Symons's
Meteorological Magazine.

No. 472. MAY, 1905. Vol. XL.

NEW SCHEME FOR THE ADVANCEMENT OF METEOROLOGICAL KNOWLEDGE.

The Council of the Royal Meteorological Society has been for some time past engaged upon a scheme for the advancement of the general knowledge of Meteorology and the promotion of that larger measure of public interest in the science which its very close connection with many of the other sciences and the phenomena of everyday life undoubtedly merits.

The Council, considering that the object in view can be largely attained with the co-operation of the various scientific societies and institutions scattered over the country, is arranging for a series of lectures to be given in connection with them. These lectures will be delivered by lecturers appointed by the Council itself and will be drawn up in accordance with the Council's approved programme. They will, it is understood, be of a practical character and in many cases illustrated by lantern slides, of which the Royal Meteorological Society has a large and comprehensive collection. Various societies and institutions frequently hold scientific exhibitions and the Council is making provision for a series of exhibits for these, illustrative of the methods of taking meteorological observations and of the instruments generally used. The exhibits will be in charge of a representative of the Society, who will be prepared to explain them and their use.

It is expected that such lectures and exhibitions will lead to an increased appreciation of the importance of an accurate knowledge of weather conditions and the elements of climate, and to the establishment of new observing stations under the auspices of the Royal Meteorological Society, thus meeting a frequently expressed wish for authoritative information and guidance upon meteorological subjects, which the Society is eminently fitted to give.

The Council has always attached great importance to the intimate connection of Meteorology with Agriculture, and recognising the special and public benefit which a proper appreciation of this would confer, it has included in its scheme the arrangement of exhibits

such as are referred to above, and others bearing directly on the relations between the two sciences, in the Shows of the various agricultural societies, and it is believed that such an exhibit has been arranged for at this year's meeting of the Royal Agricultural Society at Park Royal. In pursuance also of this part of the scheme the Council has approached the authorities in charge of the Agricultural Education in Elementary Schools Bill, now before Parliament, with a view to the inclusion of Meteorology and Weather Study with the subjects proposed to be taught in such schools.

The scheme is, of course, in its initial stages at present, but it has already received a considerable measure of support, and the Council will be prepared to extend the series of lectures and exhibits, where feasible, to, *e.g.*, the great Public Schools, Private and Elementary Schools, Polytechnics and (the camera in skilled hands being a valuable aid as a means of cloud recording) Photographic Societies.

The scheme as thus far noticed provides for bringing meteorological knowledge to the societies and institutions' own doors, so to speak, but it is also intended by the Council of the Royal Meteorological Society to hold conferences in London, from time to time, to which representatives from the various societies shall be invited and papers dealing with Meteorology and its practical uses shall be read and discussed, and exhibitions illustrating the science in all its branches and open to the general public in connection with the conferences, will be held.

The present time of year, when the scientific societies and institutions are in full work, is, it is believed, being chosen for putting the scheme into operation, and it is to be hoped that in many cases advantage will be taken by the societies of its provisions for their next session, and that Fellows of the Royal Meteorological Society who are also members of local societies will assist the Council in the necessary arrangements and in thus extending the already wide sphere of the Society's operations.

SCOTTISH METEOROLOGICAL SOCIETY.

A MEETING of this Society was held on March 16th, in Dowell's Rooms, Edinburgh, Sir John Murray, K.C.B., F.R.S., in the chair.

The report from the Council was adopted, and Mr. Ralph Richardson, W.S., appointed to the vacancy on the Council caused by the resignation of Professor Copeland.

Mr. E. M. Wedderburn, read a paper on "The Temperature Changes of the Surface Waters of Loch Ness." He described the instruments used and the methods adopted in the Survey of the Scottish lochs, at present in progress under the direction of Sir John Murray and Mr. Laurence Pullar. During the summers of 1903 and 1904 attention had been largely concentrated on Loch Ness and some important general conclusions from the temperature observations there had already been published by Mr. E. R. Watson. (*Geographical*

Journal, October, 1904.) The story of the investigation of temperature on the surface and at small depths was one of doubts and difficulties. They had not yet got a satisfactory instrument for accurately recording rapid variations, and the surface temperatures had been known to change as much as 6° F. in two minutes. The observations, however, clearly showed that in calm summer weather on Loch Ness a diurnal change of temperature due to solar radiation was well marked at the surface, fairly distinct at a depth of 10 feet, and non-existent at a depth of 25 feet. A set of simple observations made in May, 1904, at a depth of 5 feet, showed that between 8 p.m. and 10 p.m. abrupt change of temperature took place at that depth, followed by numerous rapid variations: the water at 5 feet got warmer, probably owing to the upper layers having cooled down with a consequent condition of unstable equilibrium giving rise to energetic convection currents. It was very difficult to investigate the surface temperature changes on account of the numerous currents and the variations produced by sudden shifts of wind.

Professor Knott read the second paper, on "Solar Radiation," and gave an account of researches he had made on this subject in relation to earth temperatures and sea temperatures. An analysis had been made of the records given by the thermometers placed by Professor Forbes in 1837 in the rock of the Calton Hill, Edinburgh, and the average amount of heat gained or lost from month to month had been calculated. The accumulated heat had a zero value at the beginning of March and its maximum at the beginning of September, by which time about 1200 units of heat had been stored under each unit of area of the rock surface. Determining next the amount of energy supplied by solar radiation, Langley's estimates had been adopted, from which it appeared that in the latitude of Edinburgh 114,800 units of energy per unit area were supplied during the summer half-year (April to September), but only 19,080 units during the winter half-year. But the Calton observations had shown that only 1200 units of heat were stored in the rock in the summer half-year—*i.e.*, only about 1 per cent. of the energy radiated by the sun and reaching the Earth was accumulated as heat, the remaining 99 per cent. being radiated or reflected. Of course, Langley's estimates of the solar constant had been made in a very different climate from that of Edinburgh, where a much larger proportion of the sun's rays were intercepted by clouds. It was remarkable, however, that observations made at the Radcliffe Observatory down to the depth of 9½ feet, to which the Oxford gravel extends, led to a conclusion almost the same as did the Calton records.

