

SYMONS'S MONTHLY METEOROLOGICAL MAGAZINE.

CXXIV.]

MAY, 1876.

[PRICE FOURPENCE,
or 6s. per ann. post free.

EASTER AT THE SORBONNE.

PERHAPS some day it may come to pass that our University men may adopt the practice of an occasional return to College *not* as at present, chiefly for political purposes, but to discuss the results which they have attained in the various branches of research to which they have devoted themselves. Such a scheme reads like a Utopian dream when dressed in English language, and yet such (or something closely resembling such) a scheme has for many years been adopted in France. As regularly as Easter returns are the halls of the venerable Sorbonne filled, and is its great quadrangle dotted, with hundreds of *savants* gathered from even the remotest parts of France. And what has drawn them together? Certainly not politics. Probably, as in most things, the motives are mixed. (1) Nearly one hundred of them had forwarded memoirs to be read and discussed at the meetings, and doubtless the authors are as anxious as Englishmen would be to be present at the reading of their own papers. (2) There is an equally natural liking to hear the results which one's old comrades have obtained, and generally to stimulate the provincial brain, by contact with other labourers in the same field, and by a brief residence in the centre of French culture. (3) Superadded to the foregoing is the opportunity of that which, though it may be but "talk," is in many cases of immense importance; to quote but one illustration: Two men, A and B, meet; B mentions casually that he is thinking of trying certain experiments; A immediately says, "Oh, do not try them in that form, I did that five years ago and it failed, you would only waste your time, but try them in another form," which A forthwith describes to B. This is but "talk," but five minutes of such talk will often save weeks and even months of toil.

Before passing to our subject, we cannot refrain from stating that we believe that few persons realize the proportion of brain power wasted by duplicate and triplicate work. It would probably be one of the greatest benefits which could be conferred on scientific men, if there were any means by which they could ascertain what had been done before. The matter is, however, too important to be mentioned casually and buried in the middle of an article.

In the present and a subsequent article we purpose giving a general sketch of the proceedings of the recent meetings, but confining our notice of papers to those closely restricted to the domain of this publication.

The first meeting was a general one, presided over by M. Léopold Delisle, from the report of whose inaugural speech in the *Journal Officiel* we translate (or epitomise) the opening paragraph:—

“GENTLEMEN,—An experience of nearly fifteen years has indicated the object which the founders had in establishing the meeting to which the Minister of Public Instruction yearly invites the delegates of the learned societies of the Departments. Their utility is no longer questioned by anyone, and the forebodings to which they gave rise in certain quarters, are, little by little, vanishing away. Year by year their beneficial influence is more fully recognized; the members of the learned societies, whether they devote themselves to philology, history, archæology, or the mathematical, physical, or natural sciences, are now convinced that it is to their own interest to communicate their discoveries, and to stimulate a criticism which, by removing difficulties, and determining the progress actually made, is most beneficial to the advancement of their researches.”

M. Hébert, President of the Meteorological Committee of Limoges, read a paper upon the method adopted in la Haute Vienne, for the Agricultural Warning Service. At twenty-nine stations aneroid barometers have been established, and so placed as to be visible to the public. Each instrument is accompanied by a table of instructions, and forms, for the entry of the observations and for the publication of the weather expected. Rain gauges are also placed at the same stations. The telegraphic department allows all meteorological messages to go free, and therefore the despatches received from the central observatory are transmitted to all the stations, modified if necessary in accordance with the latest local observations.

M. Le Verrier desired meteorologists to consider the best mode of organizing the Agricultural Warning Service. He reminded them that France was the first country to organize storm warnings for the sea coast, and that now the majority of the storms passing over France are announced 24 hours in advance. Agricultural Warnings are, however, different; there are the differences due to the physical features of the district, and therefore it was desirable that observers should consult together as to the method to be adopted.

M. Poincarré, of Bar-le-Duc, gave a summary of his observations during 10 years.

M. le Dr. De Pietra Santa, after enunciating the principles which ought to regulate the modern study of climatology, stated that the winter resort of Ajaccio (Corsica), enjoyed a mild marine climate, intermediate between that of Algiers and that of the Mediterranean coast. The characteristics which he had assigned to Ajaccio in 1862 had been confirmed by 12 years' observations with instruments verified at the Observatory of Paris. The leading features are: great atmo-

spheric purity and uniformity, regularity in seasonal changes, slight barometric oscillation, mean annual temperature 63°·6, mean winter temperature 57°·2.

Among other papers read, or taken as read (they will all be published in the annual volume) were the following :—

Prof. Auzillion.—Discussion of observations of storms in 1875, in l'Herault.

M. L. Besnou.—On the importance of uniformity in the construction of barometers.

Prof. Lespiault.—The hailstorms of July 20 and 21, 1874.—Influence of the configuration of the country.

Prof. Raulin.—On the distribution of rain in the south temperate zone.

A paper was also announced by *M. Valada*, Professor of Rhetoric at the Lyceum of Roche-sur-Yon, with the rather sensational title, "Taches du soleil et localisation des atmosphères. Découverte d'un grand phénomène météorologique inconnu jusqu' à ce jour." Unfortunately we did not hear this paper read, and we have not been able to find any report of it in any of the French journals, so the great meteorological phenomenon must remain a little longer unknown.

(To be continued.)

SNOWSTORM ON APRIL 13TH.

Irrespective altogether of the time of year, the fall of snow on the above date was unusual, for it seems to have averaged nearly a foot, over several of the Midland counties. We have, therefore, much pleasure in giving the following ample notes upon the subject, in addition to those of our regular correspondents on pages 62—64.

SIR,—The snowstorm which has just ceased, must be, for the time of year, of almost unprecedented violence; at all events, I can find no record of anything like it in the 15 years during which I have taken observations.

