327	2-9	1-1	73	831	105-0	38-1	1-5	5	18	8	10	9-0	4-3	9	1-2	29
May	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-512	0-872	70-9	29-7	45-2	58-7	37-7	21-0	47-9	37-4	324	4-2	0-8	85	540	100-6	82-6	0-4	4	12	7	7	2-8	6-5	21	7-4	19	
June	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-469	0-814	81-0	30-7	41-2	70-0	41-3	69-1	49-7	50-9	373	4-9	1-2	78	527	111-0	42-2	0-6	3	14	9	1-3	6-3	18	3-2	11	3-2	
July	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-768	0-800	72-9	30-5	42-8	54-8	30-7	18-8	29-7	49-5	41-0	327	2-9	1-1	73	831	105-0	38-1	1-5	5	18	8	10	9-0	4-3	9	1-2	29
August	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-682	0-750	80-0	42-6	41-4	70-5	32-7	17-8	39-9	31-7	383	4-3	1-4	75	528	111-0	42-2	0-6	3	14	9	1-3	6-3	18	3-2	11	3-2	
September	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
October	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
November	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
December	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
January	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
February	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
March	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
April	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
May	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
June	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
July	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
August	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
September	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
October	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
November	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
December	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
January	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
February	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
March	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
April	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
May	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
June	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
July	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
August	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
September	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
October	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
November	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
December	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5	382	3-0	0-8	89	541	114-7	43-4	0-5	8	12	6	9	2-3	5-9	15	1-7	17	
January	CLIFTON (Bristol). G. F. BUDDEN, Esq., M.D., F.M.S.	29-743	0-922	70-0	34-2	44-8	58-2	40-8	17-4	47-9	41-5</																		

DISS (Norfolk).	April 29/82	May 29/82	June 29/82	July 29/82	Aug 29/82	Sept 29/82	Oct 29/82	Nov 29/82	Dec 29/82	Jan 29/83	Feb 29/83	Mar 29/83	Apr 29/83	May 29/83	June 29/83	July 29/83	Aug 29/83	Sept 29/83	Oct 29/83	Nov 29/83	Dec 29/83	Jan 29/84	Feb 29/84	Mar 29/84	Apr 29/84	May 29/84	June 29/84	July 29/84	Aug 29/84	Sept 29/84	Oct 29/84	Nov 29/84	Dec 29/84	Jan 29/85	Feb 29/85	Mar 29/85	Apr 29/85	May 29/85	June 29/85	July 29/85	Aug 29/85	Sept 29/85	Oct 29/85	Nov 29/85	Dec 29/85	Jan 29/86	Feb 29/86	Mar 29/86	Apr 29/86	May 29/86	June 29/86	July 29/86	Aug 29/86	Sept 29/86	Oct 29/86	Nov 29/86	Dec 29/86	Jan 29/87	Feb 29/87	Mar 29/87	Apr 29/87	May 29/87	June 29/87	July 29/87	Aug 29/87	Sept 29/87	Oct 29/87	Nov 29/87	Dec 29/87	Jan 29/88	Feb 29/88	Mar 29/88	Apr 29/88	May 29/88	June 29/88	July 29/88	Aug 29/88	Sept 29/88	Oct 29/88	Nov 29/88	Dec 29/88	Jan 29/89	Feb 29/89	Mar 29/89	Apr 29/89	May 29/89	June 29/89	July 29/89	Aug 29/89	Sept 29/89	Oct 29/89	Nov 29/89	Dec 29/89	Jan 29/90	Feb 29/90	Mar 29/90	Apr 29/90	May 29/90	June 29/90	July 29/90	Aug 29/90	Sept 29/90	Oct 29/90	Nov 29/90	Dec 29/90	Jan 29/91	Feb 29/91	Mar 29/91	Apr 29/91	May 29/91	June 29/91	July 29/91	Aug 29/91	Sept 29/91	Oct 29/91	Nov 29/91	Dec 29/91	Jan 29/92	Feb 29/92	Mar 29/92	Apr 29/92	May 29/92	June 29/92	July 29/92	Aug 29/92	Sept 29/92	Oct 29/92	Nov 29/92	Dec 29/92	Jan 29/93	Feb 29/93	Mar 29/93	Apr 29/93	May 29/93	June 29/93	July 29/93	Aug 29/93	Sept 29/93	Oct 29/93	Nov 29/93	Dec 29/93	Jan 29/94	Feb 29/94	Mar 29/94	Apr 29/94	May 29/94	June 29/94	July 29/94	Aug 29/94	Sept 29/94	Oct 29/94	Nov 29/94	Dec 29/94	Jan 29/95	Feb 29/95	Mar 29/95	Apr 29/95	May 29/95	June 29/95	July 29/95	Aug 29/95	Sept 29/95	Oct 29/95	Nov 29/95	Dec 29/95	Jan 29/96	Feb 29/96	Mar 29/96	Apr 29/96	May 29/96	June 29/96	July 29/96	Aug 29/96	Sept 29/96	Oct 29/96	Nov 29/96	Dec 29/96	Jan 29/97	Feb 29/97	Mar 29/97	Apr 29/97	May 29/97	June 29/97	July 29/97	Aug 29/97	Sept 29/97	Oct 29/97	Nov 29/97	Dec 29/97	Jan 29/98	Feb 29/98	Mar 29/98	Apr 29/98	May 29/98	June 29/98	July 29/98	Aug 29/98	Sept 29/98	Oct 29/98	Nov 29/98	Dec 29/98	Jan 29/99	Feb 29/99	Mar 29/99	Apr 29/99	May 29/99	June 29/99	July 29/99	Aug 29/99	Sept 29/99	Oct 29/99	Nov 29/99	Dec 29/99	Jan 29/00	Feb 29/00	Mar 29/00	Apr 29/00	May 29/00	June 29/00	July 29/00	Aug 29/00	Sept 29/00	Oct 29/00	Nov 29/00	Dec 29/00	Jan 29/01	Feb 29/01	Mar 29/01	Apr 29/01	May 29/01	June 29/01	July 29/01	Aug 29/01	Sept 29/01	Oct 29/01	Nov 29/01	Dec 29/01	Jan 29/02	Feb 29/02	Mar 29/02	Apr 29/02	May 29/02	June 29/02	July 29/02	Aug 29/02	Sept 29/02	Oct 29/02	Nov 29/02	Dec 29/02	Jan 29/03	Feb 29/03	Mar 29/03	Apr 29/03	May 29/03	June 29/03	July 29/03	Aug 29/03	Sept 29/03	Oct 29/03	Nov 29/03	Dec 29/03	Jan 29/04	Feb 29/04	Mar 29/04	Apr 29/04	May 29/04	June 29/04	July 29/04	Aug 29/04	Sept 29/04	Oct 29/04	Nov 29/04	Dec 29/04	Jan 29/05	Feb 29/05	Mar 29/05	Apr 29/05	May 29/05	June 29/05	July 29/05	Aug 29/05	Sept 29/05	Oct 29/05	Nov 29/05	Dec 29/05	Jan 29/06	Feb 29/06	Mar 29/06	Apr 29/06	May 29/06	June 29/06	July 29/06	Aug 29/06	Sept 29/06	Oct 29/06	Nov 29/06	Dec 29/06	Jan 29/07	Feb 29/07	Mar 29/07	Apr 29/07	May 29/07	June 29/07	July 29/07	Aug 29/07	Sept 29/07	Oct 29/07	Nov 29/07	Dec 29/07	Jan 29/08	Feb 29/08	Mar 29/08	Apr 29/08	May 29/08	June 29/08	July 29/08	Aug 29/08	Sept 29/08	Oct 29/08	Nov 29/08	Dec 29/08	Jan 29/09	Feb 29/09	Mar 29/09	Apr 29/09	May 29/09	June 29/09	July 29/09	Aug 29/09	Sept 29/09	Oct 29/09	Nov 29/09	Dec 29/09	Jan 29/10	Feb 29/10	Mar 29/10	Apr 29/10	May 29/10	June 29/10	July 29/10	Aug 29/10	Sept 29/10	Oct 29/10	Nov 29/10	Dec 29/10	Jan 29/11	Feb 29/11	Mar 29/11	Apr 29/11	May 29/11	June 29/11	July 29/11	Aug 29/11	Sept 29/11	Oct 29/11	Nov 29/11	Dec 29/11	Jan 29/12	Feb 29/12	Mar 29/12	Apr 29/12	May 29/12	June 29/12	July 29/12	Aug 29/12	Sept 29/12	Oct 29/12	Nov 29/12	Dec 29/12	Jan 29/13	Feb 29/13	Mar 29/13	Apr 29/13	May 29/13	June 29/13	July 29/13	Aug 29/13	Sept 29/13	Oct 29/13	Nov 29/13	Dec 29/13	Jan 29/14	Feb 29/14	Mar 29/14	Apr 29/14	May 29/14	June 29/14	July 29/14	Aug 29/14	Sept 29/14	Oct 29/14	Nov 29/14	Dec 29/14	Jan 29/15	Feb 29/15	Mar 29/15	Apr 29/15	May 29/15	June 29/15	July 29/15	Aug 29/15	Sept 29/15	Oct 29/15	Nov 29/15	Dec 29/15	Jan 29/16	Feb 29/16	Mar 29/16	Apr 29/16	May 29/16	June 29/16	July 29/16	Aug 29/16	Sept 29/16	Oct 29/16	Nov 29/16	Dec 29/16	Jan 29/17	Feb 29/17	Mar 29/17	Apr 29/17	May 29/17	June 29/17	July 29/17	Aug 29/17	Sept 29/17	Oct 29/17	Nov 29/17	Dec 29/17	Jan 29/18	Feb 29/18	Mar 29/18	Apr 29/18	May 29/18	June 29/18	July 29/18	Aug 29/18	Sept 29/18	Oct 29/18	Nov 29/18	Dec 29/18	Jan 29/19	Feb 29/19	Mar 29/19	Apr 29/19	May 29/19	June 29/19	July 29/19	Aug 29/19	Sept 29/19	Oct 29/19	Nov 29/19	Dec 29/19	Jan 29/20	Feb 29/20	Mar 29/20	Apr 29/20	May 29/20	June 29/20	July 29/20	Aug 29/20	Sept 29/20	Oct 29/20	Nov 29/20	Dec 29/20	Jan 29/21	Feb 29/21	Mar 29/21	Apr 29/21	May 29/21	June 29/21	July 29/21	Aug 29/21	Sept 29/21	Oct 29/21	Nov 29/21	Dec 29/21	Jan 29/22	Feb 29/22	Mar 29/22	Apr 29/22	May 29/22	June 29/22	July 29/22	Aug 29/22	Sept 29/22	Oct 29/22	Nov 29/22	Dec 29/22	Jan 29/23	Feb 29/23	Mar 29/23	Apr 29/23	May 29/23	June 29/23	July 29/23	Aug 29/23	Sept 29/23	Oct 29/23	Nov 29/23	Dec 29/23	Jan 29/24	Feb 29/24	Mar 29/24	Apr 29/24	May 29/24	June 29/24	July 29/24	Aug 29/24	Sept 29/24	Oct 29/24	Nov 29/24	Dec 29/24	Jan 29/25	Feb 29/25	Mar 29/25	Apr 29/25	May 29/25	June 29/25	July 29/25	Aug 29/25	Sept 29/25	Oct 29/25	Nov 29/25	Dec 29/25	Jan 29/26	Feb 29/26	Mar 29/26	Apr 29/26	May 29/26	June 29/26	July 29/26	Aug 29/26	Sept 29/26	Oct 29/26	Nov 29/26	Dec 29/26	Jan 29/27	Feb 29/27	Mar 29/27	Apr 29/27	May 29/27	June 29/27	July 29/27	Aug 29/27	Sept 29/27	Oct 29/27	Nov 29/27	Dec 29/27	Jan 29/28	Feb 29/28	Mar 29/28	Apr 29/28	May 29/28	June 29/28	July 29/28	Aug 29/28	Sept 29/28	Oct 29/28	Nov 29/28	Dec 29/28	Jan 29/29	Feb 29/29	Mar 29/29	Apr 29/29	May 29/29	June 29/29	July 29/29	Aug 29/29	Sept 29/29	Oct 29/29	Nov 29/29	Dec 29/29	Jan 29/30	Feb 29/30	Mar 29/30	Apr 29/30	May 29/30	June 29/30	July 29/30	Aug 29/30	Sept 29/30	Oct 29/30	Nov 29/30	Dec 29/30	Jan 29/31	Feb 29/31	Mar 29/31	Apr 29/31	May 29/31	June 29/31	July 29/31	Aug 29/31	Sept 29/31	Oct 29/31	Nov 29/31	Dec 29/31	Jan 29/32	Feb 29/32	Mar 29/32	Apr 29/32	May 29/32	June 29/32	July 29/32	Aug 29/32	Sept 29/32	Oct 29/32	Nov 29/32	Dec 29/32	Jan 29/33	Feb 29/33	Mar 29/33	Apr 29/33	May 29/33	June 29/33	July 29/33	Aug 29/33	Sept 29/33	Oct 29/33	Nov 29/33	Dec 29/33	Jan 29/34	Feb 29/34	Mar 29/34	Apr 29/34	May 29/34	June 29/34	July 29/34	Aug 29/34	Sept 29/34	Oct 29/34	Nov 29/34	Dec 29/34	Jan 29/35	Feb 29/35	Mar 29/35	Apr 29/35	May 29/35	June 29/35	July 29/35	Aug 29/35	Sept 29/35	Oct 29/35	Nov 29/35	Dec 29/35	Jan 29/36	Feb 29/36	Mar 29/36	Apr 29/36	May 29/36	June 29/36	July 29/36	Aug 29/36	Sept 29/36	Oct 29/36	Nov 29/36	Dec 29/36	Jan 29/37	Feb 29/37	Mar 29/37	Apr 29/37	May 29/37	June 29/37	July 29/37	Aug 29/37	Sept 29/37	Oct 29/37	Nov 29/37	Dec 29/37	Jan 29/38	Feb 29/38	Mar 29/38	Apr 29/38	May 29/38	June 29/38	July 29/38	Aug 29/38	Sept 29/38	Oct 29/38	Nov 29/38	Dec 29/38	Jan 29/39	Feb 29/39	Mar 29/39	Apr 29/39	May 29/39	June 29/39	July 29/39	Aug 29/39	Sept 29/39	Oct 29/39	Nov 29/39	Dec 29/39	Jan 29/40	Feb 29/40	Mar 29/40	Apr 29/40	May 29/40	June 29/40	July 29/40	Aug 29/40	Sept 29/40	Oct 29/40	Nov 29/40	Dec 29/40	Jan 29/41	Feb 29/41	Mar 29/41	Apr 29/41	May 29/41	June 29/41	July 29/41	Aug 29/41	Sept 29/41	Oct 29/41	Nov 29/41	Dec 29/41	Jan 29/42	Feb 29/42	Mar 29/42	Apr 29/42	May 29/42	June 29/42	July 29/42	Aug 29/42	Sept 29/42	Oct 29/42	Nov 29/42	Dec 29/42	Jan 29/43	Feb 29/43	Mar 29/43	Apr 29/43	May 29/43	June 29/43	July 29/43	Aug 29/43	Sept 29/43	Oct 29/43	Nov 29/43	Dec 29/43	Jan 29/44	Feb 29/44	Mar 29/44	Apr 29/44	May 29/44	June 29/44	July 29/44	Aug 29/44	Sept 29/44	Oct 29/44	Nov 29/44	Dec 29/44	Jan 29/45	Feb 29/45	Mar 29/45	Apr 29/45	May 29/45	June 29/45	July 29/45	Aug 29/45	Sept 29/45	Oct 29/45	Nov 29/45	Dec 29/45	Jan 29/46	Feb 29/46	Mar 29/46	Apr 29/46	May 29/46	June 29/46	July 29/46	Aug 29/46	Sept 29/46	Oct 29/46	Nov 29/46	Dec 29/46	Jan 29/47	Feb 29/47	Mar 29/47	Apr 29/47	May 29/47	June 29/47	July 29/47	Aug 29/47	Sept 29/47	Oct 29/47	Nov 29/47	Dec 29/47	Jan 29/48	Feb 29/48	Mar 29/48	Apr 29/48	May 29/48	June 29/48	July 29/48	Aug 29/48	Sept 29/48	Oct 29/48	Nov 29/48	Dec 29/48	Jan 29/49	Feb 29/49	Mar 29/49	Apr 29/49	May 29/49	June 29/49	July 29/49	Aug 29/49	Sept 29/49	Oct 29/49	Nov 29/49	Dec 29/49	Jan 29/50	Feb 29/50	Mar 29/50	Apr 29/50	May 29/50	June 29/50	July 29/50	Aug 29/50	Sept 29/50	Oct 29/50	Nov 29/50	Dec 29/50	Jan 29/51	Feb 29/51	Mar 29/51	Apr 29/51	May 29/51	June 29/51	July 29/51	Aug 29/51	Sept 29/51	Oct 29/51	Nov 29/51	Dec 29/51	Jan 29/52	Feb 29/52	Mar 29/52	Apr 29/52	May 29/52	June 29/52	July 29/52	Aug 29/52	Sept 29/52	Oct 29/52	Nov 29/52	Dec 29/52	Jan 29/53	Feb 29/53	Mar 29/53	Apr 29/53	May 29/53	June 29/53	July 29/53	Aug 29/53	Sept 29/53	Oct 29/53	Nov 29/53	Dec 29/53	Jan 29/54	Feb 29/54	Mar 29/54	Apr 29/54	May 29/54	June 29/54	July 29/54	Aug 29/54	Sept 29/54	Oct 29/54	Nov 29/54	Dec 29/54	Jan 29/55	Feb 29/55	Mar 29/55	Apr 29/55	May 29/55	June 29/55	July 29/55	Aug 29/55	Sept 29/55	Oct 29/55	Nov 29/55	Dec 29/55	Jan 29/56	Feb 29/56	Mar 29/56	Apr 29/56	May 29/56	June 29/56	July 29/56	Aug 29/56	Sept 29/56	Oct 29/56	Nov 29/56	Dec 29/56	Jan 29/57	Feb 29/57	Mar 29/57	Apr 29/57	May 29/57	June 29/57	July 29/57	Aug 29/57	Sept 29/57	Oct 29/57	Nov 29/57	Dec 29/57	Jan 29/58	Feb 29/58	Mar 29/58	Apr 29/58	May 29/58	June 29/58	July 29/58	Aug 29/58	Sept 29/58	Oct 29/58	Nov 29/58	Dec 29/58	Jan 29/59	Feb 29/59	Mar 29/59	Apr 29/59	May 29/59	June 29/59	July 29/59	Aug 29/59	Sept 29/59	Oct 29/59	Nov 29/59	Dec 29/59	Jan 29/60	Feb 29/60	Mar 29/60	Apr 29/60	May 29/60	June 29/60	July 29/60	Aug 29/60	Sept 29/60	Oct 29/60	Nov 29/60	Dec 29/60	Jan 29/61	Feb 29/61	Mar 29/61	Apr 29/61	May 29/61	June 29/61	July 29/61	Aug 29/61	Sept 29/61	Oct 29/61	Nov 29/61	Dec 29/61	Jan 29/62	Feb 29/62	Mar 29/62	Apr 29/62	May 29/62	June 29/62	July 29/62	Aug 29/62	Sept 29/62	Oct 29/62	Nov 29/62	Dec 29/62	Jan 29/63	Feb 29/63	Mar 29/63	Apr 29/63	May 29/63	June 29/63	July 29/63	Aug 29/63	Sept 29/63	Oct 29/63	Nov 29/63	Dec 29/63	Jan 29/64	Feb 29/64	Mar 29/64	Apr 29/64	May 29/64	June 29/64	July 29/64	Aug 29/64	Sept 29/64	Oct 29/64	Nov 29/64	Dec 29/64	Jan 29/65	Feb 29/65	Mar 29/65	Apr 29/65	May 29/65	June 29/65	July 29/65	Aug 29/65	Sept 29/65	Oct 29/65	Nov 29/65	Dec 29/65	Jan 29/66	Feb 29/66	Mar 29/66	Apr 29/66	May 29/66	June 29/66	July 29/66	Aug 29/66	Sept 29/66	Oct 29/66	Nov 29/66	Dec 29/66	Jan 29/67	Feb 29/67	Mar 29/67	Apr 29/67	May 29/67	June 29/67	July 29/67	Aug 29/67	Sept 29/67	Oct 29/67	Nov 29/67	Dec 29/67	Jan 29/68	Feb 29/68</
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[illegible]

In the return from Worthing for April, on the 23 day at 9 A.M., the barometer reading has been altered from 30·609 in. to 29·669 in. Battersea for May, on the 12th day at 3 P.M., the barometer reading has been altered from 28·906 in. to 29·905 in.; and on the 17th at 9 A.M. from 29·884 in. to 30·384 in.

**Second Rain-gauges are placed.**—At Allers-hot at the height of 29 feet above the ground, the amount collected was 5·1 inches; at Clifton, 49 feet, 5·3 inches; at Oxford, 24 feet, 5·9 inches; at Ditch, 61 feet, 6·0 inches; at Norwich, 37 feet, 5·1 inches; at Cock-shoot, 40 feet, 6·0 inches; at Allenhurst, 41 feet, 5·9 inches; at Milborne, 40 feet, 5·9 inches.

**YARLSEA.**—In the Quarterly Table for the three months ending March 1864. Number of days rain at Yarnes, for 60, read 28.

METEOROLOGY OF ENGLAND,  
DURING THE QUARTER ENDING SEPTEMBER 30, 1866.

REMARKS ON THE WEATHER during the QUARTER ending 30th of September 1866.  
By JAMES GLAISHER, Esq., F.R.S., &c., Secretary of The Meteorological  
Society.

The last quarter closed with fine warm weather. At the beginning of this the weather changed to cold, with rain falling almost daily in every part of the country. The mean temperature of the first eight days was below their average daily by  $5^{\circ}$ . On the 9th of July the weather changed to fine and hot, which continued till the 17th; the average daily excess of this period was  $64^{\circ}$ . From 18th July till 27th September the temperature was nearly always cold; the exceptions were 24th to 28th August, and a few days at the beginning of September, whose mean temperatures either just reached their averages or were slightly in excess. The mean daily deficiency of these 72 days was  $13^{\circ}$ .

In July rain fell frequently all over the country. In the first week wheat in the southern districts passed the flowering stage, and in northern appeared in ear. Towards the end of the month some wheat in extreme south districts was cut. In August till the third week the weather was very unsettled, with low atmospheric pressure and frequent rain, which greatly interrupted harvest work. During dry intervals a large portion of the crops in the south of England were stacked, but in some cases in a damp condition. The month of August was not favourable to agricultural pursuits, the absence of sunshine retarded the crops ripening, the frequent rain injured them, but to a less extent than was feared, in consequence of the heavy drying winds. In some places the crops were beaten down by the rain and twisted by the wind, so that reaping machines could not be used. In September the weather was unsettled, but not so much as in August, and the crops were generally well advanced.

In the south of England the rain and twisted by the wind, so that reaping machines could not be used. In some places the crops were beaten all over the country in excess, amounting in Guernsey and in the western parts of England to 8 in. and 9 in., gradually decreasing in amount proceeding eastward to 3 in. near the east coast, about London near 4 in. fell.

In the south of England most of the crops were housed, but in every other part of the country they suffered greatly, and those in the north and in Scotland, owing to want of sunshine and the low day temperature made but little progress towards ripening. In the midland counties, owing to the heavy rain, there were great floods, the waters of the Trent, the Soar, and the Derwent overflowed and covered thousands of acres of corn land, and caused great damage.

and covered thousands of acres of corn land, and caused great damage. The month of September was very bad for all agricultural pursuits.

The co-existence of cholera with epidemics of the plague, the typhus, and the scarlet fever, during the month of September was very bad for all agricultural pursuits.

The three preceding visitations in the years 1832, 1848, and 1854, viz., great atmospheric pressure, high temperature, small diurnal range (owing mostly to high night temperature), deficient rain, very little wind.

deficiency of electricity (as evidenced by the few electrical fires, and the prevalence of lightning) and, consequently a stagnation of the atmosphere, and prevalent mist).

of electricity (and consequently a stagnation of the atmosphere, and prevalent mist), a remarkable blue mist which prevailed night and day, give a high interest to the meteorology of the present quarter, during which these phenomena have been observed.

During the past quarter, during which the epidemic of cholera has again visited us, the atmospheric pressure has been remarkably low, and from 26th July

the end of the quarter the atmospheric pressure has been remarkably low, and from 26th July to 31st, a most rare occurrence. The temperature of the air has been low night and day excepting in September, when the temperature was high.

The temperature of the air has been low night and day, excepting in August, and the daily range of temperature has been small, chiefly owing to low winds and a high humidity.

There has been a somewhat less degree in September, but the range in September was still further

There has been an abundance of rain everywhere, it falling in September at some places on every day in the month. The air has been less degree in September, but the range in September was still further than in the month. The air has been less degree in September, but the range in September was still further than in the month.

Nearly all the circumstances of the year.

One of the most important circumstances are directly opposite to those mentioned above as being present at the previous visitations of cholera, and have probably aided in checking its wider extension.

of the most remarkable atmospheric phenomena during the past quarter has been the prevalence of a peculiar blue mist, first seen by myself on Oct. 1. It has continued here over the past 80 days.

peculiar blue mist, first seen by myself on 30th July, but which had been remarked by some observers in the preceding week. This blue mist since that time has been generally present ; some days no trace of the mist being perceptible, and on other days only a very faint blue haze.

anywhere. This mist is seen from the coast of the Firth of Clyde, and extends from Aberdeen to the Isle of Wight, and of the same tint of blue

This mist increased in intensity when viewed through a telescope; usually no mist was seen when this viewed; it increased in density during the fall of rain: usually mist rises after the fall of rain.

viewed through a telescope; usually no mist did decrease when a gale was blowing, but increased again on its subsidence. I do not know

During the high-meteorological period of 1854 till now, the influence of this blue gale was blowing, but the fact of its presence not having been noticed since the

During the preceding quarter it has been unperceived.

The mean temperature of the preceding quarter it has been noticed over the country that the number of house-flies has been unusually small.

8. below the average of 25 years, was  $61^{\circ} \cdot 0$ , being  $0^{\circ} \cdot 4$  below the average of the preceding 95 years. The mean temperature of July was  $61^{\circ} \cdot 0$ , being  $0^{\circ} \cdot 4$  below the average of the preceding 95 years, and lower than any year since 1862, when the temperature was  $61^{\circ} \cdot 4$ .

The mean temperature of August was  $59^{\circ}\cdot 6$  being  $13^{\circ}\cdot 2$  lower than the average of the preceding 95 years, 1<sup>st</sup> 8 lower than the average of 25 years, and lower than any year since 1863, when the temperature was

Temperature of August was  $59^{\circ}.4$ , being  $1^{\circ}.3$  lower than the average of the preceding years,  $1^{\circ}.8$  lower than the average of 25 years, and  $1^{\circ}.8$  below that of last year.

the average of 25 years, and 1°·8 below that of last year.



The mean temperature of September was  $56^{\circ} \cdot 4$ , being  $0^{\circ} \cdot 1$  lower than the average of the preceding 95 years,  $0^{\circ} \cdot 7$  lower than the average of 25 years, and lower than the temperature of last year to the amount of  $7^{\circ} \cdot 5$ .

The mean high day temperatures for the three months were below the averages to the respective amounts of  $1^{\circ} \cdot 2$ ,  $3^{\circ} \cdot 4$ , and  $2^{\circ} \cdot 6$ .

The mean low night temperatures were below their averages in July and August to the respective amounts of  $0^{\circ} \cdot 4$  and  $0^{\circ} \cdot 8$ , and was  $1^{\circ} \cdot 6$  above its average in September.

Therefore the days and nights were cold in July and August, but the days were cold and the nights were warm in September.

The daily ranges of temperature were respectively  $0^{\circ} \cdot 8$ ,  $2^{\circ} \cdot 6$ , and  $4^{\circ} \cdot 2$  below their averages during the three months.

The fall of rain was  $1^{\circ} \cdot 0$  in. below the average in July, the same as the average in August, and  $1^{\circ} \cdot 5$  in. above the average in September.

The mean temperature of the air at Greenwich in the three months ending August, constituting the three summer months, was  $60^{\circ} \cdot 4$ , being  $0^{\circ} \cdot 2$  below the average of the preceding 25 years.

Temperature of													Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
1866. MONTHS.	Air.		Evaporation.		Dew Point.		Air— Daily Range.		Water of the Thames.		Elastic Force of Vapour.			Weight of Vapour in a Cubic Foot of Air.		
	Mean.	Diff. from average of 95 years.	Mean.	Diff. from average of 25 years.	Mean.	Diff. from average of 25 years.	Mean.	Diff. from average of 25 years.			Mean.	Diff. from average of 25 years.				
July	61.0	-0.4	57.1	-0.8	53.7	0.0	20.1	0.0	0	in.	in.	grs.	gr.			
August	59.4	-1.3	55.9	-1.4	52.7	-1.1	17.1	-0.8	61.4	.413	.000	4.6	4.6			
Sept.	56.4	-0.1	53.9	-0.1	51.5	+0.4	14.5	-4.2	58.3	.399	.019	4.5	4.5			
Mean	58.9	-0.6	55.6	-0.6	52.6	-0.2	17.2	-2.5	61.8	.398	-.006	4.5	4.5			

1866. MONTHS.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.	Reading of Thermometer on Grass.			
	Mean.	Diff. from average of 25 years.	Mean.	Diff. from average of 25 years.	Mean.	Diff. from average of 25 years.	Amount.	Diff. from average of 51 years.		Number of Nights it was			Lowest Reading at Night.
									Miles.	At or below 30°.	Between 30° and 40°.	Above 40°.	
July	78	+2	in. 29.770	-0.033	grs. 528	0	in. 1.6	in. -1.0	233	0	3	23	0
August	79	+2	29.637	-0.164	528	-1	2.4	0.0	254	0	6	31	38.9
Sept.	81	+3	29.581	-0.247	539	-4	3.9	+1.5	251	0	3	27	41.1
Mean	80	+2	29.663	-0.145	529	-2	Sum 7.9	Sum +0.5	Mean 246	Sum 0	Sum 6	Sum 85	Lowest 33.1

NOTE.—In reading this table it will be borne in mind that the sign (+) plus signifies above the average, and that the sign (-) minus signifies below the average.

Thunder storms occurred or thunder was heard and lightning was seen on the 1st July at Cardington, Norwich, and Wisbeach; on the 2d at Penketh and Liverpool; on the 3d at Clifton and Holkham; on the 4th at London; on the 5th at Wisbeach; on the 6th at Aldershot Camp, Oxford, Royston, and Cardington; on the 13th at Cockermouth, Allenheads, Silloth, Carlisle, North Shields, Culloden, and Durham; on the 15th at Aldershot; and on the 16th at Guernsey and Helston. On 7th August at Eccles and Castleton; on the 8th at Penketh, Liverpool, Eccles, Castleton, and Halifax; on the 9th at Llandudno and Eccles; on the 10th at Camden Town, Cardington, Wisbeach, Penketh, Liverpool, Eccles, Castleton, Stonyhurst, Allenheads, Silloth, and Bywell; on the 16th at Wisbeach, Holkham, Castleton, Cockermouth, and Silloth; on the 24th at Streatley and Carlisle; on the 25th at Truro and Carlisle; on the 26th at Clifton, Allenheads, Bywell, and Durham; on the 28th at Camden Town, Cardington, Hawarden, Penketh, and Bywell; and on the 31st at Silloth. On the 1st September at Cockermouth, Silloth, and Carlisle; on the 2d at Camden and Silloth; on the 5th at Miltown; on the 6th at Abington and Wakefield; on the 15th at Ensleigh; on the 18th at Cockermouth; on the 21st at Cardington, Halifax, and Stonyhurst; and on the 22d at Silloth and Carlisle.

Thunder was heard but lightning was not seen on 1st July at Royston and Holkham; on the 2d at Norwich; on the 3d at Oxford, Norwich, Eccles, and Bywell; on the 4th at Norwich; on the 5th at Cardington and Norwich; on the 6th at Osborne, Clifton, Oxford, and Allenheads; on the 13th at Bywell; on the 15th at Carlisle; on the 16th at Helston; on the 19th at Guernsey; on the 25th at Holkham; and on the 29th at Wisbeach. On the 7th August at Llandudno and Penketh; on the 8th at Streatley and Carlisle; on the 9th at Hawarden; on the 10th at Norwich, Belvoir, and Penketh; on the 11th at Carlisle; on the 16th at Carlisle, on the 19th at Streatley, on the 25th at Bywell; on the 26th at Helston, Bath, Ensleigh, and Stonyhurst; on the 27th at Hawarden; and on the 28th at Allenheads. On the 1st September at Battersea, Wakefield, and Halifax; on the 2d at Oxford, Liverpool, Eccles, Carlisle, and North Shields; on the 5th at Sidmouth and Halifax; on the 8th at Osborne and Diss; on the 15th at Ensleigh, Wisbeach, Belvoir, Grantham, Eccles, and Stonyhurst; on the 16th at Sidmouth; on the 17th at Sidmouth; on the 18th at North Shields; on the 21st at Eccles; on the 22d at Eccles and Stonyhurst; and on the 29th at Abington.

Lightning was seen but thunder was not heard on 6th July at Cardington; on 15th at Guernsey; and on 29th at London. On the 8th August at Cardington, Wisbeach, Llandudno, Belvoir Castle, Cardington; on the 9th at Cockermouth; on the 10th at London and Holkham; on the 16th at Shields; on the 27th at Hawarden and Carlisle; on the 28th at Ensleigh Lansdowne near Bath, Clifton, Penketh, and at Liverpool Observatory; on the 30th at Eccles, near Manchester. On the 1st September at Oxford, Liverpool, and Allenheads; on the 2d at Oxford, Cardington, Wisbeach, and Grantham; on the 6th at Cardington, Wisbeach, and Halifax; on the 13th at Cardington; on the 15th at Wisbeach, Hawarden, Eccles, and Halifax; on the 17th at Oxford.

Solar halos were seen on the 18th July at Clifton, and on the 30th at Clifton. On the 11th August at Clifton, and on the 18th at Camden Town. On the 7th September at Clifton, Oxford, and Wisbeach; on the 10th at Oxford; on the 13th at Hawarden; on the 18th at Oxford; on the 19th at Clifton and Oxford; on the 22d at Clifton; and on the 26th at Oxford.

Lunar halos were seen on the 29th July at Barnstaple; and on the 30th at Bath Literary Institution. On the 22d August at Wilton; on the 23d at Wisbeach; on the 25th at Camden; on the 26th at Camden, Halifax, and Carlisle; on the 27th at Guernsey and North Shields; and on the 28th at Camden and North Shields. On the 19th September at Oxford; on the 21st at Clifton; on the 22d at Sidmouth, Oxford, and Grantham; on the 27th at Wisbeach; and on the 28th at Abington.

Aurora Boreales were seen on the 6th August at Hawarden; and on the 19th at Halifax. On the 5th September at Hawarden.

Fog was seen on the 9th July at Guernsey, Helston, Truro, and Allenheads; on the 10th at Guernsey, Sidmouth, Penketh, and Allenheads; on the 11th at Penketh and Clifton; on the 13th at Guernsey, Camden, and Oxford; on the 14th at Camden and Penketh; on the 15th at Penketh; on the 16th at Penketh and Allenheads; on the 17th at Guernsey; on the 18th at Penketh; on the 19th at Penketh; on the 20th at Penketh; on the 21st at Guernsey, Penketh, Allenheads, and Clifton; on the 22d at Guernsey and Penketh; on the 23d at Oxford, Penketh, and Allenheads; on the 26th at Guernsey, Allenheads, and Norwich; and on the 27th at Allenheads. On the 1st August at Helston; on the 2d at Allenheads; on the 3d at Helston; on the 6th at Penketh, and Allenheads; on the 14th at Allenheads; on the 20th at Sidmouth; on the 21st at Sidmouth, Holkham, and Allenheads; on the 22d at Bath Literary Institution, Cardington, Wisbeach, Allenheads, and North Shields; on the 24th at Holkham, Penketh, Halifax, Allenheads, North Shields, and Bywell; on the 25th at Sidmouth and Halifax; and on the 26th at Helston and Oxford. On the 4th September at Helston and Leeds; on the 5th at Wakefield; on the 7th at Camden Town; on the 8th at Allenheads and Wakefield; on the 18th at Helston; on the 23d at Camden Town; on the 26th at Bath Literary Institution; on the 27th at Bath Literary Institution, Wisbeach, and Wakefield; on the 28th at Wisbeach and Wakefield; on the 29th at North Shields and Wakefield; and on the 30th at Bath Royal Literary Institution, Oxford, Allenheads, and Wakefield.

Hail fell on the 1st July at Wisbeach and Royston; on the 2d at Liverpool and Cardington; on the 3d at Holkham, Wisbeach, and Clifton; on the 5th at Guernsey and Camden; on the 6th at Marlborough and Hawarden; on the 9th at Norwich; and on the 13th at Carlisle, North Shields, and Bywell. On the 5th August at Marlborough and Liverpool; on the 7th at Camden and Grantham; on the 8th at Liverpool and Diss; on the 10th at Marlborough and Carlisle; on the 16th at Cockermouth, Carlisle, and Hawarden; and on the 29th at Belvoir and Grantham. On the 2d September at Camden Town, Oxford, Cockermouth, and Silloth; on the 14th at Stonyhurst, Silloth, and Silloth; and on the 22d at Carlisle.

Snow fell on the 21st September at Halifax.

Thursday evening, 13th September, at East Budleigh, four miles west of Sidmouth. Felt also at Branscombe, four miles west. No notice taken of it in Sidmouth. It was noticed at East Budleigh by R. H. Lipscombe, Esq. (see Exeter Gazette), and by — Ford, Esq., Branscombe.

Wheat was first cut on the 25th July at Cardington; on the 27th at Osborne; and on the 31st at Guernsey.

Oats were first cut on the 25th July at Cardington; on the 11th at Penketh; on the 15th at Belvoir Castle; and on the 27th at North Shields.

Barley was first cut on the 24th July at Guernsey. On the 7th August at Penketh.

Flax pulled at Miltown (Banbridge, Ireland) on the 31st June.

At Guernsey. Phormium Tenax (New Zealand Flax) has flowered abundantly. The plant is roughly naturalized in Guernsey, and grows spontaneously from seeds in favourable seasons such as this has been.

At Helston. Peaches were ripe on the 16th August; plums on the 16th; and pears on the 19th.

At North Shields. Pears were ripe on the 14th September; and apples on the 28th.

At Sidmouth. Trees were generally losing their leaves in September.

At Osborne. On the 27th September at 3 p.m. hundreds of swallows were swarming and flying about at a great height, scarcely visible.

At Kingsley. Departure of swallows on the 22d September.







Year 1866.	Month.	Names of Stations and Observers.	Pressure of Atmosphere in Month.			Temperature of Air in Month.			Mean Temperature.		Vapour.		Mean Reading of Thermometer.		Wind.			Mean Amount of Cloud.	Number of Days it fell.	Rain. Amount col- lected.					
			Mean.	Range.	Highest.	Lowest.	Range.	Of all Highest.	Of all Lowest.	Daily Range.	Air.	Dew Point.	Elastic Force.	Mean. Short of Saturation.	Mean Degree of Humi- dity, Sat. = 100.	Mean Weight of a Cubic Foot of Air.	Maximum in Days of Sun.				Minimum on Grass.	Estimated Strength.	Relative Proportion of		
																							N.	E.	S. W.
July	29-844	BATH ROYAL LITERARY AND SCIENTIFIC INSTITUTION, CHAS. P. RUSSELL, Esq.	1.000	89.4	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Aug.	29-718	CHAS. P. RUSSELL, Esq.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Sept.	29-630	CHAS. P. RUSSELL, Esq.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
July	29-183	ENSLIEGH OBSERVATORY, (Land-down above Bath).	1.000	89.4	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Aug.	29-047	ENSLIEGH OBSERVATORY, (Land-down above Bath).	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Sept.	29-008	ENSLIEGH OBSERVATORY, (Land-down above Bath).	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
July	29-483	MARLBOROUGH COLLEGE, Rev. THOMAS A. PULSTON, M.A., F.R.S.	1.000	89.4	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Aug.	29-349	MARLBOROUGH COLLEGE, Rev. THOMAS A. PULSTON, M.A., F.R.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Sept.	29-282	MARLBOROUGH COLLEGE, Rev. THOMAS A. PULSTON, M.A., F.R.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
July	29-705	CLIFTON (Bristol).	1.000	89.4	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Aug.	29-566	CLIFTON (Bristol).	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Sept.	29-472	CLIFTON (Bristol).	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
July	29-770	ROYAL OBSERVATORY, THE ASTRONOMER ROYAL.	1.000	89.4	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Aug.	29-637	ROYAL OBSERVATORY, THE ASTRONOMER ROYAL.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Sept.	29-581	ROYAL OBSERVATORY, THE ASTRONOMER ROYAL.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
July	29-822	GUILDHALL.	1.000	89.4	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Aug.	29-687	GUILDHALL.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Sept.	29-607	GUILDHALL.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
July	29-925	BATTERSEA TRAINING COLLEGE, J.P. FAUTHORPE, Esq., F.R.S.	1.000	89.4	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Aug.	29-785	BATTERSEA TRAINING COLLEGE, J.P. FAUTHORPE, Esq., F.R.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Sept.	29-731	BATTERSEA TRAINING COLLEGE, J.P. FAUTHORPE, Esq., F.R.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
July	29-954	STREATHLEY VICARAGE (Berk.), Rev. J. SLATER, M.A., F.R.S.	1.000	89.4	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Aug.	29-819	STREATHLEY VICARAGE (Berk.), Rev. J. SLATER, M.A., F.R.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Sept.	29-765	STREATHLEY VICARAGE (Berk.), Rev. J. SLATER, M.A., F.R.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
July	29-319	CAMDEN TOWN, G.J. SYMONS, Esq., F.R.S.	1.000	89.4	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Aug.	29-183	CAMDEN TOWN, G.J. SYMONS, Esq., F.R.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Sept.	29-028	CAMDEN TOWN, G.J. SYMONS, Esq., F.R.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
July	29-677	RADCLIFFE OBSERVATORY, (Oxford).	1.000	89.4	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Aug.	29-531	RADCLIFFE OBSERVATORY, (Oxford).	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Sept.	29-460	RADCLIFFE OBSERVATORY, (Oxford).	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
July	29-632	ROYSTON (Hertfordshire), Rev. R. MAIN, M.A., F.R.S.	1.000	89.4	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Aug.	29-490	ROYSTON (Hertfordshire), Rev. R. MAIN, M.A., F.R.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Sept.	29-446	ROYSTON (Hertfordshire), Rev. R. MAIN, M.A., F.R.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
July	29-632	HALE WORTHAM, Esq., F.R.S., F.M.S.	1.000	89.4	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Aug.	29-490	HALE WORTHAM, Esq., F.R.S., F.M.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Sept.	29-446	HALE WORTHAM, Esq., F.R.S., F.M.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
July	29-632	ABINGTON PIGGOTT, G. PIGGOTT, Esq., F.M.S.	1.000	89.4	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Aug.	29-490	ABINGTON PIGGOTT, G. PIGGOTT, Esq., F.M.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Sept.	29-446	ABINGTON PIGGOTT, G. PIGGOTT, Esq., F.M.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
July	29-823	CARDINGTON (near Bedford), Mr. J. MACLEOD, F.M.S. Assat. to SAC WATERBURY, Esq., F.R.S.	1.000	89.4	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Aug.	29-680	CARDINGTON (near Bedford), Mr. J. MACLEOD, F.M.S. Assat. to SAC WATERBURY, Esq., F.R.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Sept.	29-626	CARDINGTON (near Bedford), Mr. J. MACLEOD, F.M.S. Assat. to SAC WATERBURY, Esq., F.R.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
July	29-547	LAMPETER (Cardiganshire), Rev. J. J. MATTHEWS, M.A.	1.000	89.4	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Aug.	29-401	LAMPETER (Cardiganshire), Rev. J. J. MATTHEWS, M.A.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					
Sept.	29-351	LAMPETER (Cardiganshire), Rev. J. J. MATTHEWS, M.A.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1					

Year 1866.	Month.	Names of Stations and Observers.	Pressure of Atmosphere in Month.			Temperature of Air in Month.			Mean Temperature.		Vapour.		Mean Reading of Thermometer.		Wind.			Mean Amount of Cloud.	Number of Days	Rain. Amount in Inch.			
			Mean.	Range.	Highest.	Lowest.	Range.	Of all Highest.	Of all Lowest.	Air.	Dew Point.	Elastic Force.	Short of Sat.	Mean Weight of a Cubic Foot of Air.	Mean Degree of Humi- dity, Sat. = 100.	Estimated Strength.	Relative Proportion of N. E. S. W.						
July	29-844	DISS (Newbury), Dr. W. STEWART, F.R.S.	1.000	89.4	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1			
Aug.	29-718	NORWICH, W. BROOKS, Esq., F.R.S., F.M.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1			
Sept.	29-630	WISBEACH, S. H. MILLER, Esq., F.R.S., F.M.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1			
July	29-990	LLANDUDNO, J. NICOL, Esq., M.D.	1.000	89.4	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1			
Aug.	29-874	BELVOIR CASTLE, W. INGRAM, Esq., F.M.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1			
Sept.	29-789	GRANTHAM, JAMES WILLIAM TEAR, Esq., M.R.C.S., F.R.S., F.M.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1			
July	29-531	DERBY, JOHN DAVIS, Esq.	1.000	89.4	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1			
Aug.	29-439	HOLKHAM, JOHN DAVIDSON, Esq., Assistant to the EARL of LINCOLN.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1			
Sept.	29-350	T. MOFFAT, Esq., M.D., F.R.S., F.G.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1			
July	29-654	KINGSLEY PARSONAGE, near FROTHAM, Rev. R. TAYLOR, M.A., F.M.S.	1.000	89.4	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1			
Aug.	29-564	PENKETH, DEAR W. BRINGTON,	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1			
Sept.	29-487	L. W. HENOLD, Esq.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1			
July	29-865	LIVERPOOL OBSERVATORY, JOHN HARTUP, Esq., F.R.S.	1.000	89.4	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1			
Aug.	29-762	MANCHESTER, GEORGE FAIRBANKS VERNON, Esq., F.R.S., F.M.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1			
Sept.	29-669	ECCLLES, DODGE MANCHESTER,	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1			
July	29-800	T. MACARTHER, Esq., F.M.S.	1.000	89.4	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1			
Aug.	29-697	CASTLETON MOOR PARSONAGE, Rev. J. CHADWICK, F.R.S., F.M.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1			
Sept.	29-602	WAKEFIELD PHISON, F. G. SATER, Esq., F.R.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1			
July	29-411	WILMINGTON, F.M.S.	1.000	89.4	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1			
Aug.	29-342	WILMINGTON, F.M.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1			
Sept.	29-265	WILMINGTON, F.M.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1			
July	29-806	HALIFAX (Yorkshire), JOSEPH GLEDHILL, Esq., F.M.S.	1.000	89.4	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1			
Aug.	29-680	LEEDS PHILOSOPHICAL HALL, HENRY DENNY, Esq., A.L.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1			
Sept.	29-584	LEEDS PHILOSOPHICAL HALL, HENRY DENNY, Esq., A.L.S.	0.980	87.3	45.7	37.7	69.9	53.6	18.3	60.0	52.9	.401	4.5	77	77	1.7	15	9	9	1.1			







The mean temperature of the air at Greenwich in the three months ending November, constituting the three autumn months, was 50°·7, being 0°·1 above the average of the preceding 25 years.

Temperature of											Elastic Force of Vapour.		Weight of Vapour Cubic Foot of Air
1866. MONTHS.	Air.		Evaporation.		Dew Point.		Air— Daily Range.		Water of the Thames.				
	Mean.	Diff. from ave- rage of 25 years.	Mean.	Diff. from ave- rage of 25 years.	Mean.	Diff. from ave- rage of 25 years.	Mean.	Diff. from ave- rage of 25 years.					
										Mean.	Diff. from ave- rage of 25 years.	Mean.	Diff. from ave- rage of 25 years.
Oct.	51·3	+1·6	49·8	+1·3	48·2	+1·8	12·5	-2·1	55·0	·338	+·022	3·8	
Nov.	44·3	+1·9	42·2	+0·5	39·7	-0·2	12·5	+0·8	45·3	·244	-·008	2·8	
Dec.	42·9	+3·8	41·3	+2·4	39·3	+2·2	10·2	+0·7	42·2	·240	+·017	2·8	
Mean	46·2	+2·4	44·4	+1·4	42·4	+1·3	11·7	-0·2	47·5	·274	+·010	3·1	

1866. MONTHS.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horiz- ontal move- ment of the Air.	Reading of Thermometer on Grass				
	Mean.	Diff. from ave- rage of 25 years.	Mean.	Diff. from ave- rage of 25 years.	Mean.	Diff. from ave- rage of 25 years.	Amount.	Diff. from ave- rage of 25 years.		Number of Nights it was		Low- est Read- ing at Night.	High- est Read- ing at Night.	
										At or below 30°.	Be- tween 30° and 40°.			Above 40°.
Oct.	90	+3	29·933	+0·247	542	+4	in.	in.	Miles.	3	11	17	24·8	
Nov.	84	-5	29·792	+0·044	548	+1	1·5	-0·7	186	12	14	4	21·1	
Dec.	87	-1	29·790	-0·042	549	-3	1·8	-0·1	333	12	14	4	21·0	
									340	11	16			
Mean	87	-1	29·838	+0·083	546	+1	Sum 5·4	Sum -1·7	Mean 286	Sum 26	Sum 41	Sum 25	Lowest 21·0	

NOTE.—In reading this table it will be borne in mind that the sign (-) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred on the 24th of October at Wilton. On the 13th of November at Epsom near Manchester; and on the 14th and 15th at Carlisle. On the 13th of December at Guernsey, Helston, and Ensleigh; on the 14th at Truro, Bath, Ensleigh, and Clifton; on the 15th at Marlborough College, and Clifton; on the 26th at Grantham; and on the 29th at Helston.

Thunder was heard but lightning was not seen on the 24th of November at Wisbeach. On the 7th of December at Guernsey; on the 15th at Cockermouth; and on the 30th at Helston.

Lightning was seen but thunder was not heard on the 4th of October at Aldershot and Oxford; on the 5th at Oxford; on the 13th at Oxford; and on the 31st at Norwich. On the 2nd of November at Castleton; on the 3rd at Norwich; on the 6th at Guernsey; on the 7th at Holkham; on the 10th at Royston; on the 12th at Hawarden; on the 13th at Cardington, Norwich, Wisbeach, Grantham, Castleton, Wakefield, Halifax, and North Shields; on the 14th at Ensleigh, Cardington, Norwich, Wisbeach, Castleton, Culloden, and Durham; on the 16th at Diss; on the 21st at Royston. On the 13th of December at Oxford; on the 14th at Wilton; on the 15th at Wilton, Oxford; on the 16th at Clifton; on the 26th at Carlisle; on the 29th at Cockermouth and Clifton; and on the 30th at Guernsey.

Solar halos were seen on the 17th of October at Oxford; on the 22nd at Culloden; on the 23rd at Hawarden; on the 26th at Hawarden; and on the 27th at Culloden. On the 10th and 17th of November at Hawarden.

Lunar halos were seen on the 3d October at Sidmouth; on the 4th at Sidmouth; on the 5th at Guernsey, Wilton, Aldershot, Clifton, Oxford, Cardington, Wisbeach, and Grantham, and on the 26th at Aldershot, Camden Town, Oxford, Cardington, and Grantham. On the 14th of November at Truro; on the 17th at Oxford, Royston, Cardington, Norwich, Wisbeach, Grantham, Hawarden, Kingsley, and North Shields; on the 18th at Oxford, Grantham, and Carlisle; on the 19th at Sidmouth and Halifax; on the 20th at Eccles, Halifax, and Stonyhurst; and on the 22d at Wilton, and North Shields. On the 16th December at Cockermouth; and on the 19th at Wisbeach, Grantham, and at Eccles.

Aurora Boreales were seen on the 22d October at Stonyhurst; and on the 31st at Hawarden. On the 1st November at Hawarden; on the 3d at Clifton; on the 9th at Cardington, Halifax, Cockermouth, Allenheads, and Silloth; on the 11th at Allenheads and North Shields; on the 13th at Culloden; on the 14th at Ensleigh, Clifton, and Durham; on the 19th at York, Allenheads, and Carlisle; on the 26th at Kingsley; and on the 29th at Bywell. On the 7th December at Silloth, on the 25th at Allenheads, Silloth, and Bywell; on the 26th at Carlisle; and on the 27th at Carlisle.

Fog was prevalent on 71 days during the quarter; viz., 28 in October, 19 in November, and 24 in December.

Hail fell on October 9th, 18th, 25th, and 28th. On November 9th, 10th, 12th, 13th, 14th, 16th, 17th, 18th, 19th, 20th, 21st, 24th, 25th, 28th, and 30th. On December 7th, 13th, 14th, 15th, 29th, 30th, and 31st.

Snow fell on November 13th and 14th at Allenheads; on the 16th at Holkham, Halifax, Allenheads, and Culloden; on the 17th at Diss, Norwich, and Hawarden; on the 18th at Allenheads and Norwich; on the 19th at Lampeter, Norwich, Kingsley, and Culloden; on the 20th at Clifton, Grantham, Halifax, York, and on the 24th at Allenheads. On the 1st December at Royston, Belvoir, Grantham, Halifax, York, and Allenheads; on the 2d at Clifton, Oxford, Cardington, Wisbeach, the 14th and 29th at Allenheads; on the 30th at Hawarden, Kingsley, Wakefield, Leeds, Halifax, Stonyhurst, York, Allenheads, Bywell, North Shields; on the 6th at Allenheads; on the 14th at Marlborough, Oxford, Wisbeach, Norwich, Belvoir, Grantham, Hawarden, Kingsley, Wakefield, Leeds, Halifax, Allenheads, Stonyhurst, York, Cockermouth, Carlisle, Bywell, North Shields, and Milton.

Lime trees divested of leaves at Guernsey on the 17th October; at Culloden on the 25th; at Marlborough on the 28th; and at Oxford and Wisbeach on the 30th.

Horse chestnut divested of leaves at Oxford on the 24th October; at Culloden on the 25th; at Guernsey on the 27th; at Marlborough on the 28th; and at Sidmouth on the 31st.

Elm trees divested of leaves at Culloden on the 20th October.

Oak tree leafless at Helston on the 26th November.

Sycamore leafless at Helston on the 8th November.

Laburnum leafless at Helston on the 4th November.

Acacia leafless on the 14th November at Helston.

Hawthorn leafless at Helston on the 20th November.

Common poplar and Oriental Plane leafless at Oxford on the 11th November.

Harvest completed at Hawarden on the 31st October.

Swallows departed on the 2d October at Hawarden; and at Clifton on the 5th. At Osborne on the 21st November.

Fieldfares arrived on the 15th October at Hawarden; on the 16th at Oxford; and at Culloden and Marlborough on the 31st.

Redwing arrived at Marlborough on the 22d October; and at Culloden on the 21st.

Crossbill seen on 12th October at Marlborough.

Woodcock arrived at Marlborough on the 15th October.

Snipe seen on the 31st October at Marlborough.



# Meteorological Table, Quarter ending December 31st, 1866.

NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	Mean Estimated Strength.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.	Rain.
																Relative Proportion of						
																N.	E.	S.	W.			
Guernsey	29.727	65.5	33.0	32.5	54.5	47.8	32.6	6.7	50.4	46.8	321	37.7	0.5	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Helston	29.713	65.0	33.0	32.5	54.5	47.8	32.6	6.7	50.4	46.8	321	37.7	0.5	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Truro	29.686	65.0	33.0	32.5	54.5	47.8	32.6	6.7	50.4	46.8	321	37.7	0.5	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Sidmouth	29.701	66.0	33.0	32.5	54.5	47.8	32.6	6.7	50.4	46.8	321	37.7	0.5	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Barnstaple	29.702	67.0	33.0	32.5	54.5	47.8	32.6	6.7	50.4	46.8	321	37.7	0.5	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Osborne	29.645	71.5	29.0	42.5	54.4	42.9	31.5	11.4	48.5	44.5	294	33.3	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Bournemouth	29.702	67.0	33.0	32.5	54.5	47.8	32.6	6.7	50.4	46.8	321	37.7	0.5	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Worthing	29.712	67.8	33.5	33.3	53.3	48.0	32.8	6.7	50.4	46.8	321	37.7	0.5	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Wilton	29.749	70.0	33.0	32.5	54.5	47.8	32.6	6.7	50.4	46.8	321	37.7	0.5	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Bath Literary Inst.	29.695	64.2	33.0	32.5	54.5	47.8	32.6	6.7	50.4	46.8	321	37.7	0.5	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Ensligh Landowne, Bath	29.723	63.0	33.0	32.5	54.5	47.8	32.6	6.7	50.4	46.8	321	37.7	0.5	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Marlborough College	29.808	67.6	33.1	32.5	54.5	47.8	32.6	6.7	50.4	46.8	321	37.7	0.5	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Clifton	29.729	65.6	32.7	32.7	52.9	42.7	30.9	10.7	47.4	43.8	283	33.3	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Royal Observatory	29.744	68.1	32.6	32.6	52.9	42.7	30.9	10.7	47.4	43.8	283	33.3	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Guildhall	29.698	63.6	32.0	32.0	52.9	42.7	30.9	10.7	47.4	43.8	283	33.3	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Battersea	29.728	67.0	33.0	32.5	54.5	47.8	32.6	6.7	50.4	46.8	321	37.7	0.5	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Streatham Vicarage	29.737	67.8	33.5	33.3	53.3	48.0	32.8	6.7	50.4	46.8	321	37.7	0.5	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Oxford	29.698	63.6	32.0	32.0	52.9	42.7	30.9	10.7	47.4	43.8	283	33.3	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Royston	29.737	67.8	33.5	33.3	53.3	48.0	32.8	6.7	50.4	46.8	321	37.7	0.5	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Cardington	29.723	68.6	32.6	32.6	52.9	42.7	30.9	10.7	47.4	43.8	283	33.3	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Lampeter	29.724	72.5	27.4	45.1	53.8	41.8	31.8	12.0	47.4	43.8	283	33.3	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Diss (Norfolk)	29.698	77.5	23.0	55.5	53.3	44.0	32.6	12.6	46.7	41.5	294	34.4	0.2	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Norwich	29.698	77.5	23.0	55.5	53.3	44.0	32.6	12.6	46.7	41.5	294	34.4	0.2	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Walsbeach	29.698	77.5	23.0	55.5	53.3	44.0	32.6	12.6	46.7	41.5	294	34.4	0.2	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Llandudno	29.632	63.5	24.0	39.5	51.7	38.9	28.0	9.6	48.6	43.0	277	32.2	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Belvoir Castle	29.632	63.5	24.0	39.5	51.7	38.9	28.0	9.6	48.6	43.0	277	32.2	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Grantham	29.670	61.0	24.4	32.2	50.6	41.7	28.2	12.0	45.0	41.0	267	30.1	0.5	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Derby	29.690	66.0	30.0	38.0	51.7	38.9	28.0	9.6	48.6	43.0	277	32.2	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Holkham	29.690	66.0	30.0	38.0	51.7	38.9	28.0	9.6	48.6	43.0	277	32.2	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Hawarden	29.690	66.0	30.0	38.0	51.7	38.9	28.0	9.6	48.6	43.0	277	32.2	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Kingsley	29.690	66.0	30.0	38.0	51.7	38.9	28.0	9.6	48.6	43.0	277	32.2	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Manchester	29.690	66.0	30.0	38.0	51.7	38.9	28.0	9.6	48.6	43.0	277	32.2	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Eccles	29.690	66.0	30.0	38.0	51.7	38.9	28.0	9.6	48.6	43.0	277	32.2	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Wakefield	29.690	66.0	30.0	38.0	51.7	38.9	28.0	9.6	48.6	43.0	277	32.2	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Halifax	29.690	66.0	30.0	38.0	51.7	38.9	28.0	9.6	48.6	43.0	277	32.2	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Leeds	29.690	66.0	30.0	38.0	51.7	38.9	28.0	9.6	48.6	43.0	277	32.2	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Stonyhurst	29.690	66.0	30.0	38.0	51.7	38.9	28.0	9.6	48.6	43.0	277	32.2	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Otley	29.690	66.0	30.0	38.0	51.7	38.9	28.0	9.6	48.6	43.0	277	32.2	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
York	29.690	66.0	30.0	38.0	51.7	38.9	28.0	9.6	48.6	43.0	277	32.2	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Cockermouth	29.690	66.0	30.0	38.0	51.7	38.9	28.0	9.6	48.6	43.0	277	32.2	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Durham	29.690	66.0	30.0	38.0	51.7	38.9	28.0	9.6	48.6	43.0	277	32.2	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Alnhead	29.690	66.0	30.0	38.0	51.7	38.9	28.0	9.6	48.6	43.0	277	32.2	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Silloth	29.690	66.0	30.0	38.0	51.7	38.9	28.0	9.6	48.6	43.0	277	32.2	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Carlisle	29.690	66.0	30.0	38.0	51.7	38.9	28.0	9.6	48.6	43.0	277	32.2	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Bywell	29.690	66.0	30.0	38.0	51.7	38.9	28.0	9.6	48.6	43.0	277	32.2	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
North Shields	29.690	66.0	30.0	38.0	51.7	38.9	28.0	9.6	48.6	43.0	277	32.2	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2
Milton, Banbridge	29.690	66.0	30.0	38.0	51.7	38.9	28.0	9.6	48.6	43.0	277	32.2	0.7	0.5	0.5	10	10	10	10	4.3	4.3	2.2

The highest temperatures of the air were at Diss, 77°·5; Royston, 74°·0; Lampeter, 72°·5; Osborne, 71°·5; Wilton, 70°·0; Barnstaple, 70°·0. The lowest temperatures of the air were at Stonyhurst, 15°·6; Wakefield, 16°·7; Carlisle, 18°·0; and Kingsley, 18°·3. The greatest daily ranges were at Wilton, 15°·0; Lampeter, 15°·0; and Kingsley, 15°·0. The least number of rainy days were at Guernsey, 6°·7; Hawarden and Halifax, 8°·2; and North Shields, 14°·1. The greatest number of rainy days were at Wilton, 21°·1. The least falls of rain were at Worthing, 3°·9 in.; and Durham, 4°·2 in.

## QUARTERLY METEOROLOGICAL TABLE FOR DIFFERENT PARALLELS OF LATITUDE.

PARALLELS OF LATITUDE, &c.		Mean Pressure of dry Air reduced to the level of the Sea.	Mean of all Highest Read- ings of the Thermometer.	Mean of all Lowest Read- ings of the Thermometer.	Mean Range of Tempera- ture in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Max- imum in Rays of Sun.	Mean Reading of Min- imum on Grass.	Mean Estimated Strength.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.	Rain.
																				Relative Pro- portion of						
																				N.	E.	S.	W.			
		in.	°	°	°	°	°	°	°	°	°	in.	grs.	gr.	Mrs.											
Guernsey	-	29.727	65.5	33.0	32.5	54.5	47.8	32.6	6.7	50.4	46.8	321	37.7	0.5	0.5	541	-	-	-	-	-	-	-	-	-	
Devon and Cornwall	-	29.768	67.0	33.0	32.5	54.5	47.8	32.6	6.7	50.4	46.8	321	37.7	0.5	0.5	541	-	-	-	-	-	-	-	-	-	
Isle of Wight	-	29.645	71.5	29.0	42.5	54.4	42.9	31.5	11.4	48.5	44.5	294	33.3	0.7	0.5	543	-	-	-	-	-	-	-	-	-	
South of latitude 51°	-	29.707	67.4	32.9	32.8	54.4	42.9	31.5	11.4	48.5	44.5	294	33.3	0.7	0.5	543	-	-	-	-	-	-	-	-	-	
Between the latitudes	51° and 52°	29.723	66.4	32.8	32.8	54.4	42.9	31.5	11.4	48.5	44.5	294	33.3	0.7	0.5	543	-	-	-	-	-	-	-	-	-	
	52° and 53°	29.688	68.3	29.6	41.7	52.5	40.9	32.2	11.5	46.2	42.2	293	33.1	0.7	0.5	544	73.8	51.8	1.7	7	6	8	10	4.3	4.3	
	53° and 54°	29.643	61.9	24.3	40.6	50.5	39.8	32.1	10.6	45.2	40.3	289	33.0	0.7	0.5	545	-	-	0.9	5	4	9	13	-	-	
	54° and 55°	29.604	61.8	23.2	41.8	50.7	39.3	32.2	11.4	44.7	40.6	284	32.9	0.7	0.5	544	-	-	-	5	6	7	13	-	-	
North Shields	-	29.621	67.7	32.7	32.5	54.3	48.3	32.6	8.1	44.0	39.3	340	27.7	0.6	0.3	548	64.1	33.2	1.2	4	5	9	13	-	-	
Miltoen, Banbridge (Ireland)	-	29.616	62.0	28.0	36.0	50.0	39.0	25.0	11.7	45.0	41.3	320	29.9	0.5	0.4	544	65.7	37.6	1.3	8	3	6	13	-	-	



[illegible]

DISS (Norfolk),	Oct. 29/64	Nov. 29/64	Dec. 29/64	Jan. 29/65	Feb. 29/65	Mar. 29/65	Apr. 29/65	May 29/65	Jun. 29/65	Jul. 29/65	Aug. 29/65	Sep. 29/65	Oct. 29/65	Nov. 29/65	Dec. 29/65	Jan. 29/66	Feb. 29/66	Mar. 29/66	Apr. 29/66	May 29/66	Jun. 29/66	Jul. 29/66	Aug. 29/66	Sep. 29/66	Oct. 29/66	Nov. 29/66	Dec. 29/66	Jan. 29/67	Feb. 29/67	Mar. 29/67	Apr. 29/67	May 29/67	Jun. 29/67	Jul. 29/67	Aug. 29/67	Sep. 29/67	Oct. 29/67	Nov. 29/67	Dec. 29/67	Jan. 29/68	Feb. 29/68	Mar. 29/68	Apr. 29/68	May 29/68	Jun. 29/68	Jul. 29/68	Aug. 29/68	Sep. 29/68	Oct. 29/68	Nov. 29/68	Dec. 29/68	Jan. 29/69	Feb. 29/69	Mar. 29/69	Apr. 29/69	May 29/69	Jun. 29/69	Jul. 29/69	Aug. 29/69	Sep. 29/69	Oct. 29/69	Nov. 29/69	Dec. 29/69	Jan. 29/70	Feb. 29/70	Mar. 29/70	Apr. 29/70	May 29/70	Jun. 29/70	Jul. 29/70	Aug. 29/70	Sep. 29/70	Oct. 29/70	Nov. 29/70	Dec. 29/70	Jan. 29/71	Feb. 29/71	Mar. 29/71	Apr. 29/71	May 29/71	Jun. 29/71	Jul. 29/71	Aug. 29/71	Sep. 29/71	Oct. 29/71	Nov. 29/71	Dec. 29/71	Jan. 29/72	Feb. 29/72	Mar. 29/72	Apr. 29/72	May 29/72	Jun. 29/72	Jul. 29/72	Aug. 29/72	Sep. 29/72	Oct. 29/72	Nov. 29/72	Dec. 29/72	Jan. 29/73	Feb. 29/73	Mar. 29/73	Apr. 29/73	May 29/73	Jun. 29/73	Jul. 29/73	Aug. 29/73	Sep. 29/73	Oct. 29/73	Nov. 29/73	Dec. 29/73	Jan. 29/74	Feb. 29/74	Mar. 29/74	Apr. 29/74	May 29/74	Jun. 29/74	Jul. 29/74	Aug. 29/74	Sep. 29/74	Oct. 29/74	Nov. 29/74	Dec. 29/74	Jan. 29/75	Feb. 29/75	Mar. 29/75	Apr. 29/75	May 29/75	Jun. 29/75	Jul. 29/75	Aug. 29/75	Sep. 29/75	Oct. 29/75	Nov. 29/75	Dec. 29/75	Jan. 29/76	Feb. 29/76	Mar. 29/76	Apr. 29/76	May 29/76	Jun. 29/76	Jul. 29/76	Aug. 29/76	Sep. 29/76	Oct. 29/76	Nov. 29/76	Dec. 29/76	Jan. 29/77	Feb. 29/77	Mar. 29/77	Apr. 29/77	May 29/77	Jun. 29/77	Jul. 29/77	Aug. 29/77	Sep. 29/77	Oct. 29/77	Nov. 29/77	Dec. 29/77	Jan. 29/78	Feb. 29/78	Mar. 29/78	Apr. 29/78	May 29/78	Jun. 29/78	Jul. 29/78	Aug. 29/78	Sep. 29/78	Oct. 29/78	Nov. 29/78	Dec. 29/78	Jan. 29/79	Feb. 29/79	Mar. 29/79	Apr. 29/79	May 29/79	Jun. 29/79	Jul. 29/79	Aug. 29/79	Sep. 29/79	Oct. 29/79	Nov. 29/79	Dec. 29/79	Jan. 29/80	Feb. 29/80	Mar. 29/80	Apr. 29/80	May 29/80	Jun. 29/80	Jul. 29/80	Aug. 29/80	Sep. 29/80	Oct. 29/80	Nov. 29/80	Dec. 29/80	Jan. 29/81	Feb. 29/81	Mar. 29/81	Apr. 29/81	May 29/81	Jun. 29/81	Jul. 29/81	Aug. 29/81	Sep. 29/81	Oct. 29/81	Nov. 29/81	Dec. 29/81	Jan. 29/82	Feb. 29/82	Mar. 29/82	Apr. 29/82	May 29/82	Jun. 29/82	Jul. 29/82	Aug. 29/82	Sep. 29/82	Oct. 29/82	Nov. 29/82	Dec. 29/82	Jan. 29/83	Feb. 29/83	Mar. 29/83	Apr. 29/83	May 29/83	Jun. 29/83	Jul. 29/83	Aug. 29/83	Sep. 29/83	Oct. 29/83	Nov. 29/83	Dec. 29/83	Jan. 29/84	Feb. 29/84	Mar. 29/84	Apr. 29/84	May 29/84	Jun. 29/84	Jul. 29/84	Aug. 29/84	Sep. 29/84	Oct. 29/84	Nov. 29/84	Dec. 29/84	Jan. 29/85	Feb. 29/85	Mar. 29/85	Apr. 29/85	May 29/85	Jun. 29/85	Jul. 29/85	Aug. 29/85	Sep. 29/85	Oct. 29/85	Nov. 29/85	Dec. 29/85	Jan. 29/86	Feb. 29/86	Mar. 29/86	Apr. 29/86	May 29/86	Jun. 29/86	Jul. 29/86	Aug. 29/86	Sep. 29/86	Oct. 29/86	Nov. 29/86	Dec. 29/86	Jan. 29/87	Feb. 29/87	Mar. 29/87	Apr. 29/87	May 29/87	Jun. 29/87	Jul. 29/87	Aug. 29/87	Sep. 29/87	Oct. 29/87	Nov. 29/87	Dec. 29/87	Jan. 29/88	Feb. 29/88	Mar. 29/88	Apr. 29/88	May 29/88	Jun. 29/88	Jul. 29/88	Aug. 29/88	Sep. 29/88	Oct. 29/88	Nov. 29/88	Dec. 29/88
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Year 1866.	Month.	Names of Stations and Observers.	Pressure of Atmosphere in Month.			Temperature of Air in Month.			Mean Tem- perature.		Vapour.			Mean Reading of Thermometer.		Wind.			Mean Amount of		Rain.  Number of Days it fell.	Amount col- lected.				
			Mean.	Range.	in.	Highest.	Lowest.	Range.	Or all Highest.	Or all Lowest.	Mean.	Air.	New Point.	Elastic Force.	In a Cubic foot of Air.	Short of Saturation.	Mean Degree of Humi- dity, Scale = 100.	Mean Weight of a cubic foot of air.	Maximum in Days of Sun.	Minimum on Grass.			Estimated Strength.	Relative Proportion of		
																								N.	E.	S.
Oct.	29	STONYHURST COLLEGE, REV. W. SUGGLES.	30.647	30.602	30.602	30.647	30.602	30.602	30.647	30.602	30.602	30.647	30.602	30.602	30.647	30.602	30.602	30.647	30.602	30.602	30.647	30.602				
Nov.	29	OTLEY, H. W. THOMAS, Esq.	30.422	30.381	30.381	30.422	30.381	30.381	30.422	30.381	30.381	30.422	30.381	30.381	30.422	30.381	30.381	30.422	30.381	30.381	30.422	30.381				
Dec.	29	YORK, FIELDEN THORPE, Esq.	30.568	30.528	30.528	30.568	30.528	30.528	30.568	30.528	30.528	30.568	30.528	30.528	30.568	30.528	30.528	30.568	30.528	30.528	30.568	30.528				
Oct.	30	COCKERMOUTH, HENRY DODGSON, Esq.	30.003	30.003	30.003	30.003	30.003	30.003	30.003	30.003	30.003	30.003	30.003	30.003	30.003	30.003	30.003	30.003	30.003	30.003	30.003	30.003				
Nov.	29	DURHAM, REV. PROF. CHEVALLIER, B.D., F.R.S.	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728				
Dec.	29	ALLENHEADS, T. SOWTH, Esq., F.R.S., F.M.S.	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728				
Oct.	29	ST. PAUL'S PARSONAGE near SILLOTH, CUMMERLEY, REV. F. REDFORD, M.A., F.M.S.	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728				
Nov.	29	CARLISLE, J. CARMICHAEL, Esq., F.M.S.	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728				
Dec.	29	BYWELL, MR. JOHN DAWSON, under the direction of T. SOWTH, Esq., F.R.S., F.M.S.	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728				
Oct.	29	NORTH SHIELDS, ROBERT SPENCE, Esq.	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728				
Nov.	29	MILTOWN (Banbridge, Ireland), JOHN SMYTH, Esq., A.M.	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728				
Dec.	29	CULLODEN, A. FORBES, Esq., F.M.S.	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728	30.728	30.768	30.728				

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# METEOROLOGY OF ENGLAND, DURING THE QUARTER ENDING MARCH 31, 1867.

REMARKS ON THE WEATHER, DURING THE QUARTER ENDING 31ST OF MARCH 1867.  
By JAMES GLAISHER, Esq., F.R.S., &c., Secretary of The Meteorological Society.

The month of January opened with a low temperature and severe frost; till the 5th day the deficiency of temperature was nearly 15° daily. On the 4th day this defect was as large as 23°, and the temperature was as low as zero at many places, and below zero at several. Snow fell frequently all over the country, to an unusual amount, and rendered communication both by ordinary roads and by railroads difficult, and in some places traffic was wholly suspended. This unusually severe weather was succeeded by a sudden thaw, and a succession of heavy gales of wind from the west and south-west. The great change in the temperature broke up the frost, and cleared away the snow very rapidly, the sudden melting of which caused rivers to overflow in many parts of the country. From January 6th to the 10th days the average excess of daily temperature amounted to 7°.

On the 11th day another frosty period set in, and extended to the 22d day; during this period there were several very heavy falls of snow, particularly in the northern parts of the kingdom, where several persons perished in the snow, being overtaken by it, and frozen to death. The deficiency of temperature for these 12 days was on the average 9½° daily.

On the morning of the 23d day the weather underwent a rapid change; the mean temperature of this day was no less than 20° of higher temperature than that of the preceding day, thus introducing a period of almost unparalleled warm weather of the extraordinary duration of 35 days, or till February 26th. The average excess of temperature during this period was 7° daily; and we must go back as far as 1779, or 88 years, for an analogous period of the same length of higher temperature. In the year 1794 and 1850, the same temperature was nearly experienced. The melting of the snow at the beginning of this period, together with the heavy falls of rain, caused inundations in various places, and especially in some parts of Yorkshire and Lincolnshire.

From February 27th to the end of the quarter, with the exception of the five days from March 23d to 27th, the weather was always cold and of a wintry character; there were frequent falls of snow and sleet up to a very late period in the month all over the country. Till March 22d the deficiency of temperature averaged 6½° daily.

The months of January and March will be remembered for their severe frosts and heavy falls of snow, that of February for its high temperature, and the whole quarter for a very unusual succession of high winds and gales.

The months of February and March were not favourable for agricultural operations; in the former month, owing to frequent rain and the flooded state of the land, and in the latter month, spring farm work was frequently interrupted by its protracted wintry character, damaging growing crops, and checking vegetation.

The mean temperature of January was 34°·2, being 2° below the average of the preceding 96 years, 4°·1 below the average of the preceding 26 years, and lower than that of any of the preceding 5 years.

The mean temperature of February was 44°·7, being 6°·4 higher than the average of the preceding 96 years, 6° above the average of the preceding 26 years, and higher than that of any year since 1779, when it was 45°·3. In 1794 and 1850 the same mean value (44°·7) was obtained.

The mean temperature of March was 57°·7, being 3°·3 below the average of preceding 96 years, 4° below the average of the preceding 26 years, and 2°·8 lower than that of last year.

The mean high day temperatures were respectively 3°·8 and 5°·4 below their averages in January and March, and 5°·8 above the average in February.

The mean low night temperatures were below their respective averages in January and March to the amounts of 5°·1 and 2°·2, and in February 6° above the average.

Therefore in January and March both the days and nights were cold, whilst in February they were very warm.

The daily ranges of temperature were 1°·3 greater in January, 0°·2 less in February, and 3°·1 less in March.

The fall of rain was 1·1 in. above the average in January, was but slightly different in February, and again above the average in March to the amount of 0·7 in.

The mean temperature of the air at Greenwich in the three months ending February, constituting the three winter months, was 40°·6, being 1°·4 above the average of the preceding 26 years.

1867. Months.	Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
	Air.		Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames.					
	Mean.	Diff. from average of 96 years.	Diff. from average of 26 years.	Mean.	Diff. from average of 26 years.	Mean.	Diff. from average of 26 years.	Mean.		Diff. from average of 26 years.				
											Mean.	Diff. from average of 26 years.	Mean.	Diff. from average of 26 years.
Jan.	34·2	0	0	0	0	0	0	0	0	in.	in.	grs.	gr.	
Feb.	44·7	-2·0	-4·1	0	-4·4	29·7	-5·4	11·0	+1·3	34·8	·165	-0·633	·0·4	
Mar.	57·7	+5·4	+3·0	42·5	+3·4	40·0	+5·4	11·2	-0·2	44·2	·247	+0·044	+0·4	
Mean	38·9	+0·4	-0·7	35·5	-3·9	32·5	-3·9	11·5	-3·1	39·6	·184	-0·633	-0·4	
				36·9	-1·0	34·1	-1·3	11·2	-0·7	39·5	·199	-0·069	-0·1	



1867. MONTHS.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.	Reading of Thermometer on Grass.				
	Mean.	Diff. from average of 26 years.	Mean.	Diff. from average of 26 years.	Mean.	Diff. from average of 26 years.	Amount.	Diff. from average of 22 years.		Number of Nights it was			Lowest Reading at Night.	Highest Reading at Night.
										At or below 30°.	Between 30° and 40°.	Above 40°.		
Jan. -	83	- 5	29.620	-0.235	554	0	in.	in.	Miles.	18	10	3	0	5
Feb. -	84	- 1	29.911	+0.123	549	- 4	1.2	+1.1	346	18	10	3	5.2	4.7
Mar. -	82	0	29.621	-0.123	552	+ 2	2.3	-0.3	344	2	19	7	29.1	4.7
								+0.7	329	18	10	3	18.5	4.7
Mean -	83	- 2	29.678	-0.078	552	- 1	Sum 6.3	Sum +1.5	Mean 340	Sum 38	Sum 39	Sum 13	Lowest 5.2	Highest 4.7

NOTE.—In reading this table it will be borne in mind that the sign (-) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunder storms occurred on 2d of January at Truro; on 7th at Marlborough; on 17th at Boston and on the 23d at Grantham. On the 6th of February at Taunton; and on the 8th at Marlborough and Clifton. On the 28th of March at Norwich; and on the 29th at Aldershot.

Thunder was heard but lightning was not seen on the 4th of February at Stonyhurst; and on the 7th at Streatley Vicarage, Castleton Moor, and Stonyhurst. On the 6th of March at Boston; on the 22d at Taunton; and on the 30th at Marlborough and Cardington.

Lightning was seen but thunder was not heard on the 2d of January at Bournemouth; on the 7th at Helston; on the 7th at Bath and Oxford; on the 12th at Allenheads; on the 28th at Cardington; and on the 29th at Cockermouth, Allenheads, and Culloden. On the 1st and 2d of February at Culloden; on the 4th at Kingsley Parsonage, Castleton Moor, Wakefield, and Stonyhurst; on the 6th at Truro, Bournemouth, Clifton, Oxford, Eccles, Liverpool, and Allenheads; on the 7th at Castleton Moor; and on the 8th at Osborne, Bath, Oxford, Cardington, Eccles, Stonyhurst, and Taunton. On the 25th of March at Helston.

Solar halos were seen on the 1st of January at Ripon; on the 2d at Clifton; on the 12th at Eccles; on the 16th at Oxford and Cardington; on the 22d at Culloden; on the 26th at Grantham and Boston; on the 27th at Eastbourne; and on the 31st at Lampeter. On the 3d of February at Clifton; on the 5th at Hawarden; on the 7th at Clifton, Oxford, Lampeter, and Boston; on the 8th at Hawarden; on the 9th at Cockermouth; on the 11th at Clifton; on the 20th at Oxford; on the 21st at Oxford and Eccles; on the 22d at Hawarden; on the 23d at Clifton, Lampeter, and Hawarden; and on the 27th at Hawarden. On the 3d and 12th of March at Oxford; on the 14th at Lampeter; on the 17th at Clifton, Oxford, and Hawarden; on the 21st at Clifton, Hawarden, Allenheads, and North Shields; on the 25th at North Shields; and on the 31st of March at Oxford and Grantham.

Lunar halos were seen on the 9th of January at Eastbourne; on the 12th at Eccles; on the 13th at Halifax and Ripon; on the 14th at Boston and Halifax; on the 16th at Wilton, Clifton, Oxford, Grantham, Hawarden, Eccles, Castleton, and Halifax; on the 17th at Halifax; on the 18th at Wilton and Boston; on the 21st at Castleton and Culloden; and on the 26th at Culloden. On the 6th of February at Eastbourne; on the 9th at Culloden; on the 10th at Oxford, Cardington, Grantham, and Boston; on the 11th at Marlborough and Oxford; and on the 13th at Boston, North Shields. On the 11th of March at Allenheads; on the 12th at Eccles; on the 13th at Boston, and Halifax; on the 16th at Wisbeach; on the 17th at Oxford, Hawarden, Eccles, Halifax, and Cockermouth; and on the 19th and 21st at Cockermouth.

Aurora Boreales were seen on the 2d of January at Stonyhurst; on the 11th and 21st at Cockermouth; and on the 26th at Culloden. On the 6th of February at Carlisle; on the 8th at Truro; Clifton, Oxford, Grantham, Hawarden, North Shields, and Culloden; and on the 17th at North Shields. On the 6th and 7th of March at Silloth.

Snow fell on 58 days during the quarter; viz., 23 in January, 10 in February, and 25 in March.

Hail fell on 42 days during the quarter; viz., 17 in January, 7 in February, and 18 in March.

Fog was prevalent on 49 days during the quarter; viz., 23 in January, 17 in February, and 9 in March.

### JANUARY 1867.

STONYHURST.—The highest reading of the barometer in the month is considerably the lowest maximum registered in January since 1848, and with the exception of August 1860 it is the lowest monthly maximum ever observed here. In August 1860 the maximum was 29.616.

The mean reading of the barometer is much below the average, but not so low as the mean of 1860 and 1865 (speaking of the same month).

COCKERMOUTH.—The atmospheric pressure was lower on the 8th January than it has been since 14th January 1865.

CULLODEN.—This month has been remarkable for weather of great severity. Snow fell on 15 nights, and by the 18th accumulated on the ground, to the depth—even where not drifted—13 inches. For 23 nights the thermometer fell (and frequently many degrees) below the freezing point, and on 17 days it never rose so high as it. The mean temperature of the 5th was only 10.5, being less in value than on any day in January since 1841, when on the 8th of that month it was 18.6. The average temperature of the whole month 29.12 has been lower than in any January within at least the last 40 years; and there is only one instance on which a lower monthly value has been recorded, namely February 1855; the mean of which was 27.27 or 10.85 below the average of January in the present year. Frost penetrated the ground to the depth of 6 inches, and as in some previous severe winters, rivers and the Caledonian canal were frozen over, and ice of considerable

thickness extended along the shores of the Friths, and out to seaward, as far as low-water mark. On the 18th and 19th hoar-frost and snow on trees, &c. presented a very striking and beautiful appearance. The barometrical pressure was under the average, and the quantity of rain and melted snow much above it. In gardens and pleasure grounds some of the more tender shrubs and roses were either killed or greatly injured, and even the common whin, broom, and spruce branches presented a brown and withered appearance. Rooks, wood pigeons, and birds of various kinds were killed by the severity of the weather, and rabbits were found dead near their holes.

### FEBRUARY 1867.

TAUNTON.—Moist warm sunless month; heavy gale from the 5th till the 9th, the anemometer registering 840 miles during its continuance. Ozone prevalent with westerly wind, and coincident with severe visitation of influenza. The month closed with promise of frost, vegetation forward, young wheat looking well on high and low ground.

ECCLES NEAR MANCHESTER.—The mildness of the weather of this month has caused vegetation to progress very rapidly. The grass has grown considerably. Apple and berry trees have budded, but the frost of the last 3 days has acted as a considerable check.

COCKERMOUTH.—A month of mild open weather, the temperature of the air at 4 feet above ground (in shade) was below 31° on 2 days only. The mean temperature of February for past 5 years was 38.9, that of the present month being therefore 5.1 in excess of the average.

CASTLETON.—Very genial after the 12th. Gooseberry and currant bushes ready to burst into leaf. Thrush first heard on the 13th, the lark on the 20th, the brown linnet on the 18th. The fine weather was interrupted by a sharp frost on the 27th, and cold wintry weather, though clear, set in on the 28th.

CULLODEN.—Mean temperature several degrees above the average; fine and mild throughout, on the whole. Gales on the 2d, 10th, 24th, with wind from S.S.W. to W.N.W. Barometer unsteady, and greatly depressed.

### MARCH 1867.

TAUNTON.—Severe month. Incessant fall of snow, sleet, hail, and rain from the 6th to the 21st. A heavy gale on the 19th, another on the 25th. The month closed with fine soft weather. Agriculture checked by severe weather. General vegetation rapidly reviving during the last week of the month. Animal life greatly retarded. Typhoid fever very prevalent, chiefly amongst the young and middle aged.

COCKERMOUTH.—The barometrical reading on the 3d was the highest observed here for 5 years. The corrected reading reduced to sea-level, &c. was 30.819. Mean temperature of the month 3.4 lower than that of March in preceding 5 years, and 6.4 lower than the month of February in present year. The month was characterized by the prevalence of cold easterly winds with frosty nights. The thermometer on the grass was below the freezing point on 25 nights. There were frequent falls of snow or hail, but very slight in amount, the greatest fall not being more than half an inch deep.

Lesser Celandine in blossom on the 10th of February at Taunton; and on the 12th at Eastbourne. Pear in blossom on the 26th of February at Taunton; at Helston on the 27th of March; and at Guernsey on the 31st.

Apricot in blossom on the 29th of February at Taunton; and on the 27th of March at Boston.

Peach in blossom on the 1st of March at Taunton; on the 3d at Helston; on the 27th at Marlborough and Oxford; on the 30th at Wisbeach; and on the 31st at Guernsey.

Plum in blossom on the 28th of March at Helston; and on the 31st at Guernsey.

Hawthorn leaf buds first appeared on the 31st of January at Eastbourne. On the 6th of February at Oxford and Hawarden; on the 3d at Ripon; at Gloucester on the 15th; at Boston on the 18th; and on the 22d at Taunton.

Field elm leaf buds first appeared on the 15th of February at Boston; and on the 24th at Marlborough. On the 20th of March at Eastbourne; on the 30th at Taunton; and on the 31st at Boston.

Sycamore leaf buds first appeared on the 12th of February at Eastbourne; and on the 28th at Boston. On the 30th of March at Holkham; and on the 31st at Guernsey.

Hazel leaf buds first appeared on the 9th of February at Oxford; on the 9th and 15th the barren and fertile hazels at Marlborough; on the 11th at Eastbourne; and on the 21st at Taunton.

Horsechestnut leaf buds first appeared on the 3d of February at Taunton; and on the 6th at Hawarden. On the 15th of March at Guernsey; on the 24th at Gloucester and Holkham; and on the 26th of March at Boston.

Honeysuckle in leaf on the 12th of February at Sidmouth; and on the 15th of February at Helston.

Current in leaf on the 12th of February at Sidmouth.

Gooseberry in leaf on the 5th of February at Taunton; and on the 29th of March at Marlborough.

Coltsfoot in flower on the 9th of February at Taunton; and on the 11th at Marlborough.

Crocuses in flower on the 27th of January at Sidmouth. On the 6th of February at Marlborough; on the 16th at Culloden; and on the 20th at North Shields.

Snowdrops in flower on the 26th of January at Sidmouth; and on the 28th at Culloden. On the 7th of February at North Shields.

Christmas rose in flower on the 28th of January at Culloden; and on the 2d of February at North Shields.

Cornel Cherry in flower on the 22d of February at Marlborough.

Primrose in flower on the 1st of February at North Shields; and on the 11th at Marlborough.

Cowslip in flower on the 30th of March at Marlborough.



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	WIND.				Mean Amount of Cloud.		
													Relative Proportion of						
													N.	E.	S.	W.			
													Mean Amount of						
Guernsey	29.631.56	5.23	3.33	5.47	5.39	2.25	2.25	8.3	49.7	30.0	25.2	8.3	49.7	30.0	25.2	1	1	1	1
Helston	29.604.58	2.08	38.0	49.7	41.1	37.7	8.4	42.9	39.9	5.1	0.2	92	547	58.6	37.7	1.7	7	5	10
Truro	29.604.58	0.8	50.0	49.0	38.6	35.0	10.4	42.7	39.4	5.1	0.2	92	547	58.6	37.7	1.7	7	5	10
Sidmouth	29.684.57	5.16	6.49	6.7	0.33	8.31	6.11	2	0.8	3.6	2.1	2.4	6	9	7	8	10	10	4
Barnstaple	29.622.59	5.8	51.5	46.7	35.2	33.2	11.5	10.8	35.9	21.5	2.4	83	553	53	—	1.3	6	9	7
Osborne	29.612.59	8.13	2.47	6.46	5.34	9.32	8.11	6.46	1.36	6.1	2.19	2.19	1.36	6.1	2.19	1	1	1	1
Bournemouth	29.612.59	8.13	2.47	6.46	5.34	9.32	8.11	6.46	1.36	6.1	2.19	2.19	1.36	6.1	2.19	1	1	1	1
Bournemouth	29.612.59	8.13	2.47	6.46	5.34	9.32	8.11	6.46	1.36	6.1	2.19	2.19	1.36	6.1	2.19	1	1	1	1
Bournemouth	29.612.59	8.13	2.47	6.46	5.34	9.32	8.11	6.46	1.36	6.1	2.19	2.19	1.36	6.1	2.19	1	1	1	1
Eastbourne	29.635.58	1.10	4.45	4.3	1.37	5.81	1.97	4.0	4.6	2.20	2.4	0.6	82	553	75.8	32.0	13	4	4
Worthing	29.622.53	1.8	35.4	44.6	33.7	23.8	8.9	41.3	37.5	2.25	2.6	0.3	86	553	64.3	32.8	0.7	6	6
Wilton	29.609.58	0	3.5	5.4	6.3	5.7	2.5	8.9	13.7	3.25	2.6	0.3	86	553	64.3	32.8	0.7	6	6
Aldershot Camp	29.571.57	0	8.5	26.4	44.8	32.6	36.7	12.3	38.3	25.3	2.12	2.6	0.4	83	551	70.5	29.7	1.7	8
Both B. L. Inst.	29.609.57	2	8.5	48.7	45.4	34.9	30.5	10.0	37.1	21.6	2.5	0.4	80	547	68.1	37.3	1.9	7	9
Marlborough College	29.644.64	1.0	6.3	6.3	5.31	6.41	12.0	37.6	35.2	2.1	2.4	0.3	90	547	68.1	37.3	1.9	7	9
Clifton	29.644.64	1.0	6.3	6.3	5.31	6.41	12.0	37.6	35.2	2.1	2.4	0.3	90	547	68.1	37.3	1.9	7	9
Royal Observatory	29.626.50	1.4	12.5	44.6	33.8	32.9	9.8	39.2	35.8	2.13	2.4	0.4	87	547	68.1	37.3	1.9	7	9
Guildhall	29.680.50	1.0	5.3	14.4	9.38	4.28	5.6	6.40	3.81	1.99	2.3	0.4	83	552	66.3	30.2	0.8	7	7
Barnstaple	29.665.50	0	2.5	4.0	4.9	3.8	1.2	3.8	3.4	2.02	2.3	0.4	84	553	60.4	32.6	1.8	7	6
Streatham Viarage	29.615.53	1.0	5.6	4.4	6.8	3.3	1.2	3.8	3.4	2.02	2.3	0.4	84	553	60.4	32.6	1.8	7	6
Camden Town	29.601.57	1.6	5.0	4.4	6.4	3.3	1.2	3.8	3.4	2.02	2.3	0.4	84	553	60.4	32.6	1.8	7	6
Oxford	29.574.58	5.0	5.1	8.4	4.4	3.4	3.9	2.1	3.9	3.6	2.12	2.3	0.4	88	551	65.8	31.4	1.5	7
Gloucester	29.642.58	4.0	5.4	4.6	2.3	3.5	7.2	12.0	39.3	32.4	1.83	2.2	0.4	88	549	77.1	32.1	1.5	7
Royston	29.664.58	0.6	1.1	4.4	3.3	3.0	9.1	15.3	38.4	35.9	2.07	2.4	0.3	88	552	63.6	32.8	1.5	7
Cardington	29.630.58	0	4.6	4.7	3.2	3.5	1.2	3.8	3.4	2.02	2.3	0.4	85	554	55.7	25.1	1.1	5	8
Lampeter	29.630.58	0	4.6	4.7	3.2	3.5	1.2	3.8	3.4	2.02	2.3	0.4	85	554	55.7	25.1	1.1	5	8
Norwich	29.618.57	0	13.0	44.0	41.2	35.2	10.3	38.2	35.1	2.08	2.4	0.3	88	547	65.8	30.8	1.0	6	9
Wisbech	29.622.59	6.12	3.4	7.3	4.7	3.5	3.6	3.4	1.9	3.9	2.13	2.5	0.3	91	554	—	—	—	—
Landudno	29.580.57	8	20.7	37.1	45.5	35.7	30.1	9.7	10.0	35.9	2.13	2.5	0.4	87	554	72.6	30.8	0.3	8
Belvoir Castle	29.542.58	5	9.0	4.5	6.1	1.31	1.33	2.1	3.9	3.9	2.11	2.4	0.3	86	550	—	—	—	—
Derby	29.629.55	9	13.3	42.6	42.8	34.1	1.35	5.8	7.38	3.3	2.04	2.4	0.3	93	548	—	—	—	—
Holkham	29.615.59	0	13.0	44.0	41.2	35.2	10.3	38.2	35.1	2.08	2.4	0.3	88	547	65.8	30.8	1.0	6	9
Boston	29.578.57	0	13.0	44.0	41.2	35.2	10.3	38.2	35.1	2.08	2.4	0.3	88	547	65.8	30.8	1.0	6	9
Norton-in-Hales	29.620.57	5.0	4.6	2.3	3.5	7.2	12.0	39.3	32.4	1.83	2.2	0.4	88	549	77.1	32.1	1.5	7	7
Hardward	29.620.57	5.0	4.6	2.3	3.5	7.2	12.0	39.3	32.4	1.83	2.2	0.4	88	549	77.1	32.1	1.5	7	7
Kingsley	29.628.60	4.3	3.2	4.3	6.3	1.40	1.8	1.37	1.37	1.92	2.2	0.3	85	550	71.8	24.3	2.1	7	5
Manchester	29.611.58	5	9.0	4.5	6.1	1.31	1.33	2.1	3.9	3.9	2.11	2.4	0.3	86	552	60.0	28.0	0.8	6
Eccles	29.594.59	8.7	30.8	44.2	32.5	38.4	41.6	38.1	34.3	20.1	2.6	0.4	84	554	56.3	27.6	0.7	7	11
Liverpool Observatory	29.594.59	8.7	30.8	44.2	32.5	38.4	41.6	38.1	34.3	20.1	2.6	0.4	84	554	56.3	27.6	0.7	7	11
Leeds	29.594.59	8.7	30.8	44.2	32.5	38.4	41.6	38.1	34.3	20.1	2.6	0.4	84	554	56.3	27.6	0.7	7	11
Stonyhurst	29.594.59	8.7	30.8	44.2	32.5	38.4	41.6	38.1	34.3	20.1	2.6	0.4	84	554	56.3	27.6	0.7	7	11
Osley	29.593.52	0	13.0	44.0	41.2	35.2	10.3	38.2	35.1	2.08	2.4	0.3	88	547	65.8	30.8	1.0	6	9
Ripon	29.607.57	4	2.6	3.3	2.3	4.1	1.1	1.2	3.7	3.7	2.1	2.0	0.4	84	554	71.0	27.2	1.3	9
York	29.595.57	0	10.0	43.0	40.3	35.3	12.3	37.1	32.7	1.87	2.0	0.4	84	554	71.0	27.2	1.3	9	10
Cockermouth	29.595.57	4	7.4	4.9	4.8	3.6	1.7	3.8	3.7	2.1	2.0	0.4	84	554	71.0	27.2	1.3	9	10
Allenheds	29.548.49	0	11.0	41.6	38.9	39.3	14.6	11.3	32.6	2.3	2.2	0.4	85	539	60.4	27.6	0.5	10	6
Silloth	29.540.58	0	11.0	41.6	38.9	39.3	14.6	11.3	32.6	2.3	2.2	0.4	85	539	60.4	27.6	0.5	10	6
Carlisle	29.629.62	5	8.0	4.7	4.3	3.1	1.39	1.2	3.7	3.2	1.98	2.3	0.3	82	553	60.9	28.2	1.5	4
Bywell	29.591.56	5	8.0	4.7	4.3	3.1	1.39	1.2	3.7	3.2	1.98	2.3	0.3	82	553	60.9	28.2	1.5	4
North Shields	29.594.53	0.1	0.39	0.41	7.33	0.31	7.87	36.7	33.8	1.06	1.94	1.94	33.8	1.06	1.94	1	1	1	1
Milton, Banbridge	29.567.59	0.1	1.57	5.43	6.28	3.39	5.12	6.37	5.33	1.94	1.94	1.94	5.33	1.94	1.94	1	1	1	1

QUARTERLY METEOROLOGICAL TABLE FOR DIFFERENT PARALLELS OF LATITUDE.

PARALLELS OF LATITUDE, &c.	Mean Pressure of dry Air reduced to the level of the Sea.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Max- imum in Rays of Sun.	Mean Reading of Min- imum on Grass.	Mean Estimated Strength.	WIND.			Mean Amount of Cloud.
																Relative Pro- portion of			
																N.	E.	W.	
																Mean Amount of			
Guernsey - - -	29.631.56	5.23	3.33	5.47	5.39	2.25	2.25	8.3	49.7	30.0	25.2	8.3	49.7	30.0	25.2	1	1	1	1
Devon and Cornwall	29.628.58	2.13	1.45	6.48	1.37	7.32	1.10	4.42	6.39	1.21	2.41	2.41	6.39	1.21	2.41	1	1	1	1
Isle of Wight	29.642.60	8.13	2.47	6.46	5.34	9.32	8.11	6.46	1.36	6.1	2.19	2.19	1.36	6.1	2.19	1	1	1	1
South of latitude 51°	29.631.53	3.12	9.43	4.45	3.35	4.30	2.10	4.40	2.36	2.1	2.1	2.1	4.40	2.36	2.1	1	1	1	1
Between { 51° and 52°	29.621.57	7.12	5.61	1.45	0.33	7.36	4.12	3.39	1.35	2.1	2.1	2.1	7.36	4.12	2.1	1	1	1	1
the { 52° and 53°	29.621.57	7.12	5.61	1.45	0.33	7.36	4.12	3.39	1.35	2.1	2.1	2.1	7.36	4.12	2.1	1	1	1	1
latitudes { 53° and 54°	29.598.57	8.10	2.47	5.43	2.32	8.34	6.11	5.38	7.35	1.2	2.66	2.66	7.35	1.2	2.66	1	1	1	1
54° and 55°	29.581.56	5.74	4.91	4.28	3.16	6.37	5.11	2.37	5.34	2.1	1.96	1.96	5.34	2.1	1.96	1	1	1	1
North Shields	29.554.53	0.14	0.39	0.41	7.33	0.31	7.87	36.7	33.8	1.06	1.94	1.94	33.8	1.06	1.94	1	1	1	1
Milton, Banbridge (Ireland)	29.567.59	0.1	1.57	5.43	6.28	3.39	5.12	6.37	5.33	1.94	1.94	1.94	5.33	1.94	1.94	1	1	1	1

The highest temperatures of the air were at Marlborough, 64° 6'; Hawarden, 63° 5'; and Carlisle, 62° 5'. The lowest temperatures of the air were at Lampeter and Norton-in-Hales, 0° 0'; Streteley Viarage, 0° 1'; Aldershot Camp, 0° 8'; and Marlborough, 1° 0'. The greatest daily ranges were at Norton-in-Hales, 15° 6'; Belvoir Castle, 15° 0'; Wilton, 14° 1'; and Marlborough, 13° 4'. The least daily ranges were at Guildhall, 6° 5'; Otley, 7° 4'; Cockermouth, 7° 7'; Guernsey, 8° 3'; and Helston, 8° 3'. The greatest number of rainy days were at Allenheads, 77; Bywell, 69; Clifton, 66; and Helston, 60. The least number of rainy days were at Ripon, 21; Norwich, 23; and Hawarden, 33. The heaviest falls of rain were at Truro, 15.5 in.; Allenheads, 13.0 in.; 14.5 in.; and Guernsey, 14.1 in. The least falls of rain were at Leeds, 4.7 in.; York, 4.8 in.; and Otley and Carlisle, 4.2 in.

MONTHLY METEOROLOGICAL TABLE FOR THE QUARTER ENDING MARCH 31ST, 1867.  
The Observations have been reduced to Mean values by Glaisher's Barometrical and Diurnal Range Tables, and the Hygro-metrical results have been deduced from his second edition of Hygro-metrical Tables.

NAMES OF STATIONS AND OBSERVERS.	Year 1867.	Pressure of Atmosphere in Month.	Temperature of Air in Month.			Mean Temperature.	Dew Point.	Vapour.	Mean Reading of Thermometer.	Mean Amount of Rain.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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Months.	Mean.	Range.	Lowest.	Range.	Highest.	Lowest.	Range.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.		Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	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Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	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Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.	Of all Lowest.	Of all Highest.



Year 1867.	Months.	Pressure of Atmosphere in Month.			Temperature of Air in Month.			Mean Temperature.		Vapour.			Mean Readings of Thermometer.			Wind.			Mean Amount of Ozone.	Amount of Rain.		
		Mean.	Range.	Min.	Max.	Range.	Min.	Max.	Mean.	Short of Saturation.	Mean Weight of Air.	Minimum in Rays of Sun.	Maximum on Grass.	Estimated Strength.	Relative Proportion of							
															N.	E.	W.					
BATH ROYAL LITERARY AND SCIENTIFIC INSTITUTION, CHAS. P. RUSSELL, Esq.	Jan.	29.388	1.470	56.4	57.0	22.7	57.8	31.8	1.79	37.6	32.0	—	—	—	—	—	—	—	—	—		
	Feb.	29.382	1.500	57.0	58.0	22.7	58.0	31.8	2.77	32.2	32.0	—	—	—	—	—	—	—	—	—		
	Mar.	29.674	1.500	57.4	58.0	22.7	58.0	31.8	1.92	2.2	32.0	—	—	—	—	—	—	—	—	—		
ENSLEIGH OBSERVATORY, (Lansdowne above Bath). C.H. Weston Esq. R.A.F.R.A.S., F.G.S.	Jan.	29.393	1.626	54.5	54.5	17.0	57.1	31.8	—	—	—	—	—	—	—	—	—	—	—	—		
	Feb.	29.267	1.535	54.5	54.5	17.0	57.1	31.8	—	—	—	—	—	—	—	—	—	—	—	—		
	Mar.	29.267	1.535	54.5	54.5	17.0	57.1	31.8	—	—	—	—	—	—	—	—	—	—	—	—		
MARLBOROUGH COLLEGE, REV. THOMAS A. PRESTON, M.A., F.M.S.	Jan.	29.264	1.480	54.5	54.5	17.0	57.1	31.8	—	—	—	—	—	—	—	—	—	—	—	—		
	Feb.	29.602	1.605	54.6	54.6	19.3	57.0	31.8	—	—	—	—	—	—	—	—	—	—	—	—		
	Mar.	29.310	1.612	54.4	54.4	19.3	57.0	31.8	—	—	—	—	—	—	—	—	—	—	—	—		
CLIFTON (Bristol). G.F. BURDER, Esq. M.D., F.M.S.	Jan.	29.428	1.527	56.6	56.6	14.1	57.0	31.8	—	—	—	—	—	—	—	—	—	—	—	—		
	Feb.	29.834	1.673	56.3	56.3	14.1	57.0	31.8	—	—	—	—	—	—	—	—	—	—	—	—		
	Mar.	29.536	1.483	56.3	56.3	14.1	57.0	31.8	—	—	—	—	—	—	—	—	—	—	—	—		
ROYAL OBSERVATORY, THE ASTRONOMER ROYAL. W. HAYWOOD, Esq. C.E.	Jan.	29.911	1.680	57.0	57.0	14.1	57.0	31.8	—	—	—	—	—	—	—	—	—	—	—	—		
	Feb.	29.911	1.680	57.0	57.0	14.1	57.0	31.8	—	—	—	—	—	—	—	—	—	—	—	—		
	Mar.	29.624	1.562	57.1	57.1	14.1	57.0	31.8	—	—	—	—	—	—	—	—	—	—	—	—		
MATTHEWSEA TRAINING COLLEGE, REV. J.P. FAUTHORPE, R.A., F.R.G.S.	Jan.	29.604	1.696	57.0	57.0	14.1	57.0	31.8	—	—	—	—	—	—	—	—	—	—	—	—		
	Feb.	29.689	1.470	57.0	57.0	14.1	57.0	31.8	—	—	—	—	—	—	—	—	—	—	—	—		
	Mar.	29.689	1.470	57.0	57.0	14.1	57.0	31.8	—	—	—	—	—	—	—	—	—	—	—	—		
SPRETTLEY VICARAGE (Berks), REV. J. SLATER, M.A., F.M.S.	Jan.	29.325	1.468	55.0	55.0	14.1	57.0	31.8	—	—	—	—	—	—	—	—	—	—	—	—		
	Feb.	29.608	1.584	54.3	54.3	14.1	57.0	31.8	—	—	—	—	—	—	—	—	—	—	—	—		
	Mar.	29.662	1.581	54.3	54.3	14.1	57.0	31.8	—	—	—	—	—	—	—	—	—	—	—	—		
CAMDEN TOWN, G. J. SIMONS, Esq., F.M.S.	Jan.	29.555	1.455	56.7	56.7	49.3	59.7	29.3	10.4	34.9	32.6	18.5	21.3	0.3	91	55.4	22.7	25.8	6.3	16	28	
	Feb.	29.933	1.734	56.2	56.2	39.0	59.2	54.3	40.2	41.1	47.2	48.4	28.1	3.2	0.5	88	54.7	24.2	31.0	7.5	11	14
	Mar.	29.663	1.533	57.1	57.1	45.2	59.2	33.2	12.0	38.6	34.8	26.2	23.5	0.4	87	53.2	74.2	31.0	7.5	11	14	
BRADCLIFFE OBSERVATORY, OXFORD, REV. R. MAIN, M.A.	Jan.	29.555	1.455	56.7	56.7	49.3	59.7	29.3	10.4	34.9	32.6	18.5	21.3	0.3	91	55.4	22.7	25.8	6.3	16	28	
	Feb.	29.933	1.734	56.2	56.2	39.0	59.2	54.3	40.2	41.1	47.2	48.4	28.1	3.2	0.5	88	54.7	24.2	31.0	7.5	11	14
	Mar.	29.663	1.533	57.1	57.1	45.2	59.2	33.2	12.0	38.6	34.8	26.2	23.5	0.4	87	53.2	74.2	31.0	7.5	11	14	
HOUCESTER, E. TOLLER, Esq., M.D.	Jan.	29.555	1.455	56.7	56.7	49.3	59.7	29.3	10.4	34.9	32.6	18.5	21.3	0.3	91	55.4	22.7	25.8	6.3	16	28	
	Feb.	29.933	1.734	56.2	56.2	39.0	59.2	54.3	40.2	41.1	47.2	48.4	28.1	3.2	0.5	88	54.7	24.2	31.0	7.5	11	14
	Mar.	29.663	1.533	57.1	57.1	45.2	59.2	33.2	12.0	38.6	34.8	26.2	23.5	0.4	87	53.2	74.2	31.0	7.5	11	14	
ROYSTON (Hertfordshire), H.W. WORTHAM, Esq., F.R.A.S., F.M.S.	Jan.	29.555	1.455	56.7	56.7	49.3	59.7	29.3	10.4	34.9	32.6	18.5	21.3	0.3	91	55.4	22.7	25.8	6.3	16	28	
	Feb.	29.933	1.734	56.2	56.2	39.0	59.2	54.3	40.2	41.1	47.2	48.4	28.1	3.2	0.5	88	54.7	24.2	31.0	7.5	11	14
	Mar.	29.663	1.533	57.1	57.1	45.2	59.2	33.2	12.0	38.6	34.8	26.2	23.5	0.4	87	53.2	74.2	31.0	7.5	11	14	
MARTINGDON (near Bedford), REV. J. MACLAREN, F.M.S. Asst. to SAC. W. HURD, Esq., F.R.S., M.S.	Jan.	29.555	1.455	56.7	56.7	49.3	59.7	29.3	10.4	34.9	32.6	18.5	21.3	0.3	91	55.4	22.7	25.8	6.3	16	28	
	Feb.	29.933	1.734	56.2	56.2	39.0	59.2	54.3	40.2	41.1	47.2	48.4	28.1	3.2	0.5	88	54.7	24.2	31.0	7.5	11	14
	Mar.	29.663	1.533	57.1	57.1	45.2	59.2	33.2	12.0	38.6	34.8	26.2	23.5	0.4	87	53.2	74.2	31.0	7.5	11	14	
LAMPETER (Cardiganshire), REV. FRED. J. MATTHEWS, M.A.	Jan.	29.555	1.455	56.7	56.7	49.3	59.7	29.3	10.4	34.9	32.6	18.5	21.3	0.3	91	55.4	22.7	25.8	6.3	16	28	
	Feb.	29.933	1.734	56.2	56.2	39.0	59.2	54.3	40.2	41.1	47.2	48.4	28.1	3.2	0.5	88	54.7	24.2	31.0	7.5	11	14
	Mar.	29.663	1.533	57.1	57.1	45.2	59.2	33.2	12.0	38.6	34.8	26.2	23.5	0.4	87	53.2	74.2	31.0	7.5	11	14	

Met. Table, Quarter ending March 31st, 1867.



Year 1897.	Months.	Names of Stations and Observers.	Pressure of Air in Month.			Temperature of Air in Month.			Mean Temperature.		Vapour.		Mean Thermometer.	Wind.			Mean Amount of Rain.					
			Mean.	Range.	Highest.	Lowest.	Range.		Air.	Dew Point.	Elastic Force.	In a Cubic foot of Air.		Maximum in Days of Sun.	Minimum on Grass.	Estimated Strength.		Relative Proportion of				
							Of all Highest.	Of all Lowest.				Daily Range.						Short Saturation.	Mean Weight of a cubic foot of air.	N.	E.	S.
Jan.	29-333	1-546	53°	50-2	37-4	29-4	38-0	39-0	in.	gr.	0-2	89	552	4-5	1-3	9	8	3	11	6-1		
Feb.	29-680	1-895	51-1	27-9	26-9	40-1	32-8	33-3	1-73	2-0	0-2	83	547	4-5	1-6	3	4	17	6-1			
Mar.	29-564	1-748	51-8	24-9	28-9	40-1	32-8	33-3	1-73	2-1	0-2	83	554	4-5	1-6	11	12	4	4	4-8		
Apr.	29-465	1-532	55-8	2-2	53-6	38-4	35-8	39-1	1-60	2-1	0-2	88	556	28-3	20-1	1-3	12	6	4	0		
May	29-783	1-904	54-6	21-3	33-3	48-6	36-7	38-0	1-74	2-1	0-5	84	550	76-9	33-3	1-7	10	2	6	0		
Jun.	29-696	1-743	50-3	20-3	37-1	43-1	30-8	32-3	31-0	1-74	2-0	0-5	81	555	77-9	28-1	1-6	4	36	6-2		
Jul.	29-692	1-283	52-0	10-0	42-0	37-1	28-4	30-9	1-73	2-0	0-2	93	558	—	—	—	—	—	—	10		
Aug.	29-825	1-881	53-0	24-0	39-0	43-6	31-6	32-5	1-54	2-0	0-2	93	551	—	—	—	—	—	—	10		
Sep.	29-757	1-759	52-5	22-0	39-5	43-6	31-6	32-5	1-54	2-1	0-4	88	557	—	—	—	—	—	—	10		
Oct.	29-473	1-548	52-1	7-4	44-7	39-2	28-8	30-0	1-68	2-0	0-2	90	555	44-4	21-6	0-4	7	10	5	9		
Nov.	29-761	1-865	56-4	26-3	39-1	48-6	39-8	35-0	1-29	2-1	0-5	83	547	64-4	35-6	0-6	1	6	13	5-4		
Dec.	29-678	1-932	56-1	18-8	37-1	43-6	31-6	32-5	1-54	2-1	0-5	81	554	72-0	26-4	0-5	7	14	6	3-6		
Jan.	29-374	1-432	51-9	6-4	45-3	36-6	27-4	28-4	1-56	1-9	0-3	85	551	—	—	—	8	4	10	9		
Feb.	29-350	1-493	54-4	22-4	31-8	47-3	37-4	33-1	1-68	2-0	0-4	50	546	—	—	—	1-2	3	12	11		
Mar.	29-136	1-423	47-0	8-0	39-0	34-2	23-3	29-7	1-08	1-2	0-7	63	535	60-7	22-0	1-2	3	8	9	7		
Apr.	29-415	1-844	49-6	20-5	39-5	35-9	25-3	32-1	1-21	2-5	0-3	92	531	84-2	30-0	1-3	8	9	7	6-6		
May	29-332	1-828	46-5	10-6	37-9	38-2	26-2	32-6	1-21	2-5	0-6	71	533	79-3	24-1	1-1	11	9	3	7-1		
Jun.	29-394	1-570	52-7	11-5	41-2	38-3	27-5	30-8	1-23	1-7	0-4	82	537	58-1	23-7	1-3	14	5	5	9-8		
Jul.	29-843	1-843	53-6	23-6	40-5	45-3	36-6	37-9	1-28	2-6	0-6	82	548	68-3	33-6	1-6	7	15	11	5-5		
Aug.	29-793	1-943	53-0	20-3	37-3	44-8	31-7	33-1	1-79	2-1	0-6	81	556	74-3	28-9	1-7	5	17	4	6		
Sept.	29-332	1-512	52-5	5-0	47-5	37-7	25-3	32-4	32-1	27-5	1-55	1-8	83	537	40-1	19-2	9	7	8	4-0		
Oct.	29-839	1-839	53-0	22-0	39-5	48-9	37-2	43-2	39-1	24-2	2-8	0-4	82	550	63-1	35-6	2	11	11	4-5		
Nov.	29-764	1-933	56-0	18-0	38-0	45-0	30-7	32-3	30-6	34-3	1-88	2-3	0-3	92	555	66-9	23-4	13	5	3-6		
Dec.	29-591	1-516	55-0	5-0	50-0	39-1	25-5	33-6	32-4	29-9	1-68	1-9	80	560	—	—	1-3	4	5	6-6		
Jan.	29-557	1-836	55-0	27-0	33-0	40-5	37-3	32-2	43-2	39-1	2-88	2-8	0-4	85	566	—	—	7	15	4-1		
Feb.	29-771	1-940	56-0	18-0	38-0	45-2	28-8	33-8	33-8	29-5	1-63	1-9	84	558	—	—	1-2	3	14	5-7		
Mar.	29-537	1-289	52-0	14-0	38-0	36-9	29-4	33-0	39-0	1-67	2-0	0-2	89	536	—	—	1-5	7	7	5-5		
Apr.	29-833	1-931	53-0	23-0	47-1	37-8	31-1	38-1	35-1	33-3	1-60	2-2	0-2	89	561	33-9	1-7	5	3	7-3		
May	29-787	1-838	52-8	22-8	39-0	41-1	31-8	35-3	33-3	33-3	1-60	2-2	0-2	89	561	33-9	1-7	5	3	7-3		
Jun.	29-394	1-570	52-7	11-5	41-2	38-3	27-5	30-8	1-23	1-7	0-4	82	537	58-1	23-7	1-3	14	5	5	9-8		
Jul.	29-688	1-867	54-0	28-0	26-0	49-1	38-1	41-0	43-2	39-9	2-66	1-8	83	554	54-3	24-4	1-9	11	6	5-0		
Aug.	29-771	1-983	57-0	19-0	40-0	44-0	31-5	32-5	37-1	31-9	1-81	2-1	0-5	88	567	67-2	35-9	3	4	5-6		
Sept.	29-474	1-600	49-0	14-0	32-4	33-4	25-7	27-7	29-1	28-4	1-43	1-7	0-2	89	559	38-2	20-9	0-2	8	5		
Oct.	29-793	2-067	51-6	21-3	29-3	44-0	36-9	37-1	39-9	38-0	2-23	2-2	0-2	91	549	58-2	33-9	0-6	4	7-9		
Nov.	29-743	2-073	51-4	21-4	30-0	41-2	31-5	31-5	31-5	31-5	1-89	2-2	0-2	91	556	70-4	26-4	0-3	5	8-1		
Dec.	29-743	2-073	51-4	21-4	30-0	41-2	31-5	31-5	31-5	31-5	1-89	2-2	0-2	91	556	70-4	26-4	0-3	5	8-1		

General Remarks are placed at the bottom of each column at the height of 80 feet above the sea.

Ground Barometres are placed at the bottom of each column at the height of 80 feet above the sea.

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METEOROLOGY OF ENGLAND,  
DURING THE QUARTER ENDING JUNE 30, 1867.

REMARKS ON THE WEATHER, DURING THE QUARTER ENDING 30TH OF JUNE, 1867.  
By JAMES GLAISHER, ESQ., F.R.S., &c., *President of The Meteorological Society.*

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The weather during the month of April was changeable, being at times very unsettled and stormy, with occasional heavy gales of wind and frequent falls of rain. The temperature of the air was subject to frequent variation, but was generally in excess over its average for the period. May opened with unsettled weather, but a remarkable change took place on the 6th, when a period of clear sky with brilliant sunshine set in. The temperature rose on the 6th and 7th of May to an excess of  $15^{\circ}$  and  $17^{\circ}$  above their averages. For the 42 days ending the 12th of May the mean daily excess of temperature was  $43^{\circ}$ . On 13th May a great change of weather took place; the summer-like weather which so suddenly set in, in the 2d week in May, was as suddenly succeeded by a period of severe cold weather, the sky became cloudy, and the temperature lowered at night to below the freezing point; from the 21st day to the 25th the weather was more like winter than is ordinarily experienced in May, and the mean temperatures of these days were from  $10^{\circ}$  to  $14^{\circ}$  below their averages; the mean deficiency of daily temperature from 13th May to 26th May was  $7^{\circ}$  nearly. For a few days at the end of May and the beginning of June the weather was moderately fine and warm, the average daily excess of temperature being  $4^{\circ}$ . From 3d June the weather was changeable, there being a few hot days together succeeded by long periods of cold weather, and upon the average of the last 28 days of the quarter there was a deficiency of temperature amounting to more than  $1\frac{1}{2}^{\circ}$  daily.

Vegetation at the end of the quarter was generally in a more advanced state than in the corresponding period of the last year.

Vegetation at the end of April was generally backward, and the cold weather in the middle of May greatly checked progress. June was dry; and the hay crop was generally stated to be good in quality and large in quantity, and stacked in good condition. No signs of the potato disease were reported up to the end of the quarter; the wheat crop was variously reported as very light and thin in some places and much better in others.

The mean temperature of April was  $49^{\circ} \cdot 0$ , being  $3^{\circ} \cdot 1$  higher than the average of the preceding 96 years, and higher than that of any year since 1845, excepting 1863, which was  $49^{\circ} \cdot 1$ .

The mean temperature of June was  $58^{\circ} \cdot 1$ , being the same as the average of the preceding 96 years.

The mean high day temperatures were respectively  $1^{\circ}.3$  and  $0^{\circ}.2$  higher than their averages in April and May, and  $0^{\circ}.9$  lower in June.

Therefore in April and May, and 1°·1 below the average in June. The daily

The fall of rain was 0.2 in. below the average in April, May and June.

The mean temperature of the air at 5 ft. above the ground was respectively  $2^{\circ} \cdot 1$ ,  $0^{\circ} \cdot 3$  and  $0^{\circ} \cdot 2$  lower in April, May, and June, below the average in June.

temperature of the air at Greenwich in the three months ending May, constituting three spring months, was  $46^{\circ}.7$ , being  $0^{\circ}.4$  below the average of the preceding 26 years.

1867. MONTHS.		Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.		
		Air.		Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames.						
		Mean.	Diff. from average of 36 years.	Diff. from average of 26 years.	Mean.	Diff. from average of 36 years.	Mean.	Diff. from average of 26 years.	Mean.	Diff. from average of 35 years.	Mean.	Diff. from average of 26 years.	Mean.	Diff. from average of 26 years.		
April	-	49.0	+3.1	+3.2	0	46.1	+2.3	43.0	+2.6	18.4	-2.1	49.0	in. .277	in. .026	grs. 3.1	+0.2
May	-	53.4	+0.8	+0.5	0	49.4	+0.2	45.4	-0.1	20.0	-0.3	54.6	.304	+0.061	3.4	0.0
June	-	58.1	0.0	-1.0	0	53.8	-0.9	50.0	-0.8	21.1	-0.2	61.3	.361	-0.012	4.0	-0.2
Mean	-	53.5	+1.3	+0.6	0	49.8	+0.5	46.1	+0.6	19.2	-0.9	55.0	.314	+0.005	3.5	0.0
1867. MONTHS.		Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.		Reading of Thermometer on Grass.				
		Mean.	Diff. from average of 26 years.	Mean.	Diff. from average of 26 years.	Mean.	Diff. from average of 26 years.	Amount.	Diff. from average of 52 years.			Number of Nights it was			Lowest Reading at Night.	Highest Reading at Night.
										At or below 30°.			Between 30° and 40°.	Above 40°.		
										At or below 30°.	Between 30° and 40°.	Above 40°.				
April	-	80	+1	in. 29.929	in. .0139	grs. 539	-4	in. 2.2	+0.5	Miles. 407	3	14	13	0	0	
May	-	74	-2	29.758	-0.037	537	-5	2.3	+0.2	234	4	9	18	25.1	49.2	
June	-	75	+1	29.935	+0.139	535	+4	1.8	-0.2	232	1	5	24	25.7	49.2	
Mean	-	76	0	29.767	-0.012	537	-2	Sum 6.3	Sum +0.5	Mean 291	Sum 8	Sum 28	Sum 55	Lowest 25.1	Highest 54.2	

NOTE.—In reading this table the sign (+) plus signifies, and the sign (-) minus signifies.

0	29.767	-0.012	535	+4	1.8	-0.2	234	1	5	13	25.7	50.0
			537	-2	Sum	Sum	Mean	Sum	Sum	Sum	Lowest	Highest
					6.3	+0.5	291	8	25	55	25.1	54.2

NOTE.—In reading this table it will be borne in mind that the sign (-) means signifies below the average, and that the sign (+) plus signifies above the average.



Thunderstorms occurred or thunder was heard and lightning was seen on the 11th of April at Cardington and Cockermouth; on the 14th at Royston, Cardington, and Halifax; on the 16th at Norwich; on the 20th at Eastbourne; on the 24th at Norwich and North Shields; on the 25th at Ensleigh, Lansdown near Bath; and on the 30th at Cardington. On the 6th of May at Wakefield, Halifax, Leeds, York, Cockermouth, Allenheads, Carlisle, Bywell, and North Shields; on the 7th at Bywell; on the 8th at Hawarden, Liverpool, Ripon, Cockermouth, Allenheads, Silloth, and Carlisle; on the 9th at Guernsey, Osborne, Bournemouth, Marlborough, Oxford, and York; on the 10th at Guernsey, Osborne, Eastbourne, Wilton, Aldershot, Bath, Guildhall, Streatly, Camden, Oxford, Royston, Cardington, Wisbeach, Grantham, Holkham, Boston, Durham, and North Shields; on the 11th at Bournemouth, Eastbourne, Guildhall, Camden Town, Wisbeach, Halifax, and York; on the 27th at Guildhall, Holkham, Eccles, Stonyhurst, Ripon, York, and Carlisle; on the 28th at North Shields; and on the 29th at Llandudno, Grantham, Eccles, Ripon, and York. On the 2d of June at Osborne, Marlborough, Cardington, and Miltown, Banbridge (Ireland); on the 3d at Eastbourne and Camden Town; and on the 14th at Royston, Halifax, and Stonyhurst.

Thunder was heard but lightning was not seen on the 7th of April at Norwich; on the 10th at Carlisle; on the 11th at Oxford; on the 13th at Norwich; on the 20th at Hawarden; on the 24th at Streatly Vicarage; on the 24th at Halifax; on the 26th at Ripon; on the 27th at Marlborough; on the 28th at Ripon; on the 6th at Helston; on the 7th at Osborne, Royston, Eccles, and Stonyhurst; on the 8th at Cardington, Kingsley, Stonyhurst, and Bywell; on the 9th at York; on the 10th at Sidmouth; on the 20th at Taunton; on the 26th at Hawarden; on the 27th at Wakefield, Halifax, and Ripon; on the 29th at Bournemouth, Eastbourne, and Bywell; and on the 30th at Cardington. On the 2d of June at Guernsey and Royston; on the 3d at Bournemouth; on the 4th at Royston, Cardington, and North Shields; on the 6th at Grantham, Halifax, and Ripon; on the 7th at Royston; on the 8th at Cardington; on the 14th at Wisbeach; on the 19th and 20th at Carlisle; on the 22d at Bournemouth; and on the 24th of June at Carlisle.

Lightning was seen but thunder was not heard on the 9th of April at Royston; and on the 14th at Grantham. On the 6th of May at Eccles, Liverpool, Stonyhurst, and Durham; on the 8th at North Shields; on the 9th at Sidmouth, Wilton, Bath, Taunton, and Clifton; on the 10th at Aldershot; on the 11th at Oxford; and on the 31st at York.

Solar halos were seen on 27 days during the quarter.

Lunar halos were seen on 14 days during the quarter.

Snow fell on 12 days during the quarter; viz., 5 in April and 7 in May.

Hail fell on 27 days during the quarter; viz., 11 in April, 14 in May, and 2 in June.

Fog was prevalent on 44 days during the quarter; viz., 13 in April, 18 in May, and 13 in June.

Oak in leaf on the 28th of April at Guernsey and Oxford. On the 3d of May at York; and on the 5th at Holkham and Miltown, Banbridge (Ireland); on the 6th at Wisbeach and Ripon; and on the 12th at Cockermouth.

Sycamore in leaf on the 10th of April at Guernsey and Miltown; on the 12th at Culloden; on the 13th at Oxford; on the 19th at Holkham; on the 20th at Wisbeach; on the 24th at Boston; on the 25th at Ripon; and on the 27th at Cockermouth. On the 3d of May at Marlborough College.

Horse-chestnut in leaf on the 2d of April at Helston; on the 4th at Holkham; on the 10th at Guernsey; on the 12th at Culloden; on the 13th at Oxford; on the 14th at Wisbeach; on the 19th at Miltown; on the 20th at Ripon; on the 22d at Marlborough; on the 23d at Bournemouth; and on the 24th at Boston. On the 6th of May at York and Cockermouth.

Lime in leaf on the 18th of April at Wisbeach; on the 22d at Oxford; on the 24th at Guernsey; on the 28th at Holkham; on the 29th at Miltown (Ireland); and on the 30th at Boston. On the 4th of May at Marlborough College.

Hawthorn in leaf on the 1st of April at Miltown; on the 6th at Holkham; on the 10th at Helston; on the 11th at Battersea and Oxford; on the 13th at Wisbeach; on the 20th at Boston; on the 24th at Marlborough; and on the 25th at Cockermouth.

Field elm in leaf on the 17th of April at Miltown (Ireland); on the 22d at Oxford; on the 23d at Boston; on the 29th at Wisbeach and Holkham. On the 7th of May at Marlborough; and on the 12th at Helston.

Lilac in blossom on the 17th of April at Guernsey; on the 29th at Bournemouth, Eastbourne, Taunton, Oxford, and Boston. On the 1st of May at Cardington; on the 2d at Llandudno; on the 3d at Wisbeach and Holkham; on the 4th at Marlborough; on the 5th at Lampeter; on the 10th at York; on the 7th at Hawarden and Miltown; on the 9th at Ripon; on the 10th at Grantham and Cockermouth; and on the 27th at North Shields.

Apple in blossom on the 3d of April at Taunton; on the 12th at Helston; on the 23d at Holkham; on the 24th at Boston; on the 26th at Oxford; on the 27th at Wisbeach; on the 29th at Miltown; on the 30th of April at Streatly and Stonyhurst. On the 4th of May at Cockermouth; on the 10th at Grantham; and on the 13th at Ripon.

Pear in blossom on the 5th of April at Taunton; on the 11th at Battersea, Oxford, and Holkham; on the 12th at Helston and Boston; on the 14th at Bywell; on the 16th at Stonyhurst; on the 17th at Marlborough; on the 18th at Streatly; on the 19th at Wisbeach; on the 20th at Miltown; on the 25th at Culloden; on the 26th at Miltown; and on the 4th of May at Cockermouth.

Laburnum in blossom on the 29th of April at Helston. On the 1st of May at Boston; on the 2d at Taunton; on the 7th at Oxford and Hawarden; on the 8th at Wisbeach; on the 9th at Miltown and Eastbourne; on the 10th at Grantham; on the 11th at Llandudno and Holkham; on the 12th at Miltown; on the 20th at Cockermouth; and on the 21st at Lampeter.

Cherry in blossom on the 9th of April at Bywell; on the 11th at Oxford; on the 12th at Boston; on the 14th at Streatly and Holkham; on the 15th at Miltown; on the 16th at Wisbeach; on the 17th at

21st at Culloden; on the 22d at Kingsley Parsonage; on the 28th at Stonyhurst; and on the 30th at Cockermouth.

Wheat in ear on the 1st of June at Royston; on the 5th at Cardington; on the 9th at Boston; on the 10th at Worthing and Wisbeach; on the 14th at Helston, Eastbourne, and Taunton; on the 18th at Hawarden; on the 26th at Silloth; and on the 29th at Cockermouth.

Barley in ear on the 10th of June at Cardington; on the 22d at Taunton; and on the 25th at Helston.

Cuckoo arrived on the 6th of April at Taunton; on the 16th at Liverpool; on the 17th at Ensleigh; on the 18th at Osborne and Marlborough; on the 19th at Oxford, Cardington, Wisbeach, and Holkham; on the 20th at Guernsey, Bournemouth, and Royston; on the 21st at Aldershot; on the 23d at Llandudno; on the 25th at Hawarden; on the 26th at Eastbourne and York; on the 27th at Bywell; on the 28th at Truro, Grantham, Kingsley, and Allenheads; on the 29th at Boston; on the 30th at Culloden. On the 3d of May at Miltown; and on the 8th at Lampeter.

Swallow arrived on the 9th of April at Osborne; on the 10th at Grantham, Boston, and York; on the 12th at Sidmouth, Oxford, and Wisbeach; on the 13th at Aldershot and Llandudno; on the 15th at Eastbourne and Cardington; on the 16th at Holkham; on the 17th at Royston, Hawarden, and Liverpool; on the 20th at Streatly; on the 21st at Miltown; on the 23d at Bournemouth; on the 24th at Truro; on the 25th at Helston; on the 27th at Kingsley; on the 28th at Clifton; on the 29th at Cockermouth; on the 30th at Ensleigh. On the 1st of May at Guernsey and Culloden; and on the 8th at Lampeter.

Nightingale arrived on the 11th of April at Taunton; on the 17th at Eastbourne and Cardington; on the 19th at Aldershot; on the 21st at Streatly; on the 22d at Holkham; and on the 24th at Oxford. And on the 3d of May at Ensleigh.

## APRIL 1867.

TAUNTON.—An unsettled month with westerly winds and frequent showers. Heavy winds with rain on the 7th, 10th, 13th, and 19th. A violent hailstorm on the 30th. Softer weather set in on the 25th, developing the vegetation rapidly. The supply of ozone was high and continuous. Crops exceedingly promising.

STONYHURST.—The mean reading of the barometer is the lowest registered in April since the year 1848. The rainfall is more than double the mean April rainfall, and is much the greatest rainfall registered for this month.

## MAY 1867.

TAUNTON.—Fine weather for ten days, followed by thunderstorms and cold rainy weather until the 29th. Snow fell on the Blackdowne Hills on the 22d, but not in Taunton. Little ozone registered. The grass crops are good; the wheat a little yellow.

MARLBOROUGH COLLEGE.—The young shoots of the ash, holly, ivy, and walnut, were quite killed, even to the tops of the trees. Dahlias, potatoes, and convolvulus were killed down to the ground. Oak, beech, Spanish chestnut, laurel, Portugal laurel, acacia, laburnum, sumach, and spruce fir were much damaged in exposed or damp places.

Apple, pear, damson, gooseberry, currant, and plum trees were greatly damaged, much of the fruits being killed. Strawberry, where exposed, peas, if in flower, broad beans and asparagus, were also considerably damaged.

Elm, yew, lime, sycamore, lilac, and spindle were affected, and in some few cases the young shoots were destroyed.

Among the seedlings much damage was done, even in cases where the plants had been covered. The above is damage caused by the frost on the 23d at Marlborough.

ECCLES.—The severe frosts which happened here on the nights of the 15th, 16th, 17th, and from the 22d to the 25th, have almost completely destroyed all the fruit that was beginning to develop on the trees. Many of the early potatoes have been severely nipped.

COCKERMOUTH.—Mean temperature of the month slightly above the average of last five years. The frosty nights of 22d and 23d did much damage to the early potato crop, and killed the young leaves and twigs of many shrubs and trees. Among trees the oak and beech were the chief sufferers.

## JUNE 1867.

TAUNTON.—A splendid month. Heavy rain on the 1st and 5th, and a gale on the 15th. The other days mostly hot and fine. Vegetation good. The first garden strawberry was seen on the 10th; the first wild strawberry was seen on the 8th. The yellow iris was gathered on the 1st, and the yellow water-lily in bloom on the 9th. The white water-lily out on the 21st. The grass crop exceedingly good; much of it carried before the end of the month. The wheat and barley very promising. The prevailing winds northerly. A good supply of ozone.

COCKERMOUTH.—A month of fine dry weather. Temperature slightly above the average of June in preceding five years, the average being 56°·4. The highest reading of the barometer during June was at noon on the 27th, when the uncorrected reading was 30°·562 in. (62°·0).

CULLODEN.—Mean temperature below the average. Barometer high. Air very dry during the last week of the month. The dry and wet bulb thermometers showing at times a difference of more than 10°, with the wind from S.W. to W.S.W. and W.N.W., the barometer attaining at the same time its maximum height of 30°·546 in., which is unusual in this month of the year.



