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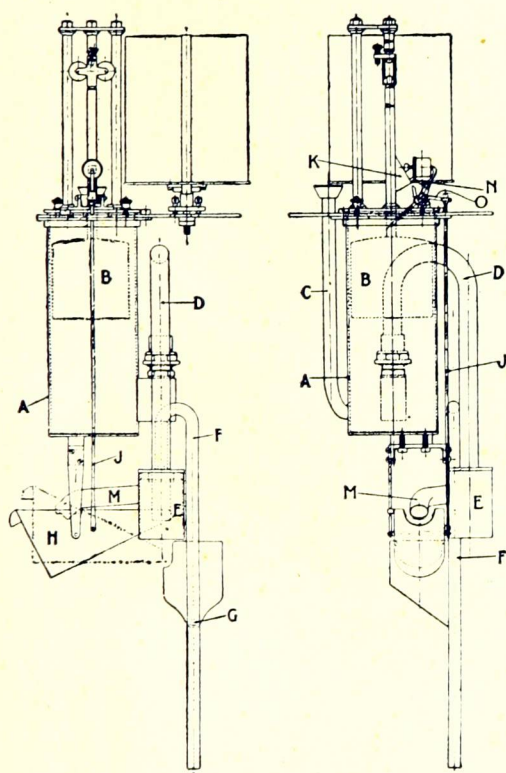
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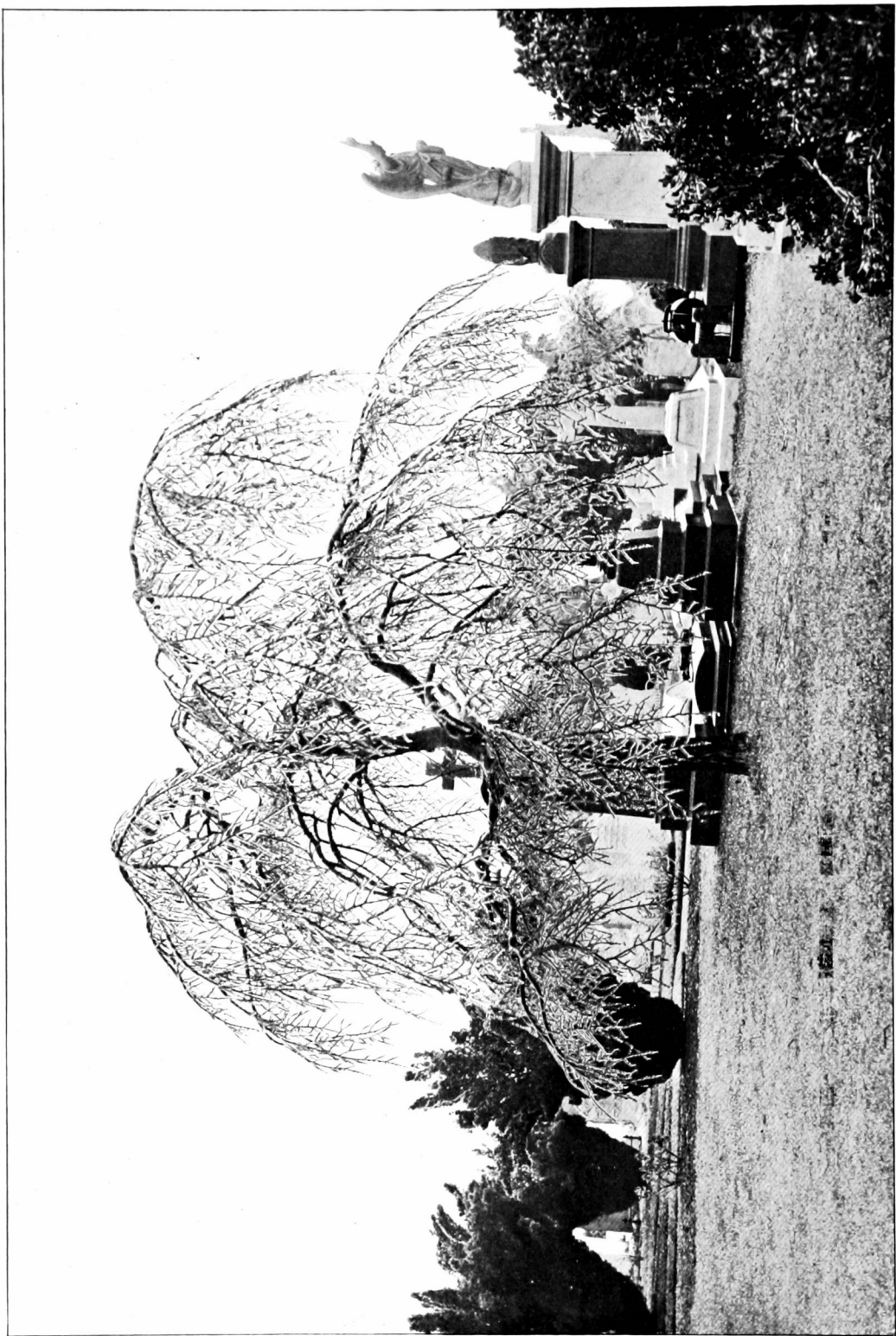


BRITISH RAINFALL,  
1912.

LONDON :  
SHIELD AND SPRING PRINTERS,  
LANCELOT PLACE, BROMPTON ROAD, S.W.



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GLAZED FROST AT LUTON, CHATHAM, JANUARY 17th, 1912.

(For description see page [4].)

*Photograph by Mr. Aler C. Burgess.*



# BRITISH RAINFALL, 1912.

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## ON THE DISTRIBUTION OF RAIN IN SPACE AND TIME OVER THE BRITISH ISLES

DURING THE YEAR

### 1912

AS RECORDED BY MORE THAN 5,000 OBSERVERS  
IN GREAT BRITAIN AND IRELAND

AND DISCUSSED

WITH ARTICLES UPON VARIOUS BRANCHES OF RAINFALL WORK

BY

## HUGH ROBERT MILL

DIRECTOR OF THE BRITISH RAINFALL ORGANIZATION

ASSISTED BY

### CARLE SALTER

CHIEF ASSISTANT

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THE FIFTY-SECOND ANNUAL VOLUME.

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WITH MAPS AND ILLUSTRATIONS

LONDON:

EDWARD STANFORD, LTD., 12, 13 & 14, LONG ACRE, W.C.

1913.

# ERRATA IN BRITISH RAINFALL, 1910.

- \*p. [247], S. Devon 6, Cheriton Bishop, *for* 47·30 *read* 47·02.
- \*p. [247], S. Devon 6, Bampton (Huntsham Court), *for* 53·25 *read* 52·77.
- \*p. [248], N. Devon 2, Filleigh (Castle Hill Gardens), *for* 51·42 *read* 51·51.
- \*p. [248], N. Devon 2, Challacombe, *for* 69·68 *read* 70·28.
- \*p. [253], Somerset 5, Hawkridge (Liscombe), *for* 71·77 *read* 71·59.
- \*p. [253], Somerset 5, Simonsbath, *for* 81·14 *read* 79·34.

# ERRATA IN BRITISH RAINFALL, 1910-11.

Part III., General Table, Perthshire, Aberfoyle, The Inn, *reduce the depth of rain in each case by 6 per cent. in order to compensate for size of funnel.*

# ERRATA IN BRITISH RAINFALL, 1911.

- pp. 107, 108, Headings of list, *for* June 30th *read* July 31st.
- p. [19], *line 4 from bottom, for* 25 days *read* 26 days.
- p. [135], Heading of Table, *for* 1910 *read* 1911.
- p. [137], *Insert after line 11,*  
  - add* Snowdon, Llyn Llydau Copper Mill, Aug. 4, 1911 ... 4·95.
  - add* „ „ „ „ Intake..... Aug. 4, 1911 ... 4·46.
- p. [257], Hampshire 2, *for* „ (Wellington House) *read* (Coastguard Station).
- p. [270], Northamptonshire 4, *for* Peterborough (Queen Street) *read* Peterborough (Abbeyfields).
- p. [278], Norfolk 2, *for* Aylsham (Woodgate) *read* Aylsham (Millgate).
- p. [285], South Devon 4, Princetown, 88·33—182, *delete the record.*
- \*p. [287], North Devon 4, Morehard Bishop (Hartnolls), *for* 30·06 *read* 31·01.
- p. [293], Somerset 3, Angersleigh (Leigh Hill Reservoir), *for* 30·73 *read* 31·73.
- \*p. [293], Somerset 5, Brushford Rectory, *for* 38·62 *read* 39·12.
- \*p. [293], Somerset 5, Winsford School, *for* 50·33 *read* 50·83.
- \*p. [294], Somerset 5, Simonsbath, *for* 66·29 *read* 66·21.
- p. [328], West Riding 9, Skipton (Embsay), *for* 360 T *read* 560 T.
- p. [346], Brecon 7, Black Mountains (Blaen Grwyne Fawr), *for* 44·70 *read* 45·01.
- p. [351], Stirling 1, Stirling (Touch Reservoir), No. 1 altitude, *for* 455 *read* 707.
- p. [381], *line 1, for* BRAY & C. *read* VARTRY & C.

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\* These errata are the result of an exhaustive study of the daily rainfall in the Exe Valley, undertaken in 1912.

# CONTENTS.

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PREFACE ... ..	PAGE 7
----------------	-----------

## PART I.

REPORT OF THE DIRECTOR TO THE TRUSTEES ... ..	9
REPORT OF THE TREASURER TO THE TRUSTEES ... ..	20
TRUSTEES AND STAFF OF THE BRITISH RAINFALL ORGANIZATION	21
LIST OF SUBSCRIBERS TO THE GENERAL FUND FOR 1912... ..	22
LIST OF DONORS TO THE ENDOWMENT FUND ... ..	27
SPECIAL ARTICLES :—	
(1) <i>The Great Rain Storm of August 25th-26th, 1912</i> ... ..	28
(2) <i>The Wettest Summer in England and Wales</i> ... ..	48
(3) <i>The “Seathwaite” Pattern Rain Gauge</i> ... ..	56
METEOROLOGICAL OBSERVATIONS AT CAMDEN SQUARE IN 1912 ...	59
RECORDS OF EVAPORATION AND PERCOLATION IN 1912 ... ..	61
THE STAFF OF OBSERVERS ... ..	70
OBITUARY ... ..	86

## PART II.

### RAINFALL AND METEOROLOGY OF 1912:

OBSERVERS' NOTES ON THE DAYS AND ON THE YEAR ... ..	[3]
THE DISTRIBUTION OF RAINFALL IN TIME— <i>Rain Days—Droughts, Rain Spells—The Duration of Rainfall—Heavy Rains in Short Periods</i> ... ..	[58]
HEAVY FALLS ON RAINFALL DAYS ... ..	[107]
MONTHLY RAINFALL ... ..	[144]
SEASONAL RAINFALL ... ..	[185]
THE RELATION OF THE TOTAL RAINFALL TO THE AVERAGE ...	[194]
EXTREMES OF RAINFALL ... ..	[204]

## PART III.

GENERAL TABLE OF RAINFALL AT 5272 STATIONS ...	[205]
--	-------

## LIST OF ILLUSTRATIONS.

	PAGE
Glazed Frost at Luton, Chatham ... ..	<i>Frontispiece.</i>
Track of Depression on August 26th, 1912 ... ..	28
Hour of Commencement of Rain on August 26th, 1912 ... ..	29
Hour of Termination of Rain on August 26th-27th, 1912 ... ..	31
Curves showing Rate of Fall of Rain, August 25th-26th, 1912 ... ..	32
Rainfall of August 25th, 1912, in England and Wales ... ..	34
Rainfall of August 26th, 1912, in England and Wales ... ..	35
Rainfall of August 25th-26th, 1912, in East Anglia ... ..	37
Rainfall of August 25th-26th, 1912, in England and Wales ... ..	37
Map of Relation of Rainfall to the Average, June-August, 1912 ... ..	50
Rainfall, June-August, 1879 ... ..	54
Rainfall, June-August, 1912 ... ..	55
The "Seathwaite" Pattern Rain Gauge ... ..	57
Evaporation Diagram for Camden Square, 1912 ... ..	61
Flood at Llanrwst, December 14th, 1912 ... ..	[25]
Distribution of Rainfall in Time—Index map of Stations ... ..	[59]
Map of Average Number of Rain Days, 1892-1911 ... ..	[64]
Map of Rain Days in 1912 ... ..	[65]
Maps of Absolute and Partial Droughts in 1912 ... ..	[68]
Map of Drought of April, 1912 ... ..	[70]
Map of Drought of September, 1912 ... ..	[71]
Map of Rain Spells in 1912 ... ..	[78]
Maps of Rain Spells of October—November, and of December, 1912 ... ..	[80]
Diagram of Heavy Falls in Short Periods in 1912 ... ..	[104]
Maps of Heavy Rain in 1912 on—	
July 23rd ... ..	[113]
,, 27th-28th ... ..	[115]
,, 31st ... ..	[117]
August 3rd ... ..	[118]
,, 4th ... ..	[119]
,, 5th ... ..	[120]
September 29th (England) ... ..	[127]
,, 30th ( ,, ) ... ..	[128]
,, 29th-30th ( ,, ) ... ..	[129]
,, 30th (Scotland) ... ..	[130]
October 26th ... ..	[132]
,, 27th ... ..	[134]
Maps of the Rainfall of the two driest Aprils in England and Wales ... ..	[150]
Maps of the Total Rainfall and of the Difference from the Average of each month in 1912 ... ..	<i>pp.</i> [152]—[175]
Maps of Seasonal Rainfall ... ..	<i>pp.</i> [186]—[188]
Map of Relation of Rainfall to the Average (coloured) ... ..	... <i>face p.</i> [195]
Map of Divisions in British Rainfall ... ..	[206]
Twenty-two Maps showing Divisions of British Isles sub-divided into River-Divisions ... ..	<i>In Part III.</i>



## PREFACE.

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THE fifty-second volume of BRITISH RAINFALL now presented to the reader, has been completed five days earlier than its predecessor of last year, although its completion has been retarded by a totally unforeseen difficulty. This was the breakdown of my health in the end of 1912 as the result of long continued overwork. My personal work on this volume has been restricted by the necessity of giving my eyes complete rest for some months, but Mr. Salter has taken far more than his usual part in the work, and it is only just that his name should appear with mine on the title page, in token of his sharing the responsibility for the completeness and accuracy of the whole volume.

A full account of the work of the year appears in the Director's Report to the Trustees, the suggestions in which regarding a reduction in the charge for certificates of accuracy for rain gauges and measuring glasses, and with reference to the arrangements for carrying on the work of the Organization during my temporary absence, have been given effect to by the Trustees.

The principal articles in Part I. are devoted to the two most remarkable phenomena of 1912, viz., the unprecedented rainfall of August 25th and 26th, which is illustrated by a coloured plate showing the centre of greatest rainfall in Norfolk and neighbouring counties, and the wet summer in England and Wales, the severity of which has only once before been approached within the period covered by our annual volumes.

The plan of the work remains exactly as before, the only alteration being the omission of the ten representative daily records of rainfall, the interest aroused by which did not appear to justify the expense of producing them.

In Part III., maps of the river-divisions are now given with the Tables for each of the twenty-three large divisions of the country.

The photograph showing one of the most beautiful of "all the forms of the radiant frost" which appears as the frontispiece, has been supplied by the kindness of Mr. W. Coles Finch.

H. R. M.

62, CAMDEN SQUARE,  
LONDON, N.W.

*31st July, 1913.*

. . . . .

As he believes in fire that it will burn,  
Or rain that it will drench him? Break fire's law,  
Sin against rain, although the penalty  
Be just a singe or soaking? "No," he smiles ;  
"Those laws are laws that can enforce themselves."

*Robert Browning.*

# THIRD ANNUAL REPORT OF THE DIRECTOR TO THE TRUSTEES OF THE BRITISH RAINFALL ORGANIZATION.

Adopted at the Meeting of Trustees held at 62, Camden Square, London,  
on July 23rd, 1913. The statistics in this proof are revised to  
the date of publication of *British Rainfall*, 1912.

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**Routine Work.**—The work of the Organization has been carried on during the year according to the usual routine, and it is necessary only to record its volume by a few statistics for comparison with previous years. The meteorological observations at Camden Square have been carried on regularly. Reports have been sent by telephone each morning to the Meteorological Office for publication in the *Daily Weather Report*, and the full record once a month.

The number of postal communications received during 1912 was 18,489, about 200 more than in the previous year. The number of entries of the despatch of communications by post in the postage book was 12,621, in addition to which 10,615 packets of publications were despatched through the printers. The number of pages of press-copied correspondence was 2,382. This figure does not exactly correspond to the total number of letters written, as a considerable number exceeded one page in length; and on the other hand, when letters were sent out to a number of Observers in identical terms only one was copied.

In response to the Christmas circular, 5,365 returns of rainfall for 1912 were received; a second application was sent to 356 Observers whose returns had not been received before April, and 228 of these responded in time for publication in *British Rainfall*; but a third application was necessary in 35 cases, to which 23 further replies were received. In 1911 the number of returns published in *British Rainfall* was 5,074, that having been the first year in which the number dealt with exceeded 5,000. The increase in the number of stations continues, 5,272 appearing in *British Rainfall*, 1912, a net increase of 198. This increase results from the inclusion of 498 records which had not appeared in 1911, and the loss of 300 records.

In addition to the records passed for printing, 344 have been received which were imperfect or obviously erroneous, and we are able to say that at the end of 1912 there were over 5,500 rain gauges at work in the country. For the first time this year, the measurement of the duration of rainfall on the traces of recording gauges occupied an appreciable time in the work of the Office, and there is reason to expect that this branch of the work will increase in the future.

The number of rain gauges submitted for testing, from July 24th, 1912, to July 23rd, 1913, was 59, and of measuring glasses, 125; and certificates were issued in all but four cases.

The monthly Table of rainfall in Cambridge and Huntingdonshire has been continued.

**The Staff.**—There has been no change in the staff of the Office, although the pressure of the work suggests the advisability of some reorganization at an early date. The degree of specialization in statistical and cartographic work is now such that the old rule no longer holds that each assistant knows all about his own work and something about the work of every other so that a temporary absence of any one would not involve dislocation of the routine. To ensure against the risk of a breakdown in the routine, it would be necessary to reorganize the work in departments, so that there should be at least two members of the staff competent to deal with any matter that might arise. I am happy to be able to report that the work of the Organization as a whole has been carried forward throughout the year without a hitch, although my long enforced absence in the early part of 1913 has thrown a very heavy burden on MR. CARLE SALTER, the chief assistant. He has on this occasion been responsible not only for the compilation of the General Table, but also for writing the draft of all the articles in Part II. after the Observers' Notes, and the greater part of the articles in Part I. also. I have, however, heard the whole work read in manuscript, so that I can share with Mr. Salter the responsibility for the treatment of the data. MR. LAMPORT, in addition to making the standard copy for reference of the monthly rainfall at all stations, has continued to deal with the monthly returns as they came in, and with the testing of rain gauges and measuring glasses. In the latter department his work has been checked in every case in which he reported an inaccuracy of the instrument, and in each instance his measurements have proved to be exact, and the condemnation of the instrument



has been confirmed. MR. H. E. CARTER has kept the full record of meteorological observations at Camden Square, and has dealt generally with all the statistical work. He has also prepared for publication the Observers' Notes on the Days and on the Year, which occupy pages [3]—[57] of *British Rainfall*, 1912. MR. DONALD S. SALTER has had his hands full with the increasing volume of cartographical work. This includes not only the plotting of the various daily, monthly and annual maps, and copying the isohyetal lines for publication, but also a great amount of measurement with the planimeter and the placing of new stations in their appropriate river divisions. MR. F. W. CORRY, in addition to taking down and typing the correspondence, has given help in the statistical work.

I cannot speak too highly of the spirit which animates every member of the staff, and the fact that the publication of *British Rainfall* has not been delayed, in spite of the special difficulties which have arisen this year, is a high tribute to their efficiency.

**Observers and Special Services.**—The steady increase in the number of Observers and the unflagging enthusiasm of the small band of helpers responsible for local rainfall associations, makes it difficult to assign a position of special honour to any, where honour is due to all. We are happy that no alteration is required in the list of surviving original Observers, whose records appeared in the first volume of *British Rainfall*, 1860-61, and four of whom (those whose names are printed in small capitals) have observations appearing in *British Rainfall*, 1912.

R. BURRELL, Esq., Westley, Bury St. Edmunds.

W. S. CLARK, Esq., Street, Somerset.

D. Doncaster, Esq., York.

W. Dillworth Howard, Esq., London.

Dr. W. C. LAKE, Teignmouth.

Rev. C. B. Mount, Bath.

LORD PECKOVER OF WISBECH, Wisbech.

Col. Michael Foster Ward, Slough.

J. G. Wood, Esq., London.

I have once more to acknowledge special help from the Meteorological Office, the Royal Meteorological Society, the Scottish Meteorological Society, the Commissioners of Northern Lighthouses, the

Shannon Navigation Office, several Railway and Canal Companies, the British Aluminium Company, the Croydon and Hertfordshire Natural History Societies, the Dorset Field Club, the Mid-Wessex Rainfall Association, the Cardiff Naturalists' Society, the North Devon Athenæum, the Cornwall County Council, the City of Nottingham, the Borough Meteorologists of many important towns, all the great and almost all the minor Waterworks Authorities in the British Isles. Amongst the Observers who have given special help in addition to those responsible for the work of the various Societies which have been named, are Mr. A. Cross of Langbank, Mr. A. W. Preston of Norwich, Mr. C. A. Markham of Northampton, Miss Marshall of Ambleside, Mr. W. E. Whitehouse of Welshpool, Mr. A. Lockwood for Snowdonia, Mr. D. W. Horner, Mr. C. Stirling, Sir John Moore of Dublin and Mr. A. Collenette and Mr. B. T. Rowsell for the Channel Islands. A great deal of help has also been obtained from local newspapers, amongst which the *Surrey Advertiser* and the *East Anglian Daily Times* deserve to be specially mentioned. The original records collected by Mr. Markham, Mr. Preston, Mr. Whitehouse and the *Surrey Advertiser* are sent to us for preservation, and the originals collected by the Scottish Meteorological Society, the Dorset Field Club, the Rev. H. A. Boys of the Mid-Wessex Rainfall Association, and Mr. J. Hopkinson of the Hertfordshire National History Society, are sent regularly for comparison. The details of daily values are published in the admirable Tables prepared by Mr. F. Campbell Bayard for the Croydon Natural History Society, and a copy of all of these is made for preservation at Camden Square. Mr. G. B. Hamlin, of Brighton, has presented the Organization with an engraving of a scene in Brighton during the great storm of July 17th, 1850. The picture has been hung in one of the rooms at 62, Camden Square, where it will be preserved as an interesting memorial of a remarkable occurrence.

**Inspection of Rain Gauges.**—No opportunity of inspecting rain gauges is allowed to pass unutilized, and every member of the staff is encouraged to visit as many stations as possible in the course of his annual holidays. Although I have been unable to do any inspecting for the last six months, I have since my last Report visited 66 rain gauges, chiefly in the west of England and the Lake District. Mr. Carle Salter has inspected 59, Mr. Carter 8, of which 2 were in Ireland, and Mr. Donald Salter 20, a total of 153, or 22

more than last year. The gauges inspected were distributed as follows: London 2, Hampshire 11, Middlesex 12, Hertfordshire 2, Buckinghamshire 3, Wiltshire 4, Dorset 1, Devonshire 10, Cornwall 1, Somerset 14, Gloucestershire 1, Worcestershire 1, Lancashire 19, Yorkshire 8, Cumberland 13, Westmorland 22, Brecon 17, Stirling 2, Perthshire 8, Antrim 2. The total number of inspected rain gauges indicated by † in the General Tables of *British Rainfall*, 1912, amounts to 676.

The mark of a gauge being liable to inspection by some other Authority has been removed, for it could now only be applied to the gauges whose readings are supplied by the Meteorological Office or the Scottish Meteorological Society, and the names of these institutions are sufficient indication of the liability to inspection.

As in former years, I have to thank several rainfall Observers and officials of public bodies for their generous help in the inspection of rain gauges, and especially by their placing their motor cars at our service. The first place must be given to Miss Marshall of Skelwith Fold, Ambleside, who in two strenuous days showed me a very large proportion of the rain gauges within ten miles of Ambleside. In the Lake District I also met with much kindness from Mr. Wivell of the Station Hotel, Keswick, whose interest in the study of the physical conditions of the district led him to supply a motor car at a merely nominal charge, enabling the inspection of gauges in Borrowdale, including those at Seathwaite and the Sty, to be carried out with the utmost dispatch and comfort. Mr. W. King Wilkinson of Middlewood, Chatburn, who took me to several of the most inaccessible stations in Yorkshire, Mr. E. C. Miller of Merlewood, Grange-over-Sands, and Mr. W. G. Welch of Hampson-in-Ellel, rendered valuable services, which I most gratefully acknowledge. Mr. Salter had an opportunity of accompanying the Water Engineer of the Glasgow Corporation on a visit to a number of stations in the neighbourhood of Loch Katrine. Mr. Salter has also been aided in his inspections by the kindness of Mr. A. A. Froude of Collapit, Mr. H. G. Morgan of Slapton, and Mr. L. S. Powell of Ashley.

**The New Volume of “British Rainfall.”**—*British Rainfall*, 1912, has been slightly reduced in dimensions in the effort to keep the expenditure of the Organization as nearly as possible within the income. This has been effected mainly by omitting the ten pages of detailed daily observations, which in previous volumes have not called

forth any particular interest. The Observers' Notes on the Days and Year have also been somewhat severely edited ; but the omission of notes or parts of notes which may be detected by individual Observers, does not mean that no use has been made of them. Some notes which do not appear have given no little help in compiling the special discussions in Part II. I have not considered it advisable to abridge the sections dealing with the Distribution of Rainfall in Time and Space, as these are already extremely condensed ; a full description of the maps alone would almost double the size of Part II. The number of pages devoted to Part III. is increased by the inclusion of the river-division maps for Scotland and Ireland, as well as by the growth in number of stations. The articles in Part I. include a discussion of two unprecedented occurrences ; the wet summer in England and Wales, which, however, was nearly equalled in 1879 ; and the 24 hours' rainfall in Norfolk on August 25th and 26th, which has never been approached since rainfall observations were commenced in this country, and which extends our conception of what is possible for a day's fall in a region of low annual rainfall.

**“Symons's Meteorological Magazine.”**—The Magazine has been published punctually on the 16th of each month, except when that date fell upon a Sunday, and it is gratifying to find that it has attracted spontaneous contributions from eminent meteorologists in many parts of the world. The necessity of retrenchment, to provide for the growing expenses of other parts of the work, has led me, though with great reluctance, to cease to pay for material which could be compiled by members of the staff. Much as I regret breaking a generous tradition, it is right to remember that very few journals devoted to a special branch of science find it possible to pay contributors at all.

**Fees for Testing Rain Gauges.**—It has been the practice to charge a fee of 2/6 for testing a rain gauge and measuring glass, and issuing a certificate of their accuracy ; while 1/- is charged for testing and issuing a certificate for a measuring glass alone. It has been pointed out that if the fee could be reduced a much larger number of instruments would be submitted for testing ; but taking account of the time required for testing a measuring glass, it would be impossible to lower the charge of 1/-. The testing of an ordinary 5-inch or 8-inch rain gauge, however, is a very simple matter, and I think it reasonable to offer a certificate to include gauge and measuring glass



for 1/6. In the case of a mountain rain gauge of the Bradford or other pattern the old charge, 2/6, should be retained; and the testing of recording rain gauges must remain as before subject to a fee of 10/-. It is, of course, recognized that the certificates issued by the British Rainfall Organization do not compete with those of Kew Observatory, and when there is any question of doubt as to where the gauge should be sent for testing, I have always recommended Observers and instrument makers to send them to Kew, where the error is determined so that corrections can be applied for deviations from accuracy. The British Rainfall Organization's certificate is issued only for instruments sufficiently accurate to read correctly to the nearest hundredth of an inch, with the exception of the "Camden" pattern measuring glass, where the lowest division should not vary appreciably from .005 inch.

**Supply of Data to the Public.**—In accordance with the Regulations sanctioned by the Trustees, the supply of rainfall data to the public is charged for according to a regular tariff. The additions to the General Fund from this source are naturally irregular, and the receipts vary widely from year to year.

During the year maps of the rainfall of each month, drawn from about 1,000 records about a fortnight after the close of the month, as well as an annual map in January, have been supplied regularly to the Meteorological Office for publication in the *Monthly Weather Report*. A map of the average rainfall in Sussex was supplied to the Education Committee of the East Sussex County Council. Rainfall data have been copied out and sent to the Department of Agriculture for Ireland, to the Water Department of the City of Birmingham, the Hertfordshire County Council, the Anchor Underwriters, the Halkyn and District Mines Drainage Company, and to various firms of engineers and solicitors.

**Scientific Work and Advice.**—The Director and Assistants have, as usual, devoted a considerable time to scientific investigations, supplying information to the public, and advising on matters relating to rainfall for which no fees could be charged.

(A.) *Annual Maps.*—Considerable progress was made before the end of 1912 with work on the Annual Rainfall Maps. The isohyetal lines on all the maps of Scotland, from 1891 back to 1865, were revised and the values corresponding to each intersection of the vertical and horizontal lines ruled upon them have been entered on the

tables for averaging; the work on the maps of Scotland being thus carried as far as the available data permit.

The maps of Ireland have all been ruled up, the isohyets revised back to 1902, and the work of entering the values on sheets commenced. I have unfortunately been unable to continue the work of revising the isohyets, but as I am most reluctant to delegate this to other hands I have postponed further treatment of the subject for the present. The sheets for the compilation of averages are ruled for the 50 years, 1865-1914, and I trust that this delay will not be of serious consequence, as the work could not in any case be carried to the next stage before 1915.

(B.) *Scientific Papers*.—I have completed a detailed discussion of the daily rainfall over the Valley of the Exe, for the period January, 1907, to March, 1912, as a contribution to the work of Dr. A. Strahan's Rivers Committee of the Research Department of the Royal Geographical Society. This work involved the preparation of a large number of maps of daily, monthly and annual rainfall on a large scale, and occupied a great deal of the time of the staff during the last three months of 1912. Mr. Carle Salter gave me most valuable assistance, and he has himself compiled a series of tables giving similar data for the Medway Valley for Dr. Strahan's Committee. I also prepared a paper dealing exhaustively with the unprecedented rainfall in East Anglia on August 25th—26th, 1912, which was read at the meeting of the Royal Meteorological Society on November 20th. I took part in the discussion on an important series of papers, read at the Institution of Civil Engineers, bearing on the relation of rainfall to water supply, and Mr. Salter joined in the discussion of several papers at the meetings of the Royal Meteorological Society. He also delivered a popular lecture on "Rain" at the Royal Victoria Hall.

(C.) *Supply of Information*.—Besides the summary of the annual rainfall in January I have followed the usual custom of writing to *The Times* about the most remarkable rainfall events as they occurred, and also called attention to unprecedented occurrences in London weather as shown by the Camden Square record. Visits of representatives of other newspapers to Camden Square have been as numerous as in previous years, and we have endeavoured to supply the information requested, while using every precaution to prevent sensational reports of the weather from gaining currency. Information of a more important kind has been supplied amongst others to

Monsieur Angot, Director of the French Meteorological Service, to Mr. Talman, the Librarian of the United States Weather Bureau, to Mr. Watt, Secretary of the Scottish Meteorological Society, and to the Principal of the Royal Agricultural College, Cirencester. Mr. Douglass, of California, who was engaged in the study of the relation of annual rainfall to the appearance of the successive growth rings of trees, spent some time at Camden Square, studying the rainfall of the British Isles in connection with sections of various trees of known age which I was able to procure for him.

Many applications for information by school teachers and students have been received and a good deal of information supplied. I have also spent some time in reading and advising upon manuscripts of papers relating to physical geography involving rainfall data. Permission to use illustrations from *British Rainfall* or *Symons's Meteorological Magazine* has been asked for and granted on several occasions. An example of the utility to the public of the preservation of records at Camden Square was afforded by the request of a public body for a copy of their rainfall record for five years which we were able to supply at once, and so to obviate the inconvenience which would otherwise have resulted from the loss of the original records. We have also on several occasions advised inquirers as to the average rainfall at different localities with reference to the choice of a residence. An exhibit of rainfall maps was sent, at the request of the Meteorological Office, to the Royal Agricultural Society's Show at Bristol in June last. At the request of the Geographical Association, South London Branch, some of their members were received at Camden Square on March 15th, where a demonstration of rainfall observing and the cartographical representation of rainfall phenomena was given. The foregoing takes no account of the correspondence with rainfall observers and intending observers regarding their instruments and observations, without which a day very rarely passed. We have been in frequent communication with the principal makers of rain gauges, advising them as to the value of suggested improvements, and endeavouring, with some success, to discourage the sale of obsolete and unsatisfactory patterns, and to reduce the price of approved forms.

**Professional Work of Director.**—Under clause 25 of the Trust Deed, I have continued to act as rainfall expert to the Metropolitan Water Board, and to supply the Board with monthly and

annual reports, and maps of the rainfall of the Thames Valley. I have also acted as Referee under the Abertillery and District Water Act, 1910. I have supplied annual reports of the rainfall of the gathering grounds of the Birmingham and of the Birkenhead Water Works ; and in connection with new schemes for water supply, I have, with the assistance of Mr. Salter, reported on the rainfall of an area in the west of England, and of certain mountainous districts in the west of Scotland and in Kincardineshire. Mr. Salter has given evidence on my behalf, in Edinburgh, before a Committee of both Houses of Parliament on a Provisional Order applied for by the Lanarkshire, Middle Ward, Water Committee. I have also reported upon certain cases, involving damage by flood waters, pending in the Law Courts ; and amongst minor reports may be mentioned one on the rainfall of certain districts in the Fens, and others to the King Edward Memorial Committee for Wales.

#### **The Director's Health and Temporary Arrangements.—**

I have with much regret to state that, acting on medical advice, I have very reluctantly consented to take a long and complete rest. The continual strain of the work has in particular seriously affected my eyesight, and for several months I have been unable to read or write, and have had to carry on my work in a tedious and unsatisfactory way, through the eyes of others. Mr. Carle Salter has proved most efficient in supervising the routine during my repeated absences, and has now had experience of every department, including the professional work carried on by me under Clause 25 of the Trust Deed, which, with the Trustees' approval, he will continue on my behalf. I have confidence in asking the Trustees to give him the temporary position of Assistant Director during my absence. I am unwilling, however, to impose upon Mr. Salter the whole responsibility of carrying on the work of the Organization, knowing from experience how heavy it is, and I have invited Mr. R. C. Mossman to share it, and to undertake the temporary editorship of the Publications. Mr. Mossman's work as a Meteorologist is well known. His experience at the Ben Nevis Observatory and on Dr. W. S. Bruce's Antarctic Expedition on the *Scotia* have given him exceptional opportunities for practical work, while his numerous Papers on the Climate of Edinburgh and the Climate of London, and his position as Editor of Publications in the Argentine Meteorological Office have proved his supreme fitness for discussing and preparing masses of figures.

Mr. Mossman has secured a year's leave of absence from Buenos Aires, and is prepared to commence work at Camden Square on October 1st. I have every confidence that the Organization will be directed with perfect satisfaction during my absence. None the less, nothing but absolute necessity would have induced me to leave, even for a time, the work which has been the centre of all my interests for the last thirteen years.

**The General Fund.**—While under no obligation to submit accounts of the General Fund, for the collection and disposal of which I am responsible, and the sufficiency of which to meet all the expenses of the Organization I personally guarantee, I again have pleasure in submitting, in a form comparable with the statements of previous years, a summary of the income and expenditure. The Subscription book, the Ledger, and all other account books are laid before the Trustees, and I shall be glad to show them to any subscriber who calls at the Office for that purpose.

*Receipts on Account of British Rainfall Organization, 1912.*

	£	s.	d.
Subscriptions ... ..	1129	6	2
Sales to Public ... ..	73	8	10
Advertisements ... ..	53	3	3
Certificates ... ..	9	17	3
Supplying Rainfall Data ... ..	22	1	6
Maps and Literary Work ..	18	15	0
Interest on Endowment Fund and Bank Account ...	58	6	9
Miscellaneous ... ..	45	0	0
<b>TOTAL ... ..</b>	<b>£1409</b>	<b>18</b>	<b>9</b>

*Expenditure on account of British Rainfall Organization, 1912.*

	£	s.	d.
<i>British Rainfall and Meteorological Magazine</i> (including Postage) ... ..	545	17	9
Observers and Instruments ... ..	31	2	11
Salaries and Assistance ... ..	674	14	10
Printing, Stationery and Establishment Expenses ...	194	16	3
Extra Postage, Telephone, Petty Cash and Miscellaneous Expenses ... ..	75	7	7
	<b>£1521</b>	<b>19</b>	<b>4</b>
<b>DEFICIT, met by Director ...</b>	<b>£112</b>	<b>0</b>	<b>7</b>

HUGH ROBERT MILL.

62, CAMDEN SQUARE,  
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# **TREASURER'S REPORT ON ENDOWMENT FUND.** **STATEMENT FOR THE YEAR 1912.**

RECEIPTS.			PAYMENTS.		
	£	s. d.		£	s. d.
Balance from 1911 ... ..	66	7 5	Purchase of £311 2s. 6d.		
W. Morrison, Esq. (2nd don'n)	5	0 0	North British Railway 3%		
R. Cooke, Esq. (3rd ,, )	4	5 0	Debenture Stock ... ..	250	0 0
D. W. Freshfield, Esq. ...	200	0 0	Purchase of £129 ditto Stock	100	0 0
C. J. P. Cave, Esq. ... ..	25	0 0	Purchase of £251 12s. 1d.		
F. Druce, Esq. (3rd don'n)	25	0 0	ditto Stock ... ..	200	0 0
Col. Henry Mellish ( ,, )	50	0 0			
W. Morrison, Esq. ( ,, )	200	0 0			
A. F. Sharman-Crawford,					
Esq. (3rd donation) ...	10	0 0			
Harvey R. G. Clarke, Esq.					
(2nd donation) ... ..	5	5 0			
G. Ross Pember, Esq. ...	5	0 0			
Sums under £2 ... ..	4	4 0	Balance ... ..	50	1 5
	<u>£600</u>	<u>1 5</u>		<u>£600</u>	<u>1 5</u>

On July 23rd, 1913, the Trustees held as the Endowment Fund £2,151 11s. 3d. North British Railway 3% Debenture Stock, and £93 3s. 5d. cash.

The Trustees are grateful for the donations received during 1912, which assist substantially the very desirable object of rendering the Organization self-supporting. This object is not yet attained, and the Trustees ask earnestly for further donations. These may take the form of legacies as well as of immediate gifts. The list of donors shews that there are some who spread what they feel inclined to give over several years, and this is another method of contributing.

FRANCIS DRUCE,  
*Treasurer, Endowment Fund.*

62, CAMDEN SQUARE,  
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*July 23rd, 1913.*

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Lewis, A. E., Esq. ....	1	1	0	Paterson, Rev. T. M. B. ....	1	1	0
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Macadam, Miss. ....	1	0	0	Peckover of Wisbech, Lord ....	5	15	0
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Machin, A. V., Esq. ....	1	1	0	Phipps, Col. R. W. (late R.A.) ..	1	1	6
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Macnamara, H. V., Esq. ....	1	0	0	Player, J., Esq. ....	1	1	0
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Marshall, Mrs. ....	5	15	0	Rankin, Sir J., Bart., M.P. ....	1	1	0
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Sing, Roger P., Esq. ....	1	1	0	Tuckett, F. F., Esq., the late ....	1	5	0
Sligo, The late Marquis of ....	1	0	0	Turner, F., Esq. ....	1	1	0
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Smith, W. A., Esq. ....	1	1	0	Urmson, Rev. T. ....	1	16	0
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Staines, A. J., Esq. ....	1	5	0	Ward, Mrs. H. ....	1	1	0
Stansfeld, A. W., Esq. ....	1	0	0	Ward, Col. M. F. ....	1	0	0
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Steward, J. J., Esq. ....	2	0	0	Wedderburn, E. M., Esq. ....	1	0	0
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Stewart, Rev. W. E. ....	1	5	0	Welch, J. H., Esq. ....	1	0	0
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Strachan & Weekes, Messrs., C.E. ....	1	1	0	Weston, G., Esq. ....	1	1	0
Strachey, J. St. Loe, Esq. ....	1	1	0	Weston, J., Esq. ....	1	1	0
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Sturge, R. F., Esq. ....	1	1	0	Whitchurch, J. A., Esq. ....	1	1	0
Sturt, Miss K. M. ....	1	18	6	White, J. Martin, Esq. ....	1	16	0
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Swinton, Capt. G. H. T. ....	1	1	0	Whittington, C. J., Esq. ....	1	1	0
Sykes, Mrs. ....	1	0	0	Widnell, E. H., Esq. ....	1	1	0
Symmons, F. Randolph, Esq. ....	1	0	0	Wilde, Mrs. ....	1	1	0
Tabor, H. S., Esq. ....	1	0	0	Wilkin, Mrs. A. ....	1	6	0
Tailyour, W. Stewart, Esq. ....	1	1	0	Wilkin, F., Esq. ....	2	10	0
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Tatham, M. T., Esq. ....	1	0	0	Wilson, Albert, Esq. ....	1	15	0
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	£	s.	d.		£	s.	d.
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Wilson, Mrs. ....	1	1	0	Wordsworth, Gordon G., Esq. ..	1	0	0
Wood, J. G., Esq. ....	2	2	0	Worthington, W. B., Esq., C.E..	1	0	0
Woodforde, Col. W. B. ....	1	0	0	Wyndham, H., Esq., C.E. ....	1	1	0
Woodhouse, Miss E. D. ....	1	1	0	Yool, Mrs. H. ....	1	7	0

Cheques should be crossed "National Bank, a/c British Rainfall Organization, General Fund," and sent to DR. H. R. MILL, 62, Camden Square, London, N.W.

THE PRINCIPAL DONATIONS TO THE ENDOWMENT FUND RECEIVED  
UP TO JULY 23RD, 1913, WERE AS FOLLOWS:—

Boughton, Miss F. H. Rouse ..	..	..	..	..	..	..	£100
Brook, Charles L., Esq. ....	..	..	..	..	..	..	£500
Druce, Francis, Esq. ....	..	..	..	..	..	..	£175
Freshfield, D. W., Esq. ....	..	..	..	..	..	..	£200
Mellish, Lt.-Col. H. ....	..	..	..	..	..	..	£200
Morrison, W., Esq. ....	..	..	..	..	..	..	£215
Murray, Sir John, K.C.B., F.R.S. ..	..	..	..	..	..	..	£100

FOR DONATIONS RECEIVED DURING 1912 SEE TREASURER'S REPORT ON P. 20. BETWEEN  
THE END OF 1912 AND JULY 24TH, 1913, THE FOLLOWING FURTHER DONATIONS  
HAVE BEEN RECEIVED:—

	£	s.	d.
Burton, Mrs. E. ....	5	0	0
Woods, J. W., Esq. ....	5	0	0
Cooke, R., Esq. (4th donation) ..	4	5	0
Druce, Francis, Esq. (4th donation) ..	25	0	0
Sums under £2 ..	3	17	0
Total ..	£43	2	0

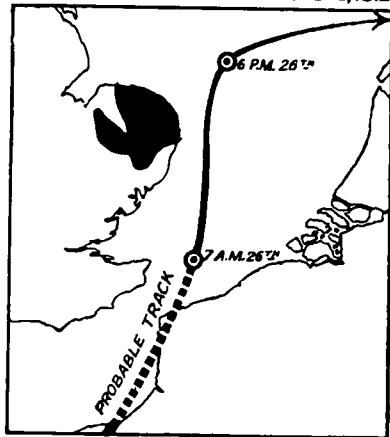
This Fund is invested by the Trustees, and the Income paid into the General Fund. Donations may be sent to FRANCIS DRUCE, Esq., at 62, Camden Square, London, N.W., and cheques crossed, "National Bank, a/c British Rainfall Organization, Endowment Fund."

## THE GREAT RAIN STORM OF AUGUST 25th-26th, 1912.

THE remarkable rain storm of August 25th-26th, 1912, was investigated within a few months of its occurrence, and the results embodied in a paper read to the Royal Meteorological Society on November 20th.\* We have now revised the discussion in the light of further data, and extended the area dealt with from East Anglia to the whole of England and Wales.

On August 25th and 26th, 1912, the southern part of the British Isles lay in a trough of low atmospheric pressure, along which a procession of rather shallow depressions had been passing for several days, following one another from the Atlantic and passing away to the eastward. The low pressure system, which appears to have been associated with the rain which fell on these two days, possibly had its origin in a secondary which is indicated in the *Daily*

TRACK OF DEPRESSION AUG. 26<sup>th</sup>, 1912



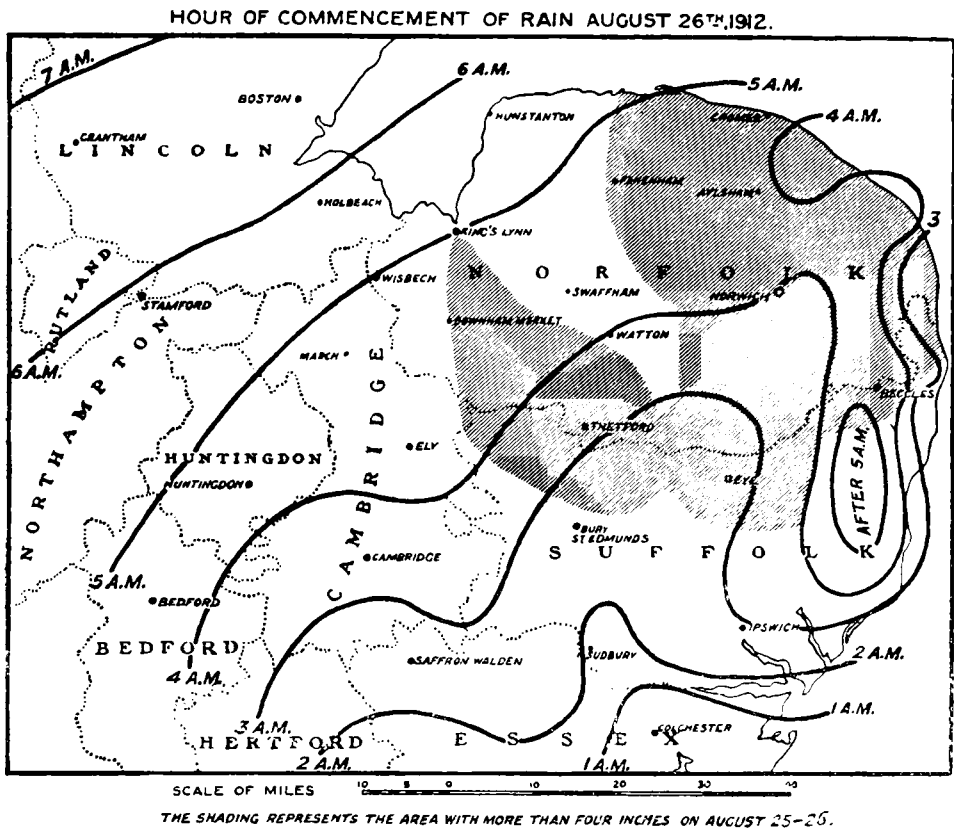
(Fig. 1.)

*Weather Report* as near Brittany on the evening of August 25th. At 7 a.m. on August 26th a small but well developed depression had its centre off the east of Kent, and during that day moved northwards very slowly, being situated north-east of Cromer at 6 p.m. On the morning of August 27th the centre was in the east of the North Sea, the track having apparently turned rather abruptly to the east during the evening or night of the 26th. We have pointed out on

previous occasions that abrupt changes in the direction of travel of the centres of low pressure systems have been associated with

\* Unprecedented Rainfall in East Anglia, August 25th-26th, 1912. By Hugh Robert Mill, D.Sc. *Quarterly Journal, Royal Meteorological Society*, Vol. 39, No. 165, pp. 1-28.

exceptionally heavy rainfall. A notable instance was that of August 24th—25th, 1905, when the path followed by the centre of a depression lay in the first place northward through the St. George's Channel to a point close to the Wicklow coast, and then eastward, traversing Wales and central England to the North Sea. Very remarkable rain storms took place in the east of Ireland, the centre of heavy rain being close to the point at which the change of direction seems to have taken place, while rain was general over



(Fig. 2.)

the whole island. The similarity of the circumstances on that occasion and on the occasion of the rain storms of August 25th—26th, 1912, is noteworthy.

Rain commenced to fall in the south-east of England on the late evening of August 25th, in Wales and the east of Ireland an hour or two later. At Haverfordwest rain was reported at 3.30 p.m. on the 25th, but this was probably local, and the 25th (civil day) generally speaking was rainless. Towards the centres of heavy rainfall the time of commencement of the rain was later. In the Black

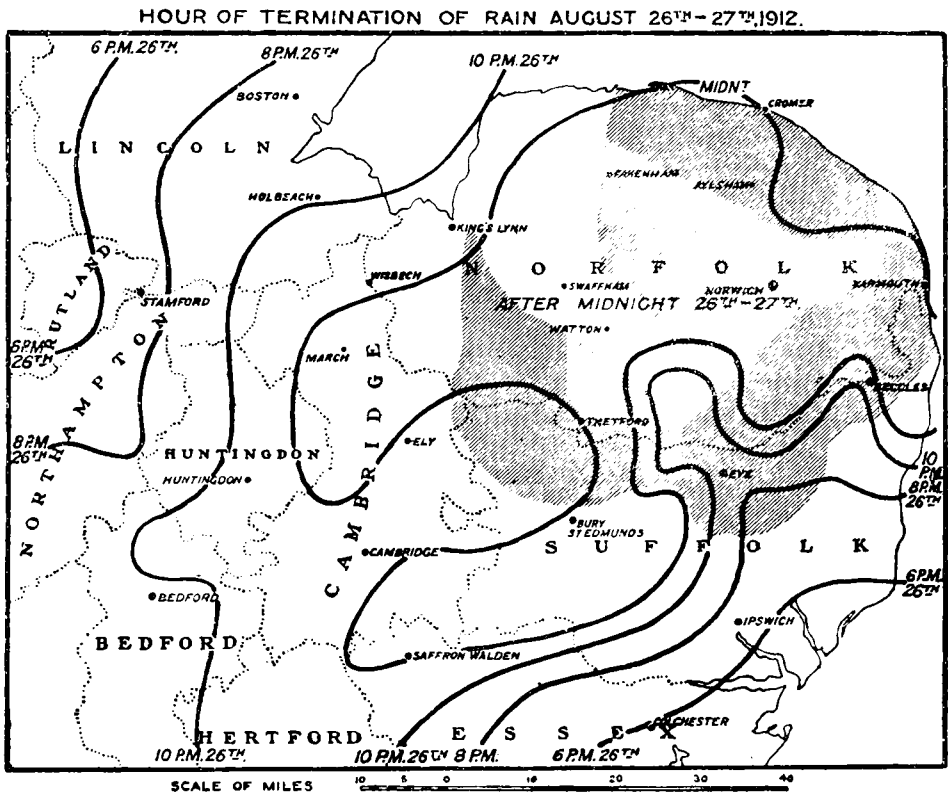
Mountains (Monmouth) we know definitely that heavy and steady rain began at 2.30 a.m. on the 26th, and continued without intermission until 8.30 p.m. The time of commencement of the unprecedented rainfall in East Anglia we are able to treat with rather more detail, and all the available information has been used in the construction of the accompanying map (Fig. 2). The hour of commencement as shown in the map (if we omit for the moment the portion of the country east of a line drawn from Colchester to Cromer), indicates a progressive movement of the commencement of rain from south-east to north-west at a rate of about 20 miles per hour. The lines marked 1 a.m. to 7 a.m. show the positions to the south-east of which rain was falling at each hour from 1 a.m. to 7 a.m. on the 26th, it being clear that no rain fell on the 25th. These isochronic lines are curved in such a way as to suggest propagation from a centre in the south-east; and the broad fact is apparent, that while rain commenced in the neighbourhood of Colchester before 1 a.m., it did not commence at Wisbech until 5 a.m., nor at Newark until after 7 a.m. This simple arrangement does not hold good for the eastern strip of Norfolk and Suffolk, where, if we have rightly interpreted the rather perplexing reports, the isochronic lines are sharply curved, first southward and then northward. Thus at Norwich the rain seems to have begun at 4 a.m., as it did from near Brundall, through Bungay, southward, and north again from Aldeburgh, parallel to the coast. In the centre of this loop at Halesworth the rain seems not to have commenced until 6 a.m., while outside, both on the west and on the east, it commenced before 3 a.m. It is highly probable that in this narrow strip for some reason rain did not begin for an hour or two after it was falling freely all round.

The hour of cessation, as shown in Fig. 3, cannot be viewed with the same confidence as the hour of commencement, the data being fewer and less definite. The probability is that the figures given refer to the end of the main downpour, and the isochronic lines have been drawn in this belief. The map makes it appear that the rain had stopped by 6 p.m. on the 26th, round the circumference of the area from Orford Ness on the south-east to Grantham in the north-west. By 10 p.m. the rain seems to have stopped all round the area outside a line sweeping from the Wash through Peterborough, Huntingdon, Hertford, Sudbury and Southwold. In a very large and irregular area in the centre, taking in almost the whole of



Norfolk and a large wedge of Suffolk, the rain continued to pour until after midnight, and at some points it did not stop until 4 or 5 a.m. on the 27th.

The duration of the rain is difficult to determine, as few Observers give any information on the point outside the area of most intense rainfall. We are able to say definitely that the duration exceeded 16 hours within an outer ring running from near Saxmundham through Sudbury, Northampton, and Peterborough to the Wash,



THE SHADING REPRESENTS THE AREA WITH MORE THAN FOUR INCHES ON AUGUST 25-26.

(Fig. 3.)

while it exceeded 20 hours within a ring drawn through Lowestoft, Cambridge, Wisbech, and Sheringham. Within this there seems to have been a large area in Norfolk where the duration exceeded 24 hours connected by a narrow neck near Thetford with a smaller patch of more than 24 hours in Suffolk and Cambridge. Practically the whole of the rainfall took place within the 24 hours of the civil day, August 26th, only a few stations having recorded the persistence of the rain into the 27th.