The storm commenced about 5 a.m. yesterday, the 13th, and lasted with great violence till 7.30 a.m., by which time 4 in. of snow had fallen. The amount yielded by the rain gauge was ·32 in. Slight showers of snow fell at intervals till 4.30 p.m., when the storm recommenced, and continued with more or less violence till 8 a.m. this morning, when the ground was covered to a depth varying from 2 to 6 inches. The yield in the gauge was ·32 in., or equivalent to only about 4 inches of snow, owing, no doubt, to the high wind which prevailed throughout the storm.—Yours truly,

THOS. PAULIN.

Enfield, 14th April, 1876.

SIR,—A large portion of St. Catherine's Down, the highest point in this island, is covered with snow. Maximum temp. to-day about 40½°; very high wind from the N. W.; frequent snow showers.—Truly yours,

E. G. ALDRIDGE.

Alma House, Newport, Isle of Wight, 18th April, 1876.

SIR,—The snowstorm of Thursday night was marked by one circumstance which I have never witnessed before, though it may not be uncommon. It was this :—

On Friday morning I observed that for a considerable distance, and following a

regular line, the lawn, to leeward of the house, was strewn with masses of snow like boulders, varying from the size of a snowball, to a cubic foot at least, and as the snow melted a track either straight or curved led up to the large ones, following, apparently, the direction of the wind. I had observed before dusk that the eddies of the wind and the swirls of the snow were very marked, and I have since heard from a friend who observed the same thing, that he saw the snow rolled along by the wind, and forming masses such as I have described.

As I have said, I know not whether this has been observed in other cases, and perhaps it may interest you to have this account of it.—Yours faithfully,

F. WM. GREY.

Lynwood, Sunningdale, Staines, April 16th.

[We believe that this is the first instance recorded of the formation of "Snow Rollers" in England. They have been frequently observed at Sandwick in Orkney where Dr. Clouston has described them as cylinders resembling ladies' white muffs.—Ed.]

SIR,—Again has the oldest inhabitant been put in requisition, and he never saw such a fall of snow since 1813 as we had last Thursday. In the middle of April, *mirabile dictu*, except by rail, and the high road from London to Bedford, we have been entirely cut off from communication with the neighbouring villages. It commenced snowing in earnest about 2 p.m. on Thursday, and kept on all night, accompanied by a furious N. gale, all the conditions being precisely as in the case of the fall about five Sundays ago, except that the barometer which on the Sunday snowstorm was 28·37, last Thursday was 29·37. At about 7 o'clock on Thursday, all people leaving here by the two roads to the west, had to abandon the attempt, and carts, flies, &c., were left in the snowdrifts until yesterday. The doctor could not get to my farm, a mile from here. Another doctor summoned to a deathbed could not get to his patient until yesterday, when gangs of men succeeded in hewing a road through the snow, along which I walked yesterday afternoon for nearly a mile, the drift in some places being 6 feet deep. I fancy this fall has been very local, and has followed the valley of the Ouse. It has done frightful damage to evergreens and plantations. It does not show much in the rain gauge, as no doubt it thawed as it fell, but I can vouch for it being a foot deep on Good Friday morning where it had not drifted.—Yours truly,

W. LUCAS.

A fly-driver left his vehicle in a snowdrift about a mile from this, at a place called Offley Cross, and when they went in search of it, it was invisible—entirely hidden in the snow.

The Firs, Hitchin, Sunday, April 23rd.

SIR,—The weather during the last four days has been so extraordinary that I send you a few notes, showing what we have experienced here.

Date.	Wind.		Thermometers on stand 4 ft.				Ther. on grass	Snow.
	9 a.m.	5 p.m.	9 a.m.	2 p.m.	max.	min.		
April 11 ...	W.	W. N. W.	41·5	45·8	46·5	32·0	25·0	0·05
12 ...	N. W.	N. W.	35·0	37·2	42·5	28·8	22·0	0·25
13 ...	N. W.	N.	34·5	31·5	35·5	31·5	22·0	0·48
14 ...	N. N. E.	N. N. E.	34·5	36·5	41·5	31·0	28·0	0·04
15 ...	N. E.	...	41·0	...	...	32·0	29·0	...

* 5 in. rain gauge, 6 in. above ground.

REMARKS.

11th.—Thick snow and hail storms in the afternoon; cold and high wind.

12th.—Very cold. Sharp snowstorms at times all day; country quite white after some of them. In the night wind turned to S.E., with heavy snow.

13th.—Snow about 1½ in. thick, though thawing. The wind very soon turned to the N. and became very high, and it was bitterly cold, with fine snow falling nearly all day till 6 p.m. ; snow much drifted in places. Quite a gale blowing in the night.

14th.—Gale, and thick snow 6 to 9 a.m., after which it became less, and ceased about 11 a.m. ; the wind also went down considerably, and a rapid thaw set in. The road near our house is impassable for carriages, the drifts being in many places 3 feet deep, right across the road.—Yours truly,

EDWARD C. MORRELL.

Broughton Lodge, Banbury, April 15th, 1876.

SIR,—I have to report a heavy snowstorm here this morning. It began about 4.30, and at 9 o'clock the snow was 4½ inches deep on the level, and yielded 0.445 in. of water in the rain gauge. At 9 o'clock last night a snowstorm (4 in. deep) was reported as having occurred at Lynn, but the sky was then clear and the stars were bright here.

S. H. MILLER.

Wisbeach, 13th April, 1876.

SIR,—I must send you a note of the very remarkable weather we had at the end of the last week. Not to speak of the very singularly strong contrast with the very mild weather of the preceding week, the variations during the days themselves were most remarkable.

On Thursday, April 13th, the ground was covered with a sheet of snow 6 inches in depth ; it snowed incessantly the whole day long, but the quantity of snow had certainly diminished before the evening. Total yield, 2.08 in.

On Friday, the ground was wetter than I ever saw it, the roads were running streams, and all the low-lying land was under water.

On Saturday the roads were perfectly dry, and there remained only a few pools here and there on the meadows.

On Thursday, 9 a.m., the min. ther. marked 23°·6 ; the max. in the evening, only reached 32°·6. I do not think such coarse weather was ever before witnessed so late in the season.—I am, yours truly,

HENRY FFOLKES.