# Meteorological Table, Quarter ending June 30th, 1867.

NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	Mean Estimated Strength.	WIND.				Mean Amount of Rain.	Mean Amount of Cloud.
																			N.	E.	S.	W.		
Guernsey	29.651	74.0	40.0	34.0	50.6	46.0	4.6	4.6	50.6	46.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Helston	29.626	80.0	37.0	43.0	58.7	43.0	15.7	15.7	58.7	43.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Truro	29.675	79.0	32.0	47.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Sidmouth	29.662	77.0	34.0	43.0	62.4	47.0	15.4	15.4	62.4	47.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Barnetaple	29.611	81.0	30.0	51.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Osborne	29.622	83.0	31.0	52.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Bournemouth	29.678	82.0	30.0	52.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Bournemouth	29.678	82.0	30.0	52.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Eastbourne	29.642	81.0	31.0	50.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Worthing	29.621	79.0	33.0	46.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Worthing	29.621	79.0	33.0	46.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Wilton	29.683	81.0	32.0	49.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Wilton	29.683	81.0	32.0	49.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Alershot Camp	29.669	84.0	26.0	58.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Bath R. L. Inst.	29.655	83.0	29.0	54.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Railway Lansdowne, Bath	29.607	78.0	35.0	43.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Marlborough College	29.635	78.0	35.0	43.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Clifton	29.633	80.0	32.0	48.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Royal Observatory	29.633	83.0	30.0	53.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Guildhall	29.607	81.0	30.0	51.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Streatham	29.605	82.0	29.0	53.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Streatham Viarage	29.581	77.0	32.0	45.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Camden Town	29.581	77.0	32.0	45.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Oxford	29.581	77.0	32.0	45.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Gloucester	29.651	84.0	31.0	53.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Royston	29.629	84.0	31.0	53.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Cardington	29.617	83.0	29.0	52.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Lampeter	29.630	81.0	29.0	56.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Walsby	29.580	84.0	30.0	54.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Llandudno	29.581	80.0	30.0	50.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Grantham	29.572	80.0	31.0	49.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Derby	29.570	80.0	30.0	50.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Boston	29.582	80.0	32.0	48.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Norton-in-Hales	29.580	79.0	30.0	49.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Hawarden	29.603	80.0	30.0	50.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Kingsley Parsonage	29.595	82.0	32.0	50.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Manchester	29.595	82.0	32.0	50.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Eccles	29.604	78.0	31.0	47.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Liverpool Observatory	29.631	84.0	31.0	53.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Wakfield	29.631	84.0	31.0	53.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Halifax	29.550	75.0	32.0	43.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Leeds	29.547	83.0	30.0	53.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Stonyhurst	29.585	77.0	31.0	46.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Osley	29.585	77.0	31.0	46.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
York	29.585	77.0	31.0	46.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Ripon	29.585	77.0	31.0	46.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Cookermouth	29.578	78.0	30.0	48.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Durham	29.585	80.0	30.0	50.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Allenheads	29.585	80.0	30.0	50.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Silloth	29.578	78.0	30.0	48.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Carlisle	29.578	78.0	30.0	48.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Bywell	29.585	80.0	30.0	50.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
North Shields	29.585	80.0	30.0	50.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Milton, Banbridge	29.585	80.0	30.0	50.0	62.4	48.0	14.4	14.4	62.4	48.0	3.0	0.0	0.0	84	538	81.0	10.0	1.0	6	7	10	10	16	2.1
Culloden	29.527	70.0	33.0	37.0	53.8	44.2	9.6	9.6	53.8	44.2	0.9	0.0	0.0	86	541	88.0	10.0	1.0	6	7	10	10	16	2.1



Year.	Month.	Names of Stations and Observers.	Pressure of Air in Month.			Temperature of Air in Month.			Mean Temperature.		Mean Temperature.		Vapour.		Mean Reading of Thermometer.		Wind.			Rain.			
			Mean.	Range.	Height.	Lowest.	Range.	Highest.	Of all Highest.	Of all Lowest.	Daily Range.	Air.	Dew Point.	Elastic Force.	Mean.	In a cubic foot of Air.	Short of Saturation.	Mean Degree of Humidity.	Relative Proportion of	Mean Amount of	Cloud.	Amount of Rain.	Number of Days in fall.
1867	April	BATH ROYAL LITERARY AND SCIENTIFIC INSTITUTION. CHAS. F. RUSSELL, Esq.	29.705 29.707 29.709 29.711 29.713 29.715 29.717 29.719 29.721 29.723 29.725 29.727 29.729 29.731 29.733 29.735 29.737 29.739 29.741 29.743 29.745 29.747 29.749 29.751 29.753 29.755 29.757 29.759 29.761 29.763 29.765 29.767 29.769 29.771 29.773 29.775 29.777 29.779 29.781 29.783 29.785 29.787 29.789 29.791 29.793 29.795 29.797 29.799 29.801 29.803 29.805 29.807 29.809 29.811 29.813 29.815 29.817 29.819 29.821 29.823 29.825 29.827 29.829 29.831 29.833 29.835 29.837 29.839 29.841 29.843 29.845 29.847 29.849 29.851 29.853 29.855 29.857 29.859 29.861 29.863 29.865 29.867 29.869 29.871 29.873 29.875 29.877 29.879 29.881 29.883 29.885 29.887 29.889 29.891 29.893 29.895 29.897 29.899 29.901 29.903 29.905 29.907 29.909 29.911 29.913 29.915 29.917 29.919 29.921 29.923 29.925 29.927 29.929 29.931 29.933 29.935 29.937 29.939 29.941 29.943 29.945 29.947 29.949 29.951 29.953 29.955 29.957 29.959 29.961 29.963 29.965 29.967 29.969 29.971 29.973 29.975 29.977 29.979 29.981 29.983 29.985 29.987 29.989 29.991 29.993 29.995 29.997 29.999 30.001 30.003 30.005 30.007 30.009 30.011 30.013 30.015 30.017 30.019 30.021 30.023 30.025 30.027 30.029 30.031 30.033 30.035 30.037 30.039 30.041 30.043 30.045 30.047 30.049 30.051 30.053 30.055 30.057 30.059 30.061 30.063 30.065 30.067 30.069 30.071 30.073 30.075 30.077 30.079 30.081 30.083 30.085 30.087 30.089 30.091 30.093 30.095 30.097 30.099 30.101 30.103 30.105 30.107 30.109 30.111 30.113 30.115 30.117 30.119 30.121 30.123 30.125 30.127 30.129 30.131 30.133 30.135 30.137 30.139 30.141 30.143 30.145 30.147 30.149 30.151 30.153 30.155 30.157 30.159 30.161 30.163 30.165 30.167 30.169 30.171 30.173 30.175 30.177 30.179 30.181 30.183 30.185 30.187 30.189 30.191 30.193 30.195 30.197 30.199 30.201 30.203 30.205 30.207 30.209 30.211 30.213 30.215 30.217 30.219 30.221 30.223 30.225 30.227 30.229 30.231 30.233 30.235 30.237 30.239 30.241 30.243 30.245 30.247 30.249 30.251 30.253 30.255 30.257 30.259 30.261 30.263 30.265 30.267 30.269 30.271 30.273 30.275 30.277 30.279 30.281 30.283 30.285 30.287 30.289 30.291 30.293 30.295 30.297 30.299 30.301 30.303 30.305 30.307 30.309 30.311 30.313 30.315 30.317 30.319 30.321 30.323 30.325 30.327 30.329 30.331 30.333 30.335 30.337 30.339 30.341 30.343 30.345 30.347 30.349 30.351 30.353 30.355 30.357 30.359 30.361 30.363 30.365 30.367 30.369 30.371 30.373 30.375 30.377 30.379 30.381 30.383 30.385 30.387 30.389 30.391 30.393 30.395 30.397 30.399 30.401 30.403 30.405 30.407 30.409 30.411 30.413 30.415 30.417 30.419 30.421 30.423 30.425 30.427 30.429 30.431 30.433 30.435 30.437 30.439 30.441 30.443 30.445 30.447 30.449 30.451 30.453 30.455 30.457 30.459 30.461 30.463 30.465 30.467 30.469 30.471 30.473 30.475 30.477 30.479 30.481 30.483 30.485 30.487 30.489 30.491 30.493 30.495 30.497 30.499 30.501 30.503 30.505 30.507 30.509 30.511 30.513 30.515 30.517 30.519 30.521 30.523 30.525 30.527 30.529 30.531 30.533 30.535 30.537 30.539 30.541 30.543 30.545 30.547 30.549 30.551 30.553 30.555 30.557 30.559 30.561 30.563 30.565 30.567 30.569 30.571 30.573 30.575 30.577 30.579 30.581 30.583 30.585 30.587 30.589 30.591 30.593 30.595 30.597 30.599 30.601 30.603 30.605 30.607 30.609 30.611 30.613 30.615 30.617 30.619 30.621 30.623 30.625 30.627 30.629 30.631 30.633 30.635 30.637 30.639 30.641 30.643 30.645 30.647 30.649 30.651 30.653 30.655 30.657 30.659 30.661 30.663 30.665 30.667 30.669 30.671 30.673 30.675 30.677 30.679 30.681 30.683 30.685 30.687 30.689 30.691 30.693 30.695 30.697 30.699 30.701 30.703 30.705 30.707 30.709 30.711 30.713 30.715 30.717 30.719 30.721 30.723 30.725 30.727 30.729 30.731 30.733 30.735 30.737 30.739 30.741 30.743 30.745 30.747 30.749 30.751 30.753 30.755 30.757 30.759 30.761 30.763 30.765 30.767 30.769 30.771 30.773 30.775 30.777 30.779 30.781 30.783 30.785 30.787 30.789 30.791 30.793 30.795 30.797 30.799 30.801 30.803 30.805 30.807 30.809 30.811 30.813 30.815 30.817 30.819 30.821 30.823 30.825 30.827 30.829 30.831 30.833 30.835 30.837 30.839 30.841 30.843 30.845 30.847 30.849 30.851 30.853 30.855 30.857 30.859 30.861 30.863 30.865 30.867 30.869 30.871 30.873 30.875 30.877 30.879 30.881 30.883 30.885 30.887 30.889 30.891 30.893 30.895 30.897 30.899 30.901 30.903 30.905 30.907 30.909 30.911 30.913 30.915 30.917 30.919 30.921 30.923 30.925 30.927 30.929 30.931 30.933 30.935 30.937 30.939 30.941 30.943 30.945 30.947 30.949 30.951 30.953 30.955 30.957 30.959 30.961 30.963 30.965 30.967 30.969 30.971 30.973 30.975 30.977 30.979 30.981 30.983 30.985 30.987 30.989 30.991 30.993 30.995 30.997 30.999 31.001 31.003 31.005 31.007 31.009 31.011 31.013 31.015 31.017 31.019 31.021 31.023 31.025 31.027 31.029 31.031 31.033 31.035 31.037 31.039 31.041 31.043 31.045 31.047 31.049 31.051 31.053 31.055 31.057 31.059 31.061 31.063 31.065 31.067 31.069 31.071 31.073 31.075 31.077 31.079 31.081 31.083 31.085 31.087 31.089 31.091 31.093 31.095 31.097 31.099 31.101 31.103 31.105 31.107 31.109 31.111 31.113 31.115 31.117 31.119 31.121 31.123 31.125 31.127 31.129 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31.417 31.419 31.421 31.423 31.425 31.427 31.429 31.431 31.433 31.435 31.437 31.439 31.441 31.443 31.445 31.447 31.449 31.451 31.453 31.455 31.457 31.459 31.461 31.463 31.465 31.467 31.469 31.471 31.473 31.475 31.477 31.479 31.481 31.483 31.485 31.487 31.489 31.491 31.493 31.495 31.497 31.499 31.501 31.503 31.505 31.507 31.509 31.511 31.513 31.515 31.517 31.519 31.521 31.523 31.525 31.527 31.529 31.531 31.533 31.535 31.537 31.539 31.541 31.543 31.545 31.547 31.549 31.551 31.553 31.555 31.557 31.559 31.561 31.563 31.565 31.567 31.569 31.571 31.573 31.575 31.577 31.579 31.581 31.583 31.585 31.587 31.589 31.591 31.593 31.595 31.597 31.599 31.601 31.603 31.605 31.607 31.609 31.611 31.613 31.615 31.617 31.619 31.621 31.623 31.625 31.627 31.629 31.631 31.633 31.635 31.637 31.639 31.641 31.643 31.645 31.647 31.649 31.651 31.653 31.655 31.657 31.659 31.661 31.663 31.665 31.667 31.669 31.671 31.673 31.675 31.677 31.679 31.681 31.683 31.685 31.687 31.689 31.691 31.693 31.695 31.697 31.699 31.701 31.703 31.705 31.707 31.709 31.711 31.713 31.715 31.717 31.719 31.721 31.723 31.725 31.727 31.729 31.731 31.733 31.735 31.737 31.739 31.741 31.743 31.745 31.747 31.749 31.751 31.753 31.755 31.757 31.759 31.761 31.763 31.765 31.767 31.769 31.771 31.773 31.775 31.777 31.779 31.781 31.783 31.785 31.787 31.789 31.791 31.793 31.795 31.797 31.799 31.801 31.803 31.805 31.807 31.809 31.811 31.813 31.815 31.817 31.819 31.821 31.823 31.825 31.827 31.829 31.831 31.833 31.835 31.837 31.839 31.841 31.843 31.845 31.847 31.849 31.851 31.853 31.855 31.857 31.859 31.861 31.863 31.865 31.867 31.869 31.871 31.873 31.875 31.877 31.879 31.881 31.883 31.885 31.887 31.889 31.891 31.893 31.895 31.897 31.899 31.901 31.903 31.905 31.907 31.909 31.911 31.913 31.915 31.917 31.919 31.921 31.923 31.925 31.927 31.929 31.931 31.933 31.935 31.937 31.939 31.941 31.943 31.945 31.947 31.949 31.951 31.953 31.955 31.957 31.959 31.961 31.963 31.965 31.967 31.969 31.971 31.973 31.975 31.977 31.979 31.981 31.983 31.985 31.987 31.989 31.991 31.993 31.995 31.997 31.999 32.001 32.003 32.005 32.007 32.009 32.011 32.013 32.015 32.017 32.019 32.021 32.023 32.025 32.027 32.029 32.031 32.033 32.035 32.037 32.039 32.041 32.043 32.045 32.047 32.049 32.051 32.053 32.055 32.057 32.059 32.061 32.063 32.065 32.067 32.069 32.071 32.073 32.075 32.077 32.079 32.081 32.083 32.085 32.087 32.089 32.091 32.093 32.095 32.097 32.099 32.101 32.103 32.105 32.107 32.109 32.111 32.113 32.115 32.117 32.119 32.121 32.123 32.125 32.127 32.129 32.131 32.133 32.135 32.137 32.139 32.141 32.143 32.145 32.147 32.149 32.151 32.153 32.155 32.157 32.159 32.161 32.163 32.165 32.167 32.169 32.171 32.173 32.175 32.177 32.179 32.181 32.183 32.185 32.187 32.189 32.191 32.193 32.195 32.197 32.199 32.201 32.203 32.205 32.207 32.209 32.211 32.213 32.215 32.217 32.219 32.221 32.223 32.225 32.227 32.229 32.231 32.233 32.235 32.237 32.239 32.241 32.243 32.245 32.247 32.249 32.251 32.253 32.255 32.257 32.259 32.261 32.263 32.265 32.267 32.269 32.271 32.273 32.275 32.277 32.279 32.281 32.283 32.285 32.287 32.289 32.291 32.293 32.295 32.297 32.299 32.301 32.303 32.305 32.307 32.309 32.311 32.313 32.315 32.317 32.319 32.321 32.323 32.325 32.327 32.329 32.331 32.333 32.335 32.337 32.339 32.341 32.343 32.345 32.347 32.349 32.351 32.353 32.355 32.357 32.359 32.361 32.363 32.365 32.367 32.369 32.371 32.373 32.375 32.377 32.379 32.381 32.383 32.385 32.387 32.389 32.391 32.393 32.395 32.397 32.399 32.401 32.403 32.405 32																				



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*Standard Rati-ranges are placed*—At Eastbourne at the height of 80 feet above the sea, the amount collected was 7.0 inches; at Allershot Camp, 25 feet, 3.4 inches; at Clifton, 50 feet, 0.5 inches; at Exeter, 51 feet, 5.4 inches; at Cardington, 23 feet, 4.5 inches; at Witley, 28 feet, 0.2 inches; at Boston, 8 feet, 0.2 inches; at Kingsley Parsonage, 13 feet, 5.5 inches; at 8 inches; at Milton, 6.0 inches; at Oxford, 5 feet, 6.5 inches; at Cookermouth, 64 feet, 7.4 inches; at Durham Observatory, 4 feet, 4.5 inches; at Allendale, 63 feet, 10.0 inches; at Spital, near Carlisle, 3 feet, 13.5 inches; at Milltown, Banbridge, (Ireland) 40 feet, 7.0 inches. The amount collected at Beachy Head at 610 feet above the level of the sea was 4.4 inches; and at Spital Reservoir (Ireland), at 440 feet, was 12.4 inches.

*Barometer reading*, May 23d, at 9h. 52m., Exeter, 29.921 in., has been observed comparatively to 29.927 in.

METEOROLOGY OF ENGLAND,  
DURING THE QUARTER ENDING SEPTEMBER 30, 1867.

REMARKS ON THE WEATHER, DURING THE QUARTER ENDING 30TH OF SEPTEMBER, 1867.  
By JAMES GLAISHER, Esq., F.R.S., &c., *President of The Meteorological Society.*

The cold period which set in on 3rd June continued throughout July, and extended to 7th August; during this time the weather was changeable and very unsettled; the amount of cloud was great, there was very little sunshine; and during the first week in August the temperature was unseasonably cold, some of the nights were frosty. From the beginning of the quarter to 7th August the deficiency of temperature was more than  $3^{\circ}$  daily on the average. From 8th August to the end of the quarter the weather was better; at about the middle of August there were a few days of hot weather, but generally the temperature was but little in excess above the average, and frequently for two or three days together was below. For the 54 days ending 30th September the average excess of temperature was  $1\frac{1}{2}^{\circ}$  daily.

Vegetation at the end of July was in a backward state, and the crops in many localities had sustained considerable damage from heavy rain. On Thursday night, 25th July, heavy rain began to fall all over the south of England, continuing almost uninterruptedly next day; the amount registered varied from  $1\frac{1}{2}$  inch to  $3\frac{3}{4}$  inches, being the heaviest rain-fall in the space of a day I have ever known. The crops were extensively laid. The Thames and its tributaries overflowed their banks; and in other parts the rivers flooded the neighbouring land, inundating the crops in some places. The harvest prospect at the end of July was unpromising; in the most forward southern districts a partial corn reaping had begun. In August the crops were a little more advanced.

In August the crops greatly improved by the fine weather in the middle of the month, and but little rain fell in England, but it fell very nearly daily in Scotland, sometimes heavily, where the crops were extensively laid and continued quite green. At the end of the quarter the harvest in England was nearly completed, and was nearly so in Ireland, but in Scotland about one third of the crops remained uncut.

The mean temperature of July was 62° at Glasgow, 60° at Edinburgh, 67° at London, and 68° at Dublin.

The mean temperature of July was  $59^{\circ} \cdot 4$ , being  $2^{\circ} \cdot 0$  lower than the average of the preceding 96 years, and lower than that of any year since 1841, excepting 1862, which was  $59^{\circ} \cdot 1$ .

The mean temperature of August was  $62^{\circ}0$ , being  $1^{\circ}3$  higher than the average of the preceding 96 years, and higher than that of any year since 1861.

The mean high day temperature was  $2^{\circ}6$  below the average in July, and respectively  $0^{\circ}7$  and  $1^{\circ}2$  above in August and September.

Therefore the average in August and September.

Therefore the night temperature was  $2^{\circ}\cdot 1$  below the average in July, and respectively  $0^{\circ}\cdot 4$  and  $0^{\circ}\cdot 1$  below the average in August and September.

The daily ranges of temperature were respectively  $0^{\circ} \cdot 6$  and  $0^{\circ} \cdot 8$  lower than the average in July and September and  $0^{\circ} \cdot 3$  higher in August.

1867. MONTHS.		Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
		Air.		Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames.	Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.		
		Mean.	Diff. from average of 26 years.	Mean.	Diff. from average of 26 years.	Mean.	Diff. from average of 26 years.	Mean.	Diff. from average of 26 years.		Mean.	Diff. from average of 26 years.	Mean.	Diff. from average of 26 years.	
July	-	53.4	0	0	0	0	0	0	0	0	in.	grs.	grs.	gr.	
Aug.	-	62.0	+1.3	-2.3	55.3	-2.0	51.7	-2.0	29.3	0.6	63.1	.384	-0.029	4.3	-0.3
Sept.	-	57.0	+1.1	+0.8	58.5	+1.2	55.5	+1.8	19.9	4.0	63.5	.441	+0.024	4.9	+0.3
Mean	-	59.7	+0.1	+0.3	54.5	+0.5	51.6	+0.5	17.7	0.8	60.0	.382	+0.001	4.3	+0.1
			-0.3		56.1	-0.1	52.9	+0.1	19.3	0.4	62.2	.402	-0.001	4.5	0.0

1867. MONTHS.		Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.		Reading of Thermometer on Grass.			
		Mean.	Diff. from average of 26 years.	Mean.	Diff. from average of 26 years.	Mean.	Diff. from average of 26 years.	Amount.	Diff. from average of 32 years.	Number of Nights it was			Lowest Reading at Night.	Highest Reading at Night.	
										At or below 30°.	Between 30° and 40°.	Above 40°.			
July	-	76	0	in.	in.	grs.	grs.	in.	in.	Miles.	0	5	21	0	0
Aug.	-	80	+3	29.730	-0.072	550	-2	3.8	+3.2	230	0	1	20	37.4	57.2
Sept.	-	81	0	29.629	+0.044	525	-1	2.6	+0.2	160	0	1	20	31.1	58.6
Mean	-	79	+1	29.615	+0.097	533	-1	2.9	+0.5	267	0	7	23	35.1	60.0
				29.825	+0.023	531	-1	Sum 11.3	Sum +3.9	Mean 239	Sum 0	Sum 13	Sum 79	Lowest 33.1	Highest 60.0

NOTE.—In reading this table signs (+) plus and (-) minus.

NOTE.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.



The fall of rain was 3.2 in. above the average in July, 0.2 in. above the average in August, and 0.5 in. above the average in September. Of the large amount of rain which fell in July, namely, 5.8 in., the great quantity of 3.7 in. fell on one day, the 26th.

The mean temperature of the air at Greenwich in the three months ending August, constituting the three summer months, was 59°·8, being 0°·8 below the average of the preceding 26 years.

Thunderstorms occurred or thunder was heard and lightning was seen on the 1st July at Guernsey, Eastbourne, Kingsley, Eccles, and Taunton; on the 9th at Culloden; on the 10th at Halifax, Cockermouth, Durham, Bywell, and Ripon; on the 11th at Stonyhurst, Cockermouth, Durham, Allenheads, and Carlisle; on the 12th at Llandudno and Culloden; on the 13th at Camden Town, Gloucester, Royston, Llandudno, Grantham, Holkham, Boston, Norton-in-Hales, Kingsley, Eccles, Liverpool, and Cockermouth; on the 14th at Royston, Grantham, Boston, Kingsley, and Liverpool; on the 15th at Truro, Clifton, and Kingsley; on the 16th at Cardington and Hull; on the 18th at Eccles, Wakefield, Halifax, and Hull; on the 23d at Halifax and Ripon; on the 25th at Hawarden; on the 27th at Guernsey; and on the 28th at Osborne, Bournemouth, Wilton, Bath, Ensleigh, and Cardington. On the 6th August at Bournemouth; on the 12th at Eccles, Liverpool, Stonyhurst, Cockermouth, Allenheads, Silloth, and North Shields; on the 13th at Hawarden, Silloth, and Carlisle; on the 14th at Guernsey, Marlborough, and Battersea; on the 15th at Eastbourne, Wilton, Bath, Ensleigh, Marlborough, Gloucester, Royston, Cardington, Hull, and Ripon; on the 19th at Guernsey, Osborne, Bournemouth, Wilton, Aldershot, Ensleigh, Marlborough, Clifton, Battersea, Oxford, Royston, Cardington, and Taunton; on the 20th at Gloucester, Royston, Cardington, Wisbeach, Boston, Wakefield, Allenheads, and Hull. On the 1st September at Norton-in-Hales and Liverpool; on the 2d at Sidmouth and Norton-in-Hales; on the 3d at Truro, Wilton, Bath, Ensleigh, Clifton, Battersea, Oxford, Gloucester, Royston, Cardington, Wisbeach, Llandudno, Knebworth, Grantham, Boston, Norton-in-Hales, Kingsley, Eccles, Liverpool, Wakefield, Halifax, Stonyhurst, Cockermouth, Silloth, Carlisle, Hull, Tunbridge, and Taunton; on the 4th at Eccles, Allenheads, and Ripon; on the 5th at Miltown; on the 9th at Osborne, Eastbourne, Aldershot, and Oxford; on the 12th at Eastbourne and Oxford; and on the 14th at Norton-in-Hales.

Thunder was heard but lightning was not seen on the 1st July at Cardington and Hawarden; on the 4th at Oxford; on the 9th at Wakefield and Taunton; on the 10th at Eccles, Stonyhurst, York, and Carlisle; on the 11th at Llandudno, Silloth, Bywell, and Miltown Banbridge; on the 12th at Ensleigh, Taunton, and Otley; on the 13th at Helston, Truro, Bath, Hawarden, Stonyhurst, Allenheads, Silloth, Miltown Banbridge, Hull, and Tunbridge; on the 14th at Cardington, Taunton, Eccles, Hull, and Knebworth; on the 15th at Ensleigh, Wisbeach, Taunton, and Eccles; on the 17th at Marlborough; on the 18th at Stonyhurst and North Shields; on the 20th at Norton-in-Hales and Stonyhurst; on the 21st at Halifax; on the 23d at Cardington, Grantham, Boston, Eccles, Allenheads, Silloth, and Hull; on the 24th at Miltown Banbridge; on the 27th at Wakefield; on the 28th at Eastbourne, Marlborough, Clifton, Oxford, Taunton, and Tunbridge Wells; and on the 31st at Marlborough. On the 6th August at Oxford; on the 7th at Sidmouth and Hull; on the 14th at Ensleigh and Cardington; on the 15th at Bournemouth, Clifton, Oxford, Gloucester, Taunton, and Boston; on the 20th at Silloth; and on the 31st at Guernsey. On the 1st September at Hawarden; on the 3d at Helston, Aldershot, Ensleigh, and Eccles; on the 5th at Ensleigh and Silloth; on the 9th at Guernsey; on the 12th at Aldershot; on the 14th at Halifax and Stonyhurst; and on the 15th at Gloucester.

Lightning was seen but thunder was not heard on the 1st July at Clifton, Oxford, and Taunton; on the 2d at Osborne; on the 14th at Halifax; on the 18th at Holkham and Culloden; on the 19th at Holkham; on the 24th at Kingsley; on the 25th at Helston, Eastbourne, and Tunbridge; on the 26th at Helston; and on the 28th at Eastbourne and Royston. On the 4th August at Hull; on the 12th at Halifax; on the 19th at Truro, Camden Town, Oxford, and Royston; on the 20th at Ensleigh, Camden Town, and Oxford; on the 29th at Wisbeach; and on the 31st at Osborne. On the 2d September at Guernsey, Helston, Eastbourne, Oxford, Gloucester, Royston, and Cardington; and on the 3d at Osborne, Eastbourne, Bath, Ensleigh, Oxford, Royston, Boston, and Eccles.

Solar halos were seen on 20 days during the quarter.

Lunar halos were seen on 9 days during the quarter.

Aurora boreales were seen on 5 days during the quarter.

Hail fell on 5 days during the quarter, viz., 4 in July and one in September.

Fog was prevalent on 38 days during the quarter, viz., 11 in July, 17 in August, and 10 in September.

Wheat was first cut on the 5th July at Silloth; on the 23d at Worthing; on the 30th at Eastbourne; and on the 31st at Taunton. On the 2d August at Oxford; on the 3d at Guernsey and Cardington; on the 9th at Helston; on the 12th at Boston and Knebworth; on the 20th at Hull; on the 22d at Miltown Banbridge; on the 24th at North Shields; and on the 26th at Ripon.

Oats were first cut on the 15th July at Hull; and on the 22d at Taunton. On the 12th August at Eastbourne, Boston, and Knebworth; on the 21st at Ripon; on the 24th at Hull; on the 26th at Cardington; on the 28th at North Shields and Miltown Banbridge; and on the 31st at Guernsey.

Barley was first cut on the 20th July at Hull; and on the 29th at Helston. On the 5th August at Knebworth; on the 12th at Boston; on the 14th at Cardington and Hull; on the 23d at North Shields; on the 24th at Eastbourne; on the 26th at Ripon; and on the 31st at Guernsey.

Rye was first cut on the 31st August at Guernsey.

Flax in flower on the 6th July at Miltown Banbridge (Ireland), and pulled on the 6th August.

HELSTON.—Cherries were ripe on the 27th July, and plums on the 29th; peaches on the 1st August; pears on the 23d; and apples on the 24th.

EASTBOURNE.—Pears were ripe on the 29th July.

OXFORD.—Plums were ripe on the 12th August.

BOSTON.—Pears were ripe on the 10th August; apples on the 15th; and peaches and plums on the 17th.

HULL.—Cherries were ripe on the 11th July; apples on the 27th August; and peaches on the 2d September.

RIPON.—Plums were ripe on the 20th August.

MILTOWN BANBRIDGE (Ireland).—Pears were ripe on the 10th August; peaches on the 28th; and apples on the 29th.

SIDMOUTH.—Laburnum in blossom on the 15th September.

OXFORD.—Departure of swallows on the 22d August.

## JULY 1867.

TAUNTON.—A cloudy, stormy month with repeated thunder-storms, and a remarkably high rainfall. The bean crops good, and the roots very promising. Cereals not generally ripe, but oats and wheat cut here and there. In the last week of this month the supply of ozone unusually large. ECCLES (near Manchester).—The heavy rains of this month have beaten down the wheat crops in this neighbourhood, but if August should prove good ripening weather little damage will have been done. The hay crops have been excellent, and were well housed before the fine weather broke down.

STONYHURST.—The thunder-storm on the 11th was very severe, accompanied with heavy rain and large hailstones. The rainfall during the storm from 4 P.M. till 5h. 15m. P.M. was just over one inch.

COCKERMOUTH.—Rain almost daily from 11th to 25th, during which time the meadow hay crops took great harm from remaining wet on the ground. First ten days and last seven days of month fine and dry.

CULLODEN.—Mean temperature considerably under the average; sky much obscured with cloud, and easterly winds unusually prevalent.

During the month of July the weather was of the most unfavourable description, cold throughout, with an easterly wind, which continued to prevail very generally day after day. The highest reading of the thermometer in the shade was not more than 71°·2; this occurred on the 10th up to the 15th; the heat, though not great, was more steady and equal. The latter half of the month was cold with a considerable quantity of rain which rendered the securing of hay crops next to impossible. The almost cloudy state of the atmosphere and the want of sun heat has had an injurious effect on all cereals. In such a season as the present it is yet too early to anticipate what the harvest may be, it is certain however that it will be late, and in consequence the ingathering of the crops attended with uncertainty.

## AUGUST 1867.

TAUNTON.—A month with brief heavy showers. The roots unusually fine. The country in splendid verdure and beauty, and a fair supply of ozone.

DERBY.—The only thunderstorm which has occurred in Derby this year visited the neighbourhood on the morning of the 19th, and whether in regard to its duration (about three hours), its violence, and the amount of rain, was the most remarkable recorded for at least 25 years. The rainfall for August is nearly double the average.

ECCLES (near Manchester).—The weather has been excellent in this district for the ripening of the crops and harvest operations, and on many farms the crops have been well housed. The yield is above an average, especially with regard to oats.

COCKERMOUTH.—The temperature on the 13th (84°·9) the highest observed here during the last six years. During the night between 13th and 14th the lowest temperature recorded at 4 feet above ground was 64°·4. Mean temperature of August 2°·4 in excess of the mean for that month in preceding five years. Hay harvest mostly ended by 17th August, except some backward meadows where hay still remained at end of month.

KNEBWORTH, HERTS.—The season is particularly healthy in this neighbourhood. The crops a good deal laid by the heavy rains of July, but the fine weather of this month has done much to improve them; the wheat crops, however, owing to the unfavourable spring and early summer, will not be quite an average one; green crops are generally good, but potatoes are a good deal affected by disease; the harvest about ten days later than usual.

CULLODEN.—August was a fine month throughout; no rain fell from the 1st to the 20th, except a small quantity 0.40 on the 15th. The 20th and 19th evening and night were wet; heavy rains accompanied with thunder; 1.33 ins. was registered in about 6 hours. The temperature during the month was steady, and though not in excess was favourable for bringing all cereals to maturity. In the shade the temperature never descended below 50°, and the maximum was every day above 60°, except in both cases on three occasions during the month.

Harvest operations commenced on a few farms between the 20th and the close of the month, but cutting was only partial and limited in extent. The crops in the north generally are heavy, and it is certain the bulk will be very large.

The grain, except perhaps the wheat, is everywhere in excellent condition, and should September be fine a bountiful harvest may be confidently looked for. Potato disease continues to be reported as spreading, and fears are entertained, should more rain fall, and close and damp weather set in, that the disease may prevail this season to a considerable extent; it is, however, yet too early to estimate what the present may be. The turnip crops are very healthy, and everywhere look well, giving promise of an abundant return. Pastures, from the continued moisture, during the season are yielding well. Early orange, apricot, and Orlean plum ripe on 20th.



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	Mean Estimated Strength.	WIND.			Mean Amount of Cloud.	Mean Amount of Rain.
																			N.	E.	W.		
Guernsey	29.615	40.5	48.0	7.5	56.1	25.5	30.6	5.1	51.1	41.9	4.7	1.0	84	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Helston	29.595	41.0	41.0	0.0	53.6	23.6	16.0	5.9	53.8	44.6	5.0	0.8	85	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Truro	29.603	39.0	38.0	1.0	52.9	23.9	16.4	5.8	53.8	44.6	5.0	0.8	85	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Sidmouth	29.620	38.5	38.5	0.0	52.9	23.9	16.4	5.8	53.8	44.6	5.0	0.8	85	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Barnstaple	29.572	35.0	40.5	5.5	50.7	21.7	14.9	5.8	52.5	43.6	4.4	1.1	81	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Osborne	29.554	35.2	38.0	2.8	45.4	20.4	15.0	6.0	57.0	46.0	4.2	0.6	91	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Bournemouth	29.608	38.0	40.0	2.0	53.4	23.2	14.9	5.8	52.5	43.6	4.4	1.1	81	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Eastbourne	29.607	37.0	40.0	3.0	51.6	23.6	15.5	6.0	53.9	44.7	4.2	0.7	86	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Worthing	29.531	37.5	40.5	3.0	54.1	21.5	14.1	6.0	56.1	45.2	4.9	1.0	86	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Taunton	29.579	36.1	38.0	1.9	51.5	21.5	13.9	5.9	53.9	44.6	4.7	1.1	83	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Wilton	29.577	36.0	37.5	1.5	52.5	22.2	15.4	5.4	54.4	43.3	4.7	0.7	86	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Aldershot Camp	29.539	37.2	37.0	0.2	51.0	21.0	13.2	5.2	53.2	43.6	4.6	1.1	79	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Bath R. L. & S. Inst.	29.566	34.2	37.0	2.8	51.3	21.3	13.8	5.3	53.8	44.1	4.5	1.1	79	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Enfield Landowne, Bath	29.567	33.8	38.5	4.7	49.6	20.6	18.0	5.7	50.9	43.3	4.2	0.7	82	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Marlborough College	29.638	33.2	40.0	6.8	49.1	21.1	18.8	5.7	50.9	43.3	4.2	0.7	82	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Clifton	29.607	34.9	39.1	4.2	52.6	22.6	15.6	5.6	52.6	43.2	4.3	1.2	78	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Royal Observatory	29.603	39.0	38.5	0.5	51.5	21.5	13.9	5.9	53.9	44.6	4.7	1.1	83	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Camden Town	29.576	38.2	36.0	2.2	52.3	22.3	14.1	5.3	52.3	43.6	4.4	1.1	81	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Oxford	29.582	33.1	35.3	2.2	47.8	21.2	16.6	5.9	50.9	43.3	4.2	0.7	82	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Gloucester	29.587	36.0	37.5	1.5	51.3	21.3	13.8	5.3	53.8	44.1	4.5	1.1	79	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Knobwort	29.587	36.0	37.5	1.5	51.3	21.3	13.8	5.3	53.8	44.1	4.5	1.1	79	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Royton	29.616	31.2	38.0	6.8	45.0	20.0	15.0	6.0	57.0	46.0	4.2	0.6	91	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Cardington	29.584	37.4	35.0	2.4	46.0	20.0	16.0	5.0	52.8	44.0	4.0	1.3	82	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Wishaneh	29.519	38.6	35.1	3.5	57.0	27.0	14.0	5.2	59.2	44.3	4.4	1.3	86	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Llandudno	29.519	38.6	35.1	3.5	57.0	27.0	14.0	5.2	59.2	44.3	4.4	1.3	86	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Grantham	29.519	38.6	35.1	3.5	57.0	27.0	14.0	5.2	59.2	44.3	4.4	1.3	86	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Derby	29.570	37.0	38.0	1.0	50.8	21.4	13.7	5.7	52.1	43.0	4.4	1.2	82	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Boston	29.569	30.1	37.5	7.4	47.6	20.6	16.9	5.7	50.7	43.0	4.4	1.2	82	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Norton-in-Hales	29.574	34.0	44.5	10.5	43.8	20.7	14.6	5.8	52.9	43.6	4.4	1.1	81	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Hawarden	29.574	34.0	44.5	10.5	43.8	20.7	14.6	5.8	52.9	43.6	4.4	1.1	81	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Kingsley Parsonage	29.559	37.3	38.0	0.7	50.8	20.8	13.9	5.9	53.9	44.6	4.7	1.1	83	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Manchester	29.559	37.3	38.0	0.7	50.8	20.8	13.9	5.9	53.9	44.6	4.7	1.1	83	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Eccles	29.544	32.7	37.9	5.2	45.8	20.8	15.0	6.0	57.0	46.0	4.2	0.6	91	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Liverpool Observatory	29.566	36.2	43.4	7.2	49.4	20.4	19.0	5.4	52.7	43.8	4.4	1.1	81	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Wakfield	29.596	39.0	37.5	1.5	51.3	21.3	13.8	5.3	53.8	44.1	4.5	1.1	79	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Halifax	29.533	33.3	36.0	2.7	49.6	20.6	18.0	5.7	50.9	43.3	4.2	0.7	82	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Leeds	29.533	33.3	36.0	2.7	49.6	20.6	18.0	5.7	50.9	43.3	4.2	0.7	82	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Stonhurst	29.551	33.7	34.4	0.7	51.1	21.1	14.1	5.1	51.1	43.1	4.1	1.1	82	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Olney	29.528	32.8	36.0	3.2	47.0	20.0	17.0	5.0	52.8	44.0	4.0	1.3	82	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
York	29.470	30.8	38.0	7.2	43.8	20.8	15.0	6.0	57.0	46.0	4.2	0.6	91	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Ripon	29.528	32.8	36.0	3.2	47.0	20.0	17.0	5.0	52.8	44.0	4.0	1.3	82	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Cockermouth	29.530	32.8	36.0	3.2	47.0	20.0	17.0	5.0	52.8	44.0	4.0	1.3	82	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Allenheads	29.530	32.8	36.0	3.2	47.0	20.0	17.0	5.0	52.8	44.0	4.0	1.3	82	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Silloth	29.477	34.4	37.5	3.1	47.3	20.3	17.0	5.3	52.8	44.0	4.0	1.3	82	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Carlisle	29.546	35.5	35.5	0.0	54.5	24.5	15.0	5.0	54.5	45.5	4.5	1.5	84	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
North Shields	29.526	37.8	37.8	0.0	54.4	24.4	15.0	5.0	54.4	45.4	4.4	1.5	84	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Milton, Banbridge	29.524	37.8	37.8	0.0	54.4	24.4	15.0	5.0	54.4	45.4	4.4	1.5	84	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0
Culloden	29.481	32.0	42.4	10.4	39.6	21.6	18.0	5.6	53.6	43.6	4.6	1.2	82	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0

The highest temperatures of the air were at Royton, 91°·2; Boston, 90°·1; and Manchester and Leeds, 90°·0. The lowest temperatures of the air were at Norton-in-Hales, 30°·0; Carlisle, 30°·5; Marlborough College, 32°·4; Wilton, 33°·5; and Ripon, 33°·5. The greatest daily ranges were at Norton-in-Hales, 29°·0; Wilton, 22°·2; Aldershot Camp and Royton, 19°·7; and Greenwich, 19°·0. The least daily ranges were at Guernsey, 0°·4; Olney, 10°·1; Culloden, 10°·9; Halifax, 10°·9; North Shields, 11°·2; Allenheads, 11°·2; and York, 13°·1. The greatest number of rainy days were at Allenheads, 64; Culloden, 60; Stonhurst, 59; Milton, 58; and Carlisle, 54; Cockerthorpe, 52; and Eccles and Liverpool, 50. The least number of rainy days were at Olney, 29; Gloucester and Worcester, 30; and Bournemouth, Worthing, Wisbech, and York, 32. The heaviest falls of rain were at Stonhurst, 13·8 in.; Milton, 12·1 in.; Greenwich, 11·4 in.; Allenheads, 11·1 in.; Eccles, 10·3 in.; and Milton, Banbridge (Ireland), 10·1 in. The least falls of rain were at Gloucester, 5·6 in.; Clifton and Culloden, 6·0 in.; Helston and Truro, 6·1 in.; and Worthing, 6·2 in.

QUARTERLY METEOROLOGICAL TABLE for different PARALLELS of LATITUDE.

PARALLELS OF  LATITUDE, &c.	Mean Pressure of dry Air reduced to the level of the Sea.	Mean of all Highest Read- ings of the Thermometer.	Mean of all Lowest Read- ings of the Thermometer.	Mean Range of Temper- ature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Max- imum in Rays of Sun.	Mean Reading of Min- imum on Grass.	Mean Estimated Strength.	WIND.			Mean Amount of Cloud.	Mean Amount of Rain.		
																			Relative Pro- portion of						
																			N.	E.	W.				
Guernsey - - - - -	29.615	80.5	48.0	32.5	65.5	55.5	125.5	5.5	54.0	50.1	41.9	4.7	1.0	84	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0	
Devon and Cornwall	29.615	81.0	39.4	41.6	66.9	25.3	34.1	10.1	59.5	53.7	41.4	4.6	1.1	81	83.3	53.2	92.8	49.9	1.1	6	6	10	10	1.0	
Isle of Wight	29.554	82.3	39.8	45.5	47.0	62.0	35.7	18.0	56.9	57.0	46.0	4.2	0.6	91	83.2	53.2	92.8	49.9	1.1	6	6	10	10	1.0	
South of latitude 51°	29.581	85.4	35.4	49.4	46.9	25.0	4.4	1.8	59.0	53.7	41.4	4.6	1.1	82	83.0	53.2	92.8	49.9	1.1	6	6	10	10	1.0	
Between 51° and 52°	29.575	88.3	37.5	50.7	69.5	55.1	4.0	1.9	57.9	52.2	39.2	4.2	1.1	79	82.9	53.2	92.8	49.9	1.1	6	6	10	10	1.0	
the latitudes 52° and 53°	29.548	85.3	38.3	47.0	67.1	51.0	6.7	1.6	57.7	51.6	38.7	4.3	1.1	80	83.1	53.2	92.8	49.9	1.1	6	6	10	10	1.0	
53° and 54°	29.518	81.7	37.5	46.6	61.8	50.5	5.7	1.4	56.2	51.2	37.8	4.2	1.0	88	83.3	52.9	102.3	43.3	0.8	7	3	4	7	15	
North Shields	29.628	73.0	41.5	51.5	62.1	50.9	20.2	11.2	54.7	49.1	34.9	3.9	0.9	81	83.7	49.4	1.3	7	4	7	15	10	11	1.0	
Wilton, Banbridge (Ireland)	29.524	78.0	31.4	0.4	65.7	40.2	23.7	10.5	56.6	44.9	36.5	4.1	1.1	77	83.2	102.5	48.3	2.3	5	4	7	15	10	11	
Glenn, Banbridge (Ireland)	29.581	72.0	42.4	0.4	60.1	50.5	24.9	10.5	55.4	44.9	36.0	4.0	0.8	82	83.4	93.2	46.0	0.3	4	7	4	7	15	10	11



WISBEACH,  
S. H. MILLER, Esq., F.R.A.S.



Year 1867.	Month.	NAMES OF STATIONS AND OBSERVERS.	Pressure of Air in Month.			Temperature of Air in Month.			Mean Tem- perature.		Vapour.			Mean Reading of Thermometer.		Wind.		Rain.												
			Mean.	Range.	Lowest.	Highest.	Lowest.	Highest.	Range.	Mean.	Daily Range.	Air.	Dew Point.	Elastic Force.	In a Cubic foot of Air.	Short of Saturation.	Mean Degree of Humi- dity. (Scale = 100.)	Mean Weight of a cubic foot of air.	Maximum in Rays of Sun.	Minimum on Grass.	Estimated Strength.	Relative Proportion of								
																						N.	E.	S.	W.					
July	July	YORK.	29.764	1.074	31.5	65.9	31.5	65.9	34.4	32.2	13.7	57.0	53.5	410	4.6	87.	89	533	113.9	48.1	1	15	3	5	4	1	1	1	13	2.4
Aug.	Aug.	FILDEN THORPE, Esq.	29.851	0.931	31.5	65.9	31.5	65.9	34.4	32.2	13.7	57.0	53.5	410	4.6	87.	89	533	113.9	48.1	1	15	3	5	4	1	1	1	13	2.4
Sept.	Sept.	RIPON.	29.955	1.042	31.5	65.9	31.5	65.9	34.4	32.2	13.7	57.0	53.5	410	4.6	87.	89	533	113.9	48.1	1	15	3	5	4	1	1	1	13	2.4
July	July	RAV. F. W. STOW, M.A., F.M.S.	29.697	1.050	31.5	65.9	31.5	65.9	34.4	32.2	13.7	57.0	53.5	410	4.6	87.	89	533	113.9	48.1	1	15	3	5	4	1	1	1	13	2.4
Aug.	Aug.	COCKERMOUTH.	29.789	0.978	31.5	65.9	31.5	65.9	34.4	32.2	13.7	57.0	53.5	410	4.6	87.	89	533	113.9	48.1	1	15	3	5	4	1	1	1	13	2.4
Sept.	Sept.	H. DODGSON, Esq., M.D., F.R.A.S., F.M.S.	29.853	0.992	31.5	65.9	31.5	65.9	34.4	32.2	13.7	57.0	53.5	410	4.6	87.	89	533	113.9	48.1	1	15	3	5	4	1	1	1	13	2.4
July	July	DURHAM.	29.687	1.054	31.5	65.9	31.5	65.9	34.4	32.2	13.7	57.0	53.5	410	4.6	87.	89	533	113.9	48.1	1	15	3	5	4	1	1	1	13	2.4
Aug.	Aug.	REV. PROF. CHEVALLIER, M.A., F.R.A.S., F.M.S.	29.743	0.973	31.5	65.9	31.5	65.9	34.4	32.2	13.7	57.0	53.5	410	4.6	87.	89	533	113.9	48.1	1	15	3	5	4	1	1	1	13	2.4
Sept.	Sept.	ALLENHEADS.	29.889	1.028	31.5	65.9	31.5	65.9	34.4	32.2	13.7	57.0	53.5	410	4.6	87.	89	533	113.9	48.1	1	15	3	5	4	1	1	1	13	2.4
July	July	T. SOWTH, Esq., M.A., F.R.S., F.M.S., F.G.S.	29.703	1.008	31.5	65.9	31.5	65.9	34.4	32.2	13.7	57.0	53.5	410	4.6	87.	89	533	113.9	48.1	1	15	3	5	4	1	1	1	13	2.4
Aug.	Aug.	ST. PAUL'S PARSONAGE.	29.856	0.997	31.5	65.9	31.5	65.9	34.4	32.2	13.7	57.0	53.5	410	4.6	87.	89	533	113.9	48.1	1	15	3	5	4	1	1	1	13	2.4
Sept.	Sept.	REV. F. REDFORD, M.A., F.R.A.S., F.M.S.	29.817	0.910	31.5	65.9	31.5	65.9	34.4	32.2	13.7	57.0	53.5	410	4.6	87.	89	533	113.9	48.1	1	15	3	5	4	1	1	1	13	2.4
July	July	CARLISLE.	29.802	1.143	31.5	65.9	31.5	65.9	34.4	32.2	13.7	57.0	53.5	410	4.6	87.	89	533	113.9	48.1	1	15	3	5	4	1	1	1	13	2.4
Aug.	Aug.	LYWELL, Mr. JOHN DAWSON, under the direction of T. SOWTH, Esq., M.A., F.R.S., F.M.S., F.G.S.	29.847	0.901	31.5	65.9	31.5	65.9	34.4	32.2	13.7	57.0	53.5	410	4.6	87.	89	533	113.9	48.1	1	15	3	5	4	1	1	1	13	2.4
Sept.	Sept.	NORTH SHIELDS, Esq.	29.761	1.082	31.5	65.9	31.5	65.9	34.4	32.2	13.7	57.0	53.5	410	4.6	87.	89	533	113.9	48.1	1	15	3	5	4	1	1	1	13	2.4
July	July	MILTOWN (Banbridge, Ireland).	29.816	0.740	31.5	65.9	31.5	65.9	34.4	32.2	13.7	57.0	53.5	410	4.6	87.	89	533	113.9	48.1	1	15	3	5	4	1	1	1	13	2.4
Aug.	Aug.	JOHN SMYTH, Esq., M.A., M.I.C.E.L., F.M.S.	29.887	1.242	31.5	65.9	31.5	65.9	34.4	32.2	13.7	57.0	53.5	410	4.6	87.	89	533	113.9	48.1	1	15	3	5	4	1	1	1	13	2.4
Sept.	Sept.	CULLODEN, Esq., F.M.S.	29.728	1.002	31.5	65.9	31.5	65.9	34.4	32.2	13.7	57.0	53.5	410	4.6	87.	89	533	113.9	48.1	1	15	3	5	4	1	1	1	13	2.4
July	July	A. FORBES, Esq., F.M.S.	29.855	0.974	31.5	65.9	31.5	65.9	34.4	32.2	13.7	57.0	53.5	410	4.6	87.	89	533	113.9	48.1	1	15	3	5	4	1	1	1	13	2.4
Aug.	Aug.	ROMAN SPENCER, Esq.	29.797	1.039	31.5	65.9	31.5	65.9	34.4	32.2	13.7	57.0	53.5	410	4.6	87.	89	533	113.9	48.1	1	15	3	5	4	1	1	1	13	2.4
Sept.	Sept.	MILTOWN (Banbridge, Ireland).	29.848	0.978	31.5	65.9	31.5	65.9	34.4	32.2	13.7	57.0	53.5	410	4.6	87.	89	533	113.9	48.1	1	15	3	5	4	1	1	1	13	2.4
July	July	JOHN SMYTH, Esq., M.A., M.I.C.E.L., F.M.S.	29.909	0.995	31.5	65.9	31.5	65.9	34.4	32.2	13.7	57.0	53.5	410	4.6	87.	89	533	113.9	48.1	1	15	3	5	4	1	1	1	13	2.4
Aug.	Aug.	CULLODEN, Esq., F.M.S.	29.644	0.958	31.5	65.9	31.5	65.9	34.4	32.2	13.7	57.0	53.5	410	4.6	87.	89	533	113.9	48.1	1	15	3	5	4	1	1	1	13	2.4
Sept.	Sept.	A. FORBES, Esq., F.M.S.	29.743	1.253	31.5	65.9	31.5	65.9	34.4	32.2	13.7	57.0	53.5	410	4.6	87.	89	533	113.9	48.1	1	15	3	5	4	1	1	1	13	2.4
July	July		29.734	1.110	31.5	65.9	31.5	65.9	34.4	32.2	13.7	57.0	53.5	410	4.6	87.	89	533	113.9	48.1	1	15	3	5	4	1	1	1	13	2.4
Aug.	Aug.		29.684	0.730	31.5	65.9	31.5	65.9	34.4	32.2	13.7	57.0	53.5	410	4.6	87.	89	533	113.9	48.1	1	15	3	5	4	1	1	1	13	2.4
Sept.	Sept.		29.756	1.182	31.5	65.9	31.5	65.9	34.4	32.2	13.7	57.0	53.5	410	4.6	87.	89	533	113.9	48.1	1	15	3	5	4	1	1	1	13	2.4

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# METEOROLOGY OF ENGLAND, DURING THE QUARTER ENDING DECEMBER 31, 1867.

REMARKS ON THE WEATHER, DURING THE QUARTER ENDING 31ST OF DECEMBER, 1867.  
By JAMES GLAISHER, Esq., F.R.S., &c., President of The Meteorological Society.

At the end of the preceding quarter the temperature became cold, with prevalence of fog, and this weather continued till the 13th of October, with great fluctuations in the pressures of the atmosphere. From the 1st day of October to the 13th, the average deficiency of mean temperature amounted to  $8\frac{1}{2}^{\circ}$  daily; from the 14th to the 18th, the weather was warm everywhere, and rain fell on each day; from the 18th the weather was generally mild, with frequent rain, and a damp atmosphere till the 1st day of November, the excess of average temperature for the 19 days ending this day being  $3\frac{1}{2}^{\circ}$  daily. During the month of November the temperature fluctuated frequently from above to below the average, but was chiefly below; the month proved to be one of the finest for 50 years. The average deficiency of temperature from 2d November to 1st December was  $10.6^{\circ}$  daily. In the first week of December a sudden change took place in the weather, which became very stormy. Rain, hail, sleet, and snow fell at different parts of the country, and there was a great hurricane, causing great destruction both on land and sea. From 2d December to the 10th the temperature was low, and its average deficiency daily was as much as  $9\frac{1}{2}^{\circ}$ . Another great change took place on 11th December, the frost departed, and the temperature in the seven days ending the 17th was in excess over the average by  $7\frac{1}{2}^{\circ}$  daily, and from this time to the end of the year the weather was changeable, clouds and fogs were prevalent, and a good deal of rain fell over the country. The average deficiency of temperature in the 14 days ending 31st December, was  $2\frac{3}{4}^{\circ}$  daily. The month of December was remarkable for its sudden changes from one extreme to the other.

The reading of the barometer at Greenwich on the 1st day of October was  $30.31$  inches, the highest in the month; it was  $29.40$  inches on the 8th, and this fall was accompanied by a gale of wind; on the 22d it passed above  $30$  inches, and continued above that point for a short time; then decreased to  $29.2$  inches on the 27th. For several days preceding the 27th the wind was light, on the morning of that day pressures to  $4$  lbs. on the square foot were recorded, after 9 h. a.m. to 17 lbs., and early in the afternoon the extreme gust of  $30$  lbs. was registered, and after this the gale subsided. From 2d November to the 13th the reading was constantly above  $30$  inches; it then decreased to  $29.4$  inches by the 15th, where it remained till the 17th, the wind during this time blowing strongly; the reading passed again above  $30$  inches on the 18th, and remained above till the 30th, it then decreased very rapidly to  $28.7$  inches by the 1st and 2d of December, and those heavy gales took place to which reference has been made above, and which caused disasters at sea to be more numerous, and the loss of life to be greater than usual.

The range of the readings of the barometer in October varied from about  $0.9$  inch at Southern stations, increasing gradually to  $1.5$  inch at extreme Northern stations in Scotland; in November it was about  $1.2$  inch generally, and in December was about  $1.5$  inch all over the country.

The change of atmospheric pressure from September to October was a decrease of about  $0.15$  inch; from October to November was great, amounting to  $0.3$  inch at Southern, increasing to  $0.5$  inch at Northern stations; and from November to December was a decrease of about  $0.25$  inch at Southern stations, and  $0.3$  inch at Northern.

The readings of the barometer in November were remarkably high, and upon the whole were above their average in each month of the quarter.

At the beginning of October the outstanding portions of the crops in the Scottish uplands, and the late districts of England, Scotland, and Ireland, were but small, and the gathering was very frequently interrupted by rain. The most reliable reports at the close of the harvest estimated the oat crop as the best of the season, and barley as the next in order for bulk, but showed considerable variation both in quantity and weight. The wheat crop was also very varied, some proved to be of good quality, but, taken as a whole, was below an average. Beans were a good average, but there was a small crop of peas. Potatoes were a large crop, but disease was spoken of in different places.

The fine weather in November enabled a great deal of field work to be done all over the country, and a great breadth of land was sown. In December the stormy weather stopped all out-door farming work for some time. At the end of the year the accounts of the growing wheat crop were generally favourable all over the country. Upon the whole the quarter was favourable for agricultural purposes.

At Greenwich the mean temperature of October was  $48.7^{\circ}$ , being  $1.0^{\circ}$  lower than the average of 96 years, and lower than the corresponding temperature of any year since 1854.

The mean temperature of November was  $41.4^{\circ}$ , being  $1.0^{\circ}$  lower than the average of the preceding 96 years, and lower than that of any year since 1861.

The mean temperature of December was  $37.5^{\circ}$ , being  $1.6^{\circ}$  lower than the average of 96 years, and  $3.0^{\circ}$  lower than that of last year.

The decrease of mean temperature at all parts of the country from September to October was from  $5^{\circ}$  to  $10^{\circ}$  generally; from October to November was also from  $5^{\circ}$  to  $10^{\circ}$ , and from November to December was generally from  $2^{\circ}$  to  $4^{\circ}$ , and there are about the usual amount of decrease.

The mean high day temperatures were respectively  $1.5^{\circ}$ ,  $1.4^{\circ}$ , and  $3.1^{\circ}$  lower than the averages in October, November, and December.

The mean low night temperatures were  $2.1^{\circ}$ ,  $2.2^{\circ}$ , and  $3.5^{\circ}$  lower than the respective averages in October, November, and December.

Therefore for the three months, October, November, December, both the days and nights were cold.

Second rain-gauges are placed—At Eastbourne, at the height of 80 feet above the sea, the amount collected was 0.9 inches; at Alford, 25 feet, 0.5 inches; at Clifton, 50 feet, 5.2 inches; at Oxford, 21 feet, 5 inches; at Witnesh, 8 feet, 7.7 inches; at Boston, 8 feet, 6.2 inches; at Kingsley Paragon, 13 feet, 6.6 inches; at Eccles, 24 feet, 8.8 inches; at Ripon, 5 feet, 1.9 inches; at Conington, 30 feet, 1.9 inches; at Doncaster, 30 feet, 1.9 inches; at Leeds, 30 feet, 1.9 inches; at Manchester, 30 feet, 1.9 inches; at Newcastle, 30 feet, 1.9 inches; at Nottingham, 30 feet, 1.9 inches; at Plymouth, 30 feet, 1.9 inches; at Southampton, 30 feet, 1.9 inches; at Swansea, 30 feet, 1.9 inches; at Cardiff, 30 feet, 1.9 inches; at Bristol, 30 feet, 1.9 inches; at Exeter, 30 feet, 1.9 inches; at Gloucester, 30 feet, 1.9 inches; at Hereford, 30 feet, 1.9 inches; at Worcester, 30 feet, 1.9 inches; at Coventry, 30 feet, 1.9 inches; at Derby, 30 feet, 1.9 inches; at Leicester, 30 feet, 1.9 inches; at Lincoln, 30 feet, 1.9 inches; at Lichfield, 30 feet, 1.9 inches; at Stafford, 30 feet, 1.9 inches; at Shrewsbury, 30 feet, 1.9 inches; at Salop, 30 feet, 1.9 inches; at Shropshire, 30 feet, 1.9 inches; at Cheshire, 30 feet, 1.9 inches; at Lancashire, 30 feet, 1.9 inches; at Yorkshire, 30 feet, 1.9 inches; at Derbyshire, 30 feet, 1.9 inches; at Nottinghamshire, 30 feet, 1.9 inches; at Leicestershire, 30 feet, 1.9 inches; at Lincolnshire, 30 feet, 1.9 inches; at Northamptonshire, 30 feet, 1.9 inches; at Bedfordshire, 30 feet, 1.9 inches; at Hertfordshire, 30 feet, 1.9 inches; at Essex, 30 feet, 1.9 inches; at Kent, 30 feet, 1.9 inches; at Surrey, 30 feet, 1.9 inches; at Sussex, 30 feet, 1.9 inches; at Hampshire, 30 feet, 1.9 inches; at Dorset, 30 feet, 1.9 inches; at Devon, 30 feet, 1.9 inches; at Cornwall, 30 feet, 1.9 inches; at Gloucestershire, 30 feet, 1.9 inches; at Wiltshire, 30 feet, 1.9 inches; at Berkshire, 30 feet, 1.9 inches; at Oxfordshire, 30 feet, 1.9 inches; at Buckinghamshire, 30 feet, 1.9 inches; at Middlesex, 30 feet, 1.9 inches; at Surrey, 30 feet, 1.9 inches; at Kent, 30 feet, 1.9 inches; at Essex, 30 feet, 1.9 inches; at Hertfordshire, 30 feet, 1.9 inches; at Bedfordshire, 30 feet, 1.9 inches; at Northamptonshire, 30 feet, 1.9 inches; at Lincolnshire, 30 feet, 1.9 inches; at Leicestershire, 30 feet, 1.9 inches; at Nottinghamshire, 30 feet, 1.9 inches; at Derbyshire, 30 feet, 1.9 inches; at Yorkshire, 30 feet, 1.9 inches; at Lancashire, 30 feet, 1.9 inches; at Cheshire, 30 feet, 1.9 inches; at Shropshire, 30 feet, 1.9 inches; at Stafford, 30 feet, 1.9 inches; at Lichfield, 30 feet, 1.9 inches; at Lincoln, 30 feet, 1.9 inches; at Derby, 30 feet, 1.9 inches; at Leicester, 30 feet, 1.9 inches; at Coventry, 30 feet, 1.9 inches; at Worcester, 30 feet, 1.9 inches; at Hereford, 30 feet, 1.9 inches; at Gloucester, 30 feet, 1.9 inches; at Exeter, 30 feet, 1.9 inches; at Bristol, 30 feet, 1.9 inches; at Swansea, 30 feet, 1.9 inches; at Cardiff, 30 feet, 1.9 inches; at Southampton, 30 feet, 1.9 inches; at Plymouth, 30 feet, 1.9 inches; at Newcastle, 30 feet, 1.9 inches; at Manchester, 30 feet, 1.9 inches; at Nottingham, 30 feet, 1.9 inches; at Doncaster, 30 feet, 1.9 inches; at Ripon, 30 feet, 1.9 inches; at Eccles, 30 feet, 1.9 inches; at Kingsley Paragon, 30 feet, 1.9 inches; at Boston, 30 feet, 1.9 inches; at Witnesh, 30 feet, 1.9 inches; at Oxford, 30 feet, 1.9 inches; at Alford, 30 feet, 1.9 inches; at Eastbourne, 30 feet, 1.9 inches.



The daily ranges of temperature were higher than their averages in October, November, and December to the respective amounts of  $0^{\circ}6$ ,  $0^{\circ}8$ , and  $0^{\circ}5$ .

The fall of rain was  $0.7$  in. in defect in October,  $2.0$  in. in defect in November, and  $0.1$  in excess in December.

The mean temperature of the air at Greenwich in the three months ending November, constituting the three autumn months, was  $49^{\circ}2$ , being  $1^{\circ}3$  lower than the average of the preceding 26 years.

1867. MONTHS.	Temperature of										Elastic Force of Vapour.	Weight of Vapour in Cubic Foot of Air.	
	Air.			Evaporation.		Dew Point.		Air— Daily Range.		Water of the Thames.			
	Mean.	Diff. from average of 26 years.	Diff. from average of 26 years.	Mean.	Diff. from average of 26 years.	Mean.	Diff. from average of 26 years.	Mean.	Diff. from average of 26 years.		Mean.	Diff. from average of 26 years.	Mean.
Oct.	48.7	-1.0	-1.9	47.0	-1.6	45.2	-1.2	15.2	+0.6	50.3	in. 302	-0.015	grs. 3.4
Nov.	41.4	-1.0	-2.6	39.7	-2.0	37.5	-2.4	12.5	+0.8	43.9	in. 225	-0.027	grs. 2.3
Dec.	37.5	-1.6	-3.0	36.2	-2.8	34.4	-2.8	10.1	+0.5	37.3	in. 199	-0.025	grs. 2.3
Mean	42.5	-1.2	-2.5	41.0	-2.1	39.0	-2.1	12.6	+0.6	43.8	in. 242	-0.022	grs. 2.8

1867. MONTHS.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.	Reading of Thermometer on Clouds.			
	Mean.	Diff. from average of 26 years.	Mean.	Diff. from average of 26 years.	Mean.	Diff. from average of 26 years.	Amount.	Diff. from average of 52 years.		Number of Nights it was			
									At or below 30°.	Be- tween 30° and 40°	Above 40°.	Low- est Read- ing at Night.	
Oct.	88	+ 1	in. 29.758	+0.003	grs. 542	+ 3	in. 2.1	-0.7	255	8	12	11	0 21.6
Nov.	87	- 1	in. 29.119	+0.370	grs. 557	+10	in. 0.4	-2.0	241	19	10	1	21.8
Dec.	89	+ 1	in. 29.854	+0.024	grs. 556	+ 4	in. 2.0	+0.1	290	23	5	3	21.3
Mean	88	0	in. 29.910	+0.152	grs. 552	+ 6	Sum 4.5	Sum -2.6	Mean 262	Sum 60	Sum 27	Sum 15	Lowest 15.0

1867. MONTHS.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.	Reading of Thermometer on Grass.			
	Mean.	Diff. from average of 26 years.	Mean.	Diff. from average of 26 years.	Mean.	Diff. from average of 26 years.	Amount.	Diff. from average of 26 years.		Number of Nights it was		Lowest Reading at Night.	Highest Reading at Day.
	Mean.	Diff. from average of 26 years.	Mean.	Diff. from average of 26 years.	Mean.	Diff. from average of 26 years.	Amount.	Diff. from average of 26 years.		At or below $30^{\circ}$ .	Between $30^{\circ}$ and $40^{\circ}$ .	Above $40^{\circ}$ .	
Oct.	88	+1	29.738	+0.068	grs. 542	+3	in. 2.1	-0.7	Miles. 255	8	12	11	21.6
Nov.	87	-1	30.119	+0.370	grs. 557	+10	in. 0.4	-2.0	241	19	10	1	21.8
Dec.	89	+1	29.854	+0.024	grs. 556	+4	in. 2.0	+0.1	290	23	5	3	19.0
Mean	88	0	29.910	+0.152	552	+6	Sum 4.5	Sum -2.6	Mean 262	Sum 50	Sum 27	Sum 15	Lowest 19.0

NOTE.—In reading this table it will be borne in mind that the sign (-) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunderstorms occurred on the 3d October at Llandudno; on the 4th and 7th at Liverpool; on the 8th at Aldershot, Oxford, and Grantham; on the 15th at Eastbourne; on the 17th at Hull, and Ripon; on the 19th at Hull; and on the 27th at Grantham.

Thunder was heard but lightning was not seen on the 2d October at Aldershot; on the 6th at Streatly Vicarage; on the 7th at Eccles; on the 8th at Cardington; on the 17th at Eccles; on the 3d and 10th December at Carlisle.

Lightning was seen but thunder was not heard on the 3d October at Guernsey, Eastbourne, Marlborough College, and Oxford; on the 4th at Battersea; on the 7th at Norwich and Stonyhurst; on the 8th at Norwich; on the 17th at Sidmouth and Allenheads; and on the 27th at Knebworth. On the 2d November at Culloden; on the 22d at Helston; and on the 26th at Llandudno. On the 14th December at Culloden, and the 15th and 18th at Llandudno.

Solar halos were seen on October 5th, 9th, and 28th; and on December the 9th and 20th. Lunar halos were seen on October 5th, 6th, and 30th. On 15th November. On December the 5th, 6th, 7th, 8th, 9th, 10th, 11th, and 24th.

Aurora borealis were seen on October 2d, 3d, 8th, 24th, 25th, and 31st. On November the 26th, and 27th. On the 21st December.

Snow fell at different places on October 3d, 4th, 5th, 7th, and 9th. On November the 16th, 17th, 18th, 19th, 20th, 21st, 28th, 29th, 30th, and 31st.

Hail fell on October the 2d, 3d, 4th, 5th, 6th, 7th, 8th, 9th, 17th, 18th, 27th, 28th, and 30th. On November the 1st and 16th. On December the 1st, 2d, 3d, 4th, 6th, 7th, 17th, 18th, and 21st.

Fog or mist was very prevalent in each of the three months at different parts of the country.

The oak tree divested of leaves. At Cockermouth on 27th October; at Marlborough on 12th November; Tunbridge Wells on the 18th November; Hull, Oxford, and Guernsey on the 30th November; and at Helston on the 7th December.

The sycamore leafless. At Cockermouth and Boston on the 20th October; at Oxford on the 24th October; at Tunbridge Wells on the 27th October; at Eastbourne and Hull on the 14th November; at Guernsey on the 20th November; at Wisbeach on the 23d November; and at Helston on the 3d December.

The horse chestnut divested of leaves. At Cockermouth and Boston on the 20th October; Tunbridge Wells on the 20th to the 25th October; at Taunton on the 27th October; and at Llandudno on the 6th November; and at Guernsey on the 10th November.

The lime leafless. At Boston and Taunton on the 20th October; at Oxford and Tunbridge Wells on the 27th October; at Guernsey on the 28th October; at Hull on the 6th November; and at Llandudno on the 30th November.

The common poplar leafless. At Boston and Taunton on the 30th October; at Oxford on the 31st October; at Hull on the 12th November; at Eastbourne on the 15th November; at Wisbeach on the 16th November; and at Helston on the 3d December.

The field elm leafless. At Tunbridge Wells on the 27th October; at Boston and Guernsey on the 30th October; at Marlborough on the 12th November; at Oxford on the 16th November; at Hull on the 30th November; at Eastbourne on the 3d December; and at Helston on the 8th December.

The wych elm leafless. At Tunbridge Wells on the 27th October; at Guernsey on the 30th October; and at Hull on the 20th November.

Walnut leafless. At Cockermouth on the 19th October; at Hull on the 3d November; and at Wisbeach on the 17th November.

Hawthorn leafless. At Cockermouth on the 19th October; at Hull on the 27th November; at Marlborough on the 12th November; and at Llandudno on the 1st December.

Swallows departed from Boston on the 9th October; Clifton on the 10th October; Eastbourne on the 12th October; Grantham on the 16th October, some were seen to the 26th; Taunton on the 19th October; and at Osborne a few were seen on the 13th November. Swallows and martins seen at Burnham on the 13th November.

Fieldfare arrived. At Taunton on the 26th October; and at Guernsey on the 27th October.

Woodcock arrived. At Taunton on the 26th October.

Starling arrived. At Guernsey on the 27th October.

Redwing arrived. At Taunton on 27th November.

CULLODEN.—October. With the exception of one or two days, (the 2d, when the weather was boisterous with a strong gale and heavy showers of rain from the W.N.W., and again on the 26th, when much rain fell,) the month throughout has continued particularly fine, and most favourable for securing a late harvest. On dry and seasonable weather this year much depended, for on all farms a large extent of grain remained in the field at the close of September, in many cases much remained steady, but particularly so from the 5th to the 23d. The temperature rose as high as  $62^{\circ}2$  in the shade and did not on any occasion fall to  $32^{\circ}$ , while on the grass it was only below  $32^{\circ}$  on the 4th, 5th, 6th, 8th, 25th, and 28th nights. Very little grain remained exposed after the 20th except in exceptional cases, and in districts of the country generally late. The bulk in some instances is greater than it was last month estimated to be, and it is hoped that the returns when thrashed out will be satisfactory. Potato lifting commenced on most farms from the 20th to the 25th. The crop is not heavy, but it is a source of gratification that there is little appearance of disease. Prices per acre have ruled from 18l. to 25l. and 30l., but few transactions have been entered into in this way, as it is evident that when the crop is all lifted the value per ton will be high and greatly in advance of that obtained for several seasons. The turnip crop continues growing. The bulbs are somewhat smaller than last year, but should the weather continue open they will improve, particularly as there is no appearance of mildew in any of the fields. Prices in most articles in the grain trade continue steady; as local supplies increase a slight fall will likely take place, but not to any extent, for from present appearances high currencies will be maintained. The general trade in fat cattle is firm. The sheep markets are scantily supplied with good quality, and inferior stock is difficult to sell at any price.

November. The past month has been remarkable for a high and steady barometer, a high and equal temperature, and for the small quantity of rain which fell, .924 of an inch only having been registered. The highest reading of the thermometer in the shade,  $52^{\circ}7$ , was taken on the 9th, and the lowest,  $33^{\circ}5$ , on the 17th. The temperature was several degrees above the November average, the temperature having been not more than 7 times below  $32^{\circ}$  on the grass, and on no occasion during the month was more than 6° of frost indicated. Throughout the whole month the weather was remarkably fine, the days bright and dry, and in consequence farm labour of all kinds is far advanced. Ploughing having been uninterruptedly proceeded with, most of the stubble land required for next year's green crop, and a considerable part of the lea land, have been turned over. Wheat sowing may be said to have been completed by the 20th, but notwithstanding the fineness of the weather, the extent of land under this crop in this district is not over the average. A considerable portion of the turnip crop has been stored in first-rate condition, and what remains in the field is still, under the influence of the fine, mild, and open weather, increasing in size and weight. The price of corn of every kind kept advancing till nearly the close of the month, when there was a slight fall. Potatoes have reached 4l. per ton, and this price has been freely given. The crop keeps sound in the pits, and there are no complaints of the appearance of disease since storing was completed. Stock every where reported healthy, and fodder plentiful. Fat cattle continue to bring good prices, though a shade lower than they have been for some months. Sheep on turnips are doing well, making rapid progress in some cases, and have been as comfortable on the heaviest soils as they are on the driest in most seasons.

December. The weather during the past month has been singularly favourable for the prosecution of out-door labour. Being mild and open, with a little rain-fall, ploughing is far advanced. The land, from the openness of the season, having worked well, the turnip crop improved very considerably during the month, but the crop is not affording so much eating for stock as was expected. Grass has continued fresh and good, and in many cases store sheep have been able to do hitherto without turnips or extra keep. Stock continues healthy and in a thriving condition throughout the district. Potatoes still command extreme prices, but the corn crop, though bulky in the stack yard, is not yielding well when thrashed out. The price of grain, however, continues high. The barometer remained steady from the 8th to the 26th, and did not vary much during this period. The highest reading of the thermometer,  $51^{\circ}4$ , was taken on the 11th, and the lowest,  $22^{\circ}1$ , on the 2d.



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	Mean Estimated Strength.	WIND.				Mean Amount of Cloud.	Mean Amount of Rain.	
																			Relative Proportion of						
																			N.	E.	S.	W.			
Guernsey	29.838	62.5	31.0	31.5	51.5	44.3	24.0	7.5	47.4	42.3	3.2	0.7	83	78.5	548	57.5	41.5	1.5	11	5	6	5	5	5	
Helston	29.842	67.0	30.0	30.7	54.5	42.8	28.0	11.7	48.5	44.3	2.7	0.6	86	801	548	57.5	41.5	1.5	18	10	7	4	8	4	7
Truro	29.847	67.0	22.0	45.5	63.7	44.1	61.3	21.0	46.8	41.4	2.61	0.7	81	550	547	57.5	41.5	1.5	18	10	7	4	8	4	7
Stidmouth	29.870	63.0	25.5	43.5	53.4	41.8	38.7	23.2	43.1	45.5	3.97	2.61	0.8	87	551	552	—	—	0.8	16	5	3	8	7	5
Berastaple	29.825	62.0	25.0	40.0	50.1	36.6	49.0	63.2	41.1	46.5	4.72	2.67	3.2	0.4	89	551	—	—	10	6	5	10	10	6	
Osborne	29.830	66.8	23.2	43.6	54.1	37.2	23.1	16.9	44.4	42.3	2.7	0.7	81	550	547	57.5	41.5	1.5	11	5	6	5	5	5	
Bournemouth	29.844	62.0	24.0	38.0	55.1	41.3	37.2	22.8	43.6	40.0	2.50	0.8	0.6	83	551	—	—	13	3	5	5	10	10	6	
Bournemouth	29.825	61.5	23.3	38.0	50.4	43.7	36.2	22.8	43.6	40.0	2.50	0.8	0.6	83	551	—	—	13	3	5	5	10	10	6	
Eastbourne	29.850	64.4	21.1	34.1	50.0	38.8	33.5	11.7	44.0	40.1	2.51	2.9	0.7	85	554	65.5	34.8	—	13	5	3	4	12	7	
Worthing	29.833	67.0	25.5	24.4	51.9	39.1	29.9	10.4	44.3	40.0	2.49	2.9	0.6	87	554	65.5	33.0	0.5	11	4	8	12	7	7	
Thiton	29.851	66.8	22.0	41.9	52.0	39.7	35.4	14.5	44.1	41.9	2.70	3.1	0.3	92	553	65.5	33.1	0.6	12	5	3	8	12	7	
Wilton	29.835	66.0	18.0	48.0	50.0	36.2	53.9	18.0	44.1	41.9	2.38	2.7	0.4	89	553	72.8	31.9	1.4	14	4	5	8	12	7	
Aldeburgh Wells	29.853	64.8	19.0	45.8	48.4	34.7	43.3	11.0	44.2	43.3	2.35	2.7	0.5	86	547	73.4	32.6	1.0	9	5	8	12	7	7	
Aldershot Cr. op	29.801	65.0	20.0	45.8	49.3	36.1	35.4	12.0	42.6	38.8	2.40	2.8	0.4	87	548	66.3	35.8	1.3	10	4	5	12	11	7	
Bath R. L. & S. Inst.	29.826	65.0	22.3	37.7	49.5	38.3	36.3	11.2	44.3	40.0	2.43	2.8	0.5	85	548	66.3	35.8	1.3	10	4	5	12	11	7	
Knudsh. Land. & Bath	—	65.5	20.0	45.5	48.3	35.3	36.3	13.0	44.1	—	—	—	—	—	—	75.6	31.9	1.3	11	5	4	11	7	7	
Marlborough College	—	63.6	17.7	48.9	49.0	35.9	41.1	15.5	42.1	—	—	—	—	—	—	72.7	32.7	0.4	12	7	3	8	12	7	
Clifton	29.851	65.5	23.7	41.8	49.3	38.8	23.2	11.1	43.3	33.0	2.46	2.8	0.5	87	550	—	—	—	—	—	—	—	—	—	
Royal Observatory	29.845	64.8	21.2	43.6	49.1	39.5	34.8	12.6	42.4	43.0	2.42	2.8	0.4	88	552	65.5	32.1	0.4	9	4	7	10	10	6	
Streatham Viarage	29.894	63.5	14.0	42.2	49.8	38.8	23.9	14.6	42.4	33.5	2.30	2.7	0.6	84	553	65.5	32.1	0.4	9	4	7	10	10	6	
Camden Town	29.815	65.7	20.0	40.4	49.6	36.6	48.9	11.2	44.3	33.1	2.42	2.8	0.5	87	552	62.2	32.4	—	—	—	—	—	—	—	
Oxford	29.862	65.0	23.0	40.4	48.8	36.6	34.8	11.9	43.3	33.1	2.49	2.8	0.4	89	550	63.9	33.9	1.0	10	4	7	10	10	6	
Gloucester	29.816	65.5	20.0	40.4	49.6	36.6	48.9	11.2	44.3	33.1	2.42	2.8	0.5	87	552	62.2	32.4	—	—	—	—	—	—	—	
Royston	29.800	67.3	15.1	52.2	49.8	37.3	30.3	12.6	42.6	38.8	2.49	2.8	0.5	84	552	63.8	33.9	0.7	9	6	11	9	10	6	
Cardington	29.819	67.0	12.6	54.4	49.1	37.5	29.5	10.3	42.6	38.8	2.44	2.8	0.5	87	519	—	—	7	8	3	7	14	10	6	
Lampeter	29.844	62.0	12.6	49.4	50.4	35.4	36.6	21.3	43.3	33.1	2.47	2.9	0.5	87	553	65.8	28.3	0.8	9	4	6	12	7	7	
Norwich	29.825	65.0	23.0	42.0	48.1	37.3	32.1	10.5	43.3	33.1	2.47	2.9	0.5	88	553	—	—	0.6	9	5	8	12	7	7	
Wishae	29.802	66.0	23.0	45.5	48.9	35.8	35.6	12.1	42.7	39.4	2.44	2.9	0.4	84	554	69.0	33.9	0.3	7	4	7	13	10	6	
Glendalno	29.801	65.0	23.0	45.5	48.9	35.8	35.6	12.1	42.7	39.4	2.44	2.9	0.4	84	554	69.0	33.9	0.3	7	4	7	13	10	6	
Derby	29.823	65.0	23.0	45.5	48.9	35.8	35.6	12.1	42.7	39.4	2.44	2.9	0.4	84	554	69.0	33.9	0.3	7	4	7	13	10	6	
Holkham	29.801	65.0	23.0	45.5	48.9	35.8	35.6	12.1	42.7	39.4	2.44	2.9	0.4	84	554	69.0	33.9	0.3	7	4	7	13	10	6	
Boston	29.785	66.0	23.0	45.5	48.9	35.8	35.6	12.1	42.7	39.4	2.44	2.9	0.4	84	554	69.0	33.9	0.3	7	4	7	13	10	6	
Hawarden	29.797	—	21.0	—	—	39.6	—	—	43.4	40.4	2.45	2.8	0.5	84	—	—	—	8	4	4	15	—	—	—	
Kingsley Parsonage	29.815	69.4	19.0	53.0	48.3	36.8	34.1	11.5	42.4	38.8	2.10	2.8	0.4	89	551	—	—	—	—	—	—	—	—	—	
Manchester	29.849	69.5	22.0	47.5	48.5	35.5	34.1	13.0	41.6	37.6	2.27	2.6	0.5	86	553	54.8	32.2	—	4	7	11	9	19	7	
Loose	29.827	65.5	23.0	45.5	48.9	35.8	35.6	12.1	42.7	39.4	2.32	2.7	0.5	87	552	49.3	33.6	0.2	10	5	4	12	11	7	
Grantham	29.834	65.4	23.0	45.5	48.9	35.8	35.6	12.1	42.7	39.4	2.32	2.7	0.5	87	552	49.3	33.6	0.2	10	5	4	12	11	7	
Wakenfield	29.827	65.0	20.0	40.0	49.3	35.3	23.7	9.2	43.5	40.0	2.32	2.9	0.4	89	550	—	—	1.6	7	6	11	—	—	—	
Halifax	29.824	63.5	23.5	45.9	44.9	36.7	27.1	14.5	42.7	39.5	2.18	2.7	0.7	79	552	61.1	34.4	1.3	6	3	7	15	—	—	
Leeds	—	65.0	26.0	42.0	49.4	39.5	37.7	8.0	41.4	39.0	2.33	2.5	0.5	84	542	—	—	0.6	8	5	5	13	—	—	
Hull	29.823	65.0	20.0	40.0	49.3	35.3	23.7	9.2	43.5	40.0	2.32	2.9	0.4	89	550	—	—	1.6	7	6	11	—	—	—	
Stonyhurst	29.805	65.4	22.0	44.4	47.9	37.1	13.1	10.8	42.0	38.8	2.33	2.7	0.5	86	555	59.8	33.3	—	—	—	—	—	—	—	
Osley	29.817	64.0	26.7	37.8	46.9	38.7	25.8	8.2	42.4	38.8	2.30	2.7	0.4	87	550	—	—	1.4	8	2	3	17	—	—	
York	29.778	61.0	22.5	38.5	47.9	37.0	29.8	10.9	42.8	38.8	2.25	2.4	0.8	91	553	—	—	—	—	—	—	—	—	—	
Ripon	29.828	67.0	19.0	48.0	48.5	35.4	30.9	13.6	41.7	36.1	2.13	2.4	0.6	81	552	—	—	30.9	0.8	12	5	3	11	—	
Cockermouth	29.797	60.0	22.2	37.8	44.9	38.8	30.5	10.9	43.4	39.5	2.43	2.8	0.5	89	550	55.9	32.7	0.4	6	4	6	11	—	—	
Akenhead	29.841	57.0	17.7	32.0	44.8	34.1	30.0	10.7	41.3	37.6	2.31	2.4	0.5	90	530	80.2	28.5	1.6	7	3	6	15	—	—	
Silloth	29.782	65.1	23.6	41.1	50.0	38.5	34.1	11.8	44.2	38.8	2.40	2.5	0.9	82	551	71.7	33.7	1.1	5	7	5	13	—	—	
Carlisle	29.848	65.0	21.0	44.4	48.5	35.1	23.5	12.3	42.0	38.8	2.31	2.6	0.6	83	553	66.1	30.9	0.2	6	4	8	13	—	—	
Bywell	29.703	68.0	21.0	47.0	51.1	36.0	35.3	15.1	42.9	37.5	2.21	2.6	0.6	82	551	—	—	—	—	—	—	—	—	—	
North Shields	29.833	63.8	26.0	47.0	47.6	38.3	31.1	9.3	42.6	38.8	2.32	2.7	0.5	83	552	—	—	36.3	1.6	10	3	5	13	—	—
Miltona, Banbridge	29.809	67.0	23.3	42.0	49.7	37.9	29.0	11.8	43.3	39.3	2.42	2.8	0.5	85	549	66.7	33.5	1.8	8	2	9	12	—	—	
Culloden	29.673	62.2	22.5	39.7	47.1	39.8	25.4	7.3	43.3	40.0	2.43	2.8	0.4	89	548	60.0	31.5	0.4	6	4	6	15	—	—	

The highest temperatures of the air were at Wakefield, 70°·0; Manchester and Eccles, 69°·5; Kingsley Parsonage, 69°·4; Ripon, 68°·0; and Royston, 67°·3. The lowest temperatures of the air were at Cardington and Lampeter, 12°·6; Streatham Viarage, Royston, 12°·1; Aldershot, 10°·8; and Allenheads, 17°·2. The greatest daily ranges were at Wilton, 18°·0; Osborne, 16°·9; and Royston, 15°·1. The least daily ranges were at Guernsey, 7°·2; Culloden, 7°·3; Halifax, 8°·0; and Otley, 8°·0. The greatest number of rainy days were at Allenheads, 62; Barnstaple, 55; and Truro and Eccles, 57. The least number of rainy days were at Gloucester, 27; Otley, 30; and Osborne and Guildhall, 31. The heaviest falls of rain were at Lampeter, 13.5 in.; Stonyhurst, 12.0 in.; Barnstaple, 11.4 in.; and Llandudno, 10.6 in. The least falls of rain were at Cardington, 3.7 in.; Carlisle, 4.1 in.; and York, 4.3 in.

QUARTERLY METEOROLOGICAL TABLE FOR DIFFERENT PARALLELS OF LATITUDE.

PARALLELS OF  LATITUDE, &c.	Mean Pressure of dry Air reduced to the level of the Sea.	Mean of all Highest Read- ings of the Thermometer.	Mean of all Lowest Read- ings of the Thermometer.	Mean Range of Tempera- ture in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Max- imum in Rays of Sun.	Mean Reading of Min- imum on Grass.	Mean Estimated Strength.	WIND.				Mean Amount of Cloud.	Mean Amount of Grains of Rain.	
																			Relative Pro- portion of						
																			N.	E.	S.	W.			
Guernsey	in.	29.838	62.5	31.0	31.5	51.5	44.3	24.0	7.2	47.4	44.2	3.2	0.7	83	548	57.5	41.5	1.5	11	5	6	5	5	5	
Devon and Cornwall	-	29.846	65.7	24.2	41.6	52.9	40.8	31.9	12.1	46.7	44.3	2.4	0.7	81	550	547	57.5	41.5	1.5	11	5	6	5	5	5
Isle of Wight	-	29.830	66.8	23.2	43.6	54.1	37.2	23.1	16.9	44.4	42.3	2.7	0.7	81	550	547	57.5	41.5	1.5	11	5	6	5	5	5
South of latitude 51°	-	29.839	65.0	19.6	46.0	49.9	35.8	23.1	13.3	42.3	40.0	2.5	0.7	81	550	547	57.5	41.5	1.5	11	5	6	5	5	5
Between 51° and 52°	-	29.839	65.0	19.6	46.0	49.9	35.8	23.1	13.3	42.3	40.0	2.5	0.7	81	550	547	57.5	41.5	1.5	11	5	6	5	5	5
the 52° and 53°	-	29.836	65.5	19.9	45.5	49.2	37.6	33.8	11.4	42.3	40.0	2.5	0.7	81	550	547	57.5	41.5	1.5	11	5	6	5	5	5
latitudes 53° and 54°	-	29.813	66.7	23.1	43.3	47.8	30.9	32.2	11.1	42.3	40.0	2.5	0.7	81	550	547	57.5	41.5	1.5	11	5	6	5	5	5
North Shields	-	29.808	63.0	20.1	42.0	48.8	36.6	23.1	12.2	42.3	40.0	2.5	0.7	81	550	547	57.5	41.5	1.5	11	5	6	5	5	5
Miltona, Banbridge (Ireland)	-	29.813	63.8	20.6	37.8	47.6	38.3	28.1	9.5	42.3	40.0	2.5	0.7	81	550	547	57.5	41.5	1.5	11	5	6	5	5	5
Culloden	-	29.673	62.0	23.0	42.0	49.7	37.9	25.0	11.8	43.3	40.0	2.5	0.7	81	550	547	57.5	41.5	1.5	11	5	6	5	5	5

Year 1867.	Month.	Pressure of Atmosphere in Month.		Temperature of Air in Month.				Mean Temperature.		Vapour.		Mean Reading of Thermometer.		Wind.			Mean Amount of Cloud.	Number of Days.	Rain.						
		Mean.	Range.	Highest.	Lowest.	Range.	Of all Highest.	Of all Lowest.	Daily Range.	Air.	Dew Point.	Elastic Force.	Mean.	Sheet of Saturation.	Mean Weight of a cubic foot of Air.	Maximum of Sun.				Minimum of Grass.	Relative Proportion of				
																					N.	E.	W.		
GUERNSEY.	Oct.	29.762	62.5	41.5	21.0	57.3	49.1	8.2	52.3	47.3	327	3.7	83	78.5	548	57.5	41.5	1.5	11	5	6	5	5	5	5
SAMUEL ELLIOTT HOSKINS, Esq., M.D., F.R.S., F.M.S.	Nov.	29.833	65.7	35.0	25.0	50.4	43.0	6.6	46.6	40.4	251	3.0	80	556	546	57.5	41.5	1.5	11	5	6	5	5	5	5
HELSTON.	Dec.	29.870	66.8	36.0	26.0	46.7	39.8	6.9	43.4	39.3	240	2.8	80	556	546	57.5	41.5	1.5	11	5	6	5	5	5	5
MATTHEW P. MOYLE, Esq., M.R.C.S.	Oct.	29.875	67.0	38.0	29.0	53.9	47.9	12.0	53.6	47.9	332	4.0	85	559	549	57.5	41.5	1.5	11	5	6	5	5	5	5
TRURO.	Nov.	29.869	67.0	39.0	29.0	53.9	47.9	12.0	53.6	47.9	332	4.0	85	559	549	57.5	41.5	1.5	11	5	6	5	5	5	5
C. DABHAM, Esq., M.D., F.M.S.	Dec.	29.900	67.0	39.0	29.0	53.9	47.9	12.0	53.6	47.9	332	4.0	85	559	549	57.5	41.5	1.5	11	5	6	5	5	5	5
SEDWORTH.	Oct.	29.813	62.0	27.0	35.0	53.1	38.3	44.5	38.8	32.9	311	3.8	81	551	541	57.5	41.5	1.5	11	5	6	5	5	5	5
J. INGLBY MACKENZIE, Esq., M.R.C.S.	Nov.	29.809	62.0	27.0	35.0	53.1	38.3	44.5	38.8	32.9	311	3.8	81	551	541	57.5	41.5	1.5	11	5	6	5	5	5	5
F.M.S.	Dec.	29.673	62.2	27.5	25.6	52.1	46.4	34.3	39.3	33.0	210	3.5	80	553	543	57.5	41.5	1.5	11	5	6	5	5	5	5
BARNSTAPLE.	Oct.	29.741	65.7	35.0	25.0	50.4	43.0	6.6	46.6	40.4	251	3.0	80	556	546	57.5	41.5	1.5	11	5	6	5	5	5	5
T. MACRELL, Esq.	Nov.	29.771	66.8	36.0	26.0	46.7	39.8	6.9	43.4	39.3	240	2.8	80	556	546	57.5	41.5	1.5	11	5	6	5	5	5	5
OSBORNE.	Dec.	29.803	63.0	36.0	26.0	46.7	39.8	6.9	43.4	39.3	240	2.8	80	556	546	57.5	41.5	1.5	11	5	6	5	5	5	5
J. R. MANS, Esq.	Oct.	29.741	65.7	35.0	25.0	50.4	43.0	6.6	46.6	40.4	251	3.0	80	556	546	57.5	41.5	1.5	11	5	6	5	5	5	5
BOURNEMOUTH.	Nov.	29.771	66.8	36.0	26.0	46.7	39.8	6.9	43.4	39.3	240	2.8	80	556	546	57.5	41.5	1.5	11	5	6	5	5	5	5
W. S. FALLA, Esq., M.D., F.M.S.	Dec.	29.803	63.0	36.0	26.0	46.7	39.8	6.9	43.4	39.3	240	2.8	80	556	546	57.5	41.5	1.5	11	5	6	5	5	5	5
BOURNEMOUTH.	Oct.	29.741	65.7	35.0	25.0	50.4	43.0	6.6	46.6	40.4	251	3.0	80	556	546	57.5	41.5	1.5	11	5	6	5	5	5	5
T. A. COMPTON, Esq., M.D., F.M.S.	Nov.	29.771	66.8	36.0	26.0	46.7	39.8	6.9	43.4	39.3	240	2.8	80	556	546	57.5	41.5	1.5	11	5	6	5	5	5	5
F.M.S.	Dec.	29.803	63.0	36.0	26.0	46.7	39.8	6.9	43.4	39.3	240	2.8	80	556	546	57.5	41.5	1.5	11	5	6	5	5	5	5
EASTBOURNE.	Oct.	29.741	65.7	35.0	25.0	50.4	43.0	6.6	46.6	40.4	251	3.0	80	556	546	57.5	41.5	1.5	11	5	6	5	5	5	5
MISS W. L. HALL.	Nov.	29.771	66.8	36.0	26.0	46.7	39.8	6.9	43.4	39.3	240	2.8	80	556	546	57.5	41.5	1.5	11	5	6	5	5	5	5
WORTHING.	Dec.	29.803	63.0	36.0	26.0	46.7	39.8	6.9	43.4	39.3	240	2.8	80	556	546	57.5	41.5	1.5	11	5	6	5	5	5	5
W. G. H. BAKER, Esq., M.D., F.R.C.S., F.M.S.	Oct.	29.765	67.0	37.5	27.5	51.5	45.3	11.2	50.5	44.6	295	3.4	81	549	539	57.5	41.5	1.5	11	5	6	5	5	5	5
TAUNTON.	Nov.	29.746	66.9	38.0	28.0	49.1	38.3	10.8	43.2	39.3	240	2.8	80	553	543	57.5	41.5	1.5	11	5	6	5	5	5	5
REV. W. TUCKWELL, F.M.S.	Dec.	29.669	67.0	38.0	28.0	49.1	38.3	10.8	43.2	39.3	240	2.8	80	553	543	57.5	41.5	1.5	11	5	6	5	5	5	5
WILTON HOUSE, near Salisbury.	Oct.	29.879	68.9	39.0	29.0	53.9	47.9	12.0	53.6	47.9	332	4.0	85	559	549	57.5	41.5	1.5	11	5	6	5	5	5	5
T. CHALLIS, Esq., F.M.S.	Nov.	29.870	68.9	39.0	29.0	53.9	47.9	12.0	53.6	47.9	332	4.0	85	559	549	57.5	41.5	1.5	11	5	6	5	5	5	5
TUNBRIDGE WELLS.	Dec.	29.900	69.0	39.0	29.0	53.9	47.9	12.0	53.6	47.9	332	4.0	85	559	549	57.5	41.5	1.5	11	5	6	5	5	5	5
REV. FENWICK STOW, M.A., F.M.S.	Oct.	29.792	68.9	39.0	29.0	53.9	47.9	12.0	53.6	47.9	332	4.0	85	559	549	57.5	41.5	1.5	11	5	6	5	5	5	5
ALDESHOT CAMP.	Nov.	29.783	68.9	39.0	29.0	53.9	47.9	12.0	53.6	47.9	332	4.0	85	559	549	57.5	41.5	1.5	11	5	6	5	5	5	5
JOHN ARNOLD, M.S.C., F.M.S.	Dec.	29.684	68.9	39.0	29.0	53.9	47.9	12.0	53.6	47.9	332	4.0	85	559	549	57.5	41.5	1.5	11	5	6	5	5	5	5



Year 1867.	Names of Stations and Observers.	Pressure of Air in Month.		Temperature of Air in Month.				Mean Tem- perature.	Vapour.			Mean Reading of Thermometer. Maximum in Days of Sun. Minimum on Grass.	Wind.			Mean Amount of Cloud.	Rain, Amount col- lected.								
		Mean.	Range.	Highest.	Lowest.	Range.	Of all Highest.		Of all Lowest.	Mean.	In a cubic foot of Air.		Short of Saturation.	Mean Degree of Humi- dity, Sat. = 100.	Mean Weight of a cubic foot of Air.			Relative Proportion of							
																		N.	E.	S.	W.				
Oct.	BATH ROYAL LITERARY AND SCIENTIFIC INSTITUTION. CHAS. P. RUSSELL, Esq.	29.830	1.010	68.0	31.5	34.5	57.0	43.6	13.4	49.8	46.0	311	in.	7.8	6	7	6	12	1.0	2.2	28	0.9			
Nov.	ENSLIEGH OBSERVATORY, (Lansdowne above Bath). C.H. WESTON, Esq., F.R.S.F.G.S.	29.827	1.140	59.5	22.5	37.0	47.6	33.7	13.9	43.9	35.9	211	2.4	0.6	8	3	14	1	1.5	7.7	17	1.4			
Dec.	MARLBOROUGH COLLEGE, REV. THOMAS A. FLESTON, M.A., F.M.S.	29.825	1.080	65.5	28.5	36.7	54.5	41.1	13.4	47.5	42.7	371	0.6	84	333	83.7	26.9	1.4	7.6	5.1	20	0.4			
Oct.	CLIFTON (Bristol). G. F. BURDESS, Esq., M.D., F.M.S.	29.824	1.180	65.5	28.8	39.7	47.1	34.6	12.5	49.0	39.6	217	2.5	0.5	85	546	74.4	29.1	7.6	6.1	20	0.4			
Nov.	ROYAL OBSERVATORY, THE ASTRONOMER ROYAL.	29.821	1.080	63.8	29.0	33.8	43.3	39.3	13.0	37.1	—	—	—	85	546	60.8	26.8	1.6	8.8	5.6	11	2.6			
Dec.	BATTERSEA TRAINING COLLEGE, REV. J. FAUNTHORPE, B.A., F.R.S.F.G.S.	29.818	1.000	66.6	28.1	38.5	50.5	40.5	12.9	49.4	45.7	307	0.5	88	533	88.5	33.3	0.4	12	1.4	25	3.6			
Oct.	STREATHLEY VICARAGE (Berks). REV. J. SWATTELL, M.A., F.R.A.S., F.M.S.	29.818	1.113	68.4	20.6	37.8	47.2	31.5	12.7	39.5	35.1	204	2.4	0.5	83	554	71.7	24.7	0.3	10	4	3.6			
Nov.	CAMPDEN TOWN. G. J. SIMONS, Esq., F.M.S.	29.814	1.005	65.8	17.7	41.1	43.5	29.3	13.8	37.3	—	—	—	85	554	53.1	23.7	0.5	12	7	11	1.6			
Dec.	RADCLIFFE OBSERVATORY, OXFORD. REV. R. MAIN, M.A., F.R.S.F.G.S.	29.812	1.025	65.5	18.4	39.7	53.7	44.9	11.8	40.1	46.1	312	0.5	87	539	49.8	21.5	0.7	11	6.7	11	1.6			
Oct.	GLoucester. E. TOLLER, Esq., M.D.	29.805	1.212	66.4	25.5	33.9	47.0	34.8	12.9	40.4	39.5	216	2.4	0.4	87	537	31.2	24.3	0.7	11	6.6	3.6			
Nov.	ROYSTON (Hertfordshire). HALE WORTHAM, Esq., F.R.A.S., F.M.S.	29.802	1.484	56.0	23.7	32.3	44.1	34.8	9.3	39.4	33.7	210	2.4	0.4	87	533	33.2	24.3	0.7	11	6.6	3.6			
Dec.	CARDINGTON (near Bedford). MR. J. MACLEAREN, F.M.S., Assist. to S.C.W. HUBBARD, Esq., F.R.S.F.G.S.	29.801	1.031	64.8	29.8	34.0	57.2	40.9	15.2	48.7	45.9	302	0.4	91	534	80.3	36.4	0.3	12	10	7	2.2			
Oct.	LAMPETER (Cardiganshire). REV. PROF. J. MATTHEWS, M.A.	29.799	1.069	64.0	27.5	37.5	47.5	35.3	12.5	41.1	37.3	205	2.6	0.4	89	532	39.0	26.5	0.5	12	10	7	2.2		
Nov.	SORWICH. C. M. GIBSON, Esq., F.M.S.	29.798	1.092	65.2	21.2	34.0	42.3	33.1	10.1	37.5	34.4	199	2.3	0.3	89	535	46.5	27.9	0.7	11	6.5	0.4			
Dec.	BATH ROYAL LITERARY AND SCIENTIFIC INSTITUTION. CHAS. P. RUSSELL, Esq.	29.790	1.002	61.0	26.0	35.0	46.6	36.0	10.0	48.5	44.6	225	0.3	85	545	62.8	39.6	1.6	8	13	14	0.7			
Oct.	ENSLIEGH OBSERVATORY, (Lansdowne above Bath). C.H. WESTON, Esq., F.R.S.F.G.S.	29.783	1.002	61.0	26.0	35.0	46.6	36.0	10.0	48.5	44.6	225	0.3	85	545	62.8	39.6	1.6	8	13	14	0.7			
Nov.	MARLBOROUGH COLLEGE, REV. THOMAS A. FLESTON, M.A., F.M.S.	29.771	0.705	66.2	29.0	36.2	53.9	41.5	16.4	49.6	43.0	277	3.2	0.9	78	541	64.9	38.9	1.6	7	8	10	1.1		
Dec.	CLIFTON (Bristol). G. F. BURDESS, Esq., M.D., F.M.S.	29.771	1.352	61.4	21.6	40.0	48.3	32.4	15.9	39.5	35.6	208	2.4	0.4	86	560	53.5	28.3	1.0	10	5	6	0.8		
Oct.	STREATHLEY VICARAGE (Berks). REV. J. SWATTELL, M.A., F.R.A.S., F.M.S.	29.769	0.815	65.0	14.0	41.0	44.1	31.8	12.3	38.4	35.3	206	2.4	0.4	89	537	47.3	28.8	1.6	13	4	8	1.2		
Nov.	CAMPDEN TOWN. G. J. SIMONS, Esq., F.M.S.	29.763	0.807	64.0	31.0	35.0	56.9	42.4	14.5	49.6	44.8	267	3.4	0.6	85	542	77.4	37.6	—	12	4	6	0.8		
Dec.	RADCLIFFE OBSERVATORY, OXFORD. REV. R. MAIN, M.A., F.R.S.F.G.S.	29.766	1.032	62.6	28.4	38.2	47.3	35.1	11.8	42.1	38.1	200	2.7	0.5	86	537	60.5	31.0	—	12	4	6	0.8		
Oct.	GLoucester. E. TOLLER, Esq., M.D.	29.760	1.407	54.9	22.5	32.5	42.3	32.5	9.8	38.2	34.4	199	2.3	0.4	89	537	48.6	23.7	—	12	4	6	0.8		
Nov.	ROYSTON (Hertfordshire). HALE WORTHAM, Esq., F.R.A.S., F.M.S.	29.752	0.792	67.3	30.3	33.4	55.0	48.4	12.6	49.6	46.7	319	3.7	0.4	90	539	83.7	39.7	1.2	7	3	10	1.1		
Dec.	CARDINGTON (near Bedford). MR. J. MACLEAREN, F.M.S., Assist. to S.C.W. HUBBARD, Esq., F.R.S.F.G.S.	29.744	1.472	60.8	27.1	33.7	47.3	35.1	12.2	41.3	37.7	227	2.6	0.4	88	555	75.6	31.7	0.8	13	4	10	1.1		
Oct.	LAMPETER (Cardiganshire). REV. PROF. J. MATTHEWS, M.A.	29.743	1.089	56.0	29.8	35.5	43.2	32.1	11.1	37.8	35.2	204	2.4	0.3	90	555	60.7	30.3	0.9	11	3	6	1.1		
Nov.	SORWICH. C. M. GIBSON, Esq., F.M.S.	29.735	1.042	65.5	33.0	32.5	55.5	44.2	11.3	50.2	46.1	332	3.5	0.6	86	542	80.8	40.7	—	11	3	6	1.1		
Dec.	BATH ROYAL LITERARY AND SCIENTIFIC INSTITUTION. CHAS. P. RUSSELL, Esq.	29.730	1.200	67.0	25.0	33.0	48.3	33.0	13.0	41.5	39.8	218	2.5	0.5	84	559	57.2	33.3	0.6	8	9	4	0.6		
Oct.	ENSLIEGH OBSERVATORY, (Lansdowne above Bath). C.H. WESTON, Esq., F.R.S.F.G.S.	29.724	1.476	63.0	29.0	33.0	48.3	33.0	13.0	41.5	39.8	218	2.5	0.5	84	559	57.2	33.3	0.6	8	9	4	0.6		
Nov.	MARLBOROUGH COLLEGE, REV. THOMAS A. FLESTON, M.A., F.M.S.	29.718	1.035	67.3	31.1	36.2	43.3	34.5	14.5	49.6	44.0	289	3.3	0.7	82	539	31.6	23.7	—	10	7	10	0.5		
Dec.	CLIFTON (Bristol). G. F. BURDESS, Esq., M.D., F.M.S.	29.707	1.038	62.0	29.1	31.1	48.2	33.1	11.6	41.8	37.7	236	2.6	0.5	87	554	—	—	—	5	9	11	13	0.0	
Oct.	STREATHLEY VICARAGE (Berks). REV. J. SWATTELL, M.A., F.R.A.S., F.M.S.	29.748	1.492	53.8	15.1	40.7	43.3	31.1	11.6	37.1	34.5	169	2.3	0.3	90	535	—	—	—	5	9	11	13	0.0	
Nov.	CARDINGTON (near Bedford). MR. J. MACLEAREN, F.M.S., Assist. to S.C.W. HUBBARD, Esq., F.R.S.F.G.S.	29.814	1.040	67.0	29.0	38.0	56.4	40.5	15.9	48.4	44.7	266	3.3	0.5	87	543	69.1	33.2	—	6	8	12	—	0.5	
Dec.	LAMPETER (Cardiganshire). REV. PROF. J. MATTHEWS, M.A.	29.184	1.050	69.4	23.6	39.8	47.5	35.2	12.3	41.1	39.6	217	2.5	0.4	84	539	51.7	24.5	—	12	3	8	12	—	0.5
Oct.	SORWICH. C. M. GIBSON, Esq., F.M.S.	29.025	1.510	56.4	12.6	48.3	43.3	39.7	12.6	37.1	34.0	166	2.4	0.3	84	533	46.5	24.0	0.8	13	6	11	14	—	0.5
Nov.	BATH ROYAL LITERARY AND SCIENTIFIC INSTITUTION. CHAS. P. RUSSELL, Esq.	29.485	1.032	62.0	28.8	33.2	53.4	43.0	12.8	49.2	45.0	263	3.5	0.5	86	536	78.5	41.3	0.6	7	3	10	11	—	0.5
Dec.	ENSLIEGH OBSERVATORY, (Lansdowne above Bath). C.H. WESTON, Esq., F.R.S.F.G.S.	29.483	1.180	57.5	23.6	33.9	49.3	33.1	15.7	40.2	38.1	203	2.5	0.5	86	536	78.5	41.3	0.6	7	3	10	11	—	0.5
Oct.	MARLBOROUGH COLLEGE, REV. THOMAS A. FLESTON, M.A., F.M.S.	29.628	1.000	62.0	12.6	41.4	43.7	33.1	10.6	40.2	37.2	222	2.4	0.5	89	540	53.0	31.6	—	10	4	6	11	—	0.5
Nov.	CLIFTON (Bristol). G. F. BURDESS, Esq., M.D., F.M.S.	29.667	0.968	65.0	31.5	35.6	52.6	42.6	13.1	49.1	45.7	237	3.5	0.5	83	537	—	—	—	5	9	11	13	—	0.5
Dec.	STREATHLEY VICARAGE (Berks). REV. J. SWATTELL, M.A., F.R.A.S., F.M.S.	29.205	0.945	60.0	26.4	32.4	47.7	37.7	9.8	42.6	38.2	231	2.7	0.5	89	543	—	—	—	5	9	11	13	—	0.5
Oct.	ROYSTON (Hertfordshire). HALE WORTHAM, Esq., F.R.A.S., F.M.S.	29.202	0.958	62.4	25.0	32.4	41.5	32.3	11.5	38.5	35.1	204	2.4	0.5	83	537	—	—	—	5	9	11	13	—	0.5

Year 1867.	Names of Stations and Observers.	Pressure of Air in Month.				Temperature of Air in Month.				Mean Tem- perature.		Mean Reading of Thermometer. Maximum in Days of Sun. Minimum on Grass.	Vapour.			Wind.			Rain, Amount col- lected.		
		Range.		Mean.	Daily Range.	Range.		Mean.	Daily Range.	Air.	Dew Point.		Mean Degree of Hum- idity, Saturation.	In a cubic foot of Air.	Short of Saturation.	Mean Direction.	Strength.	Relative Proportion of N. E. S. W.			
		in.	in.		in.	in.	in.		in.												
Oct.	WISBEACH. S. H. MILLER, Esq., F.R.A.S.	29.844	29.844	29.844	29.844	29.844	29.844	29.844	29.844	29.844	29.844	29.844	29.844	29.844	29.844	29.844	29.844	29.844	29.844	29.844	
Nov.	LLANDUDNO. J. NICHOL, Esq., M.D.	29.845	29.845	29.845	29.845	29.845	29.845	29.845	29.845	29.845	29.845	29.845	29.845	29.845	29.845	29.845	29.845	29.845	29.845	29.845	
Dec.	GRANTHAM. JAMES WILLIAM JEANS, Esq., M.R.C.S., F.R.A.S., F.M.S.	29.846	29.846	29.846	29.846	29.846	29.846	29.846	29.846	29.846	29.846	29.846	29.846	29.846	29.846	29.846	29.846	29.846	29.846	29.846	
Oct.	BOSTON. A. M. ADAMS, Esq., M.D., F.M.S.	29.847	29.847	29.847	29.847	29.847	29.847	29.847	29.847	29.847	29.847	29.847	29.847	29.847	29.847	29.847	29.847	29.847	29.847	29.847	
Nov.	NORTON-IN-HALES. REV. FREDERICK SILVER, M.A., F.R.A.S., F.M.S.	29.848	29.848	29.848	29.848	29.848	29.848	29.848	29.848	29.848	29.848	29.848	29.848	29.848	29.848	29.848	29.848	29.848	29.848	29.848	
Dec.	HAWARDEN. T. MORFAT, Esq., F.G.S. M.D., F.R.A.S., F.M.S.	29.849	29.849	29.849	29.849	29.849	29.849	29.849	29.849	29.849	29.849	29.849	29.849	29.849	29.849	29.849	29.849	29.849	29.849	29.849	
Oct.	KINGSLEY PARSONAGE, near Frodham. REV. R. TYAS, M.A., F.M.S.	29.850	29.850	29.850	29.850	29.850	29.850	29.850	29.850	29.850	29.850	29.850	29.850	29.850	29.850	29.850	29.850	29.850	29.850	29.850	
Nov.	MANCHESTER. GEORGE VENABLES VERNON, Esq., F.R.A.S., F.M.S., F.A.S.L.	29.851	29.851	29.851	29.851	29.851	29.851	29.851	29.851	29.851	29.851	29.851	29.851	29.851	29.851	29.851	29.851	29.851	29.851	29.851	
Dec.	LEEDS. T. MACGREGOR, Esq., F.R.A.S., F.M.S.	29.852	29.852	29.852	29.852	29.852	29.852	29.852	29.852	29.852	29.852	29.852	29.852	29.852	29.852	29.852	29.852	29.852	29.852	29.852	
Oct.	LIVERPOOL OBSERVATORY, JOHN HARTUP, Esq., F.R.A.S.	29.853	29.853	29.853	29.853	29.853	29.853	29.853	29.853	29.853	29.853	29.853	29.853	29.853	29.853	29.853	29.853	29.853	29.853	29.853	
Nov.	WAKEFIELD PRISON. WILLIAM RALPH, Esq., M.R.C.S., F.M.S., F.R.A.S., F.A.S.L.	29.854	29.854	29.854	29.854	29.854	29.854	29.854	29.854	29.854	29.854	29.854	29.854	29.854	29.854	29.854	29.854	29.854	29.854	29.854	
Dec.	HALIFAX (Yorkshire). JOSEPH GLEDHILL, Esq., F.M.S., F.G.S.	29.855	29.855	29.855	29.855	29.855	29.855	29.855	29.855	29.855	29.855	29.855	29.855	29.855	29.855	29.855	29.855	29.855	29.855	29.855	
Oct.	LEEDS PHILOSOPHICAL HALL, HENRY DENT, Esq., A.L.S.	29.856	29.856	29.856	29.856	29.856	29.856	29.856	29.856	29.856	29.856	29.856	29.856	29.856	29.856	29.856	29.856	29.856	29.856	29.856	
Nov.	THE PARK, HULL. MR. E. PEAK.	29.857	29.857	29.857	29.857	29.857	29.857	29.857	29.857	29.857	29.857	29.857	29.857	29.857	29.857	29.857	29.857	29.857	29.857	29.857	
Dec.	STONYHURST COLLEGE, REV. W. SIDGREAVE.	29.858	29.858	29.858	29.858	29.858	29.858	29.858	29.858	29.858	29.858	29.858	29.858	29.858	29.858	29.858	29.858	29.858	29.858	29.858	
Oct.	OTLEY. H. W. THORNS, Esq.	29.859	29.859	29.859	29.859	29.859	29.859	29.859	29.859	29.859	29.859	29.859	29.859	29.859	29.859	29.859	29.859	29.859	29.859	29.859	

HAWARDEN.—The barometer reading for December seems to be too low by 0.1 inch.



Year 1867.	Month.	NAMES OF STATIONS AND OBSERVERS.	Pressure of Air in Month.			Temperature of Air in Month.			Mean Temperature.	Vapour.			Mean Reading of Thermometer.	Wind.			Mean Amount of Cloud.	Rain.	
			Mean.	Range.	Highest.	Lowest.	Range.	Lowest.		Range.	Mean.	Short of Saturation.		Mean Degree of Humidity.	Relative Proportion of Direction.	Mean Amount of Ozone.			
																			Mean.
	Oct.	YORK.	29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Nov.	FELDEN THORPE, Esq.	29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Dec.		29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Jan.	RIPON.	29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Feb.	Rev. F. W. STOW, M.A., F.M.S.	29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Mar.		29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Apr.	COCKERMOUTH.	29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	May.	H. DODGSON, Esq., M.D., F.R.S.	29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Jun.		29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Jul.	ALLENHEADS.	29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Aug.	T. SOWTH, Esq., M.A., F.R.S.	29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Sep.	F.M.S., F.G.S., F.R.S.	29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Oct.	ST. PAUL'S PARSONAGE.	29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Nov.	near SILLOTH, CUMBERLAND.	29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Dec.	Rev. F. REDFORD, M.A., F.R.S.	29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Jan.	CARLISLE.	29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Feb.	I. CARTMILL, Esq., F.M.S.	29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Mar.		29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Apr.	BYWELL, Mr. JOHN DAWSON,	29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	May.	under the direction of T. SOWTH,	29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Jun.	Esq., M.A., F.R.S., F.M.S., F.G.S.	29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Jul.		29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Aug.	NORTH SHIELDS.	29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Sep.	ROBERT SPENCE, Esq.	29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Oct.		29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Nov.	MILTOWN (Banbridge, Ireland).	29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Dec.	JOHN SMYTH, Esq., M.A.,	29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Jan.	M.I.C.E.L., F.M.S.	29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Feb.		29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Mar.	CULLODEN.	29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Apr.	A. FORBES, Esq., F.M.S.	29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	May.		29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Jun.		29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Jul.		29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Aug.		29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Sep.		29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Oct.		29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Nov.		29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3
	Dec.		29.775	1.018	61.0	32.5	28.5	61.0	32.5	28.5	37.3	0.4	90	554	1	16	1	17	1.3

Second rain-gauges are placed — At Aldershot camp, at the height of 25 feet above the ground, the amount collected was 2.53 inches; at Clifton, 22 feet, 4.0 inches; at Cardington, 26 feet, 3.0 inches; at Wisbeach, 8 feet, 5.2 inches; at Boston, 8 feet, 4.1 inches; at Keyingham, 13 feet, 6.9 inches; at Eccles, 24 feet, 8.8 inches; at Halifax, 20 feet, 6.2 inches; at Ripon, 5 feet, 4.2 inches; at Cockermouth, 6 feet, 8.3 inches; at Allendale, 6 feet, 8.1 inches; at Milnforth, 40 feet, 5.3 inches. The amount collected at Eastbourne, 80 feet above the level of the sea, was 6.5 inches; at Beaulieu Head, 610 feet, 6.2 inches; and at Mann Reservoir (Ireland), at 440 feet, was 8.5 inches.

NOTE.—This second rain-gauge at Allendale is reported to be leaky; some suspicion will rest on these returns for some time past.

Barometer reading, December 25th, at 30.7 m., 29.99 in., has been altered conjecturally to 29.99 in.

## METEOROLOGY OF ENGLAND, DURING THE QUARTER ENDING MARCH 31, 1868.

REMARKS ON THE WEATHER, DURING THE QUARTER ENDING 31ST OF MARCH 1868.  
By JAMES GLAISHER, Esq., F.R.S., &c., President of The Meteorological Society.

The weather was cold during the first 11 days of the year; for this period the deficiency of daily temperature averaged  $6\frac{1}{2}^{\circ}$  daily. The wind was from N.E., on the 12th day it changed to S.W., the temperature increased and passed above the average, and continued so for the most part till the end of the quarter, the exceptions from an excess of temperature being few in number and small in amount. The average excess of temperature in the 80 days ending 31st March was rather more than  $3\frac{1}{2}^{\circ}$  daily.

The month of February was remarkably warm. There were less than the average of east winds and compounds of east winds in both the months of February and March. The weather in February was more like spring than winter, it caused vegetation to progress rapidly, and at the end of the month trees and shrubs were budding, and the accounts respecting autumn and winter-sown wheat were favourable.

The month of March, though less settled than February, was still favourable to agricultural pursuits; good progress was made in ploughing, sowing, and planting.

At the end of the quarter vegetation was in advance of ordinary seasons, and the prospects of the next harvest were favourable.

The reading of the barometer at Greenwich on the 1st of January was about 30 inches, and from this day to the 12th the readings were constantly above the average. A general tendency to decrease now followed, the readings fell to 28.8 inches by the 18th, and remained between 28.8 inches and 29.0 inches till the 20th, when violent gales were experienced. A rapid increase to 29.6 inches occurred by the morning of the 21st, followed by an equally rapid decrease to 28.86 inches by the following morning, then a steady increase took place, and the readings of the barometer were generally high till the 30th of January; another rapid decline was then experienced accompanied by a gale of extreme violence on 31st January and 1st February. From February 3d to 27th the readings of the barometer were generally high, at times reaching 30.4 inches; a period of depression below the average followed until the 12th of March, and from the latter day to the end of the quarter the readings were generally in excess of the corresponding averages.

At Greenwich the mean temperature of January was  $37^{\circ}.2$ , being  $1^{\circ}.0$  higher than the average of 97 years, and  $3^{\circ}.0$  higher than the corresponding temperature of the preceding year.

The mean temperature of February was  $43^{\circ}.0$ , being  $4^{\circ}.6$  higher than the average of the preceding 97 years,  $1^{\circ}.7$  lower than the preceding year, and higher than the corresponding temperatures of any year, except 1867 and 1859, as far back as 1851.

The mean temperature of March was  $44^{\circ}.0$ , being  $3^{\circ}.1$  higher than the average of the preceding 97 years, and higher than the corresponding temperature of any year since 1859.

The mean high day temperatures in January were  $1^{\circ}.7$  lower than the average, and were respectively  $4^{\circ}.8$  and  $3^{\circ}.2$  higher than the averages in February and March.

1868.	Months.	Temperature of						Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
		Air.		Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames.	Diff. from average of 27 years.
		Mean.	Diff. from average of 27 years.	Mean.	Diff. from average of 27 years.	Mean.	Diff. from average of 27 years.	Mean.	Diff. from average of 27 years.	Mean.	Diff. from average of 27 years.
Jan.	—	37.2	+1.0	0	0	0	0	0	0	in. .191	in. .011
Feb.	—	43.0	+4.6	0	0	0	0	0	0	223	+0.19
Mar.	—	44.0	+5.6	0	0	0	0	0	0	231	+0.16
Mean	—	41.4	+2.9	0	0	0	0	0	0	215	+0.08
Jan.	—	37.2	+1.0	0	0	0	0	0	0	in. .191	in. .011
Feb.	—	43.0	+4.6	0	0	0	0	0	0	223	+0.19
Mar.	—	44.0	+5.6	0	0	0	0	0	0	231	+0.16
Mean	—	41.4	+2.9	0	0	0	0	0	0	215	+0.08
Jan.	—	37.2	+1.0	0	0	0	0	0	0	in. .191	in. .011
Feb.	—	43.0	+4.6	0	0	0	0	0	0	223	+0.19
Mar.	—	44.0	+5.6	0	0	0	0	0	0	231	+0.16
Mean	—	41.4	+2.9	0	0	0	0	0	0	215	+0.08



The mean low night temperatures were  $0^{\circ}6$  lower than the average in January, and were respectively  $3^{\circ}1$  and  $1^{\circ}6$  higher than the averages in February and March.

Therefore the month of January was cold, and February and March were warm, both by day and night.

The daily ranges of temperature in January were  $1^{\circ}2$  less than the average, and were respectively  $1^{\circ}7$  and  $1^{\circ}6$  greater than the averages in February and March.

The fall of rain was  $2.4$  in. in excess in January, and  $0.3$  in. and  $0.5$  in. respectively in February and March.

The mean temperature of the air at Greenwich in the three months ending February, constituting the three winter months, was  $39^{\circ}2$ , being  $0^{\circ}1$  higher than the average of the preceding 27 years.

Thunderstorms occurred on the 15th January at Hull and Stonyhurst; and on the 21st at Truro and Bournemouth. On the 1st February at Halifax. On the 7th March at Allenheads; on the 16th at Streatley Vicarage; on the 17th at Strathfield Turgiss, Norwich, Ripon, and North Shields; and on the 23d at Halifax.

Thunder was heard but lightning was not seen on the 28th February at Carlisle. On the 8th March at Helston, Allenheads, and Bywell; on the 12th at Worthing and Hull; on the 16th at Streatley Vicarage; and on the 17th at Taunton, Wilton, Lampeter, Holkham, and Hull.

Lightning was seen but thunder was not heard on the 14th January at Allenheads; on the 15th and 16th at Culloden; on the 17th at Boston and Culloden; on the 21st at Guernsey and Helston; and on the 24th and 29th at Culloden. On the 4th, 6th, and 15th February at Culloden. On the 17th March at Guernsey; and on the 23d at Eastbourne and Holkham.

Solar halos were seen on the 7th January at Tunbridge Wells and Eccles; on the 24th at Tunbridge Wells; and on the 28th at Culloden. On the 12th February at Tunbridge Wells, Clifton, and Oxford; on the 22d at Culloden; and on the 23d at Aldershot Camp. On the 1st and 2nd March at Clifton; on the 9th at Weybridge Heath, Clifton, Wisbech, and Ripon; on the 10th at Cardington, Wisbech, and Ripon; on the 12th at Strathfield Turgiss; on the 19th at Weybridge Heath; on the 23d at Liverpool; on the 24th at Tunbridge Wells, Weybridge Heath, Strathfield Turgiss, Cardington, and Hawarden; and on the 25th at Tunbridge Wells, Weybridge Heath, Strathfield Turgiss, and Oxford.

Lunar halos were seen on the 7th January at Manchester and Culloden; on the 10th at Wisbech; on the 29th at Weybridge Heath and North Shields; and on the 31st at Grantham. On the 2d February at Clifton; on the 4th at Weybridge Heath, Oxford, Cardington, Wisbech, Grantham, North Shields, and Culloden; on the 5th at Hawarden; on the 6th at Royston, Cardington, Wisbech, Grantham, Holkham, Boston, Halifax, Hull, Cockermouth, and North Shields; on the 7th at Oxford, Grantham, and Boston; on the 8th at Truro, Royston, Cockermouth, Allenheads, and North Shields; on the 10th at North Shields; and on the 22d at Culloden. On the 1st March at North Shields; on the 2d at Eastbourne, Weybridge Heath, and North Shields; on the 3d at Eastbourne and Cardington; on the 4th and 6th at Eastbourne; on the 7th at Wisbech and Oxford; on the 9th at Weybridge Heath, Oxford, Wisbech, and Hull; on the 28th at North Shields; on the 30th at Liverpool; and on the 31st at Eastbourne.

Aurora Boreales were seen on the 21st January at Culloden; and on the 23d at Allenheads, North Shields, and Culloden. On the 10th February at North Shields; on the 16th at Weybridge Heath; and on the 19th at Culloden. On the 17th of March at Hawarden and Ripon; on the 21st at Hawarden and Carlisle; and on the 23d at Carlisle.

Snow fell on 44 days during the quarter, viz., 20 in January, 13 in February, and 11 in March.

Hail fell on 42 days during the quarter, viz., 17 in January, 10 in February, and 15 in March.

Fog was prevalent on 45 days during the quarter, viz., 18 in January, 10 in February, and 17 in March.

Field elm leaf buds first appeared. On the 16th of February at Boston; on the 17th at Weybridge Heath; and on the 28th at Helston. On the 2d of March at Eastbourne; on the 10th at Milton; and on the 17th at Holkham.

Horsechestnut leaf buds first appeared. On the 20th of February at Eastbourne; on the 24th at Boston; on the 25th at Milton; and on the 26th at Helston. On the 14th of March at Guernsey and Strathfield Turgiss; on the 15th at Holkham; and on the 21st at Weybridge Heath.

Sycamore leaf buds first appeared. On the 17th of February at Boston; on the 19th at Weybridge Heath; and on the 28th at Milton. On the 10th of March at Strathfield Turgiss; on the 14th at Guernsey; on the 17th at Holkham; and on the 19th at Helston.

Hawthorn leaf buds first appeared. On the 10th of February at Eastbourne and Weybridge Heath; on the 15th at Guernsey; on the 21st at Taunton; and on the 24th at Boston and Milton. On the 9th of March at Holkham; on the 14th at Hull; and on the 21st at Strathfield Turgiss.

Horsechestnut in leaf. On the 21st of March at Ripon; on the 23d at Strathfield Turgiss; on the 30th at Guernsey and Oxford; and on the 31st at Eastbourne.

Sycamore in leaf. On the 21st of March at Ripon; and on the 30th at Guernsey.

Hawthorn in leaf. On the 27th of February at Eastbourne; and on the 29th at Guernsey. On the 10th of March at Oxford; on the 11th at Streatley Vicarage; on the 12th at Ripon; on the 20th at Weybridge Heath; on the 23d at Holkham; and on the 25th at Helston.

Apple in blossom. On the 31st of March at Guernsey and Wilton.

Pear in blossom. On the 14th of February at Guernsey. On the 7th of March at Helston; on the 25th at Wilton; on the 26th at Streatley Vicarage; on the 30th at Oxford, Ripon, and Milton; and on the 31st at Eastbourne.

Peach in blossom. On the 25th of February at Guernsey; on the 27th at Helston and Taunton; and on the 28th at Eastbourne. On the 4th of March at Streatley Vicarage; on the 7th at Wilton; on the 8th at Oxford; on the 14th at Milton; and on the 15th at Wisbech.

Plum in blossom. On the 25th of February at Guernsey. On the 11th of March at Streatley Vicarage; on the 12th at Strathfield Turgiss; on the 14th at Helston; on the 17th at Oxford; on the

the 18th at Ripon; on the 20th at Milton; on the 25th at Weybridge Heath; on the 29th at Holkham; and on the 30th at Wilton.

Cherry in blossom. On the 10th of March at Helston; on the 27th at Holkham; on the 28th at Milton; on the 30th at Wilton and Oxford; and on the 31st at Strathfield Turgiss and Hull.

Snowdrops in flower. On the 28th of January at Helston and Streatley Vicarage; on the 29th at Eastbourne; on the 30th at Sidmouth; and on the 31st at Lampeter. On the 3d of February at Boston; on the 6th at Taunton; and on the 7th at North Shields.

Swallow arrived. On the 31st March at Guernsey.

Wryneck arrived. On the 31st of March at Guernsey.

Woodcock departed. On the 20th of February at Helston.

CULLODEN.—The month of January has been one of sudden and rapid barometrical changes, particularly from the 9th to the close of the month; the lowest readings,  $28^{\circ}758$ ,  $28^{\circ}283$ ,  $28^{\circ}624$ , and  $28^{\circ}396$  inches, were observed on the 14th, 18th, 24th, and 31st. The temperature (though the lowest reading of the thermometer on grass was not under  $16^{\circ}6$ ) was nevertheless under the monthly average. The rainfall was a good deal above the average,  $5.581$  inches having been registered during the month, and there is no corresponding month within 27 years in which the fall has been exceeded except in 1863, when it amounted to  $6.03$  inches. Not for many years has there been so little snow as has been the case during what is past of the present year; and this may in part account for the heavy falls of rain with which the northern districts have been visited. The following is an account of the great storm which visited this station and other parts of Scotland on the 24th.

On the 23d there was nothing to indicate the approach of such a storm, for the weather was fine and frosty, with masses of fog along the valleys, and partly extending along the hills. The sun frequently shone out brightly, and set in golden rays, the barometer rose till 10h. P.M., when the reading was  $29.920$  inches. At 7h. P.M. faint Auroræ appeared over the northern horizon, and continued to a late hour, with occasional meteors shooting down from the zenith. By 9 o'clock in the evening there was an accumulation of thick haze to the S. and S.W., but the greater part of the sky was still clear and star-light. After this hour the wind which had been blowing gently all the evening gradually rose, and increased in force as the night wore on, the direction being from S. to S.S.W.; and it is somewhat remarkable that it continued to blow from these points throughout the extraordinary storm,—not veering to the right, as it usually does in great storms,—until after 3h. A.M. on Saturday the 25th, when it became W.S.W., and later in the morning the "carry" of the clouds indicated a further change to W. and W.N.W. At 6h. A.M. on Friday the 24th the barometer, which had rapidly decreased from 10h. P.M. of the 23d, read  $29.550$  inches, which further decreased to  $29.277$  inches by 9.30 A.M. At 10h. A.M. the velocity of the wind indicated by the anemometer, was from 60 to 70 miles an hour, but by 11 o'clock A.M. of the 24th as high as from 80 to 90 miles, the barometer reading at 1 o'clock being  $28.962$  steadily decreasing. The heaviest gusts were from 11 to 11.10 A.M., and between noon and 12.15 P.M.; and it was at these times the anemometer gave the extraordinary velocity of 90 to 91 miles an hour, equivalent to a pressure on the square foot of 40.50 lbs. and 41.43 lbs. respectively. From 12.15 to 1.15 P.M. the velocity continued to vary between 70 and 80 miles an hour, decreasing by the latter time to 60 miles. There were however violent gusts occasionally till 2h. P.M., when the movement in the air of 49 miles, from 3 to 4 P.M. 37 miles, and by 5h. P.M. the rate was only 10 A.M. of the 25th amounted to no less than 660 miles, 300 of which it passed over between the 24th and 4 P.M. of the 24th; the number of miles passed over between 10 A.M. and 10 P.M. of the 25th, the minimum reading being  $28.575$  inches (corrected); it then increased, and by 11h. P.M. of the same day it was  $29.561$ , showing an increase of  $0.986$  inch in 20 hours. The storm was accompanied with dashing showers of sleet, hail, and rain, and a few flashes of lightning.

CULLODEN.—The month of February was in many respects a remarkable one, and likely to be remembered. January disappeared with a tremendous gale from S.S.W. to S.W., accompanied with drenching rain which flooded rivers to a greater extent than has been the case for 19 years, resulting in many instances in great destruction to property, bridges, and river embankments. The 1st, 4th, 5th, 6th, 7th, 20th, and 21st days and nights were particularly boisterous with heavy gales from the southward, much rain and sleet falling, with lightning at nights; on the 5th and 7th the pressure of the wind on the square foot ranged from 17 to 24.5 lbs. The lowest reading of the barometer ( $28.276$  ins.) was taken on the 1st; between that day and the 6th it greatly fluctuated under 29.927 ins., and all through the month the barometrical column was more or less subject to considerable and rapid oscillations. The mean temperature ( $40^{\circ}85$ ) was high for the month. The thermometer on the shade ( $54^{\circ}9$ ) was taken on the 26th, and the lowest ( $31^{\circ}4$ ) on the 4th. The extent that vegetation received no check. The rainfall ( $3.882$  in.) was over the monthly average, and has rendered the land in many districts very wet and quite unworkable. The constant succession of such violent storms has been severely felt by sheep and stock in exposed situations; the where pasture, however bad and scanty, was always to be had. The wheat crops look well, everywhere healthy and very vigorous. Stock in general have done well and thriven steadily during the winter months. Turnips are getting scarce, but as the grass season promises to be an early one this scarcity will not be felt so severely.

CULLODEN.—The mean temperature of March was several degrees above the average, and vegetation rapidly progressed. The month throughout was remarkable for the absence of easterly winds.