There were no recording rain gauges at work within the most interesting part of the area, and for accurate particulars of the duration and intensity of the rain at individual stations we have to depend entirely on two hyetograph records on the outskirts: one at Cambridge, situated on a roof; the other at Thrapston, with the exposure of which no fault can be found. It is most unfortunate that there was no recording rain gauge at Norwich or Yarmouth or between the two. We have, however, a good deal of information

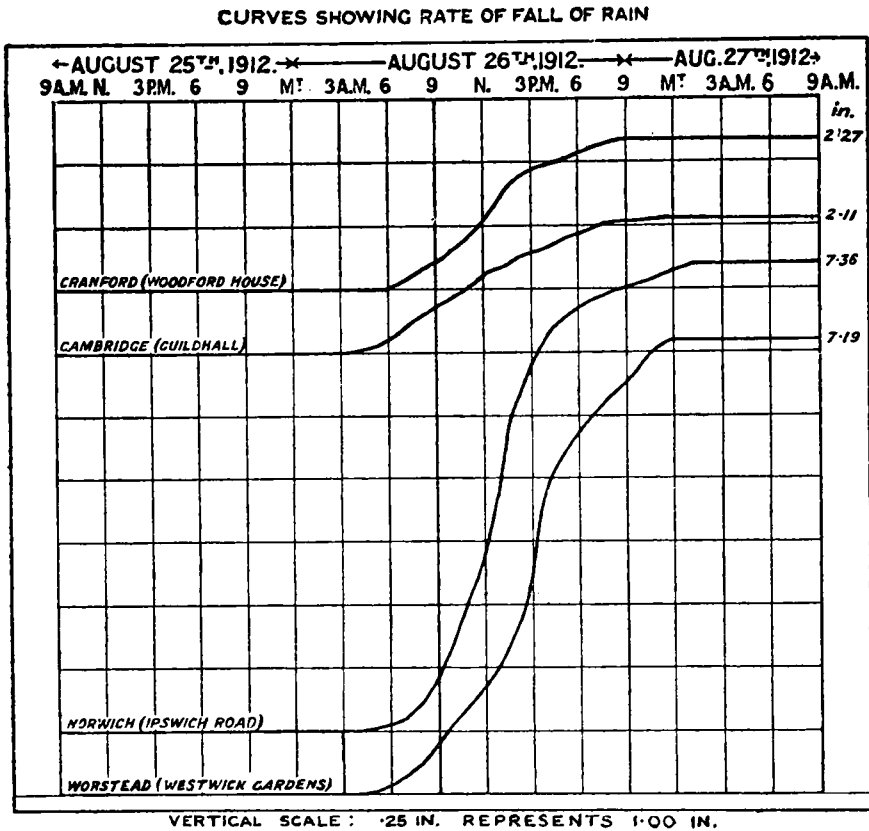


Fig. 4.—The line on which each curve commences on the lefthand side represents zero.

from rain gauges which were read at intervals during the progress of the storm, and these conform well to the curves of the hyetograph.

We may say with confidence that in the central part of the area the rain beginning early in the morning of the 26th increased gradually in intensity for the first three or four hours, then rapidly and in an increasing degree for the next six hours or so, after which the intensity gradually diminished and the rain ultimately

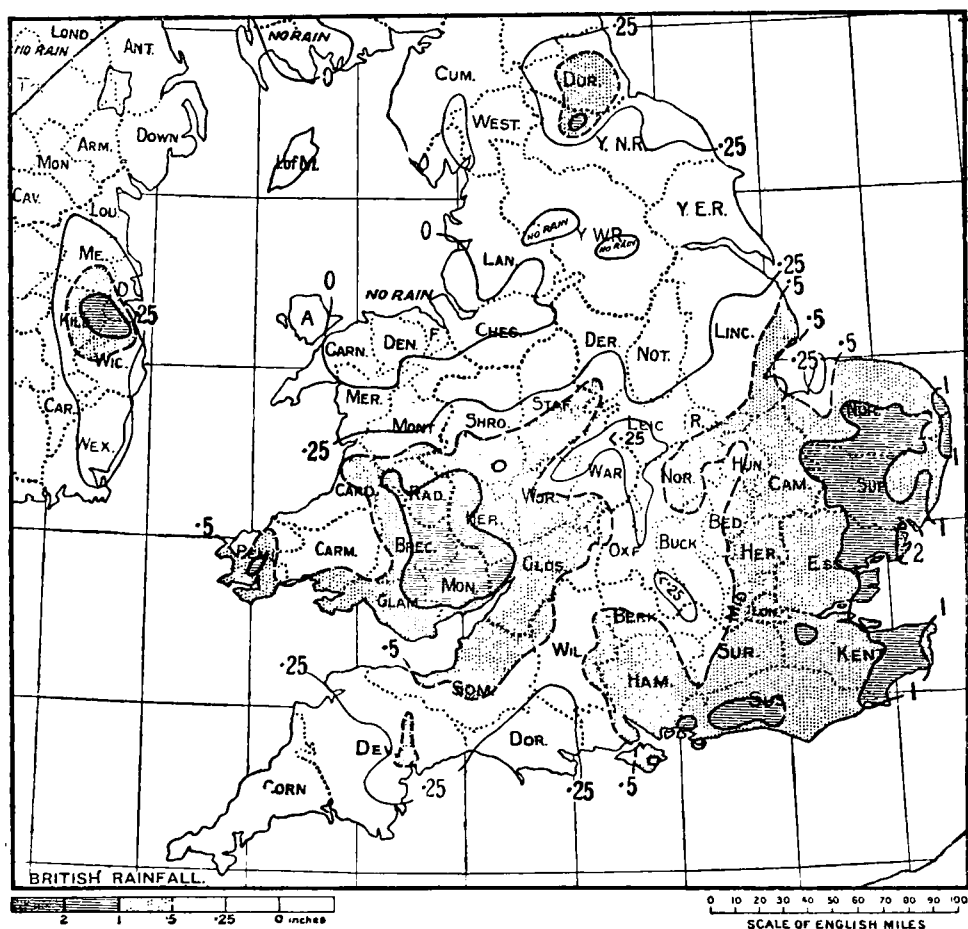
ceased. The intensity, so far as can be judged from the series of curves shown in Fig. 4, did not at any time approach that familiar in severe thunderstorms. So far as we can see, the greatest intensity was less than 1·50 in. in one hour at the wettest stations; and the average for four hours in the thick of the storm at a number of stations was not more than 1 inch per hour.

The increase in the intensity of the rain at the commencement was more rapid than the decrease at the cessation, and there was no discontinuity in the fall in the central area until it had begun to diminish. At nearly all the stations on the East Coast strip, from Dunwich in the south to Worstead in the north, a short cessation of rain was reported in the forenoon or about noon on the 26th, when at Lowestoft it cleared up for a short time and the sun appeared; but after a brief interval the rain came on again worse than before.

Maps have been constructed of the rainfall of the two rainfall days, August 25th and 26th, separately. As we have already pointed out, there seems little evidence of rain earlier on the 25th, unless of a very local nature, and we are unable to find any indication of appreciable rainfall after the cessation of the main shower and before 9 a.m. on August 27th. We are, therefore, able to regard the total rainfall of the two days as the product of one storm, and we give a map of the total rainfall of the two days in this belief. On the "rainfall day" of August 25th more than ·50 in. of rain fell in a small area in the east of Ireland, a small area in the north of England, over much of South Wales and the adjacent counties, and over the south-east of England from Lincolnshire to the Isle of Wight. In each of these splashes there was a central area with more than 1·00 in., that in Ireland being small, and that in Yorkshire very small. In South Wales, Herefordshire and Monmouthshire, 1,866 square miles had more than 1·00 in., but nowhere as much as 2·00 in. Slightly more than 1·00 in. also fell at Haverfordwest, but this was probably not part of the same storm. Small patches with more than 1·00 in. also appeared in the south of England, and a large continuous strip stretched from Winchelsea into Norfolk. The complete severance of the wet area in Wales from that in the south-east of England, by a band with not much more than a quarter of an inch of rain, passing through the Midlands, suggests that although these two parts of the country had rain simultaneously, the storms had a different origin, and that the rain in the west may possibly have been associated with another barometric secondary. Support is lent

to this view by the *Daily Weather Report* of August 26th, which indicates the existence at the time of more than one centre of low pressure. Whether this was the case or no, the patch of high rainfall in the south-east of England on this day undoubtedly represents the early stages of the great rain storm which raged on the following day. We mentioned above that the hour of commencement was

# RAINFALL AUGUST 25<sup>TH</sup>, 1912.

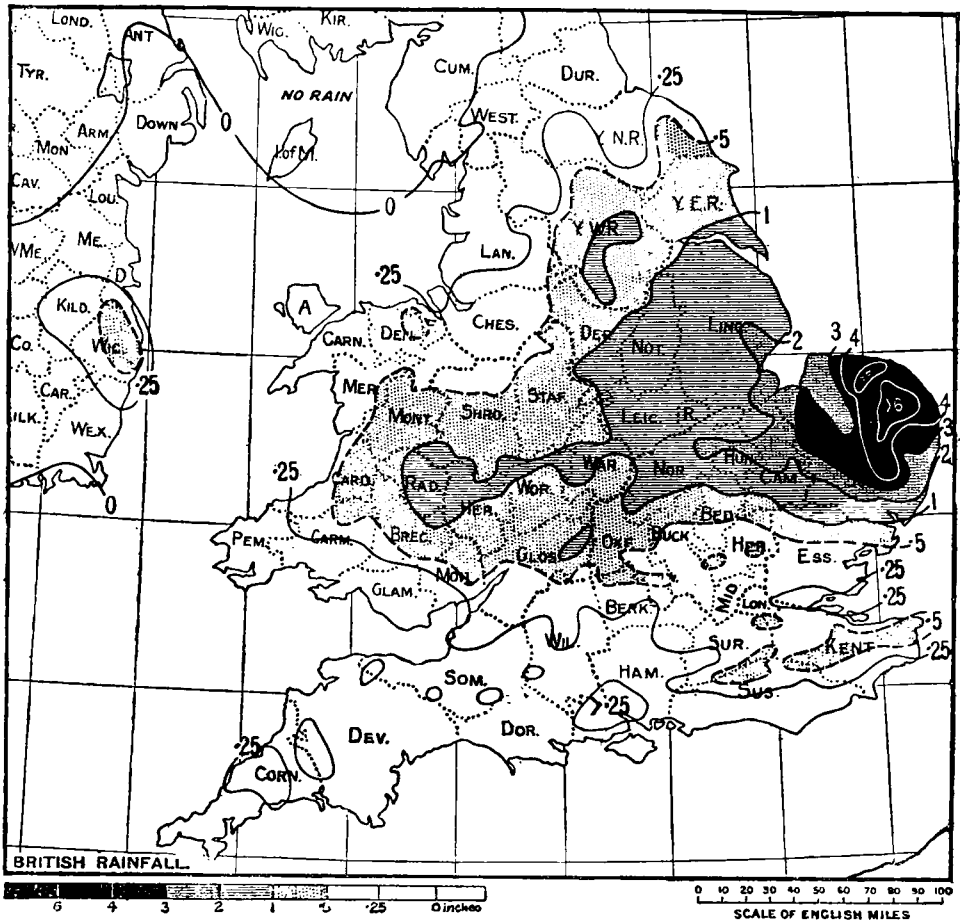


(Fig. 5.)

earlier in the south of the district affected than further north, and this early commencement threw a larger proportion of the total precipitation into the first of the two rainfall days at stations on the south-eastern fringe of the wet area. We accordingly find immediately round Harwich a small patch with more than 2.00 in. on the 25th. Over the district in which, as we have explained, the commencement

of the great rainfall was later than all around we find a well defined patch in which the fall of the 25th was less than 1 inch.

The map of the distribution of rainfall on August 26th is in some respects simpler than that of the 25th. More than half an inch again fell over a limited area in the east of Ireland, over a small patch in North Wales, and various districts in the south-east of

RAINFALL AUGUST 26<sup>TH</sup>, 1912.

(Fig. 6.)

England, but falls exceeding this amount were otherwise confined to one large triangular-shaped area, having its three angles at Scarborough, Lampeter and Walton-on-the-Naze. A smaller triangle between Hull, Coventry and Felixstowe had more than one inch, and from the south-western corner of this triangle a long narrow strip, also with more than one inch, extended into central Wales. It seems most probable that this narrow neck represents the point of

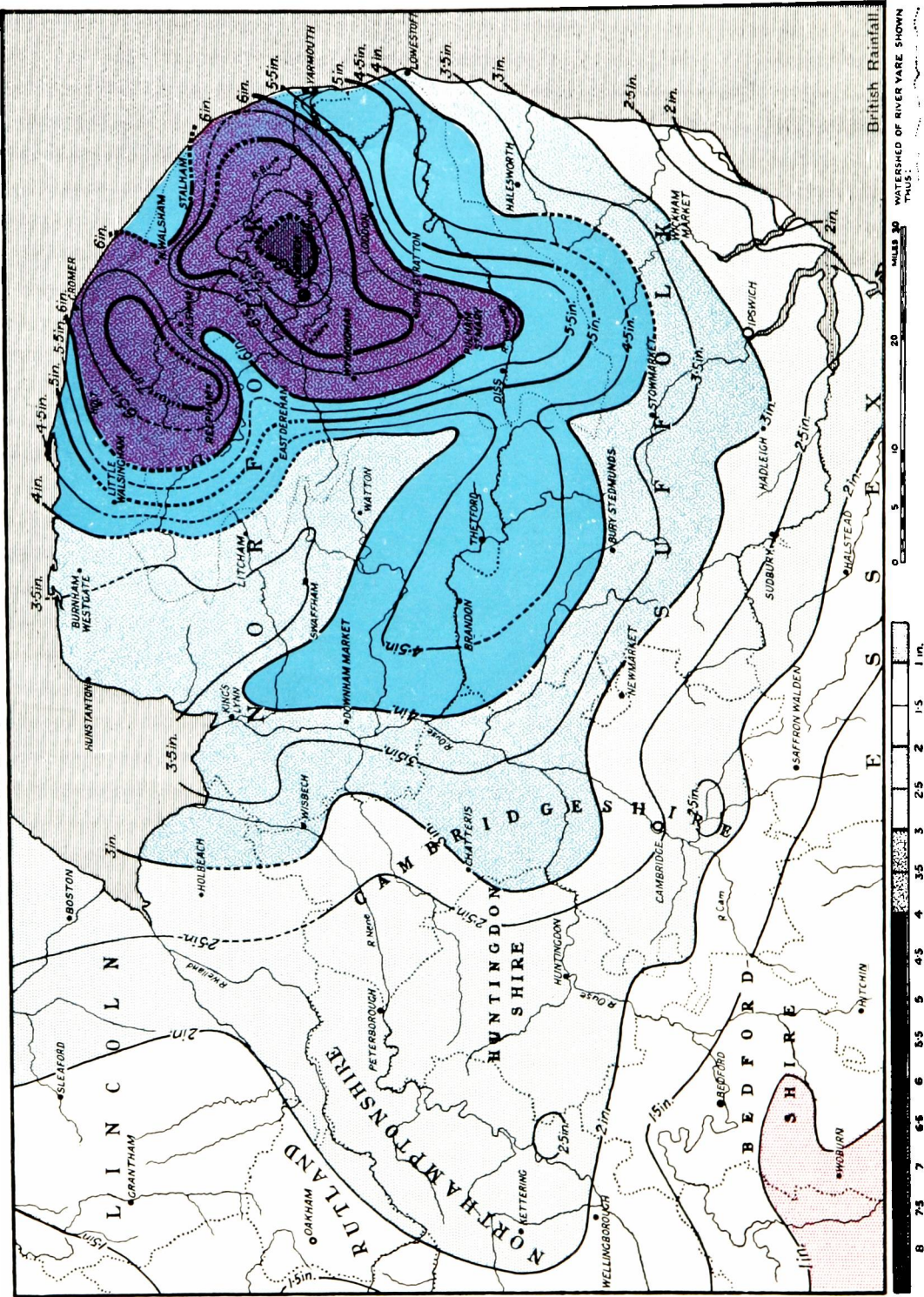
contact between the two rain areas which on the previous day had been clearly separated. The western splash was similar to that shown on the map of the 25th, though extending further to the eastward and uniting with the one inch area surrounding the great East Anglian splash, the one inch area as a whole thus stretching across nearly the whole breadth of England and Wales. There were two other detached one inch splashes, one in the north between Sheffield and Leeds and one in the south on the Cotteswold Hills. The alignment of the southern splash, with a slight extension of the half-inch line eastward from Witney, with some breaks, to Hertford, taken in conjunction with the similar parallel strips in Sussex and Kent, is a characteristic feature of heavy rain storms in the British Isles. The area with more than 2·00 in. of rain on August 26th comprised the neighbourhood round the Wash, the whole of Norfolk, the northern half of Suffolk and part of Cambridgeshire, with a narrow extension westward to Thrapston not unlike the westward extension of the one inch area mentioned above. Within this great area the rainfall of the 26th formed so large a proportion of the total fall during the two days that the distribution need not be described separately. It is sufficient to say that the amount which fell increased towards two extremely wet patches, the northern, lying between Worstead and Reepham, having rather more than six inches of rain on this day, the southern and larger, centred round Norwich, having also more than six inches, and having probably more than seven inches at its culminating point to the east of Norwich.

The map of the two days, August 25th—26th, taken together, represents, as we believe, the result of one great and continuous rain-storm. More than half an inch of rain fell on the two days together over the whole of England, except the north-west and the south-west, and also over part of the east of Ireland. More than one inch fell over the centre of the Irish splash, over central Wales, the English Midlands, and the east of England south of Hull. There were three centres with more than two inches, that on the borders of Wales reaching 2·50 in. in its wettest parts; a small area round Canterbury reached two inches, where the outskirts of the great East Anglian storm in its early stages on the 25th coincided with a subsidiary wet strip on the 26th. The main 2-inch splash stretched from Sutton-on-Sea in the north, to Kettering on the west, and to Clacton on the south-east, and it was within this area that





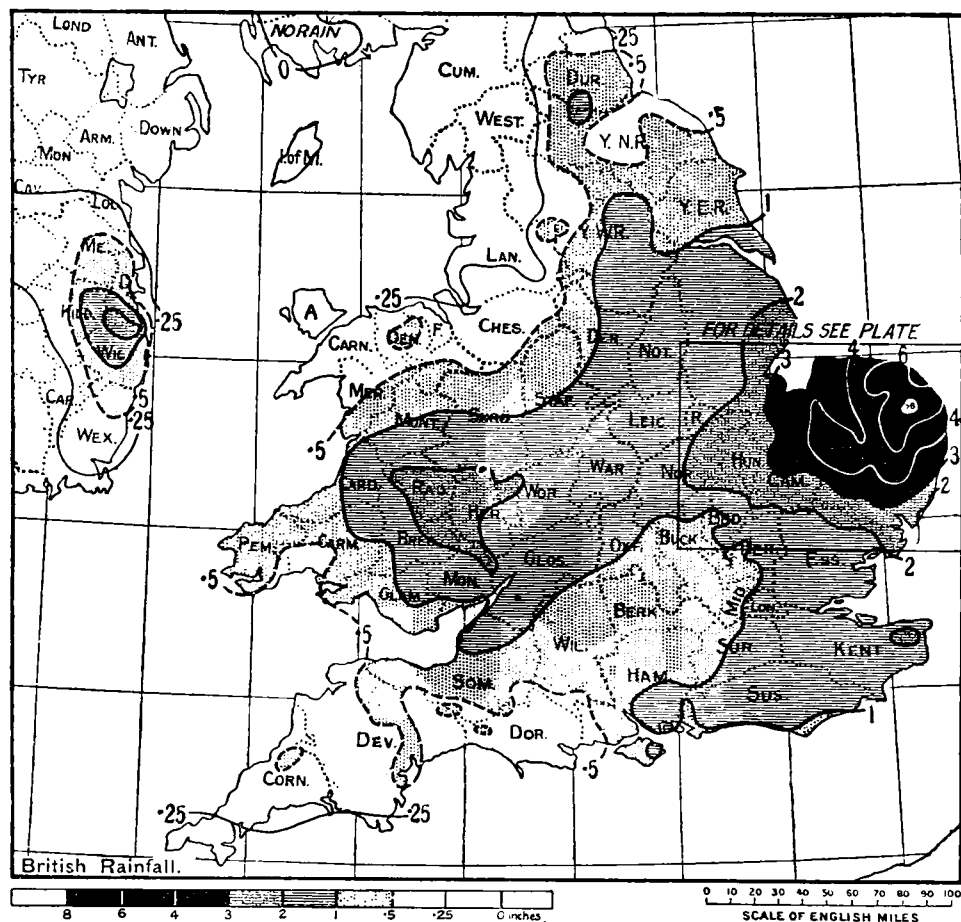
RAINFALL IN EAST ANGLIA, AUGUST 25<sup>TH</sup>-26<sup>TH</sup>, 1912.



For the map of the remainder of England and Wales, see p. [ 37 ].



the most remarkable downpour was experienced. We give a coloured map including the greater part of the country over which more than 2 inches of rain fell. It has been compiled from all the rainfall data which have reached us, after a careful examination of the records in order to eliminate all that showed signs of inaccuracy. There are areas, in this region, considerable when the detail with

RAINFALL AUGUST 25<sup>TH</sup>-26<sup>TH</sup>, 1912.

(Fig. 7.)

which the map has been drawn is taken into account, where there are not, so far as we are aware, any rain gauges at work, and in these districts we have no points to guide us in drawing the lines. The positions of the isohyetal lines are in no case, we believe, more than a mile or so from their correct positions, but some uncertainty naturally exists in places, and we have indicated by a broken line the places in which we found the data insufficient to satisfy us that

there could be no reasonable doubt. The 2·50 in., 3·00 in., 3·50 in. and 4·00 in. lines on the west, south, and south-east are well supported and fairly parallel. The most perplexing part of the map is in the west of Norfolk, where the data are both scanty and contradictory. The 3·50 in. and 4·00 in. lines there show a long tongue of comparatively low rainfall running in south-eastward from the east side of the Wash and almost cutting off a great lobe from the main mass of the "rain splash." Within this lobe the rainfall culminates in a maximum approaching, though not quite reaching, 5 inches, with its centre near Thetford. Leaving this lobe out of account, we find the region of heaviest rain defined on east and west by closely parallel lines of 4·00 in., 4·50 in., 5·00 in. and 6·00 in., showing at some places an increase of half an inch of rain with every mile of distance. The heart of the "splash," as defined by the 4·00 in. isohyetal, extends for 56 miles from Wells in the north to beyond Debenham in the south, and is widest in the latitude of Norwich and Yarmouth, where it measures over 32 miles from west to east as far as the coast of the North Sea, but rainfall over 4 inches probably extended for some distance out to sea. The central core of highest rainfall, as defined by the isohyetal of 6·00 in., is constricted between Swanington and North Walsham, so as to form two separate maxima, a small one in the north in which probably more than 7 inches fell, and a larger one in the south where more than 7 inches was experienced in an area measuring 22 miles by 12 miles, with a small patch where more than 8 inches fell between Norwich and Brundall. The rainfall returns in the neighbourhood of North Walsham are perplexing, but it seems nearly certain that the 6 inch area was constricted here and did not extend to the sea. The absence of data between Stalham and Ormesby leaves it uncertain whether the 7 inch line reached the coast or fell short of it as tentatively shown.

With regard to the greatest rainfall in the course of the storm we can confidently say that it exceeded 7·50 in. over about 67 square miles. There is always reason for examining extreme values critically, for the mere reason that they are extreme and cannot be checked by comparison. Only three records of 8 inches or more have reached us. Of these one of 8·27 in. at Hanworth Hall was mentioned in a letter to a local newspaper, where it was stated that it was the result of using a self-registering rain gauge, a pattern of instrument that is notoriously liable to error, and as the Observer

did not reply to a letter of enquiry there need be little hesitation in ignoring the figure. Probably the rainfall at that point reached or may even have exceeded 7 inches. The second record of more than 8 inches was at Sprowston Council School, where 8·25 in. was reported. There are three other rain gauges in or close to the village of Sprowston, and these gave readings of 7·19 in., 7·50 in., and 7·62 in. respectively. The reading of 8·25 in. appears somewhat large compared with these, and as the school gauge frequently reads higher than the other gauges, the instrument should be tested before accepting the reading as above 8 inches. The third record is at Brundall, where 8·09 in. was given, and there is no apparent reason for not accepting the figure, as the station is near what must have been the centre of the highest rainfall.

In the section dealing with the heavy daily rainfalls of 1912 in Part II., p. [124], of this Volume, we give a full list of the stations which recorded their maximum daily rainfall for the year on either of the two days of the storm, but, as pointed out there, the fact that in no spot did the storm occur wholly within the limits of one rainfall day, makes these records in every case imperfect from the point of view of the total fall during the storm. In the following table we have brought together all the records for stations at which the fall during the whole storm, that is the fall on the 25th and 26th taken together, exceeded 4 inches. The whole of the stations quoted lie, as may be gathered from the maps, within the borders of Suffolk and Norfolk. The stations are arranged in river-basins precisely as in the General Tables of rainfall at the end of this Volume. In all 82 stations in the 1939 square miles, recorded 4 inches or more, of which 39 stations recorded 6 inches or more, and 17 more than 7 inches.

*Stations at which the Rainfall of August 25th—26th, 1912,  
amounted to 4·00 in. or more.*

		Rainfall.		
STATION.		25th. in.	26th. in.	25th-26th. in.
<i>Suffolk.</i>	DEBEN & C.			
„	Beeches (Sotterley Hall) .....	1·07	3·30	4·37
	YARE & C.			
„	Mendlesham .....	2·26	2·56	4·82
„	Stradbroke Vicarage .....	·82	5·00	5·82
„	Halesworth (Rumburgh Vicarage).....	1·01	2·99	4·00
„	Bungay (Flixton Vicarage) .....	1·07	3·62	4·69
„	Blundeston House .....	1·75	3·30	5·05
„	Herringfleet (The Gables).....	·80	4·28	5·08
„	Lound Pumping Station .....	1·02	4·01	5·03

	STATION.	Rainfall.		
		25th. in.	26th. in.	25th-26th. in.
<i>Suffolk.</i>	<b>YARE &amp; C.—(con.)</b>			
"	Fritton Hall .....	·65	4·66	5·31
"	" Warren .....	1·04	4·19	5·23
"	St. Olave's Priory .....	1·11	3·63	4·74
"	Burgh Hall [Yarmouth].....	1·20	4·01	5·21
	<b>OUSE.</b>			
"	Bury St. Edmunds (Fornham St. Martin)..	1·07	3·14	4·21
"	Walsham-le-Willows .....	1·16	3·28	4·44
"	Barningham (The Beeches) .....	...	...	4·63
"	Elveden Hall.....	1·09	3·78	4·87
"	Brandon (North Court Lodge).....	·48	3·93	4·41
<i>Norfolk.</i>	<b>YARE.</b>			
"	Diss (The Cedars) .....	1·22	4·21	5·43
"	Pulham St. Mary (The Firs) .....	1·20	4·77	5·97
"	Pulham St. Mary School .....	2·00	4·40	6·40
"	Geldeston [Beccles] .....	·87	3·61	4·48
"	Long Stratton (Great Moulton Rec.)...	2·35	4·50	6·85
"	" (Fritton Rectory) .....	1·34	5·21	6·55
"	Hedenham Rectory.....	·74	3·29	4·03
"	Toft Monks School [Beccles].....	...	...	4·51
"	Spooner Row (Wattlefield Hall) .....	1·16	5·04	6·20
"	Raveningham Hall [Beccles]..	·69	3·45	4·14
"	Saxlingham Nethergate.....	1·20	5·45	6·65
"	Brooke School .....	·03*	6·31*	6·34
"	Thurlton School .....	·65	4·63	5·28
"	Loddon (Langley Park).....	1·05	5·05	6·10
"	Swainsthorpe (The Rookery) .....	1·11	5·90	7·01
"	Wymondham.....	1·19	5·33	6·52
"	Dunston Hall .....	1·09	6·13	7·22
"	Rockland St. Mary Vicarage....	...	...	7·35
"	Keswick Old Hall.....	·82	6·06	6·88
"	Hethersett.....	1·75	5·58	7·33
"	Yarmouth (Sailors' Home).....	·46	4·80	5·26
"	" (Northgate House) .....	·77	4·35	5·12
"	Norwich (Christchurch Road, Eaton)..	1·03	6·31	7·34
"	" (Carrow House) .....	·61	6·67	7·28
"	Brundall (Blofeld Road) .....	·78	7·31	8·09
"	Norwich (Ipswich Road) .....	·87	6·49	7·36
"	" (Heigham Cemetery).....	·92	6·59	7·51
"	Honingham Hall.....	·60	5·62	6·22
"	Drayton .....	·90	5·70	6·60
"	Bylaugh Park Gardens .....	·77	5·30	6·07
"	Swanington Rectory .....	·71	4·71	5·42
"	Reepham (Old Brewery House) .....	...	...	7·25
"	Cawston Rectory.....	·75	5·30	6·05
	<b>YARE—Bure &amp; c.</b>			
"	Moulton .....	1·12	6·01	7·13
"	Sprowston Council School.....	1·05	7·20	8·25
"	" (Oak Lodge).....	·60	6·90	7·50
"	Sprowston Hall.....	·79	6·40	7·19
"	Old Catton .....	·72	6·90	7·62
"	Yarmouth (Ormesby St. Michael) .....	1·42	5·17	6·59

\* The amount of rainfall on these two days may require adjustment, but the total appears accurate.

	STATION.	Rainfall.		
		25th. in.	26th. in.	25th-26th. in.
<i>Norfolk.</i>	YARE—Bure & c.—(con.)			
„	Coltishall .....	·70	6·18	6·88
„	Aylsham (Rippon Hall).....	·51	5·54	6·05
„	„ (Millgate) .....	·63	5·46	6·09
„	Worstead (The Rookery, Dilham) .....	·50	5·16	5·66
„	„ (Lyngate Cottage).....	·34	5·55	5·89
„	„ (The Grange) .....	·98	6·31	7·29
„	„ (Westwick Gardens) .....	·81	6·38	7·19
„	Wickmere (Honing Hall) .....	...	...	5·73
„	North Walsham (Beech Grove) .....	1·02	5·16	6·18
„	„ „ (Empson House) .....	·84	4·05	4·89
„	Gunton Park .....	·43	6·46	6·89
„	Mundesley-on-Sea .....	·75	5·42	6·17
„	Baconsthorpe Rectory.....	·93	5·76	6·69
„	Cromer (Northrepps Hall) .....	·56	4·90	5·46
	STIFFKEYS & C.			
„	Cromer (The Warren).....	·74	5·76	6·50
„	Blakeney .....	·84	3·94	4·78
„	„ .....	·95	3·95	4·90
	OUSE & C.			
„	Riddlesworth Hall Gardens.....	1·05	3·58	4·63
„	Thetford (Waterworks) .....	1·15	3·53	4·68
„	„ (Ford Place Gardens) .....	1·10	3·37	4·47
„	„ (Ford Street Gardens) .....	1·20	3·70	4·90
„	Santon [Brandon].....	1·39	3·27	4·66
„	Weeting [ „ ] .....	1·04	3·66	4·70
„	Hargham .....	1·05	2·95	4·00
„	Stoke Ferry (Wereham).....	·67	3·57	4·24
„	Middleton Hall .....	·50	3·94	4·44

In order to determine the volume of precipitation, the area between the successive isohyets on each of the maps was measured and the general rainfall was calculated from these measurements in the usual way. In the maps reproduced a small part of the north of England where the rainfall was small has been left out in order to save space, but the measurements, which were made on a large scale map, include the whole of England and Wales. The small area in Ireland on which heavy rain fell has not been included in the calculation, but, in order to give a complete account of the two days' rainfall, we give in a separate small table the results of the measurements for Ireland for the area with more than ·50 in.

*August 25th, 1912.*

<i>Ireland.</i>	Area, sq. miles.	General Rainfall, inches.	Volume of Rain, sq. miles x inches.
More than 1·00 in. ....	469	1·20	563
·50—1·00 in. ....	271	·75	203
Total more than ·50 in.	740		766

*August 26th, 1912.*

<i>Ireland.</i>	Area, sq. miles.	General Rainfall, inches.	Volume of Rain, sq. miles x inches.
More than .50 in.....	407	.60	244

*August 25th—26th, 1912.**Ireland.*

More than 2.00 in. ....	122	2.20	268
1.00—2.00 in. ....	494	1.45	717
.50—1.00 in.....	1,089	.70	762
Total more than .50 in.	1,705		1,747

The general rainfall of the area with more than .50 in. on the 25th in Ireland was 1.04 in., that on the 26th was .60 in., and for the larger area with more than .50 in. on the two days together, 1.02 in.

Measurements over the whole of England and Wales give the following results :—

*August 25th, 1912.*

<i>England and Wales.</i>	Area, sq. miles.	General Rainfall, inches.	Volume of Rain, sq. miles x inches.
More than 2.00 in.....	24	2.08	50
1.00—2.00 in. ....	5,173	1.20	6,184
.50—1.00 in.....	17,101	.74	12,655
.25—.50 in. ....	13,603	.39	5,346
Less than .25 in.....	19,760	.14	2,826
No rain.....	2,647	.00	...
Total.....	58,308		27,061

The general rainfall for the whole of England and Wales for August 25th was .46 in.

*August 26th, 1912.*

<i>England and Wales.</i>	Area, sq. miles.	General Rainfall, inches.	Volume of Rain, sq. miles x inches
More than 7.00 in. ....	21	7.10	149
6.00—7.00 in. ....	247	6.34	1,567
5.00—6.00 „ .....	452	5.45	2,463
4.00—5.00 „ .....	351	4.53	1,590
3.00—4.00 „ .....	936	3.38	3,168
2.00—3.00 „ .....	1,820	2.52	4,590
1.00—2.00 „ .....	8,685	1.32	11,504
.50—1.00 „ .....	12,810	.74	9,518
.25—.50 „ .....	13,868	.37	5,117
Less than .25 in.....	17,086	.15	2,478
No rain .....	2,032	.00	...
Total .....	58,308		42,144

The general rainfall on the 26th was .72 in.

<i>August 25th-26th, 1912.</i>			
<i>England and Wales.</i>	Area, sq. miles.	General Rainfall, inches.	Volume of Rain, sq. miles x inches
More than 8.00 in. ....	18	8.11	146
7.00—8.00 in. ....	241	7.32	1,764
6.00—7.00 „ .....	446	6.46	2,880
5.00—6.00 „ .....	334	5.53	1,847
4.00—5.00 „ .....	900	4.45	4,008
3.00—4.00 „ .....	1,524	3.45	5,264
2.00—3.00 „ .....	3,999	2.32	9,272
1.00—2.00 „ .....	19,218	1.36	26,205
.50—1.00 „ .....	15,474	.76	11,736
Less than .50 in. ....	16,154	.38	6,083
Total .....	58,308		69,205

We are able to give the general rainfall for the whole of England and Wales for the whole shower as 1.18 in.

From the foregoing measurements we are able to calculate the volume of water which fell in England and Wales in millions of gallons, and the totals may also be expressed in terms of weight.

*Volume and Weight of Precipitation over England and Wales,  
August 25th-26th, 1912.*

	Volume.		Weight.
August 25th.....	391,826 million gallons		1,749 million tons.
„ 26th.....	610,218 „ „		2,724 „ „
Total August 25th-26th	1,002,044 „ „		4,473 „ „

In order to compare the rainfall of the wet area with that measured for the various heavy falls dealt with in the Section on Heavy Falls on Rainfall Days, during the last twelve years, we have calculated the general rainfall for the area with more than an inch. Over the 26,680 square miles with more than 1.00 in. of rain the volume of the fall amounted to 51,386 square-mile-inches, and the general rainfall was 1.93 in.

On account of the concentration of the very heavy part of the rainstorm on a single area it is convenient to study this area by itself, and we have accordingly separated from the remainder the part of the country included in the eastern splash over which the rainfall exceeded 2.00 in., and give the details below.

<i>August 25th–26th, 1912.</i>			
<i>Wettest Area.</i>	Area, sq. miles.	General Rainfall, inches.	Volume of Rain, sq. miles × inches.
More than 8·00 in. ....	18	8·11	146
7·00–8·00 in. ....	241	7·32	1,764
6·00–7·00 „ . . . . .	446	6·46	2,880
5·00–6·00 „ . . . . .	334	5·53	1,847
4·00–5·00 „ . . . . .	900	4·45	4,008
3·00–4·00 „ . . . . .	1,524	3·45	5,264
2·00–3·00 „ . . . . .	2,721	2·36	6,433
Total more than 2·00 in.	6,184		22,342

The general rainfall of the eastern area with more than 2·00 in., comprising 6,184 square miles, was 3·61 in.

In the area in the east of England, bounded by the 2 inch isohyetal line, the volume of water which fell during the storm was 323,498 million gallons, the total weight being 1,444 million tons. The precipitation on the 6,184 square miles comprised in this area (11 per cent. of the surface of England and Wales) was thus 32 per cent. of that which fell over the whole country.

It is not possible to give an adequate account of the serious floods which naturally resulted from the extraordinary rainfall of August 25th–26th. Very many Observers have sent to us vivid accounts of the flooding and destruction which took place in their neighbourhoods, and these have formed a valuable supplement to the detailed descriptions which appeared in the press. Much as we should like to quote extensively from these accounts, considerations of space prevent us from doing so. The spot which probably suffered most severely in respect of flooding was the low-lying part of Norwich, which not only lay almost in the centre of highest rainfall but at the meeting of the waters coming from extensive areas of very heavy rainfall. On a wall in the city is a tablet which records the position of the high water mark of all the bad floods from which Norwich has suffered during the last 300 years. The highest and oldest of these marks bears the date 1614, but the flood mark of August, 1912, stands some 15 inches higher.

The chief feature of the flooding was the destruction of bridges and the dislocation of traffic over road and rail over almost the whole of Norfolk. The damage to roads and bridges in the county of Norfolk alone was estimated at £27,800. In the Fen District, between Spalding and Peterborough, the floods stretched for 20 miles, resembling a lake, in places a mile wide. Enormous damage to the crops, both of hay and corn, was reported, and great quantities



of hay were carried bodily away and washed into the sea. A very large area of land remained under water for the whole of the following winter.

The fact that the great area of maximum precipitation lay far to the east of the centre of Norfolk, and was central in the valley of the Bure and of the Yare below Norwich, accounts for the damage due to the resulting flood being so moderate as it was. The Yare and its tributary the Wensum, above Norwich, were flowing from a region where the rainfall, although great, was far less than that below the city; hence there was no great weight of flood-water to pass down after the first rush. The greatest precipitation fell on the level expanse of the Broads and the low land surrounding them, so that a rise of a few feet in the water level sufficed to relieve the situation, there being no great area of steeply sloping land to accelerate the current in the lower reaches of the rivers to a dangerous degree. Measurements were made, on the map, of the total volume of water, in addition to the normal flow of the river, discharged at Yarmouth by the Yare, swollen by the Bure from the north-west and the Waveney from the south-west, and the result is as follows:—

River Basin.	Area. sq. mi.	General Rainfall. in.	Volume of Rainfall. sq. mi. x in.
Yare above Norwich and Wensum .....	443	5·73	2,538
Yare below Norwich (in- cluding Waveney).....	430	5·54	2,384
Bure .....	321	6·85	2,200
Total... ..	1,194		7,122

The total volume of the water deposited in 24 hours on the drainage area discharging at Yarmouth was 103,122 million gallons, and its weight 466,360,000 tons.

Had it not been for the interposition of the Broads, the damage done by the flood waters at Yarmouth would necessarily have been very great, and the coast-line would probably have suffered considerable changes from the silt deposited when the current was checked on reaching the sea. Instead of this occurring the great bulk of the sediment carried down from the upper parts of the rivers was deposited in the Broads, the silting up of which has had a serious effect on the large boating industry and the water-borne commerce of the neighbourhood. The cost of clearing the beds of the streams will undoubtedly be very great.

The figures of the volume of water which fell during the storm, by themselves convey little idea of the relative magnitude of the rainfall, but when compared with the heaviest widespread falls previously on record their significance becomes apparent. The land area with more than 4 inches of rain on August 25th–26th, 1912, was 1,939 square miles, the total volume falling within that area was 10,645 square-mile-inches, and the general rainfall on the area 5·49 in. All the heaviest falls of rain in one day, or in a continuous downpour lasting for parts of two or three days, have been mapped in *British Rainfall* since 1900, and the areas over which rain above certain limits fell has been calculated and set down in the annual volumes. Amongst these we find only two instances, one in the east of Ireland on August 24th–26th, 1905, the other in the south-east of England on October 26th–28th, 1909, in which more than 4 inches of rain was experienced over as much as one half of the area so visited on August 25th–26th, 1912. Both falls were on the sea-coast, and, as in the case of the East Anglian fall, a considerable part of the area with more than 4 inches must have lain over the sea and so escaped measurement. No other instances of such extensive heavy falls have been noted in the volumes of *British Rainfall* back to 1865. As, however, we were not able to study the days on each side of the very wet day which was described, it is not impossible that such cases may exist. Neither of the great falls we have taken for comparison had a very high maximum rainfall, and we therefore made a special study of the heaviest falls reported in the Lake District, one of which, with a total of 10·24 in. for two days at Seathwaite, suggested the possibility of having produced an immense volume of precipitation, although the area with more than 4 inches was only 714 square miles. The comparison is as follows :—

*Instances of the most widespread Heavy Rain.*

	Area over 4 in. sq. mi.	General Rainfall. gallons.	Volume of Rainfall over this Area. sq. mi. x in. million gallons.	
East Anglia, August 25th–26th, 1912...	1,939	5·49	10,645	154,133
Eastern Ireland, August 24th–26th, 1905...	1,160	4·76	5,520	79,930
South-east England, October 26th–28th, 1909...	1,004	4·69	4,708	68,172
Lake District, August 24th–25th, 1891...	714	5·63	4,022	58,241

The measurements made at individual stations can be compared with previously recorded measurements only in a partial manner.

The greatest rainfalls put upon record refer only to the rainfall day, and we must therefore compare them, not with the total fall at any station during the whole storm of August 25th—26th, 1912, although that may have taken place within 24 hours, but with the amount which fell after 9 a.m. on the 26th.

Rainfall above 6·50 in. was recorded on the rainfall day, August 26th, at :—

	in.		in.
Brundall, Blofeld Road.....	7·31	Sprowston, Oak Lodge .....	6·90
Sprowston, Council School ...	7·20	Norwich, Carrow House .....	6·67
Old Catton .....	6·90	„ Heigham Cemetery	6·59

The greatest rainfall on a single day reported in Norfolk during the 48 years ending in 1911 was 4·48 in. at Fakenham on July 11th, 1893, and there was no other instance of as much as 4 inches in that time.

All the recorded instances of falls exceeding 6·50 in. in a rainfall day in the British Isles since 1864 are :—

	in.
Seathwaite, November 12th, 1897.....	8·03
Ben Nevis, February 6th, 1894 .....	7·74
Ben Nevis, October 2nd, 1890.....	7·29
Seathwaite, October 29th, 1911 .....	7·00
Rosthwaite, November 12th, 1897.....	6·94
Seathwaite, September 30th, 1890.....	6·79
Seathwaite, May 8th, 1884 .....	6·78
Seathwaite, November 13th, 1869.....	6·70
Angerton Hall, September 7th, 1898 .....	6·70

Other heavy falls have, of course, occurred without being recorded, and it is possible that a few are on record for other days at particular stations in those years when a larger reading has been put down in the list, which takes account only of the one wettest day in the year at each station.

Some comparisons of the rainfall of the day with the total rainfall of the year are given on pp. [137]—[139] of Part II.

## THE WETTEST SUMMER IN ENGLAND AND WALES.

By CARLE SALTER.

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IN the popular mind the summer of 1912, at any rate in the south of England and Wales, was unexampled for persistence of wet, gloomy and unseasonable weather. The press generally was unanimous in condemning it as the worst holiday season for very many years, and the Observers' Notes in Part II. of this volume speak with no less certain voice of its character, viewed from the standpoint of the meteorological observer. The coincidence of the two most rainy phases of an exceptionally rainy summer with the seasons of the hay and corn harvests rendered it an extremely trying year for agriculture, especially as farmers in general had already suffered much from the great dryness and heat of the summer of 1911.

From the point of view of the rainfall it is convenient to study the period covered by the three months, June, July and August, and we have made a search through the records of rainfall in England and Wales during the last fifty years, in order to ascertain which were the wettest summers previously recorded. The data upon which we have to rely are naturally not homogeneous throughout the period, but for England and Wales there are ample trustworthy, and sufficiently well distributed records for each year to show the general rainfall within a small margin of error.

The tables of rainfall for each month of 1912, which form part of the article on the monthly rainfall of the year in Part II. of this volume, contain the records of 154 stations in England and Wales, selected so as to represent all parts of the country; and these indicate that for the two countries taken together, the general rainfall of June, 1912, was 4·64 in., of July 3·63 in., and of August 6·86 in.; the total for the three months amounting to 15·13 in. From the smaller number of records for which average values for 35 years are available, the percentage which the rainfall of these months bore to the average is shown to have been for June 194 per cent., for July 127 per cent., and for August 210 per cent.; the three months together having had 178 per cent. of the average rainfall.

We shall first consider the month of June, next July, then June and July together, and finally June, July and August as a whole.

**June.**—Looking back through the previous 50 years' records, we find that there has been a wetter June in one year only, namely, 1879, when the general rainfall for England and Wales amounted to 5·10 in., or 213 per cent. of the average. Only one other June, in 1882, had a general rainfall of as much as 4 inches; though June, 1872, had only slightly less.

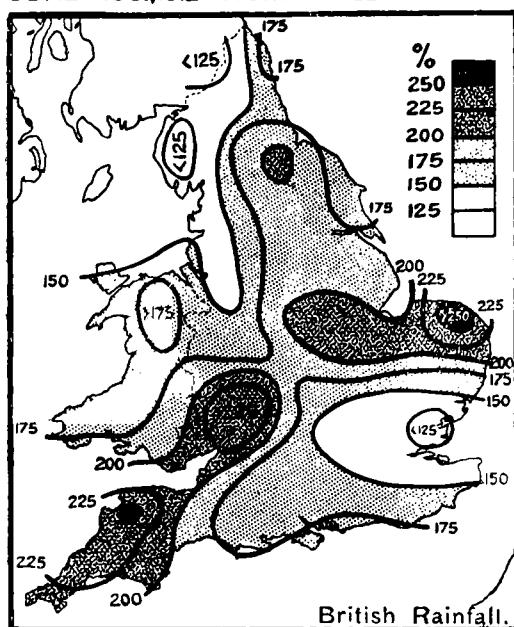
**July.**—July, although a distinctly wet month, was the least wet of the three summer months of 1912, part of the south-east of England having less than the average rainfall. Over England and Wales there have been at least nine wetter Julies since 1863. The most noteworthy instances were July, 1888, when the general fall was 5·60 in., or 196 per cent. of the average; July, 1880, with 5·41 in. or 189 per cent.; and July, 1875, with 4·96 in. or 174 per cent.

**June and July.**—In each of these three years, 1888, 1880 and 1875, the rainfall of June and August was normal or deficient in amount, and the excess in July was insufficient by itself to characterize the summer as abnormally wet. In 1879, however, the general fall in July reached 4·32 in., and this following the wet June mentioned above, brought the fall of the two months together to 9·42 in. or 179 per cent. of the average. This exceeded the total for June and July, 1912, by 1·15 in. or 22 per cent. In 1880 and 1888, the aggregate for June and July was brought by the wetness of July to a slightly higher total than in 1912. June and July, 1872, also approached 1912 very closely, but no other year had a greater general rainfall for the two months taken together.

**June, July and August as a whole.**—It is clear from the foregoing comparisons that at the close of July the summer of 1912, although it had already acquired a definite character as one of unusually high rainfall, did not stand without precedent in this respect. It may be remarked, however, that with an average fall in August, the aggregate for the three months would have been in excess of that for any previous summer in the fifty years except that of 1879. In that year, August with a general fall of 5·50 in. or 168 per cent. of its average, brought the total for the three months to 14·92 in., 75 per cent. above the average. This total rainfall in the summer of 1879 thus far exceeded the aggregate of any other from 1863 to 1911. In August, 1912, however, the rainfall was excessive over the whole of England and Wales, reaching more than double the

average in the south, and more than three times the average over large areas. The rainfall of the month at a few stations actually exceeded the average for the whole summer. The general fall, 6·86 in., was above the average by 110 per cent., and was more than an inch greater than that of any previous August on record. The very large total was in great measure due to the unprecedented rainfall in Norfolk, described in another part of this volume; but the month was extraordinarily wet also in Cornwall, Devon, Sussex and the lower Severn Valley. For the three months, June-August, 1912, as a whole, no part of England or Wales failed to reach the

JUNE-AUG., 1912 AS PERCENTAGE OF AVERAGE



average amount of rainfall, and only two small areas had an excess of less than 50 per cent. These were the north-west of England from mid-Cheshire to Berwick-on-Tweed, with a minimum of slightly less than 25 per cent. excess in the Lake District, and the Thames Valley below Oxford, with only about 25 per cent. excess in the south of Essex. More than 75 per cent. excess occurred over almost the whole of the Midlands, the south-west, and the east of England from Suffolk northwards, and also over South Wales. The

principal excesses took place in a broad tract stretching from Cornwall to Norfolk, over most of which the rainfall exceeded twice the average amount, reaching 225 per cent. of the average in three patches, and 250 per cent. in Norfolk and possibly in North Devonshire also. The main features of the distribution of rainfall in relation to the average are shown in the accompanying sketch map. The data upon which the map was based are given in the table on pp. 51-52. In the bottom line of the table are the means for the 52 stations used for calculating the relation of the rainfall to the average, and also the means of 154 stations used for the purpose of comparison with previous years. The general average has been corrected to the equivalent for the larger number of stations.

*Rainfall of June-August, 1912, as Compared with Average.*

Div.	Station.	1912.				Average, 1875-1909.	Difference.	July-Aug., 1912, as percentage of Average
		June.	July.	August.	Total June-Aug.			
		in.	in.	in.	in.	in.	in.	
I.	St. Pancras, Camden Square ..	3.23	1.44	4.89	9.56	7.24	+ 2.32	132
II.	Tenterden, View Tower .....	3.33	1.02	6.23	10.58	6.66	+ 3.92	159
"	Arundel, Patching .....	3.27	2.09	7.70	13.06	7.11	+ 5.95	184
"	Fawley, Cadland .....	3.36	3.08	6.50	12.94	7.44	+ 5.50	174
III.	Basingstoke, Sherborne St. John ..	3.78	1.89	6.18	11.85	7.26	+ 4.59	163
"	Royston, Therfield .....	2.85	1.97	6.22	11.04	7.86	+ 3.18	140
"	Oxford, Magdalen College .....	3.24	2.95	4.57	10.76	7.14	+ 3.62	151
"	Wellingborough, Croyland Abbey ..	3.14	4.20	6.41	13.75	7.02	+ 6.73	196
"	March .....	4.04	3.65	7.00	14.69	7.02	+ 7.67	209
IV.	Shoeburyness .....	1.85	1.35	3.34	6.54	5.24	+ 1.30	125
"	Braintree, Bocking .....	1.82	1.32	5.45	8.59	6.94	+ 1.65	124
"	Rendlesham Hall .....	2.17	2.01	6.14	10.32	6.59	+ 3.73	157
"	Bury St. Edmunds, Westley .....	2.21	2.82	8.29	13.32	7.41	+ 5.91	180
"	Geldeston .....	2.70	3.30	7.56	13.56	6.36	+ 7.20	213
"	Blakeney .....	3.99	4.34	8.67	17.00	6.63	+ 10.37	256
V.	Bishops Cannings .....	3.42	2.13	5.45	11.00	8.37	+ 2.63	131
"	Evershot, Melbury House .....	4.00	2.36	7.13	13.49	8.16	+ 5.33	165
"	Sidmouth, Sidmount .....	5.25	2.29	6.35	13.89	7.59	+ 6.30	183
"	Barnstaple, N. Devon Athenæum ..	6.91	4.04	10.08	21.03	8.34	+ 12.69	252
"	Falmouth Observatory .....	4.23	4.31	10.56	19.10	8.52	+ 10.58	224
"	Altarnon .....	8.20	4.95	14.96	28.11	11.85	+ 16.26	237
"	Litton, Sherborne Reservoir .....	4.37	4.05	9.46	17.88	9.74	+ 8.14	184
VI.	Stroud, Uplfield .....	6.39	5.90	7.24	19.53	8.08	+ 11.45	242
"	Church Stretton, Wolstaston .....	4.38	2.66	7.31	14.35	8.60	+ 5.75	167
"	Wolverhampton, Wrottesley .....	4.87	2.25	5.79	12.91	7.63	+ 5.28	169
"	Malvern, Church Street .....	5.19	3.97	9.33	18.49	7.81	+ 10.68	237
"	Coventry, Kingswood .....	4.48	3.44	6.47	14.39	7.93	+ 6.46	181
VII.	Market Overton .....	5.07	5.29	5.52	15.88	7.40	+ 8.48	215

*Rainfall of June–August, 1912, as Compared with Average—(continued).*

Div.	Station.	1912.				Average, 1875-1909.	Difference.	July-Aug., 1912, as percentage of Average
		June.	July.	August.	Total June-Aug.			
		in.	in.	in.	in.	in.	in.	
VII.	Revesby .....	3.33	4.08	6.01	13.42	7.01	+ 6.41	191
"	Lincoln, Doddington .....	3.38	4.06	5.32	12.76	6.83	+ 5.93	187
VIII.	Mickleover Manor .....	5.33	3.64	6.69	15.66	7.92	+ 7.74	198
"	Northwich, Highfield .....	2.94	3.41	5.83	12.18	8.88	+ 3.30	137
"	Chathurn, Middlewood .....	6.66	4.29	6.50	17.45	11.47	+ 5.98	152
"	Southport, Hesketh Park .....	4.71	4.23	4.81	13.75	8.91	+ 4.84	154
IX.	Sheffield, Redmires Reservoir .....	4.53	6.43	7.53	18.49	10.29	+ 8.20	180
"	Wetherby, Ribston Hall .....	4.73	4.11	5.37	14.21	7.51	+ 6.70	189
"	Hull, Pearson Park .....	4.89	3.39	4.95	13.23	7.53	+ 5.70	176
"	Scarborough, Osgodby .....	3.80	3.61	3.25	10.66	6.68	+ 3.98	160
X.	Darlington, Cleveland Parade .....	6.40	3.77	4.92	15.09	7.43	+ 7.66	203
"	Newcastle, Town Moor .....	5.08	3.43	4.33	12.84	8.14	+ 4.70	158
"	Howick Hall .....	5.40	4.42	4.71	14.53	7.69	+ 6.84	189
"	Borrowdale, Seathwaite .....	10.88	10.26	12.75	33.89	27.32	+ 6.57	124
"	Appleby, Castle Bank .....	8.25	3.62	4.34	16.21	8.91	+ 7.30	182
XI.	Abergavenny, Larchfield .....	5.29	5.18	7.97	18.44	8.26	+ 10.18	223
"	Ystalyfera, Wern School .....	8.65	5.22	12.54	26.41	15.14	+ 11.27	175
"	Cardiff, Ely .....	7.51	3.48	9.92	20.91	10.35	+ 10.56	202
"	Haverfordwest Castle .....	5.93	4.37	7.66	17.96	10.34	+ 7.62	174
"	Aberystwyth, Gogerddan .....	5.78	4.62	9.59	19.99	11.88	+ 8.11	168
"	Birmingham W.W., Tyrmynydd .....	6.14	4.79	11.70	22.63	13.16	+ 9.47	172
"	Bala .....	7.60	5.38	8.45	21.43	11.53	+ 9.90	186
"	Llandudno .....	3.42	4.17	5.55	13.14	7.65	+ 5.49	172
"	Holyhead .....	4.44	4.44	3.37	12.25	8.22	+ 4.03	149
	Mean of 52 Stations .....	4.75	3.72	7.02	15.49	8.71	+ 6.78	178
	" 154 " .....	4.64	3.63	6.86	15.13	8.52	+ 6.61	

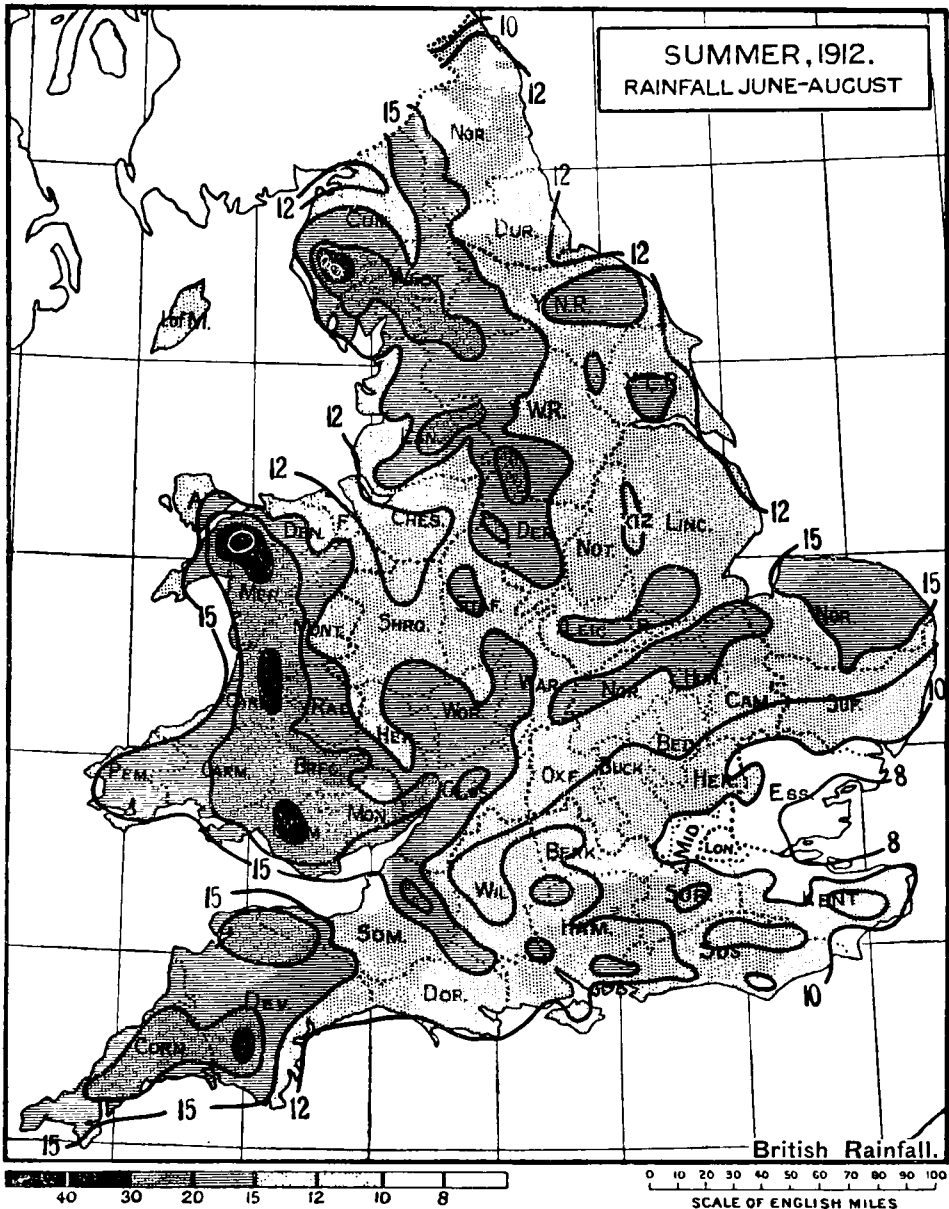


The general rainfall of the three months for England and Wales was 15·13 in. or 78 per cent. above the average. This exceeds the total for the three summer months of 1879 by the narrow margin of ·21 in. or 3 per cent. of the average. The general rainfall of the two summers was arrived at by the same method, and although, of course, the same stations were not available for both, there seems no reason to doubt that the records were in both cases capable of yielding general values closely approximating to the truth.