Hillington Rectory, Norfolk, April 18th, 1876.

SIR,—Though I am overwhelmed with parish work I must find time to send you a few notes of this extraordinary weather. We woke up this morning to find snow on the ground to the depth of 9 inches on the level ! We had a heavy storm, which lasted several hours, on Tuesday morning (11th), and a lighter fall early yesterday morning (12th), the ground on both occasions remaining covered *generally* till the afternoon, while the snow lingered in sheltered spots till night ; but the fall of to-day has been far beyond anything we have experienced this winter—for winter it is still, whatever the almanac may say. By 1 p.m. the depth of the snow had diminished, under the influence of wind and occasional sunshine, to 6 inches ; but we have just (2 p.m.) had another heavy snow-shower, and the appearance of the sky is still very threatening.

Ther. 36°, Wind N.E.—Yours truly,

GEORGE T. RYVES.

Tean Vicarage, Cheadle, Stoke-on-Trent, April 13th, 1876.

Readings of Thermometer at Tean Vicarage, Cheadle, Staffordshire.

	9 a.m.	Ther. in Glaisher stand.			mean.	On grass.
		9 p.m.	max.	min.		
April 10th	47°	34°	50°	34°·0'	41°·2	—
11th	33	32	42	29·0	34·0	31
12th	35	32	43	22·5	33·1	27*

* Ther. on grass covered with snow.

We have had a tremendous fall of snow. Taking several measurements this

morning, I found the average depth 8 inches, which had fallen since midnight. Snow has been falling most of the day, but a considerable quantity is melted now. Wind N.E.

H. BILLSON.

Leicester, 13th April, 1876, 7 p.m.

SIR,—It would be well perhaps for me to give you at once a few notes with respect to the extraordinary weather we have had during the last week. On Saturday, April 8th, the thermometer stood at 64°·5 in the shade, with a cloudless sky and a S.W. wind; it was like the beginning of summer; the bar., however, commenced to fall, and continued to do so until, during Monday, April 10th, it fell as low as 28·85 (uncorrected). The temp. also decreased, and after a heavy fall of rain (0·53 in.) on Monday, we had a day of mixed snow and rain on Tuesday, and a bitterly cold wind on Wednesday (W.N.W. at 9 a.m.), and on Thursday we woke to find more than 10 inches of snow on the ground, the greater part of which had fallen since 3 a.m. The max. temp. this day (13th) was 34°·5, showing a range of 30° in five days. During the whole of Thursday it snowed heavily, but the wind also became very high, and although in some places the snow melted, in others the drifts became very deep and the roads blocked, so that they were utterly impassable by vehicles, and almost so by foot passengers; in fact I found great difficulty in reaching a sick parishioner. Even yesterday (April 16th) some of the roads were still impassable on account of the depth of snow, notwithstanding the sun and thaw of Friday afternoon, Saturday and Sunday. Such a snow at so late a period in the year is not remembered by any inhabitant of this place.

Yours faithfully,

A. M. RENDELL.

Coston Rectory, Melton Mowbray, April 17th, 1876.

SIR,—I was obliged to leave home on the 10th of April, and returned on the 17th. During my absence the rain is measured by my gardener, who is a remarkably intelligent, careful man. On the 12th and 13th we had a most remarkable fall of snow; on 13th, I am told, it was from 2 to 3 ft. deep where it had not drifted. When I came home on 17th, it was still very deep in many places. My gardener says he carefully measured the snow (which had not drifted where the gauge was), and he made it equal to—on 12th, 1·00 in.; on 13th, 4·25 in. of rain.

He declares that there could be no mistake, but it seems to me to be almost impossible; at least, I never remember anything like it before.

I send you the return for April here.—I am, yours truly,

C. O. EATON.

Tolethorpe Hall, Stamford, May 1st.

P.S.—We have another large flood, making, I believe, the twelfth since last July.

April 1	in.	April 21	in.
„ 10	·03	„ 22	·10
„ 11	·39	„ 23	·12
„ 12 (snow)	·02	„ 24	·03
„ 13 (snow)	1·00	„ 25	·14
„ 14 (snow)	4·25	„ 26	·11
„ 15	·04	„ 27	·01
„ 16	·06	„ 28	·26
„ 17	·06	„ 29	·96
„ 18	·03		
„ 19	·08		
„ 20			
		Total...	7·69

SIR,—I take the liberty of writing to you respecting this week's snow storm. On Thursday, 13th inst., at 9 a.m., the snow on the level measured from 9 to 9½ inches deep. After that, owing to drifting, it was impossible to arrive at the true depth, but I imagine if there had been no wind the depth of snow would have been upwards of a foot. It was the heaviest fall I ever remember to have seen

(say embracing a period of 35 years); the nearest approach to it was in Suffolk, January, 1861, when the fall on the level was from 11 to 11½ inches.

I had no service yesterday owing to the snow. The baker has just informed me that this morning he was unable to reach a neighbouring village owing to the snow drifts.—I remain, Sir, your obedient servant,

J. S. SWIFT.

Thorpe Arnold, Melton Mowbray, April 15th, 1876.

P.S. None of the rural postmen were able to leave Melton Mowbray yesterday morning (Friday), with the exception of the Thorpe Arnold man, who told me that he was over knee deep in several places. Thorpe is distant from Melton a mile and a half.

SIR,—I send you an extract of the temperature from my Meteorological Register for the six days—11th to 16th April :—

Date.	Min.	.....	Max.	Date.	Min.	.....	Max.
April 11	32°	.....	43°	April 14	32°	.....	44°
„ 12	30	.....	44	„ 15	32	.....	50
„ 13	29	.....	37	„ 16	31	.....	50

The mean temperature of the period was 37°·8. The 13th and 14th will long be remembered for one of the most violent snowstorms that has visited this country for many years; whilst anything approaching such a storm in April cannot be remembered by the oldest persons. The snow commenced about 3 a.m. on 13th, and lasted 1½ hours without intermission. The wind began to blow strongly about 11 a.m., and continued to gather strength during the remainder of the day and night, and about midnight of 13–14th snow again began to fall heavily, and continued to 7 a.m. of 14th, accompanied the whole time by a hurricane of wind from N.E., which drifted the snow on the brows of some of the Wold hills to a depth of not less than 15 feet. The amount collected by the gauge was only 0·65 inch, but judging from the height of the flood there could not have been less than 1 inch of rain. I compute the depth of snow fallen to be twelve or thirteen inches.—Yours truly,

WILLIAM CARTER.

