

For still further security, a determination of the platinum in its double salt with the chloride was made:—

{ 12·784 grains of chloride of platinum and picoline gave  
4·204 ... platinum.

This corresponds to 32·88 per cent., and the calculation gives 32·94.

The suspicion, then, of the occurrence of picoline in the odorine of Unverdorben turns out to be perfectly correct; at the same time my experiments have clearly shown that odorine is a mixture of picoline, with at least one other base, the properties of which will be detailed in the second part of this investigation. The quantity of picoline contained in bone-oil is considerable, and it can be more readily prepared from that substance than from coal-tar naphtha; in fact, I obtained from three hundred pounds of bone-oil a larger quantity of picoline than that employed in my examination of it, which was obtained from some hundred gallons of coal-tar naphtha; and by means of it, I shall be enabled to trace out the products of its decomposition, which I was unable to pursue in my former communication.

The presence of aniline in bone-oil I have already alluded to; and its quantity, though small, is by no means inconsiderable, when compared with that of the other bases. I did not think it necessary to take any further means for its identification than its highly characteristic reactions with chloride of lime and nitric acid.

The investigation of the other bases is not yet in a sufficiently advanced state for publication. The sparingly soluble one has been especially troublesome, and its purification is attended by difficulties which I have not yet fully overcome. The consideration of these will be taken up in the second part of this investigation.

XXVII. *Remarks on the Weather during the Quarter ending June 30, 1848.* By JAMES GLAISHER, Esq., of the Royal Observatory, Greenwich\*.

THE meteorological returns for the past quarter furnished to the Registrar-General have been obtained from thirty-seven different places, situated between the latitudes of 50° and 55°, and between the longitudes of 5°·18' W. and 0°·16' E.

The results from every place have been examined and further reduced by myself. The following are the particulars of the weather during the quarter ending June 30, 1848.

\* Communicated by the Author.

The weather during the first month of this quarter was a continuance of the wet weather of the two preceding months; that during May was extremely fine; and that in the month of June was changeable, wet and dull. Till April 5, the daily temperatures of the air exceeded the averages of the same days of seven previous years by  $11^{\circ}9$ ,  $12^{\circ}8$ ,  $15^{\circ}6$ ,  $16^{\circ}1$  and  $7^{\circ}2$ ; on the 6th it was below the average, and for the most part continued below, till May 2, at times to a great extent; from this time till the 30th of May the daily temperatures exceeded their averages by quantities varying from  $2^{\circ}$  to  $15^{\circ}$ . From May 30 to the end of the quarter the daily temperatures were below their average values, with the exception of eight days only.

In pursuance of the arrangement I have hitherto followed, I will speak of each subject of investigation separately.

*The mean temperature of the air at Greenwich—*

For the month of April was  $47^{\circ}6$ , which is  $0^{\circ}6$ ,  $2^{\circ}4$ ,  $0^{\circ}5$  above those of the years 1841, 1842, and 1843 respectively,  $4^{\circ}1$  below that in 1844;  $1^{\circ}3$ ,  $0^{\circ}5$ , and  $2^{\circ}3$  above those of the years 1845, 1846 and 1847; or it is  $0^{\circ}5$  above the average of these seven years;

For the month of May was  $59^{\circ}7$ , which is  $2^{\circ}9$ ,  $6^{\circ}5$ ,  $7^{\circ}5$ ,  $6^{\circ}8$ ,  $10^{\circ}3$ ,  $5^{\circ}1$ , and  $3^{\circ}3$  above those of the years 1841 to 1847 respectively; or it is  $6^{\circ}1$  above the average of these seven years;

For the month of June was  $58^{\circ}5$ , which is  $2^{\circ}1$ ,  $2^{\circ}2$ , and  $0^{\circ}5$  above those of the years 1841, 1843, and 1847 respectively,  $4^{\circ}4$ ,  $2^{\circ}2$ ,  $2^{\circ}2$ , and  $6^{\circ}8$  below those of the years 1842, 1844, 1845, and 1846, respectively; or it is  $1^{\circ}6$  below the average of these seven years.