*The Observations have been reduced to Mean values by Glaisher's Barometrical and Diurnal Range Tables, and the Hygrometrical results have been deduced from his fourth edition of Hygrometrical Tables.*

Year. Iss.	Pressure of Atmosphere in Month.			Temperature of Air in Month.				Mean Tem- perature.		Mean Reading of Thermometer.				Wind.			Mean Amount of Cloud.		Rain. Number of Days fell.	Amount col- lected.				
	Mean.	Range.	in.	Temperature of Air in Month.		Mean.	Range.	Air.	Dew Point.	Elastic Force.	In a cubic foot of Air.	Short of Saturation.	Mean Weight of a cubic foot of Air.	Maximum In May of Sun.	Minimum on Grass.	Relative Proportion of					Mean Amount of Cloud.			
				Of all Highest.	Of all Lowest.											N.	E.	S.				W.		
GUERNSEY. S. B. BELLAMY HOSKINS, Esq., M.D., F.R.S., F.M.S.	Jan.	29.746	1.259	53.0	29.0	84.0	37.6	45.3	37.6	2.2	41.0	38.5	2.5	84	561	—	1.8	7	6	9	4.5	21	4.1	
	Feb.	29.629	1.944	53.5	33.0	39.5	43.7	42.0	41.3	2.5	41.0	38.5	2.5	84	561	—	1.4	5	10	13	4.3	21	4.1	
	Mar.	29.870	1.146	53.0	37.0	18.0	40.3	42.0	41.3	2.3	43.5	41.3	3.0	87	562	—	1.7	9	11	5.1	4.3	15	1.8	
HELSTON. MATTHEW P. MOYLE, Esq., M.R.C.S.	Jan.	29.886	1.920	55.0	31.0	61.0	40.1	43.5	39.6	2.3	43.5	39.6	2.8	86	560	50.8	2.6	8	5	11	5.1	4.1	15	4.1
	Feb.	29.163	1.988	53.0	31.0	37.0	42.0	42.0	43.5	2.3	43.5	39.6	3.1	87	561	62.4	3.2	7	6	15	4.7	2.3	14	2.3
	Mar.	29.925	1.467	61.0	33.0	54.6	44.1	10.5	48.0	43.8	2.8	48.0	43.8	3.5	86	561	40.2	2.4	4	16	5.8	18	2.1	
TRURO. C. BARNHAM, Esq., M.D., F.M.S.	Jan.	29.886	1.463	53.0	17.0	63.0	47.0	37.0	39.6	2.3	41.0	39.6	2.8	86	561	50.8	2.6	10	6	5	10	7.8	21	7.2
	Feb.	29.173	1.925	57.0	37.0	37.0	42.0	42.0	43.5	2.3	43.5	39.6	3.1	87	561	62.4	3.2	7	6	15	4.7	2.3	14	2.3
	Mar.	29.925	1.467	61.0	33.0	54.6	44.1	10.5	48.0	43.8	2.8	48.0	43.8	3.5	86	561	40.2	2.4	4	16	5.8	18	2.1	
SIDMOUTH. J. LINDLEY MACKENZIE, Esq., M.B., F.M.S.	Jan.	29.139	1.967	53.0	23.5	39.0	45.8	31.6	11.2	40.4	38.4	2.8	2.6	82	565	—	1.3	9	2	4	11	5.4	20	3.4
	Feb.	29.139	1.967	53.0	23.5	39.0	45.8	31.6	11.2	40.4	38.4	2.8	2.6	82	565	—	1.3	9	2	4	11	5.4	20	3.4
	Mar.	29.694	1.265	53.0	30.0	53.0	39.9	13.1	45.3	38.7	2.5	45.3	38.7	2.7	81	565	—	1.5	10	1	16	1.6	14	1.6
BARSTAPLE. T. MACRELL, Esq.	Jan.	29.878	1.480	55.5	24.0	31.5	45.0	36.4	8.6	41.1	37.7	2.5	2.6	84	563	—	1.2	7	8	9	5.9	19	5.9	
	Feb.	29.878	1.480	55.5	24.0	31.5	45.0	36.4	8.6	41.1	37.7	2.5	2.6	84	563	—	1.2	7	8	9	5.9	19	5.9	
	Mar.	29.910	1.370	57.5	33.0	24.5	42.4	10.1	47.0	43.8	2.7	47.0	43.8	3.2	85	563	—	1.3	2	9	16	4.3	18	2.1
OSPORNE. J. R. MANN, Esq.	Jan.	29.774	1.948	63.7	33.0	42.4	32.1	15.6	39.3	37.7	2.3	39												



Year 1868.	Month.	Names of Stations and Observers.	Pressure of Atmosphere in Month.		Temperature of Air in Month.			Mean Temperature.	Vapour.		Mean Reading of Thermometer.	Wind.			Mean Amount of Cloud.		Rain.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
			Mean.	Range.	Highest.	Lowest.	Range.		Mean.			Elastic Force.	In a cubic foot of Air.	Short of Saturation.	Mean Degree of Humidity.	Relative Proportion of			Mean Amount of Ozone.	Number of Days it fell.	Amount collected.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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Jan.	29-718	1-488	57.8	31.1	45.2	26.7	31.1	45.2	26.7	31.1	45.2	41.2	36.7	218	72.1	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	Mean Estimated Strength.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.
																			Relative Proportion of					
																			N.	E.	S.	W.		
Guernsey	29.865	55.0	29.0	26.0	47.9	40.3	7.6	43.4	39.5	24.5	0.83	0.00	0.00	83	550	60.6	39.3	1.6	6	4	9	11	4.4	0.0
Helston	29.869	61.0	24.0	37.0	51.7	42.2	9.5	46.1	42.1	28.9	0.91	0.00	0.00	91	530	60.6	39.3	1.6	6	4	9	11	4.4	0.0
Truro	29.816	61.0	17.0	44.0	50.8	39.7	11.1	44.5	41.1	25.8	0.90	0.00	0.00	90	530	60.6	39.3	1.6	6	4	9	11	4.4	0.0
Barnstaple	29.807	57.5	24.0	33.5	49.3	39.6	9.7	44.4	40.3	25.0	0.89	0.00	0.00	89	551	60.6	39.3	1.6	6	4	9	11	4.4	0.0
Osborne	29.821	65.7	23.3	42.4	51.7	35.1	13.7	46.6	42.6	25.4	0.90	0.00	0.00	90	552	74.2	28.3	0.7	5	3	8	13	3.7	0.0
Bournemouth	29.831	59.0	34.0	35.0	48.3	37.6	10.7	42.8	39.7	21.8	0.85	0.00	0.00	85	547	74.2	28.3	0.7	5	3	8	13	3.7	0.0
Bournemouth	29.820	60.5	32.0	37.5	48.8	37.3	11.5	42.6	39.6	22.7	0.85	0.00	0.00	85	552	74.2	28.3	0.7	5	3	8	13	3.7	0.0
Eastbourne	29.812	60.7	23.3	37.4	47.9	37.1	10.8	42.4	39.5	23.5	0.85	0.00	0.00	85	554	70.6	31.9	0.7	6	3	8	13	3.7	0.0
Worthing	29.811	57.0	24.0	33.0	47.0	37.2	9.8	42.0	37.7	22.3	0.85	0.00	0.00	85	555	70.6	31.9	0.7	6	3	8	13	3.7	0.0
Taunton	29.801	60.7	21.6	39.7	49.8	36.9	12.9	43.6	39.5	24.6	0.89	0.00	0.00	89	551	53.0	32.9	0.7	13	3	3	11	0.0	0.0
Wilton	29.781	61.5	20.0	41.5	48.9	32.9	16.0	41.3	38.5	22.9	0.85	0.00	0.00	85	552	70.7	31.5	1.0	9	3	7	11	0.0	0.0
Tunbridge Wells	29.813	59.0	29.3	38.7	46.4	35.1	11.3	40.7	36.3	21.5	0.85	0.00	0.00	85	548	81.2	31.5	1.5	6	3	10	12	0.0	0.0
Aldershot Camp	29.755	60.6	19.4	41.2	47.8	34.7	13.1	40.9	36.9	22.0	0.86	0.00	0.00	86	548	71.7	30.8	1.7	6	3	8	13	3.7	0.0
Weybridge Heath	29.848	62.8	22.5	40.3	48.2	35.8	12.4	41.9	37.0	22.1	0.86	0.00	0.00	86	553	70.2	32.3	1.3	5	3	10	12	0.0	0.0
Bath R. L. & S. Inst.	29.796	60.0	21.5	38.5	48.5	36.7	11.8	42.4	37.9	22.8	0.86	0.00	0.00	86	552	74.2	28.3	1.3	5	3	10	12	0.0	0.0
Eastleigh Lansdowne, Bath	29.784	67.0	19.5	47.4	49.3	33.7	15.6	44.0	40.0	24.0	0.88	0.00	0.00	88	550	74.2	28.3	1.3	5	3	10	12	0.0	0.0
Stratfield Turgiss	29.807	62.0	22.0	40.0	50.4	36.8	13.6	42.6	39.2	24.0	0.88	0.00	0.00	88	550	74.2	28.3	1.3	5	3	10	12	0.0	0.0
Marlborough College	29.815	66.0	19.8	46.2	47.5	33.8	13.7	40.2	36.2	23.1	0.86	0.00	0.00	86	550	74.2	28.3	1.3	5	3	10	12	0.0	0.0
Clifton	29.791	60.8	23.7	37.1	47.9	37.4	10.5	42.2	38.1	23.1	0.86	0.00	0.00	86	550	74.2	28.3	1.3	5	3	10	12	0.0	0.0
Royal Observatory	29.806	61.7	22.8	38.9	48.1	35.5	12.6	41.4	36.3	21.5	0.86	0.00	0.00	86	552	69.7	31.4	0.9	5	3	7	14	0.0	0.0
Streatham Vicarage	29.833	60.0	19.8	40.2	48.3	35.2	13.1	42.0	37.8	22.7	0.86	0.00	0.00	86	552	54.5	30.9	0.7	3	7	14	0.0	0.0	
London (21, Dorset sq.)	29.793	61.7	24.0	37.7	49.9	37.7	12.2	42.8	39.4	24.1	0.88	0.00	0.00	88	551	74.2	28.3	1.3	5	3	10	12	0.0	0.0
Camden Town	29.778	62.5	24.3	37.8	48.3	35.8	12.5	42.4	38.1	23.0	0.87	0.00	0.00	87	550	74.2	28.3	1.3	5	3	10	12	0.0	0.0
Oxford	29.778	59.0	24.3	34.7	48.1	36.8	11.3	42.4	39.5	22.9	0.85	0.00	0.00	85	551	68.2	34.0	0.9	6	3	8	13	3.7	0.0
Gloucester	29.794	60.5	23.5	37.0	49.2	37.9	11.3	43.3	38.0	22.9	0.85	0.00	0.00	85	551	68.2	34.0	0.9	6	3	8	13	3.7	0.0
Royston	29.801	61.0	22.1	38.9	48.0	35.8	12.2	41.4	36.5	21.7	0.85	0.00	0.00	85	550	74.2	28.3	1.3	5	3	10	12	0.0	0.0
Cardington	29.788	61.0	24.0	37.0	47.9	35.8	12.1	41.6	37.1	22.2	0.86	0.00	0.00	86	553	63.1	30.9	1.2	5	3	7	14	0.0	0.0
Lampeter	29.816	66.2	14.4	51.8	48.2	35.8	16.2	41.6	37.8	22.8	0.86	0.00	0.00	86	547	70.1	32.5	0.8	5	3	8	12	0.0	0.0
Norwich	29.755	53.8	27.0	32.8	46.6	35.7	10.9	41.1	37.1	22.2	0.85	0.00	0.00	85	554	74.2	28.3	1.3	5	3	10	12	0.0	0.0
Wisbech	29.791	62.2	24.4	37.8	48.3	35.8	12.5	42.4	38.1	23.0	0.87	0.00	0.00	87	550	74.2	28.3	1.3	5	3	10	12	0.0	0.0
Llandudno	29.692	58.0	26.7	31.3	48.7	39.3	9.4	44.0	39.5	24.3	0.85	0.00	0.00	85	548	74.2	28.3	1.3	5	3	10	12	0.0	0.0
Grantham	29.733	59.0	23.4	35.6	46.4	37.3	9.1	41.7	37.3	21.5	0.85	0.00	0.00	85	550	74.2	28.3	1.3	5	3	10	12	0.0	0.0
Derby	29.723	62.0	25.0	37.0	47.7	35.9	11.8	42.1	38.2	21.8	0.85	0.00	0.00	85	553	74.2	28.3	1.3	5	3	10	12	0.0	0.0
Holkham	29.727	58.8	22.6	36.2	46.7	35.2	11.5	41.2	36.7	21.8	0.85	0.00	0.00	85	549	74.2	28.3	1.3	5	3	10	12	0.0	0.0
Nottingham	29.723	62.6	19.6	43.0	48.6	34.8	13.8	41.3	37.2	22.2	0.86	0.00	0.00	86	549	74.2	28.3	1.3	5	3	10	12	0.0	0.0
Boston	29.704	60.2	25.5	34.7	47.6	36.4	11.2	42.0	38.0	22.9	0.86	0.00	0.00	86	552	72.2	31.3	1.6	5	3	7	13	0.0	0.0
Hawarden	29.696	59.0	27.0	32.0	49.7	38.8	10.9	43.2	38.6	23.4	0.85	0.00	0.00	85	549	74.2	28.3	1.3	5	3	10	12	0.0	0.0
Kingsley Parsonage	29.712	61.0	22.8	38.2	47.6	36.1	11.5	41.8	37.2	22.2	0.86	0.00	0.00	86	551	61.1	30.9	1.2	5	3	7	14	0.0	0.0
Manchester	29.715	60.2	24.2	33.0	48.5	35.3	13.2	41.8	38.2	22.2	0.86	0.00	0.00	86	550	62.0	33.6	1.2	5	3	7	14	0.0	0.0
Eccles	29.717	59.5	24.5	35.0	47.6	36.4	11.2	41.8	38.2	22.2	0.86	0.00	0.00	86	551	61.1	30.9	1.2	5	3	7	14	0.0	0.0
Liverpool Observatory	29.715	57.9	25.4	32.5	47.0	37.8	9.2	42.0	38.5	23.4	0.86	0.00	0.00	86	549	74.2	28.3	1.3	5	3	10	12	0.0	0.0
Wakefield	29.726	62.0	23.0	39.0	49.0	35.8	13.2	42.3	38.2	23.0	0.87	0.00	0.00	87	547	67.6	34.9	1.2	4	3	8	13	0.0	0.0
Halifax	29.699	57.0	25.0	32.0	43.7	37.4	6.3	40.0	36.8	21.9	0.86	0.00	0.00	86	541	74.2	28.3	1.3	5	3	10	12	0.0	0.0
Hull	29.711	60.0	21.0	39.0	47.1	34.0	13.1	40.9	35.6	20.9	0.86	0.00	0.00	86	554	63.0	32.7	0.8	4	3	7	13	0.0	0.0
Stonyhurst	29.656	58.0	23.2	32.8	46.9	36.3	10.6	41.3	38.5	23.4	0.86	0.00	0.00	86	549	74.2	28.3	1.3	5	3	10	12	0.0	0.0
Leeds	29.680	57.0	27.0	30.0	48.9	39.3	9.0	42.9	38.6	23.7	0.86	0.00	0.00	86	551	74.2	28.3	1.3	5	3	10	12	0.0	0.0
Oldley	29.662	56.3	27.3	29.0	45.6	37.7	7.9	41.6	35.6	20.9	0.86	0.00	0.00	86	548	74.2	28.3	1.3	5	3	10	12	0.0	0.0
York	29.639	60.0	24.0	36.0	46.3	36.3	10.0	41.3	38.7	23.5	0.86	0.00	0.00	86	551	74.2	28.3	1.3	5	3	10	12	0.0	0.0
Ripon	29.684	62.0	23.0	39.0	48.0	35.3	12.7	41.6	35.8	21.5	0.86	0.00	0.00	86	550	74.2	28.3	1.3	5	3	10	12	0.0	0.0
Cockermouth	29.657	57.7	22.1	35.6	46.8	37.8	9.0	42.0	37.7	22.7	0.85	0.00	0.00	85	549	62.9	33.3	0.7	3	7	14	0.0	0.0	
Allenheads	29.607	52.5	18.0	34.5	42.6	35.6	6.0	36.9	34.3	19.8	0.84	0.00	0.00	84	539	72.7	28.6	0.4	3	7	14	0.0	0.0	
Silloth	29.585	50.0	24.0	36.0	47.5	38.5	8.0	42.9	38.2	23.7	0.86	0.00	0.00	86	549	69.8	33.8	1.6	3	8	13	0.0	0.0	
Carlisle	29.668	58.5	20.5	38.0	47.3	35.6	11.7	41.7	38.6	23.0	0.86	0.00	0.00	86	547	59.4	28.8	1.5	6	3	8	13	0.0	0



The mean low night temperatures were  $1^{\circ}0$ ,  $1^{\circ}9$ , and  $0^{\circ}6$  higher than the respective average in April, May, and June.

Therefore the months of April, May, and June were warm, both by day and night.

The daily ranges of temperature were respectively  $0^{\circ}3$ ,  $4^{\circ}1$ , and  $4^{\circ}6$  above the average of the months of April, May, and June.

The fall of rain was  $0.4$  in. in excess in April, and  $0.5$  in. and  $1.5$  in. respectively in May and June.

The mean temperature of the air at Greenwich in the three months ending May, constituting three spring months, was  $49^{\circ}8$ , being  $3^{\circ}4$  higher than the average of the preceding 27 years.

Temperature of											Elastic Force of Vapour.		Winds.
1868. MONTHS.	Air.			Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames.	Mean.	Diff. from average of 27 years.	
	Mean.	Diff. from average of 27 years.	Diff. from average of 27 years.	Mean.	Diff. from average of 27 years.	Mean.	Diff. from average of 27 years.	Mean.	Diff. from average of 27 years.				
April -	45.1	+2.2	+1.2	44.9	+1.1	41.4	+0.9	18.7	+0.3	49.2	0.261	+0.009	4.2
May -	57.3	+4.8	+4.4	53.0	+3.8	49.0	+3.5	24.4	+4.1	58.6	0.348	+0.016	3.7
June -	62.0	+3.9	+2.9	56.3	+1.6	51.4	+0.6	25.5	+4.6	64.0	0.379	+0.006	3.7
Mean -	55.8	+3.6	+2.8	51.4	+2.2	47.1	+1.7	22.9	+3.0	57.3	0.329	+0.020	3.7

1868. MONTHS.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.	Reading of Thermometer on the 1st of May.				Lowest Reading of the 1st of May.		
	Mean.	Diff. from average of 27 years.	Mean.	Diff. from average of 27 years.	Mean.	Diff. from average of 27 years.	Amount.	Diff. from average of 27 years.		Number of Nights it was						
										At or below 30°.	Between 30° and 40°.	Above 40°.	C.			
April -	78	- 1	29.782	+0.019	543	grs. 0	in. 2.1	in. +0.4	Miles. 237	6	18	6	15	20.9		
May -	74	- 2	29.845	+0.071	534	- 8	1.7	-0.5	230	0	16	21	24	20.9		
June -	68	- 6	29.989	+0.179	531	0	0.5	-1.5	211	0	6			20.9		
Mean -	73	- 3	29.869	+0.090	536	- 3	Sum 4.3	Sum -1.6	Mean 246	Sum 6	Sum 40	Sum 45		20.9		

NOTE.—In reading this table it will be borne in mind that the sign (-) minus signifies below the average, and the sign (+) plus signifies above the average.

Thunderstorms occurred on the 21st April at Bath and Ripon; on the 23d at Aldershot, Weybridge Heath, Strathfield Turgiss, and Cardington; on the 24th at Ensligh Lansdowne, Eastbourne, and York; on the 25th at Aldershot Camp, Weybridge Heath, Strathfield Turgiss, Bath, Gloucester, and Stonyhurst; on the 26th at Bywell and North Shields; and on the 27th at London, Taunton, Oxford, Gloucester, Wisbech, Boston, and Hull. On the 2d May at Milton; on the 3d at Guernsey and Helston; on the 11th at Allenheads, Silloth, Carlisle, and North Shields; on the 18th at Silloth and Milton; on the 19th at Guernsey, Osborne, Bournemouth, Wilton, Marlborough College, Hawarden, Eccles, Liverpool, Wakefield, Halifax, Hull, Strathfield Turgiss, York, Ripon, Cockermouth, Allenheads, Silloth, Carlisle, Bywell, and North Shields; on the 20th at Milton; and on the 29th at Guernsey, Helston, Truro, Eastbourne, Worthing, Taunton, Weybridge Heath, Bath, Marlborough College, Battersea, London, Gloucester, Cardington, Lampeter, Norwich, Grantham, Nottingham, Boston, Eccles, Weybridge Heath, and Hull. On the 4th June at Oxford; on the 10th at Wakefield; on the 19th at Sidmouth, Bournemouth, Wilton, and Bath; on the 20th at Ensligh Lansdowne, Leeds, and Carlisle; on the 21st at Eccles, Hull, Stonyhurst, and Carlisle; and on the 22nd at Norwich.

Thunder was heard but lightning was not seen on the 14th April at Carlisle; on the 15th at London; on the 23d at Sidmouth, Battersea, Streatley Vicarage, Oxford, and Royston; on the 25th at Halifax and Allenheads; on the 26th at Strathfield Turgiss, Streatley Vicarage, and Allenheads; on the 27th at Worthing, Wilton, Aldershot Camp, Weybridge Heath, Marlborough College, Streatley Vicarage, Llandudno, Grantham, Halifax, Stonyhurst, Ripon, and Culloden; on the 28th at Weybridge Heath, Bywell, and North Shields; on the 18th at Llandudno, Cockermouth, and Culloden; on the 19th at Sidmouth, Wilton, and Lampeter; on the 20th at Strathfield Turgiss and Culloden; on the 22d at Carlisle; on the 23d at Carlisle and Bywell; on the 24th at Allenheads and Culloden; and on the 29th at Bournemouth, Wilton, Strathfield Turgiss, Ensligh Lansdowne, Weybridge Heath, Hawarden, Liverpool, and Halifax. On the 20th June at Worthing, Wilton, Strathfield Turgiss, Oxford, Wisbech, Halifax, York, Ripon, Cockermouth, Silloth, and North Shields; on the 21st at Weybridge Heath, Streatley Vicarage, Boston, Ripon, Cockermouth, and Silloth; on the 22d at Wisbech; on the 23d at Halifax; and on the 30th at Guernsey and North Shields.

Lightning was seen but thunder was not heard on the 23d April at Carlisle; on the 24th at Wilton, Streatley Vicarage, and Allenheads; on the 19th at Worthing, Weybridge Heath, and Strathfield Turgiss; on the 20th at London, Oxford, and Wisbech; on the 29th at Worthing, Battersea, and

Wisbech; and on the 30th at Wilton and Royston. On the 19th June at Helston, Truro, Osborne, Eastbourne, Worthing, Strathfield Turgiss, Ensligh Lansdowne, Oxford, and Gloucester; on the 20th at London and Eccles; and on the 21st at Streatley Vicarage and Norwich.

Solar halos were seen on the 6th April at Oxford and Culloden; on the 11th at Culloden; on the 15th at Hawarden; on the 19th at Wisbech; on the 26th at Tunbridge Wells; on the 27th at Tunbridge Wells, Wisbech, Grantham, and Culloden; and on the 28th at Grantham. On the 5th May at Oxford; on the 9th and 11th at Culloden; on the 17th at Oxford; on the 18th at Wisbech; on the 19th at Oxford; on the 20th at Weybridge Heath and Oxford; on the 21st at Oxford; on the 27th at Wisbech; and on the 29th at Weybridge Heath. On the 3d June at Bournemouth; on the 5th at Wisbech and Grantham; on the 9th and 12th at Weybridge Heath; on the 13th at Lampeter; and on the 15th at Wisbech.

Lunar halos were seen on the 2d April at Silloth and Culloden; on the 3d at Cockermouth, Allenheads, and North Shields; on the 5th at Camden Town, Grantham, and Boston; on the 6th at Ensligh Lansdowne; on the 9th at Culloden; on the 27th at Wilton and Oxford; on the 29th at Gloucester; on the 28th at Weybridge Heath, Strathfield Turgiss, and Oxford. On the 27th May the 29th at Sidmouth, Bournemouth, and Strathfield Turgiss; and on the 30th at Oxford. On the 2d June at London; and on the 8th at Oxford.

Aurora Boreales were seen on the 9th and 15th April at Hawarden; on the 20th at Culloden; on the 23d at Hawarden; on the 27th at Oxford, Royston, and York; on the 28th at Carlisle; and on the 29th at Hawarden. On the 11th and 23d May at Hawarden.

Snow fell on 6 days during the quarter; viz., 8 in April and 7 in May.

Fog prevailed on 15 days during the quarter, viz., 8 in April and 7 in May.

On the 7th of May at Ripon; on the 8th at Cockermouth; on the 10th at Culloden; on the 11th at Wisbech; and on the 16th at Hull.

Sycamore in leaf. On the 5th of April at Tunbridge Wells and Holkham; on the 7th at Eastbourne; on the 9th at Weybridge Heath; on the 12th at Cockermouth; on the 20th at Milton; on the 23d at Wisbech; and on the 24th at Boston. On the 1st of May at Ripon; and on the 15th at Hull.

Line in leaf. On the 4th of April at Wisbech; on the 15th at Oxford; on the 18th at Guernsey; on the 22d at Milton; on the 24th at Boston; on the 25th at Culloden; on the 26th at Strathfield Turgiss; and on the 30th at Marlborough College. On the 4th of May at Ripon; and on the 9th at Hull.

Horsechestnut in leaf. On the 4th of April at Holkham; on the 5th at Wisbech; on the 16th at Milton; on the 20th at Boston; on the 23d at Culloden; on the 24th at Marlborough College; and on the 28th at Cockermouth. On the 3d of May at Hull.

Lilac in blossom. On the 4th of May at Helston; on the 10th at Guernsey; on the 14th at Taunton; on the 18th at Holkham; on the 20th at Bournemouth; on the 22d at Weybridge Heath and Battersea; on the 25th at Eastbourne; on the 28th at Wisbech and Milton; and on the 30th at London. On the 1st of May at Oxford; on the 2d at Strathfield Turgiss, Lampeter, and Culloden.

Laburnum in blossom. On the 14th of April at Helston; on the 20th at Bournemouth; on the 28th at Eastbourne; on the 29th at Hawarden; and on the 30th at Wisbech. On the 1st of May at Battersea; on the 2d at Taunton, Weybridge Heath, Boston, and Milton; on the 3d at Oxford; on the 4th at Strathfield Turgiss; on the 7th at Ripon; on the 8th at York and Silloth; and on the 14th at Hull and Lampeter.

Apple in blossom. On the 5th of April at Milton; on the 14th at Wisbech; on the 15th at Bournemouth, Weybridge Heath, Strathfield Turgiss, Oxford, and Culloden; on the 16th at Marlborough College; on the 20th at Hull and Cockermouth; on the 22d at Holkham; on the 25th at Grantham; and on the 30th at Cardington.

Pear in blossom. On the 5th of April at Wisbech; on the 6th at Weybridge Heath, Grantham, and Holkham; on the 7th at Cardington; on the 10th at Hull; on the 15th at Culloden; and on the 20th at Boston.

Cherry in blossom. On the 4th of April at Weybridge Heath; on the 5th at Marlborough College; on the 13th at Wisbech; on the 15th at Kingsley Parsonage, Cockermouth, and Culloden; and on the 28th at Grantham.

Plum in blossom. On the 3d of April at Wisbech; on the 4th at Strathfield Turgiss and Cardington; and on the 6th at Cockermouth.

Wheat in ear. On the 24th of May at Royston; on the 26th at Taunton and Boston; and on the 28th at Wisbech. On the 1st of June at Cardington; on the 2d at Weybridge Heath; on the 3d at Milton; on the 7th at Grantham and Hull; on the 8th at Strathfield Turgiss; on the 10th at Weybridge Heath; on the 15th at Cockermouth; and on the 27th at Culloden.

Barley in ear. On the 5th of June at Boston; on the 8th at Cardington; on the 9th at Weybridge Heath and Marlborough College; on the 11th at Helston; on the 18th at Grantham; on the 26th at Hull; and on the 30th at Cockermouth.

Barley in flower. On the 5th of June at Weybridge Heath; on the 6th at Cardington; on the 14th at Milton; on the 16th at Helston; on the 20th at Cockermouth; and on the 29th at Culloden.

Oats in ear. On the 10th of June at Cardington; on the 14th at Weybridge Heath; and on the 16th at Helston; and on the 30th at Cockermouth, Milton, and Culloden.



MONTHLY METEOROLOGICAL TABLE FOR THE QUARTER ENDING JUNE 30TH, 1868.  
The Observations have been reduced to Mean values by Glaisher's Barometrical and Diurnal Range Tables, and the Hygrometrical results have been deduced from his fourth edition of Hygrometrical Tables.

Year 1868.	Months.	Names of Stations and Observers.	Pressure of Atmosphere in Month.			Temperature of Air in Month.			Mean Temperature.		Vapour.		Mean Reading of Thermometer.		Wind.			Rain.								
			Mean.	Range.	Lowest.	Highest.	Range.	Of all Highest.	Of all Lowest.	Daily Range.	Air.	Dew Point.	Elastic Force.	In a cubic foot of Air.	Mean Degree of Humidity, = 100.	Mean cubic foot of Air.	Maximum in Rays of Sun.	Minimum on Grass.	Relative Proportion of		Mean Amount of Cloud.	Number of Days it fell.	Amount collected.			
																			N.	E.				S.	W.	
	April	GUERNSEY.	29.788	1.184	60.0	97.5	28.5	59.9	44.3	9.9	47.2	44.5	294	3.4	0.4	92	544	—	1.7	8	5	7	10	4.5	2.9	
	May	SAMUEL ELLIOTT HOSKINS, Esq., M.D., F.R.S., F.M.S.	29.783	0.784	73.5	97.0	23.5	59.9	44.3	11.5	54.1	52.8	329	3.1	0.4	85	536	—	1.2	6	7	9	9	4.0	2.5	
	June	HELSTON.	29.783	0.784	73.5	97.0	23.5	59.9	44.3	11.5	57.9	52.8	300	4.1	0.8	85	536	—	1.1	11	5	4	10	4.7	0.4	
	April	MATTHEW P. MOTLE, Esq., M.R.C.S.	29.787	1.031	67.0	93.0	34.0	58.6	44.5	14.1	49.6	44.8	297	3.4	0.6	85	544	89.1	40.0	2.5	8	5	12	5.8	2.8	
	May	TRURO.	29.786	0.989	78.0	94.0	34.0	59.6	53.8	15.8	59.8	51.7	384	3.4	1.2	75	538	88.8	40.0	2.5	8	10	9	4.6	1.4	
	June	C. BARNHAM, Esq., M.D., F.M.S.	29.783	0.783	83.0	93.0	40.0	69.5	59.6	15.7	59.8	51.7	384	3.4	1.5	75	538	99.3	47.2	2.1	8	4	6	32	3.6	
	April	SIDMOUTH.	29.783	1.260	67.0	95.0	41.0	58.5	41.4	17.1	48.9	44.9	298	3.3	0.6	87	545	—	—	2.5	10	5	4	11	6.2	
	May	J. INGLEBY MACKENZIE, Esq., M.B., F.M.S.	29.783	0.959	78.0	93.0	43.0	66.0	48.0	17.5	59.7	54.0	427	4.8	1.0	84	537	—	—	1.9	4	9	9	5.4	1.7	
	June	T. MACKRELL, Esq.	29.787	1.400	65.3	99.4	35.9	67.1	41.9	15.2	47.7	42.5	272	3.1	0.7	83	546	—	—	1.8	14	4	2	10	5.6	
	April	BARSTAPLE.	29.786	0.863	73.5	93.6	35.9	63.6	47.1	13.4	47.0	43.0	308	3.0	0.7	85	541	—	—	1.3	11	2	3	14	2.6	
	May	T. MACKRELL, Esq.	29.786	0.863	73.5	93.6	35.9	63.6	47.1	13.4	47.0	43.0	308	3.0	0.7	85	541	—	—	1.0	3	32	13	2.5	1.4	
	June	OSBORNE.	29.788	1.040	77.5	92.0	38.0	69.1	47.8	18.4	47.2	43.1	349	3.9	1.4	74	539	—	—	0.9	7	2	4	17	0.6	
	April	J. R. MANS, Esq.	29.786	1.238	82.6	92.6	43.0	68.4	49.9	18.0	50.0	50.6	359	4.1	1.7	71	536	—	—	1.4	6	6	7	11	2.8	
	May	BOURNEMOUTH.	29.786	1.238	82.6	92.6	43.0	68.4	49.9	18.0	50.0	50.6	359	4.1	1.7	71	536	—	—	1.2	1	5	13	2.2	1.9	
	June	W. S. FALLS, Esq., M.D., F.M.S.	29.787	0.787	84.2	92.6	43.0	68.4	49.9	18.0	50.0	50.6	359	4.1	1.7	71	536	105.0	29.8	0.5	9	6	8	7	5.5	3.5
	April	BOURNEMOUTH.	29.787	0.688	85.2	93.2	42.0	73.1	49.6	25.5	61.2	53.6	406	4.5	1.5	76	532	120.5	42.7	0.1	3	4	7	16	5.9	0.5
	May	BOURNEMOUTH.	29.787	0.688	85.2	93.2	42.0	73.1	49.6	25.5	61.2	53.6	406	4.5	1.5	76	532	120.5	42.7	0.1	3	4	7	16	5.9	0.5
	June	BOURNEMOUTH.	29.787	0.688	85.2	93.2	42.0	73.1	49.6	25.5	61.2	53.6	406	4.5	1.5	76	532	120.5	42.7	0.1	3	4	7	16	5.9	0.5
	April	BOURNEMOUTH.	29.787	0.688	85.2	93.2	42.0	73.1	49.6	25.5	61.2	53.6	406	4.5	1.5	76	532	120.5	42.7	0.1	3	4	7	16	5.9	0.5
	May	BOURNEMOUTH.	29.787	0.688	85.2	93.2	42.0	73.1	49.6	25.5	61.2	53.6	406	4.5	1.5	76	532	120.5	42.7	0.1	3	4	7	16	5.9	0.5
	June	BOURNEMOUTH.	29.787	0.688	85.2	93.2	42.0	73.1	49.6	25.5	61.2	53.6	406	4.5	1.5	76	532	120.5	42.7	0.1	3	4	7	16	5.9	0.5
	April	BOURNEMOUTH.	29.787	0.688	85.2	93.2	42.0	73.1	49.6	25.5	61.2	53.6	406	4.5	1.5	76	532	120.5	42.7	0.1	3	4	7	16	5.9	0.5
	May	BOURNEMOUTH.	29.787	0.688	85.2	93.2	42.0	73.1	49.6	25.5	61.2	53.6	406	4.5	1.5	76	532	120.5	42.7	0.1	3	4	7	16	5.9	0.5
	June	BOURNEMOUTH.	29.787	0.688	85.2	93.2	42.0	73.1	49.6	25.5	61.2	53.6	406	4.5	1.5	76	532	120.5	42.7	0.1	3	4	7	16	5.9	0.5
	April	BOURNEMOUTH.	29.787	0.688	85.2	93.2	42.0	73.1	49.6	25.5	61.2	53.6	406	4.5	1.5	76	532	120.5	42.7	0.1	3	4	7	16	5.9	0.5
	May	BOURNEMOUTH.	29.787	0.688	85.2	93.2	42.0	73.1	49.6	25.5	61.2	53.6	406	4.5	1.5	76	532	120.5	42.7	0.1	3	4	7	16	5.9	0.5
	June	BOURNEMOUTH.	29.787	0.688	85.2	93.2	42.0	73.1	49.6	25.5	61.2	53.6	406	4.5	1.5	76	532	120.5	42.7	0.1	3	4	7	16	5.9	0.5
	April	BOURNEMOUTH.	29.787	0.688	85.2	93.2	42.0	73.1	49.6	25.5	61.2	53.6	406	4.5	1.5	76	532	120.5	42.7	0.1	3	4	7	16	5.9	0.5
	May	BOURNEMOUTH.	29.787	0.688	85.2	93.2	42.0	73.1	49.6	25.5	61.2	53.6	406	4.5	1.5	76	532	120.5	42.7	0.1	3	4	7	16	5.9	0.5
	June	BOURNEMOUTH.	29.787	0.688	85.2	93.2	42.0	73.1	49.6	25.5	61.2	53.6	406	4.5	1.5	76	532	120.5	42.7	0.1	3	4	7	16	5.9	0.5
	April	BOURNEMOUTH.	29.787	0.688	85.2	93.2	42.0	73.1	49.6	25.5	61.2	53.6	406	4.5	1.5	76	532	120.5	42.7	0.1	3	4	7	16	5.9	0.5
	May	BOURNEMOUTH.	29.787	0.688	85.2	93.2	42.0	73.1	49.6	25.5	61.2	53.6	406	4.5	1.5	76	532	120.5	42.7	0.1	3	4	7	16	5.9	0.5
	June	BOURNEMOUTH.	29.787	0.688	85.2	93.2	42.0	73.1	49.6	25.5	61.2	53.6	406	4.5	1.5	76	532	120.5	42.7	0.1	3	4	7	16	5.9	0.5
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	April	BOURNEMOUTH.	29.787	0.688	85.2	93.2	42.0																			

ALDERSHOT CAMP.  
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WEYBRIDGE HEATH (Surrey).  
WILLIAM F. HAMMOND, Esq., F.M.S.  
BATH ROYAL LITERARY AND SCIENTIFIC INSTITUTION.  
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ROYSTON (Hertfordshire).  
HALE WORTHAM, Esq., F.R.S.  
CARDINGTON (near Bedford).  
MR. J. MACLAREN, F.M.S., Asst. to S.C. WHITEHEAD, Esq., F.R.S., F.M.S.  
LAMPETER (Cardiganshire).  
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C. M. GIBSON, Esq., F.M.S.  
WISBECH.  
S. H. MILLER, Esq., F.R.S.

Meteorological Table, Quarter ending June 30th, 1868.

April	29	29.788	1.784	69.0	97.5	28.5	59.9	44.3	19.6	47.2	44.5	294	3.4	0.4	92	544	—	1.7	8	5	7	10	4.5	2.9
May	29	29.783	0.784	73.5	97.0	23.5	59.9	44.3	19.6	47.2	44.5	294	3.4	0.4	92	544	—	1.7	8	5	7	10	4.5	2.9
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April	29	29.783	0.784	73.5	97.0	23.5	59.9	44.3	19.6	47.2	44.5	294	3.4	0.4	92	5								



Year 1868.	Month.	Names of Stations and Observers.	Pressure of Atmosphere in Month.			Temperature of Air in Month.			Mean Temperature.		Vapour.		Mean Weight of Air.		Mean Reading of Thermometer.		Wind.			Rain.	
			Mean.	Range.	Highest.	Lowest.	Range.	Mean.	Air.	Dew Point.	Elastic Force.	In a cubic foot of Air.	Short of Saturation.	Mean.	Maximum in Days of Sun.	Minimum on Grass.	Strength.	Relative Proportion of	Mean Amount of Cloud.	Number of Days in fall.	Amount collected.
April	29-785	LLANDUDNO, J. NICOL, Esq., M.D.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
May	29-855	GRANTHAM, JAMES WILLIAM JEANES, Esq., M.R.C.S., F.R.S., F.M.S.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
June	29-925	DERBY, JOHN DAVIS, Esq.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
April	29-785	HOLKHAM, JOHN DAVIDSON, Esq., Assistant to the EARL OF LEICESTER.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
May	29-855	NOTTINGHAM, M. O. TARBOTTON, Esq., C.E., F.G.S.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
June	29-925	BOSTON, A. M. ADAMS, Esq., M.D., F.M.S.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
April	29-785	NORTON-IN-MALES, REV. FREDERICK SILVER, M.A., F.R.A.S., F.M.S.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
May	29-855	HAYWARD, T. M.D., F.R.A.S., F.G.S.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
June	29-925	KINGSLEY PARSONAGE, REV. R. TYAS, M.A., F.M.S.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
April	29-785	WAKEFIELD PRISON, WILLIAM RALPH MINNER, Esq., M.R.C.S., F.R.S., F.M.S., F.A.S.L.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
May	29-855	LIVERPOOL OBSERVATORY, JOHN HARTUP, Esq., F.R.A.S.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
June	29-925	HALIFAX (Vetch), JOSEPH GARDNER, Esq., F.G.S., F.M.S.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
April	29-785	THURFALL, RUTLAND, JOSEPH GARDNER, Esq., F.G.S., F.M.S.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
May	29-855	LEEDS PHILOSOPHICAL HALL, HENRY DUNN, Esq., A.L.S.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
June	29-925	OTLEY, H. W. THORNS, Esq.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
April	29-785	YORK, FELDEN THORPE, Esq.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
May	29-855	RIPON, REV. F. W. STOW, M.A., F.M.S.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
June	29-925	COCKERMOUTH, H. DODGSON, Esq., M.D., F.R.A.S., F.M.S.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
April	29-785	ALLENHEADS, T. SORWICK, Esq., M.A., F.R.S., F.G.S., F.M.S., F.M.S.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
May	29-855	ST. PAUL'S RECTORY, REV. F. REDFORD, M.A., F.R.A.S., F.M.S.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
June	29-925	CARLISLE, I. CARLISLE, Esq., F.M.S.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
April	29-785	BYWELL, MR. JOHN DAWSON, Esq., M.A., F.R.S., F.G.S., F.M.S., F.R.M.S.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
May	29-855	NORTH SHIELDS, ROBERT SPENCE, Esq.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
June	29-925	MILTON TOWN (Banbridge, Ireland), JOHN SMITH, Esq., M.A., M.L.C.E.I., F.M.S.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
April	29-785	CULLADEN, A. FORBES, Esq., F.M.S.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
May	29-855		30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
June	29-925		30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025

Year 1868.	Month.	Names of Stations and Observers.	Pressure of Atmosphere in Month.			Temperature of Air in Month.			Mean Temperature.		Vapour.		Mean Weight of Air.		Mean Reading of Thermometer.		Wind.			Rain.	
			Mean.	Range.	Highest.	Lowest.	Range.	Mean.	Air.	Dew Point.	Elastic Force.	In a cubic foot of Air.	Short of Saturation.	Mean.	Maximum in Days of Sun.	Minimum on Grass.	Strength.	Relative Proportion of	Mean Amount of Cloud.	Number of Days in fall.	Amount collected.
April	29-785	LEEDS PHILOSOPHICAL HALL, HENRY DUNN, Esq., A.L.S.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
May	29-855	OTLEY, H. W. THORNS, Esq.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
June	29-925	YORK, FELDEN THORPE, Esq.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
April	29-785	RIPON, REV. F. W. STOW, M.A., F.M.S.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
May	29-855	COCKERMOUTH, H. DODGSON, Esq., M.D., F.R.A.S., F.M.S.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
June	29-925	ALLENHEADS, T. SORWICK, Esq., M.A., F.R.S., F.G.S., F.M.S., F.M.S.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
April	29-785	ST. PAUL'S RECTORY, REV. F. REDFORD, M.A., F.R.A.S., F.M.S.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
May	29-855	CARLISLE, I. CARLISLE, Esq., F.M.S.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
June	29-925	BYWELL, MR. JOHN DAWSON, Esq., M.A., F.R.S., F.G.S., F.M.S., F.R.M.S.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
April	29-785	NORTH SHIELDS, ROBERT SPENCE, Esq.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
May	29-855	MILTON TOWN (Banbridge, Ireland), JOHN SMITH, Esq., M.A., M.L.C.E.I., F.M.S.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025
June	29-925	CULLADEN, A. FORBES, Esq., F.M.S.	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025	30.025

Second rain-gauges are placed—At Aldenham Camp, at the height of 25 feet above the ground, the amount collected was 2.74 inches; at Enfield Lansdowne, 20 feet, 2.08 inches; at Stratfield Turgis, 3 feet, 3.79 inches; at Oxford, 24 feet, 3.04 inches; at Cardington, 36 feet, 2.00 inches; at Walsingham, 25 feet, 2.16 inches; at Broom's Barn, 21 feet, 2.16 inches; at Kingsley Parsonage, 13 feet, 2.08 inches; at Eccles, 34 feet, 2.41 inches; at Halifax, 30 feet, 2.93 inches; at Ripon, 3 feet, 2.16 inches; at Milnrow, Banbridge (Ireland), 40 feet, 4.45 inches. The amount collected at Eastbourne, 80 feet above the level of the sea, was 3.46 inches; at Beachy Head, 100 feet,



NAMES OF STATIONS.	Mean Pressure or dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	Mean Estimated Strength.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.	Mean State of the Sky.
																			Relative Proportion of.						
																			N.	E.	S.	W.			
Guernsey	29.704	73.53	57.35	16.18	66.0	50.0	8.3	9.3	60.0	50.1	in.	kr.	gr.	68.8	639.	—	—	—	13.8	5	7	10	4.3	3.4	3.4
Helston	29.747	74.83	03.33	70.50	68.4	38.9	3.247	—	10.8	52.8	40.1	331	4.0	0.6	88	639	—	—	13.8	5	7	10	4.3	3.4	3.4
Truro	29.675	80.06	26.54	06.48	84.7	39.3	—	—	15.2	55.2	48.3	340	3.8	1.1	73	639	80.4	43.9	2.3	6	7	11	4.6	4.7	4.7
Sidmouth	29.725	75.29	44.57	63.04	48.5	55.4	—	—	17.5	54.7	49.1	365	4.1	0.8	85	639	—	—	2.1	9	6	5	10	—	5.5
Barnstaple	29.701	82.5	30.52	55.63	14.6	37.8	18.2	55.4	48.9	—	—	341	3.8	0.7	85	542	—	—	1.7	7	2	6	15	—	—
Osborne	29.690	85.30	9.54	3.67	45.42	12.2	55.4	48.9	—	—	—	378	4.2	1.3	76	639	—	—	1.2	3	5	9	13	—	—
Bournemouth	29.760	79.3	24.7	50.64	6.46	43.39	18.5	54.3	46.2	—	—	320	3.6	1.2	87	635	111.9	29.7	0.3	6	8	10	5.8	4.4	4.4
Worthing	29.704	79.9	30.2	49.7	65.4	47.437	18.5	54.3	46.9	—	—	363	4.1	1.2	75	639	114.9	41.6	—	5	8	9	11	4.7	4.9
Wilton	29.678	80.5	32.2	48.67	46.7	46.7	18.5	54.3	46.9	—	—	352	4.0	0.9	82	540	—	—	1.6	5	7	10	5.3	3.4	3.4
Tunbridge Wells	29.735	83.5	21.1	50.9	53.8	42.7	13.3	52.7	46.2	—	—	341	3.9	1.0	79	537	120.4	41.3	1.4	7	4	7	12	3.8	4.6
Albshott Camp	29.648	83	03.61	1.48	5.9	43.7	19.3	53.5	47.6	—	—	317	3.6	1.5	71	632	133.9	42.2	1.7	6	10	8	—	—	—
Weybridge Heath	29.755	89.1	24.84	2.68	44.2	2.49	19.3	53.5	47.6	—	—	324	3.8	1.3	75	532	111.2	42.3	1.3	6	5	10	1.9	4.6	4.6
Bath R. L. & S. Inst.	29.728	80.8	23.05	5.58	7.43	45.1	23.5	54.5	47.6	—	—	337	3.7	1.2	75	538	109.4	40.2	0.2	7	8	9	3.4	3.9	3.9
Enfield Landworks, Bath	29.716	79.3	27.0	53.64	4.8	47.7	22.0	52.9	43.5	—	—	338	3.2	1.4	71	534	119.3	44.1	—	—	—	—	—	—	
Strathfield Turris	29.742	88.5	23.05	5.58	7.43	45.1	23.5	54.5	47.6	—	—	337	3.7	1.2	75	538	104.2	42.2	0.2	8	7	9	8	2.5	3.5
Marlborough College	29.773	81.8	19.4	46.2	6.45	42.5	17.7	52.0	43.5	—	—	338	3.2	1.4	71	534	119.3	44.1	—	—	—	—	—	—	
Royal Observatory	29.713	88	28.59	59.1	10.85	45.7	15.5	52.2	45.8	—	—	329	3.7	1.4	73	538	126.1	40.1	0.4	6	5	9	2.5	5.4	5.4
Battersea	29.744	85.3	28.05	3.65	43.3	45.4	43.3	20.4	54.8	45.9	—	322	3.6	1.3	74	540	83.0	37.6	1.8	3	4	14	9	2.8	5.1
Streatham Vicarage	29.745	85.8	22.63	2.65	44.1	45.3	24.8	54.8	45.9	—	—	341	3.5	1.4	73	540	79.2	40.4	1.8	6	8	10	—	—	—
London (St. Dunst. Sq.)	29.734	88	03.2	53.06	48.4	43.4	—	—	—	—	—	330	3.7	1.6	72	538	—	—	3.7	5	9	11	—	—	—
Camden Town	29.693	87	30.57	3.68	44.6	44.4	21.6	53.7	47.3	—	—	330	3.7	1.7	67	538	—	—	—	—	—	—	—	—	
Oxford	29.696	84.6	23.7	60.96	9.45	44.0	21.9	53.5	48.7	—	—	330	3.7	1.6	72	536	110.0	41.6	—	10	5	9	10	—	—
Gloucester	29.732	89.5	27.3	60.67	46.0	42.9	20.7	56.1	48.7	—	—	348	3.9	1.3	75	533	119.3	40.9	0.9	6	5	9	10	4.8	3.7
Royston	29.652	88.5	22.5	66.3	48.6	44.4	18.8	54.0	56.6	44.0	—	312	3.3	1.9	65	537	115.2	45.0	1.1	6	6	5	13	3.6	4.6
Cardington	29.747	83.03	51.0	32.4	67.43	45.8	24.9	53.7	46.0	—	—	329	3.7	1.4	73	538	—	—	—	—	—	—	—	—	
Lampeter	29.747	83.03	51.0	32.4	67.43	45.8	24.9	53.7	46.0	—	—	329	3.7	1.4	73	538	—	—	—	—	—	—	—	—	
Norwich	29.702	87.0	31.0	56.0	68.45	39.8	17.5	55.4	48.4	—	—	299	3.3	1.6	69	539	—	—	—	—	—	—	—	—	
Wisbech	29.678	81.0	32.0	49.0	67.43	45.7	23.5	54.0	49.8	—	—	328	3.6	1.6	71	538	125.0	40.7	0.3	6	8	10	3.6	4.7	4.7
Llandudno	29.712	87.0	26.7	60.36	5.46	43.2	19.8	54.8	45.7	—	—	315	3.6	1.2	75	539	—	—	6.5	2	6	2	20	—	—
Grantham	29.722	86.0	26.0	60.0	6.2	44.3	20.3	53.5	44.1	—	—	265	3.3	1.9	61	537	—	—	40.6	0.2	5	9	11	3.0	6.1
Merby	29.714	85.0	27.45	57.64	44.0	45.1	18.4	54.1	44.4	—	—	259	3.3	1.9	64	536	—	—	—	—	—	—	—	—	
Northingham	29.674	87.3	25.86	1.58	14.4	34.7	23.8	54.4	46.6	—	—	322	3.6	1.3	74	535	111.5	38.9	0.3	6	12	5	—	—	—
Boston	29.673	88.5	29.0	59.8	6.7	44.6	24.4	61.1	3.56	54.0	—	316	3.6	1.7	60	537	109.0	40.9	1.2	7	12	1.9	5.8	5.8	
Hawarden	29.693	85.7	24.6	61.05	3.65	44.3	13.7	53.9	44.5	—	—	307	3.5	1.3	73	536	127.7	38.7	2.6	8	8	11	1.4	5.1	
Kingsley Parsonage	29.713	85.7	27.8	57.9	64.8	44.6	21.5	54.1	44.4	—	—	298	3.4	1.5	70	536	124.9	35.5	0.2	4	6	10	10	—	—
Eccles	29.634	81.2	30.0	51.8	62.8	46.3	16.0	53.2	44.7	—	—	296	3.4	1.8	74	539	88.9	39.7	0.3	5	4	7	14	3.7	5.8
Liverpool Observatory	29.728	89.0	23.0	66.0	6.0	43.4	18.8	54.2	46.3	—	—	334	3.8	0.5	82	537	—	—	1.2	5	5	7	13	—	—
Wakefield	29.680	81.0	25.0	56.0	59.4	43.4	18.9	54.0	45.2	—	—	287	3.2	1.6	68	538	102.6	43.7	1.6	4	5	5	14	—	—
Halifax	29.681	81.0	25.0	56.0	59.4	43.4	18.9	54.0	45.2	—	—	287	3.2	1.6	68	538	102.6	43.7	1.6	4	5	5	14	—	—
Hull	29.681	81.0	25.0	56.0	59.4	43.4	18.9	54.0	45.2	—	—	287	3.2	1.6	68	538	102.6	43.7	1.6	4	5	5	14	—	—
Donyhurst	29.682	83.0	28.9	54.1	62.7	44.9	17.8	52.0	45.1	—	—	303	3.4	1.0	77	535	118.0	—	0.3	3	4	8	15	—	—
Leamington	29.680	81.0	25.0	56.0	59.4	43.4	18.9	54.0	45.2	—	—	287	3.2	1.6	68	538	102.6	43.7	1.6	4	5	5	14	—	—
Orkney	29.631	81.0	25.0	56.0	59.4	43.4	18.9	54.0	45.2	—	—	287	3.2	1.6	68	538	102.6	43.7	1.6	4	5	5	14	—	—
Yokley	29.724	84.5	23.0	61.5	62.8	46.1	14.0	54.7	46.3	—	—	330	3.4	1.1	75	538	—	—	1.9	3	4	4	17	—	—
Ripon	29.724	84.5	23.0	61.5	62.8	46.1	14.0	54.7	46.3	—	—	330	3.4	1.1	75	538	—	—	1.9	3	4	4	17	—	—
Cockermouth	29.669	81.8	27.3	54.51	62.4	46.0	13.8	54.0	45.2	—	—	281	3.2	1.5	69	539	125.5	39.2	0.8	3	7	4	16	—	—
Allenheads	29.705	75.4	26.0	49.4	43.8	44.2	23.8	16.2	48.4	44.4	—	297	3.4	1.2	75	541	105.6	40.2	0.3	4	3	8	15	3.3	6.6
The Rectory, Silloth	29.619	84.0	30.0	54.0	63.3	45.9	14.0	47.3	43.2	—	—	317	3.6	0.8	79	519	118.8	35.5	1.8	4	3	9	14	—	—
Carlisle	29.632	84.0	28.5	56.0	62.0	44.2	24.0	27.8	52.0	48.6	—	344	3.9	0.5	80	541	99.6	40.6	1.2	2	5	8	15	4.0	5.8
Bryndal	29.636	82.0	24.0	54.0	64.3	45.3	14.7	19.0	53.5	43.5	—	284	3.3	1.4	71	540	94.3	37.2	0.2	4	4	8	14	—	—
North Shields	29.673	79.0	29.5	43.5	53.9	45.4	33.6	14.1	51.3	43.3	—	282	3.2	1.1	75	542	—	—	4.3	5	12	—	—	—	
Miltonown, Banbridge	29.671	77.3	33.4	43.9	60.6	1.4	44.3	37.6	16.7	51.3	43.9	289	3.4	1.0	76	538	104.4	41.4	2.3	3	14	8	4.7	4.8	
Culloden	29.671	77.3	33.4	43.9	60.6	1.4	44.3	37.6	16.7	51.3	43.9	289	3.4	1.0	76	538	104.4	41.4	2.3	3	14	8	4.7	4.8	

The highest temperatures of the air were at Wilton and Leeds, 91°·0; Royston, 89°·8; Weybridge Heath and Wakefield, 89°·0; Boston, 88°·8. The lowest temperatures of the air were at Marlborough College, 19°·4; Wilton, 21°·5; Streantley Vicarage, 20°·0, and Strathfield Turgiss, Wakefield, Hull, and Ripon, 25°·0. The greatest daily ranges were at Wilton, 27°·1; Strathfield Turgiss, 26°·0; Lampeter, 24°·9; Streantley Vicarage, 24°·8; Weybridge Heath, 24°·7; Royston, 24°·7; and Cardington, 24°·0. The least daily ranges were at Guernsey, 10°·8; Culloden, 10°·9; Hawarden, 13°·7; Worthing, 13°·8; Otley, 14°·2; North Shields, 14°·4; Helston, 13°·2; and Cockermouth, 15°·6. The greatest number of rainy days were at Stonyhurst, 53; Allenheads and Culloden, 51; Cockermouth, 53; and Milbourn, 37; and Eccles, Liverpool, and Bywell, 36. The least number of rainy days were at North Shields, 11; Cardington, 12; Gloucester, 20; and Osborne, Strathfield Turgiss, Royal Observatory, Battersea, Wisbech, and Holkham, 21. The heaviest falls of rain were at Cockermouth, 7·6 in.; Silloth, 6·5 in.; Allenheads, 6·0 in.; Guernsey and Truro, 5·8 in.; and Bournemouth and Carlisle, 5·5 in. The least falls of rain were at Llandudno, 2·0 in.; Royston and Wisbech, 2·4 in.; and Grantham, Boston, and Leeds, 2·6 in.

QUARTERLY METEOROLOGICAL TABLE for different PARALLELS of LATITUDE.

[illegible]

METEOROLOGY OF ENGLAND,  
DURING THE QUARTER ENDING SEPTEMBER 30, 1868.

REMARKS ON THE WEATHER, DURING THE QUARTER ENDING 30TH OF SEPTEMBER 1868.  
By JAMES GLAISHER, Esq., F.R.S., &c., *President of The Meteorological Society.*

The weather during the whole quarter has been of the same character as in the preceding quarter, viz., remarkably fine and warm; the temperature of the air has been nearly constantly above, and at times in the month of July and at the beginning of August, to very large amounts. The average daily excess of temperatures for the 92 days ending 30th September was very nearly 4°, and for the 263 days (from 12th January to 30th September) was 3½° daily. In no year, back to 1771, has the excess of temperature been so large as this for so long a period.

The excess of temperature been so large as this for so long a period. In no year, back to the month of July was remarkably warm, the temperature of the air on the 22d day was as high as 96°·6, a higher temperature than has ever before been recorded at Greenwich: it reached 92° on two occasions, viz. on July 27th and 28th.

The mean temperature of the air recorded at Greenwich; it reached 92° on July 16th and 21st, and was 90° on two other occasions, viz., on July 20th and 27th. In 1859 the temperature once reached 93°, and in 1846 it was once 93°·3.

remarkable for its high mean temperature, being the highest, except one, of any month in the preceding 97 years. The mean temperature of the month was  $67^{\circ} \cdot 5$ , in the year 1859 it was  $68^{\circ} \cdot 1$ , and in the year 1867 it was  $67^{\circ} \cdot 5$ ; in all other years, back to 1771, it was less than  $67^{\circ}$ . The month was therefore very

temperature of the month of August was of high temperature; on the 5th day the maximum in the year 1857 it was  $90\frac{1}{2}^{\circ}$ . The mean for the month was high but not remarkably so; it was  $63^{\circ}6$ .

The month of September was warm throughout, particularly at the beginning: on the 7th day the maximum temperature recorded was 86°.

The mean for the month was  $60^{\circ} \cdot 5$ , being  $3^{\circ} \cdot 4$  of lower temperature than in 1865, and  $1^{\circ} \cdot 8$  lower than in 1815, and in all other years.

The mean temperature of the three months ending September was  $63^{\circ}0$ : for the same period in 1818 it was  $63^{\circ}5$ , and in 1815, and nearly the same as in the years 1779, 1795, 1818, 1846, and 1858, whilst in 1818 it was  $60^{\circ}$ .

The warm period began about the middle of January, comparing the monthly mean temperature of the eight months since the beginning of the year with the corresponding quarter, as in the present year.

has the mean temperature in the middle of January, comparing the monthly mean temperature in the other years as far back as we can, we find that of 1779 was  $55^{\circ} \cdot 6$ , in 1846 was  $55^{\circ} \cdot 2$ , in 1868 was  $55^{\circ} \cdot 7$ , in all other years, back to 1771, it was less than  $55^{\circ}$ . In no year, therefore, however, the mean temperature

The reading of the barometer at Greenwich on the 1st July was about 30·1 inches, and continued almost constantly above it.

... continued steadily falling till the 7th, when the reading recorded was 29° 52 inches. From the 10th to the 24th the readings were generally in defect of the average: a rapid fall from 29° 8 inches on the 20th to 29° 05 inches on the 25th August, which was the lowest recorded at Greenwich on the 1st July was about 30° 1 inches, and continued

On August 9<sup>th</sup>, 85 inches on the 22d, being accompanied by a violent gale on the 22d. On the 9th, below the average, and continued in excess till the 6th September, when a slight decrease took place, but was immediately succeeded by an increase to 80 inches.

At the average. During the last few days of the month several gales were experienced.

There were many of the southern districts was brought near to completion. Harvest came in perfectly and nearly simultaneously in all parts of the country; and the crops proved to be in such a healthy state, that cutting, carrying, thrashing, and grinding into flour followed in rapid succession. There were many of the southern districts was brought near to completion. Harvest came in perfectly and nearly simultaneously in all parts of the country; and the crops proved to be in such a healthy state, that cutting, carrying, thrashing, and grinding into flour followed in rapid succession.

many sudden deaths from sunstroke during the month. The want of water was to an extent unprecedented, so far as I can trace in this country. Pastures and grass lands were generally brown. At the same time, the weather was very hot, and the animals were suffering from heat, and this combined with the great heat, acted injuriously both on animal and vegetable life.

At the end of August the harvest was nearly completed; pastures and grass lands were of their ordinary verdant appearance, the rainfall showed the presence of the fields in a very short time, and root crops were in the ground.

The rain-fall changed the appearance of the fields in a very short time. The crops were benefited by the moisture.

commenced to yield their usual supply of water; streams and currents were filled. At satisfaction. The ground for the plough; and the potato crop was upon the whole spoken of

the mean temperature of July was  $67^{\circ}.5$ , being  $6^{\circ}.1$  higher than the average of the mean temperature of August, and  $8^{\circ}.1$  higher than the corresponding temperature of the preceding year.

The mean temperature of August was  $63^{\circ}.6$ , being  $2^{\circ}.9$  higher than the average of the preceding 97 years as far back as 1857, and higher than the corresponding temperature of September.

The mean high day temperature for the month of September was  $60^{\circ} \cdot 5$ , being  $4^{\circ} \cdot 0$  higher than the average of the year,  $2^{\circ} \cdot 9$  higher than the preceding year, and  $4^{\circ} \cdot 1$  higher than the corresponding year in 1866.

temperatures in July, August, and September were respectively  $8^{\circ} 4$ ,  $2^{\circ} 4$ , and  $1^{\circ} 8$ . The averages.

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The mean low night temperatures were respectively  $2^{\circ} \cdot 9$ ,  $1^{\circ} \cdot 9$ , and  $2^{\circ} \cdot 0$  higher than the average in July, August, and September.

Therefore the months of July, August, and September were warm, both by day and night.

The daily ranges of temperature in July, August, and September were respectively  $5^{\circ} \cdot 5$ ,  $6^{\circ} \cdot 5$ , and  $2^{\circ} \cdot 1$  greater than the averages.

The fall of rain was  $1 \cdot 3$  in. in defect in both July and September, and  $0 \cdot 1$  in. in excess in August. The fall of rain at Greenwich from 1st January to 30th September amounts to  $15 \cdot 9$  in., being  $2 \cdot 3$  in. less than the average. The fall of rain for the same period in the year 1863 was  $15 \cdot 2$  in. and in the year 1864 was  $12 \cdot 4$  in., being  $3 \frac{1}{2}$  in. less than in this year. The fall of rain in the years 1865, 1866, and 1867 was in excess in each year.

The mean temperature of the air at Greenwich in the three months ending August, constituting the three summer months, was  $64^{\circ} \cdot 4$ , being  $4^{\circ} \cdot 3$  higher than the average of the preceding 97 years.

Temperature of															Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.			
1868.															Water of the Thames.					
MONTHS.																				
Air.			Evaporation.		Dew Point.		Air—Daily Range.													
Mean.	Diff. from average of 27 years.	Diff. from average of 27 years.	Mean.	Diff. from average of 27 years.	Mean.	Diff. from average of 27 years.	Mean.	Diff. from average of 27 years.	Mean.	Diff. from average of 27 years.	Mean.	Diff. from average of 27 years.	Mean.	Diff. from average of 27 years.	Mean.	Diff. from average of 27 years.				
July	67.5	+6.1	65.9	+5.9	60.3	+3.0	54.6	+1.0	26.3	+5.5	67.9	in. 0.427	in. 0.437	grs. 4.7	grs. 4.7	grs. 4.7				
Aug.	63.6	+2.9	62.4	+2.4	58.7	+1.4	54.5	+0.7	20.1	+0.5	65.9	0.425	0.425	+0.007	+0.007	+0.007				
Sept.	60.5	+1.0	58.4	+3.4	56.1	+2.1	52.2	+1.1	20.6	+2.1	60.8	0.391	0.391	+0.010	+0.010	+0.010				
Mean	63.9	+4.3	63.9	+3.9	58.4	+2.2	53.8	+0.9	22.3	+2.7	64.9	0.414	0.414	+0.011	+0.011	+0.011				

1868.															Reading of Thermometer on Grass.				Lowest Reading at Night.		Highest Reading at Night.																																																																																																																																																																																																																																																																																																																																																																																																																																														
MONTHS.															Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.	Number of Nights it was			At or below 30°.	Between 30° and 40°.	Above 40°.	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum

NOTE.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunderstorms occurred on the 9th July at Sidmouth, Osborne, Taunton, Bath, and Oxford; on the 11th at Guernsey, Bournemouth, Weybridge Heath, Strathfield Turgiss, Streatley, London, Weybridge Heath, Oxford, and Cardington; on the 12th at Osborne, Bournemouth, Worthing, Taunton, Weybridge Heath, Strathfield Turgiss, London, and Oxford; on the 13th at Guernsey; on the 15th at Taunton, Strathfield Turgiss, Bath, Streatley, Eccles, and Halifax; on the 16th at Norwich; on the 22d at Ripon; on the 23d at Hull; on the 25th at Guernsey; on the 26th at Helston, Truro, and London; and on the 28th at Holkham, Ripon, Allenheads, and Bywell. On the 3d August at Guernsey, Helston, and Truro; on the 4th at Guernsey; on the 5th at North Shields; on the 6th at Wisbech, Grantham, Boston, Halifax, and North Shields; on the 7th at Guernsey, Leeds; on the 10th at Eccles; on the 11th at Tunbridge Wells, Royston, Norwich, Weybridge Heath, Grantham, Nottingham, Boston, Hawarden, Eccles, Liverpool, Hull, Stonyhurst, Allenheads, Silloth, Carlisle, and Bywell; on the 12th at Aldershot Camp; on the 13th at Aldershot Camp, Weybridge Heath, and Bywell; on the 14th at Aldershot Camp; on the 15th at Guernsey; on the 16th at Osborne and Wilton; on the 17th at Tunbridge Wells and Eccles; on the 18th at Hawarden; on the 22d at Boston, Hawarden, and Hull; on the 27th at Carlisle. On the 8th September at Halifax and Hull; on the 17th at Helston and Taunton; on the 18th at Osborne, Worthing, Aldershot Camp, Bath, Battersea, Oxford, and Cardington; on the 19th at Marlborough College; on the 20th at Guernsey, Cardington, Ripon, and North Shields; on the 21st at Carlisle; on the 24th at Helston; on the 25th at Streatley; on the 26th at Guernsey, Sidmouth, Osborne, Bournemouth, Wilton, Strathfield Turgiss, Marlborough College, Strathfield Turgiss, Marlborough, Battersea, Oxford, Royston, Wisbech, Boston, Hull, and Carlisle; on the 28th at Wilton; on the 29th at Guernsey, Sidmouth, Bournemouth, Wilton, and Miltown; and on the 30th at Strathfield Turgiss and Oxford.

Thunder was heard but lightning was not seen on 1st July at Streatley; on the 5th at York and Bywell; on the 9th at Wilton; on the 12th at Royston; on the 15th at London, Oxford, Carlisle, and North Shields; on the 16th at Halifax; on the 22d at Worthing and Allenheads; on the 23d at Hawarden; on the 26th at Worthing; on the 27th at Helston; and on the 28th at North Shields. On the 6th August at Bywell; on the 11th at Worthing, Royston, Cardington, and Cokermonth; on the 14th at Marlborough College; on the 15th at Hull, Ripon, Allenheads, and North Shields; on the 16th at Worthing; on the 22d at Wisbech, Holkham, and Halifax; and on the 27th at Silloth. On the 12th September at Eccles; on the 16th at Worthing; on the 17th at Guernsey;

on the 18th at Tunbridge Wells, Weybridge Heath, Strathfield Turgiss, Streatley, and Royston; on the 19th at Strathfield Turgiss and Streatley; on the 20th at Oxford, Wisbech, Halifax, and Hull; on the 21st at Weybridge Heath and Royston; on the 25th at Tunbridge Wells; on the 29th at Eccles, Stonyhurst, and Miltown; and on the 30th at Streatley, Wisbech, and Cokermonth. Lightning was seen but thunder was not heard on 13 days in July; on 8 in August; and on 11 in September.

Solar halos were seen on the 11th July at Oxford; and on the 26th at Grantham. On the 12th August at Oxford; on the 21st at Cardington; on the 24th at Oxford; and on the 29th at Weybridge Heath, Oxford, and Hawarden. On the 3d September at Wisbech; on the 11th at Oxford; on the 17th at Tunbridge Wells; on the 24th at Oxford; and on the 26th at Weybridge Heath.

Lunar halos were seen on the 26th July at Ripon; and on the 29th at Strathfield Turgiss. On the 31st at Taunton. On the 3d September at Eastbourne, Wilton, Oxford, Norwich, and Grantham; and on the 30th at bridge Heath, and Oxford; on the 25th at Bath; on the 28th at Wilton, Weybridge Heath, Oxford, Cardington, and Wisbech; and on the 30th at Halifax.

Aurora Boreales were seen on the 5th September at Cokermonth and Carlisle; on the 15th and 18th at North Shields; and on the 20th at Weybridge Heath.

Snow fell on the 25th of September at Stonyhurst.

Hail fell on 7 days during the quarter, viz., on the 15th of July; on the 11th, 22d, 24th and 27th of August; and on the 18th and 29th of September.

Fog prevailed on 47 days during the quarter, viz., 16 in July, 9 in August, and 22 in September.

Wheat cut on the 7th July at Weybridge; on the 8th at Norwich; on the 10th at Worthing and Osborne and Eastbourne; on the 13th at Strathfield Turgiss, Hawarden, and in Kent generally; on the 14th at Miltown and Culloden; on the 16th at Guernsey and Boston; on the 17th at Helston; on the 20th at Tunbridge Wells; and on the 27th at Carlisle. On the 8th August at Helston; on the 3d July at Worthing; on the 9th at Guernsey and Weybridge; on the 13th at Turgiss; on the 20th at Cardington; and on the 22d at Carlisle. On the 6th August at Strathfield Turgiss; on the 10th at Culloden; and on the 12th at Miltown.

Oats cut on the 6th July at Weybridge; on the 9th at Guernsey; on the 11th at Boston; on the 13th at Helston; on the 24th at Carlisle; on the 27th at Strathfield Turgiss; and on the 31st at Culloden. On the 4th August at Miltown.

Apple ripe on the 20th July at Hull. On the 2d August at Strathfield Turgiss; on the 10th at Boston; on the 25th at North Shields; on the 27th at Helston; and on the 28th at Miltown and Culloden.

Pear ripe on the 28th July at Miltown. On the 11th August at Helston; on the 17th at Strathfield Turgiss; and on the 30th at North Shields.

Peach ripe on the 5th August at Helston; on the 7th at Strathfield Turgiss; on the 12th at Boston; on the 27th at Miltown; and on the 28th at Culloden.

Plum ripe on the 5th August at Helston; on the 7th at Weybridge; on the 10th at Strathfield Turgiss; on the 12th at Boston; on the 20th at Culloden; and on the 22d at Miltown.

July.—The excessive drought which set in in June prevailed throughout the whole of this month. The rainfall amounted to only  $0 \cdot 397$  of an inch, being less than in any July for the last 28 years, except in 1863, when it was  $0 \cdot 340$  in. The effects of such continued dry weather have been severely felt, the drought having penetrated to the depth of fully 12 inches. While the rainfall has been so small the heat has likewise been constant, and on some days almost tropical, amounting in the shade on the 2d to  $78^{\circ}$  and in the sun to  $123^{\circ} \cdot 8$ , and on the 15th to  $78^{\circ} \cdot 1$  in the shade. The mean temperature was higher than that of any corresponding month since 1852, when it was  $62^{\circ} \cdot 17$  or  $2^{\circ} \cdot 05$  above the average in the present year. A continuance of such weather has brought forward the crops prematurely to ripeness, and the harvest of this year will be earlier than any since the unsatisfactory one of 1826. All the cereals have ripened very equally, the yield, however, is reported average in bulk. Barley and oats are both deficient. The heads are small and not well filled and the straw generally short and thin. Turnips are generally very unpromising. The early sown dry weather. The crop will, however, be a small and poor one; the hay crop has fallen far short of an average, the pastures also are everywhere burnt up and suffer greatly from the want of rain.

August.—The deficient rainfall in June and July which amounted to only  $0 \cdot 778$  in. and  $0 \cdot 397$  in. respectively, continued during the first 8 days of this month, and with a degree of heat seldom experienced in this country. The mean temperature was above the monthly average for August, while on the 4th and 5th the thermometer in the shade rose as high as  $81^{\circ} \cdot 1$  and  $80^{\circ}$ , so great a degree of heat has not been experienced in the north for a period of at least 34 years, indeed there is no authentic record of its having been exceeded within a much longer period. The country continued to suffer greatly from the long drought. After the first 10 days, however, a most seasonable and beneficial change was experienced, rain was so frequent and came down so plentifully that by the end of the month  $6 \cdot 622$  inches had fallen, a larger quantity than in any August within 28 years, except 1863, when the amount recorded was  $6 \cdot 67$  inches. The crops were nearly all safely got in in the district generally and harvest completed by the last week of the month. Wheat is on all lands a fine crop and the yield admitted to be large. Barley is various, much depending on the quality of the soil where grown, and the period of sowing. Oats on almost all farms are a small crop. The recovery of pastures has been rapid, and stock have now very generally had abundance of grass for at least two weeks. In potatoes there is an improvement, symptoms of a second growth, though still to be seen, are becoming less apparent.



# MONTHLY METEOROLOGICAL TABLE FOR THE QUARTER ENDING SEPTEMBER 30TH, 1868.

The Observations have been reduced to Mean values by Glaisher's Barometrical and Diurnal Range Tables, and the Hygrometrical results have been deduced from his fourth edition of Hygrometrical Tables.

Year 1868.	Months.	Names of Stations and Observers.	Pressure of Atmosphere in Month.			Temperature of Air in Month.			Mean Temperature.	Vapour.	Mean Reading of Thermometer.	Wind.	Mean Amount of Cloud.	Rain.									
			Mean.	Range.	Highest.	Lowest.	Range.	Mean.							In a cubic foot of Air.	Mean Degree of Humi- dity, Sat. = 100.	Maximum in Kays of Sun.	Minimum on Grass.	Relative Proportion of	Mean Amount of Ozone.			
																					In.	Out.	W.
July	29.81	0.01	78.5	54.5	24.0	62.6	57.4	472	5.2	81	8	13	9	0.4									
Aug.	29.731	0.808	81.5	51.0	30.5	66.2	59.1	451	4.9	0.7	10	7	1.1	16	0.8								
Sept.	29.497	1.068	81.5	51.0	30.5	66.2	59.1	451	4.9	0.7	10	7	1.1	16	0.8								
July	29.901	0.688	80.0	52.0	31.0	76.2	58.8	464	4.8	1.8	8	9	2.1	7	0.6								
Aug.	29.821	0.802	80.0	52.0	31.0	76.2	58.8	464	4.8	1.8	8	9	2.1	7	0.6								
Sept.	29.688	1.128	80.0	52.0	31.0	76.2	58.8	464	4.8	1.8	8	9	2.1	7	0.6								
July	30.083	0.687	80.0	52.0	31.0	76.2	58.8	464	4.8	1.8	8	9	2.1	7	0.6								
Aug.	29.901	0.910	79.0	47.0	32.0	69.5	56.0	485	5.4	0.7	8	7	1.5	14	3.5								
Sept.	29.722	1.182	79.0	47.0	32.0	69.5	56.0	485	5.4	0.7	8	7	1.5	14	3.5								
July	30.083	0.687	80.0	52.0	31.0	76.2	58.8	464	4.8	1.8	8	9	2.1	7	0.6								
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Meteorological Table, Quarterly ending September 30th, 1868.																	5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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		Range.	In.	Highest.	Lowest.	Range.		Of All Highest.	Of All Lowest.	Mean.	Daily Range.	Air.	Dew Point.	Elastic Force.			Mean.	Short of foot of Air.	Mean Degree of Humidity, Sat. = 100.	Mean Weight of a cubic foot of Air.	Maximum in Rays of Sun.	Minimum on Grass.	Estimated.	Relative Proportion of																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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July	LLANDUDNO, J. NICOL, Esq., M.D.	29.775	0.900	88.6	47.0	41.6	56.4	63.0	18.1	33.1	35.1	10	2	13	4	4.5	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7</

Year	Name of Station and Observer	Pressure of Air in Month			Temperature of Air in Month			Mean Temp.		Vapour.		Mean Reading of Thermometer		Wind		Mean Amount of Cloud	Mean Amount of Rain						
		Mean	Range	In.	Highest	Lowest	Range	All Highest	All Lowest	Mean	Dew Point	Elastic Force	Mean	Short of foot of Air	Mean Degree of Humidity, Sat. = 100			Mean Weight of a cubic foot of Air	Maximum in Days of Sun	Minimum on Grass	Estimated	Relative Proportion of N. E. S. W.	Number of Days it fell
July	OTLEY, H. W. THORNS, Esq.	29.787	0.924	29.787	55.2	67.5	55.4	16.1	60.5	53.7	3.29	29.787	29.787	29.787	29.787	29.787	29.787	29.787	29.787	29.787	29.787	29.787	29.787
Aug.	YORK, F. F. REDFORD, Esq.	29.788	0.925	29.788	55.2	67.5	55.4	16.1	60.5	53.7	3.29	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788
Sept.	RIPON, Rev. F. W. SLOW, M.A., F.M.S.	29.789	0.926	29.789	55.2	67.5	55.4	16.1	60.5	53.7	3.29	29.789	29.789	29.789	29.789	29.789	29.789	29.789	29.789	29.789	29.789	29.789	29.789
July	COCKERMOUTH, H. DODGSON, Esq., M.D., F.R.A.S., F.M.S.	29.790	0.927	29.790	55.2	67.5	55.4	16.1	60.5	53.7	3.29	29.790	29.790	29.790	29.790	29.790	29.790	29.790	29.790	29.790	29.790	29.790	29.790
Aug.	ALLENHEADS, T. SORWICK, Esq., M.A., F.R.S., F.G.S., F.R.M.S., F.M.S.	29.791	0.928	29.791	55.2	67.5	55.4	16.1	60.5	53.7	3.29	29.791	29.791	29.791	29.791	29.791	29.791	29.791	29.791	29.791	29.791	29.791	29.791
Sept.	ST. PAUL'S RECTORY, near SILLOTH, CUMBERLAND, Rev. F. REDFORD, M.A., F.R.A.S., F.M.S.	29.792	0.929	29.792	55.2	67.5	55.4	16.1	60.5	53.7	3.29	29.792	29.792	29.792	29.792	29.792	29.792	29.792	29.792	29.792	29.792	29.792	29.792
July	CARLISLE, L. CARTMILL, Esq., F.M.S.	29.793	0.930	29.793	55.2	67.5	55.4	16.1	60.5	53.7	3.29	29.793	29.793	29.793	29.793	29.793	29.793	29.793	29.793	29.793	29.793	29.793	29.793
Aug.	BYWELL, Mr. JOHN DAWSON, under the direction of T. SORWICK, Esq., M.A., F.R.S., F.G.S., F.R.M.S., F.M.S.	29.794	0.931	29.794	55.2	67.5	55.4	16.1	60.5	53.7	3.29	29.794	29.794	29.794	29.794	29.794	29.794	29.794	29.794	29.794	29.794	29.794	29.794
Sept.	NORTH SHIELDS, ROBERT SPENCE, Esq.	29.795	0.932	29.795	55.2	67.5	55.4	16.1	60.5	53.7	3.29	29.795	29.795	29.795	29.795	29.795	29.795	29.795	29.795	29.795	29.795	29.795	29.795
July	MILTOWN (Banbridge, Ireland), JOHN SMYTH, Esq., M.A., M.I.C.E.L., F.M.S.	29.796	0.933	29.796	55.2	67.5	55.4	16.1	60.5	53.7	3.29	29.796	29.796	29.796	29.796	29.796	29.796	29.796	29.796	29.796	29.796	29.796	29.796
Aug.	CULLODEN, A. FORBES, Esq., F.M.S.	29.797	0.934	29.797	55.2	67.5	55.4	16.1	60.5	53.7	3.29	29.797	29.797	29.797	29.797	29.797	29.797	29.797	29.797	29.797	29.797	29.797	29.797
Sept.		29.798	0.935	29.798	55.2	67.5	55.4	16.1	60.5	53.7	3.29	29.798	29.798	29.798	29.798	29.798	29.798	29.798	29.798	29.798	29.798	29.798	29.798

Second Rain-gauges are placed — At Wetherby, at the bottom of the page.

Second Rain-gauges are placed—At Worthing, at the height of 1 foot above the ground, the amount collected was 0.78 inches; at Aldershot Camp, 25 feet, 0.75 inches; at Stratfield Turgis, 8 feet, 0.82 inches; at Guildhall, 51 feet, 10.28 inches; at Cardington, 36 feet, 5.12 inches; at Witley, 35 feet, 5.35 inches; at Nottingham, 25 feet, 6.02 inches; at Bostons, 80 feet above the level of the sea, 7.84 inches; at Barmston, 40 feet, 5.62 inches; and at Baun Reservoir (Ireland), at 440 feet, was 9.90 inches.



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	WIND.				Mean Amount of Rain.	Mean Amount of Cloud.		
																		Relative Proportion of							
																		N.	E.	S.	W.				
Guernsey	29.494	81.5	50.0	31.5	67.7	26.2	9.9	60.7	55.9	44.8	5.0	0.9	85	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Helston	29.509	86.0	48.0	38.0	72.2	27.5	9.3	60.4	55.3	44.4	5.0	1.3	80	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Truro	29.434	85.0	44.0	41.0	71.7	25.5	9.3	60.7	55.9	44.8	5.0	0.9	85	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Sidmouth	29.535	80.2	46.3	33.9	70.0	25.0	9.5	60.5	55.0	44.0	5.0	1.1	85	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Barnstaple	29.508	87.4	44.0	43.4	73.1	25.8	9.0	60.1	55.3	44.1	5.0	1.4	77	531	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Osborne	29.478	90.6	44.2	46.4	74.9	25.3	9.3	60.3	55.3	44.1	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Bournemouth	29.517	83.0	44.7	38.3	71.8	25.4	8.3	61.7	56.3	45.2	5.0	1.6	75	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Eastbourne	29.520	86.7	46.7	40.0	71.8	25.5	8.3	61.7	56.3	45.2	5.0	1.6	75	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Worthing	29.435	83.0	46.7	36.3	70.9	25.7	8.3	61.8	56.3	45.0	5.0	1.6	76	529	521	128	48	2	0	8	5	8	10	8	3.9
Taunton	29.512	94.4	43.9	50.5	75.4	24.7	9.4	62.0	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Wilton	29.497	94.0	43.9	50.5	75.4	24.7	9.4	62.0	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Tunbridge Wells	29.489	93.8	43.9	50.5	75.4	24.7	9.4	62.0	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Aldershot Camp	29.567	95.0	38.0	57.0	75.6	22.0	9.0	62.2	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Weybridge Heath	29.524	90.5	43.2	47.3	72.7	24.4	8.0	61.8	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Bath R. L. & S. Inst.	29.582	95.9	38.8	57.1	75.3	21.5	8.5	62.3	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Stratfield Turgiss	29.544	89.8	38.8	51.0	71.2	25.0	9.4	62.0	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Marlborough College	29.529	96.6	43.9	50.5	75.4	24.7	9.4	62.0	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Royal Observatory	29.458	96.0	43.9	50.5	75.4	24.7	9.4	62.0	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Guildhall	29.458	96.0	43.9	50.5	75.4	24.7	9.4	62.0	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Streatham Viarage	29.601	90.1	39.8	50.9	73.6	24.7	9.4	62.0	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Camden Town	29.569	93.3	43.9	50.5	75.4	24.7	9.4	62.0	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Oxford	29.498	94.0	41.0	53.0	74.9	24.1	8.4	61.8	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Gloucester	29.564	95.9	38.8	57.1	75.3	21.5	8.5	62.3	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Royston	29.544	95.9	38.8	57.1	75.3	21.5	8.5	62.3	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Cardington	29.553	95.4	38.0	57.1	75.6	22.0	9.0	62.2	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Lampeter	29.620	89.8	38.8	51.0	71.2	25.0	9.4	62.0	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Norwich	29.566	87.8	44.2	46.4	74.9	25.3	9.3	60.3	55.3	44.1	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Wisbech	29.522	92.4	42.7	49.7	73.9	23.5	8.5	62.4	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Llandudno	29.522	92.4	42.7	49.7	73.9	23.5	8.5	62.4	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Grantham	29.504	90.6	44.4	46.2	71.7	24.1	8.4	61.8	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Derby	29.517	92.0	44.0	48.0	73.0	23.0	8.0	61.0	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Nottingham	29.503	94.3	40.1	54.2	75.0	21.6	8.4	61.8	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Boston	29.517	94.5	43.5	51.0	71.8	24.4	8.4	61.8	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Hawarden	29.512	89.5	44.0	45.5	69.9	27.3	8.5	62.4	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Eccles	29.549	91.3	38.7	52.6	71.7	25.2	9.4	62.0	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Halifax	29.529	86.0	33.0	53.0	67.0	20.0	8.0	60.0	55.3	44.1	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Hull	29.516	90.0	33.0	53.0	67.0	20.0	8.0	60.0	55.3	44.1	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Stonyhurst	29.533	88.1	40.0	48.1	70.6	23.2	8.4	61.8	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Leeds	29.477	86.0	41.5	54.5	75.9	23.5	8.5	62.4	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Otley	29.521	88.2	44.1	39.1	67.6	24.4	8.0	61.0	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Ripon	29.509	89.0	33.0	53.0	67.0	20.0	8.0	60.0	55.3	44.1	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Cockermouth	29.509	89.0	33.0	53.0	67.0	20.0	8.0	60.0	55.3	44.1	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
The Rectory, Silloth	29.527	89.1	34.4	54.8	69.5	22.1	8.5	62.4	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Carlisle	29.521	89.0	33.0	53.0	67.0	20.0	8.0	60.0	55.3	44.1	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
North Shields	29.551	83.3	45.0	38.3	63.5	22.8	8.5	62.4	56.3	45.0	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	
Miltoyn, Ireland	29.532	83.5	36.0	47.5	67.0	20.0	8.0	60.0	55.3	44.1	5.0	1.8	73	528	50.0	1.3	80	528	1.4	10	7	6	8	4.1	

The highest temperatures of the air were at the Royal Observatory, 96°·6; Stratfield Turgiss, and Royston, 95°·9; Cardington, 95°·0; Weybridge Heath, 95°·0; and Boston, 94°·5. The lowest temperatures of the air were at Halifax, 33°·0; Carlisle, 33°·0; and Weybridge Heath, 34°·3; Lampeter and Hull, 35°·0; and Cockermouth, 35°·8. The greatest daily ranges were at Wilton, 28°·7; Streatham Viarage, 28°·7; Lampeter, 24°·2; Stratfield Turgiss, 23°·9; Weybridge Heath, 23°·6; and Nottingham, 23°·4. The least daily ranges were at Cockermouth, 9°·9; Hawarden, 12°·6; North Shields, 12°·7; Otley, 13°·2; Guildhall, 13°·3; and Worthing, 13°·8. The greatest number of rainy days were at Wilton, 20; Silloth, 21; Wisbech and Boston, 23; Norwich and Otley, 24; and Guildhall, Llandudno, and Leeds, 25. The heaviest falls of rain were at Wilton, 11·9 in.; Marlborough College, 10·9 in.; Taunton, 10·4 in.; Stratfield Turgiss, 10·0 in.; Lampeter, 9·9 in.; and Silloth, 9·7 in. The least falls of rain were at Llandudno, 3·8 in.; Guildhall and Camden Town, 4·3 in.; Barnstaple and Leeds, 4·3 in.; and Silloth, Royal Observatory and Derby, 5·1 in.

QUARTERLY METEOROLOGICAL TABLE for different PARALLELS of LATITUDE.

PARALLELS OF  LATITUDE, &c.		CLIMATE TABLE for different PARALLELS of LATITUDE.																							
		Mean Pressure of dry Air reduced to the level of the Sea.	Mean of all Highest Read- ings of the Thermometer.	Mean of all Lowest Read- ings of the Thermometer.	Mean Range of Tempera- ture in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Max- imum in Rays of Sun.	Mean Reading of Min- imum on Grass.	WIND.				Mean Amount of Cloud.	Mean Amount of Rain.	
																			Relative Pro- portion of						
																			N.	E.	S.	W.			
Guernsey	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Devon and Cornwall	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lisle of Wight	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South of latitude 51°	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Between 51° and 52°	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
the 52° and 53°	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
latitudes 53° and 54°	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
54° and 55°	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North Shields	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Milford, Bantridge (Ireland)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Temperature of														Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
1868. MONTHS.		Air.		Evaporation.		Dew Point.		Air— Daily Range.		Water of the Thames.							
		Mean.	Diff. from average of 27 years.	Diff. from average of 27 years.	Mean.	Diff. from average of 27 years.	Mean.	Diff. from average of 27 years.	Mean.	Diff. from average of 27 years.	Mean.	Diff. from average of 27 years.	Mean.	Diff. from average of 27 years.			
Oct.	-	47.9	0	-1.8	-2.6	46.2	-2.3	44.4	0	0	0	0	in.	in.	grs.	grs.	
Nov.	-	41.5	0	-0.9	-2.5	39.8	-1.8	37.6	-2.0	16.7	+2.1	50.8	0.293	-0.024	3.3	3.3	
Dec.	-	46.0	0	+0.9	+5.6	44.6	+5.7	43.1	-2.2	10.8	-1.0	43.4	0.225	-0.026	2.6	2.6	
Mean	-	45.1	0	+1.4	+0.2	43.5	+1.5	41.7	+0.6	12.3	+0.3	46.1	0.278	+0.055	3.2	3.2	

1868. MONTHS.		Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.	Reading of Thermometer on Grass.			
		Mean.	Diff. from average of 27 years.	Mean.	Diff. from average of 27 years.	Mean.	Diff. from average of 27 years.	Amount.	Diff. from average of 27 years.		Number of Nights it was			Lowest Reading at Night.
		Mean.	Diff. from average of 27 years.	Mean.	Diff. from average of 27 years.	Mean.	Diff. from average of 27 years.	Amount.	Diff. from average of 27 years.	Miles.	At or below 30°.	Between 30° and 40°.	Above 40°.	Lowest Reading at Night.
Oct.	-	88	+1	in.	in.	grs.	grs.	in.	in.	298	6	21	4	0
Nov.	-	87	-1	29.792	+0.095	543	+4	2.6	-0.2	298	13	16	1	20.5
Dec.	-	90	+2	29.836	+0.073	552	-4	1.2	-1.2	284	4	14	13	18.0
Mean	-	88	+1	29.800	-0.095	544	-5	Sum 9.2	Sum +2.1	Mean 321	Sum 23	Sum 51	Sum 18	Lowest 18.0

NOTE.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunderstorms occurred on the 7th October at Hull; on the 16th at Stonyhurst and North Shields; on the 17th at Eastbourne and Stonyhurst; on the 19th at Truro; and on the 23d at Eccles and Liverpool. On the 5th November at Llandudno. On the 14th December at Bath; on the 15th at Eastbourne; on the 16th at Guernsey and Osborne; on the 22d at Truro and Bournemouth; on the 23d at Guernsey, Truro, and Wilton; on the 24th at Guernsey, Helston, Osborne, Worthing, Tunbridge Wells, and Bath; on the 25th at Helston; on the 26th at Llandudno and Liverpool; on the 27th at Guernsey, Sidmouth, Taunton, Bath, and Stonyhurst; on the 28th at Truro, Osborne, Worthing, Aldershot Camp, London, Halifax, and Stonyhurst.

Thunder was heard but lightning was not seen on the 17th October at Stonyhurst; on the 16th at Stonyhurst and Allenheads; and on the 23d at Hawarden. On the 14th December at Hawarden; on the 16th at Streatly Vicarage; on the 24th at Royston; and on the 29th at Strathfield Turgiss and Allenheads.

Lightning was seen but thunder was not heard on the 7th October at Oxford; on the 16th at Helston and Allenheads; on the 17th at Allenheads; on the 21st at Wisbech; on the 23d at Stonyhurst and Allenheads; and on the 26th and 27th at Culloden. On the 4th November at Halifax; on the 5th at Stonyhurst; on the 9th at Guernsey; and on the 14th at Helston and Culloden. On the 5th December at Cardington; on the 7th at Bath; on the 10th at Bournemouth; on the 13th at Helston and Oxford; on the 14th at Helston, Truro, Bournemouth, Taunton, Oxford, and Eccles; on the 15th at Bournemouth; on the 16th at Halifax; on the 18th at Bournemouth and Wilton; on the 22d at London; on the 24th at Eastbourne; on the 26th at Wisbech and Hawarden; on the 27th at Strathfield Turgiss; on the 28th at Helston and Eccles; and on the 29th at Halifax.

Solar halos were seen on the 5th October at Lampeter; on the 22d at Lampeter and Hawarden; on the 26th at Oxford; on the 27th at Weybridge Heath; on the 28th at Weybridge Heath, Oxford, Lampeter, Wisbech, Grantham, Hawarden, and Eccles; on the 30th at Oxford; and on the 31st at Culloden. On the 20th November at Tunbridge Wells, Weybridge Heath, and Hawarden; on the 25th at Tunbridge Wells; and on the 29th at Grantham. On the 7th December at Worthing, Oxford, and Cardington; on the 17th at Oxford and Grantham; and on the 28th at Grantham.

Lunar halos were seen on the 2d October at Wisbech and Halifax; on the 3d at Bournemouth; on the 18th at Truro; on the 22d at Aldershot Camp and Royston; on the 29th at Bournemouth and Weybridge Heath; and on the 30th at Oxford. On the 1st November at Taunton; on the 2d at Hull; on the 6th at Eccles; on the 20th at Worthing, London, and Grantham; on the 23d at London; on the 24th at Taunton and Bath; on the 25th at Worthing and Boston; on the 28th at Winchester and Stonyhurst; and on the 29th at Wisbech and Grantham. On the 3d, 4th, 19th, and 20th December at London; on the 22d at Grantham and Stonyhurst; on the 23d at Taunton and North Shields; on the 24th at Weybridge Heath and Oxford; on the 26th at Weybridge Heath; on the 27th at Strathfield Turgiss, Grantham, and North Shields; and on the 28th at Oxford.

Aurora Boreales were seen on the 6th, 7th, and 18th October at Culloden; on the 19th at Halifax, Cockermouth, Silloth, Carlisle, Bywell, and Culloden; on the 20th at Culloden; on the 21st at Grantham, Halifax, Carlisle, and Bywell; and on the 22d at Weybridge Heath, Royston, Hull, and Bywell. On the 8th and 9th November at Culloden; and on the 20th at Streatly Vicarage. On the 14th December at Hawarden.

Snow fell at different places on October 16th, 17th, 18th, 19th, 20th, 21st, and 29th. On November 4th, 5th, 6th, 7th, 8th, 9th, 10th, 15th, 20th, 21st, and 23d. On December 16th, 19th, 20th, 24th, 26th, 28th, 29th, 30th, and 31st.

Hail fell on 32 days during the quarter, viz., 9 in October; 8 in November; and 15 in December. Fog was prevalent on 66 days during the quarter, viz., 22 in October; 23 in November; and 21 in December.

The Lime leafless on the 17th October at Strathfield Turgiss; on the 22d at Boston and Hull; on the 24th at Wisbech and Helston; on the 25th at Marlborough College; and on the 30th at Oxford. On the 2d of November at Weybridge Heath.

The Horse Chestnut leafless on the 8th October at Helston; on the 16th at Hull; on the 20th at Oxford; on the 22d at Boston; on the 24th at Strathfield Turgiss; on the 25th at Marlborough College and Spital; and on the 30th at Weybridge Heath.

The Common Poplar leafless on the 12th October at Helston; and on the 30th at Boston. On the 2d November at Hull; on the 3d at Weybridge Heath; and on the 7th at Llandudno.

The Hawthorn leafless on the 7th October at Helston; and on the 30th at Boston. On the 4th November at Weybridge Heath; on the 5th at Llandudno; and on the 24th at Hull.

Woodcock arrived on the 6th October at Helston; on the 15th at Cardington; on the 24th at Hawarden; and on the 29th at Strathfield Turgiss. On the 3d November at Taunton; and on the 5th at Guernsey.

Sealions departed on the 3d October at Hawarden; on the 6th at Eastbourne; on the 10th at Hull; and on the 18th at Weybridge Heath. On the 3d November at Taunton; on the 11th at Holkham; and on the 12th at Osborne.



## MONTHLY METEOROLOGICAL TABLE FOR THE QUARTER ENDING DECEMBER 31st, 1868.

The Observations have been reduced to Mean values by Glaisher's Barometrical and Diurnal Range Tables, and the Hygrometrical results have been deduced from his fourth edition of Hygrometrical Tables.

Year 1868.	Months.	Names of Stations and Observers.	Pressure of Atmosphere in Month.		Temperature of Air in Month.				Mean Temperature.		Vapour.		Mean Reading of Thermometer.		Wind.			Mean Amount of Cloud.	Rain.		
			Mean.	Range.	Highest.	Lowest.	Range.	Mean.		Air.	Dew Point.	Elastic Force.	In a cubic foot of Air.		Mean Degree of Humidity, Sat., = 100.	Mean Weight of a cubic foot of Air.	Relative Proportion of				
								Of all Highest.	Of all Lowest.				Short of Saturation.	N.			E.			S.	W.
Oct.	29	GUERNSEY.	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	
Nov.	29	SAMUEL ELLIOTT HOSKINS, Esq., M.D., F.R.S., F.M.S.	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	
Dec.	29	HELSTON.	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	
Oct.	29	MATTHEW P. MOTTE, Esq., M.R.C.S.	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	
Nov.	29	TRURO.	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	
Dec.	29	C. BAHAM, Esq., M.D., F.M.S.	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	
Oct.	29	SIDMOUTH.	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	
Nov.	29	J. J. MACKENZIE, Esq., M.B., F.M.S.	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	
Dec.	29	BAINSTAPLE.	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	
Oct.	29	T. MACKRELL, Esq.	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	
Nov.	29	OSBORNE.	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	
Dec.	29	J. R. MANN, Esq.	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	
Oct.	29	BOURNEMOUTH.	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	
Nov.	29	W. S. FAULA, Esq., M.D., F.M.S.	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	
Dec.	29	BOURNEMOUTH.	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	
Oct.	29	T. A. COMPTON, Esq., M.D., B.A., F.M.S.	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	
Nov.	29	EASTBOURNE.	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	
Dec.	29	MISS W. L. HALL.	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	
Oct.	29	WORTHING.	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	
Nov.	29	W. J. HARRIS, Esq., M.R.C.S.	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	
Dec.	29	F. M.S.	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	
Oct.	29	TAUNTON.	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	
Nov.	29	REV. W. TUCKER, F.M.S.	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	
Dec.	29	WYBOR HOUSE, WEST BROMWICH.	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	

ALDERSHOT CAMP.	JOHN ARKOLD, M.S.C., F.M.S.
WEST HARTREE VICARAGE.	Rev. R. TAYLOR, M.A., LL.D., F.M.S.
WYBRIDGE HEATH (Surrey).	WILLIAM HARRISON, Esq., F.M.S.
BATH ROYAL LITERARY AND SCIENTIFIC INSTITUTION.	CHAS. F. RUSSELL, Esq.
STRAITHFIELD TURGISS (Hants).	Rev. C. H. GRIFFITH, M.A., F.M.S.
MARLBOROUGH COLLEGE.	Rev. THOMAS A. PRESTON, M.A., F.M.S.
ROYAL OBSERVATORY.	THE ASTRONOMER ROYAL.
GUILDHALL.	W. HAYWOOD, Esq., C.E.
BATTERSEA TRAINING COLLEGE.	Rev. J. FAUTHOR, B.A., F.R.G.S.
STREATLEY VICARAGE (Berks).	Rev. J. SLATTERY, M.A., F.R.A.S., F.M.S.
LONDON (21 Dorset Square).	HENRY E. SODRAVE, Esq., F.M.S.
CAMDEN TOWN.	G. J. SYMONS, Esq., F.M.S.
OXFORD.	Rev. R. MAIR, M.A., F.R.S., F.R.A.S.
GLoucester.	E. TOLLER, Esq., M.D.
ROYSTON (Hertfordshire).	H. WORTHEM, Esq., F.R.A.S., F.M.S.
CARDINGTON (near Bedford).	Rev. J. MACLEAN, F.M.S., Ass't to SC. WHITEHEAD, Esq., F.R.S., F.M.S.
LAMPETER (Cardiganshire).	Rev. Prof. J. J. MATTHEWS, M.A.



Meteorological Table, Quarter ending December 31st, 1868.

Year 1888.	Months.	Names of Stations and Observers.	Pressure of Air in Month.		Temperature of Air in Month.			Mean Temperature.		Vapour.		Mean Reading of Thermometer.		Wind.			Mean Amount of Cloud.		Rain.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
			Mean.	Range.	Highest.	Lowest.	Range.	Of all Highest.	Of all Lowest.	Daily Range.	Air.	Dew Point.	Elastic Force.	Mean.	Short of Saturation.	Mean Degree of Humidity.	Mean Weight of a cubic foot of Air.	Maximum in Rays of Sun.		Minimum on Grass.	Estimated Strength.	Relative Proportion of																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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Oct.	29-904	NORWICH, C. M. GIBSON, Esq., F.M.S.	1.032	1.032	64.0	31.5	32.5	55.1	40.1	15.0	62.0	43.2	27.9	3.2	0.5	87	54.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—</

Meteorological Table, Quarter ending December 31st, 1868.

STANWICH DIST. COLLEGE. REV. W. SPOWMAN.		Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.
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NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	Mean Estimated Strength.	WIND.				Mean Amount of Rain.	Mean Amount of Cloud.
																			Relative Proportion of					
																			N.	E.	S.	W.		
	in.										in.	grs.	gr.		grs.	°	°							
Guernsey	29.584	65.3	32.0	33.3	46.0	23.5	7.3	49.5	50.8	3.4	0.8	82	540	63.3	41.5	1.7	7	6	8	10	4	4	4	
Helston	29.584	65.3	32.0	33.3	46.0	23.5	7.3	49.5	50.8	3.4	0.8	82	540	63.3	41.5	1.7	7	6	8	10	4	4	4	
Truro	29.584	65.3	32.0	33.3	46.0	23.5	7.3	49.5	50.8	3.4	0.8	82	540	63.3	41.5	1.7	7	6	8	10	4	4	4	
South of Wight	29.584	65.3	32.0	33.3	46.0	23.5	7.3	49.5	50.8	3.4	0.8	82	540	63.3	41.5	1.7	7	6	8	10	4	4	4	
Isle of Wight	29.584	65.3	32.0	33.3	46.0	23.5	7.3	49.5	50.8	3.4	0.8	82	540	63.3	41.5	1.7	7	6	8	10	4	4	4	
South of latitude 51°	29.584	65.3	32.0	33.3	46.0	23.5	7.3	49.5	50.8	3.4	0.8	82	540	63.3	41.5	1.7	7	6	8	10	4	4	4	
Between 51° and 52°	29.584	65.3	32.0	33.3	46.0	23.5	7.3	49.5	50.8	3.4	0.8	82	540	63.3	41.5	1.7	7	6	8	10	4	4	4	
the latitudes 52° and 53°	29.584	65.3	32.0	33.3	46.0	23.5	7.3	49.5	50.8	3.4	0.8	82	540	63.3	41.5	1.7	7	6	8	10	4	4	4	
North Shields	29.584	65.3	32.0	33.3	46.0	23.5	7.3	49.5	50.8	3.4	0.8	82	540	63.3	41.5	1.7	7	6	8	10	4	4	4	
Milton, Banbridge (Ireland)	29.584	65.3	32.0	33.3	46.0	23.5	7.3	49.5	50.8	3.4	0.8	82	540	63.3	41.5	1.7	7	6	8	10	4	4	4	

The highest temperatures of the air were at London (21, Dorset Sq.), 69°3; Wilton, 69°0; Eastbourne, 68°6; Stratfield Turgis, 67°4; and Taunton and Royston, 67°1. The lowest temperatures of the air were at Allenheds, 14°5; Wilton, 12°0; Turgis, 20°8; Milton, 21°0; Marlborough College, 21°4; and Ripon and Carlisle, 21°5. The greatest daily ranges were at Guernsey, 7°3; Hawarden, 7°5; Grantham, 8°0; Guildhall and Otley, 8°2; and Liverpool, 8°4. The greatest number of rainy days were at Allenheds, 83; Stonyhurst, 80; Eccles, 73; Bywell, 70; and Truro, Barnstaple, Hawarden, and Liverpool, 67. The least number of rainy days were at Norwich, 35; Battersea and Wisbech, 40; Cardington, 43; Worthing, 45; and Guildhall, 47. The least falls of rain were at Stonyhurst, 20°3 in.; Lampeter, 19°7 in.; Allenheds, 19°4 in.; Truro, 19°1 in.; Cockermouth, 17°1 in.; Hall, Halifax, 16°1 in. The least falls of rain were at Cardington, 6°8 in.; Royston, 6°9 in.; Oxford, 7°5 in.; Battersea, 7°9 in. North Shields, 7°9 in.

QUARTERLY METEOROLOGICAL TABLE for different PARALLELS of LATITUDE.

PARALLELS OF  LATITUDE, &c.	Mean Pressure of dry Air reduced to the level of the Sea.	Mean of all Highest Read- ings of the Thermometer.	Mean of all Lowest Read- ings of the Thermometer.	Mean Range of Tempera- ture in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Max- imum in Rays of Sun.	Mean Reading of Min- imum on Grass.	Mean Estimated Strength.	WIND.				Relative Pro- portion of
																			N.	E.	S.	W.	
Guernsey - - -	in.	65.5	32.0	33.5	50.4	45.0	12.5	11.3	49.5	50.8	0.8	82	543	68.9	54.4	1.7	7	6	8	10	4	4	
Devon and Cornwall	29.589	65.4	30.6	34.8	54.3	43.3	17.2	11.3	49.5	50.8	0.8	82	543	68.9	54.4	1.7	7	6	8	10	4	4	
Isle of Wight - -	29.578	67.0	25.1	41.9	56.2	39.3	16.6	10.6	47.3	43.4	0.5	84	544	69.0	54.5	1.7	7	6	8	10	4	4	
South of latitude 51°	29.600	65.4	27.4	43.8	52.4	42.1	12.8	10.6	47.4	44.2	0.5	84	544	69.0	54.5	1.7	7	6	8	10	4	4	
Between { 51° and 52°	29.579	64.8	24.0	42.0	51.4	39.1	12.3	10.5	45.7	41.3	0.5	85	543	68.9	54.4	1.7	7	6	8	10	4	4	
{ 52° and 53°	29.592	64.7	25.0	39.9	50.3	38.9	10.7	10.1	44.6	40.6	0.4	85	543	68.9	54.4	1.7	7	6	8	10	4	4	
{ 53° and 54°	29.513	63.6	22.7	36.7	48.7	38.6	13.1	10.1	44.6	40.6	0.4	85	543	68.9	54.4	1.7	7	6	8	10	4	4	
{ 54° and 55°	29.492	63.1	21.4	41.7	49.7	38.3	13.4	11.7	45.3	40.0	0.3	85	544	69.0	54.5	1.7	7	6	8	10	4	4	
North Shields -	29.546	64.0	26.6	37.4	50.0	38.4	13.1	11.7	45.3	40.0	0.3	85	544	69.0	54.5	1.7	7	6	8	10	4	4	
Miltoon, Banbridge (Ireland)	29.545	61.0	21.0	40.0	46.9	37.3	13.4	12.2	43.8	33.6	0.3	86	540	68.6	54.2	1.7	7	6	8	10	4	4	

# METEOROLOGY OF ENGLAND, DURING THE QUARTER ENDING MARCH 31, 1869.

REMARKS ON THE WEATHER, DURING THE QUARTER ENDING 31ST OF MARCH 1869.  
By JAMES GLAISHER, Esq., F.R.S., &c., President of The Meteorological Society.

With the exception of the seven days from January 19th to 25th, the months of January and February were both remarkably warm. From the beginning of the quarter to March 1st, the excess of temperature averaged more than 54° daily. On March 2d, weather of a decidedly opposite or wintry character set in and continued to the end of the quarter, the average deficiency of daily temperatures below their averages for this period exceeding 4°. Upon the whole quarter the mean daily temperature was in excess, and to the amount of more than 2°.

The mean temperature of January was 41°·1, being 4°·9 higher than the average of 98 years, higher than the corresponding temperatures in 1867 by 6°·9, and in 1868 by 3°·9, but lower than in 1866, when 42°·6 was recorded.

The mean temperature of February was 45°·3, being 6°·9 higher than the average of 98 years, and with the sole exception of 1779, when the same temperature was recorded, higher than the corresponding values in any year in the period 1771-1868.

The mean temperature of March was 37°·5, being 3°·5 lower than the average of the preceding 98 years, and 6°·5 colder than in 1868.

The mean high day temperatures were respectively 2°·9 and 6°·5 higher than their averages in January and February, but lower in March by 5°·0.

The mean low night temperatures in January and February were higher than their averages by 3°·1 and 5°·8 respectively, but lower in March by 2°·9.

Therefore the months of January and February were warm, and March cold, both by day and night.

The daily ranges of temperature were respectively 0°·2 and 2°·1 less than their averages in January and March, but 0°·7 greater in February.

The fall of rain was 1·1 in. and 0·7 in. in excess in January and February, but 0°·2 in. in defect in March.

The readings of the barometer, at the height of 160 feet above the mean level of the sea, oscillated above and below the average during the first few days in January, but on the 6th a steady increase set in, and with the exception of the 14th and 15th remained constantly above the average of depression then ensued, which lasted till February 3d, and on two occasions during this time the defect from average was as much as 0·8 in., the mean readings on each day being 28·9 in. From February 4th till March 7th small fluctuations occurred, the readings being alternately above

Temperature of													Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
1869. MONTHS.	Air.		Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames.	Thames.		Mean.	Diff. from average of 28 years.	Mean.	Diff. from average of 28 years.	
	Mean.	Diff. from average of 28 years.	Mean.	Diff. from average of 28 years.	Mean.	Diff. from average of 28 years.	Mean.	Diff. from average of 28 years.		Mean.	Diff. from average of 28 years.					
Jan.	41.1	+4.9	0	+3.0	0	+2.8	0	9.5	-0.2	40.7	in.	0.225	in.	grs.	grs.	
Feb.	45.3	+6.9	0	+6.2	0	+5.7	0	12.1	+0.7	45.1	0.253	+0.023	+0.048	2.9	+0.5	
Mar.	37.6	-3.5	39.6	-4.1	37.6	-3.9	12.5	-4.0	-2.1	40.7	0.184	-0.032	2.1	-0.5	-0.4	
Mean	41.3	+2.8	39.4	+1.7	37.9	+1.5	11.4	-0.5	42.2	0.221	+0.013	2.5	+0.1			

1869. MONTHS.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.	Reading of Thermometer on Grass.				
	Mean.	Diff. from average of 28 years.	Mean.	Diff. from average of 28 years.	Mean.	Diff. from average of 28 years.	Amount.	Diff. from average of 54 years.		Number of Nights it was		Lowest Reading at Night.	Highest Reading at Night.	
Jan.	88	0	in.	in.	grs.	grs.	in.	in.	Miles.	At or below 30°.	Between 30° and 40°.	Above 40°.	0	0
Feb.	84	-1	29.861	+0.115	553	-1	2.9	+1.1	284	9	18	4	20.2	42.7
Mar.	83	+1	29.897	+0.008	547	-6	2.3	+0.7	415	6	13	9	27.1	44.1
Mean	85	0	29.632	-0.114	553	+3	1.4	-0.2	340	18	13	0	20.4	34.6
		0	29.767	+0.003	551	-1	Sum 6.6	Sum +1.6	Mean 346	Sum 33	Sum 44	Sum 13	Lowest 20.2	Highest 44.1

NOTE.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

E. & S.—500.—5/69.

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E. & S.—500.—5/69.



and below the average in short periods; the amount of excess or defect on one occasion only, being greater than 0.4 in. From the 8th to the 21st the readings were constantly below the average; an increase, which reached its maximum on the 23d, then occurred, but on the 26th a rapid decrease set in, and the readings remained in defect during the remainder of the month.

The mildness of the weather in January and February rendered important service to the grass lands affording sufficient nourishment, enabling him to carry his live stock over the winter without the anticipated difficulties. At the end of February vegetation was remarkably forward, being from three to four weeks in advance of ordinary seasons. Agricultural work in the fields made but little progress in these two months, owing to the land being in many places unsuitable for working, being too moist. During the greater part of March vegetation was nearly stationary and made no progress; the check was advantageous. At the end of the quarter vegetation was nearly in the same state as at the end of February, excepting grass lands, pastures, and meadows, which in many places had lost the rich green and put on a brown dingy colour. Agricultural spring operations were generally in a backward state, a great deal of ploughing and sowing remained to be done.

The mean temperature of the air in the three months ending February, constituting the winter months, was  $44^{\circ} \cdot 1$ , being  $6^{\circ} \cdot 2$  higher than the average of the preceding 98 years.

Thunderstorms occurred on the 3d January at Guernsey, Worthing, and Silloth; on the 4th at Truro; on the 20th at Helston; on the 29th at Helston, Bournemouth, Streatham Vicarage, Gloucester, Royston, Liverpool, Eccles, and Stonyhurst; on the 30th at Guernsey, Eastbourne, Osborn, Worthing, and Over Court; and on the 31st at Helston and Bath. On the 1st February at Guernsey; on the 18th at Wilton and Gloucester; and on the 27th at Guernsey, Eccles, and Halifax. On the 10th March at North Shields; and on the 28th at Bradford.

Thunder was heard but lightning was not seen on the 4th January at Guernsey; on the 28th at Wilton; and on the 29th at Strathfield Turgiss and Bywell. On the 18th February at Strathfield Turgiss; and on the 28th at Taunton, Grantham, Holkham, and Halifax. On the 28th March at Halifax.

Lightning was seen but thunder was not heard on the 3d January at Bournemouth, Weybridge Heath, Bath, Halifax, Stonyhurst, Bradford, Ripon, and Allenheads; on the 4th at Culloden; on the 9th at Over Court; on the 11th at Over Court and Allenheads; on the 14th at Guernsey; on the 29th at Taunton, Over Court, and North Shields; and on the 30th at Taunton. On the 8th February at Little Wratting; on the 10th at Weybridge Heath; on the 17th at Hawarden; and on the 27th at Boston and Bradford. On the 27th March at Wilton and Carlisle; and on the 28th at Guernsey.

Solar halos were seen on the 2d January at Worthing and Over Court; on the 6th at Grantham, Hawarden, and Cockermouth; on the 11th at Culloden; on the 21st at Tunbridge Wells; on the 22d at Oxford; on the 22d at Over Court and Culloden; and on the 30th at Over Court. On the 21st February at Wisbech; on the 8th at Culloden; on the 10th at Grantham; and on the 23d at Lampeter. On the 1st March at Oxford; on the 7th at Strathfield Turgiss; on the 22d at North Shields; and on the 23d at Aldershot Camp and North Shields.

Lunar halos were seen on the 19th January at Eastbourne; on the 20th at London; on the 21st at Aldershot Camp and Grantham; on the 22d at Guernsey and Strathfield Turgiss; on the 23d at Weybridge Heath; on the 24th at Weybridge Heath; on the 26th at Tunbridge Wells; on the 27th at Aldershot Camp, Wisbech, North Shields, and Culloden; on the 28th at London; and on the 29th at Weybridge Heath. On the 21st February at Strathfield Turgiss; on the 22d at Wilton; on the 23d at Guernsey, Wilton, Aldershot Camp, West Harptre, Strathfield Turgiss, Oxford, Cardington, Wisbech, Grantham, and Bradford; on the 24th at North Shields; and on the 27th at Weybridge Heath and Camden Town. On the 3d March at Over Court; on the 20th at Bradford; on the 22d at Weybridge Heath and Camden Town; on the 23d at Aldershot Camp, Bath, Over Court, Oxford, Cardington, Wisbech, Grantham, Boston, Hull, and Stonyhurst; on the 27th at Camden Town; and on the 28th at Grantham and Stonyhurst.

Aurora Boreales were seen on the 3d January at Liverpool; and on the 12th at Culloden; on the 3d February at Weybridge Heath and Hawarden; on the 4th at Weybridge Heath; on the 10th and 16th at Culloden; on the 24th at Weybridge Heath; and on the 27th at North Shields; on the 2d March at Hawarden, Halifax, Stonyhurst, Bradford, and Carlisle; on the 5th at Carlisle; on the 9th at Grantham, Stonyhurst, and Carlisle; on the 11th at Liverpool; on the 14th at Hawarden; and on the 18th at Eccles, Bradford, and Carlisle.

Snow fell on 40 days during the quarter, viz., 8 in January, 9 in February, and 23 in March. Hail fell on 43 days during the quarter, viz., 8 in January, 11 in February, and 24 in March. Fog prevailed on 56 days during the quarter, viz., 26 in January, 18 in February, and 12 in March.

#### JANUARY.

BOURNEMOUTH.—Pink May blossoms all ready to open, and several leaves fully expanded on the 19th; but were checked in growth by cold period, 21st to 24th, and made no further progress during the month.

STRATHFIELD TURGISS.—The past month (January) has been unfavourable for manure carting both on grass and arable lands. The protracted wet season has caused considerable loss of food.

turnips, the result of which has been the non-improvement of the flock. The wheat is more forward than it generally is at this season, the young clover, &c. being equally forward owing to the extreme mildness of the season, the black thorn is in bloom, while roses have been in flower throughout the month.

HULL.—Snowdrops and winter aconites were in flower on the 20th in very exposed situations; in more sheltered places they were in flower much earlier, and a great many shrubs were ready to burst into leaf.

COCKERMOUTH.—A month of mild open weather, frost on four nights only; mean temperature of the month  $5^{\circ}$  above the average for January during preceding seven years.

CULLODEN.—The month of January has been remarkable for mild and spring like weather, and the total absence of snow and frost of any intensity, and of that stormy and wintry weather which generally prevails during the opening month of the year. The temperature was high, about  $5^{\circ}$  above the average for January; the rainfall was 2.207 in. This amount was registered on the 6th, 18th, 21st, and on the three last days of the month. It will thus be seen that on many days no rain fell, this with constant south-west winds kept the land in good working order, and in consequence of an unusually forward state, otherwise favourable weather, field labour on almost every farm is in the passing away of the months of winter under such very favourable circumstances has gladdened the hearts of many, and enabled farmers in general to maintain their stock, both cattle and sheep, in fully average condition. Considering the state of the turnip crop and the deficient slack yards everywhere throughout the country, such a circumstance has been of the greatest value and importance to many. There was a great depression of the barometer on the 29th and 30th, the mercury having fallen to  $28 \cdot 284$  and  $28 \cdot 290$  on these days. This low state of the barometer was accompanied by heavy gales both here and on the English and Irish coasts. As may be expected, in gardens, among the various kinds of fruit trees and bushes, vegetation is very advanced. The flowering of plants in the open border is likewise earlier than usual, and in some instances a few of these have neither died down nor ceased flowering all the winter. The following were observed in flower during the month. On the 4th, snowdrops, polyanthus, violets (double and single), primula (double crimson), fritoma media, tasminum revolutum, wallflower. On the 13th, periwinkle (common), 18th, helleborus niger, 19th, auricula (common), primula-denticulata, and on the 30th, chinchella and rhododendron damicum.

Young grass, and in fact all pastures, have afforded more or less keep for sheep all through the winter, and that without anything in addition, cattle having had a free outrun on them day after day; this has tended more than anything to make both straw and turnips last longer than could have been the case under any other circumstances. Breeding ewes were never in better condition, and a good crop of lambs may be expected. The value of grain has been steady all through the month, and good prices obtained. Sheep and cattle in forward condition have commanded full prices. The price of potatoes has not improved and a considerable decay in the pits, whether from frost previous to lifting or from other causes, is now clearly observable.

#### FEBRUARY.

MARLBOROUGH COLLEGE.—An enormous number of plants lived through the winter, and vegetation is generally a month earlier than usual.

COCKERMOUTH.—A month of very mild weather; vegetation unusually forward at this season of the year; heavy rains occurred on 7th and 8th accompanied by a greater flood than has been observed here since December 1861.

BYWELL.—The mild weather (during the greater part of the month) has advanced vegetation too much; the check which it has received during the last few days will do much good.

#### MARCH.

STRATHFIELD TURGISS.—In general the land is in such an improved condition that spring sowing progresses without difficulty and under favourable circumstances, as a whole the growing crop of wheat progresses satisfactorily, but much will depend upon the weather and the blooming season, barley sowing will be finished eight or ten days earlier than last year, the seed has been got into the land in very good order.

HULL.—Vegetation in general has received a most severe check this month.

COCKERMOUTH.—A month of cold dry weather with N. and E. winds, most of the grain crops sown, and potatoes planted by end of month. This month has been the coldest since January 1868. Frost occurred on 12 nights during the month.



*The Observations have been reduced to Mean values by Glaisher's Barometrical and Diurnal Range Tables, and the Hygrometrical results have been deduced from the fifth edition of his Hygrometrical Tables.*

WEST LANTIER VICARAGE		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	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Year 1869.	Names of Stations and Observers.	Pressure of Air in Month.			Temperature of Air in Month.			Vapour.	Mean Thermometer.	Wind.	Mean Amount of Moisture.	Mean Amount of Cloud.	Rain. Number of Days it fell.	Amount col- lected.										
		Mean.	Range.	in.	Mean.		Air.								Dew Point.	Elastic Force.	In a cubic foot of Air.	Short of Saturation.	Mean Degree of Humi- dity, Sat. = 100.	Mean Weight of a cubic foot of Air.	Maximum in Days of Sun.	Minimum on Grasses.	Estimated Strength.	Relative Proportion of N. E. S. W.
					Of all Highest.	Of all Lowest.																		
Jan.	SOMELEYTON RECTORY (Sur- geon).	1.474	1.474	30.3	30.3	30.3	30.3	30.3	30.3	30.3	30.3	30.3	30.3	30.3										
Feb.	REV. C. J. STEWARD, F.M.S.	1.410	1.410	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7										
Mar.	NORWICH.	1.368	1.368	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0										
Jan.	C. M. GIBSON, Esq., F.M.S.	1.462	1.462	30.8	30.8	30.8	30.8	30.8	30.8	30.8	30.8	30.8	30.8	30.8										
Feb.	WISBECH.	1.438	1.438	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2										
Mar.	S. H. MILLER, Esq., F.R.A.S.	1.315	1.315	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0										
Jan.	LIANDUNO.	1.382	1.382	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0										
Feb.	J. NICOL, Esq., M.D.	1.470	1.470	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0										
Mar.	GRANTHAM.	1.392	1.392	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4										
Jan.	JAMES WILLIAM JEANS, Esq., M.R.C.S., F.R.A.S., F.M.S.	1.430	1.430	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4										
Feb.	DERBY.	1.380	1.380	30.9	30.9	30.9	30.9	30.9	30.9	30.9	30.9	30.9	30.9	30.9										
Mar.	JOHN DAVIS, Esq.	1.454	1.454	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0										
Jan.	NOTTINGHAM.	1.516	1.516	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6										
Feb.	M. O. TABBOTT, Esq., C.E., F.G.S., the EARL OF LEICESTER.	1.416	1.416	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5										
Mar.	HOLKHAM.	1.280	1.280	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7										
Jan.	JOHN DAVIDSON, Esq., Assistant to the EARL OF LEICESTER.	1.432	1.432	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0										
Feb.	BOSTON.	1.474	1.474	30.3	30.3	30.3	30.3	30.3	30.3	30.3	30.3	30.3	30.3	30.3										
Mar.	A. MERCER ADAM, Esq., M.D., F.M.S.	1.400	1.400	30.2	30.2	30.2	30.2	30.2	30.2	30.2	30.2	30.2	30.2	30.2										
Jan.	HAWARDEN.	1.386	1.386	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5										
Feb.	T. MOFFAT, Esq., F.G.S.	1.496	1.496	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0										
Mar.	LIVERPOOL OBSERVATORY.	1.270	1.270	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0										
Jan.	JOHN HARTUP, Esq., F.R.A.S.	1.449	1.449	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1										
Feb.	ECCLLES.	1.464	1.464	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1										
Mar.	NEW MANCHESTER.	1.509	1.509	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5										
Jan.	T. MACKEITH, Esq., F.R.A.S., F.M.S.	1.576	1.576	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0										
Feb.	WILLOW HALL, near HALFAX.	1.342	1.342	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5										
Mar.	JOHN W. ROBERTS, Esq., F.G.S., JOHN W. ROBERTS, Esq., F.G.S., JOHN W. ROBERTS, Esq., F.G.S.	1.500	1.500	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0										

STATION/HURST.	REV. J. S. PEAR, F.M.S.	Jan.		Feb.		Mar.		C.F.	Jan.		Feb.		Mar.		LEEDS (Yorkshire).	HENRY DENNY, Esq., A.L.S.	Jan.		Feb.		Mar.		OTLEY (Yorkshire).	IL W. THORNS, Esq.	Jan.		Feb.		Mar.		YORK (Yorkshire).	FILDEN THORPE, Esq.	Jan.		Feb.		Mar.		RIPON (Yorkshire).	REV. F. W. STOW, M.A., F.M.S.	Jan.		Feb.		Mar.		COCKERMOUTH (Cumberland).	IL DODGSON, Esq., M.D., F.R.A.S.	Jan.		Feb.		Mar.		ALLENHEADS (Durham).	T. SOWTH, Esq., M.A., F.R.S., F.M.S.	Jan.		Feb.		Mar.		CARLISLE (Cumberland).	BYWELL (Durham).	MR. JOHN DAWSON, under the direction of T. SOWTH, Esq., M.A., F.R.S., F.M.S.	Jan.		Feb.		Mar.		NORTH SHIELDS (Durham).	ROBERT SPENCE, Esq.	Jan.		Feb.		Mar.		MILTON (Banbridge, Ireland).	JOHN SMITH, Esq., JUN., A.M., M.A., F.M.S.	Jan.		Feb.		Mar.		CULLODEN.	A. FORBES, Esq., F.M.S.	Jan.		Feb.		Mar.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
		Bar.	Therm.	Bar.	Therm.	Bar.	Therm.		Bar.	Therm.	Bar.	Therm.	Bar.	Therm.			Bar.	Therm.	Bar.	Therm.	Bar.	Therm.			Bar.	Therm.	Bar.	Therm.	Bar.	Therm.			Bar.	Therm.	Bar.	Therm.	Bar.	Therm.			Bar.	Therm.	Bar.	Therm.	Bar.	Therm.			Bar.	Therm.	Bar.	Therm.	Bar.	Therm.			Bar.	Therm.	Bar.	Therm.	Bar.	Therm.				Bar.	Therm.	Bar.	Therm.	Bar.	Therm.			Bar.	Therm.	Bar.	Therm.	Bar.	Therm.			Bar.	Therm.	Bar.	Therm.	Bar.	Therm.			Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.	Therm.	Bar.



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of the Thermometer.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	Mean Estimated Strength.	WIND.				Mean Amount of Cloud.
																			N.	E.	S.	W.	
Guernsey	29.735	55.0	31.0	24.0	48.7	41.3	21.0	7.4	44.4	40.1	24.9	2.9	0.5	86	547	62.8	39.0	1.8	6	6	9	9	4.9
Helston	29.738	61.0	34.0	27.0	52.9	43.3	23.3	9.6	47.4	41.3	26.4	3.0	0.8	79	546	—	—	2.1	8	6	6	10	5.2
Truro	29.733	64.0	35.0	29.0	51.1	41.3	30.7	9.8	45.7	41.8	26.7	3.0	0.5	87	548	—	—	2.6	8	6	6	12	4.4
Sidmouth	29.713	59.7	29.0	27.0	50.7	39.1	25.2	11.6	44.6	39.6	24.6	2.8	0.6	84	540	—	—	1.5	7	6	6	10	4.4
Osborne	29.731	63.2	34.3	28.0	50.6	43.5	33.8	15.1	42.6	39.4	24.4	2.8	0.4	89	549	71.0	28.8	0.9	6	5	10	9	5.4
Bournemouth	29.744	54.3	28.8	25.5	48.2	39.3	33.8	15.1	42.6	39.4	24.4	2.8	0.4	89	549	71.0	28.8	0.9	6	5	10	9	5.4
Worthing	29.727	54.3	28.0	26.3	47.5	38.7	24.0	8.3	42.7	38.8	23.9	2.7	0.5	85	552	—	—	1.4	7	6	6	10	4.6
Taunton	29.650	61.2	26.3	34.9	50.5	38.5	28.3	12.0	44.2	41.7	26.5	3.0	0.3	91	549	56.6	36.4	0.8	12	5	8	10	4.6
Wilton	29.674	—	—	—	50.0	33.4	—	—	16.6	42.0	39.3	24.1	0.8	83	548	—	—	1.3	7	4	9	10	4.6
Barnstaple	29.678	62.0	30.0	32.0	50.4	40.8	28.0	9.6	45.3	41.4	26.3	3.0	0.5	87	548	—	—	2.1	8	6	6	10	5.2
Tunbridge Wells	29.713	58.0	25.8	32.2	45.6	35.9	27.8	9.7	40.3	36.9	22.1	2.5	0.4	88	547	—	—	1.4	7	4	9	10	4.6
Aldershot Camp	29.618	58.0	25.0	33.0	47.9	35.5	29.1	12.4	41.1	37.6	22.7	2.6	0.4	88	548	—	—	1.5	7	4	9	10	4.6
West Hartlepool	29.713	58.0	25.0	33.0	47.9	35.5	29.1	12.4	41.1	37.6	22.7	2.6	0.4	88	548	—	—	1.5	7	4	9	10	4.6
Strathfield Turgiss	29.746	60.0	23.8	36.2	47.6	36.6	30.5	11.0	41.9	37.6	22.7	2.6	0.5	87	550	—	—	1.6	6	5	10	9	5.4
Weybridge Heath	29.735	60.6	23.3	37.3	47.1	35.1	31.4	12.0	40.7	38.1	23.1	2.7	0.5	85	550	—	—	1.6	6	5	10	9	5.4
Bath R. L. & S. Inst.	29.722	61.6	26.8	35.3	47.5	36.2	28.6	11.3	41.3	36.9	22.1	2.5	0.5	85	551	70.2	32.3	0.9	5	5	10	9	5.4
Marlborough College	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Royal Observatory	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Overcourt, nr. Bristol	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Streatley Vicarage	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
London	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Camden Town	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Oxford	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Gloucester	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Roydon	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Little Wrattling	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Cardington	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Lampeter	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Somerleyton Rectory	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Norwich	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Wisbech	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Llandudno	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Grantham	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Derby	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Nottingham	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Boston	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Hawarden	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Liverpool	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Eccles	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Halifax	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Hull	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Stonycroft	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Bradford	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Leeds	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Otley	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
York	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Ripon	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Cockermouth	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Carlisle	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
North Shields	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4
Milton, Ireland	29.730	57.7	22.9	34.8	47.4	35.5	29.0	11.9	40.8	37.1	22.3	2.6	0.4	87	549	—	—	1.7	6	5	10	9	5.4

The highest temperatures of the air were at Truro, 64° 0'; Osborne, 63° 2'; Barnstaple, 62° 0'; Liverpool, 61° 7'; Royal Observatory, 61° 6'; Over Court, 61° 3'; and Taunton, 61° 2'. The lowest temperatures of the air were at Ripon, 50° 5'; Halifax, 50° 4'; North Shields, 50° 3'; and Cardington and Lampeter, 52° 0'. The greatest daily ranges were at Wilton, 16° 6'; Osborne, 15° 1'; North Shields, 14° 3'; Streatley Vicarage, 13° 0'; Leeds, 12° 8'; and Aldershot Camp, 12° 4'. The least daily ranges were at Hawarden, 7° 3'; Truro, 7° 4'; Otley, 7° 9'; Grantham, 8° 5'; Worthing, 8° 8'; and Bournemouth, 8° 9'. The greatest number of rainy days were at West Hartlepool, 12; Strathfield Turgiss and Norwich, 36; Cardington, 38; Otley, 40; Ripon, 41; and Osborne, 42. The heaviest falls of rain were at West Hartlepool, 14.5 in.; Stonycroft, 13.9 in.; Truro, 13.2 in.; Cockermouth, 12.8 in.; West Hartlepool, 12.4 in.; and Weybridge Heath, 11.5 in. falls of rain were at North Shields, 4.9 in.; Cardington, 5.6 in.; Liverpool, 5.7 in.; Bradford, 6.0 in.; Wisbech, 6.2 in.; and Leeds, 6.3 in.

QUARTERLY METEOROLOGICAL TABLE for different PARALLELS of LATITUDE.

PARALLELS OF  LATITUDE, &c.		Mean Pressure of dry Air reduced to the level of the Sea.	Mean of all Highest Read- ings of the Thermometer.	Mean of all Lowest Read- ings of the Thermometer.	Mean Range of Temper- ature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Max- imum in Rays of Sun.	Mean Reading of Min- imum on Grass.	Mean Estimated Strength.	WIND.				Mean Amount of Cloud.		
																				Relative Pro- portion of						
																				N.	E.	S.	W.			
Guernsey	50°	51°	29.735	55.0	31.0	24.0	48.7	41.3	21.0	7.4	44.4	40.1	24.9	2.9	0.5	86	547	62.8	39.0	1.8	6	6	9	9	4.9	
Between the latitudes	50° and 51°	29.728	55.0	31.0	24.0	48.7	41.3	21.0	7.4	44.4	40.1	24.9	2.9	0.5	86	547	62.8	39.0	1.8	6	6	9	9	4.9		
	51° and 52°	29.728	55.0	31.0	24.0	48.7	41.3	21.0	7.4	44.4	40.1	24.9	2.9	0.5	86	547	62.8	39.0	1.8	6	6	9	9	4.9		
	52° and 53°	29.686	53.4	24.4	13.3	6.7	36.7	32.4	3.3	10.4	43.3	38.4	23.4	2.7	0.5	85	549	70.2	32.7	1.7	7	5	9	10	5.0	
	53° and 54°	29.644	57.7	24.4	8.2	9.6	23.6	30.3	23.7	10.3	41.3	37.7	22.9	2.6	0.4	88	550	70.2	32.7	1.7	7	5	9	10	5.0	
North Shields ( - )	54° and 55°	29.620	59.2	21.0	3.8	2.4	47.7	36.7	3.3	23.3	11.3	41.3	37.7	21.9	2.5	0.5	85	549	65.8	-	1.0	6	6	9	10	5.0
	55°	29.603	59.0	26.6	32.4	4.7	36.7	30.3	23.4	11.9	40.3	35.7	22.9	2.6	0.5	84	549	67.4	-	0.6	5	8	9	12	5.0	
Miltoen, Banbridge (Ireland)		29.673	56.0	26.6	32.4	4.7	36.7	30.3	23.4	11.9	40.3	35.7	22.9	2.6	0.5	82	551	-	33.8	1.8	6	4	13	6	5.0	
Mean - 50° to 55°		29.678	58.8	25.0	33.8	4.7	36.8	28.1	11.1	41.9	37.6	23.7	2.6	0.5	85	549	68.6	39.5	2.1	8	6	5	8	11	5.0	



Temperature of															Elastic Force of Vapour.	Weight of Vapour in Cubic Foot of Air.
Air.			Evaporation.		Dew Point.		Air— Daily Range.		Water of the Thames.							
1869. MONTHS.	Mean.	Diff. from average of 28 years.	Diff. from average of 28 years.	Mean.	Diff. from average of 28 years.	Mean.	Diff. from average of 28 years.	Mean.		Diff. from average of 28 years.	Mean.	Diff. from average of 28 years.	Mean.	Diff. from average of 28 years.	Mean.	
	°			°		°		°		°		in.	in.	grs.		
	April -	50.3	+4.3	+3.4	47.5	+3.6	44.6	+4.1	19.8	+1.4	49.9	0.295	+0.042	3.4		
	May -	50.5	-2.1	-2.6	48.0	-1.3	45.3	-0.3	17.0	-3.4	53.9	0.303	-0.001	3.4		
	June -	55.3	-2.9	-3.9	51.8	-2.9	48.4	-2.4	21.4	+0.4	56.4	0.340	-0.033	3.8		
Mean -	52.0	-0.2	-1.0	49.1	-0.2	46.1	+0.5	19.4	-0.5	53.4	0.313	-0.003	3.5			

1869. MONTHS.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal move- ment of the Air.	Reading of Thermometer on Grass.			
	Mean.	Diff. from average of 28 years.	Mean.	Diff. from average of 28 years.	Mean.	Diff. from average of 28 years.	Amount.	Diff. from average of 28 years.		Number of Nights it was			Low- est Read- ing at Night.
									At or below 30°.	Be- tween 30° and 40°	Above 40°.		
April -	81	+ 2	29.829	+0.065	542	grs.	1.0	-0.7	271	5	14	11	24.2
May -	83	+ 7	29.651	-0.126	538	- 4	3.4	+1.2	249	3	11	17	26.4
June -	78	+ 4	29.919	+0.112	538	+ 7	1.1	-0.9	219	1	10	19	25.7
Mean -	81	+ 4	29.800	+0.017	539	+ 1	Sum 5.5	Sum -0.4	Mean 246	Sum 9	Sum 35	Sum 47	Lowest 24.2

NOTE.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

Thunderstorms occurred on the 2d April at Hull; on the 3d at Grantham; on the 11th at Silloth; on the 14th at Worthing and generally over all parts of the country north of 52°; on the 15th at Cardington; and on the 27th at Helston. On the 5th May at Guernsey; on the 7th at Boston; on the 10th at West Harptre, Over Court, Royston, Little Wratting, Cardington, and Boston; on the 11th at Nottingham; on the 17th at West Harptre, Wisbech, and Boston; on the 18th at Oxford, Boston, Halifax, and Bradford; on the 19th at Strathfield Turgiss, Weybridge Heath, Battersea, London, Camden Town, Cardington, and Wisbech; on the 22d at Royston, Cardington, and Bradford; on the 25th at Over Court, Lampeter, Hawarden, and Liverpool; on the 26th at Royston; on the 27th at Eastbourne; and on the 28th at Bath. On the 6th June at Stonyhurst and Hawsker; on the 14th at Streatly Vicarage; on the 15th at Somerleyton Rectory and Hawsker; and on the 18th at Boston.

Thunder was heard but lightning was not seen on the 14th April at Weybridge Heath, London, Royston, Lampeter, Grantham, and Hawsker; on the 16th at Hawarden; and on the 27th at Guernsey. On the 4th May at Eastbourne; on the 6th at Worthing; on the 7th at Somerleyton, Wisbech, and Hull; on the 10th at Gloucester, Wisbech, and Hull; on the 16th at London; on the 17th at Gloucester; on the 18th at Taunton, Streatly, Little Wratting, Somerleyton, Norwich, and Hull; on the 19th at Aldershot, Little Wratting, Royston, Somerleyton, Norwich, and Grantham; on the 21st at Halifax; on the 22d at Aldershot, Streatly, and Silloth; on the 25th at Gloucester and Eccles; and on the 26th at Cardington and Eccles. On the 1st June at Strathfield Turgiss; on the 2d at West Harptre; on the 6th at Bradford; on the 7th at Stonyhurst; on the 8th at Llandudno; on the 14th at Strathfield Turgiss, and Stonyhurst; on the 15th at Allenheads and Bywell; on the 16th at York; and on the 24th at Stonyhurst.

Lightning was seen but thunder was not heard on the 2d April at Cardington; on the 3d at Bradford; on the 11th at Halifax, Stonyhurst, Allenheads, and North Shields; on the 14th at Worthing, London, and Oxford; on the 15th at Silloth; and on the 27th at Guernsey. On the 5th May at Bournemouth; on the 7th and 11th at London; on the 15th at Over Court; on the 17th at Eccles; on the 21st at Over Court; on the 26th at Strathfield Turgiss; at the 27th at Bournemouth; and on the 31st at Eastbourne. On the 6th June at Halifax and Hull; on the 7th at Guernsey; and on the 18th at Somerleyton.

Solar halos were seen on 28 days during the quarter, viz., 14 in April, 9 in May, and 5 in June. Lunar halos were seen on the 7th April at Wilton; on the 20th at Culloden; on the 21st at Grantham and Cockermouth; on the 22d at Camden Town, Oxford, Norwich, Wisbech, Grantham, Hawsker, and North Shields; and on the 25th at North Shields. On the 17th May at Battersea and London; on the 18th at Oxford; on the 21st at Boston; on the 24th at Holkham; and on the 25th at Wisbech.

Aurora Boreales were seen on 17 days during the quarter, viz., 10 in April and 7 in May. On May 13th it was seen from all parts of the country, from Osborne in the Isle of Wight to Culloden in Scotland.

Snow fell on 8 days during the quarter, viz., 4 in April, 3 in May, and 1 in June.

Fog prevailed on 42 days during the quarter, viz., 19 in April, 12 in May, and 11 in June.

Oak in leaf on the 20th of April at Marlborough College; on the 23d at Holkham; on the 24th at Weybridge; on the 25th at Helston and Oxford; on the 26th at Culloden; on the 28th at Milton; and on the 30th at Guernsey. On the 7th May at Wisbech; on the 27th at Cardington; and on the 31st at Hull.

Lime in leaf on the 12th of April at Marlborough College; on the 14th at Oxford; on the 15th at Wisbech; on the 16th at Culloden; on the 20th at Weybridge and Boston; on the 27th at Strathfield Turgiss; and on the 29th at Guernsey and Milton. On the 19th of May at Hull. Sycamore in leaf on the 1st of April at Culloden; on the 11th at Guernsey; on the 15th at Weybridge and Hawsker; on the 16th at Helston and Osborne; on the 20th at Milton; on the 21st at Wisbech; and on the 22d at Strathfield Turgiss and Boston. On the 17th of May at Hull. Lilac in blossom on the 18th of April at Taunton; on the 19th at Helston; on the 20th at Strathfield Turgiss and Weybridge; on the 21st at Guernsey and Oxford; on the 23d at Marlborough; on the 25th at Cardington; on the 27th at Wisbech and Hawarden; on the 28th at Osborne, Lampeter, Holkham, Bywell, and Milton; and on the 30th at Somerleyton and Hull. On the 2d of May at Llandudno and Culloden; on the 3d at Cockermouth; on the 4th at Hawsker; and on the 17th at North Shields.

Laburnum in blossom on the 25th of April at Helston; on the 26th at Oxford; on the 27th at Hawarden; on the 28th at Guernsey; on the 29th at Taunton; and on the 30th at Strathfield Turgiss and Marlborough. On the 2d of May at Llandudno; on the 3d at Cockermouth; on the 4th at Weybridge; on the 6th at Eastbourne and Milton; on the 8th at Lampeter; on the 9th at Wisbech; on the 19th at Hull; on the 21st at Culloden; and on the 27th at North Shields. Wheat in ear on the 3d of June at Strathfield Turgiss; on the 5th at Cardington; on the 6th at 16th at Over Court; on the 8th at Somerleyton; on the 9th at Helston; on the 14th at Holkham; on the Grantham; on the 17th at Llandudno; on the 19th at Hawarden; on the 20th at the 30th at Hawsker.

