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THE  
CLIMATE OF ENGLAND;  
OR  
A GUIDE TO THE KNOWLEDGE  
OF THE  
ATMOSPHERIC PHENOMENA OF ENGLAND,  
SHEWING  
THE MANNER IN WHICH THE CHANGES SUCCEED,  
WITH  
METEOROLOGICAL TABLES,  
AND GENERAL RECORDS;

THE COMPARATIVE DIFFERENCE OF WEATHER EXISTING AT ONE  
AND THE SAME TIME IN DIFFERENT PARTS OF OUR ISLAND, IN REFERENCE ALSO TO  
WHAT MAY BE PASSING ON THE CONTINENT;

THE WHOLE CONSTITUTING  
SOME RULES WHEREBY TO JUDGE OF THE FUTURE,  
(A DESIRABLE ACQUISITION,)  
AS DEDUCED FROM MANY YEARS' OBSERVATION.

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BY ORLANDO WHISTLECRAFT,  
THWAITE, SUFFOLK.

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LONDON:  
LONGMAN, ORME, BROWN, GREEN, AND LONGMANS;  
AND F. PAWSEY, IPSWICH.  
1840.

"The heavens declare the glory of God: and the firmament sheweth his handy work. Day unto day uttereth speech, and night unto night sheweth knowledge."—Psalm xix, 1, 2.

"The works of the Lord are great, sought out of all them that have pleasure therein."—Psalm cxi, 2.

"Who covereth the heaven with clouds, who prepareth rain for the earth. He giveth snow like wool, he scattereth the hoar-frost like ashes. He casteth forth his ice like morsels: who can stand before his cold? He sendeth out his word, and melteth them; he causeth his wind to blow, and the waters flow."—Psalm cxvii, 8, 16, 17, 18.

"One generation shall praise thy works to another, and shall declare thy mighty acts. I will speak of the glorious honour of thy majesty, and of thy wondrous works. And men shall speak of the might of thy terrible acts: and I will declare thy greatness. They shall abundantly utter the memory of thy great goodness."—Psalm cxlv, 4, 5, 6, 7.

"Lo, these are parts of his ways, but how little a portion is heard of him? but the thunder of his power, who can understand?"—Job xxvi, 14.



TO THE RIGHT REV. FATHER IN GOD,  
EDWARD, LORD BISHOP OF NORWICH,

HAVING,

BY YOUR LORDSHIP'S GREAT CONDESCENSION, BEEN ALLOWED THE HIGH HONOR OF

DEDICATING

T H E C L I M A T E O F E N G L A N D

TO YOUR LORDSHIP,

WITH EVERY FEELING OF GRATITUDE, I CAN BUT SINCERELY HOPE I MAY, UNDER SO

HIGH A PROTECTION, PROVE SUCCESSFUL,

AND NOT BE DEEMED ENTIRELY UNWORTHY OF YOUR LORDSHIP'S CONTINUED

PATRONAGE, IN ASSISTING ME

TO MEET PUBLIC NOTICE AND SUPPORT IN OFFERING TO THE WORLD THIS MITE,

ON YOUR LORDSHIP'S FAVOURITE SCIENCE;

REPEATING MY MOST SINCERE THANKS, AND WITH THE HIGHEST

VENERATION AND ESTEEM,

I HAVE THE HONOR TO BE, YOUR LORDSHIP'S OBLIGED AND HUMBLE SERVANT,

ORLANDO WHISTLECRAFT.



## I N T R O D U C T I O N .

IT is with the humblest feelings, that the writer of the following pages has, in part, overcome his diffidence, in offering to a refined world this little production. The science of meteorology, although so sublime, and the only study which concerns all mankind alike, has been greatly neglected, and strange to say, even despised, and is still far too little regarded. Until the present century commenced, very little was thought of this highly useful and interesting pursuit. While other sciences have flourished, this has been in a comparatively dormant state. Now, however, a society has been established for the collecting of evidence, whereby to arrive at the desirable issue, the deducing of rules, and developing of the embryo of meteorology. Some have introduced their conclusions or inferences from observations, and Mr. Howard has perhaps achieved the most for the accomplishment of the reception of this study in the world, while he has evinced a great knowledge of the nature of it.

Politics alone have the greatest effect in banishing scientific ideas from the community, inasmuch as they engross the mind to the exclusion of all the useful acquirements. In the ordinary pursuits (for such is the blindness of human nature) men are desirous to peruse past proceedings and events of the world, but the same desire is not shewn for the perusal of natural events, although these have their origin in the Almighty hand, while those are only the work of the frail creature ! Hence the scientific, and particularly the meteorological article, is met by the rebutting expression, “ we don’t want to know what is past, tell us what is to come ! ” Yet, that it is only by study of the past and passing, that we can arrive at any know-

ledge of the future, is very manifest to every thinking mind. Hence then the necessity for the more general observation of atmospheric events for discovering the laws of action in our climate. The Climate of England in its great vicissitudes, or rather (if I may repeat the word) the vicissitudes which characterize the Climate of England, produce their effects in sensible ways on the body of man, and on the vegetable world. That it is necessary to foresee these causes and effects for the farmer, and the inhabitants generally, cannot be denied. Herein are we therefore called upon to pursue our researches, for the attainment of that end, by which, from what may be deduced, a judgment of the future will, in a great measure, be acquired. "Howard's Climate of London," published in 1833, in 3 vols. 8vo. has evidently done the best for bringing into notice the grand scenery of our atmosphere, and the endless variety of interesting matter connected therewith. And with a strong desire to follow up Mr. Howard's investigations, as far as circumstances may empower him, the humble author of the following pages has endeavoured to pursue the above-named gentleman in each of the most useful branches of the science, and selecting a period from and after that noticed in Mr. Howard's tables. Here, however, the author has exhibited one year's tables (those of 1830) to compare with those of Mr. Howard's for that year, with which period his tabular record will be found to close. The rules deduced in the present work originate from previous observations, even from 1818, a period of above 20 years ; the latter half of which, or from 1830, has been arranged into tabular statements, wherein the reader may be furnished with a true representation of the respective periods, as severally headed, and daily registered for clearness and correctness. The instruments used in the prosecution of which observations, are the upright tube barometer ; "Six's" thermometer; a guage for rain,

made of lead, and of proper construction, placed away from buildings or trees, at an elevation of 3 feet from the earth; another for evaporation, being used from July 1839, whenever the season afforded a fair and correct index. A good vane completing the apparatus, accompanied by strict notice of the smoke of a chimney, or other sure indicator, when too calm to be ascertained by the vane.

That the work might, as far as possible, in his humble sphere, maintain a fair claim to its title, the author has gleaned the provincial or local accounts from all parts of the kingdom, wherefrom he has sifted the most striking relations, or parts of each narrative, and placed in due order against his own home-statement, to shew the variety of weather existing in different parts of England at one time, and together to report the general state or character of each year, or month, included in the tabular record.

It is far from the thoughts of the writer to imagine that any thing herein advanced, can throw any considerable light on the subject, since he is fully aware of the superior reasoning of other men, and that his humble situation is, as is too often the case, a bar to public reception. But it must be granted, that it is more particularly among those who pursue any one science, that the necessary matter can be obtained for elucidating the subject; hence it may not be totally unserviceable in the present instance, that this mite be contributed to the common store of facts and arguments in meteorology. With this plea, and with all due deference to a discerning public, the whole is offered, with every feeling of humility, by

Their humble servant,

THE AUTHOR.

*Thwaite, Suffolk,*

*August 31st, 1840.*



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## PRELIMINARY REMARKS.

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THE Author begs that it may be clearly understood, that the whole object of this work is briefly to shew the character of the "Climate of England," by noticing each feature and peculiarity thereof, and not to assume in any way the ability of giving any decisive conclusion relative to the sole cause of the various phenomena, but merely a few remarks, whereby all common observers may deduce some facts tending to open to the knowledge of what will most probably occur in the weather for a few days after the respective prognostics; but the moon's changes, and planetary effects (although undoubtedly influencing the seasons in some degree) are left out of the pale of this offering, for this very reason, that the following pages be plainly a picture of England's variety of weather, and a step to assist the slight observer of nature, in anticipating the same.

# THE CLIMATE OF ENGLAND.

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## CHAPTER I.

SITUATION OF, AND VARIOUS STATES OF SEASON AT THE SAME TIME, IN DIFFERENT PARTS OF OUR ISLAND.

ENGLAND is so situated, first, as an island, that, as is well known, the weather is more changeable than on large continents, or inland countries; and, secondly, as to its mean latitude or distances from the Equator and North Pole, in whatever direction considered, whether in comparing the greater distance from the former, with the less distance from the latter, or otherwise, that peculiarities of climate must in consequence exist.

In viewing it then, first as an island, it is manifest that many currents, and opposite currents of air prevail at one and the same time in different parts of our land; the course of the clouds yield testimony of this, and we have further proof of it from comparing the observations noted in different counties, and on opposite coasts on the same day. This is the effect of being surrounded by proximity of seas, as has long been proved by our scientific observers of natural events. While on the Norfolk and Suffolk coasts, an easterly wind may be blowing for a long time in spring, a westerly may prevail on the opposite or Cheshire and Lancashire coasts, hence a very late and cold season in the former, while in the latter counties an early and mild season is experienced. This was the case in April, 1837, when a gentleman coming into Suffolk on a visit to some friend was surprised to find the landscape still in winter's garb in Suffolk, after leaving Lancashire in verdure! This was at the close of April, 1837, which with us in the eastern counties was perhaps the latest season ever noted in the annals of meteorology.

The westerly breezes, as also the easterly gales, become spent in such cases, in the midland counties, or blended in effects, and produce a current from northward or southward in those parts at the time. Hence, by combating currents, a commotion originates, and an accumulation of vapours of different temperatures takes place in the midland districts. Thunder-storms and hail then introduce the warm season late in April or May, into the eastern counties, with a first blowing of the S.W. wind in those parts, for that season. This is often the case during the spring months; and at any time of the

year we may find that various currents prevail in the different sites of observation, and often many currents at different altitudes over the same site. This is apparent in viewing the drifts or tacks of the clouds which at various heights pass in directions as manifold as their elevations. Our aeronauts have added further proof of this point of consideration. Here then is the peculiar effect of our situation as insulated. A dry east wind may long prevail in the eastern counties in summer, or in the close of spring, with clear and hot weather, while we daily perceive ranges of clouds on the west horizon, at a very small elevation, risen against our lower current, and these for many days come no farther towards our zenith. This shews that a westerly wind has brought up those clouds, so far, in opposition to the current here. A breeze from the westward is hereby indicated to be about to replace that from the east; and often a violent thunder-storm first arises from S.W. or W. in direct opposition to the wind here, (this was the case on May 23, 1830, which see) and afterwards the wind veers about to the west.—More of this in the chapter on winds.—In summer too, a S.E. wind always prevails in the eastern counties, before the great thunder-storms which by night spread themselves over the greater part of England, and more frequently at the breaking off of the hottest period late in July or August. These storms are evidently aided in their rise and progress, or passage to the eastward, by a S.W. or W. wind behind them, which combats against the sea breezes so usual in Kent, Essex, Suffolk, &c. from S.E. or E. during hot days. Again, it is not at all unusual to find that while one part of the island has a wet summer for the greater portion of the season, another part at the same period may be parched with drought and heat. The north of England experiences the most rain in general, and the east and south-east have commonly the driest seasons and years. The fall of rain, as shewn by the table given in a succeeding part of the work, is various at any period.

The annual amount in Westmoreland and Lancashire usually ranges from above 40 to near 70 inches, while that noted by the guage in Essex and Suffolk is as low as from 14 to 32 inches: seldom however does it exceed 25 inches in this part. It may indeed be fairly inferred that these two parts of England produce our extremes. The former being situated, bordering on the western ocean, where the waves of the vast Atlantic cause, by the gales from American shores, many clouds, and frequent precipitation on the west and north-west coasts of our island, and also the hills in those parts serve to aid and induce precipitation. On the contrary, the eastern counties are much elevated in a great part of their surface, and here the western breezes and vapours become more spent in the extremity of their passage. The vast continent of Russia too is here a great evaporating cause; at least, the winds in passing from thence, acquire that remarkable dryness which distinguishes them

from other currents. And, hence, as we have so much of the easterly breezes in "East Anglia," our seasons, and even years, are usually the driest in England. Another point which is referable to our insular position is the disparity of weather on the same day, and in various places on the same day. Much is owing to the variety of currents in different situations; the sea around us yielding at the several places, where noticed, perhaps as many currents, and each according to the site of the place of observation.

From all these phenomena, we clearly trace every effect to the main cause or origin—our situation as an island, and nothing need be added to weary the reader in recapitulation; but we will close the subject of the chapter.

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## C H A P T E R I I.

### CHARACTER OF EACH MONTH, AND THE PECULIARITIES OF THEM, SEVERALLY, IN OUR CLIMATE.

#### JANUARY,

With us, is generally the coldest period of the year. The reign of winter seems fully established at this time in most years. The thermometer usually from  $20^{\circ}$  to  $50^{\circ}$ , as the extremes in an ordinary winter:—while it may in severe seasons fall to 10 or 12 degrees, sometimes to 0 or zero, and even 3 or more below zero. On the contrary, in mild winters,  $58^{\circ}$  is the other extreme at which the thermometer has been known to stand in the open country; while Mr. Howard once noted it  $64^{\circ}$  in the vicinity of London! This was in 1828.—This month was coldest (during 19th century) in 1802, 1808, 1810, 1814,\* 1820,\* 1823, 1827, 1830, and 1838.\* Those dates with asterisks were very severe seasons. The greatest cold occurred January 14-15th, 1820. Thermometer 3 below 0, or —3. And January 20, 1838, thermometer 0. These observations were made in Suffolk. The years producing the mildest January temperature were 1804, 1806, 1821, 1822,\* 1825, 1828,\* 1832, and 1834.\* The asterisks denoting the warmest times of them all. In January, 1834, it scarcely froze once, and on 23rd, the thermometer was  $58^{\circ}$ ! In 1828, the weather in January was often too warm to bear fires in the house with comfort! Such are the uncertain seasons of our climate. Strong winds from S.W. to N.W. with frequent rains usually attend this period in a mild winter; and only excepting in the most severe seasons, this month generally has much westerly wind.

In the severe seasons the extreme of cold often occurs between the 14th and 26th of this month, and is quickly succeeded by a sudden remission, occasioning inundations from the thawing of the snow, and

especially when rain accompanies the thaw, which is usually the case. Such thaws frequently prove but temporary, and in the eastern parts of the kingdom, the wind being S. E. or S. at the thaw, veers to N.W. or recedes by the E. to E. N. E. and N. E. with a quick return of the frost. The beauty depicted in the rime-frosts at this period amply compensates for the loss of that of summer-scenes. Who can, without emotion, fix his attention on the trees, hedges, and grass, or waving bents, &c. decked with the pointed crystals or flat tape-like straps of ice? Behold the scene, when the sun first breaks forth upon a morning of severe cold, with a spotless vest of snow perfecting the prospect! The mean state of the barometer in January is about 29.80, and mean range 1.50 inches. The highest barometer perhaps ever recorded here was on January 2nd, 1835, when it was 30.92! Evaporation now about .5 of an inch, and the depth of rain from .10 of an inch, to near 3.50 inches in the eastern counties; in 1832, 1833, and 1838, this month was very dry:—but in 1828 and 1834 it was wetter than usual. The clouds of this month are usually the cirrostratus, cumulus, and stratus; but sometimes the nimbus in stormy weather.\* Temperature on a mean 33°.

#### FEBRUARY.

This month varies much in its character, one year with another, and even more on the whole than any of the months. It may be very fine with great mildness; it may also be wet, stormy, and mild, and on the contrary, it is sometimes intense frost, with great falls of snow. A mixture of characters may in many years mark this period; and finally it never can be held under any one particular character, as some months may be. The years wherein it proved a very cold month were 1808, 1816, 1827, and 1838. Very cold weather also marked it in part in 1830 and 1832. In 1813, 1817, 1823, 1833, 1835, and 1836 it was exceedingly stormy, with considerable rain, particularly in 1833, when the pluviometer in the eastern or dry counties gave near 6 inches for the month!

In 1822 and 1826, much of the month was warm and pleasant; and in 1821 and 1832, very dry and even nearly without rain, but frosty, with rimes. The thermometer, on February 10, 1831, reached 60° in Suffolk, which is the highest there noted in any February, but that month of 1831 was mild only for a few days. The lowest thermometer for February was on the 15th, in 1808, when it was 9° at Ipswich; on the 9th, in 1816, when it was 4° in Suffolk, and —5, or 5 below zero by Mr. Luke Howard: and on 12th, in 1838, when with me in Suffolk it was 11°. The winds of February are oftener from S. to W. than elsewhere, except in severer seasons, and then from N.W. to N. as the easterly seldom establish themselves until after the close of this month. Mean of barometer is about 29.85, and its mean range 1.43. Evaporation increases to near 1 inch, or even

\* The modifications of the clouds are described in Chapter VIII.

quite. Depth of rain extremely variable in any place, and still more in different sites. In the eastern parts from 20 of an inch to above 5 inches, although usually about 2 inches : and in the west and north from 2 to 9 inches ! Cornwall, Lancashire, Westmoreland, and Cumberland yielding the highest results. In its mildest character this month produces the aconite and snowdrop, and also the primrose, as signs of coming spring. The prevalent clouds of the month are the same as in January, but the cirrus and cirrocumulus are likely to be more common now, than in the preceding month. During frost, the appearance of cirrocumulus in trains of round white detachments foresees a change and rise of temperature, and under such circumstances this cloud may now appear. Mean temperature about 39°.

#### MARCH.

The weather is now putting on the fickleness which marks the vernal months. At any period of the month violent gales may occur, but the quarterly storm period more usually happens between the 17th and 24th. A hurricane from S. W. very frequently takes place near the 20th of March, and several instances have been known of destructive gales from the 1st to the 7th days of the month, with great snowdrifts from N. W. In most years, however, the prevailing wind is at this time established from N. E. and great evaporation on some days. It may be a very dry month, and even more so than any other in the year, but at other times, the N. E. wind may be later in setting in, and then this month will produce an excess of wet and S. W. wind. It was very wet and stormy in 1818, 1835, and 1836, succeeded in the former two instances by a hot and dry summer, and in the last mentioned year by a long course of N. E. wind, and a very dry month of May. This month produced its greatest warmth in 1811, 1815, 1822, and 1830, and the coldest instances were in 1806, 1808, 1812, 1817, 1820, 1823, 1829, 1833, 1837, and 1839. In 1815, on 31st, a temperature of 73° was noted, on 28th, in 1822, of 70°, and on 26th, in 1830, of 71° or more ! These are the maxima, and the minima of temperature for March occurred on 27th, in 1837, and on 10th, in 1839, which was at each time from 16° to 17° ! The usual temperature ranging from 27° to 60°. Mean barometer 29.87 ; mean range 1.30 inches. Rain on a mean 1.35, and evaporation 1.30 inches, or more. In 1830, drought accompanied warmth, in this month, but 1837 and 1839 produced dryness and cold at the same period. The main character to be deduced from such varieties, is that of boisterousness and cold, and only in a few years do we see much, if any, progress in vegetation at this time. The violet begins to open, and wafts its rich odours around, while the primrose cheers the observer, and imparts a feeling of hope and joy on the first discovery of its bright flower on the sunny mound. Mean temperature 42°.

## APRIL.

This is the month for the greatest vicissitudes, especially in the temperature, and hence it is often unhealthy to the delicate constitutions. Some days are very warm, but others very cold and winterly; and frequently very keen nights of frost occur, with warm sunny days. The range of the thermometer being sometimes equal to 45° in a few hours! The lowest point usually is 28° or 30°, and the highest 68°; and some nights produce a temperature of 32°, amidst days of considerable heat, with the maximum at about 65°. The maximum on record in this month was on 30th, in 1827, and on 26th, in 1840, when at different sites in the shade, in Suffolk and Essex, it was 77°, 79°, and 81°! The minimum was on 2nd, 1838, when at an early hour it was 20° and 23° respectively at Redgrave and Thwaite, Suffolk. The month was warmer than usual in 1821 and 1825, and the warm weather more constant than when the extreme occurred in 1827. On several days of April, 1821, the thermometer was at or above 74°! And it proved a very cold month in 1806, 1807, 1808, 1809, 1812, 1823, 1824, 1835, 1836, 1837, 1838, and partly so in 1839. Hence it is oftener cold than otherwise, but in further proof of its extreme mutability, there were alternately some short intervals of considerable heat in the April of 1835. The table for that period will shew its great fluctuation in temperature. The N. E. wind prevailing with increase of evaporation through the month. Mean barometer 29·81; mean range 1·25 inches. Rain on a mean 1·80, and evaporation 2·20 inches. Warmth and wet as in April, 1828, constitute an early season. In 1822, the whole winter and spring were such a continuance of mildness and other growing characters, as to produce the earliest season ever noted. The primrose and variety of violets, celandine minor, or pilewort, and the cowslip deck the banks and meads as the main productions of the rural walks in our climate at this time. The imperial crown lily, now a very conspicuous and handsome ornament in the parterre. Mean temperature 46°.

## MAY.

The N. E. wind still maintains a great prevalence, and when (after a short breeze from warmer points, with hot days constituting the first summer days) clouds succeed with a sudden veering of the wind back to E. or N. E. as sudden a return of cold and ungenial weather takes place; yet near the end of this month, when winter is leaving, or has left the continent of Russia, these winds soften very fast, and a clear and serene sky will produce hot weather, be the wind where it may. In 1839 we had an instance of this, for the same wind which a few days before had brought snowy showers, as on the 14th of that month, on 31st continued to blow, with a very bright sun and great heat!

It is now, and in the previous month, that, as I observed in

chapter 1st, our opposite shores may experience the greatest disparity of winds and weather, so that Cheshire, and that part generally, may have a warm spring or a showery season, with west winds, and we in Suffolk, &c. a cold and dry spring. The evaporation now becomes very great, equalling in one day, in some instances, to .35 of an inch, and even more than this has been noted ! A clear sunny day, and with a brisk east wind causing the greatest evaporation. Mean for the month 3.50 inches, and perhaps more, if we take a longer course of years. Mean depth of rain about 1.80 only. Mean barometer 29.80. Range 1.02 inches. This month was very wet in 1818 and 1824, with very great inundations; succeeded, in the former instance, by a long period of heat and drought, and it was very dry in 1828, 1829, 1833, 1834, 1836, 1838, and 1839. In 1807, 1808, 1811, 1815, 1822, and 1833, it was a very hot month. The maximum thermometer in May, 1807, 1808, and 1833, from 85° to 86° in the eastern parts of England ! The minimum occurred in 1838, on 15th night, which was 28 $\frac{1}{4}$ ° at Thwaite, and 26 $\frac{1}{2}$ ° at Redgrave ; yet, in May, 1820, it was noted at 25° on one night, by the (then) Rev. Mr. Stanley, at Alderley Rectory, Cheshire, which great Meteorologist we rejoice to see exalted to the episcopal chair of Norwich. Mean of this month about 53°.

The gradual progress in the vegetable world daily manifests itself, and throughout England the leafing season becomes general, and verdure is completed in most years by the close of the month. The beauty of natural scenery altogether now is becoming most attractive. Every modification of cloud may appear at this time, and from the beginning of last month to the close of autumn. The cirrocumulus invariably indicating a rise of temperature.

#### JUNE.

The spring (which in a meteorological sense may be considered to commence about March 10th,) ends on or near the 10th of this month. A marked difference takes place in the general character of the weather in most years about the 12th or 13th of June, and summer may then be said to commence, or to become fully established in our climate, a rapid rise of the thermometer at this period usually proclaiming the arrival of summer in our latitude. In a few instances only do we find an earlier developement of the heat of summer, and seldom until after this month is the extreme attained. In 1825, 1826, 1827, 1831, 1835, 1836, 1837, and 1839, the commencement of summer was particularly apparent from the 6th to 13th of June, and such change actually took place in each of those years on one of the days from the 6th to 13th. On the contrary, the years 1829 and 1833 producing much sunshine and warmth in May, and in the early part of June were remarkable instances of falling temperature at the period usually considered as summer's commencement ! On the 14th of June, 1829, the maximum thermo-

meter for the year occurred, immediately followed by a cool and wet season, and in 1833, on June 11th, a gale closed the period of early heat and brightness, and no day during the remainder of that summer was near so hot as some in May! This was a very remarkable circumstance, and stands in opposition to general laws of heat, since we notice our extremes in common occurring with the shortening days, and for manifest reasons. After a dry May, we often have copious showers in June, the wind having been at N. E. in May, and S.W. in June. 1836 was a striking instance of this. The N. E. wind of the vernal months usually gives place to the S.W. now, but the length of our day, and rising temperature, cause together a great evaporation, the mean now for the month 4·00 inches; rain 1·80 inches. Mean barometer 29·90. Range 0·92 inches. The mean temperature 59°. I have known the mean for one June alone to be 65°! This month, in 1804, 1806, 1813, 1817, 1818,\* 1820, 1822, 1826,\* 1834, 1835, and 1839, was at times very hot, and the two dates with asterisks were unusual seasons of constant heat and dryness. The following are the extremes for June:—On 21st, 1817, thermometer 87°. On 13th, 1818, the thermometer 90°. On 25th, 1820, the thermometer 80° to 90°! On 28th, 1826, thermometer 90°! On 21st, 1834, thermometer 88° to 89°; and on 10th and 11th, 1835, 85° to 89°! In 1822, it was also 90° at Epping on the 10th. The usual state of the thermometer is from 40° to 60° by night, and from 58° to 78° by day in this month. It was unseasonably cold in June, 1795, 1812, 1821, 1823, and 1830, during most of the month. The minimum temperature I ever noted on a June night is 37°, but it has been noted at 32° in the north of England. The most rapid progress is now made in vegetation, and we may deem this the most beautiful period of the year in this part of the globe. The dews are heavy, and the twilight continues all night.

#### JULY.

Summer is now perfect in all its character, and the winds are in some years variable at this season, but more generally the S.W. prevails, with intervals of S. E. attended by clear and hot days, and excessive evaporation, which causes the densest clouds to be formed, which, after a considerable retention of vapour, discharge themselves in the most awful thunder-storms of the year. The long course of S.W. wind often brings great and sudden showers, which become more frequent from the great power of sun and air quickly drawing up the water until Nimbi again form, and return the moisture so taken up. In some years this entire month proves a course of thunder showers with but few days intermission. Such was the case in 1804, 1806, 1810, 1820, 1828, 1829; and with some fine intervals in 1834 and 1839. In the July of the last-named years many unusually awful thunder-storms prevailed throughout England. The extreme heat of our year occurs most usually now, and about the 28th in many

years the hottest day is noted by our observers. The years which produced a very hot July, were 1793, 1800, 1803, 1807, 1808,\* 1814, 1818,\* 1819, 1825,\* 1826, 1827, 1830, 1834, 1835, and 1836; but July in a long course of years is found to exceed August in heat as to number of times, in the proportion of 12 to 9. The dates marked by asterisks were hot beyond the usual climate of England. On 13th and 14th, in 1808, max. thermometer in different parts of our island from  $94^{\circ}$  to  $99^{\circ}$ ! On 18th and 19th, in 1825, from  $90^{\circ}$  to  $97^{\circ}$ ! In 1818, it was also above  $90^{\circ}$ ! This was on Friday, the 24th. The coldest July was in 1795, and next to that 1802—1805, 1812, and 1832 yielded considerable cold in July. The wettest were in 1799, 1806, 1816, 1823, 1828, and 1829; and driest in 1783, 1793, 1800, 1807, 1818, 1819, 1825, and 1835. The mean temperature  $63^{\circ}$ . Mean barometer 29.88, range 0.81 inches. Rain 2.50, and evaporation 3.90 inches. The S.E. wind blows with the hottest and clearest days for nearly a week in the eastern counties, until vapours arise with a S. W. current and form distant ranges of rocky clouds on the horizon in S.W. these and the white and round detachments of cirrocumulus in trains across the zenith are the first clouds after clear and hot days, indicating a change which takes place by the south-western clouds coming on, with a severe thunder-storm by night for many hours, while the wind continues E. or S. E. until it passes, when it veers to the S.W. whence the storm arose. This is a common occurrence once or twice in summer, and when near the end of July, and just at the period of the hottest weather, so great a change occurs, that no more very warm weather returns in that year. This was precisely the case in 1827 and 1830; and indeed, many other instances have been recorded. The landscape and rural walks generally, now exhibit the grandest appearance of the whole year, and the face of the heavens is alike most striking at this time. The varied forms and changes of modification of the clouds when resolving into the summer-storms are truly enchanting; but in the chapter on clouds we will treat upon their beauty and nature. The most usual state of the thermometer is now by night  $48^{\circ}$  to  $62^{\circ}$ , and by day  $64^{\circ}$  to  $84^{\circ}$ . The hay meadow and the green waving corn field remind us of the approach of the merry season in the rustic world.

#### AUGUST.

In some years the extreme heat does not take place until this month, and in most years the night temperature is now highest, and the days uniformly hot, for the thermometer keeps at nearly the height of last month's daily state. It is in the country, or open plain, where we find July hotter than this month, in the proportion aforesaid, for in the metropolis, the mean of August appears to exceed that of any month, or at least, to equal that of July. The soil now becomes so much heated by the long continuance of summer

sun, that it rebounds, or throws up more heat now than at any time, and even in gloomy weather, a sensible heat prevails, as if imparted from furnaces around us.

This month was hottest in 1800, 1802, 1807, 1818, 1819, 1822, 1826, 1835, and partly in 1839. The extreme of thermometer from 85° to 89° in most places in England. On the 5th, in 1818, it was above 90° near London; and with me, in the plain or open country, it was 89°, on August 3rd, 1839. For other notes on that remarkable day, see the table for that period. The month proved unseasonably cold in 1799, 1812, 1816, 1829, 1830, and 1833, for the greater part. The night temperature usually from 50° to 63°, until near the end, when the stratus in a morning gives a warning of autumn's approach, and a temperature of 45° or even 40° only sometimes occurs. Lower states than this have been noted, but more generally the nights of August are very close and warm to the end; and day temperature 62° to 80°. Temperature on a mean for the month 62°. Mean pressure 29.85, range 1.02 inches. Rain 1.50 inches, evaporation 3.80 inches. The action of the winds is similar to that of last month before storms of thunder, and the S.E. and S.W. prevail. Awful and long visitations of thunder-storm often occur in this month, and especially when July has been more free from them than usual. On August 9th, 1787, the most dreadful instance of this was experienced all the night, and over nearly all Europe! This was introduced by a fine and hot week, with easterly wind, and the storm came as usual, from S.W. whither the wind afterwards veered. It was a wet month in 1799, 1816, 1828, 1829, and partly in 1832 and 1837, yet sometimes very hot and fine in the last two named periods; and it proved very dry in 1807, 1818, 1819, 1826, 1835, and 1836, at least in the southern and eastern counties. The same beauty and variety in the clouds as noted last month, are observable also in this, and the rich prospect in the mature landscape completes the general scene of delight to the reflecting observer in his daily walks at this period.

#### SEPTEMBER.

The great reduction in the length of the day, now sensibly affects the temperature on a mean; yet so great is the warmth of the soil, that in many years the main character of the month is that of true summer, and sometimes it may, after a moderate summer, prove the hottest month in the year, as it really was in 1795 and 1804! It was also very hot in 1810, 1811, 1815, 1824, 1825, 1832, and 1834. It was coldest in 1803, 1807, 1829, 1830, and 1836. This last perhaps the coldest on record. The highest thermometer for the month was on the 7th, in 1795, 89°! On the 5th, 13th, and 16th, in 1804, 86°; and on the 2nd, in 1810 and 1824, from 84° to 86°. There has been known frost and even snow in this period, but the latter not more than twice on record. It then must have been a cool and wet season previously so as to cause an obstruction to the

earth's absorbing solar heat. On the 2nd, in 1816, snow and frost occurred under such a cause; in 1799 also, there fell some snow in September. The 20th morning of September, 1820, also produced frost, and in 1836, the month was uncommonly cold. The usual temperature by night is now from  $38^{\circ}$  to  $58^{\circ}$ , and that of the day  $55^{\circ}$  to  $73^{\circ}$  or  $76^{\circ}$ . Mean of the month  $58^{\circ}$ . Mean pressure 29.88, range 1.10 inches. Rain 2.25, and evaporation 2.50 inches. Thunderstorms still prevail yet with less frequency than previously, many however are very violent at this time, but continue less time than those of July and August, extending over a much less space also.

This month was remarkably dry in 1795, 1804, 1815, 1832, and 1838, and, as shewn above, there was heat with the dryness at four of these five periods. It was a wet month in 1797, 1799, 1829, 1835, and 1836, and as the given mean evinces, considerable rain more usually falls than otherwise, as it frequently begins the compensation for drought of summer, as June does for that of spring. This month, when fine, is one of the most delighting in the year, for walking, riding, or driving, as the calm serenity, with the peculiarly beautiful clouds, and agreeable softness of temperature, yield the most pleasing sensations in the mind and on the body. Autumnal tints scarcely begin to mark the foliage as yet, but traits of autumn gradually exhibit themselves in many other objects of nature. The cirrocumulus cloud is, at this period of the year, more than usually beautiful during the warmest weather; trains of it adorn the sky in parallel ribs or in round dots of silver white.

#### OCTOBER.

The auburn tints gradually throw themselves over the woods now, and the gossamerweb decks the hedges and stubbles of the corn fields in fine weather. We have frequently complete summer weather during this month, and the sky of brightest blue, dotted still with the cirrocumulus at frequent intervals. The swallows and martins which usually arrive in April now have quitted our shores, commencing their exit usually about September 23rd, when the second annual equinoctial gales often occur, or which may be deferred until some time in this month, when the oak and hazel shed their brown fruits. The purple sloe, and blushing hips and haws grace the hedge-rows amid the silvery tufts of the climbing canes, whose porous branches are used, when ignited at one end, as cigars, by the playful school-boy. The temperature of October is usually very high, compared with the shortness of the day, and compensates for the cold of the longer days in April and May in most years. The heat of the soil from summer sun is still so far retained as to give up warmth to the atmosphere, and thus imparting a summer heat sometimes in almost winter days as regards shortness. The hottest October weather occurred in 1804, 1811, 1818, 1819, in part, 1825,

1830, 1831, 1832, 1834, 1837, and 1839. The maximum temperature on 6th, in 1834, was  $77^{\circ}$ ! This was a remarkable instance of late heat, and attended by a very clear sky and S.E. wind. The coldest instances were 1817, 1824, 1829, and 1836. Snow fell to a considerable depth, suddenly after the heat in October, 1819. On the 7th, at night, in 1829, snow also fell in many parts of England; and on 29th, in 1836, a very deep snow! These were unusual cases, as the true character of this month on the whole is fineness and warmth. The driest instances were 1809, 1820, in part, 1828, 1830, 1833, in part, 1834 and 1837; and the wettest 1822, 1829, 1835, and 1836. The most usual temperature is from  $35^{\circ}$  to  $54^{\circ}$  by night, and  $50^{\circ}$  to  $65^{\circ}$  by day, yet many times it is near  $70^{\circ}$ , and several instances of its being above are noted in the tables for the warm autumns. Mean state  $48^{\circ}$ . Mean pressure 29.73, range 1.35 inches. Rain 2.00, and evaporation 1.60 inches. The ash tree sheds its leaves about 23rd, and most trees now become yellow and brown.

#### NOVEMBER.

Now comes the most dreary state of weather, depressing the spirits of the hypochondriacal subject, and shrouding the skies in universal gloom. The mean feature from the commencement of November to the end of the year, is dampness, stormy, dark, and unsettled atmosphere; yet like other months, in this mutable climate, there have been remarkable exceptions to its ordinary character in some years. It may often be very mild, calm, and clear; or frosty, keen, and yet as clear; but these according to the wind-point of course. The S.W. often prevails, and is at times violent in its force with extreme depression of barometer, viz. 28.80, or even much lower it has been noted at this period, and rain with high temperature precede these gales, the wind then veering from S.W. to N.W. while crossing the west blows with its extreme violence. Much fog, blue-haze, and uniform dampness and murkiness, may at other times prevail, and which with intervals of storm as above, and an occasional solitary frosty night, constitute real November weather in England. Long-continued rains are usual in Lancashire now, and precipitation though light, is generally frequent in other parts of the island. The mildest instances of November were 1806, 1818, 1820, in part, 1821, 1822, and 1839. The coldest were 1807, 1819, 1826, in part, 1829, and 1837, in part. The driest 1832, 1833, and 1834; and the wettest 1810, 1821, 1824, 1825, and 1836. The lowest thermometer about  $19^{\circ}$  to  $24^{\circ}$  in 1819, 1826, and 1837. The highest known  $60^{\circ}$  to  $63^{\circ}$  in 1833 and 1834. Mean state  $42^{\circ}$ , the more usual range being from  $30^{\circ}$  to  $54^{\circ}$ . Mean barometer 29.72, range 1.40 inches. Rain 2.50, and evaporation only 0.75 inches. The trees now all shed their withered foliage, and winter's garb is putting on. Most of the great storms of wind are

recorded as having occurred in this month, and usually near its close, i. e. on 26th and 27th, 1703, O. S. November 29th, 1836, and November 28th, 1838 and 1838.

#### DECEMBER.

This, as before stated, is merely a protraction of the characters of November, and it seldom happens that winter's rigours commence until about the 25th, if at any time of the month. It is evident, however, that this month generally is mild, stormy, and wet; and when an exception, it becomes dry with frost. If dry, it is invariably frosty, and in a few instances great severity has been noted near its close. The winds from S. to W. are now at times strong with rain, and in some years thunder, with such storminess of atmosphere has been known. If the wind is E. or from E. to N. the reverse is expected, and settled frost may occur. The mildest instances of this month were in 1806, 1810, 1814, 1818, in part, 1821, 1824, 1826, 1828, 1833, and 1837, in part. Most of which, or indeed all, but 1818 and 1837, were wet and stormy. The coldest were 1796, 1798, 1799, 1807, 1808, 1819, 1822, 1829, 1830, and 1835, and these were consequently chiefly dry. The minimum thermometer on 25th, in 1796, was 0 or zero, and in some parts of England, —2. The maximum for the month is about 57° or 58°. The mean 39°. Mean pressure 29.72 or 29.74 inches, range 1.65. The minimum ever known was on the 25th, in 1821, viz. from 28.15 to 27.38!! This was attended by violent storms of rain, wind, and thunder, and great mildness! The mean depth of rain for December is 2.47 inches, and evaporation only .60 of an inch. Snow falls to a very great depth in the close of this month in severe seasons. On the 25th night, in 1836, the drift of snow was alarming, with a gale at E.N.E. blocking up all the roads to the depth of many feet. The true wintry weather at this period is introduced by calmness, blue clouds, or fogs, and a great suspension or withholding of rain. The year expires in dampness and gloom, or in garb of frost and snow, according to the kind of season at the particular crisis, or clearly speaking, in milder winters the former character closes our year, and in the colder winters, the frost and snow usually sets in during the last week of this month.

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### C H A P T E R III.

#### ON THE INSTRUMENTS EMPLOYED IN THE PURSUIT OF METEOROLOGICAL OBSERVATIONS.

To those only who invent or manufacture philosophical instruments, or to those who have long made trial of them in their researches, can their uses be perfectly known, or by such alone can

the best and most adapted kinds be selected for any particular purpose. Now, therefore, after having gone through the respective characters of our months, or of each month in our climate, it becomes necessary to treat on the usual set of instruments in use for guaging the various phenomena. First, relative to the pressure of the atmosphere, the barometer must be noticed as on the whole, one of the most essential of constructed means of observation. The old kind, or tube barometer, is by far the best in use, because in this we have the first effect in our view, or to speak in plain terms, we see the mercury itself, and can perceive all its variations, be they ever so minute or inconsiderable; and consequently, we have the several indications of the weather clearly before us. Whereas, in the showy and new-fangled kind, we have to trust to a second effect, caused by the motion of the mercury within, and concealed from view; and which second effect is the motion of the pulley in turning the index or hand on the exterior of the face of the instrument. The mere difference of the two kinds of barometer is known to all who use them; but I mention this difference in construction, in endeavouring to prove where and how the preference must be given to the old kind. This, I hope, I have done, and most people on consideration, I think, will agree in the conclusion, that in consequence of the new kind only indicating by a second action, it must be less likely to be depended on, than those which show the true action of the mercury itself. I have, moreover, by watching both together, obtained ample reason for pronouncing the upright tube, or old-fashioned barometer, as most decidedly the best. The sale of the modern one is enhanced only by the prevalent system of the world in these days of pride, which leads men to buy new things, and fashionable articles, rather than good ones. I must now notice the various actions of the mercury in the barometer tube, so as briefly to remark its several indications. Those who are at all acquainted with the use of the barometer, or ever so little accustomed to regard it, may discover for themselves what it intimates, but many may condemn the instrument as an erring oracle, when it may appear to them to stand too high in wet weather, or *vice versa*. A few remarks may hence be of service. The E. N.E. or N. wind, will, at times, cause it to be higher than during other winds, be the weather what it may: but, should it ever be wet at the time, we may expect a speedy change for dry. Southerly and westerly winds may depress the mercury, while fine weather may continue for some days, yet rain will follow, if the barometer and wind remain the same. I need not add much on the common causes of the rise and fall of the mercury, as it is generally known, that whenever the air becomes dry or heavy it presses so much the more on the lower, or open extremity of the tube, and forces up the mercury, indicating fair and serene weather; and when the air is light, so that vapours cannot float in it, the pressure is withdrawn from the orifice at the bottom of the

tube, and the mercury falls, predicting rain or storm. The highest state of the barometer is therefore indicative of calm, clear and serene weather; and if winter, there will be frost. And the lowest state foresees thunder-storms, or gales and showers in summer; and if winter, mild and boisterous weather, with frequent rain.

THE THERMOMETER has the next claim on our attention, and indeed, it is equally as deserving the notice of all scientific men, as the preceding instrument, and will be found to predict in some measure, as well as to give the present state of atmosphere to us. Before I pass to general observations, I will endeavour to shew how it is that the thermometer acts as a presage of weather. It remains therefore, to be stated, that in November, or during the winter months to March, if the thermometer varies but little day and night, and its average be found on each day, to be about  $42^{\circ}$ , it is a sure sign of much rain, and most falls at that temperature. If also, in summer, the barometer and thermometer fall simultaneously, there will be more continuance of wet, than if the temperature keeps up, while the fall of pressure goes on. The rising of both instruments in summer will introduce the most serene and hottest period of the year. The main use of the thermometer, must however, be mentioned, and which is to point out the temperature of its immediate site, hence observers should have three or more of these instruments to be placed in different situations, if they would arrive at proper conclusions. Unlike the barometer, which shews the pressure of the air for an extent of 100 or 200 square miles; the thermometer gives only the temperature of the situation. To ascertain the temperature and pressure are the two main, and most essential points in meteorological observations, as on these two objects of remark, is the weather constituted. The reading a daily note of the wind, pressure, and temperature, in an old record, will alone afford the mind a perfect conception of the precise kind of day it was, as if the reader were now contemplating its presence. The various kinds of thermometers in use may here be referred to, as some one or more of them may be preferred to the rest. In reference to scale, that of Centigrade as also that of Reaumur, are not much adopted here, neither perhaps would it be right now to deviate from the long use of that of Fahrenheit, whereon our many kinds and forms are now constructed. The registering kind, by Mr. Six, is certainly indispensable, but his original has been considerably spoiled of late, as Mr. Howard justly notices in his "Climate of London." Every meteorologist, ought at least, to have one of Six's, also a single-tube small one, with metallic scale, and another small one with a wood scale. A horizontal one, with day and night tubes, may be added at pleasure, to the set, merely for proving the different action and sensibility existing among them all; but Six's, and a single metal one will be found most useful, and in this climate, mercury rather than alcohol is best for general purposes. My reason for prefering mer-

cury, is, that it is more sensible, or acts quicker than spirit in the small tubes: and why I recommend a metal plate, or scale, is for like reasons, since the metal sooner feels the variations of temperature, than wood; as the latter is slow in absorbing, or parting with the heat. Metal, in the sun, would prove too attractive, but I intend it for the shade. Any observer, in a fine summer day, may have seen the thermometer effected by the passage of a cloud, and again by the emerging of the sun, although it be placed on a north-wall; but the metal shews these effects best, as the wood heats and cools slowly. I could wish that Six's double tube were affixed to a metallic graduated plate, instead of wood; or, that some of each should be made, I argue is needful. A north aspect till after 12 at noon, and an eastern during a summer afternoon, are the best sites for the thermometer, and it should be placed about five feet from the surface, and a few inches from the wall, unless it be wood, i.e. boarding, or window-casings behind it; brick or plaster being naturally unfit to receive the instrument, if we desire a true index of the atmospheric temperature.

THE HYGROMETER is another, but less useful instrument, yet if we had one constructed so as to ensure accuracy, it would be a highly useful appendage to our apparatus. There is still, however, room left for a perfect indicator of damp and dryness, to be invented. It is not so essential in registering the weather, as the before-named instruments are, but if made so as to perform its end as well as those, we might place greater dependance upon its action. Such, however, are the defects of the many kinds in use, that I have never noted the variation of moisture, neither shall I, until we have a surer indication at hand, than any as yet made. "De Luc's" and "Daniel's" have succeeded best, but we cannot confide sufficiently even in these. Still, with the hope that practice and study may make the makers perfect, I wish them, and the inventors and vendors in general, the best success, they, from the scientific world, may merit.

PLUVIAMETERS OR RAIN-GUAGES, of various kinds are in use, but on these I would say no further, than that every meteorologist may make his own, or have it made to his own liking, in his own peculiar method, since any of the curious may conceive what is proper in the construction of his vessel for this use. I may although be permitted to add, that relative to situation, it is requisite to be particular. The guage is best placed about three or four feet from the ground, unless it be one of Mr. Howard's construction, and then we cannot deviate from his plan with any propriety. But in all cases, an open space free from trees, shrubs, or buildings must be chosen. Evaporation-guages, and other instruments of less utility may be constructed or procured, according to the several tastes of observers.

## C H A P T E R IV.

## ON RAIN, SNOW, AND HAIL, THEIR FORMATION, AND WHEN NOTED IN EXCESS.

The precipitation of moisture, which we term rain, claims our first consideration in pursuance of the subject of this chapter. It is known that vapours arise from the surface of the globe, whether from the earth, or from the seas and rivers, and that these float in the atmosphere in the form of clouds of various appearances; and it is nearly as much known, perhaps, by common observers, that the clouds must undergo certain changes of form, nature, and elevation, as well as the electrical change, before they become capable of being precipitated to the earth again in the rain which falls in various degrees of density or copiousness of volume. By a certain union of different strata also, rain may often be produced, and this more particularly in the summer and autumn, close and warm periods. In this case, we see the cirrostratus stretching in long stripes, or in undulating lines about the sky, and the cumulus below it in different forms. These two strata will join by the one descending, and the other meeting it, which is called inosculation of clouds, and hence trivial showers will ensue. This introduction of rain often occurs in the midst of summer, and during a sultry atmosphere, with S.W. or S.E. wind. The long cirrostratus will, at such a time, be seen lying in regular lines over the zenith, and converging at each extremity of their extent, during the morning, and dense cumuli gliding below, which pass to the phenomena of inosculation, and a shower clears off the whole, and settles the sky. This may be traced purely to electrical action taking place between the two modifications of cloud. Excess of evaporation at other times causes a great volume of vapour to rise from the earth until it cannot be retained in the atmosphere, but forms the great thunder-clouds of our summer months, and thus suddenly brings about a discharge. The general rains of all seasons, or wet days, are more the effect of condensation than otherwise; the wind being then usually southward, vapours are brought here, and as they pass thus from a warm, to a colder latitude, become condensed, as steam becomes visible in drops on its being cooled, which is known, if not regarded, by those engaged in culinary or other common employments. The effects of winds must be more noticed in the chapter set apart for the purpose. We will now turn to the last point relative to the formation of rain. There are many different kinds of rain, and this even may be the case in one particular season of the year. Warm rain, or which is of a higher temperature than the air near the surface, may be witnessed; and that which is lower

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in temperature than the lower atmosphere may fall in the same season. Much depends on the elevation whence it fell, and the temperature thereof, and when clouds of snow at no great elevation pass over while it is warm below, the vapour dissolves but falls in a colder state than that of the lower air. In the size of the drops too, a great diversity is presented to us. This is chiefly the effect of different elevations of the clouds. Low clouds sweeping on the surface bring the mizzle; the next elevation causes gentle rain, and the highest dense summer cloud brings the broad pelting drops which leave the singular impressions on the dusty sod, inasmuch as a union of drops may occur in falling so far; or sometimes large hail formed at a great elevation, may suddenly become fluid in the heated stratum next the earth, in their descent. With regard to condensation, rain generally must be the effect of that change or operation in nature; but when I named the condensing of clouds only under one kind of rain, I intended to shew, that in that case, it was more immediately condensation which caused the rain, than in other cases. In passing from this head, I would briefly call on each meditating soul to consider how great a blessing is the phenomenon here spoken of. How can we be sufficiently grateful for any divine favour whatever! but where is there any blessing, relative to temporal good, so distinguished as that of the shower on the dry ground?

Snow is the next precipitation I must mention, and this is another fertilizing blessing, and much to be desired in the winter months. Snow is mainly frozen fog, or clouds in their ordinary state congealed by the cold currents from N. to E. The many kinds of snow are produced by different temperatures, and otherwise by the natural laws of congelation and crystallization. The largest flakes usually fall when the cold is moderate, the particles being softer and adhering to each other in the manner of feathers. The granular snow, or rounder grains, sometimes called sleet, indicate increasing cold, in most instances. The stelliform, or star-like flat grains, show the proximity of great severity of the frost, and the smaller filaments like short hairs falling in the clear sun-shine from invisible clouds do the same. This I particularly observed on the days preceding the great severity in January, 1838, as also at many other times I have proved the reasonableness of such a conclusion. In the greatest or thickest falls, many sizes of flakes are observable, and some resembling dust, which during a drift is thickened by that which is driven up on the surface of the plain. Hence the danger to the traveller who in such case is buffeted till he cannot discern his way, and meanwhile the deep ridges accumulate across his path. Large snow falls late in spring, and in our climate, much has been witnessed even in May in several instances. When we consider the general constitution of atmosphere at this period, we cannot deem it surprising that a few inches in depth of snow should

fall in April or May, in any year. Although the days are then long, yet the earth has scarcely begun to imbibe heat, and the prevalence of N.E. wind being most striking at that season, it naturally follows that clouds of snow should by such a wind be brought to us from Siberia, and their components will fall undissolved, while our temperature is not yet high enough to alter their state, but on the contrary, such clouds will absorb our little warmth, and protract the wintry state of the temperature. Remarkable instances of this occurred in 1785, 1802, 1816, 1821, 1832, 1837, and 1839, yet the cold in May, 1838, was greater than in those dates, but no snow at this place. In the autumn, we seldom see snow until November, rarely in October, yet in 1819, 1829, and 1836, we had much at that time, and in 1816 some fell as early as September 2nd! This was extraordinary, but the wet and gloomy summer of that year hindered the usual absorption of heat in the earth; still it was succeeded by greater warmth. When it comes early after a hot season it must be the effect of a very sudden influx of cold currents from the northward, as in 1819. The peculiar qualities of snow render it a most salutary moisture to the earth, and it screens tender plants from the severity of the frost, so as to be of great service in the seasons wherein it falls. I now leave the phenomenon of snow, and turn to its near of kin—Hail.

HAIL is so far similar to snow in that it is a congealed substance, and accompanies cold winds. But this applies only to the common grain-hail of winter and spring, for there are different kinds of hail to be found in paying due attention to natural events through a whole year. The soft and whitish hail of winter and spring is very little removed from granular snow: but in spring the grains are larger and sometimes harder, yet equally the product of cold as those of winter. The hail at these periods is frozen rain-drops, so far differing from frozen fog which forms snow. The other kind of hail, is that of summer, which attends the great thunder-storms, and which is more perfectly ice than the preceding kind. From the great commotion existing while violent electrical discharges are going on, a sudden congelation of the water in the clouds may occur so as to produce large masses of ice, called hail-stones, doing great injury over the land, and this often happens in May, June, and July storms in our climate. In such storms, the nucleus once formed will prove a base to the adhesion of other drops as it passes to the earth, and each becomes frozen by the cold of the first formation, until it becomes a formidable mass. There is also another striking, but common effect produced by the passage of an electrical discharge, wherein the caloric which had held the vapour in a fluid state, will quit a certain portion of the cloud with the flash of lightning. The result is, that after each flash a momentary fall of hail occurs, while rain continues the remainder of the time of the storm. I have often seen this, and it at first puzzled me, but it proves its cause very manifestly. Thus,

having treated on the formation of rain, snow, and hail, we will close the chapter by alluding to the several instances of excess in either of these phenomena.

By old records we find that in 1338 and 1348 there were many months continual rain in England, the weather was at least extremely rainy from Midsummer to Christmas, in those years. In 1799, a remarkably wet time from July 9th, into November. In July, 1806, an unusual quantity of rain fell, nearly, or quite throughout England, amounting, in the neighbourhood of London, to about six inches in depth. This was from violent thunder-storms after great heat. In November, 1810, a very unusual quantity of rain again fell, amounting to, from five to seven inches in the eastern and southern counties. In July, 1816, considerable wet was experienced here, while in Russia, a dry season was noted. From March 4th to May 16, 1818, a great fall of rain in many parts of England, succeeded by violent drought and heat, till September 5th. In November and December, 1821, great rains and floods, and the minimum pressure on record took place on December 24th and 25th, (see Chapter 2nd, on December.) In May, 1824, about London, great floods from the heavy rains near the 15th of that month. On June 24th, the same year, another great rain. October, November, and December, the same year, were unusually wet with many floods. From July 9th, to August 15th, 1828, most violent rains throughout England with extraordinary floods in harvest. The same from June 17th, till October 4th, 1829, and in Scotland, the floods were alarming to a greater degree in that year, than in the preceding. In the year 1833, from February 1st, till May 1st, great rains fell, and the land was a complete sop! With me, in February, 1833, the depth of rain was 5·70 inches! And this the driest part of England too! On June 20th, 1833, fell the heaviest storm here I ever noted, amounting, in less than two hours, to 1·38! Another followed, producing six-tenths more, or in all 1·98 inches, very nearly two inches in about two hours, in the two periods united! see table for that month. In July and August, 1834, although a parching time on the whole, unusually great rains occurred in sudden thunder-storms. October, 1835, and 1836, were productive of much rain, as the tables shew in the succeeding pages. A wet day generally yields from .30 to .70 of an inch, in the ten or twelve hours it usually lasts. A winter's wet day yields the least, while summer rain falls heaviest. A short and heavy thunder-storm on a summer's day gives .30 or more, while a whole day in winter will sometimes produce less than this.

Snow has fallen also at times in unusual quantities, and which periods, it is now a part of our subject to point out. A great succession of snow for eleven days together, is recorded to have occurred in 1674. Another uncommon succession of it took place for eighteen days together in February, 1762. A very great depth of

snow was also noticed in 1784, 1785, and 1788, at the close of the year. At these times, the roads and fields were one level of snow, and fences not all to be traced. In February, 1799, another remarkable snow to the depth of several feet, when the unfortunate woman, Mrs. Woodcock, was enveloped by it for eight days near Cambridge, on her way home from thence. This poor creature having been fatigued, seated herself near the side of the road, on February 2nd, about sun-set, and from the cold and otherwise, became unconscious of the snow which drifted around till she was covered, but lived till the autumn after she was discovered. The next great fall was from N.W. on February 11th and 12th, 1808. That of 1799, was from E. In January 1814, the roads were again filled with snow; also in January, 1820, and on March 2nd, the same year. This last was from N.W. with a strong wind. In January, 1830, the roads were blockaded, and in many parts in January, 1838; but the most remarkable for many years, was the great storm from the E.N.E. on December 25th and 26th, 1836, when many lives were lost, and the roads nearly throughout England alike impassable; the snow lying to the depth of from 5 to 15 feet in most places, and in some, from 20 to 50 feet in depth, so that all business and communication by post or otherwise was completely suspended for several days!! The beauty of snow is among the most enchanting objects of nature, whether in its flakes we are to observe the falling snow, or in the pure carpet it spreads over the landscape, or in the indescribable fancy-work the drift presents to every thinking mind.

HAIL in the summer-storms (of the kind described last under the head of 'Hail') is common every year in some one or other part of England, but we will advert to a few of the most severe instances of hail-storm. After the long heat and drought of 1800, a dreadful hail-storm visited the west and midland counties on the 19th of August. On May 2nd, 1807, a severe visitation in the northern part of Suffolk and elsewhere, the hail-stones from 3 to 5 inches in circumference, breaking windows and doing incredible injury. After the great heat in 1808, a like storm on July 15th, in the west of England. During the awful thunder-storm by night, on Sunday, July 30th, 1820, great devastation by hail in the N.W. part of Essex. But none, perhaps, ever exceeded in violence the storm of July 14th, 1824, when in Herts. and Essex, some farms of corn were literally destroyed! We read, that on July 17th, 1666, (see Clarke's 100 Wonders) a hail-stone fell in Suffolk, near the coast, measuring one foot in circumference! And we also read of some in different works, weighing several ounces each. Some have a dark nucleus, and which will explode in the fire; and most have a different appearance at the centre, from that of the rest of the stone.

## C H A P T E R V.

ON DEW, AND ITS GREATER OR LESS DEPOSITION, OF WHAT  
THE PRESAGE.

This is another, but more insensible precipitation from the atmosphere, and is formed more copiously in summer than at other seasons. The hot and clear sun-shine produces the heaviest dew by night in general. By a strong evaporation, so much moisture is drawn up in the day, that many distinct cumuli clouds are formed by 10 A.M. in the otherwise clear sky. These increase in size till about 2 P.M. after which, with the declining of the solar ray they decrease, when at sun-set we have none again in view, but the moisture again begins to return to the surface, whence it arose, exhibiting a red blush around the horizon, while descending in the twilight. The grass first evinces its deposition at this time, and if a still evening, the quantity is great. The atmosphere now no longer capable of suspending the moisture, on account of condensation produced by the absence or even declining of the solar rays. The greater the deposition of dew, the more likelihood of fine weather, in most cases at least; but a suspension of dew in a still evening, is a prognostic of rain, since by being withheld, an increase of clouds will follow, and a more copious precipitation in the phenomenon of rain is the consequence. A very calm and serene summer-night after a hot day, when unproductive of dew, is a sure presage of a violent thunder-storm by morning or before; and such storm is already commenced in some of the S. or S.W. parts of England, on such an evening. On the other hand, when any wind blows at sun-set, or during the night, no dew will be deposited, on account of its being carried off by the breeze, and in such case, evaporation may continue all the night. Under these circumstances fine weather may continue, although no dew falls. Having noticed the nature of dew, and the principal phenomena connected with its greater or less deposition, we will close this head.

## C H A P T E R VI.

ON FOGS AND MISTS, AND THE CONNECTION OF FOG WITH SNOW, AND  
ITS PREVALENCE BEFORE AND AFTER FROST, AND SNOW.

Between a common mist and a fog, there is a manifest difference; although in vulgar conversation, mist and fog are used as synonymous words. A fog is the stratus or lowest cloud which envelopes the

landscape, and obscures the prospect in a winter's day, or on an autumnal morning. Whereas, a mist is that vapour which rises on the marshes from the earth in a summer eve, or sometimes at other seasons, but more usually after fine days. In autumn it rises at night after much rain has fallen subsequent to a hot summer, as the warm exhalations then are abundant; hence the growth of the mushroom is most profuse at such a period. Fogs are of various colours; the yellow is most common in November and December, when of a day's continuance; the blue is apparent in summer and autumn at early hours before great heat; and the white prevails in a morning, late in summer, or early in autumn. Clouds in general are bodies of fog at different elevations, when in an ordinary suspended state, before condensation brings them down in rain, or congelation produces snow, therein, &c. There is a great connection existing between fog and snow, and the former on being suddenly congealed before its small particles become condensed, causes a fall of the latter, and when a thaw comes on, if no wind occurs, we may see the snow dissolving in steam or fog, or its pristine state is again maintained. Of this interesting phenomenon I have witnessed several instances, but the most striking thereof occurred on February 24th, 1830, which I observed while taking a walk in the open country in Suffolk. The winter had been severe with much snow, but on February 8th, a thaw took place; little frosts however continuing, prevented, for some days, the large drifted patches of snow from dissolving. One of these patches was lying on the 24th, under a hedge where no wind blew, and it was at this time mild weather. A white fog lay as a narrow and long cirrostratus cloud upon this snow under the hedge, arising from the snow in gradual dissolution, and I moreover saw it rise as steam from the surface of the patch. In a general thaw, if there be no wind, fog always comes on, as both snow and frost, when dissolved, become fog; and again, reciprocally, fog on congelation produces hoar frosts and snow. Thus it is evident that a great connection really exists between fog and snow, and a somewhat less connection between fog and frost. A continuance of fog in December usually precedes a severe winter of snow and frost, and as regularly do we notice a prevalence of fogs after a thaw, or during the dissolution, if no wind blows. I must now turn to the subject of frost in general, and repeat its connection with fog, as matter for next chapter.

## CHAPTER VII.

## ON FROST AND ITS RELATION TO FOG, WHEN NOTED IN LONG AND SEVERE INSTANCES.

It will be on the one hand a repetition of the subject of the foregoing chapter, to treat on the relation of frost to fog, but we now reciprocally turn to frost, and in passing on, will consider in what way fog may succeed it. Frost, like other phenomena, may exist in various kinds, and these diversities it is the purport of this head to explain. The most common frost, or that which ushers in the chills of autumn in November is a frozen dew, which may occur in two ways; the one by dew being first deposited in fluid state, and afterwards congealed by the falling temperature. The other by severe cold in the upper regions brought on by N.E. winds, in which case the already frozen particles fall and attach themselves to the grass, &c. on the surface. As a general term, frost, of course, signifies the action of freezing, whenever the temperature is cooled down to the point, at which, by natural laws, the congelation of water commences. The main difference between some one instance of frost and another, is in the elevation from the surface at which the phenomena may appear greatest. We sometimes notice that on a foggy November or December morning, it freezes on the shrubs, &c. at an elevation of 3 or 4 feet or more, while the ground exhibits no traces of frost. In such case the drops on the twigs will be frozen, and the ground soft; the thermometer being at  $32^{\circ}$  in the former situation and about  $34^{\circ}$  in the latter. This is owing to a colder stratum of air passing over the surface, affecting the water on the twigs, while the earth remains less affected. On other instances of frost, we observe quite the reverse of this, for in a very still morning, with a white or hoar-frost, the temperature is found to be lowest at the surface, the effect of radiation. A thermometer now placed on the ground would stand three degrees or more below that which hangs in the usual elevation. These hoar-frosts usually dissolve into fog followed by rain. Another kind of frost occurs before much snow, which is the very hard frost, without any hoar-white appearance, and is the keenest to the feelings, on account of the wind blowing at the time. Here the effect is not brought on by radiation, but by the wind passing from Siberia, and losing its previous warmth in traversing the cold regions in its passage to us, thus becoming the freezing blast of the N.E. and E.N.E., and the prelude of deep snows. Another kind of frost takes place just after a general thaw, when the snow and ice having dissolved and rendered the sur-

face miry in the extreme, on the first clearing of the sky, even while the thermometer stands at  $33^{\circ}$  or  $34^{\circ}$ , the ground becomes very hard again and of a blackish appearance, shewing the lines, consequent on the commencement of congelation, with unusual clearness. This is the effect of the coldness of the earth after the recent frost, while the thaw goes on above its surface. We must now turn to the last, but greatest instance of freezing; this occurs after the greatest falls of snow, on the sky clearing, and a brisk gale falling away to a calm. On the day preceding such a night of severity, the sun is very bright, and even warm to the sense, while minute particles of frozen vapour may be seen falling as short filaments of white hair, and sparkling in the solar rays. (This was particularly noticed on January 19th and 20th, 1838.) The most perfect calm with clear sky, or with haze below attends the sun-set, and the peculiar sensations and other effects on the head and nostrils at this time, manifest the violence of the frost, and bid us to use precaution on exposure. When the thermometer falls to  $17^{\circ}$ , the above effects on the body commence, and during these nights our extremes are noted by the thermometer registering from about  $5^{\circ}$  to zero, or even below! The greatest continued frosts were in 1739-40, 1785, 1788-89, 1794-95, December 1796, 1799, 1814, 1820, 1830, and 1838. The severest days were January 25th, 1795, December 25th, 1796, December 31st, 1799, February 9th, 1816, January 14-15, 1820, and January 20th, 1838. After frosts of the white kind, a haziness after sun-rise, with a gradual thaw and fog succeeding, brings on mildness and wet; and it is evident that the icy particles in dissolution produce the fogs which so frequently follow, when not dispersed by a gale.

Having considered the nature of frosts in general, and their variety in our climate, we may now very properly make mention of the great diversities also of clouds, and the phenomena attendant thereon, as a subject for the succeeding chapter.

But before I leave the present head, one point still remains for our notice, and which is the rime; or a compound of fog and frost, distinct from all the kinds already named. In this case, freezing goes on at several elevations as well as on the ground, consequently the frozen fog attaches itself in the most beautiful forms upon all objects, yielding an enchanting prospect, emblematical of the hoary head of the winter of life, and convincing us that all seasons have their charms.

## CHAPTER VIII.

ON CLOUDS IN GENERAL, THEIR MODIFICATIONS, PECULIARITIES,  
KINDS, AND SIGNS OR INDICATIONS.

Clouds are bodies of moist vapours at different elevations, exhibiting different forms and colours according to the various currents, or falling of the sun's rays upon them. The most enchanting pictures are to be noticed in the variety of the clouds even at any season, but more especially attractive is the sky scenery in summer and autumn; the many changes constantly going on in the modification of clouds, are alike pleasing: but all these natural operations shall be noticed in their place as we pass on.

**THE CIRRUS-CLOUD.** This is the most elevated of them all, exhibiting its fine lines and filaments pencilled on the blue, as locks of white hair, curling at their extremities. These are the fibrous cirri: and which in descending somewhat lower in the atmosphere, assume a more woolly or feathery appearance, constituting the plumose cirri. The fibrous cirrus, during fine and clear weather, is sometimes the only cloud seen, and the first to appear after a continued clearness, in many instances. It is then the prognostic of a change with rain, and other lower clouds will soon follow. This cloud also appears in showery weather above the other clouds, and forming a crest on the crowns of the Nimbus, which kind will be described in its place. The plumose cirrus attends showery and stormy weather, shewing its white spongy or feathery compartments in the intervals of showers, and sometimes the greater part of the sky exhibits a continuous sheet of both the fibrous and the plumose cirrus in diversified ramifications, which is a great sign of storm.

**THE CIRROCUMULUS.** This cloud exists at a great elevation, but is lower than the preceding kind, and is the most beautiful of all clouds. In very clear and hot weather, it is usually the first to appear, in small detached dots of silvery white, in trains across the zenith, or arranged in lines nearer the horizon according to perspective in viewing them. They may be compared to a flock of sheep at rest, and when viewed by moon-light their appearance forcibly confirms the idea. At any season, this cloud is the invariable presage of a rise of the temperature. In summer and autumn it is more strikingly beautiful in round and dense lumps, regularly detached, and of purest white, or arranged in parallel ribs, as wave succeeds wave on a piece of water. The small round lumps or knotted kind, foreshew thunder; and the ribbed, windy and rainy

weather. The cirrocumulus may appear above other clouds in rainy weather, but is most conspicuous in fine serene weather, and at all times is attended with a high, or a rising temperature, and evincing the approach of an electrical discharge. Such a phenomenon, indeed, will occur within 24 hours of the time when these clouds form themselves into their conspicuous groups as described above.

**THE CIRROSTRATUS.** This cloud puts on very variable appearances, according to season, situation, (as to its receiving and reflecting the solar rays,) and extent. Its most usual form is near that of a fish, or straight body, lying horizontally, and pointed at each extremity. From the collapsing of the cirri, the cirrostratus is often formed, and a union of the cirrocumulus may at other times generate it. It is, indeed, frequently difficult to distinguish this cloud from the cirrocumulus, or in many instances we see the two kinds blended, or one mass of cloud partaking of the nature of both. In summer we have seen the cirrostratus in white and straight lines, as shoals of fish, the cirri at times curled on their upper surfaces, as partly collapsed only. This kind of cirrostratus occurs during sultry weather, shewing itself occasionally like locks of finest wool, pulled out, or elongated; and is a prognostic of wind and showers after fine and hot days. The same appearance will sometimes become undulated in form, and hence the white festoons before storms. These will also fold themselves over the tops of the rocky clouds seen in showery summer weather, or lie across the mass of storm-clouds in horizontal bands, which forebodes an electrical discharge. There are also the more dusky, and the large cirrostrati, both direct and undulated, each foreshewing rain, and the latter warns us of a speedy precipitation. The parhelion, and parasalene, with the haloes most commonly appear in these cirrostrati, and at sun-rise and sun-set, the cirrostratus affords beautiful tints in the reflection and refraction of the beams of light.

**THE CUMULUS.** This is truly the day-cloud, beginning to form itself in a previously clear morning, increasing till 2 p. m. and then decreasing, until at sun-set no cloud again appears. This takes place in fine weather, the decreasing of this cloud towards evening being the sign of a continued serenity. In this case, we see a mere speck of vapour at about 10 A. M. in a summer's day, accumulating by the vapour evaporating from the earth, till a round mass, or rather semi-circular body is formed, having a flat base, while the upper part is somewhat rocky in appearance. These constitute the most convenient screens to the labourer or traveller, in a hot day. At other times this cloud may exist with the cirrus, and the other clouds named above; and if so, it will go on increasing until storm ensues, of which we will speak in its order. (See Nimbus.) When many small cumuli exist, they yield in the perspective a singular scene, presenting a regular succession of flat bases from the height of  $45^{\circ}$  or more, down to the horizon.

Our next consideration must be to trace the progress of the cumulus to the lower modifications, into which it may resolve itself in natural order and operation.

**THE CUMULOSTRATUS.** This cloud presents itself in large accumulated masses of densest appearance, and striking form; being a body or group of cumuli, and often intersected by horizontal strips of cirrostratus, while an overhanging crown decks the summit, like the projection of a rugged precipice. When clouds are resolving themselves into a pluvial state, they usually pass into cumulostratus, immediately preceding the Nimbus, which shall be treated on in the next part of this chapter. Just before thunder-storms, or whenever an increase, instead of a decrease of the cumuli occurs, the cumulostratus will appear; the cumuli having been attracted by electrical action until they unite in a rugged group, forming a long flat base, with perhaps a large and dark cirrostratus extending horizontally below, as a part of the compound cloud. The middle of the cloud will represent a neck, similar to the stem of a mushroom, and the summit spreads and overhangs the base, in a most striking manner. The tops of these clouds may be compared to the ebullition, or at least, to the effervesing of some fluid in fermentation, giving the idea of a hugh mass of froth or foam. Across these crowns, we often see thin silvery bands of cirrostratus in horizontal order, which is a certain presage of severe thunder-storms, or indicates the existence of a violent electrical commotion elsewhere. After continuing their formation for an hour or two, we see the cumulostrati attracting small fragments of cloud into their bodies, and soon after a hasty union of two cumulostrati, by the same electrical agency occurs, and the operation completed in this regular gradation, the mass of cloud now becomes

**THE NIMBUS.** This is the rain-cloud, or source of storm, from which the heavy summer-showers, and thunder-storms proceed. It is not, however, exclusively the cloud of summer, for in any season the Nimbus may appear, letting fall—hail, snow, or rain; or finally, any cloud which precipitates vapour, and which, at the same time, is a distinct or defined body, for we cannot include the general veil of cloud prevalent in a day of rain or snow, under the head of Nimbus. Hence, it is that cloud which, in profile, shews the falling shower in dark descending streaks from its lower edge or base. The change which regularly goes on before storms, in the modifications of clouds from the highest cirrus to this cloud, is a matter of great interest, and a subject affording the highest pleasure to every one who walks in the open country, with his eyes open, and who possesses a soul capable of meditation and reflection. Written volumes are good in their places, and needful on the winter hearth, or study table; but I have often been grieved to see men reading the effusions of mortal man, when on a journey, or a short drive in summer, as if insensible to the pictures and lessons before them

in the great book of nature. Surely, this volume claims a perusal before the outpouring of human thought. The Psalmist says, "In the hand of the Lord there is a cup"—and I may add—a book also held to the perusal of all! How wide the field of amusement, the great natural pages unfold; and where is there a need of any petty trifle to divert our attention from the endless variety of charms in the landscape, or in the skies? I would not digress, but it is natural that the mind should be led out, and invoked to express itself when reflecting on one of the most enchanting traits of our atmosphere—the production and process of clouds.

To return, and in conclusion of this head, the observer is much amused during summer, in viewing an electrified Nimbus discharging the fiery shafts in the distance, and in listening to peal after peal of thunder, by this means ascertaining the distance of the cloud at each period of discharge, as it advances or recedes. Endless are the pleasures derived from natural observation, but at no time are we more delighted than in watching the generating of a thunder-storm, and the succeeding phenomena, all occurring with the production and dispersing of the Nimbus cloud.

**THE STRATUS.** This is the lowest of all clouds, and is in truth a fog or cloud of the night. The fogs and mizzling rains of autumn and during winter, are nothing more or less than the presence of the stratus, for this modification sweeps along on the surface of the earth, so that we move in the cloud itself; hence the smallness of the drops constituting aizzle, or what is commonly called "misty rain." The stratus, however, may exist with a less deposition of moisture, as in the common fogs of the morning. (See Chapter 6th.) One of the most striking phenomena attendant on this cloud, is that it puts on at times, the form of long cirrostrati, creeping along over the vales, in straight and formal lines, so that we can see the tree-tops above, and the rest of the landscape below them; or to be plain, the trees and hills become intersected by bands of fog, presenting clearly defined edges both upper and lower, and on the whole, yielding an imposing appearance! The stratus, in a high atmospheric pressure ascends, and becomes the cumulus of the day; but during a low pressure it usually resolves itself into a steady rain.