The mean value for the quarter was  $55^{\circ}3$ ; that for 1841 was  $53^{\circ}4$ ; for 1842 was  $55^{\circ}8$ ; for 1843 was  $51^{\circ}9$ ; for 1844 was  $55^{\circ}1$ ; for 1845 was  $52^{\circ}1$ ; for 1846 was  $55^{\circ}7$ ; and for 1847 was  $53^{\circ}2$ ; so that the excess for this quarter above the corresponding quarter in the years 1841, 1842, 1843, 1844, 1845, and 1847, was  $1^{\circ}9$ ,  $1^{\circ}5$ ,  $3^{\circ}4$ ,  $0^{\circ}2$ ,  $3^{\circ}2$ , and  $2^{\circ}1$ ; the only year between 1841 and 1847 whose mean temperature for this period exceeded that for the present year was 1846; the difference, however, is small, being  $0^{\circ}4$  only. The average value for this quarter from the seven preceding years was  $53^{\circ}6$ ; so that the mean temperature of the air for the quarter ending June 30, 1848, exceeds that of the corresponding quarter in the preceding seven years by  $1^{\circ}7$ . In the quarter ending March 31, 1848, this value was found to be  $1^{\circ}7$  in excess; and in that ending Dec. 31, 1847, it was found to be  $3^{\circ}4$  in excess; so that the mean temperature of the air in the

nine months ending June 30, 1848, exceeds the average value for the same period of time in the preceding seven years by  $2^{\circ}3$ .

*The mean temperature of the evaporation at Greenwich—*

For the month of April was  $44^{\circ}5$ , which is  $0^{\circ}4$  above that for the preceding seven years;

For the month of May was  $53^{\circ}0$ , which is  $2^{\circ}6$  above that for the preceding seven years;

For the month of June was  $54^{\circ}4$ , which is  $1^{\circ}2$  below that for the preceding seven years.

The mean value for the quarter was  $50^{\circ}6$ , which is  $0^{\circ}6$  above the average for the seven preceding years.

*The mean temperature of the dew-point at Greenwich—*

For the month of April was  $41^{\circ}4$ , which is  $0^{\circ}7$ ,  $3^{\circ}1$ ,  $0^{\circ}8$ , and  $4^{\circ}2$  above those for the years 1841, 1842, 1845, and 1847 respectively;  $1^{\circ}2$ ,  $2^{\circ}8$ , and  $0^{\circ}9$  below those of the years 1843, 1844 and 1846; or it is  $0^{\circ}6$  above the average of these seven years;

For the month of May was  $48^{\circ}6$ , which is  $1^{\circ}9$ ,  $2^{\circ}7$ ,  $4^{\circ}0$ , and  $0^{\circ}6$  above those for the years 1842, 1844, 1845, and 1846 respectively,  $2^{\circ}2$  and  $0^{\circ}2$  below those of the years 1841 and 1843, and is the same as that for 1847; or it is  $0^{\circ}9$  above the average for these seven years;

For the month of June was  $51^{\circ}6$ , which is  $2^{\circ}4$ ,  $0^{\circ}4$ ,  $1^{\circ}8$  above those for the years 1841, 1843 and 1847 respectively;  $2^{\circ}7$ ,  $3^{\circ}6$ , and  $4^{\circ}4$  below those of the years 1842, 1845 and 1846 respectively, and is the same as that for 1844, or it is  $0^{\circ}8$  below the average for these seven years.

The mean value for the quarter was  $47^{\circ}2$ , which is  $0^{\circ}2$  above the average for the corresponding period of the preceding seven years.

*The mean weight of water in a cubic foot of air for the quarter was 3.8 grains, which is 0.1 grain less than the average for the seven preceding years.*

*The additional weight of water required to saturate a cubic foot of air was 1.4 grain. The average for the seven preceding years was 1.2 grain. The value required in May was 2 grains, and the mean value for May from the preceding seven years is  $0^{\circ}9$  grain only.*

*The mean degree of humidity of the atmosphere for April was 0.794, for May was 0.664, and for June was 0.768; these values being less than their averages for the seven preceding years by 0.012, 0.154, and 0.012 respectively. The value for the quarter was 0.742, which is 0.059 less than the average for these years.*

*The mean elastic force of vapour for the quarter was 0.343*

inch, which is of the same value as the average of the seven preceding years.