Wheat in flower on the 14th of June at Marlborough; on the 15th at Helston; on the 21st at Eastbourne; on the 24th at Cardington; on the 26th at Holkham; on the 28th at Strathfield Turgiss and Hawarden; on the 29th at Weybridge; and on the 30th at Cockermouth. Barley in ear on the 6th of June at Taunton; on the 9th at Strathfield Turgiss; on the 14th at Cardington; on the 23d at Cockermouth; on the 24th at Weybridge; and on the 25th at Helston. Barley in flower on the 8th of June at Marlborough; on the 17th at Strathfield Turgiss; and on the 26th at Cardington.

#### APRIL.

STRATHFIELD TURGISS.—The young wheat has made good progress, and we may expect an early harvest. The spring seed time has been favourable. The fall of lambs has been fully up to the average, and the losses inconsiderable. Clover and trefoil are growing rapidly, and there is every prospect of a heavy crop of hay. Peas and beans are also looking well, and the hoeing will give labourers full employment. There is a promise of abundant autumnal fruit. All sorts of lean stock are fetching high prices, and will probably go still higher.

COCKERMOUTH.—The mean temperature of April was 10°.1 higher than that of March and 1°.9 above the average of the month during the last seven years.

BYWELL.—Grass has grown much during the month, and vegetation generally looks healthy and promising. The various fruit trees are white with blossom and promise much fruit should they not suffer from frost. Farmers are well forward with their work, and are now preparing for turnip sowing and potatoe planting.

#### MAY.

STRATHFIELD TURGISS.—A cool month, with yet but few frosts, and those slight. Wheat here looks bad and does not grow, especially that late planted; hereabouts it is two weeks later than last year. The cold weather has done the barley no good; it looks bad, especially on the strong land. Beans and peas are growing well wherever the pheasants have let them alone; the winter beans promise a good crop. With warm growing weather we shall have much grass and clover, but the meadow grass is at least a fortnight later than last year.

COCKERMOUTH.—The coldest May during last eight years. Much damage done to early potatoes by the frost on morning of the 29th, the young stems being quite blackened and killed where unprotected from the cold.

MILTOWN.—This month has been ungenial, and the crops generally have made slow progress. The flax crop has suffered much from the frosts and a fly, and in many cases has been ploughed up and resown.

BYWELL.—Owing to the prevalence of east winds vegetation has made but little progress during the month. Farmers are well forward with turnip sowing. The frost on the night of the 29th did some harm to the fruit trees and early potatoes. Fine settled weather is much required for the corn crops.

HULL.—Vegetation has not suffered so much as might have been expected from the prevalence of cold east and cold north-easterly winds. Swallows have died in considerable numbers, perhaps owing to the scarcity of insects occasioned by the cold weather.

#### JUNE.

MARLBOROUGH COLLEGE.—Hay nearly carried and in good condition. Corn crops promising. STRATHFIELD TURGISS.—The low temperature of the past months has not been favourable to the wheat crops, and they will in quantity be probably considerably below the average. Barley, oats, the hay harvest are all promising well. Clover has generally been carried in capital condition; of potatoes for the carrying, although the weather has not been altogether promising. I am sorry to report that the Mangolds and swedes seem flourishing. Garden fruits are generally looking well, with the exception of peaches and nectarines. COCKERMOUTH.—Hay harvest became general about the 21st, the crops of lea (or sown) grass being about an average.

MILTOWN.—All the crops here are much in want of rain. Flax promises to be short. The hay harvest, which is now being gathered in, is lighter than usual. Wheat harvest looks well.



Year 1880.	Month.	NAME of STATIONS and OBSERVERS.	Pressure of Air in Month.		Temperature of Air in Month.				Mean Temperature.		Vapour.		Mean Reading of Thermometer.		Wind.		Rain.								
			In.	Range.	Highest.	Lowest.	Mean.		Air.	Dew Point.	Elastic Force.	Mean.	Short of Saturation.	Mean Degree of Humidity, = 100.	Mean cubic foot of Air.	Maximum in Days of Sun.	Minimum on Grass.	Estimated Strength.	Relative Proportion of		Mean Amount of	Mean Amount of	Number of Days it fell.	Amount collected.	
							Of all Highest.	Of all Lowest.											N.	E.					W.
GUERNSEY. SARDEL ELLIOTT HOAKINS, Esq., M.D., F.R.C.P., F.R.S., F.M.S.	April	29.750	1.100	68.0	33.0	55.4	44.6	10.8	48.3	45.2	30.2	3.4	89	543	—	—	—	8	6	7	5.5	4.4	11	15	4.6
	May	29.757	1.012	61.0	33.0	46.0	44.6	10.8	48.3	47.8	33.3	3.8	94	538	—	—	—	12	7	3	6.1	5.3	11	4.6	
	June	29.787	0.815	57.0	33.0	33.7	44.6	10.8	48.3	50.4	30.6	4.1	85	538	—	—	—	12	7	3	4.2	4.0	6	1.2	
	April	29.784	0.893	70.0	33.0	38.4	48.3	12.1	50.9	45.6	30.6	3.5	88	548	85.1	40.7	2.0	7	9	6	4.7	5.5	14	1.2	
	May	29.713	1.285	61.0	33.0	33.7	48.3	12.1	50.9	45.6	30.6	4.1	85	538	49.5	43.0	2.1	11	8	8	5.5	4.0	19	4.1	
	June	29.089	0.845	78.0	43.0	33.0	50.9	17.2	57.4	50.3	35.5	4.1	77	527	49.5	43.0	2.1	11	8	8	5.9	4.7	8	0.6	
	April	29.080	1.805	72.0	33.0	40.0	50.9	15.0	51.8	45.2	30.2	3.4	76	543	—	—	—	7	9	6	5.9	4.7	8	0.6	
	May	29.705	1.285	61.0	33.0	33.7	48.3	12.1	50.9	45.6	30.6	4.1	85	538	—	—	—	7	9	6	5.9	4.7	8	0.6	
	June	29.705	0.739	70.0	33.0	33.7	48.3	12.1	50.9	45.6	30.6	4.1	85	538	—	—	—	7	9	6	5.9	4.7	8	0.6	
	April	29.683	1.009	71.0	33.0	37.4	48.3	14.4	48.5	44.1	28.9	3.7	80	546	—	—	—	7	9	6	5.0	4.8	11	0.3	
	May	29.705	1.285	61.0	33.0	33.7	48.3	12.1	50.9	45.6	30.6	4.1	85	538	—	—	—	7	9	6	5.9	4.7	8	0.6	
	June	29.067	0.700	70.0	43.0	33.0	50.9	17.2	57.4	50.3	35.5	4.1	77	527	—	—	—	7	9	6	5.0	4.8	11	0.3	
SIDMOUTH (Dagen). J. INGLEBY MACKENZIE, Esq., M.B., F.M.S.	April	29.723	1.046	68.0	33.0	37.0	45.8	34.3	11.5	39.7	33.7	2.2	66	503	75.6	28.4	0.6	12	10	2	3.2	2.4	13	0.8	
	May	29.703	1.046	68.0	33.0	37.0	45.8	34.3	11.5	39.7	33.7	2.2	66	503	75.6	28.4	0.6	12	10	2	3.2	2.4	13	0.8	
	June	29.703	0.732	61.0	33.0	33.7	48.3	12.1	50.9	45.6	30.6	4.1	85	538	—	—	—	7	9	6	5.				
	April	29.702	0.930	79.3	37.5	41.8	47.2	15.2	53.1	49.8	33.8	4.0	83	541	110.9	40.6	0.7	10	11	5	6.8	6.8	16	3.5	
	May	29.683	1.066	71.2	37.2	44.0	49.6	17.5	49.3	45.1	32.9	3.7	86	543	90.0	39.0	1.6	8	9	6	7.8	5.4	7	1.0	
	June	29.683	1.044	72.2	37.2	44.0	49.6	17.5	49.3	45.1	32.9	3.7	86	543	90.0	39.0	1.6	8	9	6	7.8	5.4	7	1.0	
	April	29.683	1.044	72.2	37.2	44.0	49.6	17.5	49.3	45.1	32.9	3.7	86	543	90.0	39.0	1.6	8	9	6	7.8	5.4	7	1.0	
	May	29.683	1.044	72.2	37.2	44.0	49.6	17.5	49.3	45.1	32.9	3.7	86	543	90.0	39.0	1.6	8	9	6	7.8	5.4	7	1.0	
	June	29.683	1.044	72.2	37.2	44.0	49.6	17.5	49.3	45.1	32.9	3.7	86	543	90.0	39.0	1.6	8	9	6	7.8	5.4	7	1.0	
	April	29.683	1.044	72.2	37.2	44.0	49.6	17.5	49.3	45.1	32.9	3.7	86	543	90.0	39.0	1.6	8	9	6	7.8	5.4	7	1.0	
	May	29.683	1.044	72.2	37.2	44.0	49.6	17.5	49.3	45.1	32.9	3.7	86	543	90.0	39.0	1.6	8	9	6	7.8	5.4	7	1.0	
	June	29.683	1.044	72.2	37.2	44.0	49.6	17.5	49.3	45.1	32.9	3.7	86	543	90.0	39.0	1.6	8	9	6	7.8	5.4	7	1.0	
TOWNEMOUTH (Hants). T. A. COMPTON, Esq., M.D., B.A., M.R.C.S.E., F.M.S.	April	29.880	1.000	74.0	31.3	42.7	57.6	43.1	14.5	49.3	43.5	2.83	3.2	0.8	546	113.0	44.0	1.1	6	7	10	4.2	3.1	11	3.1
	May	29.880	1.000	74.0	31.3	42.7	57.6	43.1	14.5	49.3	43.5	2.83	3.2	0.8	546	113.0	44.0	1.1	6	7	10	4.2	3.1	11	3.1
	June	29.880	1.000	74.0	31.3	42.7	57.6	43.1	14.5	49.3	43.5	2.83	3.2	0.8	546	113.0	44.0	1.1	6	7	10	4.2	3.1	11	3.1
	April	29.880	1.000	74.0	31.3	42.7	57.6	43.1	14.5	49.3	43.5	2.83	3.2	0.8	546	113.0	44.0	1.1	6	7	10	4.2	3.1	11	3.1
	May	29.880	1.000	74.0	31.3	42.7	57.6	43.1	14.5	49.3	43.5	2.83	3.2	0.8	546	113.0	44.0	1.1	6	7	10	4.2	3.1	11	3.1
	June	29.880	1.000	74.0	31.3	42.7	57.6	43.1	14.5	49.3	43.5	2.83	3.2	0.8	546	113.0	44.0	1.1	6	7	10	4.2	3.1	11	3.1
	April	29.880	1.000	74.0	31.3	42.7	57.6	43.1	14.5	49.3	43.5	2.83	3.2	0.8	546	113.0	44.0	1.1	6	7	10	4.2	3.1	11	3.1
	May	29.880	1.000	74.0	31.3	42.7	57.6	43.1	14.5	49.3	43.5	2.83	3.2	0.8	546	113.0	44.0	1.1	6	7	10	4.2	3.1	11	3.1
	June	29.880	1.000	74.0	31.3	42.7	57.6	43.1	14.5	49.3	43.5	2.83	3.2	0.8	546	113.0	44.0	1.1	6	7	10	4.2	3.1	11	3.1
	April	29.880	1.000	74.0	31.3	42.7	57.6	43.1	14.5	49.3	43.5	2.83	3.2	0.8	546	113.0	44.0	1.1	6	7	10	4.2	3.1	11	3.1
	May	29.880	1.000	74.0	31.3	42.7	57.6	43.1	14.5	49.3	43.5	2.83	3.2	0.8	546	113.0	44.0	1.1	6	7	10	4.2	3.1	11	3.1
	June	29.880	1.000	74.0	31.3	42.7	57.6	43.1	14.5	49.3	43.5	2.83	3.2	0.8	546	113.0	44.0	1.1	6	7	10	4.2	3.1	11	3.1
WORTHING (Sussex). W. J. HARRIS, Esq., M.R.C.S.E., F.M.S.	April	29.883	1.138	73.9	39.2	43.7	53.9	43.6	12.3	43.5	43.3	2.80	3.2	0.7	82	546	39.8	1.4	6	8	9	7	4.5	1.9	
	May	29.883	1.138	73.9	39.2	43.7	53.9	43.6	12.3	43.5	43.3	2.80	3.2	0.7	82	546	39.8	1.4	6	8	9	7	4.5	1.9	
	June	29.883	1.138	73.9	39.2	43.7	53.9	43.6	12.3	43.5	43.3	2.80	3.2	0.7	82	546	39.8	1.4	6	8	9	7	4.5	1.9	
	April	29.883	1.138	73.9	39.2	43.7	53.9	43.6	12.3	43.5	43.3	2.80	3.2	0.7	82	546	39.8	1.4	6	8	9	7	4.5	1.9	
	May	29.883	1.138	73.9	39.2	43.7	53.9	43.6	12.3	43.5	43.3	2.80	3.2	0.7	82	546	39.8	1.4	6	8	9	7	4.5	1.9	
	June	29.883	1.138	73.9	39.2	43.7	53.9	43.6	12.3	43.5	43.3	2.80	3.2	0.7	82	546	39.8	1.4	6	8	9	7	4.5	1.9	
	April	29.883	1.138	73.9	39.2	43.7	53.9	43.6	12.3	43.5	43.3	2.80	3.2	0.7	82	546	39.8	1.4	6	8	9	7	4.5	1.9	
	May	29.883	1.138	73.9	39.2	43.7	53.9	43.6	12.3	43.5	43.3	2.80	3.2	0.7	82	546	39.8	1.4	6	8	9	7	4.5	1.9	
	June	29.883	1.138	73.9	39.2	43.7	53.9	43.6	12.3	43.5	43.3	2.80	3.2	0.7	82	546	39.8	1.4	6	8	9	7	4.5	1.9	
	April	29.883	1.138	73.9	39.2	43.7	53.9	43.6	12.3	43.5	43.3	2.80	3.2	0.7	82	546	39.8	1.4	6	8	9	7	4.5	1.9	
	May	29.883	1.138	73.9	39.2	43.7	53.9	43.6	12.3	43.5	43.3	2.80	3.2	0.7	82	546	39.8	1.4	6	8	9	7	4.5	1.9	
	June	29.883	1.138	73.9	39.2	43.7	53.9	43.6	12.3	43.5	43.3	2.80	3.2	0.7	82	546	39.8	1.4	6	8	9	7	4.5	1.9	
TAUNTON (Somerset). MR. W. LUCKWELL, F.M.S.	April	29.928	1.102	82.3	32.3	50.0	63.5	42.7	20.8	51.7	46.3	3.15	3.5	0.8	542	74.8	43.5	0.4	10	6	9	12	5.5	1.9	
	May	29.928	1.102	82.3	32.3	50.0	63.5	42.7	20.8	51.7	46.3	3.15	3.5	0.8	542	74.8	43.5	0.4	10	6	9	12	5.5	1.9	
	June	29.928	1.102	82.3	32.3	50.0	63.5	42.7	20.8	51.7	46.3	3.15	3.5	0.8	542	74.8	43.5	0.4	10	6	9	12	5.5	1.9	
	April	29.928	1.102	82.3	32.3	50.0	63.5	42.7	20.8	51.7	46.3	3.15	3.5	0.8	542	74.8	43.5	0.4	10	6	9	12	5.5	1.9	
	May	29.928	1.102	82.3	32.3	50.0	63.5	42.7	20.8	51.7	46.3	3.15	3.5	0.8	542	74.8	43.5	0.4	10	6	9	12	5.5	1.9	
	June	29.928	1.102	82.3	32.3	50.0	63.5	42.7	20.8	51.7	46.3	3.15	3.5	0.8	542	74.8	43.5	0.4	10	6	9	12	5.5	1.9	
	April	29.928	1.102	82.3	32.3	50.0	63.5	42.7	20.8	51.7	46.3	3.15	3.5	0.8	542	74.8	43.5	0.4	10	6	9	12	5.5	1.9	
	May	29.928	1.102	82.3	32.3	50.0	63.5	42.7	20.8	51.7	46.3	3.15	3.5	0.8	542	74.8	43.5	0.4	10	6	9	12	5.5	1.9	
	June	29.928	1.102	82.3	32.3	50.0	63.5	42.7	20.8	51.7	46.3	3.15	3.5	0.8	542	74.8	43.5	0.4	10	6	9	12	5.5	1.9	
	April	29.928	1.102	82.3	32.3	50.0	63.5	42.7	20.8	51.7	46.3	3.15	3.5	0.8	542	74.8	43.5	0.4	10	6	9	12	5.5	1.9	
	May	29.928	1.102																						

[illegible]



Year 1869.	Month.	Names of Stations and Observers.	Pressure of Air in Month.		Temperature of Air in Month.			Mean Temperature.	Mean Dew Point.	Air.	Elastic Force.	Vapour.		Mean Reading of Thermometer.		Wind.			Mean Amount of Cloud.	Rain.			
			Mean.	Range.	Highest.	Lowest.	Range.					Of all Highest.	Of all Lowest.	Daily Range.	In a cubic foot of Air.	Mean Degree of Humidity.	Maximum in Days of Sun.	Minimum in Days of Sun.			Estimated Strength.	Relative Proportion of	Mean Amount of Ozone.
	April	SOMERLEYTON RECTORY (Surf.)	29.945	1.162	75.0	52.5	22.5	22.5	57.6	41.4	16.2	48.5	3.07	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	May	Rev. C. J. STEWARD, F.M.S.	29.790	1.110	75.0	52.5	22.5	22.5	57.6	41.4	16.2	48.5	3.07	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	June		29.790	1.110	75.0	52.5	22.5	22.5	57.6	41.4	16.2	48.5	3.07	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	April	NORWICH (Norfolk).	29.905	1.182	75.5	53.5	23.0	23.0	58.0	42.0	16.0	49.0	3.10	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	May	C. M. GIBSON, Esq., F.M.S.	29.791	1.118	75.0	52.5	22.5	22.5	57.6	41.4	16.2	48.5	3.07	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	June		29.791	1.118	75.0	52.5	22.5	22.5	57.6	41.4	16.2	48.5	3.07	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	April	WISBECH (Cambridgeshire).	29.933	1.200	77.0	54.0	23.0	23.0	59.0	43.0	16.0	50.0	3.13	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	May	S. H. MILLER, Esq., F.R.A.S.	29.811	1.165	76.0	53.0	23.0	23.0	58.0	42.0	16.0	49.0	3.10	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	June		29.811	1.165	76.0	53.0	23.0	23.0	58.0	42.0	16.0	49.0	3.10	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	April	LLANDUDNO (Carnarvonshire).	29.869	1.412	78.0	55.0	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	May	J. NICOL, Esq., M.D.	29.792	1.165	76.0	53.0	23.0	23.0	58.0	42.0	16.0	49.0	3.10	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	June		29.792	1.165	76.0	53.0	23.0	23.0	58.0	42.0	16.0	49.0	3.10	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	April	GRANTHAM (Lincolnshire).	29.809	1.316	75.0	52.5	22.5	22.5	57.6	41.4	16.2	48.5	3.07	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	May	JAMES WILLIAM JEANS, Esq., F.R.A.S.	29.811	1.165	76.0	53.0	23.0	23.0	58.0	42.0	16.0	49.0	3.10	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	June		29.811	1.165	76.0	53.0	23.0	23.0	58.0	42.0	16.0	49.0	3.10	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	April	DERRY (Downshire).	29.729	1.193	75.0	52.5	22.5	22.5	57.6	41.4	16.2	48.5	3.07	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	May	JOHN DAVIS, Esq.	29.811	1.165	76.0	53.0	23.0	23.0	58.0	42.0	16.0	49.0	3.10	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	June		29.811	1.165	76.0	53.0	23.0	23.0	58.0	42.0	16.0	49.0	3.10	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	April	NOTTINGHAM (Notts).	29.714	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	May	M. O. TARBOTTON, Esq., F.G.S.	29.714	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	June		29.714	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	April	HOVKHAM (Norfolk).	29.808	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	May	JOHN DAVIS, Esq., Assistant to the Earl of LINCOLN.	29.808	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	June		29.808	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	April	BOSTON (Lincolnshire).	29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	May	A. MERGER ADAM, Esq., M.D.	29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	June		29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	April	HAWARDEN (Flint).	29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	May	T. MOFFAT, Esq., F.G.S.	29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	June		29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	April	LIVERPOOL OBSERVATORY.	29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	May	JOHN HARTUP, Esq., F.R.A.S.	29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	June		29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	April	ECCLES.	29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	May	T. MACKENZIE, Esq., F.R.A.S.	29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	June		29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	April	WALSLEY (Yorkshire).	29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	May	WALSLEY (Yorkshire).	29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	June		29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	April	STONYHURST (Yorkshire).	29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	May	Rev. J. S. FENNER, F.R.A.S.	29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	June		29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	April	BURTON (Yorkshire).	29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	May	F.G.S., F.M.S.	29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	June		29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	April	LEEDS (Yorkshire).	29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	May	HENRI DENNY, Esq., A.L.S.	29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	June		29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	April	OTLEY (Yorkshire).	29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	May	H. W. THOMAS, Esq.	29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	June		29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	April	YORK (Yorkshire).	29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	May	FIELDS THORPE, Esq.	29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	June		29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	April	LAWASKER (Yorkshire).	29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	May	Rev. F. W. STOW, M.A., F.M.S.	29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	June		29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	April	POKERMOUTH (Cumberland).	29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6
	May	H. DUNN, Esq., M.D., F.R.A.S.	29.811	1.262	76.8	53.8	23.0	23.0	60.0	44.0	16.0	51.0	3.16										

Second Rain-gauges are placed—At Worthing, at the height of 6 inches above the ground, the amount collected was 0.84 inches; at Aldershot Camp, 25 feet, 8.49 inches; at West Harprie Vicarage, 14 feet, 7.86 inches; at Strathfield, 7.86 inches; at Marlborough College, 8 inches, 0.77 inches; at Oxford, 22 feet, 5.35 inches; at Cardington, 36 feet, 5.99 inches; at Wisbech, 8 feet, 6.74 inches; at Nottingham, 23 feet, 6.05 inches; at Boston, 8 feet, 6.62 inches; at Eccles, 34 feet, 5.78 inches; at Cockermouth, 62 feet, 6.63 inches; at Milnthorpe, 40 feet, 4.45 inches. The amount collected at Emsay Reservoir (Ireland), 440 feet above the level of the sea, was 3.40 inches.

Meteorological Table, Quarter ending June 30th,																								
STATION (FIRST Yorkshire).	Month.	Observer.	Pressure of Air in Month.		Temperature of Air in Month.			Mean Temperature.		Vapour.		Mean Reading of Thermometer.			Wind.			Rain.						
			Mean.	Range.	Highest.	Lowest.	Range.	Of all Highest.	Of all Lowest.	Daily Range.	Air.	Dew Point.	Elastic Force.	Mean.	In a cubic foot of Air.	Mean Degree of Humidity.	Maximum in Days of Sun.	Minimum in Days of Sun.	Estimated Strength.	Relative Proportion of N. E. S. W.	Mean Amount of Cloud.	Mean Amount of Rain.		
STONYHURST (Yorkshire).	April	Rev. J. S. Fenner, F.R.A.S., F.M.S.	29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
DEAUFORD (Yorkshire).	May	Rev. J. S. Fenner, F.R.A.S., F.M.S.	29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
F.G.S., F.M.S.	June		29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
LEEDS (Yorkshire).	April	Henry Denny, Esq., A.L.S.	29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
May			29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
June			29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
OTLEY (Yorkshire).	April	H. W. Thomas, Esq.	29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
May			29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
June			29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
YORK (Yorkshire).	April	Fields Thorpe, Esq.	29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
May			29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
June			29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
HAWSKER (Yorkshire).	April	Rev. F. W. Stow, M.A., F.M.S.	29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
May			29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
June			29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
COCKERMOUTH (Cumberland).	April	H. Robinson, Esq., M.D., F.R.A.S., F.M.S.	29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
May			29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
June			29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
ALLENHEADS (Durham).	April	T. Sopwith, Esq., M.A., F.R.S., F.M.S.	29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
May			29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
June			29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
CARLISLE (Cumberland).	April	L. Cartmell, Esq., F.M.S.	29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
May			29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
June			29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
BYWELL (Durham).	April	Mr. John Dawson, under the direction of T. Sopwith, Esq., M.A., F.R.S., F.M.S.	29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
May			29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
June			29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
NORTH SHIELDS (Durham).	April	Robert Spencer, Esq.	29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
May			29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
June			29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
MILTON (Banbridge, Ireland).	April	John Smyth, Esq., J.C.S., A.M., M.I.C.E.I., F.M.S.	29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
May			29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
June			29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
CULLODEN.	April	A. Forbes, Esq., F.M.S.	29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
May			29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	
June			29.740	1.361	76.1	53.1	23.0	23.0	60.0	44.0	16.0	51.0	3.16	87.5	0.3	91	100.0	2.1	0.8	7	6	5.4	0.6	

Second Rain-gauges are placed — At Wetherby.



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	Mean Estimated Strength.	WIND.			Mean Amount of Rain.
																			N.	E.	S.	W.
Guernsey	29.638	79.0	33.0	46.0	57.9	46.8	28.7	11.1	50.5	47.8	334	3.8	0.4	90	540	—	—	1.3	9	7	6	6
Helston	29.701	78.0	32.0	46.0	57.9	46.8	28.7	11.1	50.5	47.8	334	3.8	0.4	90	540	—	—	1.3	9	7	6	6
Truro	29.676	78.0	32.0	46.0	57.9	46.8	28.7	11.1	50.5	47.8	334	3.8	0.4	90	540	—	—	1.3	9	7	6	6
Sidmouth	29.663	73.0	34.0	39.0	39.8	40.3	30.5	13.5	50.9	48.7	339	3.6	0.6	86	543	—	—	1.3	9	7	6	6
Eastbourne	29.650	79.3	28.8	50.5	60.8	45.5	38.0	15.3	52.1	47.0	339	3.6	0.6	86	543	—	—	1.3	9	7	6	6
Osborne	29.651	83.2	27.5	55.0	62.1	44.9	40.5	17.2	51.7	47.5	339	3.7	0.5	86	543	—	—	1.3	9	7	6	6
Bournemouth	29.684	74.0	31.3	42.7	39.6	46.0	33.1	13.6	51.5	45.8	309	3.5	0.8	81	543	121.3	42.8	1.1	7	7	9	9
Worthing	29.668	73.0	32.0	43.0	46.0	46.5	33.7	13.7	51.8	45.0	309	3.4	1.0	78	542	—	—	1.3	6	7	9	9
Taunton	29.626	87.5	29.5	58.0	65.5	43.3	48.4	22.2	53.8	47.7	332	3.7	0.5	80	539	77.6	45.1	0.4	14	6	7	8
Wilton	29.628	86.0	27.5	58.5	65.3	42.9	46.3	23.4	52.7	46.2	314	3.6	0.9	80	538	108.6	40.8	1.4	7	7	8	8
Barnstaple	29.614	79.0	33.5	43.5	53.4	47.2	33.7	16.2	53.8	49.2	352	3.9	0.9	85	539	—	—	1.3	5	6	7	7
Aldershot Camp	29.592	86.0	30.7	57.9	64.4	43.9	44.3	20.1	53.2	47.1	325	3.4	0.9	78	534	108.2	41.4	1.3	8	8	11	11
West Hartle Piege.	29.695	86.7	28.0	58.7	63.0	42.9	47.4	20.1	51.5	45.1	301	3.5	0.9	79	539	123.5	38.5	0.3	6	8	9	9
Strathfield Turgiss	29.742	90.3	32.7	62.5	63.7	43.0	50.0	20.7	51.9	44.6	296	3.4	1.0	76	539	113.5	40.6	1.4	7	8	9	9
Weybridge Heath	29.632	83.8	32.0	51.8	62.1	45.2	41.1	16.9	52.4	47.2	327	3.7	0.7	83	540	—	—	1.6	7	7	8	8
Bath R. L. & S. Inst.	29.651	82.0	32.0	55.0	65.0	43.4	41.3	15.6	50.1	45.6	307	3.5	0.6	84	544	—	—	1.6	7	7	8	8
Battersea	29.709	81.2	29.4	51.8	60.2	42.0	43.6	18.2	50.1	43.7	286	3.2	0.9	79	539	117.7	35.4	0.5	8	8	10	10
Marlborough College	29.660	87.5	29.3	58.5	63.2	43.8	46.3	19.4	52.0	46.1	313	3.5	0.9	81	539	134.4	25.4	0.3	7	8	10	10
Royal Observatory	29.680	78.9	31.6	46.6	63.1	44.1	38.8	19.0	51.6	45.1	302	3.4	0.9	79	540	115.2	37.9	—	7	7	8	8
OverCourt, nr. Bristol	29.705	85.0	31.0	54.1	61.7	41.3	41.6	20.4	51.3	44.5	294	3.4	1.0	77	537	76.6	41.0	1.5	8	8	10	10
Streatham Viarage	29.635	89.3	28.8	60.7	64.4	44.5	47.2	19.9	53.1	46.9	320	3.4	0.9	81	539	108.4	41.3	—	11	9	10	10
Camden Town	29.642	85.3	32.8	52.5	62.3	44.8	40.9	17.5	53.0	45.7	309	3.5	1.0	77	539	106.6	41.9	—	10	9	10	10
Oxford	29.731	84.5	30.4	54.1	63.3	44.4	42.3	18.9	52.8	44.0	289	3.3	1.3	72	541	102.8	38.6	0.6	9	8	10	10
Gloucester	29.639	86.8	29.4	57.4	64.0	43.3	46.9	20.7	51.6	45.9	310	3.5	0.8	81	538	—	—	1.2	4	6	6	6
Royston	29.674	83.1	29.0	57.1	63.1	43.2	42.8	15.9	50.0	45.0	300	3.4	0.7	83	539	—	—	1.6	8	8	10	10
Little Wratting	29.692	80.9	28.0	52.0	62.7	43.5	46.6	19.2	52.1	44.7	296	3.4	1.0	76	541	—	—	1.6	7	7	8	8
Cardington	29.710	80.0	28.0	54.0	62.0	43.0	43.3	18.9	51.4	45.4	289	3.3	1.0	76	535	105.5	—	0.6	7	8	10	10
Lampeter	29.642	85.1	32.5	52.6	63.9	43.7	43.0	18.8	50.6	47.5	330	3.7	0.4	80	542	104.2	40.1	0.9	8	10	10	10
Somerleyton Rectory	29.685	86.9	31.5	55.4	60.5	44.8	42.0	15.7	51.4	44.3	299	3.3	0.9	79	542	110.0	40.4	—	10	9	10	10
Norwich	29.690	73.5	32.0	41.5	59.7	45.0	33.4	14.7	51.2	43.9	288	3.3	1.0	76	540	—	—	1.7	8	8	10	10
Wisbech	29.692	85.1	32.4	52.7	59.3	44.9	40.0	14.4	50.7	44.8	297	3.4	0.9	80	540	—	—	1.7	8	8	10	10
Llandudno	29.647	82.0	34.0	48.0	60.0	44.0	37.3	16.0	50.7	43.7	287	3.3	1.0	77	539	—	—	1.7	8	8	10	10
Grantham	29.666	86.3	32.6	56.7	62.3	41.2	44.8	21.1	50.5	43.8	287	3.3	1.2	78	539	101.4	37.3	6.5	8	9	10	10
Derby	29.672	83.8	32.7	56.0	67.9	44.2	41.8	13.7	49.3	44.5	295	3.3	0.6	84	544	111.0	37.9	1.5	13	5	5	5
Nottingham	29.639	87.5	31.0	55.7	61.1	44.0	41.5	17.1	50.9	45.7	308	3.5	0.8	83	543	102.0	41.8	1.3	7	10	10	10
Holkham	29.675	75.0	33.5	41.5	59.6	46.9	32.5	12.7	50.4	44.7	267	3.4	0.9	80	538	112.0	32.1	1.2	11	7	8	8
Hawarden	29.631	76.1	32.0	44.1	58.2	45.1	33.6	13.1	50.2	43.4	283	3.2	0.9	77	540	—	—	1.7	7	8	10	10
Liverpool	29.684	79.8	30.2	49.6	59.8	43.2	40.8	16.6	50.2	42.6	275	3.1	1.0	75	541	69.4	37.7	0.2	7	7	9	9
Eccles	29.707	77.0	32.0	45.0	56.8	42.7	35.8	14.1	47.9	41.3	262	3.0	0.8	80	534	—	—	0.4	7	9	9	9
Halifax	29.672	84.0	32.0	56.0	68.4	40.7	42.7	17.7	48.6	43.4	283	3.3	0.7	82	546	89.6	38.4	—	—	—	—	—
Hull	29.681	75.0	32.9	42.1	58.6	43.5	34.7	15.1	49.3	43.0	279	3.2	0.8	79	537	111.7	39.8	—	5	9	10	10
Stonhurst	29.692	79.6	33.5	46.1	58.2	44.5	35.3	13.7	49.3	42.4	272	3.1	0.9	77	538	—	—	1.3	8	10	10	10
Bradford	29.638	75.3	34.1	42.2	56.7	45.1	32.1	11.6	49.6	42.5	273	3.1	1.0	77	540	—	—	1.9	11	7	8	8
Leeds	29.638	75.3	34.1	42.2	56.7	45.1	32.1	11.6	49.6	42.5	273	3.1	1.0	77	540	—	—	1.9	11	7	8	8
Olney	29.638	75.3	34.1	42.2	56.7	45.1	32.1	11.6	49.6	42.5	273	3.1	1.0	77	540	—	—	1.9	11	7	8	8
York	29.638	75.3	34.1	42.2	56.7	45.1	32.1	11.6	49.6	42.5	273	3.1	1.0	77	540	—	—	1.9	11	7	8	8
Hawker	29.704	78.0	32.8	48.2	57.4	42.1	37.8	15.3	48.8	43.5	273	3.1	0.8	80	540	108.0	36.7	1.2	10	6	8	8
Cockermouth	29.686	77.3	32.0	48.3	59.8	43.2	40.3	16.6	50.4	41.7	270	3.1	1.1	73	541	100.0	37.3	0.8	8	8	10	10
Allenheads	29.686	77.4	32.0	44.4	54.7	39.2	37.8	15.5	45.0	39.6	245	2.8	0.7	81	523	112.1	32.9	1.7	8	8	10	10
Carlisle	29.655	77.0	32.0	48.0	59.7	41.4	40.4	18.3	49.3	44.9	299	3.4	0.6	85	543	93.6	34.9	0.2	3	9	9	9
Bywell	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
North Shields	29.731	73.0	32.2	40.8	57.6	43.0	32.9	14.6	48.2	42.2	270	3.1	0.8	80	545	—	—	41.5	1.5	9	9	9
Miltown, Ireland	29.690	75.0	32.0	46.0	58.1	42.7	38.7	15.4	49.4	41.8	267	3.1	1.0	75	541	95.4	39.7	2.0	10	6	7	7

The highest temperatures of the air were at Weybridge Heath, 90° 3; Cardington, 90° 0; Camden Town, 89° 5; Vicarage, 88° 6; and Taunton, Royal Observatory, and Boston, 87° 5. The lowest temperatures of the air were at Weybridge Heath, 28° 4; Taunton, 22° 2; Nottingham, 21° 1; Weybridge Heath and Royston, 20° 7; and West Hartle Piege, 20° 5. The least number of rainy days were at Taunton, 11° 1; Otley, 11° 6; Hawarden, 12° 7; Liverpool, 13° 1; Sidmouth, 13° 3; and Bournemouth, 18° 6. The heaviest falls of rain were at West Hartle Piege, 9.5 in.; Allenheads, 8.8 in.; Halifax, 8.4 in.; Hawarden, 8.3 in.; Miltown, 5.4 in.; and Eastbourne and Royal Observatory, 5.5 in.

QUARTERLY METEOROLOGICAL TABLE for different PARALLELS of LATITUDE.

PARALLELS OF LATITUDE, &c.	Mean Pressure of dry Air reduced to the level of the Sea.	Mean of all Highest Read- ings of the Thermometer.	Mean of all Lowest Read- ings of the Thermometer.	Mean Range of Tempera- ture in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Max- imum in Rays of Sun.	Mean Reading of Min- imum on Grass.	Mean Estimated Strength.	WIND.				Relative Pro- portion of Rain.
																			Relative Direction.				
																			N.	E.	S.	W.	
Guernsey	29.638	79.0	33.0	46.0	57.9	46.8	28.7	11.1	50.5	47.8	334	3.8	0.4	90	540	—	—	1.3	9	7	6	6	
Between latitudes	50° and 51°	29.670	76.8	31.2	45.6	60.9	46.3	35.0	14.6	52.1	46.5	317	3.6	0.8	84	541	—	—	1.3	9	7	6	6
	51° and 52°	29.655	85.0	30.1	54.9	63.1	43.8	43.8	19.3	52.2	45.7	318	3.6	0.8	84	541	107.4	38.9	1.2	9	7	6	6
	52° and 53°	29.670	84.4	30.4	54.0	61.0	43.8	42.3	17.4	51.1	44.8	320	3.6	0.8	84	541	—	—	1.2	9	7	6	6
	53° and 54°	29.678	79.0	31.7	47.3	55.7	43.8	37.0	14.9	49.7	43.0	329	3.6	0.8	84	537	—	—	1.2	9	7	6	6
	54° and 55°	29.683	75.9	28.7	47.2	53.7	41.5	38.9	11.5	53.9	46.4	324	3.2	0.1	83.8	537	99.8	36.9	0.9	9	7	6	6
North Shields	29.661	75.0	32.2	46.8	55.7	43.0	32.4	14.6	48.2	42.2	270	3.1	0.8	80	545	—	41.5	5.7	2.0	10	10	10	10
Miltoon, Banbridge (Ireland)	29.700	75.0	30.2	46.0	58.1	42.7	38.7	15.4	49.4	41.8	287	3.1	0.8	80	545	95.4	39.7	2.0	10	10	10	10	10
Mean - 50° to 55°	29.686	79.0	30.7	48.2	50.9	43.7	38.8	16.2	50.3	44.1	291	3.8	0.9	80	540	—	39.7	1.3	9	7	6	6	6



Temperature of												Elastic Force of Vapour.	Weight of Vapour in Cubic Foot of Air.	
Air.			Evaporation.		Dew Point.		Air— Daily Range.		Water of the Thames.					
1869. MONTHS.	Mean.	Diff. from ave- rage of 28 years.	Diff. from ave- rage of 28 years.	Mean.	Diff. from ave- rage of 28 years.	Mean.	Diff. from ave- rage of 28 years.	Mean.		Diff. from ave- rage of 28 years.	Mean.	Diff. from ave- rage of 28 years.	Mean.	Diff. from ave- rage of 28 years.
July -	64.5	+3.1	+2.7	59.9	+2.5	56.2	+2.6	29.5	+1.5	64.3	0.453	in.	in.	
Aug. -	60.8	+0.1	-0.5	56.1	-1.3	52.1	-1.7	19.9	-0.3	62.5	0.389	+0.040	+0.040	
Sept. -	59.0	+2.5	+1.7	55.1	+1.0	51.6	+0.4	16.2	-2.3	58.3	0.382	+0.001	+0.001	
Mean -	61.4	+1.9	+1.3	57.0	+0.7	53.3	+0.4	19.5	-0.2	61.7	0.408	+0.004	+0.004	

1869. MONTHS.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horiz- ontal move- ment of the Air.	Reading of Thermometer on		
	Mean.	Diff. from ave- rage of 28 years.	Mean.	Diff. from ave- rage of 28 years.	Mean.	Diff. from ave- rage of 28 years.	Amount.	Diff. from ave- rage of 28 years.		Number of Nights it was		
										At or below 30°.	Be- tween 30° and 40°.	Above 40°.
July -	75	0	29.923	+0.126	537	grs.	in.	0.6	-2.0	213	0	31
Aug. -	73	-4	29.968	+0.183	532	+3	1.2	-1.2	224	1	3	27
Sept. -	77	-4	29.642	-0.175	528	-6	3.1	+0.7	349	0	5	25
Mean -	75	-3	29.846	+0.045	529	-1	Sum	Sum	Mean	Sum	Sum	Sum

NOTE.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and the sign (+) plus signifies above the average.

Hull, Hawsker, and North Shields; on the 27th at Boston; on the 28th at Boston, North Shields, and Miltown; on the 29th at Boston; and on the 31st at Miltown. On the 1st of August at Strathfield Turgiss, Halifax, Hull, York, and Miltown; on the 2d at London; on the 3d at Cardington and Hull; on the 5th at Little Wrating; on the 6th at Strathfield Turgiss; on the 7th at Royston, Little Wrating, Cardington, Somerleyton, Norwich, Wisbech, Boston, Eccles, and Stonyhurst, Leeds, York, and North Shields; on the 8th at Wisbech and Boston; on the 9th at Guernsey, Eastbourne, Streatly, Royston, and Wisbech; on the 10th generally at all parts of the country; on the 12th at Boston; on the 13th at Little Wrating, Cardington, Somerleyton, and Hawsker; on the 15th at Stonyhurst; on the 28th at Helston and West Harpre; on the 29th at all parts of the country; and on the 30th generally over the Midland counties.

Thunder was heard but lightning was not seen on the 3rd of July at Stonyhurst; on the 4th at Little Wrating; on the 8th at Eccles; on the 12th at Streatly; on the 13th at Guernsey; on the 16th at Royston and Little Wrating; on the 18th at Bywell; on the 21st at Cockermouth; on the 22d at Bywell; on the 23d at Strathfield Turgiss; on the 25th at Bywell; on the 26th at Bradford; on the 27th at Somerleyton; on the 28th at Strathfield Turgiss; on the 29th at Bradford; and on the 31st at Eastbourne. On the 1st of August at Eastbourne, Weybridge, Stonyhurst, North Shields, and Culloden; on the 2d at North Shields; on the 5th at Halifax, Allenheads; on the 6th at Eastbourne and Weybridge Heath; on the 9th at Hull; and on the 18th at Bradford. On the 5th of September at Hawarden; on the 8th at Strathfield Turgiss; on the 10th at Oxford; on the 13th at Royston and Hull; on the 23d at Over Court; on the 24th at Helston, Sidmouth, Taunton, and Hull; and on the 30th at Strathfield Turgiss.

Lightning was seen but thunder was not heard on the 28th of July at Allenheads. On the 1st of August at Oxford, Allenheads, and Culloden; on the 4th at London; on the 5th at Weybridge, Heath, Streatly, London, Oxford, and Cardington; on the 7th at Hull; on the 10th at Eastbourne; on the 17th at Hull; on the 27th at Streatly and Llandudno; and on the 28th at Streatly, Cardington, the 4th of September at Cockermouth; on the 5th at Oxford, Llandudno, Hawarden, and Carlisle; on the 7th at Boston; on the 9th at Aldershot, Streatly, Oxford, and Boston; on the 10th at Llandudno; and on the 28th at Halifax.

Solar halos were seen on the 5th of July at Eastbourne; on the 6th at Over Court; on the 7th at Hawarden and Hawsker; on the 24th at Over Court; on the 25th at Wilton; and on the 26th at Liverpool. On the 5th of August at Over Court. On the 7th of September at Wisbech; on the 17th at Hawarden; on the 20th at Over Court; on the 26th at Oxford; and on the 27th at Over Court and Oxford.

Lunar halos were seen on the 14th of July at Strathfield Turgiss; on the 23d at Eastbourne; and on the 24th at Oxford. On the 23d of August at Sidmouth. On the 16th of September at London, Hawarden, and North Shields; on the 20th at Hawarden and Eccles; on the 21st at 24th at Eastbourne; and on the 26th at London.

Aurora Boreales were seen on the 31st of July at Hawarden. On the 4th of September at Cockermouth; on the 5th at Oxford, Hawarden, and Carlisle; on the 10th at Hawarden; on the 27th at Over Court, Oxford, Cardington, Llandudno, and Hawsker.

Hail fell on 8 days during the quarter, viz., 1 in July, 2 in August, and 5 in September.

Fog prevailed on 37 days during the quarter, viz., 13 in July, 15 in August, and 9 in September.

Wheat cut on the 22d of July at Guernsey and Weybridge; on the 24th at Eastbourne; on the 27th at Worthing and Over Court; on the 28th at Hawarden; on the 29th at Strathfield Turgiss and Cardington; and on the 31st at Osborne. On the 2d of August at Strathfield Turgiss and Cardington.

on the 3d at Helston; on the 9th at Llandudno; on the 10th at Little Wrating and Boston; on the 14th at Somerleyton and Hull; and on the 18th at Miltown. Barley cut on the 2d of August at Llandudno; on the 7th at Weybridge; on the 9th at Strathfield Turgiss and Cardington; on the 10th at Helston; on the 14th at Culloden; and on the 19th at Somerleyton.

Oats cut on the 22d of July at Weybridge; on the 23d at Worthing; on the 24th at Streatly and Hawarden; on the 26th at Boston; and on the 28th at Over Court. On the 2d of August at Strathfield Turgiss; on the 10th at Helston and Culloden; on the 11th at Eastbourne; on the 16th at Llandudno; on the 25th at Miltown; and on the 27th at Hull.

Apple ripe on the 9th of August at Somerleyton; on the 21st at Strathfield Turgiss; on the 25th at Hull; on the 26th at Culloden; and on the 28th at Miltown.

Pear ripe on the 27th of July at Weybridge. On the 7th of August at Helston; on the 18th at Miltown; on the 23d at Strathfield Turgiss; and on the 27th at Somerleyton.

Plum ripe on the 3d of August at Helston; on the 20th at Culloden; on the 21st at Strathfield Turgiss; on the 25th at Somerleyton; and on the 30th at Miltown. On the 7th of September at Hull.

## JULY.

STRAFIELD TURGISS.—A great improvement in the growing crop of wheat during this month, but hardly sufficient to make up for its deficiency in height and smallness of ear, so that the yield will be below the average. Reaping has been begun but will not be general until the second week of August. The bulk of straw is above the average. Oats and barley full average crops. Vetches well podded and promise to yield well. Sweet peas have not grown very fast, but with the rain we are having will grow a good crop. Mangolds are almost without exception a good plant, and have made great progress since the rain. Lean sheep selling at good prices, good prospect of winter keep, the hay crop was heavy and well gathered.

ECCLES.—Splendid crops of hay have been housed in this district, and the cereal crops are looking remarkably well.

HULL.—The estimate of the hay crop in June was evidently wrong, for after the most careful inspection and enquiry I find it unanimously agreed that it is the best crop that there has been for years in this district; early potatoes are rather small, late ones are suffering for want of rain; mangold wurzel are looking well.

BYWELL.—Hay is a good crop and a good quality. The grain crops are looking well, some late potatoes will be ready for cutting in a few days. Showers are much required for turnips, CULLODEN, and the pastures.

CULLODEN.—The warm and dry weather of the past month has rapidly brought on the various crops, and that to a too early maturity. From the scarcity of moisture, straw (particularly oats) has not lengthened out much during the month, and where the land is poor and thin, this crop must now be a light one, the continued dry weather having told more on it than on any other cereal; still some good fields are here and there to be observed, which was hardly the case anywhere in 1868. Barley is a fair crop, and on some farms the produce will be good. Wheat, not requiring so much moisture, everywhere looks well; some of the fields are very fine, head large, and no appearance of rust. Hay generally throughout the district may be returned as a fair crop, and in some few instances over an average, and has been well and safely got into stack. The turnip crop is everywhere very promising, the first sown fields being very heavy and luxuriant in growth, while the last got in are making good and satisfactory progress. The potato crop is not up to the average of seasons, requiring more moisture, and rain falling now would have a most beneficial effect on this valuable and important crop. Pastures are very short and poor and have but little freshness about them; should rain however come, they will still afford a full bite for stock.

## AUGUST.

STRAFIELD TURGISS.—Harvest completed; wheat various in yield, altogether the yield is under the average. Barley good in quality and quantity. Oats a good crop.

LITTLE WRATING.—Wheat harvest began on the 10th.

COCKERMOUTH.—The grain harvest commenced on the 4th, and was nearly completed by the end of the month. The crop of oats is below an average, being short in straw and deficient in grain.

Wheat fully an average crop, though not so good as last year.

HULL.—The great bulk of wheat is got in, in fine condition.

BYWELL.—The harvest is in full operation and the crops in good condition. The yield is expected to be quite an average.

CULLODEN.—The weather all through the month has been most favourable for bringing the corn crops to a state of ripeness. Oat and barley harvest began on the 10th and 14th respectively, and has been prosecuted day after day without almost any interruption. The turnip crop, at one time so promising has been seriously injured, withering away from the constant want of moisture, and in many cases the crop of common turnips particularly is much damaged by the fly. All pastures are greatly reduced, and cattle are but poorly provided for. Barley, on good heavy and well-farmed land, is a full crop, both in bulk of straw and yield of grain, and will thrash out well. Oats are in a whole wheat is the best of all the cereals, and some fields are particularly fine and good, the heads being both large and filled with well ripened grain. Potatoes are free from disease, but the crop has greatly suffered from the dry and parched condition of the land, and returns can hardly be expected to be good. The hay harvest was all completed early in the month, and secured in fine condition.

## SEPTEMBER.

STRAFIELD TURGISS.—The past month has been by no means unfavourable to the root crops; the rains at the close of the month have penetrated the ground and made it into good working order for the winter.

BYWELL.—The harvest is quite finished and the grain housed in pretty good condition considering the uncertain weather during the month. The winds have greatly assisted in drying the corn without shaking it; the yield is quite an average. The pastures and turnips are much improved by the late rains, and potatoes are as yet free from disease.



MONTHLY METEOROLOGICAL TABLE FOR THE QUARTER ENDING SEPTEMBER 30TH, 1869.  
*The Observations have been reduced to Mean values by Glaisher's Barometrical and Diurnal Range Tables, and the Hygrometrical results have been deduced from the fifth edition of his Hygrometrical Tables.*

Year 1869.	Months.	Names of Stations and Observers.	Pressure of Atmosphere in Month.		Temperature of Air in Month.				Mean Tem- perature.		Vapour.		Mean Reading of Thermometer.		Wind.		Mean Amount of		Rain.			
			Mean.	Range.	Highest.	Lowest.	Range.	Mean		In a cubic foot of Air.	Short of Saturation.	Mean Weight of a cubic foot of Air.	Maximum in Days of Sun.	Minimum in Grass.	Estimated Strength.	Relative Proportion of		Mean Amount of Ozone.	Mean Amount of Cloud.	Number of Days it fell.	Amount col- lected.	
								Or all Highest.	Or all Lowest.							Daily Range.	N.					E.
July	29-900	0.432	80.5	63.6	80.5	63.6	16.9	60.9	53.1	434	4.9	1.1	82	531	—	1.0	10	4.0	3.2	8	0.1	
Aug.	29-900	0.580	75.5	51.0	75.5	51.0	24.5	59.9	53.4	416	4.9	1.1	82	531	—	1.3	12	4.0	3.8	27	0.6	
Sept.	29-903	1.025	72.5	49.5	72.5	49.5	23.0	58.7	53.4	409	4.5	1.0	82	530	—	1.8	10	4.8	5.3	17	3.0	
July	29-904	0.625	80.0	65.0	80.0	65.0	15.0	62.9	54.6	427	4.8	1.2	75	531	101.1	48.8	6	3.7	4.4	7	0.4	
Aug.	29-904	0.669	80.0	65.0	80.0	65.0	15.0	62.9	54.6	427	4.8	1.2	75	531	102.3	46.8	2	3.6	3.3	8	0.8	
Sept.	29-903	1.312	71.0	47.0	71.0	47.0	24.0	59.0	54.5	422	4.8	0.9	83	530	82.3	48.9	2	4	5.9	6.1	21	4.7
July	29-907	0.515	81.0	61.0	81.0	61.0	20.0	63.0	54.8	430	4.8	1.2	79	533	—	1.6	8	5.7	9	0.4		
Aug.	29-907	0.470	85.0	59.0	85.0	59.0	26.0	61.4	54.1	419	4.7	1.4	78	538	—	1.9	13	8	7.0	24	4.5	
Sept.	29-915	1.104	70.0	46.0	70.0	46.0	24.0	58.4	53.0	453	4.8	0.7	88	532	—	2.5	4	7.0	7.0	24	4.5	
July	29-908	0.729	79.0	60.0	79.0	60.0	19.0	61.4	53.0	453	4.8	0.7	88	532	—	0.8	3	5.8	4.0	7	0.7	
Aug.	29-908	0.729	79.0	60.0	79.0	60.0	19.0	61.4	53.0	453	4.8	0.7	88	532	—	0.8	3	5.8	4.0	7	0.7	
Sept.	29-915	1.058	69.0	44.0	69.0	44.0	25.0	58.4	53.0	453	4.8	0.7	88	532	—	2.9	3	6.6	4.2	18	2.7	
July	29-910	0.601	87.4	67.0	87.4	67.0	20.0	62.7	57.6	427	4.7	1.3	82	535	115.8	49.1	0.7	7	5.8	2.0	9	0.3
Aug.	29-910	0.601	87.4	67.0	87.4	67.0	20.0	62.7	57.6	427	4.7	1.3	82	535	108.6	48.1	0.7	7	5.8	2.0	9	0.3
Sept.	29-914	0.694	80.1	62.0	80.1	62.0	18.0	61.4	53.0	453	4.8	1.0	85	538	—	0.9	6	6.2	4.2	18	2.7	
July	29-902	0.600	87.4	67.0	87.4	67.0	20.0	62.7	57.6	427	4.7	1.3	82	535	109.9	51.3	0.5	8	6.0	4.4	5	1.1
Aug.	29-902	0.600	87.4	67.0	87.4	67.0	20.0	62.7	57.6	427	4.7	1.3	82	535	110.1	49.2	0.7	7	6.0	4.4	5	1.1
Sept.	29-914	0.694	80.1	62.0	80.1	62.0	18.0	61.4	53.0	453	4.8	1.0	85	538	—	1.0	3	7.0	7.0	16	5.8	
July	29-909	0.603	87.9	67.0	87.9	67.0	20.0	62.7	57.6	427	4.7	1.3	82	535	130.0	51.1	1.0	5	9.2	9.2	9	0.9
Aug.	29-909	0.603	87.9	67.0	87.9	67.0	20.0	62.7	57.6	427	4.7	1.3	82	535	129.9	49.0	1.0	5	9.2	9.2	9	0.9
Sept.	29-914	0.694	80.1	62.0	80.1	62.0	18.0	61.4	53.0	453	4.8	1.0	85	538	—	1.8	3	9.0	9.0	4	1.0	
July	29-911	0.729	79.0	60.0	79.0	60.0	19.0	61.4	53.0	453	4.8	0.7	88	532	—	0.8	3	5.8	4.0	7	0.7	
Aug.	29-911	0.729	79.0	60.0	79.0	60.0	19.0	61.4	53.0	453	4.8	0.7	88	532	—	0.8	3	5.8	4.0	7	0.7	
Sept.	29-914	0.694	80.1	62.0	80.1	62.0	18.0	61.4	53.0	453	4.8	1.0	85	538	—	0.9	6	6.2	4.2	18	2.7	
July	29-912	0.600	87.4	67.0	87.4	67.0	20.0	62.7	57.6	427	4.7	1.3	82	535	117.8	50.9	1.0	5	9.2	9.2	4	0.2
Aug.	29-912	0.600	87.4	67.0	87.4	67.0	20.0	62.7	57.6	427	4.7	1.3	82	535	117.8	48.9	1.0	5	9.2	9.2	4	0.2
Sept.	29-914	0.694	80.1	62.0	80.1	62.0	18.0	61.4	53.0	453	4.8	1.0	85	538	—	1.0	3	9.0	9.0	4	0.2	
July	29-913	0.603	87.9	67.0	87.9	67.0	20.0	62.7	57.6	427	4.7	1.3	82	535	111.4	50.4	1.0	5	9.2	9.2	4	0.2
Aug.	29-913	0.603	87.9	67.0	87.9	67.0	20.0	62.7	57.6	427	4.7	1.3	82	535	111.4	48.9	1.0	5	9.2	9.2	4	0.2
Sept.	29-914	0.694	80.1	62.0	80.1	62.0	18.0	61.4	53.0	453	4.8	1.0	85	538	—	0.6	10	3	9.0	9.0	4	0.2
July	29-915	1.058	69.0	44.0	69.0	44.0	25.0	58.4	53.0	453	4.8	0.7	88	532	—	0.6	10	3	9.0	9.0	4	0.2
Aug.	29-915	1.058	69.0	44.0	69.0	44.0	25.0	58.4	53.0	453	4.8	0.7	88	532	—	0.6	10	3	9.0	9.0	4	0.2
Sept.	29-914	0.694	80.1	62.0	80.1	62.0	18.0	61.4	53.0	453	4.8	1.0	85	538	—	0.6	10	3	9.0	9.0	4	0.2
July	29-916	0.606	88.0	68.0	88.0	68.0	20.0	63.0	54.8	430	4.8	1.2	79	533	—	1.6	8	5.7	9	0.4		
Aug.	29-916	0.606	88.0	68.0	88.0	68.0	20.0	63.0	54.8	430	4.8	1.2	79	533	—	1.6	8	5.7	9	0.4		
Sept.	29-914	0.694	80.1	62.0	80.1	62.0	18.0	61.4	53.0	453	4.8	1.0	85	538	—	0.6	10	3	9.0	9.0	4	0.2
July	29-917	0.611	88.2	67.0	88.2	67.0	21.0	63.0	54.8	430	4.8	1.2	79	533	—	1.6	8	5.7	9	0.4		
Aug.	29-917	0.611	88.2	67.0	88.2	67.0	21.0	63.0	54.8	430	4.8	1.2	79	533	—	1.6	8	5.7	9	0.4		
Sept.	29-914	0.694	80.1	62.0	80.1	62.0	18.0	61.4	53.0	453	4.8	1.0	85	538	—	0.6	10	3	9.0	9.0	4	0.2
July	29-918	0.611	88.2	67.0	88.2	67.0	21.0	63.0	54.8	430	4.8	1.2	79	533	—	1.6	8	5.7	9	0.4		
Aug.	29-918	0.611	88.2	67.0	88.2	67.0	21.0	63.0	54.8	430	4.8	1.2	79	533	—	1.6	8	5.7	9	0.4		
Sept.	29-914	0.694	80.1	62.0	80.1	62.0	18.0	61.4	53.0	453	4.8	1.0	85	538	—	0.6	10	3	9.0	9.0	4	0.2
July	29-919	0.611	88.2	67.0	88.2	67.0	21.0	63.0	54.8	430	4.8	1.2	79	533	—	1.6	8	5.7	9	0.4		
Aug.	29-919	0.611	88.2	67.0	88.2	67.0	21.0	63.0	54.8	430	4.8	1.2	79	533	—	1.6	8	5.7	9	0.4		
Sept.	29-914	0.694	80.1	62.0	80.1	62.0	18.0	61.4	53.0	453	4.8	1.0	85	538	—	0.6	10	3	9.0	9.0	4	0.2
July	29-920	0.611	88.2	67.0	88.2	67.0	21.0	63.0	54.8	430	4.8	1.2	79	533	—	1.6	8	5.7	9	0.4		
Aug.	29-920	0.611	88.2	67.0	88.2	67.0	21.0	63.0	54.8	430	4.8	1.2	79	533	—	1.6	8	5.7	9	0.4		
Sept.	29-914	0.694	80.1	62.0	80.1	62.0	18.0	61.4	53.0	453	4.8	1.0	85	538	—	0.6	10	3	9.0	9.0	4	0.2
July	29-921	0.611	88.2	67.0	88.2	67.0	21.0	63.0	54.8	430	4.8	1.2	79	533	—	1.6	8	5.7	9	0.4		
Aug.	29-921	0.611	88.2	67.0	88.2	67.0	21.0	63.0	54.8	430	4.8	1.2	79	533	—	1.6	8	5.7	9	0.4		
Sept.	29-914	0.694	80.1	62.0	80.1	62.0	18.0	61.4	53.0	453	4.8	1.0	85	538	—	0.6	10	3	9.0	9.0	4	0.2
July	29-922	0.611	88.2	67.0	88.2	67.0	21.0	63.0	54.8	430	4.8	1.2	79	533	—	1.6	8	5.7	9	0.4		
Aug.	29-922	0.611	88.2	67.0	88.2	67.0	21.0	63.0	54.8	430	4.8	1.2	79	533	—	1.6	8	5.7	9	0.4		
Sept.	29-914	0.694	80.1	62.0	80.1	62.0	18.0	61.4	53.0	453	4.8	1.0	85	538	—	0.6	10	3	9.0	9.0	4	0.2
July	29-923	0.611	88.2	67.0	88.2	67.0	21.0	63.0	54.8	430	4.8	1.2	79	533	—	1.6	8	5.7	9	0.4		
Aug.	29-923	0.611	88.2	67.0	88.2	67.0	21.0	63.0	54.8	430	4.8	1.2	79	533	—	1.6	8	5.7	9	0.4		
Sept.	29-914	0.694	80.1	62.0	80.1	62.0	18.0	61.4	53.0	453	4.8	1.0	85	538	—	0.6	10	3	9.0	9.0	4	0.2
July	29-924	0.611	88.2	67.0	88.2	67.0	21.0	63.0	54.8	430	4.8	1.2	79	533	—	1.6	8	5.7	9	0.4		
Aug.	29-924	0.611	88.2	67.0	88.2	67.0	21.0	63.0	54.8	430	4.8	1.2	79	533	—	1.6	8	5.7	9	0.4		
Sept.	29-914	0.694	80.1	62.0	80.1	62.0	18.0	61.4	53.0	453	4.8	1.0	85	538	—	0.6	10	3	9.0	9.0	4	0.2
July	29-925	0.611	88.2	67.0	88.2	67.0	21.0	63.0	54.8	430	4.8	1.2	79	533	—	1.6	8	5.7	9	0.4		
Aug.	29-925	0.611	88.2	6																		



Year 1869.	Month.	Names of Stations and Observers.	Pressure of Atmosphere in Month.		Temperature of Air in Month.			Mean Temperature.		Vapour.		Mean Thermometer.		Wind.		Mean Amount of Rain.									
			Mean.	Range.	Highest.	Lowest.	Range.	Or all Highest.	Or all Lowest.	Mean.	In a cubic foot of Air.	Elastic Force.	Short of Saturation.	Mean Degree of Humi- dity, Sat. = 100.	Mean Weight of a cubic foot of Air.	Maximum in Shade of Sun.	Minimum on Grass.	Estimated Strength.	Relative Proportion of			Mean Amount of (Ozone.	Number of Days it fell.	Amount col- lected.	
																			N.	E.	S.				W.
July	30	WISBECH (Cambridgeshire), S. H. MILLER, Esq., F.R.A.S.	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788
Aug.	31	LLANDUDNO (Carmarthenshire), J. NICOL, Esq., M.D.	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788
Sept.	30	DERBY (Derbyshire), JOHN DAVIS, Esq.	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788
July	31	NOTTINGHAM (Notts.), M. O. TABBOTT, Esq., C.E., F.G.S.	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788
Aug.	31	HOLKHAM (Norfolk), JOHN DAVIS, Esq., Assistant to the EARL OF LINCOLN.	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788
Sept.	30	BOSTON (Lincolnshire), A. MENGER ADAM, Esq., M.D., F.M.S.	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788
July	31	HAWARDEN (Flint), T. MOFFAT, Esq., M.D., F.R.A.S., F.G.S.	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788
Aug.	31	LIVERPOOL OBSERVATORY, JOHN HARTNUP, Esq., F.R.A.S.	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788
Sept.	30	OLD TRAFFORD (Manchester, Lancash.), GEORGE VERNER, Esq., F.R.A.S., F.M.S., F.A.S.L.	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788
July	31	ECLES, DEAR MANCHESTER, T. MACKEATH, Esq., F.R.A.S., F.M.S.	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788
Aug.	31	WILLOW HALL near HALIFAX, LOUIS CROSSLEY, Esq., M.R.I., F.M.S.	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788
Sept.	30	THE PARK, HULL (Yorkshire), MR. L. FEAR.	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788
July	31	STONTHURPE (Yorkshire), REV. J. S. PEAR, F.R.A.S., F.M.S.	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788	29.788

Year 1869.	Month.	Names of Stations and Observers.	Pressure of Atmosphere in Month.			Temperature of Air in Month.			Mean Temperature.		Vapour.		Mean Degree of Humi- dity, Sat. = 100.		Mean of Maximum and Minimum Thermometer.		Wind.			Mean Amount of Rain.		
			Mean.	Range.	Highest.	Lowest.	Range.	Or all Highest.	Or all Lowest.	Mean.	Elastic Force.	In a cubic foot of Air.	Mean Degree of Humi- dity, Sat. = 100.	Mean Degree of Humi- dity, Sat. = 100.	Maximum Thermometer.	Minimum Thermometer.	N.	E.	S.	W.	Mean Amount of Rain.	Number of Days fell.
July	30	LEEDS (Yorkshire), HENRY DENNETT, Esq., A.L.S.	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750
Aug.	31	OTLEY (Yorkshire), H. W. THOMAS, Esq.	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750
Sept.	30	YORK (Yorkshire), FIELDEN THOMAS, Esq.	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750
July	31	HAWKESLEY (near Whitby, Yorkshire), REV. F. W. STOW, M.A., F.M.S.	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750
Aug.	31	COCKERMOUTH (Cumberland), H. D. WOOD, Esq., M.D., F.R.A.S.	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750
Sept.	30	ALLENHEADS (Durham), T. F.M.S.	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750
July	31	CARLISLE (Cumberland), I. CARTMELL, Esq., F.M.S.	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750
Aug.	31	BYWELL (Northumberland), M. J. DAWSON, under the direc- tion of T. WORTH, Esq., M.A., F.R.S., F.M.S.	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750
Sept.	30	NORTH SHIELDS (Northumberland), ROBERT SPENCE, Esq.	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750
July	31	MILTON (Banbridge, Ireland), JOHN SMITH, Esq., J.R., A.M., M.C.E.L., F.M.S.	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750
Aug.	31	CULLODEN, A. FORBES, Esq., F.M.S.	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750	29.750

Second Rain-gauges are placed—At Worthing, at the height of 11 inches above the ground, the amount collected was 5.19 inches; at Aldershot Camp, 25 feet, 4.48 inches; at West Hartlepool, 25 feet, 5.19 inches; at Stratfield Turgis, 38 feet, 6.05 inches; at Marlborough College, 8 inches, 8.98 inches; at Oxford, 2 feet, 6.35 inches; at Cardington, 38 feet, 3.00 inches; at Wisbech, 8 feet, 5.19 inches; at Bosc, 8 feet, 5.19 inches; at Eddes, 34 feet, 8.41 inches; at Hawker, 5 feet, 4.82 inches; at Conkermouth, 6 feet, 10.69 inches; at Miltown, 40 feet, 6.40 inches. The amount collected at Beachy Head, 610 feet above the level of the sea, was 5.19 inches, and at Bann Reservoir (Ireland), 440 feet, 7.40 inches.

For 1869, the maximum temperature of the air for June, read 84° 9; the same in the Quarterly Table.

The rainfall was only 1.485 in., being greatly under the usual monthly average. From the 17th to the 31st very little was registered, and none at all fell between the 17th and 27th. This excessive and long-continued drought has greatly affected the country, and springs throughout the country, and much inconvenience is felt for the want of water.

(August).—The rainfall was only 1.485 in., being greatly under the usual monthly average. From the 17th to the 31st very little was registered, and none at all fell between the 17th and 27th. This excessive and long-continued drought has greatly affected the country, and springs throughout the country, and much inconvenience is felt for the want of water.



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	Mean Estimated Strength.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.	
																			Relative Proportion of						
																			N.	E.	S.	W.			
Guernsey	29.634	80.5	49.5	31.0	66.8	56.3	25.2	10.5	50.8	54.1	420	4.7	1.1	82	531	95.2	48.2	1.4	9	6	7	9	4.2		
Helston	29.666	86.0	45.0	41.0	70.6	55.0	33.0	15.6	61.6	63.3	412	4.6	1.3	88	531	95.2	48.2	1.4	9	6	7	9	4.2		
Truro	29.626	85.0	30.0	40.0	69.3	52.9	38.7	16.4	60.4	54.6	427	4.8	1.1	82	534	95.2	48.2	1.4	9	6	7	9	4.2		
Sidmouth	29.655	79.0	44.4	34.6	67.5	52.8	30.0	14.7	59.1	51.7	385	4.3	1.3	77	533	95.2	48.2	1.4	9	6	7	9	4.2		
Eastbourne	29.623	83.7	42.8	44.0	69.9	54.0	35.4	15.9	61.0	54.5	426	4.7	1.3	29	533	108.4	47.9	0.8	6	5	9	11	5.2		
Osborne	29.638	87.7	42.8	44.0	69.9	54.0	35.4	15.9	61.0	54.5	426	4.7	1.3	29	533	108.4	47.9	0.8	6	5	9	11	5.2		
Bournemouth	29.637	79.7	41.2	38.5	67.8	53.1	32.5	14.7	59.8	52.5	336	4.5	1.3	81	534	121.9	1.2	1.2	6	4	8	12	4.7		
Worthing	29.604	79.9	42.4	37.5	67.9	54.9	29.9	13.0	60.0	54.3	422	4.7	1.4	81	533	116.9	50.1	1.3	5	8	8	12	4.7		
Taunton	29.635	90.6	38.5	52.1	73.2	52.4	45.7	20.8	61.6	64.1	419	4.6	1.7	77	531	86.8	47.2	0.4	11	5	8	8	12	4.7	
Wilton House	29.591	91.5	37.0	54.6	74.6	49.6	47.2	25.0	60.5	63.9	408	4.6	1.7	77	530	115.5	47.2	0.4	11	5	8	8	12	4.7	
Barnstaple	29.608	89.0	41.5	47.5	71.8	53.6	38.8	17.7	61.5	53.5	411	4.6	1.7	76	531	95.2	48.2	1.4	9	6	7	9	4.2		
Aldershot Camp	29.473	90.2	37.0	53.2	73.7	51.6	46.0	22.1	61.5	53.2	407	4.5	1.6	75	524	114.9	48.7	0.6	4	8	8	12	4.7		
West Hartlepool	29.577	90.0	34.2	55.8	72.0	51.4	46.4	20.6	60.9	53.6	412	4.6	1.7	79	529	121.9	48.7	0.6	4	8	8	12	4.7		
Strathfield Turgis	29.630	89.0	33.0	55.0	72.2	49.9	48.4	22.3	60.0	53.0	402	4.5	1.8	78	530	124.8	45.0	0.4	2	5	7	6	13	4.6	
Bath R. L. & S. Inst.	29.648	87.8	31.9	55.9	70.0	49.0	47.0	17.5	60.4	53.9	417	4.7	1.8	80	532	95.2	48.2	1.4	9	6	7	9	4.2		
Marlborough College	29.607	90.9	11.2	49.7	72.2	53.1	42.5	19.5	61.4	58.1	412	4.7	1.8	78	528	125.4	41.2	0.5	5	5	9	12	4.7		
Royal Observatory	29.629	90.3	35.6	54.7	71.6	51.5	45.5	20.1	60.1	53.1	408	4.6	1.5	75	529	116.7	47.1	0.5	5	5	9	12	4.7		
OverCourt, nr. Bristol	29.708	88.2	36.2	52.0	71.3	47.0	46.9	24.3	59.5	49.5	350	4.9	1.7	69	533	85.0	45.9	1.8	7	5	9	10	4.7		
Streatham Vicarage	29.611	92.2	41.2	51.0	72.6	53.8	42.2	18.8	61.6	53.2	396	4.4	1.7	72	530	118.6	48.0	1.1	5	5	9	12	4.7		
Marylebone	29.602	91.0	41.2	49.8	73.2	52.7	41.8	20.5	61.5	52.4	396	4.4	1.7	72	528	118.6	48.0	1.1	5	5	9	12	4.7		
Camden Town	29.588	88.4	33.8	51.6	70.8	52.6	41.9	18.2	61.4	52.4	395	4.4	1.7	72	528	118.4	48.0	1.1	5	5	9	12	4.7		
Oxford	29.681	90.7	33.0	57.7	73.4	52.2	47.6	21.2	61.8	52.8	393	4.4	1.8	71	531	109.9	44.0	0.9	5	7	4	15	5.9		
Gloucester	29.618	92.4	32.3	56.1	72.9	51.8	47.9	21.1	60.6	53.2	405	4.5	1.4	77	529	95.2	48.2	1.4	9	6	7	9	4.2		
Royston	29.620	85.3	33.8	54.6	69.1	51.2	46.8	17.0	59.2	50.9	373	4.1	1.5	74	529	95.2	48.2	1.4	9	6	7	9	4.2		
Little Wratting	29.610	93.4	34.1	59.0	72.4	51.2	48.3	21.2	61.5	52.8	400	4.4	1.6	74	530	103.2	47.2	1.1	6	6	9	12	4.7		
Cardington	29.595	89.8	30.9	59.0	71.0	47.8	48.9	23.2	58.2	50.0	370	4.1	1.3	76	527	109.5	47.5	0.9	6	6	9	12	4.7		
Lampeter	29.606	82.8	40.9	49.0	61.8	38.3	17.2	59.5	54.7	430	4.7	1.3	81	531	95.2	48.2	1.4	9	6	7	9	4.2			
Somerleyton Rectory	29.605	85.5	41.3	44.2	70.7	52.5	38.6	18.2	60.2	52.3	393	4.4	1.5	76	529	95.2	48.2	1.4	9	6	7	9	4.2		
Norwich	29.569	88.3	33.0	74.8	67.1	51.6	42.1	19.5	60.8	53.7	414	4.6	1.4	77	533	115.8	48.8	0.3	7	5	9	10	4.7		
Walsingham	29.533	85.7	41.6	43.6	68.6	54.4	38.7	14.2	60.1	52.8	400	4.4	1.4	77	531	95.2	48.2	1.4	9	6	7	9	4.2		
Llandudno	29.528	89.0	33.0	50.0	69.3	51.6	41.3	17.7	59.7	53.7	413	4.7	1.3	81	531	95.2	48.2	1.4	9	6	7	9	4.2		
Derby	29.561	87.0	45.0	42.0	68.0	50.4	43.2	17.0	60.9	53.5	406	4.5	1.3	78	528	118.4	48.0	1.1	5	5	9	12	4.7		
Boston	29.572	90.6	36.5	54.1	69.1	51.0	45.3	18.1	59.1	51.5	398	4.5	1.3	78	528	118.4	48.0	1.1	5	5	9	12	4.7		
Hawarden	29.571	90.0	38.0	52.0	66.9	48.8	44.3	18.1	56.7	49.2	351	3.9	1.2	76	524	95.2	48.2	1.4	9	6	7	9	4.2		
Eccles	29.564	84.0	32.0	52.0	68.6	48.9	44.0	19.7	57.9	52.6	398	4.5	0.8	83	535	86.8	46.5	1.1	3	3	8	15	4.7		
Willow Hall	29.554	86.0	36.0	50.0	67.2	50.8	39.0	16.4	57.6	51.5	382	4.3	1.1	80	528	122.5	46.8	1.2	3	3	8	15	4.7		
Hull	29.637	85.2	40.0	45.2	67.8	52.9	36.3	14.9	59.1	49.2	331	3.9	1.7	70	527	92.7	46.8	1.2	3	3	8	15	4.7		
Stonyhurst	29.549	81.7	41.8	40.0	65.7	45.3	40.6	12.0	60.0	45.0	374	4.2	1.7	71	527	79.8	46.8	1.2	3	3	8	15	4.7		
Bradford	29.504	85.0	37.0	48.0	67.0	53.1	39.7	14.5	58.7	54.5	424	4.7	0.8	87	530	95.2	48.2	1.4	9	6	7	9	4.2		
Leeds	29.583	87.7	35.0	52.7	66.8	49.7	41.6	17.1	57.2	48.5	342	3.8	1.4	72	529	95.2	48.2	1.4	9	6	7	9	4.2		
Otley	29.555	86.9	33.1	63.8	66.7	51.4	42.0	15.3	58.1	50.3	366	4.1	1.3	75	532	95.2	48.2	1.4	9	6	7	9	4.2		
York	29.506	84.3	32.8	55.8	67.9	50.1	42.3	17.8	58.1	52.8	390	4.5	0.9	83	532	97.7	45.8	1.6	3	3	8	15	4.7		
Hawsker	29.547	89.0	39.0	50.0	68.6	51.0	38.3	17.6	58.1	50.3	363	4.1	1.4	76	532	97.6	44.4	1.3	3	3	8	15	4.7		
Cockermouth	29.631	81.0	40.3	40.7	65.5	51.5	33.6	14.0	56.9	49.4	323	4.0	1.3	76	535	95.2	48.2	1.4	9	6	7	9	4.2		
North Shields	29.523	80.0	33.0	47.0	65.1	50.3	37.8	14.8	56.6	49.3	351	4.0	1.2	76	532	103.2	46.4	1.9	6	2	12	11	4.7		
Milton, Ireland																									

The highest temperatures of the air were at Leeds, 94°0; Cardington, 93°4; Royston, 92°4; Marylebone, 92°2; Wilton, 92°0; and Camden Town, 91°0.

The lowest temperatures of the air were at Carlisle, 28°5; Lampeter, 30°2; Marlborough College, 31°9; Hull, 32°0; and Strathfield Turgis, 32°1; and Gloucester and Cardington, 21°2.

The greatest daily ranges of the air were at Wilton, 25°0; Streatham Vicarage, 24°3; Lampeter, 23°2; Strathfield Turgis, 22°0; Aldershot Camp, 22°1; and Gloucester and Cardington, 21°2.

The least daily ranges of the air were at Guernsey, 10°5; Hawarden, 11°6; Otley, 12°6; Worthing, 13°0; North Shields, 14°0; Llandudno, 14°2.

The greatest number of rainy days were at Allenheads, 57; Culloden, 56; Stonyhurst, 54; Eccles, 48; York and Bywell, 46; Barnstaple, and Cockermouth, 45; and Carlisle, 40.

The least number of rainy days were at Cardington, 24; Osborne, 25; Aldershot, Royal Observatory, and Norwich, 26; and Strathfield Turgis, 27.

The heaviest falls of rain were at Stonyhurst, 14.4 in.; Lampeter 11.9 in.; Allenheads, 11.7 in.; Cockermouth, 11.1 in.; Eccles, 10.9 in.; and West Hartlepool, 10.0 in.

The least falls of rain were at Cardington, 3.4 in.; Guernsey, 3.7 in.; Sidmouth, 3.8 in.; Taunton, 4.3 in.; Royston, 4.4 in.; and Bournemouth, 4.8 in.

QUARTERLY METEOROLOGICAL TABLE for different PARALLELS OF LATITUDE.

TABLE for different PARALLELS OF LATITUDE.																									
PARALLELS OF LATITUDE, &c.	Mean Pressure of dry Air reduced to the level of the Sea.	Mean of all Highest Read- ings of the Thermometer.	Mean of all Lowest Read- ings of the Thermometer.	Mean Range of Temper- ature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Max- imum in Rays of Sun.	Mean Reading of Min- imum on Grass.	Mean Estimated Strength.	WIND.				Mean Amount of Cloud.	Remarks.	
																			Relative Pro- portion of						
																			N.	E.	S.	W.			
Guernsey - - -	in.	29.634	80.5	49.5	31.0	66.8	56.3	25.2	10.5	50.8	54.1	420	4.7	1.1	82	531	95.2	48.2	1.4	9	6	7	9	4.2	
Between 50° and 51°		29.630	83.0	42.0	54.0	69.2	53.7	34.2	15.5	60.4	53.8	416	4.6	1.3	79	530	106.7	50.5	0.7	6	6	9	10	4.7	
the 51° and 52°		29.609	89.0	33.0	55.0	72.2	49.9	48.4	22.3																
latitudes 52° and 53°		29.586	87.0	37.8	58.0	70.5	51.6	42.6	19.0	60.7	52.7	389	4.4	1.5	75	530	110.5	44.9	1.3	6	6	5	9	4.5	
53° and 54°		29.563	87.1	38.4	48.5	68.0	51.7	39.8	18.2	58.0	50.8	400	4.4	1.4	78	531	109.9	49.7	1.0	6	5	6	9	4.6	
54° and 55°		29.548	86.3	33.2	54.1	67.1	50.4	42.0	16.7	57.8	50.5	381	4.3	1.3	77	529	97.9	49.9	1.5	5	5	3	12	4.6	
North Shields - -		29.631	81.0	40.3	34.0	67.5	51.5	33.6	14.4	56.9	49.4	353	4.0	1.3	77	531	108.4	44.8	1.0	7	8	4	11	4.7	
Milton, Banbridge (Ireland)		29.533	80.0	33.0	47.0	65.1	50.3	37.3	14.8	56.9	49.3	331	4.0	1.2	76	532	103.2	46.4	1.9	6	8	2	12	4.7	
Mean for the Quarter		29.516	88.9	42.1	46.8	72.3	53.7	41.3	17.6	61.9	54.3	424	4.7	1.5	77	528	114.4	46.7	1.2	7	8	7	9	4.5	
50° to 55°		29.537	86.8	37.2	49.2	67.4	51.8	40.7	18.1	59.5	52.3	396	4.3	1.3	77	531	107.1	43.8	1.2	6	5	7	13	4.5	



There were several very heavy gales of wind during the quarter, and pressures to the amount of 30 lbs. on the square foot took place, on October 16th and 19th, November 2d and 4th, December 13th, 16th, 17th, 18th, 19th, and 30th, generally with the wind from S.W., W.S.W., or S.S.W.

The mean temperature of October was  $48^{\circ} \cdot 9$ , being  $0^{\circ} \cdot 8$  lower than the average of 98 years higher than the corresponding values in 1868 and 1867 by  $1^{\circ} \cdot 0$  and  $0^{\circ} \cdot 2$  respectively, but lower than in any year in the period 1853-66.

The mean temperature of November was  $43^{\circ} \cdot 0$ , being  $0^{\circ} \cdot 6$  higher than the average of 98 years higher than in 1868 and 1867, when  $41^{\circ} \cdot 5$  and  $41^{\circ} \cdot 4$  respectively were recorded, but lower than in the preceding four years, viz., 1863 to 1866.

The mean temperature of December was  $37^{\circ} \cdot 9$ , being  $1^{\circ} \cdot 3$  lower than the average of 98 years lower than in 1868 by  $8^{\circ} \cdot 1$ , higher than in 1867 by  $0^{\circ} \cdot 4$ , but lower than in any previous year so far back as 1860.

The mean high day temperature was the same as the average in November, but lower by  $1^{\circ} \cdot 1$  and  $3^{\circ} \cdot 4$  respectively in October and December.

The mean low night temperature was the same as the average in November, but lower in October and December by  $1^{\circ} \cdot 9$  and  $2^{\circ} \cdot 4$  respectively. Therefore the months of October and December were cold both by day and night.

The daily range of temperature was the same as the average in November, greater by  $0^{\circ} \cdot 8$  in October, but less by  $1^{\circ} \cdot 0$  in December.

The fall of rain was the same as the average in November,  $1 \cdot 0$  in. in defect in October, and  $0 \cdot 9$  in. in excess in December.

The mean temperature of the air in the three months ending November, constituting the three autumn months, was  $50^{\circ} \cdot 3$ , being  $0^{\circ} \cdot 8$  higher than the average of 98 years.

Thunderstorms occurred on the 1st of October at London; on the 2d at Hawarden and Allonheads; on the 3d at Somerleyton, Eccles, and Cockermouth; on the 9th at Holkham; on the 10th at Miltown; on the 16th at Somerleyton, Hawarden, and Stonyhurst; and on the 28th at Norwich. On the 10th of November at Hawsker. On the 14th of December at Guernsey, Osborne, Weybridge, Harptre, and Bristol; on the 15th over all parts of the country; on the 18th at Bristol; on the 19th at Norwich; on the 21st at Bristol; and on the 26th at Guernsey, Bywell, and North Shields.

Thunder was heard, but lightning was not seen, on the 1st of October at Bristol and Royston; on the 2d at Norwich, Stonyhurst, and Bywell; on the 3d at Weybridge Heath and Stonyhurst; on the 7th at Stonyhurst. On the 22d of November at Strathfield Turgiss.

Lightning was seen, but thunder was not heard, on the 3d of October at Eastbourne, Bristol, Allenheads, and Carlisle; on the 4th at Eccles; on the 11th at Culloden; on the 12th at Carlisle; on the 26th at Oxford, Little Wrattling, Boston, Hull, and Carlisle; on the 27th at Oxford and Boston; on the 28th at Holkham and North Shields; and on the 29th at Holkham. On the 2d of November at Guernsey; on the 5th at Norwich; on the 6th at Hawarden; on the 22d at Guernsey; and on the 28th at Norwich and Wisbech. On the 13th of December at Bristol; on the 15th at Guernsey, Oxford, Liverpool, and Eccles; on the 16th at Bradford; on the 19th at Guernsey and London; and on the 26th at Weybridge Heath and Allenheads.

Solar halos were seen on the 1st of October at Bradford; on the 5th at Eccles; on the 6th at Bristol; on the 10th at Bristol and Lampeter; on the 14th at Oxford; on the 15th at Cardington; on the 17th at Stonyhurst; and on the 29th at Bristol and Hawarden. On the 3d and 6th of November at Culloden; on the 10th at Oxford; on the 11th at Stonyhurst; on the 22d at Weybridge; on the 25th at Lampeter; and on the 29th at Oxford. On the 12th of December at Hawarden; on the 16th at Royston; on the 17th at Hawarden; and on the 30th at Weybridge Heath and Oxford.

Lunar halos were seen on 24 days during the quarter, viz., 6 in October, 8 in November, and 10 in December.

Aurora Boreales were seen on 21 days during the quarter, viz., 14 in October, 3 in November, and 4 in December.

Snow fell on 39 days during the quarter, viz., 8 in October, 12 in November, and 19 in December.

Hail fell on 47 days during the quarter, viz., 13 in October, 11 in November, and 23 in December.

Fog prevailed on 59 days during the quarter, viz., 25 in October, 19 in November, and 15 in December.

The lime leafless on the 10th of October at Guernsey. On the 2d of November at Hull; on the 4th at Wisbech; on the 5th at Somerleyton and Llandudno; on the 8th at Weybridge and Bristol; on the 14th at Oxford; and on the 19th at Culloden.

The horse chesnut leafless on October 10th at Guernsey; on the 27th at Hull; and on the 29th at Weybridge and Oxford. On the 5th of November at Somerleyton; on the 8th at Carlisle and Culloden; on the 12th at Llandudno; and on the 20th at Bristol.

Woodcock arrived on October 18th at Boston; on the 23d at Hawarden; and on the 29th at Guernsey and Somerleyton. On the 8th of November at Taunton.

Swallow departed on October 2nd from Culloden; on the 8th from Helston; on the 11th from Weybridge; on the 13th from Hawarden; on the 22d from Taunton; on the 29th from Hull; and on the 31st from Eastbourne. On the 17th of November from Osborne.

#### OCTOBER.

STRATHFIELD TURGISS.—But little wheat sowing has as yet been done, the general opinion being that November is a more suitable month than October; moreover the ground is as yet in a light condition than is wished for, and so we are waiting for rain. The various root crops have made great progress during the month, and the promise of winter food for sheep is very good. The wheat crop seems to have been variable, and the peas have not turned out as good a crop as anticipated.

BYWELL.—Potatoes and turnips are turning out well and free from disease. Farmers are very busy with autumn ploughing.

CULLODEN.—The weather during the past month has been generally favourable for all kinds of agricultural labour.

The first part of the month up to the 11th was fair, with frost and fog occasionally; but a change followed, and then to the end of the month  $3 \cdot 310$  inches of rain fell. There was nothing marked however in the barometrical changes during the month. Heavy gales from W. to W.N.W. and N.N.E. prevailed on the 13th and 16th, when the weather was very boisterous with much rain.

In the early part of the month the lifting of the potato crop was generally proceeded with, and where this was done, the crop was safely secured in dry condition. The crop in the north has turned out well; from the absence of second growth, and the soundness of the root, it will be superior to that of 1868, not only in quality but in quantity likewise.

Whenever the weather would admit, ploughing was carried on rapidly all through the month, and the bulk of stubble land, and also fields of lea have been turned over. The few days of frost have tended to check the growth of turnips, and they will not now possibly increase much in size. The crop has, however, on some farms exceeded expectation, and may be called a fair average. The demand for turnips for sheep feeding is considerably less than has been the case for several years. This is in a great measure owing to fewer sheep being left to feed off this year in the Northern Districts than usual.

#### NOVEMBER.

STRATHFIELD TURGISS.—On the whole this month has been favourable to farm work, wheat sowing progressed steadily in the earlier part of the month, and towards the close the land was hard enough from frost, for carting manure. A great deal of sowing has yet to be done however, wheat sowing where growers prefer to be late had gone on successfully, while the young plants, though not generally vigorous, look healthy on the whole and may eventually be all the better for being backward at the present time. The end of the month has redeemed its true November character, being foggy, cold, and dull.

BYWELL.—Autumn grown wheat has come up pretty regular and strong.

CULLODEN.—The weather during the month was unfavourable for agricultural labour. The amount of rain-fall was  $2 \cdot 913$  inches, and fell almost daily during the month, to a greater or less extent, thus greatly impeding out-door work. Gales of wind were frequent, taking place on the 2d and 8th, but more particularly on the 18th and 19th. Very severe frost with little snow on the ground, set in on the last day of the month, with a prospect of continuance.



# MONTHLY METEOROLOGICAL TABLE FOR THE QUARTER ENDING DECEMBER 31st, 1869.

The Observations have been reduced to Mean values by Glaisher's Barometrical and Diurnal Range Tables, and the Hygrometrical results have been deduced from the fifth edition of his Hygrometrical Tables.

Year 1869.	Months.	NAMES OF STATIONS and OBSERVERS.	Pressure of Air in Month.		Temperature of Air in Month.				Mean Temperature.		Vapour.		Mean Reading of Thermometer.		Wind.		Mean Amount of Cloud.	Rain.							
			Mean.	Range.	Highest.	Lowest.	Range.	Of all Highest.	Of all Lowest.	Daily Range.	Air.	Dew Point.	Elastic Force.	Mean.	In a cubic foot of Air.	Short of Saturation.			Mean Degree of Humidity.	Mean Weight of a cubic foot of Air.	Maximum in Rays of Sun.	Minimum on Grass.	Strength.	Relative Proportion of	
																								N.	E.
Oct.	29-855	GUERNSEY.	1.068	38.0	35.0	35.0	50.1	7.9	43.0	48.2	1.28	0.7	84	589	—	—	1.2	8	10	5.4	17				
Nov.	29-835	SAMUEL ELLIOTT HOSKINS, Esq., M.D., F.R.C.P., F.R.S., F.M.S.	1.240	39.0	31.0	28.0	32.0	44.4	8.5	42.7	37.2	0.6	82	544	—	—	1.7	8	13	4.6	16				
Dec.	29-833	HELISTON (Cornwall).	1.032	53.0	27.0	28.0	39.2	6.8	42.7	37.2	1.22	0.6	82	546	—	—	1.6	9	13	4.6	16				
Oct.	30-062	MATTHEW F. MOYLE, Esq., M.R.C.S.	1.022	72.0	40.0	32.0	32.0	40.6	10.6	45.5	47.5	1.29	0.7	83	544	75.5	43.6	2.2	9	6	5.2	18			
Nov.	29-799	TRURO (Cornwall).	1.315	59.0	34.0	25.0	25.0	34.8	45.0	40.9	44.5	1.26	0.7	83	544	61.0	39.8	2.3	9	1	5.2	27			
Dec.	29-749	C. BARNHAM, Esq., M.D., F.M.S.	1.231	56.0	23.0	23.0	35.0	48.0	43.9	39.9	39.9	1.26	0.8	81	542	52.3	38.6	2.4	9	8	6.1	21			
Oct.	30-065	SIDMOUTH (Devon).	1.025	75.0	38.0	37.0	37.0	49.6	48.7	45.5	48.0	1.28	0.8	81	542	—	—	2.2	14	8	7.1	19			
Nov.	29-807	J. INGLEBY MACENZIE, Esq., M.B., F.M.S.	1.278	58.0	27.0	27.0	31.0	44.3	42.3	42.6	1.27	0.7	83	548	—	—	2.4	10	9	7.1	20				
Dec.	29-789	EASTBOURNE (Sussex).	1.187	56.0	10.0	46.0	47.0	35.3	10.7	41.7	37.2	1.22	0.6	85	545	—	—	2.4	10	9	7.1	20			
Oct.	30-062	MISS W. L. HALL.	1.060	73.8	39.0	37.0	37.0	45.5	45.5	42.5	45.5	1.28	0.8	84	545	—	—	1.5	12	8	4.8	15			
Nov.	29-958	OSBORNE (Isle of Wight).	1.276	56.8	25.8	21.5	21.5	33.5	44.7	40.7	35.2	1.26	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15			
Dec.	29-788	J. R. MANN, Esq., M.D.	1.164	54.0	22.0	22.0	32.4	43.0	34.9	31.5	33.6	1.26	0.7	84	545	62.9	34.1	0.3	10	4	4.8	15			
Oct.	29-877	BOURNEMOUTH (Hants) B.A., M.R.C.S.E., F.M.S.	1.154	77.7	39.7	37.0	37.0	58.5	44.4	44.4	44.4	1.28	0.8	84	545	83.5	38.3	0.5	11	5	4.8	15			
Nov.	29-803	WORTHING (Sussex).	1.286	58.6	25.8	21.5	21.5	33.5	44.7	40.7	35.2	1.26	0.7	84	545	62.9	34.1	0.3	10	4	4.8	15			
Dec.	29-830	W. HARRIS, Esq., M.R.C.S.E., F.M.S.	1.376	53.4	21.0	32.4	43.3	33.3	10.0	39.6	36.0	1.22	0.5	83	541	81.8	31.8	1.8	10	6	4.8	16			
Oct.	29-940	TAUNTON (Somerset).	1.120	70.5	39.7	39.8	55.6	43.7	30.9	50.9	44.8	1.27	0.7	82	544	92.9	42.7	1.3	11	3	5.2	17			
Nov.	29-846	WILTON HOUSE, near Salisbury.	1.320	56.7	25.7	31.0	33.1	39.1	42.5	40.5	35.3	1.26	0.7	80	542	86.7	39.2	1.2	12	4	5.2	18			
Dec.	29-083	T. CHALLIS, Esq., F.M.S.	1.470	39.8	31.5	27.0	34.8	7.9	38.6	35.5	20.8	0.5	80	532	50.8	32.9	1.7	12	4	3.7	14	24			
Oct.	30-010	BARNSLEY (Devon).	1.060	69.1	28.3	40.8	47.4	46.0	11.4	51.0	46.5	1.31	0.6	85	544	91.1	40.9	0.9	9	5	3.2	34			
Nov.	29-931	ASHERHOPE CAMP (Devon).	1.343	58.6	27.3	31.5	31.5	32.5	11.6	42.9	38.7	1.26	0.6	84	549	71.4	38.1	0.8	10	6	3.7	11			
Dec.	29-774	JOHN ARNOLD, M.B., F.R.C.S.	1.154	52.3	23.3	29.0	43.0	34.7	8.3	38.9	36.0	1.24	0.3	91	554	39.8	30.8	1.2	12	3	6.2	17			
Oct.	29-973	TAUNTON (Somerset).	1.310	79.2	32.2	47.0	69.0	45.2	14.8	52.3	48.9	1.34	0.5	88	542	93.7	39.2	1.0	17	1	5.8	30			
Nov.	29-856	REV. W. TUCKWELL, F.M.S.	1.384	60.7	25.5	34.7	53.3	15.6	45.2	41.3	26.0	0.5	87	543	85.3	35.4	0.7	1	13	6.4	16	17			
Oct.	29-876	WILTON HOUSE, near Salisbury.	1.134	76.7	38.7	35.0	41.1	41.1	18.0	49.3	45.8	1.28	0.6	90	543	90.6	38.8	1.9	14	2	3.8	13			
Nov.	29-767	T. CHALLIS, Esq., F.M.S.	1.322	60.0	20.2	39.8	52.5	34.4	18.1	43.7	34.3	1.26	0.2	90	543	78.7	32.2	1.5	13	1	4.5	12			
Dec.	29-661	BARNSLEY (Devon).	1.032	56.0	15.0	41.0	30.3	32.5	36.9	34.3	20.8	0.4	92	51	533	28.5	28.5	1.2	6	3.8	4.9	13			
Oct.	29-068	T. MACRELL, Esq.	1.110	77.5	34.0	32.0	43.5	43.5	48.0	53.1	47.0	1.27	0.8	82	542	91.1	40.9	0.9	9	5	3.7	11			
Nov.	29-745	J. INGLEBY MACENZIE, Esq., M.B., F.M.S.	1.310	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15			
Dec.	29-745	JOHN ARNOLD, M.B., F.R.C.S.	1.110	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15			

Meteorological Table, Quarter ending December 31st, 1869.																								
Year.	Month.	Station and Observer.	Pressure of Air in Month.		Temperature of Air in Month.		Mean Temperature.		Vapour.		Mean Reading of Thermometer.		Wind.		Mean Amount of Cloud.	Rain.								
			Mean.	Range.	Highest.	Lowest.	Range.	Of all Highest.	Of all Lowest.	Air.	Dew Point.	Elastic Force.	Mean.	In a cubic foot of Air.			Short of Saturation.	Mean Degree of Humidity.	Mean Weight of a cubic foot of Air.	Maximum in Rays of Sun.	Minimum on Grass.	Strength.	Relative Proportion of N. E. S. W.	Amount of Rain.
1869.	Oct.	WEST HAMPTON VICARAGE. Rev. C. H. Garfith, M.A., F.R.S.	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Nov.	SPRINGFIELD TURF (Hants).	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Dec.	Rev. C. H. Garfith, M.A., F.R.S.	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Oct.	WYRIDGE HEATH (Surrey).	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Nov.	WILLIAM F. HARRISON, Esq., F.M.S.	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Dec.	BATH ROYAL LITERARY AND SCIENTIFIC INST. (Bath).	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Oct.	Chas. F. Russell, Esq.	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Nov.	MARLBOROUGH COLLEGE (Wilt).	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Dec.	Rev. Thomas A. Preston, M.A., F.M.S.	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Oct.	ROYAL OBSERVATORY (Kent).	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Nov.	THE ASTRONOMER ROYAL.	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Dec.	OVER COURT (near Bristol).	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Oct.	R. C. GANN-LIPPINCOTT, Esq., F.M.S.	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Nov.	STREATHLEY VICARAGE (Berks).	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Dec.	Rev. J. Scatter, M.A., F.R.A.S., F.M.S.	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Oct.	MARYLEBONE (London).	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Nov.	HENRY E. SUGGATE, Esq., F.M.S.	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Dec.	CAMDEN TOWN (London).	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Oct.	G. J. SMOKE, Esq., F.M.S.	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Nov.	OXFORD (Oxfordshire).	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Dec.	Rev. R. Mans, M.A., F.R.S., F.R.A.S.	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Oct.	GLoucester (Gloucester).	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Nov.	ROYSTON (Hertfordshire).	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Dec.	HALE WORTHAM, Esq., F.R.A.S., F.M.S.	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Oct.	LITTLE WIKATTON (Suffolk).	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Nov.	Rev. W. Previte, M.A., F.M.S.	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Dec.	CARDINGTON (near Bedford).	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Oct.	J. M. GILMAN, Esq., F.M.S., Assat. to S.A.G. WITBREAD, Esq., F.R.S., F.M.S.	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Nov.	LAMPETER (Cardiganshire).	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Dec.	Rev. Prof. J. Matthews, M.A.	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Oct.	SOMERLEYTON RECTORY (Suffolk).	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Nov.	Rev. C. J. Steward, F.M.S.	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Dec.	NORWICH (Norfolk).	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15
	Oct.	C. M. Gibson, Esq., F.M.S.	29.808	1.210	64.5	29.0	26.5	26.5	35.3	43.9	35.2	31.5	1.28	0.7	0.7	84	545	83.5	38.3	0.5	11	5	4.8	15



Year 1869.	Month.	Names of Stations and Observers.	Pressure of Atmosphere in Month.		Temperature of Air in Month.			Mean Tem- perature.		Vapour.		Mean Reading of Thermometer.		Wind.			Mean Amount of Rain.									
			Mean.	Range.	Highest.	Lowest.	Range.	Of all Highest.	Of all Lowest.	Mean.	Air.	Dew Point.	Elastic Force.	In a cubic foot of Air.	Short of Saturation.	Mean Degree of Humi- dity, Sat. = 100.	Mean Weight of a cubic foot of Air.	Maximum in Shade of Sun.	Minimum on Grass.	Estimated Strength.	Relative Proportion of			Mean Amount of Cloud.	Number of Days it fell.	Amount col- lected.
																					N.	E.	S.			
Oct.	29	WISBECH (Cambridgeshire), S. H. MILLER, Esq., F.R.A.S.	30.190	30.120	30.730	29.750	43.50	46.50	3.17	3.17	46.50	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4		
Nov.	29	WISBECH (Cambridgeshire), S. H. MILLER, Esq., F.R.A.S.	30.875	30.235	30.875	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Dec.	29	WISBECH (Cambridgeshire), S. H. MILLER, Esq., F.R.A.S.	30.758	30.428	30.515	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Oct.	29	LLANDUDNO (Carnarvonshire), J. NICOL, Esq., M.D.	30.960	30.260	30.960	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Nov.	29	LLANDUDNO (Carnarvonshire), J. NICOL, Esq., M.D.	30.774	30.170	30.774	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Dec.	29	LLANDUDNO (Carnarvonshire), J. NICOL, Esq., M.D.	30.637	30.170	30.637	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Oct.	29	DERBY (Derbyshire), JOHN DAVIS, Esq.	30.782	30.337	30.782	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Nov.	29	DERBY (Derbyshire), JOHN DAVIS, Esq.	30.668	30.262	30.668	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Dec.	29	DERBY (Derbyshire), JOHN DAVIS, Esq.	30.558	30.153	30.558	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Oct.	29	NOTTINGHAM (Notts.), M. O. TABBOTT, Esq., C.E., F.G.S., F.M.S.	30.467	30.143	30.775	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Nov.	29	NOTTINGHAM (Notts.), M. O. TABBOTT, Esq., C.E., F.G.S., F.M.S.	30.613	30.170	30.580	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Dec.	29	NOTTINGHAM (Notts.), M. O. TABBOTT, Esq., C.E., F.G.S., F.M.S.	30.412	30.143	30.557	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Oct.	29	HOLKHAM (Norfolk), JOHN DAVIDSON, Esq., Assistant to the EARL OF LEICESTER.	30.710	30.488	30.710	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Nov.	29	HOLKHAM (Norfolk), JOHN DAVIDSON, Esq., Assistant to the EARL OF LEICESTER.	30.851	30.208	30.712	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Dec.	29	HOLKHAM (Norfolk), JOHN DAVIDSON, Esq., Assistant to the EARL OF LEICESTER.	30.815	30.218	30.571	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Oct.	29	BOSTON (Lincolnshire), A. MERGER ADAM, Esq., M.D., F.M.S.	30.966	30.060	30.706	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Nov.	29	BOSTON (Lincolnshire), A. MERGER ADAM, Esq., M.D., F.M.S.	30.823	30.220	30.578	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Dec.	29	BOSTON (Lincolnshire), A. MERGER ADAM, Esq., M.D., F.M.S.	30.740	30.062	30.502	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Oct.	29	BLAWARDEN (Flint), T. MORFAT, Esq., F.G.S.	30.475	30.176	30.732	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Nov.	29	BLAWARDEN (Flint), T. MORFAT, Esq., F.G.S.	30.475	30.176	30.732	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Dec.	29	BLAWARDEN (Flint), T. MORFAT, Esq., F.G.S.	30.475	30.176	30.732	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Oct.	29	LIVERPOOL OBSERVATORY, JOHN HARTUP, Esq., F.R.A.S.	30.708	30.174	30.580	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Nov.	29	LIVERPOOL OBSERVATORY, JOHN HARTUP, Esq., F.R.A.S.	30.708	30.174	30.580	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Dec.	29	LIVERPOOL OBSERVATORY, JOHN HARTUP, Esq., F.R.A.S.	30.708	30.174	30.580	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Oct.	29	OLD TRAFFORD (Manchester, Lancashire), GEORGE VENABLES VERNON, Esq., F.R.A.S., F.M.S., F.A.S.L.	30.631	30.064	30.510	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Nov.	29	OLD TRAFFORD (Manchester, Lancashire), GEORGE VENABLES VERNON, Esq., F.R.A.S., F.M.S., F.A.S.L.	30.631	30.064	30.510	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Dec.	29	OLD TRAFFORD (Manchester, Lancashire), GEORGE VENABLES VERNON, Esq., F.R.A.S., F.M.S., F.A.S.L.	30.631	30.064	30.510	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Oct.	29	ECLES (Cheshire), T. MACKENZIE, Esq., F.R.A.S., F.M.S.	30.712	30.138	30.559	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Nov.	29	ECLES (Cheshire), T. MACKENZIE, Esq., F.R.A.S., F.M.S.	30.712	30.138	30.559	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Dec.	29	ECLES (Cheshire), T. MACKENZIE, Esq., F.R.A.S., F.M.S.	30.712	30.138	30.559	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Oct.	29	THE PARK, HULL (Yorkshire), S. E. FRANK.	30.980	30.260	30.980	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Nov.	29	THE PARK, HULL (Yorkshire), S. E. FRANK.	30.980	30.260	30.980	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Dec.	29	THE PARK, HULL (Yorkshire), S. E. FRANK.	30.980	30.260	30.980	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Oct.	29	WATSON (Leeds, Yorkshire), W. E. FRANK.	30.980	30.260	30.980	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Nov.	29	WATSON (Leeds, Yorkshire), W. E. FRANK.	30.980	30.260	30.980	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	
Dec.	29	WATSON (Leeds, Yorkshire), W. E. FRANK.	30.980	30.260	30.980	29.750	48.80	41.40	42.40	3.17	42.40	42.40	0.4	90	54.5	54.5	0.0	8	10	16	6	0.0	8.5	6	1.4	

Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.			
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NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.										WIND.									
	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	Mean Estimated Strength.	N.	E.	S.	W.	Relative Proportion of	N.	E.	S.	W.
Guernsey	29.778	29.730	0.270	0.460	32.3	44.8	30.3	7.7	48.0	42.8	27.9	3.2	0.7	8.3	54.3	1.6	8	5	7	11
Helston	29.730	29.720	0.230	0.490	34.3	44.8	30.3	7.7	48.0	42.8	27.9	3.2	0.7	8.3	54.3	1.6	8	5	7	11
Truro	29.724	29.710	0.100	0.550	33.6	44.1	30.3	7.7	47.3	42.0	27.7	3.2	0.6	8.4	54.7	1.6	8	5	7	11
Sidmouth	29.716	29.685	0.215	0.518	33.9	43.5	30.3	7.7	45.6	41.3	27.3	3.1	0.5	8.6	54.9	1.6	8	5	7	11
Eastbourne	29.687	29.738	0.220	0.518	30.4	40.1	33.7	10.3	45.2	40.9	25.8	2.9	0.5	8.6	54.9	1.6	8	5	7	11
Osborne	29.701	29.717	0.210	0.567	31.0	38.7	37.1	12.3	44.7	41.1	26.3	2.9	0.4	8.8	54.8	1.6	8	5	7	11
Bournemouth	29.707	29.705	0.220	0.485	30.2	39.9	34.1	10.3	44.5	40.4	25.8	2.9	0.5	8.8	54.8	1.6	8	5	7	11
Wilton House	29.688	29.715	0.150	0.417	31.8	35.3	34.2	12.6	43.3	38.9	24.1	2.8	0.4	8.6	54.8	1.6	8	5	7	11
Barnstaple	29.688	29.715	0.150	0.417	31.8	35.3	34.2	12.6	43.3	38.9	24.1	2.8	0.4	8.6	54.8	1.6	8	5	7	11
Aldershot Camp	29.682	29.754	0.157	0.597	31.0	37.3	37.3	13.7	43.5	39.4	24.5	2.8	0.5	8.6	54.1	1.6	8	5	7	11
West Hartre Vierge.	29.717	29.770	0.147	0.323	34.9	36.0	41.8	13.5	42.9	39.3	24.1	2.8	0.5	8.5	54.5	1.6	8	5	7	11
Strathfield Turgiss	29.724	29.755	0.170	0.385	34.9	37.0	40.6	12.7	43.7	39.5	24.1	2.8	0.4	8.8	54.9	1.6	8	5	7	11
Weybridge Heath	29.718	29.730	0.173	0.357	35.0	35.5	46.7	14.6	42.4	39.5	24.5	2.8	0.4	8.8	54.9	1.6	8	5	7	11
Marlborough College	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Royal Observatory	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
OverCourt, nr. Bristol	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Marylebone	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Camden Town	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Oxford	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Gloucester	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Royston	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Little Wratting	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Cardington	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Lampeter	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Somerleyton Rectory	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Norwich	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Wisehech	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Llandudno	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Derby	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Nottingham	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Boston	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Hawarden	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Liverpool	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Manchester	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Eccles	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Hull	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Stonyhurst	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Bradford	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Leeds	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Orley	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
York	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Hawker	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Cockermouth	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Allenheads	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Carlisle	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Bywell	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
North Shields	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11
Milton, Ireland	29.686	29.738	0.213	0.326	34.9	37.0	37.5	11.9	43.3	38.8	23.9	2.7	0.5	8.4	54.8	1.6	8	5	7	11

The highest temperatures of the air were at Lampeter, 81° 8; Hawarden, 81° 0; Marylebone, 78° 7; Osborne, 77° 1; Strathfield Turgiss, 77° 0; Wilton, 76° 7; and Bristol, 76° 6.

The lowest temperatures of the air were at Lampeter, 0° 0; Carlisle, 0° 8; Cockermouth, 4° 9; Allenheads, 5° 3; Milton, 11° 0; and Nottingham, 11° 8.

The greatest daily ranges of the air were at Wilton, 16° 5; Nottingham, 15° 2; Marlborough College, 14° 6; West Hartre Vierge, and York, 14° 2; Aldershot and Gloucester, 13° 7; and Strathfield Turgiss and Carlisle, 13° 5.

The least daily ranges of the air were at Guernsey, 7° 7; Otley, 8° 0; Hawarden, 8° 1; Llandudno, 8° 8; Liverpool, 9° 5; 9° 5; Hawker, 9° 6; and Little Wratting, 9° 9.

The greatest number of rainy days were at Allenheads, 77; Stonyhurst, 76; Bywell, 66; Hawarden, 63; Truro, Eccles, and Helston, Manchester, and York, 61.

The least number of rainy days were at Strathfield Turgiss, 30; Osborne and Otley, 31; Royal Observatory and Bradford, 31; Marylebone, and Wisehech, 38; and Cardington, 39.

The heaviest falls of rain were at Stonyhurst, 17.8 in.; Allenheads, 16.6 in.; Cockermouth, 16.0 in.; Lampeter, 14.9 in.; 14.1 in.; Truro, 13.7 in.; and West Hartre, 12.3 in.

The least falls of rain were at Cardington, 5.9 in.; Bradford, 6.0 in.; Leeds, 6.2 in.; Weybridge and Royston, 6.8 in.; 6.9 in.

QUARTERLY METEOROLOGICAL TABLE for different PARALLELS of LATITUDE.

PARALLELS OF LATITUDE, &c.	Mean Pressure of dry Air reduced to the level of the Sea.										WIND.									
	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	Mean Estimated Strength.	N.	E.	S.	W.	Relative Proportion of	N.	E.	S.	W.
Guernsey	29.778	29.730	0.270	0.460	32.3	44.8	30.3	7.7	48.0	42.8	27.9	3.2	0.7	8.3	54.3	1.6	8	5	7	11
Between 50° and 51°	29.711	29.719	0.199	0.530	31.9	40.8	35.1	11.1	46.1	41.7	26.7	3.1	0.5	8.5	54.7	1.6	8	5	7	11
the 52° and 53°	29.681	29.733	0.178	0.577	30.6	38.7	34.0	10.3	45.3	39.2	24.9	2.8	0.5	8.5	54.7	1.6	8	5	7	11
latitudes 53° and 54°	29.657	29.733	0.199	0.577	30.6	38.7	34.0	10.3	45.3	39.2	24.9	2.8	0.5	8.5	54.7	1.6	8	5	7	11
54° and 55°	29.644	29.724	0.176	0.548	30.6	38.7	34.0	10.3	45.3	39.2	24.9	2.8	0.5	8.5	54.7	1.6	8	5	7	11
North Shields	29.631	29.696	0.112	0.584	30.6	38.7	34.0	10.3	45.3	39.2	24.9	2.8	0.5	8.5	54.7	1.6	8	5	7	11
Milton, Banbridge (Ireland)	29.638	29.690	0.187	0.593	30.6	38.7	34.0	10.3	45.3	39.2	24.9	2.8	0.5	8.5	54.7	1.6	8	5	7	11
Mean - 50° to 55°	29.663	29.728	0.165	0.563	30.6	38.7	34.0	10.3	45.3	39.2	24.9	2.8	0.5	8.5	54.7	1.6	8	5	7	11

# METEOROLOGY OF ENGLAND, DURING THE QUARTER ENDING MARCH 31, 1870.

REMARKS ON THE WEATHER DURING THE QUARTER ENDING 31ST OF MARCH, 1870.  
By JAMES GLAISHER, ESQ., F.R.S., &c., Secretary of The Meteorological Society.

The weather at the beginning of the year was very mild, with frequent rain; the wind for the first few days was moderate from the west; it blew very strongly on the 7th and 8th of January mostly from the S.W. This mild weather continued till the 17th, the average excess of temperature for this period being 6.4° daily. On the 18th there was a change, and from this date the predominating winds were easterly and northerly, but generally light, and very little rain fell. From the 18th to the 30th the air was mostly dry and frequently very cold, the average deficiency of daily temperature being 5°. At the beginning of February there was a marked change, frosts disappeared, and till the 8th day the weather was mild, with an average excess of temperature of 4°



During the first three days in March the readings remained steadily at 29.4 in., on the 4th however, a rise set in and reached its maximum, 30.22 in. on the 6th. This was followed by a steady fall to 29.51 in. on the 12th; increasing readings were then recorded, and 30.29 in. was reached on the 19th. From the 20th to the end of the month the readings were generally high, the absolute maximum for the month, 30.30 in. occurring on the 28th. The absolute range of readings during March was 0.93 in.

The mean temperature of January was 38.3, being 2.0 higher than the average of 99 years lower than the corresponding temperature in 1869 by 2.8, but higher than in 1868 by 1.1.

The mean temperature of February was 36.2, being 2.3 lower than the average of 99 years and lower than the corresponding temperatures in any year since 1864, when 36.0 was recorded.

The mean temperature of March was 39.6, being 1.3 lower than the average of 99 years higher than in 1869 by 2.1, lower than in 1868 by 4.4, and higher than in 1867, when 37.7 was registered.

The mean high day temperatures of January, February, and March were lower than their averages by 0.6, 4.1 and 2.8 respectively.

The mean low night temperatures of January, February, and March were lower than their averages by 0.5, 2.2, and 1.1 respectively. Therefore the months of January, February, and March were cold both by night and day.

The daily ranges of temperature were less than their averages by 1.0, 1.9, and 1.6 respectively in January, February, and March.

The fall of rain was 0.4 in. and 1.1 in. respectively in defect in January and February, and 0.5 in. in excess in March.

The mean temperature of the air in the three months ending February, constituting the three winter months, was 37.5, being 0.5 lower than the average of 99 years.

Thunderstorms occurred on the 11th of January at Guernsey and Bath; and on the 12th at Worthing. On the 4th of March at Guernsey.

Thunder was heard, but lightning was not seen, on the 4th of January at Halifax and Allenheads. On the 5th of February at Camden Town. On the 2d of March at Strathfield Turgiss.

Lightning was seen, but thunder was not heard, on the 2d of January at Carlisle and Culloden; on the 7th at Marylebone; on the 8th at Eastbourne and Weybridge Heath; on the 12th at Eastbourne and Osborne; and on the 20th at North Shields. On the 5th of February at Marylebone. On the 24th of March at Marylebone.

Solar halos were seen on the 4th of January at Weybridge; on the 6th, 7th, and 15th at Oxford; and on the 18th at Culloden. On the 7th of February at Culloden; on the 20th and 22d at York; on the 25th at Weybridge, Oxford, Hawarden, York, and Hawsker; on the 26th at Oxford; and on the 27th at Weybridge and Culloden. On the 1st of March at Halifax; on the 14th at Weybridge, Oxford, Hawarden, and Halifax; on the 15th at Oxford; on the 24th at Oxford and Hawarden; and on the 28th at Halifax.

Lunar halos were seen on the 6th of January at Marylebone; on the 8th at Weybridge and Oxford; on the 9th at Stonyhurst; on the 11th at Wisbech; on the 13th at Wisbech and Culloden; on the 14th and 15th at Culloden; and on the 17th at Taunton. On the 7th of February at Worthing and Strathfield Turgiss; on the 11th at Stonyhurst; and on the 15th at Helston. On the 5th and 10th of March at Marylebone; on the 11th at Wilton and Stonyhurst; on the 13th at Stonyhurst; on the 14th at Taunton, Wilton, Strathfield Turgiss, Weybridge, Oxford, Cardington, and Hawarden.

Aurora Boreales were seen on the 1st and 2d of January at Culloden; on the 3d at Guernsey, Worthing, Royston, Somerleyton, Norwich, Boston, Eccles, and Culloden; on the 4th at Wisbech; on the 8th at Oxford, Liverpool, Cockermouth, and North Shields; on the 10th at Eastbourne; on the 23d and 26th at Culloden; on the 28th and 29th at Liverpool, Carlisle, and Culloden; on the 29th at Allenheads; and on the 30th at Weybridge and Hawsker. On the 1st of February at Eastbourne, Royston, Little Wrating, Somerleyton, Norwich, Wisbech, Boston, North Shields, and Culloden; on the 2d at Weybridge and Culloden; on the 3d and 4th at Culloden; on the 11th at Taunton, Wilton, Streatly, Little Wrating, Cardington, York, Hawsker, and North Shields; on the 12th at Helston and Cockermouth; on the 19th at Truro; on the 21st at Hawarden; on the 23d at Culloden; on the 26th at York and Culloden; on the 27th at Weybridge; and on the 28th at Weybridge, Hawarden, and Culloden. On the 1st of March at Hawarden; on the 3d at Cardington and Boston; on the 13th at Taunton, Oxford, Boston, and Hawsker; on the 14th at Guernsey; on the 22d at Little Wrating, Stonyhurst, and York; on the 24th at York; on the 25th at Weybridge; and on the 30th at Oxford.

Snow fell on 54 days during the quarter, viz., 17 in January, 22 in February, and 15 in March.

Hail fell on 43 days during the quarter, viz., 13 in January, 17 in February, and 13 in March.

Fog prevailed on 53 days during the quarter, viz., 23 in January, 17 in February, and 13 in March.

Leaf buds first appeared on the Horse Chesnut on the 2d of February at Eastbourne; on the 13th of March at Helston; and on the 22d at Strathfield Turgiss.

Leaf buds first appeared on the Hawthorn on the 18th of February at Eastbourne; on the 20th at Weybridge; and on the 26th at Oxford. On the 31st of March at Guernsey.

Leaf buds first appeared on the Wych Elm on the 24th of February; on the Field Elm on the 20th of March; and on the Hazel on the 15th at Weybridge.

Leaf buds first appeared on the Sycamore on the 20th of March at Weybridge; and on the 23d at Helston.

Primrose in flower on the 17th of February at Sidmouth.

Pear in blossom on the 23d of March at Helston.

Peach in blossom on the 10th of March at Helston; on the 30th at Wilton; and on the 31st at Wisbech.

Wheat first appeared above ground on the 15th of February at Culloden.

Aconites, Snowdrops, and very few Crocuses out on the 11th of February at Marlborough College.

## JANUARY.

STRATHFIELD TURGISS.—We are glad to be able to report that the fears that were entertained of injury to the young wheat from sudden changes in temperature, have proved groundless. The severe frosts of the month have enabled the farmer to get his manure upon the land, in preparation for peas and beans, and as the land, since the frost, has worked up well, there is a fair prospect of putting in these crops in fair condition. The demand for labourers is good; no man need be idle for want of work.—Rev. C. H. Griffith, M.A.

LLANDUDNO.—In spite of frost, hail, and little sun the *Géant des Batailles* rose has been flowering through the winter, and the common violet gathered in several gardens during the months of December and January; the yellow *calceolaria* are as bright and green, although in an exposed level in the open garden—as in any conservatory.—James Nicol, M.D.

HAWSKER.—Except the first week, decidedly a cold, but fine and calm month, the ice formed on the 10th was never entirely melted on the higher grounds, and the snow which fell on Christmas day and days following, is still visible here and there in patches, even on low grounds. Skating general at the end of the month.—Rev. Fenwick W. Stow, M.A.

COCKERMOUTH.—Rain fell almost daily till the 19th, the weather was afterwards frosty, and settled until the 30th.—Henry Dodgson, M.D.

## FEBRUARY.

STRATHFIELD TURGISS.—February has been a wintry month with sudden and great changes of temperature. The hard frosts made the land in a very suitable state for the carrying out the farmyard and other heavy manures thereon, without any injury by treading, but the intense frost accompanied by strong winds was very trying to the young clover plants which on some wet soils we find are considerably injured, in fact in some instances killed; we are also sorry to hear that on some of the chalk soils the wheat plant has been drawn asunder and some few fields ploughed up and re-sown; these instances we hope are exceptional, and as far as our own knowledge extends, at present, we think that the growing crop of wheat is a good plant but have gone somewhat backward. Some of the first grown swedes could not stand the severe frosts, severely checked in growth at the top; sheep-keep is, however, plentiful. Dry weather is now much wanted to enable the farmer to put in the various spring crops, and also for the healthy growth of the wheats which almost invariably yield the best when the month of March turns out dry. Red clover seeds come very sparingly to market and seem likely to be scarce.—Rev. C. H. Griffith, M.A.

HAWSKER.—A month of extreme cold; since the end of November the temperature has never exceeded 46°, except on two days in December; and, since Christmas day, snow has never been out of sight, and since January 10th the frost has never been fairly out of the ground. On the 24th of February the temperature of the sea had fallen as low as 37.7 on a part of the coast where there is deep water close in shore. There were several storms during the month, and the total horizontal motion of the air registered by Robinson's anemometer was 16731 miles. The greatest in 24 hours was 1276 miles on the 7th.—Rev. F. W. Stow, M.A.

BYWELL.—The weather has been very stormy during the greater part of the month. A change took place on the 28th, it was quite a spring day.—Thomas Sopwith, M.A.

## MARCH.

STRATHFIELD TURGISS.—The old saying of "March, of many weathers" has been fully realised this year as the changes have been great and sudden, but nevertheless on the whole a favourable month for agriculture, especially for the well doing of the young wheats, which upon all the heavy soils of this district are looking very satisfactory, with plenty of plant, on some of the thin chalk and gravel soils it became so thin as to cause its being ploughed up and sown to other grain. The putting in of beans, peas, oats, and barley, has seldom been done with the land in such good condition as this year, but little harrowing being required to obtain a good seed bed.—Rev. C. H. Griffith, M.A.

COCKERMOUTH.—A month of comparatively dry weather with frequent cold winds from the W. and E. Vegetation unusually backward.—Henry Dodgson, M.D.

WISBECH.—Vegetation is in a very backward state; sharp frosts continued to the end of the month. Rain was much needed.—Samuel H. Miller, Esq.



# MONTHLY METEOROLOGICAL TABLE FOR THE QUARTER ENDING MARCH 31ST, 1870.

The Observations have been reduced to Mean values by Glaisher's Barometrical and Diurnal Range Tables, and the Hygrometrical results have been deduced from the fifth edition of his Hygrometrical Tables.

NAMES OF STATIONS AND OBSERVERS.	Height of Station Above Sea Level.	Year 1870.	Pressure of Atmosphere in Month.			Temperature of Air in Month.			Mean Temperature.		Vapour.		Mean Reading of Thermometer.		Wind.			Mean Amount of Ozone.	Number of Days it fell.	Rain.	
			Mean.	Range.	Highest.	Lowest.	Range.	Of all Highest.	Of all Lowest.	Air.	Dew Point.	Elastic Force.	Mean.	Short of Saturation.	Mean Degree of Humidity.	Relative Proportion of					
																N.	E.				S.
GUERNSEY.	204	Jan. 29-750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	
SAMUEL ELLIOTT HOSKINS, Esq., M.D., F.R.C.P., F.R.S., F.M.S.		Feb. 29-750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	
HELSTON (Cornwall).	106	Jan. 29-750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	
MATTHEW P. MOYLE, Esq., M.R.C.S.		Feb. 29-750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	
TRURO (Cornwall).	43	Jan. 29-750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	
C. BARHAM, Esq., M.D., F.M.S.		Feb. 29-750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	
SIDMOUTH (Devon).	30	Jan. 29-750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	
J. INGLEY, Esq., M.D., F.M.S.		Feb. 29-750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	
EASTBOURNE (Sussex).	12	Jan. 29-750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	
W. L. MANN, Esq.		Feb. 29-750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	
OSBORNE (Isle of Wight).	172	Jan. 29-750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	
BOURNEMOUTH (Hants).	128	Jan. 29-750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	
T.A. COMPTON, Esq., M.D., B.A., M.R.C.S.E., F.M.S.		Feb. 29-750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	
WORTHING (Sussex).	31	Jan. 29-750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	
W. J. HARRIS, Esq., M.R.C.S.E., F.M.S.		Feb. 29-750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	
TAUNTON (Somerset).	48	Jan. 29-750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	
REV. W. TUCKWELL, F.M.S.		Feb. 29-750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	
WILTON HOUSE, near Salisbury.	150	Jan. 29-750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	
T. CHALLIS, Esq.		Feb. 29-750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	
BARNSTAPLE (Devon).	43	Jan. 29-750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	
T. MACLELLAN, Esq.		Feb. 29-750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	
ALDWORTH CAMP (Gloucester).	100	Jan. 29-750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	
W. H. GIBSON, Esq., F.M.S.		Feb. 29-750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	30.750	

Name		1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868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Names of Stations and Observers.	Height of Station above Sea Level.	Year 1870.	Pressure of Atmosphere in Month.		Temperature of Air in Month.			Mean Temperature.	Vapour.		Mean Degree of Humidity, say, = 100.	Mean Weight of a cubic foot of Air.		Mean Reading of Thermometer.		Wind.	Mean Amount of Cloud.	Rain.										
			Mean.	Range.	Highest.	Lowest.	Range.		Of all Highest.	Of all Lowest.		Daily Range.	Air.	Dew Point.	Elastic Force.				Mean.	Short of Saturation.	Mean Degree of Humidity.	Maximum in Rays of Sun.	Minimum on Grass.	Estimated Strength.	Relative Proportion of	Mean Amount of	Number of Days it fell.	Amount collected.
WISBECH (Cambridgeshire), S. H. MILLER, Esq., F.R.A.S.	14	Jan. 29-948 Feb. 29-858 Mar. 29-804	29-948 29-858 29-804	31-372 31-110 30-900	31-372 31-110 30-900	29-948 29-858 29-804	31-372 31-110 30-900	31-372 31-110 30-900	31-372 31-110 30-900	31-372 31-110 30-900	31-372 31-110 30-900	31-372 31-110 30-900	31-372 31-110 30-900	31-372 31-110 30-900	31-372 31-110 30-900	31-372 31-110 30-900	31-372 31-110 30-900	31-372 31-110 30-900	31-372 31-110 30-900	31-372 31-110 30-900	31-372 31-110 30-900	31-372 31-110 30-900	31-372 31-110 30-900	31-372 31-110 30-900	31-372 31-110 30-900			
LLANDUDNO (Carnarvonshire), J. NICOL, Esq., M.D.	100	Jan. 29-794 Feb. 29-721 Mar. 29-658	29-794 29-721 29-658	31-102 31-000 30-800	31-102 31-000 30-800	29-794 29-721 29-658	31-102 31-000 30-800	31-102 31-000 30-800	31-102 31-000 30-800	31-102 31-000 30-800	31-102 31-000 30-800	31-102 31-000 30-800	31-102 31-000 30-800	31-102 31-000 30-800	31-102 31-000 30-800	31-102 31-000 30-800	31-102 31-000 30-800	31-102 31-000 30-800	31-102 31-000 30-800	31-102 31-000 30-800	31-102 31-000 30-800	31-102 31-000 30-800	31-102 31-000 30-800	31-102 31-000 30-800	31-102 31-000 30-800			
DERBY (Derbyshire), JOHN DAVIS, Esq.	174	Jan. 29-740 Feb. 29-651 Mar. 29-582	29-740 29-651 29-582	31-000 30-800 30-600	31-000 30-800 30-600	29-740 29-651 29-582	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600			
NOTTINGHAM (Nottingham), M. O. LUTHERTON, Esq., C.E., F.G.S., F.M.S.	241	Jan. 29-670 Feb. 29-601 Mar. 29-532	29-670 29-601 29-532	30-800 30-600 30-400	30-800 30-600 30-400	29-670 29-601 29-532	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400			
HOLKHAM (Norfolk), JOHN DAVIDSON, Esq., Assistant to the EARL OF LANCETER.	39	Jan. 29-758 Feb. 29-685 Mar. 29-612	29-758 29-685 29-612	30-900 30-700 30-500	30-900 30-700 30-500	29-758 29-685 29-612	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500			
BOSTON (Lincolnshire), A. MERCEY ADAM, Esq., M.D., F.M.S.	20	Jan. 29-923 Feb. 29-849 Mar. 29-775	29-923 29-849 29-775	31-000 30-800 30-600	31-000 30-800 30-600	29-923 29-849 29-775	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600			
HAWARDEN (Hants), T. MORTON, Esq., F.G.S.	270	Jan. 29-637 Feb. 29-568 Mar. 29-494	29-637 29-568 29-494	30-800 30-600 30-400	30-800 30-600 30-400	29-637 29-568 29-494	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400			
LIVERPOOL OBSERVATORY, JOHN HARRINGTON, Esq., F.R.A.S.	212	Jan. 29-752 Feb. 29-687 Mar. 29-612	29-752 29-687 29-612	30-900 30-700 30-500	30-900 30-700 30-500	29-752 29-687 29-612	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500			
OLD TRAFFORD (Manchester, Lancashire), GEORGE VERABLES VERNON, Esq., F.R.A.S., F.M.S., F.A.S.L.	123	Jan. 29-812 Feb. 29-745 Mar. 29-678	29-812 29-745 29-678	30-900 30-700 30-500	30-900 30-700 30-500	29-812 29-745 29-678	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500	30-900 30-700 30-500			
ECCLES, T. MACKRETH, Esq., F.R.A.S., F.M.S.	145	Jan. 29-775 Feb. 29-708 Mar. 29-641	29-775 29-708 29-641	30-800 30-600 30-400	30-800 30-600 30-400	29-775 29-708 29-641	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400			
PARK ROAD OBSERVATORY (Halifax, Yorkshire), EDWARD CROSSLEY, Esq., F.R.A.S. and JOSEPH GLENDON, Esq., F.G.S., F.M.S.	613	Jan. 29-257 Feb. 29-176 Mar. 29-095	29-257 29-176 29-095	30-800 30-600 30-400	30-800 30-600 30-400	29-257 29-176 29-095	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400	30-800 30-600 30-400			
THE NEW MILL (Yorkshire), W. H. THORNTON, Esq.	20	Jan. 29-927 Feb. 29-854 Mar. 29-781	29-927 29-854 29-781	31-000 30-800 30-600	31-000 30-800 30-600	29-927 29-854 29-781	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600			

Meteorological Table, Quarter ending March 31st, 1870.

Name of Station and Observer.	Height of Station above Sea Level.	Year.	Pressure of Atmosphere in Month.				Temperature of Air in Month.				Mean Temperature.		Vapour.		Mean Degree of Humidity.		Mean Weight of a cubic foot of Air.		Mean Reading of Thermometer.		Wind.		Mean Amount of Cloud.		Rain.	
			Mean.	Range.	Highest.	Lowest.	Range.	All Highest.	All Lowest.	Daily Range.	Air.	Dew Point.	Elastic Force.	Mean.	Short of Saturation.	Mean Degree of Humidity.	Maximum in Rays of Sun.	Minimum in Grass.	Strength.	N.	E.	S.	W.	Number of Days it fell.	Amount collected.	
LEEDS (Yorkshire), HARRISON, Esq., A.L.S.	203	Jan. 29-927 Feb. 29-854 Mar. 29-781	29-927 29-854 29-781	31-000 30-800 30-600	31-000 30-800 30-600	29-927 29-854 29-781	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	
OTLEY (Yorkshire), H. W. THORNTON, Esq.	20	Jan. 29-927 Feb. 29-854 Mar. 29-781	29-927 29-854 29-781	31-000 30-800 30-600	31-000 30-800 30-600	29-927 29-854 29-781	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	
YORK (Yorkshire), F. H. THORNTON, Esq.	20	Jan. 29-927 Feb. 29-854 Mar. 29-781	29-927 29-854 29-781	31-000 30-800 30-600	31-000 30-800 30-600	29-927 29-854 29-781	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	
HAWKESLEY (near Whitby, Yorkshire), Rev. F. W. STOW, M.A., F.R.S.	341	Jan. 29-927 Feb. 29-854 Mar. 29-781	29-927 29-854 29-781	31-000 30-800 30-600	31-000 30-800 30-600	29-927 29-854 29-781	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	
COKEFORTH (Cumberland), H. DODGSON, Esq., M.D., F.R.A.S.	148	Jan. 29-927 Feb. 29-854 Mar. 29-781	29-927 29-854 29-781	31-000 30-800 30-600	31-000 30-800 30-600	29-927 29-854 29-781	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	
ALLENHEADS (Durham), T. F.G.S., F.M.S.	1080	Jan. 29-927 Feb. 29-854 Mar. 29-781	29-927 29-854 29-781	31-000 30-800 30-600	31-000 30-800 30-600	29-927 29-854 29-781	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	
CARLISLE (Cumberland), I. CARTMELL, Esq., F.M.S.	114	Jan. 29-927 Feb. 29-854 Mar. 29-781	29-927 29-854 29-781	31-000 30-800 30-600	31-000 30-800 30-600	29-927 29-854 29-781	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	
BYWELL (Northumberland), Mr. JOHN D. SORBY, Esq., M.A., F.R.S., F.G.S., F.M.S.	87	Jan. 29-927 Feb. 29-854 Mar. 29-781	29-927 29-854 29-781	31-000 30-800 30-600	31-000 30-800 30-600	29-927 29-854 29-781	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	
NORTH SHIELDS (Northumberland), ROBERT SPENCE, Esq.	124	Jan. 29-927 Feb. 29-854 Mar. 29-781	29-927 29-854 29-781	31-000 30-800 30-600	31-000 30-800 30-600	29-927 29-854 29-781	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	
MILTOWN (Banbridge, Ireland), JOHN SMYTH, Esq., M.A., M.I.C.E.L., F.M.S.	200	Jan. 29-927 Feb. 29-854 Mar. 29-781	29-927 29-854 29-781	31-000 30-800 30-600	31-000 30-800 30-600	29-927 29-854 29-781	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	
CULLODEN (Inverness, Scotland), A. FORBES, Esq., F.M.S.	104	Jan. 29-927 Feb. 29-854 Mar. 29-781	29-927 29-854 29-781	31-000 30-800 30-600	31-000 30-800 30-600	29-927 29-854 29-781	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	31-000 30-800 30-600	

Second Rain-gauges are placed—At Eastbourne, at the N.E. end of the pier.