Having now considered the seven principal modifications of the clouds, and the phenomena attending each, it will be unnecessary to mention the intermediate forms, or compounds exhibited by the natural mutations going on in the floating vapours, further than to suggest, that such middle states, or undefinable forms do often exist as a matter of course in the changing of one modification into another, or during the operation of inosculation, as mentioned in Chapter 4th. Our next subject of consideration must be, the electrical discharges of the burdened clouds of summer or other seasons, but more especially the common phenomenon,—thunder-storm, which matter, although belonging to the clouds, is not to be included under the head which we are now closing.

## CHAPTER IX.

## ON THUNDER AND LIGHTNING, AND WHEN PREVALENT.

The electrical flash, and the report which succeeds, or rather accompanies it, are common things, and therefore but very little considered by the majority of men. It is nevertheless a point highly deserving investigation, whenever we view the lightning in its varied character and hue, or listen to the solemnly grand sound of the thunder-clap. Electricity is a most powerful agent in the natural world, and strongly demands our strictest attention, and most diligent inquiry. I have before alluded to the precursors of thunder-storm, in Chapter 2nd, under the head of July; but in going into a full notice of this phenomenon, it will be necessary to refer to all the most usual and approved matters of fact relative to the production and continuance of thunder and lightning. I shall not presume to offer any argument in reference to the origin or mere production of lightning, as it has been noticed by more learned writers, in a far clearer manner than I am able to do it; and as all who read these pages are already sufficiently acquainted with this part of the phenomenon. It has long been observed by meteorologists, that a S.E. wind (in the eastern counties at least) precedes the most violent thunder-storms, and that the storm itself works its way in a higher current from the westward. The summer of 1834 proved a greater exception than any instance on record, to the usual character of storm periods, for all the violent electric commotions came on from the east, attended by very peculiar phenomena. (See table and notes for July, 1834.) The beautiful silvery cirrocumulus will, before a thunder-storm, first make its appearance in round dots lying in trains across the zenith of blue, having a charming effect. This, then, is the first indication of an electrical change, and a night without dew, will, at this crisis, pass over; hence the last morning of the fine weather opens with an unusually high temperature, and presenting increasing beds of cirrocumulus, until about 10 A. M., when the trains divide in the zenith and soon vanish. The S.E. breeze will increase, and soon after the sun has passed the meridian we notice long strips of collapsed cirri and cirrocumuli, forming a near appulse to cirrostrati across the S.W. which, with cumuli heads slowly arise all the afternoon, while the wind continues eastward below. Just before sun-set a thick veil of black cirrostratus will obscure the S.W. and undulating lines of white and black add a solemn aspect to the picture. A rapid fall of barometer is noted at this time, and as night approaches, the dismal visitation (and yet grand scene) fully develops

itself. In showery summers, smaller storms may often occur, under very different circumstances to those just alluded to. I say smaller storms, or if the expression be not accepted, I would state that I mean more trifling storms, of far less extent and violence, since the latter are hasty and repeated Nimbi, becoming electrified and soon discharging on formation, while the former are the effect of a long charging, and at length overcharged atmosphere.

The phenomena in question may occur in any month of the year, but most seldom from November to February's close, and most frequently in July and August with us. May, June, and September, also produce violent thunder in some years; and although the winter months are most exempt therefrom, instances of awful electrical discharges have occurred here even in that season.

The periods of winter thunder were December, 1790, January, 1806, December, 1810, December, 1821, November, 1831, December, 1833, January, 1834, February 26th, 1835, January 7th and 8th, and February 27th, 1839, and January 19th and 21st, 1840. It is usually windy and mild with the winter thunder, yet in November, 1831, and January, 1839, lightning accompanied frost and snow. In the latter period named, this was experienced in the northern counties more particularly, but we had much lightning in Suffolk, on the east horizon in the evening of January 8th, 1839, during a frost with some snow at intervals! (See my notes, with the table for that period.) The most remarkable visitations of thunder-storm on record in England were as follow. August 9th, 1787, a general storm over all England and the greater part of Europe, with the most awful phenomena for many hours at night, and with many serious results, preceded by hot weather and S.E. wind. July 30th, 1797, after the same precursors, and taking place early in the morning in many parts of England, with serious damage by hail. August 18th and 19th, 1800, again a similar storm succeeding the great drought of that summer, and introducing a wet time. July 11th, and August 19th and 20th, 1806, very violent in many parts of England. In August, 1807, several severe instances occurred. Succeeding the intense heat, July 15th, 1808. In London, June 14th and 15th, 1814. During night, and after great heat June 29th, and July 30th, 1820, with great hail on the latter occasion in several places in Essex, &c. Early in the morning, August 25th, 1823, in the eastern counties. Awful, with great hail in Herts., Essex, and other parts, July 14th, 1824. In London and elsewhere, June 27th and 28th, 1826. Again, on August 4th and 25th, the same year. July 30th, 1827, early in the morning in many parts of the island, and after heat and S.E. wind. July 3rd and 4th, 1828, and September 8th, at night, the same year, very severe in the southern and eastern counties. In 1829 and 1834, many dreadful storms occurred during the summer months throughout England, especially on July 28th and 29th, 1834. Also in London, August 14th, 1836. May 14th,

1837. May 8th, 1839, and on June 17th,\* July 7th,\* and August 7th, the same year.

There are many kinds of lightning, and various colours and forms are visible at different times of occurrence, and this part of the phenomenon alike requires notice. Much however depends on the time in which the storm happens, for by night the gleam of light on account of the darkness appears brighter and of a whiter colour than by day in many instances. This is not surprising, for a candle flame appears redder by day than by night, for the same common reason. But there are still different intensities of colour and brightness observable in the storms by day and in the same light of day at different times. The blue zigzag streams, the whiter or the yellow forked kind, the red flash without visible streams and some others. Various tints may also be noticed by night; sometimes bluish white sheet lighting, but more generally the whitish yellow appears. The bluest I ever noted by night, was on July 28th and 29th, 1834, and June 17th, and July 7th, 1839. The most beautiful flashes occurred on June 17th, in 1839, exhibiting many tints in each, and moreover, each flash was compound, consisting of several flashings in connection! Many circumstances may effect a different appearance in the lightning, whether temperature, season, altitude of cloud, and the situation of cloud with cloud, currents, or any other causes which, among the greater part of the creation, remind us of the wisdom of Him "whose ways are past finding out." The nature and effects of this phenomenon are sufficiently known, as also the manner in which the effects are produced; it therefore only remains for me to leave the matter (so far as relates to the deciding in a minute manner, whether chemically, naturally, or philosophically in any way, the secrets of this part of the Almighty's work) in the hands of those more capable of elucidating the subject, and to pass on to another point of consideration.

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## CHAPTER X.

### ON THE TEMPERATURE, AND WHAT GENERATES EITHER EXTREME IN OUR CLIMATE.

This is a part of meteorology more worthy of strict notice than most other points of the science. The variation of temperature, as indicated by the thermometer, is a most interesting inquiry, and a continued source of amusement will accrue from this branch of the observator's researches, alone. Whether we only attend to the

\* These were even almost general throughout the kingdom all night, with alarming effects.

variety presented by the year, or more closely to the changes even in a day, the pursuit is at once extremely delightful and useful. Let us now, in argument on this head, briefly consider the principal causes of greater or less heat being diffused in, or imparted to the atmosphere, and make a few remarks on the extremes of the temperature, and in relation to the usual causes thereof. The period of the year when we expect the lowest temperature is well known to be January or February; and that producing the highest is most usually July or August, but the point of the wind has a great effect in the variation of heat at any season, and together with other agents may often defer the period of either extreme till after the usual crisis. Beginning then, with the year, I would mention, under what concomitant circumstances the greatest cold is produced in England. It is not always coldest, when it feels so to us; for when a wind blows, it rarely freezes so severely as in a calm, yet during a breeze, the cold is more perceptible to the sense, than when the weather is calm. To experience the severest cold, we must first have a course of N.E. or E.N.E. wind for several days with dry and continued frost, without deposition; afterwards a fall of snow to cover the ground to the depth of several inches. In the next place, after a snowy night a clearing-off of the clouds at sun-rise, or before noon, at least, with a brilliant and cloudless noon and afternoon, destitute of a breeze, and succeeded by a golden sun-set, with crimson and rose-coloured haze around the horizon, particularly eastward and northward and not a breath of air stirring, sufficient to ascertain the point of the current. Perfect clearness and stillness must continue all the night, the stars unusually brilliant, but a haze still about the horizon. These are the introduction and attendants of our most severe frosts, when the snow yields an indescribable noise on being passed over by carriage wheels, &c. and on quitting our rooms, the peculiar sensations seize the nostrils, ears, and forehead. The thermometer at such a time, being at, or near, and probably below zero of Fahrenheit! Hence for the generating of our coldest nights, we have the icy blast first blowing from Siberia until much caloric here has been absorbed or taken away by it; then the fall of nitrous vapour, which being spread on the surface, produces a most excessive radiation when the arc above is opened to the passing off of the rays by at first the sun-light, and then at night by the clear star-light. After this period we usually find the frost soon temporarily breaks up. In January, 1795, December, 1796, December, 1799, and January, 1820 and 1838, a thaw quickly succeeded the extremes of cold, since the constitution of our atmosphere is such as will not retain any one extreme beyond a short period, on account of our insular position subjecting us to the variety of currents. The next part of this head is the manner in which the opposite extreme is produced in the summer months. Many summers may pass without yielding that excessive heat which has characterized some other years. For in some seasons the wea-

ther may be too variable for the production of great heat; the winds too changeable, and rain occurring frequently so as to break the succession of sunshine, (which would otherwise be the greater cause of the earth's absorbing heat, and rebounding it to the lower stratum of air,) will also prevent the growth of heat, if I may use the expression. I will now offer some conclusions, reaped from strict observation, as to the real cause of excessive heat, or the highest extremes of England. The weather must first be uniformly dry and clear for ten or fourteen days, with a steady but gentle breeze from S.E. or S.S.E. and which peculiar crisis may usually occur in the middle of summer, or it may be earlier or later, yet between June 21st and September 8th, in most cases. Near the expiration of which ten or fourteen days, an absence of dew further assists the rapid generation of heat from the soil, which day after day progressively attracts the fervid rays, and throws them up again to the atmosphere. The land thus receives the accumulated warmth to a great depth, retaining it more and more every morning, when the sun again resumes its force, and excites the redoubling of the rapidity of increase in the temperature. The S.S.E. breeze having brought the warmth from lower latitudes, also aids that thrown up here from the soil, and afterwards a calm takes place completing the effect, while the sun is still unclouded and undimmed. This is generally the character of the latter part of summer, rather than of an earlier period; for it seldom appears that our soil becomes heated sufficiently, until from July 15th, to the end of the season.

It frequently happens, that, in such a state of weather as we have just considered, a bluish or grey cloudiness comes on after sun-set and continues till sun-rise, hence the heat of the earth is prevented from escaping, as it would in a clear night by radiation. Thus we find that a cloudy night is at any season warmer than a clear one, for the clouds act as a sounding-board, or as a reflector, keeping the earth's heat confined near its surface; while, if clear, the caloric would pass off by radiation. Some instances of clear summer nights may still retain great warmth in the lower stratum of air, but then there must be no deposition of dew, or but a scanty one, and this is the kind of night, as also the cloudy just mentioned, which, together accompany our extreme periods of heat, and which tend to augment the generation of the most rapid rise of the temperature. The most usual height of the thermometer by day, in this case is from  $84^{\circ}$  to  $90^{\circ}$  or sometimes more; and by night from  $61^{\circ}$  to  $66^{\circ}$ , which perhaps is the maximum nocturnal state on record. In July, 1793, very great heat was noted, particularly on the 16th, when the thermometer was  $90^{\circ}$  at Harleston, in Norfolk. On July 13th and 14th, 1808, (as I mentioned in Chapter 2nd,) the most extraordinary heat occurred in England, with the thermometer from  $94^{\circ}$  to  $99^{\circ}$ , in the eastern counties, and men and horses died! In July, 1825, from the 14th to the 19th, a similar state of season; ther-

mometer 92° at Epping, and near London 97°. By night at this time, it stood with us at 66°! Temperature generally is at all seasons regulated by the many currents to which our insular position subjects us, and therefore we must have a greater prevalence than usual of N.E. wind to introduce severe cold; and of S. or S.E. wind to bring on the excess of heat. In winter and spring, if it has been mild with westerly breezes, and a squall with hail succeeds, the hail will absorb so much heat in dissolution that the thermometer hastily falls 10 degrees or more; and when at any season the lower stratum becomes much heated, it will, by rarefaction ascend and make way for a cooler to rush in and fill the vacuum. In hot and calm weather this often happens, and the ascending stratum is replaced, in the eastern counties, by the sea-breeze after 3 p.m. as regularly as night succeeds day! Thus the clear day in summer with perfect calmness, closes with the springing-up of an E.S.E. breeze, which again dies away with the setting of the sun in most instances, and if not, a night without dew follows, and the easterly wind continues till a thunder-storm arises from S.W. in the way already noticed in the 1st Chapter, and the hot weather breaks up. This extreme is like that of cold, in that we usually find a sudden remission takes place immediately after any unusual excess in the temperature.

The period of the year producing the greatest range of the thermometer is the spring, for in April and May we frequently find in one day and night a variation of from 30 to 45 degrees, hence, the ill-effects of this season on the invalid, or delicate individual. Within one week at this season, instances are recorded of alternate cold and heat, in turn throwing up the thermometer to 76°, and depressing it to 32°, and indeed, the one extreme is sure to be the prelude to the other, in the close of April, or during the month of May; such being the peculiarity of our climate, as proved by observation in the vernal season.

The diversity of the winds, or the prevalence of any one current on the other hand does much in affecting the temperature at all seasons. Variable currents prevent the extremes from being established; and if a fixed north wind and cloudiness exist in summer, it will be unseasonably cool; while, by the same rule, a steady S. or S.W. wind in winter, with frequent rain, or even with gales at times, will create extraordinary warmth, so that under these circumstances we may find a winter's day warmer than those of summer from the above effects. On July 22nd, 1832, maximum temperature 57° with me; and on January 23rd, 1834, it was 58° or 1° higher than on the summer day in 1832! And these two cases were at such periods as usually are productive of contrary extremes, consequently the unseasonable temperature was in both instances entirely dependent on the state of atmosphere alone. In spring and autumn, we have other agents operating on the temperature, for the coldness of the soil even in May, with fifteen hours or more of sunshine, will prevent a high

temperature in many cases; and the heat of the earth even in November with but half the daylight of May, will so far act on the atmosphere on some days as to raise the thermometer above 60°. The long time requisite to the heating, as well as to the cooling of the earth, is the main reason why our hottest days occur so long after the summer solstice, and the severity of frost so far beyond that of the winter, which indeed is a common matter known to all persons, who are accustomed to think at all. It is needless for me to go further on this subject, since my readers are well aware that our climate is liable to extraordinary changes in temperature above all things, and I trust they are equally aware that I do not presume to be able to offer any original argument; and if such a thing be discovered in the whole work, as a new idea, I shall be thankful to Him who rules and guides all, that I should prove the instrument of referring my fellows to any one of the wonders of His great work! But I would disclaim all merit as the frail creature of God, and as the humble and unworthy scribe of the public.

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## CHAPTER XI.

### ON THE WINDS.

The currents of air prevailing in an island, are many, even at one time, as has before been shewn, and this peculiarity owes its origin to proximity of seas; the main point, however, whereon I must now treat is the respective effects of each of the winds in England, and their attendant phenomena in general. In preface thereto, I would briefly notice the manner in which wind usually is caused, although its origin is too evident to my readers to need much illustration. The two great operations of the atmosphere—condensation and rarefaction, are ever active, and it is known that cold produces the former, and heat effects the latter. Now, when a portion of air becomes heated to rarefaction, it ascends, as mentioned in the preceding chapter, and the cooler current rushes in below and causes a violent flow of air, which we call wind, or air in rapid motion, and directed towards some other quarter of the heavens, whither it continues to rush, until the equilibrium be restored. Any disturbing power, or electrical change may cause one portion of air to be hastily put in motion, whereby to bring about the natural equality by universal law of atmospheric action. All nature aims at the preserving that equality or equilibrium so manifest in the universe, and here we have one among the numerous instances thereof. The passage of a person in a room will cause a rush of air to take place, since the body passed

has opened and left a space which is again filled up by the puff or motion of air we then feel, while the pristine, or at least previous state is being restored. This is a well-known fact, but it alone illustrates the nature of wind ; when, by the same law, the passage of a cloud, or body of clouds will cut a vacuum, by which a mighty blast arises, immediately following such clouds until the same end as above shewn is found to be attained. Wind succeeds to heat at any season, in many instances, and before the hard gales of winter, unusual mildness is very strikingly apparent. In our island the S.W. and N.E. are the most prevalent winds, the latter more so in the eastern counties than in other parts, for a westerly may at the same period often blow in the west and north-west of England ! In the spring we have the preponderance of N.E. winds, and the law of equality or compensation repays this by the other prevalent gale ; the S.W. or opposite current, which frequently occurs most from November to February, and in the summer months. A long course of the one induces that of the other, as the rule of compensation, the same as we find wet and dry succeed to each other in due balances. Why each current should produce its peculiar effects to England is evident ; the north brings cold, or coming from the Polar regions, absorbs our heat, and absence of heat we denominate cold. The N.E. and E.N.E. are the coldest ; coming from Siberian shores, Sweden, Norway, and the Russian territory : where also continued severity exists for some months. Hence the keenness of these winds in winter and spring. These currents, as also the E. and E.S.E. are usually dry with us, having to pass the vast extent of Russia in reaching us. The S.E. S. and S.W. may not always bring rain, but generally heat, on account of their issuing from the torrid zone, and wasting the caloric from the sandy deserts over France, &c. or from the mild Atlantic, which is never at a low temperature. The west, with the intermediate currents to S.W. produce rain in passing the great expanse of the Atlantic, and the north and west experience more rain than the east part of England, on account of situation relative to the coming on of these rains. The N.W. wind and also the N. bring cold and stormy weather, when occurring in winter and spring ; but in the summer, fine and serene weather, yet with less heat than when a S.E. current prevails.

The effects of particular currents upon the barometer, are remarkably apparent ; the two predominant winds, S.W. and N.E. producing the least and greatest pressure respectively ; and the opposite natures of these gales easily account for their extreme effects on the atmosphere. The strongest gales are usually those from the S.W. W. and N.W. and while the wind is veering about the W. in passing from S.W. to N.W. the most violent hurricane occurs. As Mr. Murphy has stated, there certainly are regular periods of storm ; at least, so far regular as to occur about every thirteen weeks, unless some other causes concur either to bring on a premature devel-

opement of the event, or to defer it a few weeks. But the true periods seem to be at each equinox, and summer and winter solstice, when, or within a few days of each time, a low barometer with squalls and rain from about S.W. takes place. (See my tables at those periods of each date.) A longer course of tables would present still further proof of the argument. In perusing old records, we find that the most dreadful storms of wind occurred on February 18th, 1662, when the spire of St. Mary Tower Church, Ipswich, was thrown down. Again, on November 26th and 27th, 1703, when such damage was experienced as would occupy volumes to relate. See "De Foe's Storm" and "Clarke's Hundred Wonders." Among other disasters at that time, the spire of Stowmarket was demolished, and hundreds of churches, &c. &c. greatly injured. In June, 1736, a violent wind! Again, almost general in England, January 1st, 1779, and November 4th, 1795. Of late years, and during the period I have kept my own register, the most violent hurricanes have been noted on March 4th and 5th, 1818, from S.S.E. (This was an unusual case.) March 2nd, 1820, from N.W. with great snow. January 14th, 1827, from N.W. April 20th, 1830, from W.N.W. In December, 1833, from W. February 23rd, 1835, from W. November 29th, 1836, from W. and W.N.W. with alarming consequences. October 29th, 1838, from S.W. January 6th and 7th, 1839, with dreadful effects throughout the kingdom. And about January 21st, 1840, from W.S.W. The summer breezes from S.E. S. S.W. and W. frequently bring so much heat with them, as to establish the extreme of temperature when aided by dry and bright weather, and the heats are sensibly felt as puffs from a furnace when wafted by the above currents in summer. Having considered the peculiar nature and effects of each of the currents of our climate, I must close this part of the work by one more chapter on the various phenomena of the atmosphere; to most of which I have not previously alluded, and many of them remaining among that part of nature which is still involved in mystery, in spite of the many who have laboured in exploring it.

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## C H A P T E R   X I I .

### MISCELLANEOUS OBSERVATIONS, AND NOTICES OF VARIOUS PHENOMENA.

There are numerous atmospheric phenomena, which might, in being treated upon, fill a large volume; but many of them remain altogether nondescript, or their respective characters and causes still remain upon the long list of unfathomable works of the

Almighty, whose wisdom passes all understanding. Let us then be content, at least, in this humble notice of His sublimer works, in producing a few remarks on the common occurrences of our atmosphere, merely to shew what variety are attendant thereupon, in furtherance of the object of this work, that of representing the climate in general; and leave others, who are better informed than the unassuming writer, to elucidate the several mysterious parts of the universe. My first matter of remark is that beautiful scene of night,

**THE AURORA BOREALIS.** This seems to have been first observed, or first placed on record, in March 1716. Between 1760 and 1790, it was very common, and sometimes there were within that period, remarkably vivid displays thereof. In the commencement of the present century, and as late as 1826, it was rarely seen, and never very conspicuously; but from 1827, to the present year, 1840, (while I write,) it has displayed itself in richest splendour on many occasions. The principal instances of Aurora Borealis have occurred as follow. On September 25th, 1827. September 13th and November 4th, 1830. January 7th, 1831, remarkably red and brilliant. March 13th and October 12th, 1833. November 18th, 1835. February 25th, 1837. During the autumn of 1837 and 1838, several times. January 14th and 19th, May 5th, September 4th, and November 16th and 23rd, 1839; and January 4th, and February 6th and 7th, 1840. Various tints are sometimes to be seen in these phenomena, and usually a bright arch appears on the northern horizon, with a dusky vapour lying as a cloud about the base of the arch. The motions of the beams of light are various at different times. Some instances exhibit waves of yellow lustre mingled with red, rolling up in horizontal order to the zenith; while others have a perpendicular action. The most unusual instance was that of March 13th, 1833, when the columns passed after each other like the spokes of a turning wheel. (See notes for that month.) The nature of this phenomenon appears but dimly shewn, but we have little doubt of its being caused by electrical action at a great elevation, portending a great change of weather either to storm, or to cold.

**LUMINOUS ARCHES.** Of these, few are on record, but one of the most remarkable of them appeared on September 29th, 1828, from 8 to 10 P. M. It appeared like the tail of a comet, but much nearer and larger than that does. Its appearance produced the idea of the existence of a luminous body below the horizon, whence it emanated, for it was most brilliant in the W.S.W. horizon, and to the height of  $40^{\circ}$ , thence spreading wider, and was less dense and bright to its extremity which extended over the zenith to within  $15^{\circ}$  of the horizon in the E.N.E. The weather was pretty fine at the time, but became stormy soon afterwards. This phenomenon may be classed among those of an electrical kind, as well as the preceding.

**FIERY METEORS.** Many of these have appeared under different circumstances, and exhibiting various forms, colours, and actions. Most of them, however, in passing, present the form of the schoolboy's kite with its appendages. Another may put on the appearance of a globe emitting brilliant scintillations, with a loud crackling as it passes. That which passed over at 10 p. m. or about that hour, on August 18th, 1783, was the largest on record, and had the true form of a kite. A report like thunder attended its passing out of sight. These and meteoric stones seem to be nearly or quite alike; at any rate, both have their origin in the chemical operations in the atmosphere, of all inflammable exhalations, and which being ignited, explode in the way which presents the phenomena herein named; or in passing become ignited in their approach to the centre of gravity; but perhaps the former is the more reasonable of the two hypotheses. The nature and composition of the falling stones, have, by their being analyzed, been fully explored, and spoken of in the world; and may we not readily conceive that some such hard matter falls somewhere, either on land, or at sea, whenever a meteor passes? In short, it is somewhat evident that meteors and meteorolites are closely connected.

The great meteor of 1783, was preceded by great heat and drought, with a most remarkable prevalence of a peculiar haze, which caused the sun by day to appear pale and white, and red at rising and setting; yet clouds were rarely seen. This extraordinary state of air continued with the heat and drought from June 22nd, to August 18th, when the vast and memorable meteor seemed to act in dispersing the haze, and effecting a thorough change. A similar fiery meteor at 11 p. m. on February 6th, 1840.

**BOLIDES, OR "SHOOTING STARS."** The smaller meteors, and which are more particularly prevalent in August and November, are called bolides. These, it is reasonable to suppose, are of the same nature as the larger fiery meteors, but too little has as yet been proved relative to the real origin and periodical exhibition of the "falling-stars" or "shooting-stars," as the phenomena in question are termed. It has still been placed beyond a doubt, that there are certain regular periods for the greater displays of the bolides, and the particulars regarding which have already been laid before the public. The two most notable periods for a numerous quantity of them, are about August 11th, and November 11th, 12th, or 13th; and indeed, on the last named day, an annual shower of them for several years was noticed to 1838 inclusive; but a far less number appeared in November, 1839. In August, 1839, I counted 16 in 15 minutes, near 10 p. m. of the 11th, as also many on the 10th; and we find by public express, that at Breslaw, in Prussia, 1008 were noted on the 10th night! Some of these meteors leave a very long white train visible a long time after they have vanished. Leaving the subject of bolides and

other meteors of the kind to the more skilful inquirers, and as much has been previously stated by them in reference to the question, I add no more upon them, except to point out when any ordinary display of them is likely to occur. The most favourable atmosphere for their appearance, is the clear and mild night, after storm and rain; or those nights which are clear and fine intervals between wet days. At any season, any one of such nights will present many of them, and unless a stormy atmosphere does exist, few will appear even at those periods, which are noted for the greater numbers of them: this being the case in November, 1839, fewer than usual were seen, but the August period was attended by storm, when the vast number were noted as above.

**SILENT LIGHTNING.** This matter is a subject of considerable dispute, since it remains to be proved, whether or not, a kind of lightning without report, really exists. By far the greater number of instances of lightning by night are attended by thunder, without doubt, we may infer, but the report is not audible to us; yet where the clouds producing the lightning are passing, thunder also occurs; hence distance alone in these cases renders it silent lightning to us. I have, however, great reason to conclude that a peculiar phenomenon will prevail at times, wherein pale flashes of light resembling lightning occur, and extend themselves over the whole visible arc in an autumnal or winter's night of cloudiness. From this fact, I feel inclined to pronounce the phenomenon as perfectly silent lightning, inasmuch as it flashes far and near, alike without report; but so far does it evidently differ from ordinary electrical discharges, that I must leave it to our scientific societies to divine whether it be not right to rank it among the more elevated electricity of the atmosphere, or to deem it as partaking somewhat of the nature of the aurora borealis. But after a stormy day at any season, we often see lightning in the East in the gone-by clouds, which become grouped on that horizon at night, in the eastern counties; hence they are probably discharging themselves on the German sea, consequently there is thunder, but none audible to us who are several miles in land.

**HALOES, PARHELIA, AND PARASELENE.** Haloes may appear under a variety of circumstances, as it may be hot or cold, tolerably clear and fine, or stormy and wet weather at the time; but certain it is, that as the solar halo presents the colours produced by the prism, there must be vapour suspended, of an aqueous kind which yields the colours to our view, in consequence of the sun's rays being refracted by them as by the prism. The halo may exist either with or without the parhelia or paraselene, yet these do not present themselves unless a halo appears. The colours are not so distinct in the lunar as in the solar phenomenon, but either are at times very clearly defined. When a cirrostratus cloud possessing a semi-transparency lies near the sun's apparent place, or hides his face, the halo is gene-

rally produced with one parhelion, or sometimes three parhelia or mock-suns, one below and one on each side of the true sun, but all within the outer limit of the halo; and the same circumstances relative to the moon will produce the paraselene, or mock-moon in the lunar halo. Cold and moist vapours are usually the cause of these phenomena, especially in the vernal months. Reflection and refraction present these to our eyes, for it is no mysterious occurrence, when we consider that the watery body may reflect the orb, as a window presents a multitude of suns or moons to a person standing out-doors in a peculiar situation, when either of the orbs shine. And the law of refraction is understood by all who know the optical illusion in the iris or rainbow, and hence the prismatic colours in the halo. Some other appearances are also attendant on the lunar halo, such as the corona and other similar displays, wherein the orb is surrounded by more or less lustre of a yellowish hue, but all are the effects of aqueous particles floating between us and the orb of light.

**THE IGNIS FATUUS.** This singular meteor arises with the pale mist of the valley, exhibiting its playful or lambent light to the traveller. The phosphorescent flame (for such it seems to be) appears to recede as we approach; hence, like the common mists and fogs, it ever remains invisible in the immediate space, while it shews itself at a distance. By this delusion of the sight, the vulgar have conceived that the phenomenon misleads the bewildered or nocturnal traveller, by enticing him to follow its apparent flight. It is undoubtedly the effect of gaseous exhalations from the marshes, where alone it prevails.

**WHIRLWINDS AND WATER-SPOUTS.** These are often connected natural events, but the land is subject to them in a very different form to those seen at sea. The whirlwind on land will at times take place in fine and clear weather, while that upon the seas is more commonly attended by water-spout, since the clouds lower at the time, as if attracted by the waters, and at the same time the sea water is raised by the whirling gust in the form of a pillar, the same as the dust is taken up by the same on land. Those who have witnessed the phenomenon at sea are quite aware of the appearance and consequences thereof, if a vessel be near the course of one. Combating currents may often generate the whirlwind, but although it will happen in very fine weather, its alarming effects are often a matter of great moment, on the land. The land "water-spout" or "bursting of a cloud" in heavy thunder-storms is further removed from that at sea; for, whenever an extraordinary volume of water burdens the atmosphere in a summer storm, the electrical charge may induce so rapid a condensation of the aqueous particles, that a hasty descent of the impetuous torrent may occur, inundating the valleys and forming deep trenches in the land where the storm discharges itself. The distressing consequences of such a visitation on

light soil, and where diversity of surface exists, as among hills and dales, are sufficiently known, without any remark upon them in this place. Whirlwinds have occurred in England, passing with so great a spiral or twisting velocity, as to lift up large pieces of timber, or our largest animals, and throw them to a great distance. At Bonsall, in Derbyshire, a remarkable instance of this occurred on May 12th, 1811. At Thrandeston, in Suffolk, on August 2nd, 1821, a red whirlwind took up part of a stall of crockery from the "fair ground," to a great height; and on September 14th, 1839, a similar one occurred in Yorkshire.

SINGULAR PHENOMENON IN CLOUDS, OR MOVING ELEPHANT'S TRUNK. This is a most singular and rare, but nevertheless well-known occurrence, to all observing persons. It is a dense portion of cloud depending from a common storm-cloud, and of the exact form and action of the proboscis of an elephant. In the great storm of November 26th and 27th, 1703, an instance of it occurred in Oxfordshire, the particulars whereof appear in "De Foe's Storm," which work presents letters and other expresses from different counties, descriptive of the alarming effects of the tempest which then raged. Just preceding the height of the storm, a moving spout or dense pillar of cloud was observed by the Rev. Joseph Ralton, of Besselsleigh, four miles S.W. of Oxford, and which the Rev. Gentleman stated in his letter, he "could compare to nothing better than the trunk of an elephant," except its being larger. It passed on, snapped a tree asunder, beat down a barn, and left a mark on the ground where it swept or twisted along: a man was also knocked down by it. (See page 88 and 89 of the said book.) I also witnessed one of these extraordinary events at a mile distant from the cloud, on August 25th, 1835, while at home, at Thwaite. This was on the first day of storm after six weeks of great heat and drought, and many dense nimbi with thunder were passing. The cloud in question was a very dark Nimbus with electrical discharges, and from the extremity depended the blacker column of vapour of the form of the proboscis before-named. It vibrated for several minutes, continuing the same well-defined shape until it was drawn upward into the cloud. Those who were near the passage of it stated that it appeared as red smoke in a moveable column constantly twisting, and producing a noise similar to a cascade. It left a mark upon the ground, levelled a wheat stubble in a narrow course, as if by a heavy roller; lifted pigs and clods of earth to a great distance, and injured trees, &c. This is, however, noted in its place, (see table for August, 1835,) yet properly belongs to this head of my design. The cause of this appears to be the meeting of currents, as in other whirlwinds, whereby the clouds are compressed into a point, and so condensed until the pillar is represented in the descent of the vapour with the whirling current. The red colour, in any

whirlwind, may arise from the extreme condensation and friction produced in the atmospheric matter.

SINGULAR KINDS OF PRECIPITATION. There is that at times falling from the clouds, which is neither rain, sleet, hail, or snow, yet partaking of the nature of both the last-named. This phenomenon presents itself in the form of soft balls, about the size of nutmegs, and these are soft and light, rather dividing or spreading on the ground, than rebounding as hail does. A peculiar state of atmosphere, relative to the temperature where such kinds of formation arise, must at the time exist, to produce them. An instance was noted in the midland counties on July 5th and 6th, 1805, but it rarely occurs.

During the severe thunder-storms of June, 1839, a mass of hailstones fell in the city of Exeter, it was four feet in length, and two inches in thickness, appearing as a sheet of ice, or united hail! Here must have been a second and more rapid congelation occurring in the descent of the hail, produced, as I noted under the head of "Hail," by a sudden extraction of caloric being repeated in the continued electrical discharges.

On July 2nd, 1823, during a thunder-storm, at Coddenham, Suffolk, a perfectly round and hot stone fell from the cloud, its surface smooth in part, and of a dusky grey colour; its size, that of an orange, or thereabouts. This, perhaps, was a meteorite, or at least nearly of the same nature.

In closing a chapter of miscellaneous observations, I must not omit a further point of considerable interest, which is the natural operation of evaporation.

EVAPORATION. This is precisely the opposite effect to that of precipitation, and yet these two opposed works of nature are closely connected with each other. The greater the one, the greater also may be the other, in most instances, and it is proper in this place to point out the principal causes of an excess or diminution of evaporation. The month of May produces as great a quantity as any period, and sometimes the greatest in the year, but we usually find it about the same, if a fine season, until August closes; and from November to February we notice the least. But as relates to monthly results, I have before shewn sufficient on this head in Chapter 2nd, I will therefore briefly mention daily causes and results. A brisk easterly wind at any temperature will promote it, and the same with a high temperature in May, June, July, or August, will give a result of from '3 to '4 of an inch evaporation! Rain frequently succeeds in a short period, for reasons already given in Chapter 2nd. (July.) The air when in motion will always dry up moisture, more than calm is found to do, but easterly winds possess most of the drying property. The damp and murky day in winter yields no evaporation, hence if only one inch of rain falls in a winter month, the earth retains a miry

surface; while in summer it is usually clean walking with even a monthly fall of three inches of rain or more! All this is from the difference in evaporation at the two periods of the year, which indeed is manifest to all who consider the matter. The main causes of the former (or winter) extreme, are the shortness of the day, loss of sun, uniform dampness or gloominess, fall of temperature, and in the earlier part of winter, a great calmness with low clouds or the mizzling stratus. In clear windy weather, however, at this season, a day will yield about .03 or .04 of an inch of evaporation.

I now close this separate part of my design, with Chapter 12th, and pass on in offering a brief record of remarkable occurrences in our climate, previously to entering upon the tabular, or second part of my work, and which I sincerely hope may be accepted together with the rest.

## REMARKABLE OCCURRENCES IN THE CLIMATE OF ENGLAND.

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- 1076 A great earthquake; and a frost from November to April, 1077.
- 1088 A great dearth—corn green till November.
- 1091 October 18th, 500 houses blown down in London.
- 1114 The Thames dry for three days.
- 1185 Lincoln cathedral destroyed by an earthquake, and some other churches also.
- 1197 A great famine and mortality.
- 1233 Thunder and lightning 15 days together, and harvest began in October.
- 1287 January 1st, dreadful storm and several churches at Ipswich destroyed.
- 1338 } A great rain for six months.
- 1348 } Great plagues.
- 1361 } Great plagues.
- 1407 } Frost ten weeks—Thames frozen to Gravesend.
- 1437 Great dearth.
- 1472 } Great plagues.
- 1478 } Another great sickness.
- 1500 A severe frost after great winds and wet.
- 1525 An alarming drought and mortality.
- 1542 A dreadful prevalence of “sweating sickness.”
- 1558 Two towns in Nottinghamshire destroyed by a thunder and hail-storm.
- 1565 July 16th, dreadful thunder-storm in Essex, 500 acres of corn destroyed near Chelmsford.
- 1574 A great dearth.
- 1577 August 4th, dreadful thunder-storm in Suffolk, and two persons struck dead in Blithburgh church, during divine service.
- 1592 The Thames almost dry.
- 1603 Plague in London.

- 1608 } Frost four months, and heavy carriages passed on the Thames.  
 1609 }  
 1625 Great plague in London.  
 1630 May 29th, a bright star shone all day.  
 1658 September 3rd, (when Oliver Cromwell died) a most terrible storm.  
 1662 February 18th, great storm of wind, much damage in London, and Ipswich spire destroyed.  
 1665 The great plague in London.  
 1683-4 Frost, thirteen weeks.  
 1703 The most terrible wind ever known, on November 26th and 27th, with alarming results.  
 1716 Great frost, and fair on the Thames.  
 1739-40 Great frost, for near four months.  
 1757 July 12th, very great heat.  
 1762 February, snow for eighteen days together.  
 1785 Frost, for sixteen weeks.  
 1787 August 9th, the most awful thunder and lightning all night, that we have on record.  
 1788 } Frost from November 25th to March.  
 1789 }  
 1793 Very great heat in July.  
 1794 } Great frost from December to March 20th.  
 1795 }  
 1796 December 25th, an unusually severe frost.  
 1808 Extraordinary heat in July, thermometer 99° on 14th.  
 1818 Excessive heat and drought from May 17th till Sept. 5th.  
 1819 Great heat and drought, July and August.  
 1820 Very severe winter.  
 1825 July, intense heat and dryness.  
 1826 Very hot and dry summer.  
 1828 } Remarkably wet summers.  
 1829 }  
 1835 July and August, violent drought.  
 1836 December 25th, an alarming snow storm.  
 1838 Very severe winter—a sheep roasted on the Thames.  
 1839 January 6th and 7th, dreadful wind—July 7th, awful thunder-storm.

A TABLE of the Annual Extremes of Temperature in England, with the Winds attendant thereon, shewing the difference between one year and another, as well as proving what periods most generally produce either extreme in our climate. The 3rd and 6th columns give the state of the Thermometer at the several periods expressed, chiefly observed in the Eastern counties.

Years.	Coldest days.	Ther.	Wind.	Hottest days.	Ther.	Wind.
1783				August 1st	90	E.
1784				July 7th	85	S.E.
1785				July 3rd	85	S.E.
1786	January 2nd	15	W.	July 24th	82	S.W.
1787	November 30th	22	E. S. E.	August 9th	85	S.E.
1788 {	December 29th	5	N. W.	{ June 18th, July 12th (and Aug. 4th, each	85	S. W. & W.
1789	January 5th	6	N. W.	June 17th, Aug. 29th	83	S.E.
1790	December 28th	28	N. W.	June 22nd	88	S.E.
1791	December 11th	18	N. W.	August 14th	81	S.E.
1792	February 21st	18	W. N. W.	August 12th	87	S.W.
1793	January 18th	25	E. N. E.	July 16th	90	S.
1794	January 9th	18	S. W.	July 7, 8, and 13th	87	W. & S.
1795 {	January 24th & 25th	4 {	Various and calm.	{ September 7th	89	S. E.
1796	December 25th	0—2	W.	June 26th	82	S. W.
1797	November 25th	26	W.	July 16th & 27th	89	S.
1798	December 27th	2	E.	June 28th	85	S. S. E.
1799	December 30th	0—3	Various	July 7th	79	S. W.
1800	January 1st	16	S. E.	August 2nd	88	S. W.
1801	December 14 & 19th	20	W. N. W.	August 20th	85	S. E.
1802	January 15 & 16th	1	W.	August 9th	86	Various
1803	February 11th	10	E.	July 2nd and 31st	87	S. E.
1804	December 24 & 30th	17	Various	Sept. 13th & 16th	87	S. E.
1805	December 17th	15	N. W.	July 4th	82	S.
1806 {	March 12th	22	N. E.	June 10th	86	E.
1807 {	January 15th	16	S. W.	May 25th	85	Various
1808	December 8th	16	W. N. W.	July 22nd	85	Various
1809	January 22 & 23rd	6	S. S. W.	July 14th	99	Various
1810	January 23rd	14	W.	August 11th	83	S. W.
1811	January 16th	8	W. S. W.	September 2nd	85	E.
1812	December 30th	12	W.	July 28th	88	S.
1813	December 7th	14	S.	July 18th	83	S. E.
1814	January 28th	22	Various	June 1 and Aug. 12	83	E. & S. W.
1815	January 9th	4	Various	July 28th	88	S. S. E.
1816	January 19th	19	N. E.	July 14th	83	S. S. E.
1817	February 9th	4	N.	July 20th	84	S. S. E.
1818	March 21st	18	W.	June 21st and 25th	88	N. W.
1819	February 3rd	3	N. N. E.	July 24th	90	S. S. E.
1820	December 9th	17	E.	July 4, 30, and 31st	85	S. E. & N. E.
1820	January 15th	0—3	Various	June 25th	87	N. W.
1821	February 27th	17	S. E.	August 24th	82	E.
1822	December 20 & 30th	20	E.	June 10th	86	E.
1823	January 19th	8	W. N. W.	August 25th	81	W.
1824	March 4th	22	N. W.	September 2nd	83	E.
1825	February 5th	23	N. W.	July 19th	91	S. E.
1826	January 16th	15	N. W.	June 28th	89	S. E.
1827	February 17th	14	N. W.	August 2nd	83	S.
1828	January 10th	25	N. E.	July 3rd	83	S. W.
1829	January 25th	18	N. W.	June 14th	81	S. W.
1830 {	January 18th	9	W.	{ July 30th	86	S. E.
1831	December 26th	4	E.	July 28th	82	S.
1832	January 26th	20	N. W.	August 10th	85	S. W.
1833	February 15th	20	N. W.	May 16th and 17th	85 <sup>1</sup>	S. W.
1834	January 23rd	19	N. E.	June 21st	88	S. S. E.
1834	December 24th	26 <sup>1</sup>	N. W.	June 11 & Aug. 10th	86	S. E. & S. W.
1835	December 26th	18	W.	July 4th and 6th	85	S.
1836	January 2nd	22	E.	August 17th	82	S. E.
1837	March 27th	16 <sup>1</sup>	N. E.	July 6th	81	S.
1838	January 20th	2	N. E.	August 3rd	89	Various
1839	Jan. 30 & March 10	17	N. W. & N. E.			

Note.—In 1796 and 1799 it was 2 and 3 below zero respectively, as the 0—2 and 0—3 signify above.

The Monthly and Annual Mean Temperature of London, from 1772 to 1780, was as stated below.

January . . . . .	35° 9	May . . . . .	56° 6	September . . . . .	59° 6
February . . . . .	42° 3	June . . . . .	63° 2	October . . . . .	52° 8
March . . . . .	46° 4	July . . . . .	66° 3	November . . . . .	44° 4
April . . . . .	49° 9	August . . . . .	65° 8	December . . . . .	41° 0
Annual . . . . .					51° 9.

The greatest usual cold about 20 degrees, occurring in January; and the greatest usual heat 81 degrees, happening generally in July. Annual variation 2° 5, or one degree above, and 1° 5 below the mean.

The greatest variations of the mean of the same month in different years, are as follows:—

January . . . . .	6 deg.	May . . . . .	2° 5	September . . . . .	3° 5
February . . . . .	5	June . . . . .	2	October . . . . .	4
March . . . . .	4	July . . . . .	2	November . . . . .	4
April . . . . .	3	August . . . . .	2	December . . . . .	3

From which it appears that summers differ much less than the winters.

NOTE.—The above is an extract from "Kirwan's Temperatures of all Latitudes."

### GENERAL RAIN TABLES FOR ENGLAND, IN INCHES.

1830.

1831.

1832.

	Epping	Boston	Thwaite	Bedford	Epping	Thwaite	Epping	Kendal	Thwaite
Jan.	1.83	1.65	3.00	1.327	1.775	3.44	1.04	2.278	.463
Feb.	1.69	1.66	2.10	2.592	2.634	3.86	.361	4.258	.20
Mar.	.53	.12	.24	2.662	2.174	2.94	1.529	3.549	1.87
Apr.	2.25	2.63	2.91	1.167	1.549	1.20	.746	2.235	.66
May	2.67	4.01	2.52	1.553	1.511	3.02	1.872	1.602	2.30
June	3.58	3.95	4.02	3.02	2.467	3.00	3.244	4.643	2.82
July	1.48	2.02	.81	3.203	3.041	2.69	.872	2.639	1.04
Aug.	3.35	2.33	2.30	3.816	2.73	1.30	3.993	4.433	3.60
Sep.	3.75	4.20	3.94	4.458	5.197	4.21	.852	2.295	.65
Oct.	.65	.64	.40	4.950	3.637	3.51	3.755	8.346	1.65
Nov.	3.16	1.34	1.80	4.312	1.637	2.33	1.955	5.373	2.50
Dec.	1.30	1.35	2.61	4.788	2.575	2.10	2.452	8.037	2.287
Totals	26.24	25.90	26.65	37.848	30.927	33.60	22.671	49.688	20.04

Epping and Kendal, from their situation, are the extremes of dry and wet, for all England.

1833.

	Ackworth	Bedford	Boston	Chiswick	Epping	Penzance	Wycomb	Thwaite
Jan.	.76	.881	.64	.52	.623	3.725	.87	.50
Feb.	2.76	4.933	4.54	3.98	5.062	9.73	5.68	5.70
Mar.	1.34	.331	2.26	1.22	1.028	5.655	1.28	1.60
Apr.	2.78	1.88	2.30	2.71	2.544	3.315	2.58	3.67
May	.54	.418	.53	.68	.858	.800	.38	.28
June	3.11	2.042	3.17	2.63	2.788	5.600	2.62	3.40
July	1.09	1.599	.60	1.46	2.306	1.81	1.88	2.63
Aug.	4.05	3.388	2.02	1.93	3.285	1.135	2.20	1.90
Sep.	1.49	1.26	1.49	1.55	1.439	4.305	1.89	2.75
Oct.	2.76	1.826	2.23	2.37	2.13	3.765	2.81	1.50
Nov.	1.32	1.508	.86	2.38	2.312	4.665	2.48	1.38
Dec.	2.61	1.926	1.98	4.29	4.857	7.78	4.90	3.65
Totals	25.06	21.992	22.62	25.72	29.227	52.285	29.57	28.96

1834.

	Ackworth	Bedford	Boston.	Chiswick	Epping	Essex.	Suffolk.	Thwaite
Jan.	3.70	2.589	2.41	2.87	4.521	2.72	2.627	3.27
Feb.	.57	.512	.45	.37	.70	.45	.432	.52
Mar.	1.49	.341	.36	.86	.594	.66	.54	.50
Apr.	1.83	.709	.64	.65	.466	.65	.702	.77
May	.66	.805	.81	1.19	1.036	.86	.54	.35
June	1.99	.821	1.36	1.63	1.674	1.65	1.215	1.66
July	7.03	2.032	3.84	6.34	4.294	5.83	3.545	2.44
Aug.	2.09	1.482	1.39	2.73	2.439	3.56	1.555	3.30
Sept.	1.83	3.115	1.30	.83	1.118	.59	1.195	1.37
Oct.	.26	1.148	.67	.43	.383	.61	.86	1.27
Nov.	1.16	1.71	.79	1.75	1.782	1.52	1.34	1.30
Dec.	1.13	.512	.64	.74	.864	.59	.85	.81
Totals	23.74	15.776	14.66	20.39	19.871	19.69	15.401	17.56

1835.

	Ackworth	Bedford	Boston	Chiswick	Epping	Kendal	Thwaite
Jan.	1.77	1.148	1.72	.72	1.017	5.349	2.00
Feb.	2.69	2.703	2.00	2.61	2.896	8.82	2.70
Mar.	1.67	2.875	2.68	1.97	2.74	5.049	3.328
Apr.	1.06	1.667	1.79	1.06	1.886	1.589	2.123
May	2.60	5.173	2.10	3.38	1.523	3.063	2.04
June	2.28	2.616	2.04	1.99	2.139	1.254	2.10
July	.63	.945	1.20	.41	.516	6.259	.40
Aug.	1.55	.474	.84	.18	.929	8.107	.48
Sept.	2.33	4.159	2.61	4.60	4.78	7.815	3.90
Oct.	2.47	4.223	3.58	4.05	5.61	4.386	4.73
Nov.	2.02	2.383	1.74	1.94	2.297	6.311	1.68
Dec.	.12	.295	.27	.25	.477	2.889	.175
Totals	21.19	28.661	22.57	23.16	26.81	55.891	25.656

1836.

	Ackworth	Bedford	Boston	Chiswick	Hemping-ham, Rutlandshire.	Epping	London	Thwaite
Jan.	1.65	2.095	1.11	1.79	1.63	2.221	1.599	1.38
Feb.	2.02	1.30	1.87	1.61	2.19	1.644	2.056	1.69
Mar.	3.39	3.887	2.24	3.30	3.50	3.877	2.43	3.44
Apr.	1.48	2.413	1.60	2.98	1.75	2.662	2.488	2.145
May	.68	.696	.47	1.01	.25	.928	.808	.33
June	2.72	2.334	1.48	1.66	1.81	2.065	.898	2.243
July	2.33	2.085	1.60	1.78	1.38	1.992	1.886	1.684
Aug.	.69	.948	1.22	1.97	1.06	1.352	.993	.72
Sept.	2.10	2.243	2.38	3.81	1.88	3.317	2.773	3.83
Oct.	1.71	3.824	2.73	3.62	2.37	4.283	3.063	3.98
Nov.	4.67	3.218	3.46	3.60	4.56	3.732	2.108	3.29
Dec.	1.77	1.806	1.22	1.48	1.63	2.058	1.646	.89
Totals	25.21	26.849	21.38	28.61	24.01	30.131	22.748	25.622

Mean of the eight.

1837.

	Ackworth	Bedford	Empingham	Epping	Estwaite Lodge, Lancashire	Kendal	York	Thwaite
Jan.	3.28	2.991	3.96	2.018	5.323	3.431	3.09	2.16
Feb.	3.16	2.223	1.94	2.42	8.379	5.84	2.21	2.02
Mar.	.99	.599	.75	.237	2.776	1.985	.86	.86
Apr.	2.00	1.868	1.81	1.066	3.238	1.61	2.01	2.28
May	1.62	2.151	1.31	1.186	1.133	1.195	1.14	1.15
June	1.51	1.05	1.38	1.156	6.604	3.61	1.21	1.65
July	2.64	2.491	1.22	2.045	5.716	4.73	3.82	1.30
Aug.	1.39	5.845	2.01	3.199	3.409	3.113	1.31	3.64
Sept.	2.13	2.392	1.88	1.206	5.175	4.181	1.80	1.36
Oct.	2.08	1.466	1.85	2.15	8.53	5.316	1.76	2.45
Nov.	1.65	1.911	2.21	1.893	9.622	6.18	1.28	2.10
Dec.	2.94	1.519	2.05	1.346	9.201	7.201	3.43	1.77
Totals	25.39	26.506	22.37	19.922	69.146	48.392	23.92	22.74

1838.

	Ackworth	Bedford	Empingham	Epping	Greenwich	Thwaite
Jan.	1.00	.417	.73	.364	.80	.10
Feb.	3.35	4.29	1.43	1.993	1.85	.84
Mar.	1.40	1.204	.91	1.222	.95	1.38
Apr.	1.58	1.60	1.47	1.006	.55	1.12
May	3.38	.921	1.69	.635	1.40	.94
June	2.61	3.046	2.77	3.586	4.60	3.37
July	1.82	2.253	2.47	2.222	1.85	1.77
Aug.	2.59	1.228	1.22	1.341	.95	1.70
Sept.	1.41	2.554	2.05	2.272	2.65	1.57
Oct.	3.31	1.791	1.50	2.38	1.80	1.68
Nov.	2.01	3.322	2.29	3.012	3.00	2.78
Dec.	.56	.846	1.03	2.282	1.60	1.42
Totals	25.02	19.611	19.56	22.315	22.00	18.67



# METEOROLOGICAL TABLES,

FROM DAILY OBSERVATIONS,

AT THWAITE, SUFFOLK.

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THE following Tables faithfully depict the state of the weather and instruments, as observed at the above-named place by the author, and the notes appended to each year show the particular phenomena at the time, and also bear testimony of what weather occurred, or existed in other parts of the island, so as more fully to represent the "Climate of England."

## EXPLANATION OF THE TABLES.

The reader will perceive by the heading of the columns, what each of them gives, but a few words in addition may here be requisite. The force of the wind is denoted by 0 for calm, 1 for gentle, 2 fresh, 3 brisk, 4 boisterous, and 5, 6, 7, &c., higher degrees of violence. The barometer and thermometer are put down as the heads imply; and every scientific reader may, I trust, comprehend the whole with facility, since I have endeavoured for that end to render the statement as plain as possible.

The mean of pressure and of temperature, are intended to shew the mean of extremes, and which in most cases will be found nearly or quite that of each period, as found by the other method of adding up the whole, and dividing by the number.

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## APHORISM—ON TEMPERATURE.

It is necessary to state, that the thermometer is usually lowest at dawn, or between dawn and sun-rise, hence its minima stand before the maxima, in the tables here. The maxima or highest states are most generally found to occur at or near 2 P. M. all the year round; but in June and July it sometimes may be as late as 3 P. M. or after, that we notice the maximum or highest state of thermometer.

On some occasions I have known it 4 P. M. before the greatest heat occurs in June or July, but if the wind be eastward, the heat decreases by 2 P. M. or before, and in August it seldom increases after 2 P. M. as the day shortens, yet of course from the heated soil this month may exceed others sometimes.

## JANUARY, 1830.

Day.	Wind.	Force.	Barom. p. m.	Therm.			Rain.	Weather.
				Min.	8 a. m.	Max.		
Jan. 1	N. W.	1	30°71	28	29	35		Little snow and frost
2	N.	1	·61	30	31	33		Cloudy and frost
Su. 3	N.	0	·50	33	35	38		Cloudy and thaw
4	N. W.	0	·33	35	35	38		Fog
5	N. W.	1	·30	35	36	38		Fair
6	N. W.	1	·40	29	30	37		Fair and frost
7	N. W.	4	29°90	40	40	42		Stormy, snow 7 p.m.
8	N. W.	3	30°17	32	33	36		Frequent hail and snow
9	N. W.	3	·25	31	31	36		Full M. 3 a.m. snow
Su. 10	N. W.	5	29°78	31	31	34		Continual snow
11	N. W.	4	·59	33	34	35		Frequent snow
12	N. E.	2	·97	28	29	32		Heavy snow and frost
13	N. E.	3	·96	28	29	32		Very heavy snow, frost
14	E.	3	30°06	23	27	31		Cloudy, fair, frost
15	N. E.	0	·03	32	34	36		Overcast, some snow
16	N. E.	1	·01	29	33	35		Overcast
Su. 17	N. W.	0	·00	20	24	29		Fair, severe frost
18	N. W.	0	·02	9	10	24		Very severe frost, cloudy
19	S. W.	1	29°75	20	20	28		Thick haze and frost
20	E.	6	28°86	26	31	36		Gale and snow drifting
21	S.	1	29°52	31	31	36		Cloudy
22	E.	0	·90	32	34	37		Cloudy
23	E.	1	30°07	31	31	35		Little snow
Su. 24	S. E.	0	·15	34	34	39		New M. 5 p. m. overcast
25	N. W.	0	·35	34	34	39		Foggy
26	Var.	0	·48	34	35	38		Foggy
27	S.	1	29°95	33	34	35		Considerable snow
28	N.	0	30°25	33	34	36		Dense fog, little snow
29	N. E.	0	·10	30	33	36		Cloudy
30	Var.	1	·01	28	32	34		Continual snow
Su. 31	N.	1	·21	18	19	24		Severe frost, snow
				9	42	3·00		

## RESULTS.

Prevailing winds from N.W. to N.E.

Barom.	{ Max. on 1st . . . . .	30°71	Therm.	{ Max. on 7th . . . . .	42 degrees
		Min. on 20th . . . . .			9
Range . . . . .		1·65		Range . . . . .	33
Medium . . . . .		29°78		Medium . . . . .	25·5

Depth of rain and melted snow, 3 inches. Fine days, 17 in number.

## FEBRUARY, 1830.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	E.	1	30°00	22	27		Severe frost, snow
2	E.	3	.00	17	20		Very severe, and snow
3	E.	3	29°99	21	22		Severe, with snow
4	N. E.	1	.82	21	33		Severe, with snow
5	N.	1	.75	18	24		Severe, with snow
6	N. E.	1	.68	17	24		Severe, with snow
Su. 7	S. E.	4	.50	24	37		Full M. 8 p. m. Thaw, p. m.
8	W.	5	.40	41	44		Windy, thaw, vales flooded
9	S. W.	0	.31	37	40		Rain
10	N. W.	1	.97	34	40		Showers with snow
11	S. W.	2	30°30	29	40		Fair, little frost
12	S. W.	3	.31	34	41		Fair
Su. 13	S. E.	1	.30	31	39		Fair, frost
14	S. E.	1	.16	29	39		Frost, cloudy
15	N. E.	0	.47	32	39		Fog
16	N. W.	0	.38	29	35		Fog
17	W.	2	29°90	28	33		Fog, rime on trees
18	N. W.	2	.86	31	36		Showers, hail and snow
19	W.	2	.80	28	38		Fair and frost
Su. 20	N. W.	2	.87	26	38		Fair and frost
21	S. W.	2	.57	32	37		Much rain and snow
22	N. W.	6	.60	30	39		Gale, frost, and snow
23	E.	0	.71	37	48		New M. 4½ a.m. overcast
24	W.	2	30°15	47	55		Cloudy, mild
25	S. W.	1	.30	47	57		Fair, warm and sunny
26	S. W.	2	.16	48	54		Fair, mild
27	S. W.	2	.14	48	55		Fair, mild
Su. 28	W.	5	.06	48	54		Little showers, p. m.
				17	57	2·10	

## RESULTS.

Barom.	{ Max. on 15th . . . . .		30°47	Therm.	{ Max. on 25th . . . . .		57 degrees	
	Min. on 9th . . . . .	29·31			Min. on 2nd . . . . .	17		
Range . . . . .		1°16	Range . . . . .		29·89	Medium . . . . .		
Medium . . . . .		29·89	Medium . . . . .			37		

Depth of rain, 2·10 inches. Winds variable. Fine days, 16.

## MARCH, 1830.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S. W.	0	30·45	38	55		Fair and bright at times
2	S. E.	0	.50	45	52		Fair and bright at times
3	S.	0	.52	45	50		Fair and bright at times
4	E.	3	.30	33	45		Fair and bright at times
5	S. E.	1	.10	33	45		Fair and bright at times
6	S. E.	1	.14	33	51		Fair and bright at times
Su 7	E.	3	.17	30	44		Fair and bright at times
8	S. E.	3	.17	29	47		Fair and bright at times
9	S. E.	3	29·75	39	44		Fair and bright at times
10	N. W.	0	.75	44	50		Cloudy
11	W.	5	.70	49	57		Fair, windy, and mild
12	W.	6	30·17	47	57		Fair and windy
13	W.	6	.35	42	52		Fair and windy
Su 14	S. W.	4	.13	37	54		Fair and windy
15	S. W.	4	29·62	42	50		Fair and windy
16	W.	4	.81	36	49		Storms of hail
17	W.	4	30·00	43	58		Some rain, fair p. m.
18	S. W.	4	.23	48	59		Cloudy
19	S. W.	4	.31	49	56		Cloudy
20	W.	4	.14	45	54		Stormy with hail
Su 21	W.	1	.41	42	60		Fair, warm, and clear
22	S. W.	2	.13	46	53		Cloudy
23	W.	2	.05	40	54		Fair
24	W.	1	.15	51	58		New M. 3 p. m. fair
25	W.	1	.48	43	62		Fair and warm
26	W.	1	.68	52	71		Fair, very warm
27	W.	1	.63	40	70		Fair, very warm and sunny
Su 28	E.	0	.51	37	66		Fair, very warm and sunny
29	S.	0	.26	40	68		Fair, very warm and sunny
30	N. E.	2	.01	43	56		Fair, cold wind
31	S. W.	1	29·82	40	60		Fair, hazy p.m., 8 p.m. rain
				29	71	0·24	

## RESULTS.

Barom.	{ Max. on 26th . . . . .	30·68	Therm.	{ Max. on 26th . . . . .	71 degrees
	Min. on 15th . . . . .	29·62		Min. on 8th . . . . .	29
Range . . . . .		1·06	Range . . . . .		42
Medium . . . . .		30·15	Medium . . . . .		50

Pervailing winds westerly. Depth of rain, 24 of an inch.

## APRIL, 1830.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	N. E.	3	29.81	41	45		Cloudy and cold, lit. snow
2	E.	3	.57	38	40		Snow & rain, p. m. heavy
3	N. W.	4	.29	42	43		Overcast, rainy [snow
Su. 4	N. W.	1	30.25	32	45		Fair and cold
5	W.	1	.05	32	50		Fair and cold
6	W.	3	29.95	34	57		Fair
7	S. W.	3	.89	48	59		Fair
8	S. E.	2	.74	47	66		<i>Full M. 7 1/2 a.m. fair &amp; warm</i>
9	S.	2	.52	50	68		Fair, very warm
10	W.	2	.41	50	58		Rainy
Su. 11	W.	2	.65	48	54		Stormy and thunder
12	W.	2	.42	50	57		Showery
13	N. W.	2	30.10	48	55		Showery
14	S. W.	2	.02	48	62		Cloudy and fine
15	S. W.	2	29.91	51	60		Showery and warm
16	W.	2	.71	54	66		Showery and warm
Su. 17	S. W.	1	.80	54	64		Showery and warm
18	S. W.	1	.95	49	64		Fair, clear, and warm
19	W.	1	.68	48	57		Stormy and thunder
20	W.	7	.43	46	57		Rain 8 till 11 a.m. Hur-
21	S. W.	3	.81	45	56		Stormy & hail [ricane p.m.
22	S. W.	1	.31	51	57		<i>New M. 12 nt. cloudy</i>
23	S. W.	3	.30	52	57		Cloudy, with storms of rain
24	S. W.	6	.27	48	55		Windy, with hail-storms
Su. 25	N. W.	3	30.15	43	57		Fair
26	S. W.	2	.32	46	63		Fair and warm
27	S. E.	2	.37	45	62		Fair, bright, and warm
28	S. E.	1	.30	50	66		Fair, bright, and warm
29	S. E.	1	.15	52	66		Fair, bright, and warm
30	S. E.	1	.01	52	71		Fair, bright, & very warm
				32	71	2.91	

## RESULTS.

Barom.	{ Max. on 27th . . . 30.37 Min. on 24th . . . 29.27	Therm.	{ Max. on 30th . . . 71 degrees Min. on 4th . . . 32
Range	. . . . . 1.10	Range	. . . . . 39
Medium	. . . . . 29.82	Medium	. . . . . 51.5

Depth of rain, 2.91 inches. Prevailing winds westerly. Fine days, only 14.

MAY, 1830.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S. W.	2	30·12	52	65		Fair
Su 2	W.	1	.22	46	63		Fair, showers distant
3	E.	1	.30	37	61		Fair, frosty morning
4	E.	1	.25	36	62		Frosty morning, fair
5	S. E.	0	.18	50	70		Fair, very warm
6	E.	1	29·99	56	72		Fair and hot
7	E.	1	.70	56	70		Fair and hot
8	E.	1	.75	55	61		<i>Full M.</i> 1 a.m. rain p.m.
Su 9	E.	2	.44	52	53	Rain	
10	N. E.	1	.60	47	53		Cloudy, cold wind
11	N. E.	3	.85	42	49		Cloudy, very cold breeze
12	N.	1	.96	43	51		Little showers, cold wind
13	N.	2	30·09	44	52		Cloudy
14	N. W.	0	.27	44	56		Cloudy
Su 15	S. W.	0	.30	47	63		Fair and warm
16	W.	0	.40	50	66		Fair and warm
17	W.	1	.28	57	73		Fair and hot
18	S. W.	1	.03	58	74		Fair, very hot
19	W.	0	29·95	52	63		Fair
20	E.	2	30·11	52	59		Fair
21	E.	2	29·94	48	57		Fair
22	Var.	0	.93	50	58		<i>New M.</i> 7 a.m. cloudy & fine
Su 23	E.	1	.35	50	64		Fair 8 p.m. thunder-storm
24	S.	2	.82	55	69		Fair and sultry
25	S. W.	1	.64	56	64		Showery, thunder
26	W.	2	.47	53	60		Showery
27	W.	2	.65	50	53		Rain
28	N. W.	1	30·10	50	57		Cloudy
29	S. W.	2	.17	46	61		Fair
Su 30	S. W.	2	29·84	53	58		Showery
31	S. W.	3	30·05	53	62		Fair
				36	74	2·52	

## RESULTS.

Barom.	{ Max. on 16th . . . . .	30·40	Therm.	{ Max. on 18th . . . . .	74 degrees
	Min. on 9th . . . . .	29·44		Min 3rd night . . . . .	36
Range . . . . .		.96	Range . . . . .		.38
Medium . . . . .		29·92	Medium . . . . .		.55

Depth of rain, 2·52 inches. Winds variable. Fine days, 22.

## JUNE, 1830.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S. W.	4	30·12	50	64		Fair a. m. showers p. m.
2	S. W.	0	.25	50	66		Fair [wind N.W.
3	E.	1	29·63	53	65		Fair a. m. Thunder-storm
4	S. W.	2	.70	51	58		Rainy [p. m.
5	S. W.	0	30·11	53	69		Fair & warm,dense cumuli
Su. 6	W.	1	.11	53	69		Full M. 2 p.m. fair & warm
7	S. W.	1	.00	51	64		Heavy showers
8	N.	1	.13	50	57		Cloudy
9	N. E.	2	.11	50	57		Overcast, light rain
10	N. W.	2	.01	48	52		Rain all day
11	W.	1	.09	47	66		Fair,cumuli clouds, show-
Su. 12	S. W.	2	29·83	45	62		Showery [er 7 p. m.
13	W.	2	.83	44	59		Showery
14	N. W.	1	.71	47	52		Frequent heavy rain, thun.
15	N.	2	.81	43	60		Dense cumuli, lit. showers
16	E.	0	30·00	47	65		Fair
17	N.	1	.02	47	57		Cloudy and cold
18	S. W.	2	29·85	44	65		Fair
19	N. W.	3	.65	48	58		Rainy morning, showery
Su. 20	N. W.	4	.65	48	59		New M. 3 p. m. cloudy
21	N. E.	1	.62	50	60		Fair
22	N. E.	1	.50	49	60		Rain 5 to 10 a. m. fair
23	N. W.	1	30·02	43	63		Fair
24	S. E.	1	.09	52	65		Fair and clear
25	E.	1	29·87	55	63		Hazy, thun.-storm night
26	S. W.	1	.93	59	75		Fair, very hot
Su. 27	S. W.	0	.98	59	77		Fair, very hot
28	S. W.	2	.95	55	74		Fair and hot
29	S. W.	2	30·07	55	71		Fine and warm
30	Var.	1	.19	50	70		Fair
				43	77	4·02	

## RESULTS.

Barom.	{ Max. on 2nd . . . . .	30·25	Therm.	{ Max. on 27th . . . . .	77 degrees		
		29·50			43		
Range . . . . .		.75	Range . . . . .		34		
Medium . . . . .		29·87	Medium . . . . .		60		

Depth of rain, 4·02 inches. Fine days, 18. Prevailing winds, S. W.

JULY, 1830.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	E.	2	30·01	51	68		Fair, rainy evening
2	S. W.	1	29·81	57	68		Showery
3	S. E.	1	'84	54	64		Showery
Su. 4	N. W.	0	'97	53	65		Fair, cloudy
5	S. W.	0	'98	50	66		Fair, cloudy
6	S. W.	1	'71	53	68		<i>Full M.</i> 2 a.m., fair
7	S. W.	2	'61	51	66		Showery and thunder
8	W.	1	'76	50	62		Fair
9	S. W.	3	'70	49	56		Cloudy, little showers
10	S. W.	1	'81	49	60		Fair
Su. 11	S.	1	'98	47	60		Fair, cloudy
12	W.	2	'98	47	62		Showery
13	W.	2	30·13	55	68		Fair, clear and warm
14	S. E.	2	'25	55	72		Fair and hot
15	S. W.	1	'10	54	74		Fair and hot [night]
16	S. W.	2	'15	54	71		Fair, Aurora Borealis
17	S. W.	2	'07	51	69		Fair, little wet evening
Su. 18	S. W.	1	29·90	60	67		Sultry, with showers
19	W.	1	30·11	54	72		Fair
20	S. W.	2	'22	55	68		<i>New M.</i> 1 a.m., fair
21	W.	1	'31	53	75		Fair, very hot
22	S. W.	1	'29	59	71		Fair, sultry
23	W.	1	'19	61	76		Fair, very hot
24	W.	0	'11	61	73		Fair and sultry
Su. 25	W.	0	'36	57	78		Fair, very hot
26	S. E.	0	'37	63	81		Fair, bright, and very hot
27	E.	1	'50	63	80		Fair, bright, and very hot
28	E.	2	'46	54	81		Fair, bright, and very hot
29	E.	1	'21	61	81		Fair, bright, and very hot
30	S. E.	1	'04	65	86		Fair, bright, & extreme heat
31	W.	1	'20	64	80		Fair very hot
				47	86	0·81	

## RESULTS.

Barom.	{ Max. on 27th . . . . .	30·50	Therm.	{ Max. on 30th . . . . .	86 degrees
	{ Min. on 7th . . . . .	29·61		{ Min. 10th night . . . . .	47
Range	. . . . .	'89	Range	. . . . .	39
Mean	. . . . .	30·05	Mean	. . . . .	66·5

Depth of rain, ·81 of an inch. Fine days, 25. Prevailing winds, S. W. and W.

AUGUST, 1830.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
Su. 1	S. W.	1	30-03	63	78		Fog a. m. fair, white cirrostrati
2	S. W.	2	29-97	57	72		Fair
3	W.	3	30-19	58	73		Fair and hot, wind brisk
4	S.	1	.14	57	75		<i>Full M.</i> 1 p. m. fair, very hot
5	S. W.	1	.05	63	75		Fair and very hot, thunder
6	W.	0	.12	52	67		Fair [till 8 a. m.]
7	W.	0	29-96	52	67		Fair
Su. 8	E.	0	.88	55	69		Fair, dense cumuli [N. W.]
9	S. E.	0	.94	53	72		Fair, black in W. 6 p. m. wind
10	S.	1	.75	53	65		Rainy a. m., cloudy p. m.
11	E.	1	.82	52	71		Fair and hot
12	S. W.	2	.95	55	72		Fair and hot [storm 6 p. m.]
13	S. W.	2	.72	53	60		Rain till 4 p. m., thunder
14	S. W.	2	.67	50	65		Fair a. m., rain p. m.
Su. 15	W.	1	.90	48	65		Fair, thun.-st. 2 mls. S 4 p. m.
16	W.	1	30-05	46	65		Showery, th.-stm. 3 mls. S. 6
17	N. W.	1	.09	46	64		Fair, with cumuli [p. m.]
18	N.	2	.29	42	60		<i>New M.</i> 12 m. cloudy
19	N. W.	2	.17	40	61		Cloudy and cool
20	N. W.	3	.01	40	56		Cloudy and cold
21	N. W.	2	.10	39	62		Cloudy
Su. 22	N. W.	1	.12	42	65		Fair
23	S. W.	1	.05	57	68		Rain 7 a. m., day fine
24	W.	2	.01	57	69		Fair and warm
25	S. W.	2	29-83	55	67		Little showers
26	W.	2	30-00	54	65		Fair, cumuli flying
27	S.	2	29-68	56	69		Fog a. m., fine day, rain 7
28	S. W.	4	.50	55	64		Stormy and thunder [p. m.]
Su. 29	W.	2	30-00	55	64		Fair till 3 p. m. thun.-show-
30	N. W.	1	.29	43	63		Fair [era]
31	N. W.	1	.36	40	66		Fair
				39	78	2-30	

## RESULTS.

Barom.	{ Max. on 31st . . . .	30-36	Therm.	{ Max. on 1st . . . .	78 degrees
		29-50			Min. on 20th night 39
Range	. . . . .	.86	Range	. . . . .	39
Mean	. . . . .	29-93	Mean	. . . . .	58-5

Principal winds, N.W. and S.W. Rain, 2-30 inches. Fine days, 22.