As regards solar radiation and sea temperature, observations made by the Austrian war-ship *Pola* showed that, at all events in the Levant in September, 1892, about two-thirds of the solar energy incident on the surface was utilized by the water near the surface and that the heating effect penetrated to a depth of about 20 metres. At lower depths conduction was probably the most powerful agent

of heat distribution. It was easy to see, however, that towards the surface convective movements would be the chief factor, since the surface layers owing to evaporation and consequent increase of salinity might rapidly become denser than the slightly cooler layers below and in sinking convey heat from the surface downwards.

An interesting discussion followed, in which Sir John Murray and Dr. Buchan took part.

METEOROLOGICAL AVERAGES AND EXTREMES AT WELLINGTON, NEW ZEALAND.

THE Rev. D. C. Bates, of the Meteorological Office, Wellington, sends the following valuable series of average and extreme values for the principal meteorological elements as the results of 40 years' observations at the Wellington Meteorological Observatory.

Barometer.

Mean 29·934 in. Highest 30·886 in. on 30 August, 1889.
Range 2·300 in. Lowest 28·586 in. on 6 March, 1871.

Air Temperature in Shade.

Mean 55·3° F.; absolute max. 88° F.; absolute min. 30° F.

Rainfall.

Mean annual fall .... 50·75 in.
Max. ,, ,, in 1892 ..... 67·65 in.
Min. ,, ,, in 1889 ..... 31·35 in.
Max. fall in any single month, December, 1884 ..... 12·45 in.
Min. ,, ,, ,, February, 1880 ..... 0·13 in.
Max. fall in a single day, 11th March, 1893 ..... 5·70 in.
Average number of days when rain (·01) fell, 170.

Average Monthly Rainfall, 1865-1903.

Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
3·60	3·25	3·10	4·15	4·61	4·94	5·86	4·94	4·22	3·93	3·57	3·26

Mean Monthly Temperatures.

Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
62·8	62·4	60·5	56·9	52·8	49·5	47·6	48·5	51·5	54·3	57·0	60·6

Mean Monthly Velocities of Wind (38 years), in miles per day.

Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
234	218	211	201	198	177	179	197	220	264	241	247

Mean velocity 216 miles per day.
Max. daily velocity 960 miles 22nd October, 1869.

Mean Barometer (40 years).

Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
29·893	29·966	30·024	30·053	29·950	29·953	29·898	29·933	29·922	29·884	29·869	29·865

Mean relative humidity 75·3 per cent. of saturation.
Mean Temperature of Dew Point 47°·6 F

ROYAL METEOROLOGICAL SOCIETY.

THE monthly meeting of this Society was held on Wednesday evening, April 19th, at the Institution of Civil Engineers, Great George Street, Westminster, Mr. Richard Bentley, President, in the chair.

Mr. W. H. Dines, F.R.S., gave "An Account of the Observations at Crinan in 1904, and Description of a new Meteorograph for use with Kites." These observations, which have been carried out under the direction of a joint Committee of the Royal Meteorological Society and of the British Association, are made with meteorographs attached to kites with the object of ascertaining the conditions prevailing in the upper atmosphere. During last summer the kites were flown from the deck of H.M.S. *Seahorse*, which was placed at the disposal of the Committee by the Admiralty. Mr. Dines designed a new and inexpensive meteorograph, which he now fully described. (See this Magazine, Vol. **39**, p. 109). The weather conditions of last summer were somewhat unusual, there being a decided preponderance of east and south-east winds. Near the summit of Ben Nevis the air was often dry, and was on several occasions warmer than the air at the same level at Crinan. As a rule, however, the temperature on Ben Nevis is generally much lower than the temperature in the free air at the same level. On several occasions temperature inversions were observed at levels between 3000 and 7000 feet. A fact previously noticed was again observed—viz., the decrease of strength of easterly winds with elevation.

The President, Mr. R. Inwards, Dr. W. N. Shaw, F.R.S., Mr. J. E. Clark, Mr. R. H. Curtis, Mr. F. Gaster, and Mr. W. Marriott took part in the discussion, and all spoke favourably of the new meteorograph.

Dr. H. R. Mill read a paper on the "Rate of Fall of Rain at Seathwaite." This is a discussion of the records from a Negretti and Zambra self-recording rain gauge during a period of eighteen months, July, 1899, to December, 1900. Seathwaite, which is in Borrowdale, Cumberland, is one of the wettest spots in the British Isles, and so these continuous records, though of short duration, possess exceptional interest and value. Dr. Mill compared the readings at Seathwaite with those at Camden Square, with the following results :—

Rate of Fall of Rain from July 10, 1899, to December 31, 1900.

	No. of Rainy Days.	Hours of Rain.	Inches of Rain.	Rate Per Rainy Day. in.	Rate Per Hour. in.	Hours per Rainy Day.
Seathwaite.....	350	1695	182·91	·523	·108	4¾
Camden Square...	196	484	32·15	·164	·066	2½
Ratio of Seathwaite if Camden Square =100...	179	350	569	319	164	190

This shows that the total duration of rain at Seathwaite was three times as long as in London, the amount falling six times as great and the rate of fall consequently twice as rapid.

At Seathwaite there were altogether 88 showers with more than half-an-inch of rain in the 539 days under consideration, an average of rather more than one per week. Of these 45 produced less than an inch of rain, and only 13 more than 2 inches. The mean duration of such a shower was 8 hours, the greatest 30 hours, and the least 1¾ hours. The showers yielding less than 1 inch had a mean duration of 6 hours and a mean rate of fall of ·14 in. per hour, though with a great range. The showers yielding larger amounts were proportionally shorter, for although the mean duration was 7½ to 20 hours, the mean rate was either ·20 in. or ·22 in. per hour, showing that at Seathwaite the long-continued rains are on the whole the heavier. The largest amount which fell in one continuous shower was 4·03 in. and this also gave the greatest duration, for while it was falling the rain did not cease for 30 hours. Dr. Mill's results seem to show that the rainfall at Seathwaite in an average year shows a tendency to be greater during the hours of darkness than in daylight, that rather less than half the time during which rain is falling it continues without intermission for at least six hours at a time, and that rather more than half the total amount of rain is deposited in such long showers.

The President, Mr. J. Hopkinson, Mr. W. Marriott, Mr. R. H. Hooker, Mr. W. B. Tripp, Mr. F. Campbell Bayard, Mr. Baldwin Latham, and Mr. J. E. Clark took part in the discussion, and Dr. Mill replied.