*The mean reading of the barometer* at Greenwich for April was 29·589 inches, for May was 29·926 inches, and for June was 29·642 inches; these values are 0·164 inch *below*, 0·158 inch *above*, and 0·167 inch *below* respectively the averages for the seven preceding years. The mean value for the quarter was 29·719 inches, which is 0·058 inch below the average for these years.

The mean reading in February was 29·517 inches, in March was 29·505 inches, and in April, as above, 29·589 inches. There is no similar instance in this century of the mean reading of the barometer for any three consecutive months being so small as this; the nearest approach to it was in the months of November and December, 1803, and January, 1804.

*The average weight of a cubic foot of air* under the average temperature, humidity, and pressure, was 531 grains; the average for the seven preceding years was 533 grains.

*The rain fallen at Greenwich* in April was 3·4 inches; in May was 0·4 inch; and in June was 3·5 inches; the average values for the seven preceding years were 1·3 inch, 1·6 inch, and 1·5 inch respectively. The amount fallen in the quarter was 7·3 inches, which is 2·9 inches above the average of the corresponding quarters of seven previous years. The total amount fallen in this year till June 30 was 15·2 inches, which is nearly six inches *above* the average fall in this period as deduced from the above-mentioned years. So large a fall of rain as 7·3 inches has not occurred at the Observatory within the corresponding quarter since the year 1824; and so large a fall as 15 inches within the first six months of the year has not taken place within the previous thirty-three years,—probably not within this century.

*The temperature of the water of the Thames* was 60°·7 by day, and 59°·6 by night. The water, on an average, was 3°·6 warmer than the air.

*The horizontal movement of the air* was about 114 miles daily, being about its average value.

*The highest and lowest readings of the thermometer* in Air at the height of four feet above the ground, and protected as much as possible from the effects of radiation and rain, were 80°·0 and 32°·0.

*The average daily range of the readings of the thermometer* in Air at the height of four feet, were 16°·7, 30°·5, and 17°·7 in the months of April, May, and June respectively. The average ranges for these months from the observations of the seven preceding years were 16°·7, 17°·6, and 19°·4. The range

in the month of May exceeded the average value for that month by  $12^{\circ}\cdot9$ , and it was larger than the mean daily range in any month in the preceding seven years. The next largest mean daily range was  $22^{\circ}\cdot5$ , which took place in the month of June 1846. The average for the quarter was  $21^{\circ}\cdot6$ , being  $3^{\circ}\cdot4$  in excess over the average for the seven years ending 1847.

In April the *readings of the thermometer on grass* were at or below  $32^{\circ}$  on twelve nights, and the lowest reading was  $25^{\circ}$ . In May they were at or below  $32^{\circ}$  on fourteen nights, and on eleven other nights the readings were below  $40^{\circ}$ . In June the lowest reading was  $31^{\circ}\cdot5$ : on six nights the readings were between  $32^{\circ}$  and  $40^{\circ}$ . The amount of heat radiated at night from the earth in the month of May was very great indeed. The observer at Leeds says, that white frosts were almost of nightly occurrence during this month. The observer at Beckington speaks of the severe frost of the 30th of June, and which was general over the south of England.

*The mean amount of cloud* for April was  $7\cdot3$ , for May was  $3\cdot0$ , and for June was  $7\cdot4$ . The month of May presented this remarkable peculiarity,—that the sky was absolutely cloudless both day and night during the first eight days, and almost free from cloud till the 15th day, the atmosphere being free from haze during this time. These circumstances are without a parallel on record. The sky during the months of April and June was more clouded than usual, so that the mean amount for the quarter, viz.  $5\cdot9$ , is only  $0\cdot2$  less than the average for the corresponding quarter of the seven previous years.

There were three exhibitions of the *aurora borealis* during the quarter, which occurred on April 3, 7, and 29.