## SEPTEMBER, 1830.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	W.	0	30 43	47	69		Fair, clear and hot
2	W.	1	29 15	46	66		Full M. 10 p.m., sultry
3	N.W.	1	29 89	53	65		Showery
4	N.W.	1	30 07	45	60		Showery
Su. 5	S. W.	1	29 80	51	63		Rainy forenoon, fair p.m.
6	S. W.	2	29 61	48	62		Stormy
7	N.W.	3	29 85	54	64		Showery
8	N.	1	30 15	52	63		Showery
9	S.W.	2	29 96	45	64		Fog, fair, rain
10	W.	2	29 85	53	63		Showery
11	S. W.	2	29 85	44	62		Fair
Su. 12	S. E.	4	29 47	49	62		Heavy rain, a. m. fair p.m.
13	N.W.	1	29 53	40	59		Fog, fair, aurora borealis
14	Var.	0	29 60	45	64		Fair, lightning W. 8 p.m.
15	S.W.	2	29 80	47	63		Showery
16	S. W.	3	29 60	56	64		Rain a. m., fair
17	N.E.	0	29 81	45	59		New M. 2½ a.m., rain
18	S.W.	1	29 95	47	61		Showery
Su. 19	S. W.	4	29 97	45	63		Fair, and high wind
20	W.	2	29 70	52	61		Fair and clear
21	S.	5	29 31	46	58		Heavy rain a. m., fair p.m.
22	W.	0	29 80	39	62		Fair and clear
23	S.	4	29 44	49	62		Beating storms of rain
24	S. W.	2	29 80	47	56		Fair, thunder to S. 2 p.m.
25	W.	6	30 00	46	56		Cloudy, high wind
Su. 26	W.	0	29 42	42	60		Fair and clear
27	S. E.	0	29 51	37	63		Fair, clear and warm
28	S.	0	29 30	52	64		Fair and warm
29	Var.	2	29 11	49	53		Cloudy, little wet
30	N.W.	1	29 15	40	56		Fair
				37	69	3·94	

## RESULTS.

Barom.	{ Max. on 27th . . . . .	30 51	Therm.	{ Max. on 1st . . . . .	69 degrees
		29 31			Min. 26th night . . . . . 37
Range	. . . . .	1·20		Range	. . . . . 32
Mean	. . . . .	29 91		Mean	. . . . . 53

Principal winds, S. W. and S. to W. Depth of rain, 3·94. Fine days, 14 only.

## OCTOBER, 1830.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S. W.	1	30·29	40	58		Fair
2	S. W.	1	·50	52	62		<i>Full M.</i> 8 a. m. fair
Su. 3	S. W.	2	·50	55	60		Fair
4	N. W.	3	·49	51	59		Fair
5	N.W.	2	·51	42	61		Fair and warm
6	N.W.	2	·49	44	52		Cloudy
7	N.W.	0	·50	47	60		Fair and warm
8	W.	0	·57	48	59		Fair and warm
9	N.E.	0	·64	54	60		Fair and warm
Su. 10	E.	0	·65	43	62		Fair, clear, and hot
11	N.E.	0	·52	51	54		Fair, cloudy
12	N.E.	0	·49	46	54		Fair
13	N.E.	1	·53	48	58		Fair. The roads dusty
14	S.E.	1	·50	47	57		Fair and clear
15	S.E.	1	·37	35	57		Fair, no cloud
16	E.	0	·47	36	56		<i>New M.</i> 7½ p. m., fair
Su. 17	E.	0	·52	48	55		Fair, foggy
18	S.E.	1	·46	48	55		Fair
19	S.E.	1	·17	49	62		Fair and hot, thin cirrostrati
20	S.E.	1	·20	55	68		Fair, clear, very hot
21	S.E.	1	·33	55	69		Fair, very hot, no cloud
22	S.W.	1	·40	54	67		Fair, very hot, cirrostrati
23	N.W.	2	·57	55	59		Fair, some cumuli
Su. 24	W.	0	·55	44	58		Fair, cloudy
25	S.W.	2	29·99	52	59		Cloudy, little wet
26	N.W.	3	30·25	43	49		Dense cumuli, and cold
27	N.W.	3	·31	35	50		Fair
28	S.W.	4	29·94	53	60		Fair, windy and warm
29	W.	5	·70	44	53		Stormy, thunder W. 6 p. m.
30	W.	2	30·17	33	45		Fair and clear
Su. 31	W.	2	29·96	43	58		<i>Full M.</i> 5 p. m., rain
				·33	69	0·40	

## RESULTS.

Barom.	{ Max. on 10th . . . 30·65 Min. on 29th . . . 29·70	Therm.	{ Max. on 21st . . . 69 degrees Min. on 30th . . . 33
Range . . . . .	·95	Range . . . . .	36
Mean . . . . .	30·175	Mean . . . . .	51

Wind chiefly N. E. and S. E. in the middle of this period. Depth of rain, only ·40 of an inch, and fine days 28!

## NOVEMBER, 1830.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	W.	1	30°21	51	59		Fair and warm, no cloud
2	S. W.	0	.25	44	57		Fair and warm
3	S. E.	1	29°95	50	55		Fair, rain at night
4	S. W.	1	30°00	50	54		Fair, smoky air
5	S. E.	1	.11	45	56		Fair, cirrostrati
6	S.	5	29°40	50	57		Stormy, windy & some rain
Su. 7	S.W.	3	.24	50	50		Windy, some wet
8	S.W.	1	.93	36	49		Fair, hoar frost
9	S.W.	1	30°03	28	45		Fair, clear, and frost
10	S.W.	3	29°87	42	52		Fair, rain during night
11	S.W.	1	.65	48	51		Fair
12	N. W.	1	30°17	40	48		Fair
13	S. E.	3	29°90	42	46		Fair, cloudy
Su. 14	S. W.	1	.75	50	53		Stormy, lightning 12 p. m.
15	S.	2	.81	40	49		New M. 2 p. m. fair
16	S.	4	.25	50	52		Rain, with a gale
17	S. W.	2	.66	38	48		Fair and clear
18	W.	1	.95	36	42		Fair, some fog
19	N. W.	1	30°32	32	42		Fair and clear
20	S.	2	.05	32	45		Fair, rain p. m.
Su. 21	S. W.	3	29°97	37	51		Fair, thin cirrostrati
22	N. W.	3	30°15	46	48		Bright, cumulonimbi & hail
23	W.	2	.32	39	45		Fair and clear
24	N.	0	.58	31	44		Fair and clear, frost
25	E.	0	.55	29	43		Fair and clear, frost
26	E.	3	.12	38	40		Fair, cloudy, cold wind
27	E.	3	29°86	37	39		Fair, cloudy, cold wind
Su. 28	S. E.	4	.71	40	43		Overcast, some snow & rain
29	E.	1	30°07	40	42		Overcast
30	N. E.	1	.14	39	41		Full M. 3 a. m., overcast
				28	59	1.80	

## RESULTS.

Barom.	{ Max. on 24th . . . . .	30°58	Therm.	{ Max. on 1st . . . . .	59 degrees
	Min. on 7th . . . . .	29°24		Min. on 9th . . . . .	28
Range	. . . . .	1.34	Range	. . . . .	31
Mean	. . . . .	29°91	Mean	. . . . .	43°5

Prevailing winds westerly. Depth of rain, 1.80. Fine days 24.

## DECEMBER, 1830.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	N. E.	0	30-20	37	39		Overcast, yet fine
2	E.	1	.10	36	38		The same
3	E.	2	29-80	37	39		Cloudy and fine
4	N. E.	0	.91	37	39		Cloudy and fine
Su.	S. E.	1	.81	36	43		Cloudy and fine
	S. E.	2	.37	41	44		Little rain
	S. E.	1	.46	44	45		Overcast
	N. E.	2	.44	43	45		Fair, cloudy
	N. E.	2	.04	43	47		Rain
	N. W.	3	.14	38	41		Rain
	W.	3	.42	35	39		Fair
	N. W.	3	.51	29	36		Frost, snow at times
	N.	2	30-37	27	31		Frost, frequent snow
	S. W.	2	.50	27	34		Frost, thaw p. m.
Su.	S. E.	0	.58	37	41		New M. 8 a. m. fog
	N. E.	1	.53	26	35		Cloudy and snow
	W.	1	.14	22	37		Frost, snow
	N. E.	1	.30	32	36		Fair, snow at night
	S. W.	2	29-80	27	34		Frost and rime
	N. W.	5	.50	34	39		Windy, hail, snow, and rain
	N. W.	2	.90	33	38		Snow a. m. fair
	W.	2	.70	34	45		Fair, stormy evening & hail
	N. W.	2	.58	25	31		Fair and severe frost
	N. W.	3	.40	17	18		Very severe and heavy snow
Su.	W.	3	.36	13	25		Very sev. heavy snow, p. m.
	N. E.	0	.40	4	26		Very severe, & fine, rime
	S. E.	1	.25	20	29		Cloudy, sharp frost
	N.	1	.43	32	33		Snow, overcast
	S.	1	.91	28	34		Full M. 2 p. m. fog, fair
	S. E.	1	.64	33	38		Cloudy, thaw
	S. E.	2	.35	41	44		Cloudy, thaw more rapid
				4	47	2-61	

## RESULTS.

Barom.	{ Max. on 15th . . . . .	30-58	Therm. { Max. on 9th. . . . .	47 degrees
		29-04		Min. on 26th. . . . . 4
Range	. . . . .	1-54	Range	. . . . . 43
Mean	. . . . .	29-81	Mean	. . . . . 25-5

Winds for the greater part from S. E. to N. E. Depth of rain, 2-61 inches. Fine days, 19.

## NOTES FOR THE YEAR 1830.

## JANUARY.

12th and 13th, the snow tremendously heavy and thick in its fall, and deeper than for sixteen years past. 14th, snow on a level two feet deep in the fields, and drifted across the Norwich turnpike to eight feet in depth—labourers in groups are clearing a passage. 18th, frost very severe, with haze attaching itself to shrubs in the form of feathers: thermometer down to 9 degrees and stood 10 degrees till after sun-rise. 20th, strong gale at E. with snow, barometer 28°86: after 10 a. m. at S. E. with rain and thaw. 21st—30th, chiefly between frost and thaw. On 26th, particles of fog visible, as rising from the snow in dissolution. 31st, severity resumed.

The snow during this month was near two yards in depth, on a level in the north of our island, while on the continent it was also very deep. Some loss of life, from the cold, occurred both in France and England.

Public expresss announce, that on the 20th, the snow drifted in one part of Somersetshire to the depth of twenty feet, and coaches and waggons, to the number of thirteen, were lost therein, for some considerable time, but without any serious loss of life, so far as was here made known.

## FEBRUARY.

1st to 7th, intense severity, and piercing winds. 8th, rapid thaw. Middle of month changeable. 24th, I observed a little cloud of vapour over a patch of snow under a hedge, the surrounding air was clear, and no other snow about; proving that the fog from the melting patch of snow was lying in a visible and defined form on the snow, confined from the wind by a shrubbery over the hedge. 24th to 28th, mild and generally fair.

## MARCH.

1st to 16th, chiefly very fine with dusty roads. 26th, remarkably hot for the season. To the 31st, very fine, and the month entire, very dry with a high barometer.

## APRIL.

A sudden depression of temperature took place on the 1st of April. 2nd day, the fields white with snow and the weather quite a reverse to that experienced just a week before. 7th, increase of temperature. 8th, cumuli in groups, heads of nimbi, along the horizon S. E. and S. and some W. during the evening, and after a warm day, much distant lightning and thunder during night. 9th, a very warm day, followed by same appearances as on the 8th evening. Much lightning and thunder S. W. and W. till midnight. 10th, rain. 11th, heavy beating storms of hail and rain, at 11 a. m. and 4 p. m. attended by vivid lightning, and very loud thunder. 12th, heavy storm of rain at 4 p. m. To the 24th, unsettled stormy weather, yet often warm. 20th, at 1 p. m. a violent

violent hurricane from N.W. for two hours. The young foliage being early opened, was much bruised and stripped off. Several trees blown down, and the following disasters occurred in the storm. The stables at the White Hart Inn, Newmarket, some buildings near Bury, and three barns in Suffolk blown down. These were at Mr. Steward's, Cockfield, Mr. Pettitt's, Alpheton, and at Stanton, near Ixworth. In Rushbrooke Park, many trees were prostrated, at the seat of Colonel Rushbrooke, near Bury St. Edmund's! The strongest gale for twelve years past, or since that of March 4th and 5th, 1818. 25th to 30th, fair, bright, and warm.

Cowslips full in blossom as early as the 9th. Willow-poplar, and sycamore leafed together near the middle of the month. An early spring since about March 11th, although so severe a winter.

#### MAY.

2nd day, distant thunder-showers to S. E. at 4 and 5 p. m. 5th, the temperature much increased: a halo about the sun at 9 a. m. 6th and 7th, very warm days. 8th, light rain with the full moon; 6 p. m. heavy rain. 9th, rainy day. 10th to 14th, cold, gloomy, and unpleasant. 15th to 18th, fine and warm; on the 18th, cirrocumuli above, and a blue smoky vapour in lower clouds with cumuli. 20th, a stratus from 5 till 10 a. m. then clear, and brisk gale at E.N.E. 21st to 23rd, fair, wind generally E. but variable; signs of thunder at 3 p. m. on Sunday, 23rd: dark cirrostrati and small cumuli heads based upon them, rising in S.W. opposite to lower current. An extraordinary cloud began to rise at 6 p. m. and veiled the S.W. in blackest hue for two hours. It was a formal range of undulated cirrostrati, at its base, intersected by two white horizontal bands, from one extremity to the other, above which, as formal a range of dense cumuli constituted the crown to the whole. It made its way against the opposing current below, with a universal blaze of blue lightning, and continued roll of thunder, and rain. The blue flashes playing in waves along the ground, and zigzag lines of blue balls as beads appeared in each flash. It continued over us about an hour, from 8 p. m. Accounts from Sussex describe it as having been terrific during the afternoon. A young woman was killed in London, and a barn set on fire at Saffron Walden, Essex. At Ipswich, the inhabitants, who were in church or chapel at evening service, were truly alarmed, and some females fainted. A house was damaged and a cow killed at Stoke Ferry, Norfolk. 24th to 31st, unsettled with frequent showers. In Aberdeenshire, at 4 p. m. on 30th, a violent thunder-storm, and great hail.

Oak leafed about the 5th, and the ash and elm soon after. The hawthorn in blossom in the first week of this month!

#### JUNE.

1st day, wind boisterous S.W. veered at 2 p. m. to N.W. with showers. 3rd, much thunder p. m. a violent storm at 4 p. m. against the lower current, which was E. N. E. the lightning vivid, and thunder very loud. 10th, a great fall of rain the whole day. 13th, a thunder-storm about 20 miles to S.W. at Lindsey, Suffolk, a house struck and burnt. 14th, torrents of rain at times, loud thunder 2 miles to S. E. 3 p. m. To the 20th, cold and ungenial; at 2 a. m. on 20th, lightning, thunder, and rain. 21st

to 25th, unsettled and cold for the season. At 10 p. m. on 25th, an awful thunder-storm came on, and lasted several hours. It arose in S. E. and passed over the greater part of Suffolk and Norfolk. At Orford, Suffolk, many trees were torn to atoms by the lightning. A house burnt at Bungay, also at Rumburgh, and a man was killed therein. Great hail fell at Mellis, and Palgrave, in Suffolk, and destroyed the bean crop. Flat pieces of ice, 5 inches in circumference, fell so thick as to cover the fields there to a great depth. The lightning was terrific, and near 11 p. m. the crushes of thunder were most awful. Some flowers in pots, in a house near us, were scorched and seared by the electric fluid. 26th to 30th, very fine and hot with us, a great change effected by the late storm. On 27th, a violent storm visited the adjacent counties, while fair and hot with us, and distant thunder to N.W. only heard at 7 p. m. At Burwell, in Cambridgeshire, a house was struck. Large hail fell at Brandon and Thetford, and so heavily to the S. E. of Norwich, as to destroy a great part of the crops.

The dog-rose in flower on the 4th, its usual time being about the 15th.

#### JULY.

11th day, 11 p. m. some rain, and distant discharges of electricity. 15th, thunder to S. E. all the evening. 16th, thunder to N.W. 7 p. m. 21st, a perfect change in the atmosphere to serenity, and signs of heat still increasing. To 24th, sultry and fine; during the evening of the 24th, vast groups of dense cumuli blackened the sky and seemed to foreshew thunder, but these descended in a blue fog, which continued till 7 a. m. of Sunday, the 25th, with a powerful smell of electricity, combined with that of burning weeds. This cleared off with a bright and very hot day, introducing intensely hot weather. To 31st, clear skies and great heat. On 25th, a golden sun-set and no cloud. 26th, few white cirrostrati and cirrocumuli. 27th and 28th, no cloud. 29th, the round white cirrocumuli in beds over zenith and elsewhere; this evening, enchanting, still, serene, and hot. The thermometer 70 degrees most of the night, some lightning on S.W. horizon. 30th, beautiful carmine sun-rise, without cloud or haze. A small range of cumuli in S.W. at this time, base above horizon, and crowned by flame-coloured cirri. I afterwards found that a little shower had fallen during 29th night, 80 miles S.W. of us; this was the cloud passing off on 30th a. m. Thermometer this day by 9 a. m. 78 degrees, at noon 84 degrees, and afterwards 86 degrees, for above 2 hours, and on the ground in sun 124 degrees. Large groups of cumuli the heads of distant nimbi in W. and N.W. horizon after 1 p. m. and white strips of cirrostrati across their crowns. Some thunder followed in that point. 31st, bright at times, some cumuli, very hot. On 30th July, the southern counties of Scotland, and those bordering on Tweed, in England, experienced an awful thunder-storm, during the afternoon and night.

#### AUGUST.

The weather as shewn in the table was warm till about the 12th, then variable but cool in general to the end. 4th, distant thunder all night. 13th, a barn, &c., at Isleham, and a barn at Occold, Suffolk, burnt by the lightning. 17th, 6 p. m. thunder-storm, and great hail at Boxford, Suffolk. 28th, great thunder-storms in Norfolk. 29th, at Thaxted, Essex, a barn filled with corn, and a stable adjoining were burnt by lightning.

## SEPTEMBER.

Cumuli, nimbi, and sheets of undulated cirrostrati, the prevailing clouds during the wet weather which continued nearly all this month. 13th, a brilliant aurora borealis from 9 till 12 p. m.

## OCTOBER.

This month unusually fine and dry, with barometer for above three weeks exceeding 30 inches; a contrast to September. Sheets of grey cirrocumuli daily appeared to the 18th. 19th to 22nd, unseasonably hot and sunny, with white cirrostrati. 25th, the first rain. 29th, a nimbus with electrical discharges in S.W., at 5 and 6 p. m., 7 miles distant.

## NOVEMBER.

4th, bright aurora borealis evening and night. 15th and 16th, a very great rain and flood at Manchester, doing damage there to the amount of £100,000!

## DECEMBER.

1st to 5th, fair and dry. 7th, at night a nondescript body of light passed from S.S.E. to the opposite point across the west, at an altitude of 8 degrees, and gleamed through the clouds which were many and dark. It occupied from half-past 7 to near 9 p. m. in shifting its place! This was at least a very unusual phenomenon! 12th, 8 p. m., many luminous clouds of aurora to N. and in zenith. 23rd to 26th, severe frost, and snow a foot or more in depth. 26th, a.m., distant church bells audible beyond what is usual. Thick rime at 4 p. m., thermometer then 12 degrees. Minimum at 11 p. m. when it was 4 degrees. A perfect calm, and chiefly clear, less haze, since 7 p. m. 27th, a change early. 31st, rapid thaw.

## SUMMARY RESULTS FOR 1830.

Fine days, 246. Rain, 26·65 inches.

Hottest on July 30th, Therm. 86 degrees		Highest Barom. January 1st . . . 30·71
Coldest on December 26th . . . 4		Lowest, January 20th . . . . 28·86
Range . . . . 82		Range . . . . . 1·85*

\* The extremes of the year occurring in one month is singular, as also that the extreme range of barometer for January, should have been that of the entire year.

## JANUARY, 1831.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S. W.	1	29.90	28	37		Fair and frost
Su. 2	S.	2	.96	30	36		Fair and frost
3	S.	2	30.02	32	37		Fog
4	S.	1	.03	35	37		Fog
5	N. E.	1	29.97	34	37		Overcast
6	N.	2	30.25	27	38		Frost, and snow showers
7	W.	0	.67	22	33		Fair, sharp frost
8	W.	0	.62	25	35		Fair, and frost
Su. 9	N. W.	2	.23	32	38		Fair, cloudy
10	N.	2	.01	34	39		Rainy
11	N. E.	2	.21	30	35		Fair, and frost
12	N.	1	.20	36	39		Overcast, foggy
13	N.W.	0	.21	35	36		Fog
14	E.	1	.26	35	37		New M. 1 a. m. fog
15	E.	2	.03	30	32		Overcast
Su. 16	S.E.	1	29.98	28	30		Overcast, yet freezing
17	S.E.	1	.81	37	39		Overcast, fog
18	S.E.	0	.75	38	44		Fair, clear, and pleasant
19	S.E.	2	.84	41	46		Overcast, drizzle
20	S.E.	3	.66	40	42		Cloudy, rain at night
21	S.E.	1	.38	39	42		Overcast, rainy
22	S.E.	1	.41	43	45		Overcast and wet
Su. 23	N. E.	2	.55	32	40		Heavy rain all day, snowy
24	N. E.	2	.65	29	32		Frost and snow [night]
25	N.	2	.99	25	31		Sharp frost and snow
26	N.W.	2	30.25	20	30		Severe frost, heavy snow
27	S. W.	2	29.50	22	34		Severe frost, heavy snow
28	N.W.	2	.75	26	31		Full M. 2½ a.m. shp. fst. clear
29	N.W.	1	30.02	26	31		Sharp frost, cloudy, snow
Su. 30	N.W.	0	29.97	22	30		Severe frost, cloudy
31	S.	2	.78	25	32		Sharp frost and snow
				20	46	3.44	

## RESULTS.

Barom.	{ Max. on 7th . . . . .	30.67	Therm.	{ Max. on 19th . . . . .	46 degrees
	Min. on 21st . . . . .	29.38		Min. on 26th . . . . .	20
Range . . . . .		1.29	Range . . . . .		26
Mean . . . . .		30.02	Mean . . . . .		33

Prevailing wind Easterly in the middle of the period, at other times of the month Westerly.  
 Rain 3.44 inches. Fine days, 18.

## FEBRUARY, 1831.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S.E.	4	29 27	21	29		Severe frost and heavy snow
2	S.E.	2	·40	30	32		Heavy snow
3	S.	1	·31	21	36		Severe a. m. snow, rain, thaw
4	W.	7	·06	33	42		Heavy rain, snow, thaw, wind
5	N. W.	5	·95	32	33		Gale and snow
Su. 6	Var.	0	30 01	28	38		Fair and frost
7	S. W.	2	29 90	39	50		Fair and mild
8	S. W.	2	30 06	46	55		Fair and warm
9	S. W.	2	·17	50	58		Fair and very warm
10	S. W.	1	·38	47	60		Fair and very warm
11	S. W.	2	·35	47	58		Fair and very warm
12	N. W.	0	·42	40	53		New M. 5 p. m. fair & clear
Su. 13	S.	1	·30	42	50		Foggy
14	S.	1	·35	45	51		Fair, clear
15	S.E.	1	·25	37	45		Fog, fair, bright
16	W.	2	29 90	39	49		Stormy with rain
17	N. W.	4	30 17	39	46		Stormy, wet a.m.
18	W.	2	·27	35	47		Fair and bright
19	N. W.	4	·10	35	45		Showers of hail
Su. 20	N. W.	2	·01	33	38		Stormy, hail and snow
21	N.	1	·05	31	39		Fair, cloudy and frost
22	N. E.	1	·35	33	40		Fair, cloudy
23	N. W.	1	·47	31	41		Fog and rime, cloudy
24	N. W.	2	·17	37	45		Foggy
25	W.	3	29 90	39	45		Fair, snow and rain 7 p. m.
Su. 27	S. W.	5	·18	36	48		Full M. 5 p. m. rain, wind,
28	S.	1	·20	35	42		Rain & snow, stormy [fair
	N. W.	4	·60	33	40		Fair and clear
				21	60	3·86	

## RESULTS.

Barom.	{ Max. on 23rd . . . . .	30·47	Therm.	{ Max. on 10th . . . . .	60 degrees
	Min. on 4th . . . . .	29·06		Min. on 1st . . . . .	21
Range	. . . . .	1·41	Range	. . . . .	39
Mean	. . . . .	29·76	Mean	. . . . .	40·5

Winds prevailing S.W. to N.W. Rain, 3·86 inches. Fine days, 15.

## MARCH, 1831.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	N. W.	3	29°70	33	44		Cumuli, hail, and sun
2	S. W.	2	.80	37	53		Rain a. m. fair
3	W.	1	.75	50	54		Fair, cloudy
4	N. E.	0	30°09	44	55		Rain a. m. fair
5	S.	1	29°73	45	50		Overcast
Su. 6	W.	3	.22	47	50		Rainy, heavy rain p. m.
7	N. W.	1	.50	42	49		Rain a. m. fair
8	S. E.	1	.75	32	48		Frost, fair
9	S. W.	1	.90	41	50		Fair, clear
10	S. W.	0	30°10	33	52		Fair, clear
11	S. W.	1	29°72	45	48		Overcast, rainy
12	S.	6	.53	37	50		Windy, stormy
Su. 13	S. W.	4	.62	41	51		Very stormy [wind
14	W.	6	.75	38	47		New M. 6 a. m. fair with
15	S. W.	2	.80	39	48		Little rain
16	W.	1	.80	49	56		Fair, cloudy
17	S. W.	3	30°06	50	58		Fair, clear, and warm
18	W.	2	.29	40	51		Fair, cloudy
19	N. W.	3	.29	39	50		Fair
Su. 20	W.	1	.19	42	50		Cloudy, little wet
21	N.	1	.30	46	50		Cloudy
22	E.	3	.48	39	44		Cloudy, very cold wind
23	E.	3	.53	35	42		Fair, clear, and cold wind
24	N. E.	3	.03	32	36		Cloudy, snow
25	E.	3	29°85	36	43		Fair, clear, and cold
26	S. E.	3	.52	38	55		Little wet, fair, warmer
Su. 27	S. W.	0	30°09	43	61		Fair, clear, and warm
28	N. E.	1	.25	37	56		Full M. 8 a. m. fair, clear
29	N. E.	1	.32	39	42		Cloudy, cold wind
30	N. E.	2	.46	37	43		Fair, some cumuli
31	N. E.	2	.60	37	47		Fair, no cloud p. m.
				32	61	2·94	

## RESULTS.

Barom.	{ Max. on 31st . . . . . 30°60		Therm.	{ Max. on 27th . . . 61 degrees	
	Min. on 6th . . . . .	29°22		Min. on 24th . . . . .	32
Range . . . . .	1·38		Range . . . . .	29	
Mean . . . . .	29°91		Mean . . . . .	46·5	

Winds chiefly Westward to the 20th, afterwards Easterly. Rain 2·94 inches. Fine days, 20.

## APRIL, 1831.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
Su. 3	N. E.	3	30·50	37	44		Fair, cold wind, snow & rain,
	N. E.	3	·15	36	41		Cloudy, very cold [night]
	N. E.	3	·02	40	49		Fair, cold wind
	E.	0	29·78	33	51		Fair
	N. W.	1	·57	40	51		Fair
	S. W.	1	·52	39	57		Fair, warmer
	S. E.	2	·51	42	59		Fair, warm
	S.	2	·40	49	53		Much rain [lightning, night]
	S.	2	·68	50	57		Fair, dark cumuli, rain
	S. W.	2	·78	50	60		Heavy rain a. m. fair day,
Su. 10	N. E.	0	30·14	46	62		Fair and warm [cumuli]
	N. E.	2	·07	48	62		New M. 4 p. m. fair & warm
	N. W.	0	29·93	48	68		Fair, hot, thunder p. m. little
	N. W.	2	30·05	45	55		Fair [wet]
	N. W.	1	·10	44	58		Fair
	N.	1	·12	50	56		Fair, cloudy
	N. E.	2	·10	46	52		Fair, cold wind
	N. E.	2	·07	42	53		Fair, clear, and cold
	N. E.	2	·05	42	56		Fair, no cloud
	N. E.	2	29·90	40	55		Fair and clear
Su. 17	E.	1	·70	48	62		Fair, and warm cumuli
	E.	2	·60	48	60		Fair, roads very dusty
	E.	2	·72	48	63		Fair, clear, and warm
	Var.	0	30·05	49	62		Fair and warm
	N. E.	0	·10	49	59		Fair
	S. E.	2	·01	47	63		Fair, clear, and warm
	S. E.	2	29·65	49	63		Full M. 1 a. m. fair & warm
	Var.	0	·44	49	65		Fair, very warm, dense cu-
	S. E.	2	·36	48	58		Cloudy, little sun [multi-
	S.	1	·35	50	61		Fair, hazy, a solar halo
				33	68	1·20	

## RESULTS.

Barom.	{ Max. on 1st . . . . .	30·50	Therm.	{ Max. on 13th . . . . .	68 degrees
	{ Min. on 30th . . . . .	29·35		{ Min. on 4th . . . . .	33
Range . . . . .		1·15		Range . . . . .	35
Mean . . . . .		29·92		Mean . . . . .	50·5

Prevailing winds, Easterly. Rain, 1·20 inches. Fine days, 26.

MAY, 1831.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
Su 1	S. W.	1	29 60	52	61		Showery, distant thunder
2	N. E.	0	.70	46	63		Great rain, and thunder
3	S. W.	1	.75	52	63		Severe thunder-storms
4	Var.	0	.60	52	64		Heavy storms, hail, & thun-
5	S.W.	2	.60	45	57		Showery, hail, & cold [der
6	N. W.	2	.85	39	45		Very cold, cumuli, snow
7	N. W.	1	30 20	31	51		Frost, fair, very cold
Su. 8	N. E.	2	.40	40	51		Fair, very cold
9	N. E.	1	.35	30	57		Frost, fair, clear
10	N. E.	2	.30	43	55		Fair and cold
11	N. E.	2	.30	43	58		Fair and clear
12	E.	0	.15	37	67		New M. 1 a. m. fair, no cloud
13	E.	3	.18	47	49		Cloudy, cold wind
14	N. E.	2	.21	42	53		Fair, cool
Su. 15	W.	1	.12	34	60		Fair, warmer
16	N. W.	0	.26	45	68		Fair, clear, and warm
17	S. E.	2	.31	49	67		Fair, clear, and warm
18	E.	2	.15	52	67		Fair, very clear
19	E.	4	29 85	54	65		Fair, clear, windy
20	S. E.	1	.96	57	68		Fair, sultry
21	N. E.	0	30 09	55	70		Fair, hot, thunder in nimbi,
Su. 22	N. E.	1	.07	55	74		Fair, very hot [S. W.
23	N. E.	1	29 99	56	74		Thunder-storm, fair, hot
24	N. E.	1	.97	57	72		Fair and hot
25	N. E.	2	30 00	56	71		Fair and hot, cumuli
26	N. E.	2	29 97	55	66		Full M. 4 p. m. fair
27	N. E.	2	.91	51	63		Fair, cloudy
28	S. E.	1	30 10	53	70		Fair, with cumuli, hot
Su. 29	E.	1	29 98	52	55		Cloudy, rain p. m.
30	N. E.	1	30 07	51	62		Cloudy
31	E.	1	.10	51	62		Fair, thunder p. m.
				30	74	3 02	

## RESULTS.

Barom.	{ Max. on 8th . . . . .	30 40	Therm.	{ Max. on 22nd & 23rd . . . . .	74 degrees
		Min. on 1st . . . . .			30
Range	. . . . .	.80	Range	. . . . .	44
Mean	. . . . .	30 00	Mean	. . . . .	52

Prevailing winds N. E. to S. E. Rain, 3.02. inches. Fine days, 24.

JUNE, 1831.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	E.	2	30°17	50	64		Fair, cumuli
2	N.	1	.21	53	71		Fair, clear
3	N. E.	0	.27	54	72		Fair
4	N. W.	2	.18	55	66		Fair, many cumuli
Su. 5	W.	2	.14	57	70		Various clouds, show. p. m.
6	N. W.	2	.13	51	58		Showery
7	N. W.	1	.15	40	57		Fair, cloudy, and cool
8	N. W.	1	29°89	38	60		Fair, cumuli
9	S. W.	2	.90	52	71		Fair
10	S. W.	2	.75	52	69		New M. 7 a.m. cumuli, & sun
11	S. W.	4	.65	53	67		Rain, fair, wind
Su. 12	W.	1	.94	56	73		Dense cumuli, and hot
13	W.	0	30°10	56	72		Showery, nimbi, &c.
14	S. W.	1	.23	58	78		Fair and very hot, cumuli
15	S.	2	29°97	58	76		Fair, very hot, var. clouds
16	S. W.	1	.97	55	71		Fair and hot
17	S. W.	3	30°02	56	69		Fair, sultry
Su. 18	S. W.	2	.12	60	75		Fair, very hot
19	S. W.	2	.06	60	75		Fair, and very hot
20	S. W.	1	.28	59	75		Fair, and very hot
21	S. W.	1	.29	60	78		Very hot, clear, and fair
22	N. W.	1	.29	60	77		Fair, with cumuli, very hot
23	E.	1	.30	55	75		Fair and hot
24	W.	4	29°89	51	63		Thunder, showers, and hail
25	N. W.	2	.70	50	62		Full M. 7 a.m. light showers
Su. 26	N. W.	2	.66	50	62		Fair, cloudy
27	Var.	1	.93	51	69		Showery
28	N.	1	.95	48	62		Rain, fair, cloudy
29	N. W.	2	30°05	46	57		Much rain
30	N. W.	2	.11	50	56		Rain
				38	78	3.00	

## RESULTS.

Barom.	{ Max. on 23rd . . . . .	30°30	Therm.	{ Max. on 14—21st . . . . .	78 degrees
		29°65			38
Range	. . . . .	.65		Range	. . . . . 40
Mean	. . . . .	29°97		Mean	. . . . . 58

Principal winds S. W. to N. W. Rain 3 inches. And fine days 20.

JULY, 1831.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	N. W.	1	30·15	51	64		Cloudy, fair
2	W.	1	·10	54	74		Fair and hot
Su. 3	S.W.	1	·16	57	74		Fair and hot
4	W.	1	·31	54	78		Fog, fair, very hot
5	S. W.	1	·36	55	76		Fair, with cumuli, very hot
6	E.	2	·48	59	75		Fair and hot
7	E.	2	·50	54	72		Fair and hot
8	N. E.	0	·31	57	77		Fog, fair, and hot [hot]
9	N. W.	0	·25	59	81		New M. 2 p. m. clear, very
Su 10	N. E.	0	·15	59	70		Sultry, cloudy, thunder
11	W.	0	29·96	55	71		Cloudy, thunder
12	S. E.	1	·82	53	72		Fair, sultry [p. m.]
13	E.	1	·73	52	69		Heavy thunder-storm, fair
14	S.E.	2	·85	50	70		Fair, cumuli and nimbi
15	S. E.	1	·90	50	70		Fair, with cumuli, &c.
16	S.	0	·92	49	68		Rain, showery, fair
Su 17	N. W.	1	30·07	49	70		Showery
18	S. W.	2	·10	47	68		Fair
19	S. W.	2	·06	48	69		Fair
20	S. W.	2	29·89	51	70		Fair
21	S. W.	4	·72	51	70		Showery
22	S. W.	4	·89	47	64		Stormy
23	S. W.	1	·90	49	67		Fair
Su 24	E.	2	30·00	52	70		Full M. 9 p. m. fair
25	E.	1	·25	53	72		Fair
26	E.	1	·29	57	78		Fair, very hot
27	N. W.	0	·33	56	81		Fair, very hot
28	S.	1	·22	60	82		Fair, extreme heat
29	S. E.	0	·22	61	81		Fair and very hot
30	N. E.	1	·30	58	79		Fair, clear, and hot
Su. 31	N. E.	2	·21	58	80		Fair, very hot
				47	82	2·69	

## RESULTS.

Barom.	{ Max. on 7th . . . . .	30·50	Therm.	{ Max. on 28th . . . 82 degrees
	Min. on 21st . . . . .	29·72		Min. on 22nd . . . 47
Range	. . . . .	·78	Range	. . . . . 35
Mean	. . . . .	30·11	Mean	. . . . . 64·5

Winds equal, half Westerly, and half Easterly. Rain, 2·69 inches.\* Fine days, 24.

\* Above two inches of rain fell on 13th alone, for the month was fine and dry.

## AUGUST, 1831.

Day.	Wind.	Force.	Barom. p. m.	Therm. Min.	Therm. Max.	Rain.	Weather.
1	N. W.	2	30°05	57	68		Cloudy, wet evening
2	N.	1	29°98	50	68		Fog, cloudy, showers
3	E.	1	30°03	56	76		Very hot, distant thunder
4	E.	0	29°96	59	77		Fair, very hot, thunder
5	N.W.	0	.75	62	75		Fair and hot [evening]
6	S. W.	1	.86	60	77		Fair very hot
Su. 7	S.E.	1	.90	54	76		New M. 10 p.m. fair & hot
8	N.	1	30°00	61	80		Fair and very hot
9	S. W.	0	.05	63	79		Fair and very hot
10	N.W.	1	.22	62	72		Rain, fair
11	N. E.	1	.29	58	75		Fair and hot
12	N.W.	0	.25	57	75		Fair and hot
13	N.	1	.15	54	72		Fair and hot
Su. 14	N.E.	1	.15	53	72		Fair and hot [change]
15	N. E.	1	.22	53	73		Fair and hot, shews for
16	Var.	0	.16	51	73		Fair and hot, shews for
17	N.	0	.09	51	72		Thunder-storms [change]
18	N.W.	2	29°99	50	66		Fair
19	W.	4	.70	48	66		Stormy
20	W.	5	.40	48	65		Stormy
Su. 21	N.	3	30°30	51	68		Stormy a. m. fair p. m.
22	N.W.	1	.38	51	67		Fair
23	N.W.	1	.25	54	75		Full M. fair and hot
24	S. W.	2	29°85	54	74		Fair and hot
25	N.W.	3	.90	52	70		Stormy
26	S. W.	1	30°08	55	71		Fair and hot
27	S.W.	2	.07	60	79		Fair and very hot
Su. 28	W.	2	.21	57	70		Fair
29	W.	2	.30	53	73		Fair and hot
30	S. W.	2	.12	54	75		Fair and hot
31	N.W.	2	.06	58	68		Change, little rain
				48	80	1·30	

## RESULTS.

Barom.	{ Max. on 22nd . . . 30°38	Therm.	{ Max. on 8th . . . 80 degrees
	{ Min. on 20th . . . 29°40		{ Min. on 20th . . . 48
Range . . . . .	0·98	Range . . . . .	32
Mean . . . . .	29°89	Mean . . . . .	64

Prevalent winds Westerly. Rain, 1·30 inches. Fine days, 23.

## SEPTEMBER, 1831.

Day.	Wind.	Force.	Barom. P. m.	Therm.		Rain.	Weather.
				Min.	Max.		
Su. 4	N. E.	1	29 88	53	61		Much rain
	N. W.	2	86	50	55		Much rain
	N. W.	2	97	46	62		Fair
	W.	0	30 00	48	70		Fair, clear, and hot
	S.	0	10	56	72		Showery [thunder-storms
	S.	1	04	58	72		New M. 9 a. m. heavy
	S.	1	29 85	51	65		Heavy showers
	S. W.	2	73	50	64		Showery, thunder
	N.	1	70	43	57		Fair, cloudy
	N. E.	2	30 00	43	63		Fair, cloudy
Su. 11	N. W.	2	13	39	62		Showers
	N. E.	1	25	47	64		Fair
	E.	0	31	49	64		Fair
	E.	0	26	53	63		Fair
	N. W.	1	22	51	63		Fair
	N.	2	36	50	61		Fair
	N.	0	31	52	63		Fair
	W.	0	20	53	65		Fair, sultry [p. m.
	S.E.	2	01	53	64		Fog, fair, thunder-storm 12
	W.	2	29 95	49	61		Fair
Su. 18	S. E.	2	90	49	61		Full M. 10 p. m. rainy
	W.	1	30 02	50	63		Fair
	W.	0	20	51	64		Fair
	S.	2	26	55	70		Fair, clear, and hot
	S. W.	2	13	54	68		Fair and hot
	S.	0	12	54	68		Fair, sultry
	S. W.	0	29 96	53	68		Fog, fair, and hot
	S. E.	1	90	55	71		Fog a. m. fair, very hot
	S. E.	1	75	54	68		Fair and hot
	E.	1	60	55	70		Fair, clear, and hot
				39	72	4·21	

## RESULTS.

Barom.	{ Max. on 16th . . . . .	30·36	Therm.	{ Max. on 5th & 6th . . . . .	72 degrees
	Min. on 30th. . . . .	29·60		Min. on 11th . . . . .	39
Range . . . . .		76	Range . . . . .		33
Mean . . . . .		29·98	Mean . . . . .		55·5

Winds variable. Rain, 4·21 inches.\* Fine days, 23.

\* Most of the rain fell on 1st, 2nd, 6th, and 7th days.

## OCTOBER, 1831.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S. E.	2	29·46	60	68		Hot and close, with showers
Su. 2	S.E.	2	70	57	67		Fair and hot [p.m.
3	S.E.	1	·90	54	68		Fair and hot, lightning 10
4	S.W.	1	·85	53	63		Thunder and rain, 2 a.m.
5	S. W.	1	30·00	53	62		New M. 9 $\frac{1}{2}$ p.m. rain a.m.
6	S.	2	·05	51	67		Fair and hot
7	S.E.	3	29·82	53	69		Fair and hot
8	S.E.	0	·90	50	66		Fair, sultry
Su. 9	S.	1	·79	50	63		Fair, with cumuli
10	S.	1	·68	49	63		Fair
11	S. W.	2	·70	50	61		Cloudy, rain evening
12	S.	0	·67	51	61		Rainy, great rain 10 p.m.
13	S.	1	·85	51	65		Rain, fair, sultry
14	S.	2	·70	57	66		Fair, very sultry, heat
15	S.W.	2	·95	51	60		Fair
Su. 16	N. W.	1	30·35	44	58		Fair
17	S. W.	1	·43	44	63		Fair, very warm
18	N. E.	0	·54	53	61		Fog, cloudy, calm
19	E.	0	·44	53	64		Fair and hot
20	S. W.	1	·15	50	60		Fair, cloudy
21	S. W.	1	·05	52	57		Full M. 9 a.m. little shower
22	S.	4	·21	40	57		Cloudy, windy, rain p.m.
Su. 23	S. W.	5	29·90	50	58		Rain, windy, fair
24	S. W.	2	30·15	43	56		Fair
25	S.E.	3	29·95	50	58		Cloudy and wind
26	S. W.	4	·61	54	58		Storms of rain and wind
27	S. E.	1	·85	50	55		Rainy, distant thunder
28	S. W.	2	30·40	43	56		Fair
29	W.	1	·35	44	56		Fair, showers 4 p.m.
Su. 30	W.	1	·37	34	52		Fair
31	S. W.	1	·36	45	54		Fair
				34	69	3·51	

## RESULTS.

Barom.	{ Max. on 18th . . . . .	30·54	Therm.	{ Max. on 7th . . . . .	69 degrees
	Min. on 1st . . . . .	29·46		Min. on 30th . . . . .	34
Range . . . . .		1·08	Range . . . . .		35
Mean . . . . .		30·00	Mean . . . . .		51·5

Principal winds S. to W. Rain 3·51. Fine days, 22.

## NOVEMBER, 1831.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S.	2	30·05	46	55		Fair
2	S. W.	1	29·85	48	51		Fair, lightning evening
3	N. W.	3	·51	40	47		Fair and clear, lightning
4	N. W.	4	·80	36	44		New M. fair, vivid lightning
5	S. W.	2	·49	37	50		Rain and snow, thunder-st.
Su. 6	S. E.	1	·60	33	45		Overcast, drizzle
7	S. W.	4	·49	41	49		Fair, windy, lightning 7 p.m.
8	S. W.	4	·92	42	50		Stormy, much lightg. even.
9	N. W.	0	30·41	32	45		Fair, clear
10	S. W.	1	·24	29	39		Frost, hazy, rain night
11	W.	2	·30	47	52		Fair, cloudy
12	N. W.	1	·40	47	54		Fair
Su. 13	N. W.	6	·01	46	48		Clear, windy, hail 4 p.m.
14	N. W.	4	·12	29	42		Frost, fair, thunder-storm
15	N. W.	2	29·50	30	37		Fair, clear, hard frost
16	N. W.	4	·28	30	34		Much snow and wind
17	W.	0	·70	23	32		Fog, severe frost
18	N. W.	1	·83	26	33		Frost, fog, and rime
19	N. W.	5	·65	30	34		Full M. 7 p.m. rainy
Su. 20	N. W.	3	·94	32	33		Fog, frost, clearer [windy
21	W.	2	·70	39	55		Rain, damp and mild
22	S. W.	2	·95	52	58		Rain, stormy, and warm
23	S. W.	1	30·00	52	56		Fair, cloudy
24	S. W.	1	·10	44	53		Fair
25	S. W.	0	29·95	46	52		Rainy and dark
26	N. E.	2	30·27	43	48		Cloudy, fine
Su. 27	N. E.	1	·51	35	41		Fair
28	N. W.	0	·57	35	39		Cloudy, fine
29	N. W.	1	·63	35	39		Fair
30	W.	1	·20	38	40		Rainy and dark
				23	58	2·33	

## RESULTS.

Barom.	{ Max. on 29th . . . . .	30·63	Therm.	{ Max. on 22nd . . . . .	58 degrees
		Min. on 16th. . . . .			23
Range	. . . . .	1·35	Range	. . . . .	35
Mean	. . . . .	29·95	Mean	. . . . .	40·5

Wind from N.W. to S.W. nearly all the month. Rain 2·33. Fine days, 20.

## DECEMBER, 1831.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	N. W.	1	30·24	40	47		Overcast
2	N. W.	1	·12	41	46		Cloudy
3	N. W.	0	·26	39	44		Cloudy
Su. 4	S.W.	1	·09	41	48		New M. 8 a. m. overcast,
5	S.W.	0	29·96	41	47		Fair [moist]
6	S. W.	1	·50	41	48		Cloudy
7	S. W.	5	·04	47	51		Windy and stormy
8	S. E.	0	·24	45	53		Overcast, drizzle
9	S. W.	2	·34	51	54		Heavy rain, fair
10	S. W.	2	·40	45	52		Fair
Su. 11	S.	4	·45	47	53		Fair, stormy night
12	S.	4	·37	47	50		Rain all the day
13	S. W.	4	·50	44	51		Fair, windy
14	S.	1	·70	41	46		Fair
15	W.	1	·85	35	45		Fair
16	S. W.	1	·63	35	48		Fair, night stormy
17	S. W.	1	·89	37	42		Fair
Su. 18	S. E.	5	·43	40	45		Heavy rain, fair
19	S. W.	1	·77	36	41		Full M. a. m., fair
20	S. W.	1	·81	33	42		Fair, rain night
21	S. W.	1	·87	39	44		Fair
22	S. W.	2	·89	31	44		Fog, rain evening
23	N. W.	2	30·15	30	40		Fair
Su. 24	N. W.	0	·41	29	33		Fair, fog, frost
25	S.	0	·42	24	36		Fair, frost, fog
26	S. W.	0	·51	28	39		Fog, fair
27	S.	0	·53	34	40		Fog
28	N.	1	·49	34	42		Cloudy, sleet
29	N. E.	1	·35	37	43		Sleet, and showers
30	N. E.	2	·33	28	36		Frost, fair
31	N. E.	0	·35	28	37		Fair, clear, frost
				24	54	2·10	

## RESULTS.

Barom.	{ Max. on 27th . . . . .		30·53	Therm.	{ Max. on 9th . . . . .		54 degrees	
	Min. on 7th . . . . .	29·04			Min. on 25th . . . . .	24	Range . . . . .	
Range . . . . .		1·49	Range . . . . .		30			
Mean . . . . .		29·78	Mean . . . . .		39			

Winds, Westerly. Rain, 2·10 inches. Fine days, 23.

## NOTES FOR THE YEAR 1831.

## JANUARY.

7th, from 5 p.m. till 12, an uncommon display of aurora borealis, in columns and clouds of red, yellow, green, and white. To the 17th, overcast, fogs, and damp. 18th clear. 19th to 23rd, again damp and overcast with much rain. 24th to 31st, wintry blasts and snow. Modifications of clouds very undefinable; generally either overcast or clear and small cumuli.

## FEBRUARY.

1st and 2nd, snow drifted a yard in depth or more. 4th, hasty thaw and inundation in the valleys; violent gale at night. 5th, snow again. 6th, fair. 7th and 8th, fair and very mild. 9th to 12th, very warm and even hot for the season. Sky-lark ascended on the 10th. 13th, foggy. 14th to 28th, at times fair, but chiefly stormy and unsettled; cumuli, nimbi, and cirri above, were the prevalent clouds.

## MARCH.

4th, lightning evening. 12th and 13th, during both nights strong hurricane with beating storms. 19th roads become dusty. 22nd and 23rd piercing gale, followed on 24th by snow. 26th, p.m. change to warmth. 27th, very warm. 29 to 31st, fair and again cold. The long cirrostratus prevalent on the cold cloudy days, and the cumulus on the finer and clearer days.

## APRIL.

1st to 6th, cold winds. 7th, much dark cirrostratus. 8 to 10th, heavy rains, the cumulostratus, cirrus, and cumulus. 12th, evening much lightning in many points. 13th, hot, with adverse currents. Thunder p.m. to 30th, very dry weather, with cirrocumulus, cumulus, and cirrostratus at times. The Spring a medium, neither early nor late.

Hawthorn in leaf on the 1st, sycamore, on 15th, horse-chesnut and willow from 18th to 22nd, cowslips full out on 30th.

## MAY.

2nd day, hot and clear till 11, a.m. wind E. Dense cumuli then gathered and united by electric attraction in zenith, with a deluge of rain, and some thunder and lightning. Black clouds with thunder p.m. and wind N.E. 3rd, beating storms of hail and rain, vivid electric discharges, and loud reports, during afternoon. 4th, black round the West for three hours, till 3 p.m. blue zigzag lightning visible there from hence, although twelve miles distant, and sun shining here. Heavy rain, hail, and thunder after 3 till 5 p.m. A house at Bury St. Edmund's struck and burnt in this day's storm. A tree also shattered in Hunston Park, Suffolk, and

sheep and lambs killed there. 6th, showers of snow while the sun was shining. Coppery cumuli and cirrostrati. 7 to 9th, frosty mornings with ice. To 14th, fine with cold winds at N. E. and E. 16th to 19th, clear, drying gales from E. some part of the time. Leaves stripped from the trees by the wind at E. on 19th, a hot sun-shine meanwhile. 21st, hot and sultry; dense groups of nimbi on S. W. horizon, 1 p. m. to 4 p. m. much thunder. At Chelmsford and Sudbury awfully severe storms occurred. The wind N. E. 22nd and 23rd, very hot. The cirrocumulus, cumulus, and cirrostratus seen. At 3 a. m. of 23rd, a thunder-storm from E. and another at 5 a. m. Much lightning and the wind N. W. to N. E. 24th to 28th, fair, warm, and wind N. E. in general. 29th. rain from E. afternoon and evening. 31st, thunder at 2 p. m. many miles to south.

The hawthorn in blossom about the 16th, or full ten days later than last year. Maple in leaf on 8th, oak on 19th, ash on 22nd, and elm on 23rd.

#### JUNE.

5th, cloudy, haziness, and blue vapour dims the landscape. During evening the wind in all points, showers, and thunder. All modifications inosculating. 6th, 7th, 8th, cool, with cumuli, and cirrostrati. 9th, rain during night. 12th, rain early a. m., distant thunder 3 p. m. 13th distant thunder both E. and N. W. at 2 p. m. 14th, very fine and hot day. 15th, thunder E. and S. all the evening. 16th, nimbus in S. E. at 7 p. m., and several electric discharges visible and audible. 17th and 18th, fleecy cumuli flying, with a hot breeze and cirro-cumulus above. 19th, this evening I noticed a great brightness on the horizon in W. N. W. and as far up as 12 degrees above it, while the sun was 20 deg. above horizon. It dazzled more than the sun, as a sheet of white light. I attributed this to moist vapour peculiarly situated so as to reflect the rays with highest intensity, and being of great extent caused it to exceed the sun in dazzling lustre to all appearances at least. 20th and 21st, very fine and hot. 22nd, the same with me. On this day a most dreadful thunder-storm at Nottingham. 23rd, very hot, with opposite and winding currents of clouds. 24th, much thunder, lightning, hail, and rain in showers to day. At noon a gale from N. W. veering then from S. W., a thunder-storm at the time. 25th to 30th, changeable, with rain and much black or very dark cirrostratus.

The dog-rose in flower about June 9th. The hay-harvest rather obstructed near the close of the month, but the crop was a medium generally.

The cold nights about May 9th greatly checked the grasses when about to set off in full vigour; and near the 7th of this month the nights were for a short period cold for the season.

#### JULY.

2nd, vivid lightning during night. 3rd, in the evening, a heavy shower only a mile and half to N. of us, but no rain here. The cloud was a long cirrostratus when it passed over us. 5th, lightning 10 p. m. on S. horizon. 7th, lightning in same point and time as on 5th. Fair and hot to the 9th. 10th, distant thunder eastward all the morning, the sky covered by undulated cirrostratus, rain at night. 11th, thunder very distant all the after-

noon in S. E. 13th, dense clouds met in zenith, and from 9 a. m. till noon, a great torrent of rain fell with impetuous fury, and many severe discharges of electrical fluid took place. A brick wall at Bury St. Edmund's was washed down by the current formed by this storm which was general in Suffolk. The long empty pools were replenished. 14th, at 4 miles northward of us, a dense nimbus passed, and hail three inches round fell at Eye, with serious damage to hot-houses, windows, &c., this was about 11 a. m. 15th, a parhelion N. of sun at 7 p. m. 16th and 17th, cumuli and nimbi with showers. 18th to 20th, fair, with medium warmth, cumuli prevailing. 21st and 22nd, squally, with nimbi. 23rd to 31st, fine, with increasing temperature. Cirri, cirrocumuli, cirrostrati, and a few cumuli prevailing. The pools again exhausted !

A thunder-storm on the German Ocean, on Sunday, July 10th, 1831 ; the thunder audible 30 miles on land. At noon on same day the southern counties experienced a severe storm. Chelmsford also and its vicinity had the same at 2 p. m.

A fine hay-time during the early part of this month, for the later districts, and much was secured in fine condition. Corn-harvest generally commenced about the end of this month.

#### AUGUST.

3rd, at noon, black nimbi to S.W. with continual thunder. A severe storm passed over Hadleigh and Bury St. Edmund's, with a tremendous fall of rain. It was the same in many parts of Cambridgeshire. 4th, much lightning and thunder in all points through the night. Mr. Shorey, a miller, at Edenbridge, Kent, was killed ; also a young man at Croydon, Surrey. At Henley, Oxon., Mr. Bullock's farm-house was struck and the inmates hurt. At Barrow, Lincolnshire, a boy was killed, and a man at Aike, near Beverley, Yorkshire. Above 2000 bricks were driven off the church at Woolwich by the lightning. Much damage also was experienced in Cambridgeshire. 5th, a shower at 8 a. m., thunder just ceased. 6th, at night many meteors and lightning. 7th, lightning, 10 p. m. to S. 8th, great heat, with cirrocumuli, lightning at night. 9th, very sultry and calm. Wind veering from W. to S. E., but chiefly S. W. 10th, rain at 3 a. m. 11th to 16th, fine and hot ; various clouds. 17th, heavy thunder-storms this evening, and much electrical phenomena all night. The metropolis, the midland counties, and Norfolk and Suffolk were alike visited to day by awful lightning, with storms. Mr. Carman, of Wissett, Suffolk, had a horse struck dead. 19th and 20th, violent gales and rain. On 20th, at 4 a. m., the wind was most violent. 21st to 23rd, fine and dry. 24th, black cumuli and cirrostrati p. m., a shower next morning at an early hour. Thermometer at 6 a. m. 62 degrees, wind S. W., it then veered to N. W. and in three minutes the thermometer fell to 55 degrees ! 27th, much cirrocumulus ; great heat. 31st, at ten a. m., thermometer 68 degrees, but in half an hour down to 59 degrees, while the wind veered as above on 25th !

The corn harvest went on favourably so as to close within this month ; the crops as a whole were fair. Every rivulet dried up and the soil very much parched at the end of this month.

During this month a remarkable sickness, which may even be stated as an epidemic, as it seized many and particularly the labouring class—some fatal cases. The symptoms being a languor, debility, great pain in the bowels, and violent efforts of nature to eject the offending matter both upwards and otherwise.

#### SEPTEMBER.

On 1st, rain began 11 a. m. and continued heavy till 3 p. m. on 2nd! Dense nimbi, cumuli, and cirrostrati on most days till the 9th. Thunder on 2nd, 6th, and 8th. To the 19th, chiefly fair, with fleecy cumuli: rain and thunder at midnight on 19th. Cirrocumulus on 18th. Rain on 21st. 24th to 30th, hot and fine. Lightning on 27th evening. Cirrocumulus on 28th. 30th, much lightning at night.

#### OCTOBER.

1st to 19th, a high temperature equal to some summers, cumuli and nimbi, with stratus all the time, yet fair and clear at intervals. 20th to 31st, variable with grey autumnal skies when fine.

October 12th, an excessive fall of rain at 10 p. m., which in these parts excavated furrows 8 or 10 inches deep in the roads. A whirlwind at Lord Peter's, Thorndon Park, Essex, which tore up 200 trees with many tons of earth on their roots, and some containing two loads of timber each. This was confined to the park!

#### NOVEMBER.

2nd, 3rd, and 4th, much vivid lightning on the southern and eastern horizon, with clear skies. The lightning continued through the night of the 2nd, and was remarkably bright and incessant on the 3rd, at 4 and 5 a. m. and the two evenings after. 5th, 4 p. m., wind S. W., a black nimbus rose N. W., with a severe storm of thunder, lightning, hail, and rain. The electric fluid was forked and of the true summer kind, with snapping crashes of thunder. It was unusually severe at Thetford and all along the Norfolk and Suffolk border. To the 13th, variable, with much lightning by night on 7th and 8th. 14th, a remarkable day; the traits of winter mixed up by a repetition of electrical discharges. Sharp frost morning and night. A dark nimbus at 8 p. m. came over us in the time of freezing, with hail, rain, brilliant lightning, and loud thunder! The barometer from 30·12 to 29·51 in a few hours. 15th to 20th, chiefly frost. Much snow, with gale from N.W. on 16th. Thermometer during night of 16th and 17th was 23 degrees. Very long icicles pendant from the roofs on 17th p. m. 21st, so sudden a rise of temperature from previous frost, that every object within doors was quite damp, and all metallic vessels were covered by drops of water on their surfaces. A peal or set of musical bells on the premises in a room having a fire therein, on the morning of this day, were more especially objects of my notice among the wet articles. 22nd, very warm day. 23rd to 30th, variable, fleecy cumuli, with cirrocumuli predominating. On 30th, the rain succeeded a high pressure with unusual suddenness; meanwhile but slight diminution of pressure was indicated by barometer!

This was a most extraordinary month, being a mixture of unusual weather, with frost, snows, and remarkable thunder-storms same time!

## DECEMBER.

1st to 6th, calm and gloomy. Stratus and cirrostratus. 7th to 12th, very wet for the greater part; it rained on 12th the whole day. Much lightning at night on 12th and 13th. A gale from S. S. E. to S. W. 16th, gale, with beating storms during night from S. S. W. 17th, haloes coloured about moon. 18th, wet and windy morning. From 19th a fall of temperature, stratus and cirrostratus usually seen to near the end. 31st, a very fine and clear day. It is singular that the first and last days of this year were alike in being clear and fine, as also in temperature, minimum and maximum! Barometer under 30 inches from 5th to 22nd, afterwards high above 30.

December 21st, a meteor apparently as large as the moon passed over during the evening to eastward. December 27th, the fog so dense in London as to cause nocturnal darkness at noon, many persons missed their way!

## SUMMARY RESULTS FOR 1831.

Fine days, 258. Rain, 33·60 inches.

Hottest on July 28th, Therm. 82 degrees	Highest Barom. January 7th . . .	30·67
Coldest on January 26th . . . 20	Lowest, December 7th . . .	29·04
Range . . . . . 62	Range . . . . .	1·63

## JANUARY, 1832

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
Su. 1	E.	1	30°30	26	33		Fair and frost
2	N. E.	1	'24	32	34		Fair, some sleet at night
3	S. E.	0	29°96	30	34		New M., fair and frost
4	S. E.	0	'79	27	34		Fair, clear, and frost
5	S. E.	0	'75	26	34		Fair and frost, cloudy
6	N. E.	1	'70	32	38		Fair, cloudy
7	E.	1	'64	37	42		Fair
Su. 8	S. E.	1	'60	37	40	.05	Cloudy, little drizzle
9	E.	1	'57	38	42	.20	Cloudy, rain at night
10	S. W.	2	'70	41	45		Cloudy
11	S. W.	1	'80	41	46	.01	Fair a. m., rain 5 p. m.
12	Var.	0	'90	38	43	.083	Cloudy, little wet
13	N. E.	2	'70	34	38		Fog, little wet
14	N. W.	2	30°41	30	35		Fair and frost
Su. 15	N. W.	0	'54	26	36		Fair and frost
16	W.	0	'46	26	35	.02	Fair, clear, and frost
17	S. W.	1	'40	35	40		Full M. 4 p. m., overcast
18	W.	0	'45	28	42		Fair, clear, and frost
19	S. W.	0	'38	29	33		Thick fog and frost
20	S.	1	'29	33	36		Thick fog
21	S. W.	0	'29	35	42		Very great fog
Su. 22	S.	1	'35	39	43		Fair
23	S.	1	'47	35	39		Fog
24	S. W.	2	'36	34	43		Fair and clear
25	S. W.	2	29°92	35	46		Cloudy, rain
26	S. W.	1	'93	30	41		Fair and clear, frost
27	N. E.	2	30°16	30	38		Fair and frost
28	S. W.	1	'32	26	34		Fair, clear, and frost
Su. 29	N. E.	1	'28	39	46		Foggy, fair, mild
30	W.	1	'42	37	43		Cloudy, fair
31	S. W.	0	29°92	38	45		Cloudy
				26	46	0.463	

## RESULTS.

Barom.	{ Max. on 15th . . . . .		30°54	Therm.	{ Max. on 11th & 29th . . . . .		46 degrees
	Min. on 9th . . . . .	29°57			Min. on 1st & 5th . . . . .	26	
Range . . . . .		'97		Range . . . . .		20	
Mean . . . . .		30°05		Mean . . . . .		36	

Winds nearly equal in distribution. Rain only .463 of an inch. Fine days, 27.

## FEBRUARY, 1832.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S. E.	2	29·45	34	40		New M. 10 p. m., fair
2	S. W.	2	29·32	40	47	.07	Cloudy, little wet p. m.
3	S. W.	1	29·60	31	41		Fair, clear, some frost
4	S. W.	4	30·00	45	51		Fair and mild
Su. 5	S. W.	4	29·13	49	52		Fair and wind
6	S.	3	29·90	43	45		Cloudy
7	N. W.	2	30·11	35	45		Fair and clear
8	N. W.	1	29·51	26	45		Sharp frost, fair,
9	S. W.	2	29·43	35	48	.10	Cloudy, rain, fair
10	N. W.	1	29·61	30	43		Frost, fair, and clear
11	N.	2	29·37	35	40		Cloudy, little sleet
Su. 12	N. E.	2	29·27	32	38	.03	Cloudy, with sleet
13	N. E.	2	29·23	34	38		Cloudy and dry
14	E.	2	29·17	26	38		Frost, fair, very cold
15	N. W.	0	29·14	20	38		Full M. 3 a. m., severe frost,
16	W.	1	29·98	28	35		Fair and frost [clear
17	W.	0	29·79	32	42		Fair, cloudy, frost
18	N. W.	0	30·33	34	44		Fair, cloudy
Su. 19	N. E.	2	29·44	30	42		Fair, clear, and frosty
20	S. E.	0	29·44	22	42		Fair, clear, severe frost
21	N. E.	1	29·39	27	45		Fog, frost, fair
22	Var.	0	29·44	28	40		Fog, frost, fine
23	S. E.	0	29·46	25	41		Fog, frost and rime, fair
24	S.	1	29·26	27	41		Thick rime, fair
25	Var.	0	29·20	26	42		Thick rime, fair
Su. 26	N. E.	2	29·32	35	43		Cloudy, fair
27	N. E.	0	29·27	36	42		Fog, fair, cloudy
28	N. E.	0	29·35	34	37		Cloudy and fine
29	N.	0	29·32	33	40		Cloudy and fine
				20	52	0·20	

## RESULTS.

Barom.	{ Max. on 10th . . . . .	30·61	Therm.	{ Max. on 5th . . . . .	52 degrees
	Min. on 2nd . . . . .	29·32		Min. on 15th . . . . .	20
Range . . . . .		1·29		Range . . . . .	32
Mean . . . . .		29·96		Mean . . . . .	36

Wind most to N. and E., or from N. W. to E. and S. E. Rain only 2-10ths of an inch, and 27 days dry!

## MARCH, 1832.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S.	1	30·41	33	42		Cloudy, fair
2	S.E.	1	·46	38	39	·025	New M. 3 p. m. little wet
3	S.E.	2	·20	35	42	·025	Cloudy, rain 10 p. m.
Su. 4	S. W.	4	29·83	41	46	·18	Rainy, windy
5	W.	4	30·10	40	47		Fair, with cumuli and wind
6	S. E.	6	29·46	31	45	·18	Rainy, high wind
7	S. W.	2	·40	32	45	·30	Very stormy
8	W.	1	·72	32	43		Fair
9	N. E.	1	30·26	26	46		Sharp frost, fair, and clear
10	N. E.	0	·50	23	45		Severe frost, fair, and clear
Su. 11	E.	1	·27	32	51		Fair and clear
12	S.E.	0	·13	34	47	·04	Fair, shower, night
13	S.	1	·01	33	46		Fog, fair, clear
14	S.E.	2	29·41	42	50	·25	Rain
15	E.	2	·90	40	44		Fair
16	S. W.	2	·71	27	45		Full M. frost, rain, night
17	N. W.	6	·41	49	50	·21	Stormy and gale
Su. 18	W.	6	·52	39	48	·03	Stormy, gale, and hail
19	W.	6	·45	37	50	·14	Stormy and gale
20	N. W.	6	·70	39	49		Fair and gale, even. calm
21	N. W.	2	30·21	45	56		Fair and warm
22	W.	2	·21	43	54		Fair
23	S.W.	2	29·93	45	54		Fair, rain, night
24	N.	4	·75	34	40	·49	Stormy, sleet, and snow
Su. 25	N. W.	2	30·31	35	46		Fair
26	W.	1	·27	38	49		Fair
27	N.	1	·20	41	48		Fair
28	S. E.	1	·26	35	48		Fair and clear
29	N. E.	2	·16	27	50		Frost, fair, and clear
30	N. E.	1	·20	37	48		Fair
31	N. E.	1	29·92	41	50		Fair
				23	56	1·87	

## RESULTS.

Barom.	{ Max. on 10th . . . . .	30·50	Therm.	{ Max. on 21st . . . . .	56 degrees
		29·40			23
Range	. . . . .	1·10		Range	. . . . .
Mean	. . . . .	29·95		Mean	. . . . .
					33
					39·5

Winds from N. W. to S. E. by the way of N. Rain, 1·87 inches. Fine days, 24.

## APRIL, 1832.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
Su. 1	N. W.	1	29.98	40	50		<i>New M.</i> 5 a. m. fair
2	S.W.	2	30.25	31	58		Frost, fair, warmer
3	S.W.	1	62	40	63		Fair, clear, and very warm
4	W.	0	68	35	69		Fair, very clear, hot in the
5	N. E.	1	57	43	68		Fair, very warm [day
6	N. E.	2	51	43	54		Fair and cold
7	N. E.	2	41	36	56		Fog, fair
Su. 8	N. E.	2	35	43	54		Fair and cold
9	N. E.	2	42	39	51		Fog, fair, cold
10	N. E.	2	37	40	52		Fair
11	N. E.	2	35	41	52		Fair
12	N. E.	3	13	41	49	.01	Shower, a. m. fair
13	S.E.	2	20	43	58		Fair, clear
14	N. E.	1	31	37	61		Fair, clear, and warm
Su. 15	N. E.	0	27	46	60		<i>Full M.</i> 4 a. m. fair & warm
16	W.	1	13	44	60	.02	Shower a. m. fair
17	S.	1	18	42	63		Fair and warm
18	S.E.	2	29.67	47	62		Fair and warm
19	W.	1	80	47	54	.08	Stormy with hail
20	S. W.	3	30.00	44	50	.10	Rain, stormy, fair
21	N.W.	1	17	42	57		Fair
Su. 22	S. W.	2	27	46	59		Fair
23	S.E.	2	29.96	40	64		Fair and warm
24	S.E.	1	86	43	65		Fair and warm
25	N.W.	1	93	46	47	.40	Rain most of the day
26	N.	2	30.00	40	50		Fair
27	N. E.	2	04	39	55	.05	Fair
28	N. E.	2	29.80	32	54		Fair
Su. 29	E.	3	57	36	57		Fair
30	E.	3	45	43	54		<i>New M.</i> fair
				31	69	0.66	

## RESULTS.

Barom.	{ Max. on 4th . . . 30.68 Min. on 30th . . . 29.45	Therm.	{ Max. on 4th . . . 69 degrees Min. on 2nd . . . 31
Range . . . . .	1.23	Range . . . . .	38
Mean . . . . .	30.06	Mean . . . . .	50

Prevailing winds Northward and Eastward. Rain .66 of an inch. Fine days, 25.

MAY, 1832.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	E.	2	29°47	33	52		Rainy
2	S. W.	1	·43	41	60	·84	Heavy thunder showers
3	S. W.	1	·50	46	58	·36	Showery
4	N. E.	1	30°10	44	55		Fair
5	S.	2	·09	39	59		Fair, cloudy, little wet
Su. 6	S. W.	1	·15	54	66	·18	Rain, fair, warm
7	S.	1	·07	52	75		Fair, very hot
8	W.	2	·24	50	65		Fair
9	N. E.	2	·41	38	48		Cloudy, very cold
10	N.	4	·42	38	48		Cloudy, very cold, with sleet
11	N. W.	1	·47	38	53		Cloudy and cold [evening]
12	N. W.	2	29°87	36	50		Very cold, cloudy, rain, &c.
Su. 13	N. W.	4	·72	38	48	·43	Heavy snow, rain, fair
14	N.	1	·85	37	53	·28	Full M. 5½ p.m. showery
15	N. E.	1	·92	38	53		Fair
16	N. E.	1	30°00	36	55		Fair, with cumuli
17	N. E.	2	29°98	42	57		Fair, cumuli flying
18	N. E.	0	30°33	42	62		Fair, warmer
19	N. W.	0	·37	41	67		Fair, clear, and warm
Su. 20	E.	2	·35	40	62		Fair and clear
21	E.	1	·35	39	67		Fair, clear, and warm
22	W.	2	·30	49	69		Fair, clear, and warm
23	N. W.	1	·39	49	68		Fair and warm, cumuli
24	S. E.	1	·42	49	71		Fog, fair, and hot
25	N. W.	0	·27	51	69		Fair and sultry
26	N.	2	·13	51	66		Fair
Su. 27	E.	1	·12	45	66		Fair
28	S. E.	1	·06	39	70		Fair, very warm day
29	S. W.	0	·00	49	66	·02	New M. 12 at night, fair.
30	S. E.	2	29°91	47	68		Fair, and warm [showers
31	S.	2	·63	51	55	·19	Cloudy, little rain
				33	75	2·30	

## RESULTS.

Barom.	{ Max. on 11th . . . . .	30°47	Therm.	{ Max. on 7th . . . . .	75 degrees
	{ Min. on 2nd . . . . .	29°43		{ Min. on 1st . . . . .	33
Range	. . . . .	1°04	Range	. . . . .	42
Mean	. . . . .	29°95	Mean	. . . . .	54°

Prevalent wind Northerly and Easterly. Rain 2·30 inches. Fine days, 20.

## JUNE, 1832.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
Su.	1	E.	0	29°75	49	58	-20
	2	Var.	1	30°00	51	67	
	3	N. W.	2	29°85	49	60	Fair
	4	E.	0	'61	53	65	Cloudy, calm, thunder
	5	S.	1	'61	51	63	Shower, a. m. rain, night
	6	S. E.	1	'61	50	66	Fair, cumuli
	7	S.	1	'75	50	67	Cumuli, showers
	8	S.	1	'91	49	64	Fair
	9	Var.	0	'98	48	67	Great thunder-storms
Su.	10	S. E.	1	30°02	50	60	Cloudy
	11	S. E.	0	29°78	52	62	Cloudy, showers
	12	S. E.	1	'66	57	68	Cloudy, showers, sultry
	13	S. W.	2	'70	58	74	Full M. 8 a. m. fair and hot
	14	S. W.	2	'85	55	69	Showery, thunder
	15	W.	2	30°09	55	67	Showery
	16	W.	0	'20	52	67	Fair
	17	N. W.	0	'22	55	69	Rain, a. m. fair
	18	Var.	0	'25	53	73	Little showers, hot
Su.	19	S.	0	'19	54	74	Fair and hot
	20	N. E.	2	'09	53	72	Fair, distant thunder
	21	N. E.	1	'05	55	72	Fair
	22	S. W.	2	29°61	54	62	Rain
	23	S. W.	4	'91	54	71	Fair, windy, warm
	24	W.	5	'99	52	64	Clouds flying, very windy
	25	N. W.	4	30°07	50	64	Fair, windy & cool, lit. hail
	26	N. W.	1	'26	49	63	Fair
	27	N. W.	0	'41	47	70	Fair and clear
Su.	28	N. W.	0	'50	57	77	New M. 7 a. m. fair and hot
	29	E.	2	'50	55	75	Fair, clear & hot, storm, p.m.
	30	E.	1	'52	53	71	Fair, very clear
				47	77	2·82	

## RESULTS.

Barom.	{ Max. on 30th . . . . .	30·52	Therm.	{ Max. on 28th . . . . .	77 degrees
	\ Min. on 4, 5, 6, & 22nd	29·61		\ Min. on 26th night	47
Range	. . . . .	, 91	Range	. . . . .	30
Mean	. . . . .	30·06	Mean	. . . . .	62

Prevalent winds N. W., E. and S. E. Rain, 2·82 inches. Fine days, 17.