The following gentlemen were elected Fellows of the Society :— Dr. E. P. Allis, Capt. C. B. Andersson, Mr. J. Aspinall, Mr. J. Burtt Davy, F.L.S., Mr. H. E. Frick, Mr. A. E. Hayter, Mr. S. C. Russell, Mr. G. C. Simpson, B.Sc., Capt. H. M. Walker, Capt. G. S. Webster, and Mr. H. D. Williamson.

Correspondence.

To the Editor of Symons's Meteorological Magazine.

WAS IT GLOBE LIGHTNING?

It would be interesting if some of your readers in Richmond could give any further information as to the circumstances described in the following paragraph from the *Surrey Advertiser*, of April 22nd.

An alarming phenomenon was witnessed at Richmond during a thunderstorm on Sunday afternoon. Following a blinding flash of lightning about three o'clock what appeared to be a ball of fire was seen descending. It seemed to explode just over St. Matthias' Church, in Church Road. A hole was torn in the roof and the place was for a second flooded with flaming light. The church is lighted with electricity, and the storm current came into contact with the electric wires. The glass doors of the various electric switchboards were simultaneously blown outwards and smashed to pieces.

These unusual occurrences had a terrifying effect upon several hundred children who were present, but nothing more serious happening, they were gradually reassured, though the service was abandoned.

J. P. MACLEAR.

Chiddingford, 22nd April, 1905.

THE COLD WINTER IN INDIA.

SIR JOSEPH HOOKER, G.C.S.I., F.R.S., has kindly forwarded the following interesting extracts from a letter:—

We are having glorious weather still, in fact it is absolutely abnormal. In all the 60 years that Mr. Chrestien can remember of India there has never been such extraordinary weather as there has been ever since Christmas. From the middle of January till the middle of February we had a succession of cold, dismal, cloudy, rainy days; regular English weather. We wore our thickest clothes, and shivered in the middle of the day, and at night, if we were somewhere where there was a fireplace, we sat before a wood-fire, if not, native fashion, we sat with pots of burning charcoal between our feet. All through we had slight frosts at night; during two nights, early in February, it was so severe that in places one could see nothing but dead, brown leaves on the trees. Riding along the valleys of the Government Reserved Forest, one passed nothing but frost-bitten trees with not a green leaf on them. Up on the slopes the trees were untouched, but in the open acres of crops were ruined, especially castor-oil, gram and Rahur (a Dahl), and one saw huge banyan and mango trees one mass of dead, brown leaves. From the middle of February we had the cold weather we ought to have had before, and we have had glorious weather ever since. Usually at this time one lives under a punkah, in the lightest of clothes. But I still shut the doors to keep warm, and at night I am none too warm under a blanket and a rug, with the doors shut.

HUGH HANNAY.

Camp Dhab, Hazaribagh, Bengal, 3rd April, 1905.

THE CLIMATOLOGICAL TABLE.

AS a subscriber to your Magazine for many years, I am taking the liberty to write to you with regard to the Climatological Table for the British Empire. I have been of the opinion for a very long time that it would be more interesting and instructive if you could publish a more representative table than one restricted to the British Empire. Observations from the United States would be of interest to compare with the numerous ones from Canada; Egypt to compare with South Africa; Japan, China and Siberia should also be there. Surely observations can be obtained without difficulty from these parts, at any rate they can be had from Europe and the States. I do not like to see the term British Empire applied to any scientific observation—what must our foreign readers think of it?

Science should know no boundary, no territory, but consider all the world equal. Perhaps, if you can find room for this letter, other meteorologists would give their views on this subject.

J. A. SARGENT.

Bancroft, Hitchin, April 20th, 1905.

[We are entirely in sympathy with Mr. Sargent's principle that science should not be cramped by political boundaries, and were it possible to find space for a larger Table each month we would gladly appeal, and we are sure we should not appeal in vain, to the directors of representative meteorological observatories in the United States, the various countries of Europe and the colonial possessions of other nations. But we must remind our readers that the space is not available. The Magazine is already too large for its price though too small to admit of another page being diverted from letterpress to statistical matter. The remedy lies with our readers; if they care to increase the circulation of the Magazine, we will follow by increasing the size, and one of the first improvements would be to move in the direction suggested in the foregoing letter. It is always helpful to have the opinion of readers on matters that interest them, and we would gladly see what others think on the question thus raised.—ED. *S.M.M.*]

RETURN OF WINTRY WEATHER, APRIL, 1905.

SOME correspondents of the daily papers seem to be under some apprehension that this wintry weather, lately experienced, is quite uncommon and unseasonable, according to ideas of the time of year.

On looking over my diary for the last six years, I find that snow storms appeared in Edinburgh on April 16th and 17th, 1899; again in 1900, March 27th and 28th; again on March 9th and 10th, 1901. Snow was recorded on April 3rd, 1902 and 1903; April 11th, 12th, 13th, 14th and 21st, 1904; and on April 9th and 10th, 1905, on April 7th and 8th.

The east coast of Scotland, including Edinburgh, probably has to submit to a *second winter* after its own is concluded in March with the equinoctial gales. This is brought about by the cold airs and currents drifting from the Baltic Sea, on the melting of the snows and glaciers in Scandinavia.

The same state of things happens to the west coast by the icebergs from Greenland and Davis Straits, sailing down the Atlantic Ocean, and gradually melting away in low latitudes, such as the latitude of Britain; but the phenomena on the west coast are modified or interrupted by the Gulf Stream which prevents any coldness of air or water from being so permanent as on the east coast at this time of the year.

I may express the likelihood that we may get a cold week in May, as usually happens, much to the surprise of the correspondents referred to, who think that one swallow makes a summer if a fine day occurs.

W. G. BLACK, F.R.MET.SOC., F.R.C.S.E.

Edinburgh, April 30th, 1905

REVIEWS.

Cape of Good Hope.—Report of the Meteorological Commission for the year 1903. Cape Town, 1904. Size 12½ × 8. Pp. 198. *Plates.*

THE work of this Commission continues to show a splendid return for the money spent upon it, though the difficulties under which it is carried on are far greater than those against which the Meteorological Offices of European countries have to contend. A decrease in the number of rain observing stations is attributed, in part, to the severe drought which prevailed over two-thirds of Cape Colony, compelling many of the farmers in the Karoo to trek with the remainder of their cattle to adjoining territories, leaving their homesteads entirely unoccupied and, naturally, the rain gauges untended. The interest shown in meteorology by the people of Cape Colony is attested by the fact that numerous applications for instruments are received every year, many from persons situated in most suitable positions; but, unfortunately, these cannot be granted, except in a very few cases, on account of lack of funds. It is amazing to find that the great mass of work epitomised in this volume is carried out on a government grant of £800 per annum. In a country so dependent as Cape Colony is on a knowledge of the climatic conditions, the policy of starving so vital a department comes dangerously near to "spoiling the ship for want of a ha'porth of tar."