*The electricity* in the atmosphere during the month of April was generally in an active state, and rather more than the average amount. It was frequently negative, which circumstances always preceded or occurred during the fall of rain. In the month of May the amount of electricity was small, and particularly during the first half of the month, excepting on the 3rd, 4th, and 5th, on which days very active positive electricity was shown. Till the last week in June the electricity was frequently active, being mostly positive, and at times negative. Generally the electricity was positive at all times when rain was not falling, and at times after rain had been falling for some time.

*Thunder-storms* at different parts of the country occurred on April 1, 2, 7, 17, 19, May 10, 14, 15, 18, 20 and 26, June 12 and 22. The heaviest of these storms occurred on June 12, and extended over all the southern parts of the country, in-

cluding latitude  $52^{\circ}$ ; north of this parallel very heavy rain fell. At many places on this day more than an inch of rain fell in a few hours. Generally, however, the storms during this quarter, and more particularly in the month of April, were local, in many cases not extending beyond a radius of a mile. The observer at Cardington says, "On April 2, at 4 P.M., an exceedingly heavy storm of hail and rain fell; within twenty minutes water to the depth of 0.64 inch was collected." By inquiries it appeared that this storm was confined within a circumference of three miles. The observer at Whitehaven says, "that on May 14 a violent thunder-storm occurred, accompanied by a heavy fall of triangular pieces of ice; near Grasmere, garden plants, shrubs, and vegetables were completely riddled, and eighty panes of glass were broken in a conservatory by the ice-shower. Though the ground was previously quite warm, the hail, or rather ice, remained on the ground for several hours, and in some places till the following morning."

This storm continued for about forty minutes, and was confined to a radius of less than two miles. Many other storms of a similar character took place in different parts of the country.

*Snow* fell at Saffron Walden on April 9, at Greenwich\*, Lewisham, and Stone on April 10, and at Leeds on April 11. The flakes at Stone measured three inches by two inches.

The mean *monthly temperatures* of the places in Cornwall and Devonshire have not been very different from those at other places during this quarter; usually in the summer months they are below those of other places.

*The reading of the barometer* during the month of April was fluctuating, and exhibited a continuance of those oscillations and low readings mentioned in last report in February and March. On April 1, at 9<sup>h</sup> A.M., the reading was 29.969 inches; slight variations only took place till the 5th, on this day the reading decreased 0.3 inch, and on the 6th, at 6<sup>h</sup> P.M., was 29.516 inches, and still decreasing; on the 8th, at 6<sup>h</sup> P.M., it was 29.198 inches, it then turned to increase, and was 29.330 inches at midnight. On the 9th, at noon, it was 29.430 inches, when it again turned to decrease, and was 29.183 inches on the 10th at midnight; shortly after this the reading increased, and was 29.639 inches on the 11th at 3<sup>h</sup> P.M.; it again decreased, and was 29.301 inches on the 12th at 6<sup>h</sup> A.M.; it then turned to increase, at first slowly, and then quickly. The reading on the 12th at midnight was

\* The fact of snow having fallen on April 10 at Greenwich and Lewisham, was inadvertently omitted in the remarks accompanying the Registrar-General's report.

29·928 inches; it then turned to decrease, and was 29·179 inches on the 18th at midnight; it continued at about this value on the 19th and 20th; it then began to increase slowly, and reached 29·8 inches on the 26th at midnight; it then alternately decreased and increased by small quantities till the last day, when for the first time in the month it reached the point 30 inches.

From May 1 to 14 its readings were above 30 inches, the highest being 30·217 inches on the 11th at 6<sup>h</sup> A.M.; this value decreased to 29·155 inches on the 17th at 6<sup>h</sup> P.M.; it increased to 30 inches on the 20th, and to 30·169 inches on the 24th; it passed below 30 inches on the 26th, and to the end of the month the changes were small.

During June the reading was generally low; its extreme readings were 29·143 inches on the 3rd, and 30·015 inches on the 20th.

The heavy rains in April, following the wet weather of February and March, caused the land to be in a soddened state, and rivers generally to be much swollen. The thunder-storms in many places did much damage. The months of February, March, and April were so wet that the spring corn was sown with much difficulty. The month of May was distinguished by high temperatures, cloudless skies both day and night for a long period, very small falls of rain, with only the average amount of water mixed with the air, notwithstanding the high temperature, so that the degree of humidity was small. The earth became sun-baked, and so hard as to be almost unbreakable; vegetation was greatly checked. During the month of June the earth became again saturated; the crops improved, and at the end of the quarter there was every prospect of a full average produce.