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	Mean Estimated Strength.	WIND.				Mean Amount of Cloud.	Mean Amount of Rain.
																Relative Proportion of					
																N.	E.	S.	W.		
Guernsey	29.737	57.0	29.0	31.0	44.7	38.3	24.3	6.4	40.9	37.3	223	2.6	0.4	88	550	59.7	36.5	2.1	8	7	4.9
Helston	29.761	59.0	28.0	31.0	48.5	40.1	24.3	8.4	43.7	37.7	229	2.6	0.6	81	550	59.7	36.5	2.1	8	8	7
Truro	29.752	57.0	28.0	34.0	47.3	37.2	30.7	10.1	42.5	37.4	224	2.6	0.5	83	553	59.7	36.5	2.1	8	8	7
Sidmouth	29.769	57.8	21.6	36.2	45.6	34.5	29.7	11.1	39.3	32.0	203	2.4	0.5	83	556	59.7	36.5	2.1	8	6	10
Eastbourne	29.775	59.0	20.2	38.8	43.6	34.8	31.5	8.8	39.1	35.7	209	2.4	0.5	83	556	59.7	36.5	2.1	8	6	10
Osborne	29.767	60.0	20.4	39.6	44.9	33.8	33.2	11.1	39.1	35.8	210	2.5	0.4	89	557	59.7	36.5	2.1	8	6	10
Bournemouth	29.786	58.4	21.5	36.9	43.8	33.5	30.2	8.7	38.9	34.9	203	2.4	0.4	86	553	59.7	36.5	2.1	8	6	10
Worthing	29.758	58.7	21.2	37.5	43.1	35.1	26.7	8.0	38.2	34.3	198	2.3	0.4	86	557	59.7	36.5	2.1	8	6	10
Taunton	29.735	57.5	21.5	36.0	45.9	33.8	33.9	12.1	40.0	35.7	209	2.4	0.5	85	554	59.7	36.5	2.1	8	4	9
Wilton House	29.724	61.2	16.5	44.7	45.3	32.9	37.4	13.4	38.7	36.5	212	2.5	0.9	92	554	59.7	36.5	2.1	8	4	9
Barnstaple	29.733	58.0	21.0	34.0	46.5	33.7	30.3	9.8	41.5	37.2	222	2.6	0.5	85	553	59.7	36.5	2.1	8	7	10
Aldershot Camp	29.744	58.0	21.0	34.0	46.5	33.7	30.3	9.8	41.5	37.2	222	2.6	0.5	85	553	59.7	36.5	2.1	8	7	10
West Hartpre Vicar.	29.736	59.3	17.9	41.4	45.0	33.3	33.7	11.7	38.9	35.2	203	2.4	0.3	91	550	59.7	36.5	2.1	8	7	9
Strathfield Turgiss	29.787	60.0	13.3	46.7	43.9	32.2	43.0	11.5	37.7	33.5	192	2.2	0.5	85	555	59.7	36.5	2.1	8	7	9
Weybridge Heath	29.807	61.5	14.5	47.0	43.6	33.1	39.0	10.5	37.9	34.4	199	2.3	0.4	88	556	59.7	36.5	2.1	8	7	9
Bath	29.744	58.0	20.5	37.5	45.0	35.4	33.9	9.6	39.9	36.0	212	2.5	0.4	84	554	59.7	36.5	2.1	8	7	7
Marlborough College	29.795	59.3	14.2	45.1	43.3	31.2	40.4	12.1	36.7	34.0	196	2.3	0.3	90	551	59.7	36.5	2.1	8	7	10
Royal Observatory	29.784	61.1	19.4	41.7	43.6	33.3	35.2	10.3	38.0	32.8	187	2.2	0.5	82	553	59.7	36.5	2.1	8	7	9
Streatley Vicarage	29.822	61.6	14.9	46.7	44.7	31.2	37.0	13.5	37.9	34.5	200	2.3	0.4	88	556	59.7	36.5	2.1	8	6	7
Marylebone	29.777	63.0	18.9	45.9	43.7	33.4	36.7	10.3	38.9	34.8	202	2.3	0.4	86	557	59.7	36.5	2.1	8	5	10
Camden Town	29.749	60.5	20.1	40.4	44.5	34.1	33.9	10.4	39.0	35.0	204	2.4	0.4	86	555	59.7	36.5	2.1	8	6	9
Oxford	29.778	57.8	12.9	44.9	43.5	34.1	35.7	9.4	38.6	34.3	193	2.3	0.5	85	554	59.7	36.5	2.1	8	6	9
Gloucester	29.792	62.0	19.0	43.0	45.3	32.8	35.7	12.5	38.9	33.4	191	2.2	0.6	81	558	59.7	36.5	2.1	8	6	9
Royston	29.759	57.5	16.5	43.0	40.7	32.7	34.7	10.9	37.6	33.6	192	2.3	0.2	90	554	59.7	36.5	2.1	8	5	10
Little Wrattling	29.791	57.2	18.3	38.9	40.7	32.0	33.0	8.7	36.0	33.4	192	2.2	0.2	90	554	59.7	36.5	2.1	8	5	10
Cardington	29.796	60.0	18.0	42.0	43.5	32.6	35.9	10.9	37.8	33.7	193	2.2	0.5	85	557	59.7	36.5	2.1	8	5	10
Lampeter	29.768	62.0	19.4	42.6	46.7	33.4	34.2	13.3	39.5	34.4	199	2.3	0.6	83	548	59.7	36.5	2.1	8	7	8
Leamington	29.772	59.3	19.8	39.5	44.1	33.5	34.6	10.6	38.6	33.8	210	2.4	0.3	90	554	59.7	36.5	2.1	8	5	10
Somerleyton Rectory	29.737	57.0	20.9	36.2	42.5	32.6	32.5	9.9	37.0	33.8	210	2.5	0.2	95	558	59.7	36.5	2.1	8	4	9
Norwich	29.782	58.0	21.0	37.0	42.1	32.7	31.2	9.4	37.5	33.8	193	2.3	0.4	87	558	59.7	36.5	2.1	8	8	7
Wisbech	29.758	57.4	21.0	36.4	43.6	33.3	32.7	10.3	37.9	34.1	197	2.3	0.4	87	558	59.7	36.5	2.1	8	8	7
Llandudno	29.723	58.4	25.4	33.0	45.2	35.9	29.5	9.3	40.4	36.3	215	2.5	0.4	86	553	59.7	36.5	2.1	8	5	10
Derby	29.741	57.0	21.0	36.0	43.5	32.8	32.7	10.7	37.8	34.0	195	2.3	0.4	86	554	59.7	36.5	2.1	8	7	9
Nottingham	29.747	56.6	20.7	35.9	43.7	32.2	31.9	11.5	37.6	34.9	203	2.4	0.3	90	553	59.7	36.5	2.1	8	7	9
Boston	29.746	56.2	21.6	34.6	42.9	33.3	31.3	9.6	37.6	33.5	204	2.4	0.3	91	557	59.7	36.5	2.1	8	6	8
Hawarden	29.748	56.0	22.0	34.0	43.6	32.4	27.3	7.2	38.8	35.3	206	2.4	0.4	88	551	59.7	36.5	2.1	8	7	9
Liverpool	29.792	55.4	22.8	32.6	43.3	31.4	28.4	9.0	38.6	34.7	201	2.3	0.4	86	554	59.7	36.5	2.1	8	7	9
Eccles	29.736	56.5	20.2	36.3	44.1	33.1	32.8	11.0	38.5	34.8	202	2.3	0.4	87	554	59.7	36.5	2.1	8	7	8
Halifax	29.768	53.0	13.6	39.4	40.4	32.0	31.8	8.4	36.0	32.4	184	2.1	0.4	85	547	59.7	36.5	2.1	8	4	11
Hull	29.767	56.0	15.0	41.0	42.3	35.0	33.6	12.0	36.8	32.7	186	2.2	0.4	86	547	59.7	36.5	2.1	8	7	8
Stonyhurst	29.776	55.4	21.9	33.5	44.3	33.6	28.9	10.7	38.1	34.1	197	2.4	0.4	86	550	59.7	36.5	2.1	8	7	9
Bradford	29.778	55.3	21.4	33.9	43.3	32.3	28.6	10.1	38.0	32.6	185	2.1	0.6	82	550	59.7	36.5	2.1	8	6	8
Leeds	29.758	57.0	21.0	37.0	44.3	31.7	33.0	12.6	38.3	33.6	192	2.2	0.5	83	555	59.7	36.5	2.1	8	3	12
Osley	29.717	53.7	22.0	31.7	43.7	34.0	26.3	9.7	38.1	34.5	200	2.3	0.4	87	553	59.7	36.5	2.1	8	2	13
York	29.732	59.0	15.0	44.0	42.7	33.4	32.7	9.3	37.3	34.1	195	2.3	0.4	88	557	59.7	36.5	2.1	8	1	14
Hawsker	29.758	57.8	18.4	44.4	44.1	33.1	34.0	9.5	38.3	32.1	182	2.1	0.4	84	553	59.7	36.5	2.1	8	10	6
Cockermouth	29.721	55.1	17.0	37.7	45.0	33.8	29.7	11.2	39.2	34.7	202	2.3	0.5	84	553	59.7	36.5	2.1	8	7	8
Carlisle	29.703	57.0	20.0	37.0	44.7	33.2	31.9	11.5	38.1	33.1	212	2.3	0.5	82	555	59.7	36.5	2.1	8	7	8
North Shields	29.787	57.0	22.7	34.3	43.4	33.0	29.4	10.4	37.2	33.2	205	1.7	0.3	92	551	59.7	36.5	2.1	8	7	8
Miltown, Ireland	29.704	59.0	21.0	38.0	44.3	33.9	31.3	10.5	38.7	35.6	209	2.4	0.4	89	552	59.7	36.5	2.1	8	5	12

The highest temperatures of the air were at Marylebone, 63° 0; Gloucester and Lampeter, 62° 0; Streatley, 61° 6; Weybridge Heath, 61° 2; and Royal Observatory, Greenwich, 61° 0.

The lowest temperatures of the air were at Oxford, 12° 9; Strathfield Turgiss, 13° 3; Hawsker, 13° 4; Halifax, 13° 6; Marlborough College, 14° 2; and Weybridge Heath, 14° 3.

The greatest daily ranges of the air were at Streatley, 13° 5; Wilton, 13° 4; Lampeter, 13° 8; Leeds, 12° 6; Gloucester, 12° 9; and Marlborough College, 12° 1; and Hull, 12° 0.

The least daily ranges of the air were at Guernsey, 6° 4; Hawsker, 7° 2; Worthing, 8° 0; Helston and Halifax, 8° 4; Bournemouth and Little Wrattling, 8° 7; and Eastbourne, 8° 8.

The greatest number of rainy days were at Stonyhurst, 64; North Shields, 60; Boston and York, 52; Hull, 51; and Royston, Wrattling, and Miltown, 48.

The least number of rainy days were at Norwich and Carlisle, 32; Gloucester, 33; Leamington and Otley, 34; and Osborne, 35.

The heaviest falls of rain were at Lampeter, 10° 55 inches; Cockermouth, 10° 33 inches; West Hartpre, 9° 29 inches; Truro, 9° 28 inches; and Halifax and Stonyhurst, 8° 64 inches.

The least falls of rain were at Wisbech, 3° 07 inches; Little Wrattling, 3° 30 inches; Cardington, 3° 35 inches; Boston, 3° 36 inches; Somerleyton, 3° 75 inches; and Royston and Norwich, 3° 82 inches.

## QUARTERLY METEOROLOGICAL TABLE for different PARALLELS of LATITUDE.

PARALLELS OF  LATITUDE, &c.		Mean Pressure of dry Air reduced to the level of the Sea.	Mean of all Highest Read- ings of the Thermometer Mean of all Lowest Read- ings of the Thermometer Mean Range of Temper- ature in the Quarter. Mean of all Highest.  Mean of all Lowest. Mean Monthly Range of Temperature. Mean Daily Range of Temperature. Mean Temperature of the Air. Mean Temperature of the Dew Point. Mean Elastic Force of Vapour. Mean Weight of Vapour in a cubic foot of Air. Mean additional Weight required for saturation. Mean degree of Humidity. Mean Weight of a cubic foot of Air. Mean Reading of Max- imum in Rays of Sun. Mean Reading of Min- imum on Grass. Mean Estimated Strength.	WIND.					Mean Amount of Cloud.	Mean Amount of Rain.														
				Relative Pro- portion of																				
				N.	E.	S.	W.	Variable.																
Guernsey	-	29.737	57.0	29.0	31.0	44.7	38.3	24.3	6.4	40.9	37.3	223	2.6	0.4	88	550	59.7	36.5	2.1	8	7	4.9	1.4	1.4
Between the latitudes	50° and 51°	29.767	58.0	22.0	34.0	45.3	35.8	29.5	9.5	40.1	35.9	211	2.5	0.4	86	554	59.7	36.5	2.1	8	7	4.9	1.4	1.4
	51° and 52°	29.769	60.0	11.6	42.6	46.4	33.4	36.1	11.2	38.6	34.8	203	2.3	0.4	86	554	59.7	36.5	2.1	8	7	4.9	1.4	1.4
	52° and 53°	29.762	58.2	20.0	33.7	44.5	33.1	32.9	10.4	37.9	34.7	201	2.3	0.4	86	555	59.7	36.5	2.1	8	7	4.9	1.4	1.4
	53° and 54°	29.750	55.8	19.5	36.3	43.2	33.2	30.5	10.8	37.9	33.3	195	2.3	0.4	86	555	59.7	36.5	2.1	8	7	4.9	1.4	1.4
North Shields	54° and 55°	29.727	56.7	17.0	39.7	43.7	32.9	31.9	10.6	37.2	34.3	189	2.3	0.4	87	554	62.4	27.5	0.7	1	1	5.0	1.4	1.4
		29.787	57.0	22.7	34.3	44.3	33.0	29.4	10.4	37.7	33.5	203	2.7	0.4	89	556	—	31.5	1.7	1	1	5.0	1.4	1.4
Milsons, Banbridge (Ireland)		29.704	59.0	21.0	38.4	44.4	33.9	31.3	10.5	38.7	35.2	205	1.4	0.3	83	562	66.8	29.9	2.0	8	7	4.9	1.4	1.4
Mean	- 50° to 55°	29.757	57.9	19.3	38.1	44.1	33.7	32.2	10.4	38.5	34.7	202	2.4	0.4	86	554	63.8	29.9	1.1	8	7	4.9	1.4	1.4



At the end of the preceding quarter vegetation was considered to be three or four weeks behind what it was in the last year at the same period. At the end of April vegetation was very backward, the pastures were bare and brown, and there was a general want of warmth and moisture for the growing crops.

During May rain appeared only in passing showers, but the fine and warm weather which set in on the 12th caused vegetation to advance rapidly. At the end of this month the prospects of the hay crop were bad.

The prolonged drought continued through June; the temperature till towards the end of the month was generally high. On heavy soils the crops were promising; forage was scarce and the haymaking began in the middle of June, but the crop was the lightest for many years past. The potato crop was spoken of satisfactorily.

The mean temperature of the air in the three months ending May, constituting the three months, was  $47^{\circ} \cdot 3$ , being  $0^{\circ} \cdot 8$  higher than the average of 99 years.

1870. MONTHS.		Temperature of										Elastic Force of Vapour.		Wet Cube of Air.			
		Air.		Evaporation.		Dew Point.		Air— Daily Range.		Water of the Thames.							
		Mean.	Diff. from ave- rage of 99 years.	Diff. from ave- rage of 29 years.	Mean.	Diff. from ave- rage of 29 years.	Mean.	Diff. from ave- rage of 29 years.	Mean.		Diff. from ave- rage of 29 years.						
April	-	48.9	+2.9	+1.8	44.2	+0.2	39.2	-1.4	23.6	+5.2	43.4	in.	0.239	in.	-0.016	grs.	54.4
May	-	53.4	+0.8	+0.4	49.2	-0.1	45.1	-0.5	24.9	+4.6	..	0.261	-0.003	0.301	-0.003	4.1	54.4
June	-	60.9	+2.7	+1.9	55.4	+0.8	50.6	-0.1	24.1	+3.1	..	0.269	-0.008	0.303	-0.008	4.1	54.4
Mean	-	54.4	+2.1	+1.4	49.6	+0.3	45.0	-0.7	24.2	+4.3	..	0.263	-0.007	0.303	-0.007	4.1	54.4

1870. MONTHS.		Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Hor- i- zontal move- ment of the Air.	Reading of Thermometer as given			Low- est Read- ing at Night.
		Mean.	Diff. from ave- rage of 29 years.	Mean.	Diff. from ave- rage of 29 years.	Mean.	Diff. from ave- rage of 29 years.	Amount.	Diff. from ave- rage of 55 years.		Number of Nights it was			
											At or below 30°.	Be- tween 30° and 40°	Above 40°.	
April	-	69	-10	in. 29.984	+0.218	grs. 546	grs. + 3	in. 0.3	in. -1.4	Miles. 244	12	17	1	0 15.9
May	-	73	- 3	29.986	+0.124	539	- 3	0.5	-1.7	254	10	13	8	21.9
June	-	68	- 6	29.947	+0.136	532	0	0.4	-1.5	242	0	6	24	31.7
Mean	-	70	- 6	29.942	+0.139	539	0	Sum 1.2	Sum -4.6	Mean 247	Sum 22	Sum 33	Sum 33	Lowest 15.3

NOTE.—In reading this table it will be borne in mind that the sign (-) minus signifies below the average, and the sign (+) plus signifies above the average.

Thunderstorms occurred on the 7th and 8th of April at Miltown; on the 9th at Taunton, Oxford, Liverpool, and Halifax; and on the 10th at Somerleyton Rectory. On the 11th at Cardington, Hull, Stonyhurst, and York; on the 21st at Camden Town; and on the 22d at Eastbourne. On the 16th of June at all parts of the country, from Helston to North Shields; (at some of the midland and northern stations it commenced on the evening of the 16th and continued through the night;) and on the 24th at York.

Thunder was heard, but lightning was not seen, on the 9th of April at West Harptre, Stonyhurst, Bradford, Allenheads, and Carlisle; and on the 10th at Camden Town, Norwich, and Boston. On the 1st of May at Somerleyton Rectory, Norwich, Boston, and Halifax; on the 2d at Cardington, Hull, and North Shields; and on the 30th at Guernsey and Hull. On the 4th of June at Bywell; on the 22d at Little Wratting; on the 13th at Hull and Allenheads; on the 20th at West Harptre; on the 8th at Guernsey; on the 16th at Guernsey, Norwich, and York; on the 17th at Portsmouth, Wratting, and Halifax; on the 18th at Marylebone and Hull; on the 21st at Little Wratting, the 24th at Halifax, Hull, Hawsker, Allenheads, Carlisle, Bywell, and North Shields; on the 27th at Marylebone.

Lightning was seen, but thunder was not heard, on the 1st of May at Holkham and Allenheads; on the 21st at Guernsey, Strathfield Turgiss, and Oxford; and on the 22d at Portsmouth, 16th of June at Llandudno, Hawarden, and Liverpool; and on the 21st at North Shields.

Solar halos were seen on the 3d, 7th, 8th, 12th, 13th, 14th, 21st, 22d, and 26th of April. On the 16th, 17th, 19th, 20th, and 28th of May. On the 9th and 16th of June.

Lunar halos were seen on the 7th, 8th, 10th, 11th, 12th, 13th, 14th, 15th, and 19th of April. On the 5th, 8th, 10th, 11th, 14th, and 28th of May. On the 7th, 8th, 9th, 10th, 11th, 20th, 21st, 22d, 23d, 24th, 26th, 27th, 28th, 29th, and 30th of April. On the 1st, 2d, 3d, 4th, 7th, 8th, 19th, 20th, 21st, 22d, 23d, 24th, 26th, 27th, 28th, 29th, and 30th of April. On the 1st, 2d, 3d, 4th, 7th, 8th, 19th, 20th, 21st, 22d, 23d, 24th, 26th, 27th, 28th, 29th, and 30th of April.

Aurora Boreales were seen on the 1st, 2d, 3d, 4th, 5th, 6th, 8th, 10th, 11th, 20th, 21st, 22d, 23d, 24th, 26th, 27th, 28th, 29th, and 30th of April. On the 1st, 2d, 3d, 4th, 7th, 8th, 19th, 20th, 21st, 22d, 23d, 24th, 26th, 27th, 28th, 29th, and 30th of April.

Snow fell on the 10th, 27th, 28th, and 29th of April. On the 1st, 2d, and 3d of May.

Hail fell on 6 days in April, 7 in May, and 4 in June.

Fog prevailed on 20 days in April, 12 in May, and 9 in June.

Hawthorn in leaf on the 5th of April at Weybridge and Culloden; on the 7th at Miltown; on the 12th at Guernsey; on the 13th at Eastbourne and Hawsker; on the 17th at Osborne; on the 21st at Holkham; on the 22d at Little Wratting; on the 23d at Boston; and on the 25th at Cockermouth.

Horse chestnut in leaf on the 10th of April at Strathfield Turgiss; on the 12th at Guernsey; on the 15th at Eastbourne, Weybridge Heath, and Culloden; on the 17th at Oxford; on the 18th at Rectory; on the 21st at Holkham; on the 22d at Helston and Miltown; on the 23d at Somerleyton Rectory; on the 26th at Osborne and Wilton; and on the 27th at Cockermouth. On the 1st of May at Llandudno; and on the 15th at Hull and Carlisle.

Sycamore in leaf on the 3d of April at Culloden; on the 11th at Strathfield Turgiss; on the 13th at Weybridge; on the 17th at Guernsey and Oxford; on the 21st at Wisbech; on the 22d at Hawsker; on the 27th at Cockermouth; on the 29th at Osborne; and on the 30th at Miltown.

Lime in leaf on the 15th of April at Strathfield Turgiss; on the 19th at Culloden; on the 20th at Wisbech; on the 21st at Oxford; and on the 24th at Guernsey and Boston. On the 4th of May at Osborne; on the 6th at Miltown; on the 11th at Helston and Somerleyton Rectory; and on the 18th at Hull.

Oak in leaf on the 26th of April at Culloden; on the 5th of May at Oxford; on the 8th at Helston; on the 10th at Weybridge Heath and Miltown; on the 15th at Wisbech; and on the 18th at Cockermouth. On the 3d of June at Hull.

Apple in blossom on the 10th of April at Boston; on the 16th at West Harptre; on the 20th at Helston; on the 24th at Oxford; on the 26th at Strathfield Turgiss and Weybridge Heath; on the 27th at Streatley Vicarage; on the 29th at Wisbech; and on the 30th at Culloden. On the 5th of May at Hull; on the 8th at Stonyhurst and Cockermouth; on the 10th at Miltown; on the 11th at Somerleyton Rectory; and on the 15th at Carlisle.

Pear in blossom on the 10th of April at Stonyhurst and Boston; on the 12th at Miltown and Culloden; on the 15th at Somerleyton Rectory; on the 16th at Weybridge; on the 17th at Streatley Vicarage and Oxford; on the 21st at Strathfield Turgiss; on the 22d at Wisbech; on the 23d at Hull; and on the 26th at North Shields. On the 8th of May at Cockermouth; and on the 15th at Carlisle.

Plum in blossom on the 2d of April at Miltown; on the 3d at Strathfield Turgiss; on the 6th at Helston; on the 7th at Oxford; on the 8th at West Harptre and Somerleyton; on the 9th at Culloden; on the 12th at Stonyhurst; on the 17th at Boston and Hawsker; on the 19th at Weybridge Heath; and on the 25th at Hull. On the 15th of May at Carlisle.

Peach in blossom on the 1st of April at Miltown; on the 2d at Oxford; on the 3d at West Harptre; on the 8th at Culloden; on the 11th at Weybridge Heath; and on the 17th at Boston.

Lilac in blossom on the 27th of April at Oxford; on the 28th at Taunton; and on the 30th at Strathfield Turgiss. On the 6th of May at Guernsey; on the 7th at Weybridge Heath and Wisbech; on the 12th at Eastbourne; on the 13th at Culloden; on the 16th at Hull and Miltown; on the 18th at Hawsker and Cockermouth; on the 22d at Somerleyton Rectory; and on the 22d at Lampeter.

Laburnum in blossom on the 8th of May at Llandudno; on the 15th at Guernsey, Weybridge Heath, and Wisbech; on the 16th at Culloden; on the 17th at Eastbourne; on the 18th at Cockermouth; and on the 25th at Lampeter.

Wheat in ear on the 4th of June at Hull; on the 5th at Strathfield Turgiss; on the 6th at Cardington; on the 8th at Weybridge Heath; on the 12th at Helston; on the 15th at Hawarden; on the 16th at Miltown; and on the 20th at Llandudno.

Wheat in flower on the 12th of June at Taunton and Weybridge Heath; on the 17th at Helston; on the 19th at Cardington; on the 20th at Boston; and on the 21st at Hawarden.

Barley in ear on the 6th of June at Cardington; on the 7th at Weybridge Heath; on the 18th at Helston; on the 25th at Llandudno; on the 26th at Hull; and on the 29th at North Shields.

Barley in flower on the 20th of June at Taunton and Llandudno; and on the 23d at Cardington.

Oats in ear on the 16th of June at Helston; on the 19th at Hull; on the 27th at Llandudno; on the 29th at North Shields; and on the 30th at Miltown.

Cuckoo arrived on the 3d of April at Taunton; on the 12th at Guernsey; on the 14th at Llandudno; on the 15th at Wisbech; on the 16th at Aldershot; on the 17th at West Harptre, Oxford, the 19th at Stonyhurst, and Boston; on the 18th at Wilton, Strathfield Turgiss, and Lampeter; on the 19th at Osborne, Streatley Vicarage, Little Wratting, and Cockermouth; on the 20th at Royston, Holkham, and Hull; on the 21st at Weybridge Heath; on the 22d at Helston, Somerleyton Rectory, and Miltown; on the 23d at Hawarden; on the 25th at Eastbourne; and on the 28th at Truro and Osbourne.

Swallow arrived on the 6th of April at Taunton; on the 7th at Wilton and Miltown; on the 13th at Osbourne; on the 10th at Weybridge Heath; on the 11th at Streatley Vicarage; on the 12th at Llandudno, and West Harptre; on the 14th at Cockermouth; on the 15th at Eastbourne, Turgiss, and Holkham; on the 16th at Hawarden and Stonyhurst; on the 18th at Strathfield Turgiss and Little Wratting; on the 20th at Royston and Boston; on the 22d at Lampeter and Culloden. On the 23d at Helston; on the 20th at Royston and Boston; on the 22d at Lampeter and Culloden. On the 2d of May at Truro; on the 10th at Somerleyton Rectory; and on the 22d at Allenheads.

Nightingale arrived on the 9th of April at Royston; on the 15th at Eastbourne; on the 16th at Weybridge Heath and Wisbech; on the 17th at Aldershot Camp, Strathfield Turgiss, and Streatley Vicarage; on the 18th at Norwich; on the 20th at Little Wratting; and on the 24th at Somerleyton Rectory.



Names of Stations and Observers.			Height of Station above Sea Level.			Year 1870.			Pressure of Air in Month.			Temperature of Air in Month.			Mean Temp. perature.		Vapour.		Mean Reading of Thermometer.		Wind.			Rain.	



Year 1870.	Month.	Names of Stations and Observers.	Height above Sea Level.	Pressure of Air in Month.			Temperature of Air in Month.			Mean Temperature.			Mean Reading of Thermometer.			Wind.			Rain. Amount col- lected.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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Year.	Month.	Name of Station and Observer.	Height above Sea Level.	Pressure of Air in Month.			Temperature of Air in Month.			Mean Temperature.			Vapour.			Mean Reading of Thermometer.			Wind.			Rain. Amount col- lected.	
				Mean.	Range.	Lowest.	Highest.	Range.	Lowest.	Highest.	Mean.	Range.	Lowest.	Highest.	Mean.	Range.	Lowest.	Highest.	Mean.	Range.	Lowest.		Highest.
LEEDS (Yorkshire).	April	29-388	1-150	80-0	30-0	61-0	58-7	22-3	30-0	41-8	24-7	27-8	33-9	67-6	7-11	11	11	11	11	11	5-9	6	
	May	29-388	1-150	80-0	30-0	61-0	58-7	22-3	30-0	41-8	24-7	27-8	33-9	67-6	7-11	11	11	11	11	11	5-9	6	
	June	29-388	1-150	80-0	30-0	61-0	58-7	22-3	30-0	41-8	24-7	27-8	33-9	67-6	7-11	11	11	11	11	11	5-9	6	
HENRY DENNY, Esq., A.L.S.	April	29-389	1-150	80-0	30-0	61-0	58-7	22-3	30-0	41-8	24-7	27-8	33-9	67-6	7-11	11	11	11	11	11	5-9	6	
	May	29-389	1-150	80-0	30-0	61-0	58-7	22-3	30-0	41-8	24-7	27-8	33-9	67-6	7-11	11	11	11	11	11	5-9	6	
	June	29-389	1-150	80-0	30-0	61-0	58-7	22-3	30-0	41-8	24-7	27-8	33-9	67-6	7-11	11	11	11	11	11	5-9	6	
OTLEY (Yorkshire).	April	29-731	1-202	73-0	33-0	65-0	62-7	25-3	33-0	45-8	28-1	31-1	37-5	73-0	1-3	3	3	3	3	3	7-9	7	
	May	29-731	1-202	73-0	33-0	65-0	62-7	25-3	33-0	45-8	28-1	31-1	37-5	73-0	1-3	3	3	3	3	3	7-9	7	
	June	29-731	1-202	73-0	33-0	65-0	62-7	25-3	33-0	45-8	28-1	31-1	37-5	73-0	1-3	3	3	3	3	3	7-9	7	
H. W. THOMAS, Esq.	April	29-811	0-944	78-0	34-0	65-0	62-7	25-3	33-0	45-8	28-1	31-1	37-5	73-0	1-3	3	3	3	3	3	6-2	4	
	May	29-811	0-944	78-0	34-0	65-0	62-7	25-3	33-0	45-8	28-1	31-1	37-5	73-0	1-3	3	3	3	3	3	6-2	4	
	June	29-811	0-944	78-0	34-0	65-0	62-7	25-3	33-0	45-8	28-1	31-1	37-5	73-0	1-3	3	3	3	3	3	6-2	4	
YORK (Yorkshire).	April	29-016	1-112	79-0	32-0	60-0	57-5	23-9	31-0	43-8	26-4	29-4	35-8	60-0	1-2	2	2	2	2	2	5-9	6	
	May	29-016	1-112	79-0	32-0	60-0	57-5	23-9	31-0	43-8	26-4	29-4	35-8	60-0	1-2	2	2	2	2	2	5-9	6	
	June	29-016	1-112	79-0	32-0	60-0	57-5	23-9	31-0	43-8	26-4	29-4	35-8	60-0	1-2	2	2	2	2	2	5-9	6	
FELDEN THORPE, Esq.	April	29-069	0-888	78-0	34-0	65-0	62-7	25-3	33-0	45-8	28-1	31-1	37-5	73-0	1-3	3	3	3	3	3	6-2	4	
	May	29-069	0-888	78-0	34-0	65-0	62-7	25-3	33-0	45-8	28-1	31-1	37-5	73-0	1-3	3	3	3	3	3	6-2	4	
	June	29-069	0-888	78-0	34-0	65-0	62-7	25-3	33-0	45-8	28-1	31-1	37-5	73-0	1-3	3	3	3	3	3	6-2	4	
HAWKES (near Whitby, Yorkshire).	April	29-713	1-029	73-0	32-0	60-0	57-5	23-9	31-0	43-8	26-4	29-4	35-8	60-0	1-2	2	2	2	2	2	5-9	6	
	May	29-713	1-029	73-0	32-0	60-0	57-5	23-9	31-0	43-8	26-4	29-4	35-8	60-0	1-2	2	2	2	2	2	5-9	6	
	June	29-713	1-029	73-0	32-0	60-0	57-5	23-9	31-0	43-8	26-4	29-4	35-8	60-0	1-2	2	2	2	2	2	5-9	6	
REV. F. W. STOW, M.A., F.M.S.	April	29-622	1-146	71-0	33-0	60-0	57-5	23-9	31-0	43-8	26-4	29-4	35-8	60-0	1-2	2	2	2	2	2	5-9	6	
	May	29-622	1-146	71-0	33-0	60-0	57-5	23-9	31-0	43-8	26-4	29-4	35-8	60-0	1-2	2	2	2	2	2	5-9	6	
	June	29-622	1-146	71-0	33-0	60-0	57-5	23-9	31-0	43-8	26-4	29-4	35-8	60-0	1-2	2	2	2	2	2	5-9	6	
COCKERMOUTH (Cumberland).	April	29-689	1-022	77-0	35-0	63-0	60-7	26-3	34-0	46-8	28-9	31-9	38-3	63-0	1-2	2	2	2	2	2	5-9	6	
	May	29-689	1-022	77-0	35-0	63-0	60-7	26-3	34-0	46-8	28-9	31-9	38-3	63-0	1-2	2	2	2	2	2	5-9	6	
	June	29-689	1-022	77-0	35-0	63-0	60-7	26-3	34-0	46-8	28-9	31-9	38-3	63-0	1-2	2	2	2	2	2	5-9	6	
H. JENNISON, Esq., M.D., F.R.A.S.	April	29-920	0-978	78-0	34-0	65-0	62-7	25-3	33-0	45-8	28-1	31-1	37-5	73-0	1-3	3	3	3	3	3	6-2	4	
	May	29-920	0-978	78-0	34-0	65-0	62-7	25-3	33-0	45-8	28-1	31-1	37-5	73-0	1-3	3	3	3	3	3	6-2	4	
	June	29-920	0-978	78-0	34-0	65-0	62-7	25-3	33-0	45-8	28-1	31-1	37-5	73-0	1-3	3	3	3	3	3	6-2	4	
ALLENHEADS (Durham).	April	28-753	1-008	70-0	30-0	58-0	55-7	22-9	30-0	42-8	25-7	28-7	35-1	58-0	1-2	2	2	2	2	2	5-9	6	
	May	28-753	1-008	70-0	30-0	58-0	55-7	22-9	30-0	42-8	25-7	28-7	35-1	58-0	1-2	2	2	2	2	2	5-9	6	
	June	28-753	1-008	70-0	30-0	58-0	55-7	22-9	30-0	42-8	25-7	28-7	35-1	58-0	1-2	2	2	2	2	2	5-9	6	
T. SOWORTH, Esq., M.A., F.R.S.	April	29-489	1-140	72-0	32-0	60-0	57-5	23-9	31-0	43-8	26-4	29-4	35-8	60-0	1-2	2	2	2	2	2	5-9	6	
	May	29-489	1-140	72-0	32-0	60-0	57-5	23-9	31-0	43-8	26-4	29-4	35-8	60-0	1-2	2	2	2	2	2	5-9	6	
	June	29-489	1-140	72-0	32-0	60-0	57-5	23-9	31-0	43-8	26-4	29-4	35-8	60-0	1-2	2	2	2	2	2	5-9	6	
F.G.S., F.M.S.	April	29-589	0-993	74-0	33-0	61-0	58-7	22-3	30-0	41-8	24-7	27-8	33-9	61-0	1-2	2	2	2	2	2	5-9	6	
	May	29-589	0-993	74-0	33-0	61-0	58-7	22-3	30-0	41-8	24-7	27-8	33-9	61-0	1-2	2	2	2	2	2	5-9	6	
	June	29-589	0-993	74-0	33-0	61-0	58-7	22-3	30-0	41-8	24-7	27-8	33-9	61-0	1-2	2	2	2	2	2	5-9	6	
CARLISLE (Cumberland).	April	29-032	1-136	72-0	32-0	60-0	57-5	23-9	31-0	43-8	26-4	29-4	35-8	60-0	1-2	2	2	2	2	2	5-9	6	
	May	29-032	1-136	72-0	32-0	60-0	57-5	23-9	31-0	43-8	26-4	29-4	35-8	60-0	1-2	2	2	2	2	2	5-9	6	
	June	29-032	1-136	72-0	32-0	60-0	57-5	23-9	31-0	43-8	26-4	29-4	35-8	60-0	1-2	2	2	2	2	2	5-9	6	
L. CARTMELL, Esq., F.M.S.	April	29-835	0-980	79-0	34-0	65-0	62-7	25-3	33-0	45-8	28-1	31-1	37-5	73-0	1-3	3	3	3	3	3	6-2	4	
	May	29-835	0-980	79-0	34-0	65-0	62-7	25-3	33-0	45-8	28-1	31-1	37-5	73-0	1-3	3	3	3	3	3	6-2	4	
	June	29-835	0-980	79-0	34-0	65-0	62-7	25-3	33-0	45-8	28-1	31-1	37-5	73-0	1-3	3	3	3	3	3	6-2	4	
BYWELL (Northumberland).	April	29-045	1-126	70-0	32-0	60-0	57-5	23-9	31-0	43-8	26-4	29-4	35-8	60-0	1-2	2	2	2	2	2	5-9	6	
	May	29-045	1-126	70-0	32-0	60-0	57-5	23-9	31-0	43-8	26-4	29-4	35-8	60-0	1-2	2	2	2	2	2	5-9	6	
	June	29-045	1-126	70-0	32-0	60-0	57-5	23-9	31-0	43-8	26-4	29-4	35-8	60-0	1-2	2	2	2	2	2	5-9	6	
M. JOHN DAWSON, under the direction of T. SOWORTH, Esq., M.A., F.R.S., F.G.S., F.M.S.	April	29-925	1-022	77-0	35-0	63-0	60-7	26-3	34-0	46-8	28-9	31-9	38-3	63-0	1-2	2	2	2	2	2	5-9	6	
	May	29-925	1-022	77-0	35-0	63-0	60-7	26-3	34-0	46-8	28-9	31-9	38-3	63-0	1-2	2	2	2	2	2	5-9	6	
	June	29-925	1-022	77-0	35-0	63-0	60-7	26-3	34-0	46-8	28-9	31-9	38-3	63-0	1-2	2	2	2	2	2	5-9	6	
NORTH SHIELDS (Northumberland).	April	29-067	0-969	64-2	32-5	31-7	30-7	40-6	16-5	46-5	39-2	24-0	2-8	0-9	75	547	77-8	33-5	1-3	8	6	3	15
	May	29-067	0-969	64-2	32-5	31-7	30-7	40-6	16-5	46-5	39-2	24-0	2-8	0-9	75	547	77-8	33-5	1-3	8	6	3	15
	June	29-067	0-969	64-2	32-5	31-7	30-7	40-6	16-5	46-5	39-2	24-0	2-8	0-9	75	547	77-8	33-5	1-3	8	6	3	15
ROBERT SPENCE, Esq.	April	29-965	1-009	70-0	33-0	60-0	57-5	23-9	31-0	43-8	26-4	29-4	35-8	60-0	1-2	2	2	2	2	2	5-9	6	
	May	29-965	1-009	70-0	33-0	60-0	57-5	23-9	31-0	43-8	26-4	29-4	35-8	60-0	1-2	2	2	2	2	2	5-9	6	
	June	29-965	1-009	70-0	33-0	60-0	57-5	23-9	31-0	43-8	26-4	29-4	35-8	60-0	1-2	2	2	2	2	2	5-9	6	
MILTOWN (Banbridge, Ireland).	April	29-961	1-194	60-0	30-0	58-0	55-7	22-9	30-0	42-8	25-7	28-7	35-1	58-0	1-2	2	2	2	2	2	5-9	6	
	May	29-961	1-194	60-0	30-0	58-0	55-7	22-9	30-0	42-8	25-7	28-7	35-1	58-0	1-2	2	2	2	2	2	5-9	6	
	June	29-961	1-194	60-0	30-0	58-0	55-7	22-9	30-0	42-8	25-7	28-7	35-1	58-0	1-2	2	2	2	2	2	5-9	6	
JOHN SNEY, Esq., JUS., M.A., M.L.C.A., F.M.S.	April	29-712	1-066	71-0	33-0	61-0	58-7	22-3	30-0	41-8	24-7	27-8	33-9	61-0	1-2	2	2	2	2	2	5-9	6	
	May	29-712	1-066	71-0	33-0	61-0	58-7	22-3	30-0	41-8	24-7	27-8	33-9	61-0	1-2	2	2	2	2	2	5-9	6	
	June	29-712	1-066	71-0	33-0	61-0	58-7	22-3	30-0	41-8	24-7	27-8	33-9	61-0	1-2	2	2	2	2	2	5-9	6	
CULLODEN (Inverness, Scotland).	April	29-821	1-225	69-1	31-0	59-1	56-7	22-9	30-0	42-8	25-7	28-7	35-1	59-1	1-2	2	2	2	2	2	5-9		



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.	Rain.	
																		Relative Proportion of							
																		N.	E.	S.	W.				
Guernsey	29.842	71.0	35.5	35.5	59.3	47.8	28.8	11.5	51.8	46.3	31.7	3.6	0.8	82	541	—	—	1.3	9	7	6	8	4.3	2.9	1.3
Helston	29.888	84.0	35.0	49.0	63.0	48.4	38.7	15.2	54.5	45.3	30.7	3.5	1.4	71	541	93.9	42.1	2.1	6	8	9	10	3.9	2.9	1.3
Truro	29.872	82.0	35.0	50.0	62.5	45.9	42.3	16.6	52.8	44.9	30.0	3.4	1.2	76	544	—	—	2.5	12	5	9	4	4.1	3.0	1.4
Sidmouth	29.847	77.5	27.5	50.0	61.2	44.9	35.1	16.3	51.3	45.7	31.0	3.5	0.8	82	546	—	—	1.2	9	8	11	5.1	3.9	1.4	
Eastbourne	29.841	79.8	28.8	51.0	63.0	44.9	41.7	18.1	53.1	45.7	31.3	3.5	1.1	74	544	108.4	38.3	0.5	6	9	9	10	4.2	3.0	1.4
Osborne	29.778	87.8	28.7	50.0	66.8	44.0	45.7	22.8	54.1	48.9	36.1	4.0	0.8	83	539	114.1	39.3	0.2	6	7	8	9	4.9	3.9	1.4
Portsmouth	29.876	84.0	23.3	60.7	66.4	43.2	44.7	23.2	52.9	43.0	28.0	3.2	1.4	70	545	113.5	37.6	0.7	6	5	7	12	3.9	3.0	1.4
Taunton	29.780	84.5	24.1	70.4	68.1	43.8	54.8	24.3	54.8	47.5	33.3	3.8	1.1	77	541	78.4	41.7	0.5	10	3	7	12	3.7	3.0	1.4
Wilton House	29.771	80.0	21.5	67.5	70.2	40.4	54.7	29.8	53.8	47.5	33.4	3.7	1.0	80	540	115.5	37.7	1.3	8	4	8	10	4.1	3.0	1.4
Barnstable	29.793	80.0	31.0	60.0	64.5	47.3	58.9	17.2	54.4	47.9	33.5	3.8	1.0	79	542	—	—	1.4	4	5	12	4.4	3.0	1.4	
Aldershot Camp	29.778	87.0	26.3	60.7	65.7	43.4	49.0	22.3	53.4	45.6	33.0	3.5	1.2	75	538	116.7	39.0	1.5	8	5	12	4.4	3.0	1.4	
West Hamptre Vicarage	29.772	87.0	26.3	60.7	65.7	43.4	49.0	22.3	53.4	45.6	33.0	3.5	1.2	75	538	116.7	39.0	1.5	8	5	12	4.4	3.0	1.4	
Strathfield Turgiss	29.901	91.1	21.1	70.0	67.0	41.0	55.9	26.0	52.8	42.6	27.6	3.1	1.5	69	541	122.3	34.7	0.3	7	5	13	4.5	4.1	1.5	
Weybridge Heath	29.859	91.3	24.0	67.3	68.2	41.5	55.6	26.7	53.4	44.2	28.5	3.4	1.3	71	541	110.1	36.4	0.7	8	6	8	10	4.0	3.0	1.4
Bath	29.799	84.2	27.0	57.2	65.1	45.0	45.2	20.1	53.8	46.0	31.6	3.5	1.2	75	541	—	—	1.4	7	4	14	5.0	3.0	1.4	
Marlborough College	29.865	83.3	20.5	62.8	63.7	41.2	50.8	22.5	51.0	42.2	27.3	3.1	1.1	73	538	129.7	31.8	0.9	4	6	11	5.3	3.0	1.4	
Royal Observatory	29.812	90.2	26.0	64.2	67.9	43.7	52.4	24.2	54.4	45.0	30.3	3.4	1.5	70	539	121.0	36.6	0.3	7	5	12	4.5	3.0	1.4	
Stratfield Vicarage	29.811	89.6	24.7	64.9	68.0	41.6	53.1	23.4	53.9	44.6	30.0	3.4	1.4	71	540	121.3	35.8	0.7	7	5	12	4.5	3.0	1.4	
Marylebone	29.849	89.0	29.0	65.0	67.8	43.7	48.7	24.2	52.7	43.7	28.8	3.2	1.8	66	542	—	—	3.3	7	5	6	12	4.5	3.0	1.4
Camden Town	29.788	91.2	26.7	64.5	68.5	44.3	51.6	24.2	54.7	45.1	30.5	3.4	1.4	70	539	114.3	—	1.2	5	8	10	4.4	3.0	1.4	
Oxford	29.816	86.1	25.9	60.2	65.5	44.7	47.9	20.8	54.9	43.8	29.0	3.3	1.7	66	537	117.8	38.8	1.2	7	3	7	13	2.8	3.7	1.5
Gloucester	29.854	88.0	27.0	61.0	69.2	43.5	51.0	25.7	54.8	44.5	29.7	3.4	1.5	68	540	122.9	37.7	0.5	8	3	7	12	4.3	3.0	1.4
Royston	29.810	88.7	26.5	60.2	68.2	43.1	51.8	25.1	53.9	46.1	31.8	3.6	1.2	75	538	—	—	0.9	6	7	12	4.5	3.0	1.4	
Little Wratting	29.799	83.7	23.5	60.2	63.3	42.4	47.9	20.9	51.8	44.2	29.4	3.4	1.1	76	539	—	—	0.9	6	7	12	4.5	3.0	1.4	
Cardington	29.811	90.2	26.0	64.2	67.9	43.7	52.4	24.2	54.4	45.0	30.3	3.4	1.5	70	539	121.0	36.6	0.3	7	5	12	4.5	3.0	1.4	
Lampeter	29.849	89.0	29.0	65.0	67.8	43.7	48.7	24.2	52.7	43.7	28.8	3.2	1.8	66	542	—	—	3.3	7	5	6	12	4.5	3.0	1.4
Leamington	29.782	80.5	25.6	64.9	62.5	42.9	43.6	19.6	51.5	45.7	31.0	3.5	0.8	81	544	112.5	36.2	1.0	8	7	7	12	4.5	3.0	1.4
Somerleyton Rectory	29.803	86.4	29.0	67.4	63.4	44.5	46.1	18.9	52.8	43.7	28.8	3.3	1.3	72	545	—	—	0.7	5	6	12	4.5	3.0	1.4	
Norwich	29.788	85.5	26.3	60.2	66.1	43.4	48.9	22.7	54.3	45.2	30.6	3.5	1.3	72	541	111.0	38.3	0.5	7	4	8	11	5.2	3.0	1.4
Wisbech	29.757	79.0	36.3	42.7	63.2	47.3	34.1	15.9	53.5	46.2	31.6	3.6	1.1	76	541	—	—	0.6	6	3	21	4.7	3.0	1.4	
Llandudno	29.761	82.0	32.0	54.0	64.3	45.2	43.9	19.4	54.0	43.2	28.3	3.3	1.5	68	538	108.0	34.7	0.4	4	5	17	4.5	3.0	1.4	
Derby	29.767	86.5	27.4	59.9	65.6	44.3	46.3	21.3	53.5	45.6	31.0	3.5	1.2	74	544	123.0	32.1	1.2	3	4	7	14	4.7	3.0	1.4
Nottingham	29.812	91.0	25.5	65.5	69.7	43.4	48.7	24.2	52.7	43.7	28.8	3.2	1.8	66	542	—	—	3.3	7	5	12	4.5	3.0	1.4	
Holkham	29.789	85.0	28.1	56.9	65.9	43.8	48.1	22.6	52.4	44.5	29.7	3.4	1.2	75	543	113.4	37.6	1.4	6	7	12	4.5	3.0	1.4	
Boston	29.773	77.5	37.0	40.0	62.6	49.9	33.2	12.7	53.6	46.2	31.6	3.6	1.1	76	537	120.8	29.8	2.7	9	2	7	12	4.7	3.0	1.4
Hawarden	29.812	76.8	32.4	44.4	60.9	46.2	36.8	14.7	52.1	44.0	29.1	3.3	1.1	75	540	—	—	1.4	4	6	16	4.6	3.0	1.4	
Liverpool	29.773	82.0	30.0	52.0	64.8	45.4	44.9	19.4	52.0	46.2	31.6	3.6	1.0	78	541	99.4	42.3	0.5	2	14	10	10	4.6	3.0	1.4
Manchester	29.772	79.5	30.5	49.0	63.0	44.6	43.8	18.4	52.6	45.2	30.3	3.4	1.1	76	541	76.0	37.9	0.5	5	2	15	4.5	3.0	1.4	
Eccles	29.836	76.0	28.0	48.0	60.2	45.2	42.0	17.0	50.0	42.9	27.8	3.2	1.0	76	535	99.5	38.0	0.5	5	2	15	4.5	3.0	1.4	
Halifax	29.764	80.0	30.0	49.0	63.0	44.1	48.3	21.9	51.1	44.3	29.6	3.4	0.9	78	545	92.6	39.6	0.3	3	5	20	4.6	3.0	1.4	
Hull	29.753	77.0	33.4	46.7	60.9	45.3	39.3	16.1	51.5	47.3	31.3	3.8	1.3	73	539	121.1	41.6	1.2	3	5	20	4.6	3.0	1.4	
Stonyhurst	29.763	77.0	33.4	46.7	60.9	45.3	39.3	16.1	51.5	47.3	31.3	3.8	1.3	73	539	121.1	41.6	1.2	3	5	20	4.6	3.0	1.4	
Bradford	29.763	77.0	33.4	46.7	60.9	45.3	39.3	16.1	51.5	47.3	31.3	3.8	1.3	73	539	121.1	41.6	1.2	3	5	20	4.6	3.0	1.4	
Leeds	29.763	77.0	33.4	46.7	60.9	45.3	39.3	16.1	51.5	47.3	31.3	3.8	1.3	73	539	121.1	41.6	1.2	3	5	20	4.6	3.0	1.4	
Osley	29.728	78.0	32.6	45.4	60.1	47.1	35.8	13.0	52.0	44.0	29.1	3.3	1.1	75	539	—	—	1.7	1	4	14	4.4	3.0	1.4	
York	29.730	79.0	32.0	47.0	63.6	47.0	41.0	16.6	53.2	45.1	30.4	3.4	1.2	74	541	—	—	1.5	6	5	14	4.4	3.0	1.4	
Hawsker	29.776	77.6	32.0	50.6	60.9	41.6	42.5	19.3	50.6	41.6	26.5	3.0	1.2	72	539	112.6	37.0	0.8	3	8	11	4.8	3.0	1.4	
Cockermouth	29.740	78.8	27.8	51.0	60.9	45.3	42.0	15.1	51.6	44.7	29.9	3.4	0.9	78	540	100.6	39.5	0.6	4	2	18	4.6	3.0	1.4	
Allenheads	29.716	74.2	25.5	49.4	57.8	41.8	41.9	16.0	47.9	41.3	26.3	3.0	0.8	78	521	117.0	35.4	1.8	5	2	10	4.6	3.0	1.4	
Carlisle	29.683	72.0	27.0	42.0	56.1	42.1	42.3	17.1	51.5	47.3	31.3	3.8	1.3	73	540	95.8	39.5	0.3	2	8	15	4.6	3.0	1.4	
Bywell	29.702	79.0	32.0	47.0	62.4	46.3	36.7	16.1	52.4	44.3	29.4	3.3	1.2	74	541	82.8	39.3	1.3	7	3	13	4.6	3.0	1.4	
North Shields	29.800	75.3	32.5	43.3	60.8	44.7	33.8	16.1	50.6	43.5	28.6	3.3	1.0	78	544	—	—	1.7	8	3	11	4.3	3.0	1.4	
Miltoyn (Ireland)	29.740	77.0	30.0	47.0	60.1	44.9	35.7	15.2	51.8	44.1	29.2	3.3	1.1	75	540	90.0	41.0	2.3	8	2	11	9	4.3	3.0	1.4



Weybridge Heath, Camden Town, Oxford, and Cardington; on the 2d at Culloden; on the 3rd at Stonyhurst; on the 4th at Hawarden, Liverpool, Hull, Leeds, Cockermouth, and Carlisle; on the 5th at Liverpool, Allenheads, Carlisle, and Bywell; on the 7th at Oxford; on the 8th at Taunton, and Wilton; on the 18th at Portsmouth, Worthing, Wilton, Strathfield Turgiss, Somerleyton, Norwich, Holkham, Boston, and Hull; on the 20th at Eastbourne, Osborne, Portsmouth, Wilton, Strathfield Turgiss, Leamington, and Liverpool; on the 22nd at Truro and Oxford; on the 25th at Somerleyton, Holkham, and York; on the 26th at Holkham and Hawsker; on the 28th at Little Wratting; and on the 29th at Halifax, Leeds, York, and North Shields. On the 3rd of September at Camden Town; on the 6th at Stonyhurst; on the 7th at Osborne, Taunton, Hull, Stonyhurst, and Hawsker; and on the 9th at Hull.

Thunder was heard, but lightning was not seen, on the 1st of July at Strathfield Turgiss, Royston, Halifax, Hull, and Bradford; on the 9th at Portsmouth, Worthing, Taunton, Strathfield Turgiss, Weybridge Heath, Streatley, Hawarden, Halifax, Allenheads, and Bywell; on the 10th at Allenheads; on the 11th at Weybridge, Little Wratting, and Wisbech; on the 12th at Somerleyton; on the 16th at Weybridge Heath; on the 21st and 24th at Cockermouth; on the 25th at Osborne, Worthing, West Harptre, Oxford, Royston, Little Wratting, and Hawarden; on the 26th at Streatley, Oxford, and Royston; on the 30th at Strathfield Turgiss; and on the 31st at Guernsey, Worthing, Taunton, Strathfield Turgiss, Streatley, Royston, and Llandudno. On the 1st of August at Worthing, Royston, Little Wratting, Somerleyton Rectory, Wisbech, and Culloden; on the 2nd at Taunton, Cockermouth, Allenheads, and Carlisle; on the 3rd at Llandudno, Carlisle, and Culloden; on the 4th at Llandudno and Halifax; on the 5th at Hawarden and Halifax; on the 7th at Taunton and Cockermouth; on the 8th at Portsmouth and Worthing; on the 10th at Culloden; on the 17th at Allenheads and North Shields; on the 19th at Hull; on the 20th at Llandudno; on the 25th at Hull; on the 27th at Carlisle; and on the 29th at Halifax. On the 3rd of September at Little Wratting and Somerleyton; on the 6th at Taunton, Hawarden, Eccles, Halifax, and Allenheads; on the 7th at Oxford, Hawarden, and Halifax; on the 9th at Halifax; and on the 12th at Carlisle.

Temperature of											Elastic Force of Vapour.	Weight of a Cubic Foot of Air.			
1870. MONTHS.	Air.			Evaporation.		Dew Point.		Air— Daily Range.		Water of the Thames.		Mean.	Diff. from average of 29 years.	Mean.	Diff. from average of 29 years.
	Mean.	Diff. from average of 29 years.	Diff. from average of 29 years.	Mean.	Diff. from average of 29 years.	Mean.	Diff. from average of 29 years.	Mean.	Diff. from average of 29 years.						
July -	65.4	+3.9	+3.5	59.7	+2.2	55.0	+1.3	22.1	+1.0	..	0.433	+0.019	4.8	+0.2	
Aug. -	61.1	+0.4	-0.2	56.2	-1.1	52.0	-1.8	19.5	-0.1	..	0.388	-0.029	4.3	-0.3	
Sept. -	55.7	-0.8	-1.6	53.0	-1.1	50.5	-0.7	20.4	+1.9	..	0.367	-0.014	4.1	-0.1	
Mean -	60.7	+1.2	+0.6	56.3	0.0	52.5	-0.4	20.7	+0.9	..	0.396	-0.008	4.4	-0.1	

1870. MONTHS.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.	Reading of Thermometer on Grass.				
	Mean.	Diff. from average of 29 years.	Mean.	Diff. from average of 29 years.	Mean.	Diff. from average of 29 years.	Amount	Diff. from average of 29 years.		Number of Nights it was			Lowest Reading at Night.	Highest Reading at Night.
										At or below 50°.	Be- tween 30° and 40°.	Above 40°.		
July -	70	- 5	in. 29.818	+0.011	grs. 525	- 3	in. 2.0	-0.6	Miles. 221	0	3	28	59.8	60.5
Aug. -	73	- 4	29.804	+0.013	529	0	2.0	-0.4	241	0	7	24	59.0	60.2
Sept. -	83	+ 2	29.908	+0.097	537	+ 4	1.6	-0.8	228	2	17	11	59.0	60.2
Mean -	75	- 2	29.843	+0.040	530	0	Sum 5.6	Sum -1.8	Mean 220	Sum 2	Sum 27	Sum 63	Lowest: 59.0	Highest: 60.5

NOTE.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

Lightning was seen, but thunder was not heard, on the 8th of July at Portsmouth; on the 12th at Norwich; on the 15th at Worthing, Allenheads, Bywell, and North Shields; on the 21st at Aldershot, Allenheads; on the 24th at Helston, Truro, and Worthing; on the 25th at Helston, Aldershot, Oxford, Royston, Little Wratting, and Hull; on the 26th at Aldershot; and on the 31st at Camden Town, Royston, Cardington, and Wisbech. On the 4th of August at Allenheads; on the 18th at Camden Town, Royston, Cardington, Wisbech, and North Shields; on the 19th at Aldershot; on the 20th at Worthing, Weybridge Heath, and Camden Town; on the 25th at Norwich and Hull; and on the 29th at Worthing and Hull. On the 1st of September at Stonyhurst; on the 7th at Eastbourne, Aldershot, Bath, and Culloden; on the 8th at Guernsey; and on the 9th at Cardington and Boston.

Solar halos were seen on the 8th, 10th, 11th, and 12th of July. On the 22d, 24th, 25th, and 31st of August. On the 1st, 4th, 6th, 7th, 11th, 12th, 15th, and 22d of September.

Lunar halos were seen on the 6th of August. On the 4th, 8th, 11th, and 12th of September. Auroræ Boreales were seen on the 20th, 22d, 26th, 27th, 28th, 29th, and 30th of August. On the 2d, 3d, 4th, 7th, 21st, 24th (described as very fine, observed at most of the stations from Guernsey to North Shields), 25th, 26th, and 29th of September.

Hail fell on the 1st, 25th, and 31st of July. On the 19th, 20th, 25th, 26th, and 29th of August. On the 7th, 8th, 9th, and 12th of September.

Fog prevailed on the 2d, 4th, 5th, 9th, 10th, 12th, 19th, 20th, 21st, 22d, 25th, 26th, 27th, 29th, 30th, and 31st of July. On the 1st, 2d, 3d, 4th, 5th, 6th, 7th, 8th, 12th, 16th, 17th, 18th, 28th, and 30th of August. On the 1st, 2d, 9th, 12th, 13th, 16th, 17th, 18th, 19th, 20th, 21st, 22d, 23d, 24th, 25th, 26th, 27th, 28th, 29th, and 30th of September.

Wheat cut on the 18th of July at Hawarden; on the 19th at Weybridge; on the 20th at Worthing and Taunton; on the 21st at Osborne and Cardington; on the 22d at Guernsey; on the 23d at Helston; on the 25th at Little Wratting and Leamington; on the 26th at Portsmouth; on the 27th at Hull; and on the 28th at Boston. On the 1st of August at Llandudno; on the 12th at Milton; and on the 18th at Culloden.

Barley cut on the 16th of July at Helston; on the 21st at Weybridge; on the 29th at Taunton and Llandudno; and on the 30th at Cardington. On the 13th of August at Culloden; and on the 18th at Guernsey.

Oats cut on the 7th of August at Helston; on the 14th at Taunton; on the 15th at Worthing; on the 21st at Weybridge and Boston; and on the 30th at Cardington. On the 3d of August at Llandudno; and on the 5th at Milton and Culloden.

Pear ripe on the 6th of August at Milton; on the 19th at Weybridge; and on the 23d at Helston. On the 1st of September at Culloden.

Peach ripe on the 11th of August at Helston; on the 26th at Milton; and on the 28th at Culloden.

Plum ripe on the 9th of August at Helston; on the 21st at Weybridge; and on the 25th at Milton. On the 5th of September at Culloden.

Cuckoo departed on the 2d of July from Hawarden; and on the 6th from Weybridge.

Swallow departed on the 26th of September from West Harptre and Culloden.

Woodcock arrived on the 24th of September at Helston.

## AUGUST.

STRATHFIELD TURGISS.—Rev. G. H. Griffiths, M.A., F.M.S. Harvest completed about the third week of July, and carried generally in good condition. As yet but little wheat has been threshed, but the yield varies to a greater extent than usual, being about an average on heavy soils and two thirds on light. A full plant of swedes or turnips not to be found in this district, but mangolds are by far the best of the root crops. Sheep-keep, however, is still very scarce, and little clover has been sowed for seed. The fruit crop is very large of all kinds, and the prices of plums and apples lower than has been the case for many years past.

COCKERMOUTH.—Henry Dodgson, Esq., M.D., F.R.A.S. Most of the grain crops were cut and secured in fine condition during the month with the exception of wheat, about half of which still remains in the fields. Crops generally good; up to or above an average.

BYWELL.—Thomas Sopwith, Esq., M.A., F.R.S. The cutting of grain in this neighbourhood is about finished, and most of it is now secured in good condition. The crop is about an average and of good quality. The late rains have improved the turnips; the pastures also look greener. Some potatoes are beginning to shoot afresh, which will make them of inferior quality. Apples and pears are abundant.

## SEPTEMBER.

STRATHFIELD TURGISS.—Rev. G. H. Griffith, M.A., F.M.S. The continuous dry weather has been good for the cleaning of the land and for getting on manures. All root crops are wanting done much havoc.

Young clover is looking better. Trifolium, a good plant everywhere. Ground too dry to plant for wheat yet. Labourers' families fully employed picking acorns, which are so plentiful this year as to save many farmers from purchasing oilcake and even hay for the sheep; on a small farm of 250 acres, 2,000 bushels have been collected.

COCKERMOUTH.—Henry Dodgson, Esq., M.D. The first half of this month was very wet and unsettled, owing to which the wheat crop was not all secured until after the middle of the month, rain having fallen on every day but one up to and including the 17th; no rain after that date. The weather during the latter part of month being extremely fine for the season.

The potato crop is being secured in fine condition and almost free from disease during the dry weather which now prevails.

BYWELL.—Thos. Sopwith, Esq., M.A., F.R.S. The showers up to the middle of the month very much improved the grass and turnips. Potatoes are good both in quantity and quality. The sprouting of later potatoes has been checked by the dry weather. Rain is much required, the springs being very low.



MONTHLY METEOROLOGICAL TABLE FOR THE QUARTER ENDING SEPTEMBER 30TH, 1870.

*The Observations have been reduced to Mean values by Glaisher's Barometrical and Diurnal Range Tables, and the Hygrometrical results have been deduced from the fifth edition of his Hygrometrical Tables.*

[illegible][illegible]

Note.—LITTLE WHATTING.—The values for August are for 24 days only—the 10th, 17th, 21st, and 28th—31st being omitted.  
LAMPETER.—The values for August are for 21 days only, 1st–21st.







NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Range of Temperature in the Quarter.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	Mean Estimated Strength.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.	Number of Days on which it fell.	RAIN.
																			Relative Proportion of							
																			N.	E.	S.	W.				
Guernsey	29.610	72.5	48.5	24.0	65.7	56.3	21.2	9.4	59.8	54.4	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Helston	29.685	84.0	45.0	39.0	71.9	55.8	35.0	16.1	62.4	53.3	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Truro	29.705	84.0	45.0	39.0	71.9	55.8	35.0	16.1	62.4	53.3	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Sidmouth	29.642	79.9	42.0	37.9	66.2	53.4	32.4	15.8	60.0	53.0	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Eastbourne	29.565	81.2	40.2	41.0	70.5	53.7	32.6	16.8	61.4	55.1	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Osborne	29.556	82.0	40.0	41.0	70.5	53.7	32.6	16.8	61.4	55.1	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Portsmouth	29.556	82.0	40.0	41.0	70.5	53.7	32.6	16.8	61.4	55.1	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Worthing	29.602	80.7	41.4	39.3	65.5	54.4	32.8	15.1	60.6	53.3	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Taunton	29.621	84.0	45.0	39.0	71.9	55.8	35.0	16.1	62.4	53.3	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Wilton House	29.672	93.3	30.3	60.0	74.7	48.1	46.3	26.9	61.3	51.8	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Barnstaple	29.625	83.5	42.0	37.1	67.1	54.5	34.0	21.7	62.0	52.9	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Aldershot Camp	29.607	80.7	41.4	39.3	65.5	54.4	32.8	15.1	60.6	53.3	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
West Harptre Vlece.	29.600	80.0	41.0	39.0	65.0	54.0	32.0	15.0	60.0	53.0	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Strathfield Turgies	29.690	90.1	31.9	58.2	73.1	49.9	48.2	23.9	60.1	49.9	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Weybridge Heath	29.690	90.1	31.9	58.2	73.1	49.9	48.2	23.9	60.1	49.9	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Bath	29.591	80.0	41.0	39.0	65.0	54.0	32.0	15.0	60.0	53.0	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Marlborough College	29.680	86.9	41.1	35.8	69.8	58.0	34.0	17.4	63.7	54.8	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Royal Observatory	29.680	86.9	41.1	35.8	69.8	58.0	34.0	17.4	63.7	54.8	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Camden Town	29.632	80.8	43.7	37.3	65.2	52.7	32.4	15.4	60.0	53.0	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Oxford	29.645	81.2	40.2	41.0	70.5	53.7	32.6	16.8	61.4	55.1	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Royston	29.652	80.6	43.7	37.3	65.2	52.7	32.4	15.4	60.0	53.0	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Little Wrattling	29.649	85.4	43.5	37.0	67.4	58.1	34.1	17.4	63.7	54.8	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Cardington	29.643	88.0	44.4	37.0	67.4	58.1	34.1	17.4	63.7	54.8	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Lampeter	29.643	88.0	44.4	37.0	67.4	58.1	34.1	17.4	63.7	54.8	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Leamington	29.643	88.0	44.4	37.0	67.4	58.1	34.1	17.4	63.7	54.8	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Somerleyton Rectory	29.589	80.4	43.8	37.2	65.2	52.7	32.4	15.4	60.0	53.0	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Norwich	29.583	81.0	40.4	41.0	68.8	52.5	34.9	16.3	60.7	53.8	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Wisbech	29.592	83.6	43.0	37.0	67.4	58.1	34.1	17.4	63.7	54.8	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Llandudno	29.607	83.8	42.7	37.1	67.0	57.5	34.1	17.2	63.8	54.4	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Derby	29.618	85.0	42.7	37.1	67.0	57.5	34.1	17.2	63.8	54.4	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Nottingham	29.590	87.8	44.8	37.2	72.8	59.5	34.0	17.8	64.8	56.0	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Holkham	29.590	87.8	44.8	37.2	72.8	59.5	34.0	17.8	64.8	56.0	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Boston	29.590	87.8	44.8	37.2	72.8	59.5	34.0	17.8	64.8	56.0	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Hawarden	29.590	87.8	44.8	37.2	72.8	59.5	34.0	17.8	64.8	56.0	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Liverpool	29.645	85.1	41.5	43.6	68.3	53.3	33.0	15.0	60.6	53.3	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Eccles	29.641	88.4	43.7	37.0	67.4	58.1	34.1	17.4	63.7	54.8	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Park Road, Halifax	29.663	83.5	42.0	37.0	65.1	51.9	32.4	15.4	60.0	53.0	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Hull	29.632	82.0	40.0	41.0	68.8	52.5	34.9	16.3	60.7	53.8	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Stonyhurst	29.615	82.7	34.6	48.1	68.1	53.4	33.2	13.7	57.4	51.5	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Bradford	29.609	87.0	44.8	37.2	72.8	59.5	34.0	17.8	64.8	56.0	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Leeds	29.590	87.8	44.8	37.2	72.8	59.5	34.0	17.8	64.8	56.0	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Otley	29.593	82.7	39.1	43.6	66.8	53.3	33.0	15.0	60.6	53.3	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
York	29.549	82.0	32.5	49.5	68.8	53.0	33.0	15.0	60.6	53.3	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Hawker	29.608	76.8	37.5	39.3	64.7	50.4	31.8	14.8	56.3	50.8	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Cockermouth	29.608	89.4	45.5	35.9	69.9	50.5	31.8	14.8	56.3	50.8	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Allenheads	29.588	89.4	45.5	35.9	69.9	50.5	31.8	14.8	56.3	50.8	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Carlisle	29.588	89.4	45.5	35.9	69.9	50.5	31.8	14.8	56.3	50.8	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Bywell	29.588	89.4	45.5	35.9	69.9	50.5	31.8	14.8	56.3	50.8	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
North Shields	29.686	76.2	38.0	38.2	63.9	50.9	28.6	13.0	53.0	49.5	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Milton (Ireland)	29.621	82.0	40.0	41.0	68.8	52.5	34.9	16.3	60.7	53.8	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0
Culloden (Scotland)	29.621	82.0	40.0	41.0	68.8	52.5	34.9	16.3	60.7	53.8	in.	grs.	grs.	grs.	grs.	grs.	grs.	grs.	10	6	6	9	4.6	3.7	12	1.0

The highest Temperatures of the Air were at Taunton, 94°1; Llandudno, 93°8; Barnstaple, 93°5; Wilton, 93°0; Osborne, 92°8; Camden Town, 90°8; Aldershot Camp, 90°6; West Harptre Vlece, 90°2; Strathfield Turgies, 90°1; and Bath, 90°0.

The lowest Temperatures of the Air were at Halifax and Hull, 31°0; Marlborough College, 31°1; Lampeter, 31°5; Strathfield Turgies, 31°9; York, 32°5; and Wilton, 32°



From December 20th to the end of the year the country was covered with snow, the wind was from the North or East, at times blowing strong, the average daily deficiency of temperature was  $12\frac{1}{2}^{\circ}$ . It is interesting to compare this period of great departure from the average with other periods of large and continued deficiency of temperature in the winter months, and which back to 1814 are as follows:

The average daily deficiency of temperature from—

1814, January 1 to 26, 26 days, was	10.5	1838, January 8 to 21, 14 days, was	15.2
" February 20 " 27, 8 " "	12.8	" February 10 " 17, 8 " "	9.8
" December 19 " 27, 9 " "	10.8	1840, December 14 " 30, 17 " "	10.6
1818, February 2 " 15, 14 " "	7.9	1841, February 1 " 10, 10 " "	13.6
1819, Dec. 24 to Jan. 18, 26 " "	9.1	1844, December 5 " 14, 10 " "	13.0
1822, " 25 " 31, 7 " "	10.7	1845, February 7 " 13, 7 " "	11.7
1823, January 9 " 26, 18 " "	11.4	1846, " 11 " 17, 7 " "	12.3
1826, " 8 " 17, 10 " "	12.5	" Dec. 25 to Jan. 2, 9 " "	8.0
1827, February 8 " 24, 17 " "	8.9	1855, February 7 to 23, 17 " "	12.7
1829, January 16 " 25, 10 " "	12.4	1859, December 14 " 20, 7 " "	14.5
" Dec. 20 to Jan. 2, 14 " "	10.2	1860, " 18 " 29, 12 " "	10.5
1830, Jan. 31 to Feb. 6, 7 " "	17.8	1867, January 12 " 22, 11 " "	10.3
1835, December 20 to 27, 8 " "	11.1	1870, December 20 to 31, 11 " "	12.5

Therefore the cold in the 11 days ending December 31, 1870, was more rigorous than in any period of similar length since February 1855.

The mean temperature of October was  $49^{\circ}8$ , being  $0^{\circ}1$  higher than the average of 99 years, higher than the corresponding values in 1869, 1868, and 1867, but lower than in any previous year back to 1854, when  $49^{\circ}4$  was recorded.

The mean temperature of November was  $41^{\circ}5$ , being  $0^{\circ}9$  lower than the average of 99 years, lower than in 1869 by  $1^{\circ}5$ , but the same as in 1868.

The mean temperature of December was  $33^{\circ}6$ , being  $5^{\circ}6$  lower than the average of 99 years. Since 1771 the following have been the only instances in which the corresponding temperatures have been lower, viz.: 1784,  $31^{\circ}0$ ; 1788,  $29^{\circ}0$ ; 1796,  $30^{\circ}4$ ; 1799,  $32^{\circ}8$ ; 1840,  $33^{\circ}3$ ; 1844,  $33^{\circ}0$ ; and 1846,  $32^{\circ}9$ .

The mean high day temperatures of October, November, and December were lower than their averages by  $0^{\circ}4$ ,  $1^{\circ}3$ , and  $7^{\circ}3$  respectively.

The mean low night temperatures of October, November, and December were respectively  $1^{\circ}4$ ,  $2^{\circ}0$ , and  $6^{\circ}9$  lower than their averages.

Therefore the months of October, November, and December were cold, both by day and night.

The daily ranges of temperature were  $0^{\circ}7$  greater than their respective averages in October and November, and  $0^{\circ}4$  smaller in December.

The fall of rain was  $0.5$  in. and  $1.1$  in. respectively, in excess in October and December, but  $1.2$  in. in defect in November.

1870. MONTHS.		Temperature of										Elastic Force of Vapour.		Weight of a Cubic Foot of Air.					
		Air.		Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames.									
		Mean.	Diff. from average of 29 years.	Mean.	Diff. from average of 29 years.	Mean.	Diff. from average of 29 years.	Mean.	Diff. from average of 29 years.										
Oct.	-	49.8	+0.1	-0.6	47.6	-0.8	45.3	-0.9	15.4	+0.7	..	in.	0.303	in.	-0.012	grs.	3.5	grs.	-0.2
Nov.	-	41.5	-0.9	-2.3	40.2	-1.3	38.5	-1.2	13.4	+0.7	..	0.233	-0.016	1.9	-0.7	2.7	1.9	-0.7	
Dec.	-	33.6	-5.6	-6.9	32.3	-6.7	29.8	-7.4	9.1	-0.4	..	0.166	-0.058	2.7	-0.3	2.7	2.7	-0.3	
Mean	-	41.6	-2.1	-3.3	40.0	-2.9	37.9	-3.2	12.3	+0.3	..	0.231	-0.029						

1870. MONTHS.		Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal movement of the Air.	Reading of Thermometer on Grass.				
		Mean.	Diff. from average of 29 years.	Mean.	Diff. from average of 29 years.	Mean.	Diff. from average of 29 years.	Amount.	Diff. from average of 55 years.		Number of Nights it was			Lowest Readings at Night.	Highest Readings at Night.
											At or below 30°.	Between 30° and 40°	Above 40°.		
Oct.	-	85	-2	29.570	-0.136	537	-2	3.3	+0.5	327	4	21	6	24.5	46.0
Nov.	-	90	+2	29.637	-0.129	543	0	1.2	-1.2	240	16	11	3	22.1	41.1
Dec.	-	86	-2	29.733	-0.075	539	+7	3.1	+1.1	242	21	9	1	3.8	41.8
Mean	-	87	-1	29.647	-0.113	548	+2	Sum 7.6	Sum +0.1	Mean 270	Sum 41	Sum 41	Sum 10	Lowest 3.8	Highest 46.0

NOTE.—In reading this table it will be borne in mind that the sign (-) minus signifies below the average, and that the sign (+) plus signifies above the average.

The mean temperature of the air in the three months ending November, constituting the three autumn months, was  $40^{\circ}0$ , being  $0^{\circ}5$  lower than the average of 99 years.

During the first few days of the month of October the readings of the barometer were generally high and the mean daily values above the averages, but after the 7th low readings were recorded and the mean daily values were in defect of the average. The principal movements were as follows. A steady decrease from the 1st to the 9th when  $28.78$  in. was registered, followed by a rapid increase to  $29.73$  in. on the 11th. Several oscillations then occurred, and on the 24th,  $28.74$  in., the minimum for the month, took place. A steady increase then set in, and lasted till the 29th, the mean daily readings, however, being in defect of the average value. The range of pressure during the month was  $1.65$  in. From the 1st November to the 15th a gradual fall was recorded, and from the 15th to the end of the month an equally gradual rise occurred though broken at times by slight oscillations. The minimum reading for the month was  $28.97$  in., and the range of pressure  $1.39$  in.

The main features of the barometric variations during December were very similar to those in November, viz., the maximum readings occurring at the beginning and end of the month, and the minimum about the middle, though in December a wave of high readings occurred on the 17th and 18th that was not recorded in November.

The minimum reading for the month was  $28.94$  in., the range of pressure amounted to  $1.51$  in.

Thunderstorms occurred on the 8th of October at Truro and Oxford; on the 9th at Guernsey; on the 19th at Helston, Truro, London, and Liverpool; on the 25th at Halifax; on the 26th at Cardington, Liverpool, Eccles, Hull, and Halifax; and on the 27th at Halifax. On the 10th of November at Helston and Truro; on the 11th at Guernsey and Helston; on the 12th at Llandudno; on the 20th at Aldershot; on the 22d at Guernsey, Helston, Truro, Sidmouth, Wilton, Aldershot, Strathfield Turgiss, London and Oxford; on the 23d at Guernsey, Eastbourne, and Worthing; and on the 25th at Eccles, Halifax, and Stonyhurst. On the 7th of December at Hawsker; and on the 25th at Hawsker and North Shields.

Thunder was heard, but lightning was not seen, on the 9th of October at Truro; on the 24th at Leamington; on the 25th at Halifax; and on the 27th at Hawarden, Liverpool, and Halifax. On the 12th of December at Llandudno; and on the 21st at North Shields.

Lightning was seen, but thunder was not heard, on the 1st of October at Allenheads; on the 9th at Llandudno and Hawarden; on the 19th at Guernsey, Bath, and Allenheads; on the 23d at Guernsey, Eastbourne, and Somerleyton; on the 24th at Portsmouth and Somerleyton; on the 25th at Somerleyton, Liverpool, Eccles, and Halifax; on the 26th at Osborne, Worthing, Oxford, Royston, Somerleyton, Eccles, and Allenheads; and on the 27th at Eastbourne, Oxford, Somerleyton, Wisbech, Hawsker, and Halifax. On the 1st of November at Eastbourne and Oxford; on the 10th at North Shields; on the 11th at Llandudno; on the 14th at Osborne, Bath, and Oxford; on the 15th at Culloden; on the 19th at Cardington; on the 21st at Llandudno, Halifax, Stonyhurst, and Allenheads; on the 22d at Osborne, Portsmouth, Weybridge Heath, Bath, Streatley, Gloucester, Royston, and Wisbech; on the 23d at Truro and Royston; and on the 24th at Helston. On the 19th of December at North Shields.

Solar halos were seen on the 18th, 21st, and 26th of October; on the 1st, 2d, 8th, 14th, and 27th, of November; and on the 9th and 23d of December.

Lunar halos were seen on the 8th, 9th, 11th, 13th, and 15th, of October; on the 1st, 2d, 5th, 6th, 8th, 9th, 12th, 13th, 14th, and 29th of November; and on the 2d, 4th, 8th, 11th, and 22d, of December.

Aurora Boreales were seen on the 1st, 2d, 3d, 14th, 15th, 17th, 18th, 20th, 21st, 22d, 23d, 24th (probably the most magnificent display seen for many years, it was seen at Malta, Italy, Syria, &c.), 25th, 26th, 27th, 28th, and 30th of October; on the 7th, 14th, 17th, 18th, 19th, 21st, 22d, 23d, and 25th of November; and on the 15th, 16th, and 17th of December.

Snow fell on 3 days in October, 12 days in November, and 24 days in December.

Hail fell on 14 days in October; 16 days in November, and 13 days in December.

Fog was prevalent on 20 days in October, on 25 days in November, and on 27 in December.

Wych elm leafless by the 23d of October at Oxford; the 24th at Helston; the 28th at Marlborough College; and the 30th at Guernsey. By the 7th of November at Carlisle; by the 8th at Hull, and by the 13th at Llandudno.

Line leafless by the 24th of October at Llandudno; by the 25th at Helston; by the 28th at Marlborough and Oxford; and by the 30th at Guernsey and Weybridge Heath. By the 5th of November at Hull, and by the 13th at Culloden.

Horse chestnut leafless by the 15th of October at Marlborough; by the 16th at Helston; by the 17th at Oxford, by the 24th at Hull; by the 27th at Somerleyton and Llandudno; by the 28th at Weybridge; and by the 30th at Guernsey. By the 3d of November at Gloucester; by the 7th at Carlisle, and by the 8th at Culloden.

Swallow departed by the 2d of October from Helston and Wisbech; by the 3d from Hawarden; by the 24th from Hull, and by the 26th from Weybridge. By the 8th of November from Osborne.



Year 1871.	Month.	Pressure of Atmosphere in Month.			Temperature of Air in Month.			Mean Temperature.		Vapour.			Mean Reading of Thermometer.		Wind.			Rain. Inch.			
		Mean.	Range.	Highest.	Lowest.	Range.	Of all Highest.	Of all Lowest.	Daily Range.	Air.	Dew Point.	Elastic Force.	In a cubic foot of Air.	Mean Weight of a cubic foot of Air.	Maximum in Days of Sun.	Minimum on Gyres.	Estimated Strength.		Relative Proportion of		
																			N.	E.	W.
Height of Station above Sea Level.		Mean Amount of Ozone.			Mean Amount of Cloud.			Number of Days it fell.			Amount col- lected.										
GUERNSEY. SAMUEL ELLIOTT, HOSKING, ESQ., M.D., F.R.S., F.R.C.P., F.M.S.	Oct.	29.60	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	18	5.35	
	Nov.	29.60	63.0	89.0	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	3.70	
	Dec.	29.60	63.0	89.0	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Oct.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Nov.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Dec.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Oct.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Nov.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Dec.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Oct.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Nov.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Dec.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
BELSTON (Cornwall). MATTHEW F. MOYLE, ESQ., M.R.C.S.	Oct.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Nov.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Dec.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Oct.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Nov.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Dec.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Oct.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Nov.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Dec.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Oct.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Nov.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Dec.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
TRURO (Cornwall). C. BARHAM, ESQ., M.D., F.M.S.	Oct.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Nov.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Dec.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Oct.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Nov.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Dec.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Oct.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Nov.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Dec.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Oct.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Nov.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
	Dec.	29.75	63.5	89.5	37.0	60.2	80.6	7.6	54.6	48.3	389	3.9	1.0	79	533	—	—	—	16	2.57	
SIDMOUTH (Devon). J. G. MACKENZIE, ESQ., M.B., F.M.S.	Oct.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Nov.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Dec.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Oct.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Nov.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Dec.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Oct.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Nov.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Dec.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Oct.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Nov.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Dec.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
EASTBOURNE (Sussex). Miss W. L. HALL.	Oct.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Nov.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Dec.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Oct.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Nov.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Dec.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Oct.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Nov.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Dec.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Oct.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Nov.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Dec.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
OSBORNE (Isle of Wight). J. R. MANN, ESQ.	Oct.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Nov.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Dec.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Oct.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Nov.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Dec.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Oct.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Nov.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Dec.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Oct.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Nov.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390	4.0	1.0	80	534	—	—	—	18	5.00	
	Dec.	29.68	63.8	89.8	37.1	60.3	80.7	7.7	54.7	48.4	390										

Index	Address	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
265	ALDERSHOTT CAMP (Hants). JOHN ABRAMS, M.B., F.R.S.	Oct. 29-416	1,368	697	2,172	3,976	5,071	4,478	3,871	2,770	1,579	478	157	47	20,540
273	WEST HARTRE VICARAGE (Kent). Rev. R. FIAS, M.A., LL.D., F.M.S.	Oct. 29-416	1,340	697	2,172	3,976	5,071	4,478	3,871	2,770	1,579	478	157	47	20,540
107	STRATHFIELD TURKISS (Hants). Rev. C. H. GRIFFITH, M.A., F.M.S.	Oct. 29-416	1,340	697	2,172	3,976	5,071	4,478	3,871	2,770	1,579	478	157	47	20,540
120	WEYBRIDGE HEATH (Surrey). WILLIAM F. HARRISON, Esq., F.M.S.	Oct. 29-416	1,340	697	2,172	3,976	5,071	4,478	3,871	2,770	1,579	478	157	47	20,540
86	SOUTH ROYAL LITERARY AND SCIENTIFIC INST. (Somerset). CHAS. P. RUSSELL, Esq.	Oct. 29-416	1,340	697	2,172	3,976	5,071	4,478	3,871	2,770	1,579	478	157	47	20,540
456	MARLBOROUGH COLLEGE (Wills). Rev. THOMAS A. PRESTON, M.A., F.M.S.	Oct. 29-416	1,340	697	2,172	3,976	5,071	4,478	3,871	2,770	1,579	478	157	47	20,540
160	OVAL OBSERVATORY (Kent). THE ASTRONOMER ROYAL.	Oct. 29-416	1,340	697	2,172	3,976	5,071	4,478	3,871	2,770	1,579	478	157	47	20,540
150	TREATLEY VICARAGE (Berks). Rev. J. SLATER, M.A., F.R.A.S., F.M.S.	Oct. 29-416	1,340	697	2,172	3,976	5,071	4,478	3,871	2,770	1,579	478	157	47	20,540
146	MARYLEBONE (London). HENRY E. SEGRAVE, Esq., F.M.S.	Oct. 29-416	1,340	697	2,172	3,976	5,071	4,478	3,871	2,770	1,579	478	157	47	20,540
210	XFORD (Oxfordshire). Rev. R. MAIN, M.A., F.R.S., F.R.A.S.	Oct. 29-416	1,340	697	2,172	3,976	5,071	4,478	3,871	2,770	1,579	478	157	47	20,540
100	LOUGHESTER (Gloucester). E. TOLLER, Esq., M.D.	Oct. 29-416	1,340	697	2,172	3,976	5,071	4,478	3,871	2,770	1,579	478	157	47	20,540
200	OYSTON (Hertfordshire). HALE WORTHAM, Esq., F.R.A.S., F.M.S.	Oct. 29-416	1,340	697	2,172	3,976	5,071	4,478	3,871	2,770	1,579	478	157	47	20,540
10	ARDINGTON (near Bedford). J. MACLAREN, Esq., F.M.S., Agent to S.C.W. WHITEHEAD, Esq., F.R.S., F.M.S.	Oct. 29-416	1,340	697	2,172	3,976	5,071	4,478	3,871	2,770	1,579	478	157	47	20,540
420	RAMFLEET (Gloucester). Rev. Prof. J. MATTHEWS, M.A.	Oct. 29-416	1,340	697	2,172	3,976	5,071	4,478	3,871	2,770	1,579	478	157	47	20,540
180	RAMINGTON (Warwickshire). S. URWICK JONES, Esq., F.M.S.	Oct. 29-416	1,340	697	2,172	3,976	5,071	4,478	3,871	2,770	1,579	478	157	47	20,540
20	MERLETON RECTORY (Suf- folk). Rev. C. J. STEWARD, F.M.S.	Oct. 29-416	1,340	697	2,172	3,976	5,071	4,478	3,871	2,770	1,579	478	157	47	20,540

*Note.*—MARLBOROUGH COLLEGE.—The mean temperature for this month is deduced from the following table.



Year 1870.	Month.	Pressure of Atmosphere in Month.	Temperature of Air in Month.				Mean Temperature.	Mean Reading of a Thermometer.	Wind. Direction.	Mean Amount of Ozone.	Mean Amount of Cloud.	Rain. Amount col- lected.		
			Range.		Mean.	Air.							Relative Proportion of	
			Highest.	Lowest.										
Height of Station Above Sea Level.	In.	F.	In.	F.	In.	F.	In.	F.	N.	S.	W.	Number of Days fell.	Amount col- lected.	
NORWICH (Norfolk). C. M. Gibson, Esq., F.M.S.	Oct.	29.654	1.842	65.5	31.7	56.4	45.4	35.0	49.6	43.1	4	5	13	In.
	Nov.	29.747	1.434	56.5	29.0	42.8	38.6	41.8	38.7	35.8	7	10	12	1.432
	Dec.	29.868	1.636	57.5	29.0	43.3	38.1	41.2	35.8	35.8	10	6	8	1.436
	Jan.	29.977	1.832	58.1	32.0	45.1	40.3	45.6	38.9	38.9	12	7	5.8	1.438
WISBECH (Cambridgeshire). S. H. Miller, Esq., F.R.A.S., F.M.S.	Oct.	29.678	1.832	72.0	32.8	52.9	43.2	34.0	49.3	38.9	12	7	5.8	1.438
	Nov.	29.777	1.604	56.2	28.0	42.2	35.8	41.0	37.8	38.9	10	6	1.7	1.438
	Dec.	29.903	1.588	57.5	29.0	43.3	38.1	41.2	35.8	35.8	12	7	1.6	1.438
	Jan.	29.977	1.604	56.2	28.0	42.2	35.8	41.0	37.8	38.9	10	6	1.7	1.438
LLANDUDNO (Carnarvonshire). James Nicol, Esq., M.D., and Monsie Dalton, Esq., M.D.	Oct.	29.555	1.910	60.6	39.0	45.1	35.2	43.4	38.9	38.9	10	6	6.4	1.438
	Nov.	29.635	1.570	55.6	29.5	42.6	35.8	41.0	37.8	38.9	12	7	1.6	1.438
	Dec.	29.815	1.580	54.7	19.2	35.5	41.4	31.1	10.3	35.5	15	2.9	2.9	1.438
	Jan.	29.885	1.570	55.6	29.5	42.6	35.8	41.0	37.8	38.9	10	6	1.7	1.438
DERBY (Derbyshire). John Davis, Esq.	Oct.	29.485	1.972	68.0	31.0	57.0	45.2	35.8	41.0	38.9	12	7	5.8	1.438
	Nov.	29.557	1.558	57.0	28.0	42.6	35.8	41.0	37.8	38.9	10	6	1.7	1.438
	Dec.	29.711	1.618	56.0	29.0	42.6	35.8	41.0	37.8	38.9	12	7	1.6	1.438
	Jan.	29.777	1.570	55.6	29.5	42.6	35.8	41.0	37.8	38.9	10	6	1.7	1.438
NOTTINGHAM (Notts). M. O. Tabor, Esq., C.E., F.G.S., F.M.S.	Oct.	29.416	1.872	70.1	30.8	50.5	42.4	35.8	41.0	38.9	12	7	5.8	1.438
	Nov.	29.507	1.540	55.2	28.2	41.7	35.8	41.0	37.8	38.9	10	6	1.7	1.438
	Dec.	29.644	1.640	59.3	28.7	44.0	35.8	41.0	37.8	38.9	12	7	1.6	1.438
	Jan.	29.701	1.556	55.0	28.0	42.6	35.8	41.0	37.8	38.9	10	6	1.7	1.438
HOLKHAM (Norfolk). John Davidson, Esq., Assistant to the Earl of Leicester.	Oct.	29.501	1.836	65.0	35.5	50.3	42.4	35.8	41.0	38.9	12	7	5.8	1.438
	Nov.	29.743	1.510	55.2	28.2	41.7	35.8	41.0	37.8	38.9	10	6	1.7	1.438
	Dec.	29.837	1.590	59.3	28.7	44.0	35.8	41.0	37.8	38.9	12	7	1.6	1.438
	Jan.	29.901	1.556	55.0	28.0	42.6	35.8	41.0	37.8	38.9	10	6	1.7	1.438
BOSTON (Lincolnshire). A. Mercer Adam, Esq., M.D., F.M.S.	Oct.	29.349	1.555	65.0	35.5	50.3	42.4	35.8	41.0	38.9	12	7	5.8	1.438
	Nov.	29.507	1.540	55.2	28.2	41.7	35.8	41.0	37.8	38.9	10	6	1.7	1.438
	Dec.	29.644	1.640	59.3	28.7	44.0	35.8	41.0	37.8	38.9	12	7	1.6	1.438
	Jan.	29.701	1.556	55.0	28.0	42.6	35.8	41.0	37.8	38.9	10	6	1.7	1.438
HAYWARDEN (Flint). T. M. F. F. S.	Oct.	29.347	1.592	64.5	35.0	50.3	42.4	35.8	41.0	38.9	12	7	5.8	1.438
	Nov.	29.510	1.455	52.5	29.0	42.8	38.6	41.8	38.7	35.8	10	6	1.7	1.438
	Dec.	29.633	1.782	62.5	34.5	53.0	43.3	38.3	41.8	35.8	12	7	1.6	1.438
	Jan.	29.684	1.853	64.8	35.2	53.6	44.9	40.4	45.4	38.9	10	6	1.7	1.438
LIVERPOOL OBSERVATORY. John Hartup, Esq., F.R.A.S.	Oct.	29.464	1.853	64.8	35.2	53.6	44.9	40.4	45.4	38.9	10	6	1.7	1.438
	Nov.	29.533	1.555	52.5	27.5	42.7	37.5	42.8	37.1	35.8	12	7	1.6	1.438
	Dec.	29.633	1.555	52.5	27.5	42.7	37.5	42.8	37.1	35.8	10	6	1.7	1.438
	Jan.	29.704	1.714	54.4	17.8	36.6	38.2	31.0	8.2	34.8	31.1	17.4	2.0	1.438
ECOLET. PORT MANCHESTER. T. Mackenzie, Esq., F.R.A.S., F.M.S.	Oct.	29.569	1.868	70.5	31.2	53.3	45.3	41.2	45.2	38.9	12	7	5.8	1.438
	Nov.	29.611	1.542	54.5	28.9	42.8	38.9	41.8	38.7	35.8	10	6	1.7	1.438
	Dec.	29.704	1.714	54.4	17.8	36.6	38.2	31.0	8.2	34.8	31.1	17.4	2.0	1.438
	Jan.	29.768	1.720	56.4	17.8	36.6	38.2	31.0	8.2	34.8	31.1	17.4	2.0	1.438
WILLOW HALL OBSERVATORY. (Hull, Yorkshire). Louis F. Crossley, Esq., F.M.S.	Oct.	29.464	1.853	64.8	35.2	53.6	44.9	40.4	45.4	38.9	10	6	1.7	1.438
	Nov.	29.533	1.555	52.5	27.5	42.7	37.5	42.8	37.1	35.8	12	7	1.6	1.438
	Dec.	29.633	1.555	52.5	27.5	42.7	37.5	42.8	37.1	35.8	10	6	1.7	1.438
	Jan.	29.704	1.714	54.4	17.8	36.6	38.2	31.0	8.2	34.8	31.1	17.4	2.0	1.438
PARK ROAD OBSERVATORY. (Hull, Yorkshire). Edw. J. Crossley, Esq., F.R.A.S. (Edw. J. Crossley, Esq., F.R.A.S., and Joseph Crossley, Esq., F.G.S., F.M.S.)	Oct.	29.464	1.853	64.8	35.2	53.6	44.9	40.4	45.4	38.9	10	6	1.7	1.438
	Nov.	29.533	1.555	52.5	27.5	42.7	37.5	42.8	37.1	35.8	12	7	1.6	1.438
	Dec.	29.633	1.555	52.5	27.5	42.7	37.5	42.8	37.1	35.8	10	6	1.7	1.438
	Jan.	29.704	1.714	54.4	17.8	36.6	38.2	31.0	8.2	34.8	31.1	17.4	2.0	1.438
THE PARK, HULL (Yorkshire). M.B. F. F. S.	Oct.	29.464	1.853	64.8	35.2	53.6	44.9	40.4	45.4	38.9	10	6	1.7	1.438
	Nov.	29.533	1.555	52.5	27.5	42.7	37.5	42.8	37.1	35.8	12	7	1.6	1.438
	Dec.	29.633	1.555	52.5	27.5	42.7	37.5	42.8	37.1	35.8	10	6	1.7	1.438
	Jan.	29.704	1.714	54.4	17.8	36.6	38.2	31.0	8.2	34.8	31.1	17.4	2.0	1.438
STONYPARK OBSERVATORY. (Hull, Yorkshire). Edw. J. Crossley, Esq., F.R.A.S. (Edw. J. Crossley, Esq., F.R.A.S., and Joseph Crossley, Esq., F.G.S., F.M.S.)	Oct.	29.464	1.853	64.8	35.2	53.6	44.9	40.4	45.4	38.9	10	6	1.7	1.438
	Nov.	29.533	1.555	52.5	27.5	42.7	37.5	42.8	37.1	35.8	12	7	1.6	1.438
	Dec.	29.633	1.555	52.5	27.5	42.7	37.5	42.8	37.1	35.8	10	6	1.7	1.438
	Jan.	29.704	1.714	54.4	17.8	36.6	38.2	31.0	8.2	34.8	31.1	17.4	2.0	1.438

[illegible]

*Second Rain-gauges are placed.*—At Portsmouth, at the height of 20 feet above the ground, the amount collected was 7.02 inches; at Eastbourne, 4 feet, 12.04 inches; at Allershot Camp, 25 feet, 6.54 inches; at West Hartlip Viaduct, 11 feet, 11.78 inches; at Stratfield Turgis, 38 feet, 8.44 inches; at Marlborough College, 8 inches, 9.01 inches; at Oxford, 22 feet, 5.68 inches; at Cardington, 26 feet, 5.50 inches; at Whiteob, 8 feet, 7.38 inches; at Nottingham, 254 feet, 7.18 inches; at Evesham, 34 feet, 11.45 inches; at Cuckersmouth, 65 feet, 14.28 inches; at Allenhurst, 67 feet, 20.85 inches; and at Milton (Banbridge, Ireland), 40 feet, 9.97 inches. The amount collected at Beachy Head, 610 feet above the level of the sea, was 10.19 inches; and at Dune Reservoir (Milltown, Ireland), 440 feet, was 22.40 inches.

*NOTE.*—The Barometer reading, October 25th, 1871, was 30.05.

NOTE.—*The Barometer Reading.* October 6th, 1887. The barometer at the level of the sea, was 30.19 inches; and at Baun Reservoir (Miltown, Ireland), 440 feet, was 29.90 inches.

"	LAUNTON,	30-212	"
"	LORHAM,	29-812	"
"	CARLETON,	29-678	"
"	CLAYDON,	29-310	"
"	BLADFORD,	28-784	"
"	OTLEY,	29-393	"
"	LEEDS,	29-350	"
"	HAWARDEN,	29-370	"
"	HAWARDEN,	29-812	"

The registered readings of the Dry and Wet-bulb thermometers, at 9h. A.M., on the 21st of October, were as follows:



NAMES OF STATIONS.	Mean Pressure of dry Air reduced to the level of the Sea.	Mean of all Highest.	Mean of all Lowest.	Mean Monthly Range of Temperature.	Mean Daily Range of Temperature.	Mean Temperature of the Air.	Mean Temperature of the Dew Point.	Mean Elastic Force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Mean additional Weight required for saturation.	Mean degree of Humidity.	Mean Weight of a cubic foot of Air.	Mean Reading of Maximum in Rays of Sun.	Mean Reading of Minimum on Grass.	Mean Estimated Strength.	WIND.				Mean Amount of Ozone.	Mean Amount of Cloud.	Number of Days in which it fell.	Rain.			
																Relative Proportion of										
																N.	E.	S.	W.							
Guernsey	29.381 66.5	23.5	43.0	51.0	42.8	29.5	8.2	46.6	40.5	250	3.0	0.8	80	542	1.7	8	6	8	9	4.5	5.9	24	11.5			
Truro	29.008 69.0	14.0	55.0	61.7	39.6	36.0	13.1	45.6	39.9	249	3.8	0.9	79	547	1.7	8	6	8	9	4.5	5.9	24	11.5			
Sidmouth	29.578 66.6	19.4	47.2	50.0	38.2	31.9	11.8	43.8	39.8	253	2.9	0.5	86	548	1.7	8	6	8	9	4.5	5.9	24	11.5			
Eastbourne	29.545 67.8	15.7	52.1	49.8	38.8	33.9	13.0	43.7	39.2	244	2.8	0.5	86	548	1.7	8	6	8	9	4.5	5.9	24	11.5			
Osborne	29.595 68.7	17.3	51.4	49.4	38.1	33.6	11.3	43.3	39.9	253	2.9	0.4	89	547	67.1	35.5	0.7	8	7	9	5.6	6.1	40	48		
Bournemouth	29.604 66.4	13.4	33.0	48.0	37.9	33.1	10.1	42.7	38.3	238	2.7	0.5	85	548	61.6	—	11.5	5	5	10	3.3	6.4	36	45		
Portsmouth	29.624 73.2	15.4	60.8	51.3	32.7	43.3	18.6	42.4	37.3	227	2.6	0.6	83	551	68.7	26.5	0.8	8	6	11	1.2	6.3	43	45		
Taunton	29.556 69.9	1.0	53.9	50.3	34.8	43.9	15.5	42.5	38.8	242	2.8	0.5	87	545	66.1	31.4	0.3	8	7	4	12	5.0	4.5	38	40	
Wilton House	29.568 72.0	8.5	53.5	50.2	33.1	43.7	17.1	41.0	38.0	230	2.7	0.3	90	549	76.3	30.8	1.5	10	7	6	8	3.8	5.0	30	30	
Barnstaple	29.570 67.0	11.0	53.0	49.0	33.0	43.0	17.0	41.0	38.0	230	2.7	0.3	90	549	76.3	30.8	1.5	10	7	6	8	3.8	5.0	30	30	
Aldershot Camp	29.582 69.0	11.0	53.0	49.0	33.0	43.0	17.0	41.0	38.0	230	2.7	0.3	90	549	76.3	30.8	1.5	10	7	6	8	3.8	5.0	30	30	
West Harptre Viege.	29.590 69.2	5.0	64.2	49.0	33.9	43.2	15.1	41.5	37.8	235	2.7	0.4	87	546	63.6	21.7	0.7	8	6	7	8	3.5	6.0	43	45	
Strathfield Turgiss	29.631 68.7	4.0	64.7	48.0	33.7	44.1	14.3	40.8	36.7	223	2.6	0.5	86	549	76.0	25.5	—	7	8	6	10	3.5	6.0	43	45	
Weybridge Heath	29.638 69.0	8.5	60.5	48.0	35.2	40.2	12.8	41.0	37.7	224	2.6	0.5	85	550	61.7	—	0.7	8	5	11	7	3.5	6.0	43	45	
Bath	29.592 70.0	12.6	57.4	48.7	36.4	40.1	12.3	42.2	38.1	236	2.7	0.5	86	549	—	—	1.2	7	6	11	11	4.0	7.0	41	41	
Marlborough College	29.617 67.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
Royal Observatory	29.587 68.6	9.8	58.8	48.0	33.7	43.9	15.5	42.5	38.8	242	2.8	0.5	87	545	66.1	31.4	0.3	8	7	4	12	5.0	4.5	38	40	
Streteley Vicarage	29.643 70.2	9.7	60.5	48.1	33.0	44.0	13.1	41.4	35.3	215	2.5	0.6	86	549	54.4	—	1.4	9	5	6	11	1.2	6.3	43	45	
Marylebone	29.577 71.2	14.0	57.2	48.6	36.0	38.1	12.6	42.9	37.8	233	2.7	0.6	82	550	—	—	—	6	7	12	—	—	—	—		
Camden Town	29.592 69.7	14.0	55.7	48.4	36.4	37.0	12.0	42.3	38.4	237	2.7	0.5	83	548	58.8	33.1	—	11	7	4	9	2.2	4.7	30	30	
Oxford	29.596 67.8	9.0	58.8	47.2	35.9	38.4	11.3	41.6	37.2	229	2.6	0.5	85	547	79.9	31.8	1.1	8	5	7	11	2.2	4.7	30	30	
Gloucester	29.580 67.0	6.0	72.0	40.0	34.3	44.7	14.7	41.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
Royston	29.601 72.7	8.6	64.1	48.2	34.9	39.3	13.3	41.0	37.5	231	2.7	0.4	88	547	—	—	—	8	3	9	11	—	—	—	—	
Cardington	29.600 69.0	8.0	61.0	47.7	34.1	40.4	13.6	41.1	36.8	224	2.6	0.5	85	550	51.0	27.7	1.0	8	6	7	10	—	—	—	—	
Lampeter	29.590 70.6	9.0	61.6	49.7	34.5	42.4	15.2	41.7	37.7	223	2.7	0.5	85	548	68.6	—	0.7	5	9	9	8	4.5	6.3	43	45	
Leamington	29.614 69.3	8.0	61.3	46.8	36.0	38.3	10.8	41.3	35.8	216	2.6	0.6	81	548	—	—	0.7	7	9	3	12	—	—	—	—	
Somerleyton Rectory	29.551 65.0	5.8	59.2	47.8	33.5	33.6	11.3	42.3	39.0	248	2.9	0.3	89	549	74.4	29.9	—	0.7	7	8	6	10	7.1	5.7	44	44
Norwich	29.565 65.5	5.5	60.0	46.9	33.1	36.6	10.8	41.5	38.5	238	2.8	0.3	90	550	—	—	—	6	6	8	11	—	—	—	—	
Wilshech	29.566 72.0	9.0	63.0	47.8	35.9	38.3	11.9	41.5	37.9	235	2.7	0.4	88	551	70.1	32.0	0.5	8	6	7	10	2.5	6.3	43	45	
Llandudno	29.546 69.6	19.2	50.4	49.4	38.6	30.6	10.8	43.9	38.3	235	2.7	0.7	81	546	—	—	0.7	8	7	2	14	—	—	—	—	
Derby	29.552 68.0	9.0	59.0	47.1	35.5	37.7	11.6	42.0	36.7	231	2.6	0.6	82	547	—	—	—	8	7	4	12	—	—	—	—	
Nottingham	29.553 70.1	8.7	51.4	47.3	34.7	39.0	12.6	40.9	37.3	228	2.6	0.4	89	547	67.5	27.0	0.2	7	6	6	12	0.9	6.9	40	40	
Holkham	29.542 65.0	4.5	59.5	47.5	34.9	38.3	12.3	41.5	37.2	225	2.6	0.5	85	550	65.9	30.3	1.1	7	6	12	6	1.1	6.5	43	45	
Hawarden	29.558 64.5	14.5	50.0	46.3	37.0	28.7	9.3	41.1	38.3	230	2.8	0.3	91	546	67.3	20.8	—	1.8	7	4	8	12	—	—	—	
Liverpool	29.576 64.8	17.8	47.0	47.2	37.8	29.1	9.4	42.3	37.9	233	2.7	0.5	84	546	—	—	—	—	—	—	—	—	—	—	—	
Eccles	29.567 70.5	11.8	58.7	45.8	33.8	37.3	13.0	40.5	36.4	220	2.6	0.4	86	549	50.6	27.7	0.5	7	7	9	8	1.9	6.3	43	45	
Willow Hall, Halifax	29.586 64.5	10.0	54.5	45.1	33.7	33.5	11.4	39.2	35.5	209	2.4	0.5	86	541	64.7	29.6	0.6	8	6	7	10	2.3	6.3	43	45	
Park Road, Halifax	29.586 62.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Hull	29.532 64.6	7.0	57.0	45.6	32.4	39.3	13.2	39.8	36.5	221	2.5	0.4	85	553	59.6	—	—	—	—	—	—	—	—	—	—	
Stonyhurst	29.555 65.2	13.8	51.4	46.2	35.0	34.1	11.2	40.2	36.2	218	2.6	0.4	86	544	76.7	31.5	—	8	7	5	11	—	—	—	—	
Bradford	29.584 63.6	10.6	47.0	47.0	36.2	29.5	10.8	41.5	33.1	166	2.3	0.5	86	541	57.5	—	1.3	—	—	—	—	—	—	—	—	
Leeds	29.584 63.6	10.6	47.0	47.0	36.2	29.5	10.8	41.5	33.1	166	2.3	0.5	86	541	57.5	—	1.3	—	—	—	—	—	—	—	—	
Leeds	29.584 63.6	10.6	47.0	47.0	36.2	29.5	10.8	41.5	33.1	166	2.3	0.5	86	541	57.5	—	1.3	—	—	—	—	—	—	—	—	
Leeds	29.584 63.6	10.6	47.0	47.0	36.2	29.5	10.8	41.5	33.1	166	2.3	0.5	86	541	57.5	—	1.3	—	—	—	—	—	—	—	—	
Leeds	29.584 63.6	10.6	47.0	47.0	36.2	29.5	10.8	41.5	33.1	166	2.3	0.5	86	541	57.5	—	1.3	—	—	—	—	—	—	—	—	
Leeds	29.584 63.6	10.6	47.0	47.0	36.2	29.5	10.8	41.5	33.1	166	2.3	0.5	86	541	57.5	—	1.3	—	—	—	—	—	—	—	—	
Leeds	29.584 63.6	10.6	47.0	47.0	36.2	29.5	10.8	41.5	33.1	166	2.3	0.5	86	541	57.5	—	1.3	—	—	—	—	—	—	—	—	
Leeds	29.584 63.6	10.6	47.0	47.0	36.2	29.5	10.8	41.5	33.1	166	2.3	0.5	86	541	57.5	—	1.3	—	—	—	—	—	—	—	—	
Leeds	29.584 63.6	10.6	47.0	47.0	36.2	29.5	10.8	41.5	33.1	166	2.3	0.5	86	541	57.5	—	1.3	—	—	—	—	—	—	—	—	
Leeds	29.584 63.6	10.6	47.0	47.0	36.2	29.5	10.8	41.5	33.1	166	2.3	0.5	86	541	57.5	—	1.3	—	—	—	—	—	—	—	—	
Leeds	29.584 63.6	10.6	47.0	47.0	36.2	29.5	10.8	41.5	33.1	166	2.3	0.5	86	541	57.5	—	1.3	—	—	—	—	—	—	—	—	
Leeds	29.584 63.6	10.6	47.0	47.0	36.2	29.5	10.8	41.5	33.1	166	2.3	0.5	86	541	57.5	—	1.3	—	—	—	—	—	—	—	—	
Leeds	29.584 63.6	10.6	47.0	47.0	36.2	29.5	10.8	41.5	33.1	166	2.3	0.5	86	541	57.5	—	1.3	—	—	—	—	—	—	—	—	
Leeds	29.584 63.6	10.6	47.0	47.0	36.2	29.5	10.8	41.5	33.1	166	2.3	0.5	86	541	57.5	—	1.3	—	—	—	—	—	—	—	—	
Leeds	29.584 63.6	10.6	47.0	47.0	36.2	29.5	10.8	41.5	33.1	166	2.3	0.5	86	541	57.5	—	1.3	—								



## PREFACE.

INSTRUMENTS used for the purpose of measuring the quantity of aqueous vapour in the atmosphere are called *Hygrometers* (measurers of moisture), and have generally been made of substances which possess great capability for absorption, and undergo variation from that cause. Amongst hygrometrical substances may be reckoned cordage, catgut, wood (especially deal), the beard of the wild oat, &c. These in turn have all furnished material for the construction of Hygrometers, or rather Hygroscopes; but in use they are found to become less and less sensitive, and finally to lose all their hygrometrical properties.

Other substances have been sought for, which would regularly lengthen and shorten by the loss or absorption of moisture. Saussure, of Geneva, thought that this property might be found in a human hair, freed from all unctuousity by being boiled in a caustic ley. Thus prepared, he stretched and fastened it at one end to an easily moveable grooved wheel, with an index attached: whenever the hair was shortened or lengthened, the wheel and index were moved round, and thus indicated every increase or diminution of moisture.

M. De Luc constructed a hygrometer of a very thin piece of whalebone cut in a direction transverse to the fibre; this he affixed at one end by gold wire to a delicate wheel carrying an index, &c. The idea was suggested by the fact, that whalebone lengthens as it absorbs moisture, and shortens or contracts as it becomes dry. These two instruments are still in use on the continent; but confidence cannot be placed in their indications, nor in any which are dependent upon the hygrometric properties of any substance that has as yet been employed.

The Hygrometer invented by Mr. Daniell was a great advance upon the previous methods of construction. It denotes the degree of moisture in the air with considerable accuracy, exhibiting the amount in temperature of the dew-point, expressed in degrees of the ordinary thermometer, and thus referred to a well-known standard of comparison.

The Hygrometer invented by M. Regnault is said to possess advantages over Daniell's Hygrometer; but in practice I have not found this to be the case. It consists of two delicate thermometers, kept in position by passing through corks fitting into long cylindrical cups of polished gold or silver, one of which is partly filled with ether, so that a portion of the bulb of its thermometer is immersed in it; a small tube passes through the corks, open at both ends, to which a flexible tube is fixed of any length, allowing the observer to be as distant from the instrument as he pleases; by this means air is drawn from or driven into the cups. The ether evaporates with a rapidity depending on the current, which is obtained at pleasure; dew is deposited on the cup containing the ether, the slightest dulling of which is seen by contrast with the other cup, which continues bright.

To use these instruments effectively, experience is required, united with a keen eye, and promptness of observation. Their employment is expensive, owing



to the required ether, which must be the best in quality and not sparingly supplied. It is difficult to procure good ether at all times; it suffers much loss from evaporation if kept or taken to hot climates, and deteriorates rapidly. When the air is very dry it is a long time before any deposition takes place, and sometimes no deposit at all will ensue with bad or indifferent ether; neither are these instruments well adapted for observations at short intervals, as, from the principle of their construction, some little time must elapse before an observation can be repeated.

For these reasons, which forbid their general employment, I directed my attention some years ago to the most effective and simple method of determining the true hygrometric conditions of the air. This proved to be best performed by the employment of the Dry- and Wet-bulb thermometers, which combined may be considered to constitute but one instrument, and which were found to give results identical with Daniell's Hygrometer, over which they possess the great advantage of requiring water only, and giving continuous observations.

The thermometers should have very small bulbs so as to be delicate and sensitive in the extreme; their graduations should be on their own stems, and their readings should be compared with those of a standard thermometer before use, to determine their index errors.

In my balloon experiments the temperature of the dew-point was determined at different heights by simultaneous readings of the Dry- and Wet-bulb thermometers, Daniell's Hygrometer, and Regnault's Hygrometer.

In the experiments of every year there was not found any certain difference in the determination of the dew-point by Daniell's and Regnault's Hygrometers, and this temperature determined by the use of the Dry- and Wet-bulb thermometers, was found to be very closely approximate to the results obtained by either of the above instruments.

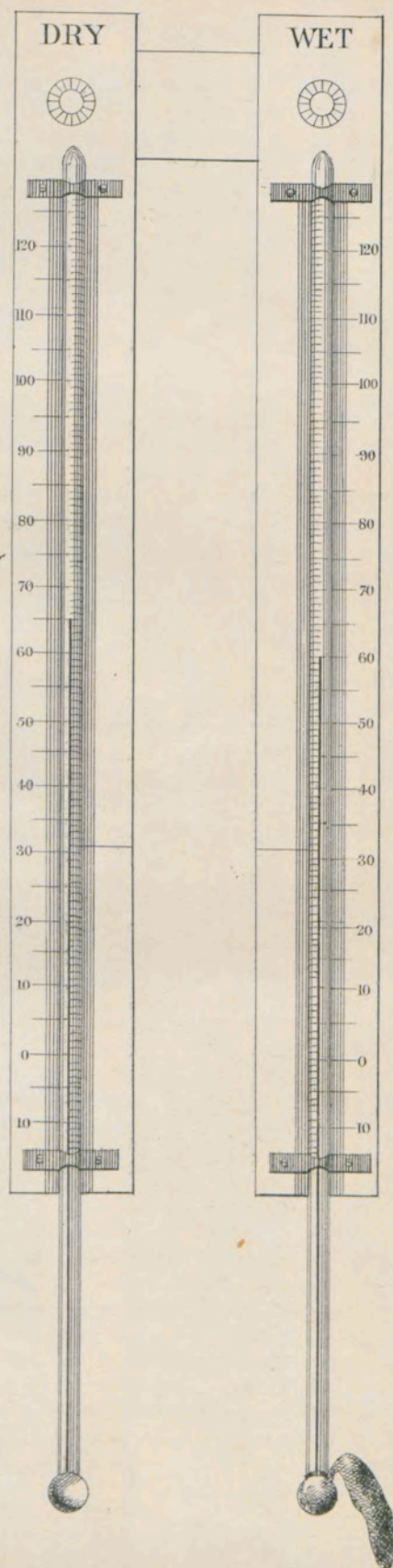
The results of all the simultaneous determinations of the temperature of the dew-point by Daniell's Hygrometer and the Dry- and Wet-bulb thermometers are as follows:—

The temperature of the dew-point as found by the use of the Dry- and Wet-bulb thermometers.

Up to 1,000 feet high	was 0.15 lower than	by Daniell's Hygrometer, from	28 exps.
From 1,000 to 2,000	" 0.10	" " "	40
2,000 to 3,000	" 0.05	" " "	59
3,000 to 4,000 feet high	was the same as	by Daniell's Hygrometer	66
4,000 to 5,000	" 0.05 lower	" " "	40
5,000 to 6,000	" 0.7	" " "	34
6,000 to 7,000	" 0.2	" " "	34
7,000 to 8,000 feet high	was the same as	by Daniell's Hygrometer	8
8,000 to 9,000	" 1.5 higher	" " "	2
9,000 to 10,000	" 1.2 higher	" " "	2
10,000 to 11,000	" 0.3 higher	" " "	1
12,000 to 13,000	" 0.3 higher	" " "	5
13,000 to 14,000	" 0.8 lower	" " "	7
14,000 to 15,000	" 1.0 lower	" " "	2

The number of experiments made up to the height of 7000 feet varying from 28 to 66 in each step of 1000 feet, are sufficient to enable us to speak with confidence; the results are that the temperatures of the dew-point, as found by the use of the Dry- and Wet-bulb thermometers and these Tables, are worthy of full confidence up to this point. At heights exceeding 7000 feet my experiments do not yield a sufficient number of simultaneous readings to give satisfactory results, and before we can speak with certainty at these high elevations more experiments must be made.





## DESCRIPTION OF THE DRY- AND WET-BULB THERMOMETER.

The instrument, as represented in the engraving, consists of two thermometers, as nearly as possible identical, the one marked Dry, the other Wet.

The bulb of the Wet thermometer is covered with thin muslin, round the neck of which and over the muslin is twisted loosely, or tied in a loose knot, a conducting thread of lamp-wick, common darning-cotton, or floss silk; this passes to an adjacent vessel of water placed at such a distance as to allow a length of conducting thread of about three inches. The reservoir of water should be placed on one side and a little beneath, so that evaporation from the water may not affect the reading of the dry bulb by its too near vicinity.

The use of those instruments in which a long cistern of glass is used as a reservoir for the supply of water occupying the central space between the two thermometers is objectionable; the water in the cistern becomes heated or cooled in excess of the surrounding temperature, and never fails, however imperceptibly, to vitiate the readings of the thermometer on either side.

### *Position of the Dry- and Wet-bulb Thermometer, and Precautions in using it.*

The instrument should be mounted in an open space with the bulbs raised about four feet above the soil, in the shade, and as far from walls, trees, &c. as possible.

The water-vessel or reservoir should always be supplied with rain or distilled water.

If the temperature of the air descend below  $32^{\circ}$ , the wet-bulb thermometer will for a time read higher than the dry-bulb; such observations must not be recorded: when the water surrounding the wet-bulb is frozen, the proper readings will take place. In frosty weather the water in the reservoir will be frozen, but this is no reason for the suspension of the observations; if the water upon the muslin be frozen at the same time, the readings are perfectly available. If the muslin be dry, it is necessary that it be wetted by the observer by means of a sponge or brush, who should leave it a sufficient time to allow the water to become frozen, and who (having satisfied himself of the fact) will take the reading in the usual way: unless this caution be attended to, the wet-bulb will read higher than the dry. When the weather is frosty, the muslin should be wetted a sufficient time before the appointed hour of observation; and, as a rule, in frosty weather it is desirable to immerse the bulb in water after every observation. If the temperature of the air ascend above  $32^{\circ}$ , immerse the wet-bulb thermometer and conducting-thread for a short time in warm water, to melt any ice that may remain; unless this be attended to, the wet-bulb will read  $32^{\circ}$  so long as any ice is in contact with it.



Before use, the cotton lamp-wick should be washed in a solution of carbonate of soda, and pressed whilst under water throughout its length. In use it should be of such extent that the water conveyed be sufficient in quantity to keep the muslin on the bulb as moist as when the air is saturated with vapour. The amount of water supplied can be increased or diminished by increasing or decreasing the extent of the conducting-thread.

In observing, the eye should be placed on a level with the top of the mercury in the tube; and the observer should be careful to refrain from breathing whilst taking the observation.

*Temperatures of the Air and of Evaporation*  
are given by the readings of the two thermometers.

*Temperature of the Dew-Point.*

If a mass of air be gradually cooled, it will descend to a degree of temperature at which it will be saturated by the quantity of vapour then mixed with it. This temperature is called the dew-point. It can be found directly by the use of either Daniell's or Regnault's Hygrometer, or by the use of the dry- and wet-bulb thermometers with these Tables.

*Determination of the Dew-Point from observations of the Dry- and Wet-bulb Thermometers.*

TABLE I.—Factors by which it is necessary to multiply the excess of the reading of the dry thermometer over that of the wet, to give the excess of the temperature of the air above that of the Dew-Point, for every degree of air-temperature, from 10° to 100°.

Reading of Dry-Bulb Therm.	Factor.	Reading of Dry-Bulb Therm.	Factor.	Reading of Dry-bulb Therm.	Factor.	Reading of Dry-bulb Therm.	Factor.
10	8.78	33	3.01	56	1.94	79	1.69
11	8.78	34	2.77	57	1.92	80	1.68
12	8.78	35	2.60	58	1.90	81	1.68
13	8.77	36	2.50	59	1.89	82	1.67
14	8.76	37	2.42	60	1.88	83	1.67
15	8.75	38	2.36	61	1.87	84	1.66
16	8.70	39	2.32	62	1.86	85	1.65
17	8.62	40	2.29	63	1.85	86	1.65
18	8.50	41	2.26	64	1.83	87	1.64
19	8.34	42	2.23	65	1.82	88	1.64
20	8.14	43	2.20	66	1.81	89	1.63
21	7.88	44	2.18	67	1.80	90	1.63
22	7.60	45	2.16	68	1.79	91	1.62
23	7.28	46	2.14	69	1.78	92	1.62
24	6.92	47	2.12	70	1.77	93	1.61
25	6.53	48	2.10	71	1.76	94	1.60
26	6.08	49	2.08	72	1.75	95	1.60
27	5.61	50	2.06	73	1.74	96	1.59
28	5.12	51	2.04	74	1.73	97	1.59
29	4.63	52	2.02	75	1.72	98	1.58
30	4.15	53	2.00	76	1.71	99	1.58
31	3.70	54	1.98	77	1.70	100	1.57
32	3.32	55	1.96	78	1.69		

The numbers in this Table have been found from the combination of many thousand simultaneous observations of the dry- and wet-bulb thermometers with Daniell's Hygrometer, taken at the Royal Observatory, Greenwich from the year 1841 to 1854, with observations taken at high temperatures in India, and others at low and medium temperatures at Toronto. The results

at the same temperatures were found to be alike at these different places; and therefore the factors may be considered as of general application.

By the numbers in this Table the temperatures of the dew-point in the general tables have been calculated; and these have been constantly checked by direct observations with Daniell's Hygrometer, at the Royal Observatory, Greenwich, till the present time 1869.

*Expansion of Air from Heat.*

M. Regnault has determined that air expands  $\frac{1}{491.13}$  part for every increase of 1° of heat. The following Table has been calculated using this value, considering a volume of air under the pressure of 30 inches of mercury and at the temperature of 32° as the unit of comparison.

TABLE II.—Showing the volume of a mass of Dry Air after expansion from heat, for every degree of Fahrenheit's scale, from 0° to 100°.

Temp. Fahr.	The volume after expansion from heat.	Temp. Fahr.	The volume after expansion from heat.	Temp. Fahr.	The volume after expansion from heat.
0	0.9348448	34	1.0040722	68	1.0732996
1	0.9368809	35	0.0061083	69	0.0753357
2	0.9389170	36	0.0081444	70	0.0773718
3	0.9409531	37	0.0101805	71	0.0794079
4	0.9429892	38	0.0122166	72	0.0814440
5	0.9450253	39	0.0142527	73	0.0834801
6	0.9470614	40	0.0162888	74	0.0855162
7	0.9490975	41	0.0183249	75	0.0875523
8	0.9511336	42	0.0203610	76	0.0895884
9	0.9531697	43	0.0223971	77	0.0916245
10	0.9552058	44	0.0244332	78	0.0936606
11	0.9572419	45	0.0264693	79	0.0956967
12	0.9592780	46	0.0285054	80	0.0977328
13	0.9613141	47	0.0305415	81	0.0997689
14	0.9633502	48	0.0325776	82	0.1018050
15	0.9653863	49	0.0346137	83	0.1038411
16	0.9674224	50	0.0366498	84	0.1058772
17	0.9694585	51	0.0386859	85	0.1079133
18	0.9714946	52	0.0407220	86	0.1099494
19	0.9735307	53	0.0427581	87	0.1119855
20	0.9755668	54	0.0447942	88	0.1140216
21	0.9776029	55	0.0468303	89	0.1160577
22	0.9796390	56	0.0488664	90	0.1180938
23	0.9816751	57	0.0509025	91	0.1201299
24	0.9837112	58	0.0529386	92	0.1221660
25	0.9857473	59	0.0549747	93	0.1242021
26	0.9877834	60	0.0570108	94	0.1262382
27	0.9898195	61	0.0590469	95	0.1282743
28	0.9918556	62	0.0610830	96	0.1303104
29	0.9938917	63	0.0631191	97	0.1323465
30	0.9959278	64	0.0651552	98	0.1343826
31	0.9979639	65	0.0671913	99	0.1364187
32	1.0000000	66	0.0692274	100	0.1384548
33	1.0020361	67	0.0712635		

*Elastic Force of Aqueous Vapour.*

M. Regnault has determined, by a very careful series of experiments, the value of the Elastic Force of Vapour (*Annales de Chimie et de Physique*, 3 série, tom. xv.). The numbers in the following Table have been calculated from his results.



TABLE III.—Showing the Elastic Force of Aqueous Vapour, in inches of Mercury, from  $-41^{\circ}$  to  $100^{\circ}$ , calculated from the experiments of Regnault.

Temp. Fahr.	Force of Vapour. in.	Temp. Fahr.	Force of Vapour. in.	Temp. Fahr.	Force of Vapour. in.	Temp. Fahr.	Force of Vapour. in.	Temp. Fahr.	Force of Vapour. in.
$-41^{\circ}$	0.005	$6^{\circ}$	0.057	$12^{\circ}$	0.075	$18^{\circ}$	0.099	$24^{\circ}$	0.131
$-40^{\circ}$	0.005	$7^{\circ}$	0.057	$13^{\circ}$	0.075	$19^{\circ}$	0.103	$25^{\circ}$	0.136
$-39^{\circ}$	0.006	$8^{\circ}$	0.058	$14^{\circ}$	0.082	$20^{\circ}$	0.108	$26^{\circ}$	0.142
$-38^{\circ}$	0.006	$9^{\circ}$	0.058	$15^{\circ}$	0.086	$21^{\circ}$	0.113	$27^{\circ}$	0.148
$-37^{\circ}$	0.006	$10^{\circ}$	0.058	$16^{\circ}$	0.090	$22^{\circ}$	0.118	$28^{\circ}$	0.154
$-36^{\circ}$	0.007	$11^{\circ}$	0.059	$17^{\circ}$	0.094	$23^{\circ}$	0.123	$29^{\circ}$	0.160
$-35^{\circ}$	0.007	$12^{\circ}$	0.059	$18^{\circ}$	0.098	$24^{\circ}$	0.129	$30^{\circ}$	0.168
$-34^{\circ}$	0.007	$13^{\circ}$	0.059	$19^{\circ}$	0.102	$25^{\circ}$	0.130		
$-33^{\circ}$	0.008	$14^{\circ}$	0.060	$20^{\circ}$	0.106				
$-32^{\circ}$	0.008	$15^{\circ}$	0.060						
$-31^{\circ}$	0.009	$16^{\circ}$	0.061						
$-30^{\circ}$	0.009	$17^{\circ}$	0.061						
$-29^{\circ}$	0.010	$18^{\circ}$	0.061						
$-28^{\circ}$	0.010	$19^{\circ}$	0.062						
$-27^{\circ}$	0.011	$20^{\circ}$	0.062						
$-26^{\circ}$	0.011	$21^{\circ}$	0.062						
$-25^{\circ}$	0.012	$22^{\circ}$	0.063						
$-24^{\circ}$	0.013	$23^{\circ}$	0.063						
$-23^{\circ}$	0.014	$24^{\circ}$	0.063						
$-22^{\circ}$	0.015	$25^{\circ}$	0.063						
$-21^{\circ}$	0.016	$26^{\circ}$	0.064						
$-20^{\circ}$	0.017	$27^{\circ}$	0.064						
$-19^{\circ}$	0.017	$28^{\circ}$	0.064						
$-18^{\circ}$	0.018	$29^{\circ}$	0.065						
$-17^{\circ}$	0.019	$30^{\circ}$	0.065						
$-16^{\circ}$	0.020		0.066						
$-15^{\circ}$	0.021		0.066						
$-14^{\circ}$	0.022		0.066						
$-13^{\circ}$	0.023		0.067						
$-12^{\circ}$	0.024		0.067						
$-11^{\circ}$	0.025		0.067						
$-10^{\circ}$	0.026		0.068						
$-9^{\circ}$	0.028		0.068						
$-8^{\circ}$	0.029		0.069						
$-7^{\circ}$	0.031		0.069						
$-6^{\circ}$	0.032		0.069						
$-5^{\circ}$	0.033		0.070						
$-4^{\circ}$	0.034		0.070						
$-3^{\circ}$	0.035		0.071						
$-2^{\circ}$	0.036		0.071						
$-1^{\circ}$	0.037		0.072						
$0^{\circ}$	0.038		0.072						
$1^{\circ}$	0.039		0.072						
$2^{\circ}$	0.040		0.073						
$3^{\circ}$	0.041		0.073						
$4^{\circ}$	0.042		0.073						
$5^{\circ}$	0.043		0.074						
$6^{\circ}$	0.044		0.074						
$7^{\circ}$	0.045		0.074						
$8^{\circ}$	0.046		0.074						
$9^{\circ}$	0.047		0.074						
$10^{\circ}$	0.048		0.074						
$11^{\circ}$	0.049		0.074						
$12^{\circ}$	0.050		0.074						
$13^{\circ}$	0.051		0.074						
$14^{\circ}$	0.052		0.074						
$15^{\circ}$	0.053		0.074						
$16^{\circ}$	0.054		0.074						
$17^{\circ}$	0.055		0.074						
$18^{\circ}$	0.056		0.074						
$19^{\circ}$	0.057		0.074						

TABLE III. (continued).

Temp. Fahr.	Force of Vapour. in.	Temp. Fahr.	Force of Vapour. in.	Temp. Fahr.	Force of Vapour. in.	Temp. Fahr.	Force of Vapour. in.	Temp. Fahr.	Force of Vapour. in.
$30^{\circ}$	0.170	$37^{\circ}$	0.220	$43^{\circ}$	0.283	$50^{\circ}$	0.361	$56^{\circ}$	0.457
$31^{\circ}$	0.171	$38^{\circ}$	0.221	$44^{\circ}$	0.284	$51^{\circ}$	0.362	$57^{\circ}$	0.459
$32^{\circ}$	0.172	$39^{\circ}$	0.222	$45^{\circ}$	0.285	$52^{\circ}$	0.363	$58^{\circ}$	0.461
$33^{\circ}$	0.173	$40^{\circ}$	0.223	$46^{\circ}$	0.286	$53^{\circ}$	0.364	$59^{\circ}$	0.462
$34^{\circ}$	0.174	$41^{\circ}$	0.224	$47^{\circ}$	0.287	$54^{\circ}$	0.365	$60^{\circ}$	0.464
$35^{\circ}$	0.174	$42^{\circ}$	0.225	$48^{\circ}$	0.288	$55^{\circ}$	0.366		
$36^{\circ}$	0.175	$43^{\circ}$	0.225	$49^{\circ}$	0.289	$56^{\circ}$	0.367		
	0.176	$44^{\circ}$	0.226	$50^{\circ}$	0.290	$57^{\circ}$	0.369		
	0.176	$45^{\circ}$	0.227	$51^{\circ}$	0.292	$58^{\circ}$	0.371		
	0.177	$46^{\circ}$	0.228	$52^{\circ}$	0.293	$59^{\circ}$	0.373		
	0.177	$47^{\circ}$	0.229	$53^{\circ}$	0.294	$60^{\circ}$	0.374		
	0.179	$48^{\circ}$	0.230	$54^{\circ}$	0.295				
	0.179	$49^{\circ}$	0.231	$55^{\circ}$	0.296				
	0.180	$50^{\circ}$	0.231	$56^{\circ}$	0.297				
	0.181	$51^{\circ}$	0.232	$57^{\circ}$	0.298				
	0.182	$52^{\circ}$	0.233	$58^{\circ}$	0.299				
	0.183	$53^{\circ}$	0.234	$59^{\circ}$	0.301				
	0.184	$54^{\circ}$	0.235	$60^{\circ}$	0.302				
	0.184	$55^{\circ}$	0.236		0.303				
	0.185	$56^{\circ}$	0.237		0.304				
	0.186	$57^{\circ}$	0.238		0.305				
	0.187	$58^{\circ}$	0.238		0.306				
	0.188	$59^{\circ}$	0.239		0.307				
	0.188	$60^{\circ}$	0.240		0.308				
	0.189		0.241		0.309				
	0.190		0.242		0.311				
	0.191		0.243		0.312				
	0.192		0.244		0.313				
	0.193		0.245		0.315				
	0.194		0.246		0.316				
	0.195		0.247		0.317				
	0.196		0.248		0.318				
	0.196		0.249		0.319				
	0.197		0.250		0.321				
	0.198		0.251		0.322				
	0.199		0.252		0.323				
	0.200		0.253		0.324				
	0.201		0.254		0.325				
	0.202		0.255		0.327				
	0.203		0.256		0.328				
	0.204		0.257		0.329				
	0.204		0.258		0.330				
	0.205		0.259		0.331				
	0.206		0.260		0.333				
	0.207		0.261		0.334				
	0.208		0.262		0.335				
	0.209		0.263		0.336				
	0.210		0.264		0.338				
	0.211		0.265		0.339				
	0.212		0.266		0.340				
	0.213		0.267		0.342				
	0.214		0.268		0.343				
	0.215		0.269		0.344				
	0.216		0.270		0.345				
	0.217		0.271		0.346				
	0.218		0.272		0.348				
	0.219		0.273		0.349				
			0.274		0.351				
			0.275		0.352				
			0.276		0.353				
			0.277		0.355				
			0.278		0.356				
			0.279		0.357				
			0.280		0.358				
					0.360				



TABLE III. (continued).

Temp. Fahr.	Force of Vapour.	Temp. Fahr.	Force of Vapour.	Temp. Fahr.	Force of Vapour.	Temp. Fahr.	Force of Vapour.	Temp. Fahr.	Force of Vapour.
63°	in. 0.576	69°	in. 0.721	76°	in. 0.897	82°	in. 1.110	89°	in. 1.366
1	578	6	723	1	900	6	1114	1	370
2	580	7	726	2	903	7	1117	2	375
3	582	8	728	3	906	8	1121	3	379
4	584	9	731	4	909	9	1124	4	384
5	586	70°	733	5	912	83°	1128	5	388
6	588	1	736	6	915	1	1131	6	393
7	590	2	738	7	918	2	1135	7	397
8	592	3	741	8	921	3	1139	8	401
9	594	4	744	9	924	4	1142	9	406
64°	596	5	746	77°	927	5	1146	90°	410
1	598	6	749	1	930	6	1150	1	415
2	601	7	751	2	934	7	1154	2	419
3	603	8	754	3	937	8	1157	3	424
4	605	9	756	4	940	9	1161	4	428
5	607	71°	759	5	943	84°	1165	5	433
6	609	1	761	6	946	1	1169	6	437
7	611	2	764	7	949	2	1173	7	442
8	613	3	766	8	952	3	1176	8	446
9	615	4	769	9	955	4	1180	9	451
65°	617	5	772	78°	958	5	1184	91°	455
1	820	6	774	1	961	6	1188	1	460
2	622	7	777	2	965	7	1192	2	464
3	624	8	779	3	968	8	1196	3	469
4	626	9	782	4	971	9	1200	4	473
5	628	72°	785	5	974	85°	1203	5	478
6	630	1	788	6	977	1	1207	6	483
7	633	2	790	7	981	2	1211	7	487
8	635	3	793	8	984	3	1215	8	492
9	637	4	796	9	987	4	1219	9	496
66°	639	5	799	79°	990	5	1222	92°	501
1	641	6	801	1	994	6	1226	1	505
2	644	7	804	2	997	7	1230	2	510
3	646	8	807	3	1000	8	1234	3	515
4	648	9	810	4	1003	9	1238	4	519
5	650	73°	812	5	1007	86°	1242	5	524
6	652	1	815	6	1010	1	1246	6	529
7	655	2	818	7	1013	2	1250	7	534
8	657	3	820	8	1016	3	1254	8	538
9	659	4	823	9	1020	4	1258	9	543
67°	661	5	826	80°	1023	5	1262	93°	548
1	664	6	829	1	1026	6	1266	1	553
2	666	7	832	2	1030	7	1270	2	557
3	668	8	834	3	1033	8	1274	3	562
4	671	9	837	4	1037	9	1278	4	567
5	673	74°	840	5	1040	87°	1282	5	572
6	675	1	843	6	1043	1	1286	6	577
7	678	2	846	7	1047	2	1290	7	581
8	680	3	848	8	1050	3	1295	8	586
9	682	4	851	9	1053	4	1299	9	591
68°	684	5	854	81°	1057	5	1303	94°	596
1	687	6	857	1	1060	6	1307	1	601
2	689	7	860	2	1064	7	1311	2	606
3	692	8	863	3	1067	8	1315	3	611
4	694	9	865	4	1070	9	1319	4	616
5	697	75°	868	5	1074	88°	1323	5	621
6	699	1	871	6	1077	1	1328	6	626
7	701	2	874	7	1081	2	1332	7	631
8	704	3	877	8	1084	3	1336	8	636
9	706	4	880	9	1088	4	1340	9	641
69°	708	5	883	82°	1092	5	1345	95°	646
1	711	6	885	1	1095	6	1349	1	651
2	713	7	888	2	1099	7	1353	2	657
3	716	8	891	3	1103	8	1357	3	662
69°4	0.718	75°9	0.894	82°4	1.106	88°9	1.361	95°4	1.667

TABLE III. (continued).

Temp. Fahr.	Force of Vapour.	Temp. Fahr.	Force of Vapour.	Temp. Fahr.	Force of Vapour.	Temp. Fahr.	Force of Vapour.	Temp. Fahr.	Force of Vapour.
95°	in. 1.672	96°	in. 1.724	97°	in. 1.779	98°	in. 1.833	99°	in. 1.890
1	677	6	730	6	784	6	839	6	896
2	682	7	735	7	790	7	845	7	901
3	687	8	741	8	795	8	850	8	907
4	692	9	746	9	801	9	856	9	912
5	697	97°	751	98°	806	99°	862	100°	918
6	703	1	757	1	811	1	868	1	923
7	708	2	762	2	817	2	873	2	929
8	714	3	768	3	822	3	879	3	935
96°4	1.719	97°4	1.773	98°4	1.828	99°4	1.884	100°4	1.940

From the numbers in this Table the Elastic Force of Vapour in the General Tables have been found.

The numbers in this Table show the length of a column of mercury, corresponding to the pressure of aqueous vapour at different temperatures. As in an atmosphere of pure steam its force at the earth's surface is its weight, so in a mixture of atmospheres, the elastic force of each at the surface of the earth is the weight of each. Therefore the elastic force of aqueous vapour representing the weight of the entire mass diffused throughout the atmosphere expresses the pressure on the surface in the cistern of the barometer, produced by the vapour present at the time of observation. To find the elastic force of vapour at any time, it is simply necessary to determine the temperature of the dew-point, and to seek for that temperature in this Table.

For instance, suppose the temperature of the dew-point be 51°, opposite to this reading in the Table is 0.374 inch of mercury, a quantity which is about  $\frac{1}{80}$ th part of an atmosphere whose whole pressure is 30 inches.