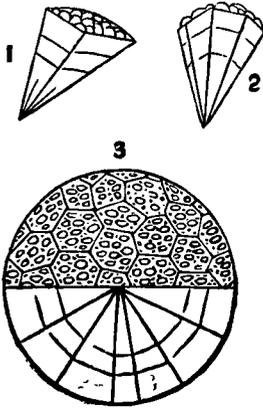
Bucknall, Horncastle, 1st May, 1876.

HAILSTORM AT LEAMINGTON.

To the Editor of the Meteorological Magazine.

SIR,—I beg to send you the accompanying memoranda respecting the heavy fall of hail at Leamington, on the afternoon of March 31st last, which I had the opportunity of witnessing, when present there for a few days. The hail fell from a thick heavy nimbus, coming from the S.E., while the sun in the W. was not obscured. It fell thickly for about 20 minutes, with much noise, both in the air, and from the roofs and trees, and splashed the river considerably on the surface. Everybody ran into shelter, as well they might, considering the size of the stones, which were as big as pebbles, angular, and pointed. They appeared to be shaped like pyramids, with points, and convex bases, studded with tubercles, and had plain sides, either square, pentagonal, or hexagonal. They would have probably belonged to complete spheres, when their sides were adjusted together, and which would have been about 1¼ in. in diameter, and these segments were, therefore, about ½ in. long. They were of crystalline ice, with concentric bands, and probably the perfect pyramids weighed from 10 to 20 grains, and, as 24 might

be estimated to make up a sphere, this, at the least, might have been half-an-ounce in weight, and at the most about one ounce. As they were tuberculated on the convex bases, the whole sphere would have looked very much like a raspberry, or an oxalate of lime calculus. These spheres of ice must have burst, or become split up into segments somewhere in the fall through the air, as none were actually found perfect on the grass in the gardens. The primitive spheres must have



- 1.—Pyramid with square base.
- 2.—Pyramid with hexagonal base.
- 3.—Perfect sphere, with lower half in section to show fragments.

been formed at great elevations, to have allowed of such a large accretion of ice from the original snow in the clouds.

The damage at Leamington, as may be supposed, was considerable in glass, plants, and blossoms, but it was fortunately only of a local character.

W. T. BLACK.

2, George Square, Edinburgh, April 23rd, 1876.

[In Vol. II., p. 30, of this Magazine, and in other places, these pyramidal hailstones have been figured, but to the best of our knowledge, Mr. Black is the first to suggest that they are fragments of spheres. The nearest approach to it which we remember, was the remark by Mr. Prince (*Meteorological Magazine*, Vol. VIII., p. 43)—“The balls were about the size of ordinary marbles. . . . They were very light, and broke into fragments upon the slightest touch.” Is Mr. Black’s theory to be accepted? because, if so, surely they ought to have fallen with great impetus.]—Ed.

THE GREAT CHANGES OF WEATHER IN APRIL.

To the Editor of the Meteorological Magazine.

SIR,—I do not know what kind of summer is prognosticated by the weather prophets this year. I desire to bring before the notice of the readers of your Magazine, the remarkable *similarity* of the changes in weather of the *two Aprils*, 1859 and 1876. In 1859, the temperature on the 1st was, in many parts of England, 8° below the freezing point,

followed by a heat of 75° in the shade on the 6th and 7th, succeeded once more by extreme cold, snow showers falling in Cambridge at mid-day on the 16th. This weather in April, 1859, preceded a remarkable fine and hot *July*.—Yours truly,

G. WARREN.

Merton Villa, Cambridge, May 4th.

FALL OF A METEORITE IN SHROPSHIRE.

To the Editor of the Meteorological Magazine.

SIR,—I enclose a cutting from our local newspaper, containing an account of the fall of a meteorite. However interesting it may be to read of these wonderful phenomena, and however sure we may feel of their genuineness, it is very gratifying to have an occurrence of the kind in one's own neighbourhood. I may say that all the parties named are so well known and so highly respectable, that the correctness of every detail in the account may be implicitly relied upon.

The very peculiar noise accompanying the fall was distinctly heard, and commented upon here, 7 miles off, by a party of cricketers, and others who happened to be away from the noise of the town. The piece of metal weighs 7½ lbs., is of very irregular shape, quite smooth, the angles rounded. As I looked upon it, I tried to realize the idea that I held in my hand a substance which had, a few hours previously, and probably for ages before, been whirling through space with planetary velocity.—Yours very truly.

JOHN THRUSTANS.

Merridale, Wolverhampton, April 26th, 1876.

STARTLING OCCURRENCE NEAR WELLINGTON.—FALL OF A METEORITE.

Great consternation has been caused amongst the villagers within a seven-mile radius of the Wrekin, by a phenomenon which occurred in that locality on Thursday afternoon. About twenty minutes to four o'clock, a strange rumbling noise was heard in the atmosphere, followed almost instantaneously by a startling explosion, resembling a discharge of heavy artillery. There was neither lightning nor thunder, but rain was falling heavily, the sky being obscured with dark clouds for some time, both before and after the incident narrated. About an hour after the explosion, Mr. George Brooks, step-son of Mr. Bayley, had occasion to go to a turf field in his occupation, adjoining the Wellington and Market Drayton Railway, about a mile north of Crudgington Station, and seven miles north of the Wrekin, when his attention was attracted to a hole cut in the ground. Probing the opening with a stick, Mr. Brooks discovered a lump of metal, of irregular shape, which proved to be a meteoric stone, weighing about eight pounds. This strange visitor had penetrated to a depth of eighteen inches, passing through four inches of soil and fourteen inches of solid clay, down to the gravel—conclusive evidence of the force of its impact with the earth. The hole (which has been protected for further investigation) is nearly perpendicular, and the stone appears to have fallen in a south-easterly direction. Some men were at work at the time within a short distance, and they, together with many other people in the neighbourhood, heard the noise of the explosion. Mr. Gibbons, of Tettenhall-road, Wolverhampton, has very kindly favoured us with a view of the meteorite, which he proposes submitting to the Birmingham Natural History Society.