The observer at Leeds says, "that in April the diseases in the lungs affecting cattle and sheep were extremely frequent and generally fatal. In May, notwithstanding the great heat during the days, the almost nightly occurrence of white frosts checked the growing vegetation greatly; the disease among cattle and sheep was in a great measure stopped. In June, with the return of wet and cold weather, the disease among cattle again appeared. So fatal a season to milch cows has not occurred within my remembrance in this neighbourhood. The potato crop is free from disease, and this vegetable is so abundant, that I have never known it so cheap before at this season."

The observer at Beckington says, "I have heard a good deal of the potato disease in this parish, but my own are in as healthy a state as they have ever been. The severe frost

on Friday night, the 30th of June, struck the potato haulm, and did much damage to the peas."

The approximate mean *monthly values* of the several subjects of investigation are printed in the Registrar-General's quarterly report, for the time or times of the day that the observations have been made. These numbers have been reduced as follows:—First, for diurnal variations to deduce true monthly values for each element; secondly, the reduced monthly mean "elastic force of vapour" was taken from the reduced "barometer readings;" thirdly, the mean of these reduced monthly values were then taken; reducing that for the barometer to the level of the sea, and in this way the subjoined quarterly table was formed.

From the numbers in the first column it seems that the volume of dry air was the same at all parts of the country. The mean of all these results is 29.554 inches, and this value may be considered as the pressure of dry air for England during the quarter ending June 30, 1848.

From the numbers in the second column it seems that the mean temperature of the air for the quarter ending June 30, 1848, in the counties of Cornwall and Devonshire, was  $54^{\circ}1$ ; at places situated south of latitude  $52^{\circ}$  was  $54^{\circ}0$ ; between the latitudes of  $52^{\circ}$  and  $53^{\circ}$  was  $53^{\circ}6$ ; between the latitudes of  $53^{\circ}$  and  $54^{\circ}$  was  $52^{\circ}0$ ; and of Durham and Newcastle was  $50^{\circ}7$ .

The average daily range of the temperature of the air in Cornwall and Devonshire was  $15^{\circ}3$ ; at Brighton, Liverpool and Whitehaven, was  $14^{\circ}9$ ; south of the latitude of  $52^{\circ}$  was  $21^{\circ}3$ ; between the latitudes of  $52^{\circ}$  and  $53^{\circ}$  was  $20^{\circ}3$ ; between the latitudes of  $53^{\circ}$  and  $54^{\circ}$  was  $19^{\circ}5$ ; and of Durham and Newcastle was  $14^{\circ}9$ .

The greatest mean daily ranges took place at Latimer, Hartwell, Aylesbury, and Beckington respectively; and the least occurred at Liverpool, Brighton, Whitehaven, and Newcastle respectively.

The highest thermometer reading during the quarter was at Leeds, which was  $88^{\circ}$ ; and the lowest was also at Leeds, viz.  $23^{\circ}$ . The extreme range of temperature in England during the quarter was therefore  $65^{\circ}$ , but this is probably somewhat too great.

The average quarterly range of the reading of the thermometer in Cornwall and Devonshire was  $42^{\circ}5$ ; at Brighton, Liverpool, and Whitehaven, was  $37^{\circ}7$ ; at all other places, except Beckington, Hartwell, Leeds and Wakefield, was  $51^{\circ}5$ .

The direction of the wind has been so variable, that it is not possible to determine its mean direction. Observers in



Meteorological Table for the Quarter ending June 30, 1848.