## JULY, 1832.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
Su. 1	N.W.	2	30·40	52	74		Fair and hot
	N.W.	1	'34	52	70		Fair
	E.	2	'21	46	72		Fair and hot
	S.	1	29·97	56	70		Fair, warm, cumuli
	E.	1	'97	54	71		Fair, sultry
	S.	2	'89	56	69		Fair, cumuli
	N.W.	1	'91	54	67		Fair, cloudy
	W.	3	'90	60	68		Cloudy, little wet
	W.	2	30·04	59	73		Fair, sultry
	S. W.	2	29·91	57	70		Fair
Su. 8	S. W.	2	'88	58	73	.05	Stormy, but warm
	S. W.	1	'83	55	76	.33	Full M.p.m. fair & hot, great
	S. W.	2	30·00	57	73		Fair, sultry. [ storm at night
	W.	2	'18	59	69	.50	Rain a. m. fair p. m.
	N.W.	1	'46	52	69		Fair
	N.W.	2	'28	57	72		Fair
	W.	2	'20	59	74		Fair and hot
	N.W.	2	'11	55	69	.02	Fair, showers, evening
	N.	3	'28	47	62		Fair, very cool wind
	N.	3	'31	44	64		Fair
Su. 15	N.	3	'23	47	59	.05	Cloudy, little wet, very cool
	N.E.	1	'32	52	57		Fair, very cloudy and cool
	N.E.	0	'27	49	63		Fair, rain during night
	N.	1	'36	53	67	.09	Showers a. m. fair
	N.	1	'32	50	66		Fair
	N.	1	'24	56	66		Fair
	N.	2	'24	50	66		New M. 2 p. m. fair
	N.E.	2	'37	55	68		Fair
	N.E.	1	'50	51	63		Fair
	N.W.	1	'45	47	64		Fair
31	N. E.	0	'42	53	64		Fair
				44	76	1·04	

## RESULTS.

Barom.	{ Max. on 29th . . . 30·50 Min. on 12th . . . 29·83	Therm.	{ Max. on 12th . . . 76 degrees Min. on 20th . . . 44
Range	. . . . . 67	Range	. . . . . 32
Mean	. . . . . 30·16	Mean	. . . . . 60

Prevalent winds Northerly. Rain, 1·04 inches. Fine days, 25. A high barometer all the month; the mean being above what is usual: and the temperature lower than usual on account of much more N. wind.

## AUGUST, 1832.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	E.	1	30·16	46	66		Fair
2	E.	1	29·99	55	73	.02	Little shower, fair, sultry
3	N.W.	1	30·09	58	67	.70	Fair, heavy rain, night
4	N.W.	0	.19	56	65		Fair
Su. 5	S. W.	1	.00	56	64	.68	Heavy rain, showery
6	W.	1	.06	54	72		Fair, with cumuli
7	S. W.	2	.10	54	73		Fair and hot
8	S. W.	1	.20	51	77		Fair, very hot
9	E.	1	.25	52	79		Fair, very hot
10	S. W.	1	.30	59	85		Fair, extremely hot
11	S. W.	2	.42	62	79		<i>Full M.</i> 24 p.m. fair very hot
Su. 12	W.	1	.36	53	77		Fair, very hot
13	E.	1	.12	57	67		Fair, hazy, thunder
14	E.	0	.02	49	76		Fair, very hot
15	S. W.	1	.05	57	75		Fair, very hot
16	S. W.	2	.19	56	76		Fair, very hot
17	S. W.	1	.21	53	74		Fair, very hot
18	S. W.	3	29·99	54	70		Hazy, little wet
Su. 19	S. W.	4	.85	58	69	.08	Windy, showers
20	W.	2	30·16	51	75		Fair and very hot
21	W.	1	.01	60	70	.15	Cloudy, rain
22	W.	1	29·80	60	70	.09	Thunder and showers
23	W.	2	30·03	53	70	.07	Showery
24	W.	1	.13	51	72		Fair, clear, and hot
25	S.	2	29·99	53	69	.19	<i>New M.</i> 10 p.m. thunder
Su. 26	W.	2	.82	51	66	.25	Rain a. m. fair [showers
27	S.	2	.40	44	61	.38	Fair, wet night
28	S. E.	1	.28	56	61	.62	Much rain
29	S. W.	1	.51	50	59		Cloudy, little wet
30	N. W.	1	.65	54	65	.37	Fair, wet night
31	W.	2	.85	51	65		Fair
				44	85	3·60	

## RESULTS.

Barom.	{ Max. on 11th : : : 30·42 Min. on 28th : : : 29·28	Therm.	{ Max. on 10th . . 85 degrees Min. on 27th . . 44
Range . . . . .	1·14	Range . . . . .	41
Mean . . . . .	29·85	Mean . . . . .	64·5

Winds chiefly Westerly. Rain 3·60 inches. Fine days 21 in number. Barometrical range greater than usual for the season. Mean temperature high.

## SEPTEMBER, 1832.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
Su. 1	N. E.	0	29°73	54	63	.055	Showers
2	N. W.	0	30°20	51	64		Fair
3	N. W.	1	·31	48	68		Fair and clear
4	E.	0	·40	46	68		Fair and clear
5	N. W.	1	·20	48	66		Fair and clear
6	E.	2	·07	49	61		Fair
7	E.	0	29°98	52	70	.30	Fair and hot, rain evening
8	W.	0	30°16	49	70		Fair, sultry heat
Su. 9	S.W.	1	·09	51	65		Fair
10	S.W.	2	29°87	54	67	.155	Full M. 5 a.m. rain
11	W.	1	30°27	51	64		Fair
12	W.	2	·41	43	63		Fair
13	W.	1	·10	54	64	.10	Showery
14	W.	4	29°91	46	60	.02	Showery, lightning & thun-
15	N. W.	2	30°06	47	60		Fair [der, evening
Su. 16	W.	2	·36	43	63		Fair
17	S. W.	2	·23	53	69		Fair and very warm
18	W.	1	·05	51	63	.02	Shower, fair
19	N.W.	1	·45	40	60		Fair
20	N.W.	1	·58	43	64		Fair
21	N.E.	0	·63	47	62		Fair
22	E.	1	·63	55	62		Fair
Su. 23	S. E.	1	·43	46	71		Fair, clear, and hot
24	S. W.	1	·45	45	78		New M. 7 a.m. fair, very hot
25	S. W.	0	·52	46	80		Fair, clear, & extremely hot
26	S. W.	1	·33	50	80		Fair, clear, & extreme heat
27	S. W.	1	·21	52	77		Fog, fair, & clear, very hot
28	S. W.	1	·19	48	76		Fair and very hot
29	S. E.	1	·12	52	74		Fair and very hot
Su. 30	S. W.	2	·01	58	69		Fair, sultry
				40	80	0·65	

## RESULTS.

Barom.	{ Max. on 21st . . . . .	30°63	Therm.	{ Max. on 25th & 26th . . . . .	80 degrees
		29°73			40
Range	. . . . .	·90		Range	. . . . .
Mean	. . . . .	30°18		Mean	. . . . .

Winds Westerly. Rain, only ·65 of an inch. Fine days, 24. Barometer high all the month, above usual mean, and its range short, while that of last month was greater in range than usual. The temperature of the close of this month was remarkably high.

## OCTOBER, 1832.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S. W.	2	30.20	52	69		Fair and hot
2	S. W.	1	.02	56	69		Fair and hot
3	S. W.	2	29.90	49	68		Fog a. m. fair and hot
4	S. W.	2	.86	55	67	.29	Very warm, storm p. m.
5	S.	5	.28	52	60		Windy, rain
6	S. W.	2	.67	46	61	.19	Fair, storm p. m. light. 9 p. m.
Su. 7	S. W.	2	.77	42	62		Stormy, fair
8	S. W.	5	.30	53	56	.11	Stormy and wet
9	W.	4	.98	45	60	.27	Full M. 7½ p. m. fair
10	S.	1	30.02	46	69	.15	Rain a. m. fair and hot
11	S. W.	2	.39	56	70		Fair, very hot and sultry
12	S. W.	5	.04	56	65	.07	Fair, windy, storm 8 p. m.
13	N. W.	4	29.94	49	59	.22	Windy, thunder-storm, p. m.
Su. 14	W.	1	30.39	42	60		Fair
15	S. W.	1	.30	47	62		Fair, clear, and warm
16	S. W.	1	.41	51	60		Fair and warm
17	W.	1	.47	38	58		Fair
18	W.	0	.35	49	59		Fair, pleasant
19	N. E.	1	.33	49	57		Fair
20	N. W.	0	.41	35	59		Fair, pleasant
Su. 21	E.	0	.48	37	53		Fair
22	N. E.	0	.37	39	59		Fair and warm
23	N. E.	2	.48	41	57		New M. 7 p. m. fair
24	E.	2	.51	45	53		Fair
25	S. E.	1	.56	45	60		Fair and warm
26	E.	0	.50	40	56		Fog, fair
27	S. E.	0	.47	39	55		Fog, fair
Su. 28	S. E.	1	.35	45	55		Fair
29	S.	1	.05	45	54	.33	Rain
30	S. W.	2	.27	38	53		Fair
31	S. W.	2	.21	43	55	.02	Fair, rain at night
				35	70	1.65	

## RESULTS.

Barom.	{ Max. on 25th . . . . .	30.56	Therm.	{ Max. on 11th . . . . .	70 degrees
		Min. on 5th . . . . .			35
Range	. . . . .	1.28		Range	. . . . .
Mean	. . . . .	29.92		Mean	. . . . .

Winds chiefly from S. to W. Rain 1.65 inches. Fine days, 23.

## NOVEMBER, 1832.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	W.	4	29.58	44	58	.18	Rain, a. m. fair, mild
2	S. W.	1	.60	42	57	.10	Overcast, wet
3	N. W.	5	.80	51	54		Fair, windy
Su. 4	N. W.	1	.94	40	49	.02	Stormy, hail
5	N.	2	.80	31	43		Frost, sleet
6	N. E.	1	30.42	40	48	.19	Showery, with sleet
7	N. E.	1	.52	39	47		Fair
8	E.	1	.13	40	42	.15	<i>Full M.</i> 8½ a. m. rain
9	E.	1	.06	36	41	.12	Rain and snow
10	S.E.	4	29.63	36	47	.40	Cloudy, wet, & wind. even.
Su. 11	S. W.	0	.80	37	53		Fair and mild
12	N. W.	1	.88	34	44		Dense fog
13	S. W.	0	.93	29	40		Dense fog, frost
14	S. W.	2	.97	35	51		Cloudy, little wet
15	N. E.	0	30.22	45	51	.05	Fair
16	N. E.	1	.47	42	50		Fair
17	E.	1	.53	34	49		Fair
Su. 18	S.E.	2	.33	34	42		Fair, cloudy
19	S.E.	1	.07	40	46		Overcast
20	S.E.	2	29.85	41	45		Fog
21	S.E.	1	.76	40	50		Fair
22	S.E.	1	30.05	40	51		<i>New M.</i> 9 a. m. fair, clear
23	S.E.	1	.12	37	54		Fair, clear, and warm
24	S.E.	1	.22	42	56		Fair and warm
Su. 25	S.	2	29.98	44	49		Rain, overcast
26	S.W.	2	.70	39	49	.37	Rain, cloudy, fair
27	S.W.	0	.60	34	44	.19	Fair, rain, p. m.
28	W.	4	.90	38	44		Fair, clear, windy
29	S.W.	4	.65	38	45	.48	Stormy
30	S.W.	2	.93	36	43	.25	Fair, wet night
				29	58	2.50	

## RESULTS.

Barom.	{ Max. on 17th . . . . .		30.53	Therm.	{ Max. on 1st . . . . .		58 degrees
	Min. on 1st . . . . .		29.58		Min. on 13th . . . . .		29
Range . . . . .			.95	Range . . . . .			.29
Mean . . . . .			30.05	Mean . . . . .			43.5

Winds equally distributed. Rain, 2.50 inches. Fine days, 17.

## DECEMBER, 1832.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	W.	4	29.95	40	56	.05	Windy and stormy
Su. 2	W.	4	.61	51	54	.35	Fair, stormy night
3	W.	6	.46	41	46	.05	Stormy and strong wind
4	N. W.	2	30.21	41	47	.20	Showers of snow and rain
5	N. W.	1	.32	39	44		Fair
6	N. W.	0	.19	36	44	.13	Fog and rain
7	N. W.	0	.42	36	43		<i>Full M.</i> 8½ p. m. fair
8	S. W.	1	.48	36	45		Fair
Su. 9	S. W.	1	.49	43	50		Fair
10	S. W.	1	.45	37	47		Fair, cloudy
11	N. W.	1	.52	38	48		Fair
12	W.	0	.55	37	49		Fair, light clouds
13	S. W.	0	.25	41	46		Fair
14	W.	2	.11	36	47		Fair
15	S. W.	4	29.70	34	51	.42	Rain and wind
Su. 16	S. W.	1	.99	30	39		Fair and frost
17	S. W.	4	.56	39	55	.25	Stormy
18	W.	6	.37	42	43		High w. fair, light. all night
19	S. W.	1	.81	30	40		Fog and frost, clear day
20	N. W.	2	30.10	29	36		Fair, clear, and frost
21	S.	2	29.81	30	45	.32	Rain, a. m. fair & milder
22	S. W.	0	.97	39	48		<i>New M.</i> 2½ a. m. rain, fair
Su. 23	S.	1	.84	38	50	.05	Rainy
24	S. W.	2	30.13	43	46		Fair, cloudy
25	S. W.	5	29.74	43	58	.28	Stormy, wet, and windy
26	S. W.	1	30.22	33	48		Fair and clear
27	S. W.	0	.27	32	40		Frost, fair, and clear
28	E.	0	.22	25	37		Sharp frost, fog, fair
29	S. E.	3	29.95	32	40	.057	Cloudy, some wet
Su. 30	N. E.	2	30.30	33	37		Fair, very cold
31	E.	1	29.95	32	35	.13	Snow, cloudy, fair night
				25	56	2.287	

## RESULTS.

Barom.	{ Max. on 12th . . . . .	30.55	Therm.	{ Max. on 1st . . . . .	56 degrees
	Min. on 18th . . . . .	29.37		Min. on 28th . . . . .	25
Range . . . . .		1.18	Range . . . . .		31
Mean . . . . .		29.96	Mean . . . . .		40.5

Winds nearly all Westerly. Rain, 2.287. Fine days, 21.

NOTES FOR THE YEAR 1832.

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## JANUARY.

1st to 6th; very fine, dry and frosty, with grey flimsy cumuli. 7th to 13th, fogs, little wet, stratus and cirrostratus. 14th to 19th, fine with frosts and clear sky at times, and stratus at other times. 20th to 31st, chiefly fine and dry, stratus, cirrostratus, and cumulus prevailing. No snow all the month.

## FEBRUARY.

The whole month very fine and dry, with occasional sharp frosts and rime. Grey cumuli, stratus, and cirrostratus predominant.

## MARCH.

7th, 1 p. m. a great storm with hail and snow; another at 7 p. m. A great depth of hail and snow drifted against walls to-day. A tree shivered to atoms by lightning at same time, at Boxford, Suffolk. Unsettled and cold most of this month, but dry at the end. Cirrus, cirrostratus, and cumulus prevailing.

## APRIL.

1st to 5th, fair and sometimes very warm, with brilliant skies on 3rd, 4th, and 5th. 6th to 13th, dry, with cold winds and broad cirrostratus and cumulus. 14th to 18th, warm and fine. On 15th, sun-set in blue cirrostrati, wasting to a himisphere, then to a line of red, and lastly to a speck or point, till it became veiled in the clouds before reaching horizon. 19th to 30th, variable; at the end cold. The principal clouds cumulus, nimbus, and cirrus.

## MAY.

2nd at noon, and at 2 p. m. severe thunder-storms. At 2 p. m. the rain was the heaviest I had noticed for 10 months past, the lightning awful, and the reports resembling heavy artillery. A chimney was struck and some bricks removed in this parish. 6th, rainy morning till 10, then cleared to a warm day. 7th, unusually close and sultry. Thunder in distant nimbi in S. W. An awful storm at Bures at this hour, viz. about 8 a. m. Bright and hot day. Cirrostratus, cirrocumulus, and cumulus. Thermometer 75 degrees at maximum, and in the sun, 107 degrees. 9th to 15th, very cold with dense cumuli, nimbi, and cold showers on some days. At 10 a. m. of 13th, the snow on the grass was near 3 inches in depth! 16th to 28th, chiefly very fine, and a few days were warm, cumulus was almost the only cloud in this period; forming and vanishing as day opened and closed. 29th, cirrocumulus in an arc; little shower 8 a. m. Close and warm day with haziness. 30th, flying cumuli. 31st, frequent light rain. Cirrostrati and nimbi.

This month proved very cold at times, and greatly injured the tender sprout in many instances. It was a chilling and melancholy sight, to behold the cowslips bowed down by snow on Sunday morning the 13th, and many totally covered by it, as it attained a depth equalling the height of those flowers, and so continued most of the forenoon, at least until it had ceased to fall, and the sun broke forth! The periods of the leafing of the trees this year was as stated below.

Sycamore, April 19th, horse-chesnut 23rd, willow 25th, poplar, May 6th, maple 16th, oak, ash, and elm, from 23rd to 25th. Hawthorn in flower on 19th.

#### JUNE.

1st to 7th, often gloomy, with stratus, nimbus, and cumulus. 9th, continual thunder from 9 a. m. to 5 p. m. A severe storm of great extent near noon and 2 p. m. with torrents of rain. Many vivid electrical discharges, and most violent thunder in snapping peals. It was awful at Ipswich and Woodbridge, as well as here at the same instant, although distant in a winding line 20 miles from latter place. Thwaite being N. W. of Woodbridge, and N. by W. of Ipswich. 10th, 11th, 12th, cloudy, close, moist. Distant thunder all day on 10th. 13th, a fine summer day, cirrocumulus, cumulus, and cirrostratus. 14th, shower with lightning and thunder near 6 p. m. 16th, thunder distant at night. Chiefly a mixture of light clouds near this time. 17th, 18th, 19th, very warm with showers intervening, with the same clouds as are usual at such a time. 20th, black nimbi to N. and E. at noon, with thunder. Adverse currents noted by the course of clouds. A very heavy thunder-storm now at Harleston, Norfolk. The wind N. E. while the chief clouds waged war from W. against it. 23rd, windy and warm, much cirri, cirrostrati, and cumuli. 24th, a gale at W. trifling showers; nimbi, cumuli, and cirrostrati. 25th, cool, stormy atmosphere, and hail of the vernal kind; brown cumuli and nimbi. 28th, a fine hot day. Cumuli only particularly seen. 29th, a fine clear and hot day till 3 p. m. Dense cumuli in different currents; I saw them at 3 p. m. combating, when anon, three united and dashed down a hasty shower for eight minutes, passing off to S. S. E., wind E. and before the storm N. W. This storm did not extend beyond one mile in breadth, increasing as the clouds went on; a heavy storm reached Hadleigh at 5 p. m. a distance of 22 miles S. S. W. 30th, a very fine and clear day. Thermometer in sun 119 degrees.

On 28th when the thermometer stood 77 degrees, and in sun 118 degrees, I found the temperature of water from a well, 16 feet deep, to be 58 degrees immediately on bringing up the water.

The dog-rose in flower on 13th. The wheat crop remarkably tall at this time in the eastern counties.

#### JULY.

1st to 6th, chiefly very fine and rather hot than otherwise. Few else than cumuli clouds observed. A gale on the 6th night, little wet. 7th to 10th, some little wet, but in general fine and warm and no rain yet measurable. The cirrocumulus, cirrostratus, and cumulus seen. 11th, nimbi and cumuli, showery and hail. 12th, fine and hot, with much cirrocumulus. At 6 p. m. the most singular appearances marked the whole sky,

and while walking out I strictly observed them. Black and white festoons of undulated cirrostrati covered the whole of the sky in regularly waved lines. Nimbi followed with thunder at 7 p. m. in S. W. A storm commenced soon after 8 p. m. The cloud coming up in S. W. was a dense black, intersected by two white horizontal lines. A noise, as of carriages in rapid process, attended its approach : the wind before S. W. was now N. E. opposed to it. Detached clouds now whirled in the zenith with great velocity. A violent whirlwind commenced, then a direct gale or hurricane S. W. anon from E. and again from W. while four distinct clouds passed with some rain, incessant lightning, and loud thunder. The several clouds were the blackest cirrostrati lying along S. S. E. to N. N. W. broadest in zenith. Trees were throughout Suffolk and Norfolk snapped asunder in the trunk, or thrown down direct, in almost every parish, and every large tree more or less injured. Barns blown down, and a set of farm-buildings, with several hay-stacks, burnt by lightning, at the Rev. — Rose's, Palgrave, Suffolk. Two mills at Bury St. Edmund's, one at Ixworth, and one at Stonham, were stripped of their sails ; one at Sudbury also, another at Beccles much injured, and the cap of a tower mill at Loddon, Norfolk, thrown off and two persons were killed by it. Another mill was uncapped in the same county ; and a long garden wall at Bury St. Edmund's thrown down. Clouds of dust preceded the storm, and the whole had not passed until midnight. 13th to 18th, warm sultry air, and little rain at times, cirrostratus and cumulus seen. 19th to 23rd, very cool and cloudy. 24th to 31st, chiefly fine but rather cool for the season. Broad cirrostratus and cumulus most observed.

The hay harvest was principally favoured by the weather this season, a fair crop, and secured about July 7th.

#### AUGUST.

2nd, a rise of temperature. Distant thunder and lightning, southward at night, preceded by much cirrocumulus in the day. 3rd, a great rain from 9 to 12 p. m. wind then N. N. E. 5th, a heavy rain for several hours a. m. 6th to 12th, very fine and great heat on most of the days. The thermometer 85 degrees for above an hour on the 10th p. m. and at nine p. m. 70 degrees. 13th, hazy, undulated cirrostrati, and distant thunder. 14th to 18th, fine and hot weather. Cumulus, cirrocumulus, and cirrostratus daily. Lightning in the evening of the 16th. 19th to 31st, a different constitution of atmosphere. 20th and 24th, fine and hot, the rest of the time showery, with thunder, and heavy and very great rains. Cirrus, cirrostratus, cumulus, and nimbus prevailing. Very heavy thunder-storms passing round on 25th during the morning. At Stowmarket and its vicinity a severe storm at 11 a. m. and a tree at Combs, one mile from the above town, was split by the electric fluid.

The latter part of this month proved remarkably rainy, retarding the harvest, and the barley crop became injured thereby. On 28th, the barometer was very low for the season as the table shews, and the rain fell in frequent heavy showers all day so as to be almost continuous ; the wind S. E. and a remarkably dark day for this period of the year ; the thermometer, on account of the gloomy state of the atmosphere, did not rise but 5 degrees all the day, (see table.)

The wheat crop was more generally secured before the wet, except in the northern counties: the quality was fair, and the greatest bulk of straw known for many years.

#### SEPTEMBER.

2nd to 6th, fair and pleasant, with cumulus and cirrostratus. 7th, fair and sultry. Cirrocumulus and cumulus followed by rain at night. 8th to 13th, occasional light rain but chiefly fair and warm. 14th, much lightning and thunder at 7 and 8 p. m. in the N. E. and E. 15th to 22nd, chiefly fine and dry with the cumulus of the day. On 22nd, the cirrocumulus followed as usual by great increase of temperature. 23rd to 29th, uninterrupted sunshine and extraordinary heat for this late period. The very commencement of the autumnal equinox! During the 23rd, 24th, 25th, 26th, and 27th, not a single cloud, even so much as a line of cirrus, was visible. A fog on 27th, in the morning, was the only change from pure skies, and this fog died away to the horizon without forming cumuli or other usual change. Maximum thermometer 80 degrees on 25th and 26th. 28th, a few trains or ranges of the white round cirrocumuli, and which collapsing in some instances exhibited small white cirrostrati, with small cumuli heads on their upper edges. 29th, many ranges of white cirrocumulus. 30th, broad cirrostrati and flying cumuli, with complete change yet sultry. A little wet at times.

On 25th the greatest intensity seemed to prevail, for at 4 p. m. the thermometer had declined only to 77 degrees, and at 6 p. m. or sunset, to 70 degrees! The effects of this week were visible on the animal and vegetable creation, for both were drooping under it. The cattle panted and evinced lassitude, while the leaves of shrubs flagged and shrivelled. The earth too became a reflector to a greater degree than usual, and was hot to the touch as in summer's reign. So late in September we have not another instance of so great heat on record!

A remarkable contrast to the last month's close, took place in this month, favouring the harvest in the north.

#### OCTOBER.

1st to 12th, a high temperature. Some heavy storms of rain on some days; cirrus, cirrocumulus, cirrostratus, nimbus, &c. 13th, near 4 p. m. a severe storm, with hail from N. and vivid lightning and violent thunder. At Wortham, near Diss, it was heavier than here. 14th to 28th, very fine. On 25th, 6 p. m. a thin cirrostratus, with lightning W. N. W. Cumulus and stratus usual during the fine days to 28th. 29th to 31st, some rain, with cirrostratus.

The land during this month was too dry for agricultural purposes till after the 29th day, and the ditches and ponds exhausted!

#### NOVEMBER.

1st to 10th, stormy and wet. Much lightning on 5th, morning and night and some thunder. On 3rd, a windmill thrown down at Stowupland, Stowmarket, at 6 a. m. by a sudden gale. 13th, great fall of meteors during night, some very large with crackling noise. 11th to 25th, generally fine. No cloud on 22nd and 23rd. 26th to 30th, stormy and wet. Cumulus, nimbus, and cirrostratus prevailing. On 24th, the cirrocumulus in vast beds.

## DECEMBER.

2nd, wind fell away after 1 p. m. Very serene and pleasant afternoon, bright, with cirrostratus. Hail-storm 7 p. m. and wind rose to a gale through the night and all next day. 4th to 6th, stormy atmosphere. 7th to 14th, very fine and calm. On 12th, a general bed of cirrocumulus, loose and grey, covered the sky. Barometer high in this period. 18th, vivid lightning the night through. To the 25th, stormy and unsettled, with nimbus, cumulus, and cirrostratus. Frost on 19th and 20th, with drying breezes. 26th to 31st, colder, with stratus at times. 30th, round cumuli and cirrostrati, followed by snow next morning. 31st, snow two inches deep, overcast all day, clearer night and frost.

Great alarm existed throughout our land on account of the prevalence of the English cholera, from February till October in this year. A fast was in consequence instituted on March 21st, and boards of health established.

## SUMMARY RESULTS FOR 1832.

Fine days, 271. Rain, 20·04 inches.

Hottest on Aug. 10th, Therm. 85 degrees	Highest Barom. April 3rd & 4th . . . . .	30·68
Coldest on February 15th . . . 20	Lowest, August 28th. . . . .	29·28
Range . . . . . 65	Range . . . . .	140

## JANUARY, 1833.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
Su.	1	W.	1	30°55	30	33	Fog, and frost
	2	S.	1	'19	30	43	Fog, rain
	3	E.	2	'30	39	43	Fair
	4	E.	2	'82	33	35	Fair, clear
	5	N. E.	1	'67	25	35	Sharp frost, cloudy
	6	N. W.	0	'63	22	33	<i>Full M.</i> 8 a. m. severe frost,
	7	N. W.	1	'68	21	34	Severe frost, cloudy [clear
	8	N. E.	0	'80	30	36	Cloudy, frost
	9	E.	2	'60	32	35	Cloudy
	10	S. E.	3	'37	30	34	Gentle frost, clear
Su	11	E.	2	'01	23	39	Clear, sharp frost
	12	S. E.	1	'06	29	40	Clear and frost
	13	E.	1	'25	31	40	Little rain
	14	E.	1	'40	38	41	Cloudy, fine
	15	E.	3	'32	34	38	Cloudy, fine
	16	N. E.	1	'36	33	42	Fair
	17	N. W.	1	'23	31	44	Showers and sleet
	18	N.	1	'27	35	38	Fair
	19	N. E.	0	'38	33	39	Fair, cloudy
	20	E.	3	'50	33	39	<i>New M.</i> 10 a. m. fair, clear
Su	21	E.	3	'52	29	36	Frost, fair, and clear
	22	E.	1	'55	29	38	Fair, clear, and frost
	23	N. E.	0	'68	19	37	Fair, clear, very severe frost
	24	E.	1	'55	20	37	Fair, severe frost
	25	E.	1	'27	27	38	Fair, and sharp frost
	26	S. W.	0	'20	30	39	Fair, frost, hazy
	27	S. W.	2	'07	32	42	Fair
	28	S. W.	1	'04	35	41	Fair, rain early
	29	S. E.	1	29°42	35	42	Foggy
	30	N. W.	1	'72	36	40	Little rain
	31	S. E.	1	'85	27	37	Frost, hazy, snow at night
				19	44	0·50	

## RESULTS.

Barom.	{ Max. on 4th . . . . .	30°82	Therm.	{ Max. on 17th . . . . .	44 degrees
	Min. on 29th . . . . .	29°42		Min. on 23rd . . . . .	19
Range . . . . .		1°40	Range . . . . .		25
Mean . . . . .		30°12	Mean . . . . .		31·5

Principal winds, Easterly. Rain, only '5 of an inch. Fine days, 27.

## FEBRUARY, 1833.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
Su. 3	E.	2	29.48	32	36		Heavy snow, fair, p.m.
	S. W.	4	28.89	32	51	.90	Very heavy rain, continual
	W.	6	.95	40	47	.07	Stormy
	S. W.	1	29.80	37	51	.05	Full M. 6½ p.m. some rain
	S. W.	1	.96	46	56		Little wet
	S. W.	1	.97	33	53		Fog, cloudy
	S. W.	0	.90	43	55	.03	Rain, fair
	S. W.	3	.85	40	55		Fair and mild
	N.W.	1	.70	41	46	.45	Heavy rain, fair p.m.
	S. W.	4	.27	35	52	.35	Much rain, fair p.m.
Su. 10	S. W.	4	.45	45	52	.10	Fair, clear, windy
	W.	6	.76	37	52	.32	Fair, high wind, rain early
	S. W.	5	.37	39	51	.26	Stormy and gale
	S. W.	5	.26	42	50		Stormy and gale
	N.W.	5	28.90	33	43	.67	Heavy rain and snow
	W.	2	29.74	30	40	.14	Much snow, and rain
	S. E.	3	.53	30	44	.40	Fair a. m. wet p.m.
	W.	2	.51	37	45	.10	Rainy
	N.E.	0	.98	38	47		New M. 5 p.m. fair
	S.	4	.06	38	46	.31	Rainy
Su. 17	N.E.	1	30.18	38	44	.22	Showery
	N.E.	2	.15	37	39		Little rain
	N.E.	2	29.97	34	43	.06	Rainy
	S. E.	2	.62	33	42	.55	Much rain
	S. W.	1	.70	39	49	.14	Stormy
	S.	3	.38	37	49		Some little rain
	S.E.	2	.27	39	47	.25	Much rain
	S. E.	4	28.97	33	46	.33	Heavy rain and snow
				30	56	5.70!	

## RESULTS.

Barom.	{ Max. on 21st . . . . 30.18 Min. on 2nd . . . . 28.89	Therm.	{ Max. on 5th . . . 56 degrees Min. on 16th . . . 30
Range	. . . . . 1.29	Range	. . . . . 26
Mean	. . . . . 29.53	Mean	. . . . . 43

Winds W. and S. W. to 16th, afterward Easterly. Rain, 5.70 inches! - Fine days, 8, and these scarcely so.

## MARCH, 1838.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S.W.	5	29·12	35	43	·17	Stormy gale, and rain
2	N. W.	2	·76	36	50		Fair and clear
Su. 3	S.W.	2	·91	43	53		Little showers, fair p. m.
	S.E.	2	30·05	42	53		Fair [cumulus
	N. W.	0	·16	33	53		Fair, much ribbed cirro-
	N. W.	3	·20	38	43	·31	<i>Full M.</i> 5 a. m. rain
	N. E.	2	·47	35	42		Stormy with hail
	E.	3	·40	29	38		Frequent snow and frost
	N.	3	·21	28	38	·10	Sharp frost and snow
	E.	3	·11	33	40		Fair, very cold wind
	N. E.	2	·20	29	40	·06	Much snow, frost
	N. E.	1	·16	31	41		Fair and frost
Su. 10	N. E.	0	29·75	24	41		Fair and severe frost
	E.	1	·47	26	36	·05	Severe frost, sleet & snow
	E.	2	·62	30	44		Fair, clear, and frost
	N. E.	2	·68	32	45		Fair and very cold
	E.	3	·74	37	40	·01	Fair, cloudy, cold, little wet
	N. E.	2	·92	36	40		Fair, cloudy
	N. E.	2	30·23	34	44		Fair, cloudy, sleet
	N. W.	2	·17	27	45		Sharp frost, hail
	N. W.	3	29·94	33	42	·14	<i>New M.</i> 11 a. m. much snow
	N. E.	0	30·07	29	41		Frost and snow [frost
Su. 24	N. E.	1	·07	28	40	·18	Great fall of snow, sharp
	N. E.	2	29·94	29	42	·15	Frost, snow, and rain
	N. E.	1	·92	33	42	·13	Showers of hail and snow
	S. E.	3	30·19	33	46		Fair
	N. E.	1	·22	34	45	·10	Rain, fair
	S. W.	1	·16	40	54		Fair, warmer
	S. W.	1	29·78	33	51		Fair
	W.	2	·85	34	52	·12	Rain early, fair
	S.E.	1	·83	32	55		Fair, clear, more pleasant
				24	55	1·60	

## RESULTS.

Barom.	{ Max. on 7th . . . . .	30·47	Therm.	{ Max. on 31st . . . . .	55 degrees
	{ Min. on 1st . . . . .	29·12		{ Min. on 13th . . . . .	24
Range . . . . .		1·35	Range . . . . .		31
Mean . . . . .		29·79	Mean . . . . .		39·5

Winds Northerly. Rain 1·60 inches. Fine days, 14. More snow than rain during the month, and a low temperature.

## APRIL, 1833

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weatner.
				Min.	Max.		
1	S. E.	3	29·11	40	51	·55	Heavy rain
2	S. W.	0	·20	42	59		Fair and warm, wet even.
3	N. W.	1	·80	43	55	·13	Some rain, lightning night.
4	S. E.	3	·67	41	50	·45	Full M. 2½ p. m. heavy rain
5	N. W.	1	30·01	44	56		Fair
6	S.	2	·11	38	55		Fair
Su. 7	N. E.	2	29·98	35	56		Fair
8	N. E.	1	30·20	39	56		Fair, thunder p. m.
9	S. W.	1	·11	37	55		Fair, rain p. m.
10	S. W.	3	29·73	42	59	·17	Stormy and hail
11	S. W.	5	·37	39	51	·09	Stormy and hail
12	N. W.	3	·63	36	53		Chiefly fair, thunder p. m.
13	N. W.	2	·71	40	54	·25	Showers
Su. 14	N. W.	4	·43	39	50	·14	Showery and hail
15	Var.	0	·43	34	50	1·00!	Heavy continued rain, thun.
16	N. E.	3	·73	36	49		Fair, hail shower
17	N. W.	2	·64	34	50	·10	Showery
18	N. W.	1	·89	35	51		Fair, hail 4 p. m.
19	S. W.	1	30·10	33	57		Fair
20	W.	0	·19	39	54	·18	New M. 2 a. m. rain, fair
Su. 21	N. W.	0	·30	33	61		Fair, warmer
22	N. W.	1	·32	38	63		Fair, clear, and warm
23	N. W.	0	·26	39	68		Fair, clear, and warm
24	Var.	0	·15	42	59	·08	Showery and thunder
25	N. E.	1	·38	43	53		Fair
26	W.	1	·24	40	60		Fair
27	S. W.	1	·03	49	63		Fair and warm
Su. 28	S. W.	2	29·85	48	59	·16	Rain a. m. fair
29	N. W.	1	·66	38	60	·30	Heavy showers, thunder N.
30	Var.	1	·79	37	58	·07	Showery, thunder S.
				33	68	3·67	

## RESULTS.

Barom.	{ Max. on 25th . . . . .	30·38	Therm.	{ Max. on 23rd . . . . .	68 degrees
	{ Min. on 1st . . . . .	29·11		{ Min. on 19th a. m. . . . .	33
Range	. . . . .	1·27	Range	. . . . .	35
Mean	. . . . .	29·74	Mean	. . . . .	50·5

Winds often Northerly, but generally variable so as to be nearly equal. Rain 3·67 inches.  
Fine days, 14. A very wet month, and the spring thus far very unkindly.

## MAY, 1833.

Day.	Wind.	Force.	Barom. P. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S.	3	29.75	41	57		Cloudy, little wet night
2	S.	4	.67	49	59		Cloudy, little wet
3	S. W.	3	30.00	51	69		Fair and very sultry
4	S. E.	1	.11	55	80		<i>Full M.</i> 1 a.m. fair, extreme-
Su. 5	N.	2	.50	54	71		Fair, clear [ly hot
6	N. E.	1	.61	44	69		Fair, clear
7	N. E.	2	.55	45	69		Fair, clear
8	E.	1	.25	48	74		Fair, clear, and hot
9	S. E.	2	29.97	49	76		Fair and very hot
10	S. W.	1	30.12	49	66		Fair, cloudy
11	E.	0	.27	51	67		Fair, cloudy
Su. 12	S.	1	.12	48	75		Fair, clear, and hot
13	W.	2	.30	54	75		Fair and hot
14	S. W.	1	.32	50	77		Fair, clear, & very hot
15	S. E.	2	.07	55	82		Fair, clear, & extreme heat
16	S.W.	1	.02	59	84		Fair, extremely hot & clear
17	S. W.	1	.00	58	85		Fair, extremely hot & clear
18	N. E.	2	.45	58	72		Fair and change
Su. 19	E.	2	.29	48	60		<i>New M.</i> 2 p. m. cloudy, rain
20	W.	1	.38	51	69		Thunder a. m. fair, cloudy
21	W.	1	.50	52	75		Fair, clear, and hot
22	E.	1	.52	47	75		Fair, clear, and hot
23	E.	1	.52	49	75		Fair, clear, and hot
24	N. E.	1	.37	48	76		Fair, clear, and hot
25	W.	3	.12	48	80		Fair, and very hot
Su. 26	N. E.	3	.41	50	58		Fair, cloudy, cool
27	N. E.	1	.43	46	67		Fair
28	W.	2	.25	46	73		Fair and hot
29	E.	1	.29	48	66		Fair
30	N. E.	2	.41	39	66		Fair
31	S.E.	2	.36	39	72		Fair, clear
				39	85	0.28	

## RESULTS.

Barom.	{ Max. on 6th . . . . .	30.61	Therm.	{ Max. on 17th . . . 85.5 deg.*
	Min. on 2nd . . . . .	29.67		Min. on 30th a.m. 39
Range	. . . . .	.94	Range	. . . . . 46.5
Mean	. . . . .	30.14	Mean	. . . . . 62.25

Winds nearly equal, but many Eastward. Rain only .28 of an inch. Fine days 28.

\* I have never placed fractions in the thermometer columns in tables, whence the difference appearing between the result and the column, but the thermometer really was 85½ on 17th.

JUNE, 1833.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S. E.	1	30·00	45	80		Fair, and very hot
Su. 2	S. E.	2	29·63	53	77		<i>Full M.</i> 12 m. very hot
3	S. W.	0	.59	55	67		Rain a. m. fair
4	S. E.	2	.74	47	69		Fair
5	Var.	0	.90	47	69		Fair
6	S. W.	1	30·00	51	74		Fair and hot
7	W.	1	.13	54	79		Fair and very hot
8	W.	2	.33	57	73		Fair and hot
Su. 9	W.	2	.37	52	79		Fair, extremely sultry
10	S.	1	.20	57	82		Fair, clear & extremely hot
11	S. W.	6	29·73	59	76	.04	Fair a. m. and hot, gale
12	S. W.	5	.80	52	60	.03	Gale and little showers
13	S.	2	.50	51	59	.15	Cloudy, little wet
14	N. W.	2	.47	50	65		Fair
15	Var.	2	30·00	41	69		Fair, clear
Su. 16	S. E.	2	29·77	55	70	.35	Rain a. m. fair
17	S. W.	3	30·07	52	69		<i>New M.</i> 11 p. m. fair
18	W.	1	.21	51	73		Fair, clear, and hot
19	S.	0	.09	52	71		Fair, sultry [thunder
20	Var.	0	.00	57	62	1·98	Extreme torrents of rain,
21	W.	1	29·99	53	70		Fog, fair
22	W.	3	30·03	55	67		Fair, rain night
Su. 23	N. W.	2	29·64	52	62	.39	Rain a. m. thunder-storms
24	W.	2	.80	47	66	.02	Showers, thunder
25	S. E.	1	30·00	46	69		Fair
26	N. E.	2	29·85	53	70	.18	Fair, thunder-storm evening
27	S. W.	3	.90	54	65		Fair [shower even.
28	S. E.	3	.88	54	74	.08	Fair and hot, thunder and
29	S. W.	3	.94	57	73		Fair and hot
Su. 30	S. W.	3	30·00	55	72		Fair and hot
				41	82	3·40	

## RESULTS.

Barom.	{ Max. on 9th . . . 30·37		Therm.	{ Max. on 10th . . . 82 degrees	
	Min. on 13th, 14th . . . 29·47	Range . . . . .		Min. on 15th . . . 41	Range . . . . .
Range . . . . .	90		Mean . . . . .	61·5	Mean . . . . .
Mean . . . . .	29·92				

Winds Southerly and Westerly. Rain 3·40 inches. Fine days, 23.

## JULY, 1833.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S. W.	3	29.87	52	65	-29	<i>Full M.</i> night, showery
2	W.	2	30.00	44	67		Fair
3	W.	1	.13	48	67		Fair
4	S. W.	1	.27	47	72		Fair and sultry
5	S. W.	1	.28	56	74		Fair and hot
6	S.E.	3	.03	52	75		Fair and hot
Su. 7	S.	1	29.86	59	80		Fair, hot, and sultry, storm
8	N. E.	3	30.10	60	71	1.50	Fair after 10 a.m. [night]
9	N. E.	3	.07	55	60		Fair
10	N. W.	1	.09	47	66		Fair
11	N. W.	2	.11	52	69		Fair
12	N. E.	2	.24	52	59		Fair, cloudy
13	N.	2	.24	54	60		Fair, cloudy
Su. 14	E.	0	.25	55	75		Fair, p. m. clear and hot
15	E.	1	.28	53	72		Fair and hot
16	S.	1	.33	52	75		Fair and hot
17	N. W.	1	.30	54	75		<i>New M.</i> a. m. fair and hot
18	S. W.	1	.02	62	79		Fair, very hot and sultry
19	S.W.	2	29.97	59	69	.03	Showers, thunder
20	S. W.	3	.72	57	67	.15	Showery
Su. 21	W.	3	.80	52	66	.10	Little showers
22	S. W.	2	.74	51	69	.08	Little wet
23	W.	2	.81	55	67	.30	Much rain
24	N. W.	3	30.10	51	67		Fair
25	W.	1	.42	51	70		Fair
26	S.W.	1	.39	50	79	.08	Fair, very hot, shower 9 p.m.
27	N. W.	1	.37	62	78	.10	Fair, very hot, shower even-
Su. 28	E.	1	.41	59	77		Fog, fair, very hot [ing]
29	E.	1	.43	56	76		Fair, very hot
30	N. E.	2	.53	56	66		Fair, cloudy [evening]
31	N. W.	2	.41	53	62		<i>Full M.</i> 3 a. m. fair, thunder
				44	80	2.63	

## RESULTS.

Barom.	{ Max. on 30th . . . . .	30.53	Therm.	{ Max. on 7th . . . . .	80 degrees
	{ Min. on 20th . . . . .	29.72		{ Min. on 2nd a. m. . . . .	44
Range	. . . . .	.81	Range	. . . . .	.36
Mean	. . . . .	30.12	Mean	. . . . .	.62

Winds very variable. Rain, 2.63 inches. Fine days, 25. It will be seen above that most of the rain fell in the night of the 7th, when we had a great thunder-storm, the particulars whereof are noticed in the notes for the month.

## AUGUST, 1833.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	N. W.	1	30.50	56	64		Fair
2	N. W.	1	.48	54	62		Fair, cloudy
3	N.	3	.40	54	65		Fair
Su. 4	N. W.	2	.37	46	69		Fair, clear
5	N. W.	2	.16	54	66		Fair
6	N.	1	.24	46	67		Fair
7	N.	0	.18	42	63		Fair, cloudy
8	N.	0	.17	43	66		Fair, cloudy
9	S. E.	1	.12	50	69		Fair
10	W.	1	.07	52	75	.02	Fair and hot, thund. show.
Su. 11	N.W.	1	.03	49	64	.04	Little shower
12	N.W.	1	.25	44	65		Fair
13	W.	1	29.85	49	65		Fair
14	N.	0	.81	45	64		Fair
15	N. W.	1	.84	47	66		New M. 2 p. m. fog, fair
16	N. W.	1	30.00	47	64	.02	Fair, shower, 5 p. m.
Su. 17	W.	1	29.90	44	67		Fair, light. 9 p.m. E. & S.E.
18	W.	1	.88	51	63	.12	Little showers
19	W.	2	.98	48	67		Fair
20	W.	3	30.00	55	68	.18	Fair, rain night
21	W.	3	29.83	56	73	.04	Fair, hot, shower night
22	S.W.	4	.77	50	68		Fair
23	W.	4	.74	52	66	.02	Fair, shower, 8 p. m.
Su. 24	N. W.	1	30.07	52	68		Fair, sultry, thunder-storm
25	N.	2	.35	52	63	.60	Fair [night]
26	N.W.	1	.22	42	69		Fair, clear
27	W.	1	.33	48	75		Fair and hot
28	W.	1	.30	55	77		Fair, very hot
29	S. W.	1	.04	54	78		Fair, very hot
30	S. W.	2	29.80	53	67	.04	Full M. 7 a. m. cloud. wet nt.
31	N.W.	6	28.82	52	56	.82	Much rain, and a gale
				42	78	1.90	

## RESULTS.

Barom.	{ Max. on 1st . . . . .	30.50	Therm.	{ Max. on 29th . . . . .	78 degrees
		Min. on 31st . . . . .			42
Range	Range	1.68		Range	36
Mean	Mean	29.66		Mean	60

Winds chiefly W. and N. W. Rain, 1.90 inches. Fine days, 26.

## SEPTEMBER, 1833.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
Su.	N. W.	5	29.33	48	55	.40	Windy and wet
	N. W.	2	30.02	41	61		Fair
	N. W.	2	29.70	50	64	.36	Fine, wet evening & night
	N.	4	30.25	47	59	.05	Showers
	N.	2	.42	45	61		Fair
	N. E.	2	.22	46	63		Fair
	N. E.	2	.05	50	66		Fair, clear
	N. E.	1	29.90	55	62	.19	Rain, showery
	N. E.	1	30.14	55	62		Fog, fair
	N.	0	.16	56	60		Cloudy
Su.	S. W.	1	29.77	55	61	.23	Rainy, lightning evening
	N. W.	4	30.20	50	60		Fair, windy
	W.	1	.21	44	64		New M. 10 p. m. fair, clear
	S. E.	2	.02	51	66		Fair and warm
	Var.	0	29.97	52	69		Fair, clear, and hot
	S.	1	.73	48	64	.80	Showers, lightning & thund.
	S.	1	.64	52	62	.54	Heavy rain, showery
	W.	1	.36	49	60		Fair, distant thunder-storm
	N. W.	1	30.15	45	64		Fair, clear
	N.	1	.32	44	65		Fair, clear
Su.	E.	0	.22	41	64		Fair
	E.	1	.11	46	69		Fog, fair, hot
	S. E.	2	.01	51	66		Fair
	S.	4	29.54	52	64		Cloudy, close
	S. W.	3	.89	55	67		Fair, sultry
	S. E.	2	.90	54	64	.06	Showery
	S. E.	0	.98	42	66		Fair, clear, warm
	S. E.	2	.80	51	63	.12	Full M. 11½ p. m. rain, fair
	S. W.	1	30.10	46	68		Fair and very warm
	S. E.	0	.37	44	66		Fair, clear, and warm
				41	69	2.75	

## RESULTS.

Barom.	{ Max. on 5th . . . . .	30.42	Therm.	{ Max. on 15th . . . . .	69 degrees
	{ Min. on 1st . . . . .	29.33		{ Min. on 1st, 21st	41
Range . . . . .		1.09	Range . . . . .		28
Mean . . . . .		29.87	Mean . . . . .		55

Winds, very variable. Rain, 2.75 inches. Fine days, 21.

## OCTOBER, 1833.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
Su.	E.	0	30°41	42	66		Fog a. m. fair, clear, & hot
	N. E.	0	.26	44	60		Fog a. m. fair
	N. E.	0	.13	48	61		Fog a. m. fair
	N. E.	2	.24	42	65		Great fog, fair, very warm
	E.	2	.25	45	62		Fair and warm
	E.	1	.25	47	64		Fog, fair, and warm
	E.	1	.22	42	64		Great fog, fair, and warm
	E.	0	.15	41	61		Fog, fair
	N. E.	2	.35	42	59		Fair
	E.	2	.38	39	58		Fair
Su.	S. E.	1	.11	35	64		Fair, clear, and warm
	S. W.	3	29°98	45	58	·13	Fair, storm, 5 p.m.
	W.	2	.98	36	52		New M. 7 p.m. fair
	S. W.	3	.54	46	60	·29	Rain, fair, p. m. light. night
	S. W.	1	.10	48	55	·13	Stormy, fair, p. m.
	S. W.	1	.41	38	51		Fair, lightning, 9 p.m.
	N. W.	4	.60	41	54	·17	Squally, with rain at times
	N. W.	1	.60	42	53		Fair
	N. W.	1	.50	44	57		Fair, lightning, E. at night
	W.	1	.83	34	55		Fair, very clear
Su.	S. W.	3	.75	41	60	·08	Cloudy, warm, little rain
	S. W.	1	.81	56	62		Fair and warm
	S.	4	.81	53	61	·48	Heavy rain, stormy, thund.
	S. E.	2	.89	43	60	·18	Fair
	S. E.	2	.60	55	61		Fair, very warm
	S. E.	2	.73	55	63		Fair, clear, very warm
	E.	1	.99	44	62		Fair, very warm
	E.	0	.90	51	63	·04	Full M. 4 p.m. show. warm
	S. E.	1	.92	52	64		Fair, clear, and even. hot
	Var.	0	30°15	43	65		Fog a. m. fair, clear, & hot
31	S. W.	0	29°97	45	56		Fog, cloudy, fine
				34	66	1·50	

## RESULTS.

Barom.	{ Max. on 1st . . . . .	30°41	Therm.	{ Max. on 1st . . . . .	66 degrees.
	Min. on 15th . . . . .	29°10		Min. on 20th a.m. . . . .	34
Range . . . . .		1·31	Range . . . . .		32
Mean . . . . .		29°75	Mean . . . . .		50

Winds Easterly, except near the middle of the month. Fair days 26. Rain 1·50.

## NOVEMBER, 1833.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S. W.	4	29.83	51	63	.08	Rain a. m. windy, very warm
2	S. W.	3	.69	45	55		Fair
Su. 3	W.	5	.63	45	52		Fair, lightning S. E. 8 p. m.
4	N. W.	2	30.14	37	49		Fair, clear
5	S. W.	2	.32	35	52	.20	Rain
6	W.	2	.03	52	56		Fair
7	S. W.	1	29.60	42	47	.15	Rain
8	N. W.	2	.87	34	46		Fair, sleet 8 p. m.
9	N. W.	2	30.11	31	46		Frost, fair, and clear
Su. 10	S. W.	3	.22	28	50		Frost, fair, and cloudy
11	S. W.	3	.14	46	48		New M. 6 p. m. little wet
12	S. W.	0	.31	40	47		Fog all day
13	E.	0	.40	35	49		Fair, cloudy
14	E.	0	.25	33	49		Fair, very clear
15	N. E.	0	.12	37	47		Fair
16	S.	1	.06	36	46		Fair
Su. 17	S.	0	.28	40	52		Fog, fair, and clear
18	S.	0	.41	45	51		Overcast, fine, clear a. m.
19	W.	1	.22	49	52		Overcast, fine
20	S. W.	0	.13	37	52		Fog a. m. fair
21	S. W.	3	29.94	42	48		Cloudy, fine
22	S. W.	4	.47	46	54		Cloudy, fine
23	S. W.	3	.80	42	47		Fair, very drying
Su. 24	S. W.	3	.61	37	49	.50	Fair, wet night
25	W.	1	.83	34	45		Fair, clear
26	W.	1	30.27	28	42		Frost, fair, and clear
27	S. E.	3	29.71	34	42		Full M. 7 a. m. fair
28	S.	6	28.99	35	47	.40	Fair, stormy, wet night
29	S. W.	6	29.31	42	46	.05	Stormy and wet
30	W.	1	30.14	38	47		Fair and clear
				28	63	1.38	

## RESULTS.

Barom.	{ Max. on 18th . . . . .	30.41	Therm.	{ Max. on 1st . . . . .	63 degrees
	Min. on 28th, . . . . .	28.99		Min. on 26th . . . . .	28
Range . . . . .		1.42	Range . . . . .		35
Mean . . . . .		29.70	Mean . . . . .		45.5

Winds Westerly. Rain 1.38 inches. Fine days, 24.

## DECEMBER, 1833.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
Su. 1	S. W.	2	30 04	40	55	.14	Rainy
2	N. W.	2	.20	41	49		Fair
3	W.	3	29 97	39	49		Fair
4	S. W.	4	.60	45	54	.15	Galy and showery
5	S. W.	1	.70	45	48	.03	Storm last night, fair
6	S. W.	3	.52	36	45		Fair, lightning at night
7	W.	5	.26	39	52	.75	Heavy storms, thunder
Su. 8	W.	2	30 03	37	45	.18	Fair, clear, wet night
9	S. W.	4	29 53	40	58	.07	Fair a. m. rain
10	S. W.	2	.90	38	45		Fair [stormy]
11	N. W.	4	.52	35	42	.07	New M. 7 a. m. wind and
12	N. W.	2	.85	32	38		Chiefly fair, little snow
13	N. W.	2	30 21	29	38		Lightning a. m. fair & frost
14	W.	1	.11	31	46	.06	Little rain, fair
Su 15	S. W.	2	.01	41	53		Cloudy, fine
16	S. W.	3	29 72	50	54		Cloudy, little wet
17	N. W.	6	.33	42	48		Fair and high wind
18	N. W.	6	.76	41	54	.055	Stormy, violent gales
19	S. W.	3	.67	42	54	.145	Stormy
20	S. W.	6	.37	45	49		Fair
21	N. W.	5	.27	37	43	.45	Much rain and snow
Su 22	S. W.	4	.45	34	51	.30	Rainy and overcast
23	N. E.	1	.50	41	43	.20	Rainy and dark
24	S. W.	1	.38	39	49		Rainy
25	N.	3	30 04	44	44	.45	Much rain, fine evening
26	S.E.	1	.27	28	45		Full M. p. m. fair, frost
27	S. W.	2	29 79	40	46	.20	Stormy and wet
28	S. W.	1	30 06	34	43	.05	Fair, wet night
Su 29	S. W.	5	29 75	39	52		Fair, clear, and windy
30	S. W.	0	.62	45	54	.23	Overcast, rain
31	W.	6	.42	41	53	.12	Stormy, high wind p. m.
				28	58	3.65	

## RESULTS.

Barom.	{ Max. on 13th . . .	30 21	Therm.	{ Max. on 9th . . .	58 degrees
		29 26			28
Range	Range	.95		Range	.30
Mean	Mean	29 73		Mean	.43

Winds, Westward. Rain, 3.65 inches. Fine days, 16.

NOTES FOR THE YEAR 1833.

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## JANUARY.

1st to 27th, very fine and dry, with seasonable frosts at times. Cirrostratus, cumulus, and stratus most usual, but oftener a clear sky and high pressure. 28th to 31st, a change with lower pressure taking place.

## FEBRUARY.

The law of compensation was proved in this month, after dryness and high pressure; we have here an amount of wet, equalling near 6 inches for February, and a mean pressure extremely low. Inundations continued all the month; greatest on 2nd, 15th, 18th, 20th, 25th, and 28th. The pastures were as a sop, with a peculiar rustling noise on being trodden, being saturated to the uttermost. Cirrus, cirrostratus in broad layers, cumulus and nimbus prevailing.

## MARCH.

3rd, we had lightning visible westward, at 8 p. m. A dreadful thunder-storm then visited the west of England. At Exeter, £50,000 damage was sustained. At Belfast, in Ireland, an extinguished candle was rekindled by a flash at the time. 5th, much white ribbed cirrocumulus. 7th to 25th, sharp N. and N. E. winds, severe frosts and great falls of snow at times, as shewn in the table. The snow on 23rd, was 4 inches in depth. 26th to 31st, somewhat more pleasant with some rain; but on the whole, a very ungenial and dreary month.

March 13th, from before 8 till 10 p. m. a grand display of aurora borealis, columns of bright yellow, followed each other in the same manner as the spokes of a wheel succeed each other in turning! These passed from N. E. to W. perpendicularly. Sky clear and sharp frost, with the wind S. E. fresh.

The extreme wetness of the soil from the great rains of last month, was kept up in this period also by the great falls of snow, occasional rain, and severe frost, so as to prevent evaporation. No agricultural pursuits could be attempted all this month, and vegetation made no start. Reports teeming from all parts of our island, bewailing the state of the land in consequence of the wetness of the season. Every plain being completely saturated, and now the addition of coldness to wet, caused a melancholy character of season altogether! No very similar state of weather is on record, but at the corresponding time in 1823, a somewhat allied character existed, but which closed by the 23rd of the month in that year.

## APRIL.

8th, much thunder very distant in S. during afternoon; and many adverse currents of clouds. At Colchester, a dreadful thunder-storm at the time. 11th, with us frequent showers of hail; same day, 57 sheep were killed by lightning at St. Alban's, Herts. during a great shower of hail! Near Holkham House, Norfolk, on the same day, many persons were hurt, and one killed in a barn. 15th, morning fair, at 11 a storm of hail and rain very heavy—loud thunder followed as the nimbus left us passing to E. After 1 p. m. very heavy rain through the rest of the day to the depth of 1 inch, and great inundations in the valleys, even greater than in February last! 16th, dense cumuli. A heavy hail shower near noon. 21st to 23rd, fair and warm days. 24th, thunder at 3 p. m. in W. 25th to 27th, fair, and the 27th, a very pleasant day. Cirrocumulus, and a soft and balmy morning. 29th and 30th, heavy storms flying about from black nimbi. The south side of Norfolk, had a severe thunder-storm and hail at 4 p. m. on 29th. And near Claydon, Suffolk, on 30th, much hail with thunder and lightning in the afternoon. Cirrus, cirrostratus, cumulus, and nimbus all the month, except on the finest days.

The continued rains and floods rendered farming work impracticable, even till after the 18th of this month, scarcely any progress of vegetation was perceptible till the same day. Even to the end of the month, some heavy storms occurred, as the table and notes will show, but the temperature became more seasonable after the 18th, with more drying intervals to favour the farmer's operations.

Sycamore leafed about 20th, horse-chesnut and willow from the 23rd to 30th.

## MAY.

Here is another proof of our atmospheric rule of compensation. From long wetness and cold, we have seen a change to the extreme of drought and heat in this month. 2nd, thin flying clouds scattering a little rain, the sun visible through them all day. 4th, a remarkable transition to a high summer temperature. Very clear till evening, thermometer 79 degrees to 80 degrees! In the sun 113 degrees. Cumuli grouped in S. W. at 7 p. m. Much thunder there. A storm near the course of the Stour and on Hertford border. 5th to 11th, very fine and mostly hot without clouds on many days. The day cumulus only on other days. 12th to 17th, extraordinary rise of temperature and brightest skies. 15th, 16th, and 17th, the heat beyond precedent for May, and above our usual maxima for any month. By 9 a. m. thermometer 74 degrees, and p. m. from 82 degrees to 85 $\frac{1}{2}$  degrees! At Botesdale fair, pigs exposed on sale died in the carts from the heat of the sun! Beasts on the road for Smithfield dropped and died; and many were the effects of the uncommon heat at this period. 19th, with new moon a change and rain. The other change occurring at full moon. On the 17th evening, some distant thunder. Cumuli grouped W. and N. and fleecy fragments whirling in the zenith with a breeze from W. N. W. On the 19th, thick beds of mixed clouds and great haziness. 20th, at 1 and 2 a. m. a severe thunder-storm in the Eastern part of Suffolk, and coming from E. A tree at Glemham park was destroyed. A man at Blaxhall killed under a tree, named James Smith, aged 70. As was his custom he was going

early to a farm-house to assist in a linen wash. At Hoxne the storm was awful at 3 a.m. With us it lightened and thundered from midnight till 6 a.m. 21st to 31st, very fine, and most days very hot without clouds.

The springs and ponds exhausted, although so full a short time since! The vegetable world burst forth at once into life, flashing into beauty in one week from previous apparent sterility. Poplar in leaf on 6th, maple on 14th, oak, ash, and elm, on 17th, so that a hitherto late spring now became an early one! Cowslip in flower on 4th, hawthorn on 17th.

#### JUNE.

2nd, awful thunder-storms at and around Newmarket, at 4 and 8 p.m. and on 3rd at 4 a.m. Much damage by hail there, and the lightning severe. With us it thundered all the evening in dark clouds W. and S. and some lightning visible at 9 p.m. Cirrocumulus all day. 4th and 5th, cumulus and cumulostratus. 9th, many silver-white cirrocumuli and elliptical cirrostrati, like pointed locks of wool. Very hot day. At 8 p.m. temperature 69 degrees. 10th, a very clear and hot day. Thermometer in sun on the sod 124 degrees. 11th, clear and extreme heat till 10 a.m. when the festoons of undulated cirrostratus, black and white, announced a storm. A furious gale from S. W. came on and continued all day, damaging trees and strewing the tender foliage below. A barn at Stebbing, Essex, was thrown down. Many trees at Colchester, Chelmsford, and Cambridge: also in Regent's Park, and many serious disasters in London. Two girls were killed by the falling of a tree in Hyde Park. 12th, strong wind. 20th, dense cumulostrati hung around. A junction took place over us at noon, and for 1½ hour, a deluging rain fell with thunder and lightning. The clouds had been passing in adverse courses, and now the rain poured in a mass or general body as if a lake were inverted in the zenith; no object 50 yards distant could be seen through the rain. At 6 p.m. another torrent of shorter continuance with electrical discharges also. In the former there fell 1·38 inches of rain, and in the latter ·60. Total 1·98!! The former in an hour and half only; the greatest rain I ever recorded! 21st to 28th, variable, cirrus, cirrocumulus, cirrostratus, cumulus, and nimbus often seen. 23rd, 2 and 3 p.m. thunder-storms and hail, nearly over the whole of Suffolk. 26th, 6 p.m. a thunder-storm from S. W. wind N. E. It passed to N. N. E. and a barn, 3 lasts of corn, and a hay-stack were burnt by the lightning at Plumstead, Norfolk. The coping removed from Tasburgh steeple in that county, and the wall of the church shattered, leaving the edifice filled with sulphureous smoke. 28th and 29th, lightning during evenings. 30th, fair with cirrostratus; few drops of rain at 8 p.m.

#### JULY.

1st, storm of rain 5 a.m. Frequent showers. Thunder in N. 7 p.m. Clear night for viewing the lunar eclipse. 3rd, fine with us, but a group of rugged cumuli S. 8 p.m. and lightning at 9 in that point. At Stowmarket a terrible thunder-storm on that evening. A torrent of rain, and awful electrical discharges; the thunder so violent that it shook to pieces a window at Mr. King's, merchant of that town. A man on the premises was whirled round and thrown down by a flash. 6th, cirrocumulus and S. E.

wind. 7th, oppressive heat. Haziness increased after 1 p. m. and dark cirrostratus introducing storm. From 10 p. m. heavy rain, continual lightning and thunder all night. A tower on Butter-hill, Norwich, was struck and burnt down, and all the apparatus of Mr. Gooch, astrologer, value £100, destroyed. A house near by was also struck, a bedstead broken, four children on it escaping unhurt, much furniture injured, and two doors thrown off their hinges, walls scaled, and almost the whole of the window-glass broken by the shock. One person was much scorched. 8th, heavy rain till 10 a. m. Some thunder. 9th to 13th, fair, with cumulus more or less. 14th to 18th, fine and hot, with cumulus. On 17th, cirrocumulus. 18th, great heat and sultriness. Cirrocumulus, cumulus, and cirrostratus. 19th, showers from nimbi passing near, with electrical discharges. Much cirrocumulus. 20th to 22nd, showers. Nimbus with other usual clouds therewith. 23rd, rain most of the day. 24th and 25th, fine with cumulus and cirrocumulus. 27th to 29th, very warm, with some local rain during night of 26th and 27th. After sunset on 26th, a very black nimbus from N. W. with a shower. The pressure unaffected. 30th to 31st, fine, with northerly wind. Cumulus and cirrostratus. Thunder on 31st evening very distant.

The land having been at first very wet in the early part of spring, became bound by the heat and drought of May, and part of June. On the heavier soils, even so that the young corn was so sealed in the surface, once muddy, as to produce a short wheat straw, but the head was very fine, except where the gale of June 11th had uprooted many of the plants which were about flowering, and thereby injured the sample by defective grains, else very fine ears were produced this season.

#### AUGUST.

4th, very fine warm day. Cirrocumulus westward 7 and 8 p. m. 5th to 9th, dry and fine, with fleecy cumuli. 10th, a higher temperature. Cirrocumulus, cumulus, and distant nimbi. Thunder in the N. at 2 and 3 p. m. Shower at 6 p. m. During evening much lightning round the horizon S. W. to S. E. 17th, warm and close. Cloudy night, and lightning S. E. and E. In this period stratus by night often; cumulus by day, and a low temperature on most days. 18th to 23rd, warmer, with some light showers, cirrostratus and trifling nimbi. The 21st hot, with a brisk gale and cirrocumulus. 24th, during evening, very dense and black clouds covered the sky. Cumulostratus also seen. Wind from N. W. veered S. S.E. Began to lighten and thunder at 11 p. m. Impenetrably dark night. Awful thunder-storm from midnight to 1 a. m. of 25th, passing from S. to N. N. E. and again came on at 3 a. m. with redoubled severity. The flashes unusually brilliant: some white, others blue, quick in succession, and with most violent detonating thunder. The windows seemed about to break with the repeated shocks. A tree 2 miles S. E. of us was split, windows shaken to pieces, and cattle injured so as to render slaughter necessary. Several horses were struck dead in the county of Suffolk, as well as other animals, and vast numbers were so terrified as to run into the ditches, &c. in which situation, hundreds of them were found, on the dawn appearing, only in a circuit of a few miles around Harleston, Norfolk! Large hail had fallen, and was undissolved at noon of the

25th. The day clear. Small cumuli. 27th to 29th, clear and very hot. The cirrocumulus on 27th. 30th, a gale with much rain commenced at night. 31st, severe gale at N. W. with much rain. A hurricane throughout England with incredible damage, both by sea and land. A great number of lives lost at sea. The barometer now extremely low.

This was a fine season for harvest here till near the close, and the toils began about the 1st day in this part. The crop of barley ripened late from being late put in. Our northern counties suffered dreadfully from the gale and rain at the end. The range of barometer unusually great for this season, and the depression great on 31st. The temperature very low till the 27th day.

#### SEPTEMBER.

1st, the gale continues with some abatement, and rain at times. 2nd, wind ceased. An unsettled period to 5th. 5th to 7th, fine and clear. 8th to 11th, unsettled, some rain. 11th, evening and night, much thunder and lightning in N.E. E. and S. 13th, much cirrocumulus. A fine warm day. 14th, cirrocumulus in thick beds. 15th, a very warm and clear day. 16th, a very heavy thunder-storm and hail 3 p. m., the hail as large as hazel nuts. A tree was split at Yaxley, Suffolk. The rain fell in torrents; and at Eye, the storm was terrific. 17th, very heavy rain from 5 till 8 a. m. 18th, thunder-storm 3 miles S. W. 3 p. m. Much lightning both E. and W. 8 and 9 p. m. 19th to 21st, fine and clear. 22nd, stratus in the morning. A very fine warm day. 23rd, large beds of cirrocumulus, a. m. Cirrus ramifying in the evening. 24th, cirrocumulus, by moonlight, p. m. To the 27th, fine and pleasant, a little shower on 26th. 28th, rain a. m. 29th and 30th, very fine. Serene and warm days.

This month proving, for the greater part, very showery and cool, greatly retarded the harvest in the later districts, and complaints reached us daily from the fenny counties of the alarming floods and gales, which closed last, and ushered in this month. The lowest barometer I ever knew at this time of the year, occurred at that period! (see the table.) A happy interval of fineness favoured the late crops between the 18th and 26th days of September, with an agreeable temperature to the end of the month. Great quantities of the esculent kind of fungus appeared after the showers of autumn.

#### OCTOBER.

1st to 12th, very fine and dry. A meteor on 1st 7 p. m. as large as a hen's egg to the eye, colour orange, train white. It passed to N. 8th and 10th, aurora borealis. 12th, 4 p. m. a whirlwind at Whitton, near Ipswich, which raised an immense body of dust on the road for 15 minutes. A shower followed. A gust with rain here. During same night, the aurora borealis extremely brilliant. Waves of brightest glare incessantly flashing in undulations horizontally to zenith. 15th, 8 p. m. a gale and thunder-storm at Brighton, injuring the chain pier. Fine and calm with us. 23rd, thunder distant. 25th to 30th, very clear and hot for the season. Stratus at times.

#### NOVEMBER.

1st, very warm. 3rd and 4th, dusty roads. 8th to 24th, remarkably dry and fine, with dusty roads. Stratus at times. Some cloudless days.

24th night, much rain. 25th and 26th, very clear and frost. 28th, great storm of wind and rain. 29th, continued storm. 30th, very fine and clear.

The prevalent clouds of these two months were, in October, the stratus, cumulus, and cirrocumulus. This on 28th October, very beautiful by moonlight. In November, the stratus and thin cirrostratus in the fine time. The usual scenery at the change to storm appearing.

#### DECEMBER.

7th, at noon a heavy storm of drenching rain, with lightning and thunder in our neighbourhood. Much lightning on 5th, 6th, and 7th evenings. Several houses on the Welch coast were burnt by the lightning on the 5th. 29th, brilliant aurora borealis in detached bodies in zenith and elsewhere, colour yellow. 31st, violent gale doing great injury in the Metropolis, both in the streets and on the Thames.

This whole month stormy and wet, with high temperature and low pressure. Cirrus, cirrostratus, cumulus, and nimbus, or general cloudiness daily.

Some intervals of remarkable fineness characterized the autumn of 1833, yielding a fine seed-time in general; but December proved unusually windy, wet, and mild, with scarcely a feature of winter.

#### SUMMARY RESULTS FOR 1833.

Fine days, 252. Rain, 28·96 inches.

Hottest on May 17th, Therm. 85·5 degs.	Highest Barom. Jan. 4th . . . . .	30·82
Coldest on January 23rd . . 19	Lowest, August 31st . . . . .	28·82
Range . . . . .	Range . . . . .	2·00

## JANUARY, 1834.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	N.W.	4	29.87	37	42		Fair, drying wind
2	N.W.	3	30.44	34	39		Fair, cold wind
3	S. W.	4	29.90	29	50	.07	Snow a. m. rain
4	N.	1	30.25	42	45		Fair, clear
Su. 5	S.	1	.11	33	49	.10	Rain a. m. fair
6	S.	2	29.62	43	46	.12	Fair, rain night
7	S.W.	1	.74	38	44		Fair
8	S. E.	2	.44	35	43	.44	Rain all day <i>New M.</i> 11 p. m. fog
9	S. E.	1	.41	42	44	.42	Much rain
10	S. E.	2	.21	39	45	.42	Stormy, gale at night
11	S. W.	2	.47	38	48	.20	Rainy
Su. 12	S. W.	2	.24	43	47	.08	Cloudy, little wet
13	S. W.	2	.79	42	51		Fair
14	S.	1	.77	45	47		Rainy
15	S. W.	1	.75	41	49	.08	Rain a. m. fair, rain night
16	S.	1	.76	39	52	.05	Thun. and lightning 2 a. m.
17	S.	4	.49	44	52	.53	Fair, clear [heavy rain
18	W.	3	.80	42	49		Fair, hazy
Su. 19	S.W.	1	.81	37	44		Fair, hazy
20	W.	1	30.08	36	45		Fair
21	S. W.	2	29.98	43	52		Fair, very mild
22	S. W.	2	.72	47	53		Rain a. m. fair, very warm
23	S. W.	4	.80	41	58	.30	Fair, windy, and warm
24	S. W.	4	30.00	54	56		<i>Full M.</i> 10 a. m. fair, cirrocum.
25	W.	2	.17	44	50		Shower a. m. fair and warm
Su. 26	W.	4	29.90	41	55	.03	Rain, heavy rain evening
27	S. W.	0	.91	44	47	.36	Heavy rain & snow, hur. p. m.
28	N.W.	7	.30	44	55		Hurricane, snow, stormy,
29	N.W.	3	30.32	30	38	.45	Frost, fair [fair
30	S.W.	0	.40	29	41	.04	
31	S.E.	1	.25	42	48		Fair
				29	58	3.27	

## RESULTS.

Barom.	{ Max. on 2nd . . . . .	30.44	Therm.	{ Max. on 23rd . . . . .	58 degrees
	Min. on 10th . . . . .	29.21		Min. on 30th . . . . .	29
Range . . . . .		1.23		Range . . . . .	29
Mean . . . . .		29.82		Mean . . . . .	43.5

Winds from S. to W. Rain, 3.27. Fine days, 21.