MEETING OF THE VIENNA PERMANENT COMMITTEE.

THE Permanent Committee of the Vienna Meteorological Congress, has just held its third meeting in London, which lasted from the 18th to the 22nd April, inclusive. The members present were: Professors Buys Ballot (Holland), President; Bruhns (Germany); Cantoni (Italy); Mohn (Norway); Wild (Russia); and Mr. Scott; Professor Jelinek (Austria), was unavoidably absent, owing to ill health.

Among numerous subjects for consideration, it appeared that the scheme for publication, in a uniform manner of actual observations, and monthly results, from a limited number of stations in each country, which are to be considered as international, had been already accepted, almost without exception, or suggestion of improvement, by all the countries which had been represented at Vienna. It is hoped that this measure will ultimately tend to bring about uniformity in hours and methods of observation.

In weather telegraphy, it was resolved to calculate gradients in the metric scale as millimetres per one degree (60 nautical miles). In this country they will be referred to our units. It was not found practicable to introduce uniform hours for observations in connection with weather telegraphy in Europe at present. As to weather charts, a proposal for the exclusion of all meridians, except that of Greenwich, was postponed to the next Congress.

It was resolved to take advantage of that meeting to attempt to effect the comparison of the principal standard barometers by means of travelling barometers, to be conveyed to the place of meeting, and left there for a considerable time.

It was recognised as impracticable at present, to create an International Meteorological Institute, and consequently, it was decided that international investigations must be carried on at the expense of individual nations, all other nations to be requested to furnish materials, as far as possible, in a usable form. A list of upwards of 200 subscribers to the international synoptic weather charts of Captain Hoffmeyer was announced.

Resolutions were adopted in favour of the establishment of stations on high mountains, and in distant localities, and M. Weyprecht's proposition, for a circle of observing stations in the Arctic regions, round the Pole, was recognised as scientifically of high importance, and deserving of general support.

With reference to universal instructions for observations, it was stated that no general form of instructions could be drawn up to suit all climates, and it appeared to the committee that the instructions recently prepared in the German, Russian, and English languages, as well as in Italian (when some contemplated modifications should have been introduced), were sufficiently in accordance with the requirements of the Vienna Congress. It was hoped that ere long, French instructions of the same tenour would be issued.

It was announced that the Italian Government was prepared to

invite the next Congress to meet at Rome, in September, 1877, and the proposal was most gratefully accepted. In preparation for this meeting, a number of reports on the present state of the different departments of the science are called for, from various meteorologists. The questions to be treated in these reports are mainly instrumental, and they are of great importance in the present state of the subject. The detailed report of the committee will be published without delay.

BOOKS RECEIVED.

- Hassard, R., C.E.—On the Future Water Supply of London. 8vo. Stanford, 1876.
- Lawes, J. B., F.R.S.—On the Amount of Water given off by Plants during their growth. 8vo. 1850.
- „ „ —On the comparative evaporating properties of Evergreens and Deciduous Trees. 8vo. 1851.
- „ „ and Gilbert, J. H., F.R.S.—Effects of the Drought of 1870 on some of the Experimental Crops at Rothamsted. 8vo. 1871.
- Manchester, Sheffield, and Lincolnshire Railway.—Monthly Statement of Rain fallen in the year ending 31st December, 1875.
- Marriott, W.—On the Reduction of Barometric Readings (from the Quarterly Journal of the Meteorological Society). 8vo.
- Meteorological Committee.—On the Physical Geography of the part of the Atlantic which lies between 20°N and 10°S, and extends from 10° to 40°W, by Capt. Toynebee. 8vo. 1876.
- „ —Quarterly Weather Report, April–June, 1874. 4to. 1876.
- Miller, S. H., F.R.A.S.—The Fenland Meteorological Circular and Weather Report. March and April, 1876. 4to.
- Muirhead, H., M.D.—On the Current Doctrines of Attraction and Energy, and an Appendix. 8vo.
- „ „ —On the Genesis of Atoms, Worlds, and Sunspots. 8vo.

REVIEWS.

Report of the Kew Committee for the Year ending Oct. 31st, 1875.
8vo.

WE have not the faintest notion of whom the Kew Committee consists; it is not, perhaps, a very important matter, since for all their faults and for all their good deeds we presume the body by whom they are appointed, viz., the Royal Society, is responsible. Still, there can hardly be any reason against their names being given in the same form as that of the analogous body who superintend the Meteorological Office.

The examination of the photographic records of the seven observatories of the Meteorological Office is still carried out at Kew, the office paying the Committee £650 per annum for so doing; but there is nothing to show to which of the bodies this transaction is profitable.

We think that it is a pity that the Kew reports never give any meteorological results. We are told from time to time of such and such pieces of work being undertaken; we know that for many years observations have been regularly made, but except some little tables in that very scientific journal, the *Illustrated London News*, and in the *Quarterly Weather Reports* of the Meteorological Office, we do not recollect any publication of meteorological results. Indeed, we cannot remember ever seeing the name of the superintendent attached to any scientific communication whatever; but if Mr. Jeffery is unwilling to bring forward results himself, he might allow his assistants to do so.

We are very glad to find that the number of instruments verified during the year is rising steadily. It was as follows:—

Barometers.....	193	Hydrometers.....	150
Aneroids.....	21	Rain Gauges	3
Thermometers	2761	Dial Anemometers.	6

SUPPLEMENTARY TABLE OF RAINFALL IN APRIL, 1876.