The Cyclones of the Far East. By REV. JOSÉ ALGUÉ, S.J. Second (revised) edition. Manila, 1904. Size 11½ × 9½. P. 284.

THE learned director of the Philippine Weather Bureau has written so complete and detailed a treatise on the whole subject of tropical cyclones, and especially of the terrible typhoons which are of constant occurrence in the neighbourhood of the Philippines and of the China Seas, that any attempt to make a synopsis of the work would be an impossibility in the limited space at our disposal.

After describing at length the origin, structure, movements and laws of typhoons and discussing their frequency and classification, the author gives an account of the attendant phenomena, meteorological and otherwise, and various direct and indirect precursory signs of their occurrence.

In the latter part of the volume typical typhoons are minutely described as confirmatory evidence of the information given in the earlier part. There are also a number of notes of practical interest to sailors and a list of harbours which afford refuge in case of an encounter with a typhoon. The volume is profusely illustrated with maps, diagrams and photographs of instruments.

Taken altogether, this is an able compendium of the life-work of an acknowledged master of the subject, and takes its place as a standard work on Tropical Meteorology.

The Climate of the Philippines. By REV. JOSÉ ALGUÉ, S.J. Bulletin 2 of the Census of the Philippine Islands. [No place of publication.] 1904. Size 9 × 6. Pp. 104.

THE subject is divided into sections, dealing respectively with temperature, water vapour (including rainfall) and the movements of the atmosphere, and each section is profusely illustrated by diagrams representing the distribution and frequency of the various phenomena. There are also coloured maps of the mean annual temperature and rainfall of the Islands.

Temperature and rainfall observations are quoted from a considerable number of stations, but generally for a very limited period, and by far the greater part of the results are deduced from the splendid records maintained at the Manila Observatory.

In the sub-section dealing with rainfall appears a list of instances of tropical falls of rain in periods of an hour or less, as measured by the Casella recording rain gauge at the Observatory, from which we select the following extreme cases:—

May 21st, 1892,	60 m.m.	(2·36 in.)	in 30 minutes.
June 15th, 1891,	50 ,,	(1·97 in.)	in 8 ,,
August 6th, 1889,	50 ,,	(1·97 in.)	in 7 ,,

The last mentioned fall was at the rate of 16·88 in. per hour. On six occasions in the period from 1865 to 1902 inclusive, daily falls exceeding 200 m.m. (nearly 8·00 in.) took place, of which the most notable were 336·0 m.m. (13·23 in.) on September 24th, 1867, and 290·1 m.m. (11·42 in.) on July 30th, 1880.

METEOROLOGICAL NEWS AND NOTES.

THE INTERNATIONAL METEOROLOGICAL COMMITTEE will meet at Innsbruck, in Tyrol, on September 9th, and representative meteorologists from all countries have been invited to take part in the proceedings. A provisional programme has been drawn up and circulated by Professor Hildebrandsson. Amongst the questions put forward for discussion are suggestions for improving observations which may be used for the comparison of phenomena over wide areas, especially with regard to noting the exact time of observing each instrument, reducing observations to standard conditions, and the like. Attention is to be called to the very important question of the causes and the prognostics of widespread heavy rains, the importance of which as affecting floods is naturally felt much more on the continent than in our country of mild extremes. Professor Pernter is to suggest a more precise classification of meteorological stations according to the equipment and the nature of the observations carried on. The question of the possibility of extending the use of wireless telegraphy for obtaining reports from the eastern Atlantic, and many others on which an international understanding is desirable, will be taken up.

MR. R. C. MOSSMAN has returned to this country in excellent health, after a sojourn of two years in charge of the meteorological observatory established in a sub-Antarctic island of the South Orkneys by Mr. Bruce's expedition in the *Scotia* and subsequently taken over by the Argentine Government. Mr. Mossman's description of his unique experiences is profoundly interesting, and the work of so accomplished a meteorologist in a part of the world whence no previous records have been obtained is invaluable.

MR. JOHN AITKEN, of the Union Bank, Braemar, whose rainfall record has appeared monthly in this Magazine since 1873, and in *British Rainfall* since 1865, dates the commencement of his services to meteorology still further back, and we are happy to see by the following cutting from the *Aberdeen Journal* of April 21st that they have been recognised in an unusual and gratifying manner:—

It was in 1856 that the late Prince Consort founded the Braemar Observatory, which stands at an altitude of 1114 feet above sea level. On its inception Mr. Aitken was appointed observer by its founder, and ever since observations have been taken by him twice daily and reports despatched weekly and monthly to head quarters. To mark the appreciation of the services rendered by Mr. Aitken, the King has sent him a letter, and made him the recipient of a jewelled scarf-pin. The letter which accompanied the gift expresses His Majesty's satisfaction with the attendance paid and the interest taken in the work of the observatory by Mr. Aitken, and expresses the hope that he may be long spared to wear the gift.

Mr. Aitken informs us that he has always had great pleasure in the work, and that he is gratified by the appreciation of his services by those whose desire it is to advance the science of meteorology, a science which he truly observes is deserving of more attention, support and encouragement than it has hitherto received.

BEN NEVIS, although deserted by meteorologists, is occasionally visited, even in the winter months, by mountaineers, who find its cliffs and snow-slopes no mean test of their Alpine craft. In the article on a Ben Nevis glacier, by the Rev. R. P. Dansey, recently published in these pages, the important work of the Rev. A. E. Robertson was dwelt upon, and our readers will regret to hear that a serious accident has befallen that intrepid climber. On April 6th, according to the report of a Fort William correspondent:—

The day was a most unsuitable one for climbing, there being an almost continuous fall of snow, accompanied by thunder and lightning, but, nevertheless, Mr. Robertson set out alone to make the ascent of the mountain. He succeeded in reaching the summit in safety, and started on the return journey. All went well until he was near the edge of a precipice, and, holding on with his ice axe, had commenced to negotiate a dangerous snow slope. Then came a vivid flash of lightning, which Mr. Robertson thinks must have struck the axe, and he was almost immediately precipitated over the slope. Mr. Robertson calculates that he must have rolled nearly 1000 ft. before his progress was stopped, and how long he lay unconscious afterwards he cannot say. He must have dragged himself to his hotel in Fort William in a semi-unconscious condition, for he recollects nothing from the moment when he began to fall.