The rainfall of England and Wales during the three summer months in the two years 1879 and 1912, was so far in excess of that of any other similar period during the last fifty years, and the general fall was so nearly the same in these two years, that we have prepared maps of the distribution of the rainfall over the country for comparison. As might be expected from the nature of the weather which prevailed during the two summers the distribution of rainfall was distinctly of a winter type, and the run of the isohyetal lines showed a strong resemblance to that of the isohyets for a normal year's rainfall. The least rainfall, rather less than 8 inches, fell on both occasions on the east coast, in 1879 in Yorkshire, in 1912 in Essex, but its extent was extremely limited in both years. Less than ten inches fell in 1879 over a large area stretching from the Vale of York into the Fen District, and also round the Thames Estuary; but in 1912, although the area with less than 10 inches surrounding the Thames Estuary was more extensive than in 1879, the 10 inch line appears nowhere else except in the extreme north near Berwick-on-Tweed. A somewhat similar description applies to the areas over which less than 12 inches fell in the two summers, and the fact becomes clear that in 1879 the least wet part of the country lay in the north-east of England, whilst in 1912 it lay in the south-east. In both years there was a wedge of comparatively high rainfall extending from the west into Norfolk; but whilst in 1879 the amount reached 15 inches only in a few isolated patches, in 1912 large areas with more than 15 inches extended across the Midlands, culminating in more than 18 inches in parts of Norfolk. The highlands of Devon, Cornwall and Wales, and the ridge of the Pennines are outlined in both maps by the line of 15 inches; and on the highest land, including in both years almost the whole of Wales, more than 20 inches fell, the total reaching 30 inches in the very rainy districts, and 40 inches in the Lake District and in Snowdonia in 1912. There is no reason to suppose that the very wet areas in Wales were smaller in 1879 than



strength of the calculated mean values, to state positively that the latter was the wetter ; but the evidence of the figures is extended by that of the maps, which were compiled from a much larger number of points. The maps indicate by inspection that the summer of 1912



had the greater rainfall of the two, and there seems little reason to doubt that this was really the case. It is, however, clear that no other summer but that of 1879, in fifty years, has any claim to rival that of 1912 in respect of the amount of its rainfall in England and Wales.

## THE "SEATHWAITE" PATTERN RAIN GAUGE.

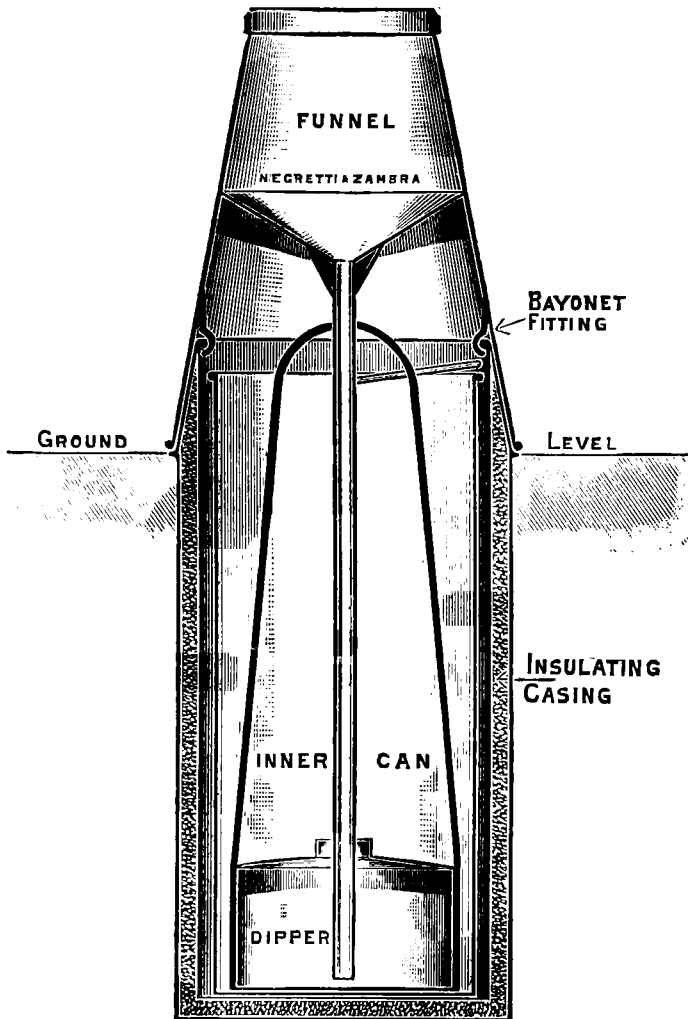
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IN order to meet the peculiar difficulties of measuring the rainfall in very wet and exposed positions where the gauges cannot be visited frequently, an attempt was made last year to devise a form of instrument which would be free from the most objectionable features of existing rain gauges. To meet the difficulty of collecting the whole rainfall of a month in a very wet position the rim of the funnel was made with a diameter of five inches, while the containing vessel had a diameter of eight inches. Hitherto, gauges in which the funnel was of smaller diameter than the receiver were open to the objection of horizontal joints, the soldering of which is particularly liable to give way and to allow rain to enter. This difficulty has been overcome by attaching the five-inch brass ring to a long and gently sloping cone rolled out of one sheet of metal, so that it has only one joint. Within this cone the funnel is fitted, its diameter being naturally greater than five inches, and the lower end of the cone is fitted over the eight-inch receiving vessel, the sides of the cone projecting beyond the receiver and coming down to within half an inch of the ground when the cone is in place. The cone is attached to the cylinder by means of a separate device in the form of a bayonet joint, which, when closed, cannot be opened until an extremely inconspicuous brass catch has been pressed back. It is hoped that this device will make the gauge less liable to be tampered with, as anyone ignorant of the construction would have great difficulty in discovering how to remove the cone.

The difficulty presented by the freezing of the contents in winter, or of evaporation of the water in summer, from a gauge which is left for a month between visits, has been attacked by making the receiver a cylindrical metal can, fitting loosely inside the outer case, which is constructed with double walls and double bottom, the intervening space being packed with a non-conducting material, rendered waterproof and sealed from contact with the air. This makes the outer cylinder large and heavy, and when it has been buried to the proper

depth in the earth it is hoped that the changes of temperature in the receiver will be greatly retarded. Experience will show whether the means employed are sufficient to attain the end in view.

The third difficulty, which is the most apparent to observers of mountain gauges, is the correct measurement of the water collected. The principle of the "Bradford" gauge, with a modification, has



THE "SEATHWAITE" PATTERN RAIN GAUGE.

been adopted. A rod, graduated to represent inches of rain for a five-inch funnel, is first inserted into the receiver, and the depth to which it is wet is noted. On account of the difference of area between the funnel and the receiver, one inch of rain corresponds to between one-half and one-third of an inch of rain in the gauge. To obviate the laborious process of emptying the gauge and measuring

it glass by glass, a "dipper" has been provided, made of copper, with a very narrow neck, and containing exactly five inches of rain for a five-inch funnel when it is filled to the lip. After the measurement with the rod, this dipper is carefully inserted and pressed down to the bottom of the receiver, so that it becomes filled with water. It is then withdrawn, bringing out exactly five inches of water, which is poured away. The dipper is inserted as frequently as may be necessary, and the number of times that it is brought out full is noted. When it at length comes out only partially filled, the water is poured from it into an ordinary graduated measuring glass, and finally the remnant of water in the receiver is poured into the glass and the measurement completed. In this way a correct account of the month's rainfall can be made by using the graduated glass only once or twice, instead of twenty or thirty times, as was necessary formerly.

The first of these new gauges was fixed by Dr. Mill, who designed it, at The Sty, above Seathwaite, in September, 1912, and no difficulties were reported with regard to its use during the following winter. Time, however, will be required before the sufficiency of the instrument and its durability are established. The experimental gauge was made by Messrs. Negretti & Zambra, to whom we are obliged for the accompanying illustration.

## METEOROLOGICAL OBSERVATIONS AT CAMDEN SQUARE, LONDON, IN 1912.

## SHADE TEMPERATURE.

1912.	MEAN DAILY.			MAXIMUM DAILY.						MINIMUM DAILY.				
	1912.	Diff. from Average.	Mean.	Diff. from Average.	Highest Reading.	Date.	Lowest Reading.	Date.	Mean.	Diff. from Average.	Highest Reading.	Date.	Lowest Reading.	Date.
January.....	40.2	+1.7	44.2	+0.9	51.7	6	33.8	28	36.1	+2.3	47.0	4	17.7	29
February.....	43.3	+3.6	48.7	+3.2	58.5	28	28.3	4	38.0	+3.3	50.7	23	16.7	3
March.....	46.5	+4.4	53.3	+3.3	62.3	25	46.2	18	40.5	+5.1	50.7	25	32.6	21
April.....	50.2	+2.1	61.1	+3.2	73.1	21	51.2	1	40.0	+0.3	48.5	8	30.3	12
May.....	57.8	+3.8	68.0	+3.4	81.2	11	54.4	4	48.2	+3.6	57.3	8	38.5	25
June.....	60.2	+0.1	69.6	-1.2	83.4	19	61.3	7	51.1	+0.4	62.5	23	44.7	3
July.....	64.5	+1.0	74.9	+0.6	91.4	12	60.7	19	55.3	+1.1	62.7	13	47.1	9
August.....	57.9	-4.4	66.6	-6.1	73.2	4	59.3	26	50.5	-2.9	57.6	17	43.1	28
September.....	54.1	-3.6	62.4	-5.0	69.4	4	56.7	11	46.6	-2.1	55.6	4	35.7	27
October.....	47.1	-3.0	55.9	-1.8	64.8	1	44.0	11	39.8	-3.9	53.6	28	30.8	5
November.....	43.7	+0.2	48.6	-0.5	56.3	9	35.8	30	38.7	+0.5	50.4	8	27.7	3
December.....	45.8	+6.1	50.8	+6.5	56.8	14	44.3	16	40.1	+5.1	49.1	14	23.4	1
YEAR.....	50.9	+0.9	58.7	+0.6	91.4	July 12	28.3	Feb. 4	43.7	+1.0	62.7	July 13	16.7	Feb. 3

These Tables of meteorological observations are compiled from the readings taken at 9 a.m. and 9 p.m. The average, when quoted, is in every case for the 50 years 1860-1909. The rainfall is from the 8-inch rain gauge of the Meteorological Office pattern; the radiation temperature from a black-bulb maximum thermometer in vacuo at a height of 4 feet above the ground, and from a link-bulb minimum thermometer laid on short

## METEOROLOGICAL OBSERVATIONS AT CAMDEN SQUARE, LONDON, IN 1912.

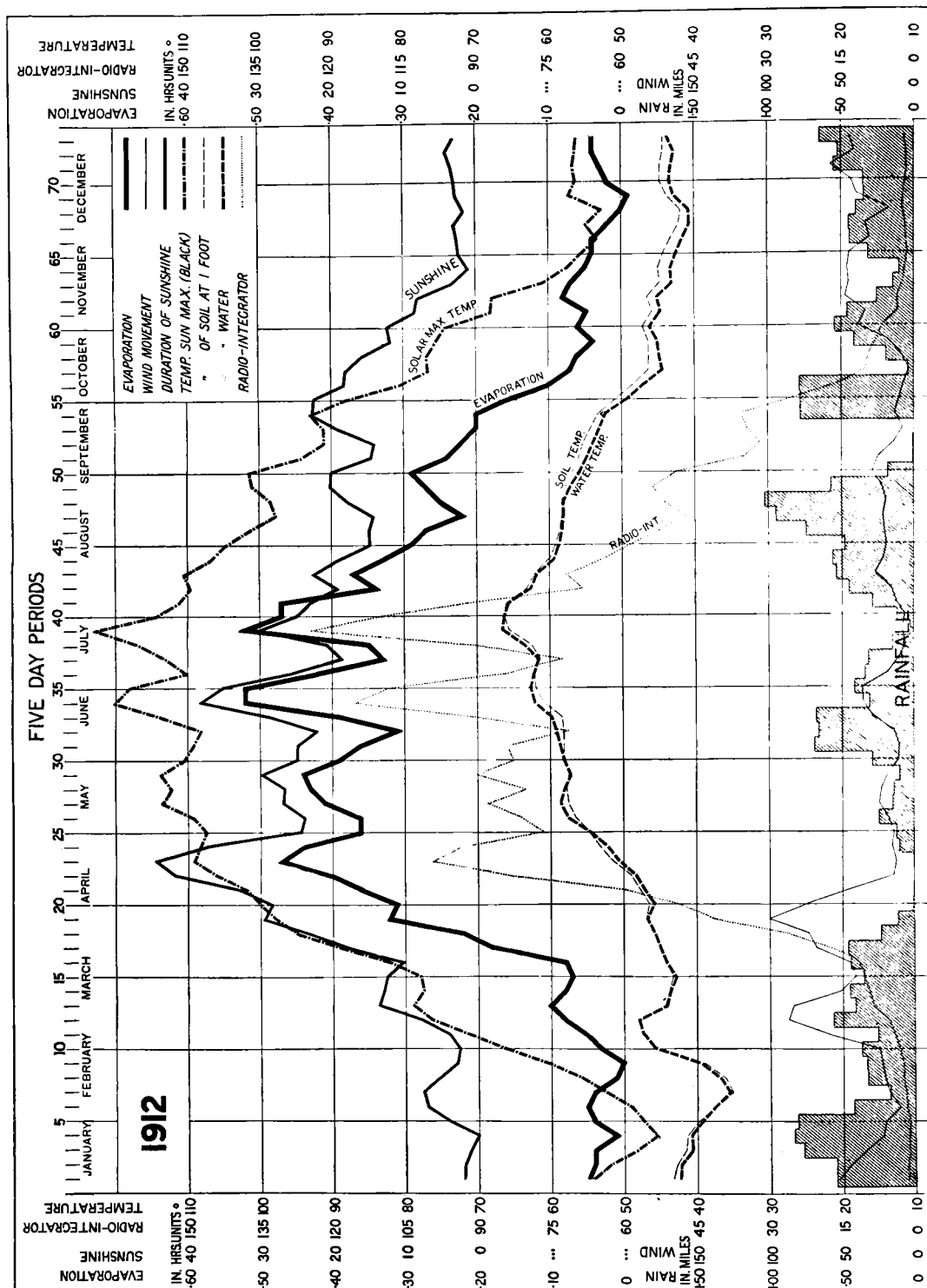
1912.	RAINFALL.						Evapor- ation.	RADIATION TEMPERATURE.		Radio- Integra- tor.	SUNSHINE.		EARTH TEMPERATURE.		
	Total duration. hrs.	Max. dura- tion in oneday.	Total amount. in.	Diff. from Average.	Max. amount in one day.	No. of Rain Days.		Mean max. in Sun. Black bulb.	Mean min. on Grass.		Total. duration. hrs.	Max. in one day.	Mean at 1 foot.	Mean at 4 feet.	Mean at 10 feet.
January.....	88.8	19.5	4.08	+2.08	.67	17	50.0	34.2	8.6	19.7	5.0	41.1	45.4	49.9	
February....	44.7	7.2	1.71	+ .11	.36	20	61.8	35.3	19.7	25.8	4.8	40.3	42.7	48.6	
March .....	59.8	8.0	2.84	+1.09	.56	20	82.2	38.4	80.9	91.5	10.1	44.6	45.1	47.6	
April .....	1.6	1.2	.04	-1.58	.02	3	104.5	35.9	443.0	218.7	12.1	49.0	47.1	47.6	
May .....	25.8	10.1	1.08	- .77	.28	9	111.5	43.8	521.4	163.3	10.5	57.1	51.8	48.6	
June .....	54.2	12.9	3.23	+ .91	.68	19	112.7	48.0	537.6	172.5	11.7	60.1	55.1	50.2	
July .....	22.2	6.8	1.44	- .92	.26	12	113.8	51.9	559.8	134.7	10.7	64.2	58.4	51.7	
August .....	66.2	9.3	4.89	+2.54	.72	25	102.8	48.2	354.9	108.7	8.2	58.9	58.2	53.4	
September ..	25.7	12.4	2.14	- .05	1.04	6	94.5	43.9	226.6	112.1	8.2	54.9	56.1	53.8	
October .....	32.1	7.8	2.04	- .59	.46	15	76.2	36.5	55.9	88.5	7.3	47.2	51.7	52.9	
November...	37.2	6.0	1.59	- .75	.32	16	58.1	34.4	12.4	23.8	6.0	44.3	48.6	51.6	
December ...	57.9	10.7	2.80	+ .67	.45	18	56.4	35.1	13.0	20.5	4.1	43.8	46.5	50.3	
YEAR.....	516.2	19.5	27.88	+2.74	1.04	180	85.4	40.5	2833.8	1179.8	12.1	50.5	50.6	50.5	

grass and freely exposed to the sky. The radio-integrator was described in *British Rainfall*, 1907, p. 44. Earth temperature is taken by spirit thermometers suspended in iron tubes of 1 inch internal diameter driven into the soil. They are read once daily at 9 a.m. The shade temperature is from thermometers on a Glaisher stand, the mean daily temperature being the mean of the maximum, minimum, 9 a.m., and 9 p.m. readings.





# EVAPORATION FROM A WATER SURFACE AND OTHER METEOROLOGICAL PHENOMENA.



## RECORDS OF EVAPORATION AND PERCOLATION.

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THIS subject stands much where it was a year ago, and though we print, and propose to continue to print, all the information which is sent to us, we cannot regard the few records available as by any means sufficient to enable useful generalizations to be made. Of the records from standard tanks published in *British Rainfall*, 1911, one only, that at Stanley Grange, Wakefield, disappears, and as we have another record at Ardsley Reservoir, only a mile or two distant, we regret the loss less than we should that of any other record. We are glad on the other hand to include once more the record from the tank at Victoria Lodge on Talla Water, one of the gathering grounds of the Edinburgh Water Works, which adds to our scanty knowledge of the conditions in the north.

We print as usual records of the amount of percolation at seven stations, including again the records at Berkhamsted, kept with two gauges by Mr. E. Mawley. There is probably much to be learned from percolation observations as to the actual evaporation from the surface of the land as distinguished from that from a free water surface, and we are surprised that the subject has received so little attention from water engineers, who require to know the proportion of the rainfall which may be stored. In the tables of percolation we add in supplementary columns the amount of evaporation, which presumably took place from the surface of the percolation gauge during each month, arrived at by deducting from the actual rainfall the amount of water which found its way through the gauge. There are, of course, limitations to the accuracy of such a calculation; since, for example, during a prolonged drought the soil in the gauge may be almost entirely drained of water, so that evaporation would be at a standstill for want of moisture, a state of things which could never occur in nature in this country.

The evaporation record at Camden Square now extends over 28 years, and of these 11 have had a smaller total evaporation than

1912. The total for the year was  $\cdot 73$  in. below the average, the deficiency being due to the small evaporation in the summer months, all of which showed great deficiencies, August having had a smaller total evaporation only once in the record, namely in 1891. April, on the other hand, had a larger total than ever before, exceeding that of its only rival for dryness, April, 1893, by  $\cdot 01$  in.

The accompanying plate, showing the relation of the evaporation observed at Camden Square to other meteorological elements, should be compared with the similar plates which have appeared in *British Rainfall* since 1905 ; but it should be noted that the relative position of the curves has occasionally been shifted, and that this year we have reverted to the scale used in 1910, which was departed from in 1911 on account of the high temperatures observed in the summer. The curves for the summer of 1911 formed a striking contrast to those for 1912, when the general flatness of the curves for temperature, sunshine and evaporation reflect the character of the cold wet summer. The frequent fluctuations in the curves from May to September emphasize their prevailing parallelism, and show that there is undoubtedly an intimate connection between the phenomena plotted. The premature summer of 1912 is represented by the rapid increase of sunshine from the 15th to the 29th pentad, culminating in an unusually high maximum at the end of April. In contrast to this, may be noticed the minimum at the 37th pentad, the beginning of July. After the end of July there was a rapid fall in all the curves, only checked by a slight recovery in September. The high rainfall on this occasion was almost entirely the effect of two days' rain at the end of September. A feature of interest is the absence of high wind movement from April to the end of the year.

The evaporation for the year was above the average at Croydon, but below the average at all the other stations for which we have average values, the deficiency ranging from  $\cdot 64$  in. at Otterbourne to  $3\cdot 53$  in. at Downholland. The largest total amount for the year was at Croydon, where, however, we should remark that the observations are not exactly uniform with those at the majority of the stations, being made with a small evaporimeter placed in the middle of a tank of water. The 4-foot tank at Isfield Place also gives a rather higher value for the year than the standard 6-foot tanks. The differences between the remaining records are perplexing, though their character is fairly constant from year to year, and we hesitate to express any

opinion as to the geographical distribution of evaporation for the present.

The mean value for the twelve stations available is 16·51 in., lower by 4·04 in. than the mean for 1911.

*Evaporation at Camden Square, 1885-1912.*

	Jan. in.	Feb. in.	March. in.	April. in.	May. in.	June. in.	July. in.	Aug. in.	Sept. in.	Oct. in.	Nov. in.	Dec. in.	Total. in.
1885.	·20	·38	·86	1·71	1·98	2·77	3·29	2·25	1·13	·77	·17	·11	15·62
1886.	·23	·13	·53	1·59	1·78	2·93	3·12	1·86	1·46	·63	·27	·12	14·65
1887.	c·07	·29	·76	1·72	1·79	3·68	3·76	2·54	1·25	·78	·21	·07	16·78
1888.	·07	·37	·48	1·16	2·71	2·24	1·44	1·90	1·17	·60	·43	·03	12·60
1889.	·03	·18	·62	1·07	1·76	2·97	2·34	1·96	1·52	·42	·29	c·13	13·03
1890.	·08	·19	·50	1·44	2·63	2·14	2·33	2·02	1·27	·79	·31	·04	13·74
1891.	·03	·16	·73	1·35	1·66	2·83	2·34	1·67	1·00	·62	·20	·22	12·81
1892.	·05	·09	·60	1·88	2·65	3·05	2·84	2·20	1·01	·36	·02	·20	14·95
1893.	c·03	·01	·92	2·33	3·06	3·62	3·12	2·85	1·48	·70	·11	·01	18·18
1894.	c·04	·28	·83	1·17	2·10	2·48	2·49	1·91	·97	·37	·20	·11	12·87
1895.	·14	·64	·36	1·26	3·06	3·31	3·07	2·12	1·27	·54	·19	·07	16·03
1896.	·16	·24	·64	1·57	3·06	3·21	3·63	1·96	·68	·47	·18	·00	15·80
1897.	·23	·21	·76	1·23	2·99	2·48	3·60	2·49	·99	·63	·26	c·14	15·73
1898.	·19	·37	·51	1·28	1·56	2·10	2·96	2·53	1·73	·45	·11	·16	13·95
1899.	·04	·28	·52	1·24	2·34	3·67	4·03	3·78	2·01	·45	·41	·11	18·88
1900.	·03	·16	·80	1·46	2·35	2·85	4·25	2·61	1·61	·89	·24	·15	17·40
1901.	·13	·24	·60	1·98	3·25	3·85	3·37	3·19	1·42	·64	·31	c·05	18·93
1902.	·16	·15	·71	1·75	1·78	2·33	3·30	1·71	1·47	·69	·28	·27	14·60
1903.	·26	·39	·97	1·57	2·24	2·79	3·35	2·53	1·51	·86	·29	·12	16·88
1904.	c·09	·26	·54	1·68	1·81	3·32	4·06	2·86	1·20	·50	·26	·02	16·42
1905.	·17	·35	·65	1·14	3·19	2·49	3·65	2·23	1·24	·78	·09	·16	16·14
1906.	·06	·21	·73	1·90	1·90	3·53	3·65	3·46	2·38	·78	·27	·16	19·03
1907.	·21	·38	1·02	1·27	1·93	2·47	2·65	2·24	1·72	·49	·27	·19	14·84
1908.	·05	·27	·56	1·32	2·23	3·77	2·75	2·47	1·25	·48	·29	·14	15·58
1909.	·14	·30	·30	1·85	2·93	1·70	2·60	2·23	·84	·76	·17	·16	13·98
1910.	·22	·17	·80	1·43	2·52	2·57	2·00	2·12	1·42	·76	·19	·10	14·30
1911.	·15	·32	·59	1·77	2·58	3·34	4·60	3·19	1·96	·64	·37	·02	19·53
Average	·10	·26	·66	1·52	2·37	2·91	3·13	2·40	1·37	·63	·24	·09	15·68
1912.	·24	·16	·79	2·34	2·44	2·49	2·55	1·69	1·41	·39	·33	·12	14·95
Diff.	+·14	-·10	+·13	+·82	+·07	-·42	-·58	-·71	+·04	-·24	+·09	+·03	-·73

NOTE.—c indicates condensation.

*Table of Rainfall, Percolation and Calculated Evaporation at Park Hill House, Stanhope Road, Croydon. Mr. Baldwin Latham, M.Inst.C.E.*

NOTE.—The percolation gauges are covered with the natural growth of grass.  
Size of percolation gauges 3 ft. square and 3 ft. deep.

1912	Rainfall. Level of Gauge 265·00 ft. above O.D.	Percolation Gauge. <i>Chalk</i> . Level of Gauge 264·00 ft. above O.D.		Percolation Gauge. <i>Gravel</i> . Level of Gauge 264·00 ft. above O.D.	
		Percolation.	Calculated Evaporation.	Percolation.	Calculated Evaporation.
	in.	in.	in.	in.	in.
January .....	3·33	2·967	·36	2·878	·45
February .....	1·93	1·444	·49	1·173	·76
March .....	3·71	2·933	·78	2·756	·95
April .....	·11	·030	·08	·041	·07
May .....	1·24	—	1·24	—	1·24
June .....	3·04	—	3·04	—	3·04
July .....	1·54	—	1·54	—	1·54
August .....	5·28	—	5·28	·063	5·22
September .....	3·18	·120	3·06	·404	2·78
October .....	2·82	1·678	1·14	1·577	1·24
November .....	2·44	1·828	·61	1·852	·59
December .....	3·28	2·933	·35	2·901	·38
Total .....	31·90	13·933	17·97	13·645	18·26

*Observations made at Park Hill House, Stanhope Road, Croydon.  
Mr. Baldwin Latham, M.Inst.C.E.*

1912	Evaporation from 12 in. Evaporator floating in Water.	Condensation in 12 in. Evaporator floating in Water.	Average daily Temperature of Water at 9 a.m. in 12 in. Evaporator floating in Water.	Evaporation from 5 in. Evaporator fully exposed in Air.	Average daily Temperature of Water at 9 a.m. in 5 in. Evaporator fully ex- posed in Air.	Temperature of the Dew Point at 9 a.m.
	in.	in.	°	in.	°	°
January .....	·450	·065	39·7	·950	38·8	37·1
February .....	·335	·095	41·1	1·455	42·2	39·7
March .....	1·220	·025	46·0	3·255	47·8	41·6
April .....	2·495	—	51·2	6·025	54·4	40·8
May .....	2·945	—	60·6	5·765	65·7	48·9
June .....	3·395	—	64·5	5·995	69·9	53·8
July .....	3·225	—	67·3	6·465	72·0	58·3
August .....	2·255	—	61·1	4·265	64·7	52·1
September .....	1·790	—	55·5	3·300	57·3	48·4
October .....	1·055	·020	48·5	2·256	46·0	43·6
November .....	·700	·010	43·0	1·629	41·6	40·1
December ..	·375	·055	43·4	1·405	44·0	42·7
Totals .....	20·240	·270	...	42·765	...	...
Means .....	...	...	51·8	...	53·7	45·6

*Table of Rainfall and Percolation at Windwhistle House, Grayshott, Hampshire. Mrs. Lyndon.*

660 feet above Sea Level. Gauge 3 ft. × 3 ft. × 3 ft.

1912	Rainfall.	Percolation.	Calculated Evaporation.
	in.	in.	in.
January .....	3·51	3·56	c·05
February .....	3·47	3·06	·41
March .....	4·76	4·46	·30
April .....	·02	·18	c·16
May .....	1·54	—	1·54
June .....	3·99	—	3·99
July .....	2·77	·27	2·50
August .....	6·08	3·81	2·27
September .....	4·21	2·17	2·04
October .....	4·58	4·37	·21
November .....	2·28	2·16	·12
December .....	5·26	5·57	c·31
Total .....	42·47	29·61	12·86

*Table of Rainfall and Percolation at the South Hants Water Company's Pumping Stations, at Timsbury and Twyford, Hants. Mr. Wm. Matthews, M.Inst.C.E.*

NOTE.—The percolation gauges are covered with a natural growth of grass.  
Size of percolation gauge 3 ft. square and 3 ft. deep.

1912.	TIMSBURY.			TWYFORD.		
	Rainfall. Level of Gauge 96·39 ft. above O.D.	Percolation Gauge. <i>Chalk.</i> Level of Gauge 89·75 ft. above O.D.		Rainfall. Level of Gauge 138·72 ft. above O.D.	Percolation Gauge. <i>Chalk.</i> Level of Gauge 137·49 ft. above O.D.	
		Percolation.	Calculated Evaporation.		Percolation.	Calculated Evaporation.
	in.	in.	in.	in.	in.	in.
January .....	4·20	4·11	·09	3·54	2·72	·82
February .....	2·67	2·43	·24	2·99	2·29	·70
March .....	5·08	4·58	·50	4·08	3·31	·77
April .....	·11	·01	·10	·02	·02	·00
May .....	1·33	·01	1·32	1·03	—	1·03
June .....	4·49	·01	4·48	4·86	—	4·86
July .....	2·17	·01	2·16	2·22	—	2·22
August .....	6·41	1·92	4·49	6·57	2·35	4·22
September .....	2·36	·24	2·12	2·57	·93	1·64
October .....	3·39	2·67	·72	3·73	2·96	·77
November .....	1·85	1·69	·16	2·15	2·13	·02
December .....	4·62	4·90	c·28	4·32	4·86	c·54
Total .....	38·68	22·58	16·10	38·08	21·57	16·51

NOTE.—c indicates condensation.

*Table of Rainfall, Percolation and Calculated Evaporation at Rothamsted Experimental Station, Harpenden.  
Mr. E. J. Russell, D.Sc.*

Altitude 420 feet.

1912.	Rainfall.	PERCOLATION AND CALCULATED EVAPORATION THROUGH SOIL.					
		20 in. deep.		40 in. deep.		60 in. deep.	
		Percolation.	Calculated Evaporation.	Percolation.	Calculated Evaporation.	Percolation.	Calculated Evaporation.
January .....	in. 3·74	in. 3·684	in. ·06	in. 3·636	in. ·10	in. 3·582	in. ·16
February .....	2·01	1·825	·18	1·875	·14	1·854	·16
March .....	4·14	3·423	·72	3·440	·70	3·357	·78
April .....	·13	·003	·13	·035	·10	·038	·09
May .....	1·41	·007	1·40	·017	1·39	·034	1·38
June .....	3·14	·514	2·63	·547	2·59	·508	2·63
July .....	3·22	1·134	2·09	1·174	2·05	1·079	2·14
August .....	6·28	4·165	2·12	4·112	2·17	4·001	2·28
September .....	2·53	1·639	·89	1·523	1·01	1·500	1·03
October .....	2·63	1·895	·73	1·866	·76	1·867	·76
November .....	2·41	1·936	·47	1·988	·42	1·961	·45
December .....	3·26	3·109	·15	3·046	·21	3·044	·22
Total .....	34·90	23·334	11·57	23·259	11·64	22·825	12·08



*Table of Rainfall, Percolation and Calculated Evaporation at Rosebank, Berkhamsted, Herts. Mr. E. Mawley, F.R.Met.Soc.*

401 feet above Sea Level.

Gauge 3 ft. × 3 ft. × 2 ft. 6 in. deep.

1912.	Rainfall.	Percolation and Evaporation. (Soil—disintegrated clay and flints.)			
		Sub-soil Gauge. (Covered with short grass).		Surface-soil Gauge. (Without vegetation).	
		Percolation.	Calculated Evaporation.	Percolation.	Calculated Evaporation.
	in.	in.	in.	in.	in.
January .....	3·74	3·283	·46	3·934	C ·19
February .....	2·03	1·482	·55	2·012	·02
March .....	3·79	2·629	1·16	3·272	·52
April .....	·09	—	·09	—	·09
May .....	2·19	—	2·19	·254	1·94
June .....	2·89	·010	2·88	1·064	1·82
July .....	2·17	—	2·17	·390	1·78
August .....	4·89	2·394	2·50	3·210	1·68
September .....	2·70	1·411	1·29	1·476	1·22
October .....	2·62	2·014	·60	2·213	·41
November .....	2·40	2·076	·32	2·318	·08
December .....	3·31	2·967	·34	3·448	C ·14
Total .....	32·82	18·266	14·55	23·591	9·23

*Table of Rainfall and Percolation, also Calculated Evaporation therefrom, compared with Evaporation from a Free Water Surface at Harlow Hill, Harrogate. Harrogate Corporation.*

Rain gauge 551 feet above O.D., and percolation gauge 550 feet above O.D.

1912.	Rainfall.	Percolation.	Calculated Evaporation.	Evaporation from Free Water Surface.
	in.	in.	in.	in.
January .....	4·64	3·58	1·06	·24
February .....	2·35	3·22	C ·87	·37
March .....	3·77	2·61	1·16	1·27
April .....	·31	·23	·08	1·79
May .....	3·33	·25	3·08	2·29
June .....	6·90	2·05	4·85	2·59
July .....	5·02	·93	4·09	2·64
August .....	5·64	2·97	2·67	2·42
September .....	1·91	·38	1·53	1·84
October .....	3·27	1·91	1·36	·88
November .....	1·82	·66	1·16	·57
December .....	2·84	2·10	·74	·90
Total .....	41·80	20·89	20·91	17·80

NOTE.—c indicates condensation.

## EVAPORATION IN 1912.

County .....	London, Camden Square.	Surrey, Croydon, Park Hill Ho.	Sussex, Isfield Place	Hampshire, Otterbourne	Devon, Torquay W. W., Kennick	Lincoln, Revesby WaterWorks
Latitude .....	51° 32' 20" N.	51° 22' 12" N.	50° 56' 50" N.	51° 0' 28" N.	50° 38' 30" N.	53° 9' N.
Longitude .....	0 8 10 W.	0 5 32 W.	0 33 40 E.	1 19 55 W.	3 41 20 W.	0 3 W.
Altitude .....	111 ft.	264 ft.	50 ft.	112 ft.	835 ft.	130 ft.
Observer .....	H. R. Mill, D.Sc.	Baldwin Latham, C.E.	Major H. King.	E. C. Rouda, C.E.	S. C. Chapman, C.E.	J. Shaw.
Size of tank .....	6 ft. x 6 ft.	1 ft. diameter	4 ft. x 4 ft.	6 ft. x 6 ft.	6 ft. x 6 ft.	6 ft. x 6 ft.
Capacity (galls.) .....	450	5	250	450	450	450
Height of lip above ground .....	3 inches	4 in. above water	3 inches	3 inches	3 inches	2 inches
January .....	in. .24	in. .39	in. .28	in. .04	in. 0.15	in. .03
February .....	.16	.24	.15	.09	0.12	.06
March .....	.79	1.19	1.22	1.03	.64	.83
April .....	2.34	2.50	2.49	2.86	2.91	1.92
May .....	2.44	2.94	2.63	2.87	2.50	1.87
June .....	2.49	3.40	2.72	3.01	2.63	1.92
July .....	2.55	3.22	3.04	3.36	2.72	2.42
August .....	1.69	2.26	2.32	2.16	1.98	1.51
September .....	1.41	1.79	1.78	1.94	2.10	1.23
October .....	.39	1.03	1.28	.72	.82	.55
November .....	.33	.69	.72	.24	.35	.13
December .....	.12	.32	.20	0.33	.01	.05
Year, 1912 .....	14.95	19.97	18.83	17.99	16.39	12.52
Average, 1903-1912 .....	16.17	17.98	...	18.63	19.31	15.36
Difference .....	-1.22	+1.99	...	— .64	-2.92	-2.84
Year, 1912 .....	27.88	31.90	35.10	36.14	47.45	30.93
Average, 1903-1912 .....	25.74	28.33	...	29.19	42.05	25.88
Difference .....	+2.14	+3.57	...	+6.95	+5.40	+5.05

Note. C indicates condensation.

County .....	Lancashire, Downholland	Lancashire, Southport, Hesketh Pk.	Yorkshire, Ardsley Reservoir	Yorkshire, Harrogate, Harlow Moor	Peebles, Talla Water, Victoria Lodge	Mullochan, Edinburgh University.	Mean of Twelve Stations.
Latitude.....	53° 34' 38" N.	53° 39' 10" N.	53° 43' 10" N.	53° 58' 30" N.	55° 29' 41" N.	55° 56' 30" N.	
Longitude .....	3 1 12 W.	2 58 0 W.	1 33 20 W.	1 33 30 W.	3 25 2 W.	3 11 30 W.	
Altitude.....	14 ft.	37 ft.	390 ft.	480 ft.	904 ft.	240 ft.	
Observer.....	J. Baxendell.	J. Baxendell.	C.C. Smith, C.E.	C. E. Rivers, C.E.	Leslie & Reid, C.E.	Prof. T. H. Beard.	
Size of tank .....	6 ft. x 6 ft.	3 ft. x 3 ft.	6 ft. x 6 ft.	6 ft. x 6 ft.	6 ft. x 6 ft.	6 ft. x 6 ft.	
Capacity (galls.)	450	112	450	450	450	450	
Height of lip } above ground }	3 inches	3 inches	3 inches	...	3 inches	3 inches	
January .....	in. ·08	in. 0·09	in. ·11	in. ·24	in. ·47	in. ·15	in. ·15
February .....	·22	·11	0·01	·37	·54	·15	·16
March .....	1·13	·80	1·02	1·27	·76	1·05	·98
April .....	2·48	2·11	2·39	1·79	2·21	1·71	2·31
May.....	2·59	2·29	1·99	2·29	2·47	2·36	2·44
June .....	2·91	2·65	2·34	2·59	1·90	1·42	2·50
July .....	2·87	2·62	2·62	2·64	3·41	2·67	2·84
August .....	2·30	2·02	2·10	2·42	1·57	1·75	2·01
September .....	1·68	1·49	1·78	1·84	1·53	1·33	1·66
October .....	·88	·56	·78	·88	·94	·87	·81
November .....	·53	·46	·60	·57	·55	·23	·45
December .....	·27	·13	·16	·90	·60	·00	·20
Year, 1912...	17·94	15·15	15·88	17·80	16·95	13·69	16·51
Average, } 1903-1912 }	21·47	...	17·00	...	...	...	...
Difference ...	-3·53	...	-1·12	...	...	...	...
Year, 1912...	32·93	37·13	33·88	41·80	49·11	28·07	36·03
Average, } 1903-1912 }	31·39	32·80	25·32	...	...	...	...
Difference ...	+1·54	+4·33	+8·56	...	...	...	...

Note.—C indicates condensation.

## THE STAFF OF OBSERVERS.

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WHILE it is usually our pleasant duty to acknowledge willing co-operation on the part of all the rainfall Observers whom we have approached during the year, we find now and again at long intervals an unwilling attitude which, like the shadow of a cloud on a landscape, only adds intensity to the general illumination of the countryside. Our readers may like to see the only two positive refusals we have received during the year, though, as we hope the Councils in question may "take a thought and mend," we do not mention their names.

Dear Sir,

I submitted your letter to the Council who decided that as the cost of keeping up the readings at ——— is expensive to the Ratepayers of this District, they have decided that the result shall not be given for publication.

Yours truly,

—————, Clerk.

The assumption that work done at the public expense must, therefore, be prevented from becoming public property throws an interesting light on the modification of the democratic ideal.

A franker statement of the objection to publicity was elicited on the fourth application for rainfall records as follows :—

Dear Sir,

In reply to your telegram of the 24th inst. I very much regret to inform you that the Council refuse to allow their Rainfall Records to be published owing to the Records being used against them. I, therefore, cannot allow them to be published.

Yours faithfully,

—————, Water Engineer.

This attitude of mind we are happy to think affects only small authorities. The great Municipalities and Water Boards of the country fully appreciate the value of publicity and are grateful for

the warnings which we are often able to give of rain gauges going out of order. We only call attention to this matter because of its extreme rarity. Had we space to print all the agreeable things that are said by Observers in forwarding rain returns the section devoted to this subject would be one of the longest in the annual volume.

The increase in the number of records available for publication is again the same as last year, a figure which has never been exceeded, the number in the General Table this year being 5,272, or 198 more than were included in the previous year. The following table shows the gains and losses each year since 1906. The heading "returned" refers to records which had formerly appeared but were absent the year before; and "temporary" under losses means records which, though absent in the year in question, may be expected to return in a later year.

Year.	Total Gain.	Returned.	Real Gain.	Total Loss.	Temporary.	Real Loss.	Net Real Gain.
1906.....	400	58	342	237	40	197	145
1907.....	375	49	326	289	81	208	118
1908.. ...	444	62	382	251	64	187	195
1909.....	426	89	337	290	87	203	134
1910 .....	490	81	409	292	73	219	190
1911.....	502	99	403	304	94	210	193
1912.....	498	81	417	300	120	180	237

The last line of the table may be amplified to show how the losses and gains were distributed in the four great divisions.

1912.	Total Gain.	Returned.	Real Gain.	Total Loss.	Temporary.	Real Loss.	Net Real Gain.
England .....	365	57	308	236	89	147	161
Wales, &c. ...	45	11	34	13	8	5	29
Scotland .....	63	7	56	32	17	15	41
Ireland .....	25	6	19	19	6	13	6
British Isles...	498	81	417	300	120	180	237

It will be seen that the increase for the British Isles, as a whole, is at the rate of 4 per cent., whilst for England alone it was at 3·5 per cent. The gain in Scotland, though appearing on the face of it to be most satisfactory, is practically confined to the county of Midlothian. Ten counties showed neither loss nor gain, and 14 no gain as compared with last year. For Wales there was an increase of 8 per cent. in the number of records received, no county showing a loss, and all but two a substantial gain. Ireland is no better than it was last year, the gain of 25 being nearly balanced by the loss of 19, the gain being only 2 per cent. We have again to deplore this state of matters,

and it would seem superfluous to plead that it is not our fault, were it not that impetuous Irish friends frequently suggest that the less favoured treatment given to that country in these pages is due to other causes than the continued difficulty of obtaining information from Irish Observers, on which we must again assure them our comments must necessarily be based, and by the scantiness of which they must be limited.

In the list of counties which follows, the figures after the name of the county are the total gains and losses of records, and the number now printed. The figures in heavy type show the number of records per hundred square miles of area.

**London** ( $a-10+10=86 \dots 73$ ).—The changes in the London rain gauges are more advantageous than the figures suggest, as most of the losses are of instruments which were unsatisfactory in their exposure, while almost all the gains are of a most satisfactory character. We may mention in particular, as an antidote to the letters quoted in the introduction to this article, that the Borough Council of Wandsworth invited us to select sites and put up two Hyetographs with Snowdon rain gauges alongside, a service which we very willingly rendered. Last year we pointed out that the only Metropolitan Boroughs unrepresented in our pages were Islington, Bethnal Green and Southwark. This year Southwark happily appears, but Shoreditch takes its place in the list of neglectful municipalities.

**Surrey** ( $a-20+23=228 \dots 31$ ).—Here, as in London, the gains outweigh the losses in importance, no less than six of the new or returning rain gauges being at altitudes exceeding 500 feet.

**Kent** ( $a-15+14=179 \dots 12$ ).—We regret the loss of the rain gauges at Friningham, after only one year's record, and also the cessation of the long records at Long Rede and Speldhurst Rectory. The gauge from the latter place, however, has been removed to Sevenoaks where the Rev. D. D. Mackinnon is continuing to observe.

**Sussex** ( $a-11+19=165 \dots 11$ ).—We particularly regret the loss of Chelwood Beacon at 530 feet, and of the long record at Steyning which had continued unbroken for 44 years. Such a loss is irreparable. We rejoice to print once more the record from Uckfield Lodge, Crowborough, and to have received the records for missing years since the figures last appeared in our pages in 1907.

**Hampshire** ( $a-3+20=164 \dots 10$ ).—The increase in the number of records for this county is remarkable and most satisfactory. There are only three losses, and the 20 gains greatly improve the representation of the county. We particularly welcome the New Forest group of gauges, East Close, Somerley Gardens, Burley (returned) and Cuffnells, Lyndhurst (returned), and also a group round Petersfield, amongst which Broadhanger is at an altitude of 700 feet, on the crest of the South Downs. New records in the neighbourhood of Winchester and Andover fall in areas which have hitherto been poorly represented.

**Berkshire** ( $a-4+10=65 \dots 9$ ).—This county shows satisfactory progress.

**Middlesex** ( $a-4+9=65 \dots 28$ ).—The improvement continues, the insertions including a Hyetograph kept by the Hendon Urban District Council at their Sewage Works.

**Hertfordshire** ( $a-2+9=80 \dots 13$ ).—Improvement is shown here, although the central and eastern parts of the county are still inadequately represented.

**Buckinghamshire** ( $a-5+5=47 \dots 6$ ).—The losses and gains balance each other numerically, but the loss of Bledlow Ridge at 618 feet is a serious one, as it deprives us of a most valuable guide in drawing the rainfall lines on the Chilterns. A useful gain in the far north is Stony Stratford.

**Oxfordshire** ( $a-12+3=65 \dots 9$ ).—The losses are not so serious as their number suggests. Most of them are Council Schools, records of which are apt to be imperfect. There is no improvement in the great empty space in the valley of the Thames.

**Northamptonshire** ( $a-4+3=67 \dots 7$ ).

**Huntingdonshire** ( $a-4+2=11 \dots 3$ ).—The record terminated at Brampton Rectory is replaced by that at Brampton Grange.

**Bedfordshire** ( $a-1+2=30 \dots 6$ ).—The gain of Dunstable Grammar School supplies a most useful point in the eastern Chilterns.

**Cambridgeshire** ( $a-3+7=53 \dots 6$ ).—Here there is distinct improvement. One of the three losses is simply a transference to

another county, the station at North Level House, Tydd, having been found to be on the Lincolnshire side of the boundary. One of the new Cambridge Corporation gauges is a Hyetograph, the record of which was of service in dealing with the great rain of August 25th—26th (see p. 32).

**Essex** ( $\alpha-5+7=105 \dots 7$ ).—Essex has gained rather than lost on the whole, but it has not gained much. Several new stations in the plain of the Thames Estuary help to define the limits of the low rainfall which occurs in that district.

**Suffolk** ( $\alpha-5+13=74 \dots 5$ ).—The great East Anglian rain storm of August 25th—26th (see p. 28) was instrumental in bringing to our notice several rainfall Observers hitherto unknown, and with very few exceptions all to whom we wrote have sent in their returns for the year. Of the records appearing for the first time this year we are particularly interested to have Haverhill in the south-west and Mildenhall in the north-west, both of which reinforce the representation in thin places.

**Norfolk** ( $\alpha-4+15=90 \dots 4$ ).—As was the case in Suffolk the interest aroused by the great rain storm threw several new records into our hands and also brought to light the fact that several old records which had been supposed to have come to an end were still being carried on. Among the losses that of Diss would have been serious but that a second record there now keeps the spot from being unrepresented, as it was for many years. The loss of the record at Hillington, owing to the death of the late Rev. H. Ffolkes, is, however, a sad one, as the observations had been kept for nearly 50 years. We are glad that the losses at Yarmouth mentioned last year are now repaired by the threefold record of Mr. G. W. Hughes. The additional records in the east of Norfolk show up the poverty in rain gauges of the north-west of the county, where the poor representation made it necessary for us to draw the isohyetal lines in an uncertain manner on the coloured plate facing p. 37.

**Wiltshire** ( $\alpha-5+11=64 \dots 5$ ).—Although we have not been able to obtain the record from Stanton St. Bernard, one of last year's accessions, we have no cause for dissatisfaction as to this county. The loss of Maiden Bradley is in another sense a gain, for it arises from the replacement of a defective rain gauge by a new one, the



record of which was incomplete for the year. A visit of one of the staff to Salisbury resulted in a substantial improvement in the number of returns received from that city. The new record at Eastridge, Ramsbury, will be most useful, as it is situated at an altitude of 600 feet.

**Dorset** ( $a-6+5=76 \dots 8$ ).—Several of the losses are temporary and none is extremely serious. The Observer at Abbotsbury Castle Gardens writes that, having discovered that a palm-tree leaf was overhanging the gauge and allowing water to drip into the funnel, he did not consider the record accurate, but had removed the gauge to a satisfactory position.

**South Devon** ( $a-14+18=152 \dots 9$ ).—Several important records on Dartmoor have failed to come in, but we are glad to welcome a number of new stations there, which to a large extent make up for the loss. Among these an excellent record at Two Bridges at an altitude of 1170 feet, near Princetown, is of special value in indicating the fall in one of the wettest parts of the moor. Leusdon, North Bovey, and Hennock, situated at above 500 feet, as well as Buckfastleigh and Ashburton, Landscope, at lower elevations, all lie on the western slopes of Dartmoor, whilst Dousland and Tavistock improve the representation in the west.

**North Devon** ( $a-3+7=55 \dots 6$ ).—We are gratified to have records again from Spreyton, Witheridge and West Buckland, all interesting stations, and even more gratified to have a record at Bratton Fleming on the western side of Exmoor, where we have often felt the need of more observations.

**Cornwall** ( $a-6+8=77 \dots 6$ ).—Three at least of the losses are temporary. The gains include three exceptionally well kept records at schools, that at Callington being at 550 feet above sea level.

**Somerset** ( $a-12+10=154 \dots 9$ ).—Thanks to the energy of Rev. H. A. Boys of the Mid-Wessex Rainfall Association, the county of Somerset is well represented and the losses are not very important. In the west the gauge at Woodlands House, Holford, was moved during the year and should re-appear elsewhere in 1913, and the record at Wheddon Cross will also come in again, the present

gauge having been found to be defective and a new gauge having been set up during the present year.