## FEBRUARY, 1834.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S.E.	1	30.30	34	43		Fair, clear
Su. 2	S.E.	1	.13	29	42		Frost, fair
3	S.E.	1	.19	34	48		Fair
4	S.E.	1	29.97	36	46		Fair
5	S.E.	2	.98	36	50		Fair, rain night
6	S.	1	30.18	37	50		Fair, clear
7	N.	1	.27	31	47		Frost, fair and clear
8	E.	0	.27	27	46		New M. 5 p. m. frost, fair
Su. 9	E.	1	.50	31	46		Frost, fair
10	S.E.	1	.53	27	41		Frost, fair
11	S.W.	3	.23	36	46		Little rain
12	S.	3	29.73	34	45		Rain
13	N.W.	0	30.37	34	47		Fair, clear
14	Var.	0	.40	32	49		Fair
15	N. E.	1	.42	38	45		Fog, fair with cumuli
Su. 16	N. E.	0	.52	33	46		Fair
17	S. W.	1	.31	28	48		Frost, fair
18	S. W.	3	.19	39	47		Fair, windy
19	W.	4	.03	43	50		Fair, windy
20	W.	2	.25	38	49		Fair, storms midnight
21	W.	3	.02	37	47		Fair, clear
22	N.W.	1	.47	36	51		Shower, a. m. fair
Su. 23	S.W.	4	.25	38	52		Full M. 9 p. m. fair, windy
24	S. W.	2	.14	46	53		Little rain
25	W.	1	.55	35	49		Fair, clear
26	S. W.	3	.39	34	52		Fair, windy
27	S. W.	3	.10	37	58		Fair, windy
28	N. E.	2	.61	42	52		Rain, a. m. fair
				27	58	0.52	

## RESULTS.

Barom.	{ Max. on 28th . . . . .	30.61	Therm.	{ Max. on 27th . . . . .	58 degrees
		Min. on 12th . . . . .			27
Range	Range . . . . .	88		Range . . . . .	31
Mean	Mean . . . . .	30.17		Mean . . . . .	42.5

Wind very variable, chiefly Westerly after 10th. Rain only .52 of an inch. Fine days, 25.

## MARCH, 1834.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S. W.	2	30-60	38	56		Fair and warm
Su. 2	S. W.	3	37	45	57		Fair and warm
3	S.	1	48	35	54		Fair
4	S. W.	3	47	43	55		Fair
5	S. W.	4	29-88	48	57	-05	Fair, windy, little wet, a.m.
6	S. W.	6	70	39	52		Fair, high wind
7	S. W.	2	30-36	43	58		Fair and warm
8	S. W.	5	33	42	59		Fair, warm, and windy
Su. 9	W.	2	51	47	61		Fair, clear, very warm
10	W.	1	37	44	59		New M. 11 a. m. fair & warm
11	N. E.	1	60	40	57		Fair, clear, and warm
12	E.	0	61	37	54		Hazy, little wet
13	S.E.	0	51	44	50	-02	Fair, cloudy
14	N. E.	1	53	29	53		Frost, fair and clear
15	N. E.	2	65	39	52		Fair
Su. 16	N.	3	59	33	52		Fog, a. m. fair
17	N. E.	2	60	39	48		Fair, cloudy
18	E.	3	67	33	47		Fair, cloudy
19	E.	1	68	29	48		Frost, fair, clear
20	E.	1	61	37	48		Fair
21	N. E.	0	46	29	51		Fair and frost
22	S.W.	3	11	34	52		Fair
Su. 23	W.	4	29-75	37	50	-02	Windy, cloudy, lit. shower
24	N. W.	2	87	40	51		Fair
25	N.	2	30-10	30	44	-02	Full M. 6 a. m. frost, hail, snow
26	N. W.	2	23	30	49		Frost, fair, and clear
27	W.	0	19	38	56		Fair and warm
28	S. W.	4	29-53	45	51	-06	Fair, a. m. stormy, some wet
29	N. W.	3	80	39	53		Fair, some hail
Su. 30	N. W.	2	98	84	54		Fair, with cumuli
31	N. W.	2	79	35	50	-33	Rain, a. m. fair
				29	61	0-50	

## RESULTS.

Barom.	{ Max. on 19th . . . . .	30-68	Therm.	{ Max. on 9th . . . . .	61 degrees
	Min. on 28th . . . . .	29-53		Min. on 19th . . . . .	29
Range . . . . .		1-15	Range . . . . .		32
Mean . . . . .		30-10	Mean . . . . .		45

Winds Westerly on 18 days, but Easterly near the middle. Rain, only .50 of an inch.  
Fine days, 25.

APRIL, 1834.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	N.W.	2	30.36	37	52		Chiefly fine, some hail
2	S.	1	35	36	50	.18	Little rain
3	S. W.	2	54	47	56		Fair
4	N. W.	1	41	34	54		Fair
5	N. W.	1	47	39	59		Fair and clear
Su. 6	Var.	0	51	40	62		Fair, clear, and warm
7	N.	1	47	36	62		Fair, clear, and warm
8	N. E.	2	50	39	48		Fair, cloudy and cold
9	N. E.	2	53	38	45		New M. 5 a.m. fair, cloudy,
10	N.	3	41	30	49		Frost, hail, and snow [cold]
11	N. E.	2	21	33	47	.02	Storm of hail and snow
12	N. E.	3	10	35	46	.14	Frequent snow and hail
Su. 13	N.	2	38	34	49		Sleet in showers
14	E.	1	52	30	55		Frost, fair
15	S. E.	1	53	29	58		Frost, fair, and clear
16	E.	2	38	30	58		Frost, fair, and clear
17	E.	2	41	35	59		Fair
18	E.	3	33	38	61		Fair, clear, and warm
19	E.	1	40	39	63		Fair, clear, and warm
Su. 20	N. E.	1	41	42	65		Fog a.m. very clear & warm
21	N.	2	44	39	56		Fair
22	N. E.	2	30	38	59		Fair and clear
23	N. E.	1	30	39	52		Full M. 2½ p. m. showers
24	N. W.	2	47	41	52		Fair
25	N.	0	26	34	57		Fair
26	E.	2	02	37	59		Fair and clear
Su. 27	S. E.	3	29.60	35	60		Fair and clear, thunder at
28	S. W.	3	43	47	66		Fair and warm [10 p. m.
29	S. W.	1	50	51	67	.13	Fair very warm, shower p.m.
30	S. W.	2	63	49	59	.27	Showery
				29	67	0.77	

## RESULTS.

Barom.	{ Max. on 3rd . . . . .	30.54	Therm.	{ Max. on 29th . . . . .	67 degrees
	{ Min. on 28th . . . . .	29.43		{ Min. on 15th . . . . .	29
Range	. . . . .	1.11	Range	. . . . .	38
Mean	. . . . .	29.98	Mean	. . . . .	48

Winds N. and E. Rain .77 of an inch. Fine days, 23.

MAY, 1834.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S.	1	29.85	48	62		Fair, cloudy
2	S.	1	30.00	47	67		Fair and warm
3	S.W.	1	'11	48	70		Fair, clear, and hot
Su. 4	S. E.	2	'12	46	73		Fair, clear, and hot
5	S.	1	'07	57	77		Fair and very hot
6	W.	1	'41	47	72		Fair, sultry
7	W.	1	'52	51	75		Fair, very hot
8	S. W.	1	'31	51	78		New M. 8½ p. m. fair, ex-
9	S. W.	0	29.92	55	72		Fair, sultry [tremely hot
10	W.	2	30.10	48	68		Fair and warm
Su. 11	S. E.	2	29.94	46	67		Fair
12	S.W.	1	'82	56	69		Fair and warm
13	W.	1	'70	54	60	-25	Rainy
14	S.W.	1	'87	49	64		Fair
15	E.	1	30.05	52	72		Fair, clear, and hot
16	E.	1	'10	49	70		Fair, clear, and hot
Su. 17	S.W.	2	29.50	52	71	-07	Thunder showers
18	S.W.	3	'60	46	62		Thunder showers
19	S. W.	1	30.05	44	63	-03	Showers a. m. fair
20	W.	1	'50	44	71		Fair, clear, and hot
21	N. E.	3	'62	46	68		Fair and warm
22	N. E.	4	'59	44	63		Full M. 11 p. m. fair
23	E.	3	'60	48	68		Fair and very clear
24	N. E.	3	'51	48	68		Fair and clear
Su. 25	N. E.	3	'43	48	60		Fair and cool wind
26	N. E.	3	'44	47	63		Fair
27	N.	3	'35	45	66		Fair, very clear
28	N.	3	'27	47	63		Fair
29	N.	0	'20	42	69		Fair, very clear
30	N. W.	1	'16	46	64		Fair
31	W.	1	'37	35	69		Frosty a. m. fair and clear
				35	78	0.35	

## RESULTS.

Barom.	{ Max. on 21st . . . . .	30.62	Therm.	{ Max. on 8th . . . . .	78 degrees
		Min. on 17th . . . . .			35
	Range . . . . .	1.12		Range . . . . .	43
	Mean . . . . .	30.06		Mean . . . . .	56.5

Winds much divided nearly all but N. W. and that on one day. Another very dry month.  
Fine days, 26. Rain, only .35 of an inch.

## JUNE, 1834.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
Su. 1	S.E.	1	30·41	42	74		Fair, clear, and hot
	S.S.E.	1	·23	49	80		Fair, clear, very hot
	W.	1	·10	53	75		Fair, sultry
	S. W.	2	29·94	52	69	0·60	Hazy, rain evening
	N. W.	1	·75	51	69	·17	Showery
	N. E.	1	30·29	44	64		Fair
	N. W.	1	·30	44	67		New M. 10 a. m. fair
	E.	1	·02	42	72		Fair, clear and hot
	S. E.	2	29·82	43	76		Fair, clear, very hot
	S. W.	3	·75	50	70		Fair, shower evening
Su. 8	S. W.	3	·80	50	68	·05	Squally, little wet, thunder
	S. W.	2	·82	48	67	·27	Fair, rain evening
	W. N. W.	3	30·00	51	67		Fair
	S. W.	2	29·89	57	73	·03	Fair, & hot, thund. st. even.
	S. W.	2	30·00	57	73		Fair and hot
	W. S. W.	3	29·70	56	69		Thunder showers, and hail
	W.	3	·90	51	63	·25	Showery
	W.	3	30·09	52	70		Fair
	S. W.	1	·22	60	74		Fair and hot
	S. W.	1	·23	52	80		Fair, clear, very hot
Su. 15	S. S.E.	1	·01	60	88	·26	Full M. 8 a. m. fair, excess.
	S. W.	1	29·96	61	69		Cloudy, fine [heat]
	N. N. W.	0	30·37	51	71		Fair
	S. W.	1	·40	49	73		Fair and hot
	S. W.	1	·39	58	72		Fair and close
	W. S. W.	2	·24	60	76		Fair, very sultry
	N. N. W.	3	·14	58	63	·03	Showery early, fair
	N. W.	2	·35	46	69		Fair
	E.	2	·45	55	69		Fair
	N. E.	2	·53	45	70		Fair
				42	88	1·66	

## RESULTS.

Barom.	{ Max. on 30th . . . . .	30·53	Therm.	{ Max. on 21st . . . 88 degrees
	Min. on 16th, . . . . .	29·70		Min. on 1 & 8th . . . 42
Range	. . . . .	·83	Range	. . . . . 46
Mean	. . . . .	30·11	Mean	. . . . . 65

Winds variable. Rain 1·66 inches. Fine days, 25.

JULY, 1834.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	N. E.	2	30.37	44	63		Fair, cloudy
2	N. E.	2	.23	55	66	.02	Cloudy, shower early
3	N. E.	2	.19	55	72		Fair
4	E. N. E.	2	.31	55	71		Fair and clear
5	E. N. E.	1	.17	55	77	.02	Fair, very hot, shower night
Su. 6	E.	1	.12	61	78		New M. 9 p. m. fair, very
7	S. W.	1	.05	57	75		Fair and hot [hot
8	S.	1	.00	61	76		Fair and hot
9	W.	1	.24	56	68	.01	Cloudy, shower 6 p. m.
10	S. W.	2	.17	57	72		Fair
11	S.	1	.12	55	76		Fair, very hot
12	S.	2	29.93	53	83		Fair, extremely hot
Su. 13	S. W.	2	30.01	57	76		Thunder early, fair and hot
14	W.	2	.16	59	76		Fair and hot
15	W.	1	.30	58	81		Fair, extremely hot
16	W.	1	.32	61	82		Fair, extremely hot
17	E.	0	.24	62	87		Fair, excessively hot
18	E.	3	29.87	59	74	.75	Cloudy, thunder-st. 11 p.m.
19	S. W.	3	.58	60	71	.04	Cloudy, little wet, thunder
Su. 20	S. W.	3	.85	54	68	.02	Full M. 7 p. m. fair shower
21	S.	2	.94	57	73		Fair and hot [p. m.
22	E.	1	30.17	55	75		Fair and hot
23	E.	0	.18	55	76		Fog, fair, and hot
24	N. W.	1	.14	58	67		Cloudy, little wet
25	N. W.	1	.12	57	77		Fair, very hot
26	S. W.	1	29.93	53	76		Fair and hot
Su. 27	E.	1	.87	60	70	.33	Shower 8 a. m. thunder, fair
28	E.	1	30.17	59	78		Fair, hot & sultry, thunder-
29	E.	1	.12	63	83	1.25	Fair and very hot [st. night
30	S.	1	.05	63	77		Fair and very hot
31	E.	1	29.92	60	80		Fair, very hot, thunder
				44	87	2.44	

## RESULTS.

Barom.	{ Max. on 1st . . . : 30.37	Min. on 19th . . . : 29.58		Therm.	{ Max. on 17th . . . 87 degrees
Range . . . . .	.79			Range . . . . .	.43
Mean . . . . .	29.97			Mean . . . . .	65.5

Winds equally Westward and Eastward. Fine days, 26. Rain, 2.44 inches. The great thunder-storms caused a large amount in the rain-gauge, but the drought on the whole went on.

## AUGUST, 1834.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
Su. 3	E. N.E.	2	29.97	67	78	'02	Fair and very hot
	N. E.	2	30.02	64	75		Fair and hot
	N. E.	1	'00	55	74		Fair and hot
	S. W.	1	'02	54	81		Fair and very hot
	S. W.	3	29.98	60	74		New M. 6½ a. m. fair & hot
	S. W.	3	'94	63	74		Showery
	S. W.	1	30.07	57	69		Chiefly fair
	S. W.	3	29.77	62	74		Showery
	N. W.	1	30.23	56	71		Fair
	W.	0	'28	54	76		Fair, very hot
Su. 10	S. W.	1	'16	58	79	'28	Fair, very hot
	S.	2	'25	59	83		Fair, extremely hot
	S.	2	'12	62	85		Fair, extremely hot
	N. E.	2	'21	61	70		Fair, cloudy
	N. E.	2	'22	58	72		Fair
	N. E.	2	'32	63	73		Fair and hot
	N. E.	1	'19	55	77		Fair and very hot
	N. W.	1	'05	58	72		Fair, cloudy
	N. E.	0	'07	59	71		Full M. 8 a. m. thunder-st.
	W.	1	29.83	63	74		Fair and hot, shower early
Su. 17	W.	1	'80	57	71	'05	Fair
	S. W.	2	'89	54	70		Fair
	S. S.W.	2	30.06	51	71		Fair
	Var.	1	29.72	47	68		Fair a. m. great thunder-
	S. W.	2	'86	49	65		Fair [storm p. m.]
	Var.	1	'88	49	65		Very heavy storms
	N. W.	1	'89	49	62		Fair
	S. W.	2	'95	50	63		Fair, wet evening
	S. W.	2	'77	58	68		Fair
	S. E.	3	'80	58	68		Showery
Su. 31	S. W.	1	'87	57	69	'23	Showery
				47	85	3.30	

## RESULTS.

Barom.	{ Max. on 16th . . . . .	30.32	Therm.	{ Max. on 13th . . . . .	85 degrees.
	Min. on 24th . . . . .	29.72		Min. on 24th . . . . .	47
Range . . . . .		'60	Range . . . . .		38
Mean . . . . .		30.02	Mean . . . . .		66

Winds most Westward, yet several days were the opposites near the middle of the month and at commencement. Rain, on account of the great storms, 3.30 inches. Fine days 22.

## SEPTEMBER, 1834.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S. W.	1	30°05	54	69	.38	Fair, heavy rain evening
2	W.	1	.14	55	68	.07	Wet a.m. fair
3	S. W.	3	.22	53	69		New M. 3 p. m. fair
4	S.	1	.01	59	76		Fair, very hot, cirrocumulus
5	S. W.	3	.00	62	69		Fair
6	W.	4	.13	56	67		Fair, windy
Su. 7	E.	1	.30	55	65		Fair
8	S.	1	29°66	51	64		Little wet
9	W.	3	.50	53	65	.28	Very showery
10	S. W.	2	.93	52	62	.19	Showery
11	S. W.	1	.94	56	67	.10	Showery, thunder and light.
12	W.	1	30°28	54	66		Fair
13	E.	1	.59	46	65		Fair
Su. 14	Var.	0	.60	42	68		Fair, very clear
15	E.	0	.50	41	69		Fair, very clear
16	E. S.E.	1	.16	46	71		Fair & hot, cirrocumulus
17	S.	2	.10	55	79		Full M. 11 p. m. very hot &
18	S.	1	.33	59	77		Fair, very hot [fine
19	S. S.W.	0	.37	56	80		Fair and extremely hot
20	N. E.	2	.48	56	76		Fair and very hot
Su. 21	N. E.	2	.40	58	67		Fair, cloudy
22	N. E.	2	.34	56	65	.03	Cloudy, drizzle
23	N. E.	2	.32	46	63		Fair
24	N. E.	0	.30	52	62		Fair
25	S.E.	0	.29	42	64		Fair
26	S.	1	.09	49	60		Cloudy, rain
27	S. W.	1	29°98	57	64	.32	Rain a.m. fair p. m.
Su. 28	N. W.	1	30°17	53	67		Fair, very warm
29	E. N.E.	2	.42	48	63		Fair
30	N. E.	1	.30	47	64		Fair
				41	80	1.37	

## RESULTS.

Barom.	{ Max. on 14th . . . . .	30°60	Therm.	{ Max. on 19th . . . . .	80 degrees.
		29°50			41
Range	Range	1.10		Range	39
Mean	Mean	30°05		Mean	60.5

Winds various, often Eastward. Rain 1.37 inches. Fine days 22.

OCTOBER, 1834.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	E. S. E.	0	30·26	45	66		Fair, very warm
2	S. E.	1	·23	45	66		New M. 11 p. m. fair, very
3	S. E.	0	·27	38	71		Fog a m. fair & hot [warm
4	S. S. E.	1	·32	43	73		Fog a. m. fair, very hot
Su. 5	S. S. E.	1	·33	46	74		Fair and very hot
6	S.	1	·35	53	77		Fair and extremely hot
7	W.	1	·31	54	72		Fair, very hot
8	S. W.	3	·20	54	69		Fair and hot
9	S. W.	1	·01	57	64		Fair, very warm
10	N. W.	1	·13	54	63		Fair
11	E.	0	·22	35	61		Fair
Su. 12	S. W.	0	·27	37	65		Fair, very warm
13	S. W.	2	·19	48	66		Fair, very warm
14	S. W.	1	29·80	50	66	·45	Sultry, thunder, wet evening
15	W.	1	·87	48	59		Fair
16	S. W.	4	·33	41	58	·08	Showers
17	N. W.	5	·25	49	57		Fall M. 5 p. m. fair, windy
18	N. W.	5	·74	41	51		Stormy
Su. 19	S. W.	2	30·11	37	54	·05	Some rain
20	S. W.	2	29·90	51	61	·04	Showers
21	N. W.	2	30·33	50	55		Fair
22	N. W.	4	29·85	39	54	·20	Stormy, some rain
23	N. W.	4	·60	47	55		Stormy, and rain at times
24	N. W.	4	·85	32	43	·16	Frost, stormy, snow, thund.
25	N. W.	4	30·15	39	49	·29	Stormy [& light. midnight]
Su. 26	N.	2	·51	37	50		Fair
27	N. W.	1	·46	39	55		Fair
28	N.	1	·63	50	54		Fair
29	Var.	0	·72	47	51		Fair, cloudy
30	S. W.	1	·45	44	52		Fair, cloudy
31	S. W.	3	·15	45	58		Fair
				32	77	1·27	

## RESULTS.

Barom.	{ Max. on 29th . . . . .	30·72	Therm.	{ Max. on 6th . . . . .	77 degrees
		29·25			Min. on 24th . . . . . 32
Range	Range	1·47		Range	45
Mean	Mean	29·98		Mean	54·5

Winds Westward after the 6th. Rain, 1·27 inches. Fair days, 24.

## NOVEMBER, 1834.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
Su. 2	W.	2	30·18	48	59		New M. 8 a. m. fair, warm
	W.	2	.15	48	56		Fair and warm
	S. W.	1	.17	50	57		Fair and warm
	S. W.	2	.03	45	60		Fair, very warm
	S. W.	4	29·70	55	62		Fair, windy, and very warm
	S. W.	2	.84	55	61		Fair and very warm
	S. W.	2	.58	53	62	·25	Rain early, fair, very warm
	S. W.	2	.56	46	54		Fair
Su. 9	N. E.	1	.60	44	51		Rain till noon, rain night
	N. E.	2	30·00	44	46	1·00	Wet a. m. fair
	E.	3	.37	40	51		Fair
	E.	3	.47	37	42		Fair, windy, and cold
	E.	2	.42	32	43		Fair
	N. E.	1	.50	36	48		Fair
	N. E.	0	.46	35	46		Fair, cloudy
	N.	0	.43	41	47		Full M. 11 a. m. fair
Su. 16	W.	2	.24	42	50		Fair
	N. W.	1	.37	39	48		Fair
	E.	0	.41	37	45		Fair, clear
	N. E.	3	29·99	31	41		Frost, fair, clear
	E.	1	.91	35	43		Fair
	E. N. E.	3	.95	36	46		Fair, the roads dusty
	E. N. E.	2	30·22	41	46		Fair
	N. E.	1	.25	33	45		Fair, cloudy, little wet
Su. 23	E.	2	29·97	39	40		Fair, cloudy
	N. W.	0	.95	37	40		Fair, cloudy
	S. W.	1	30·01	30	48		Frost, fair, clear
	S. W.	2	29·70	40	49		Fair, cloudy, storms night
	W.	4	.30	38	48	·05	Fair, windy
	N. W.	3	.80	43	48		New M. 7 p. m. fair, windy
				30	62	1·30	

## RESULTS.

Barom.	{ Max. on 14th . . . . .	30·50	Therm.	{ Max. on 5th & 7th . . . . .	62 degrees
	Min. on 29th . . . . .	29·30		Min. on 26th night . . . . .	30
Range	. . . . .	1·20	Range	. . . . .	32
Mean	. . . . .	29·90	Mean	. . . . .	46

Winds Easterly in the middle of this period, and Westerly at the beginning and at the close. Rain, 1·30, one inch of which fell on 9th and 10th, else as dry a month as we ever knew at this season. Fine days, 27 in number.

## DECEMBER, 1834.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S.W.	3	29.31	34	51	.29	Stormy, lightning night
2	W.	5	.92	42	51		Fair and a gale
3	N.W.	1	30.20	40	50		Fair
4	W.	1	.26	46	51		Fair, cloudy
5	S. W.	1	.30	38	48		Fair
6	S. W.	1	.31	39	47		Foggy
Su. 7	S. W.	4	.10	45	54	.05	Foggy, rain, mild
8	N.W.	4	.36	41	44		Fair, windy
9	N.W.	1	.57	36	46		Fair, clear
10	Var.	2	.45	38	44	.22	Rain a. m. fair
11	N. E.	1	.70	31	42		Frost, fair, clear
12	N.	0	.48	34	44		Fair, cloudy
13	N. E.	1	.51	36	45		Fair
Su. 14	N. E.	0	.65	29	38		Frost, fair, and clear
15	N. E.	2	.68	32	43		Cloudy, dark
16	N. E.	1	.51	41	46		<i>Full M.</i> 5 a. m. fair, cloudy
17	N.	2	.19	36	44	.12	Frequent rain
18	N. E.	1	.47	37	44		Fair
19	N.	2	.50	33	45		Fair
20	N. W.	2	.47	38	44		Fair, cloudy
Su. 21	N. W.	1	.41	36	43		Fair, cloudy
22	N. W.	1	.59	36	40		Fair, clear
23	N. W.	1	.57	29	39		Frost, fair, clear
24	N. W.	0	.58	26	36		Frost, fair, clear
25	N. W.	2	.37	35	43		Cloudy, little wet
26	N. W.	0	.65	36	43		Foggy
27	E. S.E.	1	.68	31	45		Frost, fair, clear
Su. 28	S. E.	3	.51	37	42		Fair and clear
29	S. E.	4	.39	32	44	.03	Fair, little wet night
30	S. W.	3	.07	40	51		<i>New M.</i> 7 a.m. fair, cloudy
31	S. W.	2	29.95	47	54	.08	Little rain
				26	54	0.81	

## RESULTS.

Barom.	{ Max. on 11th . . . .	30.70	Therm.	{ Max. on 7th & 31st . . . .	54 degrees
		29.31			26
Range	Range	1.39		Range	28
Mean	Mean	30.00		Mean	40

Winds chiefly Westward, but near the middle, Eastward. Rain only .81 of an inch. Fine days, 26.

NOTES FOR THE YEAR 1834.

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## JANUARY.

This month was unseasonably warm and wet; the cirrus, cirrostratus, and nimbus frequent. 17th, much damage by lightning at Rouen, in France, Paisley, N. Britain, some parts of Wales, Herefordshire, Clay, in Norfolk, and some other parts. 21st, several luminous clouds and meteors, 9 p. m. 28th, night, tremendous gale and rain with snow, after which, a rapid rise of barometer of above '1 inch, in 19 hours. On 2nd night, it fell, as shewn, '54 of an inch.

## FEBRUARY.

This month was very fine, dry, and pleasant, with a few frosts. A contrast to last month, and the wet and dry periods reversed, compared with same time last year. Cirrostratus and cumulus almost the only cloud. A very fine, dry, and early seed-time, in all respects a perfect reverse to the same period of last year.

## MARCH.

A very dry month, and the first 11 days warm and pleasant, cumulus, and cirrostratus. 14th to 26th, cold with nimbus, and hail, or snow. 28th, 29th, nimbi, rain, hail and gale. 30th, many cumuli. 31st, rainy morning, fine day with cumuli.

## APRIL.

1st to 7th, chiefly fine and pleasant with cumulus. 9th to 13th, cold with nimbi, hail, and snow. 14th to 17th, clear days, but frosty nights, with cold mornings. 18th to 29th, very fine and sometimes warm, as the table shews. Showers on 29th evening, and on 30th.

On 12th, in London, a great storm of snow, hail, and electrical discharges. 27th, at midnight, distant lightning and thunder.

## MAY.

3rd, rise of temperature. 4th, a very fine and clear day, except white cirrostratus in strips. 5th, a nimbus far to S. W. all the morning. Some thunder. Fine and very hot with us, except a few drops at 1 p. m. the wind veering from S. E. to S. W. 7th, cirrostratus in white streaks. 8th, a very brilliant and hot day, and no clouds. 9th, much haziness. 13th, raining lightly most of the day. 14th, dense cumuli. 16th, cirrocumulus. 17th, a conspicuous range of cirrocumulus in lines from S. to

N. in the zenith at 8 a. m. Nimbi, hail and thunder p. m. 18th, a very black nimbus at 2 p. m. 3 miles S. S. E. which discharged a very great fall of hail and rain, brilliant serpentine lightning and startling crashes of thunder. The buildings shook with the shock. I saw the electric matter in blue streams, run horizontally in zigzag course, and to descend also therefrom. The storm passed without wetting us. To the 31st, the drought continued unabated as it had for 17 weeks to this time. Scarcely a cloud for many days, or small cumuli and lines of cirrus only seen.

Hawthorn in leaf March 17th in some situations, sycamore April 16th, willow on 20th, horse-chesnut from 16th to 20th, poplar May 3rd, maple, oak, ash, and elm, from the 8th to the 11th. Cowslip in flower April 27th, hawthorn May 12th! This was very early, but was exceeded in 1822, 1825, and 1828. I noticed it in 1822 as early as April 30th! That was perhaps the earliest season ever recorded. But in returning to the present head, May 1834, the great drought from the end of January, now shews its effects upon the plains, for the grass crop promises a very light harvest, as stated in the general reports current at this period.

#### JUNE.

1st and 2nd, very fine and hot. 3rd, much cirrocumulus, and distant nimbi. 4th, a delightful rain for 3 hours or more, to night. 9th, cumuli grouped in the E. p. m. Thunder in S. W. 11th, squalls and distant thunder. A violent gust was experienced in Essex. A mill was upset at Colchester, and the miller killed by one of the stones falling upon him. 14th, much cirrocumulus. Rugged cumuli in S. W. horizon all the evening. Thunder-storm from 9 till 11 p. m. very vivid and continual lightning, and loud reports in constant succession. Early in the evening it was dreadful at Brighton, the hail the size of walnuts. £8000 damage there to windows! At Bury St. Edmund's, Brandon, and Thetford, much injury by hail. A barn at Witnesham, near Ipswich, burnt by lightning. Several houses in Aldborough were struck, a beam was split, and a large tree shattered, large boughs being driven 30 yards! The lightning appeared as rows of blue beads in zigzag order. 16th, 6 p. m. a heavy thunder-storm and 3 horses were struck dead, 2 miles E. of us. 21st, on first opening the outward door of my house this morning, the external air met me as from an oven's mouth, so early did the temperature become excessive. By 9 a. m. thermometer 79·5. A very brilliant and excessively hot day. The round knots of white cirrocumulus being the only clouds. Temperature p. m. 88 degrees, and in the sun 130 degrees. A small black nimbus came up at 11 p. m. with a thunder-storm. The flashes were vivid and thunder loud, but the cloud increased as it passed to N. E. The beautiful tower of Redenhall church, Norfolk, was injured by it.\* A horse killed also, at Eye, Suffolk. 22nd to 30th, fine and dry with cumulus and cirrostratus.

Dog-rose in flower on 5th. Garden fruits very early in maturing. A very light hay-crop, and early got up in fair condition. The effects of the drought becoming more apparent every day, and rivers, ponds, and springs now very low.

\* Redenhall Tower was similarly struck in 1616.

## JULY.

5th, black clouds southward during evening with thunder. A little shower here during night. At this time, a severe thunder-storm at Romford, Essex, with great hail and rain. A horse near Ilford was killed, and a cat also lying in a wheelbarrow, its hinder quarters being severed from its body, the barrow shattered to atoms. 6th, at 10 a. m. and 3. p. m. two alarming storms at Cambridge, cellars inundated to 4 feet in depth, and serious losses sustained. Lightning and thunder attended the latter storm. The day fair here, cumuli groups in the W. 8th, distant thunder. 12th, great heat, and a hot breeze at S. S. E. 13th, distant electrical discharges 2 and 3 a. m. 16th, the thermometer at 9 p. m. 73 degrees! Pastures burnt up and scarcely a pond furnishes a drop for the cattle! 17th, a very clear, calm, and oppressive day, thermometer, 87 degrees, and in sun, 127 degrees. A breeze from E. after 3 p. m. 18th, a severe thunder-storm at 11 p. m. 21st to 26th, chiefly fine and hot, cirrocumulus and cumulus prevailing. 27th, 8 a. m. a shower, electrical discharges in S. E. 28th, adverse currents of clouds. Awful thunder-storm from E. from 11 p. m. till 5 a. m. of 29th. A great fall of rain, incessant lightning from all points, and the most astounding crashes of thunder. A tree near us was shattered. A cottage, at Charsfield, near Woodbridge, burnt; and a house near Harwich. The shock of a thunder-clap demolished a malt-house at Woodbridge, the streets inundated there above 7 feet in depth, compelling many to quit their houses. A long brick wall at Grundisburgh, near the above town, was thrown down by the current! 31st, great thunder-storm from E. at 9 a. m. passed 6 miles to N. A deluge of rain fell on Suffolk and Norfolk contiguity. A mill at Diss was struck, the miller scorched and blistered. Many animals killed in the district, and a barn, with corn, burnt, at Billingsford. At Manchester, it was dreadful, 3 hours after this, and two lives lost. It was there most terrific, and the damage by hail, inexpressible. A pond at Brockley, Suffolk, just emptied of its mud, was literally filled level with hail on 29th morning also! At Thrandiston\* fair on 31st, two booths were swept down and stalls shaken down by the storm!

## AUGUST.

1st, at 4 a. m. a severe thunder-storm again from E. near the Waverney's course. The heat during last night at minimum 67! This is unusual! 5th, 7 p. m. two coloured Parhelia. Dark broken cumuli about. 6th to 8th, cirrus, cirrostratus, and nimbus. 12th and 13th, very clear and brilliant. On 13th, near 2 p. m. I saw a small white cloud of cumulus kind gradually evaporate in the sky. No other appeared. 17th, distant thunder, 7 and 8 p. m. 19th, dense nimbi, and a very heavy electrical storm 5 p. m. At Creeting, near Ipswich, a water-spout broke, making immense excavations in the soil. 24th, very black nimbi in S. S. W. and W. all the afternoon, with thunder. They at length came up against the opposite currents of air below. A terrific storm occurred here from 5 till 6 p. m. Torrents of rain, incessant lightning, and detonating reports prevailed. Several trees near us were struck. Much lightning in the East for some hours after. 25th, at Ipswich, a severe thunder-storm at

\* Thrandiston, Suffolk, near Botesdale.

3 p. m. with hail as large as marbles. 26th, various currents and cumuli on different tacks. An impetuous fall of rain succeeded at 4 p. m. deluging the earth while falling to the depth of several inches. A nimbus passed to Northward at 2 p. m. with thunder. A dreadful storm of hail at Cambridge same time, incredible damage; the apple crop there destroyed. A house in that town was struck by lightning, two pier-glasses shattered, and the brass feet of a fender forced into the hearth-stone! 27th to 31st, cirrus, cirrostratus, cumulus, and nimbus prevailing.

The great heat by night, during the last two months, exceeded what is usual. (See tables.) All nature early in maturing. Plums and grapes were abundant and fine this season. Cherries usually ripe about July 10th, were this year as early as June 24th, and the corn harvest remarkably early, commencing generally about July 20th this year, and ending early in August. An excellent wheat crop in most counties, other crops were partially light. The pastures completely bare about July 14th, and the herds in some places compelled to be driven a considerable distance daily for water!

#### SEPTEMBER.

3rd, much thin cirrostratus. 4th, round dots of white cirrocumulus in finest ranges. 11th, vivid lightning and thunder 6 and 7 p. m. in nimbis to West. A whirlwind same evening with immense damage in the county of Hertford. 14th to 16th, cirrocumulus with rise of temperature. 16th to 20th, clear and very hot, no cloud but cirrocumulus, or a morning haze. Lightning in South on 17th night. 21st to 30th, chiefly fine and cooler, with cumulus. Cirrus and nimbus on 27th.

#### OCTOBER.

1st to 13th, very clear and fine, and a high temperature on many days, like summer. 14th, distant thunder. A violent storm about Cambridge then, where, at 2 p. m. some buildings and stacks of wheat were burnt by lightning. To the 25th unsettled. Sudden cold on 24th, with snow, at 5 p. m. a hurricane, awful thunder-storm and snow at Cley, Norfolk. Some persons were knocked down, others lost their sight, and a vessel in the quay was shattered. The hail which also fell lay 6 inches in depth. 26th to 31st, fair, with cumulus and stratus.

#### NOVEMBER.

1st to 7th, unusually warm, fine, and pleasant. 9th, a great rain, which was a seasonable and needful supply. On 3rd, the aurora borealis, was bright at night. 11th to 30th, continued drought, such being the extreme aridity of the land, that the rain on 9th, soon vanished from the soil, and want of water was still the complaint, as for 10 months past! The roads continued dusty, and the face of the country was clean and dry for the pedestrian observer to protract his observations by walks as in the summer months. The stratus and cumulus were almost the only clouds from 11th to the end. With the exception of the 9th day, this month proved a continuation of extreme drought and unusual warmth, constituting one of the warmest autumns on record. It was even too dry a season for wheat-seed, for the land mocked the efforts of the agriculturist, so hardened had it be-

come. The rain on 9th November, was soon absorbed, like as water when thrown upon red-bricks or cinders, contrary to the usual effect on the soil at this season: and after the 9th, a total absence of rain, till a slight shower fell on 29th! The roads dusty, and every foot-path presenting a summer-like surface, opposed to the usual miry state of November in ordinary times! The 26th night, and early part of the 27th day, was the only interval of seasonable cold, as shewn by the table. The barometer has generally been very high from January 29th, when the present drought set in, and on referring to the notes for January last, a very rapid rise of barometer will be found recorded at the exact time of the commencement of the drought.

#### DECEMBER.

1st, nimbi and storms. 4th, brilliant aurora borealis during the night. 15th, a severe thunder-storm at Macclesfield, Cheshire, lightning most awful, and large hail fell, by which many windows were broken there. 22nd, the aurora borealis bright at night. Great drought continued in this month, as had been generally the case since January 29th last, in the Eastern counties. The cirrostratus, cumulus, and stratus, the chief clouds this month.

Continued dryness was the main character of this month also in most parts of England, even to the end, and water was not to be had even at this period, on many farms, but the herds were still driven elsewhere for it! The drought beginning January 30th, 1834, continued (as specified in next table) to January 9th, 1835!

#### SUMMARY RESULTS FOR 1834.

Fine days equal to 292. Depth of rain only 17.56 inches. Eleven months dryness from January 29th, when the barometer rose above an inch in 19 hours.

Hottest on June 21st, Therm. 88 degrees	Highest Barom. on October 29th . . . . .	30.72
And July 17th . . . . . 87	On December 11th . . . . .	30.70
Coldest on December 24th . . . . . 26	Lowest on January 10th . . . . .	29.21
Range . . . . . 62	Range . . . . .	1.51

## JANUARY, 1835.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	W.	1	30·61	40	48		Cloudy, littleizzle
2	N. W.	0	'92	38	42		Fair, cloudy
3	N.	0	'87	32	41		Fair, clear
Su. 4	N. E.	0	'71	27	34		Frost, cloudy, and fine
5	N. E.	0	'70	32	41		Fair and frost
6	E.	0	'57	27	38		Fair, clear, and frost
7	N. W.	0	'34	25	33		Fair, clear, sharp frost
8	E.	0	'25	22	29		Severe frost & rime. fog, fair
9	S.W.	3	29·65	28	40	.38	Cloudy, rain p. m.
10	S.W.	2	'85	35	46		Fair, rain night
Su. 11	N. E.	0	'90	39	46	.67	Much rain all day
12	S.E.	0	30·10	38	46		Overcast, fog
13	S. E.	2	29·69	39	44		Fair
14	S. S. E.	0	'61	39	47		Full M. 9 p. m. fair
15	S. W.	2	'78	40	47		Fair, clear
16	S.	5	'11	42	47	.30	Rain, fair and a gale p. m.
Su. 17	N. W.	2	'90	31	37		Frosty, some sleet
18	E.	2	'74	23	34		Sharp frost, fair keen wind
19	S. S. E.	3	'20	32	43		Rain a. m. snow p. m.
20	N.	3	30·10	27	35		Frost, heavy falls of snow
21	N. W.	0	'34	22	30		Severe frost, fair, heavy snow
22	Var.	0	'37	25	37		Fog, thaw p.m., during night
23	S.W.	1	'40	33	38	.60	Fair, cloudy, and thaw
24	N. W.	2	'17	36	47	.05	Stormy
Su. 25	S. W.	1	'30	36	50		Fair and mild
26	W.	1	'40	41	51		Fair and mild
27	S.W.	1	'50	34	44		Fair, cloudy
28	N. W.	1	'34	36	40		New M. 9 p. m. fog, fair
29	S. W.	1	'20	38	49		Fair and clear
30	E.	0	'20	41	48		Fair, cloudy
31	S. E.	3	'15	33	38		Fair, cloudy, keen wind
				22	51	2·00	

## RESULTS.

Barom.	{ Max. on 2nd . . . . .	30·92	Therm.	{ Max. on 26th. . . . .	51 degrees
		Min. on 16th . . . . .			22
Range	Range . . . . .	1·81		Range . . . . .	29
Mean	Mean . . . . .	30·01		Mean . . . . .	36·5

Winds equally distributed. Rain, 2 inches. Fine days, 24.

## FEBRUARY, 1835.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
Su. 1	S. W.	3	30.39	37	47		Fair, cloudy
2	W.	3	29	44	53	.03	Rain early, fair, and wind
3	W.	3	44	41	52		Fair, clouds and wind
4	N. W.	2	52	42	53		Fair, clear, and warm
5	W.	5	.01	37	51		Fair, high wind, sleet evn.
6	N. W.	3	.27	32	41	.10	Gale and snow, fair
7	S. W.	3	.10	37	50	.04	Rain a. m. fair
Su. 8	W.	4	29.70	38	44		Fair, windy, light N. W.
9	N. W.	4	.81	31	40		Fair, windy [8 p. m.
10	N. W.	3	30.30	27	40	.13	Snow a. m. fair, frost
11	S. W.	2	.50	28	40		Fair and frost
12	S. W.	1	.17	38	46	.38	Rainy
13	N. W.	3	.23	35	47	.20	<i>Full M.</i> 11 a. m. stormy
14	S. W.	1	.00	38	48		Drizzling rain
Su. 15	S. W.	2	29.64	45	50	.38	Rainy
16	W.	1	.47	39	45	.05	Rainy
17	W.	1	.86	39	47		Fair
18	Var.	1	.54	36	49		Very stormy
19	S.	5	.33	33	48	.18	Very stormy, and h. wind
20	S. W.	2	.18	35	45	.30	Gales and rain, floods
21	W.	4	.30	33	45	.40	Fair, windy
Su. 22	S.	4	.54	34	46	.21	Stormy, rain p. m.
23	W.	7	.21	39	50		Violent high wind, fair
24	W.	3	.96	35	46		Fair, clear, and windy
25	S.	4	.50	33	50		Fair and windy
26	S. W.	5	.26	44	50	.07	Very stormy and galy
27	S. W.	5	.27	37	50	.20	<i>New M.</i> noon, stormy
28	N. W.	3	.90	35	44	.03	Fair, windy
				27	53	2.70	

## RESULTS.

Barom.	{ Max. on 4th . . . . .	30.52	Therm.	{ Max. on 4th . . . . .	53 degrees
	{ Min. on 20th, . . . . .	29.18		{ Min. on 10th . . . . .	27
Range	. . . . .	1.34	Range	. . . . .	26
Mean	. . . . .	29.85	Mean	. . . . .	40

Winds Westerly the whole month. Rain, 2.70 inches. Fine days, 19.

## MARCH, 1835.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
Su. 1	S. E.	3	29 39	33	37	.20	Cloudy, snow, and rain
2	S. E.	3	30 20	30	41		Frost, fair
3	N. W.	5	29 47	39	49		Fair and high wind
4	W.	3	.97	35	46	.05	Stormy, lightning E. 7 p.m.
5	N. W.	3	30 00	32	45		Frost, fair, lightning night
6	N. W.	6	29 33	38	48	.08	Fair, violent gale [snow
7	N. W.	5	28 91	34	50	.74	High wind, heavy rain, and
Su. 8	N. W.	4	29 89	32	44		Frost, fair and windy
9	S.	2	.01	34	49	.23	Rain
10	N. W.	4	.83	34	47		Fair, windy
11	S. W.	3	.61	36	52	.25	Rainy
12	S. W.	3	.80	39	54	.60	Much rain all day, floods
13	W.	1	30 30	33	52		Fair clear
14	S. W.	2	.08	37	55	.20	Full M. 10 p. m. rain, fair
Su. 15	Var.	1	29 90	42	46		Heavy rain, thunder distant
16	W.	3	30 10	37	50		Fair [floods
17	S.	1	29 84	42	48		Little wet
18	N. E.	2	30 23	39	47	.191	Rain a. m. fair
19	Var.	0	.39	33	52		Fair, clear
20	S. W.	1	.42	35	55		Fair, clear
21	S. S. E.	1	.34	45	51	.21	Rainy
Su. 22	N.	2	.35	41	46	.04	Rainy
23	N. E.	3	.40	38	48		Fair
24	E.	3	.50	38	47		Fair and cold
25	N. E.	1	.62	31	49		Frost, fair, and clear
26	W.	0	.63	30	52		Frost, fair
27	N. E.	2	.40	32	52		Fair
28	N. E.	2	.28	37	46		Fair, cold wind
Su. 29	E.	2	.22	31	46		New M. 5 a. m. frost, fair
30	S. S. E.	1	29 92	34	53		Fair clear
31	S. W.	3	.86	34	59	.007	Fair, warm, shower evening
				30	59	3 328	

## RESULTS.

Barom.	{ Max. on 26th . . . . .	30 63	Therm.	{ Max. on 31st . . . 59 degrees
	{ Min. on 7th . . . . .	28 91		{ Min. on 2nd . . . 30
Range	. . . . .	1 72	Range	. . . . .
Mean	. . . . .	29 77	Mean	. . . . .

Winds variable. Rain, 3·328 inches. Fine days, 19.

APRIL, 1835.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S. W.	2	30.09	50	66		Fair, very warm
2	S. S. E.	1	29.82	47	70		Fair, and hot
3	W.	1	.97	51	57		Cloudy, rain, thunder
4	E.	1	30.24	42	49		Fair, cloudy, and cool
Su. 5	E.	2	.44	41	48		Fair, cloudy, and cold
6	S.E.	2	.49	38	59		Fair
7	S.E.	3	.52	38	60		Fair and warm
8	S. W.	2	.38	42	68		Fair, clear, and hot
9	W.	3	.17	45	64		Fair and warm
10	N.	2	.29	50	58		Fair
11	N.	2	.48	38	52		Fair and cold
Su. 12	N. W.	1	.40	32	59		Frost, fair, and clear
13	S. W.	1	.23	39	64		<i>Fall M.</i> 7 a. m. fair, warm
14	S. W.	1	.25	48	65		Fair and warm
15	N. W.	2	.16	39	61		Fair and change to cold
16	N.	3	.05	32	48		Very cold with much snow
17	N. E.	2	.26	27	43		Sharp frost, snow in showers
18	W.	2	.04	31	50		Cloudy, little wet
Su. 19	N. W.	2	.46	37	53		Fair
20	N. W.	1	.53	41	58		Fair
21	S. W.	1	.50	45	58		Fair
22	N. W.	2	.51	47	60		Fair
23	N. W.	1	.52	42	60		Cloudy, fair, some drizzle
24	N. W.	1	.41	48	62		Fair and warm
25	N. W.	3	.09	44	57		Fair, distant hail storms
Su. 26	N.	2	29.78	36	45		Snow a.m. storms of hail
27	N. E.	1	.70	32	49		<i>New M.</i> 9 p. m. hail show-
28	N. E.	2	.97	30	53		Fair, frost a. m. [ers
29	N. E.	4	.77	38	50		Windy, very cold, wet night
30	N. E.	2	.63	43	47		Heavy rain all day
				27	70	2.123	

## RESULTS.

Barom.	{ Max. on 7th & 20th . . . 30.53	Therm.	{ Max. on 2nd . . . 70 degrees
	{ Min. on 30th . . . 29.63		{ Min. on 17th . . . 27
Range	. . . . . 90	Range	. . . . . 43
Mean	. . . . . 30.08	Mean	. . . . . 48.5

Winds much divided. Rain, 2.123 inches. Fine days, 21.

MAY, 1835.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S. S.W.	1	29.82	44	55	.15	Wet a. m. fair, thun. storms
2	S. W.	1	.79	39	61	.14	Showers and thunder
Su. 3	N. W.	1	.90	43	52		Fair and cool
4	N.W.	1	30.11	42	56		Cloudy
5	S.W.	1	.19	43	61		Fair
6	S. W.	2	29.90	47	61	.69	Wet a.m. thunder storms
7	W.	2	30.10	47	58		Fair
8	S. W.	1	.20	42	68		Fair and warm
9	S. W.	2	.01	55	70		Fair, very warm
Su. 10	S. W.	4	29.87	49	62	.14	Showers
11	S. W.	2	30.01	46	62		Fair
12	S. W.	2	29.91	51	64		<i>Full M.</i> 3 p.m. fair
13	N. E.	2	.60	49	57	.09	Little showers
14	E. N.E.	2	.76	39	44	.55	Much rain, very cold
15	E.	2	.90	39	55	.10	Fair, rain early
16	S. W.	2	.92	45	62	.17	Showery and hail
Su. 17	S.	3	30.12	44	67		Fair and warm
18	S. E.	1	.04	45	71		Fair, very warm
19	E.	3	.00	47	67		Fair, clear, and warm
20	E.	0	.14	50	59		Fair
21	N. W.	1	.30	48	60		Fair
22	N. W.	1	.21	44	67		Fair and warm
23	N. W.	2	.22	50	69		Fair and very warm
Su. 24	W.	2	.09	55	71		Fair and very warm
25	S.W.	3	29.80	55	64		Light showers
26	S.W.	1	.52	47	62		Cloudy
27	N. W.	0	.92	44	61		<i>New M.</i> 1½ p.m. fair
28	N. E.	2	30.12	47	62		Fair, cool wind
29	N. E.	3	.22	41	60		Fair, cool wind
30	N. N. E.	3	.17	42	60		Fair, cool wind
Su. 31	N. W.	2	.09	41	62		Fair and cool
				39	71	2.04	

## RESULTS.

Barom.	{ Max. on 21st . . . . .	30.30	Therm.	{ Max. on 24th . . . . .	71 degrees.
	Min. on 26th . . . . .	29.52		Min. on 14th . . . . .	39
Range . . . . .		.78	Range . . . . .		.32
Mean . . . . .		29.91	Mean . . . . .		.55

Winds Westerly till 12th, then Easterly till 20th, next a week Westerly, and again Eastward and Northward. Rain, 2.04 inches. Fine days, 21.

JUNE, 1835.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S. E.	2	30·16	42	63		Fair
2	S. E.	2	·18	45	71		Fair, very warm
3	S. E.	1	·02	50	66		Fair
4	N. E.	1	·17	55	63	·08	Little rain
5	N.	2	21	51	66		Fair
Su. 7	E. N. E.	2	·20	53	76		Thun. storm a. m. fair, very [hot
	E. S. E.	0	·25	54	84		Fair, clear, extremely hot
8	E. N. E.	1	·29	56	82		Fair, clear, very hot
9	S. E.	1	·37	55	84		Fair, clear, extremely hot
10	W.	0	·41	53	84		Full M. 11 p.m. fair, hot
11	S. E.	1	·51	56	85		Fair, clear, excessive heat
12	N. E.	2	·51	55	82		Fair, clear, very hot
13	N. E.	2	·40	54	66		Fair, cloudy
Su. 14	Var.	1	·31	53	73		Fair and hot
	N. W.	1	·33	55	76		Fair, very hot
	N. W.	0	·30	59	77		Fair, very hot
	N. W.	0	·20	63	75		Fair and hot
	N. W.	1	·18	58	65		Light showers
	N.	2	·23	51	63		Fair
	N. W.	2	·03	52	68		Fair
	W.	3	·09	48	72		Fair and hot
	S. W.	3	29·78	55	74		Fair and hot
	W. S. W.	3	·74	53	67		Thunder showers
23	S. to W.	5	·23	45	59	·25	Gale and much rain
24	N. W.	5	·71	47	52		Gale and rain
25	S. E.	1	·94	43	59		New M. 4 a. m. rainy
26	N. W.	3	30·21	46	56		Cloudy, little rain
27	N. W.	2	·32	43	62		Fair
Su. 28	N. W.	1	·35	41	65		Fair
	S.	1	·25	44	66		Fair
				41	85	2·10	

## RESULTS.

Barom.	{ Max. on 11th . . . . .	30·51	Therm.	{ Max. on 11th . . . . .	85 degrees
	{ Min. on 24th . . . . .	29·23		{ Min. on 29th . . . . .	41
Range	. . . . .	1·28	Range	. . . . .	44
Mean	. . . . .	29·87	Mean	. . . . .	63

Winds Eastward to the 14th, then W. to N. Rain, 2·10 inches. Fine days, 23. The barometrical range approached to that of the winter months in general!

JULY, 1835.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S. E.	2	30·25	49	71		Fair and very warm [2 p.m.
2	S. E.	2	·20	49	71	·03	Chiefly fair, show. 7 a.m. &
3	S. W.	1	·18	57	75	·12	Thun. shower early, fair and
4	S. W.	1	·21	54	74		Fair and hot [hot
Su. 5	S. S. W.	1	29·97	56	71	·04	Fair, shower 6 p.m.
6	S. W.	1	30·28	53	71		Fair
7	S. W.	2	·29	50	71		Fair
8	S. W.	2	·07	56	68	·13	Rain early, fair
9	S. W.	3	·05	52	66		Fair
10	S. W.	2	29·86	57	68		<i>Full M.</i> 6½ a.m. fair
11	W. S. W.	1	30·20	52	69		Fair
Su. 12	S. W.	2	·03	52	71		Fair
13	W.	2	29·92	59	70		Showery, thunder
14	N. W.	2	30·12	54	68		Fair
15	S. W.	2	·01	51	73		Fair and hot
16	S. W.	1	·10	59	75		Fair and hot
17	S. W.	2	·19	56	77		Fair, very hot [10 p.m.
18	S. S. E.	2	·11	56	77		Fair, very hot, lightning E.
Su. 19	W.	0	·25	60	77		Fair, very hot
20	S. W.	1	·25	54	80		Fair, very hot and close
21	E. S. E.	2	·30	64	79		Fair and very hot
22	N. E.	2	·40	57	70		Fair •
23	N. E.	1	·36	52	75		Fair and hot
24	E.	2	·33	56	77		Fair, very hot
25	E.	3	·31	55	75		<i>New M.</i> 5 p.m. fair, hot
Su. 26	E. S. E.	3	·35	56	76		Fair, very hot
27	E. S. E.	2	·17	53	80		Fair, very hot
28	N. W.	1	·22	52	84		Fair, extremely hot
29	N. W.	1	·30	58	80		Fair, very hot
30	N. W.	0	·20	55	83		Fair, extreme heat
31	N. W.	1	·20	56	74		Fair and hot
				49	84	0·40	

## RESULTS.

Barom.	{ Max. on 22nd . . . . .	30·40	Therm.	{ Max. on 28th . . . 84 degrees
	{ Min. on 10th . . . . .	29·86		{ Min. on 1st . . . 49
Range	. . . . .	·54	Range	. . . . . 35
Mean	. . . . .	30·13	Mean	. . . . . 66·5

From 3rd to 17th, wind W. to S.W. afterwards variable. Rain only ·40 of an inch. Fine days, 28. Mean pressure very high. Mean temperature also high, and a very dry period.

## AUGUST, 1835.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	N.W.	0	30°19'	50	78		Fair, very hot
Su. 2	E.	3	'10	53	74		Fair and hot
3	N.E.	3	'17	56	70		Fair
4	N.E.	1	'10	53	77		Fair, very hot
5	S.W.	2	'05	48	80		Fair, very hot
6	W.	2	'08	63	77		Fair, very hot
7	W.	4	'02	65	70		Cloudy, windy
8	N.W.	1	'33	48	72		<i>Full M.</i> 34 p. m. fair
Su. 9	E.	1	'40	45	74		Fair and hot
10	S.W.	0	'41	55	86		Fair, extremely hot
11	S.	1	'25	58	83		} Fair and extreme heat } and sultriness
12	W.	3	29°97	62	84		
13	N.W.	1	30°24	57	71		Fair
14	N.E.	1	'32	50	71		Fair
15	N.W.	1	'26	45	78		Fair, very hot
Su. 16	W.	1	'25	60	79		Fair, very hot and sultry
17	N.W.	1	'33	65	75		Fair, very sultry
18	E.	2	'40	52	76		Fair, clear, and hot
19	E.	2	'33	56	79		Fair, very clear and hot
20	E.	2	'01	58	80		Fair, extremely hot
21	S. S.E.	0	29°75	59	83		Fair, and extreme heat
22	S.	2	'70	63	77		Fair, very hot
Su. 23	S. W.	3	'85	56	72		Fair, some clouds
24	S. S.E.	2	'67	59	73		<i>New M.</i> 4 a.m. fair
25	Var.	1	'66	58	71	.28	Thunder and shower
26	W.	1	'75	55	63	.20	Cloudy, light rain
27	S.E.	0	'91	55	69		Fair
28	E.	3	30°16	57	70		Fair
29	E.	2	'13	53	71		Fair
Su. 30	E.	2	'12	53	73		Fair and hot
31	E.	1	'19	48	68		Fair
				45	86	0°48	

## RESULTS.

Barom.	{ Max. on 10th . . . . .	30°41	
	{ Min. on 25th . . . . .	29°66	
Range . . . . .		'75	
Mean . . . . .		30°03	

Therm.	{ Max. on 10th . . . . .	86 degrees	
	{ Min. on 8th night . . . . .	45	
Range . . . . .		'41	
Mean . . . . .		65°5	

Winds variable. Rain only '48 of an inch. Fine days, 29.

## SEPTEMBER, 1835.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	E.	2	30-30	48	72		Fair and hot
2	S.E.	2	'32	46	73		Fair and hot
3	S.E.	2	'10	48	73		Fair and hot
4	S. W.	1	29-94	57	79		Fair and very hot
5	N. W.	1	30-07	63	74	·10	Rain early, fair and hot
Su. 6	S.E.	2	'25	49	72		Fair and hot
7	S. S.W.	1	'11	50	74		<i>Full M.</i> 3 a. m. fair, hot
8	S.	1	29-72	47	73	·07	Fair and hot, rain night
9	N.W.	4	'70	50	63	·05	Showery, windy & thunder
10	S. W.	4	'40	47	66	·15	Rainy
11	S. W.	4	'45	49	57	·12	Rainy
12	Var.	1	'39	47	59	·21	Rain and thunder
Su. 13	W.	1	'61	47	62		Fair, lightning E. evening
14	S. W.	1	30-05	49	67		Fair and warm
15	S. W.	2	29-95	58	70	·50	Fair and hot, heavy rain nt.
16	S. W.	1	'85	52	65		Fair
17	S. W.	2	'85	46	66		Fair, lightning E. evening
18	S. W.	2	'83	44	64		Fair, very wet night
19	S. W.	3	'54	53	67	·64	Rain a. m. fair and warm
Su. 20	S. W.	4	'76	58	66	·29	Heavy rain a. m. fair p. m.
21	S.	1	'87	53	60	·98	Heavy rain all day
22	S. E.	4	'64	58	71		<i>New M.</i> 2½ p. m. fair & hot
23	S.	3	'84	57	66		Fair
24	W.	1	30-05	55	61	·11	Rain a. m. fair
25	S.	0	29-98	51	66		Fair, clear and warm
26	S.	1	'74	47	62		Fair, rain all night
Su. 27	N. W.	1	'60	51	60	·50	Rain early, fair
28	W.	2	'58	49	55		Fair
29	S.W.	3	'75	45	63		Fair
30	S.E.	4	'34	53	63	·18	Stormy, rain p. m.
				44	79	3-90	

## RESULTS.

Barom.	{ Max. on 2nd . . . . .	30-32	Therm.	{ Max. on 4th . . . . .	79 degrees.
		29-34			Min. on 18th . . . . .
Range	. . . . .	98		Range	. . . . .
Mean	. . . . .	29-83		Mean	. . . . .
					61-5

Winds chiefly S. to W. Rain 3-90 inches. Fine days 21.

OCTOBER, 1835.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S.	4	29°48	54	60	.16	Stormy, wind, and showers
2	S. S. E.	4	·37	54	61	.27	Stormy, and windy
3	N.E.	1	·30	43	56		Rain, heavy rain evening
Su. 4	W.	3	·55	47	53	1·05	Much heavy rain, fair, p.m.
5	W.	1	·85	44	58		Fair
6	S. W.	0	30°02	44	62		Full M. 5 p. m. thund. sh.
7	N.E.	1	·20	50	56	.47	Heavy showers
8	E.	2	29°92	46	58		Fair, clear
9	S. W.	2	·27	44	53		Much heavy rain
10	N. W.	3	28°92	45	51	.52	Fair, lightning night
Su. 11	N. W.	4	29°42	39	47	.19	Showery, stormy, cold
12	N. W.	2	30°01	39	50		Fair
13	W.	3	·01	48	59	.03	Cloudy, some wet
14	N.W.	0	·40	50	58		Fair, clear
15	N.W.	0	·48	38	57		Fair, clear
16	N. E.	0	·50	42	57		Fair, clear
17	N.	0	·40	43	55		Fair
Su. 18	S. E.	2	·43	45	54		Fair
19	E.	1	·25	34	53		Fair
20	N. W.	1	29°87	36	51		Fair, with cirrocumulus
21	N. W.	2	·85	39	52	.08	Rain early, fine day
22	S. S. E.	3	·65	36	53		New M. before 1 a.m. fair
23	W.	1	·80	44	54	.13	Rain early, fine day
24	S.W.	4	·63	44	54	.37	Heavy rain, thunder, fair
Su. 25	S.	4	·59	44	50	.50	Much rain and gale
26	S. W.	2	·30	44	53		Fair
27	W.	2	·96	40	50		Fair, lightning N. E. 8 p.m.
28	N. W.	1	30°05	36	51		Fair
29	S.W.	2	·09	40	55	.28	Heavy rain a. m. fair
30	S.W.	0	·31	35	51		Fair, hazy
31	E.	1	·00	45	50	.68	Heavy rain the whole day
				34	62	4·73	

## RESULTS.

Batom.	{ Max. on 16th . . . . .	30°50	Therm.	{ Max. on 6th . . . . .	62 degrees
	Min. on 10th . . . . .	28°92		Min. on 19th . . . . .	34
Range . . . . .		1·58	Range . . . . .		28
Mean . . . . .		29°71	Mean . . . . .		48

Winds variable. Rain 4·73! Fine days, 20. Most of the rain having fallen by night.

## NOVEMBER, 1835.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
Su. 1	N. W.	1	30.32	39	48		Fair
2	S.E.	0	.35	32	49		Frost, fair, clear
3	S.E..	1	.20	42	51		Fair
4	S.E.	3	.17	39	44		Fair, cloudy
5	S.E.	2	.09	38	43		<i>Full M.</i> 10 a. m. fair,
6	E.	1	.00	36	45		Fair, cloudy, roads dusty
7	S. E.	2	.17	28	44	.50	Frost, fair, rain night
Su. 8	N. W.	1	.00	41	46		Fair
9	E.	3	.33	37	40		Fair, cold wind
10	E. N. E.	4	.47	34	38		Fair, very cold wind
11	N. W.	1	.31	35	45		Fair, showers night
12	N.	2	.21	36	44	.22	Stormy and hail
13	N. E.	1	.45	35	43	.14	Storms and hail
14	W.	1	.14	34	41	.10	Drizzling
Su. 15	N.	1	.15	40	45	.09	Showery
16	N.	1	.05	35	43		Overcast and damp
17	W.	2	29.92	39	49		Fair, cloudy
18	W.	5	.70	44	53	.11	Gale, stormy, fair
19	W.	1	30.11	38	48		Fair and clear
20	S. W.	3	.05	40	50		<i>New M.</i> 10½ a. m. fair
21	S. W.	4	29.94	46	54		Fair, warm, and windy
Su. 22	S. W.	4	.93	47	54		Fair, warm, & drying wind
23	S. W.	2	.92	48	53	.12	Little wet, fair
24	S. S. E.	3	30.01	43	54		Fair and clear
25	S. E.	3	29.95	48	52		Fair
26	S. S. E	2	.58	47	53	.10	Rain a. m. fair
27	S.	2	.47	50	54	.11	Stormy
28	S. W.	2	.45	45	50		Stormy
Su. 29	S. W.	3	.51	41	48	.19	Rainy, dark
30	S.	3	.31	46	53		Fair, cloudy
				28	54	1.68	

## RESULTS.

Barom.	{ Max. on 10th . . . . .	30.47	Therm.	{ Max. on 21st & 22nd . . . . .	54 degrees
		29.31			Min. on 7th . . . . . 28
Range	. . . . .	1.16	Range	. . . . .	26
Mean	. . . . .	29.89	Mean	. . . . .	41

Winds alternate. Rain, 1.68 inches. Fine days, 21.

## DECEMBER, 1835.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S. E.	2	29.53	46	52		Fair, some sun
2	S. E.	2	.75	44	49		Fair and clear
3	S. E.	1	.82	39	51		Fair
4	S. W.	1	.87	41	47		Fair, chiefly sun
5	W.	1	30.31	38	45		<i>Full M.</i> 5½ a. m. fair
Su. 6	W.	1	.33	39	46		Fair, fog at sun-set
7	N. E.	0	.21	30	44		Fog, frost, fair
8	S.	1	29.98	39	41	.12	Overcast, rain 10 p. m.
9	N. E.	2	.76	38	41		Overcast, sleet evening
10	N. E.	1	30.47	31	35	.01	Fair and frost
11	E. S. E.	1	.36	24	32		Fair, clear, and severe frost
12	W.	1	.35	25	36		Fair, cloudy, sharp frost
Su. 13	W.	0	.40	34	41		Fair, and calm
14	W.	0	.47	35	41		Fair, cloudy, calm
15	N.	0	.40	38	42		Fair, cloudy, calm
16	E. N. E.	1	.47	36	43		Fair
17	S. W.	2	.31	32	42		Fog, fair
18	N. W.	2	.00	37	43		Cloudy
19	N. N. E.	4	.05	33	35		<i>New M.</i> 9 p. m. snow
Su. 20	N. E.	3	.12	29	32	.025	Frost and snow
21	N. E.	2	.31	27	32		Sharp frost, fair, clear
22	N. E.	0	.52	23	34		Severe frost, fair, clear
23	N. W.	1	.61	22	34		Severe frost, fair
24	N. W.	1	.52	24	30		Sharp frost, rime, fair
25	N. W.	0	.43	20	30		Very severe frost and rime
26	W.	0	.43	18	32		Very severe, clear day
Su. 27	S. W.	2	.27	23	36		Severe frost, fair
28	S. W.	3	.14	32	44		Fair, cloudy, dry thaw
29	W.	2	.19	38	42		Fair, cloudy
30	N. W.	2	.30	38	42	.02	Cloudy, little wet
31	N. N. W.	1	.33	27	34		Fair and sharp frost
				18	52	0.175	

## RESULTS.

Barom.	{ Max. on 23rd . . . . .	30.61	Therm.	{ Max. on 1st . . . . .	52 degrees
		29.53			Min. on 26th . . . . . 18
Range	. . . . .	1.08	Range	. . . . .	34
Mean	. . . . .	30.07	Mean	. . . . .	35

Winds nearly equal. Rain, only .175 of an inch. Fine days, 28.

## NOTES FOR THE YEAR 1835.

## JANUARY.

On 2nd, a remarkably high pressure, barometer 30·92! Calm and dry to the 8th, which day closed the long drought of 49 weeks! 9th to 17th, more unsettled and rain at times. 18th to 22nd, frosts with snow. On 22nd, the snow 6 inches in depth. 25th to 30th, fine and mild, with a stratus sometimes. Cirrostratus and cumulus usual. 31st, a cold breeze from S. S. E. even like a N. E. blast to the feelings.

## FEBRUARY.

This was a month of storm throughout, high winds prevailing much, with hasty rain. Cirrus, cirrostratus, cumulus, and nimbus almost daily seen. 9th night, two barns, near Ixworth, Suffolk, were removed off the brickwork by a gale. 23rd, awful gale. Some coaches blown over. A large house at Leeds, Yorkshire, blown down. Some lives lost therein. Great damage by sea and land. 26th, 11 p. m. a severe thunder-storm with large hail, and very vivid lightning! The thunder snapping with violence.

## MARCH.

On 4th, four cottages burnt by lightning at Blofield, Norfolk. 6th, two farming establishments burnt by lightning at High Roothing, Bury, Essex, and two brick walls blown down at Bury St. Edmund's. Lavenham church, Suffolk, had a part of its upper parapet blown down at same period. Cirrus, cumulus, cirrostratus, cumulostratus, and nimbus often prevailing. Like February, very stormy.

## APRIL.

2nd, a very hot day, with cirrocumulus. Thunder westward, evening. At Maldon, Essex, a dreadful thunder-storm on 3rd, early a. m. The house of Mr. Polley was struck and ignited, as well as very much shattered. The bell-wires melted, and persons knocked down. A barn at Maldon Hall was burnt also by lightning then. 16th and 17th, snow 4 inches in depth with sharp frost. Exceedingly variable in temperature during this month. All modifications of cloud prevailing but stratus.

## MAY.

1st, dense nimbi in S. and S. E. near 2 p. m. A very heavy thunder-storm passed over Needham Market, and the centre of Suffolk. 6th, between 4 and 6 p. m. two heavy thunder-storms with hail and heavy

rain in this district, and over many parts of the country. The lightning struck the White Horse public-house, at Swaffham, Suffolk, and did great damage to it. 7th, distant thunder 1 p. m. 9th, rise of temperature, cirrocumulus, cirrostratus, and cumulus. 10th, a very dense black nimbus N. W. at 6 p. m. Thunder in N. A heavy storm of rain 8 p. m. from the cloud coming on across the lower breeze. 14th, very cold, and rain the whole day. 17th to 24th, fair and warm. Cumulus and cirrus only. 26th to 31st, fine in general, but very keen and boisterous gales from N. E. Cirrostratus and cumulus large and dense.

This spring was later than the preceding, and the March seed-time remarkably windy and wet like that of 1818, and far less favourable than that of 1834. In the month of April just past, the changes from heat to cold and again to heat, were more than usually striking, as the reader may see by the table for April, 1835. The garden fruit, such as the currant and some others, were completely cut off while in blossom, by the frost of Good Friday, the 17th! yet the month entered with great heat. May has proved unsettled, and with less warmth than for two previous years, passing away with keen and boisterous northerly winds and drying weather.

The hawthorn leafed April 2nd, sycamore on 20th, horse-chesnut on 23rd, willow on 30th, maple and poplar May 15th, oak, ash, and elm, by the 23rd. Cowslip in flower May 7th,\* and the hawthorn on 24th.

#### JUNE.

6th, at 3 a. m. a sudden thunder-storm, with heavy torrents of rain from E. N. E. after which a great change from previous coolness and unsettled skies, to clear and remarkably hot weather. 7th, a few cirrocumulus, intense heat to 12th day, and no cloud hid the sun here. 9th, 5 p. m. I observed the head of a vast and extensive nimbus on S. W. horizon, its effects are noted below. 10th, great smell of electricity. Oppressive heat, and a remarkable haze dimmed the sun, even so that its beams shone quite red or crimson on all objects, yielding a most solemn and extraordinary effect on the landscape. The solar orb a dark red, and more so at setting. Dark groups of cumuli N. W. 8 p. m. (effects also below.) 11th, unabated fervour of summer. Cumuli groups 4 p. m. in N. W. thunder heard (noted below.) 12th, wind veered. To 22nd, chiefly fine. The cumulus seen only, except for a short period. 23rd, nimbi, hail and electrical discharges. 24th and 25th, extraordinary gale from S. S. W. and N. W. with much rain and fall of temperature. 26th and 27th, low clouds and precipitation. 28th to 30th, fair. The cumulus only on last 3 days.

During our continued sun-shine, the following occurred elsewhere in our Isle:—4 and 5 p. m. June 9th, dreadful hail in Essex, Herts, and Cambridgeshire. Damage incredible! One farmer lost his whole crop, value £1000 on 122 acres. Hail-stones 4 inches round. 10,000 panes of glass broken at R. Eaton's, Esq., Stetchworth, and £2000 worth at Cambridge. Many farmers in those counties were nearly ruined, besides the one mentioned. On 10th and 11th, the northern counties had an

\* It is necessary to point out that the several dates given under this head, are intended to represent when the cowslip was in full splendour, and general over the meadows.

awful storm. Durham cathedral was struck, and two lives lost, by the fall of huge stones from its top. Hence we have proof of the variety of weather, at the same time in England. This month was a sudden advent of summer from previous cold, and the extraordinary heat of the second week, is worthy of notice, as given in the table.

The dog-rose in flower on the 9th day.

#### JULY.

1st, cirrocumulus. 2nd, cirrostratus and cumulus inosculating. 3rd, shower 4 a.m. distant thunder. 4th, cumuli only. 5th, cumuli and nimbi. 6th and 7th, cumulus and cirrostratus. 8th, rain at sun-rise. Large cumuli to-day. 9th to 12th, cumulus and cirrostratus, with cirrus above. 13th, cirrus, cirrostratus, cirrocumulus, cumulus, and nimbus. Much thunder to N.W. and S. Near Botesdale, Suffolk, a thunder-shower 2 p.m. Much hail at Witham, Essex, on this day. A wind-mill near Harwich, was struck by lightning. From this day no more rain with us for six weeks!! 14th to 31st, extremely bright sun and rising temperature, grass burning up, and ponds exhausted. On most days, not one cloud seen, from 21st to 26th inclusive, a spotless arc of blue. On 27th, cirrus only. Next three days no clouds again. On 31st, cumuli in the forenoon. The effects of this drought daily becoming more manifest. The dryness far more general than that of last year.

Reports from all parts of England bear testimony of the violence of the present drought, as being greater and more general than that of last summer, and approaching in effects to that of 1818, so memorable to our present farmers, and to that of 1800, which our elders can corroborate. Every plain on heavy soils now exhibiting cracks or openings, sufficiently wide to admit the hand or foot, and whiteness replaces the former verdure of the grass! The young turnip crop is lost, and a second sowing becomes needful in some places. The hay and clover crops were fair, and those who were beforehand or very late, evaded the wet which fell at Midsummer. The gales at that time twisted about the wheat-crops and lodged some. Harvest commenced during this month, and went on without even one shower to the end. The barley remarkably clear and white in the straw, and bright in the grain, and like that of 1800, has been termed "the silver barley."