[For the Counties, Divisions, Latitudes, and Longitudes of these Stations, see *Met. Mag.*, Vol. XI., p. 28.]

Station.	Total Rain.	Station.	Total Rain.
	in.		in.
Acol	1·96	Llanfrechfa	3·86
Hailsham	2·25	Castle Malgwyn	2·79
Andover.....	2·52	Heyope.....	3·72
Strathfield Turgiss	1·98	Rhug, Corwen	4·43
Addington Manor.....	3·86	Port Madoc	4·40
Oxford	2·78	Melrose	3·42
Cambridge.....	2·14	Cessnock, Glasgow	1·90
Sheering	2·17	Gruinart	1·75
Ipswich	1·61	Keith	2·21
Diss	1·73	Strathconan	3·47
Swaffham	3·44	Springfield, Tain	2·35
Compton Bassett	3·42	Skibbereen	4·75
Dartmoor	7·25	Glenville, Fermoy	3·86
Teignmouth	2·91	Tralee.....	2·89
Torrington (Langtree) ..	3·76	Newcastle W., Limerick	2·49
Trevarrick, St. Austell..	3·82	Kilrush .....	...
Taunton.....	3·22	Kilkenny	2·24
Bristol .....	...	Kilsallaghan	1·87
Sansaw	2·67	Twyford, Athlone	2·59
Cheadle	4·07	Ballinasloe.....	2·48
Ashby-de-la-Zouch	3·41	Kylemore	6·85
Coston, Melton Mowbray	4·18	Bangor	4·20
Bucknall	3·75	Carrick on Shannon.....	2·63
Walton, Liverpool	2·79	Rockcorry	2·18
Broughton-in-Furness ..	3·94	Warrenpoint	2·67
Stanley, Wakefield	2·33	Bushmills	2·03
Gainford	2·69	Buncrana	2·89
Shap	2·83		

APRIL, 1876.

Div.	STATIONS. [The Roman numerals denote the division of the Annual Tables to which each station belongs.]	RAINFALL.					TEMPERATURE.				No. of Nights below 32°	
		Total Fall.	Difference from average 1860-5	Greatest Fall in 24 hours.		Days on which ≥ 1 or more fell.	Max.		Min.		In shade	On grass
				Dpth	Date.		Deg.	Date.	Deg.	Date.		
I.	Camden Town	1.90	+ .77	.37	10	11	71.1	8	30.7	12	3	11
II.	Maidstone (Linton Park)	1.93	+ .71	.45	10	10	71.0	5, 8	28.0	13	2	...
III.	Selborne (The Wakes)	3.26	+ 1.76	.81	10	17	62.2	4	31.0	2, 3	3	8
IV.	Hitchin	2.81	+ 1.81	.51	13	18	62.0	8	25.0	15	9	...
V.	Banbury	2.71	+ 1.55	.56	13	21	67.0	8	29.0	12	6	...
VI.	Bury St. Edmunds (Culford)	2.27	+ 1.52	.59	13	17	66.0	4	26.0	12	8	11
VII.	Norwich (Sprowston)	2.93	...	.70	25	17	...	...	...	...	...	...
VIII.	Bridport	2.59	+ 1.11	.41	29	13	...	...	...	...	...	...
IX.	Barnstaple	2.83	+ .82	.40	10*	16	67.0	8	33.5	1	...	...
X.	Bodmin	3.85	+ 2.15	.43	9	18	61.0	7	33.0	11	0	8
XI.	Cirencester	3.71	+ 2.42	.82	12	17	...	...	...	...	...	...
XII.	Shifnal (Haughton Hall)	2.62	+ 1.47	.56	12	16	62.0	6, 8	27.0	12†	8	9
XIII.	Tenbury (Orleton)	3.07	+ 1.53	.41	10	20	68.7	8	28.0	16	7	12
XIV.	Leicester (Belmont Villas)	2.83	...	.66	12	20	70.0	8	29.0	12	6	...
XV.	Boston	4.36	+ 3.39	1.47	13	19	71.0	8	30.0	12	...	...
XVI.	Grimsby (Killingholme)	2.27	...	.39	10	19	65.5	8	30.0	12	3	...
XVII.	Mansfield	2.68	...	.41	10	21	69.5	8	24.9	16	8	9
XVIII.	Manchester	3.16	+ 1.40	...	...	17	72.0	8	28.0	12	4	8
XIX.	York	1.62	+ .52	.55	10	12	68.0	7	28.0	15	6	...
XX.	Skipton (Arncliffe)	3.49	+ .45	.72	10§	20	...	...	...	...	...	...
XXI.	North Shields	3.21	+ 1.90	.98	28	19	63.0	27	27.5	13	4	8
XXII.	Borrowdale (Seathwaite)	6.04	- .86	.93	9	15	...	...	...	...	...	...
XXIII.	Cardiff (Ely)	...	...	...	...	...	...	...	...	...	...	...
XXIV.	Haverfordwest	2.63	+ .77	.75	10	12	59.5	5	28.5	1	8	11
XXV.	Machynlleth	3.46	...	.75	9	18	67.0	8	28.0	13	6	...
XXVI.	Llandudno	3.08	+ 1.58	.83	9	12	65.3	4	31.9	...	1	...
XXVII.	Dumfries (Crichton Asylum)	2.70	...	.71	24	15	62.6	8	23.5	13	7	9
XXVIII.	Hawick (Silverbut Hall)	3.62	...	.88	28	12	...	...	...	...	...	...
XXIX.	Kilmarnock (Annanhill)	1.10	...	.29	9	14	60.8	9	22.1	13	6	12
XXX.	Castle Toward	2.47	- .03	.64	28	15	57.0	6	26.0	13	4	...
XXXI.	Mull (Quinish)	2.58	...	1.03	14	14	...	...	...	...	...	...
XXXII.	Leven (Nookton)	...	...	...	...	...	...	...	...	...	...	...
XXXIII.	Grandtully	2.25	...	.58	27	9	...	...	...	...	...	...
XXXIV.	Braemar	2.52	+ 1.12	.42	27	15	59.3	6	17.0	13	10	18
XXXV.	Aberdeen	2.92	...	.51	18	13	62.5	8	24.4	13	5	11
XXXVI.	Loch Broom	3.07	...	.65	8	22	...	...	...	...	...	...
XXXVII.	Portree	4.37	- .90	.83	14	25	...	...	...	...	...	...
XXXVIII.	Inverness (Culloden)	2.28	+ .81	.47	12	22	59.4	8	28.0	13†	6	13
XXXIX.	Helmsdale	2.98	...	.65	8	18	...	...	...	...	...	...
XL.	Sandwick	2.23	+ .49	.40	8	19	55.0	3	25.6	13	3	10
XLI.	Caherciveen Darrynane Abbey	4.80	...	.61	2	19	...	...	...	...	...	...
XLII.	Cork	3.30	...	.72	24	15	...	...	...	...	...	...
XLIII.	Waterford	2.76	+ .53	.41	9	20	63.0	5, 19	30.0	8	5	...
XLIV.	Killaloe	...	...	...	...	...	...	...	...	...	...	...
XLV.	Portarlington	2.35	+ .33	.42	28	23	64.0	4	27.5	12	5	...
XLVI.	Monkstown, Dublin	2.05	+ .41	...	...	14	...	...	...	...	...	...
XLVII.	Galway	3.74	...	.35	9	21	65.0	9	28.0	11	4	...
XLVIII.	Ballyshannon	2.03	...	.40	11	13	...	...	...	...	...	...
XLIX.	Waringstown	1.97	...	.33	10	16	66.0	17	23.0	12	9	...
L.	Edenfel (Omagh)	2.23	...	.79	27	19	59.0	4	24.0	12	10	13