**Gloucestershire** ( $a-6+8=110 \dots 9$ ).—We regret to lose the record at Wickwar and have no gain which precisely replaces it. Among the gains quite the most interesting is Colesborne, near the source of the Churn, one of the headwaters of the Thames. Batsford Park also adds to the representation of the eastern Cotteswolds, though we have no full particulars of the altitude, and print the record on the authority of a newspaper.

**Herefordshire** ( $a-2+2=50 \dots 6$ ).—We have to record the loss of our only station at Leominster.

**Shropshire** ( $a-4+5=46 \dots 3$ ).—Two extremely interesting stations on the slopes of Cleve Hill shed light where we were before almost entirely without it. The isolated position of this hill, surrounded by a nearly level plain, has led us often to wish for just such an accession of stations as we have now the pleasure of announcing. The gauge at Cleve Hill Quarry, at 1510 feet, is practically on the top of the hill.

**Staffordshire** ( $a-3+3=45 \dots 4$ ).—Betley Hall re-appears after a temporary absence from the tables, and we have received a copy of the record for 1911. The record at Stone is a useful one.

**Worcestershire** ( $a-2+5=56 \dots 7$ ) shows a slight improvement in point of numbers, but the loss of Shelsley Walsh leaves a gap which will be difficult to fill. With regard to this county and to Warwickshire we take the opportunity of mentioning that they include several stations which should properly be classified under the recently enlarged area of Birmingham. Want of time has prevented us from undertaking the re-arrangement of the stations this year, but we hope to do so before the publication of *British Rainfall*, 1913.

**Warwickshire** ( $a-4+10=42 \dots 5$ ).—Here, after many years of poor progress, there is a decided revival. The two stations at Lapworth greatly improve the representation of the Forest of Arden and Mancetter Manor also fills a gap.

**Leicestershire** ( $a-2+5=43 \dots 5$ ).

**Rutland** ( $a-0+1=7 \dots 5$ ).

**Lincolnshire** ( $a-3+11=89 \dots 3$ ).—The loss of the record at Stubton, which had been kept up for 50 years without a break, would be greatly deplored could we ascertain definitely that it is permanent, but since the death of the late Observer we have been unable to ascertain whether the record is being carried on or not. For the rest, Lincolnshire has made substantial progress. Several of the new stations are in the centre of the county where new recruits were most needed, and amongst these we have received the records of the last 23 years kept by the Great Northern Railway Company at Bardney.

**Nottinghamshire** ( $a-1+4=66 \dots 8$ ).—Rampton and Sturton-le-Steeple are useful in helping to define the belt of low rainfall which borders the lower Trent Valley, but otherwise the county is neither worse nor much better supplied with rain gauges than formerly.

**Derbyshire** ( $a-5+6=117 \dots 11$ ).—The return of Yeldersley Hall compensates in a measure for the loss of Edlaston. The new records at Whaley Bridge at 750 feet and at Press Reservoir at 810 feet are useful acquisitions.

**Cheshire** ( $a-5+4=71 \dots 7$ ).—We are glad to see the record at Parksyde, Wilmslow, once more in our pages, but that at Westgate, Congleton, which we welcomed in 1911, is not available for 1912, though we hope its absence is only temporary. The gains are all in the north of the county and there is no improvement in the large area in the south where new stations are much needed.

**South Lancashire** ( $a-6+8=107 \dots 16$ ).—We are interested to have another record at Smithills, which helps in defining the limits of the high rainfall on Rivington Moor.

**Central Lancashire** ( $a-3+5=82 \dots 15$ ).

**North Lancashire** ( $a-3+9=69 \dots 11$ ).—Three useful records in the Lune Valley disappear, and two new ones at Halton Park and Caton Green more or less replace them; but these were received only at the moment of going to press, and we were unable for want of time to obtain details as to the heights above sea level. On the

southern outskirts of the Lake District, Pennybridge School and Newton Reservoir are interesting additions.

**Yorkshire, West Riding** ( $a-12+23=322 \dots 11$ ).—Although there are 12 losses, the only one which we regard as serious is that of the record at Croasdale Beck, one of a small group of stations round Sedbergh, which give extremely interesting results. The gauge at Oughtershaw Hall is, we understand, to be replaced by a new one, and should reappear at a future date. The gains include some of exceptional utility, and in particular we would mention Hawes Junction, at 1,130 feet, in Upper Wensleydale, a point where for many years we have felt the need of more information. Thorneyholme, on the borders of Bowland Forest, and Hawkswick in Wharfedale, are also very well placed stations. Further south, the new private record at Walsden will form a valuable check on the indications of a number of rain gauges in exposed positions on Blackstone Edge. We gain two new high level records in Strines Reservoir, at 1,011 feet, one of the sources of the Sheffield water supply, and Broomhead Hall at 925 feet, a few miles further north.

**Yorkshire, East Riding** ( $a-1+3=26 \dots 2$ ).—We can only find comfort in the East Riding in that it has not gone backwards. We welcome the revival of the record at Hornsea, and the two new stations in the south-west; but the number of gauges per 100 square miles remains at 2, the lowest figure for any county in England.

**Yorkshire, North Riding** ( $a-8+7=94 \dots 4$ ).—The North Riding has not changed greatly, but the new record at Glaisdale helps appreciably in the Moors. The loss of two of the records at Mickleton, near the head of Teesdale, is unfortunate, but on the death of the Observer there, Mr. Hugh Wilson, of the Tees Valley Water Board, whose rain gauges on Lune Moor are among the most remote of the high level gauges on the Pennines, kindly made arrangements for the continuation of the record at Lime Kiln Pasture, at 1,175 feet, which we are glad to say remains in the tables.

**Durham** ( $a-2+3=49 \dots 5$ ).—The record at Raby Castle returns after many years' absence, but the county has not progressed as a whole.

**Northumberland** ( $a-2+3=61 \dots 3$ ).—There is no substantial change, but the record at Pawston returns, the old and

defective rain gauge having been replaced by a new one. The large area between Rothbury and the Cheviots of which we spoke last year still remains without a single rain gauge.

**Cumberland** ( $a-3+5=74 \dots 5$ ).—The rain gauge at Sprinkling Tarn disappeared at the end of 1911, and the Observer could only surmise that it had been stolen. A gauge of the new "Seathwaite" pattern has now been fixed, and the record should reappear for 1913. Of the new records that at Arthuret, near the Scottish border, is the most interesting.

**Westmorland** ( $a-1+5=56 \dots 7$ ).

**Monmouthshire** ( $a-2+5=37 \dots 7$ ). — Both the losses are temporary. The representation of the high land in the west of the county is improved by the records at Abertillery and Blackwood.

**Glamorganshire** ( $a-3+4=66 \dots 8$ ).—The gains outweigh the losses in importance, but we are especially sorry to lose the record at Porthcawl, where the low rainfall of the coastal strip contrasts strongly with the high fall on the rising land to the east.

**Carmarthen** ( $a-0+1=10 \dots 11$ ).—There is no loss and but one gain, at Llanddeusant at 655 feet, under the shadow of Carmarthen Van. This is an excellent acquisition, and one of the few school records that can be received with absolute confidence.

**Pembroke** ( $a-0+3=19 \dots 3$ ).—Thanks to the co-operation of Mr. J. W. Phillips, of Haverfordwest, a new record has been secured at Mynachlogddu, among the Prescelly Hills, at an altitude of 620 feet, and we hope that further improvements are to be looked for in the near future in this somewhat neglected county.

**Cardigan** ( $a-0+1=13 \dots 2$ ).

**Brecon** ( $a-2+11=87 \dots 12$ ). — Brecon is by far the best represented of the Welsh counties, and is particularly rich in high level rain gauges. Five of the gains, including two returning records, are from stations situated at above 1,000 feet. Mr. T. F. Harvey, of Merthyr Tydfil, has added three new gauges to his series in Taff Fechan. We record one serious loss, that of the record at Llangynog, at an altitude of 1,100 feet, kept by the Builth Water Works, which,

we understand, has been discontinued because the official who took an interest in it left the service of the Company.

**Radnor** ( $a-3+3=19 \dots 4$ ).—We are able to print an additional record from Figin, at an altitude of 1,700 feet, one of the splendid group of rain gauges maintained by the Birmingham Water Works, on the gathering grounds of the Elan and Claerwen streams from which the water supply of the city is drawn. We gain also a very good new record at Llandrindod Wells, but lose the last of our records in Rhayader, and have not received that for Norton Manor, near Presteigne, which appeared for the first time in 1911.

**Montgomery** ( $a-1+0=26 \dots 3$ ).

**Flint** ( $a-0+1=16 \dots 6$ ).

**Denbigh** ( $a-0+4=40 \dots 6$ ).—We are glad to note a distinct improvement in this county.

**Merioneth** ( $a-0+0=9 \dots 1\cdot4$ ).

**Carnarvon** ( $a-2+5=47 \dots 8$ ).—The mountain gauges have been reinforced by an important record at Diwaunedd at 1,213 feet, which helps to make up the loss caused by the cessation a few years ago of Mr. Gethin Jones's group of gauges in the same locality. We also welcome three new school records in the county, and hope they will prove permanent.

**Anglesey** ( $a-0+2=13 \dots 5$ ).

**Isle of Man** ( $a-1+1=8 \dots 4$ ).—Although the Isle of Man is still unsatisfactory, we have at last succeeded in getting into touch with the Bishop's Court Observer, and are glad once more to include the episcopal record.

**Channel Islands** ( $a-0+3=19$ ).

#### SCOTLAND.

**Wigtown** ( $a-0+0=10 \dots 2$ ).

**Kirkcudbright** ( $a-0+0=22 \dots 2$ ).

**Dumfries** ( $a-2+1=25 \dots 2$ ).

**Roxburgh** ( $a-0+0=14 \dots 2$ ).

**Selkirk** ( $a-0+0 = 8 \dots 3$ ).

**Peebles** ( $a-1+3 = 22 \dots 6$ ).

**Berwick** ( $a-0+1 = 10 \dots 2$ ).

**Haddington** ( $a-1+2 = 10 \dots 4$ ).

With regard to these eight counties, the best that can be said is that "they might be waur," though we wish that the old spirit of the Borders would induce a healthy rivalry with "the South."

**Midlothian** ( $a-0+20 = 48 \dots 13$ ).—Here we rejoice to find a splendid improvement, unexampled in our experience for any Scottish county, and entirely due to the enlightened co-operation of a single firm of water engineers, Messrs. Leslie and Reid, the engineers of the Edinburgh and District Water Trust. Of the 20 accessions, about one half are monthly gauges serving as a check on records previously received.

**Linlithgow** ( $a-1+4 = 15 \dots 12$ ).

**Lanark** ( $a-1+0 = 40 \dots 5$ ).—We much regret that we have been unable to obtain any reply to repeated requests for the record at Forrestburn Reservoir, but we hope to succeed another year.

**Ayr** ( $a-3+1 = 32 \dots 3$ ).

**Renfrew** ( $a-1+2 = 36 \dots 15$ ).

**Dumbarton** ( $a-0+3 = 21 \dots 8$ ).—Here there is improvement, the record at Glen Finlas being of special interest from its position on the edge of the wet zone of the Highlands.

**Stirling** ( $a-1+4 = 33 \dots 7$ ).

**Bute** ( $a-1+0 = 6 \dots 3$ ).—We do not know whether the climate of the Isle of Arran has some miasmatic influence upon rainfall Observers, but no record has ever flourished there; and we regret that the loss of the rain gauge at Brodick takes away the last station from that most interesting island.

**Argyll** ( $a-5+2 = 72 \dots 2$ ).—The results here are disappointing, and uncertainty is added to disappointment on account of the

reluctance of Observers to answer letters, which must have reached them or they would have been returned by the Post Office.

**Clackmannan** ( $a-1+0=5 \dots 9$ ).

**Kinross** ( $a-0+0=3 \dots 3$ ).

**Fife** ( $a-2+6=29 \dots 6$ ).—Here there is an encouraging improvement, including additional stations maintained by the Fifeshire County Council, though we fear that the gauges employed are not of the standard pattern.

**Perthshire** ( $a-3+4=50 \dots 2$ ).—The absence of Gartincaber is only temporary, the record having been interrupted by the loss of the measuring glass in a fire which occurred in the Observer's absence. The most interesting accession is that of Edinchip, near Lochearnhead, where the Chief of the Clan MacGregor has kept a record for many years, which he has been kind enough to send for publication. Another most interesting discovery was that the Observer employed by the Glasgow Water Works to read the rain gauge between Glen Finlas and Ben Ledi, had for several years been keeping an additional gauge, which he started because he could not believe that the original rain gauge was giving accurate results. As a result of these check observations, a new gauge was supplied for the old station, and we are now happy to be able to print the two records side by side. Their heights of 1,400 and 1,800 feet make them the highest gauges in Perthshire.

**Forfar** ( $a-0+3=35 \dots 4$ ).

**Kincardine** ( $a-0+0=14 \dots 4$ ).

**Aberdeen** ( $a-6+2=29 \dots 15$ ).—Several of the very exposed mountain rain gauges in the neighbourhood of the Cairngorms have had to be given up, and the old record at Tillypronie is broken, because, as the Observer tells us, “. . . The Apprentice boy has “burned the book. I cannot tell you how disappointed I am about “the book being burned, and I wouldn't have thought so much, but “I told him about it a while ago.” We are sorry for this, and if we read aright between the lines, the Apprentice boy had cause to be sorry for it also. The old records at Ellon and Strathdon have come to an end; the former by the death of Dr. Jamieson, the latter by the retirement of Mr. Innes.



**Banff** ( $a-0+0=6 \dots 1\cdot0$ ).

**Moray** ( $a-0+1=9 \dots 2$ ).

**Nairn** ( $a-0+0=5 \dots 3$ ).

**Inverness** ( $a-1+2=55 \dots 1\cdot3$ ).

**Ross and Cromarty** ( $a-1+0=28 \dots 0\cdot9$ ).

We ought to be able to record more gains in these important counties; and we earnestly hope that the attention of the residents will be directed to the importance of keeping count of the rainfall.

**Sutherland** ( $a-0+1=11 \dots 0\cdot5$ ).—We are much pleased to find a record at Altnaharra once more, the Rev. Malcolm Gillies having undertaken the task, no light one, and conscientiously performed as the 242 rain days reported in 1912 prove.

**Caithness** ( $a-1+1=12 \dots 1\cdot7$ ).

**Orkney** ( $a-0+0=11 \dots 3$ ).

**Shetland** ( $a-0+0=6 \dots 1\cdot1$ ).

#### IRELAND.

**Cork** ( $a-3+1=20 \dots 0\cdot7$ ).—The loss of two most carefully kept records in the city of Cork is much to be deplored.

**Kerry** ( $a-0+1=10 \dots 0\cdot5$ ).

**Waterford** ( $a-0+0=13 \dots 1\cdot8$ ).

**Tipperary** ( $a-0+2=12 \dots 0\cdot7$ ).

**Limerick** ( $a-0+3=6 \dots 0\cdot6$ ).—We are glad to note a slight improvement in this county.

**Clare** ( $a-2+0=11 \dots 0\cdot9$ ).—The loss of Miltown Malbay, through the death of the Observer, is irreparable, as we have depended upon it for many years as an average station for the west of Ireland.

**Wexford** ( $a-1+2=9 \dots 1\cdot0$ ).

**Kilkenny** ( $a-0+0=9 \dots 1.1$ ).

**Wicklow** ( $a-0+2=17 \dots 2$ ).

**Carlow** ( $a-1+0=5 \dots 1.4$ ).

**Queens County** ( $a-0+0=5 \dots 0.8$ ).

**Kings County** ( $a-0+2=6 \dots 0.8$ ).—The new rain station at Rathrobin is a distinct improvement.

**Kildare** ( $a-0+2=8 \dots 1.2$ ).

**Dublin** ( $a-4+3=29 \dots 8$ ).—We have been unable to obtain the Kingstown, People's Park, record, nor could much letter writing elicit any information as to whether it is still in existence or not. Crooksling Sanatorium at 970 feet in the extreme south-west of the county, promises to yield a most interesting record.

**Meath** ( $a-1+1=9 \dots 1.0$ ).—The loss of the record at Moynalty, Westland, through the death of the Observer, removes another of the very few old records on which we depended for the comparison of the rainfall of Ireland with the average.

**Westmeath** ( $a-0+0=8 \dots 1.1$ ).

**Louth** ( $a-0+0=5 \dots 1.6$ ).

**Longford** ( $a-0+0=4 \dots 0.9$ ).

**Galway** ( $a-2+0=7 \dots 0.3$ ).—The third of the old records for which a sound average was available disappears from Ireland in the loss of Ballinasloe.

**Roscommon** ( $a-0+1=3 \dots 0.3$ ).—A new station is welcomed in Roscommon, and there is probably no part, even of Ireland, where such an addition is more useful.

**Mayo** ( $a-3+2=9 \dots 0.4$ ).—The interesting group of gauges on Clare Island, over which we were so incautious as to rejoice last year, has failed to reach us, nor could a persistent fire of letters of enquiry elicit any response, so that we do not know whether the important series of experiments is being continued or not.

**Sligo** ( $a-0+0=2 \dots 0.3$ ).

**Leitrim** ( $a-0+0 = 4 \dots 0\cdot7$ ).

**Cavan** ( $a-1+1 = 6 \dots 0\cdot8$ ).

**Fermanagh** ( $a-0+0 = 3 \dots 0\cdot4$ ).

**Monaghan** ( $a-0+0 = 2 \dots 0\cdot4$ ).

**Armagh** ( $a-0+0 = 7 \dots 1\cdot4$ ).

**Down** ( $a-0+0 = 11 \dots 1\cdot1$ ).

**Antrim** ( $a-0+1 = 17 \dots 1\cdot4$ ).

**Londonderry** ( $a-0+0 = 5 \dots 0\cdot6$ ).

**Tyrone** ( $a-0+0 = 5 \dots 0\cdot4$ ).

**Donegal** ( $a-1+1 = 10 \dots 0\cdot5$ ).

What can we say of the foregoing statistics? They are not encouraging; but we are most anxious not to make any remarks which might appear to be discouraging to the many devoted and painstaking rainfall Observers in Ireland, to whom all praise is due.

*Number of complete rainfall records published in the volumes of British Rainfall for the undermentioned years.*

Years.	England.	Wales.	Scotland.	Ireland.	British Isles.	Increase over previous year.
1861...	333 ...	9 ...	109 ...	20 ...	471 ...	47
1871...	1038 ...	88 ...	311 ...	67 ...	1504 ...	—5
1881...	1548 ...	131 ...	313 ...	153 ...	2145 ...	41
1891...	2091 ...	168 ...	359 ...	181 ...	2799 ...	23
1901...	2616 ...	253 ...	442 ...	195 ...	3506 ...	13
1911...	3705 ...	397 ...	701 ...	271 ...	5074 ...	198
1912...	3834 ..	429 ...	732 ...	277 ...	5272 ...	198

Difference from 1911.—

Increase	129 ...	32 ...	31 ...	6 ..	198	...
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## OBITUARY.

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DURING the year ended on July 31st, 1913, we have heard of the death of 89 Observers, a larger number than usual though, considering how many of these had ceased to observe before their death and that the names of the Observers now fill two large volumes in manuscript, we cannot consider that the proportion is excessive. We have been fortunate this year in ascertaining the ages of a larger number of the Observers than on previous occasions, and the average age of the 61, the year of whose birth we were able to discover, reaches the high figure of 73 years; in fact there were only seven whose ages were less than 60. As usual we give a list of those who had reached the age of 80 or over, and this includes three who were over 90.

*Observers deceased in 1912-1913, of 80 years of age or more.*

Rev. R. Conway	...	...	...	...	95 years.
Mr. E. Turton	...	...	...	...	93 „
Mr. H. I. Dixon	..	...	...	..	92 „
Mr. James Barton, C.E.	...	...	...	...	87 „
Mr. Peter Campbell	...	...	...	...	87 „
Rev. Canon R. S. C. Blacker	...	...	...	...	86 „
Mr. Alfred Brothers	...	...	...	...	86 „
Mrs. Cope	...	...	...	...	85 „
Rev. H. A. Daniel	...	...	...	...	84 „
Dr. T. F. Jamieson	...	...	...	...	84 „
Rev. Canon W. Tate, D.D.	...	...	...	...	84 „
Lord Macnaghten	...	...	...	...	83 „
Rev. J. T. Pearse	...	...	...	...	83 „
Dr. J. W. Walker	...	...	...	...	83 „
Rev. T. W. Carr	...	...	...	...	82 „
Mr. J. H. Lancashire	...	...	...	...	82 „
Surgeon-Gen. S. B. Roe, C.B.	...	...	...	...	82 „
The Marquis of Sligo	...	...	...	...	82 „
Mr. William Becher	...	...	...	...	81 „
Rt. Rev. W. E. Meade, D.D., Bishop of Cork	...	...	...	...	81 „

*Observers deceased in 1912-1913, of 80 years of age or more—(continued).*

Mrs. Dix	...	...	...	...	81 years.
Mr. Thomas Hodgkin, D.C.L., Litt.D.	...				81 „
Mr. L. M. Jackson	...	...	...		81 „
Mr. James Whitaker	...	...	...		81 „
Rev. F. T. W. Wintle	...	...	...		81 „
Mr. John Nicholl	...	...	...		80 „
Mr. H. J. Younger	...	...	...		80 „

Considering the great age of the Observers it is a little surprising to find that only 13 had records which had continued for 30 years or more, although there is certainly no cause for regret in the fact that only a dozen of the long records existing last year have been imperilled by the death of the Observers. We are happy to know that some, including the longest, will still be continued.

*Records of Thirty years and upwards.*

*Mr. John Nicholl	...	...	The Hemnalls, Epping	...	44 years.
*Mr. H. J. King	...	...	Wrestlingworth, Beds.	...	39 „
Rev. C. W. Hony	...	...	Woodborough, Wilts.	...	38 „
*Mrs. John Tayleur	...	...	Buntingsdale Hall, Market Drayton	...	38 „
*Mr. Michael Molohan	...	...	Ballyvaskin, Miltown Malbay	...	38 „
*Mr. James Barton, C.E.	...	...	Farndreg, Dundalk	...	38 „
*Mr. Frederick Taylor	...	...	Fir Tor, Dorking	...	37 „
*Rev. F. T. W. Wintle	...	...	Bere Ferrers, Devon	...	37 „
*Mr. Wm. Holbrow	...	...	Derreen, Kenmare	...	35 „
*Dr. J. W. Walker	...	...	Spilsby, Lincs.	...	34 „
Rt. Rev. W. E. Meade, D.D.	...	...	The Palace, Cork	...	31 „
Mr. Alfred Tate	...	...	Downside, Leatherhead	...	31 „
Mr. J. J. Myres, C.E.	...	...	Flookburgh, Cark-in-Cartmel	...	30 „

With so great a loss by death, the funds of the Organization have necessarily suffered, and, although new Observers have in many cases also become subscribers, the average amount of the subscriptions continues to fall, and as yet the infant Endowment Fund has failed to attract sufficient notice to enable it to redress the balance.

In compiling the notices of a few of the Observers whom we have lost, we are confronted as usual by the curious paradox that we know most of the lives of those of them who were least interested in the subject of our studies. This arises from the fact that the names of many persons, distinguished in public life, have been given to us

as authorities for the rain records kept on their estates, although they may not personally have paid much attention to the matter. We have resisted the temptation of giving notices of such persons, and have confined our attention to those whom we knew to have had some personal interest in rainfall observing, and regarding whom it was possible to obtain biographical particulars.

MR. ALFRED BROTHERS of Handforth, near Manchester, who died in August, 1912, at the age of 86, was much interested in the natural sciences, and was a Fellow of the Royal Astronomical Society. He kept his rainfall observations personally, until within three days of his death, and we are happy to learn that the record which he maintained so resolutely, is being continued at Handforth by another observer.

THE REV. THOMAS WILLIAM CARR, rector for 46 years of Barming, Kent, died at Long Rede, Barming, on December 26th, 1912, in his 83rd year. He was a frequent correspondent, and a few years ago he suggested a plan for increasing the popularity of rainfall observing by instituting a badge or medal to be awarded to Observers of 30 years' standing. The idea has much to commend it, but as in so many other cases it had to be dropped on account of financial considerations.

MR. CHARLES PRATT CHAMBERS died suddenly, and apparently painlessly, on June 18th, 1913, when engaged in pleasant conversation at the house of a relative at Whitehaven. He observed the rainfall for several years at his residence, Orchard Head, near Broughton-in-Furness, and was one of the most regular and careful contributors of Observers' Notes to *British Rainfall*, and frequently sent letters which appeared in *Symons's Meteorological Magazine*. He followed the profession of an Architect and Estate Agent in Barrow, and also taught Science Classes. He was a great lover of Nature and natural phenomena, and his companionship was much appreciated by other Observers in the district.

COLONEL GEORGE AUGUSTUS CURZON, a veteran of the Indian Mutiny, died on November 27th, 1912, in his 77th year. He was much interested in the rainfall record which he kept at his residence, Westwood, Windlesham, and was a frequent correspondent upon meteorological matters. He served throughout the Mutiny campaign

in the Rifle Brigade, and subsequently became Colonel commanding the 2nd Life Guards.

MRS. M. H. DIX, who died at Hampton Lodge, Durdham Down, in March, 1913, in her 82nd year, had supplied the rainfall record since the death of her son in 1904. Her niece, Mrs. Clough, has kindly supplied us with the following appreciation :—

“Mrs. Dix had been crippled by rheumatism for eight years. Although unable to move in bed or lift her hands to her head, she always managed to write the Observations every morning for the *Western Daily Press*, and was eager to compare the rainfall of different places and different seasons. Mr. and Mrs. Dix would have celebrated their golden wedding had they lived until August. Mr. Dix was taken seriously ill two days after his wife’s death, and died within an hour of her funeral. Their only son, John Hardcastle Dix, died in 1904. He had supplied the Observations for many years previously, and it was in loving memory of him that Mrs. Dix first took up the work, which grew to be so great a pleasure. Mrs. Dix was a fine specimen of Victorian womanhood at its best, tall and dignified with gracious manners, she was widely read and keenly interested in all the leading questions of the day. Her patient cheerfulness and interest in the affairs of others was a constant marvel to those who were privileged to know her.”

MR. HENRY ISAAC DIXON died at Stumperlow Hall, Sheffield, on November 24th, 1912, at the age of 92. He had purchased this fine old mansion in 1854, and observed the rainfall there from 1898. When his health failed towards the end of his long life, his son, Mr. James Dixon, of Fulwood House, who now succeeds him at Stumperlow Hall, charged himself with the care of the record. Mr. Dixon was for nearly seventy years a partner in the great silver and electroplate firm of James Dixon & Sons in Sheffield, and he devoted himself to the development of the business with a single hearted intensity which left little time for public work ; although he always interested himself in a number of charitable institutions. The following fine summary of his character appeared in the *Sheffield Daily Telegraph* :—

“Mr. Dixon was one of those men in whom old age and a sunny temperament are linked together. The cheerful optimism of his youth never left him. At school it won him abiding friendships ; in the rush and stress of a long business career it often lifted him

above the anxieties of the passing hour, and it went with him into the evening of his days. His was one of those kindly natures which exercise an irresistible charm on all who come under their influence, and from whatever standpoint his life is viewed it is beyond dispute that his passing hence leaves the city distinctly poorer."

MR. ROBERT GODFREY, who died at Alne, near York, aged 72, had filled several positions as a municipal official in Sedbergh, Kendal and Birmingham, and had taken up rainfall observing as part of his official duties, and continued the habit after his retirement. Mr. Godfrey is better remembered in the North of England for his keenness as a politician on the Conservative side and for his devotion to Church music.

MR. F. W. HENKEL, B.A., F.R.A.S., died in May, 1913, at the age of 42. He was for four years in charge of Markree Observatory, Co. Sligo, where he carried on astronomical and meteorological observations. When the Observatory was closed in 1901 Mr. Henkel came to London, where he was engaged in literary work, and his name is very familiar to readers of *Symons's Meteorological Magazine*. Amongst other works he compiled a treatise on Weather Science, which was well received in the Press. How highly he was appreciated in astronomical circles is shown by the fact that very shortly before his death he was one of the three selected candidates for the Gresham Professorship in London. Mr. Henkel, however, experienced to the full the difficulties which beset a man of science in the effort to make a living without a definite appointment, and his later years were full of anxiety and disappointment.

MR. THOMAS HODGKIN, D.C.L., Litt.D., whose eminence as a historian has made his name famous, has for us a more intimate interest in his parentage and in his carrying out of a family tradition. He was born at Tottenham in 1831, his mother being a daughter of the celebrated Luke Howard, the inventor of the Howard pattern rain gauge and author of "The Climate of London." We should be interested if some member of the Society of Friends would trace out for us the descendants of Luke Howard who are still carrying on observations on the lines laid down by their distinguished ancestor. It would certainly include a considerable number of the contributors to *British Rainfall*. The rainfall observations at his residence, Barmoor Castle, Northumberland, claimed, no doubt, a very minute



share of the attention of Mr. Hodgkin, but they at least reveal one of the facets of his singularly versatile personality which we are pretty sure has escaped the attention of the writers who have dealt with his life in more ambitious pages than these. Mr. Hodgkin was one of the founders of a famous banking house in Newcastle-on-Tyne, and his philanthropic activities would have enshrined him in grateful memory had he never written a line. His historical studies were devoted principally to the period of the decline of the Roman Empire, and they have been characterised as literary rather than scientific in the choice and treatment of evidence, but the attractiveness of his work and the appeal made to the general educated reader are all the greater on this account. The local history of Northumbria and the history of the Society of Friends form the subject of many of his writings. He was devoted to foreign travel, especially in Italy and Greece, and an interesting episode in his life was his setting out at the age of 78 to visit the communities of the Society of Friends in Australia and New Zealand, and as *The Times* obituary notice says "to inspect and confirm and strengthen them."

MR. OWEN JONES who died at Blaenau Festiniog, in October 1912, was manager of the great Oakley Slate Quarries which dominate the quaint little town, and his record kept at the Quarries was of great importance as giving a fixed point in a very bare place on the rainfall map of North Wales. Mr. Jones possessed to the full the enthusiasm and eloquence of his race, and I was much impressed when after a lecture on "Rain" which I gave at Blaenau Festiniog, he proposed a vote of thanks, and after a few quiet words in English, broke into a torrent of Welsh which roused his hearers to shouts of laughter and thunders of applause, and left the lecturer wondering what he had really said.

MR. JOSIAH HENRY LANCASHIRE of Deeplish Hill, Rochdale, died on May 2nd, at the age of 82. He was a member of the firm of J. H. Lancashire and Co., and was known as the "Father" of the Manchester Stock Exchange. Mr. Lancashire took a kindly interest in our work, and latterly not a year passed without a letter expressing his goodwill and commenting on his increasing age. In his last letter he says "My age of over 80 please accept as a reason for now resigning a task which for many years past has been also a pleasure. I enclose my usual contribution of £1 11s. 0d. for expenses etc. of the year. Wishing you for the valued organization increasing support."

MR. J. E. LONGFIELD, of Kilcoleman, Enniskean, died on June 12th, 1913, as the result of a motor accident, the circumstances of which as narrated in a local newspaper were peculiar. Mr. Longfield was an enthusiastic angler, and was motoring home after a fishing expedition, when he diverted his attention from the steering to seize a fishing-rod which was slipping from the car. The motor swerved, cleared the fence at the side of the road and threw Mr. Longfield into a tree, to a branch of which, 25 feet above the ground, he clung unhurt for a time, but dropping thence received fatal injuries. Mr. Longfield served with distinction as a Magistrate for many years, and was extremely popular with all sections of the community, a circumstance of great significance in Ireland, where party and religious divisions cut deeper than elsewhere.

THE RIGHT REV. WILLIAM EDWARD MEADE, D.D., Church of Ireland Bishop of Cork, died at the Palace, Cork, at the age of 81. He was educated at Trinity College, Dublin, where he had a distinguished career. He was successively Rector of Ardtrea, Co. Tyrone; Prebendary, Treasurer and Archdeacon of Armagh, and was appointed Bishop of Cork, Cloyne and Ross in 1894. His rainfall records were for more than 30 years a source of interest to him, and that at Cork was the most trustworthy and best kept record in the City. I have a very pleasant recollection of the kindly reception which the Bishop gave me when he presided at a Lecture on "Rain," in the City Hall, Cork, a few years ago.

MR. MICHAEL MOLOHAN, of Miltown Malbay, Co. Clare, who died in September, 1912, will be much missed by the compilers of *British Rainfall* because of his long and accurate record, now unhappily terminated, and the unvarying punctuality of his monthly returns. No record exists in the west of Ireland to take its place, and our readers will miss the regular appearance of the Observer's Notes from Miltown Malbay, which, notwithstanding a certain gloominess of outlook pardonable in a West of Ireland farmer, showed a living interest and a profound knowledge of the weather of his district.

MR. JOHN J. MYRES, Assoc.M.Inst.C.E., of Flookburgh Lodge, Cark-in-Carmel, died on May 5th, 1913, at the age of 72. He was born in Preston where he was educated, and spent the greater part of his life as a member of the well known firm of Myres, Veevers and

Myres, consulting engineers. His interest in rainfall arose from the importance of rainfall data in connection with waterworks engineering. Mr. Myres retired from business in 1904, and for the last few months of his life Mrs. Myres assisted him with the rainfall records, which she has most kindly promised to continue.

DEPUTY SURGEON-GENERAL SAMUEL BLACK ROE, C.B., died in July, 1912, at Ballyconnell House, Co. Cavan, aged 82. He graduated in Medicine at Trinity College, Dublin, and joined the Gordon Highlanders in 1855 as Assistant Surgeon, being sent out at once to the Crimea, whence he proceeded to India after the Mutiny. He took part in the Second Afghan War, and was decorated for his services on the march from Kabul to Kandahar. After serving at several stations in India, he again saw active service in the first Boer War. Subsequent to his retirement he filled the office of High Sheriff of Co. Cavan.

THE FIFTH MARQUESS OF SLIGO, who died on February 24th, 1913, at the age of 82, had a long career in the Indian Civil Service, from which he retired in 1886. He succeeded to the title in 1903, and kept two rainfall records on his great estates in the West of Ireland. His eldest son, the Earl of Altamont, now Sixth Marquess of Sligo, is much interested in rainfall observations.

MR. HENRY STILWELL, of Steepleton Manor, Dorchester, died on April 2nd, 1913, at the age of 79, after a very short illness. Mr. Stilwell, who was a typical country gentleman, much interested in all that concerned the welfare of Dorset, had been a rainfall Observer since 1890, and took over the charge of the collection of meteorological data for the Dorset Field Club when Mr. H. S. Eaton relinquished it in 1906. He carried on the tradition of scrupulous accuracy which Mr. Eaton had established, and continued either to bring or send the Dorset records to Camden Square for comparison and criticism every year. Mr. Stilwell had made all arrangements for the work of the Dorset Field Club being continued by Mr. Henshaw, C.E., who took it over in 1912; but he continued his personal interest in the work to the very end, being engaged in the preparation of the copy of his own record for *British Rainfall* a day or two before his death. We shall greatly miss his friendly and courteous co-operation, for he had done much to maintain and extend the interest in rainfall which has made Dorset a model county in

that respect, and we never applied to him in vain for help with regard to a late return or information as to new Observers.

MR. CHARLES UPTON TRIPP, M.A., who died on August 28th, 1912, at Penleat, Altarnon, in his 71st year, was one of the most enthusiastic Observers who survived from the very early days of the British Rainfall Organization. Although in later years he did not himself observe the rainfall, he always took steps to see that his neighbours who did so sent in their records, and he never failed to write on the publication of each successive volume of *British Rainfall* expressing his pleasure in the progress of the work. We may be excused for quoting some of his recent remarks. He wrote in 1909, "I wish you and your splendid work, which I have never ceased to back up all I could since December, 1863, when my late father started the Altarnon Vicarage Climatological Station. Then we got Kew tested thermometers, and merited the approval of G. J. Symons when he paid his visit. Such is life !!" In 1910 he wrote, "I send the rainfall for what may be *my* last time. May God give power, etc., to others in the future to aid you in your noble work at 62, Camden Square, N.W. I so approve of all you are doing *re* Trustees, etc., etc. *A capital plan!* May you be guided to even greater success."

*Observers deceased to July 31st, 1913.*

Small capitals designate Observers with 30 years' records.

Andrews, J.	...	...	Fleet Street, Beaminster.
Bain, Col. James Robert	...	...	Bolton Hall, Gosforth.
Baines, George Henry, J.P.	...	...	Bradgate, West Hartlepool.
Barratt, James William Henry	...	...	Holywath, Coniston.
BARTON, JAMES, C.E.	...	...	Farndreg, Dundalk.
Battiscombe, Major W. W.	...	...	Dolbear, Ashburton.
Beale, Charles Gabriel	...	...	Maple Bank, Edgbaston.
Beauchamp, Sir Reginald William			
Proctor, Bart.	...	...	Langley Park, Norwich.
Becher, William	...	...	Castle Hyde, Fermoy.
Blacker, Rev. Canon Robert			
Shapland Carew	...	...	Woodbrook, Enniscorthy.
Blathwayt, Rev. Calvert	...	...	Braddon Rectory, Towcester.
Bott, Miss Caroline	...	...	Hanbury Hall, Staffs.
Brand, Hon. Charles	...	...	Littledene, Glynde, Sussex.
*Brothers, Alfred	...	...	Clare Cottage, Handforth.
Burke, Miss Rachel Edith	...	...	Bulmer Lodge, Sudbury.
Cameron, Ewen	...	...	Rutherford House, West Linton.

*Observers deceased to July 31st, 1913—(continued).*

Campbell, Peter	...	...	Lignwood, Scone.
*Carr, Rev. Thomas William	...	...	Long Rede, Barming, Maidstone.
*Chambers, Charles P.	...	...	Orchard Head, Broughton-in-Furness.
Conway, Rev. R.	...	...	Catworth, Hunts.
Cope, Mrs. Cecilia Philippa	...	...	The Manor House, Loughgall.
*Curzon, Col. George Augustus	...	...	Westwood, Windlesham.
Daniel, Rev. Henry Arthur	...	...	Manor House, Stockland, Bridgewater.
*Dix, Mrs. M. H.	...	...	Hampton Lodge, Durdham Down, Clifton.
*Dixon, Henry Isaac, J.P.	...	...	Stumperlow Hall, Sheffield.
Doxon, Mr. S. H.	...	...	Millbrook, Hollingworth, Manchester.
Drummond, Andrew Cecil	...	...	Cadland, Hants.
*Godfrey, Robert, C.E.	...	...	Alne, York.
Harrowby, Dowager Countess of	...	...	High Ashurst, Dorking.
*Henkel, F. W.	...	...	Walthamstow, London.
*Hodgkin, Dr. Thomas, D.C.L.	...	...	Barmoor Castle, Beal.
HOLBROW, WILLIAM	...	...	Derreen, Kenmare.
HONY, REV. CHARLES WILLIAM, M.A.	...	...	Woodborough Rectory, Wilts.
Jackson, Laurence Morris	...	...	South Park, Bodiam.
Jacques, Rev. William Baldwin.	...	...	Orlingbury Hall, Wellingborough.
Jamieson, Dr. T. F.	...	...	Avonbank, Ellon.
*Jones, Owen	...	...	Blaenau Festiniog, Merioneth.
Karslake, Lewis, J.P.	...	...	Redlap House, Dartmouth.
KING, H. J.	...	...	Wrestlingworth, Pottton, Beds.
Kitchin, William Henry, J.P.	...	...	Ellerslie, Gosforth.
*Lancashire, Josiah Henry	...	...	Deeplish Hill, Rochdale.
Leven and Melville, The Earl of	...	...	Glenferness, Inverness.
Lewis, Miss Judith Elizabeth	...	...	The High Beech, Hollington, Sussex.
*Longfield, J. E., J.P.	...	...	Kilcoleman, Enniskean.
Longworth, Dr. Stephen George.	...	...	Melton Asylum, Woodbridge.
MacBeath, D.	...	...	Netherswell Manor Gardens, Stow-on- the-Wold.
McIlriach, Duncan	...	...	Bunawe, Tarbert, Loch Fyne.
Mackay, Rev. George S.	...	...	U. F. Manse, Doune.
Macnaghten, The Lord	...	...	Dundarave, Bushmills.
*MEADE, RT. REV. WILLIAM EDWARD, D.D., Bishop of Cork	...	...	The Palace, Cork.
Meikle, Dr. Thomas Henry	...	...	Strathearn Hydro, Crieff.
*MOLOHAN, MICHAEL	...	...	Ballyvaskin, Miltown Malbay.
*MYRES, JOHN J., C.E.	...	...	Flookburgh Lodge, Cark-in-Cartmel.
Newbitt, Thomas	...	...	Crescent Avenue, Whitby.
NICHOLL, JOHN	...	...	The Hemnalls, Epping.
Owen, H. G.	...	...	Land Wick, Southminster.
Pearse, Rev. John Thomas, M.A.	...	...	Edells, Markbeach.
Pole, Edwin C.	...	...	Neath, Glamorgan.
Priestley, William	...	...	Offord D'Arcy, Huntingdon.

*Observers deceased to July 31st, 1913—(continued).*

Ramsay, Capt. John, late R.E. ...	Cams Hall, Fareham.
Rathbone, Mrs. Augusta Acheson	Bassenfell, Cockermouth.
Richardson, Mrs. Henry ... ..	Cherry Hill, York.
*Roe, Surgeon-Gen. Samuel Black	Ballyconnell House, Cavan.
Sanderson, Samuel ... ..	Cloverhill, Co. Cavan.
Schofield, J. W. ... ..	Waterworks, Huddersfield.
*Sligo, The Marquis of ... ..	Westport House, Co. Mayo.
Smart, Francis Gray, J.P., M.A.	Bredbury, Tunbridge Wells.
Smith, Lady Cunliffe ... ..	Suttons, Romford.
Soame, G. B. H. ... ..	Staffordshire Potteries W.W.
Stileman, Frank, C.E. ... ..	Eastbourne Waterworks Co.
*Stilwell, Henry, J.P. ... ..	Steepleton Manor, Dorchester.
Stott, John ... ..	Springfield Lodge, Haslingden.
TATE, ALFRED ... ..	Downside, Leatherhead.
Tate, Rev. Canon William, D.D.	Stradbroke Vicarage, Suffolk.
TAYLEUR, MRS. JOHN ... ..	Buntingsdale, Market Drayton.
TAYLOR, FREDERICK ... ..	Fir Tor, Dorking.
Thorp, H. B. ... ..	Maplederwell, Hants.
Todd, Rev. James Utten ... ..	Alcombe, Somerset.
*Tripp, Charles Upton, M.A. ...	Altarnon, Launceston.
Turton, E. ... ..	Collingham, Newark.
WALKER, DR. JOHN WEST ... ..	Spilsby, Lincs.
Watters, James ... ..	Gearhameen, Co. Kerry.
Whitaker, James ... ..	Hampton Hall, Salop.
Williams, Louis H. ... ..	Edenderry, Kings County.
WINTLE, REV. FREDERICK	
THOMAS WILLIAM, M.A. ... ..	Bere Ferrers Rectory, Dorset.
Woakes, Dr. Edward ... ..	Belvoir House, Fareham.
Woodward, J. ... ..	Ardgillan Gardens, Balbriggan.
Wright, Mrs. ... ..	Bolton Hall, Clitheroe.
Younger, Henry Johnston, J.P.,	
D.L. ... ..	Benmore, Argyll.

\* See Biographical Note *ante*.

BRITISH RAINFALL, 1912.

PART II.

RAINFALL AND METEOROLOGY

OF

1912.

## EXPLANATION.

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THE Observers' Remarks on the Days and on the Year as a whole are given as far as possible in the words of the Observers themselves, and the signature of the Observer is added to each Note on the Year. The designation of "F.R.Met.Soc." is added to the names of those Observers whose interest in Meteorology has led to their becoming Fellows of the Royal Meteorological Society.

It is understood that the Notes refer in each case to extreme or exceptional rather than to normal phenomena. The Notes on the Days are occasionally supplemented by short extracts from the newspaper press or by illustrations. The completeness or incompleteness of this picture of the weather of the year depends upon the interest which the Rainfall Observers of each district take in the meteorological incidents of their locality, and on their willingness to communicate the outcome of their observations in a suitable form. The Notes supplement, but do not supersede, those published monthly in *Symons's Meteorological Magazine*.

It is necessary to point out that when phrases such as "gale," "cloud-burst," and similar expressions, are used in the Notes these are in every case the Observer's own words, and may possibly not refer to the phenomena technically so called.

The various discussions of the Rainfall of the Year as regards heavy falls in short periods and on rainfall days, droughts, and rain spells, and the general distribution of Rainfall over the British Isles for each month and for the year, are prepared by the Editor after considering all sources of information which have been published or are available for publication.

In order to save space by avoiding frequent repetitions, the names of the Counties are omitted in the Daily Remarks, the numerals of the Divisions only being retained. The following abbreviations are employed :—

Bar.	Barometer.	R	Rain, Rainfall.
E.	East.	S	Snow.
H	- Hail.	S.	South.
Max.	Maximum (temperature).	T	- Thunder.
Met. Mag.	<i>Symons's Meteorological Magazine.</i>	Temp.	Temperature.
Min.	Minimum (temperature).	Ther.	- Thermometer.
N.	North.	TS	- Thunderstorm.
L	- Lightning.	TSS	- Thunderstorms.
		W.	- West.



## OBSERVERS' REMARKS ON THE WEATHER OF 1912.

With occasional quotations from the Newspaper Press.

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### NOTES ON THE DAYS OF 1912.

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These Notes should be read in conjunction with those on Heavy Rains in 1912, and reference should also be made to *Symons's Meteorological Magazine*, Vol. 47.

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#### JANUARY.\*

6th.—*West Witton* (IX). About 5 inches of S.

10th.—*St. Pancras, Camden Square* (I). Thick fog all day, dispersing towards evening. — *Mansfield* (VII). Exceptionally thick fog. — *Chellaston* (VII). Dense fog in morning.—*Hull* (IX). Dense fog all day ; clearer at night.

13th—18th.—*St. Andrews* (XVI). High S.E. wind and very high seas. Quantities of shell fish and beasts of all descriptions washed ashore.

14th—16th.—*Eskdale* (X). Floods. Aurora visible on night of 14th.

15th.—*Drumnadrochit* (XVIII). At 7 p.m. wind increased to a gale and blew all night, causing damage.

15th—18th.—*Wick* (XIX). Very severe S.E. gales. Some 30 yards of the south wall of the old harbour was torn down by heavy seas.

15th—24th.—*Nene Valley* (III). 7,000 acres flooded between Northampton and Peterborough.

16th.—*Ebbw Vale* (XI).

“The bank of the extensive reservoir supplying the Ebbw Vale Iron and Steel Works gave way. . . . A huge volume of water rushed down the mountain side, being narrowly diverted from a row of cottages by a dip in the ground. Tearing on, it swept away forty yards of the railway bank at Victoria Station, and then entered the River Ebbw. The Great Western train service was completely blocked.”—*Daily Graphic*.

—*Aberfeldy, Dall Avon* (XVI). The R, 3·82 in., was phenomenal for this part of the country, and many roads were rendered impassable.

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\* See also *Met. Mag.*, February, 1912, pp. 10, 19 ; March, 1912, p. 21.

16th—18th.\*—*Mayfield House* [*Ashbourne*] (VI). R fell continuously for 28 hours from 1 a.m. on 16th, followed by 33 hours' continuous S.

17th.†—*Haslemere, Whitwell Hatch* (II). At about 8 a.m. a cold wave, or rather a layer of cold swept over this house. R fell heavily and before it could run off the roofs or branches it froze. The roofs, weather-tiling on the upper walls, and the brick lower walls, became sheets of ice, the icicles hanging to a length of from 6 to 18 inches. All gutter pipes and stack pipes became full of ice, and the former had *curtains* of ice hanging from them, in some places more than 18 inches long. All boughs became coated with ice, in some cases 3 inches thick. Many boughs of coniferous trees, and some of deciduous trees, gave way under the weight of ice on them. The day was calm and still and the neighbourhood resounded with the cracks of boughs in the surrounding woods giving way under the weight of ice. The ground was not under the influence of frost at any time during this cold wave, but remained soft and muddy.—*Haslemere, Hazelhurst* (II). On the night of 17th and all day on the 18th there was a remarkable glazed frost. Gorse was so coated with ice as to obscure the spines; bamboos and hollies were bent to the ground; birches, Scotch firs and great branches of oak were broken off, and some oaks were wrecked by the great weight of ice. The ice was transparent and some four times the diameter of thin twigs; it came away from leaves with a beautiful impression of the venation, particularly remarkable in the long leaves of the yucca. It is remarkable that there was no frost on the ground.—*Dover* (II).

"In the county districts around Dover . . . large numbers of the telegraph poles and telephone wires strewed the ground, having been brought down by the weight of the ice with which they were cumbered owing to the unusual combination of rain and frost. Both the telegraphic and telephonic sections of the Post Office were working under great difficulties as a result of the wholesale breakage of wires. In many cases the weight of ice had broken down branches of trees, and shrubs were borne to the ground from the same cause."—*Dover Standard*.

—*Chatham, Luton W.W.* (II). The glazed frost produced remarkable effects in this locality. So heavily coated were the trees that they could scarcely bear the weight, and the boughs swept the ground. Every tree presented a gorgeous spectacle. The deciduous trees were certainly the most graceful. During the darkness of the night

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\* See also *Met. Mag.*, March, 1912, p. 23.

† See also *Met. Mag.*, March, 1912, p. 22.

two Lawson cypresses, covered with pendants of clear ice, reflected a thousand little points of light from a street lamp. The beauty of the trees on this day is shown in the photograph by Mr. A. C. Burgess reproduced [*see frontispiece.*]—*Gravesend* (II). The R froze as it fell on all trees and bushes, breaking off many branches by its weight.—*Wantage* (II). Heavy R, followed by 4 inches of S.—*Faringdon* (II). S 5 inches deep.—*Winslow* (III). S 6 inches deep.—*Pyrton Hill* (III). It began freezing some hours before the R turned to S, and trees and buildings were covered with icicles.—*Charlbury* (III). S 6 inches deep.—*Eye* (III). S 4 to 6 inches deep.—*Bradford-on-Avon* (V). 8 inches of S.—*Littlebredy* (V). Heavy fall of S after dark. Although it followed about 2 in. of R in 36 hours, and there was little or no frost, the ground being quite soft and running with water at about 10 p.m., the S was lying about 4 inches deep on the morning of the 18th.—*Keynsham* (V). S 5 inches deep.—*Cirencester* (VI). Heavy S all day. The rapid melting of it caused heavy floods.—*Shifnal* (VI). S 13 inches deep.—*Hoar Cross* (VI). S 21 inches deep, the drifts in places being from 4 to 10 feet deep. Several milk drays remained on the roads all day and night, and had to be dug out.—*Bewdley, Spring Grove* (VI). Wet and heavy S fell quietly, undisturbed by the slightest wind. A ridge of S, resting in the open on a single galvanised wire, measured 7 inches.—*Eccleston* (VIII). S 14 inches deep, the deepest fall here in 24 hours for over 30 years. As the storm was accompanied by little, if any, wind, the S lodged on the branches of the trees, and, owing to the weight, large numbers were broken off and trees were uprooted, the damage being very considerable.—*Liverpool* (VIII).

“The heavy snowstorm . . . is officially estimated to entail an expenditure of over £2,000 to clear. The Corporation's regular staff of 900 men has been trebled.”—*Daily Graphic*.

17th—18th.\*—*Swerford* (III). S fell from about 9.15 a.m. on 17th, and at 4 p.m. on 18th was about 10 inches deep.—*Wroughton* (V). R, followed by S 6 to 6½ inches deep.—*Mickleton* (VI). S 8 to 8½ inches deep at 9 a.m. on 18th.—*Barnt Green* (VI). S or H all day on 17th, measuring 10 inches deep on 18th.—*Buxton* (VII). S 6 inches deep on 17th and 12 inches deep on 18th, with drifts 6 feet deep.—*Blundellsands, Park Corner* (VIII). S started to fall at 8.30 a.m. on 17th and continued steadily, without any break, till 4.30 p.m., when it was fully 7 inches deep. S fell again in the night to a depth of

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\* See also *Met. Mag.*, February, 1912, p. 9.

5 inches. On the morning of the 18th it averaged 12 inches deep. The trees carried an unprecedented weight of S, which broke some of them.—*Snowdon* (XI). Heavy S. A strong wind on 18th caused deep drifts, completely blocking mountain roads.

18th.—*Swerford* (III). S 10 inches deep.—*Chedington Court* (V). S 5 inches deep at 9 a.m., and 1 inch fell after that time.

18th—19th.—*Warwick Castle* (VI). A record fall of S for many years. On the first date it was equal to 1·50 in. of R, and did tremendous damage here to the cedar trees, yews and other heavy foliated trees.

19th.—*Moor Hall* (VI). S 10 inches deep.

25th.—*Haileybury* (III). Floods in Lee Valley at their height.

## FEBRUARY.\*

2nd.—*Horeham Road* (II). Sharp S storm at 3.45 p.m. ; in half an hour S fell to a depth of  $1\frac{1}{2}$  inches.—*Kingsbridge, Collapit Creek* (V). Min. temp.  $18^{\circ}$ , the lowest recorded here.

2nd—3rd.—*Castletown* (XIX). S 8 to 9 inches deep.

2nd—6th.—*Dover* (II). S fell on 2nd and continued to 6th. Drifts measured 3 feet 6 inches deep.

3rd.—*Fethard-on-Sea* (XXI). Min. shade temp.  $13^{\circ}$ , and on S at same time zero. All shrubs suffered severely, even ivy and gorse.

3rd—4th.—*Ilderton, Lilburn Cottage* (X). Severe frost. Temp.  $2^{\circ}$  below zero on night of 3rd. Much damage done to shrubs and garden stuff.

4th.—*Maxwelton* (XII). Twenty-six degrees of frost.

4th—5th.—*Stockton-on-Tees* (X). Thirty-eight degrees of frost in night. Many shrubs seriously injured.

5th.—*Penrith* (X).

“A . . . jury . . . returned a verdict of death from exposure at an inquest on the body of Titus Lister, 35, tailor, of Skelton, Penrith, who was found sitting by the roadside frozen. He had apparently fallen from his bicycle and had lain all night.”—*The Times*.

—*Loch Lomond* (XV).

“So intense was the frost in the Loch Lomond-side district over the weekend that . . . Loch Lomond was covered for about a mile with good sheet ice. It is 17 years since Loch Lomond was frozen.”—*The Times*.

6th.†—*Castletown* (XIX). S 9 inches deep.

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\* See also *Met. Mag.*, March, 1912, pp. 21, 32, 39.

† See also *Met. Mag.*, March, 1912, p. 22.

23rd.—*Buckies* (XIX). Very sudden and fierce W. gale.