RAINFALL AND TEMPERATURE, APRIL, 1905.

Div.	STATIONS. [The Roman numerals denote the division of the Annual Tables in *British Rainfall* to which each station belongs.]	RAINFALL. Total Fall.	Diff. from average, 1870-99.	Greatest in 24 hours. Depth	Date.	Days on which ·01 or more fell.	TEMPERATURE. Max. Deg.	Max. Date.	Min. Deg.	Min. Date.	No. of Nights below 32°. Shade	Grass
		inches.	inches.	in.								
I.	London (Camden Square) ...	1·75	+ ·06	·49	9	19	64·7	13	31·6	8	1	11
II.	Tenterden ...	2·33	+ ·56	·92	10	15	63·5	13	29·7	8	3	12
,,	Hartley Wintney ...	1·68	— ·01	·52	30	13	65·0	12	29·0	9, 10	4	8
III.	Hitchin ...	1·84	+ ·22	·32	10	20	62·0	13	27·0	2	7	...
,,	Winslow (Addington) ...	1·92	+ ·09	·30	9	19	62·0	16	30·0	3, 8	6	10
IV.	Bury St. Edmunds (Westley)	1·82	+ ·28	·39	10	20	61·5	13	28·5	9	4	...
,,	Brundall ...	2·06	+ ·38	·36	10	24	64·0	14	27·0	8	3	9
V.	Alderbury ...	1·78	— ·10	·36	14	15	62·0	13, 14	29·0	8, 22	7	...
,,	Winterbourne Steepleton ...	2·59	— ·01	·61	13	20	58·3	13	29·5	22	2	12
,,	Torquay (Cary Green) ...	2·65	+ ·20	·67	10	15	59·3	11	36·9	23	0	1
,,	Polapit Tamar [Launceston]	3·21	+ ·98	·63	10	20	56·4	11	30·8	7	3	4
,,	Bath ...	2·47	+ ·42	·44	10	17	61·0	13	29·2	22	1	14
VI.	Stroud (Upfield) ...	2·70	+ ·65	·36	11	21	60·0	16	33·0	21	0	...
,,	Church Stretton (Woolstaston)	2·25	+ ·11	·66	30	21	61·0	1	27·5	8	7	...
,,	Bromsgrove (Stoke Reformatory)	1·88	+ ·22	·26	30	17	56·0	13	25·0	21	7	...
VII.	Boston ...	3·17	+ 1·58	·47	6	18	68·0	29	27·0	8	6	...
,,	Worksop (Hodsock Priory).	1·74	+ ·05	·29	6	21	62·2	13	25·0	3	4	15
,,	Derby (Midland Railway)...	1·37	— ·35	·25	6, 30	21	61·0	13	29·0	7	4	...
VIII.	Bolton (The Park) ...	4·24	+ 2·09	·73	28	21	57·7	15	28·7	8	3	11
IX.	Wetherby (Ribston Hall) ...	2·55	+ ·57	·41	6	20	...	...	...	...	...	...
,,	Arncliffe Vicarage ...	6·47	+ 3·15	1·11	30	23	...	...	...	...	...	...
,,	Hull (Pearson Park) ...	2·44	+ ·72	·41	23	20	60·0	28	27·0	8	3	13
X.	Newcastle (Town Moor) ...	2·88	+ 1·09	·38	14	24	...	...	...	...	...	...
,,	Borrowdale (Seathwaite) ...	12·71	+ 6·44	2·83	1	23	58·2	15	24·5	8	6	...
XI.	Cardiff (Ely) ...	2·72	+ ·38	·43	10	22	...	...	...	...	...	...
,,	Haverfordwest (High St.)..	4·36	+ 1·69	·80	30	20	58·2	13	32·9	22	0	8
,,	Aberystwith (Gogerddan)...	3·41	+ 1·02	·49	8	18	66·0	13	32·0	17	1	...
,,	Llandudno ...	1·80	— ·02	·45	6	18	60·8	13	30·5	8	1	...
XII.	Cargen [Dumfries] ...	3·99	+ 1·69	·76	30	13	58·0	15	25·0	8	8	...
,,	Lilliesleaf (Riddell) ...	2·84	+ ·88	·35	30	24	55·0	14	21·0	7	12	17
XIII.	Edinburgh (Royal Observy.)	1·48	...	·23	26	17	59·7	14	25·5	8	5	17
XIV.	Colmonell ...	2·63	+ ·38	·55	1	12	58·6	15, 27	20·0	7	8	...
XV.	Tighnabruaich ...	3·22	+ ·33	·73	1	16	54·0	30	23·0	7	13	13
,,	Mull (Quinish) ...	3·14	+ ·34	·70	1	19	...	...	...	...	...	...
XVI.	Dundee (Eastern Necropolis)	2·20	+ ·26	·50	14	17	58·3	4	25·6	8	9	...
XVII.	Braemar ...	2·59	+ ·41	·44	14	22	54·2	4	20·6	8	12	...
,,	Aberdeen (Cranford) ...	3·43	+ 1·21	·62	30	22	53·0	26, 27	23·0	6	8	...
,,	Cawdor (Budgate) ...	2·09	+ ·60	·43	22	16	...	...	...	...	...	...
XVIII.	Invergarry ...	3·12	+ ·44	1·21	1	8	...	...	...	...	...	...
,,	Bendamph ...	2·95	— 1·39	·48	3	19	...	...	...	...	...	...
XIX.	Dunrobin Castle ...	1·73	— ·08	·31	5	14	57·0	29	26·0	7, 9	8	...
,,	Castletown ...	3·39	...	·58	5	26	55·0	26	25·0	6, 7	10	...
XX.	Killarney ...	4·02	+ ·31	1·07	25	25	62·5	6	32·0	19	...	...
,,	Waterford (Brook Lodge)...	4·01	+ 1·45	·45	8	19	56·5	4*a*	28·0	8	2	...
,,	Broadford (Hurdlestown) ...	2·48	+ ·31	·49	30	23	58·0	3	28·0	7	3	...
XXI.	Carlow (Browne's Hill) ...	3·05	+ ·71	·64	30	20	...	...	...	...	...	...
,,	Dublin (Fitz William Square)	2·47	+ ·47	·68	30	25	59·1	14, 27	30·0	8	1	5
XXII.	Ballinasloe ...	1·33	— ·99	·17	26	24	67·0	13	22·0	8	10	...
,,	Clifden (Kylemore House)..	4·91	+ ·17	·82	26	18	...	...	...	...	...	...
XXIII.	Seaforde ...	2·46	— ·13	·41	6	19	58·0	29	23·0	7	6	11
,,	Londonderry (Creggan Res.)	3·09	+ ·77	·51	28	21	...	...	...	...	...	...
,,	Omagh (Edenfel) ...	2·53	+ ·28	·50	6	22	62·0	13	26·0	7	4	14