As the pressure of the whole atmosphere is about 15 lbs. on the square inch when the reading of the barometer is about 30 inches, and as the weight of vapour in the atmosphere when the temperature of the dew-point is 51° is about  $\frac{1}{80}$ th part of the whole pressure, it follows that the actual weight of the vapour is about  $\frac{15}{80}$  lb., or 1300 grains nearly. The weight of a cubic inch of water is 253 grains; therefore the quantity of water present in a column of the atmosphere reaching to its limit is  $\frac{1300}{253}$ , or about 5 inches.

An examination of the numbers in this Table at different temperatures shows that the increased capacity of heat for aqueous vapour at higher temperatures does not follow the same ratio as the temperature, its capacity at any temperature being less than the mean of equidistant temperatures; for example, at 50° the elastic force of vapour is 0.361 inch, and at 70° is 0.733 inch; if, therefore, two masses of air, the one at 50° and the other at 70° (both being saturated with moisture), be mixed together, the compound will take a mean temperature of 60°; but the elastic force of vapour at 60° is 0.518 inch, while the mean of the forces at 50° and 70° is 0.547. The tension of vapour is therefore greater than the air can sustain, and the excess must fall.

#### The Degree of Humidity of the Air.

The degree of humidity is the ratio of the quantity of vapour present in any volume of the air to the quantity which would have been present in the same volume had the air been completely saturated, or, which is the same thing, the ratio of the elastic force of vapour at the temperature of the dew-



point to the elastic force of vapour at the temperature of the air as found in Table III. Thus, if the air be saturated with vapour, the degree of humidity is unity, for the temperature of the dew-point and air are then the same. If the air be not saturated, the elastic force of vapour at the temperature of the dew-point is less than that of the air, and therefore the degree of humidity, which is measured by their ratio, is always less than unity, as of course it evidently must be.

To avoid decimals, it is convenient to multiply this ratio by 100, so that in the General Tables saturation is represented by 100.

### Weight of a Cubic Foot of Air.

From M. Regnault's experiments, 1000 cubic inches of dry air under the pressure of 30 inches of mercury, and at the temperature of 60°, weigh 310.3529 grains, and 1000 cubic inches of water under the same pressure, and at the same temperature, weigh 2525.25 grains; therefore water is 813.67 times heavier than air.

From Table II., the volume of a mass of dry air at 60°, whose volume at 32° is represented by unity, is 1.05701.

Therefore the weight of a cubic foot of dry air at 32° is equal to the weight at 60°, viz. 536.3 grains, multiplied by 1.05701, or to 566.86 grains.

The following Table has been calculated by dividing 566.86 by the number expressing the volume of dry air after expansion from heat, as contained in Table II.

TABLE IV.—Showing the weight in grains of a Cubic Foot of Dry Air, under the pressure of 30 inches of Mercury, for every degree from 0° to 100°.

Temp. Fahr.	Weight of a Cubic Foot of Dry Air.	Temp. Fahr.	Weight of a Cubic Foot of Dry Air.	Temp. Fahr.	Weight of a Cubic Foot of Dry Air.	Temp. Fahr.	Weight of a Cubic Foot of Dry Air.
0	606.4	26	573.9	51	545.7	76	520.3
1	605.1	27	572.7	52	544.7	77	519.3
2	603.7	28	571.5	53	543.6	78	518.3
3	602.4	29	570.3	54	542.6	79	517.4
4	601.1	30	569.2	55	541.5	80	516.4
5	599.8	31	568.0	56	540.5	81	515.4
6	598.5	32	566.9	57	539.4	82	514.5
7	597.3	33	565.7	58	538.4	83	513.5
8	596.0	34	564.6	59	537.3	84	512.6
9	594.7	35	563.4	60	536.3	85	511.7
10	593.4	36	562.3	61	535.3	86	510.7
11	592.2	37	561.2	62	534.2	87	509.8
12	590.9	38	560.0	63	533.2	88	508.8
13	589.7	39	558.9	64	532.2	89	507.9
14	588.4	40	557.8	65	531.2	90	507.0
15	587.2	41	556.7	66	530.2	91	506.1
16	586.0	42	555.6	67	529.2	92	505.2
17	584.7	43	554.4	68	528.1	93	504.2
18	583.5	44	553.3	69	527.1	94	503.3
19	582.3	45	552.2	70	526.2	95	502.4
20	581.1	46	551.2	71	525.2	96	501.5
21	579.8	47	550.1	72	524.2	97	500.6
22	578.6	48	549.0	73	523.2	98	499.7
23	577.4	49	547.9	74	522.2	99	498.8
24	576.2	50	546.8	75	521.2	100	497.9
25	575.1						

### Enlargement of Volume of Air by Vapour.

If a volume of dry air of known elasticity be mixed with an equal volume

of vapour, also of known elasticity, and if the mixture be so compressed as to occupy a space only equal to one of these volumes, the elasticity of the mixture will be the sum of the two elasticities of the air and vapour; or if the mixture be allowed to expand till its elasticity is equal to that of the unmixed air, it will occupy a larger volume in the proportion of the sum of the two elasticities to the elasticity of the air alone.

Let  $p$  = the atmospheric pressure as measured by inches of mercury in the barometer tube.

$E_t$  = the elastic force of vapour, at temperature  $t$ , measured in inches of mercury in the barometer tube.

$n$  = the bulk of a certain quantity of air, when dry, at the temperature  $t$ , and under the pressure  $p$ .

$n'$  = the bulk of the same quantity of air when saturated with vapour, at the temperature  $t$ , and under the pressure  $p$ .

The elasticity varies inversely as the volume, the temperature remaining the same; therefore that portion of the elastic force  $p$ , which depends on the air only which occupies the space  $n' = \frac{np}{n}$ , and the whole atmospheric pressure

$p = \frac{pn}{n'} + E_t$ , or  $\frac{n}{n'} = \frac{p - E_t}{p}$ ,  $= 1 - \frac{E_t}{p}$ ;  $\therefore n' = \frac{n}{1 - \frac{E_t}{p}}$ . And from this formula the

following Table has been constructed:—

TABLE V.—Showing the enlargement which a volume of Dry Air receives when saturated with Vapour under the pressure of 30 inches of Mercury, for every degree of temperature, from 0° to 100°.

Temp. Fahr.	Increased volume owing to the pre- sence of vapour, the original bulk being considered as unity.	Temp. Fahr.	Increased volume owing to the pre- sence of vapour, the original bulk being considered as unity.	Temp. Fahr.	Increased volume owing to the pre- sence of vapour, the original bulk being considered as unity.	Temp. Fahr.	Increased volume owing to the pre- sence of vapour, the original bulk being considered as unity.
0		26	1.0047	51	1.0127	76	1.0308
1	1.0015	27	1.0049	52	1.0131	77	1.0319
2	1.0015	28	1.0051	53	1.0136	78	1.0330
3	1.0017	29	1.0053	54	1.0141	79	1.0341
4	1.0018	30	1.0056	55	1.0146	80	1.0352
5	1.0018	31	1.0058	56	1.0152	81	1.0365
6	1.0019	32	1.0060	57	1.0157	82	1.0378
7	1.0020	33	1.0063	58	1.0164	83	1.0391
8	1.0020	34	1.0065	59	1.0170	84	1.0405
9	1.0021	35	1.0068	60	1.0176	85	1.0419
10	1.0023	36	1.0071	61	1.0182	86	1.0432
11	1.0024	37	1.0074	62	1.0188	87	1.0446
12	1.0025	38	1.0077	63	1.0196	88	1.0461
13	1.0026	39	1.0080	64	1.0203	89	1.0477
14	1.0027	40	1.0083	65	1.0210	90	1.0493
15	1.0029	41	1.0086	66	1.0218	91	1.0510
16	1.0030	42	1.0089	67	1.0225	92	1.0526
17	1.0031	43	1.0093	68	1.0233	93	1.0544
18	1.0033	44	1.0096	69	1.0242	94	1.0562
19	1.0034	45	1.0100	70	1.0250	95	1.0581
20	1.0036	46	1.0105	71	1.0260	96	1.0600
21	1.0038	47	1.0109	72	1.0269	97	1.0620
22	1.0039	48	1.0113	73	1.0279	98	1.0641
23	1.0041	49	1.0117	74	1.0288	99	1.0661
24	1.0043	50	1.0121	75	1.0298	100	1.0683
25	1.0045						



*Weight of Vapour in a Cubic Foot of Air.*

Vapours, so long as they remain in an æriform state, expand by the increase of temperature as permanently elastic fluids, and their volumes vary inversely as the pressure to which they are subjected. Air, as before stated, expands  $\frac{1}{491.13}$ , or .0020361 for every increase of  $1^\circ$  of heat; it therefore expands 0.3665 of its bulk from  $32^\circ$  to  $212^\circ$ , and its expansion is uniform between these points.

Therefore, if the weight of a cubic foot of vapour, under the pressure of 30 inches of mercury, and at the temperature of  $212^\circ$ , be called  $W$ , and the weight of an equal volume of vapour, at the temperature  $t$ , and under the same pressure of 30 inches, be called  $W'$ , and if  $E_t$  be the elasticity of vapour at the temperature  $t$ , then (the expansion of dry air from  $32^\circ$  to  $212^\circ$  being 0.3665, or 0.0020361 for each degree of temperature),

$$W' = \frac{1.3665 \times W \times E_t}{30\{1 + .0020361 \times (t - 32^\circ)\}}$$

A cubic foot of vapour at  $212^\circ$ , and under a pressure of 30 inches, weighs 258.448 grains. Therefore, substituting this value of a cubic foot of vapour at  $212^\circ$ , and under a pressure of 30 inches, the above formula becomes

$$W' = \frac{1.3665 \times 258.448 \times E_t}{30\{1 + .0020361 \times (t - 32^\circ)\}}$$

And from this formula the next Table has been formed.

TABLE VI.—Showing the Weight in Grains of a Cubic Foot of Vapour, under the pressure of 30 inches of Mercury, for every degree of temperature, from  $0^\circ$  to  $100^\circ$ .

Temp. Fahr.	Weight in grains of a Cubic Foot of Vapour.	Temp. Fahr.	Weight in grains of a Cubic Foot of Vapour.	Temp. Fahr.	Weight in grains of a Cubic Foot of Vapour.	Temp. Fahr.	Weight in grains of a Cubic Foot of Vapour.
0	grs. 0.55	26	grs. 1.68	51	grs. 4.24	76	grs. 9.69
1	0.57	27	1.75	52	4.39	77	9.99
2	0.59	28	1.82	53	4.55	78	10.31
3	0.62	29	1.89	54	4.71	79	10.64
4	0.65	30	1.97	55	4.87	80	10.98
5	0.68	31	2.05	56	5.04	81	11.32
6	0.71	32	2.13	57	5.21	82	11.67
7	0.74	33	2.21	58	5.39	83	12.03
8	0.77	34	2.30	59	5.58	84	12.40
9	0.80	35	2.39	60	5.77	85	12.78
10	0.84	36	2.48	61	5.97	86	13.17
11	0.88	37	2.57	62	6.17	87	13.57
12	0.92	38	2.66	63	6.38	88	13.98
13	0.96	39	2.76	64	6.59	89	14.41
14	1.00	40	2.86	65	6.81	90	14.85
15	1.04	41	2.97	66	7.04	91	15.29
16	1.09	42	3.08	67	7.27	92	15.74
17	1.14	43	3.20	68	7.51	93	16.21
18	1.19	44	3.32	69	7.76	94	16.69
19	1.24	45	3.44	70	8.01	95	17.18
20	1.30	46	3.56	71	8.27	96	17.68
21	1.36	47	3.69	72	8.54	97	18.20
22	1.42	48	3.82	73	8.82	98	18.73
23	1.48	49	3.96	74	9.10	99	19.28
24	1.54	50	4.10	75	9.39	100	19.84
25	1.61						

From the numbers in this Table, it appears that the capacity of air for moisture doubles for a rise from  $0^\circ$  to  $16^\circ$ ; from  $16^\circ$  to  $33^\circ$ ; from  $33^\circ$  to  $52^\circ$ ; from  $52^\circ$  to  $73^\circ$ ; and from  $73^\circ$  to  $96^\circ$ .

When the readings of the dry- and wet-bulb thermometers are alike, the weight of a cubic foot of vapour is at once taken from the numbers in Table VI. In all other cases as the quantity of vapour at the temperature of the dew-point expands in the same ratio as air, the weight of a cubic foot of vapour is calculated from the following formula:—

$$\left. \begin{array}{l} \text{Weight of} \\ \text{a cubic foot} \\ \text{of vapour.} \end{array} \right\} = \frac{\text{Volume at temperature of dew-point} \times \text{weight of a cubic foot of vapour at temperature of dew-point}}{\text{Volume at temperature of air.}}$$

*Sum of the Weights of a Cubic Foot of Air and a Cubic Foot of Vapour.*

TABLE VII.—Showing the Weight of a Cubic Foot of Dry Air added to the Weight of a Cubic Foot of Vapour, at all temperatures between  $0^\circ$  and  $100^\circ$ , under a pressure of 30 inches of Mercury.

Temp. Fahr.	Sum of the weights of a Cubic Foot of Dry Air and of a Cubic Foot of Vapour.	Temp. Fahr.	Sum of the weights of a Cubic Foot of Dry Air and of a Cubic Foot of Vapour.	Temp. Fahr.	Sum of the weights of a Cubic Foot of Dry Air and of a Cubic Foot of Vapour.	Temp. Fahr.	Sum of the weights of a Cubic Foot of Dry Air and of a Cubic Foot of Vapour.
0	grs. 606.9	26	grs. 575.6	51	grs. 550.0	76	grs. 529.9
1	605.6	27	574.4	52	549.1	77	529.3
2	604.3	28	573.3	53	548.2	78	528.6
3	603.1	29	572.2	54	547.3	79	528.0
4	601.8	30	571.1	55	546.4	80	527.4
5	600.5	31	570.1	56	545.5	81	526.8
6	599.3	32	569.0	57	544.6	82	526.2
7	598.0	33	567.9	58	543.8	83	525.6
8	596.8	34	566.9	59	542.9	84	525.0
9	595.5	35	565.8	60	542.1	85	524.4
10	594.3	36	564.8	61	541.2	86	523.9
11	593.1	37	563.7	62	540.4	87	523.3
12	591.8	38	562.7	63	539.6	88	522.8
13	590.6	39	561.7	64	538.8	89	522.3
14	589.4	40	560.6	65	538.0	90	521.8
15	588.2	41	559.6	66	537.2	91	521.4
16	587.0	42	558.6	67	536.4	92	520.9
17	585.9	43	557.6	68	535.7	93	520.4
18	584.7	44	556.7	69	534.9	94	520.0
19	583.5	45	555.7	70	534.2	95	519.6
20	582.4	46	554.7	71	533.4	96	519.2
21	581.2	47	553.8	72	532.7	97	518.8
22	580.1	48	552.8	73	532.0	98	518.4
23	578.9	49	551.9	74	531.3	99	518.1
24	577.8	50	550.9	75	530.6	100	517.8
25	576.7						

The next Table is computed from the following formula:—

$$\left. \begin{array}{l} \text{Weight of a} \\ \text{cubic foot} \\ \text{of saturated} \\ \text{air.} \end{array} \right\} = \frac{\text{Weight of a cubic foot of air and a cubic foot of vapour (Table VII.)}}{\text{Increased volume of a cubic foot of dry air in consequence of its saturation with moisture (Table V.)}}$$



*Weight of a Cubic Foot of Saturated Air.*

TABLE VIII.—Showing the Weight in Grains of a Cubic Foot of Air saturated with moisture, at all temperatures between 0° and 100°, under the pressure of 30 inches of Mercury.

Temp. Fahr.	Weight of a Cubic Foot of Air saturated with Vapour.	Temp. Fahr.	Weight of a Cubic Foot of Air saturated with Vapour.	Temp. Fahr.	Weight of a Cubic Foot of Air saturated with Vapour.	Temp. Fahr.	Weight of a Cubic Foot of Air saturated with Vapour.
0	606.0	26	572.9	51	543.1	76	514.1
1	604.7	27	571.6	52	542.0	77	512.9
2	603.4	28	570.4	53	540.8	78	511.7
3	602.1	29	569.2	54	539.7	79	510.6
4	600.7	30	568.0	55	538.5	80	509.4
5	599.4	31	566.8	56	537.3	81	508.2
6	598.1	32	565.6	57	536.2	82	507.0
7	596.8	33	564.4	58	535.0	83	505.8
8	595.5	34	563.2	59	533.8	84	504.6
9	594.2	35	562.0	60	532.7	85	503.3
10	592.9	36	560.8	61	531.6	86	502.2
11	591.6	37	559.6	62	530.4	87	501.0
12	590.4	38	558.4	63	529.2	88	499.8
13	589.1	39	557.2	64	528.1	89	498.5
14	587.8	40	556.0	65	526.9	90	497.3
15	586.6	41	554.9	66	525.7	91	496.1
16	585.3	42	553.7	67	524.6	92	494.9
17	584.0	43	552.5	68	523.5	93	493.6
18	582.8	44	551.4	69	522.3	94	492.3
19	581.5	45	550.2	70	521.1	95	491.1
20	580.3	46	549.0	71	519.9	96	489.8
21	579.0	47	547.8	72	518.7	97	488.5
22	577.8	48	546.6	73	517.6	98	487.2
23	576.6	49	545.5	74	516.4	99	486.0
24	575.3	50	544.3	75	515.3	100	484.7
25	574.1						

When the readings of the two thermometers are alike, the weight of a cubic foot of air, under a pressure of 30 inches of mercury, will be found opposite to the temperature in the above Table.

When the readings of the two thermometers are not alike, the weight of a cubic foot of air will be found by taking the excess of the weight of a cubic foot of dry air (Table IV.) above that of a cubic foot of saturated air (Table VIII.), multiplying this excess by the degree of humidity, and taking the product from the weight of a cubic foot of dry air: the result will be under a pressure of 30 inches of mercury. The numbers in the General Tables have been calculated for a pressure of 29 inches.

*Note.*—At temperatures exceeding 65°, the numbers in the General Tables are too great, and need to be reduced as follows:—

If the readings of the two thermometers are alike,

66 to 69 by 0.3	85 to 86 by 0.8	92 by 1.2	97 by 1.7
70 to 75 by 0.4	87 to 88 by 0.9	93 by 1.3	98 by 1.8
76 to 79 by 0.5	89 by 1.0	94 by 1.4	99 by 1.8
80 to 82 by 0.6	90 by 1.1	95 by 1.5	100 by 1.9
83 to 84 by 0.7	91 by 1.1	96 by 1.6	

If the readings of the two thermometers are not alike, the corrections would be found by multiplying the above numbers by the degree of humidity corresponding to the readings of the two thermometers.

ON THE MANNER OF USING THE TABLES.

*To find the Temperature of the Dew-Point.*

CASE I.—If the readings of both the dry- and wet-bulb thermometers be whole degrees, the dew-point will be found opposite to the reading of the wet-bulb.

CASE II.—If the reading of the dry-bulb be affected with parts of a degree, in the fourth column, opposite to the reading of the wet-bulb, will be found the amount of the decrease in the temperature of the dew-point, corresponding to an increase of reading of 1° in the dry-bulb. A proportional part of this, for the parts of a degree, is to be taken from the dew-point opposite to the reading of the wet-bulb.

CASE III.—If the readings of the dry- and wet-bulb be both affected with parts of a degree, then the decrease due to the excess above the whole degree in the dry will be found as in Case II.; and the increase due to the excess of reading of the wet-bulb above the whole degree will be found by taking the difference between two consecutive dew-points, which will give the difference for an increase of one degree in the wet-bulb; a proportional part of this being taken and applied will give the reading required.

*Example.*—Suppose the readings of the dry- and wet-bulb be 51°·6 and 46°·4.

In Table, 51° dry, on page 10,—

The dew-point opposite to 46° wet is . . . . 40.8  
The dew-point opposite to 47° wet is . . . . 42.8

Difference, or the increase in dew-point for an  
increase of 1° in wet . . . . 2.0  
Proportional part of the increase for 0°·4 . . . . is + 0.8

Temperature of the dew-point corresponding to  
51° dry and 46°·4 wet is . . . . 41.6

In the fourth column the decrease of dew-point for an in-  
crease of 1° in the dry is 0.9, the proportional part  
for 0.6 is . . . . — 0.5

The temperature of dew-point corresponding to 51°·6 dry  
and 46°·4 wet is . . . . 41.1

*In like manner the elastic force of vapour, the weight of vapour in a cubic foot of air, the additional weight required to saturate a cubic foot of air, and the degree of humidity may be found.*

*To find the weight of a cubic foot of air the reading of the barometer is required in addition.*

*Example.*—Required the weight of a cubic foot of air when the reading of the dry-bulb is 51°·6, wet 46°·4, and barometer 29.72 inches.

In column 13, opposite 46° wet is . . . . 525.9

In column 14, the decrease of weight for an increase of 1° in  
dry is 1 gr.; the proportional part for 0°·6 is . . . . — 0.6

Carried over . . 525.3



Brought over . . .	grs. 525.3
In column 14, the increase of weight for an increase in the reading of the barometer for one inch is 18.1 grs.	
Opposite .7 (in the Table, under 18.1 in last column) is . .	12.7
Opposite .02 (in the little Table in right-hand corner of the page) . . . . .	0.4
The weight required is . . . . .	538.4

When the reading of the barometer exceeds 30 inches, the numbers in column 13 are to be increased by the quantity in column 14 for one inch, and still further increased by the quantities in the little Tables in the last column, corresponding to the excess of reading above 30 inches.

When the reading is less than 29 inches, the difference from 29 inches is to be taken, and the quantities from the small Tables, corresponding to the difference, are to be taken and applied subtractively to the number in column 13.

In all cases throughout the Tables the sign — denotes decrease, and the sign + increase.

#### *General Remarks.*

In addition to its value to the meteorologist, there are many cases in ordinary life in which this instrument may be used to advantage; the simple inspection of the two thermometers will often afford a better criterion of the weather, and of the probability of rain, than the barometer itself: regard, however, must be had to the time of the day and the time of the year when the observation is made.

In summer, when the diurnal range of temperature is great, if in the morning the difference between the air-temperature and the dew-point temperature be small, and the rise of temperature during the day considerable, it is probable that the difference will increase; and if the temperature of the dew-point at the same time decrease, it is an indication of very fine weather. If, on the contrary, the temperature of both should increase with the day in nearly equal proportion, rain will almost certainly follow as the temperature of the air falls with the declining sun.

In winter, when the diurnal range of temperature is small, the indication of the weather is shown by the increase or decrease in the temperature of the dew-point, rather than by the difference between the temperatures of the air and of the dew-point. In showery weather the indications vary rapidly, and a person making observations at short intervals may predict the approach of a storm, particularly if he take simultaneous observations with the barometer.

#### *Use of the Instrument in the Sick Chamber.*

The importance of this instrument in the requirements of a sick chamber are scarcely to be overrated, and will be at once obvious to all who know that the comfort of the patient is dependent not so much on the temperature, as on the hygrometric condition of the air. In cold frosty weather the air of apartments is frequently too dry, in which case the difference between the readings of the two thermometers will be great, and this condition will be manifest to the patient by the degree of inconvenience experienced attributable to this cause. If the air be moist, the difference between the

readings will be less, in proportion to the degree of moisture; and if the air be saturated, the readings will be alike. It would be well for the medical profession to enforce, as far as lies in its power, the use of this simple and effectual instrument, which in case of sickness gives indications so important to the comfort of the patient. If the air in the apartment be too dry, that is to say, if the difference between the readings of the thermometers is very considerable, it will be necessary to expose water in some shallow vessel of some extent of surface, so that the evaporation from it, mixing with the air, will cause a greater degree of humidity. This process may be considerably accelerated by heating the water, when the evaporation will proceed more rapidly.

If, on the contrary, the air be too moist, or should be required to be remarkably dry, all water must either be removed or covered over; and the required degree of dryness obtained either by raising the temperature, or by placing in the room sulphuric acid, or any other medium which has the property of rapidly absorbing watery vapour. By these simple means an artificial locality may be produced, and invalids whose circumstances or avocations prevent them from seeking a climate suited to their peculiar constitution may to a great extent, by the assistance of this instrument, obviate the necessity of so doing.

The instrument in use should be placed in a part of the room away from the immediate influence of the fire, and not exposed to open doors or currents of air; in ordinarily constructed rooms, the best place is in a recess on the same side of the room as the fire.

A difference of from 6 to 8 degrees between the readings of the two thermometers will generally be found to give a pleasant degree of humidity.

#### *Use of the Instrument in Hothouses, Greenhouses, and in Conservatories.*

In regulating the hygrometric state of the air in conservatories &c. it may be made to render essential service, the temperature of the air being regulated by the dry-bulb, and the degree of humidity by the lower reading of the wet-bulb.

It is well known that in greenhouses, plants become shrivelled or otherwise injured before there is any suspicion of an alteration in the humidity of the air; and when suspected, a quantity of water, without any guide as to the amount required, is thrown upon the plants and walls; and occasionally at other times, when our senses indicate a dry atmosphere, water is spread in the same indefinite manner. Our sensations, with regard to heat and humidity, are very fallacious guides: every one must have felt in summer the heat at times to be almost insupportable, without any apparent reason as shown by the reading of the thermometer; this happens when the air is nearly calm and moist; and should the air become in motion, under the same hygrometric conditions we feel cool, and experience a relief; should these hygrometric conditions change, with the same temperature, and the air become dryer, evaporation of moisture from the skin takes place with activity, and we feel a marked sensation of cold; so that with the same temperature, and enjoying an equal state of health, we experience according to our own sensations various vicissitudes of temperature; in fact our senses cannot guide us with regard to heat and humidity. A dry- and wet-bulb thermometer properly used, and its indications attended to, may be made the means of preserving many valuable plants which might otherwise perish in an ill-regulated atmosphere.

To make the instrument properly available for this purpose, a knowledge is required of the climatic conditions of the countries in which the plants naturally have their growth. The temperature of the hothouse may then be regu-



lated by the dry-, and the degree of humidity by the wet-bulb. For example, suppose the temperature of the climate be  $70^{\circ}$ , and its mean state of humidity about 60 or 70 per cent. of the quantity of aqueous vapour which the air would contain if saturated. It is necessary then that the reading of the dry thermometer should be maintained at  $70^{\circ}$ , and the reading of the wet between  $62^{\circ}$  and  $64^{\circ}$ . These last numbers are found by looking in the Table at division  $70^{\circ}$  of the dry-bulb, and under degree of humidity for 60 or 70, where the degree of humidity 61 is found to correspond with the reading  $62^{\circ}$  of the wet-bulb, and the degree of humidity 69 to correspond with the reading  $64^{\circ}$  of the wet-bulb. The introduction of a large surface of water with a moveable cover to regulate at pleasure the extent of evaporating surface, is a certain means of obtaining and afterwards continuing the required degree of humidity: should it be found desirable to throw water on the walls, the attendant will find in the instrument a certain guide as to the degree of humidity in the air occasioned by the performance of this operation, which may be regulated accordingly.

*Value of the Instrument in places where Stoves are used.*

The use of Stoves is general, but their effects are often injurious to health, and frequently subject the occupant of rooms so heated to much pain and inconvenience; this arises in a great measure from the excessive dryness of the air of such rooms, causing moisture from the skin to evaporate too rapidly.

Blackheath, April 1869.

Reading of Thermometer.	Temperature of the Dew-point.		Elastic force of Vapour.	Difference for an increase of $1^{\circ}$ in Dry.	Difference for an increase of $1^{\circ}$ in Dry.	Vapour in a Cubic Foot of Air.	Difference for an increase of $1^{\circ}$ in Dry.	Vap. reqd. to sat. a Cubic Foot of Air.	Difference for an increase of $1^{\circ}$ in Dry.	Degree of Humidity. (Satn. = 100.)	Difference for an increase of $1^{\circ}$ in Dry.	Weight of a Cubic Foot of Air. Bar. reading 29 inches.	Diff. for an increase of $1^{\circ}$ in Dry.	Difference for one inch in Barometer and proportional parts.
	Dry.	Wet.												
10	10.0	10.0	in.	in.	gr.	gr.	gr.	gr.	gr.	100	-33	573.1	-1.1	19.8
	9.8	8.2	0.068	-0.020	0.8	-0.2	0.0	+0.2	0.0	92	29	573.1	-1.1	19.8
	9.6	6.5	0.063	-0.018	0.8	-0.2	0.1	+0.2	0.1	85	26	573.1	-1.1	19.8
	9.4	4.7	0.058	-0.016	0.7	-0.2	0.2	+0.2	0.2	78	23	573.1	-1.1	19.8
	9.2	3.0	0.054	-0.015	0.7	-0.2	0.2	+0.2	0.2	72	20	573.1	-1.1	19.8
	9.0	1.2	0.050	-0.014	0.6	-0.2	0.3	+0.2	0.3	67	18	573.1	-1.1	19.8
11	11.0	11.0	0.046	-0.012	0.6	-0.2	0.0	+0.2	0.0	100	-34	572.1	-1.1	19.8
	10.8	9.2	0.071	-0.021	0.9	-0.2	0.1	+0.2	0.1	92	30	572.1	-1.1	19.8
	10.6	7.5	0.065	-0.018	0.8	-0.2	0.1	+0.2	0.1	85	27	572.1	-1.1	19.8
	10.4	5.7	0.060	-0.016	0.8	-0.2	0.2	+0.2	0.2	78	24	572.1	-1.1	19.8
	10.2	4.0	0.056	-0.014	0.7	-0.2	0.2	+0.2	0.2	72	22	572.1	-1.1	19.8
	10.0	2.2	0.052	-0.012	0.7	-0.2	0.3	+0.2	0.3	67	20	572.1	-1.1	19.8
	9.8	0.5	0.048	-0.010	0.6	-0.2	0.3	+0.2	0.3	62	18	572.1	-1.1	19.8
12	12.0	12.0	0.045	-0.008	0.6	-0.2	0.0	+0.2	0.0	100	-34	570.7	-1.1	19.7
	11.8	10.2	0.074	-0.022	0.9	-0.2	0.1	+0.3	0.1	92	31	570.7	-1.1	19.7
	11.6	8.5	0.068	-0.020	0.8	-0.2	0.1	+0.3	0.1	85	28	570.7	-1.1	19.7
	11.4	6.7	0.063	-0.018	0.8	-0.2	0.2	+0.3	0.2	78	26	570.7	-1.1	19.7
	11.2	5.0	0.058	-0.016	0.7	-0.2	0.2	+0.3	0.2	72	24	570.7	-1.1	19.7
	11.0	3.2	0.054	-0.014	0.7	-0.2	0.3	+0.3	0.3	66	22	570.7	-1.1	19.7
	10.8	1.5	0.050	-0.012	0.6	-0.2	0.3	+0.3	0.3	61	20	570.7	-1.1	19.7
13	13.0	13.0	0.047	-0.010	0.6	-0.2	0.0	+0.3	0.0	100	-34	569.9	-1.1	19.7
	12.8	11.3	0.078	-0.023	1.0	-0.3	0.1	+0.3	0.1	92	31	569.9	-1.1	19.7
	12.6	9.5	0.072	-0.021	0.9	-0.3	0.1	+0.3	0.1	85	28	569.9	-1.1	19.7
	12.4	7.7	0.066	-0.019	0.8	-0.2	0.2	+0.3	0.2	78	25	569.9	-1.1	19.7
	12.2	6.0	0.061	-0.017	0.8	-0.2	0.2	+0.3	0.2	72	23	569.9	-1.1	19.7
	12.0	4.2	0.056	-0.015	0.7	-0.2	0.3	+0.3	0.3	66	21	569.9	-1.1	19.7
	11.8	2.5	0.052	-0.013	0.7	-0.2	0.3	+0.3	0.3	61	19	569.9	-1.1	19.7
	11.6	0.7	0.048	-0.011	0.6	-0.2	0.4	+0.3	0.4	57	18	569.9	-1.1	19.7
14	14.0	14.0	0.045	-0.009	0.6	-0.2	0.0	+0.3	0.0	100	-33	568.2	-1.1	19.6
	13.8	12.2	0.082	-0.025	1.0	-0.3	0.1	+0.3	0.1	92	30	568.2	-1.1	19.6
	13.6	10.5	0.075	-0.022	0.9	-0.3	0.1	+0.3	0.1	85	28	568.2	-1.1	19.6
	13.4	8.7	0.069	-0.020	0.9	-0.3	0.2	+0.3	0.2	78	26	568.2	-1.1	19.6
	13.2	7.0	0.064	-0.018	0.8	-0.2	0.2	+0.3	0.2	72	24	568.2	-1.1	19.6
	13.0	5.2	0.059	-0.016	0.7	-0.2	0.3	+0.3	0.3	66	22	568.2	-1.1	19.6
	12.8	3.5	0.055	-0.014	0.7	-0.2	0.3	+0.3	0.3	61	20	568.2	-1.1	19.6
	12.6	1.7	0.051	-0.012	0.6	-0.2	0.4	+0.3	0.4	57	18	568.2	-1.1	19.6
15	15.0	15.0	0.048	-0.010	0.6	-0.2	0.0	+0.3	0.0	100	-33	567.7	-1.1	19.6
	14.8	13.3	0.082	-0.025	1.0	-0.3	0.1	+0.3	0.1	92	30	567.7	-1.1	19.6
	14.6	11.5	0.075	-0.022	0.9	-0.3	0.1	+0.3	0.1	85	27	567.7	-1.1	19.6
	14.4	9.7	0.069	-0.020	0.9	-0.3	0.2	+0.3	0.2	78	25	567.7	-1.1	19.6
	14.2	8.0	0.064	-0.018	0.8	-0.2	0.2	+0.3	0.2	72	24	567.7	-1.1	19.6
	14.0	6.2	0.059	-0.016	0.7	-0.2	0.3	+0.3	0.3	66	22	567.7	-1.1	19.6
	13.8	4.5	0.055	-0.014	0.7	-0.2	0.3	+0.3	0.3	61	19	567.7	-1.1	19.6
	13.6	2.7	0.051	-0.012	0.6	-0.2	0.4	+0.3	0.4	57	17	567.7	-1.1	19.6
	13.4	1.0	0.048	-0.010	0.6	-0.2	0.5	+0.3	0.5	52	16	567.7	-1.1	19.6
16	16.0	16.0	0.045	-0.009	0.6	-0.2	0.0	+0.3	0.0	100	-32	565.8	-1.1	19.5
	15.8	14.3	0.082	-0.025	1.0	-0.3	0.1	+0.3	0.1	92	29	565.8	-1.1	19.5
	15.6	12.5	0.075	-0.022	0.9	-0.3	0.1	+0.3	0.1	85	27	565.8	-1.1	19.5
	15.4	10.8	0.069	-0.020	0.9	-0.3	0.2	+0.3	0.2	78	25	565.8	-1.1	19.5
	15.2	9.0	0.064	-0.018	0.8	-0.2	0.2	+0.3	0.2	72	24	565.8	-1.1	19.5
	15.0	7.3	0.059	-0.016	0.7	-0.2	0.3	+0.3	0.3	66	22	565.8	-1.1	19.5
	14.8	5.6	0.055	-0.014	0.7	-0.2	0.3	+0.3	0.3	61	19	565.8	-1.1	19.5
	14.6	3.8	0.051	-0.012	0.6	-0.2	0.4	+0.3	0.4	57	18	565.8	-1.1	19.5
	14.4	2.1	0.048	-0.010	0.6	-0.2	0.5	+0.3	0.5	52	17	565.8	-1.1	19.5
	14.2	0.3	0.044	-0.008	0.5	-0.2	0.6	+0.3	0.6	50	17	565.8	-1.1	19.5



Reading of Thermometer.	Dry. Wet.		Temperature of Dew-Point.	Difference for an increase of 1° in Dry.	Elastic force of Vapour.	Difference for an increase of 1° in Dry.	Vapour in a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Vap. reqd. to sat. a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Degree of Humidity. (Satn. = 100.)	Difference for an increase of 1° in Dry.	Weight of a Cubic Foot of Air, Bar. reading 29 inches.	Diff. for an increase of 1° in Dry.	Difference for one inch in Barometer and proportional parts.
17	17°	17°	17°	-7°5	0°094	-0°028	1°1	-0°3	0°0	+0°4	100	-32	564°5	-1°1	19°5
	16°8	15°3	7°5	0°087	0°026	1°0	0°3	0°1	0°4	0°4	93	30	564°5	-1°1	19°5
	16°6	13°6	7°5	0°080	0°023	1°0	0°3	0°1	0°4	0°4	86	26	564°5	-1°1	19°5
	16°4	11°8	7°4	0°074	0°021	0°9	0°3	0°2	0°4	0°4	80	20	564°5	-1°1	19°5
	16°2	10°1	7°4	0°068	0°019	0°8	0°2	0°3	0°3	0°3	74	24	564°5	-1°1	19°5
	16°0	8°4	7°4	0°063	0°017	0°8	0°2	0°3	0°3	0°3	68	22	564°5	-1°1	19°5
	15°8	6°7	7°3	0°058	0°015	0°7	0°2	0°4	0°3	0°3	63	20	564°5	-1°1	19°5
	15°6	4°9	7°3	0°054	0°013	0°6	0°2	0°5	0°2	0°2	58	18	564°5	-1°1	19°5
	15°4	3°2	7°3	0°050	0°011	0°6	0°2	0°5	0°2	0°2	53	16	564°5	-1°1	19°5
	15°2	1°5	7°3	0°047	0°009	0°5	-0°2	0°6	0°2	+0°2	49	-14	564°5	-1°1	19°5
18	18°0	18°0	-7°3	0°098	-0°028	1°2	-0°3	0°0	0°0	+0°4	120	-32	563°4	-1°1	19°4
	17°8	16°3	7°3	0°091	0°026	1°1	0°3	0°1	0°4	0°4	93	30	563°4	-1°1	19°4
	17°6	14°6	7°3	0°084	0°024	1°0	0°3	0°2	0°4	0°4	86	28	563°4	-1°1	19°4
	17°4	12°9	7°3	0°077	0°022	1°0	0°3	0°2	0°4	0°4	80	26	563°4	-1°1	19°4
	17°2	11°2	7°2	0°071	0°020	0°9	0°3	0°3	0°3	0°3	74	23	563°4	-1°1	19°4
	17°0	9°5	7°2	0°066	0°018	0°8	0°2	0°4	0°3	0°3	68	21	563°4	-1°1	19°4
	16°8	7°8	7°1	0°061	0°016	0°7	0°2	0°5	0°3	0°3	63	19	563°4	-1°1	19°4
	16°6	6°1	7°1	0°057	0°014	0°7	0°2	0°5	0°3	0°3	58	17	563°4	-1°1	19°4
	16°4	4°4	7°0	0°053	0°012	0°6	0°2	0°6	0°2	0°2	54	15	563°4	-1°1	19°4
	16°2	2°7	7°0	0°049	0°010	0°6	0°2	0°6	0°2	0°2	50	13	563°4	-1°1	19°4
	16°0	1°0	-6°9	0°046	-0°008	0°6	-0°2	0°6	0°2	+0°2	46	-11	563°4	-1°1	19°4
19	19°0	19°0	-7°1	0°103	-0°030	1°3	-0°3	0°0	0°0	+0°4	100	-32	562°1	-1°1	19°3
	18°8	17°3	7°1	0°095	0°027	1°2	0°3	0°1	0°4	0°4	93	29	562°1	-1°1	19°3
	18°6	15°7	7°1	0°088	0°025	1°1	0°3	0°2	0°3	0°3	86	27	562°1	-1°1	19°3
	18°4	14°0	7°0	0°081	0°022	1°0	0°3	0°3	0°3	0°3	80	25	562°1	-1°1	19°3
	18°2	12°3	7°0	0°075	0°020	0°9	0°3	0°4	0°3	0°3	74	22	562°1	-1°1	19°3
	18°0	10°7	6°9	0°070	0°019	0°9	0°3	0°4	0°3	0°3	68	20	562°1	-1°1	19°3
	17°8	9°0	6°9	0°065	0°017	0°8	0°2	0°5	0°2	0°2	63	18	562°1	-1°1	19°3
	17°6	7°3	6°8	0°060	0°015	0°7	0°2	0°6	0°2	0°2	58	17	562°1	-1°1	19°3
	17°4	5°6	6°8	0°055	0°013	0°7	0°2	0°6	0°2	0°2	54	16	562°1	-1°1	19°3
	17°2	4°0	6°7	0°051	0°011	0°6	0°2	0°7	0°2	0°2	50	14	562°1	-1°1	19°3
	17°0	2°3	6°7	0°048	0°009	0°6	0°2	0°7	0°2	0°2	47	13	562°1	-1°1	19°3
	16°8	0°7	-6°7	0°045	-0°008	0°6	-0°2	0°7	0°2	+0°2	44	-11	562°1	-1°1	19°3
20	20°0	20°0	-6°9	0°108	-0°030	1°3	-0°3	0°0	0°0	+0°4	100	-32	561°0	-1°1	19°2
	19°8	18°4	6°8	0°100	0°028	1°2	0°3	0°1	0°4	0°4	93	28	561°0	-1°1	19°2
	19°6	16°7	6°7	0°093	0°026	1°1	0°3	0°2	0°4	0°4	86	26	561°0	-1°1	19°2
	19°4	15°1	6°7	0°086	0°024	1°0	0°3	0°3	0°4	0°4	80	24	561°0	-1°1	19°2
	19°2	13°5	6°7	0°079	0°021	1°0	0°3	0°3	0°4	0°4	74	22	561°0	-1°1	19°2
	19°0	11°9	6°6	0°073	0°019	0°9	0°2	0°4	0°3	0°3	68	20	561°0	-1°1	19°2
	18°8	10°2	6°5	0°068	0°017	0°8	0°2	0°5	0°3	0°3	63	18	561°0	-1°1	19°2
	18°6	8°6	6°5	0°063	0°015	0°8	0°2	0°5	0°3	0°3	59	16	561°0	-1°1	19°2
	18°4	7°0	6°5	0°059	0°014	0°7	0°2	0°6	0°3	0°3	55	15	561°0	-1°1	19°2
	18°2	5°4	6°4	0°055	0°013	0°7	0°2	0°6	0°3	0°3	51	14	561°0	-1°1	19°2
	18°0	3°7	6°4	0°051	0°012	0°6	0°2	0°7	0°2	0°2	48	13	561°0	-1°1	19°2
	17°8	2°1	6°4	0°048	0°011	0°6	0°2	0°7	0°2	0°2	45	12	561°0	-1°1	19°2
	17°6	0°5	-6°3	0°045	-0°010	0°5	-0°2	0°8	0°2	+0°2	42	-11	561°0	-1°1	19°2
21	21°0	21°0	-6°6	0°113	-0°030	1°4	-0°3	0°0	0°0	+0°4	100	-29	559°7	-1°1	19°1
	20°8	19°4	6°5	0°105	0°028	1°3	0°3	0°1	0°4	0°4	93	27	559°7	-1°1	19°1
	20°6	17°9	6°5	0°097	0°025	1°2	0°3	0°2	0°3	0°3	87	25	559°7	-1°1	19°1
	20°4	16°3	6°5	0°090	0°023	1°1	0°3	0°3	0°3	0°3	81	23	559°7	-1°1	19°1
	20°2	14°7	6°4	0°084	0°021	1°0	0°3	0°4	0°3	0°3	75	21	559°7	-1°1	19°1
	20°0	13°1	6°3	0°078	0°019	1°0	0°3	0°4	0°3	0°3	70	20	559°7	-1°1	19°1
	19°8	11°5	6°2	0°072	0°017	0°9	0°2	0°5	0°2	0°2	65	18	559°7	-1°1	19°1
	19°6	10°0	6°2	0°067	0°016	0°8	0°2	0°6	0°2	0°2	60	16	559°7	-1°1	19°1
	19°4	8°4	6°2	0°062	0°014	0°8	0°2	0°6	0°2	0°2	56	15	559°7	-1°1	19°1
	19°2	6°8	6°1	0°058	0°013	0°7	0°2	0°7	0°2	0°2	52	14	559°7	-1°1	19°1
	19°0	5°2	6°1	0°054	0°012	0°7	0°2	0°7	0°2	0°2	49	13	559°7	-1°1	19°1
	18°8	3°7	6°0	0°051	0°011	0°6	0°2	0°8	0°2	0°2	46	12	559°7	-1°1	19°1
	18°6	2°1	6°0	0°048	0°010	0°6	0°2	0°8	0°2	0°2	43	11	559°7	-1°1	19°1
	18°4	0°5	-5°0	0°045	-0°010	0°5	-0°2	0°8	0°2	+0°2	40	-10	559°7	-1°1	19°1

Reading of Thermometer.		Temperature of the Dew-Point.	Difference for an increase of 1° in Dry.	Elastic force of Vapour.	Difference for an increase of 1° in Dry.	Vapour in a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Vap. reqd. to sat. a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Degree of Humidity. (Satn. = 100.)	Difference for an increase of 1° in Dry.	Weight of a Cubic Foot of Air, Bar. reading 29 inches.	Diff. for an increase of 1° in Dry.	Difference for one inch in Barometer and proportional parts.
Dry.	Wet.													
22	22°0	22°0	-6°3	0°118	-0°030	1°4	-0°3	0°0	+0°4	100	-28	558°5	-1°1	19°3
	21°8	20°5	6°2	0°110	0°027	1°3	0°3	0°1	0°4	94	26	558°5	-1°1	19°3
	21°6	19°0	6°1	0°102	0°025	1°2	0°3	0°2	0°4	88	24	558°5	-1°1	19°3
	21°4	17°4	6°0	0°095	0°023	1°2	0°3	0°2	0°4	82	23	558°5	-1°1	19°3
	21°2	15°9	6°0	0°089	0°022	1°1	0°3	0°3	0°4	76	21	558°5	-1°1	19°3
	21°0	14°4	6°0	0°083	0°020	1°0	0°2	0°4	0°3	71	19	558°5	-1°1	19°3
	20°8	12°9	5°9	0°077	0°018	0°9	0°2	0°5	0°3	66	18	558°5	-1°1	19°3
	20°6	11°4	5°8	0°072	0°017	0°9	0°2	0°5	0°3	62	16	558°5	-1°1	19°3
	20°4	9°8	5°7	0°067	0°015	0°8	0°2	0°6	0°3	58	15	558°5	-1°1	19°3
	20°2	8°3	5°7	0°063	0°014	0°8	0°2	0°6	0°3	54	15	558°5	-1°1	19°3
	20°0	6°8	5°6	0°059	0°013	0°7	0°2	0°7	0°3	50	14	558°5	-1°1	19°3
	19°8	5°3	5°6	0°055	0°012	0°7	0°2	0°7	0°3	47	13	558°5	-1°1	19°3
	19°6	3°8	5°5	0°051	0°011	0°6	0°2	0°8	0°2	44	12	558°5	-1°1	19°3
	19°4	2°2	5°5	0°048	0°010	0°6	0°2	0°8	0°2	41	12	558°5	-1°1	19°3
	19°2	0°7	-5°4	0°045	-0°010	0°5	-0°2	0°9	+0°2	38	-11	558°5	-1°1	19°3
23	23°0	23°0	-5°9	0°123	-0°029	1°5	-0°3	0°0	+0°4	100	-27	557°4	-1°1	19°2
	22°8	21°5	5°8	0°115	0°027	1°4	0°3	0°1	0°4	94	25	557°4	-1°1	19°2
	22°6	20°1	5°8	0°108	0°026	1°3	0°3	0°2	0°3	88	23	557°4	-1°1	19°2
	22°4	18°6	5°7	0°101	0°024	1°2	0°3	0°3	0°3	82	22	557°4	-1°1	19°2
	22°2	17°2	5°6	0°094	0°022	1°1	0°3	0°4	0°3	77	20	557°4	-1°1	19°2
	22°0	15°7	5°5	0°088	0°020	1°1	0°3	0°4	0°3	72	19	557°4	-1°1	19°2
	21°8	14°3	5°5	0°082	0°018	1°0	0°2	0°5	0°2	67	17	557°4	-1°1	19°2
	21°6	12°8	5°4	0°077	0°017	0°9	0°2	0°6	0°2	63	16	557°4	-1°1	19°2
	21°4	11°4	5°4	0°072	0°016	0°9	0°2	0°6	0°2	59	15	557°4	-1°1	19°2
	21°2	9°9	5°3	0°067	0°014	0°8	0°2	0°7	0°2	55	14	557°4	-1°1	19°2
	21°0	8°4	5°2	0°063	0°013	0°8	0°2	0°7	0°2	52	13	557°4	-1°1	19°2
	20°8	7°0	5°2	0°059	0°012	0°7	0°2	0°8	0°2	48	12	557°4	-1°1	19°2
	20°6	5°5	5°1	0°055	0°011	0°7	0°2	0°8	0°2	45	11	557°4	-1°1	19°2
	20°4	4°1	5°0	0°052	0°010	0°6	0°2	0°9	0°2	42	10	557°4	-1°1	19°2
	20°2	2°6	-5°0	0°049	-0°010	0°6	-0°2	0°9	+0°2	39	-9	557°4	-1°1	19°2
24	24°0	24°0	-5°5	0°129	-0°029	1°5	-0°3	0°0	+0°4	100	-26	556°1	-1°1	19°1
	23°8	22°6	5°4	0°121	0°027	1°5	0°3	0°1	0°4	94	24	556°1	-1°1	19°1
	23°6	21°2	5°3	0°114	0°025	1°4	0°3	0°2	0°3	88	23	556°1	-1°1	19°1
	23°4	19°8	5°2	0°107	0°023	1°3	0°3	0°3	0°3	83	21	556°1	-1°1	19°1
	23°2	18°5	5°2	0°100	0°021	1°2	0°3	0°3	0°3	78	20	556°1	-1°1	19°1
	23°0	17°1	5°2	0°094	0°020	1°1	0°3	0°4	0°3	73	18	556°1	-1°1	19°1
	22°8	15°7	5°1	0°088	0°019	1°1	0°3	0°4	0°3	69	17	556°1	-1°1	19°1
	22°6	14°3	5°0	0°082	0°017	1°0	0°3	0°5	0°3	65	15	556°1	-1°1	19°1
	22°4	12°9	4°9	0°077	0°015	0°9	0°3	0°6	0°3	61	14	556°1	-1°1	19°1
	22°2	11°5	4°8	0°072	0°013	0°9	0°2	0°6	0°2	57	13	556°1	-1°1	19°1
	22°0	10°2	4°7	0°068	0°012	0°8	0°2	0°7	0°2	53	12	556°1	-1°1	19°1
	21°8	8°8	4°7	0°064	0°011	0°8	0°2	0°7	0°2	50	12	556°1	-1°1	19°1
	21°6	7°4	4°6	0°060	0°010	0°7	0°2	0°8	0°2	47	11	556°1	-1°1	19°1
	21°4	6°0	4°5	0°056	0°010	0°7	0°2	0°8	0°2	44	10	556°1	-1°1	19°1
	21°2	4°6	4°5	0°053	0°009	0°6	0°2	0°9	0°2	42	10	556°1	-1°1	19°1
	21°0	3°2	-4°4	0°050	-0°009	0°6	-0°2	0°9	+0°2	39	-9	556°1	-1°1	19°1
25	25°0	25°0	-5°1	0°135	-0°028	1°6	-0°3	0°0	+0°4	100	-24	555°0	-1°1	19°1
	24°8	23°7	5°0	0°127	0°026	1°5	0°3	0°1	0°4	94	22	555°0	-1°1	19°1
	24°6	22°4	4°9	0°120	0°024	1°4	0°3	0°2	0°4	89	21	555°0	-1°1	19°1
	24°4	21°1	4°8	0°113	0°022	1°4	0°3	0°2	0°4	84	20	555°0	-1°1	19°1
	24°2	19°8	4°7	0°106	0°020	1°3	0°3	0°3	0°4	79	18	555°0	-1°1	19°1
	24°0	18°5	4°7	0°100	0°019	1°2	0°2	0°4	0°3	74	17	555°0	-1°1	19°1
	23°8	17°2	4°6	0°094	0°018	1°1	0°2	0°5	0°3	70	16	555°0	-1°1	19°1
	23°6	15°9	4°5	0°089	0°017	1°1	0°2	0°5	0°3	66	14	555°0	-1°1	19°1
	23°4	14°6	4°4	0°084	0°016	1°0	0°2	0°6	0°3	62	13	555°0	-1°1	19°1
	23°2	13°3	4°3	0°079	0°014	1°0	0°2	0°6	0°3	59	12	555°0	-1°1	19°1
	23°0	11°9	4°2	0°074	0°013	0°9	0°2	0°7	0°3	55	11	555°0	-1°1	19°1
	22°8	10°6	4°1	0°069	0°012	0°8	0°2	0°8	0°3	52	10	555°0	-1°1	19°1
	22°6	9°3	4°0	0°065	0°011	0°8	0°2	0°8	0°2	49	9	555°0	-1°1	19°1
	22°4	8°0	3°9	0°062	0°010	0°9	0°2	0°9	0°2	46	8	555°0	-1°1	19°1
	22°2	6°7	3°8	0°059	-0°010	0°9	-0°2	0°9	+0°2	43	-7	555°0	-1°1	19°1



Reading of Thermometer.		Temperature of the Dew-Point.		Difference for an increase of 1° in Dry.		Elastic force of Vapour.		Difference for an increase of 1° in Dry.		Vapour in a Cubic Foot of Air.		Difference for an increase of 1° in Dry.		Vap. reqd. to sat. a Cubic Foot of Air.		Difference for an increase of 1° in Dry.		Degree of Humidity. (Satn. = 100.)		Difference for an increase of 1° in Dry.		Weight of a Cubic Foot of Air, Bar. reading 29 inches.		Diff. for an increase of 1° in Dry.		Difference for one inch in Barometer and proportional parts.		
Dry.	Wet.	Dry.	Wet.	in.	in.	gr.	gr.	gr.	gr.	gr.	gr.	gr.	gr.	gr.	gr.	gr.	gr.	gr.	gr.	gr.	gr.	gr.	gr.	gr.	gr.	gr.	gr.	
26	26°0	26°0	26°0	-4°6	0°141	-0°27	1°7	-0°3	0°0	100	-21	553°7	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	25°8	24°8	4°5	0°134	0°025	1°6	0°3	0°1	0°3	95	20	553°8	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	25°6	23°6	4°4	0°127	0°023	1°5	0°3	0°2	0°3	90	18	553°9	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	25°4	22°3	4°3	0°120	0°021	1°4	0°3	0°3	0°3	85	17	553°9	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	25°2	21°1	4°2	0°113	0°019	1°4	0°3	0°3	0°3	80	16	554°0	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	25°0	19°9	4°1	0°107	0°018	1°3	0°2	0°4	0°2	76	15	554°0	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	24°8	18°7	4°0	0°101	0°017	1°2	0°2	0°5	0°2	72	14	554°0	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	24°6	17°5	4°0	0°096	0°016	1°1	0°2	0°6	0°2	68	13	554°0	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	24°4	16°3	3°9	0°091	0°015	1°1	0°1	0°6	0°2	64	12	554°0	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	24°2	15°1	3°8	0°086	0°014	1°0	0°1	0°7	0°1	61	11	554°0	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	24°0	13°8	3°7	0°081	0°013	1°0	0°1	0°7	0°1	58	11	554°0	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1
	23°8	12°6	3°6	0°076	0°012	0°9	0°1	0°8	0°1	55	10	554°0	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1
23°6	11°4	3°5	0°072	0°011	0°9	0°1	0°8	0°1	52	10	554°0	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
23°4	10°2	3°5	0°068	0°010	0°8	0°1	0°9	0°1	49	9	554°0	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
23°2	9°0	3°4	0°065	0°009	0°8	0°1	0°9	0°1	46	9	554°0	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
27	27°0	27°0	-4°1	0°147	0°025	1°7	-0°3	0°0	100	-20	552°5	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	26°8	25°9	4°0	0°140	0°023	1°7	0°3	0°1	0°3	95	19	552°5	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	26°6	24°8	3°9	0°133	0°021	1°6	0°3	0°1	0°3	91	18	552°5	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	26°4	23°6	3°8	0°126	0°019	1°5	0°2	0°2	0°3	87	17	552°5	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	26°2	22°5	3°7	0°120	0°018	1°4	0°2	0°3	0°3	83	16	552°5	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	26°0	21°4	3°6	0°114	0°017	1°4	0°2	0°3	0°3	79	15	552°5	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	25°8	20°3	3°5	0°109	0°016	1°3	0°2	0°4	0°3	75	14	552°5	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	25°6	19°2	3°4	0°104	0°015	1°2	0°2	0°5	0°3	71	13	552°5	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	25°4	18°0	3°3	0°099	0°014	1°2	0°2	0°5	0°3	68	12	552°5	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	25°2	16°9	3°2	0°094	0°013	1°1	0°1	0°6	0°2	64	12	552°9	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	25°0	15°8	3°1	0°089	0°013	1°1	0°1	0°6	0°2	61	11	553°0	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	24°8	14°7	3°0	0°084	0°012	1°0	0°1	0°7	0°2	58	10	553°0	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
24°6	13°5	2°9	0°080	0°011	1°0	0°1	0°7	0°2	55	9	553°0	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1		
24°4	12°4	2°8	0°076	0°010	0°9	0°1	0°8	0°2	52	8	553°0	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1		
24°2	11°3	2°7	0°072	0°010	0°9	0°1	0°8	0°2	49	7	553°1	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1		
28	28°0	28°0	-3°6	0°153	0°023	1°8	-0°3	0°0	100	-18	551°4	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	27°8	27°0	3°6	0°146	0°021	1°7	0°3	0°1	0°3	95	16	551°4	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	27°6	26°0	3°5	0°140	0°020	1°7	0°3	0°1	0°3	91	15	551°4	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	27°4	24°9	3°4	0°134	0°019	1°6	0°2	0°2	0°3	87	14	551°4	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	27°2	23°9	3°3	0°128	0°018	1°5	0°2	0°3	0°3	84	14	551°4	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	27°0	22°9	3°2	0°122	0°016	1°5	0°2	0°3	0°3	80	13	551°4	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	26°8	21°9	3°1	0°117	0°015	1°4	0°2	0°4	0°3	76	12	551°4	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	26°6	20°8	3°0	0°112	0°014	1°3	0°2	0°5	0°3	73	11	551°4	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	26°4	19°8	2°9	0°107	0°013	1°3	0°2	0°5	0°3	70	11	551°4	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	26°2	18°8	2°8	0°102	0°012	1°2	0°1	0°6	0°2	67	10	551°4	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	26°0	17°8	2°8	0°097	0°011	1°2	0°1	0°6	0°2	64	10	551°4	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
	25°8	16°7	2°7	0°093	0°010	1°1	0°1	0°7	0°2	61	9	551°4	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	
25°6	15°7	2°6	0°089	0°010	1°1	0°1	0°7	0°2	58	8	551°4	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1		
25°4	14°7	2°5	0°085	0°009	1°0	0°1	0°8	0°2	55	8	551°4	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1		
25°2	13°7	2°4	0°081	0°009	1°0	0°1	0°8	0°2	53	7	551°9	-1°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1	19°1		
29	29°0	29°0	-3°1	0°160	0°020	1°9																						



Reading of Thermometer.		Temperature of the Dew-Point.	Difference for an increase of 1° in Dry.	Elastic force of Vapour.		Difference for an increase of 1° in Dry.	Vapour in a Cubic Foot of Air.		Difference for an increase of 1° in Dry.	Vap. reqd. to sat. a Cubic Foot of Air.		Difference for an increase of 1° in Dry.	Degree of Humidity. (Satn. = 100.)		Difference for an increase of 1° in Dry.	Weight of a Cubic Foot of Air, Bar. reading 29 inches.		Diff. for an increase of 1° in Dry.	Difference for one inch in barometer and proportional parts.	
Dry.	Wet.			in.	in.		grs.	grs.		grs.	grs.		grs.	grs.		grs.	grs.		in.	grs.
34	34.0	34.0	-1.6	0.196	0.012	2.3	0.2	0.0	0.3	100	-10	544.4	-1.1	18.8						
	33.8	33.5	1.6	0.192	0.012	2.3	0.2	0.0	0.3	98	10	544.4	-1.1	18.8						
	33.6	32.9	1.5	0.188	0.012	2.2	0.2	0.1	0.3	96	10	544.4	-1.1	18.8						
	33.4	32.3	1.5	0.184	0.012	2.2	0.2	0.1	0.3	93	9	544.4	-1.1	18.8						
	33.2	31.8	1.5	0.180	0.012	2.1	0.2	0.2	0.3	91	9	544.4	-1.1	18.8						
	33.0	31.2	1.4	0.176	0.012	2.1	0.1	0.2	0.2	89	9	544.4	-1.1	18.8						
	32.8	30.7	1.4	0.172	0.011	2.0	0.1	0.3	0.2	87	8	544.4	-1.1	18.8						
	32.6	30.1	1.4	0.168	0.011	2.0	0.1	0.3	0.2	85	8	544.4	-1.1	18.8						
	32.4	29.6	1.3	0.164	0.010	1.9	0.1	0.4	0.2	83	8	544.4	-1.1	18.8						
	32.2	29.0	1.3	0.160	0.009	1.9	0.1	0.4	0.2	81	7	544.4	-1.1	18.8						
	32.0	28.5	1.3	0.156	0.008	1.8	0.1	0.5	0.2	79	7	544.4	-1.1	18.8						
	31.8	27.9	1.2	0.152	0.008	1.8	0.1	0.5	0.2	77	7	544.4	-1.1	18.8						
	31.6	27.4	1.2	0.148	0.008	1.8	0.1	0.5	0.2	76	7	544.4	-1.1	18.8						
	31.4	26.8	1.2	0.145	0.008	1.7	0.1	0.6	0.2	74	6	544.4	-1.1	18.8						
	31.2	26.2	-1.1	0.142	0.008	1.7	0.0	0.6	0.1	73	6	544.4	-1.1	18.8						
35	35.0	35.0	-1.5	0.204	0.011	2.4	0.2	0.0	0.3	100	-10	543.3	-1.1	18.7						
	34.8	34.5	1.5	0.200	0.011	2.3	0.2	0.1	0.3	98	9	543.3	-1.1	18.7						
	34.6	34.0	1.5	0.196	0.010	2.3	0.2	0.1	0.3	96	9	543.3	-1.1	18.7						
	34.4	33.4	1.5	0.192	0.010	2.2	0.2	0.2	0.3	94	9	543.3	-1.1	18.7						
	34.2	32.9	1.4	0.188	0.010	2.2	0.2	0.2	0.3	92	8	543.3	-1.1	18.7						
	34.0	32.4	1.4	0.184	0.009	2.1	0.1	0.3	0.2	90	8	543.3	-1.1	18.7						
	33.8	31.9	1.4	0.180	0.009	2.1	0.1	0.3	0.2	88	8	543.3	-1.1	18.7						
	33.6	31.4	1.4	0.176	0.008	2.1	0.1	0.3	0.2	86	8	543.3	-1.1	18.7						
	33.4	30.8	1.4	0.172	0.008	2.0	0.1	0.4	0.2	84	7	543.3	-1.1	18.7						
	33.2	30.3	1.3	0.168	0.007	2.0	0.1	0.4	0.2	82	7	543.3	-1.1	18.7						
	33.0	29.8	1.3	0.164	0.006	1.9	0.1	0.5	0.2	80	7	543.3	-1.1	18.7						
	32.8	29.3	1.3	0.160	0.006	1.9	0.1	0.5	0.2	79	7	543.3	-1.1	18.7						
	32.6	28.8	1.3	0.157	0.006	1.9	0.1	0.5	0.2	77	6	543.3	-1.1	18.7						
	32.4	28.2	1.2	0.154	0.006	1.8	0.1	0.6	0.2	75	6	543.3	-1.1	18.7						
	32.2	27.7	1.2	0.151	0.006	1.8	0.0	0.6	0.1	74	6	543.3	-1.1	18.7						
	32.0	27.2	-1.2	0.148	0.006	1.7	0.0	0.7	0.1	72	6	543.3	-1.1	18.7						
36	36.0	36.0	-1.4	0.212	0.012	2.5	0.1	0.0	0.2	100	-9	542.1	-1.1	18.7						
	35.8	35.5	1.3	0.193	0.011	2.2	0.1	0.3	0.2	91	8	542.1	-1.1	18.7						
	35.6	35.0	1.3	0.175	0.010	2.0	0.1	0.5	0.2	82	7	542.1	-1.1	18.7						
	35.4	34.5	1.2	0.158	0.009	1.8	0.1	0.7	0.2	74	6	542.1	-1.1	18.7						
	35.2	34.0	1.1	0.142	0.008	1.7	0.1	0.8	0.2	66	5	542.1	-1.1	18.7						
	35.0	33.5	1.0	0.127	0.007	1.5	0.1	1.0	0.2	59	5	542.1	-1.1	18.7						
	34.8	33.0	0.9	0.113	0.006	1.3	0.1	1.2	0.2	53	4	542.1	-1.1	18.7						
	34.6	32.5	0.9	0.101	0.005	1.2	0.1	1.3	0.2	47	4	542.1	-1.1	18.7						
	34.4	32.0	0.8	0.090	0.004	1.1	0.1	1.4	0.2	42	3	542.1	-1.1	18.7						
37	37.0	37.0	-1.4	0.220	0.012	2.6	0.1	0.0	0.2	100	-9	540.9	-1.1	18.7						
	36.8	36.5	1.3	0.200	0.010	2.3	0.1	0.3	0.2	91	8	540.9	-1.1	18.7						
	36.6	36.0	1.3	0.182	0.009	2.1	0.1	0.5	0.2	83	7	540.9	-1.1	18.7						
	36.4	35.7	1.2	0.165	0.008	1.9	0.1	0.7	0.2	75	6	540.9	-1.1	18.7						
	36.2	35.3	1.1	0.149	0.007	1.7	0.1	0.9	0.2	68	6	540.9	-1.1	18.7						
	36.0	34.9	1.1	0.134	0.006	1.6	0.1	1.0	0.2	61	5	540.9	-1.1	18.7						
	35.8	34.5	1.0	0.120	0.005	1.4	0.1	1.2	0.2	55	5	540.9	-1.1	18.7						
	35.6	34.0	0.9	0.107	0.004	1.3	0.1	1.3	0.2	49	4	540.9	-1.1	18.7						
	35.4	33.5	0.8	0.096	0.004	1.1	0.0	1.5	0.1	44	3	540.9	-1.1	18.7						
	35.2	33.0	0.8	0.086	0.003	1.0	0.0	1.6	0.1	39	2	540.9	-1.1	18.7						
38	38.0	38.0	-1.3	0.228	0.010	2.7	0.1	0.0	0.2	100	-8	539.8	-1.1	18.7						
	37.8	37.5	1.3	0.208	0.009	2.4	0.1	0.3	0.2	91	7	539.8	-1.1	18.7						
	37.6	37.0	1.3	0.190	0.009	2.2	0.1	0.5	0.2	83	6	539.8	-1.1	18.7						
	37.4	36.9	1.2	0.173	0.009	2.0	0.1	0.7	0.2	75	6	539.8	-1.1	18.7						
	37.2	36.6	1.2	0.157	0.008	1.8	0.1	0.9	0.2	68	5	539.8	-1.1	18.7						
	37.0	36.2	1.1	0.142	0.007	1.7	0.1	1.0	0.2	62	5	539.8	-1.1	18.7						
	36.8	36.0	1.1	0.128	0.006	1.5	0.1	1.2	0.2	56	4	539.8	-1.1	18.7						
	36.6	35.5	1.0	0.115	0.005	1.3	0.0	1.4	0.1	50	4	539.8	-1.1	18.7						
	36.4	35.0	1.0	0.103	0.004	1.2	0.0	1.5	0.1	45	3	539.8	-1.1	18.7						
	36.2	34.8	1.0	0.092	0.003	1.1	0.0	1.6	0.1	41	3	539.8	-1.1	18.7						
	36.0	34.4	0.9	0.083	0.003	1.0	0.0	1.7	0.1	37	3	539.8	-1.1	18.7						

Reading of Thermometer.		Temperature of the Dew-Point.	Difference for an increase of 1° in Dry.	Elastic force of Vapour.	Difference for an increase of 1° in Dry.	Vapour in a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Vap. reqd. to sat. a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Degree of Humidity. (Satn. = 100.)	Difference for an increase of 1° in Dry.	Weight of a Cubic Foot of Air, Bar. reading 29 inches.	Diff. for an increase of 1° in Dry.	Difference for one inch in Barometer and proportional parts.
Dry.	Wet.													
39	39	39°	0	in.	in.	gr.	gr.	gr.	gr.	100	-8	grs.	grs.	18°6
	38	36°7	1°3	0°238	0°012	2°8	0°1	0°0	+0°2	92	8	538°6	-1°1	in.
	37	34°4	1°3	0°199	0°010	2°3	0°1	0°3	0°2	84	8	538°9	+18°6	grs.
	36	32°0	1°2	0°181	0°009	2°1	0°1	0°5	0°2	77	7	539°0		1°1
	35	29°7	1°2	0°164	0°008	1°9	0°1	0°7	0°2	70	7	539°0		2°
	34	27°4	1°1	0°149	0°007	1°7	0°1	0°9	0°2	63	6	539°0		3°
	33	25°1	1°1	0°135	0°006	1°6	0°1	1°1	0°2	57	6	539°0		4°
	32	22°8	1°1	0°122	0°005	1°4	0°1	1°2	0°2	52	5	539°0		5°
	31	20°4	1°0	0°110	0°004	1°3	0°1	1°4	0°2	47	5	539°0		6°
	30	18°1	1°0	0°099	0°003	1°2	0°1	1°5	0°2	42	4	539°0		7°
	29	15°8	1°0	0°089	0°002	1°0	0°0	1°6	0°2	38	4	539°0		8°
	28	13°5	-1°0	0°080	0°002	0°9	-0°0	1°8	0°1	34	3	539°0		9°
								1°9	+0°1	31	-2	539°7		16°7
40	40	40°0	-1°2	0°247	0°012	2°9	-0°1	0°0	+0°2	100	-8	537°5	-1°1	
	39	37°7	1°2	0°226	0°011	2°6	0°1	0°3	0°2	92	8	537°5		
	38	35°4	1°2	0°207	0°010	2°4	0°1	0°5	0°2	84	7	537°8	+18°5	
	37	33°1	1°1	0°189	0°009	2°2	0°1	0°7	0°2	76	6	538°0		
	36	30°8	1°1	0°172	0°008	2°0	0°1	0°9	0°2	69	5	538°0		
	35	28°5	1°1	0°156	0°007	1°8	0°1	1°1	0°2	63	5	538°0		
	34	26°3	1°1	0°142	0°007	1°6	0°1	1°3	0°2	57	4	538°0		
	33	24°0	1°1	0°129	0°007	1°5	0°1	1°4	0°2	51	4	538°0		
	32	21°7	1°0	0°117	0°007	1°4	0°1	1°5	0°2	46	3	538°0		
	31	19°4	1°0	0°106	0°007	1°2	0°1	1°7	0°2	42	3	538°0		
	30	17°1	1°0	0°096	0°007	1°1	0°1	1°8	0°2	38	3	538°0		
	29	14°8	0°9	0°087	0°007	1°0	0°1	1°9	0°2	34	3	538°0		
	28	12°5	-0°9	0°078	0°006	0°9	-0°0	2°0	+0°1	31	-2	538°7		
41	41	41°0	-1°2	0°257	0°012	3°0	-0°1	0°0	+0°2	100	-8	536°4	-1°1	
	40	38°7	1°2	0°235	0°010	2°7	0°1	0°3	0°2	92	7	536°4		
	39	36°5	1°2	0°215	0°008	2°5	0°1	0°5	0°2	84	6	536°4	+18°5	
	38	34°2	1°1	0°197	0°007	2°3	0°1	0°7	0°2	77	5	536°4		
	37	32°0	1°1	0°180	0°006	2°1	0°1	0°9	0°2	70	5	536°9		
	36	29°7	1°1	0°164	0°005	1°9	0°1	1°1	0°2	64	4	537°0		
	35	27°4	1°0	0°149	0°005	1°7	0°1	1°3	0°2	58	4	537°0		
	34	25°2	1°0	0°135	0°005	1°6	0°1	1°4	0°2	53	4	537°0		
	33	22°9	1°0	0°122	0°005	1°4	0°1	1°6	0°2	48	3	537°0		
	32	20°7	1°0	0°110	0°004	1°3	0°1	1°7	0°2	43	3	537°0		
	31	18°4	0°9	0°099	0°003	1°2	0°1	1°8	0°2	39	3	537°0		
	30	16°1	0°9	0°089	0°002	1°0	0°0	2°0	0°1	35	2	537°0		
	29	13°9	0°9	0°080	0°002	0°9	0°0	2°1	0°1	31	2	537°0		
	28	11°6	-0°8	0°072	0°002	0°9	-0°0	2°1	+0°1	28	-2	537°7		
42	42	42°0	-1°2	0°267	0°012	3°1	-0°1	0°0	+0°2	100	-8	535°2	-1°1	
	41	39°8	1°2	0°245	0°011	2°8	0°1	0°3	0°2	92	8	535°2		
	40	37°5	1°1	0°225	0°010	2°6	0°1	0°5	0°2	85	7	535°2	+18°5	
	39	35°3	1°1	0°207	0°010	2°4	0°1	0°7	0°2	78	7	535°2		
	38	33°1	1°1	0°190	0°009	2°2	0°1	0°9	0°2	72	6	535°2		
	37	30°9	1°1	0°174	0°008	2°0	0°1	1°1	0°2	66	6	535°2		
	36	28°6	1°0	0°159	0°007	1°8	0°1	1°3	0°2	60	5	535°2		
	35	26°4	1°0	0°144	0°006	1°7	0°1	1°4	0°2	54	5	535°2		
	34	24°2	1°0	0°130	0°005	1°5	0°1	1°6	0°2	49	4	535°2		
	33	21°9	0°9	0°117	0°004	1°4	0°1	1°7	0°2	44	4	535°2		
	32	19°7	0°9	0°106	0°004	1°2	0°0	1°9	0°1	40	3	535°2		
	31	17°5	0°9	0°096	0°004	1°1	0°0	2°0	0°1	36	2	535°2		
	30	15°2	0°8	0°087	0°004	1°0	0°0	2°1	0°1	33	2	535°2		
	29	13°0	0°8	0°078	0°004	0°9	0°0	2°2	0°1	30	2	535°2		
	28	10°8	-0°8	0°070	0°004	0°8	-0°0	2°3	+0°1	27	-2	536°6		
43	43	43°0	-1°2	0°277	0°012	3°2	-0°1	0°0	+0°2	100	-8	534°1	-1°1	
	42	40°8	1°2	0°255	0°011	2°9	0°1	0°3	0°2	92	8	534°1		
	41	38°6	1°1	0°234	0°010	2°7	0°1	0°5	0°2	84	7	534°1	+18°4	
	40	36°4	1°1	0°215	0°010	2°5	0°1	0°7	0°2	78	7	534°1		
	39	34°2	1°1	0°197	0°009	2°3	0°1	0°9	0°2	71	6	534°1		
	38	32°0	-1°1	0°181	0°009	2°1	-0°1	1°1	+0°2	65	-6	534°8		



Reading of Thermometer.		Temperature of the Dew-Point.	Difference for an increase of 1° in Dry.	Elastic force of Vapour.	Difference for an increase of 1° in Dry.	Vapour in a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Vap. reqd. to sat. a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Degree of Humidity. (Satn. = 100.)	Difference for an increase of 1° in Dry.	Weight of a Cubic Foot of Air, Bar. reading 29 inches.	Diff. for an increase of 1° in Dry.	Difference for one inch in Barometer and proportional parts.
Dry.	Wet.													
43	38	32.0	-1.1	0.181	-0.09	gr. 2.1	-0.1	gr. 1.1	+0.2	65	-6	534.8	grs. 18.4	
37	29.8	1.1	0.166	0.09	1.9	0.1	1.3	0.2	59	5	534.9	1.1	1.8	
36	27.6	1.0	0.152	0.09	1.7	0.1	1.5	0.2	54	5	535.0	2.2	3.7	
35	25.4	1.0	0.138	0.08	1.6	0.1	1.6	0.2	49	4		3.3	5.5	
34	23.2	1.0	0.125	0.07	1.4	0.1	1.8	0.2	45	4		4.4	7.4	
33	21.0	1.0	0.113	0.06	1.3	0.1	1.9	0.2	41	4		5.5	9.2	
32	18.8	1.0	0.102	0.05	1.2	0.1	2.0	0.2	37	3		6.6	11.0	
31	16.6	0.9	0.092	0.04	1.1	0.1	2.1	0.2	34	3		7.7	12.9	
30	14.4	0.9	0.083	0.03	1.0	0.1	2.2	0.2	31	3		8.8	14.7	
29	12.2	-0.9	0.074	-0.03	0.9	-0.1	2.3	+0.2	28	-3	535.5	9.9	16.6	
44	44	44.0	-1.2	0.288	-0.13	3.3	-0.1	0.0	+0.2	100	-8	533.0	-1.0	
43	41.8	1.1	0.265	0.12	3.0	0.1	0.3	0.2	92	7		1.1	1.8	
42	39.6	1.1	0.244	0.11	2.8	0.1	0.5	0.2	84	6		2.2	3.7	
41	37.5	1.1	0.224	0.10	2.6	0.1	0.7	0.2	77	6		3.3	5.5	
40	35.3	1.1	0.205	0.08	2.4	0.1	0.9	0.2	71	5		4.4	7.4	
39	33.1	1.1	0.188	0.07	2.2	0.1	1.2	0.2	65	5		5.5	9.2	
38	30.9	1.0	0.172	0.06	2.0	0.1	1.3	0.2	59	4		6.6	11.0	
37	28.7	1.0	0.157	0.05	1.8	0.1	1.5	0.2	54	4		7.7	12.9	
36	26.6	1.0	0.143	0.04	1.7	0.1	1.6	0.2	49	4	533.9	8.8	14.7	
35	24.4	1.0	0.130	0.03	1.5	0.1	1.8	0.2	45	3	534.0	9.9	16.6	
34	22.2	1.0	0.118	0.03	1.4	0.1	1.9	0.2	41	3				
33	20.0	0.9	0.107	0.03	1.2	0.0	2.1	0.1	37	3				
32	17.8	0.9	0.097	0.03	1.1	0.0	2.2	0.1	34	3				
31	15.7	0.9	0.088	0.03	1.0	0.0	2.3	0.1	31	3				
30	13.5	-0.9	0.080	-0.02	0.9	-0.0	2.4	0.1	28	-3	534.4			
45	45	45.0	-1.1	0.299	-0.13	3.4	-0.1	0.0	+0.3	100	-7	531.9	-1.0	
44	42.8	1.1	0.275	0.11	3.1	0.1	0.3	0.3	92	7		1.1	1.8	
43	40.7	1.1	0.253	0.09	2.9	0.1	0.5	0.3	85	6		2.2	3.7	
42	38.5	1.1	0.233	0.08	2.7	0.1	0.7	0.3	78	6		3.3	5.5	
41	36.4	1.1	0.214	0.07	2.5	0.1	0.9	0.3	72	5		4.4	7.4	
40	34.2	1.0	0.197	0.07	2.3	0.1	1.1	0.3	66	5		5.5	9.2	
39	32.0	1.0	0.181	0.07	2.1	0.1	1.3	0.3	60	4		6.6	11.0	
38	29.9	1.0	0.166	0.07	1.9	0.1	1.5	0.3	55	4		7.7	12.9	
37	27.7	1.0	0.152	0.07	1.7	0.1	1.7	0.3	50	4	532.9	8.8	14.7	
36	25.6	1.0	0.139	0.07	1.6	0.1	1.8	0.3	46	3	533.0	9.9	16.6	
35	23.4	0.9	0.127	0.07	1.4	0.0	2.0	0.2	42	3				
34	21.2	0.9	0.115	0.06	1.3	0.0	2.1	0.2	38	3				
33	19.1	0.9	0.104	0.05	1.2	0.0	2.2	0.2	34	3				
32	16.9	0.9	0.094	0.04	1.1	0.0	2.3	0.1	31	3				
31	14.8	-0.9	0.085	-0.03	1.0	-0.0	2.4	+0.1	28	-3	533.4			
46	46	46.0	-1.1	0.311	-0.13	3.6	-0.2	0.0	+0.3	100	-7	530.7	-1.0	
45	43.9	1.1	0.287	0.12	3.3	0.2	0.3	0.3	93	7		1.1	1.8	
44	41.7	1.1	0.265	0.12	3.1	0.2	0.5	0.3	86	7		2.2	3.7	
43	39.6	1.1	0.244	0.11	2.8	0.1	0.8	0.2	79	6		3.3	5.5	
42	37.4	1.0	0.225	0.11	2.6	0.1	1.0	0.2	73	6		4.4	7.4	
41	35.3	1.0	0.207	0.10	2.4	0.1	1.2	0.2	67	5		5.5	9.2	
40	33.2	1.0	0.190	0.09	2.2	0.1	1.4	0.2	61	5		6.6	11.0	
39	31.0	1.0	0.174	0.08	2.0	0.1	1.6	0.2	56	4		7.7	12.9	
38	28.9	1.0	0.159	0.07	1.8	0.1	1.8	0.2	51	4		8.8	14.7	
37	26.7	0.9	0.145	0.06	1.7	0.1	1.9	0.2	47	4	531.9			
36	24.6	0.9	0.132	0.05	1.5	0.1	2.1	0.2	43	3	532.0			
35	22.5	0.9	0.120	0.04	1.4	0.1	2.2	0.2	39	3				
34	20.3	0.9	0.109	0.04	1.3	0.1	2.3	0.2	35	3				
33	18.2	0.9	0.099	0.04	1.1	0.0	2.5	0.1	32	3				
32	16.0	-0.8	0.090	-0.03	1.0	-0.0	2.6	+0.1	29	-3	532.2			
47	47	47.0	-1.1	0.323	-0.14	3.7	-0.2	0.0	+0.3	100	-7	529.6	-1.0	
46	44.9	1.1	0.298	0.13	3.4	0.2	0.3	0.3	93	7		1.1	1.8	
45	42.8	1.1	0.275	0.12	3.2	0.2	0.5	0.3	86	7		2.2	3.7	
44	40.6	1.0	0.253	0.10	2.9	0.1	0.8	0.2	79	6		3.3	5.5	
43	38.5	-1.0	0.233	-0.09	2.7	-0.1	1.0	0.2	73	6		4.4	7.4	

Reading of Thermometer.		Temperature of the Dew-point.	Difference for an increase of 1° in Dry.	Elastic force of Vapour.	Difference for an increase of 1° in Dry.	Vapour in a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Vap. reqd. to sat. a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Degree of Humidity. (Satn. = 100.)	Difference for an increase of 1° in Dry.	Weight of a Cubic Foot of Air. Bar. reading 29 inches.	Diff. for an increase of 1° in Dry.	Difference for one inch in Barometer and proportional parts.
Dry.	Wet.													
47	43	38.5	-1.0	0.233	-0.09	2.7	-0.1	1.0	+0.2	73	-5	530.1	-1.0	18.2
	42	36.4	1.0	0.214	0.08	2.5	0.1	1.2	0.2	67	5			
	41	34.3	1.0	0.197	0.08	2.3	0.1	1.4	0.2	61	5			
	40	32.2	1.0	0.181	0.08	2.1	0.1	1.6	0.2	56	4			
	39	30.0	0.9	0.166	0.07	1.9	0.1	1.8	0.2	51	4			
	38	27.9	0.9	0.152	0.06	1.7	0.1	2.0	0.2	47	3			
	37	25.8	0.9	0.139	0.05	1.6	0.1	2.1	0.2	43	3			
	36	23.7	0.9	0.127	0.05	1.5	0.1	2.2	0.2	39	3	530.9		
	35	21.6	0.9	0.116	0.05	1.3	0.0	2.4	0.1	36	3	531.0		
	34	19.4	0.8	0.105	0.04	1.2	0.0	2.5	0.1	33	2			
33	17.3	-0.8	0.095	-0.04	1.1	-0.0	2.6	+0.1	30	-2	531.1			
48	48	48.0	-1.1	0.335	-0.13	3.8	-0.2	0.0	+0.3	100	-7	528.5	-1.0	
	47	45.9	1.1	0.309	0.11	3.5	0.2	0.3	0.3	93	7			
	46	43.8	1.0	0.285	0.09	3.3	0.2	0.5	0.3	86	7	528.8	+18.2	
	45	41.7	1.0	0.263	0.08	3.0	0.1	0.8	0.3	79	6	530.0		
	44	39.6	1.0	0.243	0.08	2.8	0.1	1.0	0.3	73	6			
	43	37.5	1.0	0.224	0.07	2.6	0.1	1.2	0.3	67	5			
	42	35.4	1.0	0.206	0.06	2.4	0.1	1.4	0.3	62	5			
	41	33.3	0.9	0.189	0.05	2.2	0.1	1.6	0.3	57	4			
	40	31.2	0.9	0.173	0.04	2.0	0.1	1.8	0.3	52	4			
	39	29.1	0.9	0.159	0.04	1.8	0.1	2.0	0.2	48	3			
38	27.0	0.9	0.146	0.04	1.7	0.1	2.1	0.2	44	3				
37	24.9	0.9	0.134	0.04	1.5	0.1	2.3	0.2	40	3				
36	22.8	0.8	0.122	0.04	1.4	0.1	2.4	0.2	36	2	530.9			
35	20.7	0.8	0.111	0.04	1.3	0.0	2.5	0.2	33	2	531.0			
34	18.6	-0.8	0.101	-0.04	1.2	-0.0	2.6	+0.2	30	-2	531.1			
49	49	49.0	-1.1	0.348	-0.14	4.0	-0.2	0.0	+0.3	100	-7	527.3	-1.0	
	48	46.9	1.0	0.322	0.13	3.7	0.2	0.3	0.3	93	7			
	47	44.8	1.0	0.298	0.12	3.4	0.1	0.6	0.2	86	6			
	46	42.8	1.0	0.276	0.11	3.1	0.1	0.9	0.2	79	6	527.8	+18.2	
	45	40.7	1.0	0.255	0.10	2.9	0.1	1.1	0.2	73	5	528.0		
	44	38.6	1.0	0.235	0.09	2.7	0.1	1.3	0.2	67	5			
	43	36.5	0.9	0.217	0.09	2.5	0.1	1.5	0.2	62	4			
	42	34.4	0.9	0.200	0.09	2.3	0.1	1.7	0.2	57	4			
	41	32.3	0.9	0.184	0.08	2.1	0.1	1.9	0.2	53	4			
	40	30.2	0.9	0.169	0.07	1.9	0.1	2.1	0.2	49	4			
39	28.2	0.9	0.155	0.06	1.8	0.1	2.2	0.2	45	3				
38	26.1	0.8	0.142	0.06	1.6	0.1	2.4	0.2	41	3				
37	24.0	0.8	0.130	0.06	1.5	0.1	2.5	0.2	37	3				
36	22.0	0.8	0.118	0.05	1.3	0.0	2.7	0.1	34	2	528.9			
35	19.9	0.8	0.107	0.04	1.2	0.0	2.8	0.1	31	2	529.0			
34	17.8	-0.8	0.097	-0.03	1.1	-0.0	2.9	+0.1	28	-2	529.0			
50	50	50.0	-1.0	0.361	-0.13	4.1	-0.2	0.0	+0.3	100	-7	526.2	-1.0	
	49	47.9	1.0	0.334	0.12	3.8	0.2	0.3	0.3	93	7			
	48	45.9	1.0	0.309	0.11	3.5	0.1	0.6	0.2	86	6			
	47	43.8	1.0	0.286	0.10	3.3	0.1	0.8	0.2	80	6			
	46	41.8	1.0	0.265	0.10	3.0	0.1	1.1	0.2	74	5	526.8	+18.2	
	45	39.7	0.9	0.245	0.09	2.8	0.1	1.3	0.2	68	5	527.0		
	44	37.6	0.9	0.226	0.08	2.6	0.1	1.5	0.2	63	5			
	43	35.6	0.9	0.208	0.07	2.4	0.1	1.7	0.2	58	4			
	42	33.5	0.9	0.191	0.06	2.2	0.1	1.9	0.2	53	4			
	41	31.5	0.9	0.176	0.06	2.0	0.1	2.1	0.2	49	3			
39	29.4	0.8	0.162	0.06	1.8	0.1	2.3	0.2	45	3				
38	27.3	0.8	0.149	0.06	1.7	0.1	2.4	0.2	41	3				
37	25.3	0.8	0.136	0.05	1.5	0.1	2.6	0.2	37	2				
36	23.2	0.8	0.124	0.04	1.4	0.1	2.7	0.2	34	2				
35	21.2	0.8	0.113	0.03	1.3	0.0	2.8	0.1	31	2				
34	19.1	0.7	0.103	0.03	1.2	0.0	2.9	0.1	29	2	527.9			
	17.0	-0.7	0.094	-0.03	1.1	-0.0	3.0	+0.1	27	-2	528.0			



Reading of Thermometer.		Temperature of the Dew-Point.	Difference for an increase of 1° in Dry.	Elastic force of Vapour.	Difference for an increase of 1° in Dry.	Vapour in a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Vap. reqd. to sat. a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Degree of Humidity. (Satn. = 100.)	Difference for an increase of 1° in Dry.	Weight of a Cubic Foot of Air. Bar. reading 29 inches.	Diff. for an increase of 1° in Dry.	Difference for one inch in barometer and proportional parts.
Dry.	Wet.													
51	51	51°	0	in.	in.	gr.	gr.	gr.	gr.	100	-7	525°1	-1°	18°1
50	49°	51°	0	0°374	-0°13	4°2	-0°1	0°0	+0°3	93	7	525°1	-1°	18°1
49	46°	51°	0	0°348	-0°13	3°9	0°1	0°3	0°3	86	6	525°1	-1°	18°1
48	44°	51°	0	0°323	-0°12	3°6	0°1	0°6	0°3	80	6	525°1	-1°	18°1
47	42°	51°	0	0°299	-0°11	3°4	0°1	0°8	0°3	74	5	525°1	-1°	18°1
46	40°	51°	0	0°276	-0°10	3°1	0°1	1°1	0°3	68	5	525°1	-1°	18°1
45	38°	51°	0	0°255	-0°09	2°9	0°1	1°3	0°3	63	4	525°1	-1°	18°1
44	36°	51°	0	0°236	-0°09	2°7	0°1	1°5	0°3	58	4	525°1	-1°	18°1
43	34°	51°	0	0°218	-0°08	2°5	0°1	1°7	0°3	54	4	525°1	-1°	18°1
42	32°	51°	0	0°201	-0°07	2°3	0°1	1°9	0°3	50	3	525°1	-1°	18°1
41	30°	51°	0	0°185	-0°06	2°1	0°1	2°1	0°3	46	3	525°1	-1°	18°1
40	28°	51°	0	0°170	-0°05	1°9	0°1	2°3	0°3	42	3	525°1	-1°	18°1
39	26°	51°	0	0°156	-0°04	1°8	0°1	2°4	0°3	38	3	525°1	-1°	18°1
38	24°	51°	0	0°143	-0°04	1°6	0°1	2°6	0°3	35	2	525°1	-1°	18°1
37	22°	51°	0	0°131	-0°04	1°5	0°1	2°7	0°3	32	2	525°1	-1°	18°1
36	20°	51°	0	0°120	-0°04	1°4	0°1	2°8	0°3	29	2	525°1	-1°	18°1
35	18°	51°	0	0°110	-0°04	1°2	0°0	3°0	0°2	27	2	525°1	-1°	18°1
34	16°	51°	0	0°100	-0°03	1°1	0°0	3°1	0°2	25	2	525°1	-1°	18°1
52	52	52°	-1°	0°388	-0°14	4°4	-0°2	0°0	+0°3	100	-7	524°0	-1°	18°0
51	50°	52°	-1°	0°361	-0°13	4°1	0°2	0°3	0°3	93	6	524°0	-1°	18°0
50	48°	52°	-1°	0°335	-0°12	3°8	0°2	0°6	0°3	86	6	524°0	-1°	18°0
49	45°	52°	-1°	0°310	-0°11	3°5	0°1	0°9	0°3	80	5	524°0	-1°	18°0
48	43°	52°	-1°	0°287	-0°10	3°3	0°1	1°1	0°3	74	5	524°0	-1°	18°0
47	41°	52°	-1°	0°266	-0°09	3°0	0°1	1°4	0°2	69	5	524°0	-1°	18°0
46	39°	52°	-1°	0°246	-0°08	2°8	0°1	1°6	0°2	64	4	524°0	-1°	18°0
45	37°	52°	-1°	0°227	-0°07	2°6	0°1	1°8	0°2	59	4	524°0	-1°	18°0
44	35°	52°	-1°	0°210	-0°07	2°4	0°1	2°0	0°2	54	4	524°0	-1°	18°0
43	33°	52°	-1°	0°194	-0°06	2°2	0°1	2°2	0°2	50	3	524°0	-1°	18°0
42	31°	52°	-1°	0°179	-0°05	2°0	0°1	2°4	0°2	46	3	524°0	-1°	18°0
41	29°	52°	-1°	0°165	-0°05	1°9	0°1	2°5	0°2	42	3	524°0	-1°	18°0
40	27°	52°	-1°	0°152	-0°05	1°7	0°1	2°7	0°2	39	3	524°0	-1°	18°0
39	25°	52°	-1°	0°139	-0°04	1°6	0°1	2°8	0°2	36	2	524°0	-1°	18°0
38	23°	52°	-1°	0°127	-0°03	1°4	0°0	3°0	0°2	33	2	524°0	-1°	18°0
37	21°	52°	-1°	0°116	-0°03	1°3	0°0	3°1	0°1	30	2	524°0	-1°	18°0
36	19°	52°	-1°	0°106	-0°03	1°2	0°0	3°2	0°1	27	2	524°0	-1°	18°0
35	17°	52°	-1°	0°097	-0°03	1°1	-0°0	3°3	+0°1	25	2	524°0	-1°	18°0
53	53	53°	-1°	0°403	-0°15	4°5	-0°1	0°0	+0°3	100	-7	522°9	-1°	18°0
52	51°	53°	-1°	0°374	-0°14	4°2	0°1	0°3	0°3	93	7	523°1	-1°	18°0
51	49°	53°	-1°	0°347	-0°13	3°9	0°1	0°6	0°3	86	6	523°1	-1°	18°0
50	47°	53°	-1°	0°322	-0°12	3°6	0°1	0°9	0°3	80	6	523°1	-1°	18°0
49	45°	53°	-1°	0°299	-0°11	3°4	0°1	1°1	0°3	74	5	523°1	-1°	18°0
48	43°	53°	-1°	0°277	-0°10	3°1	0°1	1°4	0°3	69	5	523°1	-1°	18°0
47	41°	53°	-1°	0°257	-0°09	2°9	0°1	1°6	0°3	64	5	523°1	-1°	18°0
46	39°	53°	-1°	0°238	-0°08	2°7	0°1	1°8	0°3	59	4	523°1	-1°	18°0
45	37°	53°	-1°	0°220	-0°07	2°5	0°1	2°0	0°3	55	4	523°1	-1°	18°0
44	35°	53°	-1°	0°203	-0°06	2°3	0°1	2°2	0°3	51	4	523°1	-1°	18°0
43	33°	53°	-1°	0°188	-0°06	2°1	0°1	2°4	0°3	47	3	523°1	-1°	18°0
42	31°	53°	-1°	0°174	-0°06	2°0	0°1	2°5	0°3	43	3	523°1	-1°	18°0
41	29°	53°	-1°	0°160	-0°05	1°8	0°1	2°7	0°3	39	3	523°1	-1°	18°0
40	27°	53°	-1°	0°147	-0°05	1°7	0°1	2°8	0°3	36	3	523°1	-1°	18°0
39	25°	53°	-1°	0°135	-0°05	1°5	0°0	3°0	0°2	33	2	523°1	-1°	18°0
38	23°	53°	-1°	0°124	-0°05	1°4	0°0	3°1	0°2	30	2	523°1	-1°	18°0
37	21°	53°	-1°	0°113	-0°04	1°3	0°0	3°2	0°2	28	2	523°1	-1°	18°0
36	19°	53°	-1°	0°103	-0°04	1°2	-0°0	3°3	+0°2	26	2	523°1	-1°	18°0
54	54	54°	-1°	0°418	-0°15	4°7	-0°2	0°0	+0°4	100	-7	521°8	-1°	18°0
53	52°	54°	-1°	0°388	-0°13	4°4	0°2	0°3	0°4	93	7	522°0	-1°	18°0
52	50°	54°	-1°	0°360	-0°12	4°1	0°2	0°6	0°4	86	6	522°0	-1°	18°0
51	48°	54°	-1°	0°334	-0°11	3°8	0°1	0°9	0°4	80	6	522°0	-1°	18°0
50	46°	54°	-1°	0°310	-0°09	3°5	0°1	1°2	0°3	74	5	522°0	-1°	18°0
49	44°	54°	-1°	0°288	-0°08	3°3	0°1	1°4	0°3	69	5	522°0	-1°	18°0
48	42°	54°	-1°	0°267	-0°07	3°0	-0°1	1°7	+0°3	64	4	522°0	-1°	18°0

Reading of Thermometer.		Temperature of the Dew-Point.	Difference for an increase of 1° in Dry.	Elastic force of Vapour.	Difference for an increase of 1° in Dry.	Vapour in a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Vap. reqd. to sat. a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Degree of Humidity. (Satn. = 100.)	Difference for an increase of 1° in Dry.	Weight of a Cubic Foot of Air. Bar. reading 29 inches.	Diff. for an increase of 1° in Dry.	Difference for one inch in Barometer and proportional parts.
Dry.	Wet.													
54	48	42°1	-0°8	in.	in.	gr.	gr.	gr.	gr.	64	-4	522°7	-1°	18°0
47	40°1	40°1	0°8	0°248	-0°07	2°8	0°1	1°9	0°3	59	4	522°9	-1°	18°0
46	38°2	38°2	0°8	0°230	-0°07	2°6	0°1	2°1	0°3	55	3	523°0	+18°0	18°0
45	36°2	36°2	0°8	0°213	-0°07	2°4	0°1	2°3	0°3	51	3	523°0	+18°0	18°0
44	34°2	34°2	0°8	0°197	-0°07	2°2	0°1	2°5	0°3	47	3	523°0	+18°0	18°0
43	32°2	32°2	0°7	0°182	-0°07	2°1	0°1	2°6	0°3	43	3	523°0	+18°0	18°0
42	30°2	30°2	0°7	0°168	-0°06	1°9	0°1	2°8	0°3	40	3	523°0	+18°0	18°0
41	28°3	28°3	0°7	0°155	-0°05	1°7	0°0	3°0	0°2	37	2	523°0	+18°0	18°0
40	26°3	26°3	0°7	0°142	-0°04	1°6	0°0	3°1	0°2	34	2	523°0	+18°0	18°0
39	24°3	24°3	0°7	0°130	-0°03	1°5	0°0	3°2	0°2	31	2	523°0	+18°0	18°0
38	22°3	22°3	0°6	0°119	-0°03	1°3	0°0	3°4	0°2	28	2	523°0	+18°0	18°0
37	20°3	20°3	-0°6	0°109	-0°03	1°2	-0°0	3°5	+0°2	26	-2	523°8	+18°0	18°0
55	55	55°0	-0°9	0°433	-0°14	4°9	-0°1	0°0	+0°2	100	-7	520°6	-1°	18°0
54	53°0	53°0	0°9	0°403	-0°12	4°5	0°1	0°4	0°2	93	6	520°8	-1°	18°0
53	51°1	51°1	0°9	0°375	-0°10	4°2	0°1	0°7	0°2	87	5	521°0	+18°0	18°0
52	49°1	49°1	0°9	0°349	-0°09	3°9	0°1	1°0	0°2	81	5	521°0	+18°0	18°0
51	47°2	47°2	0°9	0°325	-0°08	3°7	0°1	1°2	0°2	75	5	521°0	+18°0	18°0
50	45°2	45°2	0°8	0°302	-0°07	3°4	0°1	1°5	0°2	70	5	521°0	+18°0	18°0
49	43°2	43°2	0°8	0°280	-0°06	3°1	0°1	1°8	0°2	65	4	521°0	+18°0	18°0
48	41°3	41°3	0°8	0°260	-0°06	2°9	0°1	2°0	0°2	60	4	521°0	+18°0	18°0
47	39°3	39°3	0°8	0°241	-0°06	2°7	0°1	2°2	0°2	56	4	521°0	+18°0	18°0
46	37°4	37°4	0°8	0°223	-0°06	2°5	0°1	2°4	0°2	52	3	521°0	+18°0	18°0
45	35°4	35°4	0°7	0°206	-0°06	2°3	0°0	2°6	0°2	48	3	521°0	+18°0	18°0
44	33°4	33°4	0°7	0°190	-0°05	2°1	0°0	2°8	0°2	44	3	521°0	+18°0	18°0
43	31°5	31°5	0°7	0°175	-0°04	2°0	0°0	2°9	0°2	41	3	521°0	+18°0	18°0
42	29°5	29°5	0°7	0°162	-0°04	1°8	0°0	3°1	0°2	38	2	521°0	+18°0	18°0
41	27°6	27°6	0°7	0°150	-0°04	1°7	0°0	3°2	0°2	35	2	521°0	+18°0	18°0
40	25°6	25°6	0°6	0°138	-0°03	1°6	0°0	3°3	0°2	32	2	521°0	+18°0	18°0
39	23°6	23°6	0°6	0°127	-0°03	1°4	0°0	3°5	0°2	29	2	521°0	+18°0	18°0
38	21°7	21°7	-0°6	0°116	-0°03	1°3	-0°0	3°6	+0°2	27	-2	522°7	+18°0	18°0
56	56	56°0	-0°9	0°449	-0°15	5°0	-0°2	0°0	+0°4	100	-7	519°6	-1°	18°0
55	54°1	54°1	0°9	0°419	-0°14	4°7	0°2	0°3	0°4	93	6	519°8	-1°	18°0
54	52°1	52°1	0°9	0°391	-0°14	4°4	0°2	0°6	0°4	87	6	519°9	+17°9	18°0
53	50°2	50°2	0°9	0°365	-0°14	4°1	0°2	0°9	0°4	81	6	520°1	+17°9	18°0
52	48°2	48°2	0°8	0°340	-0°13	3°8	0°1	1°2	0°3	75	5	520°1	+17°9	18°0
51	46°3	46°3	0°8	0°317	-0°13	3°5	0°1	1°5	0°3	70	5	520°1	+17°9	18°0
50	44°4	44°4	0°8	0°295	-0°12	3°3	0°1	1°7	0°3	65	4	520°1	+17°9	18°0
49	42°4	42°4	0°8	0°274	-0°11	3°1	0°1	1°9	0°3	60	4	520°1	+17°9	18°0
48	40°5	40°5	0°8	0°254	-0°10	2°8	0°1	2°2	0°3	56	4	520°9	+17°9	18°0
47	38°5	38°5	0°7	0°235	-0°08	2°6	0°1	2°4	0°3	52	3	521°0	+17°9	18°0
46	36°6	36°6	0°7	0°217	-0°07	2°4	0°1	2°6	0°3	48	3	521°0	+17°9	18°0
45	34°7	34°7	0°7	0°200	-0°05	2°3	0°1	2°7	0°3	44	3	521°0	+17°9	18°0
44	32°7	32°7	0°7	0°185	-0°04	2°1	0°1	2°9	0°3	41	3	521°0	+17°9	18°0
43	30°8	30°8	0°7	0°171	-0°04	1°9	0°0	3°1	0°2	38	2	521°0	+17°9	18°0
42	28°8	28°8	0°6	0°158	-0°04	1°8	0°0	3°2	0°2	35	2	521°0	+17°9	18°0
41	26°9	26°9	0°6	0°146	-0°04	1°6	0°0	3°4	0°2	32	2	521°0	+17°9	18°0
40	25°0	25°0	0°6	0°135	-0°04	1°5	0°0	3°5	0°2	29	2	521°0	+17°9	18°0
39	23°0	23°0	-0°6	0°124	-0°04	1°4	-0°0	3°6	+0°2	27	-2	521°7	+17°9	18°0
57	57	57°0	-0°9	0°465	-0°14	5°2	-0°2	0°0	+0°4	100	-6	518°4	-1°	18°0
56	55°1	55°1	0°9	0°434	-0°13	4°8	0°2	0°4	0°4	93	6	518°6	-1°	18°0
55	53°2	53°2	0°9	0°405	-0°12	4°5	0°1	0°7	0°3	87	6	518°8	+17°9	18°0
54	51°2	51°2	0°8	0°377	-0°11	4°2	0°1	1°0	0°3	81	5	519°0	+17°9	18°0
53	49°3	49°3	0°8	0°351	-0°10	3°9	0°1	1°3	0°3	75	5	519°0	+17°9	18°0
52	47°4	47°4	0°8	0°327	-0°09	3°7	0°1	1°5	0°3	70	4	519°0	+17°9	18°0
51	45°5	45°5	0°8	0°304	-0°08	3°4	0°1	1°8	0°3	65	4	519°0	+17°9	18°0
50	43°6	43°6	0°8	0°283	-0°08	3°2	0°1	2°0	0°3	61	4	519°0	+17°9	18°0
49	41°6	41°6	0°7	0°263	-0°07	3°0	0°1	2°2	0°3	57	4	519°0	+17°9	18°0
48	39°7	39°7	0°7	0°244	-0°06	2°7	0°1	2°5	0°3	53	3	519°0	+17°9	18°0
47	37°8	37°8	0°7	0°227	-0°06	2°5	0°1	2°7	0°3	49	3	520°0	+17°9	18°0
46	35°9	35°9	0°7	0°211	-0°06	2°4	0°1	2°8	0°3	45	3	520°2	+17°9	18°0
45	34°0	34°0	-0°7	0°196	-0°06	2°2	-0°1	3°0	+0°3	42	-2	520°2	+17°9	18°0



Reading of Thermometer.		Temperature of the Dew-Point.	Difference for an increase of 1° in Dry.	Elastic force of Vapour.	Difference for an increase of 1° in Dry.	Vapour in a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Vap. reqd. to sat. a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Degree of Humidity. (Satn. = 100).	Difference for an increase of 1° in Dry.	Weight of a Cubic Foot of Air, Bar. reading 29 inches.	Diff. for an increase of 1° in Dry.	Difference for one inch in Barometer and proportional parts.
Dry.	Wet.													
57	45	34.0	-0.7	0.196	-0.06	2.2	-0.1	3.0	+0.2	42	-2	520.2	-1.0	17.8
	44	32.0	0.6	0.181	0.05	2.0	0.0	3.2	0.2	39	2	520.3		
	43	30.1	0.6	0.167	0.04	1.9	0.0	3.3	0.2	36	2	520.4	+17.9	
	42	28.2	0.6	0.154	0.03	1.7	0.0	3.5	0.2	33	2	520.5		
	41	26.3	0.6	0.142	0.03	1.6	0.0	3.6	0.2	30	2	520.6		
	40	24.4	0.6	0.131	0.03	1.5	0.0	3.7	0.2	28	2	520.7		
	39	22.4	-0.6	0.120	-0.03	1.4	-0.0	3.8	+0.2	26	-2	520.7		
58	58	58.0	-0.9	0.482	-0.15	5.4	-0.2	0.0	+0.4	100	-6	517.4	-1.0	
	57	56.1	0.9	0.451	0.15	5.0	0.2	0.4	0.4	93	6	517.6		
	56	54.2	0.9	0.421	0.14	4.7	0.2	0.7	0.4	87	6	517.8	+17.8	
	55	52.3	0.9	0.393	0.13	4.4	0.2	1.0	0.4	81	5	518.0		
	54	50.4	0.9	0.367	0.13	4.1	0.1	1.3	0.3	76	5	518.1		
	53	48.5	0.8	0.342	0.12	3.8	0.1	1.6	0.3	71	5	518.3		
	52	46.6	0.8	0.318	0.10	3.6	0.1	1.8	0.3	66	4	518.5		
	51	44.7	0.8	0.296	0.09	3.3	0.1	2.1	0.3	61	4	518.6		
	50	42.8	0.8	0.275	0.08	3.1	0.1	2.3	0.3	57	4	518.7		
	49	40.9	0.8	0.256	0.08	2.9	0.1	2.5	0.3	53	4	518.9		
	48	39.0	0.8	0.238	0.08	2.7	0.1	2.7	0.3	49	3	519.0		
	47	37.1	0.8	0.221	0.08	2.5	0.1	2.9	0.3	46	3	519.1		
	46	35.2	0.8	0.205	0.08	2.3	0.1	3.1	0.3	43	3	519.2		
	45	33.3	0.8	0.190	0.08	2.1	0.1	3.3	0.3	40	3	519.3		
	44	31.4	0.7	0.176	0.07	2.0	0.1	3.4	0.3	37	2	519.4		
	43	29.5	0.7	0.163	0.06	1.8	0.0	3.6	0.2	34	2	519.5		
	42	27.6	0.7	0.151	0.06	1.7	0.0	3.7	0.2	31	2	519.6		
	41	25.7	0.7	0.139	0.05	1.6	0.0	3.8	0.2	28	2	519.7		
	40	23.8	-0.7	0.128	-0.04	1.4	-0.0	4.0	+0.2	26	-2	519.7		
59	59	59.0	-0.8	0.500	-0.15	5.6	-0.2	0.0	+0.4	100	-6	516.2	-1.0	
	58	57.1	0.8	0.467	0.14	5.2	0.2	0.4	0.4	94	6	516.4		
	57	55.2	0.8	0.436	0.13	4.9	0.2	0.7	0.4	88	6	516.6	+17.8	
	56	53.3	0.8	0.407	0.12	4.6	0.2	1.0	0.4	82	5	516.8		
	55	51.4	0.8	0.380	0.11	4.3	0.2	1.3	0.4	76	5	517.0		
	54	49.5	0.8	0.354	0.10	4.0	0.2	1.6	0.4	71	5	517.2		
	53	47.7	0.8	0.330	0.09	3.7	0.1	1.9	0.3	66	4	517.3		
	52	45.8	0.8	0.308	0.09	3.5	0.1	2.1	0.3	61	4	517.4		
	51	43.9	0.8	0.287	0.09	3.2	0.1	2.4	0.3	57	4	517.5		
	50	42.0	0.8	0.267	0.08	3.0	0.1	2.6	0.3	53	4	517.6		
	49	40.1	0.8	0.248	0.07	2.8	0.1	2.8	0.3	49	3	517.9		
	48	38.2	0.8	0.230	0.06	2.6	0.1	3.0	0.3	46	3	518.0		
	47	36.3	0.7	0.213	0.05	2.4	0.1	3.2	0.3	43	3	518.1		
	46	34.4	0.7	0.197	0.04	2.2	0.1	3.4	0.3	40	3	518.2		
	45	32.5	0.7	0.182	0.03	2.1	0.1	3.5	0.3	37	2	518.3		
	44	30.7	0.7	0.169	0.03	1.9	0.1	3.7	0.3	34	2	518.4		
	43	28.8	0.7	0.157	0.03	1.8	0.1	3.8	0.3	31	2	518.5		
	42	26.9	0.7	0.145	0.03	1.6	0.0	4.0	0.2	29	2	518.6		
	41	25.0	0.7	0.134	0.03	1.5	0.0	4.1	0.2	27	2	518.7		
	40	23.1	-0.7	0.124	-0.03	1.4	-0.0	4.2	+0.2	25	-2	518.7		
60	60	60.0	-0.8	0.518	-0.15	5.8	-0.2	0.0	+0.4	100	-6	515.0	-1.0	
	59	58.1	0.8	0.485	0.15	5.4	0.2	0.4	0.4	94	6	515.2		
	58	56.2	0.8	0.453	0.14	5.1	0.2	0.7	0.4	88	6	515.4	+17.8	
	57	54.4	0.8	0.423	0.13	4.7	0.1	1.1	0.3	82	5	515.7		
	56	52.5	0.8	0.395	0.12	4.4	0.1	1.4	0.3	76	5	515.9		
	55	50.6	0.8	0.369	0.11	4.1	0.1	1.7	0.3	71	5	516.0		
	54	48.7	0.8	0.344	0.10	3.8	0.1	2.0	0.3	66	4	516.2		
	53	46.8	0.8	0.321	0.10	3.6	0.1	2.2	0.3	62	4	516.3		
	52	45.0	0.8	0.299	0.10	3.3	0.1	2.5	0.3	58	4	516.4		
	51	43.1	0.8	0.278	0.09	3.1	0.1	2.7	0.3	54	3	516.5		
	50	41.2	0.8	0.259	0.09	2.9	0.1	2.9	0.3	50	3	516.6		
	49	39.3	0.7	0.241	0.09	2.7	0.1	3.1	0.3	46	3	516.9		
	48	37.4	0.7	0.224	0.08	2.5	0.1	3.3	0.3	43	3	517.0		
	47	35.6	0.7	0.208	0.07	2.3	0.1	3.5	0.3	40	3	517.1		
	46	33.7	-0.7	0.193	-0.06	2.2	-0.1	3.6	+0.3	37	-2	517.2		

Reading of Thermometer.		Temperature of the Dew-Point.	Difference for an increase of 1° in Dry.	Elastic force of Vapour.	Difference for an increase of 1° in Dry.	Vapour in a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Vap. reqd. to sat. a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Degree of Humidity. (Satn. = 100).	Difference for an increase of 1° in Dry.	Weight of a Cubic Foot of Air, Bar. reading 29 inches.	Diff. for an increase of 1° in Dry.	Difference for one inch in Barometer and proportional parts.
Dry.	Wet.													
60	46	33.7	-0.7	0.193	-0.06	2.2	-0.1	3.6	+0.3	37	-2	517.2	-1.0	17.7
	45	31.8	0.7	0.179	0.05	2.0	0.1	3.8	0.3	34	2	517.3		in. 1.1
	44	30.0	0.7	0.166	0.05	1.8	0.0	4.0	0.2	32	2	517.4	+17.8	1.2
	43	28.1	0.7	0.154	0.05	1.7	0.0	4.1	0.2	30	2	517.5		3.5
	42	26.2	0.7	0.142	0.04	1.6	0.0	4.2	0.2	28	2	517.6		5.3
	41	24.3	-0.7	0.131	-0.04	1.4	-0.0	4.4	+0.2	26	-2	517.6		7.1
61	61	61.0	-0.8	0.537	-0.17	6.0	-0.2	0.0	+0.4	100	-6	514.0	-1.0	5.8
	60	59.1	0.8	0.503	0.16	5.6	0.2	0.4	0.4	94	6	514.2		8.9
	59	57.3	0.8	0.470	0.14	5.2	0.2	0.8	0.4	88	6	514.4	+17.7	10.6
	58	55.4	0.8	0.439	0.13	4.9	0.2	1.1	0.4	82	5	514.6		12.4
	57	53.5	0.8	0.410	0.12	4.6	0.2	1.4	0.4	77	5	514.8		14.2
	56	51.7	0.8	0.383	0.11	4.3	0.2	1.7	0.4	72	5	515.0		15.9
	55	49.8	0.8	0.358	0.11	4.0	0.1	2.0	0.3	67	4	515.2		
	54	47.9	0.8	0.334	0.10	3.7	0.1	2.3	0.3	62	4	515.4		
	53	46.0	0.8	0.311	0.09	3.5	0.1	2.5	0.3	58	4	515.5		
	52	44.1	0.8	0.289	0.08	3.2	0.1	2.8	0.3	54	3	515.6		
	51	42.3	0.8	0.269	0.07	3.0	0.1	3.0	0.3	50	3	515.7		
	50	40.4	0.7	0.250	0.06	2.8	0.1	3.2	0.3	47	3	515.9		
	49	38.6	0.7	0.232	0.05	2.6	0.1	3.4	0.3	44	3	516.0		
	48	36.7	0.7	0.216	0.05	2.4	0.1	3.6	0.3	41	2	516.1		
	47	34.8	0.7	0.201	0.05	2.3	0.1	3.7	0.3	38	2	516.2		
	46	33.0	0.7	0.187	0.05	2.1	0.1	3.9	0.3	35	2	516.3		
62	45	31.1	0.7	0.174	0.05	1.9	0.0	4.1	0.2	32	2	516.4		
	44	29.2	0.7	0.161	0.04	1.8	0.0	4.2	0.2	30	2	516.5		
	43	27.3	0.6	0.149	0.04	1.7	0.0	4.3	0.2	28	2	516.6		
	42	25.5	-0.6	0.138	-0.04	1.5	-0.0	4.5	+0.2	26	-2	516.6		
	62	62.0	-0.8	0.556	-0.16	6.2	-0.2	0.0	+0.4	100	-6	512.9	-1.0	
	61	60.1	0.8	0.520	0.15	5.8	0.2	0.4	0.4	94	6	513.1		
	60	58.3	0.8	0.487	0.14	5.4	0.2	0.8	0.4	88	6	513.3	+17.7	
	59	56.4	0.8	0.456	0.13	5.1	0.2	1.1	0.4	82	5	513.5		
63	58	54.6	0.8	0.427	0.13	4.7	0.1	1.5	0.3	77	5	513.7		
	57	52.7	0.8	0.399	0.12	4.4	0.1	1.8	0.3	72	5	513.9		
	56	50.8	0.8	0.372	0.11	4.1	0.1	2.1	0.3	67	4	514.1		
	55	49.0	0.8	0.347	0.10	3.9	0.1	2.3	0.3	62	4	514.2		
	54	47.1	0.8	0.323	0.09	3.6	0.1	2.6	0.3	58	4	514.4		
	53	45.3	0.7	0.301	0.09	3.4	0.1	2.8	0.3	54	3	514.5		
	52	43.4	0.7	0.281	0.09	3.1	0.1	3.1	0.3	50	3	514.7		
	51	41.5	0.7	0.262	0.08	2.9	0.1	3.3	0.3	47	3	514.8		
	50	39.7	0.7	0.244	0.08	2.7	0.1	3.5	0.3	44	3	514.9		
	49	37.8	0.7	0.227	0.07	2.5	0.1	3.7	0.3	41	3	515.0		
	48	36.0	0.7	0.211	0.06	2.4	0.1	3.8	0.3	38	3	515.1		
	47	34.1	0.7	0.196	0.05	2.2	0.1	4.0	0.3	35	2	515.2		
	46	32.2	0.7	0.182	0.04	2.0	0.0	4.2	0.2	32	2	515.3		
	45	30.4	0.6	0.169	0.04	1.9	0.0	4.3	0.2	30	2	515.4		
	44	28.5	0.6	0.157	0.04	1.7	0.0	4.5	0.2	28	2	515.5		
	43	26.7	-0.6	0.145	-0.04	1.6	-0.0	4.6	+0.2	26	-2	515.6		
64	63	63.0	-0.8	0.576	-0.16	6.4	-0.2	0.0	+0.4	100	-6	511.7	-1.0	
	62	61.2	0.8	0.540	0.15	6.0	0.2	0.4	0.4	94	6	512.0		
	61	59.3	0.8	0.506	0.14	5.6	0.2	0.8	0.4	88	5	512.2	+17.7	
	60	57.5	0.8	0.474	0.13	5.2	0.1	1.2	0.3	82	5	512.4		
	59	55.6	0.8	0.443	0.12	4.9	0.1	1.5	0.3	77	4	512.6		
	58	53.8	0.8	0.414	0.11	4.6	0.1	1.8	0.3	72	4	513.1		
	57	51.9	0.7	0.387	0.11	4.3	0.1	2.1	0.3	67	4	513.1		
	56	50.1	0.7	0.361	0.10	4.0	0.1	2.4	0.3	63	4	513.1		
	55	48.2	0.7	0.337	0.09	3.7	0.1	2.7	0.3	59	4	513.1		
	54	46.4	0.7	0.314	0.08	3.5	0.1	2.9	0.3	55	3	513.1		
	53	44.5	0.6	0.292	0.07	3.3	0.1	3.1	0.3	51	3	513.1		
	52	42.6	0.6	0.272	0.06	3.0	0.0	3.4	0.2	47	3	513.1		
51	40.8	0.6	0.253	0.05	2.8	0.0	3.6	0.2	44	2	513.1			
50	39.0	0.6	0.236	0.04	2.6	0.0	3.8	0.2	41	2	514.1			
49	37.1	-0.5	0.220	-0.04	2.4	-0.0	4.0	+0.2	38	-2	514.1			



Reading of Thermometer.		Temperature of the Dew-point.	Difference for an increase of 1° in Dry.	Elastic force of Vapour.	Difference for an increase of 1° in Dry.	Vapour in a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Vap. reqd. to sat. a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Degree of Humidity. (Satn. = 100.)	Difference for an increase of 1° in Dry.	Weight of a Cubic Foot of Air, Bar. reading 29 inches.	Diff. for an increase of 1 in. in Bar.	Difference for one inch in Barometer and proportional parts.
Dry.	Wet.													
63	49	37.1	-0.5	0.220	-0.004	2.4	-0.0	4.0	+0.2	38	-2	514.1	-1.0	17.6
	48	35.2	0.5	0.205	0.004	2.3	0.0	4.1	0.2	35	2	514.1		
	47	33.4	0.5	0.191	0.004	2.1	0.0	4.3	0.2	33	2	514.1		
	46	31.6	0.5	0.178	0.004	2.0	0.0	4.4	0.2	31	2	514.1		
	45	29.7	0.5	0.165	0.004	1.8	0.0	4.6	0.2	29	2	514.1		
	44	27.8	-0.5	0.153	-0.004	1.7	-0.0	4.7	+0.2	27	-2	514.5		
64	64	64.0	-0.8	0.596	-0.016	6.6	-0.2	0.0	+0.4	100	-6	510.7	-0.9	
	63	62.2	0.8	0.560	0.016	6.2	0.2	0.4	0.4	94	6	510.9		
	62	60.3	0.8	0.525	0.015	5.8	0.2	0.8	0.4	88	5	511.1	+17.6	
	61	58.5	0.8	0.492	0.014	5.4	0.2	1.2	0.4	82	5	511.1		
	60	56.7	0.8	0.461	0.014	5.1	0.2	1.5	0.4	77	5	511.1		
	59	54.8	0.8	0.431	0.013	4.8	0.2	1.8	0.4	72	4	511.9		
	58	53.0	0.8	0.403	0.012	4.5	0.2	2.1	0.4	67	4	512.1		
	57	51.2	0.8	0.376	0.010	4.2	0.2	2.4	0.4	63	4	512.1		
	56	49.4	0.8	0.351	0.009	3.9	0.1	2.7	0.3	59	4	512.1		
	55	47.5	0.7	0.328	0.008	3.6	0.1	3.0	0.3	55	3	512.8		
	54	45.7	0.7	0.306	0.007	3.4	0.1	3.2	0.3	51	3	513.0		
	53	43.9	0.7	0.286	0.007	3.2	0.1	3.4	0.3	48	3	513.5		
	52	42.0	0.7	0.267	0.007	3.0	0.1	3.6	0.3	45	3	513.5		
	51	40.2	0.7	0.249	0.007	2.8	0.1	3.8	0.3	42	3	513.5		
	50	38.4	0.7	0.232	0.006	2.6	0.1	4.0	0.3	39	2	513.5		
	49	36.6	0.7	0.216	0.006	2.4	0.1	4.2	0.3	36	2	513.5		
	48	34.7	0.6	0.201	0.005	2.2	0.0	4.4	0.2	33	2	513.5		
	47	32.9	0.6	0.187	0.005	2.1	0.0	4.5	0.2	31	2	513.5		
	46	31.1	0.6	0.174	0.005	1.9	0.0	4.7	0.2	29	2	513.5		
	45	29.2	-0.6	0.162	-0.004	1.8	-0.0	4.8	+0.2	27	-2	513.5		
65	65	65.0	-0.8	0.617	-0.016	6.8	-0.2	0.0	+0.4	100	-6	509.5	-0.9	
	64	63.2	0.8	0.580	0.016	6.4	0.2	0.4	0.4	94	6	509.8		
	63	61.4	0.8	0.544	0.015	6.0	0.2	0.8	0.4	88	6	510.0	+17.6	
	62	59.5	0.8	0.510	0.014	5.6	0.2	1.2	0.4	83	5	510.0		
	61	57.7	0.8	0.478	0.013	5.3	0.2	1.5	0.4	78	5	510.8		
	60	55.9	0.8	0.447	0.012	4.9	0.1	1.9	0.3	73	5	511.0		
	59	54.1	0.8	0.418	0.011	4.6	0.1	2.2	0.3	68	4	511.0		
	58	52.3	0.8	0.391	0.010	4.3	0.1	2.5	0.3	63	4	511.0		
	57	50.4	0.7	0.366	0.010	4.0	0.1	2.8	0.3	59	4	511.0		
	56	48.6	0.7	0.342	0.009	3.8	0.1	3.0	0.3	55	4	511.0		
	55	46.8	0.7	0.320	0.009	3.5	0.1	3.3	0.3	51	3	511.0		
	54	45.0	0.7	0.299	0.009	3.3	0.1	3.5	0.3	48	3	511.0		
	53	43.2	0.7	0.279	0.008	3.1	0.1	3.7	0.3	45	3	511.0		
	52	41.3	0.7	0.260	0.007	2.9	0.1	3.9	0.3	42	2	511.9		
	51	39.5	0.7	0.242	0.006	2.7	0.1	4.1	0.3	39	2	512.0		
	50	37.7	0.7	0.225	0.005	2.5	0.1	4.3	0.3	36	2	512.0		
	49	35.9	0.7	0.210	0.005	2.3	0.1	4.5	0.3	34	2	512.0		
	48	34.1	0.7	0.196	0.005	2.2	0.1	4.6	0.3	32	2	512.0		
	47	32.2	0.6	0.182	0.004	2.0	0.0	4.8	0.2	29	2	512.0		
	46	30.4	0.6	0.169	0.004	1.9	0.0	4.9	0.2	27	1	512.0		
	45	28.6	0.6	0.157	0.004	1.7	0.0	5.1	0.2	25	1	512.0		
	44	26.8	-0.6	0.146	-0.003	1.6	-0.0	5.2	+0.2	23	-1	512.6		
66	66	66.0	-0.8	0.639	-0.017	7.0	-0.2	0.0	+0.5	100	-6	508.5	-0.9	
	65	64.2	0.8	0.601	0.017	6.6	0.2	0.4	0.5	94	6	508.8		
	64	62.4	0.8	0.564	0.016	6.2	0.2	0.8	0.5	88	5	509.0	+17.5	
	63	60.6	0.8	0.529	0.015	5.8	0.2	1.2	0.5	83	5	509.0		
	62	58.8	0.8	0.496	0.014	5.5	0.2	1.5	0.5	78	5	509.8		
	61	57.0	0.8	0.464	0.012	5.1	0.1	1.9	0.4	73	4	510.0		
	60	55.1	0.7	0.434	0.011	4.8	0.1	2.2	0.4	68	4	510.0		
	59	53.3	0.7	0.406	0.010	4.5	0.1	2.5	0.4	64	4	510.0		
	58	51.5	0.7	0.380	0.009	4.2	0.1	2.8	0.4	60	3	510.0		
	57	49.7	0.7	0.356	0.008	3.9	0.1	3.1	0.4	56	3	510.0		
	56	47.9	0.7	0.333	0.008	3.7	0.1	3.3	0.4	52	3	510.0		
	55	46.1	0.7	0.311	0.007	3.4	0.1	3.6	0.4	48	3	510.0		
	54	44.3	-0.7	0.280	-0.006	3.2	-0.1	3.8	+0.4	45	-3	510.8		

Reading of Thermometer.		Temperature of the Dew-Point.	Difference for an increase of 1° in Dry.	Elastic force of Vapour.	Difference for an increase of 1° in Dry.	Vapour in a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Vap. reqd. to sat. a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Degree of Humidity. (Satn. = 100.)	Difference for an increase of 1° in Dry.	Weight of a Cubic Foot of Air, Bar. reading 29 inches.	Diff. for an increase of 1° in Dry.	Difference for one inch in Barometer and proportional parts.
Dry.	Wet.													
66	54	44.3	-0.7	0.280	-0.006	3.2	-0.1	3.8	+0.4	45	-3	510.8	-0.9	1.5
	53	42.5	0.7	0.271	0.006	3.0	0.1	4.0	0.4	42	2	510.9		
	52	40.7	0.7	0.253	0.006	2.8	0.1	4.2	0.4	40	2	511.0	+17.5	
	51	38.9	0.7	0.236	0.006	2.6	0.1	4.4	0.4	37	2			
	50	37.0	0.6	0.220	0.006	2.4	0.1	4.6	0.4	34	2			
	49	35.2	0.6	0.205	0.006	2.3	0.1	4.7	0.4	32	2			
	48	33.4	0.6	0.191	0.006	2.1	0.1	4.9	0.4	30	2			
	47	31.6	0.6	0.178	0.006	2.0	0.0	5.0	0.3	28	2			
	46	29.8	0.6	0.165	0.005	1.8	0.0	5.2	0.3	26	2			
	45	28.0	-0.6	0.153	-0.005	1.7	-0.0	5.3	+0.3	24	-2	511.7		
67	67	67.0	-0.8	0.661	-0.017	7.3	-0.2	0.0	+0.4	100	-6	507.4	-0.9	
	66	65.2	0.8	0.622	0.016	6.8	0.2	0.5	0.4	94	6	507.6		
	65	63.4	0.8	0.585	0.016	6.4	0.2	0.9	0.4	88	6	507.9	+17.5	
	64	61.6	0.8	0.549	0.015	6.0	0.2	1.3	0.4	83	5	508.1		
	63	59.8	0.7	0.515	0.014	5.6	0.2	1.7	0.4	78	5			
	62	58.0	0.7	0.483	0.013	5.3	0.2	2.0	0.4	73	5			
	61	56.2	0.7	0.453	0.012	5.0	0.2	2.3	0.4	68	5			
	60	54.4	0.7	0.424	0.011	4.7	0.2	2.6	0.4	64	4	508.9		
	59	52.6	0.7	0.397	0.010	4.4	0.2	2.9	0.4	60	4	509.1		
	58	50.8	0.7	0.372	0.010	4.1	0.1	3.2	0.3	56	4			
68	57	49.0	0.7	0.348	0.009	3.8	0.1	3.5	0.3	52	4			
	56	47.2	0.7	0.325	0.008	3.6	0.1	3.7	0.3	49	3			
	55	45.4	0.7	0.304	0.008	3.3	0.1	4.0	0.3	46	3			
	54	43.6	0.7	0.284	0.008	3.1	0.1	4.2	0.3	43	3			
	53	41.8	0.6	0.265	0.007	2.9	0.1	4.4	0.3	40	3	509.9		
	52	40.0	0.6	0.247	0.006	2.7	0.1	4.6	0.3	37	3	510.1		
	51	38.2	0.6	0.230	0.005	2.5	0.1	4.8	0.3	34	3			
	50	36.4	0.6	0.214	0.004	2.4	0.1	4.9	0.3	32	2			
	49	34.6	0.6	0.199	0.003	2.2	0.0	5.1	0.2	30	2			
	48	32.8	0.6	0.185	0.003	2.0	0.0	5.3	0.2	28	2			
69	47	31.0	0.6	0.172	0.003	1.9	0.0	5.4	0.2	26	2			
	46	29.2	-0.6	0.160	-0.003	1.8	-0.0	5.5	+0.2	24	-2	510.6		
	68	68.0	-0.8	0.684	-0.018	7.5	-0.2	0.0	+0.5	100	-6	506.2	-0.9	
	67	66.2	0.8	0.644	0.018	7.1	0.2	0.4	0.5	94	6			
	66	64.4	0.8	0.606	0.017	6.6	0.2	0.9	0.5	88	6	506.7	+17.5	
	65	62.6	0.8	0.569	0.016	6.2	0.2	1.3	0.5	83	5	507.0		
	64	60.8	0.8	0.534	0.016	5.8	0.2	1.7	0.5	78	5			
	63	59.1	0.8	0.501	0.015	5.5	0.1	2.0	0.4	73	5			
	62	57.3	0.8	0.470	0.013	5.2	0.1	2.3	0.4	68	5			
	61	55.5	0.7	0.441	0.012	4.8	0.1	2.7	0.4	64	4	507.8		
70	60	53.7	0.7	0.413	0.011	4.5	0.1	3.0	0.4	60	4	508.0		
	59	51.9	0.7	0.387	0.010	4.2	0.1	3.3	0.4	56	4			
	58	50.1	0.7	0.362	0.009	4.0	0.1	3.5	0.4	52	4			
	57	48.3	0.7	0.339	0.009	3.7	0.1	3.8	0.4	49	3			
	56	46.5	0.6	0.317	0.008	3.5	0.1	4.0	0.4	46	3			
	55	44.7	0.6	0.296	0.007	3.2	0.0	4.3	0.3	43	3			
	54	42.9	0.6	0.276	0.007	3.0	0.0	4.5	0.3	40	3	508.9		
	53	41.2	0.6	0.258	0.006	2.8	0.0	4.7	0.3	37	3	509.0		
	52	39.4	0.6	0.241	0.006	2.6	0.0	4.9	0.3	35	3			
	51	37.6	0.6	0.225	0.006	2.5	0.0	5.0	0.3	33	2			
71	50	35.8	0.6	0.210	0.006	2.3	0.0	5.2	0.3	31	2			
	49	34.0	0.6	0.196	0.006	2.2	0.0	5.3	0.3	29	2			
	48	32.2	0.6	0.182	0.005	2.0	0.0	5.5	0.3	27	2			
	47	30.4	0.6	0.169	0.005	1.9	0.0	5.6	0.3	25	2			
	46	28.6	-0.6	0.157	-0.004	1.7	-0.0	5.8	+0.3	23	-2	509.6		
	70	69.0	-0.8	0.707	-0.018	7.8	-0.2	0.0	+0.4	100	-6	505.2	-0.9	
	69	67.2	0.8	0.665	0.016	7.3	0.2	0.5	0.4	94	6			
	68	65.4	0.8	0.625	0.015	6.9	0.2	0.9	0.4	88	5			
	67	63.7	0.8	0.587	0.014	6.5	0.2	1.3	0.4	83	5	505.9	+17.4	
	66	61.9	0.8	0.551	0.013	6.1	0.2	1.7	0.4	78	5	506.2		
72	60.1	-0.7	0.517	-0.012	5.7	-0.2	2.1	+0.4	73	-4	506.4			



Reading of Thermometer.		Temperature of the Dew-Point.	Difference for an increase of 1° in Dry.	Elastic force of Vapour.	Difference for an increase of 1° in Dry.	Vapour in a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Vap. reqd. to sat. a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Degree of Humidity. (Satn. = 100.)	Difference for an increase of 1° in Dry.	Weight of a Cubic Foot of Air, Bar. reading 29 inches.	Diff. for an increase of 1° in Dry.	Difference for one inch in Barometer and proportional parts.
Dry.	Wet.													
69	64	60.1	-0.7	0.547	-0.12	5.7	-0.2	2.1	+0.4	73	-4	506.4	-0.9	17.4
63	58.3	0.7	0.486	0.11	5.3	0.1	2.5	0.3		68	4	506.6		
62	56.5	0.7	0.457	0.10	5.0	0.1	2.8	0.3		64	4	506.8		
61	54.8	0.7	0.429	0.10	4.7	0.1	3.1	0.3		60	4	507.0		
60	53.0	0.7	0.402	0.09	4.4	0.1	3.4	0.3		56	3	507.1		
59	51.2	0.7	0.377	0.09	4.1	0.1	3.7	0.3		53	3	507.2		
58	49.4	0.6	0.353	0.08	3.9	0.1	3.9	0.3		50	3	507.3		
57	47.6	0.6	0.330	0.07	3.6	0.1	4.2	0.3		47	3	507.4		
56	45.9	0.6	0.309	0.07	3.4	0.1	4.4	0.3		44	3	507.5		
55	44.1	0.6	0.289	0.06	3.2	0.1	4.6	0.3		41	3	507.6		
54	42.3	0.6	0.270	0.05	3.0	0.1	4.8	0.3		38	2	507.7		
53	40.5	0.6	0.252	0.05	2.8	0.1	5.0	0.3		35	2	507.8		
52	38.7	0.6	0.235	0.05	2.6	0.1	5.2	0.3		33	2	507.9		
51	37.0	0.6	0.219	0.05	2.4	0.1	5.4	0.3		31	2	508.0		
50	35.2	0.6	0.204	0.05	2.2	0.0	5.6	0.2		29	2	508.1		
49	33.4	0.6	0.190	0.04	2.1	0.0	5.7	0.2		27	2	508.2		
48	31.6	-0.6	0.177	-0.04	2.0	-0.0	5.8	+0.2		25	-2	508.3		
70	70	70.0	-0.8	0.733	-0.19	8.0	-0.2	0.0	+0.5	100	-6	504.0	-0.9	
69	68.2	0.8	0.691	0.19	7.5	0.2	0.5	0.5		94	6	504.1		
68	66.5	0.8	0.651	0.18	7.1	0.2	0.9	0.5		88	5	504.2		
67	64.7	0.7	0.613	0.17	6.7	0.2	1.3	0.5		83	5	504.3		
66	62.9	0.7	0.576	0.16	6.3	0.2	1.7	0.5		78	5	504.4		
65	61.1	0.7	0.541	0.15	5.9	0.2	2.1	0.5		73	4	504.5		
64	59.4	0.7	0.508	0.14	5.5	0.2	2.5	0.5		69	4	504.6		
63	57.6	0.7	0.476	0.13	5.2	0.1	2.8	0.4		65	4	504.7		
62	55.8	0.7	0.446	0.11	4.9	0.1	3.1	0.4		61	4	504.8		
61	54.0	0.7	0.418	0.10	4.6	0.1	3.4	0.4		57	3	504.9		
60	52.3	0.7	0.392	0.09	4.3	0.1	3.7	0.4		53	3	505.0		
59	50.5	0.7	0.368	0.09	4.0	0.1	4.0	0.4		50	3	505.1		
58	48.8	0.7	0.345	0.09	3.8	0.1	4.2	0.4		47	3	505.2		
57	47.0	0.6	0.323	0.08	3.5	0.1	4.5	0.4		44	2	505.3		
56	45.2	0.6	0.302	0.07	3.3	0.1	4.7	0.4		41	2	505.4		
55	43.5	0.6	0.283	0.07	3.1	0.1	4.9	0.4		38	2	505.5		
54	41.7	0.6	0.265	0.07	2.9	0.1	5.1	0.4		36	2	505.6		
53	39.9	0.6	0.247	0.06	2.7	0.1	5.3	0.4		34	2	505.7		
52	38.1	0.6	0.230	0.05	2.5	0.0	5.5	0.3		31	2	505.8		
51	36.4	0.6	0.214	0.04	2.3	0.0	5.7	0.3		29	2	505.9		
50	34.6	0.5	0.199	0.03	2.2	0.0	5.8	0.3		27	2	506.0		
49	32.8	-0.5	0.185	-0.03	2.0	-0.0	6.0	+0.3		25	-1	506.1		
71	71.0	-0.8	0.759	-0.20	8.3	-0.2	0.0	+0.4		100	-6	502.9	-0.9	
70	69.2	0.8	0.714	0.18	7.8	0.2	0.5	0.4		94	5	503.0		
69	67.5	0.8	0.672	0.17	7.3	0.2	1.0	0.4		88	5	503.1		
68	65.7	0.8	0.633	0.16	6.9	0.2	1.4	0.4		83	5	503.2		
67	64.0	0.8	0.596	0.15	6.5	0.2	1.8	0.4		78	5	503.3		
66	62.2	0.7	0.560	0.13	6.1	0.2	2.2	0.4		73	4	503.4		
65	60.4	0.7	0.526	0.12	5.7	0.1	2.6	0.3		69	4	503.5		
64	58.7	0.7	0.494	0.11	5.4	0.1	2.9	0.3		65	4	503.6		
63	56.9	0.7	0.464	0.10	5.1	0.1	3.2	0.3		61	3	503.7		
62	55.2	0.7	0.436	0.10	4.7	0.1	3.6	0.3		57	3	503.8		
61	53.4	0.7	0.409	0.10	4.4	0.1	3.9	0.3		53	3	503.9		
60	51.6	0.7	0.383	0.09	4.2	0.1	4.1	0.3		50	3	504.0		
59	49.9	0.7	0.359	0.09	3.9	0.1	4.4	0.3		47	2	504.1		
58	48.1	0.6	0.336	0.08	3.7	0.1	4.6	0.3		44	2	504.2		
57	46.4	0.6	0.315	0.08	3.4	0.1	4.9	0.3		41	2	504.3		
56	44.6	0.6	0.295	0.08	3.2	0.1	5.1	0.3		38	2	504.4		
55	42.8	0.6	0.276	0.07	3.0	0.1	5.3	0.3		36	2	504.5		
54	41.1	0.6	0.258	0.06	2.8	0.1	5.5	0.3		34	2	504.6		
53	39.3	0.6	0.241	0.05	2.6	0.1	5.7	0.3		32	2	504.7		
52	37.6	0.6	0.225	0.04	2.5	0.1	5.8	0.3		30	2	504.8		
51	35.8	0.5	0.210	0.03	2.3	0.1	6.0	0.3		28	2	504.9		
50	34.0	0.5	0.196	0.03	2.1	0.1	6.2	0.3		26	1	505.0		
49	32.3	0.5	0.183	0.03	2.0	0.0	6.3	0.2		24	1	505.1		
48	30.5	-0.5	0.170	-0.03	1.9	-0.0	6.4	+0.2		22	-1	505.2		