#### AUGUST.

1st to 6th, very fine. 2nd, cirrocumulus and haziness, cumulus, only on 4th, 5th, 6th. 7th, cloudiness general, a moisture in fogginess, (not rain.) The temperature during last night very high. 10th, no cloud, no breeze, but quite calm. Thermometer at maximum, 86 degrees. 11th, excessive heat, and beautiful sky dotted with cirrocumulus in various forms, and of silver white. 12th, some gusts of wind, but the heat excessive. To the 18th, calm day and night. 19th & 20th, foggy mornings, very clear days. 21st, excessive heat, a cumulostratus, with loud thunder as it resolved itself into a nimbus, 3 miles N.W. where at most a few large drops fell and the cloud evaporated soon after, groups of cumuli in S. at 7 p.m. and after, with lightning. 22nd, large cumuli. 23rd, cirrus, cirrostratus, cumulus, distant nimbus, and thunder in West, 11 a.m. 24th, cumulo-

stratus, distant thunder. 25th, cirrus, and all kinds to nimbus, much lightning and thunder, in dense nimbi around us, showers here, but more at a distance; the first rain for 6 weeks. The pastures of late, and other lands so much cracked by the parching drought, as to exhibit openings wide enough for the insertion of a man's foot! The grass perfectly seared, and no water to be had at the surface! Suffolk and Essex, generally had a thunder-storm on 25th. At Orsett, near Bulvan Fen, a barn and 5 stacks of corn were burnt by lightning; damage £1,000. At noon on 25th, a dark body was seen depending from a dense cloud; 1 mile west of us, it looked like an elephant's trunk, vibrating and waving from the cloud. A furious tornado burst over a field, where it was vertical, levelling the stubble as if by a heavy roll in a long narrow course, and removed large clods of earth, and some pigs in its passage: appearing to persons near, like a reddish smoke in agitation, but it spent itself in the field; it was attended by a noise like that of a cascade. A shower followed, electrical discharges distant. 26th, cloudy and rainy. 27th to 31st, again fine. On 30th, rocky cumuli in adverse currents. 31st, lightning in E. 8 p. m. The counties of York, Lancaster, Gloucester, and Sussex, felt the shock of an earthquake, at 3 a. m. August 20th.

#### SEPTEMBER.

First 7 days, chiefly fine and very hot. Excessively sultry on 4th. 8th to 30th, a compensation for previous drought, being very wet on many days, and the cirrus, cirostratus, cumulus, and nimbus constantly seen, except on a very few days. A perfect reverse to last month in pressure and dryness, but the temperature was still altogether high.

#### OCTOBER.

The rule of compensation went on through this month, with excess of wet, even to 4·73 inches. Fine days, 20, much of the rain being by night. Winds variable, but rather most Westerly. The same clouds prevailed as in last month. On 6th, a heavy torrent, 4 miles N. while fine here, 4 p. m. and at 5 p. m. a heavy thunder-storm, 10 miles S. W. 25th evening, a great gale in London, and on the Eastern coasts. The comet now visible, Westward.

#### NOVEMBER.

In the fine weather, sometimes a perfect blue sky, or cumulus only seen. In the remainder of this period, the cirrus, cirostratus, cumulus, and nimbus usually prevailing. On the whole, a fine and mild month. 18th night, most beautiful undulations of aurora borealis of brilliant yellow and unusually vivid. Dreadful hurricane in the North of Scotland on the morning before, 48 lives lost!

#### DECEMBER.

A very fine and dry month. The stratus at times and cirostratus, and cumulus most usual. 25th and 26th, the trees richly adorned with rime.

## SUMMARY RESULTS FOR 1835.

Fine days, 274. Rain, 25·656 inches. July and August the dryest, and March, September, and October the wettest months.

Hottest on June 11th, Therm. 85 degs. And August 10th . . . 86 Coldest on Dec. 25th, 26th . 18		Highest Barom. Jan. 2nd . . . . . 30·92 Lowest, March 7th . . . . . 28·91 And on October 10th . . . . . 28·92
Range . . . . . 68		Range . . . . . 2·01

In 1828, a wet summer was compensated for in the dry autumn of the same year, and now in 1835, a dry summer has been succeeded by a very wet autumn, hence again proving the natural rule of compensation. Part of November and all December have again been dry, affording a good latter seed-time. The Northern counties were not so fortunate as ourselves, in securing their crops, as they were of course later, and consequently the rain overtook them.

The years 1808 and 1825, produced heat beyond what is common in this Island, and mark! there was an interval of 17 years between. Again 1818 and 1835 were remarkable for wet springs and hot and dry summers, another period of 17 years, and many other instances prove that in 17 years we have a return of each particular kind of season, with few exceptions.

## JANUARY, 1836.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	E.	3	30.52	25	29	.07	Fair, cloudy, sharp frost
2	S.	3	.73	22	26		Severe frost, cloudy, s. nt.
Su. 3	W.	2	.50	24	39		Overcast rain, thaw
	W.	4	.23	39	48		<i>Full M.</i> 1 a.m. cloudy lit.w.
	W.	2	.34	45	50		Fair and mild
	S. W.	2	.29	43	47		Overcast, wet
	S. E.	3	.09	33	38		Fair
	S. E.	2	.15	36	40		Fair, cloudy
	S. E.	2	.04	30	36		Fair, fog, and frost
	E.	3	29.50	29	31		Frost, heavy snow
	S. W.	1	.35	30	33		Frost, thaw, and rain
11	S. W.	2	.51	27	36	.37	Fair, and frost
12	S. W.	1	.93	29	37		Fair, clear, and frost
13	S. W.	6	.50	36	46		High wind, rain p. m
14	S. W.	2	.67	38	47		Gale and rain, fair
15	S. W.	2	30.30	30	36		Fair, clear, and frost
16	W.	2	.39	30	39		Fair, clear, and frost
Su. 17	N.W.	2	.39	30	39		Fair, clear, and frost
	W.	4	29.95	32	40		<i>New M.</i> 8 <sup>th</sup> a.m. fair
	N.E.	0	30.45	32	39		Fair and clear
	W.	2	.37	26	38		Overcast, damp
	S. S.W.	2	29.90	34	40		Fair, clear
	S.	2	.70	36	46		Cloudy, damp
	S.W.	6	.50	42	54		Little wet, high wind
	W. S. W.	3	30.14	43	48		Fair, clear
	S. S.W.	1	.50	35	42		Fog
	S. W.	2	.22	35	44		Fair, drying wind
27	S. W.	3	29.95	36	45	.04	Fair, very drying
28	S.W.	2	.50	39	46		Rainy
29	W.	4	.44	33	41		Windy, stormy, hail
30	N. W.	5	.20	30	40		Strong gale, some snow
Su. 31	S. W.	3	.24	30	44		Frost, snow, and rain
				22	54		
							1.38

## RESULTS.

Barom.	{ Max. on 2nd . . . 30.73 Min. on 30th . . . 29.20	Therm.	{ Max. on 23rd . . . 54 degrees. Min. on 2nd . . . 22
Range	1.53	Range	32
Mean	29.96	Mean	38

Winds Westerly. Rain, 1.38 inches. Fine days, 25. Most of the rain being by night.

## FEBRUARY, 1836.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S. W.	5	29.30	35	44		High wind, clear and cold
2	S. E.	3	28.88	32	40		<i>Full M.</i> 7 a. m. snow, rain
3	E.	3	29.10	33	38	.60	Heavy rain and snow, floods
4	N. E.	5	30.00	35	38	.05	High wind, little wet
5	N.	3	.29	35	38		Cloudy
6	N. W.	2	.01	32	47		Fair
Su. 7	N. W.	3	29.80	37	45	.11	Rain a. m. fair
8	S. W.	2	30.13	33	43		Fair
9	W.	2	.05	42	53		Fair
10	S. W.	2	29.70	42	51	.17	Fair, wet evening
11	N. W.	4	30.20	33	38		Fair, windy
12	N. W.	4	.25	31	47		Fair, windy, hail
13	N. W.	0	.45	28	42		Fair, clear, and frost
Su. 14	W.	2	.48	36	46		Fair
15	W.	0	.52	32	51		Fair and clear
16	S. W.	3	29.98	32	46	.20	<i>New M.</i> 8 p. m. wet night
17	N. W.	6	.76	30	34	.15	Great fall of snow and gale
18	N. E.	6	30.25	34	38		Severe gale and cold
19	N. E.	3	.32	30	35		Fair and frost
20	N. E.	1	.52	26	39		Fair, clear, and sharp frost
Su. 21	S. W.	1	.24	25	40		Sharp frost, fair and clear
22	S. W.	2	29.98	32	45		Fair
23	S. W.	1	.68	35	45		Fair
24	S. S.E.	3	.37	29	44		Fair, frost, windy and cold
25	Var.	0	.16	34	45		Fair
26	N. E.	3	.11	28	38	.22	Frost, sleet; rain
27	N. E.	1	.03	35	38		Cloudy, little wet
Su. 28	N. E.	1	.41	32	41	.19	Much snow
29	N. E.	1	.63	32	44		Fair
				25	53	1.69	

## RESULTS.

Barom.	{ Max. on 15th & 20th . . . . .	30.52	Therm.	{ Max. on 9th . . . . .	53 degrees
	Min. on 2nd . . . . .	28.88		Min. on 21st . . . . .	25
Range . . . . .		1.64	Range . . . . .		28
Mean . . . . .		29.70	Mean . . . . .		39

Winds divided, and most N. W. to N. E. Rain, 1.69. Fine days, 21.

## MARCH, 1836.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S. E.	5	29.06	33	40	.37	Gale, much heavy rain
2	W.	3	.62	39	50		Fair
3	S. W.	2	.84	38	50		<i>Full M.</i> 10 a. m. stormy
4	S. W.	2	.70	37	48	.10	Rain a. m. fair
5	S.	3	.43	42	52	.12	Fair, storm 7 p. m.
Su.	S. E.	4	.35	34	47	.06	Windy and rainy
	S. E.	0	.50	33	51		Fair
	N.	1	.47	38	46		Fair, cloudy
	S. W.	1	.50	36	48	.08	Showers
	S. W.	2	.47	37	48	.06	Cloudy
	S. W.	4	.18	41	51	.11	Very stormy
Su.	S. W.	6	.48	40	50	.04	Stormy and gales
	W.	3	.68	39	49		Fair
	S. W.	6	.21	41	51	.18	Gale and stormy
	V.	2	.12	35	44	.85	Much heavy rain, thunder
	W.	3	30.00	35	46		Fair
	S. W.	5	.05	35	53	.19	<i>New. M.</i> 9 a. m. rain, fair
Su.	S. W.	2	.43	47	61		Fair, very warm, butterfly
	S. E.	2	.25	46	61		Fair, clear, & warm [seen
	S. S. W.	1	.25	42	66		Fair, clear, and very warm
	S. W.	1	.10	46	57		Fog, cloudy
	S. W.	1	29.95	46	53	.07	Rainy
	S. W.	2	.65	41	51	.05	Rainy
Su.	S. W.	4	.58	39	50		Fair and windy
	W.	4	28.93	38	48	.18	Rainy
	N. W.	4	29.47	35	43		Cloudy, sleet, snow
	S. W.	3	.64	31	48		Fair
	S. E.	4	28.88	38	47	.54	Wind and much rain
	N. W.	4	29.70	35	49		Fair and windy
Su.	S. W.	4	.40	38	52	.39	Gale and much rain
	N. W.	5	.88	38	48	.05	Gale and hail storms
				31	66	3.44	

## RESULTS.

Barom.	{ Max. on 18th . . . . .	30.43	Therm.	{ Max. on 20th . . . . .	66 degrees
	{ Min. on 28th . . . . .	28.88		{ Min. on 27th . . . . .	31
Range	. . . . .	1.55	Range	. . . . .	35
Mean	. . . . .	29.65	Mean	. . . . .	48.5

Winds Westerly. Rain, 3.44 inches. Fine days, 17.

APRIL, 1836.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	W. S. W.	3	29.50	33	49		<i>Full M.</i> 10 p. m. snow
2	N. W.	2	.42	32	43		Great fall of snow
Su. 3	N. W.	4	30.29	31	44	1.20	Heavy snow & rain, floods
4	N. W.	2	.40	34	46		Fair
5	S.	2	.11	31	53		Frost, fair
6	S. W.	1	29.99	40	50	.08	Rainy
7	S.	3	.27	40	46	.12	Rainy
8	S. S. E.	3	.19	34	50	.19	Rainy, fair p. m.
9	S. E.	3	.61	36	49		Fair
Su. 10	N. E.	2	.72	34	51		Fair, fog a. m.
11	N.W.	1	.82	40	46		Fair
12	S. W.	2	.89	34	57		Fair, warmer
13	S. W.	3	.79	44	58	.03	Fair, rain night
14	N. W.	1	30.06	39	56	.10	Fair, rain evening
15	N. E.	1	.29	43	55		<i>New M.</i> 11 p. m. fair, clear
16	E.	1	.22	35	57		Fog, fair and clear
Su. 17	S. E.	1	.22	42	55		Cloudy, fine
18	W.	1	.17	40	56		Fair
19	W.	3	.14	39	60		Fair and warm
20	S. W.	3	29.93	47	58	.02	Fair, shower 9 p. m.
21	S. W.	2	.87	43	57		Fair, rain in the night
22	S. W.	3	.98	45	62	.015	Fair and warm
23	S. W.	2	.88	42	53	.07	Rainy
Su. 24	E.	1	.87	42	56	.06	Showers
25	Var.	1	30.20	38	59		Fair, clear
26	N. W.	2	29.97	40	55	.10	Stormy
27	N.	2	.83	37	49	.07	Stormy and hail
28	N. W.	2	30.00	35	54	.05	Fair, rain evening
29	N. W.	3	29.90	32	46		Frost, sleet, snow
30	N. W.	3	.80	31	49	.04	Frost, hail, cold wind
				31	62	2.145	.

## RESULTS.

Barom.	{ Max. on 4th		30.40	Therm.	{ Max. on 22nd		62 degrees
	Min. on 8th	.. .	29.19		Min. on 5th	.. .	31
Range	.. .	.. .	1.21		Range	.. .	31
Mean	.. .	.. .	29.79		Mean	.. .	46.5

This month was colder than the preceding. Winds N. to W. some Eastward. Rain 2.145.  
Fine days, 19.

MAY, 1836.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
Su. 1	N. E.	3	29°90	32	51	·10 ·23	<i>Full M.</i> 8 a.m. cold wind, hail
2	N. E.	5	30°11	41	54		Gale at N. E. fine and cold
3	N. N.E.	4	29°83	41	53		Windy, little rain 5 p. m.
4	E. N.E.	4	·85	44	56		Windy, some rain
5	E. S.E.	4	·87	42	53		Windy, fair and cold
6	N. E.	2	30°36	42	60		Fair, clear, warmer
7	N. E.	3	·41	38	58		Fair, cool wind
Su. 8	N. E.	2	·33	41	57		Fair, cool wind
9	N.	1	·35	41	57		Fair, cool wind
10	N. E.	1	·35	43	58		Fair, clear
11	S. W.	1	·23	36	67		Fair, clear, and warm
12	W.	1	·32	43	71		Fair, very clear and warm
13	W.	1	·43	44	72		Fair, very clear and hot
14	N.	2	·64	44	66		Fair, cool wind [and warm
Su. 15	E.	0	·64	40	71		<i>New M.</i> 2 p. m. fair, clear
16	N. W.	1	·60	46	71		Fair, clear, and warm
17	E.	0	·62	47	74		Fair, clear, and hot
18	E.	1	·31	46	72		Fair, clear, and hot
19	E.	3	·40	47	61		Fair, cloudy
20	S.	0	·10	40	71		Fair, clear, and very warm
21	N. E.	3	·17	48	62		Fair, cool breeze
Su. 22	E.	3	·05	37	58		Fair, very cool wind
23	N. E.	4	·00	43	58		Fair, and cool wind, cloudy
24	N. E.	4	·27	45	57		Fair, cold wind
25	N. E.	2	·32	41	58		Fair, cloudy
26	E.	3	·45	42	59		Fair
27	E.	2	·51	38	63		Fair
28	N. E.	2	·45	39	63		Fair
Su. 29	N. E.	2	·43	43	62		Fair
30	N. E.	2	·30	45	64		<i>Full M.</i> 4 p.m. fair, clear
31	N. E.	3	·10	47	65		Fair, clear, hazy night
.	.	.		32	74	0·33	

## RESULTS.

Barom.	{ Max. on 14th & 15th . . . . .	30°64	Therm.	{ Max. on 17th . . . . .	74 degrees
		Min. on 3rd, . . . . .			Min. on 1st . . . . .
.	Range . . . . .	·81	.	Range . . . . .	42
.	Mean . . . . .	30°23	.	Mean . . . . .	53

Winds Easterly. Rain, only ·33 of an inch. Fine days, 29.

JUNE, 1836.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	N.	1	29.99	49	62		Fair, hazy
2	E. S. E.	2	.71	49	64		Hazy, wet night
3	S. W.	2	.69	54	66	.48	Heavy showers, thunder
4	S. W.	3	.72	55	67	.07	Showery
Su. 5	W.	3	.98	50	61	.05	Showery
6	W.	3	30.06	48	67	.03	Fair, shower early
7	S. W.	3	29.98	52	63	.08	Fair, shower evening
8	S. W.	1	.68	54	67	.106	Thunder showers
9	S. W.	3	.91	53	68		Fair
10	S. W.	3	.94	57	69	.16	Fair, rain night
11	S.	3	.90	59	71		Fair, sultry
Su. 12	S. W.	2	30.20	50	67		Fair
13	S. W.	1	.41	51	71		Fair, sultry
14	S.	1	.32	57	76		New M. 5½ a.m fair, very hot
15	S. E.	2	.12	54	77		Fair, clear, and very hot
16	S. W.	1	29.98	59	79		Fair, clear, and very hot
17	S. S. E.	1	.89	57	78	.35	Fair, very hot, rain night
18	S. W.	2	.79	55	70		Fair
Su. 19	W.	1	.84	55	69	.23	Thunder showers
20	W. N. W.	4	30.03	53	65		Fair and windy
21	W.	3	.00	52	61	.47	Rain
22	S. W.	3	29.98	53	68	.023	Showers
23	S. W.	3	.88	58	69		Fair, windy
24	S. W.	4	.83	55	67	.214	Thunder storms
Su. 25	S. W.	2	30.16	51	68		Fair
26	S. W.	1	.42	51	71		Fair and hot
27	S.	1	.38	52	71		Fair, cloudy, and sultry
28	S. S. E.	2	.19	57	80		Full M. 11 p.m. fair, very hot
29	N. W.	0	.42	51	72		Fair and hot [thunder
30	S. E.	2	.44	54	73		Fair and hot
				48	80	2.243	

## RESULTS.

Barom.	{ Max. on 30th . . . . .	30.44	Therm.	{ Max. on 28th . . . . .	80 degrees
	Min. on 8th . . . . .	29.68		Min. on 6th . . . . .	48
Range . . . . .		.76	Range . . . . .		.32
Mean . . . . .		30.06	Mean . . . . .		64

Winds Westerly. Rain, 2.243 inches. Fine days, 21. A truly fostering, warm, and genial month, the mean temperature being high, with fertilizing showers at times.

JULY, 1836.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S.E.	1	30.24	59	82		Fair and extremely hot
2	W.S.W.	2	.29	63	83		Fair and great heat
Su. 3	W.	0	.29	55	78		Fair, very hot
4	S.E.	0	.35	53	83		Fair and extreme heat
5	S.E.	2	.21	59	81		Fair and very hot
6	S. to W.	2	.14	62	85		Fair and excessive heat
7	N. W.	1	.31	50	73		Fair and hot
8	N. W.	2	.36	55	71		Fair
9	W.	2	.25	57	77		Fair and very hot
Su. 10	W.	3	.20	62	82		Fair, extremely hot
11	S. W.	2	.05	61	83		Fair and excessive heat
12	W.	3	29.80	65	73	.06	Sultry, with showers
13	W.	3	30.10	53	73		New M. 8½ p.m. fair & hot
14	W.	3	29.99	58	70		Fair
15	S. W.	3	.69	52	65	.19	Cloudy, showers
Su. 16	W.	4	.90	48	67	.057	Showers early, fair & windy
17	W.	4	30.05	57	69		Fair, windy
18	W.	4	.14	54	68		Fair, windy
19	S. W.	4	29.80	49	66	.04	Showery and windy
20	N. E.	0	.52	51	54	.60	Much rain
21	S. W.	2	.76	45	63	.13	Thunder showers
22	N. W.	1	.95	50	62	.155	Showery
23	N.	1	30.16	50	68		Fair, distant showers
Su. 24	S.	2	29.74	50	60	.302	Much rain
25	W.	1	30.02	51	63		Cloudy
26	S. W.	1	.19	53	70		Fair
27	S. W.	2	.21	61	73		Fair and hot
28	S. W.	1	.03	56	77		Full M. 5½ a.m. fair, very hot
29	S. W.	4	29.65	63	69	.07	Cloudy, little wet
30	W.	4	30.25	52	64	.08	Some showers
Su. 31	W. N. W.	1	.44	49	63		Fair and pleasant
				45	85	1.684	

## RESULTS.

Barom.	{ Max. on 31st . . . . .	30.44	Therm.	{ Max. on 6th . . . . .	85 degrees
	Min. on 20th . . . . .	29.52		Min. on 21st . . . . .	45
Range . . . . .		.92	Range . . . . .		40
Mean . . . . .		29.98	Mean . . . . .		65

Winds Westward. Rain 1.684 inches. Fine days, 23. Extremely hot till 12th day, afterwards refreshing showers and fostering gales continued.

## AUGUST, 1836.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S. W.	3	30°30	53	68		Fair
2	N. W.	1	'04	50	64		Fair, cloudy
3	S. E.	3	'02	53	71		Fair
4	S. W.	1	29°82	57	74		Fair and hot
5	E. N. E.	1	30°13	59	71		Sultry, little shower
6	N. E.	1	'25	57	66		Fair
Su. 7	E. N. E.	2	'30	50	69		Fair
8	E.	0	'27	45	70		Fair, clear
9	N. E.	2	'30	49	67		Fair
10	N. E.	2	'31	46	66		Fair
11	N. E.	3	'41	53	66		Fair
12	E. N. E.	2	'43	55	69		New M. 11 a. m. fair
13	E.	2	'24	47	75		Fair, clear, and hot
Su. 14	E.	0	29°98	56	71		Sultry
15	N.	0	30°10	60	73		Sultry, little wet
16	N. E.	0	'26	55	69		Fair and sultry
17	S. W.	2	'17	59	76		Fair, very hot
18	S. W.	3	29°98	49	74		Fair and hot, shower 7 p.m.
19	W.	3	30°19	53	65		Fair
20	S. W.	2	29°82	49	61		Rain p. m. storm 10 p. m.
Su. 21	W.	1	30°02	53	68		Fair, clear
22	S. W.	2	29°66	52	67		Fair, rain night
23	N. E.	2	'92	57	63		Little wet, fair
24	E.	2	30°28	51	65		Rain early, fair
25	S. E.	1	'12	48	70		Fair, very warm
26	S. W.	1	'04	53	63		Full M. 2 p. m. rainy
27	S. W.	4	29°99	52	71		Showers
Su. 28	S. E.	1	30°05	47	65		Fair, little wet
29	N. W.	1	'19	47	68		Fair
30	S. W.	1	'27	51	68		Fair
31	S.	2	'11	57	76		Fair, very hot
				45	76	0·72	

## RESULTS.

Barom.	{ Max. on 12th . . . . .	30°43	Therm.	{ Max. on 17th . . . . .	76 degrees
	Min. on 22nd . . . . .	29°66		Min. on 7th night . . . . .	45
Range . . . . .		.77	Range . . . . .		31
Mean . . . . .		30°04	Mean . . . . .		60·5

Winds on a balance, more E. than usual at this period. Rain, .72 of an inch. Fine days, 24.

SEPTEMBER, 1836.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S. W.	4	29 88	54	73		Fair and hot
2	S. W.	4	76	53	68	.21	Thunder storms
3	S. W.	2	86	44	65		Fair
Su. 4	S. W.	2	46	52	70	.78	Heavy rain, fair and hot
	S. W.	3	70	55	61	.046	Very stormy
	S.	3	39	51	59	.42	Severe thunder storms
	Var.	0	87	48	58		Fair
	N. W.	0	81	46	63		Fair
	S. W.	1	91	47	62		Fair
	W.	2	85	44	55	.38	Rainy
	W. N. W.	3	30 01	41	54	.06	New M. 1 a. m. cold & rain
	N. E.	2	12	48	56	.408	Much rain
	N.	4	21	51	57	.03	Showery
Su. 11	N.	3	22	49	58	.03	Showery
	N. E.	1	23	47	60		Fair
	N. E.	2	17	50	58	.10	Showery
	N. E.	2	07	50	59	.28	Heavy storms
	N.	3	05	51	58		Fair
	N. W.	2	00	48	55		Fair
	W.	3	05	45	58	.04	Showers
	N. W.	2	24	42	51		Fair, very cold
	W.	1	35	35	57		Fair, cold morning
	S. W.	3	29 94	51	64	.426	Much rain
Su. 25	W. S. W.	2	30 20	54	67		Full M. 12 night, fair, warm
	W. S. W.	2	27	55	68		Fair and warm
	S.	1	20	58	70		Fair and hot
	S. W.	3	29 91	58	68		Fair, very warm
	S. W.	2	64	52	63	.31	Heavy thunder storms
	N. E.	0	40	50	57	.24	Rainy, thunder
	W.	3	61	46	53	.07	Rainy and cold
				35	73	3.83	

## RESULTS.

Barom.	{ Max. on 22nd . . . . .	30.35	Therm.	{ Max. on 1st . . . . .	73 degrees.
	Min. on 6th . . . . .	29.39		Min. on 22nd . . . . .	35
Range . . . . .		96	Range . . . . .		38
Mean . . . . .		29.87	Mean . . . . .		54

Winds variable, but chiefly Westward. Rain, 3.83 inches. Fine days, 15. A wet month, with a low temperature.

OCTOBER, 1836.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S. E.	5	29.19	40	53	.38	Wind and much rain
Su. 2	S. W.	4	.45	42	51		Rainy
3	W.	4	.00	43	50	.30	Much rain
4	S. W.	1	.68	37	56	.19	Fair, clear
5	S.	1	30.07	37	59		Fair, clear
6	S. E.	1	29.81	44	56	.785	Much rain
7	S. E.	2	.53	53	62	.30	Rainy
8	S.	2	.51	54	60	.11	Fair, rain p. m.
Su. 9	S. W.	4	.54	47	58		Fair, windy
10	S.	5	.33	48	60	.19	New M. 1 $\frac{1}{2}$ p. m. stormy
11	S. W.	6	.26	53	59	.05	Gale, rain, fair
12	S.	4	.70	46	60	.035	Fair, rain night
13	S. W.	6	.22	52	60	.62	Violent storm, fair
14	S. W.	4	.81	51	60		Fair
15	S.	0	30.07	50	57	.38	Rainy
Su. 16	S. E.	0	.33	44	60		Fair, clear
17	E.	0	.30	51	65		Fair, clear, very warm
18	S. E.	2	.27	53	60		Foggy, fair, warm
19	W.	1	.50	54	60	.16	Fog, rain or wet from fog
20	Var.	0	.56	40	55		Fair
21	S. S. E.	1	.42	40	55		Fair
22	S. E.	0	.51	43	54		Fair
Su. 23	N. W.	1	.44	43	57		Fair
24	W.	2	.49	48	56		Full M. 1 p. m. fair
25	W.	1	.34	50	57		Fair
26	W. S. W.	2	.19	47	58		Fair
27	S. W.	4	29.74	46	52	.05	Stormy
28	N. W.	3	.90	32	42		Frost, fair
29	N. E.	2	.60	29	34	.285	Frost, heavy snow
Su. 30	N.	2	30.15	28	39	.09	Sharp frost, snow
31	N. N. W.	2	.18	32	42	.055	Some rain
				28	65	3.98	

## RESULTS.

Barom.	{ Max. on 20th : : : 30.56		Therm.	{ Max. on 17th . . 65 degrees.	
	Min. on 3rd : : : 29.00			Min. on 30th : : 28	
Range . . . . .	1.56		Range . . . . .	37	
Mean . . . . .	29.78		Mean . . . . .	46.5	

Winds very variable. Rain, 3.98 inches. Fine days, 18.

## NOVEMBER, 1836.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S. W.	2	30.05	30	41		Cloudy, frost
2	S. W.	1	.02	40	54		Cloudy, mild
3	S. W.	2	29.70	37	50		Chiefly fair
4	S. W.	3	.48	38	48		Fair
5	W.	3	.22	41	45	.11	Rainy, fair p. m.
Su. 6	N. W.	2	.54	33	43		Fair
7	N. W.	2	.81	32	43		Fair, frost
8	W.	1	30.16	28	43		Fair, frost
9	S. W.	2	29.96	32	50	.081	New M. 1 $\frac{1}{2}$ a.m. rainy
10	S. W.	2	.66	44	54	.125	Rain a. m. fair
11	S. E.	2	.60	38	52	.10	Cloudy, some rain
12	S. E.	1	.97	36	46		Fog all day
Su. 13	S. W.	4	.70	41	54	.30	Rainy, fair p. m.
14	W.	2	.81	39	47		Fair, very clear
15	W. N. W.	1	30.11	35	47		Fair, very clear
16	S. W.	1	.02	42	51		Fair, stormy night
17	S. W.	3	29.11	44	48		Much rain p. m.
18	N. W.	3	.26	36	42		Fair
19	W.	2	.23	33	40	.48	Much rain
Su. 20	N. E.	1	30.13	33	42		Fair
21	W. N. W.	1	.20	34	43		Fair, cloudy
22	N.	1	29.93	36	43		Fair [and rain
23	S. W.	7	.24	38	42	.385	Full M. 5 $\frac{1}{2}$ a. m. high wind
24	N. W.	4	.55	34	41		Fair, clear
25	N.	1	.84	32	37		Fog all day
26	S. E.	3	.47	34	42	.23	Rain
Su. 27	S. W.	3	.68	41	51		Fair [storms
28	S. S. W.	6	.32	49	58	.389	Violent gale and thunder
29	W.	8	28.87	42	56	.16	Violent hurricane, rain
30	S. to W.	1	29.64	43	49	.42	Much rain
				28	58	3.29	

## RESULTS.

Barom.	{ Max. on 20th . . . . .	30.20	Therm.	{ Max. on 28th . . . . .	58 degrees
		Min. on 29th . . . . .			28
Range	. . . . .	1.33	Range	. . . . .	30
Mean	. . . . .	29.53	Mean	. . . . .	43

Winds Westward. Rain, 3.29 inches. Fine days, 16. Mean barometer very low, same state as in February, 1833.

DECEMBER, 1836.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S.W.	1	30.20	31	42		Fog and frost
2	S.W.	5	29.90	38	51	.08	Rain, stormy
3	W.	4	.80	45	53		Fair, windy
Su. 4	W.	5	.79	47	56		Fair, windy, and warm
5	W.	4	.80	45	55	.10	Stormy and mild
6	S. W.	2	30.10	42	53		Fair
7	S.	5	29.50	46	53	.035	Little rain
8	S.W.	5	.17	40	44	.22	New M. 1 p.m. wet & stormy
9	S.W.	2	.04	35	42		Chiefly fair
10	N. W.	2	.40	32	40		Fair, clear
Su. 11	W.	1	.73	32	37		Fair
12	S.E.	2	.60	28	44	.065	Frost, rain
13	S.W.	2	.35	45	50		Fair, clear
14	S. W.	5	.32	34	43	.11	Stormy and rain
15	N. W.	2	30.10	36	41		Fair
16	W.	3	29.68	34	48	.18	Stormy and rain
17	S. W.	1	30.20	34	42	.03	Chiefly fine
Su. 18	W.	1	.12	39	52		Fair
19	S.W.	1	.28	44	49		Fair
20	S. W.	1	.35	40	46		Fair, clear
21	S. W.	1	.35	36	45		Fair
22	W.	1	.42	39	45		Fair, fog [snow]
23	N. W.	2	29.87	36	37	.07	Full M. before 1 a.m. sleet,
24	N. E.	2	.85	28	31		Sleet, snow, and frost
Su. 25	E. N. E.	6	.87	27	30		Frost, heavy snow
26	N. E.	5	.74	27	30		Heavy snow and frost
27	N. E.	3	.80	27	30		
28	N.	3	30.04	27	30		
29	N. E.	2	.10	28	32		
30	N. E.	1	.20	26	30		
31	N. E.	1	.51	22	31		
				22	56	0.89	

## RESULTS.

Barom.	{ Max. on 31st . . . . .	30.51	Therm.	{ Max. on 4th . . . . .	56 degrees
	Min. on 9th . . . . .	29.04		Min. on 31st . . . . .	22
Range . . . . .		1.47	Range . . . . .		84
Mean . . . . .		29.77	Mean . . . . .		39

Winds Westerly to the 22nd, then Easterly. Rain, .89\* of an inch. Fine days, 19.

\* The melted snow could not be ascertained, as a much greater quantity fell than the vessel could contain.

NOTES FOR THE YEAR 1836.

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## JANUARY.

A variable month, and on the whole, mild. Cirrostratus, cumulus, and nimbus often, but on several days a perfectly clear and serene sky. Violent gale on 23rd, some trees uprooted.

## FEBRUARY.

2nd and 3rd, very low barometer, a great rain, and floods in the marshes. 4th, gale from N. E. with shipwreck on our E. coast. Cumulus, nimbus, and hail on many days, but on 13th, clear and serene. 16th, 17th, and 18th, dreadful gales from W. to N. E. with alarming shipwrecks on the coasts. The sea water flooded the port-towns to a great depth. A vessel was thrown by the mighty waves a mile on land, in Yorkshire! On 17th, a great fall of snow; it fell so thick, that the trees, 60 yards off, could not be seen through it. 28th, much snow during night.

## MARCH.

15th, much rain and snow, and floods on the marshes. At 2 p. m. after it had cleared, a black nimbus with hail, rain, lightning, and thunder, very severe. 20th, a very hot day for the season. 28th to 30th, floods again. 31st, maximum thermometer 48 degrees at 10 a. m. A storm with hail soon after, and thermometer down to 38 degrees, which was the minimum for the day. On 19th, cirrus. On 20th, no cloud. On other days all the rain clouds prevailed.

## APRIL.

1st, snow at night, equalled 9 inches in depth. 2nd, extremely heavy snow in flakes, 3 inches broad, to above a foot in depth, although the fall of the 1st had melted. 3rd, rain and snow, and great inundations. Throughout the month, cold and ungenial, with cumulus and nimbus, and hail or other downfall. 22nd, fine, warm day. The aurora at night.

1836 produced another very wet March, and cold and unfavourable seed-time on the whole, even worse than the year before at same period.

## MAY.

A remarkably dry period with parching winds, and a mean pressure unusually high. A complete counterpoise to past months. On 2nd, a hard gale from N. E. stripped off the tender opening foliage. The day previous was more like a New-year's than a May-day! 6th to 31st, un-

interrupted fineness, but at times cold. On 15th, during the great solar eclipse, the thermometer fell from 71 degrees to 63 degrees in an hour and half. The landscape in lurid tint or coppery yellow. N. and E. skies indigo. S. and W. coppery. Venus visible in the S. Wind veering from N. E. to S. E. But few clouds since 5th day.

## JUNE.

8th, a general pluvial state of air, which came on in the evening of 2nd. Electrical discharges on 3rd and 8th. 13th, summer seemed fully established this evening, with a clear golden sun-set, and calm sultriness. 14th to 17th, very fine and hot. No cloud on 15th, yet much lightning in S. W. 9 and 10 p.m. 16th, white cirrostratus and temperature 79 degrees. 17th evening, cirrostratus and cumulus, followed by nimbus. Smell of electricity. 18th, much cumulus. 19th, cirrus, and all kinds down to nimbus, with showers and thunder S. W. W. and N. E. all the afternoon. Near the course of the Stour, violent thunder-storms occurred with much injury. A barn burnt at 3 p.m. by lightning, at Trimley, Suffolk. 20th, cumulus, cirrus, and wind. 24th, hasty beating showers. Thunder N. W. and S. E. of us, the latter near, with vivid lightning 5 p.m. A tree in Redgrave Park, Suffolk, was shattered this afternoon. 26th to 30th, fine and hot. On 28th, cirrocumulus in round knotted portions; the heat very great. Nimbi and continual thunder W. to N. from 2 to 4 p.m. A few large hail stones and immense drops fell at 5 p.m. from a skirt of the cloud over us. Very loud thunder at this time, the storm following the Waveney's course. 30th, cirrocumulus and a few cumuli.

This was a remarkably growing month, producing the showers so much needed in May. The spring was later than for several past years.

Hawthorn in leaf April 17th, sycamore 22nd, horse-chesnut 28th, willow May 2nd, poplar 13th, maple 16th, oak, ash, and elm, 20th to 27th. Cowslip in flower May 7th, hawthorn on 27th, dog-rose June 19th.

## JULY.

1st, cirrocumulus. Thunder very far off in S. W. at 9 a.m. At 10 p.m. temperature 70 degrees! To the 12th day, a period of intense heat. No cloud on 4th. Cirrocumulus on 5th. Lightning S. W. all night, and near 9 p.m. a large meteor fell S. E. It appeared red, and as large as a hen's egg, although a brilliant twilight. 6th, till 1 p.m. the maximum heat in Suffolk, but more to the W. and S., the 5th was the hottest. The counties of Somerset, Gloucester, and to Middlesex, with the Metropolis on 5th night and 6th morning, had a most awful thunder-storm, while I noticed the above lightning in S. W. from hence. Serious damage and loss of life there. The wind was S. with us till 1 p.m. on 6th, temperature 85 degrees. At 1 p.m. wind to W. N. W. with many cumuli and blue vapour, causing a complete change, the refuse of the tempest (if I may so name it.) 10th, the wind blows as puffs of heat from a furnace. 11th, great heat. Thunder in groups of cumuli W. and N. W. all the evening. An awful thunder-storm, with alarming hail then visited the West and North, as the counties of Wilts, Worcester, Salop, and Lancaster. The crops on some farms completely destroyed by hail-

stones  $5\frac{1}{2}$  inches round. The damage on each farm from 1500 to 4000 pounds. At Trafalgar-house, Earl Nelson's, 802 panes of glass were broken. And at Claughton-hall, near Lancaster, 8000 were broken, and the vines destroyed! 21st, heavy thunder-storm passed 4 miles N. of us, and hail, very large, fell with damage at Hoxne, Suffolk. To the 31st, variable, with cumuli and nimbi at times. On 20th and 24th, we had much rain, and on 28th, great heat again.

In this month, a continued fine hay-time in general, and it was made use of in securing the crop. The dryness of May, however, caused a short crop of grass, which the charming showers and warmth of June proved too late to recover, or restore to a fine and thriving state of growth.

#### AUGUST.

1st to 14th, very fine and dry. On 3rd, cirrocumulus. 5th, a little shower, quite local, extending only a square mile! 13th, risen temperature. 14th, much cirrostratus and cirrocumulus in dark fragments, from a storm distant in night past. In London, a violent thunder-storm at this time, with torrents of rain for some hours. One life lost, and many injuries sustained by lightning. 18th, 7 p. m. a thin red cloud in the West hastily came up, with a furious and sudden gale and heavy shower. To the 31st, variable, but still very dry on the whole throughout this month. On 31st, rise of temperature again, and the cirrocumulus much exhibited on the blue sky. Moon at eve rose in cirrostrati.

The grass at this time suffering from drought, for a third time in three years, but with this difference: in 1834 it was so dried as to cause the pastures to look like closely-fed land: in 1835, it was seared to white bents, but now dried to a barren brown appearance.

This month proved dry in the Eastern parts of the Island, more particularly, and the effects thereof, as above described, were very apparent on the pastures, but the heat was less than last month, or during the two summers preceding. Gentle showers also favoured the turnip-crop in this year, although the main state of the season was fine. It was, however, manifest at this time, that the state of the meadows proceeded more from the weather in May, than from the dryness now, for the early effects had not been conquered by the June showers.

#### SEPTEMBER.

1st, fine and hot, but changing to turbulence, with a gale p. m. Pluvial signs arising. 2nd, nimbi, with electrical showers. 4th, a very great fall of rain. At Ipswich, it was still greater, penetrating the roofs of the houses, and doing great injury to shop goods and other effects, in different parts of that town. Fine after 9 a. m. 6th 3 p. m. a black nimbus, and violent thunder-storm. The lightning extremely vivid, and the thunder unusually awful. Many thunder-clouds passing all the afternoon around us. 11th, wet and cold, so as to render a fire necessary all day in our rooms! To the 20th, unsettled and cold for the season. The cirrus, cirrostratus, cumulus, and nimbus usual. 21st, a tolerably clear day, but remarkably cold, and with every character of the commencement of November in ordinary times! Cumulus prevailed, the thermometer at 9 a.m. only 47 degrees, and at maximum 51 degrees! A large fire needful in

the stove. 22nd, a frost, but soon became warmer. 24th to 27th, fine and very summer-like (so fickle is our climate.) Cirrocumulus, and cumulus. 28th to 30th, again rainy and cold, and usually overcast. On 28th, soon after 1 p. m. a severe thunder-storm and hail. An awful flash struck a tree close by us, with a most violent and immediate report.

The main feature of September, 1836, was wetness, and unseasonable cold at times. So unpleasant and gloomy was it at times, as to render a fire agreeable in our rooms, and finally, I have not discovered on record so unseasonable a September, excepting that of 1829, which succeeded, or rather protracted the wet summer of that year. The northern counties could not proceed with their harvest, but ours, in the East, was secured in good state before the rain, and the crop was good.

#### OCTOBER.

6th, after 9 p. m. an exceedingly heavy storm of rain, in complete torrents, with vivid lightning and thunder. 11th, a hard gale a. m. from S. E. and S. W. 13th, an awful thunder and hail-storm passed over Suffolk during the forenoon. Very black nimbi in the W. and N. W. the wind S. and afterwards veered to the cloud. Great hail broke windows, at Stowmarket, and the violence of the gale, with the torrents of rain and hail, beat in the whole windows near Felsham and Lavenham, Suffolk. The gale here was violent with the storm, and the rain drove with impetuous violence, in a complete volume, deluging the surface to a great depth. Some electrical discharges p. m. fair with cumulus. 16th to 26th, fine and drying. Stratus, cumulus, and cirrocumulus, this last seldom only. 28th, great advances of winter. 29th, a fall of snow for many hours, to near a foot in depth, with sharp frost at night. 30th, sharp frost and some snow. 31st, thaw with rain.

On 13th, some time after the storm, hail of cylindrical form, as thick as a man's finger, was picked up in the fields here! This month proved a very tedious seed-time, for the rain was frequent and heavy, except about the 3rd week of the month. This season yielded a great crop of apples in most parts of the Island, but the grapes never became ripe. Such also was the case in 1829, but the seasons of 1818, 1819, 1826, and 1834, were as remarkable for good grape seasons.

#### NOVEMBER.

1st, change to mildness p. m. 4th, much lightning in N. E. 7 p. m. 5th, rainy a. m. Fair and clear p. m. Cumuli grouped N. W. a hail-storm followed. 8th, considerable frost. 9th, boisterous night and rain. 12th, a stratus all day. 13th, boisterous and wet till noon. Fine p. m. The cirrus, cirrostratus, cumulus, and nimbus, daily till now. 14th to 16th, fine and clear. 17th, great rain through the night, and squalls. 18th, floods in the marshes. Snow to night. 19th, much heavy rain all night. Floods continue. 20th to 22nd, fair. 23rd, hard gales and beating storms. 25th, a stratus. 26th, stormy and wet. 28th, gale, with a high temperature. Ragged nimbi, hail, lightning, and thunder. 29th, rain a. m. Hard gale from S. S. W. At noon, finer and wind to W. A dreadful hurricane from W. and W. N. W. till 3 p. m. tearing up trees and demolishing buildings. The most violent gale for 18 years or more.

Abated after 3 p. m. sky clear, and barometer rising fast from its minimum state for the month. 30th, much rain all the afternoon.

On 3rd day, Doncaster spire was struck by the electric fluid, its summit beaten down, and the church thereby injured, as well as shattered by the shock. 23rd, several wind-mills lost sails or caps in Norfolk, and a mill blown down at Diss. 28th, Boston tower injured by lightning. 29th, great darkness at noon, followed by a dreadful hurricane. The effects whereof would fill a volume. Wind-mills, tops of steeples, and chimney-stacks demolished throughout that part of England, South of the Humber! Whole rows of trees uprooted in the parks about London and elsewhere. Scarcely a house escaped, and many were unroofed. Two mills at Sudbury, one at Palgrave, one at Diss, and one at Yarmouth fell in the storm. A stack of chimneys at Offton, Suffolk, fell through the roof upon the table where a family were dining, but the main beam supported the rubbish, until they were quickly rescued all safe.

#### DECEMBER.

1st, a stratus. 2nd, strong gales through the night. 18th, Cirrocumulus by moonlight. To the 22nd, very variable, and rather mild. Cirrostratus and stratus common. 23rd to 31st, fall of temperature, and excessive snow.

25th evening, after snowing hard for two days, it increased through the night, with hurricane from E. N. E. and N. E. The fall of snow by daylight of 26th was tremendous, attaining the depth of from 4 to 9 feet. Some drifts were from 20 to 50 feet deep. The mails, all business, and correspondence were stopped nearly a week, until the multitudes employed had cut a way in the snow. Several lives were lost in the snow, which was equally great all the Island over!

#### SUMMARY RESULTS FOR 1836.

Depth of rain, 25.622 inches. Fine days, 247. Prevalent wind the S. W.

Hottest on July 6th, Therm. 85 degrees		Highest Barom. on January 2nd 30.73
Coldest on Jan. 2nd & Dec. 31st 22		Lowest on November 29th . . . 28.87
Range . . . 63		Range . . . . . 1.86

The months of September, October, and November, 1836, were such a succession of wet, that the land became a complete sop at the close of November. The extraordinary fall of snow too in October, with the early coldness, was another striking character of this autumn.

## JANUARY, 1837.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
Su. 1	N. W.	2	30.59	26	34		Frost, snow
2	W.	0	'46	17	32		Severe frost, fair
3	N. W.	2	'35	21	34		Severe frost, fog, fair
4	N. W.	0	'43	19	30		Severe frost, rime, fair
5	S.		'10	20	35		Severe frost, fair
6	S. W.	2	29.67	28	39	.09	New M. 11½ p.m. thaw, rain
7	N. W.	4	'60	35	41		Fair, windy
Su. 8	N. W.	1	30.31	32	39		Frost, fair
9	S. W.	4	'20	32	46		Cloudy, rapid thaw
10	W.	6	29.80	37	47	.22	Much rain, gale
11	N.	2	30.25	26	33		Fair, clear, frost
12	S. W.	2	'04	24	34		Sharp frost, snow
13	S. W.	4	29.37	32	48		Cloudy, windy, rain
14	N. W.	3	30.20	32	37	.10	Cloudy, snow at times
Su. 15	N. N.W.	1	'49	29	37		Frost, fair, clear
16	W.	1	'40	31	35	.07	Frost, snow continual
17	S.W.	1	'34	33	41		Thick fog, cold and raw
18	N. E.	1	'24	37	38		Overcast, damp, and raw
19	N. E.	2	'00	34	36		Cloudy, damp, and raw
20	N. E.	2	29.83	32	33	.07	Overcast, raw, and drizzly
21	S. W.	2	'72	32	38		Full M. 8 p.m. cloudy
Su. 22	S. E.	4	'40	37	48	.345	Rainy and windy
23	S. W.	3	'50	45	50	.105	Rainy
24	W.	1	'71	46	50		Cloudy, fair
25	S. E.	2	'76	41	44	.30	Much rain
26	E.	4	'85	38	40	.58	Much rain, fair p. m.
27	N. E.	4	'88	36	38		Cloudy, sharp gale, sleet
28	N. E.	3	30.06	31	34		Snow at times
Su. 29	N. E.	4	29.98	30	31	.12	Continual snow
30	S.E.	4	30.02	31	41		Fair, frost
31	S.E.	2	'08	37	47	.06	Fair, shower 9 p. m.
				17	50	2·16	

## RESULTS.

Barom.	{ Max. on 1st : : : 30.59 Min. on 13th : : : 29.37	Therm.	{ Max. on 24th : : 50 degrees Min. on 2nd : : 17
Range . . . . .	1·22	Range . . . . .	33
Mean . . . . .	29.98	Mean . . . . .	33·5

Winds Westward to 17th, then Eastward. Rain, 2·16 inches. Fine days, 15.

FEBRUARY, 1837.

Day.	Wind.	Force.	Barom. p.m.	Therm.		Rain.	Weather.
				Min.	Max.		
Su.	1	S. E.	1	30°15	37	44	Fog, fair, cloudy
	2	S. E.	0	·48	38	46	Fair
	3	E.	2	·45	37	43	Fair, clear
	4	S. E.	2	·52	31	41	Fair, clear, frost
	5	E. S. E.	2	·48	29	38	New M. 10 a. m. fair, frost
	6	E. S. E.	1	·51	28	40	Frost, fair, clear
	7	E. S. E.	2	·38	28	39	Frost, fair, clear
	8	S. E.	3	·24	32	44	Fair, rain night
	9	S. W.	1	·34	40	47	Fog
	10	S. W.	4	29°85	42	49	Fair, windy
	11	S. S. E.	6	·21	46	47	Gale and much rain
Su.	12	W.	4	·51	36	44	Chiefly fair, some hail
	13	W.	4	·35	37	50	Cloudy, some wet
	14	S.	1	·70	34	48	Fair
	15	S. W.	1	30°16	30	49	Frost, fair, clear
	16	S. W.	3	·21	43	55	Fair and mild
	17	S. W.	1	·40	43	50	Fair, clear
	18	S. S. E.	2	29°75	34	49	Fog, fair, wet night
	19	S. W.	5	·28	33	50	Much rain and a gale
	20	N. W.	4	·75	37	50	Full M. 2 p.m. fair, windy
	21	N. W.	3	·60	40	50	Rain, stormy
Su.	22	W.	4	30°00	35	46	Fair, windy
	23	S. W.	6	29°28	37	48	Heavy rain, violent gale
	24	N. W.	5	·97	34	41	Windy, cold, and snow
	25	N. N. W.	5	30°20	29	40	Frost, snow heavy, with hail
	26	N. W.	1	·22	29	40	Frost, snow
	27	S. W.	1	·03	32	42	Fair, cloudy
	28	N. E.	2	·19	32	41	Fair, distant storms
				28	55	202	

## RESULTS.

Barom.	{ Max. on 4th . . . . .	30°52	Therm.	{ Max. on 16th . . . . .	55 degrees
	Min. on 11th . . . . .	29°21		Min. on 7th . . . . .	28
Range . . . . .		1°31	Range . . . . .		27
Mean . . . . .		29°86	Mean . . . . .		41°5

Winds much divided. Rain, 2°02 inches. Fine days, 21.

## MARCH, 1837.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	E.	3	30·53	28	40		Fair, sharp frost
2	N. W.	2	·40	31	40		Fair, frost
3	N. E.	3	·40	31	43		Frost, fair, clear
4	N. N.E.	5	·10	37	42	·02	Stormy, rain, sleet
Su. 5	N.W.	3	·05	32	44		Fair, very drying
6	N. E.	1	·17	35	41	·08	New M. 8½ night, rain, fair
7	N. W.	1	·15	32	47		Fair, frost
8	W.	2	·28	32	48		Fair, frost
9	S. W.	4	29·98	39	51		Fair, windy
10	S. W.	5	·40	37	49		Fair, high wind
11	S. W.	3	·40	32	47		Fair
Su. 12	S. W.	3	·60	33	46		Fair, hail
13	N. E.	2	30·31	32	41	·09	Sleet, snow, frost
14	N. E.	4	·45	32	44		Fair, clear, frost
15	E.	4	·30	35	39		Fair, cloudy, piercing wind
16	N.	1	·22	36	40		Fair, cloudy
17	N. E.	1	·40	35	43		Fair
18	N. E.	2	·24	34	42		Fair, very cold for many days
Su. 19	N. E.	3	·11	28	41		Sharp frost, sleet
20	N. E.	4	29·99	25	38	·15*	Snow, severe frost
21	N. E.	1	30·04	22	36		Severe frost, snow [sleet
22	E.	3	29·92	26	38		Full M. 7 a. m. sharp frost,
23	W.	1	·82	19	40		Very severe frost, fair
24	N. N.W.	3	·90	22	38		Severe frost, snow p.m.
25	N. W.	3	·84	28	42		Frost a.m. fair [evening
Su. 26	Var.	1	·80	33	44		Fair, cloudy, great snow
27	N. W.	0	30·09	16½	39	·49*	Extremely severe, fair
28	S. W.	4	·00	31	43		Sleet, rain, thaw, windy
29	W.	4	29·76	35	49	·03	Fair, windy
30	N. W.	1	·91	29	45		Frost a.m. fair, clear
31	N.	0	30·05	27	47		Frost a.m. fair, clear
				16	51	0·86	

## RESULTS.

Barom.	{ Max. on 1st Min. on 10th	· · · 30·53 29·40	Range	· · · 1·13	Therm.	{ Max. on 9th Min. on 27th	· 51 degrees 16·5
Mean	· · · 29·96				Range	· · · 34·5	

Wind Northward and Eastward. Rain and melted snow, 86 of an inch. Fine days, 25.

APRIL, 1837.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	N. W.	2	29.95	30	47		Frost, fair, hail
Su. 2	N. W.	1	30.00	28	48		Frost, fair
3	S. W.	5	29.55	36	46	-005	Stormy, little wet
4	N. W.	3	.80	31	46		Frost, fair
5	N. E.	4	.90	33	43		New M. 7 a. m. cloudy, sleet
6	N.	3	30.00	31	45		Chiefly fair, some sleet, snow
7	N. E.	4	.23	29	42	-025	Cold & stormy, frost, hail and
8	N. E.	5	.42	33	43		Very cold & high wind, snow
Su. 9	N. E.	5	.32	30	39		Frost, boisterous, sharp wind
10	N. E.	3	.05	28	41	.03	Sharp frost, snow
11	W.	0	29.73	28	46		Sharp frost, fair
12	E.	2	.78	27	42	.07	Snow, sharp frost, fair
13	N. E.	3	30.00	33	41		Stormy, with snow, very cold
14	N. W.	1	29.97	34	51		Fair and warmer
15	S. E.	1	.75	31	51		Fair, clear, little warmer
Su. 16	N. W.	2	.42	33	44	.54	Rain and snow
17	N. W.	5	.60	34	42	.09	Windy, some rain, cold
18	N. W.	1	30.04	38	48		Overcast, cold
19	N. W.	0	.06	40	51		Fair, cloudy [shower p.m.]
20	W.	2	29.83	36	57	.06	Full M. 8½ p.m. fair, warmer
21	S.	3	.83	33	53	.20	Stormy, hail, rain
22	S. W.	0	.67	38	53	.02	Little showers and hail
Su. 23	S. W.	4	.80	36	46	.42	Snow, much rain
24	S. W.	1	.88	41	58		Fair, warm, thunder
25	S. W.	2	30.03	36	59		Fair, warm, clear
26	S. W.	2	29.95	45	60	.30	Rain a.m. fair and warm
27	S. W.	1	.90	40	58	.37	Showery
28	S. W.	1	.73	40	61	.10	Fair & warm, rain evening
29	S. E.	2	.43	40	57		Fair a. m. rain p. m.
Su. 30	S. W.	4	.55	47	58	.05	Stormy, galy
				27	61	2.28	

## RESULTS.

Barom.	{ Max. on 8th . . . . 30.42 { Min. on 16th . . . . 29.42	Therm.	{ Max. on 28th . . . 61 degrees. { Min. on 12th . . . . 27
Range	1.00	Range	34
Mean	29.92	Mean	44

Winds much divided. Rain, 2.28 inches. Fine days, 16.

MAY, 1837.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S. W.	4	29.81	46	61		Fair, windy, clear
2	W. S. W.	1	30.07	44	64		Fair, clear and warm
3	E.	1	29.88	44	66		Fair and warm
4	N. E.	1	30.07	41	57		New M. 7 p. m. fair
5	N. W.	2	·14	41	58		Fair
6	N.	2	·26	39	55		Fair, keen wind
Su. 7	Var.	0	·09	34	59		Fair, cool wind
8	W.	1	29.89	44	52	·47	Cloudy, some rain [snow
9	N. E.	2	·76	34	47	·138	Stormy, very cold, hail and
10	N.	3	·75	34	49		Stormy, hail
11	S. E.	1	30.11	35	54		Fair and cold
12	S. E.	2	29.91	41	52	·08	Little rain, cloudy
Su. 13	S. W.	2	·98	38	62		Fair, much warmer
14	E.	2	30.12	40	59		Fair
15	N. W.	3	·14	44	57	·15	Fair a. m. rain, cold
16	N.	3	·46	43	56		Windy, cold and cloudy
17	N. W.	2	·29	40	69		Fair, very warm, showers
18	N.	3	·26	43	52	·092	Fair, cloudy, cold [night
19	N. E.	3	·21	40	55		Fair, cold wind
20	N.	2	·07	41	49		Full M. 7½ a. m. cold and dull
Su. 21	N. W.	3	29.82	38	54		Some rain, very cold
22	N. W.	4	·90	39	49	·12	Stormy and very cold
23	N. E.	1	30.11	42	55		Fair, cloudy
24	S. W.	2	·02	41	65		Fair, clear and warm
25	S.	2	·02	45	65		Fair and warm
26	S.	2	·03	44	68		Fair and warm
27	S. W.	1	·14	42	69		Fair, very clear and warm
Su. 28	E.	1	·20	45	66		Fair, cloudy
29	S. W.	2	·12	44	71		Fair and very warm
30	W.	3	·20	50	66	·10	Showery
31	S. W.	2	·07	46	67		Chiefly fair, windy
				34	71	1·15	

## RESULTS.

Barom.	{ Max. on 16th . . . . .	30·46	Therm.	{ Max. on 29th . . . . .	71 degrees
		29·75			34
Range	. . . . .	·71	Range	. . . . .	37
Mean	. . . . .	30·10	Mean	. . . . .	52·5

Winds Northward. Rain, 1·15 inches. Fine days, 22.

JUNE, 1837.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
Su.	1	N. W.	4	30.06	47	60	Fair, windy
	2	N. W.	1	'11	47	56	Fair, cloudy
	3	N. W.	2	'09	43	64	New M. 8 a.m. fair
	4	N. E.	1	'24	42	65	Fair [6 p.m.
	5	S.W.	1	'19	47	74	Fair & hot, thunder-storm
	6	N.	2	'25	51	65	Fair
	7	E. N.E.	2	'30	40	61	Fair
	8	E. S. E.	3	'06	37	57	Fair
	9	S.E.	1	29.70	47	71	Fair, much rain night
	10	S.W.	3	'82	57	70	Fair and warm
Su.	11	S.W.	4	'95	54	69	Fair windy
	12	S. S. W.	1	30.05	51	70	Warm, showery
	13	S.W.	2	29.99	58	75	Fair, very hot
	14	S.W.	1	30.06	61	76	Shower early, fair, very hot
	15	E.	1	'15	52	75	Fair, clear, and hot
	16	E.	2	'09	51	73	Fair, clear, and hot
	17	S.W.	2	'06	57	73	Fair, clear, and hot
	18	S. W.	1	29.90	55	67	Full M. 4 p.m. thun. showers
	19	S. W.	2	30.05	54	73	Fair and hot
	20	S.	2	'01	53	78	Fair, very hot, shower 11 p.m.
Su.	21	W.	1	'20	58	74	Fair, clear, and hot
	22	W.	0	'45	54	77	Fair, clear, very hot
	23	E.	2	'47	50	74	Fair, clear, and hot
	24	E.	2	'27	49	74	Fair, clear, and hot
	25	E. N. E.	2	'22	52	79	Fair, very hot
	26	N. E.	3	'37	55	65	Fair, cool breeze
	27	N. E.	1	'35	51	64	Fair, cooler
	28	E. N.E.	0	'27	42	68	Fair
	29	S.E.	1	'20	42	74	Fair, clear, and hot
	30	N. E.	3	'41	52	72	Fair and hot
				37	79	1.65	

## RESULTS.

Barom.	{ Max. on 23rd . . . . .	30.47	Therm.	{ Max. on 25th . . . . .	79 degrees
	Min. on 9th . . . . .	29.70		Min. on 7th . . . . .	37
Range	. . . . .	77	Range	. . . . .	42
Mean	. . . . .	30.08	Mean	. . . . .	58

Winds variable, Eastward near the end. Rain, 1.65 inches. Fine days, 27. A fine month, and the mean pressure was high. After the 8th, the temperature was seasonable.

JULY, 1837.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	N. E.	3	30°47	49	64		Fair
Su. 2	N. E.	2	.30	40	72		New M. 9½ p. m. fair, clear
3	S. E.	2	.32	48	74		Fair and hot
4	N.	2	.21	54	70		Fair
5	S. W.	0	.25	53	75		Fair and hot
6	N. W.	1	.21	56	70	.007	Little wet, fair, sultry
7	N. E.	1	.30	54	70		Fair
8	E. N. E.	1	.25	53	71		Fair, sultry
Su. 9	N. E.	2	.27	46	63		Fair, cloudy, and cool
10	N. E.	2	.08	43	71		Fair, and hot
11	E. N. E.	2	.11	48	72		Fog, fair, and hot
12	N. E.	1	.02	53	66		Fair
13	S. S. W.	1	29°92	48	75		Fair, very sultry
14	S. W.	1	.88	58	76	.11	Very hot, thund-storms, p.m.
15	S. W.	2	.93	57	74	.203	Showery, with thunder, hot
Su. 16	W.	3	30°06	53	72	.10	Fair and hot, show. evening
17	S. W.	2	.09	53	73		Full M. 11 p. m. fair & hot
18	S. W.	1	29°96	57	72	.27	Heavy thunder-showers
19	W.	0	.93	54	70		Fair, clear
20	N. W.	3	.89	55	70		Fair, distant thund-storms
21	N. N. W.	3	30°11	53	69	.10	Showers a. m. fair, p. m.
22	N. W.	0	.19	58	72		Fair and hot
Su. 23	W. S. W.	2	.09	58	79	.08	Fair, very hot, thund. p. m.
24	W.	2	.19	54	70		Fair
25	N. W.	1	.18	54	72		Fair and hot
26	S. W.	2	.17	58	77		Fair, very hot, and sultry
27	S.	3	29°99	56	81		Fair, extremely hot
28	S. W.	0	.88	62	76		Thunder, fair, very sultry
29	S. W.	5	.32	58	70	.43	Rain and gale, fair
Su. 30	W.	3	.80	56	67		Chiefly fair
31	W.	1	30°00	51	71		Fair and hot, thunder, p. m.
				40	81	1°30	

## RESULTS.

Barom.	{ Max. on 1st . . . . .		30°47	Therm.	{ Max. on 27th . . . . .		81 degrees
	Min. on 29th . . . . .	29°32			Min. on 1st night . . . . .	40	
Range . . . . .	1.15*			Range . . . . .	41		
Mean . . . . .	29°89			Mean . . . . .	60°5		

Winds Eastward till 12th, afterwards Westward. Rain 1°30 inches. Fine days, 24.

\* The barometrical range greater than usual at this season of the year.

## AUGUST, 1837.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S.	2	29.95	56	68	·40 ·20 ·08 ·09 ·96 1·04	New M. noon, cloudy
2	S. E.	3	·80	58	72		Heavy rain, fair, hot
3	S. S. W.	5	·87	58	71		Chiefly fair
4	S. W.	3	30·10	57	73		Fair, sultry, local showers
5	W. to E.	2	·31	49	69		Wind veered by the North,
Su. 6	E. N. E.	2	·36	47	67		Fair [fair
7	N. E.	3	·53	48	67		Fair
8	E. N. E.	3	·53	48	67		Fair
9	E. N. E.	3	·13	49	73		Fair and hot
10	Var.	0	·06	58	72		Fair, sultry, thun. evening
11	S. S. E.	2	·03	59	75		Fair, and hot
12	S. W.	2	·11	56	76		Fair, very hot, clear
Su. 13	W.	2	·31	57	77		Fair, very hot and clear
14	E.	2	·40	53	76		Fair, clear, and very hot
15	N. E.	3	·34	53	73		Fair and hot
16	E.	3	·24	56	76		<i>Full M.</i> 5½ a.m. fair, very hot
17	S. E.	1	·13	63	82		Fair, clear, extremely hot
18	W.	1	·30	60	81		Fair, extremely hot & sultry
19	S. S. E.	2	·15	58	80		Fair and very hot and sultry
Su. 20	S. S. W.	2	·00	64	79		Shower early, fair, very hot
21	S. W.	3	·19	57	74		Fair and hot
22	W.	1	·26	58	74		Fair and hot, rain evening
23	N. E.	1	·17	61	63		Heavy rain a. m. rainy
24	N. E.	1	·35	52	64		Fair
25	S.	1	·34	42	68		Fair, clear
26	S. W.	0	29.92	54	62		Great thunder-storms
Su. 27	N. W.	2	30.32	44	61		Fair
28	S.	1	29.90	43	64		Fair
29	E.	0	·60	51	58		Rain a. m. fair [storms
30	Var.	0	·48	51	61		Very heavy rain, thunder-
31	W.	1	·53	45	64		<i>New M.</i> 4 a. m. fair
				42	82	3·64	

## RESULTS.

Barom.	{ Max. on 6th & 7th . . . . .	30·53	Therm.	{ Max. on 17th . . . . .	82 degrees
		Min. on 30th . . . . .			Min. on 24th nt . . . . .
Range . . . . .		1·05	Range . . . . .		40
Mean . . . . .		30·00	Mean . . . . .		62

Winds very variable. Rain, 3·64 inches.\* Fine days, 25.

\* The month on the whole was very fine and hot, but in the last 8 days there fell 2·69 inches of rain.

## SEPTEMBER, 1837.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	Var.	0	29·46	42	61	.23	Showers, thunder
2	N.	3	.67	44	59	.15	Showery and thunder
Su. 3	N. W.	2	.81	47	60	.07	Showery
4	N.	2	30·05	49	58	.05	Showery
5	N. E.	2	.05	42	62		Fog, fair
6	N.W.	1	.15	46	62		Fair, clear
7	S. W.	3	29·97	49	66		Fair, sultry
8	N. W.	0	30·08	55	64	.08	Rain a. m. fair, clear
9	S.	2	29·81	53	70	.07	Fair and hot, storm 8 p.m. [ing
Su. 10	S. W.	2	30·08	54	70		Fair and hot
11	S.	3	29·84	54	69	.25	Fair, very warm, rain even-
12	S. E.	2	.84	50	64		Fair
13	S.	1	.24	48	65	.25	Rain early, fair
14	N. W.	4	.37	46	57	.06	Full M. 1½ p.m. showery
15	W.	2	.85	45	61		Fair
16	S.	1	30·10	43	61		Fair, little wet p. m.
Su. 17	S. S. W.	2	.14	57	72		Fair and hot
18	S. W.	3	.12	61	69	.05	Fair & hot, showery evening
19	S. S. W.	1	.30	54	70		Fair and hot
20	S. E.	3	.13	60	66		Hot morning, fair
21	E.	2	.07	50	66		Fair and warm
22	E.	3	.26	51	66		Fair and warm
23	E.	4	.32	52	62		Fair, boisterous wind
Su. 24	E. N. E.	3	.41	50	59		Fair, brisk wind
25	E.	3	.45	43	63		Fair
26	N.	0	.35	47	60		Fair
27	N. E.	2	.24	44	57	.06	Cloudy, shower 11 a. m.
28	N. E.	0	.19	49	60	.04	Cloudy, showers
29	E. S. E.	3	.22	44	62		New M. 8 p. m. fair
30	E. S. E.	1	.12	42	62		Fair, clear, and warm
				42	72	1·36	

## RESULTS.

Barom.	{ Max. on 25th . . . . .	30·45	Therm.	{ Max. on 17th . . . . .	72 degrees.
	Min. on 13th . . . . .	29·24		Min. on 1st, 5th & 30th	42
Range . . . . .		1·21	Range . . . . .		30
Mean . . . . .		29·84	Mean . . . . .		57

Winds Westward till 19th, afterwards Eastward. Rain, 1·36 inches. Fine days, 22.

## OCTOBER, 1837.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
Su. 1	S.	1	30°04	46	65	·12	Showery and very sultry
	S. W.	1	·32	54	68		Fair, clear, and hot
	S.	1	·22	52	69		Fair, clear, and hot
	S. W.	1	·20	57	70		Fair and very hot
	S. W.	2	·33	48	64		Fair, very warm
	S. W.	2	·14	53	66		Fair, very warm, rain 7 a.m.
	N. W.	1	·33	49	64		Fair, clear, and warm
	S. W.	2	·20	48	63		Cloudy, sultry, rain evening
	N. W.	2	·39	44	57		Fair, clear
	S. S. W.	1	·47	45	61		Fair, cloudy
11	S. W.	1	·50	50	62		Fair and warm
12	N. E.	1	·58	47	60		Fair and warm
13	N. E.	1	·68	37	57		Full M. 11 p. m. fair
14	N. W.	0	·77	34	57		Fair, very clear
Su. 15	W.	2	·74	36	57		Fair, clear
16	W.	2	·50	39	57		Fair, clear
17	S. W.	1	·24	40	58		Fair, warm
18	W.	3	·30	48	60		Fair and warm
19	S. W.	0	·51	40	57		Fog, fair, clear [ing
20	W.	2	·60	45	63	·02	Fair, very warm, rain even-
21	N. W.	0	·71	47	58		Fog, fair, clear
Su. 22	S. W.	2	·29	47	60		Fair and warm
23	S. W.	4	29·82	50	59	·27	Cloudy, windy, wet night
24	S. W.	0	·62	49	55		Much rain
25	N.	3	30·11	36	48		Rain and snow, fair
26	S. W.	3	·02	33	50		Fair
27	S. W.	2	29·56	48	54	·21	Stormy
28	S. S. W.	2	·41	37	51		Fair, much rain night
Su. 29	S. W.	2	·57	37	47		New M. 11 a. m. fair
30	S. W.	4	·27	36	56	·17	Stormy
31	W.	4	·54	41	49		Fair
				33	70	2·45	

## RESULTS.

Barom.	{ Max. on 14th . . . . .	30°77	Therm.	{ Max. on 4th . . . . .	70 degrees
		29·27			33
Range	Range . . . . .	1°50		Range . . . . .	37
Mean	Mean . . . . .	30·02		Mean . . . . .	51·5

Winds chiefly Westward, although so dry for some time. Rain, 2·45 inches, most of which fell in the last week. Fine days, 24.

NOVEMBER, 1837.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	S. W.	6	28·85	39	56	-95	Rainy, violent storms 4 and 6
2	S. W.	4	29·25	39	46		Fair, clear, windy [p.m.]
3	S. W.	1	·51	32	48		Frost, fair, clear, warm sun
4	N. W.	2	·94	35	47		Fair, clear
Su. 5	W.	2	30·14	35	47		Fair,
6	N. W.	1	·50	31	47		Frost, fair, and clear
7	S.	0	·53	29	48		Sharp frost, fair, clear
8	S. E.	0	·40	25	44		Severe frost, fair, and clear
9	S. E.	1	·20	24	44	-005	Severe frost, clear, cloudy,
10	S. W.	2	·04	43	53		Hazy, little wet [wet]
11	W.	4	29·95	46	51		Fair and mild [cold]
Su. 12	N. W.	4	30·14	38	42		<i>Full M.</i> 11½ a. m. fair, clear
13	W.	2	·20	31	42		Frost, fair
14	Var.	1	29·54	40	44	-20	Rain, cloudy
15	N. E.	2	30·00	34	43	-395	Stormy, rain, snow
16	E.	1	·12	31	41		Fair, clear, sleet clouds
17	N. E.	1	·15	30	41		Frost, fair, sleet
18	S. E.	1	·19	29	38		Cloudy, frost
Su. 19	S. W.	3	29·92	37	49	-12	Cloudy, stormy night
20	S. W.	2	30·00	40	47		Fair, clear, mild
21	S. W.	4	29·90	33	46	-04	Fair, stormy p. m.
22	S. W.	3	30·05	36	54	-14	Cloudy, showers
23	S. W.	4	29·85	50	53	-03	Cloudy, showers
24	N. W.	0	30·06	42	48		Fair, hazy
25	N.W.	0	·31	33	40		Fair
Su. 26	S. W.	4	29·47	27	45	-20	Frost, fair, wet evening
27	W.	2	·49	33	43		Fair
28	W.	2	·26	37	39	-02	<i>New M.</i> 2 a.m. rain, snow
29	N. W.	3	·80	28	37		Frost, fair, very clear
30	S.	2	·75	29	49		Frost, fair, hazy
				24	56	2·10	

## RESULTS.

Barom.	{ Max. on 7th : : : : 30·53	Therm.	{ Max. on 1st : 56 degrees
	Min. on 1st : : : : 28·85		Min. on 9th : 24
Range . . . . .	1·68	Range . . . . .	32
Mean . . . . .	29·69	Mean . . . . .	40

Winds most Westerly. Rain 2·10 inches. Fine days, 23.