+ Shows that the fall was above the average; — that it was below it. *a*—and 7, 27

SUPPLEMENTARY RAINFALL, APRIL, 1905.

Div.	STATION.	Rain. inches	Div.	STATION.	Rain. inches
II.	Dorking, Abinger Hall	1·56	XI.	New Radnor, Ednol	4·98
,,	Ramsgate, West Cliff	2·63	,,	Rhayader, Nantgwillt	6·67
,,	Hailsham	1·64	,,	Lake Vyrnwy	3·59
,,	Crowborough	2·87	,,	Ruthin, Plâs Drâw	2·58
,,	Osborne	1·83	,,	Criccieth, Talarvor	2·45
,,	Emsworth, Redlands	1·63	,,	Anglesey, Lligwy	2·60
,,	Alton, Ashdell	1·55	,,	Douglas, Woodville	2·87
,,	Newbury, Welford Park	2·49	XII.	Stoneykirk, Ardwell House	2·30
III.	Harrow Weald	1·95	,,	Dalry, Old Garroch	4·57
,,	Oxford, Magdalen College	1·90	,,	Langholm, Drove Road	4·46
,,	Banbury, Bloxham	2·24	,,	Moniaive, Maxwelton House	3·50
,,	Pitsford, Sedgebrook	1·64	XIII.	N. Esk Reservoir [Penicuick]	3·10
,,	Huntingdon, Brampton	1·55	XIV.	Maybole, Knockdon Farm	2·55
,,	Wisbech, Bank House	1·52	,,	Glasgow, Queen's Park	1·92
IV.	Southend	2·48	,,	Campbeltown, Redknowe	2·35
,,	Colchester, Lexden	1·86	XV.	Inveraray, Newtown	3·82
,,	Saffron Waldon, Newport	1·79	,,	Ballachulish House	4·31
,,	Rendlesham Hall	2·24	,,	Islay, Eallabus	3·03
,,	Swaffham	1·91	XVI.	Dollar	2·56
,,	Blakeney	1·44	,,	Loch Leven Sluices	1·93
V.	Bishops Cannings	3·02	,,	Balquhidder, Stronvar	3·83
,,	Ashburton, Druid House	3·89	,,	Coupar Angus Station	1·31
,,	Okehampton, Oaklands	3·54	,,	Blair Atholl	2·17
,,	Hartland Abbey	2·92	,,	Montrose, Sunnyside	3·09
,,	Lynmouth, Rock House	1·92	XVII.	Alford, Lynturk Manse	2·86
,,	Probus, Lamellyn	3·05	,,	Keith	2·43
,,	Wellington, The Avenue	2·43	XVIII.	N. Uist, Lochmaddy	1·77
,,	North Cadbury Rectory	2·10	,,	Aviemore, Alvey Manse	2·19
VI.	Clifton, Pembroke Road	3·16	,,	Loch Ness, Drumnadrochit	1·21
,,	Moreton-in-Marsh, Longboro'	2·67	,,	Glencarron Lodge	...
,,	Ross, The Graig	2·59	,,	Fearn, Lower Pitkerrie	1·82
,,	Shifnal, Hatton Grange	1·87	XIX.	Invershin	2·40
,,	Wem Rectory	1·47	,,	Altnaharra	3·54
,,	Cheadle, The Heath House	2·45	,,	Bettyhill	3·21
,,	Coventry, Kingswood	1·64	,,	Watten	2·54
VII.	Market Overton	1·74	XX.	Cork, Wellesley Terrace	3·27
,,	Market Rasen	1·69	,,	Darrynane Abbey	5·57
,,	Bawtry, Hesley Hall	1·93	,,	Glenam [Clonmel]	5·30
VIII.	Neston, Hinderton	2·16	,,	Ballingarry, Gurteen	1·86
,,	Southport, Hesketh Park	2·60	,,	Miltown Malbay	3·04
,,	Chatburn, Middlewood	3·44	XXI.	Gorey, Courtown House	3·18
,,	Cartmel, Flookburgh	3·89	,,	Moynalty, Westland	2·23
IX.	Langsett Moor, Up. Midhope	3·05	,,	Athlone, Twyford	1·38
,,	Scalby, Silverdale	2·96	,,	Mullingar, Belvedere	2·08
,,	Ingleby Greenhow	3·04	XXII.	Woodlawn	1·71
,,	Middleton, Mickleton	2·78	,,	Westport, Murrisk Abbey	2·47
X.	Beltingham	4·15	,,	Crossmolina, Enniscoe	2·44
,,	Font Reservoir, Fallowlees	1·71	,,	Collooney, Markree Obsy	1·96
,,	Ilderton, Lilburn Cottage	2·62	XXIII.	Enniskillen, Portora	1·93
,,	Keswick, The Bank	4·81	,,	Warrenpoint	2·21
XI.	Llanfrechfa Grange	3·69	,,	Banbridge, Milltown	2·30
,,	Treherbert, Tyn-y-waun	7·88	,,	Belfast, Springfield	2·93
,,	Carmarthen, Friary	5·50	,,	Bushmills, Dundarave	2·15
,,	Castle Malgwyn	5·10	,,	Stewartstown	2·01
,,	Plynlimon	8·20	,,	Killybegs	2·03
,,	Tallyllyn	4·10	,,	Horn Head	2·06

METEOROLOGICAL NOTES ON APRIL, 1905.