Reading of Thermometer.		Temperature of the Dew-Point.	Difference for an increase of 1° in Dry.	Elastic force of Vapour.	Difference for an increase of 1° in Dry.	Vapour in a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Vap. reqd. to sat. a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Degree of Humidity. (Satn. = 100.)	Difference for an increase of 1° in Dry.	Weight of a Cubic Foot of Air, Bar. reading 29 inches.	Diff. for an increase of 1° in Dry.	Difference for one inch in Barometer and proportional parts.
Dry.	Wet.													
72	72	72.0	-0.7	0.785	-0.19	8.5	-0.2	0.0	+0.5	100	-6	501.8	-0.9	17.3
71	70.2	0.7	0.739	0.17	8.0	0.2	0.5	0.5		94	5	502.1		
70	68.5	0.7	0.696	0.16	7.6	0.2	0.9	0.5		89	5	502.4	+17.3	
69	66.7	0.7	0.655	0.15	7.1	0.2	1.4	0.5		84	5	502.7		
68	65.0	0.7	0.617	0.14	6.7	0.2	1.8	0.5		79	4	502.9		
67	63.2	0.7	0.581	0.13	6.3	0.2	2.2	0.5		74	4	503.1		
66	61.5	0.7	0.547	0.13	5.9	0.2	2.6	0.5		69	4	503.4		
65	59.7	0.7	0.514	0.12	5.6	0.2	2.9	0.5		65	4	503.7		
64	58.0	0.7	0.483	0.11	5.3	0.2	3.2	0.5		61	4	504.0		
63	56.2	0.7	0.454	0.11	5.0	0.1	3.5	0.4		57	3	504.3		
62	54.5	0.6	0.426	0.10	4.7	0.1	3.8	0.4		54	3	504.6		
61	52.7	0.6	0.399	0.09	4.4	0.1	4.1	0.4		51	3	504.9		
60	51.0	0.6	0.374	0.08	4.1	0.1	4.4	0.4		48	3	505.2		
59	49.2	0.6	0.350	0.07	3.8	0.1	4.7	0.4		45	3	505.5		
58	47.5	0.6	0.328	0.06	3.6	0.1	4.9	0.4		42	2	505.8		
57	45.7	0.6	0.307	0.05	3.3	0.0	5.2	0.3		39	2	506.1		
56	44.0	0.6	0.287	0.05	3.1	0.0	5.4	0.3		36	2	506.4		
55	42.2	0.6	0.269	0.05	2.9	0.0	5.6	0.3		34	2	506.7		
54	40.5	0.6	0.252	0.04	2.7	0.0	5.8	0.3		32	2	507.0		
53	38.7	0.6	0.236	0.04	2.6	0.0	5.9	0.3		30	2	507.3		
52	37.0	0.5	0.221	0.04	2.4	0.0	6.1	0.3		28	2	507.6		
51	35.3	0.5	0.207	0.04	2.2	0.0	6.3	0.3		26	1	507.9		
50	33.5	0.5	0.193	0.04	2.0	0.0	6.5	0.3		24	1	508.2		
49	31.8	-0.5	0.180	-0.04	1.9	-0.0	6.6	+0.3		23	-1	508.5		
73	73	73.0	-0.7	0.812	-0.19	8.8	-0.2	0.0	+0.5	100	-6	500.7	-0.9	
72	71.3	0.7	0.766	0.18	8.3	0.2	0.5	0.5		94	5	501.0		
71	69.5	0.7	0.722	0.17	7.8	0.2	1.0	0.5		89	5	501.3	+17.3	
70	67.8	0.7	0.680	0.16	7.4	0.2	1.4	0.5		84	5	501.6		
69	66.0	0.7	0.641	0.16	7.0	0.2	1.8	0.5		79	4	501.9		
68	64.3	0.7	0.604	0.15	6.6	0.2	2.2	0.5		74	4	502.2		
67	62.6	0.7	0.568	0.14	6.2	0.2	2.6	0.5		70	4	502.5		
66	60.8	0.7	0.534	0.13	5.8	0.2	3.0	0.5		66	4	502.8		
65	59.1	0.7	0.502	0.11	5.4	0.1	3.4	0.4		62	3	503.1		
64	57.3	0.6	0.472	0.09	5.1	0.1	3.7	0.4		58	3	503.4		
63	55.6	0.6	0.443	0.08	4.8	0.1	4.0	0.4		54	3	503.7		
62	53.9	0.6	0.416	0.08	4.5	0.1	4.3	0.4		51	3	504.0		
61	52.1	0.6	0.390	0.08	4.2	0.1	4.6	0.4		48	3	504.3		
60	50.4	0.6	0.366	0.08	4.0	0.1	4.8	0.4		45	2	504.6		
59	48.6	0.6	0.343	0.07	3.7	0.1	5.1	0.4		42	2	504.9		
58	46.9	0.6	0.322	0.07	3.5	0.1	5.3	0.4		40	2	505.2		
57	45.2	0.6	0.302	0.07	3.3	0.1	5.5	0.4		37	2	505.5		
56	43.4	0.6	0.283	0.07	3.1	0.1	5.7	0.4		35	2	505.8		
55	41.7	0.6	0.265	0.07	2.9	0.1	5.9	0.4		32	2	506.1		
54	39.9	0.5	0.248	0.07	2.7	0.1	6.1	0.4		30	2	506.4		
53	38.2	0.5	0.232	0.07	2.5	0.1	6.3	0.4		28	2	506.7		
52	36.5	0.5	0.217	0.06	2.3	0.0	6.5	0.3		26	1	507.0		
51	34.7	0.5	0.202	0.06	2.2	0.0	6.6	0.3		24	1	507.3		
50	33.0	-0.5	0.188	-0.05	2.0	-0.0	6.8	+0.3		23	-1	507.6		
74	74	74.0	-0.7	0.840	-0.20	9.1	-0.2	0.0	+0.5	100	-6	499.6	-0.9	
73	72.3	0.7	0.793	0.19	8.6	0.2	0.5	0.5		94	5	499.9		
72	70.5	0.7	0.748	0.18	8.1	0.2	1.0	0.5		89	5	500.2	+17.2	
71	68.8	0.7	0.705	0.17	7.6	0.2	1.5	0.5		84	5	500.5		
70	67.1	0.7	0.664	0.16	7.2	0.2	1.9	0.5		79	5	500.8		
69	65.3	0.7	0.625	0.15	6.8	0.2	2.3	0.5		74	4	501.1		
68	63.6	0.7	0.588	0.14	6.4	0.2	2.7	0.5		70	4	501.4		
67	61.9	0.7	0.554	0.13	6.0	0.2	3.1	0.5		66	4	501.7		
66	60.2	0.7	0.522	0.13	5.6	0.1	3.5	0.4		62	4	502.0		
65	58.4	0.6	0.492	0.12	5.3	0.1	3.8	0.4		58	3	502.3		
64	56.7	0.6	0.463	0.12	5.0	0.1	4.1	0.4		55	3	502.6		
63	55.0	0.6	0.435	0.11	4.7	0.1	4.4	0.4		52	3	502.9		
62	53.2	0.6	0.408	0.10	4.4	0.1	4.7	0.4		48	3	503.2		
61	51.5	-0.6	0.382	-0.09	4.1	-0.1	5.0	+0.4		45	-2	503.5		



Reading of Thermometer.		Temperature of the Dew-Point.	Difference for an increase of 1° in Dry.	Elastic force of Vapour.	Difference for an increase of 1° in Dry.	Vapour in a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Vap. reqd. to sat. a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Degree of Humidity. (Satn. = 100.)	Difference for an increase of 1° in Dry.	Weight of a Cubic Foot of Air, Bar. reading 29 inches.	Diff. for an increase of 1° in Dry.	Difference for one inch in Barometer and proportional parts.
Dry.	Wet.													
74	61	51.5	-0.6	0.382	-0.009	4.1	-0.1	5.0	+0.4	45	-2	502.6	-0.9	17.2
	60	49.8	0.6	0.358	0.008	3.9	0.1	5.2	0.4	43	2	502.7		1.7
	59	48.1	0.6	0.336	0.007	3.6	0.1	5.5	0.4	40	2	502.9	+17.2	5.4
	58	46.3	0.6	0.315	0.007	3.4	0.1	5.7	0.4	37	2	503.0		5.2
	57	44.6	0.6	0.295	0.007	3.2	0.1	5.9	0.4	35	2			8.6
	56	42.9	0.6	0.276	0.006	3.0	0.1	6.1	0.4	33	2			10.3
	55	41.1	0.5	0.258	0.005	2.8	0.1	6.3	0.4	31	2			12.0
	54	39.4	0.5	0.241	0.004	2.6	0.0	6.5	0.3	29	1			13.8
	53	37.7	0.5	0.225	0.004	2.4	0.0	6.7	0.3	27	1			15.5
	52	35.9	0.5	0.210	0.003	2.3	0.0	6.8	0.3	25	1			
	51	34.2	-0.5	0.196	-0.003	2.1	-0.0	7.0	+0.3	23	-1	503.7		
75	75	75.0	-0.7	0.868	-0.020	9.4	-0.2	0.0	+0.5	100	-6	498.5	-0.9	
	74	73.3	0.7	0.820	0.019	8.9	0.2	0.5	0.5	94	5	498.8		1.7
	73	71.6	0.7	0.774	0.018	8.4	0.2	1.0	0.5	89	5	499.1	+17.2	5.4
	72	69.8	0.7	0.731	0.018	7.9	0.2	1.5	0.5	84	5			8.6
	71	68.1	0.7	0.690	0.018	7.4	0.2	2.0	0.5	79	4			10.3
	70	66.4	0.7	0.650	0.017	7.0	0.2	2.4	0.5	74	4	499.9		12.0
	69	64.7	0.7	0.612	0.016	6.6	0.2	2.8	0.5	70	4	500.1		13.8
	68	63.0	0.7	0.576	0.015	6.2	0.1	3.2	0.4	66	4			15.5
	67	61.2	0.6	0.542	0.014	5.8	0.1	3.6	0.4	62	3			
	66	59.5	0.6	0.510	0.012	5.5	0.1	3.9	0.4	58	3	500.8		
	65	57.8	0.6	0.479	0.011	5.2	0.1	4.2	0.4	55	3	501.0		
	64	56.1	0.6	0.450	0.010	4.9	0.1	4.5	0.4	52	3			
	63	54.4	0.6	0.423	0.009	4.6	0.1	4.8	0.4	49	3			
	62	52.6	0.6	0.397	0.008	4.3	0.1	5.1	0.4	46	3			
	61	50.9	0.6	0.373	0.007	4.0	0.1	5.4	0.4	43	2			
	60	49.2	0.6	0.350	0.007	3.8	0.1	5.6	0.4	40	2			
	59	47.5	0.6	0.328	0.006	3.6	0.1	5.8	0.4	38	2	501.9		
	58	45.8	0.6	0.307	0.006	3.3	0.0	6.1	0.3	36	2	502.1		
	57	44.0	0.5	0.288	0.005	3.1	0.0	6.3	0.3	33	2			
	56	42.3	0.5	0.270	0.005	2.9	0.0	6.5	0.3	31	1			
	55	40.6	0.5	0.253	0.005	2.7	0.0	6.7	0.3	29	1			
	54	38.9	0.5	0.237	0.005	2.6	0.0	6.8	0.3	27	1			
	53	37.2	-0.5	0.222	-0.005	2.4	-0.0	7.0	+0.3	25	-1	502.6		
76	76	76.0	-0.7	0.897	-0.020	9.7	-0.2	0.0	+0.5	100	-5	497.4	-0.9	
	75	74.3	0.7	0.848	0.019	9.2	0.2	0.5	0.5	94	5	497.7		1.7
	74	72.6	0.7	0.801	0.018	8.6	0.2	1.1	0.5	89	5	498.0	+17.2	5.4
	73	70.9	0.7	0.756	0.017	8.2	0.2	1.5	0.5	84	5			8.6
	72	69.2	0.7	0.713	0.016	7.7	0.2	2.0	0.5	79	4			10.3
	71	67.4	0.6	0.672	0.014	7.2	0.1	2.5	0.4	75	4	498.8		12.0
	70	65.7	0.6	0.633	0.013	6.8	0.1	2.9	0.4	71	4	499.0		13.8
	69	64.0	0.6	0.596	0.012	6.4	0.1	3.3	0.4	67	4			15.5
	68	62.3	0.6	0.561	0.011	6.1	0.1	3.6	0.4	63	3			
	67	60.6	0.6	0.528	0.010	5.7	0.1	4.0	0.4	59	3			
	66	58.9	0.6	0.497	0.009	5.4	0.1	4.3	0.4	55	3	499.9		
	65	57.2	0.6	0.468	0.009	5.1	0.1	4.6	0.4	52	3	500.1		
	64	55.5	0.6	0.441	0.008	4.8	0.1	4.9	0.4	49	3			
	63	53.8	0.6	0.415	0.008	4.5	0.1	5.2	0.4	46	2			
	62	52.1	0.6	0.390	0.008	4.2	0.1	5.5	0.4	43	2			
	61	50.4	0.6	0.366	0.008	3.9	0.1	5.8	0.4	40	2			
	60	48.6	0.5	0.343	0.007	3.7	0.1	6.0	0.4	38	2	500.9		
	59	46.9	0.5	0.322	0.007	3.5	0.1	6.2	0.4	36	2	501.0		
	58	45.2	0.5	0.302	0.007	3.3	0.1	6.4	0.4	34	2			
	57	43.5	0.5	0.283	0.007	3.1	0.1	6.6	0.4	32	2			
	56	41.8	0.5	0.265	0.006	2.9	0.1	6.8	0.4	30	1			
	55	40.1	0.5	0.248	0.005	2.7	0.1	7.0	0.4	28	1			
	54	38.4	0.5	0.232	0.005	2.5	0.0	7.2	0.3	26	1			
	53	36.7	-0.5	0.217	-0.005	2.3	-0.0	7.4	+0.3	24	-1	501.7		
77	77	77.0	-0.7	0.927	-0.021	10.0	-0.2	0.0	+0.5	100	-5	496.3	-0.9	
	76	75.3	0.7	0.877	0.020	9.5	0.2	0.5	0.5	94	5			1.7
	75	73.6	-0.7	0.829	-0.019	8.9	-0.2	1.1	+0.5	89	5	496.9	+17.1	5.4

Reading of Thermometer.		Temperature of the Dew-point.	Difference for an increase of 1° in Dry.	Elastic force of Vapour.	Difference for an increase of 1° in Dry.	Vapour in a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Vap. reqd. to sat. a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Degree of Humidity. (Satn. = 100.)	Difference for an increase of 1° in Dry.	Weight of a Cubic Foot of Air, Bar. reading 29 inches.	Diff. for an increase of 1° in Dry.	Difference for one inch in Barometer and proportional parts.
Dry.	Wet.													
77	75	73.6	-0.7	0.829	-0.019	8.9	-0.2	1.1	+0.5	89	-5	496.9	-0.9	17.1
	74	71.9	0.7	0.783	0.018	8.4	0.2	1.6	0.5	84	5	497.2		1.7
	73	70.2	0.7	0.739	0.017	8.0	0.2	2.0	0.5	79	4		+17.1	5.4
	72	68.5	0.7	0.697	0.016	7.5	0.2	2.5	0.5	75	4	497.8		8.6
	71	66.8	0.7	0.658	0.015	7.1	0.2	2.9	0.5	71	4	498.0		10.3
	70	65.1	0.7	0.620	0.014	6.7	0.2	3.3	0.5	67	4			12.0
	69	63.4	0.7	0.584	0.013	6.3	0.1	3.7	0.4	63	3			13.8
	68	61.7	0.6	0.550	0.012	5.9	0.1	4.1	0.4	59	3			15.5
	67	60.0	0.6	0.518	0.011	5.6	0.1	4.4	0.4	56	3	498.9		
	66	58.3	0.6	0.488	0.010	5.3	0.1	4.7	0.4	53	3	499.1		
	65	56.6	0.6	0.459	0.010	4.9	0.1	5.1	0.4	50	2			
	64	54.9	0.6	0.431	0.009	4.6	0.1	5.4	0.4	47	2			
	63	53.2	0.6	0.405	0.008	4.3	0.1	5.7	0.4	44	2			
	62	51.5	0.6	0.381	0.008	4.1	0.1	5.9	0.4	41	2			
	61	49.8	0.6	0.358	0.008	3.9	0.1	6.1	0.4	38	2	499.9		
	60	48.1	0.6	0.336	0.008	3.6	0.1	6.4	0.4	36	2	500.1		
	59	46.4	0.6	0.315	0.007	3.4	0.1	6.6	0.4	34	2			
	58	44.7	0.6	0.295	0.006	3.2	0.1	6.8	0.4	32	2			
	57	43.0	0.6	0.276	0.005	3.0	0.1	7.0	0.4	30	2			
	56	41.3	0.6	0.259	0.005	2.8	0.1	7.2	0.4	28	1			
	55	39.6	0.6	0.243	0.005	2.6	0.1	7.4	0.4	26	1			
	54	37.9	-0.6	0.228	-0.005	2.4	-0.0	7.6	+0.3	24	-1	500.7		
78	78	78.0	-0.7	0.958	-0.021	10.3	-0.2	0.0	+0.5	100	-5	495.2	-0.9	
	77	76.3	0.7	0.906	0.019	9.7	0.2	0.6	0.5	94	5			1.7
	76	74.6	0.7	0.857	0.018	9.2	0.2	1.1	0.5	89	5	495.8	+17.1	5.4
	75	72.9	0.6	0.810	0.017	8.7	0.2	1.6	0.5	84	5	496.1		8.6
	74	71.2	0.6	0.765	0.016	8.2	0.2	2.1	0.5	79	4			10.3
	73	69.5	0.6	0.722	0.015	7.8	0.2	2.5	0.5	75	4			12.0
	72	67.8	0.6	0.681	0.015	7.3	0.2	3.0	0.5	71	4	496.9		13.8
	71	66.1	0.6	0.642	0.014	6.9	0.2	3.4	0.5	67	3	497.2		15.5
	70	64.4	0.6	0.605	0.013	6.5	0.1	3.8	0.4	63	3			
	69	62.7	0.6	0.571	0.013	6.2	0.1	4.1	0.4	59	3			
	68	61.1	0.6	0.539	0.013	5.8	0.1	4.5	0.4	56	3	497.8		
	67	59.4	0.6	0.508	0.012	5.5	0.1	4.8	0.4	53	3	498.0		
	66	57.7	0.6	0.478	0.011	5.1	0.1	5.2	0.4	50	3			
	65	56.0	0.6	0.449	0.010	4.8	0.1	5.5	0.4	47	3			
	64	54.3	0.6	0.422	0.009	4.5	0.1	5.8	0.4	44	3			
	63	52.6	0.6	0.397	0.009	4.3	0.1	6.0	0.4	41	2			
	62	50.9	0.6	0.373	0.008	4.0	0.1	6.3	0.4	39	2	498.8		
	61	49.2	0.6	0.350	0.007	3.8	0.1	6.5	0.4	37	2	499.0		
	60	47.5	0.6	0.328	0.006	3.5	0.1	6.8	0.4	35	2			
	59	45.8	0.6	0.308	0.006	3.3	0.1	7.0	0.4	32	2			
	58	44.1	0.6	0.289	0.006	3.1	0.1	7.2	0.4	30	2			
	57	42.4	0.6	0.271	0.006	2.9	0.1	7.4	0.4	28	1			
	56	40.7	0.6	0.254	0.005	2.7	0.0	7.6	0.3	27	1			
	55	39.0	-0.5	0.238	-0.005	2.5	-0.0	7.8	+0.3	25	-1	499.7		
79	79	79.0	-0.7	0.990	-0.022	10.6	-0.2	0.0	+0.6	100	-5	494.1	-0.9	
	78	77.3	0.7	0.937	0.021	10.1	0.2	0.5	0.6	95	5			1.7
	77	75.6	0.7	0.887	0.020	9.5	0.2	1.1	0.6	90	5	494.8	+17.0	5.4
	76	73.9	0.7	0.839	0.019	9.0	0.2	1.6	0.6	85	5	495.1		8.6
	75	72.3	0.7	0.793	0.018	8.5	0.2	2.1	0.6	80	4			10.3
	74	70.6	0.7	0.749	0.018	8.0	0.1	2.6	0.6	75	4			12.0
	73	68.9	0.7	0.707	0.017	7.6	0.2	3.0	0.6	71	4	495.9		13.8
	72	67.2	0.7	0.666	0.016	7.2	0.2	3.4	0.6	67	4	496.2		15.5
	71	65.5	0.6	0.628	0.015	6.8	0.2	3.8	0.6	63	3			
	70	63.8	0.6	0.592	0.014	6.4	0.2	4.2	0.6	59	3			
	69	62.1	0.6	0.558	0.013	6.0	0.2	4.6	0.6	56	3	496.8		
	68	60.4	0.6	0.526	0.013	5.6	0.1	5.0	0.5	53	3	497.0		
	67	58.7	0.6	0.495	0.012	5.3	0.1	5.3	0.5	50	3			
	66	57.0	0.6	0.466	0.011	5.0	0.1	5.6	0.5	47	3			
	65	55.4	0.6	0.439	0.010	4.7	0.1	5.9	0.5	44	3			
	64	53.7	-0.6	0.413	-0.009	4.4	-0.1	6.2	+0.5	42	-3	497.8		



Reading of Thermometer.		Temperature of the Dew-Point.	Difference for an increase of 1° in Dry.	Elastic force of Vapour.	Difference for an increase of 1° in Dry.	Vapour in a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Vap. reqd. to sat. a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Degree of Humidity. (Satn. = 100.)	Difference for an increase of 1° in Dry.	Weight of a Cubic Foot of Air, Bar. reading 29 inches.	Diff. for an increase of 1° in Dry.	Difference for one inch in Bar. and proportional parts.
Dry.	Wet.													
79	64	53.7	-0.6	0.413	-0.09	4.4	-0.1	6.2	+0.5	42	-3	497.8	-0.9	17.0
	63	52.0	0.6	0.388	0.08	4.2	0.1	6.4	0.5	39	2	497.9		17.1
	62	50.3	0.6	0.365	0.08	3.9	0.1	6.7	0.5	37	2	498.1	+17.0	17.2
	61	48.6	0.6	0.343	0.08	3.7	0.1	6.9	0.5	35	2			17.3
	60	46.9	0.6	0.322	0.07	3.5	0.1	7.1	0.5	32	2			17.4
	59	45.2	0.5	0.302	0.06	3.2	0.0	7.4	0.4	30	2			17.5
	58	43.5	0.5	0.283	0.05	3.0	0.0	7.6	0.4	28	1			17.6
	57	41.8	0.5	0.265	0.05	2.8	0.0	7.8	0.4	26	1			17.7
	56	40.2	-0.5	0.248	-0.05	2.7	-0.0	7.9	+0.4	25	-1	498.8		17.8
80	80	80.0	-0.7	1.023	-0.23	11.0	-0.2	0.0	+0.5	100	-5	493.0	-0.9	17.9
	79	78.3	0.7	0.968	0.21	10.4	0.2	0.6	0.5	95	5			18.0
	78	76.6	0.7	0.916	0.20	9.8	0.2	1.2	0.5	90	5	493.7	+17.0	18.1
	77	75.0	0.7	0.867	0.19	9.3	0.2	1.7	0.5	85	5	494.0		18.2
	76	73.3	0.7	0.820	0.18	8.8	0.2	2.2	0.5	80	4			18.3
	75	71.6	0.7	0.775	0.17	8.3	0.2	2.7	0.5	75	4			18.4
	74	69.9	0.6	0.732	0.16	7.8	0.2	3.2	0.5	71	4	494.8		18.5
	73	68.2	0.6	0.690	0.15	7.4	0.2	3.6	0.5	67	4	495.1		18.6
	72	66.5	0.6	0.650	0.13	7.0	0.2	4.0	0.5	63	3			18.7
	71	64.9	0.6	0.613	0.12	6.6	0.2	4.4	0.5	59	3			18.8
	70	63.2	0.6	0.578	0.11	6.2	0.2	4.8	0.5	56	3	495.8		18.9
	69	61.5	0.6	0.545	0.11	5.8	0.1	5.2	0.4	53	3	496.0		19.0
	68	59.8	0.6	0.513	0.10	5.5	0.1	5.5	0.4	50	3			19.1
	67	58.1	0.6	0.483	0.10	5.2	0.1	5.8	0.4	47	2			19.2
	66	56.4	0.6	0.455	0.10	4.9	0.1	6.1	0.4	44	2			19.3
	65	54.8	0.6	0.429	0.10	4.6	0.1	6.4	0.4	41	2			19.4
	64	53.1	0.6	0.404	0.10	4.3	0.1	6.7	0.4	39	2	496.9		19.5
	63	51.4	0.6	0.380	0.09	4.1	0.1	6.9	0.4	37	2	497.0		19.6
	62	49.7	0.6	0.357	0.08	3.8	0.1	7.2	0.4	35	2			19.7
	61	48.0	0.6	0.335	0.07	3.6	0.1	7.4	0.4	33	2			19.8
	60	46.3	0.5	0.315	0.07	3.4	0.1	7.6	0.4	31	1			19.9
	59	44.7	0.5	0.296	0.07	3.2	0.1	7.8	0.4	29	1			20.0
	58	43.0	0.5	0.278	0.06	3.0	0.1	8.0	0.4	27	1			20.1
	57	41.3	-0.5	0.261	-0.06	2.8	-0.0	8.2	+0.3	25	-1	497.8		20.2
81	81	81.0	-0.7	1.057	-0.24	11.3	-0.2	0.0	+0.6	100	-5	491.8	-0.9	20.3
	80	79.3	0.7	1.000	0.22	10.7	0.2	0.6	0.6	95	5	492.2		20.4
	79	77.7	0.7	0.947	0.21	10.1	0.2	1.2	0.6	90	5			20.5
	78	76.0	0.7	0.897	0.20	9.5	0.2	1.8	0.6	85	4	492.8	+17.0	20.6
	77	74.3	0.7	0.849	0.19	9.1	0.2	2.2	0.6	80	4	493.1		20.7
	76	72.6	0.6	0.802	0.18	8.6	0.2	2.7	0.6	76	4			20.8
	75	70.9	0.6	0.757	0.16	8.1	0.2	3.2	0.6	72	4	493.7		20.9
	74	69.3	0.6	0.715	0.15	7.6	0.1	3.7	0.5	68	4	494.0		21.0
	73	67.6	0.6	0.675	0.14	7.2	0.1	4.1	0.5	64	3			21.1
	72	65.9	0.6	0.637	0.13	6.8	0.1	4.5	0.5	60	3			21.2
	71	64.2	0.6	0.601	0.13	6.4	0.1	4.9	0.5	56	3			21.3
	70	62.6	0.6	0.567	0.13	6.0	0.1	5.3	0.5	53	3	494.9		21.4
	69	60.9	0.6	0.534	0.12	5.7	0.1	5.6	0.5	50	3	495.1		21.5
	68	59.2	0.6	0.503	0.11	5.4	0.1	5.9	0.5	47	2			21.6
	67	57.5	0.6	0.473	0.09	5.1	0.1	6.2	0.5	44	2			21.7
	66	55.8	0.6	0.445	0.08	4.8	0.1	6.5	0.5	41	2			21.8
	65	54.2	0.6	0.419	0.08	4.5	0.1	6.8	0.5	39	2	495.8		21.9
	64	52.5	0.6	0.394	0.07	4.2	0.1	7.1	0.5	37	2	496.0		22.0
	63	50.8	0.6	0.371	0.07	4.0	0.1	7.3	0.5	35	2			22.1
	62	49.1	0.6	0.349	0.07	3.7	0.1	7.6	0.5	33	2			22.2
	61	47.5	0.6	0.328	0.07	3.5	0.1	7.8	0.5	31	2			22.3
	60	45.8	0.6	0.308	0.07	3.3	0.1	8.0	0.5	29	2			22.4
	59	44.1	0.5	0.289	0.07	3.1	0.1	8.2	0.5	27	1			22.5
	58	42.4	-0.5	0.271	-0.06	2.9	-0.0	8.4	+0.4	26	-1	496.7		22.6
82	82	82.0	-0.7	1.091	-0.25	11.7	-0.3	0.0	+0.6	100	-5	490.8	-0.8	22.7
	81	80.3	0.7	1.033	0.24	11.1	0.3	0.6	0.6	95	5	491.1		22.8
	80	78.7	0.7	0.978	0.23	10.5	0.3	1.2	0.6	90	5			22.9
	79	77.0	-0.7	0.926	-0.22	9.9	-0.3	1.8	+0.6	85	-5	491.8	+16.9	23.0

Reading of Thermometer.		Temperature of the Dew-Point.	Difference for an increase of 1° in Dry.	Elastic force of Vapour.	Difference for an increase of 1° in Dry.	Vapour in a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Vap. reqd. to sat. a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Degree of Humidity. (Satn. = 100.)	Difference for an increase of 1° in Dry.	Weight of a Cubic Foot of Air, Bar. reading 29 inches.	Diff. for an increase of 1° in Dry.	Difference for one inch in Barometer and proportional parts.
Dry.	Wet.													
82	79	77.0	-0.7	0.926	-0.22	9.9	-0.3	1.8	+0.6	85	-5	491.8	-0.8	16.9
	78	75.3	0.6	0.877	0.21	9.4	0.3	2.3	0.6	80	4	492.1		
	77	73.6	0.6	0.830	0.20	8.9	0.3	2.8	0.6	76	4		+16.9	
	76	72.0	0.6	0.785	0.19	8.4	0.2	3.3	0.5	72	4	492.7		
	75	70.3	0.6	0.742	0.18	7.9	0.2	3.8	0.5	68	4	493.0		
	74	68.6	0.6	0.701	0.17	7.5	0.2	4.2	0.5	64	3			
	73	67.0	0.6	0.662	0.16	7.1	0.2	4.6	0.5	60	3			
	72	65.3	0.6	0.624	0.14	6.7	0.2	5.0	0.5	57	3			
	71	63.6	0.6	0.588	0.13	6.3	0.2	5.4	0.5	54	3	493.9		
	70	61.9	0.6	0.554	0.12	5.9	0.2	5.8	0.5	51	3	494.1		
	69	60.3	0.6	0.522	0.11	5.6	0.2	6.1	0.5	48	3			
	68	58.6	0.6	0.492	0.10	5.2	0.1	6.5	0.4	45	3			
	67	56.9	0.6	0.464	0.10	4.9	0.1	6.8	0.4	42	2			
	66	55.3	0.6	0.437	0.09	4.7	0.1	7.0	0.4	40	2	494.8		
	65	53.6	0.6	0.411	0.08	4.4	0.1	7.3	0.4	38	2	495.0		
	64	51.9	0.6	0.387	0.08	4.1	0.1	7.6	0.4	35	2			
	63	50.2	0.6	0.364	0.08	3.9	0.1	7.8	0.4	33	2			
	62	48.6	0.6	0.342	0.07	3.6	0.1	8.1	0.4	31	1			
	61	46.9	0.5	0.321	0.06	3.4	0.1	8.3	0.4	29	1			
	60	45.2	0.5	0.301	0.05	3.2	0.1	8.5	0.4	27	1			
	59	43.5	-0.5	0.282	-0.05	3.0	-0.1	8.7	+0.4	26	-1	495.8		
83	83	83.0	-0.7	1.127	-0.23	12.0	-0.3	0.0	+0.7	100	-5	489.6	-0.8	
	82	81.3	0.7	1.067	0.22	11.7	0.3	0.6	0.7	95	5	490.0		
	81	79.7	0.6	1.010	0.21	10.8	0.3	1.2	0.7	90	5		+16.9	
	80	78.0	0.6	0.956	0.19	10.2	0.2	1.8	0.6	85	5	490.7		
	79	76.3	0.6	0.905	0.18	9.7	0.2	2.3	0.6	80	4	491.0		
	78	74.7	0.6	0.856	0.17	9.1	0.2	2.9	0.6	76	4			
	77	73.0	0.6	0.810	0.16	8.6	0.2	3.4	0.6	72	4			
	76	71.3	0.6	0.766	0.15	8.2	0.2	3.8	0.6	68	4	491.8		
	75	69.7	0.6	0.724	0.14	7.7	0.2	4.3	0.6	64	3	492.1		
	74	68.0	0.6	0.684	0.13	7.3	0.2	4.7	0.6	60	3			
	73	66.3	0.6	0.646	0.12	6.9	0.2	5.1	0.6	57	3			
	72	64.7	0.6	0.610	0.12	6.5	0.2	5.5	0.6	54	3	492.9		
	71	63.0	0.6	0.576	0.11	6.1	0.2	5.9	0.6	51	3	493.1		
	70	61.3	0.6	0.543	0.11	5.8	0.2	6.2	0.6	48	2			
	69	59.7	0.6	0.512	0.11	5.4	0.1	6.6	0.5	45	2			
	68	58.0	0.6	0.482	0.10	5.1	0.1	6.9	0.5	42	2			
	67	56.3	0.6	0.454	0.09	4.8	0.1	7.2	0.5	40	2	493.8		
	66	54.7	0.6	0.428	0.09	4.6	0.1	7.4	0.5	38	2	494.0		
	65	53.0	0.5	0.403	0.09	4.3	0.1	7.7	0.5	36	2			
	64	51.3	0.5	0.379	0.08	4.0	0.1	8.0	0.5	34	2			
	63	49.7	0.5	0.356	0.07	3.8	0.1	8.2	0.5	32	2			
	62	48.0	0.5	0.335	0.07	3.6	0.1	8.4	0.5	30	1			
	61	46.3	0.5	0.315	0.07	3.3	0.1	8.7	0.5	28	1			
	60	44.7	-0.5	0.296	-0.06	3.1	-0.1	8.9	+0.5	26	-1	494.8		
84	84	84.0	-0.6	1.164	-0.23	12.4	-0.3	0.0	+0.7	100	-5	488.4	-0.8	
	83	82.3	0.6	1.103	0.21	11.7	0.3	0.7	0.7	95	5	488.8		
	82	80.7	0.6	1.045	0.19	11.1	0.2	1.3	0.6	90	5	489.2	+16.9	
	81	79.0	0.6	0.990	0.17	10.5	0.2	1.9	0.6	85	4			
	80	77.4	0.6	0.938	0.16	10.0	0.2	2.4	0.6	80	4	489.9		
	79	75.7	0.6	0.888	0.15	9.4	0.2	3.0	0.6	76	4	490.2		
	78	74.0	0.6	0.840	0.14	8.9	0.2	3.5	0.6	72	4			
	77	72.4	0.6	0.794	0.13	8.5	0.2	3.9	0.6	68	4	490.8		
	76	70.7	0.6	0.751	0.13	8.0	0.2	4.4	0.6	64	3	491.1		
	75	69.1	0.6	0.710	0.12	7.5	0.1	4.9	0.5	60	3			
	74	67.4	0.6	0.671	0.11	7.1	0.1	5.3	0.5	57	3			
	73	65.7	0.6	0.634	0.11	6.7	0.1	5.7	0.5	54	3	491.8		
	72	64.1	0.6	0.598	0.10	6.3	0.1	6.1	0.5	51	3	492.0		
	71	62.4	0.6	0.564	0.09	6.0	0.1	6.4	0.5	48	2			
	70	60.8	0.6	0.532	0.08	5.6	0.1	6.8	0.5	45	2			
	69	59.1	0.6	0.501	0.07	5.3	0.1	7.1	0.5	43	2			
	68	57.4	0.6	0.472	-0.06	5.0	-0.1	7.4	+0.5	41	-2	492.8		



Reading of Thermometer.		Temperature of the Dew-Point.	Difference for an increase of 1° in Dry.	Elastic force of Vapour.	Difference for an increase of 1° in Dry.	Vapour in a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Vap. reqd. to sat. a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Degree of Humidity. (Satn. = 100.)	Difference for an increase of 1° in Dry.	Weight of a Cubic Foot of Air, Bar. reading 29 inches.	Diff. for an increase of 1° in Dry.	Difference for one inch in Barometer and proportional parts.
Dry.	Wet.													
84	68	57.4	-0.6	0.472	-0.006	gr. 5.0	-0.1	7.4	+0.5	41	-2	492.8	-0.8	16.8
	67	55.8	0.6	0.445	0.006	4.7	0.1	7.7	0.5	38	2	492.9		
	66	54.1	0.6	0.419	0.006	4.5	0.1	7.9	0.5	36	2	493.1	+16.9	
	65	52.5	0.6	0.394	0.006	4.2	0.1	8.2	0.5	34	2			
	64	50.8	0.6	0.371	0.006	4.0	0.1	8.4	0.5	32	2			
	63	49.1	0.5	0.349	0.006	3.7	0.1	8.7	0.5	30	2			
	62	47.5	0.5	0.328	0.006	3.5	0.1	8.9	0.5	28	1			
	61	45.8	-0.5	0.308	-0.006	3.3	-0.1	9.1	+0.5	26	-1	493.8		
85	85	85.0	-0.6	1.203	-0.023	12.8	-0.3	0.0	+0.7	100	-5	487.4	-0.8	
	84	83.4	0.6	1.141	0.021	12.1	0.3	0.7	0.7	95	5	487.8		
	83	81.7	0.6	1.082	0.020	11.5	0.3	1.3	0.7	90	5	488.2	+16.8	
	82	80.0	0.6	1.026	0.019	10.9	0.3	1.9	0.7	85	4			
	81	78.4	0.6	0.973	0.018	10.3	0.2	2.5	0.6	80	4	488.8		
	80	76.7	0.6	0.922	0.018	9.7	0.2	3.1	0.6	76	4	489.2		
	79	75.1	0.6	0.873	0.018	9.2	0.2	3.6	0.6	72	4			
	78	73.4	0.6	0.826	0.018	8.7	0.2	4.1	0.6	68	3	489.8		
	77	71.8	0.6	0.781	0.018	8.3	0.2	4.5	0.6	64	3	490.0		
	76	70.1	0.6	0.738	0.017	7.8	0.2	5.0	0.6	61	3			
	75	68.5	0.6	0.698	0.017	7.4	0.2	5.4	0.6	58	3			
	74	66.8	0.6	0.660	0.017	7.0	0.2	5.8	0.6	55	3	490.8		
	73	65.2	0.6	0.623	0.016	6.6	0.2	6.2	0.6	52	3	491.0		
	72	63.5	0.6	0.588	0.015	6.2	0.2	6.6	0.6	49	3			
	71	61.8	0.6	0.555	0.014	5.9	0.2	6.9	0.6	46	2			
	70	60.2	0.6	0.524	0.014	5.5	0.1	7.3	0.5	43	2			
	69	58.5	0.6	0.494	0.014	5.2	0.1	7.6	0.5	40	2	491.8		
	68	56.9	0.6	0.466	0.013	4.9	0.1	7.9	0.5	38	2	492.0		
	67	55.2	0.6	0.439	0.012	4.6	0.1	8.2	0.5	36	2			
	66	53.6	0.6	0.413	0.011	4.3	0.1	8.5	0.5	34	2			
	65	51.9	0.5	0.388	0.009	4.1	0.1	8.7	0.5	32	1			
	64	50.2	0.5	0.365	0.008	3.8	0.1	9.0	0.5	30	1			
	63	48.6	0.5	0.343	0.007	3.6	0.1	9.2	0.5	28	1			
	62	46.9	-0.5	0.322	-0.006	3.4	-0.1	9.4	+0.5	27	-1	492.9		
86	86	86.0	-0.6	1.242	-0.024	13.2	-0.3	0.0	+0.7	100	-5	486.2	-0.8	
	85	84.3	0.6	1.180	0.023	12.5	0.3	0.7	0.7	95	5	486.6		
	84	82.7	0.6	1.121	0.023	11.8	0.2	1.4	0.6	90	5	487.0	+16.8	
	83	81.1	0.6	1.064	0.022	11.2	0.2	2.0	0.6	85	4			
	82	79.4	0.6	1.008	0.022	10.6	0.2	2.6	0.6	80	4	487.7		
	81	77.8	0.6	0.955	0.021	10.1	0.2	3.1	0.6	76	4	488.1		
	80	76.1	0.6	0.904	0.020	9.5	0.2	3.7	0.6	72	4			
	79	74.5	0.6	0.855	0.018	9.0	0.2	4.2	0.6	68	3	488.7		
	78	72.8	0.6	0.808	0.016	8.5	0.2	4.7	0.6	64	3	489.0		
	77	71.2	0.6	0.763	0.014	8.1	0.2	5.1	0.6	61	3			
	76	69.5	0.6	0.721	0.013	7.6	0.2	5.6	0.6	58	3			
	75	67.9	0.6	0.681	0.012	7.2	0.2	6.0	0.6	55	3	489.7		
	74	66.2	0.6	0.643	0.011	6.8	0.2	6.4	0.6	52	2	490.0		
	73	64.6	0.6	0.607	0.010	6.4	0.2	6.8	0.6	49	2			
	72	62.9	0.6	0.573	0.009	6.1	0.2	7.1	0.6	46	2			
	71	61.3	0.6	0.541	0.009	5.7	0.1	7.5	0.5	43	2			
	70	59.6	0.6	0.510	0.008	5.4	0.1	7.8	0.5	40	2	490.8		
	69	58.0	0.6	0.480	0.007	5.1	0.1	8.1	0.5	38	2	491.0		
	68	56.3	0.6	0.452	0.007	4.8	0.1	8.4	0.5	36	2			
	67	54.7	0.6	0.426	0.007	4.5	0.1	8.7	0.5	34	1			
	66	53.0	0.5	0.402	0.007	4.2	0.1	9.0	0.5	32	1			
	65	51.4	0.5	0.379	0.006	4.0	0.1	9.2	0.5	30	1			
	64	49.7	0.5	0.357	0.006	3.7	0.1	9.5	0.5	28	1			
	63	48.1	-0.5	0.336	-0.006	3.5	-0.1	9.7	+0.5	27	-1	491.8		
87	87	87.0	-0.6	1.282	-0.024	13.6	-0.3	0.0	+0.7	100	-5	485.2	-0.8	
	86	85.4	0.6	1.219	0.024	12.9	0.3	0.7	0.7	95	5	485.6		
	85	83.7	0.6	1.158	0.024	12.2	0.3	1.4	0.7	90	5	486.0	+16.7	
	84	82.1	0.6	1.098	0.023	11.6	0.3	2.0	0.7	85	5			
	83	80.4	-0.6	1.040	-0.022	11.0	-0.2	2.6	+0.6	81	-4	486.7		

Reading of Thermometer.		Temperature of the Dew-point.	Difference for an increase of 1° in Dry.	Elastic force of Vapour.	Difference for an increase of 1° in Dry.	Vapour in a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Vap. reqd. to sat. a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Degree of Humidity. (Satn. = 100.)	Difference for an increase of 1° in Dry.	Weight of a Cubic Foot of Air, Bar. reading 29 inches.	Diff. for an increase of 1° in Dry.	Difference for one inch in Barometer and proportional parts.
Dry.	Wet.													
87	83	80.4	-0.6	1.040	-0.022	11.0	-0.2	2.6	+0.6	81	-4	486.7	-0.8	16.7
	82	78.8	0.6	0.985	0.021	10.4	0.2	3.2	0.6	77	4	487.1		
	81	77.1	0.6	0.933	0.020	9.8	0.2	3.8	0.6	73	4			
	80	75.5	0.6	0.884	0.019	9.3	0.2	4.3	0.6	69	4	487.7		
	79	73.9	0.6	0.837	0.018	8.8	0.2	4.8	0.6	65	4	488.0		
	78	72.2	0.6	0.792	0.017	8.3	0.2	5.3	0.6	61	3			
	77	70.6	0.6	0.749	0.016	7.9	0.2	5.7	0.6	58	3			
	76	68.9	0.6	0.708	0.015	7.4	0.1	6.2	0.5	55	3	488.8		
	75	67.3	0.6	0.669	0.014	7.0	0.1	6.6	0.5	52	3	489.0		
	74	65.6	0.6	0.632	0.013	6.6	0.1	7.0	0.5	49	3			
	73	64.0	0.6	0.597	0.012	6.3	0.1	7.3	0.5	46	2			
	72	62.4	0.6	0.564	0.011	5.9	0.1	7.7	0.5	43	2			
	71	60.7	0.6	0.532	0.010	5.6	0.1	8.0	0.5	41	2	489.8		
	70	59.1	0.6	0.502	0.010	5.3	0.1	8.3	0.5	39	2	490.0		
	69	57.4	0.5	0.473	0.009	5.0	0.1	8.6	0.5	37	2			
	68	55.8	0.5	0.446	0.009	4.7	0.1	8.9	0.5	35	2			
88	88	88.0	-0.6	1.323	-0.024	14.0	-0.3	0.0	+0.7	100	-5	484.0	-0.8	
	87	86.4	0.6	1.258	0.023	13.3	0.3	0.7	0.7	95	5			
	86	84.7	0.6	1.195	0.023	12.6	0.3	1.4	0.7	90	5	484.8	+16.7	
	85	83.1	0.6	1.134	0.022	12.0	0.3	2.0	0.7	85	4	485.2		
	84	81.5	0.6	1.075	0.021	11.4	0.3	2.6	0.7	81	4			
	83	79.8	0.6	1.018	0.020	10.8	0.3	3.2	0.7	77	4	485.9		
	82	78.2	0.6	0.964	0.019	10.2	0.2	3.8	0.6	73	4	486.3		
	81	76.5	0.6	0.913	0.018	9.6	0.2	4.4	0.6	69	3			
	80	74.9	0.6	0.865	0.018	9.1	0.2	4.9	0.6	65	3	486.9		
	79	73.3	0.6	0.819	0.018	8.6	0.2	5.4	0.6	61	3	487.2		
	78	71.6	0.6	0.775	0.018	8.1	0.2	5.9	0.6	58	3			
	77	70.0	0.6	0.733	0.017	7.7	0.2	6.3	0.6	55	3			
	76	68.4	0.6	0.693	0.016	7.3	0.2	6.7	0.6	52	3	487.9		
	75	66.7	0.6	0.655	0.015	6.9	0.2	7.1	0.6	49	3	488.2		
	74	65.1	0.6	0.619	0.014	6.5	0.1	7.5	0.5	46	2			
	89	89	89.0	-0.6	1.366	-0.024	14.4	-0.3	0.0	+0.7	100	-5	482.9	-0.8
88		87.4	0.6	1.299	0.023	13.7	0.3	0.7	0.7	95	5	483.3	+16.7	
87		85.7	0.6	1.234	0.022	13.0	0.3	1.4	0.7	90	5	483.7		
86		84.1	0.6	1.172	0.021	12.3	0.3	2.1	0.7	85	4	484.1		
85		82.5	0.6	1.112	0.020	11.7	0.3	2.7	0.7	81	4			
84		80.8	0.6	1.054	0.019	11.1	0.3	3.3	0.7	77	4	484.8		
83		79.2	0.6	0.998	0.017	10.5	0.2	3.9	0.6	73	4	485.1		
82		77.6	0.6	0.945	0.016	10.0	0.2	4.4	0.6	69	4			
81		76.0	0.6	0.895	0.015	9.4	0.2	5.0	0.6	65	3	485.8		
80		74.3	0.6	0.847	0.014	8.9	0.2	5.5	0.6	61	3	486.1		
79		72.7	0.6	0.801	0.013	8.4	0.2	6.0	0.6	58	3			
78		71.1	0.6	0.757	0.012	8.0	0.2	6.4	0.6	55	3			
77		69.4	0.6	0.716	0.012	7.5	0.1	6.9	0.5	52	2	486.9		
76		67.8	0.6	0.677	0.012	7.1	0.1	7.3	0.5	49	2	487.1		
75		66.2	0.6	0.640	0.011	6.7	0.1	7.7	0.5	46	2			
74		64.6	0.6	0.605	0.010	6.4	0.1	8.0	0.5	43	2			
73	63.0	0.6	0.572	0.010	6.0	0.1	8.4	0.5	41	2				
72	61.3	-0.5	0.541	-0.010	5.7	-0.1	8.7	+0.5	39	-2	487.9			



Reading of Thermometer.		Temperature of the Dew-Point.	Difference for an increase of 1° in Dry.	Elastic force of Vapour.	Difference for an increase of 1° in Dry.	Vapour in a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Vap. reqd. to sat. a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Degree of Humidity. (Satn. = 100.)	Difference for an increase of 1° in Dry.	Weight of a Cubic Foot of Air, Bar. reading 29 inches.	Diff. for an increase of 1° in Dry.	Difference for one inch in Barometer and proportional parts.
Dry.	Wet.													
89	72	61.3	-0.5	in. 0.541	-0.10	gr. 5.7	-0.1	gr. 8.7	+0.5	39	-2	grs. 487.9	-0.8	16.6
	71	59.6	0.5	0.511	0.10	5.4	0.1	9.0	0.5	37	2	488.1		
	70	58.0	0.5	0.482	0.09	5.1	0.1	9.3	0.5	35	2	488.3	+16.7	
	69	56.4	0.5	0.455	0.09	4.8	0.1	9.6	0.5	33	2	488.5		
	68	54.7	0.5	0.429	0.08	4.5	0.1	9.9	0.5	31	1	488.7		
	67	53.1	0.5	0.404	0.07	4.2	0.1	10.2	0.5	29	1	488.9		
	66	51.5	-0.5	0.381	-0.06	4.0	-0.1	10.4	+0.5	28	-1	489.1		
90	90	90.0	-0.6	1.411	-0.27	14.8	-0.3	0.0	+0.8	100	-5	481.8	-0.8	
	89	88.4	0.6	1.342	0.26	14.1	0.3	0.7	0.8	95	5	482.3		
	88	86.8	0.6	1.276	0.26	13.4	0.3	1.4	0.8	90	4	482.7	+16.6	
	87	85.1	0.6	1.212	0.25	12.7	0.3	2.1	0.8	85	4	483.1		
	86	83.5	0.6	1.151	0.24	12.1	0.3	2.7	0.8	81	4	483.5		
	85	81.9	0.6	1.092	0.23	11.4	0.2	3.4	0.7	77	4	483.8		
	84	80.3	0.6	1.036	0.22	10.8	0.2	4.0	0.7	73	4	484.1		
	83	78.6	0.6	0.982	0.21	10.3	0.2	4.5	0.7	69	3	484.5		
	82	77.0	0.6	0.930	0.20	9.7	0.2	5.1	0.7	65	3	484.8		
	81	75.4	0.6	0.880	0.18	9.2	0.2	5.6	0.7	62	3	485.1		
	80	73.7	0.5	0.833	0.17	8.7	0.2	6.1	0.7	59	3	485.4		
	79	72.1	0.5	0.788	0.16	8.3	0.2	6.5	0.7	56	3	485.7		
	78	70.5	0.5	0.745	0.15	7.8	0.2	7.0	0.7	53	3	486.0		
	77	68.8	0.5	0.704	0.14	7.4	0.2	7.4	0.7	50	2	486.3		
	76	67.2	0.5	0.665	0.13	7.0	0.2	7.8	0.7	47	2	486.6		
	75	65.6	0.5	0.629	0.13	6.6	0.1	8.2	0.6	44	2	486.9		
	74	64.0	0.5	0.595	0.13	6.2	0.1	8.6	0.6	42	2	487.2		
	73	62.4	0.5	0.562	0.12	5.9	0.1	8.9	0.6	40	2	487.5		
	72	60.7	0.5	0.531	0.11	5.6	0.1	9.2	0.6	38	2	487.8		
	71	59.1	0.5	0.501	0.10	5.3	0.1	9.5	0.6	36	2	488.1		
	70	57.5	0.5	0.473	0.10	5.0	0.1	9.8	0.6	34	2	488.4		
	69	55.8	0.5	0.446	0.09	4.7	0.1	10.1	0.6	32	2	488.7		
	68	54.2	0.5	0.421	0.08	4.4	0.1	10.4	0.6	30	1	489.0		
	67	52.6	-0.5	0.397	-0.07	4.2	-0.1	10.6	+0.6	28	-1	489.3		
91	91	91.0	-0.6	1.455	-0.27	15.3	-0.3	0.0	+0.7	100	-5	480.7	-0.8	
	90	89.4	0.6	1.384	0.27	14.5	0.3	0.8	0.7	95	5	481.1		
	89	87.8	0.6	1.316	0.27	13.8	0.3	1.5	0.7	90	4	481.5	+16.6	
	88	86.1	0.6	1.250	0.26	13.1	0.3	2.2	0.7	86	4	481.9		
	87	84.5	0.6	1.187	0.25	12.5	0.3	2.8	0.7	82	4	482.3		
	86	82.9	0.6	1.127	0.23	11.8	0.2	3.5	0.6	78	4	482.6		
	85	81.3	0.6	1.069	0.21	11.2	0.2	4.1	0.6	74	4	483.0		
	84	79.7	0.6	1.013	0.19	10.6	0.2	4.7	0.6	70	4	483.4		
	83	78.0	0.6	0.960	0.17	10.1	0.2	5.2	0.6	66	3	483.7		
	82	76.4	0.6	0.910	0.16	9.5	0.2	5.8	0.6	62	3	484.0		
	81	74.8	0.6	0.862	0.15	9.0	0.2	6.3	0.6	59	3	484.3		
	80	73.2	0.6	0.816	0.14	8.5	0.2	6.8	0.6	56	3	484.6		
	79	71.6	0.6	0.772	0.13	8.1	0.2	7.2	0.6	53	3	484.9		
	78	69.9	0.5	0.730	0.12	7.7	0.2	7.6	0.6	50	3	485.2		
	77	68.3	0.5	0.690	0.11	7.2	0.1	8.1	0.5	47	2	485.5		
	76	66.7	0.5	0.652	0.10	6.8	0.1	8.5	0.5	44	2	485.8		
	75	65.1	0.5	0.616	0.09	6.5	0.1	8.8	0.5	42	2	486.1		
	74	63.5	0.5	0.582	0.09	6.1	0.1	9.2	0.5	40	2	486.4		
	73	61.8	0.5	0.550	0.09	5.8	0.1	9.5	0.5	38	2	486.7		
	72	60.2	0.5	0.520	0.09	5.5	0.1	9.8	0.5	36	2	487.0		
	71	58.6	0.5	0.491	0.08	5.1	0.1	10.2	0.5	34	2	487.3		
	70	57.0	0.5	0.463	0.07	4.8	0.1	10.5	0.5	32	1	487.6		
	69	55.3	0.5	0.437	0.07	4.5	0.1	10.8	0.5	30	1	487.9		
	68	53.7	-0.5	0.413	-0.06	4.3	-0.1	11.0	+0.5	28	-1	488.2		
92	92	92.0	-0.6	1.501	-0.28	15.7	-0.3	0.0	+0.8	100	-5	479.5	-0.8	
	91	90.4	0.6	1.428	0.27	14.9	0.3	0.8	0.8	95	5	480.0		
	90	88.8	0.6	1.357	0.25	14.2	0.3	1.5	0.8	90	4	480.4	+16.6	
	89	87.1	0.6	1.289	0.24	13.5	0.3	2.2	0.8	85	4	480.8		
	88	85.5	0.6	1.224	0.23	12.8	0.3	2.9	0.8	81	4	481.2		
	87	83.9	-0.6	1.162	-0.22	12.2	-0.3	3.5	+0.8	77	-4	481.5		

Reading of Thermometer.		Temperature of the Dew-Point.	Difference for an increase of 1° in Dry.	Elastic force of Vapour.	Difference for an increase of 1° in Dry.	Vapour in a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Vap. reqd. to sat. a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Degree of Humidity. (Satn. = 100.)	Difference for an increase of 1° in Dry.	Weight of a Cubic Foot of Air, Bar. reading 29 inches.	Diff. for an increase of 1° in Dry.	Difference for one inch in Barometer and 1 proportional part.
Dry.	Wet.													
92	87	83.9	-0.6	in. 1.162	-0.22	gr. 12.2	-0.3	gr. 3.5	+0.8	77	-4	grs. 481.5	-0.8	16.5
	86	82.3	0.6	1.103	0.21	11.6	0.3	4.1	0.8	73	4	481.9		
	85	80.7	0.6	1.047	0.20	11.0	0.3	4.7	0.8	70	3	482.3	+16.6	
	84	79.1	0.6	0.994	0.20	10.4	0.2	5.3	0.7	66	3	482.7		
	83	77.5	0.6	0.943	0.20	9.9	0.2	5.8	0.7	62	3	483.1		
	82	75.9	0.6	0.894	0.19	9.3	0.2	6.4	0.7	59	3	483.5		
	81	74.2	0.6	0.847	0.18	8.8	0.2	6.9	0.7	56	3	483.9		
	80	72.6	0.5	0.802	0.17	8.3	0.2	7.4	0.7	53	3	484.3		
	79	71.0	0.5	0.759	0.15	7.9	0.1	7.8	0.6	50	2	484.7		
	78	69.4	0.5	0.718	0.14	7.5	0.1	8.2	0.6	47	2	485.1		
	77	67.8	0.5	0.679	0.13	7.1	0.1	8.6	0.6	45	2	485.5		
	76	66.2	0.5	0.642	0.12	6.7	0.1	9.0	0.6	43	2	485.9		
	75	64.5	0.5	0.607	0.11	6.3	0.1	9.4	0.6	41	2	486.3		
	74	62.9	0.5	0.573	0.09	6.0	0.1	9.7	0.6	38	2	486.7		
	73	61.3	0.5	0.541	0.08	5.7	0.1	10.0	0.6	36	2	487.1		
	72	59.7	0.5	0.511	0.08	5.3	0.1	10.4	0.6	34	2	487.5		
	71	58.1	0.5	0.483	0.08	5.0	0.1	10.7	0.6	32	1	487.9		
	70	56.5	0.5	0.456	0.07	4.8	0.1	10.9	0.6	30	1	488.3		
	69	54.8	-0.5	0.430	-0.07	4.5	-0.1	11.2	+0.6	28	-1	488.7		
93	93	93.0	-0.6	1.548	-0.28	16.2	-0.3	0.0	+0.8	100	-5	478.4	-0.8	
	92	91.4	0.6	1.473	0.27	15.4	0.3	0.8	0.8	95	5	478.9		
	91	89.8	0.6	1.401	0.26	14.7	0.3	1.5	0.8	90	4	479.3	+16.5	
	90	88.2	0.6	1.332	0.25	14.0	0.3	2.2	0.8	86	4	479.7		
	89	86.6	0.6	1.266	0.24	13.3	0.3	2.9	0.8	82	4	480.1		
	88	85.0	0.6	1.203	0.22	12.6	0.3	3.6	0.8	78	4	480.5		
	87	83.4	0.6	1.142	0.21	11.9	0.2	4.3	0.7	74	4	480.9		
	86	81.7	0.5	1.084	0.20	11.3	0.2	4.9	0.7	70	3	481.3		
	85	80.1	0.5	1.028	0.18	10.7	0.2	5.5	0.7	66	3	481.7		
	84	78.5	0.5	0.974	0.16	10.2	0.2	6.0	0.7	63	3	482.1		
	83	76.9	0.5	0.923	0.15	9.6	0.2	6.6	0.7	60	3	482.5		
	82	75.3	0.5	0.874	0.14	9.1	0.2	7.1	0.7	57	3	482.9		
	81	73.7	0.5	0.828	0.13	8.7	0.2	7.5	0.7	54	3	483.3		
	80	72.1	0.5	0.785	0.13	8.2	0.2	8.0	0.7	51	3	483.7		
	79	70.5	0.5	0.744	0.12	7.8	0.2	8.4	0.7	48	2	484.1		
	78	68.9	0.5	0.704	0.12	7.4	0.2	8.8	0.7	45	2	484.5		
	77	67.2	0.5	0.666	0.11	6.9	0.1	9.3	0.6	42	2	484.9		
	76	65.6	0.5	0.630	0.10	6.6	0.1	9.6	0.6	40	2	485.3		
	75	64.0	0.5	0.596	0.09	6.2	0.1	10.0	0.6	38	2	485.7		
	74	62.4	0.5	0.564	0.09	5.9	0.1	10.3	0.6	36	2	486.1		
	73	60.8	0.5	0.533	0.09	5.5	0.1	10.7	0.6	34	2	486.5		
	72	59.2	0.5	0.503	0.09	5.2	0.1	11.0	0.6	32	2	486.9		
	71	57.6	0.5	0.475	0.09	5.0	0.1	11.2	0.6	30	1	487.3		
	70	56.0	-0.5	0.449	-0.08	4.7	-0.1	11.5	+0.6	29	-1	487.7		
94	94	94.0	-0.6	1.597	-0.29	16.7	-0.3	0.0	+0.8	100	-5	477.2	-0.8	
	93	92.4	0.6	1.520	0.28	15.9	0.3	0.8	0.8	95	5	477.7		
	92	90.8	0.6	1.446	0.26	15.1	0.3	1.6	0.8	90	4	478.1	+16.5	
	91	89.2	0.6	1.375	0.25	14.4	0.3	2.3	0.8	86	4	478.6		
	90	87.6	0.6	1.307	0.24	13.7	0.3	3.0	0.8	82	4	479.0		
	89	86.0	0.6	1.242	0.23	13.0	0.3	3.7	0.8	78	4	479.4		
	88	84.4	0.6	1.180	0.22	12.3	0.2	4.4	0.7	74	4	479.7		
	87	82.8	0.6	1.121	0.22	11.7	0.2	5.0	0.7	70	3	480.1		
	86	81.2	0.6	1.064	0.21	11.1	0.2	5.6	0.7	66	3	480.5		
	85	79.6	0.6	1.010	0.20	10.5	0.2	6.2	0.7	63	3	480.8		
	84	78.0	0.6	0.958	0.18	10.0	0.2	6.7	0.7	60	3	481.1		
	83	76.4	0.6	0.909	0.17	9.5	0.2	7.2	0.7	57	3	481.5		
	82	74.8	0.6	0.862	0.16	9.0	0.2	7.7	0.7	54	3	481.7		
	81	73.1	0.5	0.816	0.15	8.5	0.2	8.2	0.7	51	3	482.0		
	80	71.5	0.5	0.772	0.14	8.0	0.1	8.7	0.6	48	2	482.2		
	79	69.9	0.5	0.731	0.13	7.6	0.1	9.1	0.6	45	2	482.5		
	78	68.3	0.5	0.692	0.12	7.2	0.1	9.5	0.6	43	2	482.7		
	77	66.7	0.5	0.655	0.11	6.8	0.1	9.9	0.6	41	2	482.9		
	76	65.1	-0.5	0.620	-0.10	6.4	-0.1	10.3	+0.6	39	-2	483.1		



Reading of Thermometer.		Temperature of the Dew-Point.	Difference for an increase of 1° in Dry.	Elastic force of Vapour.	Difference for an increase of 1° in Dry.	Vapour in a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Vap. reqd. to sat. a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Degree of Humidity. (Satn. = 100.)	Difference for an increase of 1° in Dry.	Weight of a Cubic Foot of Air, reading 29 inches.	Diff. for an increase of 1° in Dry.	Difference for one inch in Barometer and proportional parts.
Dry.	Wet.													
94	76	65.1	-0.5	0.620	-0.10	6.4	-0.1	10.3	+0.6	39	-2	483.1	-0.8	16.4
	75	63.5	0.5	0.587	0.10	6.1	0.1	10.6	0.6	37	2	483.3		
	74	61.9	0.5	0.555	0.10	5.7	0.1	11.0	0.6	35	2	483.5		
	73	60.3	0.5	0.524	0.10	5.4	0.1	11.3	0.6	33	1	483.7		
	72	58.7	0.5	0.494	0.09	5.1	0.1	11.6	0.6	31	1	483.9		
	71	57.1	-0.5	0.466	-0.08	4.9	-0.1	11.8	+0.6	29	-1	484.0		
95	95	95.0	-0.6	1.646	-0.30	17.2	-0.3	0.0	+0.8	100	-5	476.2	-0.8	
	94	93.4	0.6	1.567	0.29	16.3	0.3	0.9	0.8	95	5	476.6		
	93	91.8	0.6	1.492	0.28	15.5	0.3	1.7	0.8	91	5	477.1		
	92	90.2	0.6	1.420	0.27	14.8	0.3	2.4	0.8	86	4	477.5		
	91	88.6	0.6	1.350	0.26	14.1	0.3	3.1	0.8	82	4	477.9		
	90	87.0	0.6	1.283	0.24	13.4	0.3	3.8	0.8	78	4	478.3		
	89	85.4	0.5	1.219	0.22	12.7	0.3	4.5	0.8	74	4	478.7		
	88	83.8	0.5	1.158	0.20	12.1	0.3	5.1	0.8	70	4	479.1		
	87	82.2	0.5	1.099	0.18	11.5	0.3	5.7	0.8	66	3	479.5		
	86	80.6	0.5	1.043	0.17	10.9	0.2	6.3	0.7	63	3	479.8		
	85	79.0	0.5	0.990	0.16	10.3	0.2	6.9	0.7	60	3	480.1		
	84	77.4	0.5	0.940	0.16	9.8	0.2	7.4	0.7	57	3	480.4		
	83	75.8	0.5	0.892	0.16	9.3	0.2	7.9	0.7	54	2	480.7		
	82	74.2	0.5	0.846	0.15	8.8	0.2	8.4	0.7	51	2	481.0		
	81	72.6	0.5	0.802	0.14	8.3	0.2	8.9	0.7	48	2	481.3		
	80	71.0	0.5	0.759	0.13	7.9	0.2	9.3	0.7	45	2	481.5		
	79	69.4	0.5	0.718	0.12	7.5	0.2	9.7	0.7	43	2	481.7		
	78	67.8	0.5	0.680	0.12	7.1	0.2	10.1	0.7	41	2	482.0		
	77	66.2	0.5	0.644	0.11	6.7	0.2	10.5	0.7	39	2	482.2		
	76	64.6	0.5	0.610	0.10	6.3	0.1	10.9	0.6	37	2	482.4		
	75	63.0	0.4	0.577	0.09	6.0	0.1	11.2	0.6	35	2	482.6		
	74	61.4	0.4	0.545	0.08	5.6	0.1	11.6	0.6	33	2	482.8		
	73	59.8	0.4	0.514	0.07	5.3	0.1	11.9	0.6	31	2	483.0		
	72	58.2	-0.4	0.485	-0.07	5.0	-0.1	12.2	+0.6	30	-1	483.1		
96	96	96.0	-0.6	1.697	-0.31	17.7	-0.3	0.0	+0.8	100	-5	475.0	-0.8	
	95	94.4	0.6	1.616	0.30	16.8	0.3	0.9	0.8	95	5	475.5		
	94	92.8	0.6	1.538	0.28	16.0	0.3	1.7	0.8	90	4	475.9		
	93	91.2	0.6	1.464	0.27	15.2	0.3	2.5	0.8	86	4	476.4		
	92	89.6	0.6	1.393	0.25	14.5	0.3	3.2	0.8	82	4	476.8		
	91	88.0	0.6	1.325	0.23	13.8	0.3	3.9	0.8	78	4	477.2		
	90	86.4	0.6	1.260	0.22	13.1	0.3	4.6	0.8	74	4	477.6		
	89	84.9	0.6	1.198	0.21	12.4	0.2	5.3	0.7	70	3	478.0		
	88	83.3	0.6	1.138	0.20	11.8	0.2	5.9	0.7	66	3	478.4		
	87	81.7	0.6	1.081	0.19	11.2	0.2	6.5	0.7	63	3	478.7		
	86	80.1	0.6	1.026	0.17	10.7	0.2	7.0	0.7	60	3	479.0		
	85	78.5	0.5	0.974	0.16	10.1	0.2	7.6	0.7	57	3	479.3		
	84	76.9	0.5	0.924	0.15	9.6	0.2	8.1	0.7	54	3	479.6		
	83	75.3	0.5	0.876	0.14	9.1	0.2	8.6	0.7	52	3	479.9		
	82	73.7	0.5	0.831	0.13	8.6	0.2	9.1	0.7	49	2	480.2		
	81	72.1	0.5	0.788	0.13	8.2	0.2	9.5	0.7	46	2	480.5		
	80	70.5	0.5	0.746	0.12	7.7	0.1	10.0	0.6	43	2	480.8		
	79	68.9	0.5	0.706	0.11	7.3	0.1	10.4	0.6	41	2	481.1		
	78	67.3	0.5	0.668	0.10	6.9	0.1	10.8	0.6	39	2	481.4		
	77	65.7	0.5	0.633	0.10	6.5	0.1	11.2	0.6	37	2	481.7		
	76	64.2	0.5	0.600	0.10	6.2	0.1	11.5	0.6	35	2	482.0		
	75	62.6	0.5	0.568	0.10	5.9	0.1	11.8	0.6	33	1	482.3		
	74	61.0	0.5	0.537	0.09	5.6	0.1	12.1	0.6	31	1	482.6		
	73	59.4	-0.4	0.507	-0.08	5.3	-0.1	12.4	+0.6	30	-1	482.9		
97	97	97.0	-0.6	1.750	-0.30	18.2	-0.3	0.0	+0.8	100	-5	473.8	-0.7	
	96	95.4	0.6	1.666	0.27	17.3	0.3	0.9	0.8	95	5	474.3		
	95	93.8	0.6	1.586	0.25	16.5	0.3	1.7	0.8	90	4	474.7		
	94	92.2	0.6	1.510	0.24	15.7	0.3	2.5	0.8	86	4	475.2		
	93	90.6	0.6	1.437	0.24	14.9	0.3	3.3	0.8	82	4	475.6		
	92	89.1	0.6	1.368	0.23	14.2	0.3	4.0	0.8	78	4	476.1		
	91	87.5	-0.6	1.302	-0.22	13.5	-0.3	4.7	+0.8	74	-3	476.5		

Reading of Thermometer.		Temperature of the Dew-Point.	Difference for an increase of 1° in Dry.	Elastic force of Vapour.	Difference for an increase of 1° in Dry.	Vapour in a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Vap. reqd. to sat. a Cubic Foot of Air.	Difference for an increase of 1° in Dry.	Degree of Humidity. (Satn. = 100.)	Difference for an increase of 1° in Dry.	Weight of a Cubic Foot of Air, Bar. reading 29 inches.	Diff. for an increase of 1° in Dry.	Difference for one inch in Barometer and proportional parts.
Dry.	Wet.													
97	91	87.5	-0.6	1.302	-0.22	13.5	-0.3	4.7	+0.8	74	-3	476.5	-0.7	16.3
	90	85.9	0.6	1.238	0.21	12.8	0.2	5.4	0.7	70	3	476.8		
	89	84.3	0.5	1.177	0.20	12.2	0.2	6.0	0.7	67	3	477.2	+16.4	
	88	82.7	0.5	1.118	0.19	11.6	0.2	6.6	0.7	64	3	477.6		
	87	81.1	0.5	1.062	0.19	11.0	0.2	7.2	0.7	60	3	477.9		
	86	79.5	0.5	1.009	0.19	10.4	0.2	7.8	0.7	57	3	478.2		
	85	78.0	0.5	0.958	0.18	9.9	0.2	8.3	0.7	54	3	478.5		
	84	76.4	0.5	0.909	0.16	9.4	0.2	8.8	0.7	52	3	478.8		
	83	74.8	0.5	0.863	0.15	8.9	0.2	9.3	0.7	49	2	479.1		
	82	73.2	0.5	0.818	0.14	8.4	0.2	9.8	0.7	46	2	479.4		
	81	71.6	0.5	0.775	0.13	8.0	0.2	10.2	0.7	44	2	479.7		
	80	70.0	0.5	0.734	0.12	7.6	0.2	10.6	0.7	42	2	479.9		
	79	68.4	0.5	0.695	0.11	7.2	0.1	11.0	0.6	39	2	480.1		
	78	66.8	0.5	0.658	0.10	6.8	0.1	11.4	0.6	37	2	480.3		
98	98	98.0	-0.6	1.807	-0.32	18.7	-0.3	0.0	+0.9	100	-5	472.7	-0.7	
	97	96.4	0.6	1.721	0.31	17.8	0.3	0.9	0.9	95	4	473.2		
	96	94.8	0.6	1.639	0.29	17.0	0.3	1.7	0.9	90	4	473.7	+16.3	
	95	93.3	0.6	1.561	0.27	16.2	0.3	2.5	0.9	86	4	474.2		
	94	91.7	0.6	1.487	0.25	15.4	0.3	3.3	0.9	82	4	474.6		
	93	90.1	0.5	1.416	0.23	14.6	0.3	4.1	0.9	78	4	475.0		
	92	88.5	0.5	1.347	0.21	13.9	0.3	4.8	0.9	74	3	475.4		
	91	86.9	0.5	1.281	0.19	13.2	0.3	5.5	0.9	70	3	475.8		
	90	85.3	0.5	1.218	0.17	12.6	0.3	6.1	0.9	67	3	476.2		
	89	83.8	0.5	1.157	0.16	12.0	0.3	6.7	0.9	64	3	476.6		
	88	82.2	0.5	1.099	0.15	11.4	0.2	7.3	0.8	61	3	476.9		
	87	80.6	0.5	1.043	0.14	10.8	0.2	7.9	0.8	58	3	477.3		
	86	79.0	0.5	0.990	0.13	10.2	0.2	8.5	0.8	55	3	477.6		
	85	77.4	0.5	0.940	0.13	9.7	0.2	9.0	0.8	52	2	477.9		
99	99	99.0	-0.6	1.862	-0.34	19.3	-0.4	0.0	+0.9	100	-5	471.5	-0.7	
	98	97.4	0.6	1.774	0.32	18.4	0.4	0.9	0.9	95	5	472.0		
	97	95.9	0.6	1.690	0.30	17.5	0.4	1.8	0.9	91	4	472.5	+16.3	
	96	94.3	0.6	1.610	0.29	16.7	0.4	2.6	0.9	87	4	473.0		
	95	92.7	0.6	1.534	0.28	15.9	0.4	3.4	0.9	83	4	473.5		
	94	91.1	0.6	1.462	0.27	15.1	0.3	4.2	0.8	79	4	473.9		
	93	89.6	0.6	1.393	0.26	14.4	0.3	4.9	0.8	75	4	474.3		
	92	88.0	0.6	1.327	0.26	13.7	0.3	5.6	0.8	71	3	474.7		
	91	86.4	0.5	1.263	0.25	13.0	0.3	6.3	0.8	67	3	475.1		
	90	84.8	0.5	1.201	0.25	12.3	0.2	7.0	0.7	64	3	475.5		
	89	83.2	0.5	1.141	0.25	11.7	0.2	7.6	0.7	61	3	475.9		
	88	81.7	0.5	1.084	0.24	11.1	0.2	8.2	0.7	58	3	476.2		
	87	80.1	0.5	1.029	0.23	10.5	0.1	8.8	0.6	55	2	476.5		
	86	78.5	0.5	0.977	0.22	10.0	0.1	9.3	0.6	52	2	476.8		



Reading of Ther- mometer.		Temperature of the Dew-point.	Difference for an in- crease of 1° in Dry.	Elastic force of Vapour.	Difference for an in- crease of 1 in Dry.	Vapour in a Cubic Foot of Air.	Difference for an in- crease of 1° in Dry.	Vap. reqd. to sat. a Cubic Foot of Air.	Difference for an in- crease of 1° in Dry.	Degree of Humi- dity. (Satn. = 100.)	Difference for an in- crease of 1° in Dry.	Weight of a Cubic Foot of Air. Bar. reading 29 inches.	Diff. for an increase of 1° in Dry.	Difference for one in. in Barometer and proportional parts.
Dry.	Wet.													
99	80	69.1	-0.5	0.712	-0.13	7.3	-0.1	12.0	+0.6	38	-2	478.4	-0.7	16.2
	79	67.5	0.5	0.675	0.12	6.9	0.1	12.4	0.6	36	2	478.6		
	78	65.9	0.4	0.639	0.11	6.6	0.1	12.7	0.6	34	2	478.8	+16.3	1.1
	77	64.3	0.4	0.605	0.11	6.2	0.1	13.1	0.6	32	1	479.0		2.2
	76	62.8	-0.4	0.572	-0.10	5.9	-0.1	13.4	+0.6	31	-1	479.2		3.3
100	100	100.0	-0.6	1.918	-0.35	19.8	-0.4	0.0	+1.0	100	-5	470.5	-0.7	4.4
	99	98.4	0.6	1.828	0.33	18.9	0.4	0.9	1.0	95	5	471.0		5.5
	98	96.9	0.6	1.742	0.31	18.0	0.4	1.8	1.0	90	4	471.5	+16.2	6.6
	97	95.3	0.6	1.660	0.29	17.2	0.4	2.6	1.0	86	4	472.0		7.7
	96	93.7	0.6	1.582	0.27	16.3	0.3	3.5	0.9	82	4	472.9		8.8
	95	92.1	0.6	1.508	0.26	15.5	0.3	4.3	0.9	78	4	473.3		9.9
	94	90.6	0.6	1.437	0.25	14.8	0.3	5.0	0.9	74	4	473.7		11.0
	93	89.0	0.6	1.368	0.23	14.1	0.3	5.7	0.9	71	4	474.1		12.1
	92	87.4	0.6	1.301	0.22	13.4	0.3	6.4	0.9	68	3	474.5		13.2
	91	85.9	0.6	1.237	0.20	12.7	0.3	7.1	0.9	64	3	474.9		14.3
	90	84.3	0.5	1.175	0.18	12.1	0.2	7.7	0.8	61	3	475.2		15.4
	89	82.7	0.5	1.116	0.17	11.5	0.2	8.3	0.8	58	3	475.5		16.5
	88	81.2	0.5	1.060	0.16	10.9	0.2	8.9	0.8	55	3	475.8		17.6
	87	79.6	0.5	1.006	0.15	10.4	0.2	9.4	0.8	52	3	476.1		18.7
	86	78.0	0.5	0.955	0.14	9.9	0.2	9.9	0.8	49	2	476.4		19.8
	85	76.5	0.5	0.907	0.14	9.4	0.2	10.4	0.8	47	2	476.7		20.9
	84	74.9	0.5	0.861	0.13	8.9	0.2	10.9	0.8	45	2	477.0		22.0
	83	73.3	0.5	0.818	0.13	8.4	0.2	11.4	0.8	43	2	477.2		23.1
	82	71.7	0.5	0.777	0.13	8.0	0.1	11.8	0.7	40	2	477.5		24.2
	81	70.2	0.5	0.738	0.12	7.6	0.1	12.2	0.7	38	2	477.8		25.3
	80	68.6	0.5	0.700	0.12	7.2	0.1	12.6	0.7	36	2	478.1		26.4
	79	67.0	0.5	0.663	0.12	6.8	0.1	13.0	0.7	34	2	478.4		27.5
	78	65.5	0.4	0.628	0.11	6.4	0.1	13.4	0.7	32	1	478.7		28.6
	77	63.9	0.4	0.594	0.11	6.1	0.1	13.7	0.7	30	1	479.0		29.7
	76	62.4	-0.4	0.561	-0.10	5.8	-0.1	14.0	+0.7	29	-1	479.3		30.8

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1871

# BAROMETER MANUAL.

Board of Trade.

COMPILED BY DIRECTION OF THE METEOROLOGICAL COMMITTEE

BY

ROBERT H. SCOTT, M.A., F.R.S.,

DIRECTOR OF THE METEOROLOGICAL OFFICE.

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## PREFACE.

THE Board of Trade Barometer Manual compiled by the late Admiral FitzRoy, of which the last edition was published in 1865, being now out of print, the Meteorological Committee have instructed me to re-write the book. This has accordingly been done. The first few pages of the present Manual are an improved reprint of the Fishery Barometer Manual published in 1869. To this has been added a chapter on Weather Telegraphy. I am indebted to the kindness of Capt. Toynbee for the remarks on the use of the Barometer to Seamen. The description of the instruments, which will be found at the end of the book, has been drawn up under my directions by Mr. R. Strachan.

ROBERT H. SCOTT.

Feb. 1871.



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## BAROMETER MANUAL.

### METEOROLOGICAL INSTRUMENTS, AND WHAT THEY TELL US.

The appearance of a barometer is familiar to most persons, but although the instrument is very commonly used, at sea as well as on land, comparatively few are able to understand much about what it tells us. The general opinion is that the *rise*\* of level of the mercury USUALLY shows that there will be less wind or rain; its *fall* that more wind or rain may be expected; that when the level remains steadily high a long spell of fine dry weather is probable; while when the level is low the weather will be wet and unsettled, and a sudden change may be looked for.

These conclusions are correct in many cases, but they require modification in many others, for we shall show that there are other matters besides mere barometrical indications to be taken into consideration, so that in some instances the barometer taken by itself is wholly misleading. It is the object of these pages to give the best general rules to be observed in making use of meteorological instruments, and more particularly of the barometer, to aid in forming a judgment as to probable weather. There are three instruments essential to this end, the barometer, the thermometer, and the hygrometer, and we shall commence by giving a short explanation as to their nature and object. A more complete account of the instruments, with some tables of general utility, will be found at a subsequent page.

Briefly we may say that,—

The barometer shows the pressure of the air.

The thermometer (in the shade) shows the temperature of the air.

The hygrometer shows the degree of moisture present in the air, or its dampness.

### THE BAROMETER.

The barometer, in its simplest form, consists of a glass tube closed at one end, which is filled with pure mercury, and is a little less than three feet long. It is placed, standing upright with the open end downwards, in a cup or cistern partly filled also with mer-

\* The rise of level of the mercury is indicated in the case of a wheel barometer by the motion of the hand, from left to right, in the direction of the hands of a watch. The motion of the hand of an aneroid is similar.



cury. If this be done carefully, without allowing any air to get into the tube, the level of the mercury in the tube will sink until it stands at a height of about thirty inches above the surface of the mercury in the cistern.

The space in the tube above the top of the column of mercury is then empty, forming what is called a *vacuum*.

In general terms it may be said that the level of the mercury in the tube rises when the air becomes heavier,\* falls when it becomes lighter, and remains at rest when it is unchanged in weight.

Atmospherical pressure.

Air like all other substances has weight, and the atmosphere presses on everything at the surface of the earth with a force or weight of nearly fifteen pounds on a square inch of surface. We do not feel this as a burden upon us because the tissues of our bodies allow the air to permeate through them, and so the air in them supports the pressure of that outside them.

Accordingly, we see that the air presses on the surface of the mercury in the cistern of the barometer with a force of about 15 lbs. on the square inch, and consequently it will keep up such a column of mercury in the glass barometer tube, standing in that cistern, as will press on the same surface with an equal downward force. Now, a cubic inch of mercury weighs about half a pound, so that 30 cubic inches weigh about 15 lbs. Accordingly a column of mercury 30 inches in height, in the tube, will press on the surface of the mercury in the cistern with a force of about 15 lbs. on the square inch, or with the same force as the air outside the tube does. Every change which occurs in atmospherical pressure will be shown by the rising or falling of the mercury in the tube.

If the liquid in the barometer were water instead of mercury, the column required to balance the pressure of the atmosphere would be thirteen and a half times higher than the column of mercury, because mercury is thirteen and a half times heavier than water. Water barometers have been made in this way, but they are not so handy or useful as mercurial barometers. However, in making an ordinary pump, use is made of the fact that the pressure of the atmosphere will support a column of water in an empty tube the lower end of which is plunged in water. The sucker draws the air out of the pipe, and the water is forced up out of the well after it by the pressure of the atmosphere on the surface of the water round about the pipe, so that in a good pump, which "holds its charge," the water would, if required, stand at a level of more than 30 feet above the surface of the well below.

Effect of elevation above sea level.

It must be remembered that it is only at the level of the sea that the column of mercury in the barometer stands on the average at the height of 30 inches. If the instrument be placed on the top of a hill there will be a lesser thickness of air above it, and if at the bottom of a mine a greater, than there is at sea level; so in the former case the average height of the column will be less and in the latter greater than 30 inches. It is most important to bear

\* To speak more correctly, we should say that when the weight of the atmosphere becomes greater, it presses more heavily on the earth's surface.

this in mind, for the difference in the height of the column amounts to more than a tenth of an inch for each hundred feet of elevation above the sea or depression below it.

The barometer is commonly said to be *falling* when the level of the mercury in the tube is sinking, (at which time its surface is frequently slightly concave or hollow,) or when the hand of a wheel barometer or aneroid moves to the left. On the other hand the barometer is said to be *rising* when the level of the mercury in the tube is rising, (at which time its surface is usually convex or rounded,) or when the hand of a wheel barometer or aneroid moves to the right.

Motion of the barometer.

The scale for reading the barometer is divided into inches and tenths. For yet greater precision a sliding scale called a "vernier" is attached (p. 57). By means of this contrivance readings to hundredths and even thousandths of an inch can be obtained.

Graduation of scale.

In both Temperate Zones, and therefore in these islands, the mercury at sea level ranges, or rises and falls through a space of about three inches on *extraordinary* occasions, namely, between thirty-one inches (31.0) and twenty-eight inches (28.0) or even a little lower. An uninterrupted fall exceeding an inch and a half (1.5 in.) is very rare in this country. The usual range is from 30.5 in. to about 29.0 in. In the Torrid Zone or near the Equator the mercury usually ranges only through the space of a few tenths, but on *extraordinary* occasions, such as the very severe storms called hurricanes or cyclones, the level sometimes falls as low as 27.0 in.

Barometrical range.

The thermometer attached to a barometer shows the temperature of the mercury within the barometer. The column of mercury in the barometer tube is a trifle longer or shorter according as it is warmer or colder, as will be explained hereafter; it is therefore necessary to allow for the difference in weight of the mercury which this produces when accurate observations of its length are being made.

Attached thermometer

All readings of the barometer intended for comparison with those taken elsewhere should be reduced to what they would have been had the instrument been at sea level, and had the temperature of the column been 32°. Tables for effecting these reductions will be found at pp. 64-69.

Barometer reductions.

The words which are generally placed on the scales of barometers are of no value as indications of weather,\* for it is not the mere height of the mercury in a barometer on a particular day that we ought to look in order to judge of the weather, but to the fact of its *rising* or *falling* or *remaining steady*. If having lately stood at *Change* it rises towards *Fair*, it shows that a change of wind or weather is likely to take place; on the contrary, if having stood at *Fair* it then falls, it shows that there will probably be a

Words on scale.

\* The words referred to are *not* those proposed by Admiral FitzRoy. See page 11.



change of wind or weather, though the level may not reach the point marked *Change*. It must be remembered that the changes of level of the mercury are much greater in winter than in summer, so that the same scale of words cannot suit all seasons. It is also evident that it cannot suit all stations, for if the mercury stands at "*fair*" at the sea level, it may perhaps stand at "*change*" at a station situated at some height above it.

A barometer tells more about wind than about rain.

The barometer, feeling the pressure of the air, shows at once when that pressure is changing in amount. If, owing to any cause, the pressure at one place on the earth's surface be greater than at another, the air has a tendency to move from the place where the pressure is greater towards that where it is less, and thus WIND is caused. Hence we see that the barometer shows pretty accurately when wind may be expected. A change of weather comes almost always with a change of wind, and the extent of this change of weather depends on the fact of the new wind being warmer or colder, damper or drier, than that which has been blowing. Now because landmen generally, such as farmers and gardeners, care more about rain or snow than about wind, many people have fallen into the habit of looking at the barometer in order to see whether the weather is going to be wet or fine, without thinking from what point the wind is blowing. Used in this way, the instrument will be at least as likely to mislead the person consulting it as to guide him aright. The barometer has but two motions, *rising* and *falling*, by which to indicate all changes of weather; and any conclusions drawn from its movements must be checked by observations of temperature, moisture of the air, present direction and force of wind, and state of the sky, before any correct opinion can be formed as to what may be expected.

Barometer Diagram, Plate IV.

A barometer is nearly as useful to a landsman as to a sailor, as may be seen from these pages, but both must remember that the usefulness of the instrument is much diminished if it be not observed carefully and regularly. If any one takes sufficient interest in the science to note the circumstances attending the various states of weather, and to enter his observations daily on a diagram similar to that given on Plate IV., he will derive great assistance in his study of the weather from a careful examination of the course of the curve from day to day.

Importance of Telegraphic Weather Reports.

It must be clearly understood that it is quite impossible to obtain a precise knowledge of the *general* conditions of the weather by observing a barometer at one station only. For this purpose a knowledge of the state of the barometer at nearly the same time at several neighbouring stations, such as is to be learned from the Daily Telegraphic Weather Reports, is necessary. A manual such as this is intended to show no more than can be learnt by the help of a single barometer, as it is, of course, quite impossible for many observers to gain access to these reports at an hour early enough for them to be able to make practical use of them. We shall return to this subject at a future page.

## THE THERMOMETER.

This instrument shows heat and cold, but does not show the pressure of the air in any way. The air has no access to the fluid in it. A thermometer consists of a long glass tube of very small bore, closed at one end, and having a small glass bulb filled with mercury at the other.\* Almost all substances expand when they are heated and contract when they are cooled. Mercury is very much affected in this way, much more so than the glass which contains it, so that when the thermometer is heated the mercury in the bulb expands, and a portion of it is forced into the tube, when the thin thread of mercury in the tube becomes longer; when the instrument is cooled the mercury contracts, and the thin thread becomes shorter, as part of it is drawn back into the bulb. Thus, then, the thermometer shows, by means of the length of the thread of mercury, the temperature of the place where it is at the time. Some remarks as to the proper mode of exposing thermometers so as to give an accurate indication of the temperature will be found at p. 59.

Description of a thermometer.

The scale of a thermometer is divided into *degrees*. There are two fixed points on it, viz., that at which ice melts, and that at which water boils. In the thermometer in use in England, namely, that designed by Fahrenheit, the distance between these points on the scale is divided into 180 degrees. The point at which ice melts is 32 degrees, and that at which water boils, when the barometer stands at 30 ins., is 212 degrees. Table IV., p. 74, gives a comparison of the various thermometrical scales in use.

Graduation of a thermometer.

The usual range of a thermometer in the shade in the open air is about seventy degrees in England, viz., from 10° to 80°. In very hard frosts the temperature sometimes falls below 10°, and on very hot summer days it rises above 80°. If the sun shines on the instrument the mercury rises much higher. The range of the thermometer is greater in other countries, especially in the United States and Canada, where the winters are much colder and the summers hotter than they are in this country.

Range of temperature.

## THE HYGROMETER.

This instrument measures the dampness of the air. There are several kinds of hygrometers, but the easiest to make and to manage consists of a pair of thermometers placed near each other and arranged as we are about to describe.

Description of hygrometer, or dry and wet bulb thermometers.

If a thermometer be fitted with a piece of linen fastened tightly round the bulb, and this be kept damp by means of a few threads of darning cotton or lamp wick, passed loosely round the

\* Thermometers intended for use in very cold climates are filled with spirit instead of mercury, because, at the very low temperature at which mercury freezes, spirit still remains liquid.



bottom of the stem so as to touch the linen coating, and with their lower ends dipping into a cup of water placed close to the thermometer (see p. 60), it will in general show a temperature lower than that shown by an ordinary thermometer.

A thermometer so mounted is called a *damp* or *wet bulb thermometer*, to distinguish it from an ordinary thermometer which has its bulb *dry*.

Principle of the instrument.

The reason that the wet bulb thermometer reads lower than the dry is that, when the air is not quite saturated with moisture, evaporation takes place from all free water surfaces exposed to it, and continues until the air has received as much moisture as it can contain. The damp coating of the wet bulb will give off vapour like any other water surface, but in order that the water which is on it should be turned into vapour, it requires heat, which it takes partly from the thermometer itself. This action thus causes the thermometer to fall in proportion to the dryness of the air, and the consequent evaporation. The drier the air the greater is this evaporation, and accordingly the difference in readings between the dry and wet bulb is greater in the same proportion. When the atmosphere is very damp or moist, during or just before rain, when fog is prevalent or when dew is forming, the two thermometers read very nearly or quite alike, but at other times the wet bulb reads lower than the dry, and the difference sometimes amounts to ten or fifteen degrees in this climate, and to twenty or even more elsewhere. In winter, the difference between the dry and wet bulb readings is far less than in summer, and the same amount of moisture in the air is indicated by a much smaller difference of reading between the two thermometers in the former season than in the latter.

This will be easily seen from the following example:—

The moisture is usually measured by the pressure or tension of its vapour, and if this tension be 0.288 in.—

When the dry bulb	the wet bulb	and the difference
is at 75°	will be at 57°	18°
" 64°	" 54°	10°
" 54°	" 49°	5°
" 44°	" 44°	0°

Indications precede changes.

#### RULES TO EXPLAIN THE INDICATIONS OF THE INSTRUMENTS.

It should always be remembered that changes in weather generally give signs of their coming, for the instruments are affected before the wind actually begins to blow or the rain to fall; thus they may be said to enable us to feel the pulse of the atmosphere. It must not be forgotten that the length of time which passes between the first appearance of a change of weather and its actual setting in is not always the same. It is much greater when a south-west wind is going to succeed a north-east wind than when the opposite change is about to take place. We shall see, a little further on, why this is the case, and also how the

appearance of the sky will aid us in forming an opinion as to probable weather.

The general principles on which the following rules are founded have been laid down by Professor Dove, of Berlin, on the basis of a long series of accurate observations made at several stations situated in the North Temperate Zone between the parallels of 49° and 65°, to which region they specially refer. The rules themselves may be shortly stated thus\* :—

The average height of the mercury in the barometer, at sea level, in the British Islands, is about 29.9 ins.

If the barometer rises steadily above its mean height while the weather gets colder and the air becomes drier, North-westerly, Northerly, North-easterly winds, or less wind, less rain or snow may generally be expected. Explanation of Dove's rules.

On the contrary, if the barometer falls while the weather gets warmer and the air becomes damper, wind and rain may be looked for from the South-east, South, or South-west.

The deviations from these general principles which are noticed correspond to the various changes of weather. Exceptions to the rules.

If the weather gets warmer while the barometer is high and the wind North-easterly, we may look for a shift of wind to the South. On the other hand, the weather sometimes becomes colder while the wind is South-westerly and the barometer low, and then we may look for a sudden squall or perhaps a storm from the North-west, with a fall of snow if it be winter time.

No absolute laws for weather can however be laid down; the most striking exceptions to the rules are those noticed by Admiral FitzRoy. They occur with North-east winds, which sometimes bring rain, sleet, or snow, especially during gales, although the barometer may be high and rising. On the other hand, when the wind is North-easterly and light, and the barometer begins to fall, rain may set in before the wind changes to East or East South-east. N.E. winds.

Besides these rules for the instruments, there is a rule about the way in which the wind changes, which is very important. It is Law of "veering" and "backing" of wind.

\* Admiral FitzRoy proposed the following words for barometer scales instead of those referred to at p. 7, they are taken almost exactly from these rules, and have been very generally used :—

RISE	FALL
FOR	FOR
NORTH	SOUTH
N.W.-N.-E.	S.E.-S.-W
DRY	WET
OR	OR
LESS	MORE
WIND.	WIND.
EXCEPT	EXCEPT
WET FROM	WET FROM
NORTH.	NORTH.

A few short maxims were often added.  
Dove's rules and these words will suit the Southern hemisphere if we put S. for N., and N. for S., throughout.



well known to every sailor, and is contained in the following couplet—

When the wind shifts against the sun,  
Trust it not, for back it will run.

The wind usually shifts *with the sun*, i.e. from left to right\* in the Northern Hemisphere. A change in this direction is called *veering*.

Thus an East wind shifts to West through South-east, South, and South-west, and a West wind shifts to East through North-west, North, and North-east.

If the wind shifts the opposite way, viz., from West to South-west, South, and South-east, the change is called *backing*, and it seldom occurs unless when the weather is unsettled.

However, slight changes of wind do not follow this rule exactly; for instance, the wind often shifts from South-west to South and back again.

Winds : polar  
and equatorial  
currents.

In most parts of the world it has been observed that there are two prevailing wind-currents, whose directions vary with the circumstances of the place, but are on the whole nearly opposite to each other. In these islands these directions are about North-east and South-west, and the latter of these winds blows for about ten times as many days in the year as the other does. What is it that causes these winds to blow and makes them so different from each other as we know them to be? The simplest account of them is that the air is always flowing towards the equator from the poles and back again. It then forms two great currents; one is called the Polar current—as it flows from the direction of the pole, and is felt here as a North-east wind. The other is called the Equatorial current—as it flows from the direction of the equator, and is felt here as a South-west wind.

The air of the Polar current has been chilled, and is heavy, cold, and dry : while it is blowing, the barometer is high and the weather usually dry.

The air of the Equatorial current has been heated, and is light, warm, and moist : while it is blowing, the barometer is low and the weather usually wet.

If we keep the idea of these two great wind-currents clearly in our heads, we shall easily understand most of the signs of the weather which are noticed.

South-west  
winds give  
early notice of  
their coming.

The air of the equatorial current is lighter than that of the polar, and so southerly winds will begin to blow aloft before they are felt on the ground, while northerly winds will begin to blow close to the ground. Accordingly South-west winds give much more warning of their coming than North-easterly ones. The South-west wind will often show itself first by long streaks of cirrus cloud at a great height, called “mare’s tails;” or, when a gale is very near, by driving scud.

\* In the Southern Hemisphere motion *with the sun* is, of course, from right to left.

Signs of weather, such as those just noticed, are important to any one watching for changes, as they will enable him to confirm or modify the opinions formed from the behaviour of his instruments. Signs of weather.

As to the instruments themselves, we have already seen that when the barometer rises, owing to a change of wind, the weather usually becomes colder; while when the barometer falls, owing to a change of wind, the weather usually becomes warmer. Motion of instruments.

If the barometer be high (above 30.5 inches), and *remain steady* for some days, it is because there is, so to speak, a surplus of air at the place. The wind will be light, and the weather will probably be dry. A gale can set in only when the air flows away, and it will not at first be severe at the place. Barometer high and steady.

If the barometer be low (below 29.0 inches) and *remain steady*, there is a deficiency of air at the place. The wind will be light also, but the weather will probably be cloudy and wet. However, there may be fine weather for a short time, what is called a “pet day,” but there is great danger of a serious storm, because the air will try to force its way into the district where the readings are low, and increase the pressure there, so as to restore the atmospheric equilibrium. Barometer low and steady.

If the barometer rises slowly from a low level, the weather may become drier, and the wind lighter, or perhaps die away. There may also be local fogs. Barometer rising slowly.

If the barometer falls gradually from a high level, the weather may become wetter and more unpleasant, and there will never be a certainty of having a fine day, though there need not be much wind. Barometer falling slowly.

In general, whenever the level of the mercury continues steady we may expect settled weather, but when it is unsteady we must look for a change and perhaps a serious gale.

A sudden rise of the barometer is very nearly as bad a sign as a sudden fall, because it shows that atmospheric equilibrium is unsteady. In an ordinary gale the wind often blows hardest when the barometer is just beginning to rise, directly after having been very low. Sudden changes.

It must never be forgotten that it is impossible for any one to interpret the meaning of all the changes in his barometer, at first, or perhaps for a day or two, inasmuch as he requires to learn what is going on at stations in his neighbourhood, for without this information he cannot know whether these changes are due to mere local causes, or are the first symptoms of the approach of a more serious disturbance. A storm may be raging at a comparatively short distance from him, but his barometer, *taken by itself*, will not necessarily enable him to detect its existence. However in many cases a good guess at what is likely to happen may be formed by an experienced observer who watches his instrument closely, records Uncertainty of conclusions based on observations from isolated stations.



its indications on such a form as shown at Plate IV. and interprets them by the rules provided in this Manual. He will, however, require to call to his aid not only observations of the temperature and of the dampness of the air, but all his experience as to the influence of the several seasons, the ordinary character of the weather at the place, and the local signs of its change.

Daily Weather Reports.

The Daily Weather Reports issued by the Meteorological Office are calculated to render important service to any one who wishes to study weather; they contain observations made daily at 8 a.m. at twenty British and about as many foreign stations.\* Great care has been taken to ensure the accuracy of these reports, and the result is that a mass of information of very great value is published every day. The table shows the readings of the barometer, and the dry and wet bulb thermometers, the direction and force of the wind, &c., and from it a very good idea may be gathered of the weather which is actually prevailing on or near our coasts.

This Report is published in the newspapers and is sent by post to coast stations. It is of course impossible that it can reach observers at a distance from London in time to be of any use for the day on which the observations are taken, but a study of the Report of the previous day will often be of very great service to any one seeking to gain a knowledge of probable weather.

Changes of weather usually come from the west.

When we look at these Weather Reports for two or three days together, we find that it is very seldom that a change of weather or a storm is felt along one line of coast, and nowhere else, for more than 24 hours at a time. Generally wet weather begins in Ireland at least a day sooner than it does in England; and as for storms, we need only give as an instance the storm of December 1, 1867, which began on the south coast of Ireland, on the afternoon of the 29th of November, nearly 36 hours before it reached London, or the gales of October 12 and 13, 1870, represented on Plates I. and II. We say *generally*, because some changes of weather travel faster than others, and they do not all of them move from West to East.

Buys Ballot's law.

As regards the use which may be made of these reports a most important principle has been discovered of late years. Professor Buys Ballot, of Utrecht, and others have shown that we can tell with considerable certainty what wind may be expected to blow at any place, if we know the readings of the barometer, taken a short time previously, at a number of stations situated within a distance of, say, 100 or 200 miles from that place.†

The rule is: Stand with your left hand towards the place where the barometrical reading is lowest, and with your right hand towards that where it is highest, and you will have your back to the direction of the wind which will blow during the day.

\* A few stations send reports at 2 p.m. also.  
† See also "Report of an Inquiry into the Connection between Strong Winds and Barometrical Differences," by Robert H. Scott. Non-official papers, No. 1. Potter, Poultry; and Stanford, Charing Cross.

Thus the wind may be expected to be--

Easterly when the pressure is highest in the North,  
lowest in the South;

Southerly pressure highest in East, lowest in West;

Westerly " " South " North;

Northerly " " West " East.

The force of the wind on each day bears some proportion to the amount of difference in barometrical readings noticed between any two stations situated near the place where the wind was felt. Thus we find that it has been shown that a Westerly gale hardly ever blows in the British Isles unless, at least a few hours before, the pressure in the North of Scotland is half an inch less in amount than it is on the South coast of England.

We shall return to this subject when dealing with Weather Telegraphy (p. 20). At present it is sufficient for us to say, with reference to the principles above laid down for the behaviour of the instrument, that whenever a storm is blowing, the level of the barometer will be very different at stations near each other, so that as the storm travels across the country, the barometer at any station will show signs of its coming and going by the mercury sinking or rising in the tube. This shows us why it is that when the barometer is steady, there is no great likelihood of a sudden change of weather, while when it is changing quickly, there is great danger of the wind freshening to a gale.

"A few of the more marked signs of weather\*—useful alike to seaman, farmer, and gardener, are the following:—

"Whether clear or cloudy—a rosy sky at sunset presages fine weather:—a sickly, greenish hue, wind and rain; tawny, or Colour of sky.  
"coppery clouds—wind: a dark (or *Indian*) red, rain; a red sky in the morning bad weather, or much wind (perhaps also rain):—a grey sky in the morning, fine weather,—a high dawn, wind:—a low dawn, fair weather."†  
"Soft-looking or delicate clouds foretell fine weather, with moderate or light breezes:—hard edged oily-looking clouds,—wind. A dark, gloomy blue sky is windy;—but a light, bright blue sky indicates fine weather. Generally, the *softer* clouds look, the less wind (but perhaps more rain) may be expected;—and the harder, more 'greasy,' rolled, tufted, or ragged,—the stronger the coming wind will prove. Also—a bright yellow sky at sunset presages wind: a pale yellow, wet: orange or copper coloured, wind and rain—and thus by the prevalence of red, yellow, green, grey, or other tints, the coming weather may be foretold very nearly:—indeed, if aided by instruments, almost exactly.

\* This account of weather signs is extracted from that given by Admiral FitzRoy.  
† "A 'high dawn' is when the first indications of daylight are seen above a bank of clouds. A 'low dawn' is when the day breaks on or near the horizon, the first streaks of light being very low down."



Clouds.

"Light, delicate, quiet tints or colours, with soft, indefinite forms of clouds, indicate and accompany fine weather: but gaudy or unusual hues, with hard, definitely outlined clouds, foretell rain, and probably strong wind.

"Small inky-looking clouds foretell rain:—light scud clouds driving across heavy masses show wind and rain; but, if alone, may indicate wind only—proportionate to their motion.

"High *upper* clouds crossing the sun, moon, or stars, in a direction different from that of the lower clouds, or the wind then felt below,—foretell a change of wind toward *their* direction.\*

"After fine clear weather, the first signs, in a sky, of a coming change, are usually light streaks, curls, wisps, or mottled patches of white distant cloud, which increase and are followed by an overcasting of murky vapour that grows into cloudiness. This appearance, more or less oily, or watery, as wind or rain will prevail, is an infallible sign.

"Usually the higher and more distant such clouds seem to be,—the more gradual, but, general, the coming change of weather will prove.

"Misty clouds forming, or hanging on heights, show wind and rain coming—if they remain, increase or descend. If they rise, or disperse—the weather will improve, or become fine.

Flight of sea-birds.

"When sea birds fly out early, and far to seaward, moderate wind and fair weather may be expected. When they hang about the land, or over it, sometimes flying inland, strong winds with stormy weather are probable. As, besides birds, many creatures are affected by the approach of rain or wind: their indications should not be slighted by an observer who wishes to foresee changes.

Dew.

"Dew is an indication of coming fine weather. Its formation never *begins* under an overcast sky, or when there is much wind.

Clearness of the air.

"Remarkable clearness of atmosphere, especially near the horizon: distant objects, such as hills, unusually visible, or well defined; or raised (by refraction)†—and what is called 'a good *hearing* day,' may be mentioned among signs of wet, if not wind, to be expected, in a short time.

"More than usual twinkling or apparent size of the stars; indistinctness or apparent multiplication of the moon's horns; haloes; 'wind-dogs,'‡—and the rainbow; are more or less significant of increasing wind, if not approaching rain, with or without wind.

\* "Between the tropics, or in the regions of the Trade Winds, there is generally an upper and counter current of air, with very light clouds, which is not an indication of any approaching change. In middle latitudes such upper Currents are not so frequent (or *evident*?) except before a change of weather.

† "Much refraction is a sign of easterly wind."

‡ "Fragments or pieces (as it were) of rainbows (sometimes called 'wind-galls') seen on detached clouds."

"Near land, in sheltered harbours, in valleys, or over low ground, there is usually a marked diminution of wind and a dispersion of clouds during the early part of the night. At such times an eye on an overlooking height may see a body of vapour extending below (rendered visible by the cooling of night) which *seems* to check the wind."

Wind dying down at night.

## REMARKS ON WEATHER.

A few remarks as to the ordinary varieties of weather, and as to storms, based, as before, on the principles laid down by Dove,\* may be of use.

Weather. A complete change "with the sun."

Commencing with the usual wind in these islands, the true equatorial current, blowing from the South-west. If the wind shifts from South-west through West to North, the barometer rises and the thermometer falls. While this change is going on we frequently have in winter snow, in spring sleet, and in summer, if the weather be hot, thunder-storms, after which the weather gets cooler. If the wind draws further round through North to North-east, the weather becomes clearer, the barometer high, and the air dry; and in winter there is generally a hard frost. After a frost, as soon as the barometer begins to fall, the wind veers towards East, thin streaks of whitish clouds cover the sky, and the snow which falls comes from the South wind which has set in aloft already. If the barometer falls quickly the snow turns to rain, while the wind veers further through South-east and South to South-west.

The change from a clear sky to a cloudy one almost always begins with the appearance of long streaks of cloud, pointing from S. or S.E. towards N. or N.W., which show the track of the southerly wind in the sky. At night we often see rings (haloes) round the moon when such clouds as these are observed. If they stretch right across the sky, forming what is called a "Noah's Ark," we know that the wind above us has set in in earnest, and that wet weather is sure to follow.

Signs of Southerly winds.

The probable reason that the air clears and that mountains look near just before rain is that after a long spell of dry weather there is a great deal of dust in the air, and when the air gets damp, as it does just before rain, the moisture settles on the dust and makes it sink, leaving the air clear.

Reason that atmosphere clears before rain.

Our rain comes generally from the West side, so that a clear sunset tends to show that the weather will be fine for a little time, as there are no clouds to the West of us. On the same principle the saying—

Rainbow.

A rainbow in the morning  
Is the sailor's warning,  
A rainbow at night  
Is the shepherd's delight.

\* See his Law of Storms (London, 1862), p. 300.



may be explained. In the morning the sun is to the East of us, and the rain which occasions the rainbow must be falling to the Westward, and therefore likely to come over us. In the evening, if we see a rainbow it must be in the East, and the sky must be clear in the West.

Sky clearing at night not a certain sign of fine weather.

However, after a wet day the whole of the sky often clears at night. This is not a certain sign of fine weather. The clouds may, and often do, form just as heavily after sunrise next morning.

Thunderstorms.

Thunderstorms almost always occur when the weather is hot for the season: they are generally caused by a cold wind coming over a place where the air is much heated. They do not cool the air: it is the wind which brings them which makes the weather cooler. Thunderstorms are more violent the greater is the difference of temperature between the two currents of wind which produce them: they are most frequent in these islands in summer, but are also very common in stormy weather in autumn on our West and North coasts.

Sudden rise of barometer, with fog, dangerous.

If in winter the barometer suddenly rises very high, and a thick fog sets in, it is a sure sign that the S.W. and the N.E. winds are, as sailors say, fighting each other. Neither of them can make head against the other, and there is a calm, but there is great danger of such a state of things being followed by a bad gale. Thus the storm of December 1, 1867, before referred to, was preceded by a very high pressure with a great deal of fog, at the entrance of the English channel, where the gale first began.

Storms.

The changes shown by the instruments in stormy weather are like those just described, but they take place more quickly and are greater when they come.

The storms which are felt on our coasts are generally South-westerly, during which the wind may blow from any point between South-east, round by South, to West and West-north-west.

South-west gales.

In winter, after a prevalence of Easterly winds, if the barometer begins to fall, and the thermometer to rise, the sky being densely clouded, a gale which commences to blow from South-east will veer to South-west, while the barometer falls constantly. As soon as the wind passes the South-west point, the barometer begins to rise, the thermometer falls suddenly, a heavy shower of rain falls, and a strong West-north-west or North-west wind may follow, with a clear sky.

Wind backing.

If the wind "backs" from North-west towards West and South-west, the bad weather is very likely to continue.

Most of these gales are felt first on the west coast of Ireland, and later at stations lying to the eastward. Accordingly, if the change of direction of the wind takes place rapidly, the storm may be blowing from North-west on the coast of Ireland, while it is only beginning to blow from South or South-south-east on the east coast of England. See Plates I. and II.

Such gales are very violent, and being produced by a South-west (equatorial) current which is apparently forcing its way against a North-east (polar) current, the changes of pressure and temperature are very rapid, and the storms are often accompanied by thunder and lightning.

North-easterly storms are not so common as those from the South-west. They are very dangerous on the east coast of Great Britain, as they do not give so much local warning of their approach as South-west gales (see page 12.)

North-easterly storms.

The weather generally becomes much colder before they begin to blow.

These (North-east) polar storms do not "veer" to the same extent as the (South-west) equatorial winds: they seldom change their direction more than 2 or 3 points, while a shift of wind *with the sun* through 6 or 7 points is very common in the case of South-west storms.



## WEATHER TELEGRAPHY.

The object of the foregoing pages has been to provide rules for the guidance of those who have no access to any sources of information respecting weather beyond the observation of their own instruments and of natural phenomena. The recent development of the system of Meteorological Telegraphy, in the introduction of which this country and France have taken so prominent a part, has, however, thrown a totally new light on the science of our weather and its changes, so that a few remarks on this subject will scarcely be out of place here.

Buy's Ballot's Law.

The facilities afforded us, by means of telegraphy, for comparing observations taken simultaneously at several stations have revealed to us the existence of great differences, even between adjacent stations, as regards the instrumental readings and the actual phenomena observed, under various conditions of weather.

In seeking to assign causes for these differences, we have been greatly assisted by applying the principle to which allusion has already been made at p. 14 under the name of Buy's Ballot's Law.

The immediate result of the law is to show that whenever barometrical readings are lower over any area than over those adjacent to it, the air will sweep round that area as a centre, and the direction of its motion will be opposite to that of the hands of a watch.\* Conversely the air will sweep round an area of relatively high barometrical readings in the direction in which the hands of a watch move. The former of these motions is said to be *cyclonic*, the latter *anticyclonic*. These names are derived from the word "cyclone," the general name for hurricanes and typhoons, in all which storms the motion of the air takes place around an area of diminished barometrical pressure.

We see therefore that the existence of a deficiency of atmospheric pressure, or what is termed a barometrical depression, over any district, is accompanied by cyclonical movement in the air in the neighbouring districts. The actual movement of the air has no reference either in direction or velocity to the absolute readings of the barometer at the point where it is lowest, or to the distance of the particles of air which are in motion from that point, but is related almost entirely to the distribution of pressure in accordance with Buy's Ballot's Law.

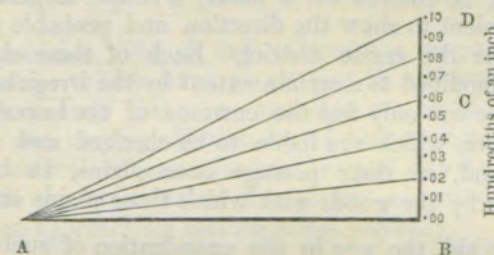
\* These remarks have reference to the Northern Hemisphere. In South latitude the direction of rotation of the wind in cyclonic or anticyclonic motions respectively is exactly reversed.

The law gives the direction of motion, and its truth for these islands and the adjacent parts of the earth's surface is incontestable; it appears moreover to hold good generally.

The velocity of the air depends, at least in a great measure, though not absolutely, on the difference of barometrical readings over a given distance, or on what is termed the barometrical "gradient."

The gradients adopted by the Meteorological Office are expressed in hundredths of an inch of mercury per fifty geographical miles,\*

In the accompanying figure the horizontal distance between the two stations A and B is supposed to be 50 geographical miles. The divisions on the vertical line B D are hundredths of an inch, and they correspond to the differences between the barometrical readings taken at the same hour at the two stations. The gradients are the tangents of the angles B A C, B A D, &c., the distance A B being supposed to be = 1. The gradients are given as 6 for the angle B A C, 10 for the angle B A D, corresponding to the several observed differences. These lines A C, A D, &c., are imagined to be drawn every morning, between the most important stations given in the Daily Weather Report,† and from their inclination conclusions as to the probable direction and force of the wind for the day are drawn. It is found, for instance, that the force of the wind will not exceed the figure 5 or 6, a fresh breeze, on Beaufort's Scale, unless the gradient be as high as 6 (A C on the diagram).



To reduce this statement to a practical form, we may put it in these words. The distance from Penzance to Brest is 113 geographical miles. A gradient of 6 between these stations represents a difference in barometrical readings of 0.14 in., so that, in accordance with what has just been said, whenever a westerly gale is blowing at the entrance of the Channel we may expect that the barometer at Penzance will be at least 0.14 in. lower than that at Brest; *vice versa*, the readings at Brest will be proportionably lower than those at Penzance, whenever an easterly gale is felt in the district in question. An instance in point is the gale

\* This is nearly exactly equivalent to a quarter of a millimetre per fifty geographical miles.

† A table for the calculation of gradients will be found in the Quarterly Weather Report for 1869.



Westerly gale. of the 8th of January 1870, during which the reading at Brest at 8 a.m. was 29.38, and that at Penzance, at the same hour, was 29.19. The difference between these readings is 0.19, and the resulting gradient 8. The actual winds reported that morning were West-South-West 9 from Brest, South-West 10 from Penzance, and West 11 from Plymouth. The converse conditions, accompanying an easterly gale, were observed on the 14th of May 1869, when the reading at Penzance was 29.92 and that at Brest 29.68. The resulting gradient is 10, and accordingly heavy easterly gales were felt on our channel coast.

Conclusions from the foregoing.

To apply the same principles to the weather of the British Islands generally, it may safely be asserted that no storm of any serious extent is ever felt over the United Kingdom unless there be an absolute difference in barometrical readings exceeding half an inch of mercury between two of our stations.\*

The difference in readings between Rochefort and Aberdeen on the 1st of February 1868, when a tremendous westerly gale was raging, was as much as 1.76 in. The reading at Rochefort being 30.16, and that at Aberdeen 28.40 ins. These figures give a gradient of 13.5 over the entire distance of 673 miles, and we find that gales were reported from 16 stations that morning.

Synoptic charts.

If, then, simultaneous barometrical readings for any considerable tract of country such as that represented in the Daily Weather Reports, which embraces these islands and the adjacent coasts of the continent, be entered on a chart, a simple inspection of that chart is sufficient to show the direction and probable force of the winds felt over the entire district. Each of these elements will, however, be modified to a certain extent by the irregularities of the surface, for we can only feel the currents of the lowest stratum of the atmosphere, which are liable to be checked and deflected by mountains, and, in their passage over plains, to be seriously retarded even by the woods with which those plains are covered.

Isobaric lines.

In order to aid the eye in the examination of such charts, the different points where the barometrical readings are equal are joined, and the lines so drawn are called Isobarometrical, or, for brevity, Isobaric Lines.

Whenever on such a chart we find the Isobaric Lines closely packed, we know that the wind will be strong, for their closeness indicates that the gradients are high in that part of the map.

Specimens of such charts for two consecutive days, Oct. 12 and 13, 1870, are given (Plates I. and II.), and they will be amply sufficient to illustrate the foregoing statements.

On these charts the barometrical and thermometrical readings are given, and the wind is represented by arrows flying with it;

\* Local storms, which occasionally do great damage, may be felt when the barometrical disturbance is itself only local, and when the actual amount of difference between the extreme readings is less than half an inch, although the gradients for a short distance may be high.

the force, Beaufort Scale, is represented by the number of feathers.

We see from these charts that the motion of the air is regulated by the shape and contour of the area of depression. The wind cannot blow with equal force all round the point or the district where the barometrical readings are lowest, unless the isobaric lines form concentric circles, or rather are parallel to each other throughout their course. This latter condition is never completely fulfilled, and consequently a cyclone, properly so called,\* is perhaps never felt in these islands. All the winds are nearly coincident with the isobaric curves, and as their force is approximatively proportional to the gradients we see that—

High gradients on the N. side of the area of depression indicate Easterly gales,	E.	„	Southerly „
„	S.	„	Westerly „
„	W.	„	Northerly „

and so on for the intermediate points of the compass.

Buys Ballot's Law, then, shows us what winds are blowing at any epoch for which the barometrical readings are known; and it has further been shown in the Report (Non-official Papers, No. I.) referred to at p. 14, that if we make certain allowances for the "veering" of wind and for the translation of conditions of weather over the earth's surface, we can, under ordinary circumstances, form a fair judgment as to the wind which *will* blow at each station during any day for which we know the distribution of pressure, say at 8 a.m.

The law does not give us any information respecting the disturbing agencies which have given rise to those winds. Even though we can admit that these agencies are to be looked for in the unequal and varying distribution of barometrical pressure, we have made no real advance, for we are not as yet able to assign causes for all the barometrical fluctuations observed, at least not with anything approaching mathematical accuracy.

The great currents of the atmosphere, already referred to under the names of Equatorial and Polar, are as closely dependent on the distribution of pressure as the motion of the air in a storm. Thus we have already said that South-west winds are much more common in these islands than North-east winds. If this be true, we should expect to find the mean level of the barometer in Iceland to be lower than it is in these islands. This is really the

Relation of the motion of the air to the average distribution of pressure.

\* The strict definition of a cyclone is a mass of air sweeping in a circular path round a limited district where there is no wind at all. The diameter of this calm district is comparatively small, and the barometrical reading over it is much lower than at the outside of the storm; the difference at times amounting to two inches. The gradients in such a storm are very steep and are uniform all round the centre, so that the force of the wind from all points of the compass is equal. As a rule the violence of the storm increases as you approach the central calm. It is stated by some authors that the air in cyclones moves in a spiral course, tending to flow in towards the centre and rise there. No satisfactory proof has as yet been given of this statement.



case, for while the mean annual pressure at Stykkisholm is 29.634 in., and at Sandwick in the Orkneys 29.791, it is 29.958 at Greenwich. Again, the general prevalence of South-westerly winds in the United Kingdom is not unusually interrupted by Easterly winds in the end of spring; and we find that in May the mean pressure at Stykkisholm is 29.886, at Sandwick 29.924, and at Greenwich 29.966. The mean northern pressures are still lower than the southern ones, but the difference between them in May is only one fourth of what is noticed on the average of the year. Hence, although in May the prevailing wind is still Westerly, the amount of disturbance of the general equilibrium of the atmosphere, which is requisite to render the Northern pressures higher than the Southern, and so produce an Easterly wind, is much less in the month of May than at other times of the year.

Motion of changes of weather over the earth's surface.

We see that Buys Ballot's Law in itself does not enable us to foresee weather so far as to gain any great practical advantage from it; all that it indicates is the probable course of the wind for a very few hours in advance. If we revert to Plates I. and II., it is evident that the conditions represented on Plate I. on the 12th of October gave no indication *per se* that the state of things represented on Plate II. would have established itself on the 13th. The probability of this is inferred from experience of the Weather Reports for consecutive days, and from the consideration of the changes which are taking place in localities at a distance from that affected by the storm.

It is found that the weather prevailing on the day in one district does, in general, advance to another district within the space of a day, and that the most usual direction of this advance is from west to east. A proof of this statement may be seen in the fact that out of 23 storms which passed over Hamburg in the year 1869, 22 had previously passed over some portion of the British Islands.

Difficulty of scientific prediction of weather.

All the storms which we feel are accompanied by a considerable relative reduction of pressure; and these barometrical depressions travel over the country, carrying their own wind systems with them. If, therefore, we could determine beforehand the direction of advance, and the rate of motion of each successive area of depression, as well as its shape, its gradients in each direction, and the rate of their increase or decrease in intensity, we should have made a considerable advance towards forecasting weather.

Of these several conditions our knowledge is very incomplete. The attempts which have been hitherto made to lay down laws for any of these undetermined quantities have met with a very limited amount of success. The *shape* of the area of depression is far from uniform, and is liable to modification, firstly, according to the character of the ground over which it passes; and, secondly, according to the conditions of pressure in the neighbourhood. The *direction of advance* takes place most usually from some point between S.W. and N.W., but not unfrequently lies in

a different direction, and it is stated that occasionally a motion even from the eastward has been recognized. The *velocity of motion* varies from five or six miles an hour to as much as 60 or 70: this latter rate of motion having been reached by the storm of December 16, 1869.

Hitherto we have spoken of storms and weather in general, with exclusive reference to the barometer. It should now be stated that the different winds exhibit nearly as strong a contrast with each other with regard to their temperature and hygrometrical condition as they do with regard to barometrical pressure.

Storms in relation to temperature and moisture.

It is a remarkable fact, that although each barometrical depression has its own special wind-system, the air which is set in motion thereby has as marked characteristics as if it were influenced by the two great currents, Equatorial and Polar, already referred to. In general the wind which comes from the S.E., S., or S.W. is warm and damp, while that which comes from the N.W., N., or N.E. is cold and dry. Accordingly, along the eastern and southern side of the path of the centre of depression, where the winds belonging to the first category are felt, the temperature will be high and the weather wet, while where the winds from the polar quarters prevail there will be cold weather, and a great difference between the wet and dry bulb thermometers.

It is also found that a coming storm sometimes influences the thermometer even previously to its affecting the barometer, and therefore if in winter we find the temperature rising unexpectedly we have reason to fear the approach of a gale, and the danger is greater if the disturbance of temperature be local.

A difference in thermometrical readings of nearly 30° between the north of Scotland and the south coast of England is not very uncommon immediately before and during some of our great winter storms. One of the most marked phenomena about these storms is the sudden chill which accompanies the shift of wind from W.S.W. to N.W., see p. 18. On some occasions the fall in temperature registered by self-recording instruments has amounted to 10° or even 15° in a few minutes.

Owing to the extreme sensitiveness of the thermometer to changes of weather, it has been frequently proposed to consider its indications as fully equal in importance to those of the barometer; but great caution is necessary in acting on this idea. The accuracy of thermometrical observations depends on a great many conditions, such, as aspect, exposure to the air, elevation above sea level and above the surface of the ground, all of which are either immaterial or can be allowed for in dealing with the barometer.

Difficulty of dealing with thermometrical readings.

In the case of each instrument we meet with the question of daily range and its influence on the readings; but while this is so slight for the barometer that it may be, and is, almost invariably disregarded in discussing weather, it forms a most serious consideration in the treatment of thermometrical observations; varying, as it does, through wide limits, and being influenced, not only by



the character of the weather, but to a considerable extent even by the height of the thermometer bulbs above the ground.

An idea of the extreme difficulty of obtaining a record of temperature which shall be thoroughly unexceptionable, may be gained from the fact that the highest meteorological authorities are far from unanimous as to the best form of screen in which to expose the thermometers.

It is obvious, therefore, that any statements as to the value of thermometrical, and, even more so, of hygrometrical indications of weather, must for the present be couched in the most general terms.

Conditions which have been noticed to precede storms.

Mention has been made of the existence of great contrasts of temperature previously to the breaking out of a storm. Experience shows that there are certain circumstances concerning the relative positions of the warm and cold currents which are indicative of more serious atmospherical disturbance than others.

Not unfrequently hard frost prevails over France, while these islands, especially on their north and west coasts, are enjoying mild weather, and this state of things may exist for days in succession, without any storm ensuing. The reverse conditions of great cold in these islands while the weather in France is warm are never observed for a long period at a time. These are the conditions which exist *during* one of our great storms, as may be gathered from what has just been said, and it appears that whenever they are noticed, if a storm is not actually blowing on our coasts, one is very likely to follow in a day or two.

From what has already been stated about the different temperatures of the two great wind currents, it will be readily seen that the conditions of temperature just referred to are those which are produced by the existence of the polar current in the north while the equatorial current prevails in the south. Under such circumstances the barometer will be lowest in the space between these currents. It is therefore a sign of disturbance of weather if we find the barometer to be lower, even to a very slight extent, over central England than in the north and south of these islands.

The reverse condition, of westerly winds being felt over Scotland while the east wind sweeps down the Channel, accompanied by a relative barometrical maximum over England, is not found to be a sign of bad weather.

Advance of storms from the Atlantic.

In conclusion, we may notice certain general principles regulating our weather which have been established by the comparison of the Daily Weather Reports with observations made at sea outside our coasts.

It will be shown at p. 32 that the changes of weather experienced by ships crossing the Atlantic may be explained by the hypothesis that a number of successive barometrical depressions, each with its own cyclonic wind-system more or less completely developed, are advancing across the Atlantic in a manner almost analogous to that in which the eddies chase each other down a river. Whenever a series of these depressions reach our coasts, we are visited by a continuance of stormy and wet weather, the

gales following each other with brief intervals of calm, for the space of perhaps a month, or even longer. Thus in the spring of 1868 27 separate storms passed successively over the north of Europe between the 13th of January and the 26th of March.

We have already shown that there are as yet no *certain* means of knowing *à priori* whether a given depression will be accompanied by a storm from any given point of the compass. This much only can be anticipated, on the principles already so frequently urged in these pages:—

Probable direction from which a storm will blow.

If a depression comes in from the Atlantic, at a time when barometrical readings are very high over North Germany and the South of Norway, there is danger of a *southerly* storm. If the region of high pressure be situated over Spain and the South of France, the storm will be *westerly*.

In the case of *northerly* and *easterly* storms, we, in the United Kingdom, are placed at a great disadvantage, for the area over which the excess of pressure would be noticed, previous to the storm, in each case respectively is frequently situated over the open sea, so that no telegraphic information respecting its existence is obtainable.

This latter consideration is one of the reasons, but not by any means the only reason, why storms from the polar quarters come on us more suddenly than those from other points of the compass.

What then are we to regard as the bearing of the principles we have just laid down, on the explanation of weather changes given previously on the authority of Dove?

Value of Dove's rules.

It must not be forgotten that at the time that his work, the "Law of Storms," was written, weather telegraphy was in its infancy, and the fact that barometrical pressure is differently distributed according to the point from which the wind blows had not attracted the attention which it merits.

Dove's rules are deduced from a careful discussion of trustworthy observations made over a definite, though limited, district of the earth's surface, and consequently they deserve the very greatest attention. If, however, they be applied to the purposes of daily weather study, a very brief experience is sufficient to show how inferior such rules, for observations from isolated stations, are to the information derivable from a general view of simultaneous weather conditions as represented on a Daily Telegraphic Weather Chart.

These latter sources of information are unfortunately only accessible to a very limited class of meteorologists, so that Dove's rules are now, and are likely to remain, most valuable guides for the individual observer.



## ON THE USE OF THE BAROMETER TO SEAMEN.

By CAPT. H. TOYNBEE, F.R.A.S., Marine Superintendent.

Buys Ballot's law.

Buys Ballot's law has already been explained, but it is so important to seamen that, at the risk of repetition, I propose alluding to it again, as it must take a prominent place in these remarks.

It has long been known that if an observer turns his back to the wind of a hurricane in the Northern Hemisphere, the barometer will be lower on his left hand than on his right, and that this rule is reversed in the hurricane of the Southern Hemisphere, where the barometer will be lower on his right than on his left. We now know that this rule applies to all winds, even the lightest, at any rate in moderately high latitudes, and it is supposed that, excepting in the neighbourhood of the equator, where the two hemispheres meet, its application is universal. In the neighbourhood of the equator it seems probable that, with your back to the wind, the lowest pressure faces you;\* at any rate, most seamen know that in the equatorial doldrums there is a comparatively low barometer, and that as they are approached the respective Trades draw more directly from North and South.

Plates I. and II.

Plates I. and II. illustrate this law; they represent the state of the barometer as well as the direction and force of the wind over these islands during an ordinary heavy gale on our South coasts, which lasted for two days, and in which the direction of the wind was, at first, Southerly, and then veered to West.

Barometrical gradient.

It has also been established that the strength of the wind usually bears some proportion to the amount of barometrical difference in a given distance, *i.e.*, to steepness of gradient.† It will be seen *e.g.* on Plate I. that the isobars or lines of equal barometrical readings are very close, and there is a very hard gale at certain places, amounting to force 10 in the South of Ireland. The wind also blows nearly parallel to the isobars, the lowest pressure being on its left side.

It is a common remark with seamen that at one time they have had a heavy gale when the barometer did not fall very low, whilst at another the barometer was very low, but the wind light. It is now clear that in the former case, although the barometer was not very low, there was a great difference of pressure in a short distance; whilst in the latter, in spite of the low barometrical reading, there was but little difference of pressure in a given distance.

\* It is hoped that this question will be satisfactorily answered by the minute investigation into the meteorology of that part of the ocean, which is now being carried out in the Office.

† See No. 1, Non-official Papers, "On the connection between Strong Winds and Barometrical Differences," published by this Office.

What holds good for special readings of the barometer is equally true for mean pressures and mean directions of wind, as has already been shown. It seems clear then that, in as far as Buys Ballot's law holds good, a knowledge of the relative distribution of atmospheric pressure on the earth's surface will indicate the prevailing direction and force of the winds; whilst, on the other hand, a knowledge of the prevailing direction and force of the winds will indicate the relative distribution of atmospheric pressure. It is very important that the seaman should bear these facts in mind, as sometimes he is well acquainted with one and sometimes with the other of these conditions.\*

To illustrate what has been said, we propose alluding to certain facts of pressure and prevailing winds which are well known to experienced seamen.

The areas of high and low pressure on Plate III. are taken from Buchan's Chart for the month of December, that for the South Pacific being added from the Charts of Meteorological Data for Cape Horn and the West coast of South America, in process of publication by this Office. The directions of wind are from the Admiralty Pilot Charts, Horsburgh, Buchan, and from the general experience of seamen as gathered from an examination of their logs.

Here we must warn the reader that this plate refers to the sea only, and does not give more than a rough outline of the shapes and positions of these areas, which vary with the seasons. It must also be remembered that the boundary lines of areas of high and low pressure are not supposed to contain areas of equal pressure; they only show that the pressure inside is higher or lower than that surrounding them.

As we have already been told, the motion of the air round areas of high pressure has been termed anti-cyclonic, because the air flows round their centres in a direction opposite to that which it has in cyclones, at the centre of which there is always an area of low pressure. The reader must not suppose that all areas of either high or low pressure are circular, as the term cyclone seems to indicate, for they vary very much in shape, especially in high latitudes. Daily experience, however, shows that, whatever the shapes of the areas of high and low pressure may be, the wind works round them. The wind also does not blow exactly at right angles to the line joining the highest and lowest pressure. In cyclones the air is supposed by some to draw inwards towards the lowest pressure, as if there were an ascending current at the calm centre; in anti-cyclones it is thought to draw outwards from the central area of highest pressure, as if it were a descending current.

\* For further information on this subject I would refer the reader to a paper by A. Buchan, Esq., M.A., F.R.S.E., in the "Transactions of the Royal Society of Edinburgh," vol. xxv. It gives isobars and prevailing winds for each month in the year, showing the changes caused by the seasons. A resumé of it will be found in his "Handy Book of Meteorology."

Relation between pressure and wind.

Plate III.



Horse latitudes  
or Doldrum of  
Cancer.

All seamen familiar with the use of the barometer in tropical seas are aware that there is an area of high pressure at the polar edge of each Trade Wind. It seems to be proved by Buchan's diagrams, and the Meteorological Charts of the West coast of South America,\* that this high pressure does not extend up to the land. Referring to the area of high pressure in the North Atlantic, Plate III. shows that it is situated between the parallels of 30 and 40 North; according to Buys Ballot's law, the wind will draw round it, being Northerly on its Eastern, Easterly on its Southern, Southerly on its Western, and Westerly on its Northern side.

Keeping in mind this area of high pressure, we shall now refer the experienced navigator to a few of the winds which he most frequently meets with in its neighbourhood; for instance,—outward bound from England, as he approaches the coast of Portugal the wind very generally comes from North-west, gradually shifting to North and North-east as he proceeds to the Southward; this fact, according to the law just quoted, shows that he passes from the North-east to the East and South-east side of an area of high pressure lying to the Westward of him.

Then, again, what is the experience of the homeward bounder in the neighbourhood of the same area?

As he approaches the Northern verge of the N.E. Trades, he finds that the wind draws to the Eastward, with a fast rising barometer, until he very probably arrives at a spot where the barometer ceases to rise, and the wind dies away. These are the dreaded "Horse Latitudes," or, as Maury calls them, Doldrums of Cancer. It has been shown that where there is no difference of pressure there is no wind, be the barometer high or low, so that these Horse Latitudes are really formed of a large shoal of high and even pressure, with little or no wind, until the ship creeps to a part where the pressure commences to decrease.

The above case does not, however, represent the experience of all homeward bounders. It is frequently found, especially at certain seasons of the year, that the N.E. Trade gradually turns into a S.E., S., and S.W. wind, and, from what has already been said, we know that such vessels have passed round the S.W., W., and N.W. sides of this area of high pressure, thereby avoiding the Horse Latitudes altogether.

The analogy in their action on the wind between this area of high pressure, and that in the South Atlantic, makes this the place for a slight allusion to the latter.

Area of high  
pressure in  
South Atlantic.

The homeward-bound ship, after rounding the Cape of Good Hope, is at the polar edge of the Trade on the Eastern side of the Atlantic, just as the outward bounder is when off the coast of Portugal (see Plate III.), and the first wind experienced is from S.W., changing to S. and S.E. as the ship proceeds to the Northward, which (according to Buys Ballot's Law, when applied to the Southern Hemisphere,) shows that she passes on the S.E., E., and N.E. sides of an area of high pressure.

\* Now in process of publication by the Meteorological Office.

But the outward-bound ship, as she draws towards the Southern verge of the S.E. trades on the Western side of the Atlantic, very generally experiences a change of wind to N.E., N., and N.W., which correspond to the N.W., W., and S.W. sides of an area of high pressure, agreeing with the experience of the fortunate homeward bounder on the Western side of the North Atlantic.