Names of the places.	Mean pressure of the atmosphere of dry air reduced to the level of the sea.	Mean temperature of the air.	Highest reading of the thermometer.	Lowest thermometer.	Mean daily range of temperature.	Range of the thermometer.	Mean estimated strength 0—6.	Wind.		Mean amount of cloud 0—10.	Rain.		Mean weight of vapour in a cubic foot of air.	Mean additional weight required to saturate a cubic foot of air.	Mean degree of humidity.	Mean whole amount of column of water in a vertical sphere.	Mean weight of a cubic foot of air.	Height of station of the barometer above the level of the sea.
								General direction.	Strength 0—6.		Number of days on which it fell.	Amount collected.						
Helston	29.539	53.5	78.0	30.0	15.8	48.0	1.6	n.e. & s.w.	4.3	35	8.3	4.0	1.0	1.0	0.804	4.7	531	106
Falmouth	53.4	52.1	77.0	30.0	18.4	47.0	1.5	Variable.	5.6	40	8.5	3.8	1.1	1.1	0.767	4.6	530	120
Truro	53.4	52.1	77.0	30.0	18.4	47.0	1.5	Variable.	5.6	40	8.5	3.8	1.1	1.1	0.767	4.6	530	140
Torquay	55.1	55.1	72.0	37.0	12.3	35.0	2.3	n.e.	4.3	38	9.1	3.8	1.4	1.4	0.725	4.1	533	60
Exeter	56.3	56.3	77.5	30.0	18.0	47.5	2.0	n.e.	4.3	39	7.6	4.0	0.9	0.9	0.813	4.9	533	180
Brighton	54.2	54.2	77.5	30.0	12.8	47.5	0.7	n.e.	4.3	39	7.6	4.0	0.9	0.9	0.813	4.9	533	180
Chichester	52.6	52.6	77.0	30.0	16.2	47.0	0.7	n.	5.6	37	10.6	3.9	1.7	1.7	0.684	4.7	530	265
Southampton	54.5	54.5	81.5	28.0	21.2	53.5	0.7	s.w.	5.6	37	10.6	3.9	1.7	1.7	0.684	4.7	530	159
Uckfield	55.9	55.9	82.0	29.0	21.6	53.0	0.7	Variable.	5.6	37	10.6	3.9	1.7	1.7	0.684	4.7	530	107
Beckington	29.572	53.1	83.0	24.0	22.4	59.0	1.3	s.w.	5.4	46	9.2	3.8	1.4	1.4	0.719	4.7	531	335
Royal Observatory, Greenwich	29.570	54.3	80.0	30.2	21.6	49.8	1.3	e.	5.9	46	7.3	3.8	1.4	1.4	0.781	4.7	531	280
Maidenstone Hill, Greenwich	29.563	54.2	78.6	30.7	18.9	47.9	0.7	e.	6.0	41	7.2	3.9	1.1	1.1	0.781	4.7	531	300
Walworth	29.618	54.8	80.0	35.0	19.0	45.0	3.3	s.w.	5.7	45	6.7	3.8	1.2	1.2	0.742	4.5	532	335
Latimer Rectory	29.588	53.2	82.0	33.5	26.7	58.5	1.5	n.	5.3	46	7.9	3.8	1.2	1.2	0.763	4.6	527	335
Aylesbury	29.482	55.0	82.0	38.0	23.3	54.0	0.8	s.	5.8	41	8.0	3.8	1.5	1.5	0.718	4.7	529	280
Stone Observatory	29.596	53.3	77.9	27.7	19.6	50.2	0.8	Variable.	5.3	43	5.8	3.7	1.2	1.2	0.754	4.6	529	300
Hartwell House	29.581	53.7	84.0	24.0	26.0	60.0	0.8	s.	5.3	43	5.8	3.7	1.2	1.2	0.773	4.6	529	300
Cardington	29.594	54.2	81.0	29.0	21.8	52.0	0.8	s.	5.7	48	7.5	4.0	1.2	1.2	0.793	4.9	531	150
Thwait	29.628	53.6	84.0	33.0	21.8	51.0	0.7	e.	5.7	48	7.5	4.0	1.2	1.2	0.793	4.9	531	200
Cambridge Observatory	29.628	53.6	79.5	30.7	18.7	48.8	0.6	s.w.	6.4	39	5.5	3.8	1.1	1.1	0.776	4.6	532	88
Norwich	29.482	54.9	84.0	31.0	20.8	53.0	0.6	Variable.	6.4	39	5.5	3.8	1.1	1.1	0.781	5.0	531	39
Derby	29.544	52.5	77.0	26.0	18.1	51.0	0.7	Variable.	6.4	39	5.5	3.8	1.1	1.1	0.781	5.0	531	39
Highfield House, Notts	29.541	53.7	83.0	27.0	21.9	56.0	0.7	Variable.	6.2	54	8.3	3.8	1.1	1.1	0.778	4.6	533	103
Liverpool Observatory	29.561	52.2	71.9	34.7	11.3	37.2	1.0	n.w.	5.9	47	7.0	3.6	0.8	0.8	0.835	4.3	537	37
Leeds	29.513	50.5	88.0	23.0	21.7	65.0	1.4	Variable.	5.9	47	7.0	3.6	0.8	0.8	0.835	4.3	537	37
Wakefield	29.452	52.8	85.0	25.0	21.0	60.0	0.8	w.	6.8	51	11.6	3.5	1.2	1.2	0.739	4.2	532	113
Stonyhurst Observatory	29.511	51.1	75.5	27.0	18.1	48.0	0.8	w.s.w.	6.8	51	11.6	3.5	0.9	0.9	0.784	4.2	531	381
York	53.4	53.4	79.5	27.0	17.3	52.5	0.7	s.e.	6.0	48	9.9	3.9	0.9	0.9	0.805	4.7	532	162
Scarva, Ireland	53.1	53.1	77.6	28.1	16.9	49.5	1.9	s.	6.0	34	6.1	3.9	1.1	1.1	0.784	4.6	532	340
Whithaven	52.2	52.2	73.0	31.0	13.1	42.1	1.9	s.w.	6.0	41	6.2	3.7	1.0	1.0	0.779	4.3	530	121
Durham	29.565	50.7	76.4	24.5	15.6	51.9	1.4	s.w.	6.0	41	6.2	3.5	1.2	1.2	0.887	4.8	531	121
Newcastle	29.506	50.6	79.5	26.5	14.2	53.0	0.7	s.w.	6.0	41	6.2	3.9	1.2	1.2	0.887	4.8	531	121