ABBREVIATIONS.—Bar. for Barometer; Ther. for Thermometer; Temp. for Temperature; 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 AND WALES.

LONDON, CAMDEN SQUARE.—Typical April weather with frequent changes and no period of settled conditions. There was a spell of cold N. and E. winds from 16th, lasting more or less till 25th, with low temp. and only slight R. A little S fell on 7th and a quantity of sleety H on 18th and 19th. T and L on 16th. Duration of sunshine 91·3* hours and of R 53·7. Mean temp. 47°·6.

TENTERDEN.—Cold, with polar winds on 15 days, but strong S.W. winds at the close. Dry at Easter, but with deficient sunshine, the total for the month being only 117† hours.

CROWBOROUGH.—A typical April, showery and cool, with R ·66 in. above the average of 34 years, reducing the deficiency for the year to ·86 in. From the 17th there was a week of cold wintry weather, with strong N.E. winds and occasional light S, sleet and H. Mean temp. 45°·9, or 1°·7 below the average.

HARTLEY WINTNEY.—Not a good word can be said on the phenomena of the month's weather. Very mild in the first week, then cool, harsh, acrid and sunless days, with rough, biting N. and N.E. winds until the last two days, which were mild and stormy. Ozone daily, with a mean of 3·8.

BRUNDALL.—S fell heavily on 5th and 6th, lying five inches deep on the level. S, sleet and H also fell on 18th and 19th. T and L on 23rd and 30th.

TORQUAY.—Mean temp. 48°·7, or 0°·5 above the average. Duration of sunshine 107·8* hours, being 72·4 hours below the average. Mean amount of ozone 6·0; max. amount 9·0 on 13th, 14th and 30th; min. 3·5 on 12th.

LYNMOUTH.—From 1st to 13th was mild, with sunshine and showers. Cold from 14th to 24th, afterwards mild and warm, with sunshine and R.

NORTH CADBURY.—A very disagreeable April. R was frequent, but the total was only 88 per cent. of the average of 9 years. The max. temp. was much below, and the min. temp. well above, the normal.

CLIFTON.—A rainy month, with R nearly an inch above the normal. The driest period was from 17th to 22nd, under the influence of cold N.E. winds. There were about 45 hours of continuous R from 9th to 11th, and R fell nearly the whole of 25th and 26th. S.S.E. gale and heavy R on 30th.

ROSS.—One of the most cheerless Aprils remembered. The amount of cloud was 8 or more on no less than 25 mornings. R very persistent but not heavy, being about one-third more than the average. Mean max. temp. very low and mean min. much above the average.

WORKSOP.—Cloudy and showery, with mild nights but no warm days. Two inches of S lying at 8 a.m. on 7th. Earthquake shock at 1.36 a.m. on 23rd.

BOLTON.—Temp. generally slightly below the average; mean 42°·7. Duration of sunshine 76·7* hours, 34 hours below the average. Prevailing winds E. and N. till the end, then S. All growing factors were in excess of 1904.

SOUTHPORT.—Exceptionally sunless and rather wet. Mean temp. 1°·3 below the average. Duration of sunshine 46 hours below the average. R ·86 in. above the average. Underground water level still exceptionally low.

LILBURN.—Very cold, with frequent showers of S, H and R and little sunshine. Milder at the end. R above the average.

HAVERFORDWEST.—Fine generally but cold, with no R from 16th to 23rd, after which it was very wet. Vegetation and agricultural operations were generally backward. Duration of sunshine 84·9* hours.

RUTHIN.—The early part was mild and rainy, followed by dull days with cold N.E. and N.W. winds. The last week was mild and rainy.

LLANDUDNO.—A variable month. Very cold from 16th to 20th. H on 5th and S on 7th. Duration of sunshine 106·6* hours. Vegetation very advanced, and lilac and laburnum in bloom at the end. Summer migrants all late.

* Campbell-Stokes. † Jordan

DOUGLAS.—A deplorable month. Except perhaps 1880 and 1891, almost unprecedentedly cold and wintry, with bitter, strong N.E. winds, S, H and frosts. The 21st and 29th were mild.

SCOTLAND.

LILLIESLEAF.—Unusually windy and wet. Very bad seed time, with continual heavy showers and only two consecutive fine days.

COLMONELL.—Mean temp. 43°·9, or 1°3 below the average of 29 years. About two inches of S on the ground on 7th, the heaviest in April in 29 years.

INVERARAY.—There was a spell of fine dry weather in the middle, but it was too cold for anything to grow, and the season was very backward.

COUPAR ANGUS.—The month opened with a few bright and warm days, but a protracted period of cold and barren weather lasted till 26th, then milder.

DRUMNADROCHIT.—R ·68 in. less than the average of 19 years, but rainy days 8 above the average. Unusually cold, with drizzling R or S almost daily.

CASTLETOWN.—Cold, wet and sunless. S storm from 5th to 10th. The ground was so soaked with water that in many cases turnip crops could not be carted, and at the end only about half the seed was sown and ploughing unfinished.

IRELAND.

DARRYNANE ABBEY.—Again very wet, with R 156 per cent. of the average of 25 years, and only exceeded three times in that period. Cold easterly wind from 8th to 22nd; the rest fairly mild with some hot days.

MILTOWN MALBAY.—Ungenial, cold and dripping, ending a bad spring.

DUBLIN.—Cold, dull and very showery. Mean temp. 46°·8, or 0°·8 below the average. Duration of sunshine 107·8 hours, or 51·2 hours below the average. A very cold Easter.

BELFAST.—Cold and dull until the last week, when a vast change came and spring really commenced. R just over the average.

OMAGH.—With a considerable preponderance of polar and easterly winds and rather above the average R, the weather was mostly ungenial and unfavourable for vegetation.

FOUR MONTHS' RAINFALL OF 1905.

Aggregate Rainfall for January—April, 1905.