That part of the South Atlantic which corresponds to the high and equal pressure of our "Horse Latitudes" is not in the great highway of ships, so that we have not such proof of its existence from direct barometrical observations, though the Admiralty Pilot Charts give decided indications of its presence, by the number of circles denoting calms in the neighbourhood.

With regard to the areas of low barometrical readings, it will be seen from Plate III. that there is one in the North Atlantic in the neighbourhood of Iceland; this is much more decided in the winter than in the summer months. Another exists in the Antarctic Ocean, where there appears to be a permanent deficiency of pressure, which is most serious in the vicinity of Cape Horn. Lastly, over the district of the Atlantic Doldrums, between the north-east and south-east Trade Winds, the barometer reads lower than it does in the Trade Wind region itself.

Areas of low  
pressure.

A cursory examination of these areas of high and low pressure indicates, by the rules already explained, how the wind may be expected to circulate, and there is no doubt that the main currents of air do draw round them in certain parts of the ocean. If these differences of pressure were the only atmospherical disturbances, our winds would be comparatively simple; but this is not the case.

Let us suppose that in 15° N. and 50° W. a sudden serious local depression of the barometer took place, (it is not the present object to consider its cause, but merely to instance the fact,) we have what actually exists when a hurricane is formed. We know that a higher pressure exists to its North than to its South, a condition which gives rise to a prevailing Easterly wind, and we may well suppose that the hurricane will be carried to the Westward in this main stream of air, eventually recurving to the North-eastward round the Western edge of the area of permanent high pressure.\* The tracks of West India hurricanes, as shown in the Admiralty Pilot Charts and other works on the subject, show that their course is similar to that which has been described.

Track of West  
India hurri-  
cane.

A recurving of hurricanes, under circumstances analogous to those just noticed, is commonly experienced in the longitude of the Island of Mauritius. It will be found (see Plate III.) that

Track of Mau-  
ritius hurri-  
cane.

\* In the Nautical Magazine for 1842, p. 145, there is a paper by T. C. Hunt, Esq., British Consul for the Azores, showing that the gales of these islands generally travel to the S.E. Twenty cases are given between June 1840 and September 1841. Mr. Hunt is of opinion that in some instances they are related to the West India hurricanes; if so, it may be possible that some of these latter storms may recurve still further, travelling round the N.E. side of the area of high pressure, and coming under the influence of the North-westerly wind which exists there, advance towards the South-east.



the area of high pressure to the S. of the S.E. trades in the Indian Ocean does not extend up to the island of Madagascar; a fact well borne out by the N.E., or "Fort Dauphin" winds, which Horsburgh tells us prevail to the S.E. of that Island.\* If, now, we suppose a sudden barometrical depression to appear in about  $12^{\circ}$  S. &  $80^{\circ}$  E. in the main stream of the South-east Trade, which carries it to the Westward, the hurricane will then work its way in a manner precisely similar to that just described, recurving to the S.E. as it passes to the Southward of the Western end of the area of high pressure. It has happened to me to escape the strength of a Mauritius hurricane by carrying on to the Westward with the South wind of its Western side, knowing that its advance to the Westward was likely to cease in about this longitude.

Areas of low pressure belonging to gales of high northern latitudes.

In addition to the areas of low pressure which cause the hurricanes of the tropics, there are others, belonging to the gales of high latitudes; for instance, in the main stream of air which circulates to the South of the area of low pressure near Iceland, shifting areas of low pressure frequently make their appearance, and travel to the East or North-east. This is indicated by the diagrams of the Quarterly Weather Report published by the Meteorological Office, which show that certain atmospherical disturbances advance in a North-easterly direction from Valencia to Armagh, Glasgow and Aberdeen. One of the papers published by this Office† proves that the same movement prevails across the Atlantic, for it shows that the homeward bound steamer from America can come to the Eastward in company with and often faster than one of these areas of low pressure, whilst the steamer bound to the Westward meets several of them. Since this paper was published, several captains of steamers crossing the Atlantic have drawn diagrams similar to those given in the Report, which agree entirely with these conclusions.

One great peculiarity of these gales is that they generally commence at S. and end at W. or N.W., with little or no E. wind. The probable reason of this is that the areas of low pressure to which they are related have steep gradients only on their E., S.E., S., and S.W. sides, there being little or no difference of pressure between them and the more permanent depression which lies to the North. Here let it be borne in mind that the depression related to a West India hurricane is bounded on the North by an area of high pressure, a fact which may possibly account for the strength of its Easterly wind as compared with the frequent deficiency of force in that wind in the gales of high latitudes.

\* Here let us call attention to the similarity between this N.E. wind and that on the western side of the South Atlantic at the southern verge of the S.E. trades; both are in the same latitude on the western sides of great oceans with heated land to the westward of them. The S.E. wind, which so often prevails on the western side of the North Atlantic, at the polar edge of the trades, seems to have a similar cause.

† Report on the Meteorology of the North Atlantic by Capt. H. Toynbee (Non-official No. II.), Potter, Poultry, and Stanford, Charing Cross.

The ordinary gales of high southern latitudes are similar in character to those we have alluded to in the Northern Hemisphere. They also are accompanied by areas of low pressure travelling to the Eastward, and considering that their equatorial wind is North instead of South, their winds are similar, for they commence at N., and end at W. or S.W., with little or no Easterly wind accompanying them, possibly because the pressure to the S. is so much lower than that to the N. of them.

Gales of high southern latitudes.

So far we have chiefly treated of areas of high and low pressure in the North and South Atlantic, as these seas, and their prevailing winds, are generally well known to seamen. There are other parts of the world where high and low pressures alternate according to the seasons. Central Asia is the most decided instance. There, in January, the mean pressure is 30.4, whilst in July it is 29.5. This immense difference is supposed to reverse the direction of the wind over the South of Asia periodically, causing the N.E. and S.W. monsoons of India.

Areas of high and low pressure alternating.

Whenever areas of both high and low pressure pass over any district it is obvious that the direction of the wind, taken alone, will not be a sufficient guide as to what weather is to be expected. If in the Northern Hemisphere an area of high pressure be passing off to the eastward, the wind in the rear of it will veer through S.E. to S. Although this direction of the wind shows that the barometrical readings are lower to the westward than to the eastward, it is not by any means an indication that a serious diminution of pressure, which may possibly bring a storm with it, is approaching, although the wind in front of such a depression would be southerly also. It is therefore necessary to look for other signs besides the mere direction of the wind when striving to foresee what is coming.

Direction of wind not a safe guide.

We shall now say a few words on the practical use of barometrical indications to seamen.

Practical use of barometer indications.

From what has already been stated (p. 24), it is clear that if we could tell the shape of an area of low pressure, its gradients or the difference of pressure in a given distance on all sides, the rate at which it is increasing or decreasing in intensity, the direction in which it is moving, and its speed per hour, we could calculate very correctly what sort of weather would be experienced at a land station or on board a ship at sea; but at present we have no certain knowledge of these data.

We shall first deal with the ordinary gales of the North Temperate Zone, which commence at S.E. or S. and end at W. or N.W.

Ordinary gales of high Northern latitudes.

Suppose a ship in these latitudes experiences a fresh S. or S.E. wind, with a relatively high temperature and falling barometer. Buys Ballot's law shows that there is an area of low pressure to the W. or S.W. of her; and from what has already been said, her Captain may expect that it is travelling to the E. or N.E. Experience shows that on board a ship hove-to or standing to the West-



ward, the barometer will fall until the wind shifts to the Westward, (which generally happens during a heavy shower of rain, together with a sudden fall of temperature,) when the barometer will probably rise as fast as it previously fell, and a strong N.W. wind will set in. The curves of wind, barometer, and thermometer for January 5th, 1869, in the Quarterly Weather Report published by this Office, afford a very good illustration of these phenomena.

Speed of barometer fall.

It is generally believed that the speed at which the barometer falls is an indication of the strength of a Southerly gale in these latitudes. The fact that the force of wind is more or less related to the amount of the barometrical gradient supports this idea; but we must also take into consideration the speed at which an area of low pressure is travelling. Suppose, for instance, that one with a very steep gradient stood still, as sometimes happens, the wind would blow furiously although the barometer would cease falling, unless the depression were becoming deeper. Then, again, suppose that a depression with a slight gradient were passing very quickly, the barometer would fall quickly, though the wind would not be strong.

Influence of a ship's course and speed on the action of the barometer.

The importance of considering the ship's course and speed in connection with those of the area of low pressure is well shown by the Diagrams of the Report above quoted (No. 2, Non-official), where it is shown that the observer on board a steamer bound to the Westward meets the advancing areas of low pressure, and finds that his barometer falls and rises again more rapidly than it would were he on shore, whilst the observer on board a steamer bound to the Eastward finds that the usual order is frequently reversed, and that his barometer *rises* during a Southerly gale, instead of falling until the wind shifts to the Westward. (See Diagrams 1 and 4 in that Report.)

Different effect of the tack a ship is on.

These facts prove that Captains of sailing ships must consider the tack they are on and the progress they are making, when judging of the weather by the speed with which the barometer falls. For instance, suppose that a homeward bound ship in about 45° N. and 30° W., fell in with a fresh Southerly wind, from what has been said, the Captain will know that there is a lower pressure to the West of him, and he may safely consider that it is travelling to the Eastward; but as he is also going East, his barometer may remain steady or even rise, if, like the homeward-bound American steamers already alluded to, he is outstripping the low pressure in its advance.

State of sea, &c., to be considered.

In such a case, the state of sea and other weather appearances must be taken into consideration; and if the ship is closing with the land, where she may have to heave-to for daylight or a pilot, it might be well to make snug, as by delay she would give the storm, which may be chasing her, the chance of catching her up. After heaving-to, the amount of fall in the barometer per hour is a good though not certain guide, as shown above; a fall of .04 to

.10 per hour is usually considered to be a valuable warning of a Southerly gale, which is likely to be followed by an equally fast rise, accompanied by a W. or N.W. gale.

From what has been said it will be clear to the navigator that in these latitudes, at the setting in of a Southerly wind, a sailing ship as well as a steamer bound to the Westward will, by her course and speed, cause the barometer to fall quicker than if she hove-to or stood to the Eastward, so that in this case also the state of the sea and other appearances ought to be considered, or her Captain may be led to anticipate worse weather than is really coming.

Whilst speaking on the effect of a ship's tack on the motion of the barometer, it may be well to point out that in the Northern Hemisphere, with all winds, except when near the Equator, the starboard tack takes a ship towards a higher barometer, whilst the port tack takes her towards a lower one, and that this order is reversed in the Southern Hemisphere.

Starboard tack always toward high, port towards low pressure in Northern, and vice versa in Southern Hemisphere.

It is not to be understood that the barometer will always rise on the starboard or fall on the port tack. In the former case the high pressure towards which the ship is going may be receding from her faster than she sails, and the lower may be coming up astern; while in the latter the lower pressure towards which the ship is sailing may be moving away faster than she sails. Still the influence of the tack must always be felt. As an illustration see Plate I., which represents the state of the barometer in England and France during a south-westerly gale. There it will be seen that the barometer at Brest is about 0.2 in. higher than that at Penzance; accordingly, a ship on the starboard tack will find the barometer rise as she nears the French coast, while one on the port tack will find it fall as she approaches the English coast. I have more than once noticed a rising barometer on the starboard tack when beating down Channel with a Westerly gale, and, expecting the wind to draw towards North, have tacked to take advantage of the change, when to my sorrow the barometer fell again when on the port tack. The cause of this is now evident. Hence we may conclude that in the Northern Hemisphere, with a rising barometer on the starboard tack, other signs should be looked for before trusting it. In all cases a rising barometer on the port tack is a valuable indication of improving weather, while on the starboard tack a falling barometer is a great warning.\*

Effect of tack in English Channel.

This order is reversed in the Southern Hemisphere, so that a ship beating round the Cape of Good Hope against Westerly gales may very likely find the barometer rising on the port tack when standing towards the land, whilst it will probably fall again as she stands off. This effect has been noticed by some experienced navigators.

Effect of tack off Cape of Good Hope.

\* Diagram 9, in Non-official No. 3, illustrates more clearly the effect of tack on a ship beating down Channel, because both wind and isobars run directly up the Channel.



It may be worthy of remark, that in the Southern winter the barometer at the Royal Observatory at the Cape of Good Hope reads nearly three tenths higher than in the summer, and as this is probably not the case over the warm sea to the Southward, we have at once a steep gradient for the Westerly gales of winter.

Ordinary  
gales of high  
Northern lati-  
tudes.

In treating of the gales of high Northern latitudes, it may be well to say a few words on the use of the barometer when handling a ship in them. As they seem to be related to areas of low pressure extending over many degrees of latitude, and generally travel to the Eastward, differing so much in shape and size from hurricanes, similar rules cannot be laid down for avoiding them. We have already seen that a steamer from America may keep in front of them, but they are still following her.

If the wind begins at S.E., with a falling barometer, the ship bound to the Westward might gain by running to the N.W. with the object of getting the wind more easterly, but the type of gale in which this is possible is more of a cyclone, and does not represent the ordinary gales of these latitudes which begin at S. and end at W. or N.W. In these gales it might be possible for a ship, with the first of the southerly wind which exists on the east side of the areas of low pressure, to get less wind by running to the north, but as their extent in latitude is not well known, and as there is no certain proof that she would get into more moderate weather by doing so, she might do herself more harm than good.

Weak ship.

Best progress  
to the West-  
ward.

It seems then probable that the ship bound to the Southward or Westward must face them. The weak ship, whose one object is to stem the sea and get safely through, without considering progress, should heave-to on the starboard tack, as the wind generally shifts from S. to S.W., W., and N.W. This would of course be the best plan for any ship which found the gale too heavy for her. But the well-conditioned ship, bound to the Westward, which does not fear to face one of these gales, should keep on the port tack until the wind shifts to West with a rising barometer, and then tack to the South-westward. This plan would, of course, tend to bring her into the trough of the sea, and she would be more likely to be caught aback as the wind changed, but we are assuming that her Captain will be prepared to meet these risks.

When the wind has shifted to N.W. the starboard tack takes her away from that disturbance, though she may soon sail into the Southerly wind of the Eastern side of another low pressure coming towards her. This is very common in the Winter.\*

Ordinary gales  
of high South-  
ern latitudes.

The prevailing gales of high Southern latitudes resemble those of Northern, and in describing them it is only requisite to remember that *there* North is the equatorial, and South the polar wind, so that they change places. For instance, as an outward bound ship gets into 40 S., "the Roaring Forties," she experiences a series of gales which, commencing at N. or N.E., end at W. or S.W. Now with a Northerly wind in the Southern Hemisphere there

\* See Diagram 1 of the Non-official Report No. 2.

is a low pressure to the Westward, and the way in which the wind usually changes proves that those areas of low pressure are also travelling to the Eastward. When, therefore, we hear that the Australian Clipper Ships keep a steady Westerly wind for days as they run to the Eastward in high Southern latitudes, we know that they are probably keeping company with one of these areas of low pressure, and that if they hove-to or commenced beating to the Westward they also would experience many changes, just in the same manner as our steamers bound to America do, whilst those from America frequently keep a steady barometer and Westerly wind for days. This idea receives abundant confirmation from the frequency of the barometrical oscillations, and changes of wind, experienced by ships bound to the Westward, in rounding either the Cape of Good Hope or Cape Horn.

The best method for dealing with a very bad gale, or with a weak ship in an ordinary gale, is reversed for high Southern latitudes: there the port is the coming up tack, which enables her to stem the sea, as the wind usually shifts from N. by N.W. to S.W., and the port tack with a S.W. wind takes her away from the low pressure to which the wind is related, though of course it may, and in the winter months most probably will, soon take her into the Northerly wind of the Eastern side of another low pressure coming towards her.

Weak ship in  
bad gale,  
Southern  
Hemisphere.

For a ship beating to the Westward, of course the best progress is made by keeping on the starboard tack with the wind N. and N.W. until it shifts to W. and S.W., when she ought to tack to the North-westward; but it will be seen that, as in the best method for making progress to the Westward in high Northern latitudes, the ship will be headed off, and get into the trough of the sea: she will also be more liable to be taken aback, as the wind changes, than if she were on the port tack.

Best progress  
to the west-  
ward.

From what has been said respecting the ordinary gales of high latitudes which have usually little or no Easterly wind, it must not be supposed that there are not some which have steep gradients on *all* sides, and consequently strong Easterly as well as Westerly winds. These are not nearly so common as the others, and must be dealt with more as cyclones.

The shape, size, and tracks of hurricanes are better understood than are those of the gales of higher latitudes. Then, again, it is a duty for the *best* ship to avoid their centres if possible, whereas a large number of the gales of higher latitudes need not be avoided. For these reasons many works have been written on the subject of handling ships in cyclones; still their importance makes it necessary to allude to them here. It is generally known that a cyclone is related to an area of very low pressure. This area is supposed to have more or less a circular form, with very steep sides, descending quickly from its outer edge to the centre, in a manner somewhat similar to the crater of a volcano, or, to use a more homely simile, to the interior of a wash-hand basin. The

The use of the  
barometer in  
hurricanes or  
cyclones.



wind circulates round this centre according to the law so often alluded to: its strength is believed to be in proportion to the steepness of the sides or gradient, and a short calm is usually experienced at the centre, where there is a small area of very low but uniform pressure.

South wind in  
West India  
Cyclone.

In the tropics, during the season for hurricanes, the careful navigator will look suspiciously on any wind stronger than usual, especially if his barometer shows signs of falling. Suppose this to happen to the Eastward of the West India Islands, and the wind be Southerly, by Buys Ballot's Law it is known that the area of low pressure is to the Westward. Now by referring to the Admiralty Pilot Charts or other works showing the tracks of these hurricanes, it will be seen that in this part of the sea they generally go to the Westward, so that a ship with a Southerly wind is comparatively safe, and if bound to the Westward, may follow a cyclone at a respectful distance, making use of its wind.\* The barometer will be a capital guide here, for if it falls it will show that the ship is closing with the centre, and that it will be well to reduce sail or heave-to for a short time. But if the ship bound to the Westward were further West, and in the position where these cyclones generally recurve to the North, she ought to heave-to on the starboard tack with a Southerly wind, until it shifted to the Westward.

Wind drawing  
in towards the  
centre of  
cyclones.

If, instead of a Southerly wind, the ship to the Eastward of the West India Islands experiences a Northerly wind with a falling barometer, it is evident that the centre will be to the East of her, and as it is right to suppose that the cyclone is coming to the West, the ship may be right in front of the centre. This is the most dangerous position. Here it may be well to remark on the alleged indraft of the wind towards the centre of a cyclone, because in so critical a position a point may be of value. Suppose that the wind is *due* North, then with the back to this wind *due* East will be to the left, and according to the common rule, *there* will be the centre of the cyclone; but if the wind draws spirally inwards towards the centre, instead of blowing in an exact circle, then with the back to the wind the centre will not be exactly to the left, but a trifle towards the front of the person so standing; *e.g.*,

With the wind North	the centre will bear	South of East;
" West	"	East of North;
" South	"	North of West;
" East	"	West of South;

the amount depending upon the angle which the direction of the wind makes with the tangent to a circle round the centre of the hurricane.

North wind in  
West India  
cyclone.

But to revert to the case of a ship in front of a West India cyclone coming to the West, wind and sea-room permitting, it seems

\* In "Maury's Sailing Directions," Vol. I, 1858, p. 273, is a Diagram showing how the "Gloriana" made such use of a cyclone near Madras.

best to run, (or, if possible, to keep the wind on the starboard quarter, because running before a wind drawing spirally inwards towards the centre must bring a ship nearer to it), and try to shift the wind from N. to N.W., bringing the centre to the N.E. This puts the ship in the southern half of the cyclone. Then, if running takes her out of her course, or for any other reason it is wished to heave-to, it seems well to bring her to on the port tack, because although this puts the ship's head *towards* the centre, it enables her to come up and stem the sea, and also lessens the risk of being caught aback, for, as the centre passes to the north of her, the wind will shift from N.W. to W. and S.W. It is not supposed that a ship hove-to in a hurricane will fore-reach much in the direction of her head; still it must be borne in mind that all she does go in that direction whilst on the port tack in the Northern Hemisphere will be towards the centre.

It is quite clear that the *track* of a cyclone must be considered before steps can be taken to avoid it. For instance, the North wind, just alluded to, proves a ship to be in front of a West Indian cyclone *if* it be moving to the West; but where it recurves to the North, an East wind shows that a ship is in its front, and *there* the ship, with a North wind, might gain by carrying on to the West. Then, again, as some West Indian hurricanes are supposed to recurve to the North-east in a certain part of the sea, *there* a South-east wind and falling barometer would indicate being in its front. Hence the importance of considering both the barometer and wind in connection with the average track of storms in that part of the sea. If the wind continues steady in one direction, but increases in force, and the barometer falls, it is a strong proof that the centre is coming direct for the ship. If the wind shifts from North to North-west, with a falling barometer, it is a sign that the bearing of the centre has changed from East to North-east, but that it is nearer the ship. If the wind shifts from North to North-east, with a falling barometer, it is a sign that the bearing of the centre has changed from East to South-east, and that it has closed with the ship. On the Northern side of a Northern Hemisphere hurricane, travelling to the West, in which the wind veers from North-east by East to South-east, the starboard is the best tack to heave-to upon, as the ship comes up to stem the sea, avoids the risk of being caught aback, and looks away from its centre.

As the wind revolves similarly in all cyclones North of the Equator, the above remarks refer equally to those of the Bay of Bengal and the China Sea, so that the navigator should make himself familiar with the usual tracks laid down by Piddington and others for these seas; and, as many of those tracks vary very much in direction, he should not fail to study the changes of barometer and wind which he is actually experiencing, by which he may form a good idea of the track of the special cyclone with which he is dealing, in time to enable him to avoid its centre. The transparent storm cards in Piddington's Horn Book are very useful in trying to estimate the track of a hurricane.

Heave-to on  
port tack in  
southern half  
of West India  
hurricane.

Necessity of  
considering the  
track of a  
cyclone.

Heave-to on  
starboard tack  
in northern  
half of West  
India hurricane.



Hurricanes of  
Southern  
Hemisphere.

The hurricanes of the Southern Indian Ocean should perhaps also be alluded to. There, the order of revolution being reversed, the Captain, with a Northerly wind, knows that the centre is to the West, and, if the ship be well to the Eastward where their tracks are usually to the West, the North is a very safe wind, until he arrives at the place where they usually recurve, South of the Mauritius. Hence the necessity of considering their probable tracks, together with the changes of the wind and action of the barometer.

A Captain in the neighbourhood of one of these cyclones, standing to the Westward, with a Northerly wind, must be guided by the strength of wind and by his barometer. If the barometer falls, and the wind increases, he is closing with the centre, and must not go on so fast. Then, if, with a Northerly wind, and signs getting worse, he is approaching the longitude of the Mauritius, where they recurve, it will be well to heave-to on the port tack until the wind shifts to the Westward: a sign that the centre has passed to the Southward. I have practised this manoeuvre successfully.

With a South wind and fast-falling barometer in a Mauritius cyclone, the centre is to the East, and when its track is to the West this is a very dangerous position. Under such circumstances it seems best to stand to the North or North-west, if possible, until the wind shifts to South-west, when the ship will be in the Northern half of the cyclone, and may, if preferred, be hove-to on the starboard tack. This puts her head towards the centre; but, as in the similar case for the Northern Hemisphere, it is the tack on which she will come up and stem the sea when the wind changes to West and North-west, and it is not supposed that she will fore-reach towards the centre. This plan also reduces the risk of being caught aback.

When one of these cyclones has ceased advancing to the West, and recurved to the Southward, the best plan is to carry on to the Westward with its South wind, in which case the barometer will rise and wind decrease, as already remarked.

When a Captain expects to experience the change of wind belonging to the Southern half of a Mauritius cyclone, viz., from South-east by East to North-east, and wishes to heave-to, the port is the best tack, because his ship will come up and stem the sea, avoid the risk of being caught aback, and her head will be turned from its centre.

In cyclones of both hemispheres, the West wind on their equatorial sides is easily dealt with, for they seldom move on a track towards the equator, so the ship may take that route until the barometer rises and weather improves.

But in the part of a cyclone's track where it moves towards the pole, an East wind proves that a ship is in front of it; and running, until the wind has changed so as to make it safe to heave-to, even though running takes the ship out of her course, seems to be the best method to escape it.

The bearing of the centre of a hurricane in the Southern Hemisphere will also be affected by the indraft of the wind towards

Starboard tack  
best to heave-to  
upon in North-  
ern half of  
Mauritius  
cyclone.

Port tack best  
in southern  
half of Mauri-  
tius cyclone.

the centre, if such an indraft exists. In this case also, with the back to the wind, the centre will be not exactly towards the right hand, but slightly more in front of the observer; for instance,—

With the wind South, the centre will bear	North of East;	Indraft of wind towards the centre.
" West,	" East of South;	
" North,	" South of West;	
" East,	" West of North.	

The amount depending upon the amount of indraft, or the angle which the wind makes with the tangent to a circle round the centre of the cyclone.

As a general rule, when a Captain has discovered the direction in which a cyclone is moving, he should imagine it to be cut in half by its own track; then, supposing himself to be on the track, in the rear of the cyclone, and looking towards the direction in which it is moving, if he be in the Northern Hemisphere and wishes to heave-to, he should put his ship on the *starboard tack* if the direction of the wind shows that she is in the *right-hand half*, and on the *port tack* if she be in the *left-hand half*.

In the Southern Hemisphere, when the ship's positions are as given above, the tacks must be reversed, i.e., *port* in the *right-hand* and *starboard* in the *left-hand half* of the cyclone. It is very important to bear in mind that the parts of a cyclone which form its right and left halves change as it changes the direction of its track.

The seaman will naturally say, if there can be no wind without a corresponding difference of pressure, how is it that the barometer does not fall with each squall and rise again? Experience shows that this does occur, though the change is too small and transient to be detected by the ordinary method of observing. King's self-registering barometer at the Liverpool Observatory has a very large time-scale, and on its records the oscillations caused by squalls are clearly shown.

In conclusion, it need hardly be said that we have still much to learn respecting the wind and its relation to the barometer. The data to illustrate what has been said have been taken from parts of the world generally known to seamen, and the same ideas may easily be applied to other districts.

It is hoped that, from the excellent logs coming into the Meteorological Office, we may ultimately be able to give monthly charts of the direction and force of wind, with relative pressure, for the most important parts of the sea. It must, however, be borne in mind, that it is only the *prevailing* winds and weather that can be indicated for each month, as no amount of observations will enable us to deprive them of their proverbial changeableness.

General  
conclusion.

Action of the  
barometer in  
squalls.



## CONSTRUCTION AND MANAGEMENT OF BAROMETERS.

Principle of the instrument.

The barometer, as usually constructed, consists of a tube of glass, about 34 inches in length, closed at one end, filled with mercury, and placed vertically with the open end dipping into a cup containing mercury, which is commonly called the cistern. The mercury does not entirely fill the tube so placed, but, occupies at the level of the sea from 31 to 27 inches of the tube, measured above the mercury in the cistern, according to the changes of atmospherical pressure. When the instrument is carried above the sea level, the stratum of air below it does not affect it, and the column falls in relation to the elevation. Conversely, if it be carried below the sea level, as down a mine, an additional thickness of air presses upon it, and the column rises in relation to the depth. The barometer is, therefore, an exponent of the changes incessantly taking place in the pressure of the air over it, and it may also be used differentially for the purpose of estimating the magnitude of elevations and depressions of the earth's surface.

Barometer scales.

Although the instrument exhibits only the effects of pressure, usually estimated by *weight*, its indications are considered in relation to the *length* of the column.

A lineal scale is therefore a necessary accompaniment, and it may be given in inches or millimetres, or in any other recognised measure of length. During the changes which take place in the length of the column, the mercury which leaves the tube must enter the cistern, or *vice versa*; hence the level of the mercury in the cistern undergoes changes related to those of the column. In measuring the length of the column we must therefore take into consideration these changes of level, and this necessity has led to various constructions of the cistern. The cistern need not be covered; but, in order to render the instrument portable, it usually is closed up, as explained further on, and firmly cemented to the tube. The whole is then supported by a frame.

Material for frames.

There is much variety in the fashion, though less in the material, of barometer frames. Brass is considered the best material, because its coefficient of expansion by heat is well known; and, what is very important, because the tables for correcting barometer readings for temperature, founded upon the coefficients of expansion of mercury, glass and brass always give, with such barometers, identical results, although the nature of the alloy forming such frames may not in all cases be exactly similar. Aluminium has been lately used, but we are not aware of any reduction tables adapted to it. Barometers are also framed in various woods. In different, and even in similar, species of wood, the expansive coefficient is not

the same; nor is it constant for the same specimen, as wood is affected by moisture as well as temperature. A reduction table has been calculated, founded on an average of various determinations of the expansive coefficients of certain woods, such as oak, walnut, and mahogany, but it cannot be relied upon for accurate results, like that for brass. Barometers in wood, however well made, must always be inferior in accuracy to those mounted in brass.

The scale, or the greater part of it, is commonly measured along the frame; but if a scale be applied which is quite independent of the frame, then, of course, the reduction for temperature would depend upon the material of the scale, and not upon that of the frame. In such a case wood answers the purpose of a frame, even better than brass. It is not the practice to divide the whole length of the scale, but only the part usually required; viz., that from 27 to 32 inches. This portion may actually be divided on ivory, porcelain, or enamel, and fixed in its proper position, but if the frame which bears it be brass the entire scale is considered to be on brass, and if the frame be wood the scale is virtually on wood.

Material for scales.

The change of level of the mercury in the cistern may be compensated for either (1) by a so-called *capacity correction*; (2) by a flexible cistern base; or (3) by a contracted scale.

Cistern level.

The first method must be resorted to when the cistern is entirely covered up, and a scale of standard inches is engraved on the frame. In such a barometer, a certain height of the column is correct, by the scale. When the mercury sinks below this position, called the *neutral point*, the level rises in the cistern above the zero of the scale, and then the height read off must always be too great. When the mercury rises above the neutral point the level in the cistern sinks below the zero point, and the reading is too small. On the scale of such a barometer the maker should mark the neutral point, and state the relative interior sections of the tube and of the cistern thus: Capacity 1 to 50. From these data, the correction for capacity is found by taking a 50th part of the difference between the height read off and that of the neutral point, adding it to the reading when the column is above, and subtracting it from the reading when it is below, the neutral height.

"Capacity" correction.

By the second method, the necessity for the capacity correction is avoided by a peculiar construction of cistern invented by Fortin, after whom such barometers have been named. The scale is engraved to show true inches. The upper part of the cistern is made of glass, and the base is flexible, and acted upon by a lifting screw. The zero of the scale is visible in the cistern, being generally a piece of ivory, called the *fiducial point*. The level of the mercury in the cistern must be set to this point, before taking the reading, by raising or lowering the cistern base by means of the thumb screw. This construction of cistern is best adapted for high class or standard barometers; but it cannot be employed for barometers required for use at sea.

Fortin's method.



Contraction of  
scale.

The third plan was adopted by the Kew Committee of the British Association in 1854, and by means of it we obtain a standard marine barometer which does not require a capacity correction. By this method the highest point of the scale is made the neutral point, and the inches are shortened in proportion to the relative size of the diameter of the tube and of the cistern. In the Government marine barometers the diameter of the cistern is about 1.25 in., and that of the tube about 0.25 in. The scale, therefore, instead of being divided into inches in the usual way, is shortened in the proportion of 0.04 of an inch for every inch.

This method has also grown into favour for station barometers. For the ordinary kind, mounted in wood, it is especially suited, as it does away with the necessity for a capacity correction; but for standards it is not to be preferred to Fortin's plan. All marine barometers should be graduated on this principle. In nearly all the barometers which till recently have been employed at sea the index correction has varied through the range of scale readings in proportion to the difference of capacity between the cistern and the tube. Barometers with scales contracted or compensated in this way are now known as Kew barometers.

Air or mois-  
ture in tube.



*The Air Trap.*—In well made barometer tubes it is the practice to insert a small funnel or pipette, somewhere between the range of the column and the cistern neck. The figure in the margin represents the portion of a marine barometer tube which contains the pipette A B. The lower part of the tube has a contracted bore down to the cistern. The upper part, as far as the scale portion, in marine barometers, is contracted even to a finer bore than that represented in the figure, to obviate "pumping," see p. 49. The pipette was first suggested by Gay Lussac, in order to stop the ascent into the vacuum of air or moisture which may work its way from the cistern into the tube between the glass and the mercury, for it will lodge at the shoulder A as represented by the white space. Experience proves that instruments deteriorate less rapidly with this contrivance than without it. Cases, however, occasionally occur in which it does not effectually prevent the ingress of moisture, and it becomes necessary to boil the tubes over a gas or charcoal stove to expel it. All barometer tubes should be thus treated as soon as made, in order to expel any air or moisture which may have been left behind in the process of filling. The slightest trace of moisture is very detrimental, as it makes the mercury adhere to the glass, and so causes the barometer to be sluggish in its action, and, of course, also affects its accuracy as its tension depresses the column. Should the glass be even slightly smeared by the mercury, or should the mercury appear always to cling to the tube, the presence of air or moisture may be assumed, and the instrument should be sent to the maker to be reboiled, or refilled, or fitted with a new tube as may be necessary. To know whether a tube with mercury

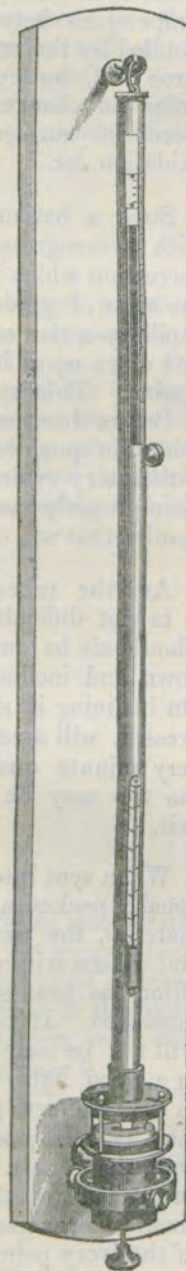
has been well boiled, it is unnecessary to watch the tedious process. It is usually sufficient to examine it with a lens. The absence of small specks and minute bubbles may be considered a satisfactory condition. It is sometimes recommended to cause the mercury to strike the top of the tube; a clear metallic "click," indicating a good condition of the mercury, while a dull sound is evidence of the presence of air or vapour; but, unless this be done with very great care, the tube may be broken by the momentum of the heavy mercury, and there seems to be no general necessity for incurring such a risk: it should therefore never be attempted without very good reason.

*Attached Thermometer.*—Every mercurial barometer should have an accurate thermometer attached to its frame, the bulb of which should be turned inwards so as to be as near as possible to the barometer tube. The degrees should be etched upon its stem, and, of course, a numbered scale must be placed by its side. No reading of a barometer is complete without a notation of the temperature at the same time.

A short description of the principal kinds of barometers will now be given, omitting all mention of constructions which have not proved generally useful, such as long-range barometers, and those with distorted scales, such as the instruments with spiral and diagonal tubes.

#### LAND STANDARD BAROMETER.

The best standard barometers are made on Fortin's principle, which was explained on p. 43. The tube is mounted in a brass frame, which is suspended from a bracket at the top of a mahogany board, so as to ensure perpendicularity. At the lower end of the board is a socket or ring, with clamping screws, for steadying the instrument in a vertical position when an observation is to be made. The instrument is so suspended that it may be turned at pleasure to any source of light for setting and reading the vernier. A sheet of white notepaper fixed on the board, just behind the top of the mercury, will also be found serviceable in reflecting the light so as to enable a good observation to be made. The vernier is constructed to read to  $\frac{1}{500}$  of an inch, or by estimation to .001 inch, and is adjusted by a rack and pinion motion. For explanation of the vernier, see page 57.



Attached  
thermometer.

Barometers on  
Fortin's prin-  
ciple.  
Standard  
Barometer.



Barometers on Fortin's principle can only get out of order by the ingress of air or moisture. They are not affected by any changes which may take place in the material of the cistern or the mercury therein. The scales are engraved by a dividing engine, and are usually laid down with accuracy. The only scale error likely to exist arises from incorrect measurement from the zero point, which the greatest care cannot obviate, as the difference of temperature between the machine scale and the tube, while being handled by the workman, may account for this final error. This error will, however, be constant throughout the scale, and can suffer no change from lapse of time; and the position of the mercurial surface is independent of loss of mercury from oxidation, &c.

Testing  
standard baro-  
meters.

Such a barometer should, when finished, be carefully compared with a recognised standard. The difference will be the constant correction which is to be applied to its reading, and will include the error of graduation combined with the error arising from the capillary action of the glass tube upon the mercury. The inches laid down upon it should also be tested by a standard dividing-engine. This is the plan followed at the Kew Observatory.

Before barometrical observations can be of any real use for scientific purposes, the computer or investigator should have satisfactory evidence that the errors of the instruments used have been properly ascertained. He can then allow for them, and deduce results that are comparable for different times or different places.

Removal of air  
bubbles from  
standard baro-  
meters.

As the tubes of standard barometers are not contracted it is not difficult to remove any air which may get into them. Should air be suspected in such a barometer, it should be taken down and inclined *very* gently till the mercury fills the tube. On inclining it still more, so as nearly to invert it, the air, if present, will ascend in a bubble into the cistern, unless it be a very minute quantity and detained by adhesion, in which case the top may be slightly tapped on the ground to facilitate its exit.

Management  
of standard  
barometers.

When sent into the country or abroad, a standard barometer is usually packed, apart from the mahogany board, in some soft elastic material, the cistern being screwed up so as to fill the tube and cistern with mercury. It should not be handled until a position has been selected for it, and then must be very carefully unpacked. It may be placed in any convenient room where it will not be near a fire nor exposed to the sunshine. It should be in a good light, with the scale about five feet from the ground, so that the zero point in the cistern and the vernier on the scale may be easily seen. The board should first be fixed against the wall, the cistern then inserted into the socket and the instrument suspended from the bracket. When this is done, the thumb screw should be reversed till the mercury falls in the cistern to the level of the ivory point.

To set the barometer, first read the attached thermometer, then adjust the mercury by means of the thumb-screw, (the tube being held vertically by the clamping-screws,) so that it exactly touches the ivory point, which, with its reflection (if the surface of the mercury be clear,) will then appear as a double cone. Next adjust the lower edge of the vernier tangentially to the convex surface of the mercury in the tube, by keeping the eye in line with the back and front edges of the vernier. It requires some practice for the novice to make these adjustments properly and expeditiously. While it is all important that they should be done properly, it is advisable to do them quickly in order to avoid raising the temperature of the instrument by the proximity of the observer's person.

Reading a  
standard baro-  
meter.

#### ORDINARY LAND BAROMETER.

The common land barometer is generally mounted in wood. The cistern may have a flexible base, but if so, its purpose is merely for screwing up the mercury so as to fill the tube and cistern, and so render the instrument better adapted for carriage from place to place. As a rule these barometers are useless for scientific records. Like the wheel barometers, they are household instruments used as weather glasses, which name they have received from the practice among the makers of engraving the following formulary on their scales:—

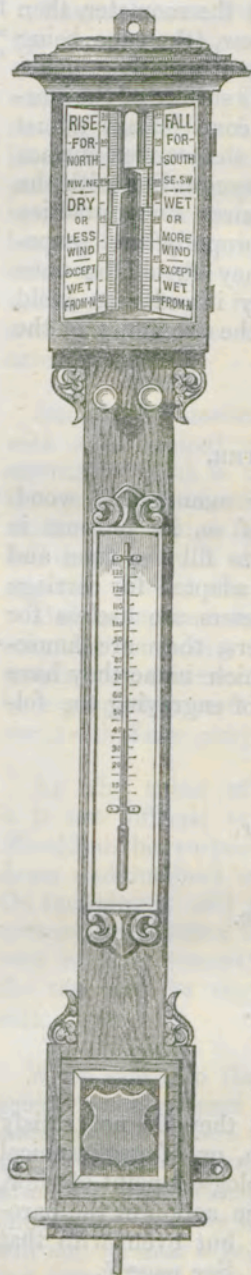
Ordinary baro-  
meters.

At 31 inches	Very dry.
30.5 "	Settled fair.
30 "	Fair.
29.5 "	Changeable.
29 "	Rain.
28.5 "	Much rain.
28 "	Stormy.

These words are very objectionable, since they do not satisfy different conditions of elevation above the sea, or of geographical position, and are also wrong from a meteorological point of view. They were, no doubt, intended to refer to the action of the barometer when placed at or near the sea level; but even with that limitation they only apply to extreme cases. See page 7.



Fishery barometers.



Management.

## COAST OR FISHERY BAROMETER.

The Meteorological Office has placed about 120 barometers at exposed positions on the coasts of the British Isles for the use of fishermen, seafaring persons, and the public generally.\* This form of barometer was designed by Admiral FitzRoy, who also devised the lettering, and it has been copied by the opticians generally. It was intended to be simple, durable, and accurate for all practical purposes as a weather glass. The frame is made of oak, and fastened by brass screws. There are no glued pieces nor iron fastenings which might be acted upon by moisture. The tube shows a broad column of mercury. It dips in a well seasoned box-wood cistern, which has a flexible base made of sheepskin, and is in connection with a lifting screw. The scale plates are porcelain, and have the lettering burnt in. The vernier reads to hundredth parts of an inch. The attached thermometer is large and easily read. It gives the temperature of the air, as well as that of the barometer, when the instrument is freely exposed.

*Directions for handling.*—This barometer should be suspended on a hook or stout nail, against a frame or piece of wood, so that light may be seen through the tube. Otherwise a piece of white paper should be placed behind the upper or scale part of the tube. When first suspended, take the pinion key (from the lower end of the scale), and fit it on the square-headed brass pin at the lower extremity of the instrument, and turn gently to the left, or against the sun, till the screw stops; then take off the key, and replace it for use on the vernier pinion near the scale, where it should remain, to be used in moving the vernier. The cistern base being thus let down, the mercury in the tube comes at once to its proper level.

In removing this barometer it is necessary to slope it very gradually, till the mercury is at the top of the tube, and then, with the instrument reversed, to screw up the cistern base or bag, by the pinion key, used gently, and turned to the right till it stops. It

\* Similar instruments have been issued by the National Life Boat Institution.

will then be portable, but should be carried with the cistern end uppermost, or lying flat, but it must not be jarred or receive a concussion.

## MARINE BAROMETERS.

The greater portion of the tube for a barometer intended for use at sea must be made with a very fine bore, in order to prevent the oscillations of the mercurial column which would otherwise occur from the motion of the ship. When the bore is not sufficiently contracted, the ship's motion causes fluctuations in the barometer, to which the term "pumping" is applied. Of course this condition is objectionable, as at times correct readings cannot be obtained. On the other hand, when the contraction has been over-done, the instrument is sluggish in responding to the varying pressure of the atmosphere, and is therefore equally objectionable for accurate observations.

Sometimes, though very rarely, a particle of dirt or a bubble of air lodges in the very fine contraction of the tube, and completely stops the action of the instrument. Whenever, therefore, a marine barometer becomes stationary or inactive when it evidently ought to be moving under the influence of atmospheric changes, there being no evidence of fracture of the glass, the cause may be surmised to be of this nature. It should then be taken down, the mercury allowed to fill the tube, and put aside in an inverted position for a few hours. On replacing it, the cause of the stoppage will generally be found to have been removed to a part of the tube where it can do no harm.

*Standard Marine Barometer.*—In 1854, by direction of the Committee of the Kew Observatory, Mr. John Welsh made special experiments to ascertain the appropriate limits of contraction for marine barometer tubes. The Committee had been requested to decide on the barometer best adapted for marine observations, then about to be commenced by the Admiralty and the Board of Trade. Their reply to the Board of Trade stated that "in selecting the form of marine barometer best adapted to the purpose of making observations at sea, the Committee have endeavoured to combine convenience and economy with accuracy, durability, and simplicity in construction and adjustment."

"The barometer proposed by Mr. Adie appears to them to fulfil those conditions in a satisfactory manner. Its action at sea has been tested, under their superintendence, by Mr. Welsh, on two occasions; once in a voyage to Leith and back, and subsequently to the island of Jersey. The general conclusion arrived at in those trials, is, that in order to reduce the pumping of the mercury within convenient limits, it is necessary to have the tube contracted to such an extent that the mercury will take about twenty minutes to fall from the top of the tube to the height indicating the true pressure of the atmosphere at the time."

Kew barometers.



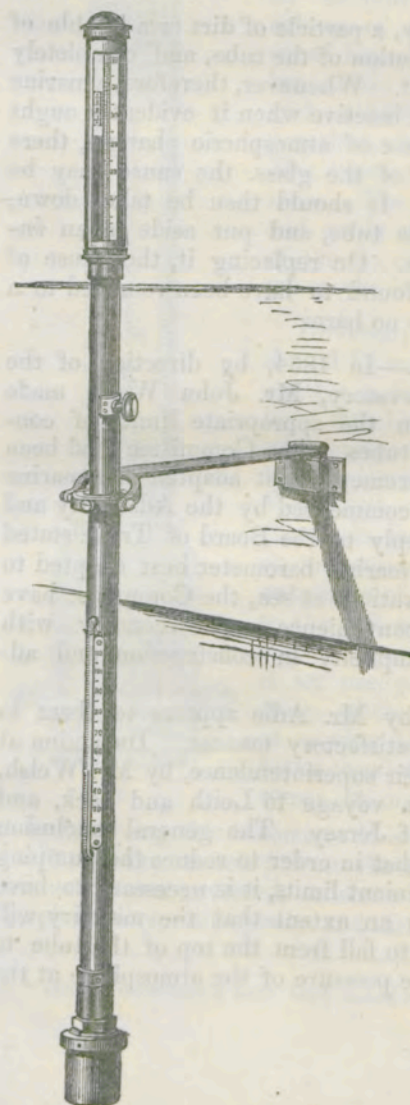
Construction.

Accordingly this barometer has been adopted by the Government. It is in all respects a standard instrument, and is equally available for land or sea service. It is not too sluggish for accuracy on land, while at sea the motion of the ship is rather favourable than otherwise to its correctness of action. It is mounted in a brass frame, but, as this alloy is acted upon by mercury, the cistern is made of iron. The frame is open in front and rear so as to expose to view the range portion of the tube, and the scale is protected from dust by a glass shield. The vernier is engraved on a small piece of silvered brass tubing, and travels firmly by a rack and pinion motion, the parts being kept in position by friction. The vernier enables the height of the mercurial column to be read off to the nearest thousandth of an inch. See p. 57.

The inches of the scale are contracted to compensate for the alterations in the level of the mercury in the cistern, as has already been explained.

Suspension of marine barometers.

Standard marine barometer.



Barometers when in use at sea are slung in gimbals, and suspended from arms at least a foot long, so as to be perfectly free to assume the vertical position under every movement of the ship, and at the same time to keep clear of the bulkhead against which the arm is fastened. It is desirable to place the barometer in such a position as not to be in danger of a side blow and also sufficiently far from the deck above to allow for the spring of the metal arm in cases of sudden movements of the ship. If there be risk of the instrument striking anywhere when the vessel is pitching or rolling heavily, it will be well to put some soft padding on that place. It is essentially necessary that the instrument should have free swing. Neither steadying springs nor stays of any kind should be applied to a barometer, as by their weight they at all times keep it slightly out of the vertical, and when they come under stress the instrument is in an abnormal position altogether. *Care should be enjoined that no read-*

*ings from a barometer which is not hanging truly vertically should ever be recorded.* Such readings will always be too high in proportion to the degree of obliquity.

Various contrivances have been resorted to for rendering the arm and gimbals elastic so as to yield to sudden jerks. Experience proves that a simple straight arm of well hammered brass has sufficient spring for the purpose.

A new marine barometer for the Naval Service, intended to withstand the concussion arising from gun-firing, was designed in 1861 by Admiral Fitz-Roy, and its use is rendered necessary by the greatly increased size of modern artillery. In this instrument the glass tube is surrounded as much as possible with vulcanized india-rubber tubing, as packing, which checks vibration from concussion, but does not hold it rigidly. The cistern is made entirely of seasoned box-wood, but would be improved by the substitution of iron, which is more durable, and preserves the mercury better from oxidation and moisture. Formerly they were only graduated to 0.01 in., but they have lately been fitted with improved verniers and accurate scales, so as to read to .001 inch. The instrument, therefore, now differs only in details from the Kew marine barometer.

The cisterns of these barometers are closed. Each contains sufficient mercury to cover the open end of the tube when the instrument is laid flat or when inverted, for carriage; so that no adjustment of cistern whatever has to be made, either for portability or for observation. The observer should never attempt to meddle with the cistern. Those made of wood are sufficiently pervious to air for the mercury to be affected by the variations of the pressure of the atmosphere. Those made of iron are provided with a small aperture at the top or cover, which is closed internally by a leather washer through which the air can act, but the mercury cannot escape.

Every tube is constructed with an air-trap, similar to that already described.

*Common Marine Barometers* are usually made without system, either as regards the contraction of the tubes, the compensation of the scales for capacities, or the introduction of the air-trap to prevent deterioration. They are framed in wood, and are showy instruments. Their usual faults are either sluggishness from over contraction, or pumping from insufficient contraction. The scale-errors are sometimes of considerable magnitude, and differ in value at different parts of the scale; while the mercury itself is frequently impure, owing to oxidation or to the presence of moisture.

The cistern is made of box-wood with a flexible sheep-skin base, to which a lifting screw is attached. This arrangement is solely intended for making the instrument portable. It is covered by an outer brass casing. After fixing up such an instrument the brass casing should be unscrewed, and the flexible base of the cistern let down. Before changing the position of the instrument,

"Gun" barometer.

The cistern.

Ordinary marine barometers.



or taking it down for carriage, the cistern should be screwed up so as to confine the mercury in a close space.

Verification of barometers.

*Verification of Barometers.*—To find the index correction for a Fortin's barometer, comparison with a standard, at any part of the scale at which the mercury may happen to be, is generally considered sufficient. It is a work of much more time to test the marine barometer, since it is necessary to find the correction for scale readings at each half inch throughout the range of atmospheric pressure to which it may be exposed; and it becomes necessary to have recourse to artificial means of changing the pressure of the atmosphere on the surface of the mercury in the cistern.

Kew method.

At Kew Observatory the barometers to be thus tested are placed, together with a standard, in an air-tight chamber, connected with an air pump, so that, by partially exhausting the air, they can be made to read much lower than the lowest pressure to which marine barometers are likely to be exposed; and by compressing the air they can be made to read higher than the mercury ever stands at the level of the sea. The tube of the standard with which they are compared is contracted similarly to that of the marine barometer, but a provision is made for adjusting the mercury in its cistern to the zero point. Glass windows are inserted in the upper part of the iron air-chamber, through which the scales of the barometers may be seen; but as the verniers cannot be moved in the usual way from outside the chamber, a provision is made for reading the height of the mercury, independently of the verniers attached to the scales of the respective barometers, by an instrument called a Cathetometer. At a distance of some five or six feet from the air-tight chamber a vertical scale is fixed. The divisions on the scale correspond exactly with those on the tube of the standard barometer. A vernier and telescope are made to slide on the scale by means of a rack and pinion. The telescope has two horizontal wires, one fixed, and the other moveable by a micrometer screw, so that the difference between the height of the column of mercury and the nearest division on the scale of the standard, and also of all the other barometers placed by the side of it for comparison, can be measured either with the vertical scale and vernier or with the micrometer wire. The means are thus possessed of testing barometers for index error in any part of the scale, through the whole range of atmospherical pressure to which they are likely to be exposed, and the usual practice is to test them at every half inch from 27.5 to 31 inches.

Defects of ordinary barometers.

In this way ordinary barometers of various constructions have been tested, and some found to read half an inch and more too high, while others read as much too low. In some cases those which were correct in one part of the scale were found to be several tenths of an inch wrong in other parts. In some the mercury would not descend lower than to about 29 inches, owing

to a very usual fault in the construction of many common barometers till lately in use,—*the cistern was not large enough* to hold the mercury which descended from the tube at the time of a low atmospherical pressure.

### SYPHON BAROMETERS.

The tube of a barometer may be bent up at the open end in the shape of a syphon, with the short limb from six to eight inches long. This does away with the necessity for a cistern; for, when sufficient mercury is introduced into such a tube, the atmosphere supports the mercury in the long limb, which is closed at the top, by its pressure upon that in the short limb. As the barometrical column rises and falls, the mercury in the short limb falls and rises; therefore, provided the calibre of the upper part of the long limb be equal to that of the short limb, the distance between the upper and lower levels of the mercury is always the height of the barometric column. A scale of inches starting from a zero point taken near the bend of the tube, with verniers fitted to each limb, give the means of measuring the long and short columns. The difference of readings is the height of the barometer. Or, the zero point may be taken at some intermediate position, and the distances of the mercury levels being measured therefrom, upward and downward, their sum is the height of the barometer.

Syphon barometers.

This form of tube has been much used for mountain barometers; as, from the absence of a cistern, and the small quantity of mercury required, it makes a light and compact instrument. Instead of the top of the short limb being left entirely open, it is closed, and a small conical puncture is made at the side, which is bound round with cotton wool, so that the instrument may be inverted for travelling without any mercury escaping. The portion in the short limb is then loose in its part of the tube, but, as there is little of it, there is no danger of its breaking the tube by its momentum if ordinary care be taken in moving the instrument. The tube is contracted along the intermediate portion and round the bend, so that the mercury, filling it when inverted, is retained there while travelling.

Mountain barometers.

As a standard station barometer the syphon tube is but little used, but it makes an excellent standard mountain instrument.

As the capillary action of the glass is considered to be the same at each of the mercury surfaces, no correction for capillarity is required. If, therefore, a correct scale of inches be applied, the instrument should have no errors; but practically this is hardly ever the case. The index error should be determined by comparison with an acknowledged standard barometer. The correction for temperature is applied, as for other barometers, according as the scale is brass or wood.

The syphon tube is greatly used for the construction of the household weather glass known as the Wheel Barometer. In this instrument, the mercury in the short limb carries a float, to which

Wheel barometers.



a silk cord is attached, and carried over, and two or three times round, a fixed pulley, the other end being counterpoised, and kept in a guide tube to prevent its oscillating about. The axis of the pulley carries a pointer in front of a dial mounted on the wood frame of the instrument. As the barometer rises the float descends, and the cord drags the pointer to the right; as it falls the float rises and the counterpoise brings back the pointer to the left. The dial is graduated to correspond with the inches and divisions on an ordinary barometer, usually 28 to 31 inches. The arrangement gives a very open scale; for, although the actual movements of the mercury are only half of what they are in an ordinary barometer, yet the pointer, traversing a large arc, multiplies their linear extent. It will be apparent that as the mercury rises, say half an inch, in the long tube, the fall in the short limb being also half an inch, the length of the barometrical column has increased one inch; but for this increase of one inch there has only been movement through half an inch, and this is the amount of movement given to the pulley, and is shown on the dial as a change, say from 29 to 30 inches. The inertia arising from the weight of the float and the friction of the cord and pulley render the instrument at all times sluggish, but more especially so at the times of change from a falling to a rising barometer, and the converse.

Sluggishness of  
barometers.

The most perfect barometer must always be a little behind the actual changes of atmospherical pressure, considered as pressure merely, because of the inertia to be overcome arising from the weight of the mercury and its friction against the glass tube. The mercury of a barometer is, moreover, virtually a body in motion, and must obey the law of inertia, which teaches that the motion will continue after the cause has ceased to produce it, until its energy is destroyed. Whenever, therefore, we seek to make the barometrical column perform work as in the wheel barometer, or in the registering barometers which act mechanically, we increase the inertia, and consequently render the instruments more sluggish than they otherwise would be. This circumstance has compelled meteorologists to resort to the photographic method of recording the height of the barometer as now perfected in the barograph used at the observatories of the Meteorological Committee. For a description of this instrument, see the Report of the Meteorological Committee for 1867.

#### SUBSTITUTES FOR MERCURIAL BAROMETERS.

Aneroids, metallic barometers, and sympiesometers are useful as substitutes for the mercurial barometer as weather-glasses; but, as they cannot furnish observations of sufficient accuracy for scientific purposes, they need not be described in detail here.

The aneroid.

The aneroid is an instrument which has come into extensive use, owing to its convenient size and its portability. These recommendations have at once secured its very general adoption.

It is especially suited for use on board small vessels, and also in lieu of the mountain barometer.

In the aneroid, atmospherical pressure is measured by its effect in altering the shape of a small, hermetically sealed, metallic box, from which almost all the air has been withdrawn, and which is kept from collapsing by a spring. The top of the box is corrugated in order to increase its strength.

When atmospherical pressure rises above the amount which was recorded when the instrument was made, the top is forced inwards, and *vice versa* when pressure falls below that amount the top is forced outwards by the spring. These motions are transferred by a system of levers and springs to a hand which moves on a dial like that of a wheel barometer.

It is at once evident that the instrument must be graduated experimentally, as it cannot measure pressure absolutely, but only relatively to a mercurial barometer.

The instruments are very sensitive, but unfortunately it is found that they do not preserve their accuracy completely. If a table of corrections be determined for any aneroid, it will be found that after a time the instrument will have undergone some change, and that the values of the corrections require alteration, so that recomparison with a standard barometer is necessary. In every case of such comparison the readings of the mercurial barometer should be reduced to 32°. The principle of the metallic barometer is somewhat similar to that of the aneroid.

A most serious objection to the scientific utility of these instruments is their liability to injury owing to rust or to the alteration of force in the springs used in their construction.

In the sympiesometer atmospherical pressure is measured by the change of volume of a portion of air which is confined in the closed limb of a syphon tube by means of oil. Its principle is therefore somewhat similar to that of the aneroid. It is sensitive and is rather popular, but it has no claim to scientific accuracy whatever. It must be graduated experimentally, and before taking a reading the scale must be set to correspond with the temperature of the instrument, as shown by the attached thermometer. The oil which is contained in it is liable to undergo chemical changes which affect the accuracy and permanency of the readings.

As before stated, the aneroid is especially suitable for fishermen, pilots, or seafaring persons employed in boats or small coasting vessels, in which there is not space to suspend a barometer; and, of course, all that is stated in this manual regarding the barometer as a weather indicator, applies to it so far as a single observer is concerned. For concerted observations mercurial barometers are indispensable.

The sympiesometer.



## DIRECTIONS FOR USING THE "KEW" MARINE BAROMETER.

(See pp. 49-52.)

In handling barometers it should always be remembered that they are delicate and expensive instruments. The result of rough treatment is breakage; and for scientific purposes, observations from an instrument improperly repaired and not verified are useless.

The barometer should be fixed in a good light for observing, but out of the reach of sunshine or the occasional heat of a fire or lamp. The ill effects of artificial heat are, however, nearly completely obviated by taking a careful reading of the attached thermometer at the time of observation of the barometer. It should hang where it can swing freely, and be out of the reach of passengers or others passing near it, so as to be carefully protected from injury. The height of the cistern of the barometer above the level of the sea should be ascertained, and noted.

Fixing up.

A bracket and screws for suspending the barometer are in its box. Screw up the bracket where the barometer is to hang. Then lift the instrument carefully out of its box, bend back the hinged part of the suspension arm, and slip it into the bracket. (The holding screws should not be driven quite home until the instrument is in position.) The mercury will then fall gradually, and the instrument will usually be ready for observation in about an hour; but as local temperature affects the instrument slowly, it may be well not to record observations from it for some hours after first fixing it. In a well boiled tube, the mercury hangs adhesively sometimes, and will not quit the top of the tube. If, after an hour or so, the mercury has not descended to its proper level, tap the cistern end rather sharply with the finger, or make the instrument swing a little in its gimbals. This difficulty very rarely happens, and no precise mode of treatment can be laid down: the remedy lies much at the judgment of the observer, who should use such means as his discretion may lead him to deem best to cause the mercury to fall. The box should be safely stowed away.

Taking it down.

Whenever it may be necessary to take down a barometer and stow it in its box, *the vernier should be brought down to the bottom of the scale*. Then, having lifted the instrument out of the bracket, place or hold it in an *inclined* position for a few minutes so as to allow the mercury to flow *very gently* up to the top of the glass tube. It should then be taken lengthwise and laid in its box. It is now portable, without any other adjustment whatever; and may be carried with the *cistern end upwards* or *lying flat*, but it must not be subjected to jars or concussions.

Experience shows that it is advisable to give some directions as to packing barometers. The instrument having been taken down and placed in its box, as directed, should, if it is to be sent by rail or other conveyance, and is likely to be handled by persons unacquainted with its delicate and peculiar construction, be placed in a packing case with two or three inches of soft elastic packing all round it, as hay, straw, shavings, tow, or paper-cuttings. The lid of the case should *never be nailed down*, but always fastened with screws. The address label should be *pasted* (not nailed) on the end of the case which is next the cistern, or lower end of the barometer, and it should be marked "Glass and fragile instruments. Keep this box lying flat, or carry it this end upwards." Of course, if two or more barometers are packed together, the cisterns should all be placed at this marked end of the case. Barometers should be transmitted by passenger train, and, in short, always by whatever route or conveyance affords the most easy transit. Transshipment or change of conveyance should be avoided, if possible.

## BAROMETER VERNIER.

In order to facilitate the taking of accurate readings of the height of the barometer, a small moveable scale, called a vernier, is attached to the instrument. Principle of the vernier.

The general principle of this moveable dividing scale is that the total number of the smallest spaces or subdivisions of the vernier are made equal, taken together, to one less or more than that number of the smallest spaces in an equal length of the fixed scale. In standard barometers the twenty-five spaces in the vernier are equal to any twenty-four spaces of the scale, which are each half a tenth or five hundredths of an inch; therefore a space on the scale is larger than a space on the vernier by the twenty-fifth part of .05, which is .002 inch, consequently the vernier exhibits differences of .002 of an inch.

The vernier is moved by a rack and pinion. Turn the milled-head of the pinion so as to bring the *lower* edge of the vernier exactly on a level with the top of the mercurial column. When set properly, the front edge of the vernier, the top of the mercury, and the back edge of the vernier should be in the line of sight, which line will thus just touch the *middle* and *uppermost* point of the column. Great care should be taken to acquire the habit of reading with the eye exactly on a level with the top of the mercury, that is with the line of sight at right angles to the scale. Setting the vernier.

A piece of white paper placed behind the tube, so as to reflect the light, assists in setting the vernier accurately. A small bull's-eye lamp held behind the instrument, so as to throw the light on the paper, enables the observer to get a correct reading at night. When observing the barometer, it should hang *freely*, not being inclined by holding or even by a touch; because any inclination will cause the column to rise in the tube.



The graduations of the scale and vernier are as follows:—

Every long line {	cut on the barometer scale	{ a tenth	(.100) of an inch.
" short	" corresponds to	" five hundredths (.050)	"
Every long line {	cut on the vernier scale	{ one hundredth (.010)	"
" short	" corresponds to	" two thousandths (.002)	"

Reading the  
barometer.

The mode of reading off may be learned from a study of the following diagrams, in which A B represents part of the scale, and C D the vernier, the lower edge D denoting the top of the mercurial column. The scale is readily understood; B is 29.000 inches; the first line above B is 29.050; the second line 29.100, and so on. The first thing is to note the scale line just below D, and the next is to find out the line of the vernier which is in one and the same direction with a line of the scale. In figure (1), the lower edge of the vernier, D, is represented in exact coincidence with scale line 29.5; the barometer therefore reads 29.500 inches. Studying it attentively in this position it will be perceived that the vernier line *a* is .002 inch below the next line of the scale.

FIG. 1.

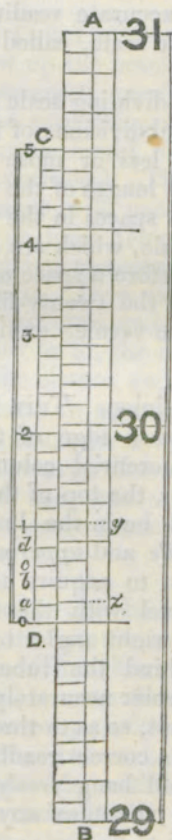
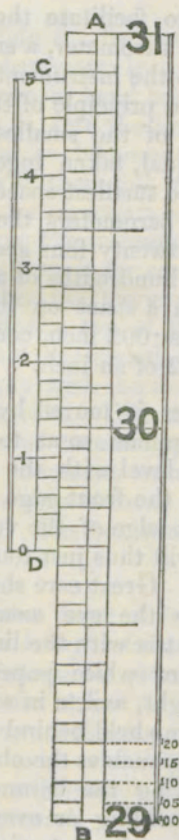


FIG. 2.



If, therefore, the vernier be moved so as to place *a* in a line with *z*, the edge D would read 29.502. In like manner it is seen that *b* is .004 inch away from the line next above it on the scale; *c*, .006 inch apart from that next above it; *d*, .008 inch from that next above it; and *e*, .010 below *y*. Hence, if *e* be moved into line with *y*, D would read 29.510. Thus the numbers 1, 2, 3, 4, 5, on the vernier, indicate hundredths, and the intermediate lines the even thousandths of an inch. Referring now to figure (2), the scale line just below D is 29.650. Looking carefully up the vernier, the third line above the figure 3 is seen to lie evenly with a line on the scale. The number 3 indicates .030, and the third subdivision .006; and thus we get—

Reading on scale -	-	29.650
Reading on vernier -	{	.030
		.006
Actual reading -	-	29.686 inches.

Sometimes two pairs of lines will appear to be coincident; in which case the intermediate thousandth of an inch should be set down as the reading. Thus, suppose the reading appears to be 29.684 or 29.686, the mean 29.685 should be adopted.

## MANAGEMENT OF THERMOMETERS.

The thermometer has been described in general terms at page 9, and we shall now say a few words as to the method of using it.

It is not at all an easy matter to obtain a record of temperature which shall be altogether unexceptionable. If an open exposure is available, a louvre-boarded case, or screen, should be set up to contain the thermometers. There is a great difference of opinion among meteorologists as to the best form and size for such a screen. It would seem to be suitable for its purpose, if it afford perfect shelter from the sun's rays falling directly upon the instruments and allow free circulation of the air about them, keeping them at least three or four inches from the wall and from the sides and front of the screen itself. All thermometer stands which are entirely open on one side have two serious disadvantages; the thermometers are not sheltered from rain and snow, and constant care is required to turn the stand so as to keep the instruments always in the shade. This is more particularly necessary in high latitudes, as the sun rises and sets more on the polar side of the east and west points of the horizon than in the low latitudes.

Fig. 3, p. 60, shows the form of screen used for mounting the dry-bulb and wet-bulb thermometers on board ship, where it should be fixed in front of the poop or in any other available position, so as to be freely exposed to the external air. This form of screen has also been found to answer satisfactorily

Thermometer  
screens.

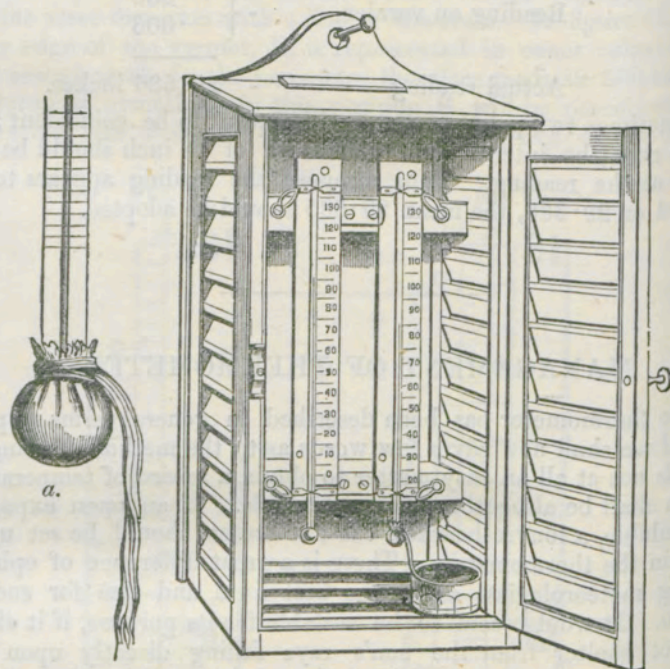


at land stations. It should be fixed about four feet from the ground, and face the north if possible.

Two thermometers should be fitted up in the vertical position in the screen, one to give the temperature of the air, and the other that of evaporation. They should be without cases or guards, near each other, but not within a less distance than two or three inches, and as free as possible from radiation from walls, heated ground or stones, and from draughts near windows of warm rooms and kitchen areas; and, on board ship, from cabins and engine rooms.

A piece of the finest muslin or cambric should be tied round the bulb of one thermometer, and a few threads of cotton wick

Fig. 3.



passed round the glass stem close to the bulb (see *a*, fig 3), touching the muslin, and long enough to reach two or three inches below the lowest part of the bulb, should be carried down so as to dip into and remain in a small vessel of water. By this arrangement the water is slowly conducted, by capillary attraction, to the bulb and evaporated there. See fig. 3.

The cup, glass, or other small holder of water ought not to be under or too near the dry thermometer. This little reservoir should be on the off side of the wet thermometer, that is, as far as possible from the dry thermometer, which of course should not receive any moisture either from rain or otherwise. The water should be either distilled or rain water, or, if this be not procurable, the softest pure water which can be had, to avoid the inconvenience of the deposit of lime, &c. on the bulb. The water vessel

should be replenished *after*, or some little time *before*, observing; because observations are incorrect if made while the water is warmer than the air.

The muslin and wick should be well washed before being applied, and occasionally while in use. They should be changed once or twice a month, or even oftener, according to the quality of the muslin, &c., and the exposure to *dust* or *blacks*. Accuracy depends much on the care taken for cleanliness, and for a proper supply of fresh water. The temperature of evaporation is a very important observation, and therefore especial care should be taken to make it correctly.

In our climate the usual difference between the readings of the dry and wet bulb thermometers ranges from 0 to 12 degrees in *outer* air.

When the wet bulb is frozen it should be wetted, by means of a camel-hair brush or a feather, with some cold water taken from under ice, care being taken to raise its temperature as little as possible. After waiting a few minutes, the moisture will first freeze, then cool down to the temperature of the air, and finally the thermometer will fall a trifle lower than the dry one, and then the temperature of evaporation may be noted. It is only when there is absolutely no water, either fluid or frozen, upon the bulb that it fails in cold weather; and, allowing for the error of the instrument, it can only read higher than the dry-bulb when the water is warmer than the air, which it never should be for the purpose of a correct observation.



## APPENDIX I.

### TELEGRAPHIC WEATHER INTELLIGENCE.

The Meteorological Office issues to ports or fishing stations notice of serious atmospherical disturbance on or near the coasts of the British Islands.

#### SIGNAL.

The fact of such notice having been received at any station is made known by the use of a DRUM, which is hoisted on the receipt of the message, and remains hoisted for the space of 36 hours and no longer.

The Drum (or cylinder) has the appearance of a large black square seen from any point of view when suspended.

At dusk, a night signal should be hoisted, consisting of four lanterns hung on a square frame.

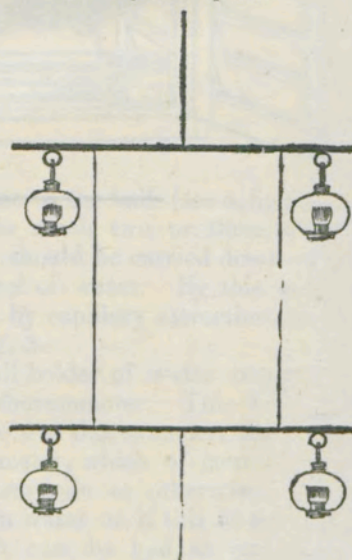
Lanterns will be supplied by the Committee of the Meteorological Office to any station, approved of by the Board of Trade where the cost of oil, &c. will be defrayed by the local authorities.

#### CAUTIONARY SIGNALS.

DAY SIGNAL.  
Drum.



NIGHT SIGNAL.  
Lights in Square.



Four lanterns will be sufficient with two yards, each 4ft. long. These signals may be made with any lanterns, showing either white or any colour. Red is most eligible, and is used at the station supplied by the Meteorological Office. Lamps are preferable to candles. The halyards should be good rope, and protected from chafing. The lanterns should hang at least three feet apart.

#### MEANING OF SIGNAL.

The hoisting of the Drum does not imply *any prophecy of wind or weather*; it is only intended to convey information that there is an atmospherical disturbance somewhere which may possibly reach the place where the signal is hoisted, and the knowledge of which is likely to be of use to the mariners and fishermen of that part of the coast. Its meaning is "Look out; bad weather *may* be approaching you." At most stations a telegram stating the nature of the disturbance is posted up where the drum is hoisted.

It must be remembered that only the greater and more general disturbances of the atmosphere can be made known by this method. Local changes of less extent may be indicated to observers by their own instruments and by locally accredited signs of the weather. A regular study of the Weather Reports published in the London daily papers, especially in the Shipping and Mercantile Gazette, will also be found very useful as showing what weather has been prevalent at other stations.

#### SUPPLY OF WEATHER INTELLIGENCE.

A copy of the Daily Report will be supplied by post, free of cost, to any port the authorities of which apply for it, and will undertake to exhibit it to the public as soon as it is received.

If a port requires occasional telegraphic intelligence, the authorities can obtain any information which reaches the Meteorological Office, if they will state the precise nature of the information required, and undertake to bear half the cost of transmission of the messages.

Such messages would be issued soon after 11 a.m. each day.



## APPENDIX II.

## EXPLANATION OF THE TABLES.

TABLE I. contains the correction to be applied to the readings of barometers mounted in *brass* frames, in order to reduce them to the normal temperature, 32° F. It is taken from the "*Admiralty Manual of Scientific Enquiry*," and has been computed from the following formula given by Schumacher—

$$\text{Correction} = -h \frac{m(t-32) - s(t-62)}{1 + m(t-32)}$$

in which

$h$  = height of the barometer,

$t$  = temperature of attached thermometer,

$m$  = expansion of mercury for 1° F., taken as .0001001 of its length at 32°,

$s$  = expansion of the substance of which the scale is made, for brass it is taken as .00001041 of its length at 32° F., the standard temperature for the scale being 62° F.

TABLE II. is for reducing to the sea-level observations of the barometer made at any height not exceeding 500 feet. It has been abridged, by Mr. Simmonds' permission, from that given in his "*Meteorological Tables*."\* It is given for two pressures at the lower station, namely, 30 and 27 inches. For intermediate pressures, the correction may be obtained by simple proportion.

For heights exceeding those given in the Table, the value, at the sea-level, of a barometer reading at a station, the height of which is known, may be calculated from the following formula:—

$$\text{Log } \frac{h}{h'} = f \div \left\{ 60159 \left( 1 + \frac{t+t'-64}{900} \right) \left( 1 + .00268 \cos 2l \right) \left( 1 + \frac{f+52251}{20886861} + \frac{h}{10443430} \right) \right\}$$

From a table of common logarithms, the natural number corresponding to  $\log \frac{h}{h'}$  is found; or,  $\frac{h}{h'} = n$ ,

$$\text{And } h = n h'.$$

In this formula—

$h$  and  $h'$  = barometer reduced to 32° F. at the lower and upper stations respectively,

$t$  and  $t'$  = the temperature of the air at the respective stations,

$f$  = elevation of upper station in feet,

$l$  = latitude of the place.

In the last factor of the divisor an approximate value must be used for  $h$ .

\* Meteorological Tables by G. H. Simmonds. Williams & Strahan, London.

The above formula is merely an inversion of the well-known formula given by Laplace in his *Mécanique Céleste*, for finding the difference of elevation between any two places by means of the barometer, which, adapted to Fahrenheit's thermometer and English feet and inches, is,—

$$f = 60159 \log \frac{h}{h'} \left( 1 + \frac{t+t'-64}{900} \right) \left( 1 + .00268 \cos 2l \right) \left( 1 + \frac{f+52251}{20886861} + \frac{h}{10443430} \right)$$

In the last factor an approximate value must be used for  $f$ .

TABLE III. is for converting the reading from barometers having millimetre scales into inches, and *vice versa*. It is computed from Captain Kater's determination of the length of the French metre in English inches (*see* Phil. Trans. for 1818, p. 109), viz., 1 metre at 32° F. = 39.37079 inches at 62° F.

Before using this Table, the barometer observations must be reduced to the normal temperature of 32° F., as per Table I., if the scale be English; but if it be a French scale, the French Table for the purpose must be employed, for which see Guyot's "*Tables—Meteorological and Physical*," published by the Smithsonian Institution.

TABLE IV. is to facilitate the conversion of readings of thermometers graduated according to either Fahrenheit, Celsius, or Reaumur, into equivalents of the others.



TABLE I.—Correction to be applied to Barometers with *Brass Scales*, extending from the Cistern to the top of the Mercurial Column, to reduce the observation to 32° Fahrenheit.

Temp.	INCHES.																Temp.
	24.0	24.5	25.0	25.5	26.0	26.5	27.0	27.5	28.0	28.5	29.0	29.5	30.0	30.5	31.0		
0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	0	
1	.059	.061	.062	.063	.064	.065	.067	.068	.069	.071	.072	.073	.074	.076	.077	1	
2	.057	.058	.060	.061	.062	.063	.064	.066	.067	.068	.069	.070	.072	.073	.074	2	
3	.055	.056	.057	.059	.060	.061	.062	.063	.064	.065	.067	.068	.069	.070	.071	3	
4	.053	.054	.055	.056	.057	.058	.059	.061	.062	.063	.064	.065	.066	.067	.068	4	
5	.051	.052	.053	.054	.055	.056	.057	.058	.059	.060	.061	.062	.063	.065	.066	5	
6	.049	.050	.051	.052	.053	.054	.055	.056	.057	.058	.059	.060	.061	.062	.063	6	
7	.046	.047	.048	.049	.050	.051	.052	.053	.054	.055	.056	.057	.058	.059	.060	7	
8	.044	.045	.046	.047	.048	.049	.050	.051	.052	.053	.054	.054	.055	.056	.057	8	
9	.042	.043	.044	.045	.046	.046	.047	.048	.049	.050	.051	.052	.053	.054	.054	9	
10	.040	.041	.042	.042	.043	.044	.045	.046	.047	.047	.048	.049	.050	.051	.052	10	
11	.038	.039	.039	.040	.041	.042	.042	.043	.044	.045	.046	.046	.047	.048	.049	11	
12	.036	.036	.037	.038	.039	.039	.040	.041	.042	.042	.043	.044	.045	.045	.046	12	
13	.033	.034	.035	.036	.036	.037	.038	.038	.039	.040	.040	.041	.042	.043	.043	13	
14	.031	.032	.033	.033	.034	.035	.035	.036	.037	.037	.038	.038	.039	.040	.040	14	
15	.029	.030	.030	.031	.032	.032	.033	.033	.034	.035	.035	.036	.036	.037	.038	15	
16	.027	.028	.028	.029	.029	.030	.030	.031	.032	.032	.033	.033	.034	.034	.035	16	
17	.025	.025	.026	.026	.027	.027	.028	.028	.029	.030	.030	.031	.031	.032	.032	17	
18	.023	.023	.024	.024	.025	.025	.025	.026	.026	.027	.027	.028	.028	.029	.029	18	
19	.021	.021	.021	.022	.022	.023	.023	.024	.024	.025	.025	.026	.026	.027	.027	19	
20	.018	.019	.019	.020	.020	.020	.021	.021	.021	.022	.022	.023	.023	.023	.024	20	
21	.016	.017	.017	.017	.018	.018	.018	.019	.019	.019	.020	.020	.020	.021	.021	21	
22	.014	.014	.015	.015	.015	.016	.016	.016	.016	.017	.017	.017	.018	.018	.018	22	
23	.012	.012	.012	.013	.013	.013	.013	.014	.014	.014	.014	.015	.015	.015	.015	23	
24	.010	.010	.010	.010	.011	.011	.011	.011	.011	.012	.012	.012	.012	.012	.013	24	
25	.008	.008	.008	.008	.008	.008	.009	.009	.009	.009	.009	.009	.009	.010	.010	25	
26	.005	.006	.006	.006	.006	.006	.006	.006	.006	.006	.007	.007	.007	.007	.007	26	
27	.003	.003	.003	.003	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	27	
28	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	28	
29	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	29	
30	.003	.003	.003	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	30	
31	.005	.006	.006	.006	.006	.006	.006	.006	.006	.006	.007	.007	.007	.007	.007	31	
32	.008	.008	.008	.008	.008	.008	.008	.009	.009	.009	.009	.009	.009	.010	.010	32	
33	.010	.010	.010	.010	.011	.011	.011	.011	.011	.012	.012	.012	.012	.012	.012	33	
34	.012	.012	.012	.013	.013	.013	.013	.014	.014	.014	.014	.015	.015	.015	.015	34	
35	.014	.014	.015	.015	.015	.015	.016	.016	.016	.017	.017	.017	.018	.018	.018	35	
36	.016	.017	.017	.017	.017	.018	.018	.019	.019	.019	.020	.020	.020	.021	.021	36	
37	.018	.019	.019	.019	.020	.020	.021	.021	.021	.022	.022	.022	.023	.023	.024	37	
38	.020	.021	.021	.022	.022	.023	.023	.023	.024	.024	.025	.025	.026	.026	.026	38	
39	.023	.023	.024	.024	.024	.025	.025	.026	.026	.027	.027	.028	.028	.029	.029	39	
40	.025	.025	.026	.026	.027	.027	.028	.028	.029	.029	.030	.030	.031	.031	.032	40	
41	.027	.027	.028	.029	.029	.030	.030	.031	.031	.032	.033	.033	.034	.034	.035	41	
42	.029	.030	.030	.031	.031	.032	.033	.033	.034	.034	.035	.036	.036	.037	.037	42	
43	.031	.032	.032	.033	.034	.034	.035	.036	.036	.037	.038	.038	.039	.040	.040	43	
44	.033	.034	.035	.035	.036	.037	.037	.038	.039	.040	.040	.041	.042	.042	.043	44	
45	.035	.036	.037	.038	.038	.039	.040	.041	.041	.042	.043	.044	.044	.045	.046	45	
46	.038	.038	.039	.040	.041	.042	.042	.043	.044	.045	.045	.046	.047	.048	.049	46	
47	.040	.041	.041	.042	.043	.044	.045	.046	.046	.047	.048	.049	.050	.051	.051	47	
48	.042	.043	.044	.045	.045	.046	.047	.048	.049	.050	.051	.052	.052	.053	.054	48	
49	.044	.045	.046	.047	.048	.049	.050	.050	.051	.052	.053	.054	.055	.056	.057	49	
50	.046	.047	.048	.049	.050	.051	.052	.053	.054	.055	.056	.057	.058	.059	.060	50	

TABLE I.—continued.

Temp.	INCHES.																Temp.
	24.0	24.5	25.0	25.5	26.0	26.5	27.0	27.5	28.0	28.5	29.0	29.5	30.0	30.5	31.0		
51.	.048	.049	.050	.051	.052	.053	.054	.055	.056	.057	.058	.059	.060	.061	.062	51	
52	.050	.052	.053	.054	.055	.056	.057	.058	.059	.060	.061	.062	.063	.064	.065	52	
53	.053	.054	.055	.056	.057	.058	.059	.060	.061	.062	.063	.064	.065	.066	.067	53	
54	.055	.056	.057	.058	.059	.060	.061	.062	.063	.064	.065	.066	.067	.068	.069	54	
55	.057	.058	.059	.060	.061	.062	.063	.064	.065	.066	.067	.068	.069	.070	.071	55	
56	.059	.060	.061	.062	.063	.064	.065	.066	.067	.068	.069	.070	.071	.072	.073	56	
57	.061	.062	.063	.064	.065	.066	.067	.068	.069	.070	.071	.072	.073	.074	.075	57	
58	.063	.065	.066	.067	.068	.069	.070	.071	.072	.073	.074	.075	.076	.077	.078	58	
59	.065	.067	.068	.069	.070	.071	.072	.073	.074	.075	.076	.077	.078	.079	.080	59	
60	.068	.069	.070	.072	.073	.075	.076	.077	.079	.080	.082	.083	.085	.086	.087	60	
61	.070	.071	.073	.074	.075	.077	.078	.080	.081	.083	.084	.086	.087	.089	.090	61	
62	.072	.073	.075	.076	.078	.079	.081	.082	.084	.085	.087	.088	.090	.091	.093	62	
63	.074	.076	.077	.079	.080	.082	.083	.085	.086	.088	.089	.091	.092	.093	.094	63	
64	.076	.078	.079	.081	.082	.084	.086	.087	.089	.090	.092	.093	.094	.095	.097	64	
65	.078	.080	.082	.083	.085	.086	.088	.090	.091	.093	.095	.096	.098	.100	.101	65	
66	.080	.082	.084	.085	.087	.089	.090	.092	.094	.096	.097	.099	.101	.102	.104	66	
67	.083	.084	.086	.088	.089	.091	.093	.095	.096	.098	.100	.102	.103	.105	.107	67	
68	.085	.086	.088	.090	.092	.094	.095	.097	.099	.101	.102	.104	.106	.108	.109	68	
69	.087	.089	.090	.092	.094	.096	.098	.100	.101	.103	.105	.107	.109	.110	.112	69	
70	.089	.091	.093	.095	.096	.098	.100	.102	.104	.106	.108	.109	.111	.113	.115	70	
71	.091	.093	.095	.097	.099	.101	.102	.104	.106	.108	.110	.112	.114	.116	.118	71	
72	.093	.095	.097	.099	.101	.103	.105	.107	.109	.111	.113	.115	.117	.119	.121	72	
73	.095	.097	.099	.101	.103	.105	.107	.109	.111	.113	.115	.117	.119	.121	.123	73	
74	.097	.099	.102	.104	.106	.108	.110	.112	.114	.116	.118	.120	.122	.124	.126	74	
75	.100	.102	.104	.106	.108	.110	.112	.114	.116	.118	.120	.122	.125	.127	.129	75	
76	.102	.104	.106	.108	.110	.112	.114	.117	.119	.121	.123	.125	.127	.129	.131	76	
77	.104	.106	.108	.110	.112	.115	.117	.119	.121	.123	.126	.128	.130	.132	.134	77	
78	.106	.108	.110	.113	.115	.117	.119	.122	.124	.126	.128	.130	.133	.135	.137	78	
79	.108	.110	.113	.115	.117	.119	.122	.124	.126	.128	.131	.133	.135	.137	.140	79	
80	.110	.113	.115	.117	.119	.122	.124	.126	.129	.131	.133	.136	.138	.140	.143	80	
81	.112	.115	.117	.119	.122	.124	.126	.129	.131	.134	.136	.138	.141	.143	.145	81	
82	.114	.117	.119	.122	.124	.126	.129	.131	.134	.136	.138	.141	.143	.146	.148	82	
83	.117	.119	.121	.124	.126	.129	.131	.134	.136	.139	.141	.143	.146	.148	.151	83	
84	.119	.121	.124	.126	.129	.131	.134	.136	.139	.141	.144	.146	.149	.151	.154	84	
85	.121	.123	.126	.128	.131	.133	.136	.139	.141	.144	.146	.149	.151	.154	.156	85	
86	.123	.126	.128	.131	.133	.136	.138	.141	.144	.146	.149	.151	.154	.156	.159	86	
87	.125	.128	.130	.133	.136	.138	.141	.143	.146	.149	.151	.154	.157	.159	.162	87	
88	.127	.130	.133	.135	.138	.141	.143	.146	.149	.151	.154	.156	.159	.162	.165	88	
89	.129	.132	.135	.137	.140	.143	.146	.148	.151	.154	.156	.159	.162	.165	.167	89	
90	.131	.134	.137	.140	.142	.145	.148	.151	.153	.156	.159	.162	.164	.167	.170	90	
91	.134	.136	.139	.142	.145	.148	.150	.153	.156	.159	.162	.165	.167	.170	.173	91	
92	.136	.139	.141	.144	.147	.150	.153	.156	.158	.161	.164	.167	.170	.172	.175	92	
93	.138	.141	.144	.147	.149	.152	.155	.158	.161	.164	.167	.170	.172	.175	.178	93	
94	.140	.143	.146	.149	.152	.155	.157	.161	.163	.166	.169	.172	.175	.178	.180	94	
95	.142	.145	.148	.151	.154	.157	.160	.163	.166	.169	.172	.175	.178	.180	.183	95	
96	.144	.147	.150	.153	.156	.159	.162	.165	.168	.171	.174	.177	.180	.181	.186	96	
97	.146	.149	.152	.156	.159	.162	.165	.168	.171	.174	.177	.180	.183	.186	.189	97	
98	.148	.152	.155	.158	.161	.164	.167	.170	.173	.176	.179	.183	.186	.188	.191	98	
99	.151	.155	.157	.160	.163	.166	.169	.173	.176	.179	.182	.185	.188	.191	.194	99	
100	.153	.156	.159	.162	.165	.169	.172	.175	.178	.181	.184	.188	.191	.194	.197	100	



TABLE II.—For reducing Observations of the Barometer to Sea-level.  
(Barometrical Reading at Sea-level = 30 inches.)

Height in Feet.	Temperature—Degrees Fahr.												Height in Feet.
	-20	-10	0	+10	+20	+30	+40	+50	+60	+70	+80	+90	
10	.013	.013	.012	.012	.012	.012	.011	.011	.011	.011	.010	.010	10
20	.026	.025	.025	.024	.024	.023	.023	.022	.022	.021	.021	.021	20
30	.039	.038	.037	.036	.035	.035	.034	.033	.033	.032	.031	.031	30
40	.051	.050	.049	.048	.047	.046	.045	.044	.043	.043	.042	.041	40
50	.064	.063	.061	.060	.059	.058	.056	.055	.054	.053	.052	.051	50
60	.077	.075	.074	.072	.071	.069	.068	.066	.065	.064	.063	.062	60
70	.090	.088	.086	.084	.082	.081	.079	.077	.076	.075	.073	.072	70
80	.103	.100	.098	.096	.094	.092	.090	.089	.087	.085	.084	.082	80
90	.116	.113	.110	.108	.106	.104	.102	.100	.098	.096	.094	.092	90
100	.128	.125	.123	.120	.118	.115	.113	.111	.109	.106	.104	.103	100
110	.141	.138	.135	.132	.129	.127	.124	.122	.119	.117	.115	.113	110
120	.154	.151	.147	.144	.141	.138	.135	.133	.130	.128	.125	.123	120
130	.167	.163	.159	.156	.153	.150	.147	.144	.141	.138	.136	.133	130
140	.180	.176	.172	.168	.165	.161	.158	.155	.152	.149	.146	.144	140
150	.192	.188	.184	.180	.176	.173	.169	.166	.163	.160	.157	.154	150
160	.205	.201	.196	.192	.188	.184	.180	.177	.173	.170	.167	.164	160
170	.218	.213	.208	.204	.200	.196	.192	.188	.184	.181	.177	.174	170
180	.231	.226	.221	.216	.211	.207	.203	.199	.195	.191	.188	.184	180
190	.243	.238	.233	.228	.223	.218	.214	.210	.206	.202	.198	.195	190
200	.256	.250	.245	.240	.235	.230	.225	.221	.217	.213	.209	.205	200
210	.269	.263	.257	.252	.246	.241	.237	.232	.227	.223	.219	.215	210
220	.282	.275	.269	.264	.258	.253	.248	.243	.238	.234	.229	.225	220
230	.294	.288	.282	.276	.270	.264	.259	.254	.249	.244	.240	.235	230
240	.307	.300	.294	.288	.282	.276	.270	.265	.260	.255	.250	.246	240
250	.320	.313	.306	.299	.293	.287	.281	.276	.271	.266	.261	.256	250
260	.333	.325	.318	.311	.305	.299	.293	.287	.281	.276	.271	.266	260
270	.345	.338	.330	.323	.317	.310	.304	.298	.292	.287	.281	.276	270
280	.358	.350	.343	.335	.328	.322	.315	.309	.303	.297	.292	.286	280
290	.371	.363	.355	.347	.340	.333	.326	.320	.314	.308	.302	.297	290
300	.384	.375	.367	.359	.352	.344	.338	.331	.324	.318	.312	.307	300
310	.396	.387	.379	.371	.363	.356	.349	.342	.335	.329	.323	.317	310
320	.409	.400	.391	.383	.375	.367	.360	.353	.346	.339	.333	.327	320
330	.422	.412	.403	.395	.387	.379	.371	.364	.357	.350	.343	.337	330
340	.434	.425	.416	.407	.398	.390	.382	.375	.367	.361	.354	.347	340
350	.447	.437	.428	.419	.410	.401	.393	.386	.378	.371	.364	.358	350
360	.460	.450	.440	.430	.421	.413	.405	.397	.389	.382	.375	.368	360
370	.472	.462	.452	.442	.433	.424	.416	.408	.400	.392	.385	.378	370
380	.485	.474	.464	.454	.445	.436	.427	.418	.410	.403	.395	.388	380
390	.498	.487	.476	.466	.456	.447	.438	.429	.421	.413	.406	.398	390
400	.511	.499	.488	.478	.468	.458	.449	.440	.432	.424	.416	.408	400
410	.523	.512	.500	.490	.480	.470	.460	.451	.443	.434	.426	.418	410
420	.536	.524	.513	.502	.491	.481	.472	.462	.453	.445	.437	.429	420
430	.549	.536	.525	.514	.503	.492	.483	.473	.464	.455	.447	.439	430
440	.561	.549	.537	.525	.514	.504	.494	.484	.475	.466	.457	.449	440
450	.574	.561	.549	.537	.526	.515	.505	.495	.485	.476	.467	.459	450
460	.587	.574	.561	.549	.538	.527	.516	.506	.496	.487	.478	.469	460
470	.599	.586	.573	.561	.549	.538	.527	.517	.507	.497	.488	.479	470
480	.612	.598	.585	.573	.561	.549	.538	.528	.518	.508	.498	.489	480
490	.624	.611	.597	.585	.572	.561	.549	.539	.528	.518	.509	.499	490
500	.637	.623	.609	.596	.584	.572	.561	.550	.539	.529	.519	.510	500

Corrections for intermediate readings are obtained by

TABLE II.—continued.  
(Barometrical Reading at Sea-level = 27 inches.)

Height in Feet.	Temperature—Degrees Fahr.												Height in Feet.
	—20	—10	0	+ 10	+ 20	+ 30	+ 40	+ 50	+ 60	+ 70	+ 80	+ 90	
	+ IN.	+ IN.	+ IN.	+ IN.	+ IN.	+ IN.	+ IN.	+ IN.	+ IN.	+ IN.	+ IN.	+ IN.	
10	.012	.011	.011	.011	.011	.010	.010	.010	.010	.010	.009	.009	10
20	.023	.023	.022	.022	.021	.021	.020	.020	.020	.019	.019	.018	20
30	.035	.034	.033	.032	.032	.031	.031	.030	.029	.029	.028	.028	30
40	.046	.045	.044	.043	.042	.041	.041	.040	.039	.038	.038	.037	40
50	.058	.056	.055	.054	.053	.052	.051	.050	.049	.048	.047	.046	50
60	.069	.068	.066	.065	.064	.062	.061	.060	.059	.058	.056	.055	60
70	.081	.079	.077	.076	.074	.073	.071	.070	.068	.067	.066	.065	70
80	.092	.090	.088	.086	.085	.083	.081	.080	.078	.077	.075	.074	80
90	.104	.102	.099	.097	.095	.093	.091	.090	.088	.086	.085	.083	90
100	.115	.113	.110	.108	.106	.104	.102	.100	.098	.096	.094	.092	100
110	.127	.124	.121	.119	.116	.114	.112	.110	.107	.105	.103	.102	110
120	.138	.135	.132	.130	.127	.124	.122	.119	.117	.115	.113	.111	120
130	.150	.147	.143	.140	.137	.135	.132	.129	.127	.124	.122	.120	130
140	.161	.158	.154	.151	.148	.145	.142	.139	.136	.134	.132	.129	140
150	.173	.169	.165	.162	.159	.155	.152	.149	.146	.144	.141	.138	150
160	.184	.180	.176	.173	.169	.166	.162	.159	.156	.153	.150	.148	160
170	.196	.192	.187	.183	.180	.176	.172	.169	.166	.163	.160	.157	170
180	.207	.203	.198	.194	.190	.186	.183	.179	.175	.172	.169	.166	180
190	.219	.214	.209	.205	.201	.197	.193	.189	.185	.182	.178	.175	190
200	.230	.225	.220	.216	.211	.207	.203	.199	.195	.191	.188	.184	200
210	.242	.237	.231	.226	.222	.217	.213	.209	.205	.201	.197	.193	210
220	.253	.248	.242	.237	.232	.227	.223	.219	.214	.210	.206	.203	220
230	.265	.259	.253	.248	.243	.238	.233	.228	.224	.220	.216	.212	230
240	.276	.270	.264	.259	.253	.248	.243	.238	.234	.229	.225	.221	240
250	.288	.281	.275	.269	.264	.258	.253	.248	.243	.239	.234	.230	250
260	.299	.293	.286	.280	.274	.269	.263	.258	.253	.248	.244	.239	260
270	.311	.304	.297	.291	.285	.279	.273	.268	.263	.258	.253	.248	270
280	.322	.315	.308	.302	.295	.289	.283	.278	.272	.267	.262	.258	280
290	.334	.326	.319	.312	.306	.299	.293	.288	.282	.277	.272	.267	290
300	.345	.337	.330	.323	.316	.310	.303	.298	.292	.286	.281	.276	300
310	.356	.349	.341	.334	.327	.320	.314	.307	.302	.296	.290	.285	310
320	.368	.360	.352	.344	.337	.330	.324	.317	.311	.305	.300	.294	320
330	.379	.371	.363	.355	.348	.341	.334	.327	.321	.315	.309	.303	330
340	.391	.382	.374	.366	.358	.351	.344	.337	.331	.324	.318	.312	340
350	.402	.393	.385	.376	.369	.361	.354	.347	.340	.334	.328	.322	350
360	.414	.404	.396	.387	.379	.371	.364	.357	.350	.343	.337	.331	360
370	.425	.415	.406	.398	.389	.382	.374	.367	.360	.353	.346	.340	370
380	.436	.427	.417	.408	.400	.392	.384	.376	.369	.362	.355	.349	380
390	.448	.438	.428	.419	.410	.402	.394	.386	.379	.372	.365	.358	390
400	.459	.449	.439	.430	.421	.412	.404	.396	.388	.381	.374	.367	400
410	.471	.460	.450	.440	.431	.422	.414	.406	.398	.391	.383	.376	410
420	.482	.471	.461	.451	.442	.433	.424	.416	.408	.400	.393	.385	420
430	.493	.482	.472	.462	.452	.443	.434	.425	.417	.409	.402	.395	430
440	.505	.493	.483	.472	.463	.453	.444	.435	.427	.419	.411	.404	440
450	.516	.505	.494	.483	.473	.463	.454	.445	.437	.428	.420	.413	450
460	.527	.516	.505	.494	.483	.474	.464	.455	.446	.438	.430	.422	460
470	.539	.527	.515	.504	.494	.484	.474	.465	.456	.447	.439	.431	470
480	.550	.538	.526	.515	.504	.494	.484	.475	.465	.457	.448	.440	480
490	.562	.549	.537	.526	.515	.504	.494	.484	.475	.466	.457	.449	490
500	.573	.560	.548	.536	.525	.514	.504	.494	.485	.475	.467	.458	500



TABLE III.

COMPARISON of the METRIC and ENGLISH BAROMETER SCALES.  
(1 Metre = 39.37079 Inches.)

Milli- metres.	Tenths of a Millimetre.									
	0	1	2	3	4	5	6	7	8	9
	English Inches.									
705	27.756	27.760	27.764	27.768	27.772	27.776	27.780	27.784	27.788	27.792
6	.796	.800	.804	.808	.812	.815	.819	.823	.827	.831
7	.835	.839	.843	.847	.851	.855	.859	.863	.867	.871
8	.875	.878	.882	.886	.890	.894	.898	.902	.906	.910
9	27.914	27.918	27.922	27.926	27.930	27.934	27.938	27.941	27.945	27.949
710	27.953	27.957	27.961	27.965	27.969	27.973	27.977	27.981	27.985	27.989
1	27.993	27.997	28.001	28.004	28.008	28.012	28.016	28.020	28.024	28.028
2	28.032	28.036	.040	.044	.048	.052	.056	.060	.063	.067
3	.071	.075	.079	.083	.087	.091	.095	.099	.103	.107
4	28.111	28.115	28.119	28.123	28.126	28.130	28.134	28.138	28.142	28.146
715	28.150	28.154	28.158	28.162	28.166	28.170	28.174	28.178	28.182	28.186
6	.189	.193	.197	.201	.205	.209	.213	.217	.221	.225
7	.229	.233	.237	.241	.245	.249	.252	.256	.260	.264
8	.268	.272	.276	.280	.284	.288	.292	.296	.300	.304
9	28.308	28.312	28.315	28.319	28.323	28.327	28.331	28.335	28.339	28.343
720	28.347	28.351	28.355	28.359	28.363	28.367	28.371	28.375	28.378	28.382
1	.386	.390	.394	.398	.402	.406	.410	.414	.418	.422
2	.426	.430	.434	.438	.441	.445	.449	.453	.457	.461
3	.465	.469	.473	.477	.481	.485	.489	.493	.497	.501
4	28.504	28.508	28.512	28.516	28.520	28.524	28.528	28.532	28.536	28.540
725	28.544	28.548	28.552	28.556	28.560	28.564	28.567	28.571	28.575	28.579
6	.583	.587	.591	.595	.599	.603	.607	.611	.615	.619
7	.623	.627	.630	.634	.638	.642	.646	.650	.654	.658
8	.662	.666	.670	.674	.678	.682	.686	.689	.693	.697
9	28.701	28.705	28.709	28.713	28.717	28.721	28.725	28.729	28.733	28.737
730	28.741	28.745	28.749	28.752	28.756	28.760	28.764	28.768	28.772	28.776
1	.780	.784	.788	.792	.796	.800	.804	.808	.812	.815
2	.819	.823	.827	.831	.835	.839	.843	.847	.851	.855
3	.859	.863	.867	.871	.875	.878	.882	.886	.890	.894
4	28.898	28.902	28.906	28.910	28.914	28.918	28.922	28.926	28.930	28.934
735	28.938	28.941	28.945	28.949	28.953	28.957	28.961	28.965	28.969	28.973
6	28.977	28.981	28.985	28.989	28.993	28.997	29.001	29.004	29.008	29.012
7	29.016	29.020	29.024	29.028	29.032	29.036	.040	.044	.048	.052
8	.056	.060	.064	.067	.071	.075	.079	.083	.087	.091
9	29.095	29.099	29.103	29.107	29.111	29.115	29.119	29.123	29.127	29.130
740	29.134	29.138	29.142	29.146	29.150	29.154	29.158	29.162	29.166	29.170
1	.174	.178	.182	.186	.190	.193	.197	.201	.205	.209
2	.213	.217	.221	.225	.229	.233	.237	.241	.245	.249
3	.252	.256	.260	.264	.268	.272	.276	.280	.284	.288
4	29.292	29.296	29.300	29.304	29.308	29.312	29.315	29.319	29.323	29.327

TABLE III.—continued.

COMPARISON of the METRIC and ENGLISH BAROMETER SCALES.  
(1 Metre = 39.37079 Inches.)

Milli- metres.	Tenths of a Millimetre.									
	0	1	2	3	4	5	6	7	8	9
	English Inches.									
745	29.331	29.335	29.339	29.343	29.347	29.351	29.355	29.359	29.363	29.367
6	.371	.375	.378	.382	.386	.390	.394	.398	.402	.406
7	.410	.414	.418	.422	.426	.430	.434	.438	.441	.445
8	.449	.453	.457	.461	.465	.469	.473	.477	.481	.485
9	29.489	29.493	29.497	29.501	29.504	29.508	29.512	29.516	29.520	29.524
750	29.528	29.532	29.536	29.540	29.544	29.548	29.552	29.556	29.560	29.564
1	.567	.571	.575	.579	.583	.587	.591	.595	.599	.603
2	.607	.611	.615	.619	.623	.627	.630	.634	.638	.642
3	.646	.650	.654	.658	.662	.666	.670	.674	.678	.682
4	29.686	29.690	29.693	29.697	29.701	29.705	29.709	29.713	29.717	29.721
755	29.725	29.729	29.733	29.737	29.741	29.745	29.749	29.753	29.756	29.760
6	.764	.768	.772	.776	.780	.784	.788	.792	.796	.800
7	.804	.808	.812	.815	.819	.823	.827	.831	.835	.839
8	.843	.847	.851	.855	.859	.863	.867	.871	.875	.878
9	29.882	29.886	29.890	29.894	29.898	29.902	29.906	29.910	29.914	29.918
760	29.922	29.926	29.930	29.934	29.938	29.941	29.945	29.949	29.953	29.957
1	29.961	29.965	29.969	29.973	29.977	29.981	29.985	29.989	29.993	29.997
2	30.001	30.004	30.008	32.012	30.016	30.020	30.024	30.028	30.032	30.036
3	.040	.044	.048	.052	.056	.060	.064	.067	.071	.075
4	30.079	30.083	30.087	30.091	30.095	30.099	30.103	30.107	30.111	30.115
765	30.119	30.123	30.127	30.130	30.134	30.138	30.142	30.146	30.150	30.154
6	.158	.162	.166	.170	.174	.178	.182	.186	.190	.193
7	.197	.201	.205	.209	.213	.217	.221	.225	.229	.233
8	.237	.241	.245	.249	.253	.256	.260	.264	.268	.272
9	30.276	30.280	30.284	30.288	30.292	30.296	30.300	30.304	30.308	30.312
770	30.316	30.319	30.323	30.327	30.331	30.335	30.339	30.343	30.347	30.351
1	.355	.359	.363	.367	.371	.375	.379	.382	.386	.390
2	.394	.398	.402	.406	.410	.414	.418	.422	.426	.430
3	.434	.438	.441	.445	.449	.453	.457	.461	.465	.469
4	30.473	30.477	30.481	30.485	30.489	30.493	30.497	30.501	30.504	30.508
775	30.512	30.516	30.520	30.524	30.528	30.532	30.536	30.540	30.544	30.548
6	.552	.556	.560	.564	.567	.571	.575	.579	.583	.587
7	.591	.595	.599	.603	.607	.611	.615	.619	.623	.627
8	.630	.634	.638	.642	.646	.650	.654	.658	.662	.666
9	30.670	30.674	30.678	30.682	30.686	30.690	30.693	30.697	30.701	30.705
780	30.709	30.713	30.717	30.721	30.725	30.729	30.733	30.737	30.741	30.745
1	.749	.753	.756	.760	.764	.768	.772	.776	.780	.784
2	.788	.792	.796	.800	.804	.808	.812	.816	.819	.823
3	.827	.831	.835	.839	.843	.847	.851	.855	.859	.863
4	.867	.871	.875	.879	.882	.886	.890	.894	.898	.902
785	30.906	30.910	30.914	30.918	30.922	30.926	30.930	30.934	30.938	30.942

Parts.

Mill.	Inch.
1	0.0394
2	.0787
3	.1181
4	.1575
5	.1968
6	.2362
7	.2756
8	.3149
9	.3543
10	.3937



TABLE III.—continued.

COMPARISON of the ENGLISH and METRIC BAROMETER SCALES.

English Inches and Tenths.	Hundredths of an Inch.									
	0	1	2	3	4	5	6	7	8	9
27.0	685.79	686.04	686.30	686.55	686.80	687.06	687.31	687.57	687.82	688.07
1	688.33	688.58	688.84	689.09	689.34	689.60	689.85	690.11	690.36	690.61
2	690.87	691.12	691.38	691.63	691.88	692.14	692.39	692.65	692.90	693.15
3	693.41	693.66	693.92	694.17	694.42	694.68	694.93	695.19	695.44	695.69
4	695.95	696.20	696.46	696.71	696.96	697.22	697.47	697.73	697.98	698.23
5	698.49	698.74	699.00	699.25	699.50	699.76	700.01	700.27	700.52	700.77
6	701.03	701.28	701.54	701.79	702.04	702.30	702.55	702.81	703.06	703.31
7	703.57	703.82	704.08	704.33	704.58	704.84	705.09	705.35	705.60	705.85
8	706.11	706.36	706.62	706.87	707.12	707.38	707.63	707.89	708.14	708.39
9	708.65	708.90	709.16	709.41	709.66	709.92	710.17	710.43	710.68	710.93
28.0	711.19	711.44	711.70	711.95	712.20	712.46	712.71	712.97	713.22	713.47
1	713.73	713.98	714.24	714.49	714.74	715.00	715.25	715.51	715.76	716.01
2	716.27	716.52	716.78	717.03	717.28	717.54	717.79	718.04	718.30	718.55
3	718.81	719.06	719.31	719.57	719.82	720.08	720.33	720.58	720.84	721.09
4	721.35	721.60	721.85	722.11	722.36	722.62	722.87	723.12	723.38	723.63
5	723.89	724.14	724.39	724.65	724.90	725.16	725.41	725.66	725.92	726.17
6	726.43	726.68	726.93	727.19	727.44	727.70	727.95	728.20	728.46	728.71
7	728.97	729.22	729.47	729.73	729.98	730.24	730.49	730.74	731.00	731.25
8	731.51	731.76	732.01	732.27	732.52	732.78	733.03	733.28	733.54	733.79
9	734.05	734.30	734.55	734.81	735.06	735.32	735.57	735.82	736.08	736.33
29.0	736.59	736.84	737.09	737.35	737.60	737.86	738.11	738.36	738.62	738.87
1	739.13	739.38	739.63	739.89	740.14	740.40	740.65	740.90	741.16	741.41
2	741.67	741.92	742.17	742.43	742.68	742.94	743.19	743.44	743.70	743.95
3	744.21	744.46	744.71	744.97	745.22	745.48	745.73	745.98	746.24	746.49
4	746.75	747.00	747.25	747.51	747.76	748.02	748.27	748.52	748.78	749.03
5	749.29	749.54	749.79	750.05	750.30	750.56	750.81	751.06	751.32	751.57
6	751.83	752.08	752.33	752.59	752.84	753.10	753.35	753.60	753.86	754.11
7	754.37	754.62	754.87	755.13	755.38	755.64	755.89	756.14	756.40	756.65
8	756.91	757.16	757.41	757.67	757.92	758.18	758.43	758.68	758.94	759.19
9	759.45	759.70	759.95	760.21	760.46	760.72	760.97	761.22	761.48	761.73

TABLE III.—continued.

COMPARISON of the ENGLISH and METRIC BAROMETER SCALES.

English Inches and Tenths.	Hundredths of an Inch.									
	0	1	2	3	4	5	6	7	8	9
30.0	761.99	762.24	762.49	762.75	763.00	763.26	763.51	763.76	764.02	764.27
1	764.53	764.78	765.03	765.29	765.54	765.80	766.05	766.30	766.56	766.81
2	767.07	767.32	767.57	767.83	768.08	768.34	768.59	768.84	769.10	769.35
3	769.61	769.86	770.11	770.37	770.62	770.88	771.13	771.38	771.64	771.89
4	772.15	772.40	772.65	772.91	773.16	773.42	773.67	773.92	774.18	774.43
5	774.69	774.94	775.19	775.45	775.70	775.96	776.21	776.46	776.72	776.97
6	777.23	777.48	777.73	777.99	778.24	778.50	778.75	779.00	779.26	779.51
7	779.77	780.02	780.27	780.53	780.78	781.04	781.29	781.54	781.80	782.05
8	782.31	782.56	782.81	783.07	783.32	783.58	783.83	784.08	784.34	784.59
9	784.85	785.10	785.35	785.61	785.86	786.12	786.37	786.62	786.88	787.13
31.0	787.39	787.64	787.89	788.15	788.40	788.66	788.91	789.16	789.42	789.67
1	789.93	790.18	790.43	790.69	790.94	791.20	791.45	791.70	791.96	792.21
2	792.47	792.72	792.97	793.23	793.48	793.74	793.99	794.24	794.50	794.75
3	795.01	795.26	795.51	795.77	796.02	796.28	796.53	796.78	797.04	797.29
4	797.55	797.80	798.05	798.31	798.56	798.82	799.07	799.32	799.58	799.83

Inch.	Mill.
1	25.400
2	50.799
3	76.199
4	101.598
5	126.998
6	152.397
7	177.797
8	203.196
9	228.596
10	253.995

Thousandths of an Inch.									
1	2	3	4	5	6	7	8	9	
0.03	0.05	0.08	0.10	0.13	0.15	0.18	0.20	0.23	



TABLE IV.

COMPARISON OF THERMOMETERS graduated according to the FAHRENHEIT, CENTIGRADE, and REAUMUR SCALES.

FAHRENHEIT.						CENTIGRADE.					
Fahren- heit.	Centi- grade.	Reau- mur.	Fahren- heit.	Centi- grade.	Reau- mur.	Centi- grade.	Fahren- heit.	Reau- mur.	Centi- grade.	Fahren- heit.	Reau- mur.
1	-17.2	-13.8	51	10.6	8.4	-17	1.4	-13.6	11	51.8	8.8
2	16.7	13.3	52	11.1	8.9	16	3.2	12.8	12	53.6	9.6
3	16.1	12.9	53	11.7	9.3	15	5.0	12.0	13	55.4	10.4
4	15.6	12.4	54	12.2	9.8	14	6.8	11.2	14	57.2	11.2
5	15.0	12.0	55	12.8	10.2	13	8.6	10.4	15	59.0	12.0
6	14.4	11.6	56	13.3	10.7	12	10.4	9.6	16	60.8	12.8
7	13.9	11.1	57	13.9	11.1	11	12.2	8.8	17	62.6	13.6
8	13.3	10.7	58	14.4	11.6	-10	14.0	-8.0	18	64.4	14.4
9	12.8	10.2	59	15.0	12.0	9	15.8	7.2	19	66.2	15.2
10	12.2	9.8	60	15.6	12.4	8	17.6	6.4	20	68.0	16.0
11	-11.7	-9.3	61	16.1	12.9	7	19.4	5.6	21	69.8	16.8
12	11.1	8.9	62	16.7	13.3	6	21.2	4.8	22	71.6	17.6
13	10.6	8.4	63	17.2	13.8	5	23.0	4.0	23	73.4	18.4
14	10.0	8.0	64	17.8	14.2	4	24.8	3.2	24	75.2	19.2
15	9.4	7.6	65	18.3	14.7	3	26.6	2.4	25	77.0	20.0
16	8.9	7.1	66	18.9	15.1	2	28.4	1.6	26	78.8	20.8
17	8.3	6.7	67	19.4	15.6	-1	30.2	-0.8	27	80.6	21.6
18	7.8	6.2	68	20.0	16.0	0	32.0	0.0	28	82.4	22.4
19	7.2	5.8	69	20.6	16.4	+1	33.8	+0.8	29	84.2	23.2
20	6.7	5.3	70	21.1	16.9	2	35.6	1.6	30	86.0	24.0
21	-6.1	-4.9	71	21.7	17.3	3	37.4	2.4	31	87.8	24.8
22	5.6	4.4	72	22.2	17.8	4	39.2	3.2	32	89.6	25.6
23	5.0	4.0	73	22.8	18.2	5	41.0	4.0	33	91.4	26.4
24	4.4	3.6	74	23.3	18.7	6	42.8	4.8	34	93.2	27.2
25	3.9	3.1	75	23.9	19.1	7	44.6	5.6	35	95.0	28.0
26	3.3	2.7	76	24.4	19.6	8	46.4	6.4	36	96.8	28.8
27	2.8	2.2	77	25.0	20.0	9	48.2	7.2	37	98.6	29.6
28	2.2	1.8	78	25.6	20.4	+10	50.0	+8.0	38	100.4	30.4
29	1.7	1.3	79	26.1	20.9	REAUMUR.					
30	1.1	0.9	80	26.7	21.3	Reau- mur.	Fahren- heit.	Centi- grade.	Reau- mur.	Fahren- heit.	Centi- grade.
31	-0.6	-0.4	81	27.2	21.8	-14	0.5	-17.5	9	52.3	11.3
32	0.0	0.0	82	27.8	22.2	13	2.8	16.3	10	54.5	12.5
33	+0.6	+0.4	83	28.3	22.7	12	5.0	15.0	11	56.8	13.8
34	1.1	0.9	84	28.9	23.1	11	7.3	13.8	12	59.0	15.0
35	1.7	1.3	85	29.4	23.6	-10	9.5	-12.5	13	61.3	16.3
36	2.2	1.8	86	30.0	24.0	9	11.8	11.3	14	63.5	17.5
37	2.8	2.2	87	30.6	24.4	8	14.0	10.0	15	65.8	18.8
38	3.3	2.7	88	31.1	24.9	7	16.3	8.8	16	68.0	20.0
39	3.9	3.1	89	31.7	25.3	6	18.5	7.5	17	70.3	21.3
40	4.4	3.6	90	32.2	25.8	5	20.8	6.3	18	72.5	22.5
41	+5.0	+4.0	91	32.8	26.2	4	23.0	5.0	19	74.8	23.8
42	5.6	4.4	92	33.3	26.7	3	25.3	3.8	20	77.0	25.0
43	6.1	4.9	93	33.9	27.1	2	27.5	2.5	21	79.3	26.3
44	6.7	5.3	94	34.4	27.6	-1	29.8	-1.3	22	81.5	27.5
45	7.2	5.8	95	35.0	28.0	0	32.0	0.0	23	83.8	28.8
46	7.8	6.2	96	35.6	28.4	+1	34.3	+1.3	24	86.0	30.0
47	8.3	6.7	97	36.1	28.9	2	36.5	2.5	25	88.3	31.3
48	8.9	7.1	98	36.7	29.3	3	38.8	3.8	26	90.5	32.5
49	9.4	7.6	99	37.2	29.8	4	41.0	5.0	27	92.8	33.8
50	+10.0	+8.0	100	37.8	30.2	5	43.3	6.3	28	95.0	35.0
						6	45.5	7.5	29	97.3	36.3
						7	47.8	8.8	30	99.5	37.5
						+8	50.0	+10.0	31	101.8	38.8

DECIMAL PARTS OF A DEGREE.

Centigrade Scale compared with Fahrenheit and Reaumur.			Fahrenheit Scale compared with Centigrade and Reaumur.			Reaumur Scale compared with Centigrade and Fahrenheit.		
Cent.	Fah.	Reaum.	Fah.	Cent.	Reaum.	Reaum.	Cent.	Fah.
0	0	0	0	0	0	0	0	0
0.1	0.18	0.08	0.1	0.06	0.04	0.1	0.13	0.22
.2	.36	.16	.2	.11	.09	.2	.25	.45
.3	.54	.24	.3	.17	.13	.3	.38	.67
.4	.72	.32	.4	.22	.18	.4	.50	0.90
.5	0.90	.40	.5	.28	.22	.5	.63	1.12
.6	1.08	.48	.6	.33	.27	.6	.75	.35
.7	.26	.56	.7	.39	.31	.7	0.88	.57
.8	.44	.64	.8	.44	.36	.8	1.00	1.80
0.9	1.62	.72	0.9	.50	.40	0.9	.13	2.02
1.0	1.80	0.80	1.0	0.56	0.44	1.0	1.25	2.25

C      F      R

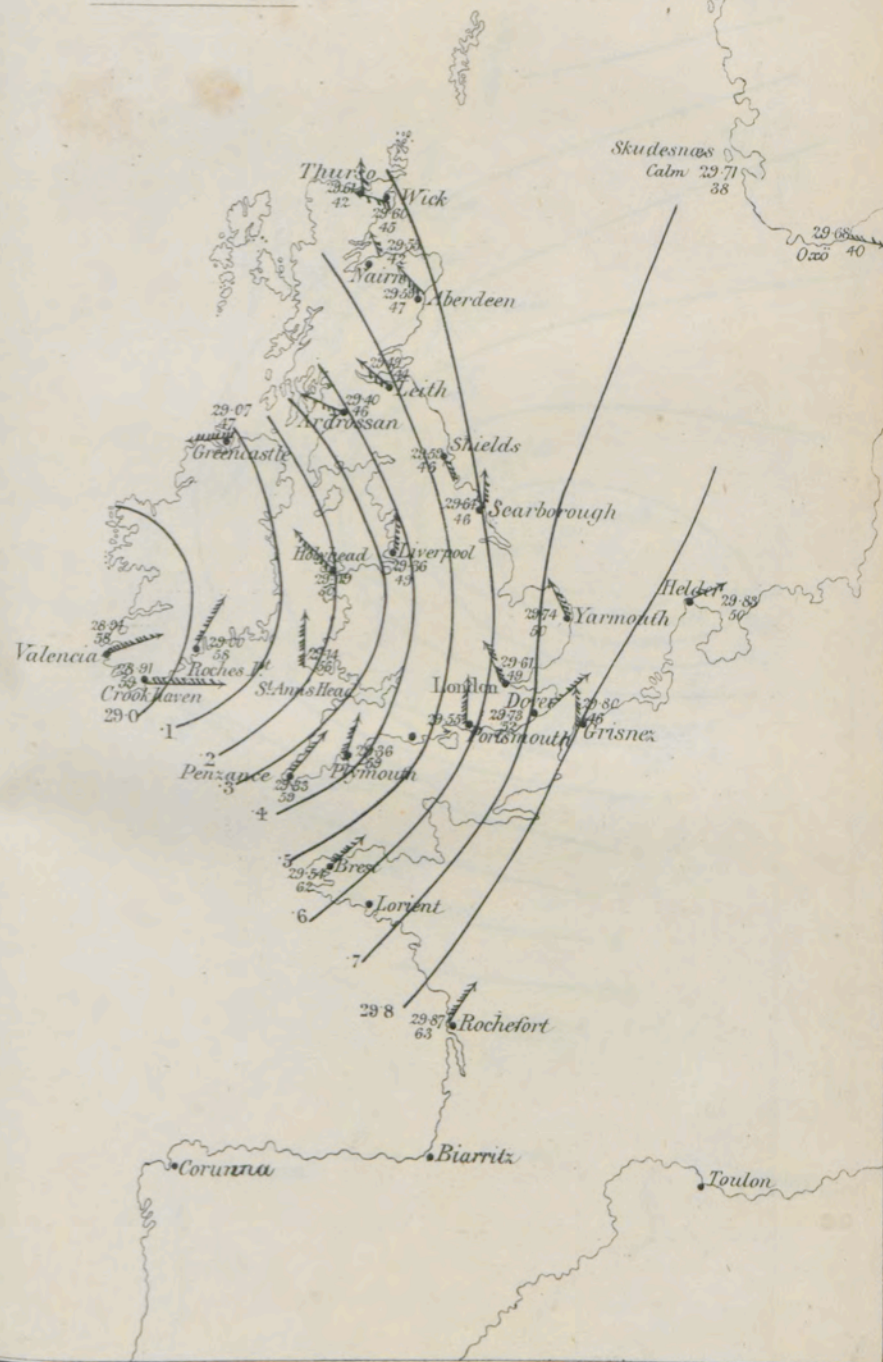
1.00 — 1.80 — 0.80

0.56 — 1.00 — 0.44

1.25 — 2.25 — 1.00

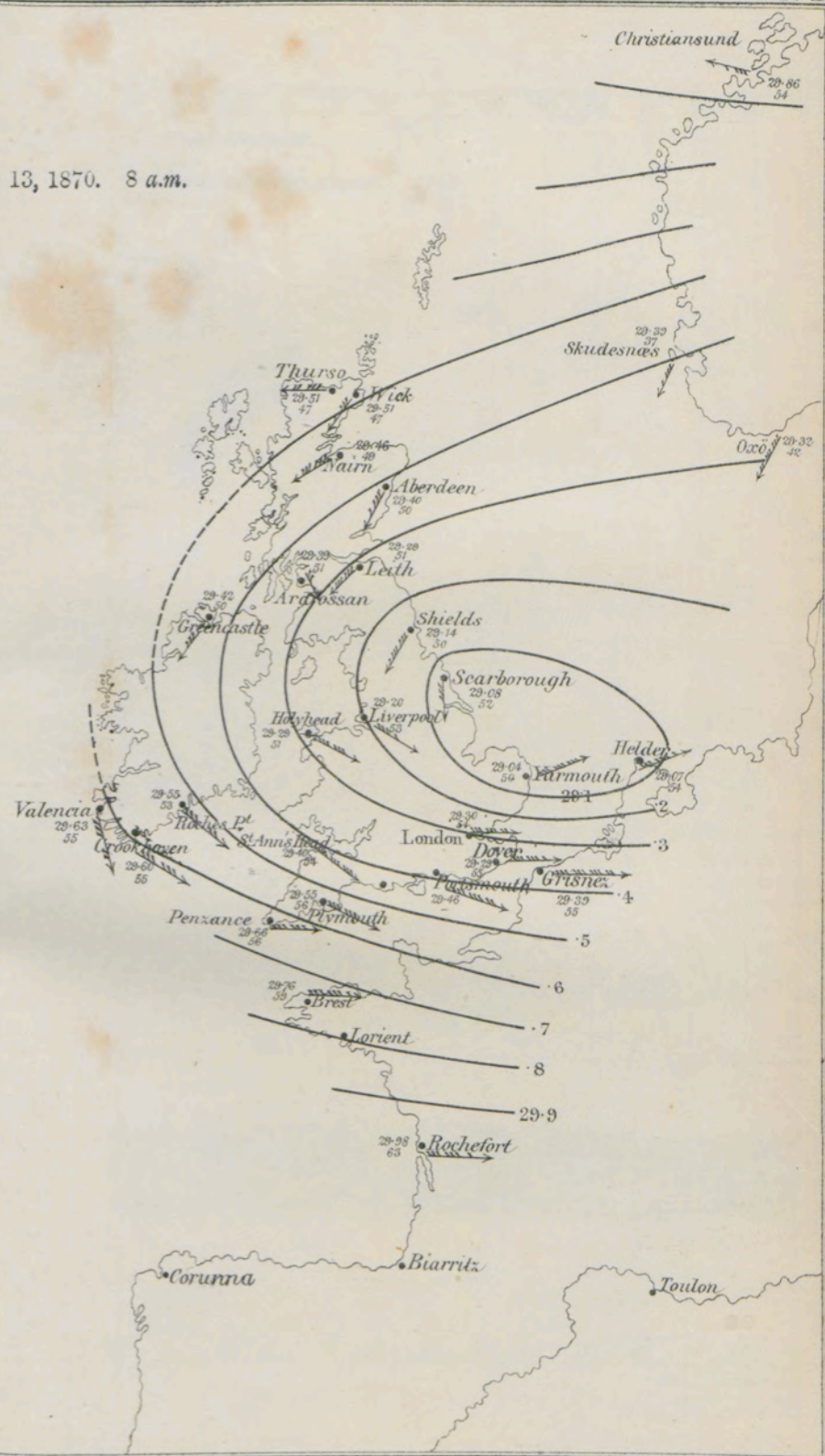


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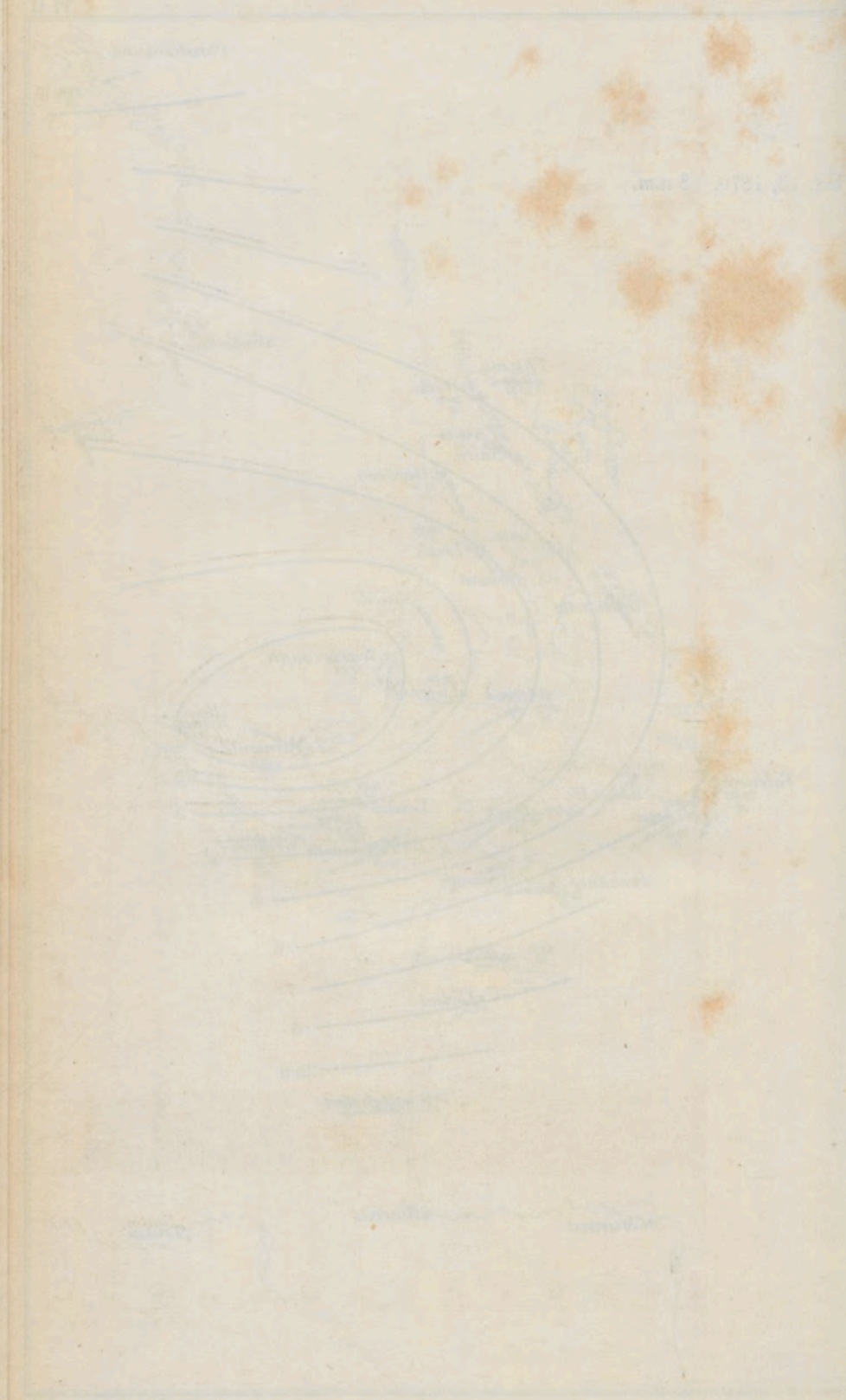




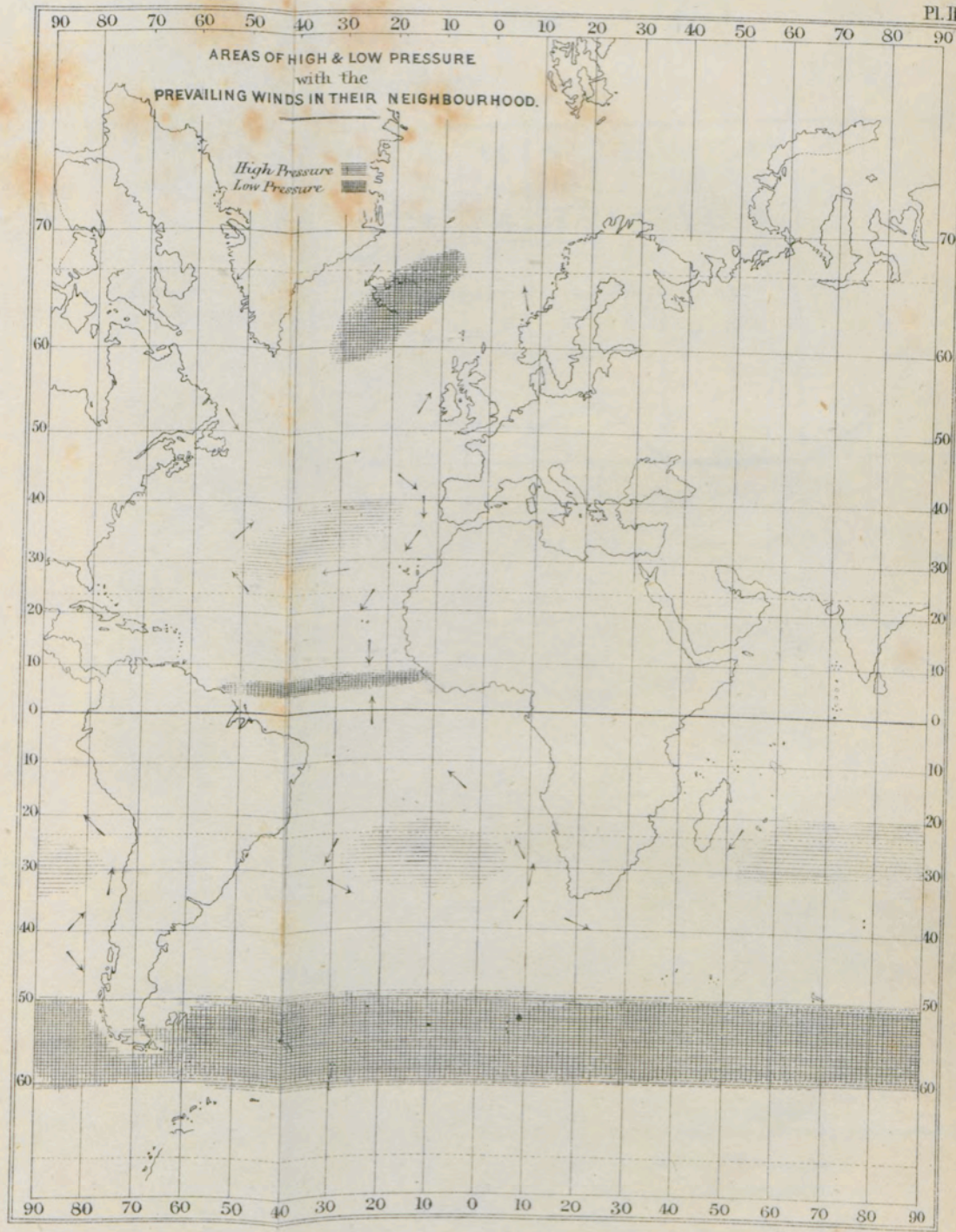
Oct. 13, 1870. 8 a.m.













## FISHERY OR COAST DIAGRAM.

Barometer and Thermometer at London Month June Year 1863.

[illegible]

Notes: Mark the points at which height (by side scale) and time lines cross. Draw a line through the points. The vertical lines are at each six hours—Barometer line should be darkest. First days are of previous month, for reference, in judging of weather; in order to foretell its character. Time lines or day figures are at 8 A.M. nearly when the temperature Intermediate, or alternate lines are for degrees of thermometer, or half tenths of inches. is about the mean or average of night and day. The angles made by the drawn lines with those of the form are very useful aids in foretelling weather, especially with exact squares—such as the above, without thermometer lines between. N.B. This paper should be held on a board by an edge above and below—each end being free—for reading or to hold while shifting.

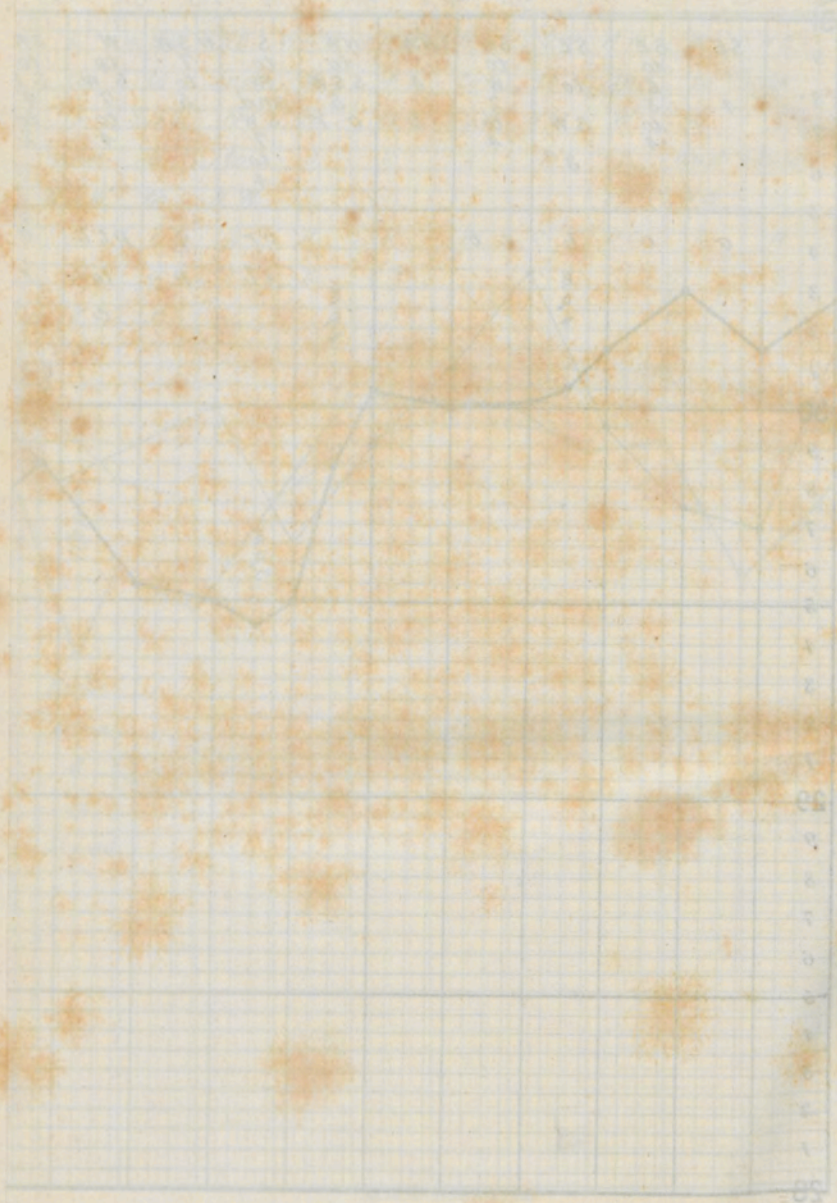
N. B. This paper should be held on a board by an edge above and below—each end being



# FISHERY OF EAST DIAMOND

Barrow and Thule

July 1st to August 1st



Notes: The points in which the lines intersect are the points in which the lines intersect. The lines are drawn by the eye and are not necessarily straight. The lines are drawn by the eye and are not necessarily straight.