27th.—*Snowdon* (XI). Storm at 0.15 a.m. L “blew” overhead transmission and telephone fuses. Gale blew in several windows.

### MARCH.\*

4th.†—*Lewisham* (I). Violent squall, with T, L, H and heavy R, at 5.15 p.m., lasting about 20 minutes.—*London* (I).

“In the height of the storm a chimney stack collapsed in Queen’s-road, Peckham, S.E., and wrecked the back part of the house and the rooms on the first, second and third floors. A woman was buried under the mass, but was rescued by firemen; she was alive but considerably injured. A portion of the scaffolding surrounding a six-floored building in course of erection in Tudor-street, E.C., collapsed; owing to the possibility of another portion giving way all traffic was diverted. Part of the terrace stand on the West Ham Football Club’s ground was blown down and with the separating fence was carried into Priory-road, blocking that thoroughfare.”—*The Times*.

—*Worlingham* (II). Very sharp squall at 4.30 p.m. Trees blown down and windows forced in.—*Abinger Hall* (II). Violent storm, with T, L and H, from 4.15 to 4.30 p.m. The finest tree on the estate was blown down.—*Fareham* (II).

“Mr. Charles Mould, of Maylands, Fareham, had a very narrow escape. He was at home, and after the first flash of lightning and clap of thunder he attempted to make his way to where his wife was, she being nervous during the thunderstorm. He was delayed owing to the wind having jammed the bolt of the door, and this delay, it is thought, saved his life, for the second flash of lightning passed just in front of him, and smashed into matchwood a fowl-house.”—*Hampshire Telegraph*.

—*Bledlow Ridge* (III). TS at 3 p.m., and another at 4.30 p.m. A tall aspen was struck at 3 p.m. and the bark was scattered 12 yards from the tree.—*Oving House* (III). Severe storm with heavy R and strong S.W. wind which uprooted 3 enormous elm trees.—*Tiverton* (V). TS and gale. Trees blown down.—*Stoke Bishop* (VI). Heavy T with L, H and a violent gale at night.—*Newport (Pembrokeshire)* (XI). Abnormally high flood.

11th.‡—*Greatham* (II). Heavy TS between 3 and 4 p.m. It was very dark and the R was quite black.

\* See also *Met. Mag.*, April, 1912, pp. 45, 63.

† See also *Met. Mag.*, March, 1912, p. 23.

‡ See also *Met. Mag.*, June, 1912, p. 104; and *Quarterly Journal* R.Met.Soc., Vol. 38, p. 275.

20th.—*Warlingham* (II). S began to fall heavily at 8.30 p.m., and by 9.45 p.m. it lay 3 inches deep.—*Tottingworth Park* (II). The stream Dudwell overflowed its banks.

21st.—*St. Pancras, Camden Square* (I). T at 0.45 p.m. and occasionally in the next hour. Sudden squall at 1.18 p.m., with sudden H shower, T and L. The H stones were  $\frac{1}{4}$  inch in diameter.—*Hartley Wintney* (II). TS at 2.30 p.m., destroying a large elm tree and injuring a man.—*Little Saxham* (IV). TS from 1.30 to 1.45 p.m., accompanied by great lumps of S or H.

22nd.—*Hartley Wintney* (II). TS at 2.30 p.m. A house was struck and chimney pots knocked off.

27th.—*Bucklyvie* (XV). About 2 a.m. a TS passed overhead followed by heavy H and high wind. One peal sounded like the “crack o’ doom.”

31st.\*—*Sanderstead* (II). Bright rainbow, with two others in contact and a fourth slightly west. All four seen at one time.

#### APRIL.†

4th.—*Glen Aray, Ladyfield* (XV). Heavy R and great flood.

8th.—*Kempsey* (VI). N.W. gale. Trees uprooted.—*Astle Hall* (VIII). Great N.N.W. gale. Trees blown down.—*Ilderton, Lilburn Cottage* (X). Severe gale. Much damage to buildings.—*Dumfries, Cargen* (XII). N.W. gale, reaching its height from 3 to 4 p.m. Great damage to trees.—*Alexandria* (XV). A fierce gale, and much destruction of property.—*Buchlyvie* (XV). Fine meteor in N.W. at 9.15 p.m.—*Perth* (XVI). Strong squalls from 3 to 6 p.m. Considerable damage to property.

9th.—*Buckies* (XIX). S in afternoon to a depth of 4 inches.

17th.‡—*Lewisham* (I). The most interesting part of the solar eclipse was the unnatural yellowish tint and shadows cast by the crescent shaped sun. The birds sang beautifully throughout, but the bats thought evening had come as two were seen flying about.—*St. Pancras, Camden Square* (I). Cumulus clouds in the sky until nearly 11 a.m., after which the sky was almost cloudless, and the solar eclipse was observed under ideal atmospheric conditions from first to last. It began at 10.51 a.m., had its greatest phase (magnitude .92) at

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\* See also *Met. Mag.*, April, 1912, p. 57.

† See also *Met. Mag.*, May, 1912, pp. 70, 71, 87; June, p. 98.

‡ See also *Met. Mag.*, May, 1912, p. 67.

12.11 p.m., and ended at 1.30 p.m. Observations of temperature, taken almost continuously throughout the eclipse, showed a depression of  $4^{\circ}8$  in the shade temp.,  $23^{\circ}8$  by a thermometer exposed on grass and not sheltered from the sun's rays, and  $39^{\circ}$  by a solar-radiation thermometer. The sunshine record was interrupted from noon until 0.20 p.m.—*Bennington House* (III). Clear sky. The Campbell-Stokes sunshine record was broken from 11.55 a.m. to 0.20 p.m. during the eclipse.—*Lamport Hall* (III). Temp. dropped  $5^{\circ}$  during eclipse.—*Marytavy Rectory* (V). During the eclipse flashings, which appeared rose-coloured, were observed all over the visible portion of the sun both before and after the greatest phase. Temp. dropped from  $53^{\circ}$  to  $47^{\circ}5$ .—*Great Torrington* (V). During the eclipse the temp. dropped from  $48^{\circ}$  to  $43^{\circ}$ , and as the eclipse passed went up again.

28th.—Absolute drought ended after continuing at *Cranbrook*, *Hartley* (II). 36 days.—*Frinningham Lodge* (II). 27 days.

#### MAY.\*

2nd.—Absolute drought ended after continuing at *Oxford*, *Banbury Road* (III). 23 days.—*Caversham*, *Eastfield* (III). 30 days.—*Goring*, *Elmcroft* (III). 32 days.—*Blisworth*, *Crieff House* (III). 23 days.—*Aldwinkle St. Peter* (III). 23 days.—*Barnt Green*, *Upwood* (VI). 23 days.—*Sark*, *Vallée du Creux* (XI). 23 days.

3rd.—Absolute drought ended after continuing at *Reigate*, *Holmfels* (II). 33 days.—*Hascombe* (II). 32 days.—*Hurworth Grange* (X). 33 days.

5th.—Absolute drought ended after continuing at *Hailsham* (II). 31 days.—*Ryde*, *Beldornie Tower* (II). 26 days.

8th.—*Alexandria* (XV). A TS brought a phenomenal deluge of R, which for intensity during the short period of  $1\frac{1}{2}$  minutes is surely a record. At 4 p.m. it became so dark that it was necessary to light gas. There was no R till 4.15 p.m., when there was a tremendous flash of L which struck and fused the tramway trolley wire in the main street of Alexandria. This was followed in a few moments by the fall of a few H stones, or rather flat pieces of ice, of extraordinary size, resembling lozenges, about an inch or more in diameter and a quarter of an inch thick. Almost before one could realize the curiosity of this phenomenon it was succeeded by an overwhelming deluge of R, of such violence that almost in a moment the street was

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\* See also *Met. Mag.*, June, 1912, p. 96.

a torrent of rushing water. This lasted but  $1\frac{1}{2}$  minutes, and then ceased as suddenly as it began. The measurement gave  $\cdot 26$  in. This fall was quite local, as half a mile to the N. and S. there was no R till later in the afternoon. There was heavy R later, but nothing to compare with those  $1\frac{1}{2}$  minutes.

12th.\*—*Lewisham* (I). Slight TS from N., with H stones as large as marrowfat peas, at 4.47 p.m., passing away at great speed at 5 p.m. *Langley, Rumwood* (II). H storm lasting 10 minutes, with very large stones that cut foliage of trees and plants badly.

16th.—*Hartley Wintney* (II). Terrific flash of L and simultaneous T at 3.30 p.m., smashing about 30 panes of glass in the village and striking a magnificent elm tree 120 feet high.—*Swerford* (III). TS with H stones the size of marbles.—*Littleton Panell* (V). A boy was killed by L in a large open field.—*Shifnal, Haughton Hall* (VI). H stones as large as small walnuts.

21st—22nd.—*Ross* (VI). Heavy TS. Town flooded.—*Morley* (IX). Continuous downpour for 36 hours. R measured 1.69 in.

22nd.—*Sporle* (IV). From 11.15 a.m. to 0.15 p.m. 1.10 in. of R fell.—*Waltham-on-Wolds* (VII). Cloudburst at 3.50 p.m., far worse 300 yards from gauge. Shops and private houses flooded.

26th.—*Newport, Llwyngwair* (XI). A sharp white frost damaged potato crop and killed young bracken.

30th.†—*Mansfield, Berry Hill* (VII). In 55 minutes 1.43 in. of R fell.—*Mansfield, High Oakham* (VII). In 55 minutes 1.46 in. of R fell, causing severe a flood in the surrounding district.—*Mansfield, West Bank* (VII). Cloudburst, when 1.26 in. of R fell in 40 minutes, and 1.54 in. in an hour, causing severe flooding. No such storm has occurred here since 1858, when similar floods were reported.

“At Ilkeston the sewers overflowed and many cellars were flooded. At Mansfield many shops and business premises were flooded. In Church-street the force of the water, which the sewers could not carry off, tore up the pavement, and near the parish church the stream spreading the full width of the road was 18 in. deep.

At Stafford, the residence of Mr. Clarence Espley, a builder, was struck by lightning and much damage done. At Newmarket the storm lasted about half-an-hour, and here the residence of Captain Dewhurst was struck by lightning and damaged.”—*The Times*.

—*Bolton, Queen's Park* (VIII). TS with  $\cdot 15$  in. of R in 5 minutes.

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\* See also *Met. Mag.*, June, 1912, pp. 102, 111.

† See also *Met. Mag.*, August, 1912, p. 145.



31st.\*—*Frimley Green* (II). An oak was struck by L and split down the centre.—*Althorp House* (III). Sharp TS about 5.30 p.m. lasting half an hour, with .55 in. of R and H.—*Eye* (III). Much damage by H in the district.—*Waternewton Rectory* (III). Two storms appeared to come from S.E. and W. at 5 p.m. Heavy R, especially heavy for 30 minutes, after which large H stones fell for 5 minutes. H lay on the ground until next morning. The storm finally cleared about 8 p.m. Whole fields of grass and ploughed land were under water away from all ditches or other causes of overflow.—*Mildenhall* (V). Severe H storm at noon; .25 in. fell in 10 minutes.—*Christleton Hall* (VIII). T, L and a strong wind, with .55 in. of R in 45 minutes.—*Coxhoe* (X).

"The interment of a young man was arranged to take place at Coxhoe . . . . Owing to the extraordinary rain on Saturday the grave was flooded out, and although the sexton and assistants had been engaged bailing all day yesterday, it was still partly flooded. A painful scene ensued after the coffin was lowered. After the majority of the mourners had left, the water had continued to force its way into the grave, with the result that the coffin was floating on the top. A relative of the deceased's objected to the burial under such conditions, and, eventually, the coffin was taken into the church, to remain there overnight, until the water settled down or a fresh grave was dug. A similar occurrence took place at Coxhoe thirty-seven years ago, owing to heavy rains."—*Newcastle Chronicle*.

#### JUNE.†

2nd.—*Little Dunmow* (IV). In half an hour .63 in. of R fell. No R fell 2 miles to the E. until later.

3rd—4th.—*Clonakilty* (XX). Frost did great damage to potato crop. Several fields in low lying ground near river had to be set again with other crops, as potatoes were all burned.—*Dunmanway* (XX). Severe frost at night blackened potatoes and bracken.—*Enniskean, Kilcoleman* (XX). Sharp frost, did much damage to potatoes and fruit trees.

8th.—*Liskeard, Trevillis* (V). T at 10.30 a.m., and .61 in. of R in 35 minutes.—*Castle Forbes Gardens* (XXI). R measured .73 in. in 2 hours, of which .50 in. fell inside 15 minutes during a TS.

9th.—*Peterborough, Abbeyfield* (III). Sharp TS at 1.30 p.m., with .45 in. of R, almost all of which fell in 10 minutes.—*Wirksworth, Manor House* (VII). Heavy TS with .40 in. of R in 10 minutes.—*Northallerton* (IX).

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\* See also *Met. Mag.*, August, 1912, p. 146.

† See also *Met. Mag.*, July, 1912, pp. 113, 114, 131.

“The wind wrecked a warehouse, stripped roofs, and scattered two stacks of hay. Yafforth Brickworks’ buildings were also wrecked. Hailstones of unusual size followed the lightning, which set fire to stacks of hay.”—*The Times*.

10th.—*Morchard Bishop, Hartnolls* (V). H storm began about 1.30 p.m. and lasted about 2 hours, with T and L. There was nothing abnormal in the size of the H stones, but the amount that fell was terrific. The ground was white as after a heavy fall of S, and the next day small heaps of H stones were still lying under hedges and in sheltered corners. The damage done was terrible. We grow fruit for market, and the full force of the storm passed through our 13 acres. Strawberries were smashed, small bush fruit torn off and left lying in thick layers round the bushes. The apples were dented as though a shot-gun had been fired into them, and all young growth on the trees was stripped bare of leaves and the bark dented and split. The farmers’ mangolds, a few inches high, vanished completely being beaten into the ground.—*Southwell, Elmfield* (VII). Severe H storm at 6.50 p.m., a large proportion of the stones being large. The grass was still white in places next morning, and the terrestrial radiation ther. fell to  $32^{\circ}2$ . No glass was broken; but there was terrible destruction of potato tops, other vegetables and fruit. Many of the apples, which were not knocked off, were permanently injured. Bedding out plants, especially begonias and cannas, were nearly destroyed. The storm lasted about 20 minutes. Half a mile away it did no damage.—*Rochdale, Fieldhead Yard* (VIII). In 10 minutes .26 in. of R fell.—*Morley* (IX). Heavy TS in afternoon, with .75 in. of R in less than an hour.—*Girvan, Glendowne* (XIV). A sharp TS with vivid L, followed by a most terrific H shower which did considerable damage, strong foliage being pierced as by shot, and many tender growing plants entirely denuded of foliage, notably chrysanthemums and plants of a like nature.

12th.—*Grays Sewage Works* (IV). Of the 1.67 in. of R observed 1.50 in. fell in one hour.—*Casterton, Clergy Daughters’ School* (X). TS, with .56 in. of R in less than 20 minutes, about 5.45 p.m.

16th.—*South Norwood, Holmesdale Road* (II). At noon .20 in. of R fell in 7 minutes.

17th.—*Snowdon* (XI). Heavy floods, especially on Glaslyn.

19th.—*Claypole* (VII). In 17 minutes .71 in. of R fell, accompanied by T and L.—*Waltham Hall Gardens* (VII). Terrific H storm, doing a great deal of damage to growing crops. Potatoes and corn were

badly broken down, and apples and pears were damaged. H stones fell measuring  $\frac{3}{8}$ ,  $\frac{1}{2}$  and  $\frac{5}{8}$  inch thick, being 1 inch across and in some cases more. On the S.W. side of Waltham Village some 500 panes of glass were broken in the cottage windows.—*Irby-on-Humber* (VII). Terrific T and H storm with vivid L. The H stones were as large as walnuts. R 1·03 in., all of which fell in less than 2 hours.—*Grimsby* (VII). Severe H storm at 3 p.m. The enormous H stones quickly cleared the streets of people and traffic, and the streets were flooded in less than 15 minutes. Several H stones measured from  $\frac{5}{8}$  to  $1\frac{1}{8}$  inch in diameter, and one of the largest was an exact model, in clear ice, of a fossil ammonite 1 inch in diameter by  $\frac{3}{8}$  inch thick.

22nd.—*Cong, The Glebe* (XXII). A fall of 1·05 in. of R in 35 min.

24th.—*Weybridge, Station Road* (II). From 9.55 to 10.23 p.m. ·49 in. of R fell.—*Frinningham Lodge* (II). From 10.30 to 10.33 a.m. ·19 in. of R fell.—*Cockburn Hill* (XIII). In 5 minutes ·10 in. of R fell.

28th.—*Bolton, Queen's Park* (VIII). In less than 15 minutes ·22 in. of R fell.

### JULY.\*

1st.—*Heddon-on-the-Wall* (X). In 15 minutes ·24 in. of R fell, and after a lull of 7 minutes ·97 in. fell in 35 minutes. Hardly any R 3 miles to E.

6th.—*Milton Bryant* (III). Heavy local R storm at 2 p.m., covering a track about 2 miles wide; about ·27 in. fell in 20 minutes.

7th.—*New Malden, Edenfield* (II). TS with ·24 in. of R in 12 min.

12th.†—*Blisworth, Crieff House* (III). Severe TS, with L, H and R, at 4.30 p.m. ·31 in. of R fell in 12 minutes.—*Northampton* (III).

“A thunderstorm which broke over Northampton . . . did considerable damage. On West Bridge, an exposed spot, a baker's cart was blown against a tramcar, both cart wheels being knocked off and the driver injured. The roof of a tannery was struck by lightning, some of the masonry being dislodged, and a portion of the roof of St. Peter's, an old Norman church, was also struck. Many large trees on London-road, just outside the town, were struck and thrown across the road.”—*The Times*.

—*Great Billing* (III). TS with ·42 in. of R between 4.50 and 5.2 p.m., and H stones as large as small marbles.—*Willingham-by-Stow* (VII). Severe TS from 6 to 10.15 p.m. The L flashes were of quite an appreciable duration and like melted metal being poured out of the

\* See also *Met. Mag.*, August, 1912, pp. 137, 138, 151.

† See also *Quarterly Journal*, R. Met. Soc., Vol. 38, p. 313.

clouds in streams with a hissing noise. A house was struck and part of the wall blown out within 2 feet of a woman's head.—*Waltham-on-the-Wolds* (VII). Heavy TS accompanied by a gale of wind, preceded by a huge dust cloud. Storm 5 to 5.30 p.m., with .27 in. of R. One beast and two sheep were killed by L.—*Ashbourne W.W.* (VII). From 3.30 to 3.45 p.m. .28 in. of R fell.—*Baslow, The Beeches* (VII). R 2.28 in., of which 2.20 in. fell in 40 minutes. Wind S.—*Mosbrough* (VII). A violent TS did much damage. R commenced about 4 p.m. Streets were flooded, shops and basements suffered through the inrush of water, and garden crops were badly damaged. R ceased at 4.20 p.m., commenced again at 4.30 p.m. and cleared before 5 p.m. A third storm at 6 p.m. lasted about 10 minutes.—*Huddersfield* (IX).

“Strange effects of a flash of lightning were described at an inquest . . . on Nellie Haigh, aged eight years, who . . . was killed during the storm on Friday. A woman who was in the house when the child was killed, said she saw a blue light flash in front of her and soot flew all over the room. For a time witness was dazed and semi-conscious, and when she recovered she could not take hold of anything with her hands. It was some time before she could see the child, but when she did she found the girl was dead, and her clogs were torn from her feet. Describing the damage done to the house, witness said the clock had stopped at 4.40 and was damaged, pans were thrown from the cupboard, plaster was stripped from the walls and the windows broken. Another witness said there were on the dead girl's breast two marks like the branches of a tree, and the lower part of the body was burnt.”—*Lancashire Daily Post*.

—*Goldsborough Hall* (IX). Distant T all the afternoon. About 4.45 p.m. the storm broke with very vivid and almost continuous L and deafening T. R fell in torrents. The storm abated about 5.30 p.m. and returned again for half an hour at 6.45 p.m.—*West Witton* (IX). TS from 4 to 7 p.m.; .35 in. of R fell between 5.50 and 6 p.m.—*Hurworth Grange* (X). Continuous T and L from 5.15 to 7.50 p.m., and 1.59 in. of R.—*Darlington, Cleveland Parade* (X). From 4.50 to 5.50 p.m. 1.08 in. of R fell.—*Bamburgh* (X). R 2.16 in. At the end of the first hour the fall was 1.75 in. Water was running down the village streets like a river.

13th.\*—*Bulmer Lodge [Sudbury]* (IV). A tropical T and H storm began about 2.40 p.m. Roads were rendered impassable, even for vehicles, for some time, and thousands of panes of glass were broken in the neighbourhood by the H stones, which were of enormous size, and in sheltered places remained on the ground until the following

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\* See also *Quarterly Journal*, R. Met. Soc., Vol. 38, p. 313.

morning;  $\cdot 77$  in. of R fell in about 45 minutes.—*Sudbury, Great Cornard* (IV). A remarkable H storm when about  $1\cdot 40$  in. of R fell in about 30 minutes, though it is probable that it may have been more on account of the large H stones blocking the funnel. They were many of them conglomerate. One very curious one was composed of a flat disc nearly 2 inches in diameter and about  $\frac{3}{4}$  inch thick, round the edge of which were frozen on spherical H stones about as big as sparrows' eggs.—*Sudbury, Cornard Road* (IV). An exceptional H and R storm occurred,  $2\cdot 01$  in. falling in about 40 minutes, doing a very large amount of damage to roads and property.—*Sudbury, Friars Street* (IV). The ther. at noon marked  $86^{\circ}$ . Stormy looking clouds had occasionally overcast the sky. The bar. was high and steady, being  $30\cdot 55$  in. at noon and in no way indicated an approaching storm. At  $1\cdot 45$  p.m. a T shower commenced, but lasted only about a minute. The sky at this time was completely overcast, but had no very stormy appearance being of a dull leaden colour. Just before 2 p.m. distant T was heard, and at  $2\cdot 15$  a flash of L showed that a storm was at hand. T and L continued for some time, and at 2.30 p.m. R commenced and quickly developed into a terrible cloudburst, dealing destruction in its path. H stones of the size of walnuts were mingled with R. Hundreds of panes of glass in greenhouses were broken. Rhubarb and other large leaves were perforated, hedges stripped of their leaves, growing corn stripped of the grain and the straw broken and bent. In some cases growing crops were washed out of the ground, the flood taking the surface of the fields into the adjoining roadways. At  $2\cdot 55$  p.m. the storm ceased, passing away to the N.W.  $\cdot 98$  in. of R fell in 25 minutes. At 6 p.m. large numbers of H stones as large as walnuts were still to be found piled up in ditches. The storm apparently formed about 3 miles to the S.E. of Sudbury in the Stour Valley and travelled up the valley for about 6 miles.—*Osbaston Hall* (VII). TS with H and R. Of the total fall of  $\cdot 41$  in.,  $\cdot 36$  in. fell in 10 minutes.

13th—14th.—*Teignmouth, The Shrubbery* (V). In the night a heavy storm occurred. It rose very suddenly and lasted not much more than half an hour. In that time  $\cdot 83$  in. of R fell.

22nd.—*Wirksworth, Manor House* (VII). R  $1\cdot 54$  in., 1 inch of which fell in 10 minutes.—*Dunmanway Rectory* (XX). At 3 p.m.  $\cdot 50$  in. of R fell in half an hour, and the same amount fell again at 5 p.m.

23rd.\*—*Barnet, Dyrham Park* (III). During a TS there was a fall

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\* See also *Met. Mag.*, August, 1912, p. 146.

of 2·81 in. of R in 2 hours 12 minutes, from 1.15 to 3.27 p.m.—*London Colney* (III). Tropical R accompanied by T and L. One inch of R fell in 15 minutes, the ground appearing a sheet of water. The total, 2·33 in., fell in about 2½ hours, commencing about 1.45 p.m.—*St. Albans Gas Works* (III). From 3.15 to 4.45 p.m. 1·40 in. of R fell.—*Barnet, Summerhill* (III). TS of a very violent character. It lasted 2 hours, and during that time over 1·50 in. of R fell.—*Hitchin, Preston* (III). R storm with 2·84 in., of which 1·00 in. fell in the first hour.—*Hitchin, Chiltern Road* (III). Storm with ·89 in. of R from 3 to 4.15 p.m. It came on again at 5 p.m. and passed away about 7.20 p.m., in which time an additional 1·26 in. of R fell. From 7.10 to 7.15 p.m. ·25 in. of R fell.—*Hitchin* (III).

“ It is something like seventy-five years since Hitchin experienced a storm similar to that which raged round the district on Tuesday . . . There was comparatively little lightning or thunder, but the rainfall constitutes a fresh record . . . Considerable damage was done to business establishments in Bridge-street, Sun-street and Market-place, when the water flooded them to a depth of from 6 in. to 3 ft. Horses in their stalls were standing over the knees in water, while furniture floated out of the houses into the main thoroughfare. In some instances customers were kept imprisoned for a couple of hours, and then had to be carried out shoulder high. The damage to the crops is enormous. The motor-bus which runs between Letchworth and Hitchin had the greatest difficulty in getting through, the water in many parts being above the hubs. It is remarkable that at Letchworth, only a mile and a half away, scarcely any rain fell during the day.”—*Daily Telegraph*.

—*Oxford, Banbury Road* (III). TS with ·78 in. of R from 1.50 to 2.20 p.m.—*Cranford, Woodford House* (III). R ·80 in. in 15 minutes.—*Radford House* (VI). In the afternoon 1·30 in. of R fell in 55 minutes.

24th.—*Horkstow* (VII). About 1 p.m. there was a remarkable R, 2·12 in. falling in 1½ hours, which caused much damage. Many cottages were flooded in the village and the lowland submerged. The outfalls were unable to take the overflow for many days. This storm was accompanied by a severe TS with H, and did considerable damage to corn crops. Several cattle and sheep were killed by L in the district.—*Beverley, East Riding Asylum* (IX). Within 2 hours 2·00 in. of R fell.

25th.\*—*N. Walsham, Empson House* (IV). From 6.30 to 6.45 p.m. ·44 in. of R fell.—*Forfar, Lilyfield* (XVI). From 10.15 to 11.45 a.m. 1·43 in. of R fell.—*Carnoustie* (XVI). Heavy R between 10 and 11.30 a.m. which measured ·88 in.

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\* See also *Quarterly Journal*, R. Met. Soc., Vol. 38, p. 314.

26th.—*Raunds Day School* (III). TS at 1.20 p.m., with .50 in. of R in 12 minutes.

27th.—*Hodsock Priory* (VII). In 24 minutes .80 in. of R fell.—*Darley Dale* (VII). A cloudburst occurred at the Rowsley end of the township, and large quantities of earth were washed down from the adjoining hills. The river Derwent was heavily flooded, and for some hours communication with the neighbouring parish of South Darley was cut off by the water.—*Darley Hall* (VII). Storm commenced at 1.30 p.m., and from 1.30 to 1.50 p.m. .80 in. of R fell. Centre of storm more than two miles N. Wind changed round during storm.—*Haddon Hall* (VII).

“A cloudburst took place close to Haddon Hall, Derbyshire, and resulted in the Rowsley Railway Station and the extensive sidings there being submerged. During the storm a landslide took place at Haddon Tunnel, and the great volume of water which came down the hills flooded the line. The water entered the tunnel close to Haddon Hall, and traffic, including a number of passenger trains, was held up for an hour and a half . . . The main road from Bakewell to Haddon Hall and Rowsley was submerged to the depth of a couple of feet for about a quarter of a mile, motor and other traffic being held up . . . The entrance grounds in front of Haddon Hall were all under water, and at Bakewell, a few miles distant from Haddon Hall, the water rushed down from the Chatsworth Woods, passed through a railway arch, and flooded the workhouse. The kitchen gardens were submerged, and the boiler house was filled to a depth of 5 feet. The water rushed through the grounds in front of the workhouse and flooded the Baslow-road, rendering traffic impossible. At the village of Stanton, near Haddon, stone walls were swept away by the rush of water.”—*Morning Post*.—*Chesterfield Sewage Works* (VII). Storm, with 1.35 in. of R in about 40 minutes.—*Llanfairfechan* (XI). The R was the heaviest known here for many years.

28th.—*Tamney Rectory* (XXIII). Between 1 a.m. and 9 p.m. 2.30 in. of R fell causing a serious flood.

29th.—*Tredegar* (XI). Nearly 2.00 in. of R fell from 6.30 to 9 a.m.

31st.—*Leyland* (VIII). Heavy R. The Lostock overflowed its banks flooding the main road; and the Shaw Brook, a tributary of the former, swept away a plank bridge.

#### AUGUST.\*

1st.—*Southport, Hesketh Park* (VIII). Severe TS, with gale and 1.79 in. of R, in early morning.—*Bradford* (IX).

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\* See also *Met. Mag.*, September, 1912, pp. 162, 164, 165, 171; October, 1912, pp. 181, 183.

"Many thousands of pounds damage was caused in the West Riding of Yorkshire. At Bradford over  $1\frac{1}{2}$  inches of rain fell during the night. In Thornton Road the beck overflowed into many of the mills. Boiler fires were put out and work could not be resumed for some hours. Large quantities of cloth and prepared material were damaged. At Messrs. Priestman's the warps in 600 looms were spoiled by dirty water. The water in the roads was so high that millhands on their way to work had to walk on the tops of walls. At Cleckheaton it was impossible to start a number of mills, and it was only by using carts that the workpeople at other factories could get along the roads."—*The Times*.

2nd.—*Godalming, Charterhouse* (II). An extremely violent, but brief, TS burst over this hill in the afternoon. A large oak tree standing in a narrow valley was split to ribbons from the ground upwards to a height of about 15 feet; the branches and foliage were uninjured. The tree was "wrung" over by the wind next day. At the moment of the bursting of the storm sparks of considerable length darted from a water-tap, and in another house close by a "ball of fire" issued from a wall-plug for electric light and was witnessed by several people assembled at a tea-party.—*Instow* (V). An exposed ther. registered  $4^{\circ}$  of frost.—*Lampeter, Llanleir* (XI). Severe frost blackened all dahlias and delicate flowers.

3rd.—*Shrewsbury, Highfield* (VI). Frost on grass. Beans cut.—*Cockburn Hill* (XIII). In 20 minutes  $\cdot 43$  in. of R fell.

4th.—*Redditch* (VI). Severe local H and R storm. One H stone measured  $1\frac{1}{2}$  inch, and 5 in a row measured 6 inches. In 20 minutes 1.00 in. of R fell.—*Bolton, Queen's Park* (VIII). R 1.47 in., of which  $\cdot 50$  in. fell in 30 minutes. —*Curke-in-Cartmel* (VIII). TS in evening. A valuable horse was killed at Birkby, near Cartmel.—*Rawdon* (IX). About 1 inch of R fell in 20 minutes about 4.30 p.m., and the water flooded the roadway in places.—*Warwicksland School* (X). Snowballing in hayfield.

5th.—*Ledbury* (VI). A cloudburst about a mile from Ledbury tore up and carried away the metal off the roads.—*Greenock, Prospect Hill* (XIV). In 1 hour 20 minutes 1.87 in. of R fell.—*Greenock* (XIV).

"A thunderstorm, accompanied by excessive rain, raged over Greenock and district . . . There was a great deal of flooding in various parts of the town, and much damage has been done to property. The most serious effect of the storm was at Brougham Street. Through the overflowing of the West burn and the consequent rush of a large volume of water through a tunnel on the Glasgow and South-Western Railway Company's line to Prince's Pier, a tenement in Brougham Street, adjacent to the railway, was destroyed. The water rushed through the houses and out into the street, where it was waist high. A large crowd gathered, and willing rescuers went to the assistance



of the inmates of the flooded houses. A lorry was backed against the tenement, and, by means of blankets tied together, the men, women and children were taken out. The burgh fire brigade were summoned, but the people were all rescued before their arrival.

A serious accident took place at the Greenock West Station of the Caledonian Railway Company's line. Floods of water came from the higher parts of the town, and a retaining wall which supported a number of houses and shops in Inverkip Street collapsed, carrying with it the gable of the end house and shop, which were completely devastated. The wall fell on to the platform, thrusting a large part of it on to the line. As a result, traffic between Greenock Central Station and Gourock was stopped.

The block on the Glasgow and South-Western Railway Company's line resulted in the stoppage of the service to Prince's Pier, no trains being allowed beyond Lynedoch Street Station. On the Glasgow to Wemyss Bay line of the Caledonian Company a temporary stoppage was caused by a landslide.

Work at the shipyards was greatly interfered with, and outdoor workers of all kinds were rendered idle for the day, while some public works closed altogether.

Great damage was caused in the lower parts of the town and in the East End, where low-lying shops and houses were completely flooded."—*The Scotsman*.

—*Loch Eck, Benmore* (XV). Great cloudburst on the hills along the east side of Loch Eck, accompanied by T and L. Thousands of tons of large boulders and trees were washed down by the rush of water. Walls along the roadside were knocked down and the debris carried right through the fields on the opposite side down to the river. The Loch Eck Road was closed by the County Council for some time.

6th.—*Bradford-on-Avon, Woolley Grange* (V). R 1.53 in., the bulk of which came down in 4 hours from 9 a.m. to 1 p.m., a continuous downpour unaccompanied by any T.—*Lostwithiel* (V). The River Fowey rose flooding the town and low-lying meadows.

7th.\*—*Southwater* (II). TS with .75 in. of R from 4.5 to 4.13 p.m.

8th.—*Charlton Kings* (VI).

"A fishmonger named Brookes . . . was lying ill in bed, and was glancing at a newspaper when a storm suddenly broke over the house. Lightning tore off the roof, deposited the chimney-stack in the front garden and roadway, partly stripped the ceiling off the bedroom in which he was lying, smashed a wall picture to fragments, cut a strip from the wall, and broke open the gas-pipe. The escaping gas ignited and set fire to the roof, but the fire was quickly extinguished by a member of the fire brigade who lived close by. The whole village was shaken by the concussion."—*Daily Telegraph*.

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\* See also *Met. Mag.*, November, 1912, p. 204 ; and *Quarterly Journal*, R. Met. Soc., Vol. 38, p. 314.

9th.—*Woolacombe* (V). Most terrific TS from 6.30 to 8 a.m., followed by a cloudburst, or series of cloudbursts, from about 8 to 11 a.m.; several were seen in the Morte Bay and around Baggy Point and at Saunton.

10th.\*—*Kensal Green* (I). T during afternoon. Chimney stack in Queen's Park neighbourhood struck by L.—*St. Pancras, Camden Square* (I). TS with L and sharp R from 1.55 to 2.20 p.m., and frequent showers later; .40 in. of R fell between 1.55 and 2.11 p.m.—*Weybridge, Glenart* (II). Between 1.30 and 2.45 p.m. a TS passed over this district from W.S.W., accompanied by violent H, the ground being rendered perfectly white. The H stones, where drifted, remained unmelted for 3 hours. Total R .75 in.—*Buckingham* (III).

"A heavy thunderstorm visited Buckingham shortly after eleven o'clock in the morning. Rain fell in torrents, creating quite a deluge. The lightning was very vivid. From one black cloud hail descended for some minutes; the stones were large and rugged, mere rough pieces of ice, and the roads and pavements were covered with ice-stones for fully an inch deep. It was market day, and the trading was greatly interfered with. No one living recollects seeing the market square coated with the white mantle in August. Hundreds of acres of cut grass are rotting on the fields, and many hundreds of acres are yet uncut, and the farmers are despairing of the corn harvest. The agricultural outlook is gloomy in the extreme."—*Daily Telegraph*.

—*Caversham* (III). TS at 6 p.m. lasting 40 minutes. Some buildings were struck, off the Caversham Road.

12th.—*Dunkeld, Snaigow* (XVI). In about 6 minutes .21 in. of R fell and did a lot of damage.

13th.—*Lewisham* (I). Slight T and L, and great darkness at 6.10 p.m.—*Southport* (VIII). Three waterspouts over sea in morning.

19th.\*—*Southwater* (II). TS from 6 to 9.30 p.m. From 9.5 to 9.10 p.m. .40 in. of R fell.—*Oving House* (III). TS with about .50 in. of R in 40 minutes.—*Cropwell Butler* (VII). A most unusual and destructive storm of H of great size passed from S.W. to N.W. across the southern part of this parish.—*Clifton, Durdham Down* (VI). From 11 a.m. to noon .98 in. of R fell.—*Cowdenbeath, Northbank* (XVI). Heavy R between 6.30 and 7.30 a.m.; .71 in. in 45 minutes.

20th.\*—*Bournemouth, Vale View* (II). At 7 p.m. .40 in. of R fell in 10 minutes.

21st.—*Salisbury Plain* (V).

"Owing to the severity of the weather on Salisbury Plain, which has greatly affected the health and comfort of the troops in camps, a special ration of rum is to be issued daily by order of the medical officers.

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\* See also *Quarterly Journal*, R. Met. Soc., Vol. 38, p. 314.

The Cavalry in the camps west of the Avon have suffered considerably, and several cases of pneumonia have occurred. Many of the camping places are half flooded with surface water, the ground being practically waterlogged. At Larkhill access to the post office was only possible yesterday by a temporary pathway formed of hurdles over bricks laid by the postal officials."—*The Times*.

22nd—24th.—*Harrow Road* (I). Continuous R from 11 p.m. of 22nd to about 2 p.m. of 24th, but not heavy.

23rd.—*Aberystwyth, Gogerddan* (XI). Heavy and continuous R. Brooks and streams were flooded to an extent not known for years.

24th.—*Twywell* (III).

"There has been a unique haymaking scene this week. A hay-field was nine inches under water, and no horsed mower could tackle the work of reaping a lake, so recourse had to be made to the antiquated scythe, the scythemen wearing jackboots and mowing under the water all the time. As the grass was cut it floated on the water. The ordinary agricultural labourers were not in sufficient numbers for this "new dredging industry," so furnacemen from adjoining blast furnaces, clerks, and even a grocer's assistant were engaged in this novel agricultural scene."—*Standard*.

24th—25th.—*Tiverton* (V). River Exe in flood.

25th—27th.\*—**For detailed discussion of the great rain storms of these three days see special article in Part I.**

26th—31st.—*Hampton Poyle* (III). Great inconvenience and loss from flooding over the riverside meadows.

27th—28th.—*Great Witchingham* (IV). The River Wensum overflowed its banks, and a great flood occurred. No person remembers so high a flood, and great damage was done to roads and the railway line. Low lying land remained submerged for many weeks.

30th.—*Faringdon* (II). River Isis below Faringdon in flood.

## SEPTEMBER.†

4th.—*Glen Aray, Ladyfield* (XV). R all day. Great flood.

10th—11th.‡

27th.—Absolute drought ended after continuing at *Fordingbridge, Oaklands* (II). 24 days.—*Stockton House* (V). 24 days.—*Exeter, Elmfield House* (V). 26 days.—*Tiverton* (V). 24 days.—*West Coker* (V). 24 days.—*Waterford, Whitfield Court* (XX). 25 days.—*Tullow, Hardy-mount* (XXI). 24 days.—*Balbriggan, Ardgillan* (XXI). 22 days.

\* See also *Met. Mag.*, September, 1912, p. 153; December, 1912, pp. 217, 219; and *Quarterly Journal*, R.Met.Soc., Vol. 39, pp. 1, 28.

† See also *Met. Mag.*, October, 1912, pp. 181, 182, 191.

‡ See *Met. Mag.*, October, 1912, p. 185.

29th.—*Hascombe* (II). The R, 2.28 in., was the heaviest daily fall since records were commenced in 1882.

29th—30th.\*—*Warlingham, Redvers Road* (II). The R for these days was 1.80 in. and 1.71 in. respectively, and both amounts exceed any previous daily fall in 8 years' observations.

30th.—*Cockburn Hill* (XIII). R, 2.42 in., caused much flooding and a lot of damage to roads and grain.

### OCTOBER.†

5th.—*Kilbride* (XV). Absolute drought of 26 days ended.

11th.—*Lewisham* (I). Dense choking fog; houses opposite quite invisible.—*New Malden* (II). Thick fog, becoming very dense in evening.—*Englefield Green* (II.) Thick fog at night.

11th—12th.—*St. Pancras, Camden Square* (I). Continuous thick white ground fog, lifting somewhat in afternoon of 12th, but thick again at night.—*London* (I).

"Many fatal accidents are recorded. A carman named George Myers, while driving a horse and cart along the bank of the Surrey Canal on his way to stables, lost his way in the fog and drove into the canal. Several hours afterwards his body was found pinned beneath the cart. Another man named Thomas Simmonds and his horse were found drowned in the River Lea near Lea-bridge-road. The horse had been employed hauling barges on the river on Saturday, and it is believed that while proceeding along the towing path both man and animal fell into the water during the fog."—*The Times*.

21st.—*W'rrington* (V). About 6 p.m. the village was visited by an extraordinary wind, which lasted about 3 minutes. It was preceded by a tremendous shower, then a terrific flash of L and then the wind storm. It began to the west of the village. One narrow gust went south-east doing little damage; another went east, breaking trees, chimney pots, stripping roofs off two houses and a farm shed, and finally uprooted an elm and then ended. Another gust went north-east; it struck a saddler's shop at the back of his house, did no damage to roof of house but great damage to roof of shop. It did some slight damage to a painter's shed, and then it ceased.

25th.—*Mansfield* (VII). Thick fog.—*Goole* (IX). Dense fog.—*Tanney Rectory* (XXIII). Dense fog in morning.

26th.—*Snowdon* (XI). Heavy floods caused much damage. Large areas of land under water.

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\* See also *Met. Mag.*, October, 1912, p. 186.

† See also *Met. Mag.*, November, 1912, pp. 206, 211.

27th.—*Warrenpoint* (XXIII). Sudden strong gale sprang up at 11 a.m. and rapidly abated at 1 p.m.—*Tuvistock* (V). R 2·04 in., which mostly fell between 6 and 10 p.m.

28th.—*Reepham, Old Brewery House* (IV). About noon 1·30 in. of R fell in about 45 minutes.

### NOVEMBER.\*

19th.—*Horsham, Wimblehurst* (II). At 9.5 a.m. a curious rumbling sound was heard, and the doors and windows of the house shook. Supposed to be a slight earthquake.—*Reading, Lynmouth Road* (II). A slight earthquake shock accompanied by a noise like T. Similar reports have come from Abingdon, Sunningdale, Ascot and Woolwich.

20th—21st.—*Sunningdale, Lynwood* (II). An extraordinary shock, presumably from an earthquake, was felt here about 9 a.m. on the 20th. The rattling of windows and furniture, which took place was greater than could be caused by guns or an explosion. A similar shock was felt at the same time at Windsor and Datchet some eight miles off. On the following day at 3 o'clock another shock of the same kind was felt here.

26th.—*Reigate, Holmfels* (II). R ·69 in., nearly all of which fell in 30 minutes.—*New Malden, Edenfield* (II). Between 6.45 and 6.53 p.m. ·20 in. of R fell.—*Stockbridge* (II). About 6 p.m. R fell very heavily for 20 or 30 minutes, and roads were damaged.—*Hatfield* (III). R ·53 in., almost all of which fell between 5.35 and 5.55 p.m.—*Hampton Pytle* (III). About ·33 in. of R fell in a heavy shower from 4.10 to 4.20 p.m.—*Rousdon* (V). Gale blowing strongly all day. Wind 47 miles per hour at 2.50 p.m., but subsided with remarkable suddenness at 4.15 p.m.—*Barrow* (VIII).

“Two men were killed and 12 injured at Vickers' Naval Construction Yard, Barrow, where a cantilever crane was blown into the platers' and drillers' sheds. The men killed were Thomas Scott and Thomas McKenzie, drillers, of Birkenhead. The cranes stand high above the hulls of ships in the course of construction and run on rails on high gantries, being propelled by electric power. The crane to which the accident happened was moving in the direction of the sheds when a squall caught it and carried it along. It dashed against the stops and, falling over, crashed through the roof of a shed in which hundreds of men were at work. Scott and McKenzie, who were working together, were killed instantly.”—*The Times*.

—*Horsley Vicarage* (X). Very stormy, with high wind and floods.—*Cockburn Hill* (XIII). Severe gale blew down a lot of trees.—*Cardross*

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\* See also *Met. Mag.*, December, 1912, pp. 215, 231.

(XV). Tremendous storm. Many trees blown down. High tide and much flooding near the shore.—*Dumbarton* (XV). Great storm with wind of hurricane force. Dumbarton was under 3 feet of water.—*Alexandria* (XV). Great gale. The bar. which at midnight had read 29·46 in. fell by 1 p.m. to 28·08 in., and afterwards rose with equal rapidity. The height of the gale lasted from 1 to 3 p.m., and enormous damage was done. Indeed the destruction to trees would seem only to be limited because the gale of November, 1911, had left so few standing; and many stretches of woodland which escaped then, were left by this storm without a tree standing. It will take very many years before this part of Scotland can recover in appearance from the effects of these two gales.—*Killeen Manse* (XV). A heavy gale suddenly sprang up and raged for about 4 hours. It was unaccompanied by R at the outset. The tide rose to a height far above the ordinary mark, and much damage was done.—*Tighnabruich* (XV). Gale from W. came with rising tide, and did great damage along sea frontage.—*Loch Eck, Benmore* (XV). Great S.W. gale. The piers on the Holy Loch were submerged, and great damage done to property along the east side of the Loch. At Dunoon East Bay the sea walls were washed away.—*Rosyth* (XVI).

“Great damage was done at Rosyth Dockyard. Cranes were blown over and several barges broke adrift. The clock tower fell, and the contractors’ offices had to be strapped down with chains.”—*The Times*.

—*Perth* (XVI). S.W. gale. Bar. (corrected) at 3 p.m. 28·308 in.—*Tamney Rectory* (XXIII). Hurricane from W., attaining its greatest force at 11 a.m. Two trees uprooted.

28th.—*Brough-on-in-Furness* (VIII). S 5½ inches deep.—*Lincluden House* (XII). S 4 inches deep.

29th.—*Bicknor* (II). Thick yellow fog in afternoon, making day as dark as night.—*Mansfield* (VII). In early morning 9 inches of S fell.—*Hodsock Priory* (VII). S 6 inches deep.

29th—30th.—*Thurso, Buckies* (XIX). S 4 inches deep on 29th, and 5½ to 8½ inches deep on 30th.

30th.—*Wallop* (VI). S 6 to 7 inches deep.—*Rudnor Forest, Great Rhos* (XI). S 4 feet 5 inches deep.—*Castletown* (XIX). S 7 inches deep.—*Rathmines, Leinster Road* (XXI). Intense frost, shade max. 31°·7.

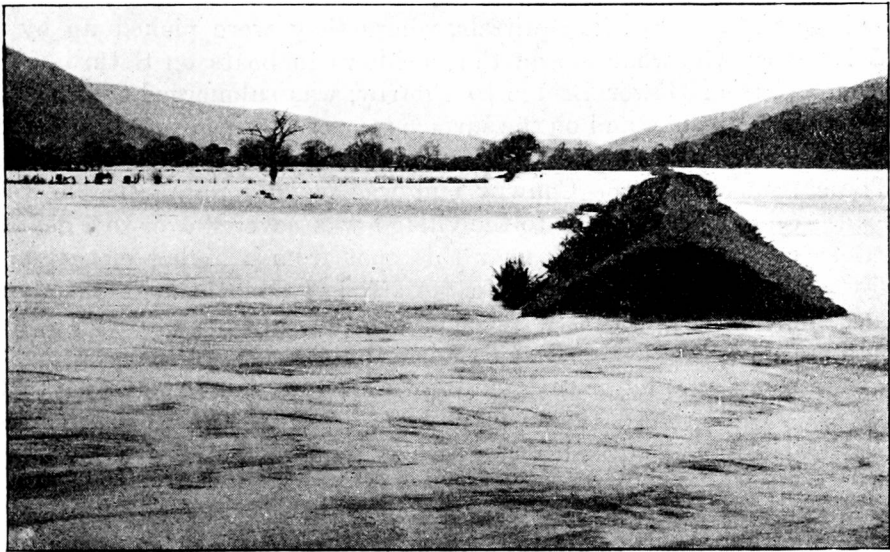
#### DECEMBER.\*

13th—14th.—*Burton, Hoar Cross* (VI). A gale, blowing trees down in all directions.—*Llanrwst* (XI). Great flood on River Conway. The

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\* See also *Met. Mag.*, January, 1913, pp. 240, 251.

water rose to within a yard of the top of the arches of the old bridge, and many roads and fields were under water. The accompanying



*Photograph by A. T. Hughes.*

FLOOD AT LLANRWST, DECEMBER 14TH, 1912.

photograph shows the appearance of the valley.—*Conway Valley* (XI).

“Guarding the lowlands of Trefriw is a formidable embankment, standing some 17 feet above the river, and about three miles in length, said to have been erected by Sir John Wynne, centuries ago. The farmers in the park-like valley regard this rampart with so much confidence that they seldom adopt the precautionary measure of driving their sheep into the uplands when Dame Conway is in her tantrums. On Friday night, rendered exceptionally dark by the rain and the gale, the flood reached to within a few inches of the top of the embankment, and on a straight stretch, some 300 yards below Gower Bridge, the water commenced to trickle through a mole-run in the embankment, and gradually enlarged the opening. About midnight a portion of the embankment fell. Through the breach the Conway thrust her surplus burden with the result that the gap in a very short time was enlarged to an opening 25 yards long. The water drove its way through this in immense volumes, and fell into the valley with a roar that roused the residents of the Spa. The flood appears to have advanced over the valley like a tidal wave, sweeping everything into its folds that lived or was movable. At Trefriw men turned out half-dressed, and listened to the advancing flood, and drove what animals they could reach into safety. Several men mounted horses, breasted the flood, and rescued sheep which were drowning in the hedges. Boats were also requisitioned, and men readily risked their lives in succouring all the stock they could . . .

“Out in the darkness scores of drowning sheep bleated for the help which could not be afforded them, and when the morning dawned, the heads of the animals—dead in most cases—could be discerned in the bushes on the

hedges. Others which still exhibited life were rescued by means of boats. When the flood had receded a little on Monday, scores of carcasses of sheep littered the hedges . . . Hundreds of rabbits left their burrows, and took shelter on the top of the hedges, and when the flood attained that height climbed up the bushes like squirrels, where they were picked up by the scores by those who went out on the meadows in boats on Saturday . . . Gower Road, from Gower Bridge to Trefriw, was submerged to the height of the top of the hedge, and on the surface tons of turnips from the adjoining fields were mixed up with gates, doors, and other debris.

"The entrance from the Conway end was equally impracticable, while the road leading from Gwydyr to the village was covered over to a depth of several feet. Those watching near this spot from a higher elevation, on Sunday, viewed an unique spectacle. A strong gale lashed the waters into considerable waves, and as they raced each other in billows across the inundated meadows they crashed against the high stone wall separating the fields from the road, and soared yards overhead to fall in sheets into the flooded road, while the spray and foam flew high on the wings of the gale to the wooded slope of the hills beyond."—*North Wales Pioneer*.

16th.—*Loch Awe, Ford* (XV). Shower of large H stones measuring from  $\frac{3}{8}$  to  $\frac{3}{4}$  inch.

20th.—*Perth* (XVI). River Tay in flood. Gauge indicated 14.04 feet at the Perth Bridge, which level has not been attained since 7th February, 1894. The flood level was maintained for about 40 hours.

20th—21st.—*Kenmore* (XVI). River in high flood. Loch Tay rose over piers higher than any time for 11 years.

23rd—24th.—*Newmarket-on-Fergus* (XX). Gale; wind blowing about 70 miles per hour.

23rd—28th.—*New Valley* (III). Floods all down the valley.

23rd—31st.—*Blaby* (VII). Extensive floods.

24th.\*—*Willey Park* (VI). Terrific R storm, with H and strong gale, lasting about 7 minutes.—*Goldsborough Hall* (IX). A heavy storm of wind, with R and T, between 1.30 and 2 p.m.—*Ushaw College* (X). A very strong wind from the S.W. brought a deposit of salt which was observed upon the windows facing S. and S.W. This is a very rare occurrence here, for the salt must have been carried from the west coast for a distance of at least 60 miles.—*Isle of Man* (XI).

"A south-westerly gale . . . did considerable damage in the Isle of Man. Several roofs were partially stripped and the plate-glass fronts of some shops were blown in. The steamer *Douglas*, which left Liverpool for Douglas with mails and 250 passengers, occupied nearly eight hours in making the passage which usually takes half that time."—*The Times*.

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\* See also *Met. Mag.*, January, 1913, p. 243.



—*Damfries* (XII).

“The flat roofs of a block of six new houses which are in course of completion were blown off, and carried with them part of the wall and the upper storeys.”—*The Times*.

—*Castle Forbes Gardens* (XXI). A hurricane from 11.30 a.m. to 1.30 p.m. did a vast amount of damage in the forests. Many trees were broken into matchwood where they gave way about 6 to 10 feet from the ground. Many were blown down by the roots giving way owing to the sodden state of the ground.

25th.\*—*Torquay, Roby Hall* (V). Exceptionally heavy gales broke over Torquay at night with little or no warning. About 11 p.m. the sky was clear and the bar. 29.80 in. (corrected). By 5 a.m. there was a terrific gale and the bar. had fallen .66 in. —*Skibbereen Rectory* (XX). Bar. fell 1.1 in. in 12 hours.

25th—26th.—*Milford-on-Sea, Salt Grass* (II). A gale and R on 25th were followed by another gale on 26th, which brought an extraordinarily high tide at “second high-water.” For two hours this garden was 1 to 3 feet deep in salt water, and the violence of its rush carried away a fence in 3 places, and washed plants quite, and fruit trees almost, out of the ground. It rose with wonderful speed. No doubt the cause was the second tide meeting the ebb of the first and the land water from the heavy rains.—*Porchester* (II). Fierce gale from S. and S.E. Part of sea bank broken away.

26th.\*—*Dibden* (II). Gale with heavy T. For three days it blew violently, causing high tides to rise and flood some of the ground floors of houses at Hythe,  $1\frac{1}{2}$  miles from here. No great damage to buildings.—*Warsash* (II). Strong S.W. gales causing a very high tide in Southampton Water and the Solent. The streams, swollen by the heavy R, were unable to escape, and the meadows were quickly flooded. Some bullocks were nearly drowned, being extricated with difficulty.—*Alverstoke* (II). Terrific southerly to south-westerly gale, and the highest spring-tide recorded for 20 years.—*Creech Grange* (V). TS with one vivid flash of L about 10 a.m., accompanied by a heavy H storm, and followed all day by an unusually violent south-westerly gale.—*Littlebredy* (V). Violent S.W. gale. L and T from 6 to 7 a.m. About 200 trees were blown down in Dry Wood about 1 mile to E.—*Parkstone* (V). A very rough day, L, T, R and H stones as big as marbles; some measured 2 inches round.—*Ashburton* (V). Great S.W. gale, uprooting many fine elms and pine trees.—*Teignmouth*,

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\* See also *Met. Mag.*, January, 1913, p. 243.