## DECEMBER, 1837.

Day.	Wind.	Force.	Barom. p. m.	Therm.		Rain.	Weather.
				Min.	Max.		
1	W.	1	30·10	40	47	.07	Storm a.m. fair, clear
2	S. W.	0	41	28	42		Frost, fair, clear
Su. 3	E. S. E.	3	.53	29	42		Fair, cloudy, frost
4	N. E.	0	.60	25	38		Sharp frost, fair, cloudy
5	N. E.	0	.40	35	39		Fair, calm, cloudy
6	N. E.	2	.14	32	36	.17	Frequent snow
7	N. E.	1	29·93	32	37	.23	Snow, rain at night
8	S.	1	.81	34	41		Fog, fair, clear
9	N. W.	1	.90	27	35		Fog, fair, rime frost
Su. 10	N. E.	1	30·17	27	38		Fair and frost
11	N. E.	0	.22	31	38		Fair and frost
12	N. W.	2	29·95	31	37	.03	Full M. 2 a.m. little snow
13	N. W.	2	30·21	31	41		Fair and frost
14	S.	0	.35	28	40		Fair, clear, and frost
15	S. S. E.	1	.20	32	37		Fair and clear
16	S. E.	2	29·92	33	41		Fair
Su. 17	S.	3	.79	40	47		Fog, rainy
18	S. W.	5	.47	43	53	.20	Rain, very warm
19	S. W.	1	30·02	42	46		Gale early, fair, mild
20	S. W.	7	29·31	46	54	.89	Much rain, warm, hurricane
21	N. E.	3	30·34	38	40	.05	Chiefly fine, cloudy
22	S. W.	1	.01	36	46	.03	Light drizzles
23	N. W.	1	.04	45	50		Fair and mild
Su. 24	S. W.	2	29·95	42	50	.05	Cloudy, little wet [mild]
25	S. W.	4	.80	48	58	.03	Rain a.m. fair, clear, windy
26	S.	1	30·00	37	46		Foggy all day
27	S. S. W.	0	29·94	37	45		New M. 2½ p. m. fair
28	S. W.	1	30·05	43	47		Fair, cloudy
29	S. E.	2	.07	41	46		Fog, fair, cloudy
30	S. S. E.	2	.11	42	49		Fair and mild
Su. 31	S. E.	2	.14	43	48	.02	Cloudy, little wet, fair
				25	54	1·77	

## RESULTS.

Barom.	{ Max. on 4th . . . . .	30·60	Therm.	{ Max. on 20th . . . . .	54 degrees
	Min. on 20th . . . . .	29·31		Min. on 4th . . . . .	25
Range . . . . .		1·29	Range . . . . .		29
Mean . . . . .		29·95	Mean . . . . .		39·5

Winds divided. Rain, 1·77 inches. Fine days, 21.

## NOTES FOR THE YEAR 1837.

## JANUARY.

1st, heavy snow early in the morning. Fine, with sharp frost after sun-rise. Much snow at times in the day. 2nd, clear above, haze below, very severe after sun-rise. Thermometer 17 degrees for two hours! To the 5th, severe frost, fog, and rime. 6th, thaw, rain at noon. Clear p.m. 7th to 26th, exceedingly unpleasant. Damp, drizzly, overcast, raw, cold, and at times wet. The stratus and broad cirrostratus only definable. Great epidemic, with an appalling fatality almost throughout England. The main symptoms were violent cough, hoarseness, fever, languor, and debility, followed by inflammation of the lungs. It proved fatal to the old or asthmatic, to those of the young who were predisposed to consumption, and to all who had pulmonary disorders before, except in a few instances! The provincial papers contained frightfully long obituaries, for where in ordinary a list of from 10 to 15 deaths appeared, from 80 to above 100 were published! In a population of 600 near us, as many died in January as usually die in a whole year there, while 4000 were buried in London in the 3rd week of the month, which appeared the most sickly and unpleasant period. 27th to 31st, cold, raw, and snowy, exceedingly unpleasant weather.

The wet of last autumn, and the dissolution of the great snow since, has made the whole soil in an unusually miry state. There is also now, in consequence of the above, a superabundance of cold vapours floating, constituting the peculiar state of the air in this month, and producing the melancholy effects already described.

## FEBRUARY.

1st to 7th, fine and frosty. 8th to 10th, stratus, nimbus, &c. 11th, hard gale S. S. E. with rain all day. 12th to 17th, chiefly fine. Nimbi on 12th, some hail. Cirrostratus and cumulus generally. 18th to 23rd, stormy, hard gales on 19th and 23rd, and heavy rain flooded the marshes. 24th to 28th, cold, with snow at times.

On 23rd, during a very great rain till 4 p. m. the wind was a gale at S. W. afterwards in turning to N. W. it blew a hurricane for a minute only. 25th, aurora borealis very splendid at night.

## MARCH.

This whole month was very dry, but a real severe winter in itself, with piercing winds. The snow was above a foot in depth on 26th, falling in about an hour from 5 p. m. 27th morning, clear, calm, and violent severity. Thermometer for two hours at  $16\frac{1}{2}$  degrees!

## APRIL.

6th, aurora bright at night. 1st to 23rd, very cold, with frost, snow, and piercing gales at times. Cirrostratus, cumulus, and nimbus often. 24th to 30th, warmer. Cirrus, and all denominations or modifications to nimbus prevailing. On 24th, an exceedingly heavy shower 9 miles N.W. swelling the rivers in a short time to a great extent.

## MAY.

On 3rd p. m. cumulostratus and cirrostrati across, black in E. and N.E. p. m. 6th to 23rd, unseasonably cold with various clouds. 24th to 31st, warm and fine in general, with cumulus. Thunder-showers at a distance on 30th, cirrus, cirrostratus, and nimbus.

Sunday, 14th, an alarming thunder-storm in London at 3 to 4 p. m. It rose N. E. A deluge of rain, large hail, awful lightning, and appalling thunder. Two persons were killed there. It was fine here, but at that hour the wind from N. E. sprung up with cloudiness. Sunday, 21st, a severe storm with snow in Cheshire, during which two persons, near Chester, were killed by the lightning, passing down the chimney of their apartment. On 27th, 2 p. m. during clear and calm weather, a sudden whirlwind passed close by me in this parish, cutting a trench in the road, as if the hard road had been scraped by an iron tool, with a sudden jerk. It passed on, violently agitating the trees in its course, and had any person stood in its way, he must have been thrown down !

## JUNE.

5th, cumuli in opposite currents. Cirrocumuli above. 6 p. m. it became as dark as twilight. Dense nimbus West, much violent thunder. Heavy storm followed with severe electrical discharges. The lightning passed to the earth in unusually large streams, with astounding reports. A tree near us was riven by it. 9th, a great rain during night. Near Ipswich, much more so than here. The vales inundated. 18th, heavy thunder-storms passing about. At 6 p. m. a heavy shower and hail with us. A severe storm 5 p. m. 7 miles S. W. and S. and another here at 9 p. m. Cirrus and other kinds to nimbus of late seen. 19th to 30th, fine, clear weather, generally hot, sometimes no clouds, or linear cirrus alone. On 16th, increasing cirrocumulus. Also on 20th.

The spring of this year was the latest on record in the Eastern counties, and no start of vegetable life till about April 25th ! The hawthorn leaf then appeared, horse-chesnut May 2nd, sycamore 4th, willow 14th, maple 21st, poplar 25th, oak June 1st, ash 2nd, and elm on the 5th, and this only partially. Cowslip flowering on 17th of May, and the white-thorn, or hawthorn, June 5th ! The dog-rose at last opened June 22nd !! This, however, after the 8th day, was a fine and warm month, and a most rapid growth in the wheat took place about the 13th.

## JULY.

2nd, rise of temperature p. m. from a very cool night, to a hot summer's day. To the 13th, very fine, and sometimes very warm. On 10th, cirrus and cirrostratus, cumulus generally on the other days to 13th. 14th, continual thunder after 3 p. m. Black nimbi in S.W. S. and S. E.

The thunder shook the walls and caused the windows to clatter violently, even while the storms were several miles distant. At 5 p. m. a skirt of the storm over us, some rain, vivid discharges of electric matter, and violent reports. At Stowmarket and at Saxmundham, a severe storm same time, with hail and very heavy rain. 15th, frequent nimbi with showers, lightning, and thunder. 16th, distant electrical nimbi. 18th, nimbi, with heavy showers, much lightning and thunder around. 20th, fine here, cirrus, cirrocumulus, cirrostratus, cumulus, and distant nimbi. Black with thunder S. W. and S. p. m. Heavy storm a few miles to the N. of Ipswich. 21st, hasty showers from N. at 9 and 10 a. m. Fine and serene p. m. 22nd, enchantingly beautiful evening, and splendidly brilliant sun-set. 23rd, very hot, and the white knotted cirrocumulus spotting the sky. Thunder commenced in N. W. at 4 p. m. Black and dense nimbus passed at 6 miles N. of us to N. E. with vivid electrical discharges. Some rain here. 24th to 27th, fine, and a great rise of temperature. The cirrocumulus prevailing much, most on 27th. Maximum thermometer 81 degrees. 28th, much thunder in the S. all the morning. Cirrostratus and cirrocumulus spreading over the sky, a few drops fell. 29th, heavy rain a. m. Gale p. m. It rained very hard from 5 till 11 a. m. 30th, stormy atmosphere with cumulus and nimbus. Fine here. 31st, Fine day with us. Cumulus, and in S. at 4 p. m. black nimbus and thunder near Ipswich.

This was a very fine hay time, but the crop was light. Most of it was secured about the 10th of July. A seasonable and good month.

#### AUGUST.

3rd, sudden fall of large drops at noon. A gale from S. S. W. 4th, a fine warm day in general, but with us a heavy shower 2 p. m. extending only about the limits of the parish, and no sign of showers elsewhere, by clouds or otherwise. The cloud collected and dispersed with us. 9th to 22nd, chiefly fine and very hot at times. On 10th, a fog in the morning, clear day. Cumuli crossed by strips of cirrostratus on S. and S. E. horizon during evening. Much thunder and lightning with return of fog followed, continuing till midnight, and a little rain. 13th, a beautifully clear sun-set. 16th, the cirrocumulus in beautiful flocks. A shower at midnight for an hour, and very hot night. 17th, cirrocumuli and cumuli. Heat extreme. Thunder in S. E. very distant at 4 p. m. Thermometer 70 degrees at 8 p. m. 18th, 19th, and 20th, great heat. 19th night, no dew, very hot night. 20th, thunder at 4 a. m. very distant, some rain. During the afternoon, beautiful lines of cirrocumuli and cirrostrati from S. to N. across zenith, and converging at less altitudes. Lightning at 9 p. m. Eastward. 22nd, rain commenced at 7 p. m. Much rain on 23rd. 25th, 7 p. m. beautiful dots of cirrocumulus, and lines of cirrostratus in S. W. the latter with points rising like saw teeth, or parapet walls on their upper edges. 26th, awful thunder-storm proved the sequel to above signs. From 10 till 11 a. m. and from 12 to 1 p. m. violent torrents of rain, and unusually severe electrical discharges. This was almost general over our Isle! The metropolis felt it from 11 a. m. till after 3 p. m. with awful severity. Ipswich, Bury, Yarmouth, &c. were alike visited at the same time, as were many parts of England. The streets of

many towns were so deluged, as to be impassable. Earl Stonham mill was shattered, sheep and lambs killed at Kentford, and a stable struck at Newmarket and two horses killed, another killed at Brettenham, and a tree shattered, and the driver of a coach was temporarily struck senseless. These were the Suffolk events. Cattle around London were killed, and a house at Ruislip was struck, the inmates beaten down, two children killed, and the room ignited! The rain fell here till 3 p.m. making nearly one inch in depth. 30th, nimbi, with much rain, and at a distance much thunder. Lightning incessant during evening on East horizon. 31st, the same this evening, with thunder in the W. and N. W.

On 19th, a labourer, near Dublin, was killed by lightning in the harvest field at 2 p.m. On 20th, much damage at Aberdeen by a thunder-storm in the morning. 30th, 2 p.m. the streets of London again flooded by another awful thunder-storm.

Compare these notes with the table for August.

#### SEPTEMBER.

1st to 16th, unsettled, with frequent showers. Thunder in the evening of 1st, and lightning at night. 2nd, nimbi from N. E. a. m. and thunder. 5th, 6th, and 7th, fine and pleasant, the cirrocumulus on 6th evening. 9th, thin cumuli and cirrostrati, a squall and shower on a sudden 8½ p.m. 17th, great rise of temperature, much cirrocumulus. At 9 p.m. beautiful night, the moon rising and gleaming through a broken screen of cirrostratus and cirrocumulus. The latter also in silver dots in zenith. Uniform detachments overspreading the blue, as locks of finest wool. To the 30th, very fine parching weather, some very brisk Easterly gales, often quite cloudless, or a few cumuli.

Sept. 1st, Inverness, North Britain, was visited by a violent hurricane, and torrents of rain. The storm continued till the evening of the 2nd. A man was killed by lightning under a tree at Collumpton, Devon. on 1st. His wife fell dead (a natural death) on entering a shop the same day, not knowing the event of her husband! Same day, a man was struck dead also under a tree, near Clapham, Surrey, and many trees shattered, and a house unroofed near that place.

The harvest this year did not generally begin till August 15th, and closed late in September. The crops were good, but the barley much injured by the rain of September's commencement, and the storms which closed August.

#### OCTOBER.

1st to 8th, a very high temperature for the season. The 2nd, 3rd, and 4th, very bright and ardent sun. 6th, a nimbus at 9 miles N. with thunder at 1 and 2 p.m. At 8 p.m. vivid red coruscations of aurora borealis. 7th, very fine, much gossamer web on the fields. 8th, shower at 4 and 5 p.m. Clear moon-light night. To the 23rd, very fine, and often without a cloud, or the cumulus only. Much gossamer covering the surface, and some on the trees and hedges. Hoar frost on 13th, 14th, and 15th. 19th and 21st, stratus in the mornings. 23rd, the ash and elm leaves falling. Windy, rain commenced after night came on. 24th, continued heavy rain after 2 p.m. for many hours. 25th, rain and snow till 9 a.m. Great fall of temperature. 26th, cirrostratus and haze. 27th, stormy

day. Heavy rain from 9 a. m. till 1 p. m. Clear night. Lightning in N. E. 28th, heavy rain all the evening and part of the night. 30th, very squally. Strong gales and driving storms during the evening. 31st, clear evening and lightning in N. E. followed by rain after midnight.

A remarkably dry and warm time from September 16th till the 23rd of October, so that the latter harvest in the North, and the seed-time were highly favoured, and some part of this month was truly summer-like, and a perfect contrast to the corresponding period of last year. The gossamer thickly spread on the stubbles this month, over a hard dry surface, and glittering beneath a cloudless sun. A protraction of beautifully fine, warm, and enchanting summer weather, was the principal character of the month.

An unusual abundance of apples this season in most counties. Some were sold at 1s. 6d. per sack !

#### NOVEMBER.

1st, rainy all day with gales from S. S.E to S. W. At 4 p. m it became very dark, and in a few minutes a storm came on with extremely heavy rain and violent gale from W. S.W. Another at 6 p. m. but less violent. Lightning Eastward at night. 2nd, clear in general with cumuli and a boisterous gale. 3rd, a hoar-frost a. m. but a clear day and warm. Dense coppery cumuli towards evening. Some hail. Vivid lightning E. N. and S. during evening, and thunder distant South 7 p. m. 8th, bright and calm with a severe frost. The leaves pouring in thick showers from the trees. 9th, a severe frost. Change p. m. to clouds and muzzle with mildness. 12th, very clear, and a cold wind. The aurora in red coruscations at night, clearly distinct in spite of the full moon. The roads now very dusty. 13th, much cirrus, and other lower modifications followed. 14th, rain. 15th, stormy, rain, and snow at intervals, clearer evening, and similar lights to those of the 12th. 19th, the elm leaves falling fast. 20th, a very fine, clear day. 21st to 23rd, stormy, cirrostratus, cumulus, and nimbus. 24th and 25th, fine. 26th, frost a. m. Change to haze, cirrostratus and cumulus, finally a wet evening, and a gale at S.W. 27th and 28th, cold and raw. Snow and rain at 11 a. m. 28th, fine p.m. but cold and raw. 29th, sharp frost, and a very fine day, not a single cloud. 30th, fine and frost. Became hazy and overcast. Change to mildness at night.

Sudden and hasty approaches of winter presented themselves to us in this month, and near the 8th day, the frost was very severe for a first instance, being a prelude to a rigorous winter. Ash leaves fell about Oct. 23rd, which is the usual period, and the frosts near the commencement of November, assisted to divest nature generally of the withering foliage.

#### DECEMBER.

2nd to 14th, frequent frost, and on 6th and 7th, snow to the depth of 2 or 3 inches. 15th, a beautiful sun-rise, bands of cirrostratus tinged crimson. 16th, another handsome sun-rise, crimson East, lines of cirrus, and cirrocumulus also of crimson, and the ribbed cirrocumulus like lines of wool in zenith. 17th, rainy till 2 p. m. when the clouds broke, and I saw the cirrocumulus at a higher elevation. To the 20th,

stormy and mild, the thrush sings. 20th, very mild, the flies buzzing about. Much rain, and at evening a hurricane from W. to N. W. which lasted all night, with damage by sea and land. 21st, barometer risen above one inch in 24 hours, and thermometer fallen 16 degrees. 23rd, thrush and finch singing at sun-rise. 24th, stratus and cirrostratus. 25th, boisterous morning, a shower at nine. Fine, clear, and warm p. m. cirrus only. Took a walk without upper coat with great comfort! 27th, purple and red East, with cirrocumulus at sun-rise. 28th to 31st, stratus, cumulus, cirrostratus, and cirrus.

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### SUMMARY RESULTS FOR 1837.

Depth of rain, 22·74 inches. Fine days, 265. Prevalent winds S. W. and N. E.

Hottest on Aug. 17th, Therm. 82 degrees	Highest Barom. on October 14th 30·77
Coldest on Jan. 2nd . . . 17	Lowest on November 1st . . . 28·85
And March 27th . . . 16½	
Range . . . 65·5	Range . . . . . 1·92

## JANUARY, 1838.

Day.	Wind.	Force	Barom.		Therm.		Rain	Weather.
			a. m.	p. m.	Min.	Max.		
1	S.	2	30·12	30·04	41	46		Fair and pleasant
2	S. S. E.	2	'02	29·90	38	46		Little wet, fair
3	S.	1	29·74	'87	41	45	·10	Rain a. m. fair, clear
4	S.	1	30·09	30·20	31	44		Frost, fair, clear
5	N. W.	0	'34	'36	28	34		Frost, thick rime, fair
6	N. W.	0	'40	'37	27	36		Frost, rime, fair
Su. 7	N. E.	3	'43	'45	32	34		Fair, cloudy, sharp wind
8	N. E.	3	'52	'40	26	30		Fair, sharp freezing wind
9	N. E.	2	'35	'31	19	21		Very severe frost, con. snow
10	N. E.	3	'19	'09	21	24		Full M. 7½ p. m. very severe
11	N.	0	'09	'13	15	25		Extreme frost, hazy, snow
12	N.	0	'40	'45	11	29		Extreme frost, rime, fair
Su. 13	E.	1	'46	'35	17	26		Severe frost, snowy
Su. 14	N.	1	'17	'00	21	26		Severe frost, snow, sharp w.
15	N. W.	1	29·90	29·88	17	28		Gentle snow, con. severity
16	N. E.	3	'99	30·19	23	28		Much snow, severe frost
17	N. E.	1	30·31	'35	20	31		Continual snow, and frost
18	N. E.	4	'21	'13	19	22		Very severe, snow at times
19	E. N. E.	3	29·93	'00	16	19		Increased frost, gale
20	N. W.	0	30·07	'11	7	21		Intense severity, fair, clear
Su. 21	S. E.	2	'07	29·94	2	29		Unabated till early a. m.
22	S. S. E.	3	29·83	'89	27	39		Frost a. m. little thaw, fair
23	E.	3	'89	'88	31	35		Cloudy, sharp wind, frost
24	E. N. E.	4	'97	'92	22	24		Gale, severe frost, snow
25	E. N. E.	2	'78	'69	22	27		Cloudy, severe, sharp wind
26	E. N. E.	2	'56	'49	24	28		New M. 2 a.m. fair, cloudy
27	E.	1	'43	'45	27	32		Fair, cloudy, frost [frost
Su. 28	S.E.	1	'57	'64	28	30		Fair, cloudy, frost
29	S.	1	'61	'72	27	40		Foggy, little thaw
30	N. E.	0	'76	'85	33	36		Thick fog all day
31	N. E.	2	'93	30·00	32	33		Overcast, frost
					2	46	0·10	

## RESULTS.

Barom.	{ Max. on 8th . . . . .		30·52	Therm.	{ Max. on 1st . . . . .		46·5 degrees.
	{ Min. on 27th . . . . .		29·43		{ Min. on 20th . . . . .		2
Range	. . . . .		1·09		Range	. . . . .	44·5
Mean	. . . . .		29·97		Mean	. . . . .	24·25

Wind N. E. Rain, only ·10 of an inch. Fine days (or tolerably so) 20 The mean temperature extremely low.

FEBRUARY, 1838.

Day.	Wind.	Force	Barom.		Therm.		Rain	Weather.
			a. m.	p. m.	Min.	Max.		
Su.	N. E.	3	30·18	30·22	30	32		Cloudy, frost, snow
	N. W.	1	·39	·43	30	34		Fair and frost
	N. W.	2	·48	·48	28	36		Frost, snow heavy at times
	N. E.	3	·47	·46	22	31		Severe frost, fair
	N. E.	1	·41	·39	22	37		Severe frost, some snow
	E.	3	·24	29·94	27	37		Fair, clear, frost
	S. E.	3	29·72	·48	29	40	·16	Hail, rain, little thaw
	S. W.	3	·20	·05	35	48	·15	Rain a. m. fair, thaw
	S. S. W.	2	28·90	28·81	39	46	·14	Full M. 2 p. m. rain & thaw
	N. E.	0	29·30	29·34	27	34		Fair, frost, cloudy
Su.	N. W.	3	·40	·57	25	34		Severe frost, snow [calm
	N. W.	0	·67	·68	11	34		Extreme frost, fair, clear,
	N. E.	0	·68	·70	14	34		Frost, fair, clear, and calm
	N. E.	0	·84	·91	14	37		Frost, fair, clear, and calm
	S. E.	3	·83	·78	23	34		Fair, severe frost [gale
	E. S. E.	4	·81	·87	25	32		Fair, severe frost, & piercing
	S. E.	3	·84	·91	27	32		Frost, boisterous, snow
	N. E.	0	30·12	30·30	30	35		Frost, fair, calm, overcast
	E. S. E.	3	·27	·01	30	38		Frost, fair
	S. E.	1	29·89	29·80	25	38		Severe frost, fair, clear
Su.	N. E.	1	·84	·88	27	36		Frost, cloudy
	N. E.	1	·87	·81	26	38		Frost, fair, clear
	E.	1	·70	·58	28	38	·22	Frost, heavy snow, rain night
	S. E.	2	·10	28·90	33	40	·11	New M. noon, thaw, rain
	S. S. E.	2	28·94	29·00	36	46		Fair, cloudy, thaw
	E.	3	29·11	·24	33	37		Overcast, windy, rain 8 p.m.
	E. S. E.	3	·35	·33	33	38		Overcast
	S.	1	·28	·32	34	50	·06	Rain, fair, mild
					11	50	0·84	

## RESULTS.

Barom.	{ Max. on 3rd . . . . 30·48 Min. on 9th . . . . 28·81	Range . . . . . 1·67	Therm.	{ Max. on 28th . . . 50 degrees Min. on 12th . . . . 11	Range . . . . . 39
		Mean . . . . . 29·64			Mean . . . . . 30·5

Winds N. to E. and S. E. Rain, ·84 of an inch. Fine days, 20. The severe winter continued till 24th. Number of frosty days since Nov. 1st, is 69, and the degrees of frost amount to 511! A rigorous season.

## MARCH, 1838.

Day.	Wind.	Force.	Barom.		Therm.		Rain	Weather.
			a.m.	p.m.	Min.	Max.		
1	S. S. E.	1	29·25	29·31	36	52	.07	Little rain, fair
2	S. E.	1	.24	.32	36	45	.20	Rain
3	S.E.	1	.39	.38	38	49		Fair, cloudy
Su. 4	E.	3	.28	.15	37	43	.21	Rainy
5	N. W.	1	.70	.98	37	43		Cloudy over
6	S. W.	1	.74	.91	39	50	.26	Much rain, stormy, fair
7	S. W.	3	30·00	.92	35	51	.11	Stormy, thunder, hail
8	N. W.	3	.12	30·30	35	48		Fair
9	N.	1	.37	.35	30	48		Fair, frost a. m.
Su. 10	S. E.	3	.18	.04	31	46		Frost a. m. fair
11	S. E.	3	.00	.06	33	43		Full M. 8½ a. m. fair, clear
12	E.	0	.19	.32	29	46		Frost a. m. fair, clear
13	S. W.	3	.31	.16	32	50	.04	Little wet, mild, cloudy
14	W.	2	.12	.10	44	59		Fair and warm,
15	N.W.	3	29·96	.05	42	48		Fair
16	S. W.	4	.98	29·74	30	50	.12	Stormy, windy
Su. 17	N. W.	4	.50	.48	34	44	.02	Storms of hail, windy
18	N. W.	2	.65	.74	31	45		Fair and clear
19	S. W.	1	.75	.71	35	46		Fair, cloudy
20	S. W.	6	.39	.27	40	52	.11	Violent gales, hail and rain
21	W. S. W.	5	.41	.42	33	48	.06	Windy and stormy
22	N. W.	3	.57	.64	34	45	.04	Showers and hail
23	N. W.	2	.62	.60	32	38	.02	Cloudy, little snow
24	S. W.	2	.64	.65	32	47	.12	Fair, heavy shower 10 p.m.
Su. 25	W. S. W.	5	.80	30·14	34	47		New M. 9½ p. m. fair, windy
26	S. E.	1	30·24	.27	27	54		Frost a. m. fair, very clear
27	S. W.	1	.37	.43	34	58		Fog a. m. fair, clear, warm
28	N. E.	1	.60	.63	35	53		Fog, fair
29	N. E.	1	.62	.62	32	59		Fog a. m. fair, clear, warm
30	N. W.	1	.60	.41	43	59		Fair, clear, and warm
31	N.	3	.25	.25	39	44		Cloudy, sleet snow p. m.
					27	59	1·38	

## RESULTS.

Barom.	{ Max. on 28th . . . . .	30·63	Therm.	{ Max. on 14th & 30th 59 degrees.
		29·15		
Range	Range	1·48		
Mean	Mean	29·89		

Winds most Westerly. Rain, 1·38 inches. Fine days, 22.

APRIL, 1838.

Day.	Wind.	Force.	Barom.		Therm.		Rain	Weather.
			a. m.	p. m.	Min.	Max.		
Su.	N. W.	3	30·26	30·25	26	42		Sharp frost, stormy, sleet &
	N. W.	3	.09	.04	23	46		Frost, cloudy, fine [snow
	W.	1	.09	.11	32	51		Cloudy, fair
	W.	3	.03	.02	39	57		Fair, warmer
	W. S. W.	3	29·99	29·96	43	59		Fair, windy
	W. S. W.	3	.74	.83	45	59	.28	Rain a. m. fair, warmer
	S. W.	3	.70	.67	49	54	.31	Rainy
	W. N. W.	4	.18	.50	39	44	.04	Stormy, rainy, cold
	N. W.	1	.70	30·03	36	48		Cloudy and cold
	S.	3	30·10	.13	37	60		Full M. 2 a. m. fair, warm
Su.	S. W.	2	.24	.10	47	65		Very fine, clear, and warm
	N. W.	3	.20	.27	38	57		Fair, windy
	N. W.	2	.30	.17	35	50		Fair, cold wind
	N. W.	1	.04	.07	40	56		Fair
	N. W.	6	29·85	29·70	42	56		Stormy, snowy, a gale
	N. W.	5	.68	.60	34	45		Gale, snow storms, thunder
	N. W.	4	.63	.69	29	47		Great fall of snow, boist.
	N. W.	3	.72	.78	33	45		Frequent rain and snow
	N. N. W.	3	.74	.81	33	42		Frequent rain and hail
	N. W.	1	.85	.79	31	45	.41	Fair a. m. hail storms
Su.	W.	2	.71	.65	34	50		Fair
	S. E.	3	.52	.37	34	51		Fair, windy
	S. E.	3	.51	.42	37	59		Fair, warmer
	E. S. E.	3	.64	.72	39	59	.02	New M. 7 a. m. show. p. m.
	N. E.	3	.83	.91	38	52		Fair, cloudy
	N.	3	.95	30·08	42	51	.03	Cold, cloudy, some wet
	N.	4	30·01	29·98	37	49		Fair, windy, and cold
	N.	3	29·91	.79	35	50		Fair, cold, and cloudy
	N. N. W.	3	.71	.82	32	45		Piercing gale, & snow stms.
	S. W.	3	.63	.58	35	49	.03	Rainy, dull, and cold

## RESULTS.

Barom.	{ Max. on 13th . . . . .	30·30	Therm.	{ Max. on 11th . . . . .	65 degrees
	Min. on 8th . . . . .	29·18		Min. on 2nd . . . . .	23
Range . . . . .		1·12	Range . . . . .		42
Mean . . . . .		29·74	Mean . . . . .		44

Winds Northward. Rain, 1·12 inches. Fine days, 19.

## MAY, 1838.

Day.	Wind.	Force.	Barom.		Therm.		Rain	Weather.
			a. m.	p. m.	Min.	Max.		
1	S.	2	29-74	29-73	41	55	.08	Cloudy, some rain
2	S. W.	2	.93	.90	47	68	.10	Fair, very warm, thunder-
3	S. W.	2	.91	30-08	50	65		Fair and warm [st. 10 p.m.
4	N. E.	2	30-12	.12	42	66		Fair and warm
5	N. E.	4	.16	.32	46	63		Fair, windy
Su. 6	N. E.	2	30-39	.40	43	56		Fair
7	N.	1	.41	.44	41	70		Fair and hot, very clear
8	E.	2	.43	.38	44	70		Fair and hot, very clear
9	N. E.	1	.29	.31	38	70		Full M. 5 p.m. fair, clear
10	N. E.	3	.45	.52	41	55		Fair, cold wind
11	N. E.	1	.49	.38	33	59		Fair, clear
12	S.	2	.27	.02	35	65		Fair, warm day
Su. 13	N. W.	2	29-77	29-72	42	54		Cloudy, cold
14	N.	2	.72	.80	40	51	.06	Stormy, with hail, very cold
15	N. N. W.	2	.82	.85	29	53		Sharp frost a. m. fair
16	S. E.	1	.95	.98	29	58		Sharp frost a. m. fair
17	E.	2	.94	.94	31	58		Frost a. m. fair
18	N. E.	2	.95	30-09	37	56		Fair, cold wind
19	S. E.	2	30-05	29-94	30	59		Fair, frost a. m. cloudy p.m.
Su. 20	S. S. E.	3	29-81	.67	48	64	.06	Cloudy, warm, little wet
21	S.	2	.61	.75	49	63		Cloudy, some sun
22	S.	3	.69	.75	46	62	.18	Showery
23	W.	2	.80	.87	46	51	.16	New M. 4½ p.m. rain
24	E.	2	.97	30-13	46	60		Fair, cloudy
25	N. E.	2	30-12	.13	45	56		Fair, cool, and cloudy
26	N. E.	3	.18	.22	45	59		Fair, brisk and cool wind
Su. 27	E. N. E.	3	.11	29-96	38	60		Fair, cool wind, some clouds
28	S. E.	2	29-73	.71	45	68		Warmer, little wet p. m. fog
29	S. W.	3	.69	.80	49	68	.20	Rain a.m. fair warm [even.
30	W.	2	.85	.97	49	70		Fair and hot [wet, evening
31	Var.	0	30-00	30-08	47	71	.10	Showery a.m. sultry, thunder,
					29	71	0-94	

## RESULTS.

Barom.	{ Max. on 10th . . . . .	30-52	Therm.	{ Max. on 31st . . . . .	71 degrees
	{ Min. on 21st . . . . .	29-61		{ Min. on 15th nt. . . . .	28-75
Range	. . . . .	.91	Range	. . . . .	42-25
Mean	. . . . .	30-06	Mean	. . . . .	49-87

Winds N. to E. for the greater part. Rain, .94 of an inch. Fine days, 22.

JUNE, 1838.

Day.	Wind.	Fores.	Barom.		Therm.		Rain	Weather.
			a. m.	p. m.	Min.	Max.		
1	E.	0	30.08	30.07	48	55	.14	Cloudy, rain, evening [p.m.
2	S. E.	1	29.93	29.88	49	74	.50	Hot and thunder, wind W.
Su. 3	S. W.	3	.87	.90	48	68		Fair, thunder distant
4	S. W.	1	.83	.90	53	70		Fair and hot, thunder
5	S. W.	1	.99	30.09	47	73	.15	Fair and hot, thunder-storm
6	N.	2	30.13	.27	48	61		Fair [p.m.
7	N.	1	.27	.20	47	63	.06	Fair, shower 5 p.m.
8	N. W.	3	.28	.34	42	55		Full M. 5 a.m. cloudy
9	S. S. E.	2	.31	.14	38	66		Fair
Su. 10	S. S. E.	3	29.95	29.78	48	69		Fair, windy
11	E.	1	.69	.69	52	69		Fair
12	S. E.	2	.70	.80	50	70		Fair, sultry
13	N. W.	1	.77	.80	51	69		Fair, sultry
14	S. W.	2	.82	.90	48	70	.03	Fair, hot, sudden shower
15	S. W.	1	.88	.80	52	70	.54	Fair, heavy rain p.m.
16	S. W.	1	.87	.96	53	74		Fair and hot
Su. 17	S. W.	1	.98	.95	60	74	.18	Rain early, fair, very hot
18	S.E.	1	.80	.72	60	75	.11	Very hot, thunder-storms
19	S. W.	3	.85	30.00	56	71	.02	Flying shower, fair
20	S.	2	.89	29.75	54	68		Fair, rain night
21	W. S. W.	3	.58	.82	59	68	.38	Fair, windy
22	W. S. W.	5	.89	30.00	52	66	.05	New M. 24 a.m. stormy
23	S. W.	1	30.21	.23	51	75		Fair, clear, very hot
Su. 24	S. E.	1	.20	.13	51	76		Fair, clear, very hot
25	Var.	0	.17	.19	56	78		Fair, very hot
26	N. E.	1	.13	.11	56	60	.40	Rain
27	S. W.	2	.12	.10	56	71		Fair, sultry
28	S.	1	.15	.11	54	68	.42	Rainy
29	Var.	0	.04	.09	54	68	.39	Thunder-storms and hail
30	Var.	1	.08	.03	49	70		Fair
					38	78	3.37	

## RESULTS.

Barom.	{ Max. on 8th . . . . .	30.34	Therm.	{ Max. on 25th . . . . .	78 degrees
	{ Min. on 21st . . . . .	29.58		{ Min. on 8th night . . . . .	38
Range . . . . .		.76	Range . . . . .		.40
Mean . . . . .		29.96	Mean . . . . .		.58

Winds much divided. Rain, (on account of the great storms) 3.37 inches. Fine days, 18. The rain was much wanted, and was a most seasonable supply.

JULY, 1838.

Day.	Wind.	Force.	Barom.		Therm.		Rain	Weather.
			a. m.	p. m.	Min.	Max.		
Su. 1	S. E.	2	30.00	30.13	53	70	.17	Sultry, little wet
2	S. E.	1	.15	.18	57	74		Very sultry and hot, fair
3	S. E.	1	.15	.21	61	77	.11	Showers 3 a.m. fair, very hot
4	W.S.W.	1	.23	.24	59	79		Fair, very hot, thunder
5	S. W.	0	.29	.28	54	79		Fair and very hot
6	S.	2	.18	.11	56	81		Fair, extremely hot, thunder
7	S.W.	3	.11	.04	55	71	.04	<i>Full M.</i> 2½ p.m. stormy
Su. 8	S.W.	2	.03	.14	53	71	.04	Little wet, fair
9	W.S.W.	2	.22	.26	57	75		Fair and hot
10	S. W.	2	.28	.26	56	77		Fair, very hot
11	W.S.W.	2	.25	.20	60	79		Fair, very hot and sultry
12	S. W.	2	.15	.18	60	77		Fair, very hot
13	W.	1	.14	29.90	58	78		Fair, very hot, thunder
14	S. W.	3	29.87	.77	64	72	.18	Fair and hot, rain night
Su. 15	S. W.	3	.78	.99	58	71	.04	Trifling showers, fair
16	W. S. W.	2	30.10	30.27	55	73		Fair and hot
17	S. W.	1	.31	.16	51	73		Fair and hot
18	N.	2	.12	.38	59	68	.01	Little shower a.m. fair
19	W.S. W.	3	.35	.17	52	75		Fair and hot
20	W.	2	.07	.02	57	70	.33	Rain early, fair, wind
21	N. W.	4	.05	.23	51	63	.01	<i>New M.</i> 2½ p.m. stormy
Su. 22	N. W.	4	.22	.23	47	61	.03	Stormy, cloudy, and cool
23	N. W.	2	.23	.10	47	67	.17	Fair, rain night
24	N. W.	3	.00	.10	52	62	.02	Stormy, very cool, showers
25	N. W.	1	.07	.10	49	64		Fair, cloudy, very cool
26	W.	2	.05	29.88	49	68	.18	Showers
27	N. W.	3	29.74	.91	53	66		Fair, windy
28	S. W.	2	.90	.82	53	69	.07	Fair, stormy night
Su. 29	S. W.	2	.75	.67	52	67	.15	Thunder-showers
30	W.	2	.76	.87	48	65	.22	Very showery, thunder
31	W.	1	.90	30.07	49	70		Fair, very pleasant day
					47	81	1.77	

## RESULTS.

Barom.	{ Max. on 18th . . . . .	30.38	Therm.	{ Max. on 6th . . . . .	81 degrees
	{ Min. on 29th . . . . .	29.67		{ Min. on 22nd night . . . . .	46.5
Range . . . . .		.71	Range . . . . .		.34
Mean . . . . .		30.02	Mean . . . . .		63.75

Prevailing winds S. W. and N. W. Rain 1.77 inches. Fine days, 21.

AUGUST, 1838.

Day.	Wind.	Force.	Barom.		Therm.		Rain	Weather.
			a. m.	p. m.	Min.	Max.		
1	W. S. W.	1	30.13	30.09	50	74		Fair and hot, rain night
2	S.W.	2	29.93	29.84	58	72	.50	Rainy and sultry
3	W.S.W.	3	.79	.89	58	74		Fair and hot
4	S.W.	2	.79	.72	61	73	.10	Very sultry, some wet
Su. 5	S.W.	1	.70	.63	56	69		<i>Full M.</i> 10 $\frac{1}{2}$ p.m. fair
6	S.W.	3	.61	.56	57	70	.34	Wind, thunder showers
7	W.	1	.73	.93	54	66	.49	Very showery
8	W. N. W.	1	30.06	30.23	54	65	.08	Showery
9	S. W.	2	.28	.20	48	66	.04	Little wet
10	S. W.	3	.15	.11	57	74		Fair and hot
11	S. W.	2	.13	.20	63	79		Fair, very hot
Su. 12	S. W.	1	.17	.17	60	75		Fair and sultry
13	W.	2	.14	.23	61	73		Fair and hot
14	W.	2	.29	.26	49	70		Fair
15	N. W.	2	.20	.29	50	65		Fair, cool wind
16	S. W.	1	.25	.18	44	70		Fair, sultry
17	Var.	1	.26	.32	50	69		Fair
18	W.	1	.33	.26	51	73		Fair and sultry
Su. 19	S. W.	2	.13	29.92	60	75	.01	Fair and hot, little wet p.m.
20	S. W.	2	29.95	.72	50	70		<i>New M.</i> 4 a.m. fair
21	S. W.	1	.43	.49	58	71		Fair and hot
22	S. W.	5	.33	.29	51	67	.10	A gale and thunder-storm
23	N. W.	3	.46	.77	54	64	.02	Little showers
24	N. W.	2	.98	30.14	51	64		Fair
25	S. W.	1	30.22	.12	46	67	.02	Fair, little wet 10 p.m.
Su. 26	W.	1	.14	.19	56	71		Fair, sultry
27	W.	1	.17	.23	56	79		Fair, very hot and clear
28	S. W.	0	.20	29.81	62	79		Fair, very hot and sultry
29	N. W.	3	29.81	30.19	50	62		Fair, cloudy, very cool
30	N. W.	1	30.23	.24	42	67		Fair
31	W.	0	.24	.20	49	71		Fair and hot
					42	79	1.70	

## RESULTS.

Barom.	{ Max. on 18th . . . . .	30.33	Therm.	{ Max. on 27th&28th 79 degrees
		29.29		
Range	. . . . .	1.04	Range	. . . . .
Mean	. . . . .	29.81	Mean	. . . . .

Winds Westerly. Rain, 1.70 inches. Fine days, 23.

## SEPTEMBER, 1838.

Day.	Wind.	Force.	Barom.		Therm.		Rain	Weather.
			a. m.	p. m.	Min.	Max.		
Su. 1	W.	1	30.18	30.20	50	70		Fair and hot
2	W.	1	'20	'26	57	70		Fair and hot
3	S. W.	0	'27	'19	52	69		Fair.
4	S.	1	'10	29.95	46	72		Full M. 6 $\frac{1}{4}$ a.m. fair, very hot
5	S. E.	2	29.76	'60	57	72	.03	Thunder a.m. fair, very hot
6	S.	2	'39	'40	58	68	.26	Showers
7	S. S. E.	1	'51	'55	56	72		Very hot, showery p.m. thun.
8	N. W.	2	'70	30.02	52	58	.05	Showery
Su. 9	W.	1	30.24	'39	41	60		Fair
10	N. W.	1	'48	'55	42	63		Fair and clear
11	N. W.	0	'60	'60	38	64		Fair and clear
12	S. W.	1	'56	'48	43	69		Fog, fair, clear, and warm
13	S. W.	1	'42	'32	50	67		Fair and warm
14	S.	0	'23	'20	49	66		Fair
15	S. E.	1	'20	'21	58	72		Fair, clear, and hot
Su. 16	Var.	1	'19	'17	47	67		Fair and warm
17	N. E.	1	'19	'23	53	66		Fair
18	E.	2	'20	'16	52	58		New M. 8 $\frac{3}{4}$ p. m. fair
19	E.	1	'08	'00	51	59	.02	Little wet, fair
20	S. W.	1	29.90	29.97	53	65		Fair and warn
21	Var.	1	'95	30.02	39	63		Fair
22	S.	1	30.08	'08	38	65		Fair
Su. 23	S. S. E.	2	'03	'01	48	65		Fair
24	E.	1	'03	29.91	51	62	.30	Rainy
25	S. W.	0	29.88	30.00	53	59	.21	Rainy
26	S. W.	1	30.08	'12	51	63		Fair
27	N. W.	1	29.95	'00	54	57	.70	Much rain
28	N. W.	0	30.08	'19	45	62		Fair, very clear
29	E.	0	'17	'16	46	63		Fair
Su. 30	N. W.	1	'27	'35	54	64		Fair, sultry
					38	72	1.57	

## RESULTS.

Barom.	{ Max. on 11th . . . . .	30.60	Therm.	{ Max. on 4th, 5th, & 15th 72 degrees
	Min. on 6th . . . . .	29.39		Min. on 11th a. m. . . . . 37.5
Range . . . . .		1.21	Range . . . . .	34.5
Mean . . . . .		29.99	Mean . . . . .	54.75

Winds N. W. and S. W. Rain, 1.57 inches. Fine days, 23.

OCTOBER, 1838.

Day.	Wind.	Force	Barom.		Therm.		Rain	Weather.
			a. m.	p. m.	Min.	Max.		
1	N. W.	2	30.38	30.40	54	59	.01	Cloudy, little wet
2	N. E.	2	.47	.51	52	61		Fair
3	N. E.	2	.53	.54	48	61		Full M. 3 p. m. fair, clear
4	N. E.	1	.50	.45	43	58		Fair, clear
5	N.	1	.43	.47	45	58		Fair
6	N.	1	.43	.45	48	58		Fair
Su. 7	N.	1	.44	.42	49	57		Fair
8	N. W.	1	.42	.41	48	56		Fair, cloudy
9	N. W.	1	.43	.38	47	59		Fair
10	W.	0	.30	.20	48	55		Fair, cloudy
11	S. W.	4	.08	29.64	50	59	.03	Fair, windy, shower night
12	N. W.	3	29.68	.77	41	50		Fair and cold
13	N. W.	2	.80	.97	31	46		Frost, fair
Su. 14	S. W.	5	.97	.55	32	53	.20	Stormy, little wet
15	S. W.	4	.55	.67	47	56		Stormy
16	S. W.	5	.67	.50	55	61	.02	Little showers
17	S. W.	4	.32	.56	51	59	.05	Showers early, fair
18	S. W.	2	30.06	.86	38	56	.02	New M. 24 p. m. little wet
19	N. W.	2	29.90	30.19	54	58		Fair, clear
20	W.	3	30.08	.28	46	65		Fair, very warm, and clear
Su. 21	S. W.	1	.37	.33	45	62		Fair, very warm
22	S.	1	.29	.21	53	61		Fair, very warm
23	S. E.	2	.10	29.94	52	58		Fair, cloudy
24	W.	2	29.80	30.02	52	61	.08	Rain a.m. fair, very warm
25	S. E.	2	30.20	.12	45	58		Fair
26	S. W.	3	29.89	.02	52	60	.04	Stormy
Su. 27	S. W.	3	30.04	29.63	37	55	.50	Fair, very wet night
28	S. E.	1	29.63	.31	50	52	.25	Stormy
29	S. W.	7	28.99	.72	48	51		Hurricane, fair
30	S. W.	2	29.82	.85	38	51		Fair, clear
31	N.	0	.89	.88	37	46	.48	Much rain
					31	65	1.68	

## RESULTS.

Barom.	{ Max. on 3rd . . . : 30.54		Therm.	{ Max. on 20th . . . : 65 degrees.	
	Min. on 29th . . . : 28.99	Range . . . . . : 1.55		Min. on 13th . . . : 31	Range . . . . . : 34
Mean . . . . .	29.76		Mean . . . . .	48	

Wind S. W. Rain, 1.68 inches. Fine days, 22.

## NOVEMBER, 1838.

Day.	Wind.	Force.	Barom.		Therm.		Rain	Weather.
			a. m.	p. m.	Min.	Max.		
1	S. W.	2	29.51	29.37	36	51	.28	<i>Full M.</i> 12 p. m. stormy
2	S. W.	3	'40	'35	36	48		Fair
3	S.	1	'57	'32	33	46	.17	Fair, rainy night
Su. 4	S.	1	'02	28.97	41	52		Fair, distant storms
5	N. W.	1	'19	29.51	35	48	.05	Fog, stormy, hail
6	W.	1	'75	'82	41	48		Fair, clear, and warm
7	S. S. E.	3	'61	'54	41	57	.35	Wet a. m. fair, very warm
8	S. W.	3	'59	'62	47	54		Fair, very warm
9	S. W.	1	'46	'58	45	49	.40	Much rain
10	S. W.	0	'70	'87	36	48	.02	Fair, storm 5 p. m.
Su. 11	N. E.	3	'79	'84	31	40		Frost and fog, fair
12	N. E.	3	30.16	30.41	35	46		Fair
13	N. E.	0	'51	'47	30	46		Fair, clear, and frost
14	E.	2	'37	'22	28	46		Frost, fair, clear
15	S. E.	0	'05	29.90	40	48		Overcast, fair, and mild
16	W.	0	29.82	'79	34	44		Foggy and fair
17	S. W.	0	'83	'84	38	47		<i>New M.</i> 8 a. m. fair
Su. 18	N. E.	3	'77	'82	37	44	.41	Much continued rain
19	E.	4	'77	'64	36	38	.28	Rainy with snow, very cold
20	N. E.	1	'70	'84	35	38		Fair, cloudy, cold
21	E.	3	'62	'49	35	39		Fair, cloudy, cold
22	S. E.	2	'35	'50	39	49	.12	Rainy, fair p. m.
23	N. E.	2	'62	'71	38	40		Fair
24	N. E.	2	'72	'82	34	37		Fair, very cold
Su. 25	N. E.	0	30.08	30.11	25	39		Severe frost, fair
26	S. E.	2	'04	'03	29	36		Frost, fair, and clear
27	S. E.	4	29.75	29.39	27	35		Sharp frost, fair, very cold
28	S. E.	6	'21	28.81	34	47	.50	Gale and much rain
29	S. W.	5	28.81	'86	44	49	.20	Gale and thunder storms
30	S. W.	4	29.00	29.31	43	51		Fair and clear
					25	57	2.78	

## RESULTS.

Barom.	{ Max. on 13th . . . . .	30.51	Therm.	{ Max. on 7th . . . . .	57 degrees
		Min. on 28th . . . . .			25
Range	. . . . .	1.70	Range	. . . . .	32
Mean	. . . . .	29.66	Mean	. . . . .	41

Winds N. E. S. W. and S. E. Rain, 2.78 inches. Fine days, 19.

## DECEMBER, 1838.

Day.	Wind.	Force.	Barom.		Therm.		Rain	Weather.
			a. m.	p. m.	Min.	Max.		
Su. 1	S. W.	3	29·59	29·50	43	50	·18	<i>Full M.</i> 11½ p. m. fair
2	S. W.	4	·55	·60	49	54	·25	Stormy, thunder clouds
3	S.W.	1	·55	·53	41	49		Fair
4	S.W.	1	·57	·75	39	47		Fair, clear, and mild
5	N. W.	2	·86	30·11	35	44		Sleet showers
6	S. W.	0	30·31	·34	41	45		Fair
7	N. W.	0	·30	·40	34	47	·12	Rainy
8	N. W.	1	·40	·47	31	42		Frost, fair, clear
Su. 9	N. W.	0	·48	·43	29	38		Frost, fair
10	S. W.	1	·40	·23	29	39		Frost, fair, clear
11	N. W.	0	·38	·43	34	43		Fair
12	W.	0	·39	·40	29	43		Frost, fair, cloudy
13	S. W.	0	·40	·43	39	44		Overcast and dark, yet fine
14	N. W.	0	·47	·49	39	47		Fair, cloudy
15	N. E.	1	·48	·43	31	43		Frost, fair, clear
Su. 16	S. E.	0	·45	·48	33	40		Fair, calm, and cloudy
17	S. E.	1	·45	·44	35	38		<i>New M.</i> before 1 a.m. fair
18	N. E.	0	·44	·36	31	34		Fair, clear frost
19	S. W.	0	·31	·28	30	36		Frost, fair, cloudy
20	S.	1	·30	·39	30	41		Frost, fair, very clear
21	S. E.	2	·48	·29	33	38		Foggy, cloudy, and fair
22	S. E.	3	·21	·09	31	35		Little sleet and hail
Su. 23	S. E.	4	29·76	29·60	34	41	·40	Continual rain, snow
24	S. E.	3	·50	·45	36	37		Overcast, fog, snow
25	N. W.	2	·69	·94	28	34		Frost, fair, heavy snow p.m.
26	S. S. W.	4	30·00	·64	25	34	·42	Severe frost, rain and snow
27	N. W.	3	29·71	·97	32	38		Fair [p. m.]
28	N. W.	0	30·25	30·41	30	37		Frost, fair, clear
29	S. S. W.	2	·31	·30	27	40		Overcast, some wet
Su. 30	S. W.	4	·22	·19	40	48	·05	Rainy and windy
31	W. N. W.	2	·38	·59	33	39		<i>Full M.</i> bef. 1 a.m. fair, clear
					25	54	1·42	

## RESULTS.

Barom.	{ Max. on 31st . . . . .		30·59	Therm.	{ Max. on 2nd . . . . .		54 degrees
	Min. on 24th . . . . .	29·46			Min. on 26th . . . . .	25	
Range . . . . .		1·14		Range . . . . .		29	
Mean . . . . .		30·02		Mean . . . . .		39·5	

Wind N. W. Rain 1·42 inches. Fine days, 24.

NOTES FOR THE YEAR 1838.

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## JANUARY.

1st, 2nd, and 3rd, mild and pleasant, quite deceptive, as the sequel shews. The birds sang, viz. thrush and finch. The lilac and currant buds swollen by the mildness since 17th Dec. 1837! 4th, rocky cumuli on the East horizon at sun-rise. Frost partially set in. 5th and 6th, rime and frost. 7th, a sharp N. E. gale, introducing the great severity of the present winter! 7th night till 22nd, constant severity. Piercing N. E. wind and much snow at times. 10th, snow several inches in depth. 11th, soon after 4 p. m. thermometer 15 degrees. 12th, minimum thermometer 11 degrees, rime decking the trees. 16th, a great fall of snow through the night, attaining to a very great depth on 17th. 19th, very clear in the day, and the lowest mid-day temperature we have had, maximum being only 19 degrees. A brisk gale and very piercing. Minute frozen particles fell at mid-day glittering in clear sunshine! These appeared as fine as hair cut into short pieces of one-eighth of an inch long! 20th thermometer 7 degrees for two hours, even till 9 a. m. clear and calm. At noon, in the reflection of a South wall, it was comfortable walking without upper coat, contrasted with the morning, the sun being very bright, thermometer then 21 degrees on opposite wall, 5 p. m. at 11 degrees, 8 p. m. 5 degrees, 9 p. m. 4 degrees, 11 p. m. 2 degrees, the minimum with me; but at Redgrave, 10 miles N. W. at only '5 of a degree! Wind calm at N. E. On the top of a brewery, at Stowmarket, thermometer at zero, and out of that town, a few miles, it stood 3 below zero! This is the coldest for 18 years past at least! Several lives were lost from the intensity of the cold in various parts of England; one person was frozen to death upon a stage-coach on the morning of the 20th; sheep were roasted on the Thames; navigation stopped in all inland streams; the ice in the country attained in one night two inches in thickness; nearly all Europe were alike visited by the severity. In the East of Suffolk, and in some other counties, the roads were impassable by snow until excavations were made. On 22nd, the cirrocumulus and cirrostratus, the latter also on 21st; frost however returned and closed the month, with no signs of thaw being permanent. The cumulus and nimbus during the snows. Stratus on 28th at times, and more extensively on 30th.

On 20th, the intense cold seized the ears at the instant of quitting the house, caused adhesion in the nostrils, and struck the forehead and temples with the sense of being bound by an iron hoop in that part. The peculiar noise of the carriages on the snow was also worthy of note.

## FEBRUARY.

1st, 2nd, and 3rd, granular snow and broader flakes intermingled on 3rd. 4th, very clear and a keen piercing wind. 6th, lines of cirrocumulus, for the first this year, and predicting warmer air. 7th, a change and some rain, casing the ground with ice while it thawed above. This is common at such times as the present, the earth being in so freezing a state. 8th, and 9th, rainy and mild, with very low pressure. Wind rose after 4 p.m. and soon veered from S. S. W. to N. N. W. with rain and lower temperature again. 10th to 23rd, continuation of the severe winter. 11th, the new snow is 6 inches in depth. 12th, 13th, and 14th, extremely severe frost, with clear and calm skies, minimum temperature 11 degrees. 15th, dense cumuli. 16th, cirrostratus and cumulus, very piercing gale. 17th, great fall of snow from the S. E., snow again very deep. 20th, white lines of cirrostratus, or the linear cirrus, collapsed, a shower of hail and rain followed this on 21st, at 8 p.m. 22nd, the ground very hard, with a brown glaze. 23rd, heavy snow followed by a permanent thaw. 24th to 28th, stratus, cumulus, and cirrostratus, and the 28th, the most pleasant day of the new year to this period. The roads remarkably muddy and deep with mire, from the loose state of the gravel from the long frost, and the thaw. Some lives lost on or about the middle of the month, in the severity.

On 4th, at noon, a little hail fell, but no cloud was visible, hence a very thin and small cumulus, of the fleecy kind, must have passed over, so trifling in body as to escape the sight, but bearing water ready for deposition through our cold stratum, whereby hail was engendered. During the Eastern gales this winter, the salt vapours were brought on land 30 miles or more from our coast, and the windows were wet with it in houses fronting that point. This was particularly noticed by my friend, T. Pallant, Esq. at his residence at Redgrave. He was at first surprised to see fluid vapour on the windows during frost; but on examination, found it was outside, and of a very salt taste.

## MARCH.

6th, nimbi with hail p.m. 7th, nimbus with much thunder passed at 5 p.m. 7 miles to the N.W. and N. Storm with hail at 6 p.m. here. To the 24th, cumulus and nimbus with gales at times. 25th, clear, or cumulus only, and a galy day. 26th to 30th, very fine. 31st, a fall of temperature.

Cirrocumulus on 16th, and on 18th, the same in parallel ribs or ranges near the zenith, succeeded by storm on 20th.

## APRIL.

A colder month than March on the whole. On 5th, cirrostratus and cirrocumulus. 6th, dense cumuli. 10th, cirrus and cirrocumulus, with rise of temperature. 11th, very warm and fine, much cirrocumulus in ranges 7 and 8 p.m. 12th, dense cumuli. Gusts from N. N.W. 6 p.m. 15th to 20th, exceedingly stormy and cold. Many nimbi, and on 20th, dense rocky cumulus. 23rd, cumulostratus and nimbus on W. horizon p.m. To 30th, nimbus, cumulus, &c. with low temperature.

## MAY.

1st, a more growing atmosphere than of late. 2nd, delightful change, very fine and warm. The willow leafed, and all nature smiles. Vast groups of rugged cumuli on S. and E. horizon, from 5 p. m. These reflected the twilight or declining solar rays, and were of coppery red. The East was veiled in black nimbis. The cumulostratus in E. N. E. intersected by white strips of cirrostratus. White cirrocumuli dotted other parts of the blue canopy. Much lightning E. and S. E. and between 10 and 11 p. m. a hasty rain, large hail, and gale, with violent electrical discharges passed over us from S. E. where the wind now fixed after leaving S. W. 3rd, cuckoo sang a. m. Fine and warm with cumulus. 4th, very fine and warm, with cirrostratus and cirrocumulus. 5th, clear and fine, but wind rough from N. E. Cirrocumulus lying opposite on S. W. horizon all day. 7th and 8th, fine, clear, and hot. 9th, cold morning, but a hot day. Clouds and coolness in the evening. 10th to 19th, chiefly fine but generally very cold and ungenial, with piercing winds and some winterly frosts, as appear by the table foregoing. The 12th was warm and clear. Cumulus, cirrostratus, and nimbus most common to 19th. The nimbus bearing hail. 20th, very hazy with beds of cirrocumulus and cirrostratus. Some inoculation with lower cumuli and little rain, with a rise of temperature. 21st to 26th, unsettled but cold for the season. Cumulus, cirrostratus, and some lower clouds prevailing. 28th, rise of temperature this morning early, and cirrocumulus with cirrostratus. A stratus from 7 p. m. all the evening. 29th, rain a. m. 6 to 7. Much cirrocumulus and cumulus. Fine and warm, with a breeze at S. W. 30th and 31st, hot and sultry. Adverse currents, and much thunder about at a distance.

On 2nd, Boulogne, in France, experienced a most awful thunder-storm. At Ipswich it was severe. A squall and large hail visited some places, and in the East of Suffolk, the storm was very heavy at 6 p. m. and after. On 31st, a severe thunder-storm in and near the Metropolis of our Island. The month of March started vegetation a little, so that it had an earlier set-off than in 1837, but April and May have, for the greater part, been very ungenial, and the spring is very late, yet some earlier than last.

Hawthorn partially in leaf April 11th, sycamore on 30th, willow May 2nd, poplar 8th, oak 16th, elm 22nd, ash 25th, hawthorn in flower on 26th, the cowslip on May 4th, and horse-chesnut leaf on April 24th.

## JUNE.

1st, a stratus. Heavy shower 10 a. m. Rainy evening. 2nd, close morning, every cloud from cirrus to nimbus. The wind S. E. till after 3 p. m. then West, and black nimbis, with heavy thunder-storm 4 p. m. The rain excessive for half an hour, and with violent electrical discharges. A great rise of temperature to-day. 3rd, 4th, and 5th, very warm days, with electrical showers passing about. Distant nimbi on 3rd, cumuli and cirrostrati. Fine here. 4th, fine here, but at Debenham, 6 miles to S.E. a very heavy thunder-storm at noon. 5th, plumose, cirri, near the sun, looked green and red. Cirrostrati across the heads of cumuli these three days. Black and dense clouds on opposite tacks to-day p. m. Heavy thunder-showers about, and some here. Near Hadleigh and Ipswich the

beans were injured by hail, and the electric discharges were awful there, and also near Ixworth. 6th to 14th, variable, with much cumulus and cirrostratus. 15th, haziness increasing, with a very great rain p. m. 16th, cirrocumulus in beautiful beds, cirrostratus and cumulus. A hot day. 17th and 18th, very hot. A beautiful sky on 18th a. m. An interwoven bed of cirrus, cirrocumulus, and cirrostratus, these undulated, and followed by nimbus. Violent thunder-storm passed at 11 a. m. seven miles to S. E. with continual discharges of electric matter, and every one forked and descending. Wind to S. W. evening and a gale. To the 22nd, galy with nimbi and cirrostrati. On 21st, thunder not far off in N. W. 6 p. m. 23rd, 24th, and 25th, very fine and hot. On 24th, no cloud, till the cirrocumulus dotted the West after 6 p. m. 25th, cirrus, cumulus followed. 28th, broad cirrostrati, with cumuli inosculating. 29th, a very black nimbus in the West, with a raggy edge below, the whole of uncommon density, it rose against the lower current, producing a violent thunder-storm and great hail, some of the hail-stones an inch in length and as big as the finger, greatly injuring the beans and peas in this neighbourhood. The thunder came in snapping crashes.

The cold nights in May so injured the grass, that a short hay-crop presents itself, and but little is yet cut down in the fields. The barley promises to be at least a bulky crop, other corn looks fairly. Dog-rose in flower, June 18th.

#### JULY.

2nd, dense cumuli and cirrocumuli above them. The birds more tuneful than at any previous time this year. 3rd, great sultriness, overcast till 10 a. m. Clear and very hot day after that hour, at least with us. A cumulostratus in the West at 2 p. m. with white strips of cirrostratus across. 4th, a stratus a. m. Cumulus and cirrostratus, and scorching sun. A nimbus with violent thunder, from 15 to 20 miles E. S. E. and E. of us. At midnight some thunder at but a little distance. 5th, small cumuli, a scorching sun. 6th, much cirrocumulus. Nimbi with thunder passed along the West from 11 a. m. till noon. In the evening the cirrocumulus continued in white knots, and cumuli grouped Eastward, crossed by the usual strips of cirrostratus. 7th, cirrus and other kinds, down to nimbus. A hasty short shower '3 p. m. Much dark cirrostratus during evening. 8th to 19th, very warm in general, and chiefly fine. 11th, numerous cirrostrati. 12th, this evening I observed across the N. at considerable elevation, some white cirrostrati notched at their nether edges. 13th, very close and sultry, much cirrocumulus, cirrostratus, and other stormy signs. Lightning and thunder distant at night, temperature 70 degrees at 8 p. m. 17th, handsome beds of cirrocumulus. 19th, very beautiful ranges of ribbed cirrocumulus, in the most formal regularity of parallel detachments of silver white. 21st to 26th, fall of temperature after rain and storm on 20th. 28th, cumulus. A dense nimbus with shower from S. W. 9 p. m. 29th, cumuli and nimbi crossed by cirrostratus. Violent thunder-storms in many parts. One passed before 12 noon, at 10 miles West. Another at 1 mile South at noon, and a heavy shower here, the lightning very vivid with snapping reports. A third visited Ipswich and its vicinity at 4 p. m. and was awful in the extreme. 30th, cumulostratus crossed by cirrostratus this evening. 31st, very fine and pleasant. Cumulus and large cirrostratus.

On July 4th, a most terrific thunder-storm visited Cheshire, Lancashire, and Yorkshire borders. In Rochdale, £80,000 worth of goods were carried away by the deluge, the river rising in 3 hours, 13 feet above usual level. Buildings were washed down, and the damage by lightning and hail not to be stated. Nocturnal darkness preceded, and in some parts, the torrents continued 7 hours. Near Saxmundham, Suffolk, also at 3 p. m. a tree was shattered, a house injured, and a barn burnt down by lightning. 6th, London experienced a severe thunder-storm, with loss of life, at 7 a. m. Derbyshire was visited on same day by the storm, and Shardlow new church had a pinnacle destroyed, and at Bolton, Lancashire, a gable was struck, killing 3 men in its fall.

The hay-harvest was favoured by fine weather for the greater part.

#### AUGUST.

1st, very fine, small cumulus, haziness which increased during evening. 2nd, much rain. 3rd, cirrus and cirrostratus. 5th, cumulostratus 7 p. m. in N. E. and cirrostratus across. 6th, many modifications, even all from cirrus to nimbus. Heavy thunder-storms at 3 and 4 p. m. 9th evening, hazy and much undulated cirrostratus in black festoons. 10th, cirrocumulus, sultry night, temperature 68 degrees at 8 p. m. 11th, very fine and hot. Many white cirrostrati in strips. 12th, cirrocumulus in handsome trains. Cirrostrati at night, and very close. 13th, many cirrostrati. Beautiful sun-sets on 11th and 14th. To the 21st, very fine weather. 19th, beautiful cirrocumulus and cirrostratus. 20th, cirrus, cirrostratus, and cumulus. 22nd, a hard gale at S. W. Cumulus and cirrostratus. Coloured halo round sun at 1 p. m. and after, nimbi at 3 p. m. A heavy thunder-storm one mile to S. E. Very violent thunder, wind then abated. 23rd, cirrocumulus and cumulus. 24th and 25th, cirrus, cirrostratus, and cumulus. 26th, cirrocumulus in silver white dots all day, predicting heat. Beautiful sun-set, cirrostrati in the West, gilded at first, then tinged rose and purple. 27th, a very hot and fine day. A few small cumuli and white cirrostrati. 8 p. m. temperature 68 degrees out-doors and within. Black raggy cumuli, lightning 10 p. m. 28th, oppressive and sultry heat. Cirrocumulus and cirrostratus in mixed sheets, the former in finely divided dots. Black undulated cirrostratus, and black specks in minutest divisions overspread, with haziness all the evening. 8 p. m. temperature 70 degrees, at 9 p. m. 69 degrees, and at 10 p. m. 67·5! Distant lightning all round. 29th, rapid fall of temperature. Maximum 62 degrees early a. m. or minimum of past night, 3 p. m. 55 degrees! 8 p. m. 50 degrees, and during night 42 degrees! 30th and 31st, fine and clear, some cirrocumulus.

On 28th night, a dreadful thunder-storm in the Northern counties, and in Norfolk. The spire of Astbury church, in Cheshire, was much injured. Mrs. Roach, of Wroxham, Norfolk, was struck dead, some other lives were lost, and cattle killed. Mrs. Roach was the wife of a schoolmaster, and was putting her child to bed. Her husband was unhurt in next room. A hole was pierced in the roof, and in the next house, some children had their hair singed. The mail coach near Tadcaster was overturned, from the horses being frightened by the storm. In York, Chester, and Stafford counties, it was a terrific visitation. The hay-harvest concluded about July 13th, and this month was very fine after the 9th, for the corn-harvest which commenced about 14th.

## SEPTEMBER.

1st, 2nd, 3rd, and 4th, very fine and hot days. Much cirrocumulus on 3rd and 4th. Beautiful sky on 4th day. The cirrocumulus in silver dots and ranges, and in the evening, the cirrostratus also, some of which lying horizontally in S. W. and W. were decked with small cumuli heads upon their surface, like battlement walls. A hot and close night followed by lightning and thunder 5th, at 2 a. m. a black nimbus with severe thunder-storm passed 3 miles W. and N. W. of us. A shower here, and blue forked lightning from the cloud Westward, with violent reports. A very heavy storm there. One very startling clap awoke those who were as yet in the arms of Somnus. At 4 p. m. Parhelia appeared in halo about sun. Lightning resumed in S. E. and E. during evening. 7th, cumulostratus, nimbi, and thunder, with showers. Wind from S. to N. 5 p. m. 9th to 23rd, very fine. 12th, a train of ribbed cirrocumulus. 13th, much cirrocumulus and cirrostratus. 15th, very bright and hot, no cloud. Red and yellow aurora borealis evening. 16th, 8 p. m. I observed two columns of white light in S. W. intersecting each other at an obtuse angle. Several bolides at the same time. 20th, beautiful sky. A fine scene in speckled ranges of cirrocumulus and cirrostratus. Handsome varieties of the same through the day. Lightning East at 8 p. m. 21st, cirrus both plumose and fibrous, cirrocumulus and cumulus. At 4 p. m. a tendency to nimbus Eastward. Cirrostratus across cumulus. Nimbus with thunder W. 5 p. m. and a beautiful rocky one S. 6 p. m. gilded by setting sun. Aurora borealis bright at night. 23rd, a change with the equinox. Cirrocumulus, cirrostratus, and cumulus, followed by rain on 24th, 25th, and 27th. 28th, a very fine and clear day. A white train of speckled cirrocumulus across the S. at noon, the only cloud on this day. At first, this was a long silvery cirrostratus, then it opened and dilated into cirri and knotted cirrocumulus! 29th and 30th, close atmosphere and fine. An extensive bed of cirrocumulus all the evening.

This was a very fine harvest month in most parts of England, and in the East counties, it was concluded about the 8th or before.

## OCTOBER.

1st to 11th, fine with Northerly winds in general, but a calm atmosphere ever since August 23rd, and great complaints among the millers for want of wind. Waters also low. Cirrostratus and cumulus now prevalent, and some cirrocumulus. On 4th, cirrus and cirrostratus red with setting sun. 11th, a galy day, with cumulus and large dusky cirrostratus. The first wind for a long period. 12th, very cold for the season. Large rocky cumuli and hail, with a clear frosty night. Lightning in N. E. 7 p. m. 13th, a frost, clear day except cumulus. Warmer after midnight. 14th to 18th, stormy with dark cumuli and nimbi, and night temperature often highest. Much plumose cirrus on 17th. Frequent gales, coming on most at twilight p. m. hence the warm nights. 19th to 23rd, fine. On 19th, much cirrocumulus, and the sun-set in a screen of this and cirrostratus tinged purple. 20th, very warm, and even hot for this period. Undulated cirrostratus in the morning. Clear day, except a few flying cumuli. 21st and 22nd, very close, sultry, and summer-like, although last week was a prelude to wintry blasts! 24th to 31st, a more pluvial atmosphere, with cumulus and nimbus, and the cirrostratus in broad

and dark layers. On 28th, much cirrus and haze followed by a tempestuous night. 29th, violent hurricane from 3 to 7 a.m. from S. S. E. to S. W. Trees thrown down, and corn stacks uncovered. In London, it was surpassing all within memory. Houses blown down, and vessels, with human life, lost at sea! Raggy cumuli during the day, but fine. 30th, very clear and fine. 31st, much rain the chief of the day.

On 17th night, distant lightning on S. E. horizon.

This month proved another fine seed-time, and was much like the same period of 1837, but quite the reverse to 1836. The land in fact was too hard and dry for husbandry in this season of 1838. The millers now complaining of lack of wind and water. Apples a partial crop. Turnips suffering from drought.

#### NOVEMBER.

1st, rainy morning with wind S. S. W. veered to N. W. p. m. a storm of hail 5 p. m. from a dense raggy nimbus. 4th, banks of cumuli intersected by cirrostrati in strips as usual in summer. Some distant thunder. Cirrocumulus at eve. Stratus on the marshes. 6th, a beautiful day, very clear and great warmth in the solar rays, grateful to the sense. 7th, after a wet morning, a fine and warm day, with cirrus and cumulus. 8th, very fine and clear with lines of cirrus collapsing to cirrostratus. 9th, rain all the morning and till noon. 10th, cumuli grouped on many parts of horizon, the cirrostratus across their heads. A very black nimbus rose N. W. 4 p. m. which came on with a storm of hail. 11th, fog congealing on shrubs, &c. but no frost on the ground. 12th to 17th, fair with frosts night and morning. Cirrus and white cirrostratus at times. The trees now nearly all stripped of their foliage. On 13th, early in the morning, a grand display of aurora borealis in red columns: and at night a multitude of meteors, as also on 12th. This seems now an annual phenomenon. 18th, great fall of rain all day. 19th, a most dismal day, cold rain with snow, and a boisterous E. and N. E. gale all the day. 20th to 27th, chiefly fine, with cold winds and sharp frosts. 28th, 29th, violent gales from S.E. and S.W. with drenching storms. Much thunder and lightning early on 29th. 30th, cirrus of both kinds, and cumulus, fair and windy. Chiefly bright sun.

On 29th, at 1 a. m. an awful tempest in London, with a violent gale, hail, rain, and severe electrical discharges! Serious damage both by wind and lightning there and elsewhere. The parks in and about London were strewn with trees torn up by the roots! This was similar to the same period of 1836. The barometer also near the same.

#### DECEMBER.

2nd, summer-looking clouds. Cumulostrati and nimbi crossed by cirrostrati. Very warm. 3rd, cirrus and cirrostratus. A long and dusky cirrostratus in S. W. 6 p. m. exhibiting a beautiful lunar rain-bow. The moon rising in N.E. The cloud was a well-defined elliptical strip, gave us a shower when in zenith, and passed to N. E. still preserving its form. 4th to 21st, very fine weather, and often clear, or cirrus only. The roads dusty about the 20th. 23rd, boisterous and wet. 25th, snow from  $2\frac{1}{2}$  p. m. till 4 p. m. very heavy, to the depth of 3 inches. 26th, a sharp frost. Much rain and snow to-night, the snow falling in large soft masses

rather than flakes. 28th, the ground in a slippery state. 30th, mild and squally. 31st, a cloudless day, but some haze.

On 2nd, a violent thunder-storm on the Sussex coast in the morning, and great damage at Brighton, Horsham, and Lewes, by lightning and hail! During the day, great thunder-storms in many parts of England.