Stations.	Diff. from Aver.	Per cent. of Aver.	Stations.	Diff. from Aver.	Per cent. of Aver.	Stations.	Diff. from Aver.	Per cent. of Aver.
	in.			in.			in.	
London	6·88	101	Bolton	13·14	119	Braemar	11·45	112
Tenterden	7·86	100	Wetherby	7·21	98	Aberdeen	9·76	104
Hartley Wintney	6·98	88	Arncliffe	20·05	103	Cawdor	10·91	143
Hitchin	6·78	104	Hull	6·27	87	Invergarry	24·78	130
Winslow	6·29	87	Newcastle	5·58	75	Bendamph	33·13	126
Westley	6·64	103	Seathwaite	42·82	99	Dunrobin	13·25	143
Brundall	6·24	96	Cardiff, Ely	11·52	95	Killarney	19·58	99
Alderbury	8·41	98	Haverfordwest	14·95	103	Waterford	13·46	108
Winterbourne	11·07	92	Gogerddan	15·43	126	Broadford	11·91	125
Torquay	10·24	93	Llandudno	9·00	108	Carlow	10·41	100
Polapit Tamar	13·08	115	Cargen	13·86	103	Dublin	7·85	98
Bath	7·58	88	Lilliesleaf	8·10	86	Mullingar	11·41	110
Stroud, Upfield	8·54	100	Colmonell	13·72	101	Ballinasloe	9·48	88
Woolstaston	9·49	103	Glasgow	9·39	95	Clifden	24·65	101
Bromsgrove	6·53	100	Inveraray	25·79	130	Crossmolina	17·29	109
Boston	6·12	100	Islay, Eallabus	17·25	121	Seaforde	10·08	86
Hodsock Priory	4·97	76	Mull	20·39	117	Londonderry	13·15	113
Derby	5·35	78	Dundee	6·50	81	Omagh	13·03	123

Climatological Table for the British Empire, November, 1904.

STATIONS. (*Those in italics are South of the Equator.*)	Absolute. Maximum. Temp.	Date.	Absolute. Minimum. Temp.	Date.	Average. Max.	Min.	Dew Point.	Humidity.	Absolute. Max. in Sun.	Min. on Grass.	TotalRain. Depth.	Days.	Aver. Cloud.
	°		°		°	°	°	0-100	°	°	inches		
London, CamdenSquare	58·8	9	24·1	26	47·8	36·7	39·5	91	87·6	16·5	1·70	11	7·2
Malta	71·6	6	46·7	18	64·5	53·6	49·9	75	121·6	44·0	2·82	20	4·4
Lagos	90·0	29	70·5	13	87·5	74·9	75·2	77	143·0	69·5	·63	2	5·6
Cape Town	83·8	25	44·6	13	69·9	54·3	52·7	71	...	...	1·21	6	4·7
Durban, Natal	90·7	26	57·8	5	80·4	65·0	...	...	148·6	...	3·61	18	6·4
Johannesburg	88·3	8	47·2	4	75·5	55·4	51·0	62	...	44·5	4·32	9	2·2
Mauritius	87·0	28	61·9	17	83·5	67·0	62·7	66	155·2	53·0	1·38	10	5·8
Calcutta	88·2	13	55·4	29	82·3	64·7	63·2	72	144·4	50·0	·15	1	3·2
Bombay	92·1	16	69·8	24	87·4	72·7	67·4	68	139·4	58·9	·00	0	1·1
Madras	93·4	5	64·1	24*a*	89·4	69·3	65·6	66	146·8	60·7	·20	3	3·2
Kodaikanal	69·0	27	40·5	28	62·5	45·9	49·9	74	132·2	25·2	·09	1	4·0
Colombo, Ceylon	90·7	29	71·8	23	87·7	74·5	71·4	76	150·5	67·8	3·39	9	6·4
Hongkong	83·7	14	52·2	30	74·0	64·6	56·3	62	132·9	...	·22	5	5·5
Melbourne	92·2	16	41·6	20	71·0	50·8	47·7	65	146·7	33·0	1·29	8	5·4
Adelaide	99·5	16	44·9	7	76·9	53·5	47·7	50	154·5	40·2	·65	7	3·3
Coolgardie	100·6	19	39·0	2	87·9	56·3	46·1	40	168·9	35·2	·70	2	2·4
Sydney	93·2	2	54·2	5	78·4	61·8	56·4	58	132·7	42·8	·46	10	4·2
Wellington	73·8	28	42·0	22	63·8	48·9	45·3	67	140·0	36·0	1·06	7	5·2
Auckland	71·0	25	47·0	17	62·5	52·5	49·8	76	135·0	41·0	4·35	16	5·5
Jamaica, Negril Point	89·6	10	66·8	26	86·4	72·1	72·5	78	...	...	·35	2	...
Grenada	86·4	17	72·0	28	84·1	74·4	72·0	77	152·0	...	5·69	24	3·5
Toronto	58·0	3	9·9	28	43·2	28·6	29·6	78	82·0	3·5	·11	9	5·9
Fredericton	49·8	4	-0·5	29	37·6	20·3	19·0	64	...	...	2·41	8	6·3
Winnipeg	64·8	2	-7·0	30	41·3	22·6	...	...	...	...	·32	2	5·0
Victoria, B.C.	60·0	9	34·0	18	52·7	45·4	45·5	86	...	...	5·23	22	8·1
Dawson	22·0	2	-27·5	18	5·0	-4·3	...	...	...	...	·80	5	5·6

a—and 29.

MALTA.—Mean temp. of air 58°·3, or 3°·8 below average, mean hourly velocity of wind 10·5 miles, or 1·1 above average. Mean temp. of sea 66°·0. TSS on 3 days.

Mauritius.—Mean temp. of air 0°·4, dew point 1°·6, and R ·38 in., below averages. Mean hourly velocity of wind 10·0 miles, or 0·7 mile below average. Computed direction of wind E. by S.

MADRAS.—R the lowest recorded since 1813. Bright sunshine 238 hours.

KODAIKANAL.—Bright sunshine 214 hours.

COLOMBO.—Mean temp. of air 81°·1, or 1°·3 above, of dew point 0°·9 below, and R 9·25 in. below, averages. Mean hourly velocity of wind 7·5 miles; prevailing direction N. and N.W. TSS on 5 days.

HONGKONG.—Mean temp. of air 68°·8. Bright sunshine 187·3 hours. Mean hourly velocity of wind 13·1 miles; mean direction E. 27° N.

Adelaide.—Mean temp. of air 2°·0 below, and bright sunshine 35 hours above the averages, and R ·36 in. below average.

Sydney.—Mean temp. of air 3°·2, above, R 2·64 in. below, and humidity 10·7 p.c. below averages.

Wellington.—Mean temp. of air 0°·9 below, and R 2·51 in. below, averages.

Auckland.—Mean temp. of air 3·5 degrees below, and R 2·20 in. above average