*The Shrubbery* (V). Very violent squalls occurred during a gale from S.W. ; breaking off large branches, blowing down trees and doing other damage.—*Rousdon* (V). Great gale commenced about 4.30 a.m. and continued for 12 hours. At 6.30 a.m. the wind blew at 61 miles per hour, and at 11.30 a.m. 55 miles per hour.—*Coker Court Gardens* (V). At 6.40 a.m. a cyclone passed over these gardens and broke down a large cedar tree which was probably over 100 years old, and many other trees besides.—*Loch Eck, Benmore* (XV). Great gale. Hundreds of large trees blown down. Some that must have stood for hundreds of years were snapped through 20 feet up and the roots left standing.—*Glanmire, Lota Lodge* (XX). Severe gale from 3 to 8 a.m., with much T and L.—*Fethard-on-Sea* (XXI). A violent S.E. gale between 5 and 6 a.m., with R, H, L and T. A large tree was struck by L at Tintern Abbey in this parish, and a labourer's cottage was wrecked near Wexford.

27th.\*

29th.—*Raunds* (III). Main street flooded to a depth of 3 feet from 2 to 5 a.m. Much destruction to shops and houses.

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\* See *Met. Mag.*, January, 1913, p. 243.

## NOTES ON THE YEAR, 1912.

(Notes on the months are included in those on the year.)

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When an average is referred to in these Notes without a statement of the number of years on which it is based the figure should not be accepted as necessarily comparable with the average of any other station.

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### ENGLAND AND WALES.

#### DIVISION I.—LONDON.

SYDENHAM, LETHEN GRANGE.—The most remarkable feature of the year was the *topsy-turvy* character of April and August. Not a single drop of R here in April, not a single rainless day in August.—*G. F. Chambers.*

LEWISHAM, LIMES GROVE.—The features of the year were the exceptionally severe spell of frost and S from February 2nd—5th, the extremely early spring and protracted drought in April, and the abnormally wet summer. August was the wettest month of the year, with low temp. throughout and cold winds. This was followed by a lovely autumn with unusually high temp.—*G. E. Dacey.*

WEST KENSINGTON, EDITH ROAD.—R 4·07 in. above the average, and the wettest year since 1903. The wettest August in 30 years' record, and the driest April. Absolute drought of 24 days, from April 10th to May 3rd. Partial drought of 41 days, from April 1st to May 11th. Mean temp. 51°·3.—*G. Searle.*

ST. PANCRAS, CAMDEN SQUARE.—The R of each of the first three months was above the average, the excess being greatest in January, which, with 4·08 in., was the wettest January in the 55 years' record, excepting only January, 1877, which had 4·74 in. April was unprecedentedly dry, no other April having had R so low as ·04 in., and only one month, February, 1891, with ·01 in., having a smaller total. After April no other month but August had R differing from the average by so much as 1·00 in. May, July, September, October and November, had all less than the average amount, whilst June, August and December, had more than the average. August, with

4·89 in., was 2·54 in. above the average of that month, and the wettest month of the year. August, 1881, had exactly the same R, and only in 1878 and 1879 was the R in August greater. At the end of August the aggregate R was 3·46 in. above the eight months' average, and at no time in the year was this difference exceeded. The total R of the year was 2·74 in., or 11 per cent., above the average of 50 years. The number of rain days was 17 above the average of 50 years, the greatest divergence from the average being in April and August, which months had respectively 10 below and 12 above the average number. There were two absolute droughts; for 18 days from April 10th to 27th, and for 16 days from September 12th to 27th. There were also two partial droughts; from April 1st to May 11th, 41 days with ·41 in. of R, and from August 30th to September 27th, 29 days with ·28 in. There were no rain spells, the longest period of successive rain days being 13 days from August 14th to 26th. The duration of R was 516·2 hours, or 89·3 hours above the average of 31 years, and the greatest in that period, except in 1903 and 1909. January, with 88·8 hours, had the greatest R duration of any month of the year, and of any January in 32 years' record. August came second with 66·2 hours, which exceeds all previous August records. The duration in April, 1·6 hour, was the lowest ever recorded in that month, and, excepting February, 1891, with 1·0 hour, the lowest of any month in the record. The duration reached 12 hours or more on 4 days, the greatest being 19·5 hours on January 17th. The total duration of sunshine was 1179·8 hours, and was the lowest in the 9 years over which the sunshine record extends. April was by far the most sunny month, with a duration of 218·7 hours. Not one of the first three or the last three months of the year had so much as 100 hours of sunshine, and January, February, November and December, had each less than 30 hours, January having least with only 19·7 hours. There were 40 successive days with recorded sunshine from March 24th to May 3rd, and 30 successive days from May 8th to June 6th, but in January 17 days from 10th to 26th were sunless. There were in all 102 sunless days in the year. The total evaporation from a free water surface amounted to 14·95 in., or ·73 in. below the average of the preceding 27 years. Mean temp. exceeded the average in every month but August and September. Temp. was consistently low in both these months, the mean temp. being 4°·4 and 3°·6 below the average respectively. August was the

coolest month of that name in the 55 years' record, and only in 1877, when the mean temp. of September was exactly equal to that in 1912, was September so cool. August was also the first month with mean temp. below the average since April, 1911. December was unusually mild, the mean temp. being  $45^{\circ}\cdot8$ , or  $6^{\circ}\cdot1$  above the average, and the highest for December in the record, with the single exception of December, 1868, when the mean was  $46^{\circ}\cdot0$ . The mean temp. of the year was  $50^{\circ}\cdot9$ , or  $0^{\circ}\cdot9$  above the average. Frosts occurred in the screen on 27 days, and on the grass on 60 days. The latest spring frost was on April 12th in the screen, and April 30th on the grass; the earliest autumn frost was on October 5th in the screen, and September 27th on the grass.—*Hugh Robert Mill, F.R.Met.Soc.*

## DIVISION II.—SOUTH EASTERN COUNTIES.

### SURREY.

LYDEN CROFT [EDENBRIDGE].—Well I know the bitter public complaint of the year's wetness, a complaint founded entirely upon the unfortunate incidence of R upon days set apart for public outdoor games—and to a certain reasonable amount of flooding over land neighbouring the rivers and the watercourses of the country. But in the record of 32·58 in. I find nothing of extraordinary occurrence, and my belief is that such occasional years of excessive moisture greatly benefit the country, and merit grateful thanks rather than repining.—*C. Planck.*

HASLEMERE, HAZELHURST.—R 10·03 in. above the average of 22 years, and with the exception of 1903 the greatest on record. Except in April, May and November, the R of every month was above the average. April was the driest month with ·04 in. on one day, and August the wettest with 6·50 in. on 29 days. On the four days, September 29th—October 1st, 4·92 in. fell, the wettest four days on record. There was skating from January 30th to February 5th.—*T. P. Newman, F.R.Met.Soc.*

CHURT, FURZE HILLS.—A wet and mild winter was followed by a very dry April and May, during which period there were severe frosts at night. In spite of the heavy summer R vegetation never made headway, showing the effect of a spring drought. The night temperatures during July and August were very low. A remarkable feature was the September drought.—*Clements G. O. Bond.*

WITLEY, THE MOUNT.—March, August and December each had over 4 inches of R. March, usually reckoned a dry month, had the largest R. April, a notably “showery” month, had only .02 in. on one day, and this month had the only summer weather of the year, with the exception of a few days in the middle of June. There was a little S in February and March, but the spring was not very cold; there was no really hot weather, and the absence of sunshine was a feature of 1912. There was a very cold fortnight in September, but November and December were mild.—*Juliana Foster, F.R.Met.Soc.*

FARNHAM, CHARLES HILL.—On the whole a wet and sunless year, with low summer temp., the thermometer after July 27th not once reaching 70°. April was a delightful month, and to a less degree most of September, but the whole summer, with the exception of part of July, was more or less wet. April was the driest month recorded during the 11 years that observations have been taken, one slight shower, .01 in., alone falling. September promised to be almost as dry, but at the close of the month there was heavy R. There was a good deal of fog in the autumn, and the latter part of the year was mainly dull and wet.—*M. Oliver.*

FARNHAM, SHORT HEATH LODGE.—With the exception of the first four or five days of February the winter was extremely mild. In April there was absolute drought from 10th to 30th inclusive, with brilliant sunshine. The summer was generally rainy, overcast and chilly, until September, which was again a remarkable month. Absolute drought from 2nd to 28th, then in the remaining three days 3.02 in. of R fell. Autumn, except the first half of October, which was beautiful, was generally rainy and overcast and very cold at times. December was generally mild and overcast, with frequent drizzling R.—*Geo. Chrystie.*

WEYBRIDGE, STATION ROAD.—The R was the greatest since 1903, although April, with .06 in., was one of the driest months on record. August was the wettest month, with 5.61 in. September was very dry till the end, when falls of 1.40 in. on the 29th and 1.10 in. on the 30th brought the fall to over the average. The mean temp. for the year was 50°·0. August was abnormally cold, with a mean of 57°·0. There was practically no fog during the year, and with the exception of a few days between January 27th and February 5th no winter cold. The only warm period was from July 11th to 19th.—*H. K. G. Rogers.*

CHERTSEY, OTTERSHAW.—The total R exceeded the average of the past 20 years by about 5 inches, in spite of a practically rainless April and a deficiency in May. The excess was particularly marked in June and August, but the most noticeable feature of the year was absence of sunshine and consequent lack of warmth.—*R. H. Otter.*

### KENT.

TENTERDEN, VIEW TOWER.—The wettest year since 1877. All the winter months were mild, dull and wet, March especially until after 23rd, when a partial drought set in, lasting till May 31st, 69 days with only .63 in. April was almost as dry as in 1893, but not so sunny nor nearly so hot. The heavy June R was very welcome, and only two days went over summer heat. July was dry, with over a week of hot weather in the middle. August was quite the wettest August in 50 years. September, though cold and not very fine, was very dry to the last two days, when 1.30 in. fell on 29th and 1.67 in. on 30th, a total for two consecutive days only equalled once in 50 years, on September 3rd and 4th, 1884. October had more sunshine than August and September, but was wet after 19th. November was dull and December also, with a wet Christmas and high temp., the mean being 45°. Year's sunshine 1675 hours. Hop crop fairly good and profitable, apple crop very large and prices low.—*J. Ellis Mace.*

ST. PETER'S.—An abnormally dry April and May, and an abnormally wet August, especially after the 22nd, 3.32 in. out of 5.26 in. of R falling during the last nine days of the month. In September no R fell from the 14th to the 28th, but 2.08 in. fell on the 29th and 30th. There was a white frost on August 20th. The greatest number of rain days since I began to measure in 1892.—*H. C. V. Snowden.*

TONBRIDGE, BROOKLANDS.—The wettest year since 1903. Mild, open weather from January to March, with the exception of January 27th to February 5th, when severe frost prevailed. April was a record dry month. The summer was severe, and August was the wettest month of the year. September was fine and dry though cold till 29th and 30th, when nearly 3 inches of R fell, bringing the total for the month much above the average. The closing months were very mild and muggy. Absence of sunshine was the outstanding feature of 1912.—*G. J. Kimmins.*

BROMLEY, LANSDOWN ROAD.—My record in Kent commences in 1869, and April is the first month recorded in which no R fell. In August 5·36 in. fell, and this is the largest fall for August recorded by me.—*C. A. Case.*

### SUSSEX.

FUNTINGTON.—An extraordinary year, characterized by dry weather in April, May and September, and all the other months wet, extremely so in August, when we had rain on 29 days. The artesian well never ceased to overflow during the year. The only really hot days were in the middle of July.—*J. A. Greenwood, F.R.Met.Soc.*

BRIGHTON, DITCHLING ROAD.—The R for 1912 was greatly above the average, and really more remarkable than the record year of 1903, as this year had the whole of April without R. There were droughts in April and September, and a rain spell in December. August was the wettest month, with a total of 6·60 in., which has not been exceeded since the year 1891.—*G. B. Hamlin.*

HEATHFIELD, THE WHITE COTTAGE.—A very mild spring with vegetation much advanced. A cold and wet June. A cold and wet August, the highest temp. being 67° and the R 8·25 in. A dry September, but with 3 in. of R on 29th and 30th. December extremely mild. Primroses out by the 1st of the month, and at Warbleton Church, two and a half miles from here, upwards of 40 bunches gathered in the neighbourhood were used in Christmas decoration.—*J. F. Leigh Clare.*

### HAMPSHIRE.

TOTLAND BAY, ASTON HOUSE.—The R was 6·95 in. above the average of 26 years, and for the twelve months ending on October 2nd the R amounted to 43·27 in. The total sunshine for the year amounted to only 1548·4 hours, our average for the year being 1771 hours. January, February and December, gave records of 39 and 33 hours only; the smallest amounts I have ever recorded for each of these months.—*John Dover, F.R.Met.Soc.*

CHRISTCHURCH, WINKTON LODGE.—A wet, cloudy year, with little sunshine and low temp. The sunniest and the driest month was April, and the wettest month was August. Heavy R at the end of September prevented that being the driest month.—*Jane Lassell.*



FORDINGBRIDGE, OAKLANDS.—This year's weather was one of record-breaking, having had the wettest March, the wettest June, the wettest August, and the wettest year of the 38 during which the rainfall has been taken here.—*Sidney B. Rake.*

HYTHE, HEATHFIELD, DIBDEN.—In April there was only 10 in. of R, which, being followed by an ordinary fall in May, was a great check to the hay crops and to the straw. This being followed by an unusually wet June when the grass was cut caused an immense loss to farmers. One near here was 100 tons short in crop, representing a loss of £500. In addition to this the remainder of his crop was so damaged that it was only fit for feeding cattle. In August there was a fall of 4.00 in. more than the average, and this being just at harvest time caused heavy losses, a great deal of wheat being only fit for feeding pigs. The straw, instead of being 3 ft. to 4 ft. high, was not more than 2 ft., and in some places even less. The R for the year was 9.48 in. above the average.—*Jesse Reeves.*

STOCKBRIDGE, ASHLEY.—The intermittent Somborne commenced flowing towards the end of December, 1911, from Tanner's Pond. Towards the end of March there was a decided flow between Rookley and Little Somborne, which during the first few days entered a "swallow" at Little Somborne and reappeared some hundred yards lower down, but later became a connected stream. This upper and exceptional flow continued for nearly a month. About the 26th July, in spite of a fall of upwards of 6 in. of R during June and July, the stream ceased running from Tanner's Pond. It recommenced at that point however about a month later, though only to continue for a few days. On 14th November it started definitely to flow once more at Tanner's Pond, but the rise was very gradual until about the 21st December, from which date the volume of water augmented very rapidly. The rise of the wells a mile or more distant corresponded exactly with that of the stream.—*Legh S. Powell.*

BISHOPS WALTHAM, HILL PLACE.—R 9.05 in. above the average for 36 years. There were two periods of complete drought in April and September. April was the driest month in the 36 years, with the exception of February, 1891, when the fall was the same, viz., .04 in.—*W. A. Daubeny.*

PETERSFIELD, DITCHAM PARK.—The first three months were wet, April was exceptionally dry, August very wet, and September very dry, except for the R on the last three days, which amounted to 3.99 in. On the morning of October 1st there was much flooding on

the low ground on the north side of the Downs. There were two absolute droughts, viz. : April 10th to 30th, 21 days, extending to a partial drought lasting from March 24th to May 6th, 44 days with  $\cdot 34$  in. of R ; and September 4th to 27th, 24 days. There were two rain spells : March 8th to 25th, 18 days with  $3\cdot 38$  in, and August 2nd to 26th, 25 days with  $7\cdot 13$  in.—*Charles J. P. Cure, Pres.R.Met.Soc.*

LISS, HIGHFIELD.—On the whole the features of the year were the too heavy R and the moderate temperature with little of either great cold or great heat. The winter was remarkably mild, the only really cold weather being from January 26th to February 5th. The latter half of April was also moderately cold. The only really hot weather was in July, especially from 14th to 18th ; the rest of the summer was remarkable for R, especially during June and August. In April there was scarcely any R, and September also was very dry until the last three days, when about 4 in. of R was recorded. December was very wet.—*J. S. Gamble.*

UPTON GREY, HODDINGTON HOUSE.—One of the worst farmers' years known since 1879 in north Hants. I do not know of a single farm that has done well.—*Basing.*

### BERKSHIRE.

WANTAGE, GINGE MANOR.—The most remarkable feature was the drought in March and April, which, starting on March 24th, was broken only on the 31st by a fall of  $\cdot 17$  in., and in April by a fall of  $\cdot 06$  in. on the 9th. The summer was wet and cheerless, the worst month being August, with only 4 days on which no rain was recorded. September was dry but cold.—*Gertrude Elliot.*

LONG WITTENHAM, MANOR HOUSE.—This was the first occasion since 1851, when the register began, in which there has been a month with no rain. This happened in April.—*W. R. Clutterbuck.*

### DIVISION III.—SOUTH MIDLAND COUNTIES.

#### MIDDLESEX.

MILL HILL, THE HOLLIES.—Bright sunshine was recorded on 269 days with a total duration of  $1369\cdot 7$  hours. April with  $247\cdot 8$  hours was the brightest month and the only month with more than 200 hours. The greatest duration of sunshine on any one day was  $13\cdot 5$  hours on July 15th. The total duration of R was  $549\cdot 7$  hours. January with  $88\cdot 5$  hours had the greatest monthly duration, August

coming next with 72·8 hours. In April the duration was only 1·5 hour and this was the only month with less than 25 hours duration of R. There were 22 days' absolute drought, from April 10th to May 1st, and a partial drought from April 1st to May 3rd, 33 days with ·15 in. of R. There were no rain spells, the longest period of consecutive rain days being 13, from August 14th to 26th.—*Frances Mill, F.R.Met. Soc.*

ENFIELD, CARISBROOKE.—The character of the year was one of persistent rainfall rather than of flood rains. Except the two days (29th and 30th September) which gave respectively 1·28 in. and 1·07 in., no day gave over ·69 in.—*John McEwan, F.R.Met.Soc.*

### HERTFORDSHIRE.

WATFORD, WEETWOOD.—The R was about 4 in. above the average; April was almost unprecedently dry, having ·07 in. in two days, and August excessively wet, with 5·48 in. on 27 days. Absolute drought of 23 days ended May 2nd; partial drought of 41 days, with ·34 in. of R, ended May 11th.—*John Hopkinson, F.R.Met.Soc.*

ST. ALBANS, COUNTY MUSEUM.—Mean temp. of year was 0°·5 above, and the R about 7 inches above, the average of 24 years; in April about one twenty-fourth of the average fell, and in August more than double the average; absolute drought for 23 days ended on May 2nd.—*John Hopkinson, F.R.Met.Soc.*

### BUCKINGHAMSHIRE.

SLOUGH, UPTON.—Generally a much overcast and very damp year with winter temp. consistently above the average and summer temp. below it. The only cold periods were a week in February, the months of August and September and the early part of October. The year 1912 contained the least number of frosty nights for many years. It also had the lowest annual total duration of sunshine yet recorded here. January, November and December were especially sunless months. The deficiency of 117 hours in the year would have been much greater had not a record duration been reached in April. The R in this district, which was abnormally heavy in August, was six inches in excess of the average for the year. Trees and herbage had an opportunity of recovering after the prolonged droughts of 1911, and wells of getting replenished. April was exceptionally dry, however, and so was September until the 28th.

Save for these breaks the R of the year was remarkable more for its continuity than for heavy falls. Little fog was experienced except in the early part of October. The fall of the leaf was very early, and the autumn tints of the foliage unusually striking. Towards the close of the year land became waterlogged and roads suffered much.—*Richard Bentley, F.R.Met.Soc.*

HEDSOR.—Very mild and generally wet for the first three months, excepting for an intensely cold spell from January 27th to February 6th, when frost prevailed both day and night. Continuous drought with harsh north-easterly winds during April and the early part of May, and many destructive frosts. A very wet cool summer followed, the rains of August being of a torrential character. A dry September was succeeded by a further spell of R, the autumn being generally wet and very mild, especially at the close of the year. The R was 8·17 in. above the average of 1890-1909. Absolute droughts April 11th—May 3rd, 23 days, September 6th—September 27th, 22 days; partial drought April 1st—May 14th, 44 days; R ·41 in. No rain spells.—*Boston.*

SPEEN, SAUNDERTON.—The year was remarkable for the spring drought, the month of April being entirely rainless with bright sunshine nearly all the time. Instead of about 2 feet of grass in mid-May there was hardly any, and it looked as if there would be no hay crop at all, but the heavy warm showers during June saved the situation.—*H. R. McCarthy.*

### OXFORDSHIRE.

ISLIP.—During August the lower part of this village, which is situated on the River Ray which runs into the Cherwell at the western end of the village, was flooded. No August flood has ever been known here before, nor one so high as that in August for many years past.—*Geo. E. Eliot.*

CAVERSHAM, RECTORY ROAD.—The wet weather which marked the autumn of 1911 was continued during January and resulted in extensive flooding of the River Thames. A cold snap set in at the end of January and lasted till the 6th of February. March was unusually wet, but April was fine and dry, and the R amounted to only ·03 in. May was pleasant, but June, July and August hardly deserved the name of summer. The only week of warmth was from July 12th to 18th, and by way of contrast the shade maximum on the 19th was as low as 58°. September was mostly dry but on the

29th 1·60 in. of R fell. October, November and December were unsettled, with flooding of the Thames at the close of the year, but in a less degree than in January.—*W. Simpson.*

#### NORTHAMPTONSHIRE.

CRANFORD, WOODFORD HOUSE.—A sharp spell of frost occurred at end of January and beginning of February, the ice on the lake freezing to a thickness of three inches, giving a pleasant week's skating. R above the average, principally owing to the very wet August; the fall for that month amounting to 7·42 in. June and July had large totals, that of the former being 3·64 in. and of the latter 4·83 in. These three wet months coming together made it an easy matter for the floods at the latter part of August to attain to the proportions they did, considering the saturated state of the ground.—*E. N. Plevins, F.R.Met.Soc.*

#### BEDFORDSHIRE.

CRANFIELD SCHOOL.—The first quarter brought nothing extraordinary, but April proved the driest month for years. The few hot days in July were followed by an abnormally wet August, and yet what looked like a spoiled harvest was prevented by a fine September and October. The almost entire absence of frost during November and December favoured the growth of wild flowers so that sufficient primroses might have been obtained from the local woods for Christmas decorations.—*Alfred Death.*

#### DIVISION IV.—EASTERN COUNTIES.

##### ESSEX.

GREAT LEIGHS, LYONS HALL.—The greater part of the excess rainfall this year fell in August, and harvest operations were seriously affected, much grain being damaged. Consequently farmers who suffered in this district from drought in 1911 had to suffer from the opposite cause in 1912.—*J. H. Tritton.*

FINGRINGHOE, BALLAST QUAY FARM.—January was a mild, wet month, and was followed in the first six days of February by a fairly sharp frost, after which the weather turned mild. March was a real disappointment to farmers, R falling on no less than 21 days. April was mild and favourable for growth, and proved much the driest month of the year. May was a warm growing month

throughout, and corn crops generally presented a fairly good appearance when it closed. R slightly exceeded the average in June, and haymaking was somewhat interrupted. A burst of heat occurred from 10th to 18th July, but the harvest all through August was hindered by showers. September proved a fairly fine month, and what remained of the harvest was eventually secured in a much damaged condition. After October 1st the weather was pretty fine until 27th. November gave an average R, and the remainder of the year was mild and wet.—*T. B. Grubb.*

### SUFFOLK.

IPSWICH, ROOKWOOD, COPDOCK.—Undoubtedly the feature of the year which will be longest remembered was the atrocious weather of August and September, especially the former month with its unprecedented storms. Other months presented abnormal records, most noteworthy perhaps being the brilliant cold October and the still more unusually warm December, with only one night in which the temp. fell below 32°, and no fewer than eight days on which it rose above 50°. There were only 29 days in the whole year when frosts were observed in the screen. Duration of sunshine 1525·2 hours.—*F. L. Bland.*

GREAT GLEMHAM.—The heavy fall and number of wet days in August has not been equalled within the last 21 years. The scant fall of R in April was not equalled in the past 21 years, except in 1893, though nearly approached in 1906. It quite spoiled the hay crops and stunted most of the corn. That which survived was swamped in August, resulting in the threshed corn losing about 35 per cent. of its weight.—*A. Bloomfield.*

BURY ST. EDMUNDS, WESTLEY.—The year is remarkable for the great R of August, the total of which month was 8·29 in. This is the greatest fall in any one month since the record commenced in 1856. This August R did incalculable damage to the harvest. The year was cold, with great deficiency of sunshine.—*Robert Burrell.*

### NORFOLK.

NORWICH, CHRISTCHURCH ROAD, EATON.—January and March were wetter than usual, but there were only seven days with S in January, four in February, none in March, and two in April. The latter month and May were exceedingly dry, the combined fall for the two months having been only an inch and a quarter, or

considerably less than the average of either month. From June to October, with a break in July, it was very wet, but the terrific fall of R which occurred on August 25th and 26th so eclipsed all the other wet days of the rainy summer that they sink into insignificance. The total R for August was 11·27 in., or 3·35 in. more than in our previous wettest month, November, 1878, the date of the previous Norwich flood.—*Arthur W. Preston, F.R.Met. Soc.*

KENNINGHALL.—A mild winter with the exception of a very cold snap at the beginning of February. An abnormally cold and wet summer with an exception of one week of tropical heat in the middle of July, followed by miserably cold and wet weather with a deluge and floods in August. The beginning and middle of October were fine. November and December were wet and very mild with spring flowers blooming in the gardens.—*A. B. Smith.*

#### DIVISION V.—SOUTH WESTERN COUNTIES.

##### WILTSHIRE.

SALISBURY PLAIN, SHREWTON.—A very early spring, and a cool damp summer, resulted in a very long nesting season for birds, broods being hatched both much earlier and much later than usual. Perhaps the most notable feature of the year was the long cold period, August to October, the mean temp. of the three months being more than 4° below the average.—*F. J. Wardale.*

##### DORSETSHIRE.

BEAMINSTER.—The R of 1912, 47·79 in., is exactly 10 inches above the average.—*F. Trotman.*

WIMBORNE ST. GILES, ST. GILES HOUSE.—A remarkably rainy year. Mean temp. 49°·8. Duration of sunshine 1,472 hours.—*W. E. Axford.*

##### DEVONSHIRE.

LEE MOOR CLAY WORKS.—The R was 80·40 in., the heaviest recorded for over fifty years, the average for that period being 58 in. The next largest fall was 79 in. in 1879.—*T. Martin.*

POLAPIT TAMAR [LAUNCESTON].—Wet, sunless year. The R of August was the heaviest for that month in 43 years' record, and the total for the year was 11·02 in. above the average of the previous 42 years.—*R. C. Cooke.*

TOTNES, BERRY POMEROY.—The R which fell between 7 a.m. and 7 p.m. amounted to 23·25 in., and between 7 p.m. and 7 a.m. to 26·15 in.—*C. Barran*.

SIDMOUTH, SIDMOUNT.—The wettest year we have had with the exception of 1872 since our record began in 1870.—*C. M. Radford*.

PETROCKSTOW, HEANTON SATCHVILLE.—The R was 9·73 in. above the average of 22 years. The most notable feature of 1912 was the absence of sunshine, there being 139 days without any, and only 27 clear cloudless days; 11 of the latter occurred in the month of April. The heavy R of June was disastrous to the hay crop. Crops were good and heavy, but little was saved in good condition, and much rotted on the ground. The same must be said of the corn crops, owing to August R. Little or no sound corn was saved, and great waste occurred, the crops being laid and twisted and much grown.—*Alf. Fames*.

#### CORNWALL.

NEWQUAY.—More R and less sunshine than in any of the previous 20 years. August had more R than any month in 20 years, but had less than December, 1876. Temp. below the average.—*U. C. Vigurs*.

TRURO, BOSVIGO.—Very wet year. The extraordinary amount of R in August accounts in great measure for the excess, the three falls during that month of 1·60 in., 1·80 in., and 1·35 in., being most unusual. Other places in the neighbourhood had even larger falls. April was very dry and so was the greater part of September.—*Constance L. Rashleigh*.

#### SOMERSET.

EDINGTON.—By far the wettest year recorded in 23 years. August, with 9·65 in. of R, was the wettest month of 23 years; October, 1891, being next with 7·75 in. The moors at the end of August were flooded, an event which people 80 years of age cannot remember. Hay was being cut and carted in October till the wet weather recommenced and put a stop to further work, and many acres were never cut at all.—*A. C. F. Luttrell*.

CLEVEDON, OLD STREET.—With the exception of 1882 the R for 1912 was the highest on record, and was 11·06 in. above the average for the 40 years 1870-1909.—*Jos. Harger Pye*.

MONTACUTE, ODCOMBE RECTORY.—The wettest year on record, surpassing 1879, 1903 and 1910. With R 13 in. above the average, making for the past three years of 1910, 1911, 1912, a total R



nearly 21 inches above average for the three years. No March dust and no April showers, and August the wettest month of the year.—*Hubert Cornish.*

BRIDGWATER.—The year will be remembered in these parts for a very cold February, a fine and warm April, and a dry and cold September. July and August were wet and cold, in fact, many of their days were colder than some in December. The beautiful spring that raised our hopes merged into one of the wettest summers on record. The most remarkable feature of the year has been its great electric disturbances.—*H. C. Salmon.*

MINEHEAD, MARIANSLEIGH.—The year was remarkable for the unusually warm spring and winter; no frost being registered in the screen after February 6th, for the remainder of the year. June, August and September had temp. considerably below the average, and there was a slight deficiency in July and October. March, June and August were extremely wet, more than 5 in. of R falling in each month and 7·13 in. in August. Vegetation was very advanced in the early spring and also at the close of the year, when roses, fuchsias and sweet peas were in flower. Elders, honeysuckle and some elms were leafing in the latter half of December.—*T. F. Twist.*

#### DIVISION VI.—WEST MIDLAND COUNTIES.

##### GLOUCESTERSHIRE.

QUEDGELEY HOUSE.—The wettest year since 1872 when the R was 42·12 in., but the summer months were much wetter in 1912.—*J. Curtis Hayward.*

GLOUCESTER, BELGRAVE ROAD.—The heaviest year's R in Gloucester for 30 years and 12·92 in. above the average. There was an absolute drought of 18 days, April 13th—30th, and a partial one of 30 days, August 30th—September 28th. April, September and November were dry months, the rest wet. Much T and L in June, July and August.—*W. Piffe Brown.*

CHARLTON KINGS, THE GRANGE.—The wettest year since 1882. More R fell in August, 1912, than in any other month of which I have a record. August was also an unusually cold month; on August 2nd the ther. registered 3° of frost at night.—*E. M. Heberden.*

##### HEREFORDSHIRE.

WOOLHOPE, THE HYDE.—The R for the months of June, July and August was the highest recorded in Herefordshire since observa-

tions began in 1818, for the corresponding three months. I ought to say I have only records for this station since January 1st, 1892. But I have tables giving records for Dewchurch, Titley and Ross, Herefordshire, giving monthly R for the 73 years, and for this station for 21 years. The total for this June, July and August was 16·49 in., against 14·15 in. in 1839 and 14·05 in. in 1879. The year's total has been surpassed in several previous years.—*J. A. Thompson.*

WHITNEY-ON-WYE.—The principal feature of the weather was the abnormal R and the damage done by it during the harvest time. Much hay was entirely spoiled. The Wye was in flood in August, and it was said to be the worst flood for many years. The summer season was sunless and wet.—*W. Burgess.*

BODENHAM.—The August flood did much damage to river banks, more especially in the Teme below Leintwardine where the course of the river was altered in several places.—*R. C. Bailey.*

LEDBURY, ORCHARDLEIGH.—The wettest year during the 39 years I have registered R at Ledbury.—*Miles A. Wood.*

### SHROPSHIRE.

LUDLOW, ASHFORD HOUSE.—The R for 1912 was greater than in any year but 1903 in the last 21 years. The average yearly R had been reached by the end of August, and the big total for the year raised the average by half an inch. January, March, June, August and December produced 122 rain days and 26·55 in. of R. The August R of 8·16 in. has only been beaten by 8·34 in. in October, 1907. There were two fairly dry spells of weather, April had only ·14 in. of R, none falling from April 13th to May 1st, a period of 19 days. No R fell for 14 days, from September 14th to 27th, and had it not been for ·60 in. on September 29th we should have had a partial drought from September 1st to the middle of October, the first 28 days of September having only ·26 in. of R.—*W. D. Hall.*

### STAFFORDSHIRE.

WALSALL, BROCKHURST FARM.—R 8·13 in. above the average of 22 years. The R for August was 6·41 in., and a record for any month during the 22 years.—*J. Taylor.*

MAYFIELD HOUSE.—The year was wet and sunless almost throughout. There was an absolute drought of 22 days in April. The winter months were warm and the summer cold, only one day

exceeding 80° in the shade. Duration of sunshine 1153·1 hours. Mean temp. 46°·6.—*G. C. Lawson.*

### WORCESTERSHIRE.

UPTON-ON-SEVERN, WILLOW BANK.—The highest R I have recorded for 30 years. There was a flood on the rivers Severn, Avon and Teme, in August, causing a large amount of damage to hay crops. These rivers have been on the eve of flooding several times during the year.—*J. Selwyn Cowley.*

MOSELEY, CHANTRY ROAD.—The greatest R since 1882, and 8·24 in. above the average of 35 years.—*G. F. Lyndon.*

### WARWICKSHIRE.

BIDFORD, MOOR HALL.—Heavy R occurred in January and June, and also in August, when the fall amounted to 7·21 in. August was also remarkable for its cold, sunless weather. December was remarkable for its mildness, having a mean temp. 1°·8 higher than November.—*E. H. Cubberley.*

FOXFORD SCHOOL.—Owing to the constant R the river Sowe was frequently flooded. In 21 years I have never known this happen so often before. An important footpath used by many people is, unfortunately, taken from use by these floods.—*Arthur F. Smith.*

## DIVISION VII.—NORTH MIDLAND COUNTIES.

### LEICESTERSHIRE.

BELVOIR CASTLE.—The wettest year since 1882, when 36·04 in. were recorded, and only exceeded three times since the records commenced in 1855. April only gave ·26 in., being the driest April recorded here. The total of 5·57 in. for August is the highest record we have for that month. December was the warmest since 1900. Total sunshine 1258·8 hours; 76 sunless days.—*W. H. Divers.*

### LINCOLNSHIRE.

LOUTH, WESTGATE.—Only in 1880 and 1883 during the last 40 years has more R fallen than during 1912.—*Fred. Fawcsett.*

NORTH SANDSFIELD.—Very wet summer. Here in the valley of Trent hundreds of acres of land were flooded in July and August. The river Trent overflowed its banks, and waterfowl were swimming between the potato rows.—*J. Creed.*

**NOTTINGHAMSHIRE.**

**HODSOCK PRIORY.**—The year was exceptionally wet and dull, with an unusual absence of warm days, a great contrast to its predecessor. The total R was larger than in any of the previous 36 years, except 1880, when we had 34·94 in. The total sunshine, 944 hours, was 312 hours less than the average, and 121 hours less than in 1888, hitherto our dullest year. Summer was confined to about 10 days in July, while August and September were unusually cold, and October rather so. However, as the remaining months were mild, March and December being unusually warm, the mean temp. of the year was well above the average.—*H. Mellish, F.R.Met.Soc.*

**DERBYSHIRE.**

**BELPER, QUARRY BANK.**—R 9·00 in. above the average of 36 years, and, excepting 1882, the wettest year in that period.—*John Hunter, F.R.Met.Soc.*

**DIVISION VIII.—NORTH-WESTERN COUNTIES.****CHESHIRE.**

**MACCLESFIELD, THE PARK.**—The R was 1·84 in. above the average of 32 years. Except during the latter part of January and the first week in February, there was very little frost, and a meagre amount of S throughout the year.—*John Dale.*

**LANCASHIRE.**

**BLUNDELLSANDS, MYRA.**—Absolute drought of 22 days from April 10th to May 1st. Partial droughts from September 9th to October 12th, 34 days, with ·27 in. of R, and from April 1st to May 4th, 34 days, with ·26 in.—*Hugh Montgomery, F.R.Met.Soc.*

**HAMPSON-IN-ELLEL.**—Owing to continuous R and the absence of sunshine, the hay harvest was not completed until the last week in September, a later date than has been known for very many years. For the seventh successive year the R exceeded the average.—*W. G. Welch.*

**ST. MICHAELS-ON-WYRE VICARAGE.**—The wettest March ever recorded here. The driest April since 1893 when the R was ·33 in. There was a drought of 21 days from April 10th to 30th. R fell on 36 of the 40 days, July 26th to September 3rd. The R of the whole year was 14 per cent. above the average.—*P. J. Hornby.*

## DIVISION IX.—YORKSHIRE.

## WEST RIDING.

BOLTON HALL.—1912 will be long remembered (unless the present or future years should prove to be worse, which Heaven forbid !) not so much for its total R, which is not much out of the ordinary, as for the large total of 223 rain days, accompanied as they too frequently were by cold sunless weather, causing most unpleasant conditions of almost constant saturation. Following three very wet months, April was too dry for vegetation. R was anxiously looked for till well into May, when it was welcomed. Since then the R was endured with varying degrees of patience.—*Fred. Scrivener.*

MELTHAM, HAREWOOD LODGE.—R 18 per cent. above the average, and the wettest year since 1903. Rain days 10 per cent. above. Nevertheless there were two absolute droughts of 19 and 20 days, an unusual length in this district. Temp. slightly above the average. August and September were most exceptionally cold, the former also being the wettest but one in 30 years; December was very mild, but not so warm as December of 1898 and 1900; the Decembers of the last three years have all been warmer than the corresponding Novembers. Sunshine very deficient, the sky being constantly veiled with thin cloud during the summer, so that it was impossible to do any astronomical work. TSS more frequent than usual, with one severe on July 12th.—*Charles Lewis Brook, F.R.Met.Soc.*

SOWERBY BRIDGE, THE HAUGH END.—From June 1st to August 31st, a period of 92 days, '01 in. or more of R fell upon 72 days. The total R of 19·17 in. for the three months is the heaviest fall I have recorded for three consecutive summer months since my records commenced in January, 1869. Upwards of 1·00 in. of R in 24 hours occurred on five days—*J. Selwyn Rawson.*

## NORTH RIDING.

WEST WITTON, IVY HOUSE.—January was a mixture of S, thaw, mist and slush in about equal proportions; the first few days of February were very wintry, a min. temp. of 9°·9 in the screen being recorded on the 4th. The next fortnight was generally milder with mist almost every day; the remainder of this month and all March were decidedly unsettled. All April and the first fortnight of May

were very droughty, the growth of vegetation being greatly retarded. The remainder of May, all June, and, with the exception of a few fine days in the second week, July also, formed a succession of wet days. August was likewise, and fully one-third of the hay hereabouts was totally spoiled, it being certainly the worst haytime here in living memory. September and October were more seasonable. November was on the whole a mild and open month, though we had gales on 25th and 26th, and S on 29th. December was mild and open with frequent gales and much R. A noteworthy number of salmon were caught in this locality owing to the comparatively swollen state of the river.—*Jas. B. Espiner, F.R.Met.Soc.*

THORNTON-LE-DALE.—Very rainy autumn. In November some fields between here and Malton lying 7 ft. under water for many acres.—*Ethel M. Priestman.*

#### DIVISION X.—NORTHERN COUNTIES.

##### DURHAM.

SUNDERLAND, WEST HENDON HOUSE.—The R was 4·06 in. above the arithmetical average and 4·40 in. above the geometrical mean for the 46 years 1860-1905. June was the wettest month with 4·65 in., and April the driest with ·20 in., which is the driest April I have recorded. On no rainfall day in the year did the fall reach 1·00 in. S fell on 19 days in the year, the max. depth of 4 inches being attained on February 3rd and 4th. The duration of time that R fell was somewhat above the average. The N., S.E. and S.W. winds during the year were decidedly more than usual, and there was a very noticeable deficiency of W. winds. This may have been partly, at least, the cause of the great amount of R. There was a great excess of N. winds in July. The wind force was much above the average in November and December. There was far more than the ordinary amount of cloud in the year. In January there were five consecutive days completely overcast, namely, from the 14th to the 18th inclusive, this being the longest duration that I have observed when at home since 1866.—*T. W. Backhouse, F.R.Met.Soc.*

##### NORTHUMBERLAND.

TYNEMOUTH, PERCY PARK.—Duration of sunshine 1025·3 hours on 263 days.—*J. Edward Burnett, F.R.Met.Soc.*

**CUMBERLAND.**

COCKERMOUTH, BROUGHTON GRANGE.—The R for 1912 was only ·07 in. in excess of that of 1911, but R fell on 44 more days in 1912 than in 1911, and only three times in the last 40 years has the number of rain days been exceeded. A very stormy summer and constant S.W. gales in November and December.—*G. S. Wilson.*

WHINTHWAITE, SEASCALE.—R 5·04 in. above the average of 23 years.—*Robert Hellon.*

**WESTMORLAND.**

AMBLESIDE, RYDAL FARM.—With the exception of April, May and September, which were fine and dry months, the great peculiarity of the year was the absence of sunshine. The only really hot weather was between July 12th and 23rd. December was one of the most dark and depressing months I remember, and its R was only exceeded during the last ten years by that of March, 1903, when R fell on 31 days and totalled over 16 inches.—*Ralph Fletcher.*

**DIVISION XI.—MONMOUTH, WALES AND THE ISLANDS.****MONMOUTHSHIRE.**

ABERGAVENNY, LARCHFIELD.—The R is the highest since 1872, when it registered 52·20 in. The heavy R during June, July and August, combined with a low temp., was disastrous to many of the crops.—*J. Glendinning.*

**GLAMORGANSHIRE.**

FONMON CASTLE.—R 12 in. above the average for the past 28 years. The R in August, 10·63 in., was the highest total for any month I have ever recorded, and the R for June is the highest for that month that I have ever had. There was a remarkable absence of bright sunshine. The summer was cold and miserable—the winter abnormally warm, with the exception of a very cold spell for a week in February, when the cold was more severe than we have had for the past 15 years.—*O. H. Jones.*

**PEMBROKESHIRE.**

HAVERFORDWEST, PORTFIELD.—A wet year, the total R being 10·27 in. above the average of 64 years. April, May and September, were dry, but the summer months were wet and cold, and in

September frost was recorded on five nights. April was the sunniest month, producing 208·3 hours of sunshine, and the total for the year was 1396·3 hours. Crops of all kinds were good, but much hay was spoiled by the wet. Corn was also damaged, and some fields never ripened at all.—*J. W. Phillips.*

### DENBIGHSHIRE.

DENBIGH, GARN.—R 3·86 in. above the average of 28 years. The wettest June since 1891, the wettest July and August for at least 28 years, and altogether the wettest and coldest summer on record.—*W. D. W. Griffith.*

### CARNARVONSHIRE.

ABERSOCH.—The peculiarity of the year was the very dry period from 1st April to 6th June inclusive, 44 rainless days out of 67, and on only seven days did ·10 in. of R fall. In August there was a series of depressions, each accompanied by heavy R. We had six days in the year with more than an inch of R.—*W. H. Winterbotham.*

### GUERNSEY.

ST. MARTIN'S, LES BLANCHES.—The spring months were very mild and slightly wet, and were followed by a very cold, sunless and excessively wet summer, and a cold and wet autumn. The summer six months, April to September, taken as a whole was a period of remarkable unseasonableness, the climax of which was reached in August when 7·43 in. of R fell. An absolute drought of 22 days' duration began and ended respectively on April 11th and May 2nd, and a partial drought of 33 days ran from April 1st to May 3rd.—*Basil T. Rowsell.*

### SCOTLAND.

#### DIVISION XII.—SOUTHERN COUNTIES.

#### WIGTOWN.

WHITHORN, CUTROACH.—The weather of 1912 has been a great contrast to 1911 in most ways. There were a few hot days about St. Swithin's, but the end of July and the whole of August were cold, wet and stormy. September and early October were fair and chilly, and most valuable for harvesting. With the exception of a



sharp spell of frost in the end of November, the closing months of the year were very mild.—*J. G. Martin.*

### KIRKCUDBRIGHT.

AUCHENCAIRN, TORR.—A favourable spring, but a cold, wet and sunless summer. A remarkably fine September enabled the majority of Scotch farmers to secure their grain crop in excellent condition. From October to the end of September wet and blustering weather, with the exception of the last week of November, which was very wintry.—*Walter Ovens.*

### DUMFRIES.

DALTON, WHITECROFT.—The R in April and May was unusually small, and, in consequence, it was a record grouse year in the south-west of Scotland. Owing to almost continuous rain after 9th June, when the partridges were hatching, fully 90 per cent. of the young birds died.—*W. Maitland Heriot.*

### ROXBURGH.

MELROSE ASYLUM.—R 3.01 in., and rain days 12, above the average of 30 years.—*A. C. Pattman.*

## DIVISION XIII.—SOUTH EASTERN COUNTIES.

### BERWICK.

COLDSTREAM, LOCHTON.—Very severe frost at the end of January and beginning of February. March was a fairly good month, and April, excepting very severe gales on the 6th and 8th, was an excellent month. May was dry until 15th, when much needed R fell. June, July and August, were very wet and unsettled. September was wet at the beginning, but fine from 4th to 28th. October was wet at the beginning, fine in the middle, and wet during the last week. Very hard frost round the last week in November, preceded by gales. Frost at beginning of December, with slight S; a very windy, unsettled month.—*John Aitchison.*

### LINLITHGOW.

BO'NESS, GRANGE.—A remarkably good year for farmers. All the crops were got in in good order during the dry harvest weather of September. Two crops of good hay were won also. There were two wet days on 29th and 30th September, after three weeks

without any R. No R fell to 13th October, and very little till 23rd, so that the later districts got their crops all in also before that date. The only wet month was December.—*H. M. Cadell.*

#### DIVISION XIV.—SOUTH WESTERN COUNTIES.

##### LANARK.

BIGGAR, CAMBUS WALLACE.—The R was under the average, but the conditions were cold. The prevailing wind was E., and there was a decided want of sunshine. The early spring months were good, and sowing was done early. The harvest was plentiful, and was nearly all secured by the middle of September.—*T. W. M. Watson.*

#### DIVISION XV.—WEST MIDLAND COUNTIES.

##### STIRLING.

BUCHLYVIE MANSE.—Dry periods were short, rainy periods many and long. From July to end of year there was a marked absence of sunshine, so much so that the cereal crops ripened slowly, and the dry period in September was lost for harvesting. With R less than the average for 23 years in January, April, May, July, August, September and November, the total R, owing to the large amounts of the other months, was a little over the average. June had no dry day, and December was mild, almost sunless, very wet, and the stormiest December experienced for many years.—*John A. Macdonald.*

##### ARGYLL.

HOLY LOCH, ARDNADAM.—The first three weeks in January were very wet. February, after five cold days, was alternately wet and fine. March was wet and gloomy with R on 28 days. The first week of April was wet and windy, but in the last three weeks only 44 in. of R fell. A dry and sunny May was followed by a wet, cold and unsettled June. July was sunny, August dull and sunless, and in September the first week had storms of wind and R, but the last three weeks were fine and dry. October was dull, wet and mild. November was fine in the first 23 days, followed by three days of heavy R storms and then wintry weather. The R in December, 21.58 in., beat all previous records in any month, the nearest approach being 16.50 in. in October, 1862.—*J. Cairns Mitchell.*

MULL, QUINISH.—After a series of very hard frosts, from January 13th to February 13th, with some slight S, the weather

of 1912 improved very much. After an ordinary March, April and May were unusually mild and fine. It was the earliest and best spring I have ever recorded since my first observations in 1874. June was cool and rather wet, but in July, though the R was heavy when it came, an unusually heavy hay crop was secured in perfect condition. September, except for the first five days, was an ideal harvest month. The weather broke on October 10th and from then to the end of November the R was very persistent. Throughout December it rained and blew from S. to N.W. without cessation. A very good year from an agricultural point of view.—*James N. Forsyth.*

#### DIVISION XVI.—EAST MIDLAND COUNTIES.

##### PERTH.

COUPAR ANGUS.—The R exceeded the average by 4·95 in., and mean temp. 45°·7, slightly exceeded the average.—*John Robertson.*

##### FORFAR.

ARBROATH, DISHLAND HILL.—The past year will be memorable chiefly on account of the exceedingly small R during the month of April, the dulness of the summer months with their scant sunshine, the heavy R at the end of September, and the violent storms of November and December. The average R for the past 23 years was 22·90 inches.—*James Campbell.*

MONTROSE, SUNNYSIDE ASYLUM.—At the time of the coal strike in the spring a period of mild weather prevailed, so that after the tea kettle was in order one could get along nicely of an evening without a coal fire. September turned out a nice dry month until near its close when there was a heavy R on the 30th retarding the harvest, which was got into the stack yard on the whole in good order all along the north-eastern seaboard of Forfarshire. A wet time occurred in October causing hindrances to the lifting of the potato crop. Temp. was low at the close of November and the beginning of December.—*John Masson.*

#### DIVISION XVII.—NORTH EASTERN COUNTIES.

##### ABERDEEN.

LYNTURK MANSE.—The year was notable for (1) a great and

prolonged gale in January, lasting more or less for six days, 13th to 18th, and attended by loss of life at sea greater than for many years; (2) a drought in April and May; (3) good harvest weather in September and October; and (4) very exceptional frost for six days, from 27th November to 2nd December.—*James B. Duncan.*

#### DIVISION XVIII.—NORTH WESTERN COUNTIES.

##### INVERNESS.

DRUMNADROCHIT.—R 3·38 in., and rain days 2, above the average of 27 years.—*Angus Grant.*

GLENELG MANSE.—The year has been very dry, with the exception of the last two months, which were most boisterous and wet throughout. The gales during these months were exceptionally severe and continuous, and only one dry day was recorded.—*A. MacLaggart.*

FORT WILLIAM, ATHOLL BANK.—The R for December, 20·81 in., was somewhat remarkable both for its continuity and heaviness. The month's R was more than two and a half times the average, and considerable damage was done to roads and railways. Muggy, mild conditions prevailed throughout almost the whole month, and for a great proportion of the period the air was saturated.—*W. T. Kilgour*

##### ROSS.

PLOCKTON.—The most strongly marked feature was want of sunshine. The only summer weather was in July from 13th to 23rd. Even when the weather was comparatively warm there was scarcely any sunshine. The last three months of the year were exceptionally wet, and throughout the year there was very little quiet weather. The autumn and winter months especially showed a constant succession of heavy gales.—*C. P. Anstruther Mackay.*

#### DIVISION XIX.—NORTHERN COUNTIES.

##### CAITHNESS.

CASTLETOWN, THE CLETT.—Great lack of sunshine. A late harvest. Moderately dry weather during corn cutting time, but very wet immediately after. Crops lay in stook on fields for weeks, blackening much of the straw and destroying the heads.—*John Calder.*

## IRELAND.

## DIVISION XX.—MUNSTER.

## CORK.

MALLOW, SUMMER HILL.—A year of exceptionally constant R, several long periods of consecutive daily R being experienced, viz., 25 days in March, 21 in August, and 31 in December. Total R 2·93 in. above the average for 23 years. The number of days on which measurable R fell constituted a record here.—*J. F. Williamson.*

## KERRY.

DARRYNANE ABBEY.—R 10 per cent. above the average of 30 years.—*D. O'Connell.*

## CLARE.

NEWMARKET-ON-FERGUS, FENLOE.—Except for a wonderful dry September and the driest April during 16 years, it has been a wet, bad year.—*S. C. Hickman.*

BROADFORD, HURDLESTOWN.—A very wet year, the R being above the average in seven months, just the average in one month, and under the average in four months. There was, however, a remarkable partial drought in September—October of 36 days, during which only ·27 in. was recorded. There had not been a partial drought here since 1896. The wet and cold summer ruined nearly all the crops. Hay was nearly impossible to have, and but for the dry September there would have been hardly any. Potatoes were the worst crop for many years, and in many places they were not worth digging.—*W. A. Bentley.*

## DIVISION XXI.—LEINSTER.

## WICKLOW.

BRAY, FASSAROE.—Early spring wet. Two days' skating in February. From July 20th to August 29th, 11·09 in. of R fell, and there is no such record for 63 years in the same number of days. Late hay crop damaged in consequence. December was remarkable for windy days and frequent R.—*R. M. Barrington, F.R.Met.Soc.*

## CARLOW.

HACKETSTOWN RECTORY.—The most remarkable features were the dry months of April, May and September. The R during the wet summer months was more remarkable for its persistence than its amount, so that a summer which was universally denounced as

the worst we have had for 20 years, really fell short of the R of others which have enjoyed a better reputation. For instance, the amount for August was 5·52 in., compared with 7·94 in. in 1910. There was a week of severe frost from January 28th to February 5th, when for four days the temp. did not rise above 32°, but practically none otherwise. T was only heard twice during the summer.—*C. S. S. Ellison.*

#### KING'S COUNTY.

TULLAMORE, ST. CATHERINE'S.—With the exception of April, May and September, the year was wet and cheerless. There was little or no summer weather. April was fine and mild. May was also fine but cold, with frequent frost at night. September and the early part of October were very fine and dry, and E. and S.E. winds prevailed during that period.—*R. S. Craig.*

#### DUBLIN.

RATHMINES, LEINSTER ROAD.—Absolutely the worst year in my record. Except from January 27th to February 5th, when a rather sharp frost prevailed, wintry conditions were entirely absent. The remainder of February and March were abnormally mild, with almost constant R. April was the only really fine month. May was fine but cool. There was absolutely *no* summer. From June 1st to September 4th the sun never once shone in a clear sky. August was the dreariest and most miserable month in living memory. The max. temp. of this dismal month was only 66·2°, and during the whole year 70° was exceeded on only six occasions! September was almost rainless, but cloudy and cool. The nearest approach to summer conditions occurred in the first fortnight in October, some days being remarkably brilliant. The rest of the autumn was of the usual cyclonic type. December again failed in its reputation as a winter month, its mean temp. being 43·3°. A succession of gales, without heavy R, brought a wretched year to a close.—*E. H. Cannon.*

#### DIVISION XXIII.—ULSTER.

##### CAVAN.

COOTEHILL, ERRIGLE.—The spring here was early, chestnut trees being in full bloom the first week in May, some two weeks earlier than usual. It was the coldest August I can recollect. We had fires going all day and every day, and wore winter clothing. The chestnuts and sumach trees had all their autumn tints, and the

crows returned to my rookery at the end of August instead of October as usual.—*T. H. Moorhead.*

#### MONAGHAN.

MONAGHAN, ROWANTREE HOUSE.—The year had the heaviest R and coldest summer for many years. The months of June, July and August, were particularly wet, cold and unfavourable. September was by far the driest and warmest month, and had the greatest amount of sunshine. The later months of the year were, generally speaking, cold, wet and windy, but frost or snow did not prevail to any great extent.—*J. Campbell Hall.*

#### DOWN.

WARRENPOINT, THE MANOR HOUSE.—A wet year, and with low temp. Three months, April, May and September, were comparatively dry, the latter being the driest month here for years. High winds prevailed towards the end of the year.—*A. W. Mansergh.*

#### ANTRIM.

BALLYMENA, HARRYVILLE.—The wettest year here for 36 years.—*J. R. Williams.*

#### TYRONE.

OMAGH, EDENFEL.—The R for January, April, May and September, was below the average, but in all the other months the average was exceeded. The summer was wet and cold. A fine spell of three weeks in September was a godsend to farmers, but although a quantity of oats ripened, in some places I saw stooks of oats still out in December.—*J. B. Buchanan.*

#### DONEGAL.

FANAD, TAMNEY RECTORY.—The three most noticeable features of 1912 were, in order (a) its sunlessness ; (b) its wetness ; (c) the extraordinary vagaries in the monthly temperatures. During all the summer months, except for a few days in July, gloom ruled supreme. June was excessively wet, and a more miserable season than the summer was, after July 26th, cannot be imagined. Fair, cold and dull weather, which set in on September 17th, saved the harvest, but on October 12th an extraordinarily rainy period followed, and from that date until the end of the year it was only twice rainless for 48 consecutive hours. Gales were severe in the autumn. Curiously enough the mean temp. for this most dismal year was 47°·8, the same as that of its beautiful predecessor.—*A. C. Digby French.*

## THE DISTRIBUTION OF RAINFALL IN TIME.

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UNDER the general heading of the Distribution of Rainfall in Time, we include the discussion of the frequency of rain days during the year in different parts of the country, and that of the occurrence of runs of rainless or rain days as indicated by Droughts or Rain Spells.