adjacent localities have estimated it differently. At all places its strength seems to have been unusually small.

From the numbers in the ninth column, the distribution of cloud seems to have been the same at all places, and such as to cover about one-half of the sky. This value is much less than the average amount of cloud.

The fall of rain during the quarter has greatly exceeded the average amount for the season. The amount in May was much below the average for that month. In the months of April and June the amount was unusually large, particularly in the latter month. The places at which rain fell on the greatest number of days were Leeds, Nottingham, Stonyhurst, Saffron Walden, &c.; and on the smallest number of days were Thwaite, Scarva, Helston, Newcastle, &c. The places at which the largest falls have taken place were Hereford, Stonyhurst, Southampton, York, Leeds, Wakefield, &c.; and the places where the falls have been the least in amount, are Saffron Walden, Cambridge, Newcastle, Stone, &c.; but it would seem that the amount at the last-mentioned place is wrong (see the amounts at Hartwell and Aylesbury). Generally the largest falls have been in Yorkshire, and the smallest in the counties north of Yorkshire.

The numbers in column 12 to 16 contain the mean values of the hygrometrical results at every station; from which we find that—

The mean weight of vapour in a cubic foot of air for England (excepting Cornwall and Devonshire) in the quarter ending June 30, 1848, was 3·8 grains.

The mean additional weight required to saturate a cubic foot of air in the quarter ending June 30, 1848, was 1·1 grain.

The mean degree of humidity in the quarter ending June 30, 1848, was 0·778.

The mean amount of vapour mixed with the air would have produced water, if all had been precipitated at one time on the surface of the earth, to the depth of 4·6 inches.

The mean weight of a cubic foot of air at the level of the sea, under the mean temperature, humidity and pressure, was 534 grains.

And these values for Cornwall and Devonshire were 3·8 grains; 1·2 grain; 0·765; 4·7 inches; and 534 grains respectively.

The results from the station in Ireland agree very closely with those in England in the same parallel of latitude, excepting those depending on the water mixed with the air, and in these respects an excess of humidity is shown at this station.