* And 11. † 16. ‡ 23. § 24.

† Shows that the fall was above the average; — that it was below it.

METEOROLOGICAL NOTES ON APRIL.

ABBREVIATIONS.—Bar. for Barometer; Ther. for Thermometer; Max. for Maximum; Min. for Minimum; T for Thunder; L for Lightning; TS for Thunderstorm; R for Rain; H for Hail; S for Snow.

ENGLAND.

SELBORNE.—A bleak yet damp month; very retarding to farm and garden work; between the 13th of February and end of April it rained on 63 days out of the 78. Fogs frequent during the month; white frost on 2nd; R all day on 10th, and S at night; heavy storm at 9 a.m. on 12th; H and S in after part of the day; snowstorm and high wind on 13th; and S and sleet on 14th. First swallow on 9th, and first martin on 10th.

HITCHEN.—S on 13th; the deepest on record, and remaining in some places till the end of the month.

BANBURY.—S daily from 11th to 14th. Cuckoo heard on 21st.

CULFORD.—A month of exceedingly variable weather, being for a few days almost like summer, and changing suddenly to weather of quite a wintry character. Polar winds prevailed on 13 days; S on the 11th, accompanied with almost total darkness; S fell also on 12th, 13th and 14th; TS, with H, on 25th. Cuckoo first heard on 22nd; nightingale first heard on 26th; and swallows seen on 29th.

SPROWSTON.—A very wet month; heavy fall of S on 12th and 13th, with high wind. TS, with heavy R, at 1 p.m. on 25th.

BRIDPORT.—S on 11th.

BODMIN.—Very severe weather on 11th, 12th, 13th and 14th, the last named being the most trying day in the winter. Average temp. of month 50°·3.

SHIFNAL.—For the first nine days the month was warm and dry, the max. ther. never sinking below 50°, and min. only recording two frosty nights, 2nd and 5th. On 9th R set in, and the temp. fell on the 11th from 53°·0 to 41°, followed on 12th by sleet, and at night by nearly 5 inches of S from N.W., making ·56 in. of fluid. On the 18th ther. rose again to 54°, continuing to rise slightly to the close, and R falling daily, with the exception of the 25th, 30th and 31st. The bright green hedges laden with S on the 13th, and the hollies still red with berries were a curious sight. Wood anemone in flower on 5th; blackthorn in blossom on 8th; and wild cherry on 21st. The chiff chaff heard on 7th; sand martins seen on 15th, and cuckoo heard on 21st. First white butterfly seen on the 10th.

ORLETON.—The first eight days were dry, and generally fine and pleasant. Storms of S and R then set in till the close of the month. Much S fell between the 10th and 15th, frequently covering the ground, and the month upon the whole was very cold, wet and wintery. The average temp. was the same as that of last April, being nearly $2\frac{1}{4}$ ° below the average for the month. Many peals of T were heard on 28th. The cuckoo was first heard on 19th, and generally about the 23rd; the chiff chaff first seen on 19th; martins on the 10th; white throats, redstarts and swallows on the 27th. Cherry trees and damson trees came into blossom about the 10th.

LEICESTER.—Very fine during the first week, the temp. reaching to 70° on the 8th. Very heavy fall of S on 13th, which commenced at 1 a.m., and continued till 5 p.m., the greatest depth being 8 in.; the max. temp. only rising to 36° on this day. S also fell for some hours on the 14th, but a considerable quantity had melted by the evening; some of the roads in the eastern parts of the county were quite impassable, the drifts in some cases being nine feet deep, and postal communication was stopped for two days; the latter part of the month was stormy and unsettled, and the max. temp. on the last day was only 46°·5. Mean temp. of month 46°·6.

BOSTON.—A very heavy fall of S, with a strong gale from the N.E. on 11th, 12th, 13th and 14th; the snowstorm began about 2 a.m. on 12th, and continued without abatement for the next 26 hours, then came a lull for a few hours, when it began again; during part of this time the flakes were the largest ever seen,

being the size of a five-shilling piece. The country presented a singular appearance, the hedges in full leaf, and the ground coated a foot deep with S. The weather of Thursday and Good Friday morning was the most bitter and severe of any that has occurred during this long and protracted winter. The rainfall was 2.43 in. above the average of the last 20 years; the temp. 1°·7 below the average.