The day referred to is the "rainfall day," or period of twenty-four hours commencing at 9 a.m. Whenever the amount of rain recorded for this period reaches  $\cdot 01$  inch or more the day is termed a "rain day"; when it fails to reach that lower limit, the day is regarded as a rainless day, even though some few drops may be found in the receiver of the rain gauge. In the whole of the section on the distribution of rainfall in time the discussion rests on the examination of records made on this uniform plan.

A few Observers insist on registering rainfall at midnight, and a larger number read at some forenoon hour other than 9 a.m., and these records are necessarily excluded from consideration in this section. Observers who do not visit their rain gauges every day without exception, and those whose gauges do not admit of measurements to  $\cdot 01$  inch, also cannot supply records suited for this purpose, though the monthly and annual total amounts may be quite satisfactory. There are, we are happy to say, thousands of records which fully satisfy the requirements set out above, and most of these are used in the consideration of the number of rain days; but in order to obtain a uniform distribution of stations throughout the British Isles, it is found necessary to select only a few of the many in the more thickly represented districts in order not to over-represent these districts in relation to the more sparsely gauged parts of the country. One hundred thoroughly trustworthy daily rainfall records, fulfilling all the requirements mentioned, and as far as possible equally spaced over the country, are therefore selected for more complete analysis. These stations are approximately 40 to 50 miles apart. The accompanying index map shows their positions. We have, as far as possible, utilized the same records as in previous volumes; but every year, from one cause or another, a few changes are necessary. It





## RAIN DAYS IN 1912.

IN *British Rainfall*, 1911, we discussed in some detail the distribution of average number of rain days over the country, and prepared for the purpose a map showing the results based on the averages of about 100 stations for a period of 20 years. This map and the general averages deduced from the data may be regarded for the present as the standard, by means of which we are enabled to compare the results during any particular year with those of other years, and for convenience of reference we reproduce the map. This should be compared with the map of the distribution of number of rain days during 1912 which faces it. In drawing the latter, we have supplemented the 100 selected records by plotting the numbers of rain days at about 1,000 other stations, and the lines of equal number of rain days are thus considerably more detailed than in the average map. The general results for the countries in Table I. are,

TABLE I.—*Number of Rain Days, 1903-1912, compared with the Average of 1892-1911.*

Year.	ENGLAND & WALES. Average 187.			SCOTLAND. Average 216.			IRELAND. Average 223.			BRITISH ISLES. Average 204.		
	Rain Days.	Diff. from Aver.	Per cent. of Aver.	Rain Days.	Diff. from Aver.	Per cent. of Aver.	Rain Days.	Diff. from Aver.	Per cent. of Aver.	Rain Days.	Diff. from Aver.	Per cent. of Aver.
1903	211	+24	113	244	+28	113	252	+29	113	229	+25	112
1904	188	+ 1	101	219	+ 3	101	231	+ 8	104	206	+ 2	101
1905	186	— 1	99	222	+ 6	103	221	— 2	99	203	— 1	100
1906	192	+ 5	103	226	+10	105	231	+ 8	104	210	+ 6	103
1907	203	+16	109	232	+16	107	240	+17	108	218	+14	107
1908	189	+ 2	101	221	+ 5	102	228	+ 5	102	206	+ 2	101
1909	195	+ 8	104	216	0	100	209	—14	94	204	0	100
1910	209	+22	112	221	+ 5	102	233	+10	104	218	+14	107
1911	175	—12	94	209	— 7	97	202	—21	91	191	—13	94
1912	212	+25	113	228	+12	106	235	+12	105	222	+18	109

however, deduced from the selected stations only. A glance at the 1912 map is sufficient to show that the year was one of considerably more than average rain day frequency. In the average map it will be seen that normally rain falls on so many as 200 days only in the

TABLE II.—*Number of Rain Days in 1912.*

STATION.	COUNTY.	Jan.	Feb.	Mar.	Apr.	May.	June	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Total.	Total Rain-fall.	Amount per Rain Day
ENGLAND & WALES.																
St. Pancras, Camden Square ...	London ...	2	17	20	3	9	19	12	25	6	15	16	18	180	27·88	in. .15
Tenterden, View Tower ...	Kent ...	1	20	20	3	10	17	13	28	8	16	17	21	194	33·30	in. .17
Brighton, Ditchling Road ...	Sussex ...	3	18	24	0	12	16	12	27	6	15	17	22	192	37·31	in. .19
Totland Bay, Aston House ...	Hampshire ...	1	19	25	1	10	18	15	27	3	19	14	21	195	35·24	in. .18
Petersfield, Ditcham Park ...	" ...	5	22	24	2	10	21	12	29	5	16	15	24	202	46·03	in. .23
Newport Pagnell, The Croft ...	Buckinghamshire ...	5	19	16	2	12	22	14	25	8	13	11	20	181	30·97	in. .17
Goring, Elmcroft ...	Oxfordshire ...	4	19	18	0	11	20	16	27	7	16	13	21	193	32·86	in. .17
Cambridge, Botanic Gardens ...	Cambridgeshire ...	2	19	14	2	13	18	16	25	9	12	17	22	182	27·29	in. .15
Shoburyness ..	Essex ...	3	20	16	3	10	13	11	20	8	19	15	16	168	20·19	in. .12
Colchester, Hill House, Lexden	" ...	5	21	17	6	12	13	9	23	9	14	17	17	182	24·13	in. .13
Beccles, Sotterley Hall...	Suffolk ...	3	18	15	10	10	15	16	21	13	16	21	19	195	31·06	in. .16
Swaffham, The Paddocks ...	Norfolk ...	4	21	17	8	14	21	15	24	11	15	18	23	207	37·05	in. .18
Salisbury Plain, Shrewton ...	Wiltshire ...	3	22	23	4	13	23	20	27	6	17	16	23	218	36·67	in. .17
Winterbourne Steepleton.....	Dorsetshire ...	3	23	24	4	12	17	16	28	5	18	16	23	214	51·85	in. .24
Ashburton, Druid House.....	South Devon ...	4	21	24	3	11	20	22	28	5	19	13	26	218	66·34	in. .30
Stratton, Poughill ...	Cornwall ...	1	21	21	12	18	21	22	28	8	19	20	25	244	48·03	in. .30
St. Austell, Trevana ...	" ...	2	19	21	9	15	23	21	27	7	19	21	26	234	60·47	in. .26
Angersleigh, Leigh Court ...	Somerset ...	3	22	22	3	14	21	19	28	5	20	17	26	223	45·47	in. .20
Simonsbath.....	" ...	5	22	25	31	15	23	21	29	8	19	23	30	256	83·81	in. .33
Mickleton, Bank House ...	Gloucestershire...	4	19	17	23	16	22	19	27	6	14	13	20	199	33·89	in. .17
Clifton, Pembroke Road ...	" ...	5	21	22	28	13	22	18	25	6	18	19	27	229	46·60	in. .20
Hereford, Holmer Hall ...	Herefordshire ...	1	21	17	24	5	22	18	27	6	21	14	22	210	32·78	in. .16
Shifnal, National School ...	Shropshire ...	4	21	18	22	5	22	18	28	10	15	18	22	213	33·90	in. .16
Mayfield House [Ashbourne] ...	Staffordshire.....	5	23	16	22	14	25	19	24	11	11	18	26	214	41·09	in. .19
Blaby, Whetstone Road ...	Leicestershire ...	4	20	17	19	4	23	19	25	7	11	16	19	195	33·39	in. .17
Market Deeping, Wilsthorpe ...	Lincolnshire.....	2	19	15	17	4	13	18	22	9	11	14	17	181	32·00	in. .18
Spilsby, Ashby Road ...	" ...	4	18	12	17	6	14	19	23	14	15	17	19	196	31·33	in. .16
Worksope, Hodsock Priory ...	Nottinghamshire ...	5	21	15	25	2	24	18	21	8	12	14	16	190	33·45	in. .18
Northwich, Winnington ...	Cheshire ...	2	18	16	24	3	17	23	24	10	19	18	24	212	33·32	in. .16
St. Michael's-on-Wyre Vicarage	North Lancashire...	5	20	16	23	5	18	15	27	8	13	22	26	219	42·15	in. .19
Settle, The Terrace ...	Yorkshire, W.R....	2	23	20	27	8	14	15	23	11	17	22	26	231	50·07	in. .22
Meltham, Harewood Lodge ...	" ...	8	20	22	27	9	17	24	21	9	12	18	24	230	52·19	in. .23
Hull, Pearson Park ...	" E.R. ...	3	19	18	23	4	14	20	23	10	15	16	18	205	33·23	in. .16
Thirsk, Mount St. John ...	" N.R. ...	2	22	17	19	13	23	14	24	13	18	17	14	198	33·48	in. .17

RAIN DAYS.

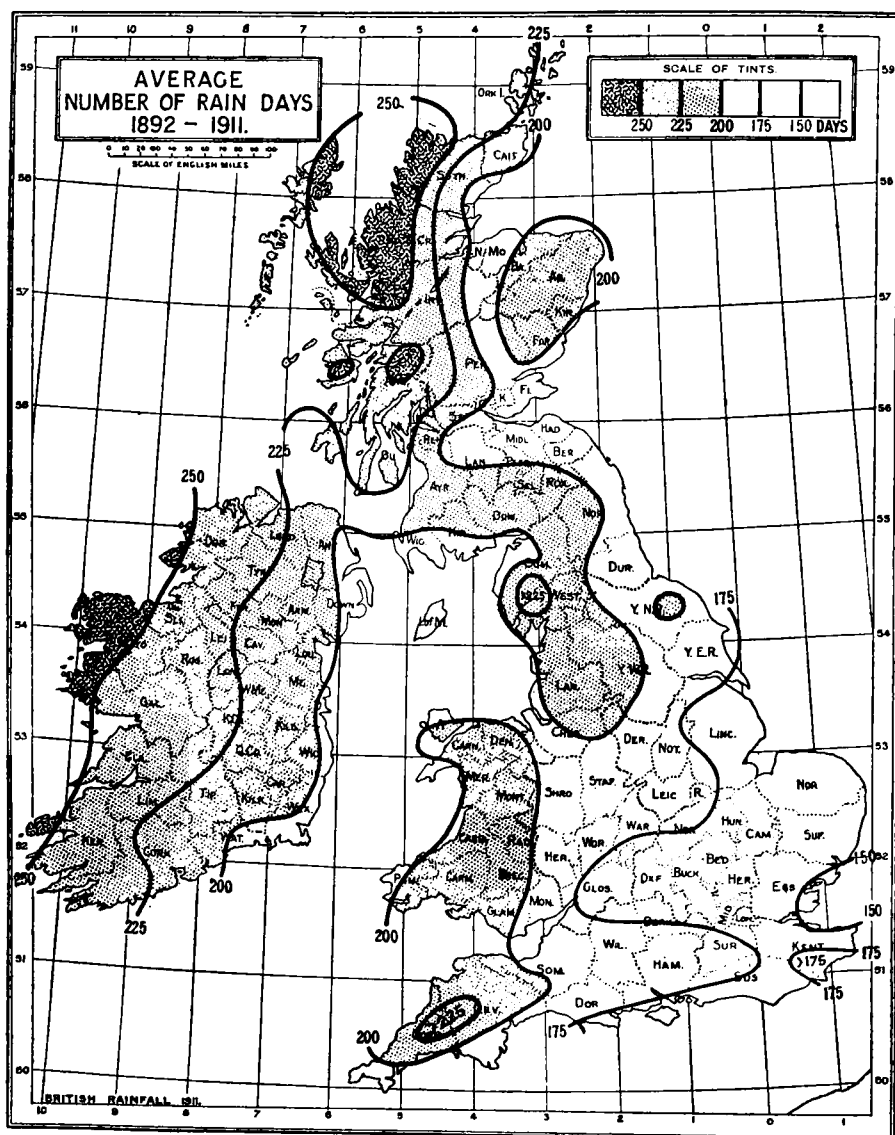
[ 61 ]

TABLE II.—Number of Rain Days in 1912—(continued).

STATION.	COUNTY.	Jan.	Feb.	Mar.	Apr.	May.	June	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Total.	Total Rain-fall.	Amount per Rain Day
[ 62 ]																
BRITISH RAINFALL, 1912.																
ENGLAND & WALES—(con.)																
Scarborough, May Lodge .....	Yorkshire, N.R. .... 5	20	14	24	5	12	21	16	16	12	17	18	13	188	32·47	in.
Sunderland, West Hendon House .....	Durham .....	19	19	21	7	18	26	14	23	10	16	17	15	205	31·01	·17
Haltwhistle, Bellister Castle....	Northumberland ... 2	22	24	29	8	17	25	14	25	11	18	23	24	240	44·75	·15
Ganton Pyke Gardens.....	" ..... 6	23	19	18	7	15	27	17	19	10	20	13	20	208	34·68	·19
Kirkby Stephen, Redman House .....	Westmorland ..... 1	25	23	29	4	16	28	13	23	11	11	16	28	227	50·76	·17
Duncheon Ghyll .....	" ..... 2	22	21	31	12	19	29	17	28	9	16	20	31	255	121·43	·22
Treherbert, Tyn-y-waun .....	Glamorgan ..... 6	22	25	30	9	15	27	22	26	8	19	23	29	255	107·54	·48
Carmarthen, The Friary .....	Carmarthen ..... 2	25	23	29	8	15	25	17	29	8	21	24	29	253	55·47	·42
Fishguard, Goodwick Station..	Pembroke .....	2	19	20	6	10	22	18	25	6	21	24	29	226	43·31	·22
Aberystwyth, Gogerddan.....	Cardigan .....	2	17	19	28	7	14	16	26	9	20	23	28	227	56·75	·19
Birmingham W.W., Tyrmynydd .....	Radnor .....	1	23	24	28	7	26	20	28	11	15	21	30	250	70·49	·25
Lake Vyrnwy .....	Montgomery..... 5	17	20	27	4	11	25	17	25	8	15	18	27	214	56·08	·28
St. Asaph, St. Beuno's College..	Flint .....	2	14	15	22	5	22	16	26	10	14	20	22	197	31·08	·26
Abersoch.. ..	Carnarvon..... 4	19	20	26	7	13	18	14	21	9	19	25	26	217	46·06	·16
Lligwy .....	Anglesey .....	19	21	24	5	14	24	15	22	7	17	20	27	215	35·83	·21
England & Wales .....	(Mean of 49 stations)..	20	19	24	5	14	22	17	25	9	16	18	23	212	44·01	·21
ISLE OF MAN.																
Douglas, Clypse, Onchan .....	Isle of Man .....	19	20	26	11	17	21	16	24	11	20	22	27	234	45·87	·20
SCOTLAND.																
Whithorn, Cutroach .....	Wigtown .....	18	16	23	8	11	21	14	21	9	18	16	24	199	42·16	·21
Jardington [Dumfries] .....	Kirkcudbright ..... 4	18	17	23	7	16	24	16	23	8	18	15	30	215	44·23	·21
Meggat Water, Cramlitt Lodge..	Selkirk .....	24	21	27	9	13	29	15	24	10	21	20	29	242	52·56	·22
Marchmont House .....	Berwick .....	4	22	21	6	8	25	13	20	6	19	15	20	197	31·93	·16
Motherwell, Dalzell Gardens ..	Lanark .....	4	22	17	6	12	26	12	24	9	19	17	25	214	35·21	·16
Dalrymple, Bow Hill .....	Ayr .....	5	22	18	15	19	24	16	25	13	23	21	30	253	55·08	·22
Buchlyvie, The Manse .....	Stirling .....	1	23	18	10	16	30	15	22	13	23	19	30	248	51·87	·21
Rothsay, Glenburn .....	Bute .....	1	21	19	13	17	26	17	22	10	24	24	31	252	59·84	·24
Loch Awe, Ford .....	Argyll .....	6	21	18	14	18	26	16	19	10	24	25	31	249	77·62	·31
Campbeltown, Witchburn .....	" ..... 10	21	19	25	13	14	20	14	23	10	20	24	31	234	57·42	·25
Islay, Eallabus .....	" ..... 14	22	16	24	16	13	24	14	20	11	24	23	29	236	53·99	·23
Mull, Ulva.....	" ..... 14	20	18	26	16	20	24	18	22	13	24	28	30	259	65·38	·25
Cupar, Rankellour .....	Fife .....	3	20	18	3	7	27	12	23	7	17	15	28	199	31·14	·16
Aberfeldy, Dall Avon .....	Perth .....	11	19	22	8	14	23	15	16	6	21	19	28	213	46·44	·22

	Kincardine	16	20	21	5	15	23	9	17	7	19	18	24	194	36·47	19
Fettercairn, The Burn .....	1	16	20	21	5	15	23	9	17	7	19	18	24	194	36·47	19
Cromar, Logie Coldstone School .....	1	23	20	20	10	15	24	12	21	12	20	20	19	216	30·75	14
Peterhead, Mains of Buthlaw .....	4	23	19	22	8	22	18	14	20	14	23	20	18	221	29·08	13
Gordon Castle .....	2	21	14	19	13	16	17	15	22	15	22	22	16	212	29·69	14
Alvey Manse .....	3	13	10	13	9	14	23	10	25	12	21	19	21	190	29·26	15
Fort Augustus, St. Benedict's .....	6	19	18	25	15	20	26	16	21	9	21	27	27	244	50·26	41
Loch Nevis, Inverie .....	12	16	18	26	15	18	20	15	22	9	23	29	28	239	97·53	41
Glenleven, Kinlochmore .....	17	18	20	26	17	18	24	14	21	7	26	24	28	243	111·67	46
Skye, Dunvegan .....	18	16	20	24	16	16	19	12	17	10	24	27	29	230	85·23	37
Glencarron Lodge .....	9	15	20	27	18	18	24	14	20	11	23	29	27	246	95·37	39
Invershin .....	1	13	9	24	12	17	22	12	20	14	22	21	17	203	36·08	18
Loch Stack, Ardchullin .....	5	22	19	27	16	18	16	13	24	16	24	29	27	251	76·50	30
Thurso, Buckies .....	3	25	22	25	14	22	16	18	21	13	22	30	27	255	43·39	17
<b>Scotland</b> .....	(Mean of 27 stations)...	20	18	24	12	16	23	14	21	10	22	22	26	228	53·93	24
<b>IRELAND.</b>																
Skibbereen Rectory .....	6	23	23	29	9	19	23	13	22	9	24	19	31	244	51·15	21
Mallow, Summer Hill .....	9	20	23	30	8	15	26	13	27	11	20	17	31	241	42·14	17
Darrynane Abbey .....	4	22	25	31	15	24	27	21	31	12	26	27	31	292	56·27	19
Waterford, Brook Lodge .....	3	18	19	25	8	9	18	16	25	5	14	12	27	196	42·56	22
Cahir, Bengurragh .....	3	21	22	29	9	17	29	19	27	10	17	20	31	251	43·42	17
Carraigaholt Castle .....	3	17	19	30	13	19	23	16	25	10	21	22	31	246	38·86	16
Broadford, Hurdlestown .....	3	16	17	31	11	14	28	19	26	10	21	23	31	247	42·49	17
Gorey, Courtown House .....	4	19	21	23	4	9	18	16	24	3	15	15	27	194	42·34	22
Abbey Leix, Blandsfort .....	2	17	19	26	8	15	28	18	27	7	21	17	30	233	37·23	16
Dublin, Fitz William Square .....	2	19	18	24	7	19	23	17	23	8	13	14	23	208	27·65	13
Kells, Headfort .....	4	19	16	27	9	15	26	17	23	9	14	15	28	218	37·79	17
Moate, Coolatore .....	1	18	17	27	9	15	26	16	24	8	18	18	29	225	36·70	16
Knockboy House .....	2	14	16	28	12	17	25	16	21	12	22	19	28	230	43·89	19
Woodlawn .....	4	16	19	31	10	15	23	17	23	7	22	25	30	238	39·44	17
Newport, Burrishoole House .....	4	17	19	31	15	14	22	18	24	9	24	25	30	248	51·80	21
Collooney, Markree Observatory .....	2	15	20	29	11	16	24	18	24	12	20	21	28	238	49·05	21
Mohill Rectory .....	5	17	20	28	11	14	22	17	24	11	19	19	30	232	38·39	17
Seaforde .....	2	20	18	19	9	14	24	15	20	10	16	16	28	209	45·56	22
Bushmills, Dundarave .....	3	18	12	23	10	15	21	11	22	8	19	25	29	213	41·46	19
Ballymena, Harryville .....	5	19	20	27	11	17	25	14	27	11	21	24	30	246	53·08	22
Omagh, Edenfel .....	3	16	18	30	12	15	25	16	21	7	20	22	30	232	48·32	21
Fanad, Tanney Rectory .....	2	19	20	29	16	14	24	18	26	14	20	26	31	257	48·89	19
Killybegs .....	5	19	20	30	15	17	25	16	25	9	23	28	31	258	62·23	24
<b>Ireland</b> .....	(Mean of 23 stations)...	18	19	28	11	16	24	16	25	9	20	20	29	235	44·38	19
<b>BRITISH ISLES</b> .....	( " 100 " )...	20	19	25	8	15	23	16	24	9	18	20	25	222	46·79	21

west of England and Wales ; and that a considerable portion of the east of Scotland, and even a narrow strip on the east coast of Ireland, fail to record so many. In 1912, however, the 200 day line passes through the Midlands, coinciding roughly with the normal position of the 175 day line, and also occurs along a portion of the east coast.



The line of 175 days instead of occupying that position appears only at the mouth of the Thames, and in the Vale of York. In Scotland, a strip with less than 200 days occurred on the east coast as far north as Aberdeen, and a small area round the Firth of Forth had also less than that number. In Ireland, fewer than 200 days

occurred only on the south-east coast. Rain fell on more than 225 days over part of the Devon-Cornwall peninsula, over practically the whole of Wales and the Pennine chain, and also over the western half



of Scotland, a few patches of the eastern Highlands, and the whole of Ireland except the east coast. This line was very near the normal position of the 200 day line in England, and slightly west of it in Scotland and Ireland. The rain days reached 250 in a number of the

most rainy places in all three kingdoms ; but the area with more than 250 days was not greatly in excess of the average in Scotland and Ireland. At Darrynane, in the extreme south-west of Ireland, the number of days in the year on which rain was recorded reached the enormous total of 292, leaving only 74, or 20 per cent., rainless days out of the total of 366 days in the year.

Table I. summarises the number of rain days in the year at the 100 selected stations, the full monthly totals of which are set out in Table II. As may be judged from the map, the excess above the average number of days was greater in England and Wales than in either Scotland or Ireland. In England and Wales the general number was 212, the largest number found in any of the ten years for which similar data have been extracted, exceeding even the number in the very wet year 1903 by one day. The more moderate excesses in the rest of the British Isles, however, reduced the general surplus to 18, or 9 per cent. This was exceeded by 7 days, or 3 per cent., in 1903, but is higher than in any other of the ten years.

Table II., in which will be found in heavy type the general average values for each month for the countries separately, makes it clear that the summer months June and August were to a great extent responsible for the large number of rain days recorded during the year ; August, especially in England, having been persistently rainy. March and December were also months of high rain frequency, whilst April and September had few days with rain. There are no general average values at present worked out for the months, but we incline to the opinion that April and September were probably the only months in 1912 during which, over the country as a whole, the number of days with rain was below the average.

The year 1912 was thus characterized by a larger number of rain days for the whole country than any other year since our discussions began, with the single exception of 1903, and for England and Wales even this exception disappears.



## DROUGHTS IN 1912.

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Two classes of Drought are recognised.

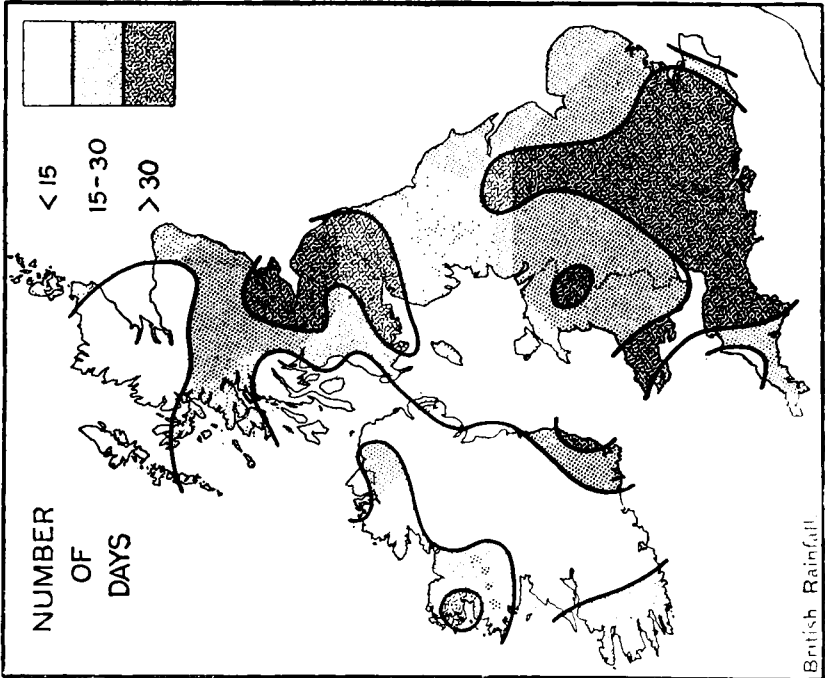
THE ABSOLUTE DROUGHT is a period of *more than* 14 consecutive days no one of which is a rain day.

THE PARTIAL DROUGHT is a period of *more than* 28 consecutive days the mean rainfall of which does not exceed .01 in. per day.

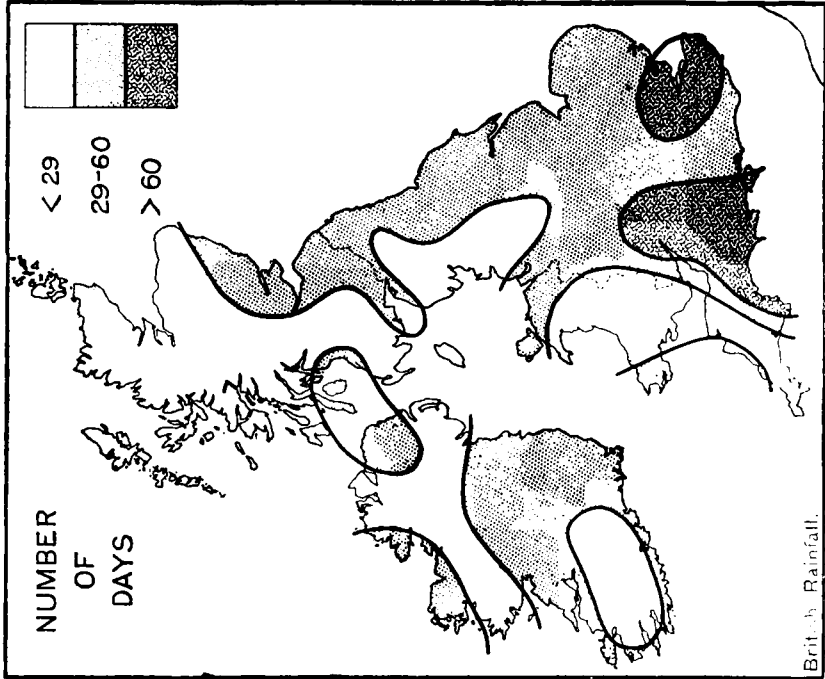
On pages [61]—[63] is given a Table containing the names of 100 carefully selected stations taken as representative of the British Isles, and the positions of these stations are shown on the map on p. [59]. All the absolute or partial droughts which occurred at these stations have been extracted, and the results are set out in full in the lists on pp. [71]—[76] following. In the case of those stations at which no drought was recorded during the year the name of the station has been omitted from the list in order to save space. A summary of this table provides us with a rough but effective comparison of the prevalence of droughts in 1912 with those in each of the previous 25 years. In the earlier years a smaller number of records was utilized ; in these cases a correction has been applied in order to make the whole series homogeneous.

Despite the great frequency of rain days in the year 1912 the number of instances of both absolute and partial drought at the 100 stations was well above the average. This may, however, be attributed not to abnormal frequency of droughts, for there was only one station in the list which experienced more than two of either class, but to the fact that the two dry periods which marked the beginning and ending of a persistently wet summer affected an unusually large area. As a result the number recorded during the year is found to be 40 in excess of the average in the case of absolute droughts, and 16 above the average in the case of partial droughts. The number of stations out of the 100 at which no drought was recorded was correspondingly small. For duration the April drought ranks high among previously recorded instances of prolonged dry weather. Maps were prepared showing both the distribution of the number of droughts and the distribution as expressed by the number of days involved in those droughts. As at most stations there were either one or two droughts the lines showing 15 and 30 days' drought included the areas where one or two droughts occurred, and it is only

ABSOLUTE DROUGHTS IN 1912.



PARTIAL DROUGHTS IN 1912.



necessary to reproduce one of the maps. The same similarity occurred in the case of the two maps of distribution of partial droughts, and in that case also the map of number of days only is given. The absolute droughts map indicates that, generally speaking, one at least

*Comparative Summary of Droughts.*

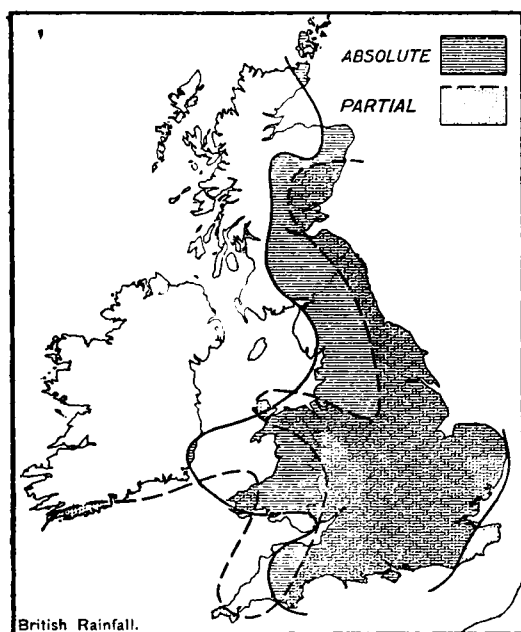
	ABSOLUTE DROUGHTS.				PARTIAL DROUGHTS.			
	No. of Droughts at 100 Stations	Duration.		Stations without one.	No. of Droughts at 100 Stations	Duration.		Stations without one.
		Mean.	Greatest.			Mean.	Greatest.	
		days.	days.			days.	days.	
1887	160	21	34	4	116	40	74	18
1888	34	17	20	70	8	42	50	92
1889	84	21	30	26	76	34	45	30
1890	26	18	20	78	6	30	31	94
1891	52	18	34	56	76	36	49	28
1892	72	16	20	50	34	35	64	66
1893	78	20	44	46	106	51	114	20
1894	104	18	31	20	88	37	62	26
1895	104	19	29	32	94	39	64	38
1896	54	18	26	50	98	40	75	32
1897	40	18	20	62	14	40	61	88
1898	62	17	28	54	62	38	77	52
1899	120	21	31	20	82	35	48	40
1900	28	17	21	76	18	32	35	82
1901	112	17	20	20	18	37	56	84
1902	10	17	18	90	4	37	41	96
1903	22	19	25	79	33	34	41	71
1904	12	16	18	88	18	34	41	82
1905	26	17	20	74	59	36	48	60
1906	73	17	25	47	40	36	55	62
1907	56	19	25	51	30	32	41	71
1908	74	18	32	48	52	35	54	68
1909	47	17	23	66	18	37	51	84
1910	32	16	24	70	23	33	42	78
1911	137	19	32	20	137	36	75	19
Mean	65	18	26	52	52	37	56	59
1912	105	19	32	26	68	37	69	42
Diff.	+40	+1	+6	-26	+16	0	+13	-17

NOTE.—The values previous to 1910 have been increased to the equivalent of 100 stations for ready comparison.

occurred everywhere in England and Wales; in Scotland only the north and the south-west coast were without a drought. In Ireland practically the whole of the interior experienced no absolute drought. More than 30 days of absolute drought occurred in the south of England, part of the Midlands, and the south-east of Scotland, these being the areas where droughts occurred both in April and September.

The distribution of partial droughts was somewhat different, these being confined with trifling exceptions to the eastern half of Great Britain, though the September partial drought occurred over a large area in central Ireland where no absolute drought was recorded. More than 60 days of partial drought, that is, for the most part two partial droughts, occurred only in the south of England. Two stations in the south of Scotland and two in the west of Ireland recorded an absolute drought in January, but with this exception the droughts of the year were confined to two periods, the first in April, the second in September. The extent of these two droughts is shown by the two small sketch maps. That of April occurred as an absolute drought over almost the whole of England and the eastern half of Scotland. One station only in Ireland recorded it. The area of the partial drought, shown by a broken line on the map, was rather more limited, and the west of England generally escaped. The absolute drought commenced as a rule about April 10th, lasting in most places until about the end of that month. At a few stations in the south of England this drought extended throughout the whole

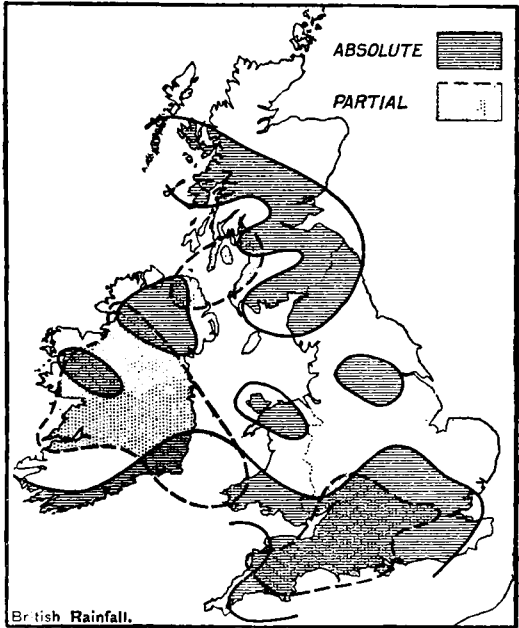
#### THE DROUGHT OF APRIL, 1912.



month of April, and it reached the unusual length of 32 days at Goring-on-Thames. As a partial drought the dry period extended generally from April 1st until the end of the first or second week in May. In the south-east of England some stations experienced a partial drought lasting more than two months, the period at Tenterden and at Shoeburyness being from March 24th to May 31st. Partial droughts of equal or greater duration have occurred only in five of the previous 25 years.

The absolute drought of September although almost as widespread as that of April was more irregularly felt. It took place roughly over the south of England, parts of the north of England, the south and west of Scotland, and at a few stations in Ireland. The partial drought

appeared over a part of the south of England, but the  
THE DROUGHT OF SEPTEMBER, 1912.



area affected in Ireland and the west of Scotland was curiously coincident with that missed by the absolute drought. The absolute drought lasted generally from about September 9th to 28th, the partial drought from August 30th to September 28th in England, and from September 9th to October 9th or 12th in Scotland and Ireland. The duration of the partial drought was in no case very prolonged, but the duration of the absolute drought reached 27 days at Totland Bay in the Isle of Wight.

*Droughts in 1912.*

STATION & COUNTY.	ABSOLUTE DROUGHTS.			PARTIAL DROUGHTS.			
	Began.	Ended.	Lasted.	Began.	Ended.	Lasted.	Rainfall.
<b>ENGLAND &amp; WALES.</b>							
St. Pancras (Camden Square) ...	Apr. 10	Apr. 27	Days 18	Apr. 1	May 11	Days 41	in. .41
London—2.	Sept. 12	Sept. 27	16	Aug. 30	Sept. 27	29	.28
Tenterden (View Tower) .....	None			Mar. 24	May 31	69	.63
Kent—1.							
Brighton (Ditchling Rd., Preston)	Apr. 1	Apr. 30	30	Mar. 24	May 6	44	.16
Sussex—3.	Sept. 7	Sept. 27	21				
Totland Bay (Aston House) .....	Apr. 10	Apr. 30	21	Mar. 24	May 5	43	.42
Hampshire—1.	Sept. 1	Sept. 27	27	Aug. 29	Sept. 28	31	.13
Petersfield (Ditcham Park).....	Apr. 10	Apr. 30	21	Mar. 24	May 6	44	.34
Hampshire—5.	Sept. 4	Sept. 27	24				
Newport Pagnell (The Croft) ...	Apr. 10	May 2	23	Mar. 24	May 14	52	.50
Buckinghamshire—5.	Sept. 9	Sept. 23	15				

*Droughts in 1912—(continued).*

STATION & COUNTY	ABSOLUTE DROUGHTS.			PARTIAL DROUGHTS.			
	Began.	Ended.	Lasted.	Began.	Ended.	Lasted.	Amount.
<b>ENGLAND &amp; WALES—(con.)</b>			Days			Days	in.
Goring (Elmcroft)..... <i>Oxfordshire—4.</i>	Apr. 1 Sept. 9	May 2 Sept. 27	32 19	Apr. 1	May 13	43	·36
Cambridge (Botanic Gardens)..... <i>Cambridgeshire—2.</i>	Apr. 10	May 2	23	Mar. 24	May 14	52	·44
Shoeburyness ..... <i>Essex—3.</i>	Apr. 10 Sept. 13	Apr. 28 Sept. 28	19 16	Mar. 24	May 31	69	·68
Colchester (Hill House, Lexden). <i>Essex—5.</i>	Apr. 11	Apr. 28	18	Apr. 1	May 2	32	·31
Beccles (Sotterley Hall) ..... <i>Suffolk—3.</i>	Apr. 12	Apr. 27	16	Apr. 12	May 14	33	·32
Swaffham (The Paddocks) ..... <i>Norfolk—4.</i>	Apr. 12	Apr. 27	16	Apr. 11	May 14	34	·31
Salisbury Plain (Shrewton)..... <i>Wiltshire—3.}</i>	Apr. 13 Sept. 9	May 3 Sept. 27	21 19	Mar. 24 Aug. 30	May 4 Sept. 28	42 30	·35 ·24
Winterbourne Steepleton ..... <i>Dorsetshire—3.</i>	Apr. 13 Sept. 4	May 3 Sept. 27	21 24	Apr. 1 Aug. 30	May 5 Sept. 28	35 30	·15 ·16
Ashburton (Druid House) ..... <i>South Devon—4.</i>	Apr. 11 Sept. 4	May 3 Sept. 27	23 24	Apr. 1 Aug. 30	May 4 Sept. 27	34 29	·29 ·17
Stratton (Poughill) ..... <i>Cornwall—1.</i>	None			Aug. 30	Sept. 27	29	·29
St. Austell (Trevarna)..... <i>Cornwall—2.</i>	Sept. 8	Sept. 27	20	None			
Angersleigh (Leigh Court) ..... <i>Somerset—3.</i>	Apr. 13 Sept. 11	May 1 Sept. 27	19 17	Apr. 1 Aug. 29	May 5 Sept. 27	35 30	·33 ·28
Simonsbath ..... <i>Somerset—5.</i>	Apr. 13 Sept. 11	Apr. 30 Sept. 27	18 17	None			
Mickleton (Bank House) ..... <i>Gloucestershire—4.</i>	Apr. 10 Sept. 11	May 1 Sept. 27	22 17	Mar. 24 Aug. 29	May 3 Sept. 28	41 31	·29 ·26
Gloucester (Pembroke Road)..... <i>Gloucestershire—5.</i>	Apr. 16 Sept. 6	May 3 Sept. 27	18 22	Apr. 1 Aug. 29	May 3 Sept. 28	33 31	·32 ·26
Hereford (Holmer Hall) ..... <i>Herefordshire—1.</i>	Apr. 13	May 1	19	Apr. 1 Aug. 29	May 3 Sept. 27	33 30	·27 ·20

*Droughts in 1912—(continued).*

STATION & COUNTY.	ABSOLUTE DROUGHTS.			PARTIAL DROUGHTS.			
	Began.	Ended.	Lasted.	Began.	Ended.	Lasted.	Amount.
<b>ENGLAND &amp; WALES—(con.)</b>			Days			Days	in.
Shifnal (National School) ..... <i>Shropshire—4.</i>	Apr. 16	May 2	17	Apr. 1	May 2	32	·27
Mayfield House [Ashbourne]..... <i>Staffordshire—5.</i>	Apr. 10	May 1	22	None			
Blaby (Whetstone Road) ..... <i>Leicestershire—4.</i>	Apr. 10 Sept. 11	May 1 Sept. 28	22 18	Mar. 24	May 3	41	·34
Market Deeping (Wilsthorpe). ... <i>Lincolnshire—2.</i>	Apr. 10	Apr. 30	21	Mar. 24	May 14	52	·44
Spilsby (Ashby Road)..... <i>Lincolnshire—4.</i>	Apr. 11	Apr. 27	17	Apr. 1	May 14	44	·37
Worksop (Hodsock Priory) ..... <i>Nottinghamshire—5.</i>	Apr. 10 Sept. 9	May 2 Sept. 27	23 19	Apr. 1	May 14	44	·44
Northwich (Winnington) ..... <i>Cheshire—2.</i>	Apr. 15	May 1	17	Mar. 31	May 3	34	·34
St. Michaels-on-Wyre Vicarage... <i>North Lancashire—5.</i>	Apr. 10	Apr. 30	21	None			
Settle (The Terrace) ..... <i>Yorkshire, West Riding—2.</i>	Apr. 15	May 1	17	None			
Meltham (Harewood Lodge) ..... <i>Yorkshire, West Riding—8.</i>	Apr. 12 Sept. 9	May 1 Sept. 27	20 19	None			
Hull (Pearson Park) ..... <i>Yorkshire, East Riding—3.</i>	Apr. 11	May 3	23	Mar. 30	May 4	36	·30
Thirsk (Mount St. John) ..... <i>Yorkshire, North Riding—2.</i>	Apr. 11	Apr. 27	17	Apr. 1	May 14	44	·37
Scarborough (May Lodge) ..... <i>Yorkshire, North Riding—5.</i>	Apr. 11	Apr. 27	17	Apr. 1	May 4	34	·30
Sunderland (W. Hendon House).. <i>Durham—2.</i>	Apr. 11	Apr. 27	17	Apr. 1	May 4	34	·30
Haltwhistle (Bellister Castle) ... <i>Northumberland—2.</i>	Apr. 11 Sept. 14	Apr. 29 Sept. 28	19 15	None			
Glanton (Glanton Pyke Gardens) <i>Northumberland—6.</i>	Apr. 10 Sept. 13	Apr. 27 Sept. 27	18 15	Apr. 1	May 6	36	·30

*Droughts in 1912—(continued).*

STATION & COUNTY.	ABSOLUTE DROUGHTS.			PARTIAL DROUGHTS.			
	Began.	Ended.	Lasted.	Began.	Ended.	Lasted.	Amount.
<b>ENGLAND &amp; WALES—(con.)</b>			Days			Days	in.
Kirkby Stephen (Redman House) <i>Westmorland—1.</i>	Apr. 11	Apr. 30	20	Apr. 11	May 14	34	·30
Dungeon Ghyll ... <i>Westmorland—2.</i>	Sept. 9	Sept. 28	20	None			
Treherbert (Tyn-y-waun) .... <i>Glamorgan—6.</i>	Sept. 9	Sept. 27	19	None			
Carmarthen (The Friary) ..... <i>Carmarthen—2.</i>	Apr. 14 Sept. 10	Apr. 29 Sept. 26	16 17	None			
Fishguard (Goodwick Station) .. <i>Pembroke—2.</i>	Apr. 13 Sept. 9	Apr. 29 Sept. 27	17 19	Apr. 1 Aug. 30	May 4 Sept. 28	34 30	·30 ·18
Aberystwith (Gogerddan) ..... <i>Cardigan—2.</i>	Apr. 13	Apr. 29	17	None			
Birmingham W.W. (Tyrmynydd) <i>Radnor—1.</i>	Apr. 13	Apr. 30	18	None			
Lake Vyrnwy ..... <i>Montgomery—5.</i>	Apr. 13 Sept. 9	May 4 Sept. 27	22 19	None			
St. Asaph (St. Bueno's College).. <i>Flint—2.</i>	Apr. 10	Apr. 28	19	Apr. 1	May 4	34	·32
Abersoch ..... <i>Carnarvon—4.</i>	Apr. 13	Apr. 29	17	None			
Lligwy ..... <i>Anglesey.</i>	Sept. 9	Sept. 28	20	Apr. 10	May 19	40	·33
<b>SCOTLAND.</b>							
Whithorn (Cutroach) ..... <i>Wigtown—4.</i>	Jan. 21 Sept. 9	Feb. 4 Sept. 28	15 20	None			
Jardington [Dumfries]..... <i>Kirkcudbright—5.</i>	Jan. 22 Apr. 11 Sept. 9	Feb. 5 Apr. 29 Sept. 28	15 19 20	Sept. 9	Oct. 12	34	·33
Meggat Water (Cramilt Lodge)... <i>Selkirk—2.</i>	Apr. 11	Apr. 28	18	None			
Marchmont House <i>Berwick—4.</i>	Apr. 10 Sept. 9	Apr. 26 Sept. 28	17 20	Apr. 1	May 7	37	·37



*Droughts in 1912—(continued).*

STATION & COUNTY.	ABSOLUTE DROUGHTS.			PARTIAL DROUGHTS.			
	Began.	Ended.	Lasted.	Began.	Ended.	Lasted.	Amount.
<b>SCOTLAND—(con.)</b>			Days			Days	in.
Motherwell (Dalzell Gardens) ... <i>Lanark—4.</i>	Apr. 10 Sept. 9	Apr. 30 Sept. 28	21 20	None			
Dalrymple (Bow Hill)..... <i>Ayr—5.</i>	None			Sept. 14	Oct. 12	29	·29
Rothsay (Glenburn) ..... <i>Bute—1.</i>	Sept. 14	Sept. 28	15	Sept. 9	Oct. 9	31	·26
Campbeltown (Witchburn)..... <i>Argyll—10.</i>	None			Sept. 8	Oct. 11	34	·34
Mull (Ulva) ..... <i>Argyll—14.</i>	Sept. 17	Oct. 2	16	None			
Cupar (Rankeillour) ..... <i>Fife—3.</i>	Apr. 8 Sept. 9	Apr. 29 Sept. 28	22 20	Mar. 31	May 7	38	·32
Aberfeldy (Dall Avon) ..... <i>Perth—11.</i>	Apr. 13 Sept. 8	Apr. 30 Sept. 28	18 21	Apr. 9	May 7	29	·29
Fettercairn (The Burn) ..... <i>Kincardine—1.</i>	Apr. 11	Apr. 29	19	Apr. 1	May 4	34	·34
Peterhead (Mains of Buthlaw) ... <i>Aberdeen—4.</i>	Apr. 12	Apr. 28	17	None			
Alvey Manse..... <i>Inverness—3.</i>	Apr. 13	Apr. 28	16	None			
Loch Nevis (Inverie) ..... <i>Inverness—12.</i>	Sept. 16	Oct. 2	17	None			
Glenleven (Kinlochmore) ..... <i>Inverness—17.</i>	Sept. 14	Sept. 30	17	None			
Skye (Dunvegan) ..... <i>Inverness—18.</i>	Sept. 14	Sept. 28	15	None			
Thurso (Buckies) ..... <i>Caithness—3.</i>	Apr. 13	Apr. 27	15	None			
<b>IRELAND.</b>							
Skibbereen Rectory.. ..... <i>Cork—6.</i>	Sept. 8	Sept. 24	17	Mar. 31	Apr. 29	30	·29
Darrynane Abbey ..... <i>Kerry—4.</i>	Sept. 9	Sept. 24	16	None			

*Droughts in 1912—(continued).*

STATION & COUNTY.	ABSOLUTE DROUGHTS.			PARTIAL DROUGHTS.			
	Began.	Ended.	Lasted.	Began.	Ended.	Lasted.	Amount.
<b>IRELAND—(con.)</b>			Days			Days	in.
Waterford (Brook Lodge) ..... <i>Waterford—3.</i>	Sept. 3	Sept. 26	24	Aug. 29	Oct. 11	44	·38
Carrigaholt Castle ..... <i>Clare—3.</i>	Jan. 21	Feb. 4	15	Sept. 2	Oct. 9	38	·35
Broadford (Hurdlestown) ..... <i>Clare—3.</i>	None			Sept. 4	Oct. 9	36	·27
Gorey (Courtown House) ..... <i>Wexford—4.</i>	Mar. 27 Sept. 3	Apr. 11 Sept. 27	16 25	Aug. 30	Oct. 12	44	·40
Abbey Leix (Blandsfort)..... <i>Queen's County—2.</i>	None			Aug. 30	Sept. 27	29	·24
Dublin (FitzWilliam Square)..... <i>Dublin—2.</i>	None			Aug. 30	Sept. 28	30	·27
Kells (Headfort) ..... <i>Meath—4.</i>	None			Sept. 4	Oct. 9	36	·35
Moate (Coolatore) ..... <i>Westmeath—1.</i>	None			Sept. 4	Oct. 9	36	·24
Woodlawn .... <i>Galway—4.</i>	Sept. 8	Sept. 24	17	Sept. 4	Oct. 12	39	·25
Newport (Burrishoole House) ... <i>Mayo—4.</i>	Jan. 21 Sept. 14	Feb. 4 Sept. 28	15 15	Sept. 5	Oct. 4	30	·27
Mohill Rectory ..... <i>Leitrim—5.</i>	None			Sept. 4	Oct. 9	36	·28
Seaforde ..... <i>Down—2.</i>	Sept. 9	Sept. 27	19	None			
Bushmills (Dundarave)..... <i>Antrim—3.</i>	Sept. 8	Sept. 28	21	Sept. 4	Oct. 12	39	·38
Ballymena (Harryville) ..... <i>Antrim—5.</i>	None			Sept. 9	Oct. 9	31	·30
Omagh (Edenfel) ..... <i>Tyrone—3.</i>	Sept. 6	Sept. 28	23	None			
Killybegs ..... <i>Donegal—5.</i>	Sept. 14	Sept. 28	15	Sept. 8	Oct. 9	32	·19

## RAIN SPELLS IN 1912.

THE definition of a Rain Spell was designed to provide a means of studying periods of persistent rain of equal duration to the Absolute Drought and we have now ten years' records similarly treated for comparison.

A RAIN SPELL is a period of *more than* 14 consecutive days, every one of which is a rain day.

The large number of rain days in 1912 suggests that the rain spells of the year should be exceptionally numerous, but, as a matter of fact, the number was exceeded both in 1903 and in 1910, the former year having 85 more instances at 100 stations. The number recorded in 1912 exceeds the average of the ten years by 24. The mean rainfall per day during the spells of the year was .01 in. above the average.

*Comparative Table of Rain Spells at 100 Stations.*

Year.	No. of Rain Spells.	DURATION OF SPELLS.				STATIONS WITH			
		Mean.		Greatest.					
		days.	Mean R per day. in.	days.	Mean R per day. in.	None.	1 or 2.	3 or 4.	5 or more.
1903...	282	22	.28	52	.51	11	41	26	22
1904...	152	19	.22	34	.27	31	51	11	7
1905...	121	19	.24	44	.38	45	39	12	4
1906...	125	21	.25	50	.40	38	47	11	4
1907...	177	21	.25	45	.17	38	30	18	14
1908...	159	19	.24	49	.43	21	59	12	8
1909...	110	19	.26	45	.12	36	52	12	0
1910...	235	21	.25	64	.30	24	34	25	17
1911...	185	22	.29	39	.15	19	50	23	8
1912...	198	22	.27	58	.19	29	32	30	9
Average	174	21	.26	48	.29	29	44	18	9

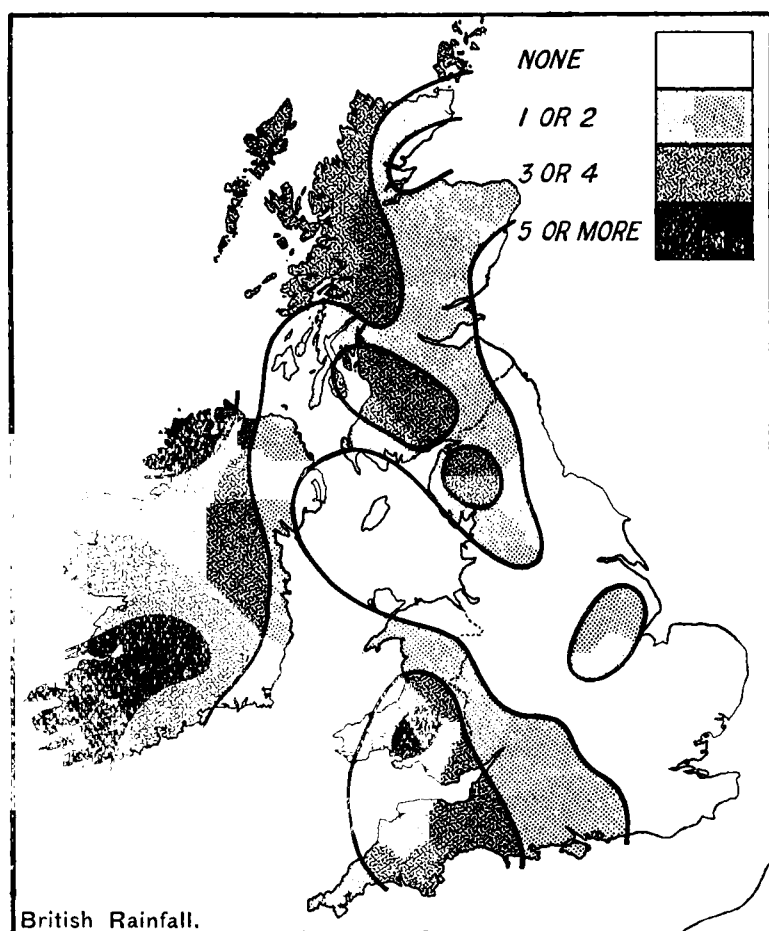
NOTE.—The values previous to 1910 have been increased to the equivalent of 100 stations for comparison.