### SUMMARY RESULTS FOR 1838.

Depth of rain, only 18·67 inches. Fine days, 251. Prevalent winds S. W. and N. W. and their opposites next in frequency.

Hottest on July 6th, Therm.	81 degrees	Highest Barom. on March 28th .	30·63
At Redgrave, same day .	83	Lowest on Feb. 9th & Nov. 28th	28·81
Coldest on Jan. 20th . . .	2		
Range . . . .	<u>79</u>	Range . . . .	<u>1·82</u>

Most of the evergreens, such as the laurustinus and some others, totally destroyed by the great frost of January and February 1838!

## JANUARY, 1839.

Day.	Wind.	Force.	Barom.		Therm.		Rain	Weather.
			a. m.	p. m.	Min.	Max.		
1	W.	5	30-38	30-08	32	46	.01	Fair, windy, shower a.m.
2	W.N.W.	4	'02	'12	39	44		Fair, windy
3	S.W.	3	'01	29-70	37	47	.01	Chiefly fair and mild
4	W.S.W.	5	29-55	'76	41	44	.01	Mild and windy
5	S. W.	2	'70	'62	30	39		Fair, clear, and frost
Su. 6	S. S. W.	2	'79	'40	30	35	.10	Fair, frost, snow p.m. wind
7	W.S.W.	8	28-98	'14	33	44		Violent hurricane a.m. snow
8	N. W.	7	29-42	'61	29	34		Snow, frost, fair
9	N. W.	4	'72	30-05	27	30		Fair, clear, severe frost
10	S. W.	1	30-31	'30	21	36		Fair, severe frost
11	S. W.	3	'20	'11	32	43	.10	Cloudy, little wet
12	N. W.	1	'27	'30	41	45		Fair, clear, mild
Su. 13	W.S.W.	6	'06	'03	36	51		Fair, very mild
14	W.	3	'03	29-78	40	44		Fair, cloudy
15	W.N.W.	6	29-78	'90	32	40		New M. 3 p.m. frost, clear
16	N. W.	2	'96	'95	28	37		Clear, frost, fair
17	N. W.	2	30-02	30-12	28	35		Frost, little snow
18	N. W.	1	'18	'11	26	34		Frost, little snow
Su. 19	W.	5	29-64	29-38	29	46	.30	Wind and much rain
20	S. W.	3	30-01	'94	32	40		Fair, heavy rain night
21	N. E.	1	29-72	'92	38	44	.80	Much rain
22	N.	3	30-11	30-38	30	39		Frost, little snow
23	N.	1	'55	'61	31	40		Chiefly fair
24	N. W.	2	'56	'40	30	41		Fair
25	N. W.	3	'15	'01	34	44	.08	Stormy and sleet
26	N. E.	3	'21	'41	30	34		Snow at times
Su. 27	N. E.	1	'45	'32	30	34		Some snow
28	N. W.	0	'11	29-80	28	35		Frost, snow night
29	N. W.	2	29-61	'20	23	34		Full M. 4 p.m. severe, snow
30	N. W.	3	'24	'06	18	29		Very severe and snow
31	N. E.	1	'19	'72	19	30		Severe, heavy snow
					18	51	1·41	

## RESULTS.

Barom.	{ Max. on 23rd . . . . .	30-61	Therm.	{ Max. on 13th . . . . .	51 degrees
	{ Min. on 7th . . . . .	28-98		{ Min. on 30th . . . . .	18
Range	. . . . .	1·63	Range	. . . . .	38
Mean	. . . . .	29-79	Mean	. . . . .	34·5

Winds prevailing from S. W. to N. W. Rain, 1·41 inches. Fine days, 17.

FEBRUARY, 1839.

Day.	Wind.	Force.	Barom.		Therm.		Rain	Weather.
			a. m.	p. m.	Min.	Max.		
1	N.	2	30.03	30.07	1°	33		Severe frost, snow
2	N.	0	'13	'17	2°	36		Fair, severe frost
Su. 3	S. E.	1	'02	29.93	24	37		Frost, fog, thaw
4	S. E.	2	29.97	'87	26	38	.30	Fog, frost, thaw
5	S. W.	1	30.12	30.17	34	44	.22	Hazy, heavy rain
6	E.	1	'21	'26	36	43		Fog
7	S. W.	1	'30	'35	39	52		Cloudy, mild, little wet
8	S. W.	2	'43	'33	45	53		Cloudy, mild, little sun
9	S. W.	3	'36	'33	47	54	.03	Fair, mild, and pleasant
Su. 10	N. W.	0	'49	'58	38	50		Clear, fine, and pleasant
11	S.	2	'51	'41	30	46		Fog, frost, fair
12	S. W.	3	'33	'28	40	49	.11	Fair, rain, night
13	W.	2	'45	'50	32	48		Fair
14	S. W.	5	29.97	'04	36	53		New M. 3½ a.m. fair, mild
15	W. S. W.	4	30.13	29.99	32	48		Fair and clear
16	W.	4	29.51	'58	39	45	.10	Stormy
Su. 17	W.	4	'51	'52	29	41		Stormy and hail
18	Var.	1	'59	'73	25	35		Sharp frost, heavy snow
19	Var.	1	'69	'63	25	41		Frost, some snow
20	N. E.	4	'53	'91	30	38	.29	Snow and rain
21	N. E.	2	30.27	'23	31	42		Fair, frost, clear
22	S. W.	2	29.90	29.78	31	47		Cloudy
23	W.	3	'54	'80	43	51	.75	Drenching storms
Su. 24	N. W.	2	'85	'73	34	49		Fair, clear
25	N. W.	2	'64	'89	33	46	.03	Stormy and hail
26	W.	1	30.06	30.02	29	46		Frost, fair, clear
27	S. W.	2	29.92	29.95	32	48	.17	Stormy, hail, thunder
28	W.	2	30.16	30.22	32	52		Full M. 8½ a.m. fair, clear
					19	54	2.00	

## RESULTS.

Barom.	{ Max. on 10th . . . . .	30.58	Therm.	{ Max. on 9th . . . . .	54 degrees
	Min. on 17th . . . . .	29.49		Min. on 1st . . . . .	19
Range . . . . .		1.09	Range . . . . .		35
Mean . . . . .		30.03	Mean . . . . .		36.5

Prevalent wind S. W. Rain, 2 inches. Fine days, 17

## MARCH, 1839.

Day.	Wind.	Force.	Barom.		Therm.		Rain	Weather.
			a. m.	p. m.	Min.	Max.		
1	S. S. E.	3	30-13	30-02	39	50		Cloudy
2	S.	1	29-96	.08	37	56		Fair and warm
Su. 3	N. E.	1	30-17	.20	42	50		Foggy
4	E.	3	.19	.22	32	41		Fair, and very cold
5	E. N. E.	2	.23	.14	31	36		Frost, little snow
6	E. N. E.	2	29-99	29-80	27	31		Frost, and snow
7	N. W.	3	.59	.48	25	37		Sharp frost, much snow
8	N. W.	3	.74	30-00	26	37		Sharp frost, heavy snow
9	N.	1	30-01	.13	24	38		Severe frost, fair
Su. 10	S. W.	2	.22	.31	17	40		Very severe, fine day
11	S. E.	3	.31	.28	29	42		Fair and frost
12	S. E.	4	.24	.20	30	42		Fair, still very cold
13	S. E.	1	.15	.14	33	47		Cloudy
14	S. E.	2	.12	.15	37	45	.15	Showers
15	S. E.	3	29-98	29-42	42	50	.64	New M. 2 p.m. heavy rain
16	W. S. W.	3	.32	.37	41	51	.03	Showers of hail
Su. 17	N. E.	2	.52	.83	37	43	.18	Rain, fog, and cold
18	N. E.	2	.95	30-06	34	38	.02	Cloudy,izzle, and snow
19	W.	1	30-05	.11	32	46		Fair
20	S. W.	3	.02	29-81	32	48		Hazy, little rain
21	W.	1	29-65	.69	43	52	.08	Showery
22	W.	5	.67	.76	38	48		Stormy, with hail
23	S. W.	5	.74	.71	42	55	.03	Windy and stormy
Su. 24	S. W.	3	.75	.65	43	55		Fair and pleasant
25	W.	3	.68	.73	40	51	.03	Stormy and hail
26	E.	2	.83	30-03	36	52		Fair and bright
27	S. W.	3	.77	29-53	38	59	.10	Showery
28	W.	3	.45	.35	41	53	.08	Stormy, with thunder
29	N. E.	3	.52	.73	39	43		Cloudy and cold wind
30	E.	3	.80	.91	35	46		Full M. 2 a.m. fair & cold
Su. 31	S. E.	5	.80	.75	36	50		Fair and cold
					17	59	1-34	

## RESULTS.

Barom.	{ Max. on 11th . . . . .	30-31	Therm.	{ Max. on 27th . . . . .	59 degrees
		Min. on 16th . . . . .			Min. on 9th nt. & 10a.m 17
Range	. . . . .	.99	Range	. . . . .	.42
Mean	. . . . .	29-81	Mean	. . . . .	38

Prevailing winds S. E. N. E. and S. W. Rain, 1-34 inches. Fine days, 19.

APRIL, 1839.

Day.	Wind.	Force	Barom.		Therm.		Rain	Weather.
			a. m.	p. m.	Min.	Max.		
1	E.	4	29.73	29.80	39	48		Fair, cold wind
2	E. N. E.	5	'92	30.06	35	38		Snow, rain, and high wind
3	E. N. E.	5	30.03	'04	32	35		Cloudy, very cold, snow
4	E. N. E.	2	'10	'10	33	38		Cloudy and very cold
5	S. E.	4	29.95	'07	33	46		Cloudy, very cold wind
6	E. N. E.	2	30.22	'40	32	48		Fair, clearer, and cold
Su. 7	E. N. E.	2	'47	'49	27	49		Frost, fair, and cold
8	E.	4	'40	'42	31	45		Frost, little sleet
9	N. E.	4	'44	'50	32	42		Cloudy, and wind piercing
10	N. E.	3	'53	'57	37	50		Fair and clear
11	N. E.	0	'59	'54	35	49		Fair, but cold
12	N.	4	'35	'33	36	49		Windy, cold, and ungenial
13	N.	2	'31	'31	41	48		New M. 11 $\frac{1}{4}$ p.m. cloudy
Su. 14	N. W.	1	'29	'31	42	57		Fair, pleasant and warmer
15	S. W.	1	'23	'11	42	58		Fair and pleasant
16	S. E.	2	29.93	29.70	43	61		Fair and warm
17	S. W.	5	'43	'61	44	55		Stormy, showery and wind
18	S. W.	3	'63	'60	38	57		Rain a. m. fair p.m.
19	W.	3	'63	'97	45	56		Showery
20	N. W.	2	30.08	30.23	38	57		Showery, hail and thunder
Su. 21	N. W.	1	'28	'33	38	59		Fair and pleasant
22	S. W.	1	'33	'27	35	63		Fair and warm
23	W.	3	'08	'03	47	56		Rainy day
24	N.	3	'12	'17	38	55		Showers of hail
25	N.	2	'14	'17	34	55		Fair and clear, cold wind
26	E.	1	'22	'29	40	60		Fair and pleasant
27	S. E.	1	'32	'36	38	62		Fair, warm, and sunny
Su. 28	E.	1	'38	'42	35	64		Full M. 7 $\frac{1}{4}$ p.m. bright, warm
29	N. W.	0	'34	'24	35	69		Fair, bright, and very warm
30	W.	0	'22	'16	44	70		Fair and hot
					27	70	0.83	

## RESULTS.

Barom.	{ Max. on 11th . . . . .	30.59		Therm.	{ Max. on 30th . . . . .	70	degrees.
	{ Min. on 17th . . . . .	29.43			{ Min. on 6th nt. . . . .	27	
Range . . . . .		1.16		Range . . . . .		43	
Mean . . . . .		30.01		Mean . . . . .		48.62	

Winds E. and N. E. during first 11 days, afterwards chiefly Westerly. Rain, .83 of an inch. Fine days, 23.

## MAY, 1839.

Day.	Wind.	Force.	Barom.		Therm.		Rain	Weather.
			a. m.	p. m.	Min.	Max.		
1	S.	1	30.10	30.05	49	76		Fair and very hot
2	E.	0	.04	.09	50	72		Fair and hot
3	N. W.	1	.07	.04	43	73		Fair and hot
4	S. S. E.	1	29.95	29.75	44	74		Fair, very hot
Su. 5	S. E.	1	.77	.93	50	74		Fair, very hot
6	N. E.	3	30.07	30.17	45	61		Fair and cool
7	N. E.	2	.20	.13	41	65		Fair
8	N. E.	2	.03	29.96	41	72		Fair and hot
9	N. E.	4	29.99	.96	44	56		Cloudy, rain at times, cold
10	N. E.	6	30.00	30.15	42	54		Gale and very cold
11	N. E.	2	.25	.19	41	59		Cloudy, very cold
Su. 12	N.	1	.11	.13	37	60		Snow a.m. cloudy and cold
13	W.	2	.02	29.74	38	65		New M. 7 a.m. fair
14	N.	2	29.62	.54	35	52		Snow in showers, hail, rain
15	S. W.	2	.49	.47	33	54		Fair and cold, thunder p.m.
16	S. W.	2	.62	.88	34	60		Fair
17	S. W.	2	30.08	30.18	34	65		Fair
Su. 18	S.	3	.23	.19	36	67		Fair
19	S.	1	.17	.23	51	63		Fair, cloudy, and close
20	Var.	1	.31	.36	46	78		Fair, very hot
21	Var.	1	.28	.15	53	71		Fair
22	N.	3	.03	.18	46	54		Cloudy and cold, showers
23	W.	2	.18	29.93	42	63		Fair
24	N. W.	2	29.95	30.10	45	55		Cloudy and cold, little wet
25	N.	2	30.14	.23	41	58		Showery
Su. 26	S. E.	0	.29	.31	39	65		Fair
27	E.	0	.31	.32	36	76		Fair, very hot
28	E.	2	.34	.35	41	66		Full M. 10 a.m. fair
29	N. E.	1	.32	.27	44	74		Fair and hot
30	N. E.	1	.21	.20	48	77		Fair, very hot, rain 10 p.m.
31	N. E.	1	.12	.12	52	79		Fair and very hot day
					33	79	0.83	

## RESULTS.

Barom.	{ Max. on 20th . . . 30.36	Therm.	{ Max. on 31st . . 79 degrees
	{ Min. on 15th . . . 29.47		{ Min. on 15th . . 33
Range . . . . .	.89	Range . . . . .	46
Mean . . . . .	29.91	Mean . . . . .	56

Prevailing wind N. E. Rain, .83 of an inch. Fine days, 26.

## JUNE, 1839.

Day.	Wind.	Force.	Barom.		Therm.		Rain	Weather.
			a. m.	p. m.	Min.	Max.		
Su.	1	N. E.	2	30.11	30.10	49	69	Fair
	2	N. E.	2	.06	29.98	45	65	Fair
	3	E.	1	29.83	.82	46	63	Rain
	4	N. E.	1	.79	.86	49	70	Fair
	5	N. W.	0	.90	30.00	44	76	Fair, very hot
	6	S. W.	1	30.05	.07	47	79	Very hot, thunder storm
	7	S. S. E.	2	.01	29.94	55	70	Sultry, little wet
	8	S. S. E.	2	.02	.99	55	72	Fair, sultry
	9	S. W.	2	.12	30.25	54	75	Fair, very hot
	10	S. W.	2	.38	.34	51	77	Fair, very bright and hot
Su.	11	S. W.	1	.30	.37	57	79	New M. 3 p. m. clear & hot
	12	S.	1	.33	.20	56	83	Very clear & extreme heat
	13	E.	2	.09	.09	59	77	Morning hot, cloudy p.m.
	14	E.	2	.02	.03	55	60	Cloudy, little wet
	15	N. E.	2	.07	.23	53	71	Fair and very hot
	16	N. E.	1	.38	.40	50	76	Fair and very hot
	17	E.	2	.37	.28	51	77	Thunder-storm nt. through
	18	E.	0	.12	.08	60	84	Bright and extreme heat
	19	S. W.	1	.13	.21	59	76	Shower a.m. fair and hot
	20	S. E.	2	.27	.12	55	82	Fair, very hot
Su.	21	S. W.	2	29.89	29.90	60	80	Fair, very hot, rain 2 a.m.
	22	S.	4	.82	.57	56	67	Wind and showers
	23	S. W.	5	.48	.74	56	71	Wind and showers
	24	S. W.	3	.84	.96	55	72	Fair
	25	S. W.	1	30.03	.99	55	78	Fair, very hot
	26	S. E.	2	29.78	.61	58	71	Full M. 12 night, cloudy
	27	S. W.	2	.91	.92	55	74	Fair and hot
	28	Var.	0	.78	.77	55	67	Showers, hail, and thunder
	29	N. W.	3	.90	30.14	53	63	Rain, finer p.m.
	30	N. N. W.	2	.17	.28	47	60	Cloudy
					44	84	2.84	

## RESULTS.

Barom.	{ Max. on 16th . . . . .	30.40	Therm.	{ Max. on 18th . . . . .	84 degrees
	{ Min. on 23rd . . . . .	29.48		{ Min. on 4th nt. . . . .	44
Range . . . . .		.92	Range . . . . .		.40
Mean . . . . .		29.94	Mean . . . . .		64

Mean maximum temperature by day 72.65. Prevailing wind, S. W. Rain, 2.84 inches.  
Fine days, 20.

JULY, 1839.

Day.	Wind.	Force.	Barom.		Therm.		Rain	Evap	Weather.
			a. m.	p. m.	Min.	Max.			
1	N. W.	1	30.33	30.39	48	65			Fair
2	N. E.	1	.37	.36	50	71	.01		Very cloudy
3	N.	0	.36	.34	52	73			Cloudy and sultry
4	N. E.	1	.31	.32	47	78			Fair, clear, and very hot
5	S.	1	.30	.20	50	76			Fair and sultry
6	S. W.	2	.08	.00	56	82			Fair, bright, and very hot
Su. 7	S.	1	29.97	29.70	58	81	.30		Fair, bright, very hot thun.
8	S.	3	.76	.81	61	74			Cloudy [storm night
9	S.	3	.85	.91	55	72	.015		Flying nimbi, fair here even.
10	S. W.	3	30.11	30.12	51	74			New M. 11 p. m. fair & hot
11	S.	3	.12	.05	58	80			Fair, very hot
12	S. W.	2	29.92	.00	62	78	.10		Sultry, little show. hot p.m.
13	W.	0	30.13	.24	57	81			Fair and very hot
Su. 14	S. S. E.	2	.17	.01	55	76	.05		Sultry heat, with showers
15	W.	2	.05	.21	60	75			{ Fair and very hot, large
16	S. W.	1	.29	.31	51	78			{ cumuli clouds
17	S. E.	3	.24	.04	52	75			Windy, hot, thun. st. night
18	S.	2	29.69	29.68	62	75	.19		Windy, with showers
19	S.	4	.82	.83	57	72			Windy and dry
20	S. S. W.	3	.87	.92	58	73			Fair, with wind
Su. 21	S. W.	2	30.01	30.09	56	72			Fair
22	S. W.	1	.18	.20	55	75			Fair and hot
23	S. W.	1	.18	.09	57	73			Cloudy and hot, rain even.
24	S. W.	2	29.94	29.87	60	76	.185		Rain a.m. fine and hot day
25	S. W.	0	.90	.93	57	75			Fair and hot
26	S.	1	.91	.65	56	72	.27		Full M. 11½ a. m. rain even
27	S. W.	3	.70	.80	57	72	.07		Showers and thunder
Su. 28	Var.	0	.90	30.05	56	70	.10		Rain a. m. fine p. m.
29	S. W.	1	30.13	29.75	51	69	.30	.15	Bright morn, rain p. m.
30	N. W.	0	29.81	.82	55	73	.19	.10	Cloudy & sultry, rainy nt.
31	S. S. W.	3	.46	.53	57	65	.05		Windy, some rain, & warm
					47	82	1.83		

## RESULTS.

Barom.	{ Max. on 1st . . . . .	30.39	Therm.	{ Max. on 6th . . . . .	82 degrees
	Min. on 31st . . . . .	29.46		Min. on 3rd nt. . . . .	47
Range . . . . .		.93	Range . . . . .		.35
Mean . . . . .		29.92	Mean . . . . .		64.25
			Mean Max. of days		74.12

Depth of rain, 1.83 inches. Fine days, 22. Prevailing winds from S. W. to S. E.

## AUGUST, 1839.

Day.	Wind.	Force.	Barom.		Therm.		Rain	Evap	Weather.
			a. m.	p. m.	Min.	Max.			
1	W.	1	29.96	30.19	55	73		'10	Fair and hot
2	S. S. E.	2	30.23	.19	53	78		'40	Fair, very bright and hot
3	Var.	0	.16	.25	56	89		'33	Fair, bright, extreme heat
Su.	N. W.	1	.30	.36	61	72		'15	Fair, close, and sultry
	N. W.	1	.38	.35	51	77		'28	Fair and very hot
	S. W.	1	.29	.17	51	79		'21	Fair, very hot
	S. W.	3	29.94	29.83	58	69	'15		Rain
	N. W.	3	30.01	30.14	54	71		'20	Fair
	S. W.	2	.24	.20	52	76		'30	New. M. 9 p. m. fair & hot
	S. W.	3	.20	.12	55	73		'25	Fair, windy, and hot
	W.	4	.05	.26	54	69	'18	'05	Windy with showers
	N.	1	.35	.37	52	70		'10	Fair
	S. E.	1	.28	.21	52	67		'12	Fair
Su.	S. E.	2	.14	29.94	51	73		'21	Fair and hot
	E.	1	29.85	.74	56	71	'07	'06	Showery and thunder
	S.	0	.77	.78	56	71	'10		Showery and thunder
	Var.	1	.73	.93	58	70	'19	'03	Rain a. m. fair p. m.
	Var.	1	30.09	30.12	54	72		'14	Fair and sultry
	N.	2	29.99	.11	55	67	'67	'11	Great rain early a.m. fair
	N.	1	30.11	.22	52	65	'10	'09	Showery
	N. W.	1	.25	.27	43	66		'19	Fair
	S. W.	0	.29	.31	40	73		'21	Fair and hot
	S. W.	0	.34	.31	49	78		'15	Fair and very hot
Su.	S. W.	2	.23	.08	56	77		'20	Full M. 9½ p. m. fair & hot
	W.	1	.08	.08	60	77		'20	Fair and sultry heat
	S. W.	1	.02	29.96	52	75	'01	'16	Fair and hot, rain night
	N. W.	2	29.87	.97	57	69		'16	Fair
	W.	0	30.12	30.12	48	73		'21	Fair and sultry
	S.	2	.03	29.98	55	72		'15	Fair and hot
	S. W.	2	29.95	.92	60	72		'10	Fair and hot
	S.	4	.74	.34	57	68	'25	'08	Windy, rain p. m.
					40	89	1.72	4.94	

## RESULTS.

Barom.	{ Max. on 5th . . . . .	30.38	Therm.	{ Max. on 3rd . . . . .	89 degrees
	{ Min. on 31st . . . . .	29.34		{ Min. on 21st nt. . . . .	40
	Range . . . . .	1.04		Range . . . . .	49
	Mean . . . . .	29.86		Mean max of day.	72.29

  

	Mean of extremes	64.5
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Prevailing winds, S. W. and N. W. Fine days, 23. Depth of rain, 1.72 inches. Evaporation 4.94 inches.

## SEPTEMBER, 1839.

Day.	Wind.	Force	Barom.		Therm.		Rain	Evap	Weather.
			a. m.	p. m.	Min.	Max.			
Su. 1	S. W.	5	29·16	29·23	55	69	.17	.19	Hard gale, violent thunder-
2	S. W.	4	.30	.29	52	67	.10	.14	Showers [storms
3	W.	3	.45	.62	52	64	.65	.07	Violent drenching storms
4	W.	1	.78	30·02	53	69		.14	Fair, very warm [thunder
5	S. W.	0	30·00	29·96	49	69	.13	.06	Rain a. m. fair
6	S. W.	1	.07	30·18	56	73		.20	Fair and hot
7	S.	3	.06	29·91	51	69		.15	New M. 10 p. m. fair
Su. 8	S.W.	3	29·95	30·14	56	70		.15	Fair and sultry
9	S. W.	2	30·10	.10	58	75		.27	Fair, very hot
10	Var.	0	.08	.25	57	76		.18	Fair, very hot
11	S. E.	0	.19	.01	58	76	.13	.15	Shower early, fair, very hot
12	W.	1	29·90	29·83	61	67	.03	.09	Showery
13	S. W.	1	.75	.62	48	67		.19	Fair
14	S. E.	3	.38	.26	51	64	.22		Stormy, gales, and rain
Su. 15	S. E.	3	.34	.44	57	66		.07	Some showers
16	S. S. E.	3	.53	.53	52	64	.15	.03	Frequent showers
17	S. W.	3	.60	.40	54	65	.35	.05	Fair, much rain p. m.
18	S. W.	3	.61	.72	48	66		.21	Fair and warm
19	S. W.	2	.63	.65	48	66	.33	.08	Much rain at times
20	S.	2	.76	.73	49	66		.15	Fair and warm
21	N. W.	2	.65	.61	51	56	.62	.02	Heavy rain all day till 3 p.m.
Su. 22	S. W.	1	.75	.75	44	65	.10	.10	Fair, thun. showers evening
23	W.	0	.84	.98	43	63		.11	Full M. 7 a.m. fog, fair
24	S. W.	1	30·00	.98	43	67		.09	Fair, very warm
25	S.	2	29·89	.96	55	69	.05	.18	Shower 8 a.m. fair and hot
26	S. W.	1	.96	.98	52	68	.04	.12	Shower early, fair and hot
27	S. W.	2	30·01	.91	46	65		.11	Fair and warm
28	S. E.	2	29·70	.62	52	64		.05	Fair and warm
Su. 29	W.	1	.74	.83	44	67		.10	Fair, very warm
30	S. E.	0	.97	30·08	39	67		.10	Fair and warm
					39	76	3·07	3·50	

## RESULTS.

Barom.	{ Max. on 10th . . . . .		30·25	Therm.	{ Max. on 10th & 11th . . . . .		76 degrees
	Min. on 1st . . . . .	29·16			Min. on 30th . . . . .	39	
Range . . . . .		1·09		Range . . . . .		37	
Mean . . . . .		29·70		Mean . . . . .		57·5	

Winds Southerly and Westerly. Rain, 3·07 inches. Evaporation 3·50 inches. Fine days 17.

## OCTOBER, 1839.

Day.	Wind.	Force.	Barom.		Therm.		Rain	Evap	Weather.
			a. m.	p. m.	Min.	Max.			
1	S. E.	1	30-11	30-01	40	66		.07	Fair, clear, very warm
2	S. W.	1	29-81	29-77	45	64	.05	.04	Fair and sultry, shower
3	S.	0	30-04	.92	40	63		.10	Fair, clear, and warm
4	S.	2	29-62	.57	47	65	.60	.03	Rain a.m. fair & hot p.m.
5	N.	3	30-00	30-31	50	56	.25	.03	Rain a.m. fair, cloudy
Su. 6	N. E.	1	.37	.41	46	61		.04	Fair, rather cool wind
7	E.	0	.41	.34	42	64		.07	New M. 2 p.m. fair, warm
8	S.	1	.22	.13	46	64		.06	Fair, very warm
9	S.	2	29-98	29-92	54	69		.12	Fair and hot, clear sky
10	S.	2	.74	.83	58	67	.19	.12	Showers early, fair and hot
11	S. E.	2	.79	.80	54	70	.15	.11	Fair, very hot, and close
12	S.	2	.91	30-17	55	63		.11	Fair and warm
Su. 13	S.	1	30-12	.11	50	64	.07	.04	Rain a.m. fair, very warm
14	S. E.	2	.08	.01	41	62		.11	Fair, clear, and warm
15	Var.	0	29-95	29-96	48	57	.02	.03	Cloudy, little wet
16	S. W.	1	30-14	30-17	45	61		.07	Fair, clear, and warm
17	N. E.	0	.19	.21	42	58		.03	Fair, cloudy
18	S.	2	.01	.05	49	61	.10	.04	Rain a.m. fair and warm
19	W.	0	.05	.22	45	58		.04	Fair and pleasant
Su. 20	E.	1	.20	.16	34	59		.05	Fair, clear, and warm
21	S. E.	0	.16	.24	45	58		.01	Overcast and close
22	S.	0	.27	.24	52	57		.01	Full M. 4½ p.m. overcast
23	S. E.	2	.20	.19	50	57		.02	Fair, cloudy
24	S. E.	2	.18	.24	50	55		.03	Fair, cloudy
25	N. E.	2	.36	.39	45	52	.02	.02	Fair, showers night
26	N. E.	1	.38	.38	42	52	.05	.01	Showery
Su. 27	N.	1	.30	.28	39	53	.11	.02	Showers and hail
28	N. E.	4	.40	.47	39	49	.07		Cold and showers with hail
29	E. N. E.	6	.45	.36	39	49		.12	Fair, high wind, very cold
30	E. N. E.	5	.27	.21	40	49		.12	Fair, windy, and very cold
31	E. N. E.	4	.11	.00	38	39		.08	Cloudy, piercing wind
					34	70	1·68	1·72	

## RESULTS.

Barom.	{ Max. on 28th . . . 30-47		Therm.	{ Max. on 11th . . 70 degrees.	
	Min. on 4th . . . 29-57	Range . . . . .		Min. on 20th a.m. 34	Range . . . . .
Range . . . . .	.90				Mean . . . . .
Mean . . . . .	30-02				52

Winds chiefly S. till 18th, afterwards S. E. to N. E. Rain, 1·68 inches. Evaporation 1·72 inches. Fine days, 22.

## NOVEMBER, 1839.

Day.	Wind.	Force.	Barom.		Therm.		Rain	Evap	Weather.
			a. m.	p. m.	Min.	Max.			
1	E.	4	29.93	29.88	39	44			Fair, dry, and windy
2	E.	3	.80	.66	42	47	.20		Fair a.m. rain
Su. 3	E.	1	.78	.72	44	52			Overcast
4	S. W.	2	.60	.68	48	55	.17		Rain early, fair, clear p.m.
5	W.	2	.61	.79	45	51	.05		Little rain, fair p.m.
6	N. W.	0	.81	.87	45	51			Fair, pleasant, <i>New M</i> 8a.m.
7	E.	2	.82	.79	42	51	.02		Overcast, little wet
8	S. E.	2	.83	.85	49	53			Cloudy, fair, and warm
9	S. E.	2	.70	.58	48	53			Fair and mild, cloudy
Su. 10	S. E.	1	.54	.30	49	54	.18		Very mild, cloudy, rainy
11	S. W.	1	.27	.45	49	56			Fair, very warm, clear p.m.
12	S. E.	0	.54	.69	41	56			Fair, very warm
13	N. E.	0	.83	30.01	42	51			Overcast, fairer evening
14	[S.]	1	30.11	.13	43	49	.01		Overcast, little wet evening
15	S. S. E.	1	.08	.01	48	53	.05		Overcast, fog,izzle
16	S. W.	1	29.93	.04	50	57			Fair, very warm, clear p.m.
Su. 17	S. W.	0	30.12	.13	46	57			Fair, very warm, wet eveng.
18	S. W.	1	.07	.04	50	57	.71		Heavy rain
19	S. W.	1	.06	29.97	44	52	.08		Very fine, rain evening
20	N. W.	1	.07	30.08	39	49			Very fine and clear
21	S. E.	2	29.66	29.80	35	46	.06		Showery, <i>Full M.</i> 2 a.m.
22	N. E.	1	30.00	30.21	35	46			Fair and clear
23	N. W.	1	.30	.31	32	48			Fair
Su. 24	S. W.	4	.21	29.82	33	43	.22		Rain, dark and cold
25	S. W.	5	29.73	.48	48	57			Fair, windy
26	W.	1	.41	.50	37	46	.42		Heavy rain a.m. fine day
27	S. E.	0	.52	.60	26	42			Sharp frost, fair, clear
28	S. E.	2	.67	.75	33	45			Fair, cloudy
29	E.	5	.53	.39	39	47	.51		Gale and rain
30	S. E.	0	.70	.76	42	49	.08		Fair, hazy
					26	57	2.68	0.19	

## RESULTS.

Barom. { Max. on 23rd . . . . .	30.31	Therm. { Max. on 16th, 17th, 18th & 25th 57 deg.	
{ Min. on 11th . . . . .	29.27	{ Min. on 27th . . . . .	
Range . . . . .	1.04	Range . . . . .	31
Mean . . . . .	29.79	Mean . . . . .	41.5

Wind S. E. and S. W. more than half the month. Rain, 2.68 inches. Evaporation .19 only. Fine days, 19.

\* Evaporation on 7 finest days between 1st and 16th, only .05 of an inch; and from 16th to 30th only .08, while on the 1st it was .06. Total 19.

## DECEMBER, 1839.

Day.	Wind.	Force.	Barom.		Therm.		Rain	Evap	Weather.
			a. m.	p. m.	Min.	Max.			
Su. 1	S. E.	0	29-82	29-90	31	47			Hoar frost, fair, clear
2	N. E.	0	30-00	.98	26	40			Sharp frost, foggy, fine
3	N. W.	0	.01	30-02	36	46	.04		Fair, cloudy
4	N.	0	29-93	29-96	31	42			Frost, fair, fog
5	N. W.	1	30-12	30-27	35	40			Foggy, fair, <i>New M.</i> 3 a.m.
6	N. W.	0	.42	.47	32	39			Fair and fog
7	S. E.	2	.45	.35	27	43			Fair, clearer
Su. 8	E.	2	.23	.12	34	36			Fair, cloudy, cold
9	N. E.	0	29-93	29-81	33	36			Overcast, little snow
10	E.	0	.74	.71	32	37			Overcast, little snow
11	S. E.	4	.72	.46	34	46	.10		Cloudy and some rain
12	S. E.	4	.50	.34	41	47	.13		Stormy with rain
13	S.	2	.42	.41	37	47			Fair, clear
14	S.	1	.36	.46	41	46	.08		Rain a. m. fair
Su. 15	S.W.	0	.65	.58	36	43			Fair, hazy, calm
16	N. W.	1	.70	30-09	37	42	.30		Rain early, fair
17	S. E.	2	30-20	.03	26	40	.01		Frost, sleet, cloudy
18	S. E.	4	29-70	29-53	35	39			Cloudy, cold wind
19	S.	1	.53	.52	37	49	.28		Rain a.m. fair, cloudy
20	S. W.	2	.41	.36	47	53	.47		Rain, mild, <i>Full M.</i> 1 p.m.
21	S. W.	2	.63	.58	43	51	.05		Fair, clear, mild, rain even.
Su. 22	S. W.	2	.60	.46	45	52	.15		Cloudy, mild, wet evening
23	S. W.	6	.58	.46	46	49	.13		Gale, fair, cloudy, wet even.
24	S. W.	5	.33	.38	47	56			Fair, windy, and warm
25	W.	1	.60	.72	42	46			Fair and clear
26	S. E.	1	.85	.56	30	40			Fair and frost, rain p.m.
27	N. W.	2	.35	.66	41	50	.26		Rainy, fair, cloudy
28	N. W.	1	.81	30-00	31	39			Fair, clear
Su. 29	N. W.	1	30-26	.43	30	37			Frost, fair, and clear
30	S. E.	0	.47	.34	25 $\frac{1}{2}$	37			Frost, fair, hazy, sleet
31	S.	2	29-99	29-82	34	46	.04		Fog, little wet
					25 $\frac{1}{2}$	56	2-04	0-19	

## RESULTS.

Barom.	{ Max. on 6th & 30th . . . . .	30-47	Therm.	{ Max. on 24th . . . . .	56 degrees
	{ Min. on 24th . . . . .	29-33		{ Min. on 30th . . . . .	25-5
Range	. . . . .	1-14	Range	. . . . .	30-5
Mean	. . . . .	29-90	Mean	. . . . .	40-75

Winds S. E., N. W. and S. W. Rain, 2-04 inches. Evaporation only .19 of an inch. Fine days, 20.

NOTES FOR THE YEAR 1839.

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## JANUARY.

1st, much sun p. m. the white ribbed cirrocumuli prevail. Very windy all night. 2nd, coppery cumuli looking like snow. To 4th at night, windy, chiefly fine and mild. 5th and 6th, frost, snow commenced 3 p.m. on 6th. During night, a violent gale from S. S. E. Barometer rapidly descending. 7th, tremendous hurricane from 3 a. m. veering from S. to W. S. W. and continued with unabated fury till near 7 a. m. Violent till noon. Strong all day. Fair with sun. Snow at night and gale at West. This storm was foreshewn by groups of cumuli on S. E. horizon in the evening of 5th, and strips of cirrostrati intersected their crowns as before summer-storms, and lightning played also among them. To depict the ravages of the storm on 7th, would occupy a volume! It was dreadful throughout England, Wales, Ireland, and part at least of Scotland, and abroad; nearly 200 lives were lost by sea and land in the North of England alone. At Liverpool and Manchester, almost every house was injured, and many people killed by falling chimneys or roofs. Numerous vessels, with cargoes to an enormous value lost. 177 houses blown or burnt down in Ireland, where the oldest man never before saw so dreadful a storm. A wind-mill was thrown down at Diss, Norfolk, and the flour driven in clouds across the fields. Many trees, chimneys, &c. throughout the Island were also thrown down! 8th, 9th, and 10th, severe frost, the 9th, very clear. Groups of cumuli in N. Lightning during evenings. To 14th, very mild. Undulated cirrostratus on 14th, like rows of small arches in N. altitude 45 degrees. Aurora borealis bright at eve. Again more so on 19th. Frost from 15th to 20th. 21st to 25th, stormy and unsettled, some frost. 26th to 28th, snow and frost. 29th to 31st, severe frost, with the thermometer 18 degrees for some hours on 30th. Great fall of snow on 29th and 31st. It was now 15 inches or more in depth. Large cumuli crossed by cirrostrati in the East on 31st, between snowy intervals, looking like summer clouds, although in real winter-weather.

On the whole, this was a seasonable period, but not so rigorous as the same month of last year. The great hurricane of the 6th and 7th, will, however, be as memorable as the severity of the preceding winter.

## FEBRUARY.

1st and 2nd, severe frost. 3rd, fog, thaw, frost at night. 4th, fog and thaw. 5th, heavy rain. 6th, 7th, and 8th, fogs and cloudiness. 9th, fair, mild, and pleasant. 10th, bright, very warm sun, and calm. A thermometer outside a South window at noon was 81 degrees; in shade North aspect 45 degrees, in East 49 degrees. 12th, the silver white cirrocumuli, finely divided into dots, speckling the sky, and cirrostrati also white. A flock of wild geese passed to N. W. in orderly flight, forming a V, soon after 8 a. m. 13th to 15th, fair and mild, with gales. The

ribbed cloud on 13th. 16th, exceedingly squally. 18th, frost and heavy snow, to the depth of 6 inches or more. 19th, sharp frost. 20th, a dismal day, overcast, snow, rain, fog, sleet, and hail intermingled, or in turns all day, with a sharp N. E. gale. Strong wind at N. E. all night. 21st, fair and drying. 22nd, snow a. m. Heavy rain p. m. 23rd, continued rain, and the vales inundated, fine eve, the white ribbed cirrocumuli seen. 24th and 25th, nimbi and hail. 27th, nimbi, hail, some thunder, a few miles N. W. 4 p. m. 28th, clear, fair, mild, and pleasant day.

A very turbulent and unpleasant month for the greater part, and some heavy rains at times.

#### APHORISM—ON TEMPERATURE.

It is not generally known what the effects of soil and situation are upon atmospheric heat. In one county, a great diversity of temperature exists on the same day, even in a day of uniform or general clearness. Variety of surface and soil, are the main agents of all this diversity of warmth. A flat, woodland, and clay, will prevent that collecting and rebounding of solar heat, which is found to prevail in chalky or light soils, and on gentle slopes to the South, or in places sheltered by hills to the East and North, as Ipswich is in part, and several other towns, whereas some are elevated and exposed to currents which absorb, or otherwise carry off the heat which would otherwise be as if inclosed by a reflector.

#### MARCH.

2nd, fair, warm and delightful, the primrose open. 3rd, a change, and to 13th, real winter prevailed. 9th and 10th, clear and calm, with violent severity of frost. Thermometer 17 degrees with us, and 15·5 at Redgrave, Suffolk.\* The chief clouds in this period were the large cirrostratus, of great length, or dense cumuli and nimbi. 16th, crocus, yellow and purple, in flower. 17th to 20th, variable, cumulus and nimbus frequent. 21st, cirrostratus and nimbus. 22nd and 23rd, cumuli and nimbi. 24th, small fleecy cumuli, cirri, and white cirrostrati. 4 p. m. the parallel ribs of white cirrocumuli in beautiful ranges. These extended from S. W. to N. E. 8 p. m. silvery cirrostrati by moon-light. 25th, nimbi, hail, and thunder. 26th, clear with cirrus. 28th, black nimbi, cirrostrati, and cumuli. 30th, cirri and cirrostrati in ranges from S. E. to N. W. 31st, flying cumuli, and large cirrostrati above them.

The remarkable severity of the early part of this month may long be remembered, but although the latter half proved stormy with some wet, the seed-time was fully made use of, as on the whole favourable for the field operations. The equinoctial gales occurred at their usual period, but the current soon burst again from the bitter N. E. or Siberian shores, so as to keep back the tender bud.

\* Here is an instance of diversity of temperature, proceeding from the situation of observation at Redgrave, being more elevated, and less inclosed than the site of my thermometer, at Thwaite, the difference being 1½ degrees, as shewn by the two instruments, and in my conclusive notes for 1838, the reader will find that the difference was 2 degrees on the hottest day of that year, but Redgrave then was the warmer of the two, it being a clearer day there.

## APRIL.

1st to 13th, sharp Easterly winds and dry weather, little snow at times. The prevailing clouds the cirrostratus, and brown or coppery cumuli. Vegetation at a stand. 5th to 8th, a great fall of snow in London, and some places near the metropolis. 10th, the yellow daffodil in flower this week past. 14th, a sensible change to warmth. 16th, very fine and warm, cirri and cirrostrati foreshew rain. Violets flower. 17th, growing showers. 20th, black nimbi and thunder in West. A tree at Great Saxonham, near Bury St. Edmund's, struck by lightning this afternoon, and literally riven into four equal parts. Whitethorn leafing fast. Cowslips in flower for some days. 21st, dense cumuli, and long horizontal cirrostrati. 25th, cuckoo sings. Horse-chesnut leafed. Ribbed cirrostrati, cumuli below, and long white strips of cirrostrati p. m. near S. W. and W. horizon. 26th, many currents combating. 27th, the same, sycamore in leaf. 28th, no cloud. 29th, lines of cirri in a train from S. W. to N. E. p. m. else clear. Cirrostrati at sun-set. 30th, no cloud till 11, afterwards many cumuli. A hot day.

Cowslips now in full flower.

## APHORISM—ON TEMPERATURE.

The Southern and Eastern parts of England are subject to the greatest summer-heat, and the West and North to the least. The Midland counties have a less annual range of thermometer than the other counties, and the Eastern are generally liable to the greatest range of the whole Island. When the thermometer is 85 degrees in Suffolk in a general day of fine-ness, it will rarely be above 82 degrees in Northamptonshire, and when in settled severity, it is 10 degrees in Suffolk, the Midland districts will seldom have it lower than 15 degrees. The Northern counties are proportionably less warm than the South-eastern, according to situation, soil, and surface. The winter cold is also greater in nearly the same proportion. The Midland cold may sometimes exceed that of the Eastern counties, but not very often.

## MAY.

1st to 5th, very fine and great heat for the season. The cirrocumuli prevailing, as is usual in hot weather. 5th, brilliant aurora borealis during night, yellow and crimson very distinctly waving to the zenith. 6th, cooler breeze. 7th, aurora again noticed 10 p. m. 8th, at 6 p. m. banks of cumuli on S. and S. W. horizon, intersected by strips of cirrostrati, and rising against the lower current.\* Much lightning and thunder at midnight with rain. 9th to 14th, cloudy with N. E. gales, and very ungenial. On the 10th, a remarkably cold and high wind blasted the trees. 15th, thunder-storm 2 p. m. 5 miles N. W. Lightning and thunder very severe. 16th, cirrocumuli foreshew a return of warmth. 20th, very hot day, many cumuli p. m. 21st to 26th, changeable. 27th, very hot as

\* May 8th, while I observed the above-noted clouds in S. a dreadful thunder-storm visited London from 10 p. m. for 6 hours! Torrents of rain fell there, with hail, and awful electrical discharges.

day advanced, small cumuli, whose heads were wrapped in white cirrostrati separately. To the 31st, fine and hot. On 31st, very hot and bright, yet a N. E. wind. Beautifully clear golden sun-sets on 29th and 31st.

Hawthorn in leaf April 16th, horse-chesnut 23rd, sycamore 27th, willow 28th, maple May 5th, poplar about the same time, oak 16th, ash and elm 19th and 20th, cowslip flowering April 30th, hawthorn May 24th.

The extraordinary change of weather to cold near the middle of this month, greatly checked the grass, so as to prevent there being a heavy hay-crop afterwards.

#### JUNE.

6th, heavy thunder-storm between 1 and .2 p. m. vivid lightning and snapping thunder. Some large hail. Several trees shattered, and a poor woman, at Bungay, struck dead. The storm was terrific there, and two houses were damaged. The rain fell in torrents. This was a very hot day, and the storm suddenly came on from the union of a group of cumuli in S. W. Much undulated cirrostrati on the previous evening. 12th, thermometer above 82 for some time to-day, and 116 in the sun. The round knotted cirrocumuli frequent now. 13th, extremely hot morning by 9 a. m. thermometer 75. A change soon after to cloudiness, a breeze from E. and thunder distant all the evening. 15th, a clear sunset. 17th, cirrocumuli, haziness followed in S. and lightning commenced at 9 p. m. increased and continued all the night, the whole sky in a complete blaze, each flash was tenfold or more, or compound, exhibiting many in one, and of every hue. The thunder violent in the extreme. Large black cirrostrati continued to pass to N. N. E. the storm coming on from S. S. E. Several trees were struck, and a colt killed on Mellis common, near us. This storm was almost general in England. 18th, extreme heat, and scattered cirrocumuli in beautiful forms. Dark cirrostrati p. m. thunder evening and night, and till 19th 8 a. m. all at a great distance. A barn burnt down near Norwich in a storm this morning. 20th, very bright and great heat. Thermometer on the ground in sun 122 degrees. During this evening, the knotted detachments of cirrocumuli prevailed, with cirrostrati, and all very black. 21st, 2 a. m. thunder-storm from S. E. to N. E. and passing very near us to the E. 3 parhelias at sun-rise, one above, and one on each side of the true sun, shewing the prismatic tints. 22nd and 23rd, gale and showers. 25th, night, 26th morning, thunder-storms about. To the 30th, unsettled, with rain and coolness.

On 20th evening, a great hail-storm at Harvington, Worcestershire, the hail attained a depth of 6 feet, doing immense damage. At Exeter, a mass of ice fell, four feet long, and two inches thick. 25th night, 92 sheep and lambs killed by lightning at Piddington, in Sussex, and next morning, Herts and Essex felt a dreadful storm. Several persons and trees injured, and at Chelmsford, a boy named Bush was killed.

#### JULY.

Between 1st and 6th, signs of thunder daily seen, many undulated cirrostrati, and on 6th, cirri of both kinds, fibrous and plumose, overspread the sky, a hot day. 7th, still very hot, cirri and cirrocumuli. Hazy p. m. became black at 7 p. m. A dense cirrostratus passed with immense

drops of rain. Dreadful thunder-storm general over all the East part of our Island through the night. Awful and continual lightning here from 9 p.m. till 2 a.m. the sky in one general flame on all sides, with astounding reports in quick succession. Two lives were lost, a man named Hayward, at Eye, Suffolk, and one named Polley, at Birch, Essex; the house of the latter being struck, as also two houses in Ipswich, Messrs. Bristol's and Tovell's, in Tacket-street, in that town. Many trees in all counties under the storm were struck, and a barn at Great Saxham, near Bury St. Edmunds. The scene was terrific wherever the storm was felt, and it surpassed all for many past years. A black body of vapour was seen depending from a cloud at the commencement of the storm, in and near the Metropolis. Large hail fell at Windsor, some flat pieces  $5\frac{1}{2}$  inches round one way, and 4 the other. I observed a fixed luminous body in the clouds Westward, at half-past 9 p.m. similar to a fiery aperture in the dark veil. 11th, ribbed and round cirrocumuli near sun-set, in ranges. 12th, thick beds of cirrostrati all the morning, little wet at 11 a.m. then bright, with cirrocumuli and cumuli. Rain 8 and 9 p.m. 13th, cumuli, cirri, and cirrostrati. 14th, sheets of cirrostratus with frequent rain. 17th, beautiful sky, dappled with cirrocumuli in lines from S.E. to N.W. so continued with some haziness all day, lightning began 9 p.m. 18th, severe thunder-storm 1 and 2 a.m. very black elliptical cirrostrati, with brilliant lightning, loud thunder and rain. A barn was struck and burnt down at Winston, Suffolk. 19th to 25th, changeable, and every modification of cloud, forming charming scenery. 26th to 31st, frequent showers, and many modifications above the nimbi.

## AUGUST.

1st, rapid rise of temperature. 2nd, continued increase of heat. 3rd, the sun-rise a pure carmine, clear sky, calm and brilliant day. Maximum thermometer in shade soon after 1 p.m. was 89 degrees in the sun, 4 feet above the sod on a plane board in open ground 144 degrees, and the temperature of water exposed to the sun in open space 3 feet elevated was 104! This was the hottest day for 13 years previous. 4th, thick beds of cirrocumuli, hazy, and close. 5th and 6th, chiefly clear, cumuli only at times. The bars of cirrocumuli in parallel ranges, white cirrostrati, and the round cirrocumuli on 6th. 7th, rainy. On this day in the evening, a violent thunder-storm in London, with hail, and torrents of rain. Two buildings ignited by the electric fluid. In Cheshire, at same time, a few light showers only, and in France and the Netherlands, a hail-storm, exceeding all in the memory of the inhabitants! Meteors observed much on 3rd, 9th, 10th, 11th, and 12th, and some other nights. A large one descended to S.E. at 10 p.m. on 3rd, and left a long train visible. Multitudes were visible here and elsewhere on 10th and 11th. I counted 16 in 15 minutes on 11th, and 1008 were noted in Prussia on the 10th night. 16th, violent thunder-storm in Cambridgeshire, a farming premises, with 54 coombs of corn were burnt by lightning at Quy, in that county, and at Nowton, near Bury St. Edmund's, Suffolk, much damage done by the storm. 19th, great fall of rain from 1 to 5 morning in these parts, with me '67 of an inch, and at Redgrave, 10 miles N.W. it was 1.26! This was observed there by my friend Thomas Pallant, Esq. A

dreadful thunder-storm passed over the county of Sussex, at 2 a.m. same day, and a house was literally shattered there, while the thunder was appalling in the extreme. 22nd to 30th, generally fine and hot. Beautiful sun-set on 23rd, a screen of cirri and cirrostrati kindled red. Cirrocumuli and black cumuli 9 p.m. A similar sun-set on 25th, and a beautiful cirri passed Eastward over-head, or across zenith near 7 p.m. like a long red flame from a point Westward. 27th, 8 and 9 p.m. vivid coruscations of aurora borealis of crimson hue in N.E. and flashing across zenith. 31st, a gale with rain from S.

#### SEPTEMBER.

1st, strong gales and violent thunder-storms. A boat near Bristol was upset in a squall, and eleven lives lost. Near us a horse struck dead by lightning at 2 p.m. On 3rd, nimbi and drenching storms with thunder. A perfect torrent at 5 p.m. 4th, brilliant aurora. 6th to 11th, very hot and fine. Continual beds of beautiful knotted and ribbed cirrocumulus. 11th night, remarkably sultry. On 14th, whirlwind in Yorkshire, with much damage. Trees wrenched asunder, their tops carried away to a great distance, earthenware whirled high in the air, from a wall where it was placed out-doors, while a woman was washing plates, &c. The water of a river raised in sheets into the air, and a man on horseback taken off his saddle by it! This was about noon. Stormy with us, and various clouds. A great rain with dreadful floods in Scotland on 14th and 15th of September, 1839. 15th, at sun-set, a sheet of cloud passed the zenith with the appearance of rolling volumes of smoke, and tinged yellow and red with setting sun. 16th to 20th, showers, and fine warm intervals, and beautiful varieties of cloud, from the cirrus down to the nimbus, beds of round cirrocumuli on 18th. On 20th, 8 a.m. a small white cirrostratus folding round a nimbus crown in S.W. I observed many of these on the 2nd also, in the same action. 21st, hard rain for six hours to 3 p.m. Red cirri at sun-set. 22nd, a splendid sky, all modifications but stratus. Cumulostratus in profusion all day and in all points, intersected by cirrostratus, while cumuli skimmed beneath the cirrus and cirrocumulus, and black nimbi completed the grand exhibition. Thunder in these at 5 p.m. (Exit of summer quarter.) 23rd and 24th, stratus a.m. Fine days. 25th to 30th, chiefly fine and very warm. The sky usually dotted by the white cirrocumulus in delightful order. These by moon-light on 25th, yielded a fine scene. 25th and 28th, charming sun-sets. The cirrocumulus and cirrostratus tinged with crimson and gold in the West.

#### OCTOBER.

1st, 2nd, and 3rd, very warm and fine. 2nd a.m. a most beautiful sky, covered with cirrocumulus and cirrostratus in dots, ribs, and festoons or undulations; those near the sun shewed the prismatic tints at 7 a.m. 4th, very heavy storms of warm rain till noon. Clear and hot p.m. Heavy storm again at 5. The sun to-day shone with the same effect as in the intervals of Midsummer showers, so far as regards our feelings. 5th, rainy a.m. 6th, 7th, and 8th, fine, warm and pleasant. 9th, 10th, and 11th, remarkably hot days, even true summer weather! A stratus passed off at 7 a.m. of the 9th. A bright day, the cirrocumulus in small dots prevailed. Near sun-set, much knotted cirrocumulus and other

summer clouds! Close and sultry night. 10th, many modifications and heavy local storms, or of small extent; lightning all night. 11th, extremely sultry, with silver white cirrocumulus and cirrostratus. Much lightning at night in many parts of the horizon; thunder, and black knotted clouds of great density. 12th, conjunction of Saturn and Mars now at hand, with similar clouds as yesterday. 13th, beautiful beds of knotted cirrocumulus, cumulus below. The former were impelled by a S. E. current, and the latter by a S. W. The wind chiefly South below. 14th, much cirrus ramifying about, followed by rain on 15th. 15th, 16th, the ribbed cirrocumulus in formal ranges across S. W. by moonlight, at 8 and 9 p. m. on each day. A high temperature to the 19th. 20th, clear and frosty morning, bright and warm day. 21st to 25th, very gloomy, calm, and clouded, the nights very warm. 26th to 28th, wind at N. E. with variations to N. and cold showers and hail, a prelude to winter. 29th, 30th, violent gale from E. N. E. and very cold, with excessive evaporation for the season, causing dusty roads! Much shipwreck and loss of many lives on our East coasts. 31st, very cold, with lead-coloured sky, clouded over as for snow, and the gale continues but with abatement. Cirrus in sheets appeared on 29th and 30th. The sun chiefly bright on those days. The trees retained their foliage late this season, ashes only at all stripped.

The earlier hay-harvest was obstructed this year, but a favourable time was experienced in July, and the crop was of a medium bulk. The corn-harvest commenced about August 9th, and those who were patient did well, and the crop was good for the greater part.

#### NOVEMBER.

1st, roads very dusty with drying wind till after 10 a. m. of the 2nd, when rain commenced. Rainy day, more or less. 3rd, a fog at times, overcast and nearly calm. The trees are still unusually thick in foliage, i. e. the elm, oak, and some others. 4th, a fine, sunny, and warm afternoon. The white cirrostratus in horizontal strips with fleecy cumulus. 5th, 6th, 7th, 8th, and 9th, mild and damp, much cirrostratus and stratus. Sheets of cirrus also on the 9th, and at sun-set a screen of cirrostratus, divided like the stripes of a mackerel, and at 6 and 7 p. m. these reaching the zenith, exhibited the black knotted clouds, similar to those before summer-thunder. A rise of temperature was the sequel. 11th to 16th, unusually warm. Several meteors on 11th night, and some on 12th. On this day, large cumuli, cirrostrati, and linear cirri, some of these were undulated, while others were like the feathered part of a goose-quill, others of the cirrostrati kind, were divided into finest dots of white, or spongy cirrus, wherein a parhelion appeared at 4 p. m. shewing the colours cast by the prism. Much stratus at times now for some days. 17th, a heavy rain during the night. White cirrocumulus, cirrostratus, and cirrus in handsome forms all white on 16th p. m. during bright sun, predicted this rain. The birds melodious every morning, about 8 a. m.! Outer coats not needed, and fires scarcely so, meanwhile a full-blossomed cowslip, and many opening flowers deck the parterre on my premises. 19th, much cirrus and cirrocumulus. 20th, purple haze on E. horizon 5 p. m. followed by a fall of temperature. 21st, cirrus, cirrostratus, cumulus, and

nimbi. 22nd, at sun-rise, cirrostrati tinged lake and gold. 23rd, the first frost! Great variety of clouds all this day. The cirrus, down to the cumulostratus in rich scenery. Beautiful sun-set. The cirrostratus in golden strips, and afterwards lake and purple, as usual, as the rays became refracted. 24th, dark and very wet, with blue haze, warmest during night. 25th, a fine and warm, yet windy day. 26th, a heavy rain early in the morning, and temperature lowered much since. The cumulostratus with bands of cirrostratus across, prevailing to-day. A very clear, calm, and cold night. 27th, a sharp frost, a thermometer on the grass-plat 23 degrees, while in usual place it was 26 degrees, beautiful sun-rise, cirri, and cirrostrati tinged lake and gold. Fine, clear day. 28th, fine with long cirrostrati. 29th, a very rough and wet day, with a gale from E. 30th, fine but very hazy. Calm night, and a stratus.

#### DECEMBER.

1st, a hoar frost, a stratus after sun-rise, but after 10 a. m. a very clear day, and a thermometer in full sun at 1 p. m. on a S. wall stood at 83 degrees, while that on the N. wall was 47 degrees. From 2nd to 10th, chiefly fine and calm, with cloudiness and rather cold. At this time a deep snow in the Northern and some Midland counties. Expresses now circulating relative to the prevalence of great floods during the close of November, and to the commencement of this month, from the continued rains of November in the South and West of England. In Shropshire, the Isle of Wight, and on the banks of the Thames, much injury was sustained from the inundations between Nov. 16th and 30th. In the two first-named parts, a land-slip occurred in consequence! 11th, damp and stormy. Maximum temperature at 9 p. m. 12th, hard rain p. m. 13th, sheets of plumose cirrus. 14th, much cirrostratus. 15th, a fine, calm winter's day, and much cirrostratus. 17th, a low cirrostratus over the marshes, exhibiting the tree-tops above it, and part of the landscape below it. 19th to 24th, stormy and very mild. 25th, very fine, and the cirrus prevalent. 27th, maximum temperature before sun-rise, which is contrary to usual circumstances. Maximum by day only 43 degrees. 28th, very fine, with undulated cirrostratus in fine white filaments. A singular cloud on the zenith at 2 p. m. representing waving streaks, which were evidently falling sleet. Clear, frosty night. 29th, very clear all day, frost a. m. Temperature on a South wall at 1 p. m. 67 degrees, in the shade 37 degrees. Very clear evening and night, stars very brilliant. 30th, hard white frost, and haziness came on after sun-rise. Very hazy afternoon. Sleet at 9 p. m. and wind rising from S. E. 31st, foggy, with some wet a. m. Milder again to-day, p. m. clearer with much divided cirrostratus and cirrocumulus of a dark hue.

December 2nd, at 7 p. m. a remarkably large fiery meteor passed over England, emitting a most brilliant glare of light, although thick clouds overspread the sky beneath its passage. So far as could be discerned, the apparent magnitude was that of the moon, but the cloudiness precluded much of its true appearance, and direction of its passage.

The wheat seed-time was generally favourable, except to those who delayed until the wet of November. The apple crop was great in some parts, but in others scanty.

## SUMMARY RESULTS FOR 1839.

Depth of rain, 21.27 inches. Fine days, 245. Prevalent winds the S. W. S. E. and N. W.

Hottest on Aug. 3rd, Therm. 89 degrees	Highest Barom. on Jan. 23rd . . . . .	30.61
Coldest on Jan. 30th . . . . 18	Lowest on January 7th . . . . .	28.98
And March 10th . . . . 17		

  

Range . . . . .	72	Range . . . . .	163
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Mean temperature of the year 1839, 49.84 degrees

## THE WEATHER OBSERVED AT CONGLETON, CHESHIRE, IN 1839.

ere the reader may perceive, by comparing the following with my tables, how far the N. W. side of England differs from the E.

MAY—23rd to 26th, very fine. 27th, very fine and hot. 28th, fine. 9th and 30th, very fine, hot. 31st, fine and very hot. Hence on the opposite coast the weather was very nearly like that experienced here.

JUNE—1st, fine and hot. 2nd, fine, cool night. 3rd, gentle rain. 4th, growing day, little rain night. 5th and 6th, fine. 7th, rain all day. 8th and 9th, fine and growing. 10th, rain. 11th, fine. 12th, cloudy, very sultry. 13th, wind and thunder-storm evening, after a high gale. 14th, rain evening. 15th and 16th, very fine. 17th, very hot, thunder, and black in S. E. evening. 18th, very hot, much rain in the evening with lightning, &c. 19th, another thunder-storm 5 a.m. fine day. 20th, fine and hot, a gale with heavy thunder-storms all the night. 21st, thunder-storm 8 p.m. Very hot from 17th to 22nd. 22nd, cool and cloudy, some rain. 23rd, windy, warm, and little rain. 24th, growing day. 25th, fine, warm, and sunny. 26th, warm, cloudy, little wet. 27th, warm, showery, and thunder. 28th and 29th, showery. 30th, fine.

JULY—1st, cool, cloudy a.m. clear p.m. 2nd, cloudy. 3rd, cloudy and sultry. 4th and 5th, fine and hot. 6th and 7th, the same, dark clouds, and distant thunder night. (Time of our great tempest.) 8th, windy, light rain. 9th, windy, and thunder-showers. 10th and 11th, cloudy, windy, and rain at times. (Compare this with our table and notes.) 12th and 13th, very fine. 13th, fine and hot. 14th, rain. 15th, showery. 16th, fine and bright. 17th, fine, shower and wind at night. 18th, wind and rainy. 19th, wind, rough, and little wet. 20th, light flying showers. 21st, cloudy, warm, and growing, few drops. 22nd and 23rd, fine. 24th, very hot and showers. 25th, fine. 26th, fine a.m. rain p.m. 27th, very wet. 28th, fine. 29th, fine a.m. rain p.m. 30th, fine, windy and wet night. 31st, windy and rain at times.

AUGUST—1st to 5th, fine and very hot. 6th, a little rain. 7th and 8th, showers. 9th and 10th, windy and showery. 11th, windy and some rain. These daily reports may well be compared with ours, to shew the

agreement of the different sites, the one being as near the West coast, or rather the N. W. as the other is to the E. 12th and 13th, fair. 14th, rain. 15th, sultry and wet. 16th and 17th, hot and little showers. 18th to 20th, showery and cooler. 21st, cool a.m. a fine day. 22nd and 23rd, fine. 24th, very sultry and rainy. (This day in Suffolk was very fine.) 25th and 26th, fine. 27th, showery. 28th to 30th, fine. 31st, showery.

**SEPTEMBER**—1st, showery. 2nd, ibid, heavy rain all night. 3rd, a wet day, wind S. W. to N.W. 4th, fine, wind S. W. 5th, showers S.W. 6th, very fine W. 7th, rainy and windy at S. W. heavy rain during night. 8th, fine and windy. 9th, sultry, fine a.m. rainy p.m. wind S.W. very wet night. 10th, very fine and hot, wind W. and N.W. 11th, heavy rain all day, and low situations inundated! The silk factories compelled to suspend their work on account of the water making an inroad to a great depth upon them! The wind at S. 12th and 13th, fine days but wet nights, wind S. W. 14th, very wet day and night, wind S. E. (This is nearly as with us.) 15th, showers S. 16th, heavy rain all day S. and S. E. 17th, fair a. m. a thunder-storm 4 p. m. W. and S. W. 18th, showery S. E. and E. to S. W. 19th, fine S. E. 20th, stormy, hail and heavy rain, thunder p. m. S. W. 21st, fine. 22nd, fine a. m. a storm of rain p. m. N. E. 23rd, fair a. m. little wet p. m. 24th and 25th, fine S. E. 26th, very fine E. to W. 27th, cloudy and windy at S. E. 28th, very rainy. 29th, fine. 30th, rainy a. m. fine p. m. S. E.

**OCTOBER**—1st, fine S. E. 2nd, very wet S. E. W. and N. W. 3rd, fine day, wet night S. E. 4th, rainy and windy S. E. 5th, fine N. W. 6th, very fine. 7th, frosty a.m. fine S.E. 8th and 9th, fine S.E. 10th, showers S. windy night. 11th to 14th, very fine S. E. frosty a. m. on 14th. 15th, foggy, little wet W. 16th and 17th, fine and warm S. E. to N. E. 18th, rainy p. m. N. 19th and 20th, fine S. E. 21st, overcast E. N. and S. E. 22nd, fair. 23rd, rainy. 24th, rain all day E. S. E. 25th to 28th, fine N. and N. E. 29th,izzle and cold wind at N. 30th and 31st, fine but a rough and cold wind from N. E. and E.

**NOVEMBER**—1st, 2nd, and 3rd, cold, windy at E. (like as in Suffolk.) 4th to 9th, fine N. W. to E. 10th, rain S. W. 11th, and 12th, fine S. to S. E. 13th, fog N. 14th to 20th, rain at times, wind Southward. 21st, rain N. 22nd and 23rd, fair E. 24th to 30th, stormy, S. W. to E. Snow on 26th and 28th.

**DECEMBER**—1st to 9th, chiefly fine, foggy and frost, E. and N. E. 10th and 11th, much snow, E. to S. E. 12th to 13th, stormy S. E. 14th to 21st, fine, S. E. to E. To 31st, variable. Snow on 28th, wind E.

In the Northern counties the latter part of this year, even from the middle of the summer, was rainy for the greater part, and less favourable to the harvest than in the Eastern counties; and indeed in every year, as before argued, our Eastern districts are the driest, but here we depend on agriculture, while there the mines are the source of wealth. Hence let us be grateful to God, that we, who need fine seasons, enjoy them in greater proportion and in every clime and season. Hallowed be His name.

## APPENDIX TO THE CLIMATE OF ENGLAND.

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THE year 1840, which, at the time of the publication of this volume, has scarcely fled from us, has been remarkable for many unusual phenomena; so much so, that the author humbly begs the reader to accept this apparently unnecessary addition, as he feels compelled to note down a few remarks thereupon, as also to offer a table of the daily maxima of temperature during the several hot and dry periods experienced in the Eastern counties in the spring and summer of this memorable year,

1840.

The succeeding tables will furnish the reader with the highest state of the thermometer as daily noted at Thwaite, by the author in the said time, and will serve to shew that the season was unusually warm, at least in these parts of our island, for a long period. In consequence of the early warmth, the hedges and trees put on their verdure sooner than the author ever before noted; the hawthorn which usually opens its blossom about May 20th, but in 1837 was not open till June 5th, was in 1840 expanded on April 28th! This is even earlier than in 1822. Every tree, even to the oak and ash, became green by April 30th, 1840, a cloudless sky having for some weeks hastened up the sap from its dormant state.

*A Table of the Hot Weather of 1840, with the State of Wind and Thermometer during the time.*

1840.	Wind.	Therm. highest.	1840.	Wind.	Therm. highest.	1840.	Wind.	Therm. highest
April 15 16 17 18 Su. 19 20 21 22 23 24	S.	72	June 8 9 10 11 12 13 Su. 14 15 16 17	S. S. E.	77 70 73 75½ 73 70 S. W.	Aug. 1 Su. 2 3 4 5 6 7 8 9 10	W.	77
	N. E.	73		S. W.	73		W.	84
	E.	62½		S. W.	75½		Var.	85
	N. E.	67		S. W.	73		E.	85½
	N.	67		N. W.	70		7.	77
	N. W.	70		S. W.	77		E. S. E.	80
	W.	67		S. W.	76		E.	81
	N. W.	67		S. W.	78		N. E.	79
	S. W.	75		S. W.	72		N. E.	83
	S.	74		W. S. W.	72		S.	86
Su. 25 26 27 28 29 30	S. E.	79		W.	72	Su. 9 10 12 13 14 15 16 19 20 21	W.	74
	N. W.	80		S. S. W.	75		S. W.	72
	E.	74		S. S. W.	75		S. W.	74
	S. E.	79½		N. W.	73		S. E.	70
	N. W.	79		N. W.	72		S. W.	76
	N.	75		S. W.	73		S. E.	81
							S. W.	82
							S. W.	76
							S.	78
							S. W.	78
May 1 2 Su. 3 4 5 28 29 30 Su. 31	N. E.	70	July 14 15 16 17 18 Su. 19 20 21 22 27	W. N. W.	77	Su. 23 24 25 26 27 28 29 Su. 30 31	W.	79
	E.	74		S. W.	79		S. W.	76
	E. N. E.	73		S. W.	77		S.	78
	E.	66		W.	72		S. W.	78
	E.	72		W.	70		W.	79
	S. W.	75		S. W.	73½		S. W.	74
	N. W.	72		S. W.	71		W.	83
	W. S. W.	73		S. W.	75		S. E.	78
	W. S. W.	77		W. N. W.	72		S. E.	84
				N. W.	73		N. E.	77
June 1	S. W.	82	28	S. W.	73			
2	N. W.	77	29	N. W.	82	Sept. 1 2	E.	82
7	W. S. W.	75	30	S. W.	78		S. S. E.	84
			31	N. W.	73			

## NOTES FOR THE YEAR 1840.

This year having produced several extraordinary characters, it is scarcely fair that a writer on our climate should exclude the notice of them in offering his observations to the public, relative to previous years. Hence, in closing this work, the author appends the foregoing table with annexed remarks as follow.

From February 11th to May 7th, an unusual drought prevailed, with a succession of great summer-heat in April, as shewn by the table here. Again, from the latter part of May till September commenced, or till the time this went to press, a protracted season of drought was experienced in the Eastern and Southern counties; and, as the same table shews, the heat was very great from July 14th to September 2nd, with very little intermission! During the whole period represented in the foregoing columns for 1840, it will be found that 16 days produced a temperature of 80 degrees and far above; 11 of these occurred in August, which month also contained 14 other days from 71 degrees to 79 degrees! On the 3rd, 4th, 10th, and 30th, and on September 1st, a thermometer in full sun elevated 4 feet on a plane board, was from 132 degrees to 143 degrees! Water at 3 feet elevation became heated to 100 degrees during this hot season; and finally, so great heat in such succession has not been known for many years!

Pasture lands were quite seared, and the scarcity of water became alarming.

	INCHES.		INC ES.	DEG.
April, 1840, rain .....	0·08	Evaporation	4·01	Mean temperature 52
May .....	2·24	.....	3·35	..... 56
June .....	0·83	.....	3·88	..... 62
July .....	1·22	.....	3·66	..... 62
August .....	0·94	.....	5·16	..... 66
Total .....	5·31	Total ..	20·06	

Hence we see that the evaporation was near four times that of precipitation, whereby the grass and waters have shewn the effect so strongly during the time. The mean monthly temperature is above given in whole numbers, as the decimals found on casting up the journal were but trivial.

The mean for August was unusually great!

## CONCLUSION.

### COMMON RULES TO BE OBSERVED BY THE FARMER.

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1. The action of different kinds of clouds must be regarded by those interested in the weather, as farmers more particularly are. For the indication of clouds, see chap. 8, p. 26.
  2. The variations of barometer and thermometer must be noticed several times daily, and if recorded, these would still more tend to assist in pre-judging. See the tables in this work, and how attended. The study of the past will open the future.
  3. When barometer and thermometer both rise together in summer, it is safe to go on with hay or corn harvest.
  4. When the nights become very warm in summer, and the sky covered by dark clouds, threatening rain, yet with a rising barometer, great calmness, and the minute black fly tickles the face, or swarms on the inside walls of our houses, depend on a course of bright and very hot weather being near.
  5. The sun setting in pure sky, and full splendour, denotes a very clear and hot day to follow.
  6. Pink and purple haze opposite to the setting sun, indicates a dewy or frosty night according to season.
  7. A very low barometer in winter foretells mildness and high wind. In summer, galy weather.
  8. Barometer rising much in winter, predicts calm and frost. In summer fine serene weather.
  9. Barometer rising long during rain is the best proof of fine weather being about establishing. Falling long in fine weather, a proof of much wet.
  10. Many gales and showers from the Westward in the middle of March, foreshew a wet summer, and other winds at that time usually precede drought.
  11. A long course of East wind in autumn will be succeeded by a severe winter, and the same wind in spring generally brings a dry summer.
  12. Sudden falls of barometer in hot weather, and the little round white clouds, like flocks of sheep, in the zenith, indicate thunder-storm, especially if the wind be blowing from East or South East.
- N. B. In perusing the monthly notes for each year, if the reader refer to chap. 8, page 26, the terms used for specifying the clouds will be explained to him.

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### ERRATA.

- Page 1, line 12, omit the word "first."
- 7, — 11 from the bottom, for "arrival," read arrival.  
 43, — 5 from the bottom, for "table," read notes.  
 50, — at bottom, after mean of the eight, read 25·57.  
 68, — 8, for "crusher," read crashes.  
 99, April 1832, line 4, for "himisphere," read Hemisphere.

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