GRIMSBY.—A week of mild and delightful weather at the opening of the month, the remainder was cold, cheerless, and unsettled. We caught only the tail of the great snowstorm that visited the Midland counties. Air remarkably dry on 8th; T at 2.55 p.m. on 9th; T during most of the afternoon on the 21st; and T and L on 25th. Sprinkling of S on the ground on the morning of 12th, and the ground covered at night; showers of S through the day of 13th, but it did not lie. Cowslips began to flower on 7th; the sloe on the 8th. Swallows seen on 23rd; cuckoo heard on 26th.

MANSFIELD.—A most remarkable month, commencing with beautiful spring-like weather, which suddenly changed during the night of the 10th, and a considerable fall of S took place, which was, however, but the prelude to a much heavier fall on the night of the 12th, when nearly 4.00 in. covered the ground; since then the weather has been cold, damp and cheerless, with the exception of a few gleams of sunshine. Vegetation is very backward, the hedges were scarcely green at the close of the month, and the flowers few and far between.

NORTH SHIELDS.—Cherry in blossom on 19th; pear in blossom on 22nd.

SEATHWAITE.—S and sleet on 9th and 10th; the max. fall of month was on the 9th, and was less than 1 in. (.93 in.); a most unusual thing to occur at Seathwaite.

WALES.

HAVERFORDWEST.—First three days cold, fine, and frosty, then some rain. From 11th to 16th very wintry, and much snow. A stormy period succeeded, after which to the end of the month the weather was fine and genial. A backward spring.

MACHYNLLETH.—A few very warm days at the beginning of the month, afterwards very cold and stormy, with much H, frost and S; altogether very stormy to the 13th, better after, but very cold at times, and I consider that everything is late for the season.

LLANDUDNO.—Weather fine for the first eight days, from thence a cold period to the 15th, with frequent S and H showers; the lowest night temp. (31.9 in.) was registered on 13th. From 19th to 29th the weather was showery, but the temp. was equable. Rainfall much above the average. Swallows seen on 14th. Apple in blossom on 20th.

SCOTLAND.

DUMFRIES.—A cold ungenial month, except during the first week, when the weather was mild and dry. S fell on the 10th, and H showers were frequent. TS on 19th, latter half of the month very wet. S.E. and E. winds prevailed almost continuously from 19th to the end. Mean temp. (44°·3) 2° lower than last year.

HAWICK.—A very cold frosty month; S and H on 9th, 10th, 13th, 21st, 29th and 30th; the hills continuing white with S, and on May-day we had rattling H showers and cold east winds. The farmers all say that they never saw a more unfavourable lambing season.

ANNANHILL.—Young oats and hay looking well now, but all farm work has been much retarded by the severe weather of February and March. Deciduous trees and fruit trees of all kinds very backward. The cattle disease has again shown itself, but otherwise the cattle are healthy.

CASTLE TOWARD.—A few good growing days at the beginning of the month, but afterwards cold winds set in, which retarded vegetation very much; this will be a backward season in this district, seeds in many cases having had to be sown over again.

BRAEMAR.—An unusually severe month, so much so that farming operations have not been so late since 1826. No progress in vegetation, a very late harvest anticipated.

ABERDEEN.—The first eight days were unusually fine and mild, the remainder of the month cold, rough, and variable. Bar. pressure and temp. below the average, and rainfall above it. Ground white with S on May Day morning; fogs frequent from 7th to the end of the month; H and S daily from 10th to 14th inclusive; T on early morning of the 9th. Min. temp. on grass 21°·4 in. on 13th.

LOCHBROOM.—The month was cold, stormy, and wet.

PORTREE.—The coldest April on record. Ground covered with S from 10th to 14th inclusive, with sharp frosts at night, and strong bright sun in the day. The cold has caused fearful havoc among the lambs.

SANDWICK.—April has been a very cold month, and vegetation is very backward. The great E of March and the cold of April kept the soil so wet that agricultural and horticultural operations were prevented till the end of the month. The ground was white with S on 10th, 11th, 12th, 13th, 22nd and 30th; T in afternoon of 29th, and aurora on 11th.

IRELAND.

DARRYNANE.—Harsh and ungenial month; vegetation very backward.

MONKSTOWN.—The middle of the month, just before Easter, was very cold. S 2 in. deep on morning of the 13th, and deeper in neighbouring districts.

BALLYSHANNON.—The rainfall has exceeded the corresponding period of last year by '80 in. S, sleet, and H fell on 10th and 11th. Bar. very variable, temp. low; little sign of growth yet. Cuckoo heard on 30th.

WARINGSTOWN.—Cold, backward and variable.

EDENFEL, OMAGH.—With the exception of the first week, the month has been cold, raw and inclement, the second week especially so, with S, sleet and rain every day, and keen frost at night; as a result vegetation is backward beyond precedence. Hedges not yet (4th of May) in full leaf. Swallows appeared on the 9th, but disappeared again till the 25th; corncrake heard on 27th; and cuckoo on 29th.

A "SULPHUR" RAIN.

[Translated from the *Messenger du Midi*.]

A VERY remarkable phenomenon, and one calculated to excite the imagination of the peasantry, occurred during the recent rains near Castelnau and Lez. After the rain everybody noticed that the leaves of the trees and the sides of the roads were covered with a yellow dust, like powdered sulphur. What is usually known as a rain of sulphur had occurred.

This phenomenon, which is easily explained, is rare in our country, and is entirely due to the fall of the pollen of conifers after it has been carried by the wind.

LOAN COLLECTION OF SCIENTIFIC APPARATUS.

IN connection with the above fine collection, a series of Conferences are to be held in the Gallery at South Kensington. Those upon Physics and Astronomy on May 16th, 19th, and 24th, and those upon Physical Geography, Geology, Mineralogy, and Meteorology, on May 30th, June 1st, and June 2nd.

A certain number of Tickets for the use of the Fellows and their friends are in the hands of the Assistant-Secretary of the Meteorological Society, 30, Great George Street, S.W.