The map of the distribution of rain spells in 1912 shows that over about two-thirds of England none were recorded, though only three stations in the driest parts of Scotland and one station in the east of

Ireland escaped. On the other hand more than two spells took place over the greater part of the west coasts, the number reaching five in South Wales and in the west of Ireland, but nowhere in Scotland.

No individual rain spell during the year was remarkably widespread, that which affected the largest area being that of December. At the beginning of the year the great rain spell of December, 1911,

## RAIN SPELLS IN 1912.



continued into January, 1912, for about six days at many stations chiefly in Scotland and Ireland. The whole period of this spell is given in the list of rain spells at the end of this section in order to supplement the list in *British Rainfall, 1911*, pp. [102]—[108], but since it does not properly rank with the rain spells of 1912, the details are printed in italics and have been excluded from the numbers of spells counted as having occurred in 1912 and from the

data on which the average values for the year are based. The only exception to this rule is that if, as was the case at one or two stations, the spell of 1911 was continued sufficiently far into 1912 to constitute an independent rain spell entirely within the year, the spell has been counted afresh as belonging to 1912, but only that portion of it which lay in 1912 is included in the average values of duration and intensity. Almost immediately after the termination of the rain spell of December, 1911, another, which, however, was not remarkable either for duration or for amount of rain, took place at a good many Irish stations and in the south-west of England, continuing generally till about January 20th. At Killybegs, in Donegal, this spell continued without any break from December 21st to January 17th.

One of the longest rain spells of the year commenced in most of the western districts about February 20th, though rather earlier in Wales, and lasted, at one or two of the wettest stations, throughout March, and even in one or two places into the beginning of April. There was, however, generally a dry day about March 10th which broke this spell into two parts. Both the shorter spells thus formed were recorded in the west of Ireland, in the Lake District, in South Wales, and in the north of Scotland.

The rain spell of June was confined almost entirely to the west of Scotland and the centre and west of Ireland. It commenced generally between June 8th and 14th, but considerably earlier in a few places, and ended for the most part on July 1st or 2nd.

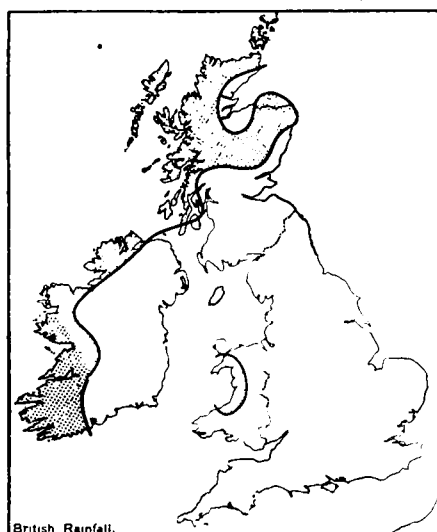
Save for the Lake District and one isolated station in Scotland, the main rain spell of August occurred only in the south-west of Ireland and in the south-west of England and Wales and a small area in the Midlands, but in Ireland, in South Wales, and in the south-west of Scotland, a rain spell lasted from the last week in July until about August 9th, and these two spells following one upon the other involved almost the whole of August. At Darrynane, in Co. Kerry, the two spells merged into one, continuing from July 21st to September 5th, a period of 47 days during which 7·30 in. of rain fell.

In the north-west of Scotland and on the west coast of Ireland a rain spell took place in October and November; the date of commencement was, as a rule, about October 18th, but in the south-west of Scotland it was as early as the 10th, and in the north-west as late as November 3rd. This spell reached its greatest duration in the west of Scotland, exceeding 30 days over a large area. The

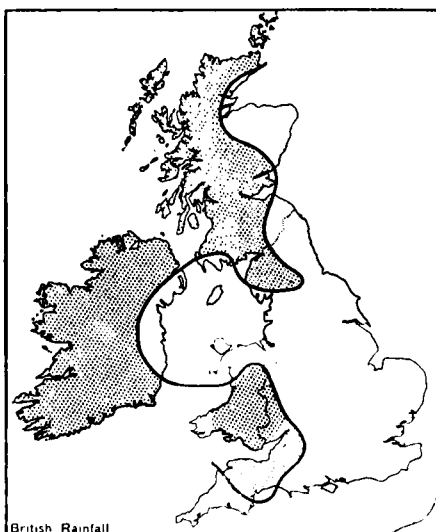
accompanying sketch map indicates by a tint the districts over which it occurred.

The rain spell of December was the most widespread of the year. Its extent is shown in the sketch map where it will be seen to have occupied roughly the whole of the British Isles, with the exception of England. The date of commencement of this spell varied from the last days of November to about December 9th and it continued in almost all districts till the end of the year, the duration being greatest in the south and west of Ireland, two stations, Carrigaholt Castle and Killybegs, recording a spell of 40 days from November 22nd. The mean amount of rain per day was  $\cdot 29$  in., the rate of fall

RAIN SPELL OF OCT.-NOV., 1912.



RAIN SPELL OF DEC., 1912.



being noticeably small in Ireland and great in Scotland. At Kinlochmore during the 23 days of this rain spell no less than 21·20 in. of rain fell, the mean fall per day being  $\cdot 92$  in.

The following list comprises all instances in 1912 of rain spells at any of the 100 selected stations in which the mean rainfall per day amounted to as much as  $\cdot 40$  in. The number is 19, excluding five spells which properly belong to 1911 but which were incomplete at the end of that year. The only instance which occurred in the summer was at Simonsbath where the 24 days of the August rain spell produced the remarkable total of 13·51 in., or  $\cdot 56$  in. per day.

In the list of rain spells the names of the stations at which no spell occurred have not been printed. The names of all the stations will be found in the Table of Rain Days on pp. [61]—[63].

*Rain Spells of a Mean Rate of .40 in. or more per day in 1912.*

Div.	Station.	Began.	Ended.	Lasted	Total Fall.	Rain per Day.		
						Max.	Min.	Mean.
V.	Simonsbath .....	Aug. 3	Aug. 26	days. 24	in. 13·51	in. 1·95	in. ·04	in. ·56
X.	Dungeon Ghyll ...	Nov. 26	Jan. 6	42	24·28	1·91	·01	·58
		(1911)						
	" " " ...	Feb. 21	Apr. 10	50	22·97	2·49	·01	·46
	" " " ...	Nov. 30	Dec. 31	32	20·31	3·81	·01	·63
XI.	Treherbert .....	Feb. 5	Mar. 9	34	15·49	2·20	·01	·46
	" " " ...	Mar. 11	" 31	21	9·81	1·76	·01	·47
	" " " ...	Dec. 3	Dec. 20	18	10·08	2·01	·03	·56
	Aberystwyth .....	Oct. 16	Oct. 31	16	6·37	1·35	·01	·40
XV.	Loch Awe, Ford...	Nov. 30	Jan. 6	38	15·55	1·45	·04	·41
		(1911)						
	" " " " ...	Nov. 30	Dec. 31	32	13·55	1·43	·01	·42
XVIII.	Fort Augustus ...	Dec. 6	" 25	20	9·56	1·55	·02	·48
	Inverie .....	" 15	Jan. 6	23	12·16	1·70	·02	·53
		(1911)						
	" " " " ...	Nov. 3	Nov. 30	28	13·82	1·38	·02	·49
	" " " " ...	Dec. 3	Dec. 25	23	15·63	1·60	·02	·68
	Kinlochmore .....	Nov. 30	Jan. 6	38	19·67	1·31	·01	·52
		(1911)						
	" " " " ...	Mar. 24	Apr. 10	18	13·02	3·59	·01	·72
	" " " " ...	Oct. 26	Nov. 12	18	7·13	1·20	·01	·40
	" " " " ...	Dec. 3	Dec. 25	23	21·20	2·89	·05	·92
	Skye, Dunvegan...	" 2	" 25	24	13·14	1·41	·11	·55
	Glencarron .....	" 15	Jan. 5	22	9·87	1·55	·06	·45
		(1911)						
	" " " " ...	Mar. 24	Apr. 15	23	13·18	2·68	·01	·57
	" " " " ...	Oct. 25	Nov. 27	34	16·01	1·99	·01	·47
	" " " " ...	Dec. 6	Dec. 25	20	10·17	1·43	·03	·51
XIX.	Ardchullin .....	Mar. 24	Apr. 12	20	10·27	2·80	·04	·51

*Table of Rain Spells, 1912.*

STATION & COUNTY.	Began.	Ended.	Lasted.	Total Rain.	RAIN PER DAY.		
					Max.	Min.	Mean.
ENGLAND & WALES.			Days	in.	in.	in.	in.
Totland Bay (Aston House) ... Hampshire—1.	Aug. 3	Aug. 26	24	5·37	·57	·01	·22
Petersfield (Ditcham Park) ... Hampshire—5.	Mar. 8 Aug. 2	Mar. 25 Aug. 26	18 25	3·38 7·13	·50 ·84	·01 ·01	·19 ·29
Salisbury Plain (Shrewton) ... Wiltshire—3.	Aug. 12	Aug. 26	15	3·35	·62	·01	·22

Table of Rain Spells, 1912—(continued).

STATION & COUNTY.	Began.	Ended.	Lasted.	Total Rain.	RAIN PER DAY.		
					Max.	Min.	Mean
ENGLAND & WALES—(con.)			Days	in.	in.	in.	in.
Winterbourne Steepleton .....	Jan. 4	Jan. 25	22	7·56	1·68	·01	·34
Dorsetshire—3.	Feb. 18	Mar. 10	22	4·46	·66	·01	·20
	Aug. 14	Sep. 1	19	5·35	1·30	·01	·28
Ashburton (Druid House) .....	Feb. 18	Mar. 12	24	7·23	1·26	·03	·30
South Devonshire—4.	Aug. 9	Aug. 29	21	6·56	1·27	·01	·31
	Dec. 5	Dec. 19	15	3·48	·95	·02	·23
Stratton (Poughill) .....	Jan. 2	Jan. 16	15	3·38	·64	·01	·23
Cornwall—I.	Mar. 12	Mar. 28	17	2·74	·58	·01	·16
	Aug. 9	Aug. 29	21	6·27	1·23	·01	·30
St. Austell (Trevarna).....	Aug. 9	Aug. 23	15	4·83	1·00	·01	·32
Cornwall—2.							
Angersleigh (Leigh Court).....	Jan. 4	Jan. 25	22	4·72	·58	·01	·21
Somerset—3.	July 26	Aug. 10	16	4·88	1·23	·01	·30
	Aug. 12	Aug. 26	15	3·39	·68	·01	·23
	Dec. 5	Dec. 19	15	2·35	·43	·03	·16
Simonsbath .....	Jan. 3	Jan. 24	22	7·51	1·33	·01	·34
Somerset—5.	Feb. 18	Mar. 31	43	13·89	1·34	·01	·32
	Aug. 3	Aug. 26	24	13·51	1·95	·04	·56
	Dec. 1	Dec. 20	20	7·83	1·33	·01	·39
Mickleton (Bank House).....	July 26	Aug. 11	17	3·76	·63	·01	·22
Gloucestershire—4.							
Clifton (Pembroke Road) .....	Feb. 26	Mar. 25	29	5·15	·70	·01	·18
Gloucestershire—5.	Dec. 5	Dec. 19	15	2·98	·52	·01	·20
Blaby (Whetstone Road) .....	Aug. 14	Aug. 28	15	4·40	1·18	·01	·29
Leicestershire—4.							
Market Deeping (Wilthorpe)..	May 29	June 12	15	3·94	1·40	·01	·26
Lincolnshire—2.							
Spilsby (Ashby Road).....	July 18	Aug. 1	15	2·55	·63	·01	·17
Lincolnshire—4.							
Settle (The Terrace).....	June 14	June 28	15	3·73	·86	·01	·25
Yorkshire, West Riding—2.							
Meltham (Harewood Lodge) ...	Mar. 14	Mar. 31	18	3·03	·68	·01	·17
Yorkshire, West Riding—8.							
Haltwhistle (Bellister Castle)...	Feb. 21	Mar. 9	18	2·18	·53	·02	·12
Northumberland—2.	Mar. 12	Mar. 31	20	3·90	·93	·01	·20



Table of Rain Spells, 1912—(continued).

STATION & COUNTY.	Began.	Ended.	Lasted.	Total Rain.	RAIN PER DAY.		
					Max.	Min.	Mean
ENGLAND & WALES—(con.)			Days	in.	in.	in.	in.
Kirkby Stephen (Redman Ho.) <i>Westmorland—1.</i>	Feb. 21	Mar. 10	19	3·69	·87	·01	·19
	June 12	July 2	21	3·58	·49	·01	·17
	Dec. 6	Dec. 21	16	4·60	1·42	·01	·29
Dungeon Ghyll ..... (1911) <i>Westmorland—2.</i>	Nov. 26	Jan. 6	42	24·28	1·91	·01	·58
	Feb. 21	Apr. 10	50	22·97	2·49	·01	·46
	June 9	July 2	24	9·26	1·67	·01	·39
	Aug. 3	Aug. 26	24	7·64	1·12	·01	·32
	Nov. 30	Dec. 31	32	20·31	3·81	·01	·63
Treherbert (Tyn-y-waun) ..... <i>Glamorganshire—6.</i>	Feb. 5	Mar. 9	34	15·49	2·20	·01	·46
	Mar. 11	Mar. 31	21	9·81	1·76	·01	·47
	Dec. 3	Dec. 20	18	10·08	2·01	·03	·56
Carmarthen (The Friary) (1911) <i>Carmarthenshire—2.</i>	Dec. 9	Jan. 23	46	11·80	1·07	·01	·26
	Feb. 14	Mar. 10	26	5·62	·73	·01	·26
	Mar. 12	Mar. 28	17	4·19	·76	·01	·25
	Aug. 14	Sep. 1	19	5·35	1·00	·01	·28
	Dec. 1	Dec. 27	27	6·95	·84	·01	·26
Fishguard (Goodwick Station).. <i>Pembrokeshire—2.</i>	Dec. 6	Dec. 31	26	4·85	·71	·01	·19
Aberystwyth (Gogerddan) ..... <i>Cardigan—2.</i>	Mar. 12	Mar. 31	20	6·26	1·05	·02	·31
	July 26	Aug. 9	15	5·53	1·51	·01	·37
	Oct. 16	Oct. 31	16	6·37	1·35	·01	·40
	Dec. 17	Dec. 31	15	3·84	·93	·02	·26
Birmingham W. W. (Tyrmynydd) <i>Radnorshire—1.</i>	Jan. 2	Jan. 20	19	5·93	·94	·01	·31
	Feb. 14	Mar. 9	25	7·31	1·20	·01	·29
	Mar. 14	Mar. 31	18	5·21	·78	·01	·29
	July 21	Aug. 10	21	7·49	1·29	·01	·36
	Dec. 9	Dec. 31	23	8·41	1·19	·05	·37
Lake Vyrnwy ..... <i>Montgomeryshire—5.</i>	Dec. 7	Dec. 27	21	7·24	1·48	·05	·34
Abersoch ..... (1911) <i>Carnarvonshire—4.</i>	Dec. 8	Jan. 6	30	7·92	1·41	·03	·26
	Oct. 18	Nov. 1	15	5·56	1·28	·02	·37
Lligwy ..... (1911) <i>Anglesey.</i>	Dec. 13	Jan. 6	25	3·09	·58	·01	·12
SCOTLAND.							
Jardington [Dumfries]..... <i>Kirkcudbrightshire—5.</i>	June 17	July 1	15	3·52	·69	·04	·23
	July 23	Aug. 7	16	4·17	1·13	·03	·26
	Dec. 3	Dec. 31	29	6·36	·75	·01	·22

*Table of Rain Spells, 1912—(continued).*

STATION & COUNTY.	Began.	Ended.	Lasted.	Total Rain.	RAIN PER DAY.		
					Max.	Min.	Mean
SCOTLAND—(con.)			Days	in.	in.	in.	in.
Meggat Water (Cramilt Lodge) <i>Selkirkshire—2.</i>	Nov. 30 (1911)	Jan. 21	53	13·14	1·02	·01	·25
	June 8	July 1	24	5·50	1·52	·01	·23
	Dec. 6	Dec. 31	26	8·86	·99	·01	·34
Motherwell (Dalzell Gardens)... <i>Lanarkshire—4.</i>	Jan. 8	Jan. 22	15	1·30	·28	·01	·09
	Dec. 6	Dec. 21	16	4·71	·72	·04	·29
Dalrymple (Bow Hill)... (1911) <i>Ayrshire—5.</i>	Nov. 27	Jan. 6	41	11·32	1·03	·01	·28
	Feb. 21	Mar. 10	19	2·80	·38	·01	·15
	June 9	June 28	20	4·96	·67	·01	·25
	July 27	Aug. 11	16	1·96	·51	·01	·12
	Dec. 6	Dec. 31	26	7·82	1·01	·01	·30
Buchlyvie (The Manse) (1911) <i>Stirlingshire—1.</i>	Nov. 30	Jan. 6	38	7·87	·65	·02	·21
	Mar. 12	Apr. 1	21	4·32	·73	·01	·21
	May 30	July 1	33	5·38	·97	·01	·16
	Dec. 1	Dec. 25	25	6·96	1·43	·01	·28
Rothsay (Glenburn) ... (1911) <i>Buteshire—1.</i>	Nov. 30	Jan. 6	38	10·36	1·15	·01	·27
	June 17	July 1	15	4·04	1·06	·02	·27
	Oct. 10	Oct. 30	21	5·18	1·27	·01	·25
	Dec. 1	Dec. 31	31	8·93	·82	·02	·29
Loch Awe (Ford) ..... (1911) <i>Argyll—6.</i>	Nov. 30	Jan. 6	38	15·55	1·45	·04	·41
	June 17	July 1	15	3·94	1·15	·02	·26
	Nov. 30	Dec. 31	32	13·55	1·43	·01	·42
Campbeltown (Witchburn)..... <i>Argyll—10.</i>	Nov. 30	Dec. 31	32	9·07	1·05	·01	·28
Islay (Eallabus)..... (1911) <i>Argyll—14.</i>	Dec. 1	Jan. 6	37	9·40	1·07	·01	·25
	Oct. 10	Nov. 1	23	6·65	·77	·02	·29
	Dec. 8	Dec. 30	23	7·26	·80	·02	·32
Mull (Ulva) ..... (1911) <i>Argyll—14.</i>	Nov. 27	Jan. 6	41	14·97	1·46	·01	·37
	June 14	July 1	18	4·15	·76	·01	·23
	Oct. 23	Nov. 27	36	8·24	·73	·01	·23
	Dec. 1	Dec. 25	25	8·04	·75	·03	·32
Cupar (Rankeillour)..... <i>Fifeshire—3.</i>	Dec. 3	Dec. 25	23	2·51	·39	·01	·11
Aberfeldy (Dall Avon) ..... <i>Perthshire—11.</i>	Oct. 18	Nov. 5	19	2·84	·59	·01	·15
	Dec. 6	Dec. 31	26	7·76	1·12	·01	·30
Cromar (Logie Coldstone Sch.) <i>Aberdeenshire—1.</i>	Jan. 4	Jan. 18	15	3·71	·83	·01	·25
	Oct. 19	Nov. 5	18	4·34	1·16	·01	·24

Table of Rain Spells, 1912—(continued).

STATION & COUNTY.	Began.	Ended.	Lasted.	Total Rain.	RAIN PER DAY.		
					Max.	Min.	Mean
SCOTLAND—(con.)			Days	in.	in.	in.	in.
Peterhead (Mains of Buthlaw).. Aberdeenshire—4.	Oct. 20	Nov. 5	17	3·05	·47	·02	·18
Gordon Castle ..... Morayshire—2.	Oct. 21	Nov. 5	16	2·52	·40	·04	·16
Alvey Manse..... Inverness-shire—3.	Aug. 4	Aug. 20	17	2·84	·65	·01	·17
Fort Augustus (St. Benedict's) Inverness-shire—6.	Dec. 16 (1911)	Jan. 6	22	4·14	·72	·03	·19
	June 17	July 2	16	1·90	·42	·01	·12
	Nov. 1	Nov. 27	27	6·23	1·08	·01	·23
	Dec. 6	Dec. 25	20	9·56	1·55	·02	·48
Loch Nevis (Inverie) ... (1911) Inverness-shire—12.	Dec. 15	Jan. 6	23	12·16	1·70	·02	·53
	Nov. 3	Nov. 30	28	13·82	1·38	·02	·49
	Dec. 3	Dec. 25	23	15·63	1·60	·02	·68
Glenleven (Kinlochmore) (1911) Inverness-shire—17.	Nov. 30	Jan. 6	38	19·67	1·31	·01	·52
	Mar. 24	Apr. 10	18	13·02	3·59	·01	·72
	June 8	June 25	18	5·16	1·05	·01	·29
	Oct. 26	Nov. 12	18	7·13	1·20	·01	·40
	Dec. 3	Dec. 25	23	21·20	2·89	·05	·92
Skye (Dunvegan) ..... (1911) Inverness-shire—18.	Nov. 28	Jan. 5	39	14·26	·99	·02	·37
	Mar. 24	Apr. 10	18	6·10	1·49	·01	·34
	Oct. 27	Nov. 27	32	10·46	1·42	·01	·33
	Dec. 2	Dec. 25	24	13·14	1·41	·11	·55
Glencarron Lodge..... (1911) Ross-shire—9.	Dec. 15	Jan. 5	22	9·87	1·55	·06	·45
	Feb. 22	Mar. 9	17	5·39	1·27	·01	·32
	Mar. 24	Apr. 15	23	13·18	2·68	·01	·57
	Oct. 25	Nov. 27	34	16·01	1·99	·01	·47
	Dec. 6	Dec. 25	20	10·17	1·43	·03	·51
Loch Stack (Ardchullin)..... Sutherland—5.	Feb. 22	Mar. 9	17	6·57	1·94	·02	·39
	Mar. 24	Apr. 12	20	10·27	2·80	·04	·51
	Nov. 3	Nov. 30	28	10·29	1·03	·05	·37
	Dec. 7	Dec. 25	19	6·40	·88	·05	·34
Thurso (Buckies) ..... Caithness—3.	Oct. 29	Nov. 30	33	6·44	·90	·02	·20
	Dec. 9	Dec. 26	18	3·54	·64	·01	·20
IRELAND.							
Skibbereen Rectory..... Cork—6.	Jan. 3	Jan. 18	16	4·92	·95	·03	·31
	Feb. 25	Mar. 27	32	6·44	·73	·01	·20
	Aug. 13	Aug. 29	17	3·22	·85	·01	·19
	Oct. 15	Nov. 7	24	5·10	·86	·01	·21
	Nov. 30	Dec. 31	32	7·99	·88	·01	·25

*Table of Rain Spells, 1912—(continued).*

STATION & COUNTY.	Began.	Ended.	Lasted.	Total Rain.	RAIN PER DAY.		
					Max.	Min.	Mean
IRELAND—(con.)			Days	in.	in.	in.	in.
Mallow (Summer Hill).....	Jan. 3	Jan. 21	19	4·11	·78	·01	·22
Cork—9.	Mar. 7	Mar. 31	25	3·35	·49	·01	·13
	Aug. 9	Aug. 29	21	3·13	·69	·01	·15
	Nov. 30	Dec. 31	32	5·62	·55	·01	·18
Darrynane Abbey..... (1911)	Nov. 27	Jan. 16	51	14·70	1·00	·02	·29
Kerry—4.	Feb. 13	Apr. 10	58	10·99	·67	·01	·19
	June 11	July 2	22	7·28	1·33	·01	·33
	July 21	Sep. 5	47	7·30	1·10	·01	·16
	Oct. 8	Nov. 14	38	7·54	·80	·01	·20
	Nov. 30	Dec. 31	32	6·40	·59	·04	·20
Waterford (Brook Lodge) .....	Aug. 13	Aug. 29	17	2·73	·71	·01	·16
Waterford—3.	Nov. 30	Dec. 15	16	2·15	·32	·02	·13
Cahir (Bengurragh) .....	Jan. 1	Jan. 20	20	3·67	·50	·01	·18
Tipperary—3.	Feb. 24	Mar. 10	16	2·38	·41	·01	·15
	Mar. 12	Mar. 28	17	2·16	·41	·02	·13
	June 3	July 2	30	6·01	·61	·01	·20
	July 20	Aug. 5	17	5·83	1·05	·04	·34
	Aug. 9	Aug. 23	15	2·59	·85	·01	·17
	Nov. 30	Dec. 31	32	5·46	·49	·01	·17
Carrigaholt Castle .....	Jan. 2	Jan. 16	15	2·86	·53	·02	·19
Clare—3.	Mar. 12	Apr. 3	23	2·87	·40	·01	·12
	June 13	June 27	15	3·89	·97	·04	·26
	Oct. 15	Oct. 30	16	3·12	·63	·03	·20
	Nov. 22	Dec. 31	40	7·41	·53	·02	·19
Broadford (Hurdlestown) .....	Feb. 26	Mar. 31	35	4·99	·53	·01	·14
Clare—3.	June 8	July 1	24	5·35	·89	·02	·22
	July 20	Aug. 5	17	3·92	·82	·01	·23
	Aug. 13	Aug. 29	17	4·76	1·78	·02	·28
	Oct. 15	Oct. 30	16	2·66	·39	·01	·17
	Nov. 30	Dec. 31	32	5·88	·58	·01	·18
Gorey (Courtown House) .....	Jan. 3	Jan. 18	16	5·46	1·56	·01	·34
Wexford—4.	July 21	Aug. 6	17	6·53	1·43	·04	·38
Abbey Leix (Blandsfort).....	June 3	June 28	26	5·06	·60	·02	·19
Queen's County—2.	July 21	Aug. 7	18	5·51	·86	·01	·31
	Nov. 30	Dec. 27	28	3·78	·38	·02	·14
Dublin (Fitz William Square)...	July 21	Aug. 4	15	4·48	1·46	·01	·30
Dublin—2.							
Kells (Headfort) .....	Jan. 1	Jan. 16	16	3·72	·79	·01	·23
Meath—4.	Mar. 12	Mar. 27	16	3·18	·60	·01	·20
	June 17	July 1	15	3·42	1·09	·01	·23
	July 20	Aug. 4	16	4·65	1·45	·01	·29

Table of Rain Spells, 1912—(continued).

STATION & COUNTY.	Began.	Ended.	Lasted.	Total Rain.	RAIN PER DAY.		
					Max.	Min.	Mean
IRELAND—(con.)			Days	in.	in.	in.	in.
Moate (Coolatore).....	June 5	June 21	17	2·37	·50	·01	·14
Westmeath—1.	July 20	Aug. 4	16	3·25	1·02	·01	·20
	Nov. 30	Dec. 15	16	2·12	·31	·02	·13
Knockboy House .....	Mar. 18	Apr. 1	15	3·06	·82	·01	·20
Galway—2.	June 7	June 27	21	6·09	·87	·01	·29
	Oct. 12	Oct. 30	19	2·64	·26	·02	·14
	Dec. 10	Dec. 26	17	3·32	·47	·04	·20
Woodlawn .....	Feb. 24	Apr. 1	38	5·15	·46	·02	·14
Galway—4.	June 9	June 27	19	5·07	1·05	·04	·27
	Oct. 13	Oct. 30	18	2·99	·46	·01	·17
	Dec. 4	Dec. 31	28	4·51	·50	·02	·16
Newport (Burrishoole House)...	Jan. 2	Jan. 17	16	3·69	·74	·02	·23
Mayo—4.	Feb. 24	Apr. 1	38	7·84	·91	·02	·21
	Oct. 10	Oct. 24	15	2·94	·68	·01	·20
	Dec. 2	Dec. 31	30	8·47	1·49	·01	·28
Collooney (Markree Observatory)	Feb. 18	Mar. 14	26	4·71	1·05	·01	·18
Sligo—2.	Mar. 18	Apr. 1	15	3·82	1·06	·01	·25
	June 15	July 1	17	4·34	·61	·05	·26
Mohill Rectory .....	Mar. 7	Apr. 1	26	4·34	·48	·03	·17
Leitrim—5.	June 11	July 1	21	4·28	·65	·01	·20
	Dec. 5	Dec. 31	27	4·54	·38	·02	·17
Bushmills (Dundarave) .....	June 14	June 29	16	3·18	·43	·03	·20
Antrim—3.	Dec. 5	Dec. 24	20	3·10	·42	·01	·16
Ballymena (Harryville) .. .....	Dec. 5	Dec. 31	27	5·29	·65	·02	·20
Antrim—5.							
Omagh (Edenfel) .....	Feb. 26	Mar. 14	18	2·09	·36	·02	·12
Tyrone—3.	Mar. 16	Apr. 1	17	3·16	·55	·02	·19
	Dec. 5	Dec. 31	27	6·02	·55	·03	·22
Fanad (Tamney Rectory) .....	Feb. 21	Mar. 8	17	1·58	·25	·01	·09
Donegal—2.	Mar. 18	Apr. 1	15	4·05	1·34	·01	·27
	June 14	July 2	19	4·18	·78	·02	·22
	Nov. 4	Nov. 27	24	5·14	·93	·01	·21
	Nov. 29	Dec. 31	33	6·52	·60	·02	·20
Killybegs .....	Dec. 21	Jan. 17	28	7·60	1·10	·01	·27
Donegal—5.	Feb. 18	Mar. 16	28	5·29	·96	·02	·19
	Mar. 18	Apr. 1	15	4·85	1·19	·01	·32
	June 17	July 1	15	5·39	·61	·03	·36
	Nov. 3	Nov. 20	18	5·16	1·37	·02	·29
	Nov. 22	Dec. 31	40	12·26	·80	·02	·31

## THE DURATION OF RAINFALL IN 1912.

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THIS section continues to expand, and although the number of records received is still far from sufficient, the increase in the amount of information, and the satisfactory reports which we get from many Observers of the working of the new patterns of self-recording rain gauges, give promise for the future.

As time goes on it becomes increasingly evident that a large part of the differences between the total durations of rainfall recorded at the various stations must be attributed to differences in the degree of sensitiveness of the instruments in use, and the splendid series of records from instruments of three patterns kept by Mr. A. J. Walker at Thirsk throws an extremely interesting light on the matter. It seems clear that the discrepancies observed are almost entirely due to the different action of various instruments during light rain. To take an extreme example, one may imagine the case of a persistent drizzle, lasting for say twenty-four hours, producing in the gauge, as is sometimes the case, only  $\cdot 01$  or  $\cdot 02$  in. of rain for the whole period. In these circumstances a gauge of an extremely sensitive type, such for example as Halliwell's recorder, is quite capable of indicating the true duration of the rainfall for the day as 24.0 hours, whilst an instrument giving perfectly satisfactory results in an ordinary shower but not sufficiently delicate in action to record so minute an aggregation of water, may conceivably fail entirely to show that any rain fell during the whole period. The errors which may possibly arise from such a cause are obviously very large indeed, whereas the error in a record of the *quantity* of rain arising from failure to measure  $\cdot 01$  inch is generally negligible. That this difficulty is a real one is shown by the large number of enquiries as to the method of proceeding in measuring the duration during days of Scotch mist, which we have received during the last six months. The time is as yet hardly ripe for framing any definite rule in order to bring the results from all kinds of self-recording rain gauges into harmony, but one

method which suggests itself is that of excluding from consideration all rain which fails to reach a fixed standard of intensity easily recognizable by inspection. Thus, for example, it might be advisable to leave out of account altogether periods during which the rate of rainfall is less than .01 in. in four hours. This may be too high a limit, and until we have had an opportunity of studying a large number of curves with detail we prefer to ask Observers of rainfall duration to continue as at present, in order to provide the means whereby a more satisfactory solution may be arrived at in the future.

In response to a circular letter addressed to all those whom we believed to be in possession of the more recent forms of recording rain gauges we obtained promises of records from 17 stations, mostly in England. In one or two instances the records had already come to an end, and we were able to obtain only those of past years. This was the case with that at Clare Island, the only record of duration of rainfall which we have ever received from Ireland, and therefore, although the gauge was observed with great care for about eighteen months, we are not able to include this interesting station in the lists for 1912. Other records, although not available for 1912, will we hope appear for 1913. Altogether we print 9 new records, either complete or in part; one only which appeared in *British Rainfall*, 1911, has not come in, and the number therefore increases from 20 to 28.

Of the new records, all of which are very welcome additions, we are especially glad to be able to include that kept at Crathes, by Mr. J. Smith, which, imperfect though it is, is peculiarly interesting as the only record beyond the limits of England and Wales since the observations made with the same instrument at Insch came to an end in 1910.

Most of the old records have continued with unaltered conditions so far as we have any information, but the Halliwell gauge at Aberclyd, in the Black Mountains, Breconshire, has been replaced by a Hyetograph, which needs less skilled mechanical attention, and breaks in the record have accordingly been fewer. It should be borne in mind, however, that the new gauge is slightly less sensitive and so gives rather smaller duration values than the old gauge, as appears from the comparison during the three months of the year during which the two gauges were observed side by side.

The long record by Casella's standard self-recording rain gauge at Camden Square provides the only means for comparing the duration

values of the year with those for more than very few previous years. The comparative table shows that in London 1912 ranks third among the last 32 years for duration, the only years with greater totals being 1903 with no less than 688·5 hours, and 1909 with the more moderate aggregate of 576·5 hours. It may be wise to mention

*Comparison of Amount, Duration and Intensity of Rainfall, and Number of Rain Days at Camden Square in 1912 with the Average for 31 years, 1881-1911.*

YEAR.	AMOUNT.		DURATION.		INTENSITY.		RAIN DAYS.	
	Total.	Per cent. of average	Total.	Per cent. of average	Rate per Hour.	Per cent. of average	Total.	Per cent. of average
	in.		hours		in.			
1881	27·92	116	486·3	114	·057	100	152	94
1882	27·14	112	480·7	113	·056	98	165	102
1883	24·40	101	393·5	92	·062	109	164	101
1884	20·35	84	336·8	79	·060	105	150	93
1885	26·64	110	470·0	110	·057	100	165	102
1886	27·01	112	427·2	100	·063	111	176	109
1887	19·21	80	300·3	70	·064	112	140	87
1888	27·74	115	435·7	102	·064	112	173	107
1889	23·85	99	428·5	100	·056	98	169	104
1890	21·23	88	409·5	96	·052	91	161	99
1891	28·15	117	490·3	115	·057	100	178	110
1892	22·61	94	372·5	87	·061	107	158	98
1893	19·80	82	388·0	91	·051	89	148	91
1894	27·94	116	477·7	112	·058	102	185	114
1895	21·47	89	380·0	89	·057	100	137	85
1896	23·52	97	404·3	95	·058	102	159	98
1897	22·86	95	371·2	87	·062	109	164	101
1898	<i>m</i> 17·69	73	<i>m</i> 298·5	70	·059	104	140	87
1899	22·54	93	337·5	79	·067	118	144	89
1900	23·28	97	366·3	86	·064	112	174	107
1901	22·17	92	310·2	73	<i>M</i> ·071	125	<i>m</i> 128	79
1902	20·84	86	352·5	83	·059	104	162	100
1903	<i>M</i> 38·10	158	<i>M</i> 688·5	161	·055	96	179	110
1904	20·65	86	491·8	115	<i>m</i> ·042	74	160	99
1905	22·97	95	456·4	107	·050	88	162	100
1906	24·26	101	420·4	98	·058	102	163	101
1907	23·01	95	418·8	98	·055	96	175	108
1908	23·67	98	500·7	117	·047	82	157	97
1909	26·75	111	576·5	135	·046	81	<i>M</i> 190	117
1910	25·36	105	491·2	115	·052	91	186	115
1911	24·79	103	473·0	111	·052	91	155	96
Average.	24·13	100	426·9	100	·057	100	162	100
1912	27·88	116	516·2	121	·054	95	180	111
Difference from average	+ 3·75	+16	+ 89·3	+21	- ·003	- 5	+18	+11



that the Casella recording gauge was, until November 26th, 1903, fitted with a pencil instead of the present aniline-ink pen, and that the improvement in the definition of the curve has probably led to the detection and inclusion of slight showers which in the earlier years might easily have passed unnoticed. In consequence it is possible, though not certain, that the values throughout the period are not absolutely comparable. The duration in 1912 at Camden Square exceeded the average value by 21 per cent., the amount of rain being 16 per cent., and the number of rain days 18 per cent. in excess of the average for the same period ; the year was thus one of very persistent rainfall but with an intensity slightly below the normal. The months of greatest duration were January with 88·8 hours, and August with 66·2 hours, each of these values being higher than ever before recorded in a month of that name. The only month with notably small duration was the almost rainless April, during which rain fell only during 1·6 hours at an average rate of only ·025 in. per hour. A shorter duration has been recorded in one month only, February, 1891, during the 32 years of the record, when it was only 1·0 hour.

All the stations reporting agree in giving high duration totals for the year, but most of the records are too short to provide any useful comparison with previous years. The Hodsock Priory record has now extended over eight years, and that at Southport over nine years ; at both these places the record for 1912 exceeded any previously recorded.

*Duration of Rainfall at Hampstead Observatory, London, in 1912.*

Negretti & Zambra's Hyetograph. 451 feet above Sea Level.

MR. E. L. HAWKE, F.R. Met. Soc.

1912.	Rainfall.	Duration.	Rate per hour.	Number of rain days.	Rate per rain day.	Duration per rain day.
	in.	hours.	in.		in.	hours.
January .....	4·08	101·0	·040	19	·21	5·3
February .....	1·79	44·0	·041	17	·11	2·6
March .....	3·19	66·3	·048	22	·15	3·0
April.....	·09	1·4	·064	3	·03	·5
May .....	1·18	27·9	·042	12	·10	2·3
June .....	3·64	59·7	·061	19	·19	3·1
July .....	1·72	19·4	·089	13	·15	1·5
August .....	4·66	81·0	·058	25	·19	3·2
September .....	2·08	29·8	·070	9	·23	3·3
October .....	2·17	42·0	·052	18	·12	2·3
November .....	1·69	44·1	·038	15	·11	2·9
December.....	2·78	70·8	·039	19	·15	3·7
Year ..	29·07	587·4	·050	191	·15	3·1

*Duration of Rainfall at Camden Square, London, in 1912.*  
 Casella's Standard Recording Rain Gauge. 111 feet above Sea Level.  
 DR. H. R. MILL, F.R.Met.Soc.

1912.	Rainfall.	Duration.	Rate per hour.	Number of rain days.	Rate per rain day.	Duration per rain day.
	in.	hours.	in.		in.	hours.
January.....	4·08	88·8	·046	17	·24	5·2
February .....	1·71	44·7	·038	20	·09	2·2
March .....	2·84	59·8	·047	20	·14	3·0
April .....	·04	1·6	·025	3	·01	·5
May .....	1·08	25·8	·042	9	·12	2·9
June .....	3·23	54·2	·060	19	·17	2·9
July .....	1·44	22·2	·065	12	·12	1·9
August.....	4·89	66·2	·074	25	·20	2·6
September .....	2·14	25·7	·083	6	·36	4·3
October .....	2·04	32·1	·064	15	·14	2·1
November.....	1·59	37·2	·043	16	·10	2·3
December .....	2·80	57·9	·048	18	·16	3·2
Year .....	27·88	516·2	·054	180	·15	2·9

*Duration of Rainfall at Park Hill House, Stanhope Road, Croydon,  
 Surrey, in 1912. 265 feet above Sea Level.*  
 MR. BALDWIN LATHAM, M.Inst.C.E., F.R.Met.Soc.

	in.	hours.	in.		in.	hours.
January .....	3·33	72·0	·046	21	·16	3·4
February .....	1·92	43·3	·044	18	·11	2·4
March .....	3·72	63·7	·058	20	·19	3·2
April .....	·10	1·2	·083	4	·03	·3
May .....	1·25	27·0	·046	11	·11	2·5
June .....	3·03	45·9	·066	19	·16	2·4
July .....	1·55	24·6	·063	14	·11	1·8
August.. .....	5·27	67·9	·078	28	·19	2·4
September .....	3·18	27·2	·117	8	·40	3·4
October .....	2·83	45·6	·062	20	·14	2·3
November .....	2·44	38·3	·064	21	·12	1·8
December .....	3·28	57·9	·057	21	·16	2·8
Year .....	31·90	514·6	·062	205	·16	2·5

*Duration of Rainfall at Hedgecroft, Walton-on-the-Hill, Surrey, in 1912.*  
 Negretti & Zambra's Hyetograph. 570 feet above Sea Level.  
 MR. G. R. CROMPTON, F.R.Met.Soc.

	in.	hours.	in.		in.	hours.
January .....	3·28	83·3	·039	24	·14	3·5
February .....	2·59	68·5	·038	24	·11	2·9
March .....	4·77	84·1	·057	23	·21	3·7
April .....	·05	·7	·071	3	·02	·2
May .....	1·41	22·8	·062	11	·13	2·1
June .....	3·28	55·5	·059	19	·17	2·9
July .....	1·61	28·8	·056	12	·13	2·4
August.....	6·82	84·9	·080	26	·26	3·3
September .....	3·87	33·3	·116	9	·43	3·7
October .....	3·44	58·2	·059	18	·19	3·2
November .....	2·41	57·8	·042	17	·14	3·4
December .....	3·80	82·9	·046	23	·17	3·6
Year .....	37·33	660·8	·056	209	·18	3·2

*Duration of Rainfall at Edenfield, New Malden, Surrey, in 1912.*

Casella's Recording Rain Gauge. 43 feet above Sea Level.

MR. W. J. CARTER, F.R.Met.Soc.

1912.	Rainfall.	Duration.	Rate per hour.	Number of rain days.	Rate per rain day.	Duration per rain day.
	in.	hours.	in.		in.	hours.
January .....	3·08	69·4	·044	17	·18	4·1
February .....	1·54	32·0	·048	19	·08	1·7
March .....	2·56	68·6	·037	20	·13	3·4
April .....	·11	·9	·122	2	·06	·5
May .....	1·37	32·6	·042	11	·12	3·0
June .....	3·32	71·6	·046	19	·17	3·8
July .....	1·57	36·8	·043	11	·14	3·3
August .....	5·08	90·8	·056	27	·19	3·4
September .....	2·35	31·2	·075	5	·47	6·2
October .....	2·27	55·9	·041	15	·15	3·7
November .....	1·83	52·6	·035	15	·12	3·5
December .....	2·69	77·5	·035	19	·14	4·1
Year .....	27·77	619·9	·045	180	·15	3·4

*Duration of Rainfall at Frinningham Lodge, Detling, Kent, in 1912.*

Negretti and Zambra's Hyetograph. 495 feet above Sea Level.

MR. R. M. KER.

	in.	hours.	in.		in.	hours.
January .....	2·85	62·0	·046	16	·18	3·9
February .....	1·77	57·3	·031	18	·10	3·2
March .....	3·07	61·1	·050	17	·18	3·6
April .....	·05	·9	·056	2	·03	·5
May .....	1·22	37·1	·033	13	·09	2·9
June .....	3·71	59·1	·063	17	·22	3·5
July .....	1·10	28·1	·039	...	...	...
August .....	5·17	74·1	·070	29	·18	2·6
September .....	3·07	34·1	·090	10	·31	3·4
October .....	3·12	56·6	·055	16	·20	3·5
November .....	...	...	...	...	...	...
December .....	...	...	...	...	...	...
Year .....	...	...	...	...	...	...

*Duration of Rainfall at Isfield Place, Sussex, in 1912.*

Negretti &amp; Zambra's Hyetograph. 51 feet above sea level.

MAJOR H. KING.

	in.	hours.	in.		in.	hours.
January .....	2·40	59·8	·040	17	·14	3·5
February .....	2·41	67·8	·036	20	·12	3·4
March .....	4·82	81·8	·059	19	·25	4·3
April .....	·10	1·6	·063	3	·03	·5
May .....	1·10	19·3	·057	9	·12	2·1
June .....	2·88	46·1	·063	18	·16	2·6
July .....	1·36	19·6	·069	12	·11	1·6
August .....	6·63	88·8	·075	25	·27	3·6
September .....	3·23	30·9	·105	6	·54	5·2
October .....	3·72	61·0	·061	13	·29	4·7
November .....	2·27	49·1	·046	16	·14	3·1
December .....	4·18	75·6	·055	21	·20	3·6
Year .....	35·10	601·4	·058	179	·20	3·4

*Duration of Rainfall at Tinsbury, Hants, in 1912.*

Negretti & Zambra's Tipping Bucket Recording Rain Gauge.  
90 feet above Sea Level. MR. WILLIAM MATTHEWS, M.Inst.C.E.

1912.	Rainfall.	Duration.	Rate per hour.	Number of rain days.	Rate per rain day.	Duration per rain day.
	in.	hours.	in.		in.	hours.
January .....	4·20	99·6	·042	20	·21	5·0
February .....	2·67	88·2	·030	20	·13	4·4
March .....	5·08	96·6	·053	21	·24	4·6
April .....	·11	1·2	·092	2	·05	·6
May .....	1·33	18·2	·073	10	·13	1·8
June .....	4·49	81·1	·055	20	·22	4·1
July .....	2·17	42·9	·051	15	·14	2·9
August.....	6·41	165·9	·039	26	·25	6·4
September .....	2·36	24·7	·096	3	·79	8·2
October .....	3·39	59·2	·057	14	·24	4·2
November .....	1·85	30·7	·060	11	·17	2·8
December .....	4·62	99·5	·046	20	·23	5·0
Year .....	38·68	807·8	·048	182	·21	4·4

*Duration of Rainfall at Twyford, Hants, in 1912.*

Negretti & Zambra's Tipping Bucket Recording Rain Gauge.  
139 feet above Sea Level. MR. WILLIAM MATTHEWS, M.Inst.C.E.

	in.	hours.	in.		in.	hours.
January .....	3·54	91·9	·039	18	·20	5·1
February .....	2·99	79·4	·038	20	·15	4·0
March .....	4·08	85·5	·048	20	·20	4·3
April .....	·02	·7	·029	2	·01	·3
May .....	1·03	19·2	·054	8	·13	2·4
June .....	4·86	75·3	·065	17	·29	4·4
July .....	2·22	32·8	·068	11	·20	3·0
August.....	6·57	124·8	·053	27	·24	4·6
September .....	2·57	28·5	·090	6	·43	4·7
October .....	3·73	60·2	·062	16	·23	3·8
November .....	2·15	32·7	·066	13	·17	2·5
December .....	4·32	103·6	·042	20	·22	5·2
Year .....	38·08	734·6	·052	178	·21	4·1

*Duration of Rainfall at University College, Reading, Berkshire, in 1912.*

Negretti & Zambra's Hyetograph.  
153 feet above Sea Level. DR. H. N. DICKSON, F.R.Met.Soc.

	in.	hours.	in.		in.	hours.
January .....	3·45	...	...	18	·19	...
February .....	1·75	...	...	18	·10	...
March .....	3·31	63·3	·052	21	·16	3·0
April .....	·03	0·7	·043	2	·02	0·4
May .....	1·25	23·6	·053	11	·11	2·1
June .....	3·28	56·7	·058	20	·16	2·8
July .....	1·38	23·6	·058	14	·10	1·7
August.....	4·60	54·3	·085	22	·21	2·5
September .....	2·35	25·1	·094	5	·47	5·0
October .....	2·21	36·8	·060	14	·16	2·6
November .....	1·43	28·1	·051	13	·11	2·2
December.....	2·66	48·2	·055	21	·13	2·3
Year .....	27·70	...	...	179	·15	...

*Duration of Rainfall at The Hollies, Mill Hill, Middlesex, in 1912.*  
 Negretti and Zambra's Hyetograph. 380 feet above Sea Level.  
 MRS. H. R. MILL, F.R.Met.Soc.

1912.	Rainfall.	Duration.	Rate per hour.	Number of rain days.	Rate per rain day.	Duration per rain day.
	in.	hours.	in.		in.	hours.
January .....	3·70	88·5	·042	17	·22	5·2
February .....	1·94	45·8	·042	17	·11	2·7
March .....	3·36	63·3	·053	23	·15	2·8
April .....	·08	1·5	·053	3	·03	·5
May .....	1·35	28·5	·047	12	·11	2·4
June .....	2·44	43·8	·056	20	·12	2·2
July .....	2·98	32·2	·093	15	·20	2·1
August.....	5·22	72·8	·072	25	·21	2·9
September .....	2·16	28·8	·075	11	·20	2·6
October .....	2·40	42·3	·057	16	·15	2·6
November .....	1·80	40·9	·044	17	·11	2·4
December .....	2·76	61·3	·045	21	·13	2·9
Year .....	30·19	549·7	·055	197	·15	2·8

*Duration of Rainfall at Woodford House, Cranford, Northamptonshire,  
 in 1912.*

Negretti and Zambra's Hyetograph. 262 feet above Sea Level.  
 MR. E. N. PLEVINS, F.R.Met.Soc.

	in.	hours.	in.		in.	hours.
January .....	2·98	89·8	·033	19	·16	4·7
February .....	1·43	39·5	·036	18	·08	2·2
March .....	2·10	51·9	·040	19	·11	2·7
April .....	·05	1·8	·028	1	·05	1·8
May .....	1·67	24·2	·069	12	·14	2·0
June .....	3·64	56·1	·065	23	·16	2·4
July .....	4·83	60·1	·080	17	·28	3·5
August.....	7·42	100·3	·074	25	·30	4·0
September .....	·97	24·5	·040	7	·14	3·5
October .....	2·03	41·3	·049	11	·18	3·8
November .....	1·36	35·1	·039	14	·10	2·5
December .....	2·88	55·7	·052	19	·15	2·9
Year .....	31·36	580·3	·054	185	·17	3·1

*Duration of Rainfall at Melbury Reservoir, Parkham, Devon, in 1912.*  
 Negretti and Zambra's Tipping Bucket Recording Rain Gauge.  
 516 feet above Sea Level.

MR. BALDWIN LATHAM, M.Inst.C.E., F.R.Met.Soc.

	in.	hours.	in.		in.	hours.
January ..	5·62	112·9	·050	20	·28	5·6
February .....	3·72	83·9	·044	24	·16	3·5
March .....	9·17	184·1	·050	30	·31	6·1
April .....	·35	10·6	·033	11	·03	1·0
May .....	1·81	44·4	·041	19	·10	2·3
June .....	9·10	142·6	·064	23	·40	6·2
July .....	4·22	75·9	·056	24	·18	3·2
August.....	11·46	179·8	·064	30	·38	6·0
September .....	1·13	27·1	·042	10	·11	2·7
October .....	7·36	109·3	·067	20	·37	5·5
November ..	4·18	96·9	·043	22	·19	4·4
December .....	9·71	189·2	·051	29	·33	6·5
Year .....	67·83	1256·7	·054	262	·26	4·8

*Duration of Rainfall at Dollarward House, Cirencester, Gloucestershire,  
in 1912.*

Negretti and Zambra's Hyetograph. 366 feet above Sea Level.

MR. C. P. HOOKER, F.R.Met.Soc.

1912.	Rainfall.	Duration.	Rate per hour.	Number of rain days.	Rate per rain day.	Duration per rain day.
	in.	hours.	in.		in.	hours.
January .....	6·08	110·8	·055	19	·32	5·8
February .....	1·93	58·5	·033	17	·11	3·4
March .....	5·14	106·7	·048	29	·18	3·7
April .....	·16	4·8	·033	4	·04	1·2
May .....	2·58	33·7	·077	14	·18	2·4
June .....	4·15	68·3	·061	20	·21	3·4
July ..	3·70	46·5	·080	18	·21	2·6
August.....	6·57	106·3	·062	26	·25	4·1
September .....	·86	19·3	·045	8	·11	2·4
October .....	3·83	67·8	·056	15	·26	4·5
November .....	1·89	38·9	·049	14	·14	2·8
December .....	5·12	100·8	·051	29	·18	3·5
Year .....	42·01	762·4	·055	213	·20	3·6

*Duration of Rainfall at West Bromwich, Staffordshire, in 1912.*

Negretti and Zambra's Hyetograph. 546 feet above Sea Level.

MR. A. D. GREATOREX, M.Inst.C.E.

	in.	hours.	in.		in.	hours.
January .....	3·77	...	...	17	·22	...
February.....	1·74	...	...	16	·11	...
March .....	5·05	...	...	22	·23	...
April .....	·28	...	...	4	·07	...
May .....	2·37	47·0	·050	15	·16	3·1
June.....	5·51	50·2	·110	25	·22	2·0
July .....	3·14	30·8	·102	17	·18	1·8
August .....	7·15	85·2	·084	26	·28	3·3
September .....	·81	12·5	·065	8	·10	1·6
October .....	2·55	24·9	·102	11	·23	2·3
November .....	2·16	26·5	·081	15	·14	1·8
December .....	3·62	40·2	·090	18	·20	2·2
Year.....	38·15	...	...	194	·20	...

*Duration of Rainfall at Mayfield House [near Ashbourne], Staffordshire,  
in 1912.*

Casella's Recording Rain Gauge. 374 feet above Sea Level.

MR. GRAHAM C. LAWSON.

	in.	hours.	in.		in.	hours.
January .....	4·89	163·9	·030	23	·21	7·1
February.....	1·56	47·9	·033	16	·10	3·0
March .....	4·08	109·5	·037	22	·19	5·0
April .....	·36	10·1	·036	5	·07	2·0
May .....	2·31	59·8	·039	14	·16	4·3
June .....	4·41	84·7	·052	25	·18	3·4
July .....	4·34	70·5	·062	19	·23	3·7
August.....	6·75	138·2	·049	24	·28	5·8
September.....	1·38	46·0	·030	11	·13	4·2
October .	3·95	58·5	·068	11	·36	5·3
November .....	3·10	75·2	·041	18	·17	4·2
December .....	3·96	74·3	·053	26	·15	2·9
Year.....	41·09	938·6	·044	214	·19	4·4

*Duration of Rainfall at Hodsock Priory, Notts, in 1912.*

Halliwell Recording Gauge. 56 feet above Sea Level.

LT.-COL. H. MELLISH, F.R.Met.Soc.

1912.	Rainfall.	Duration.	Rate per hour.	Number of rain days.	Rate per rain day.	Duration per rain day.
	in.	hours.	in.		in.	hours.
January .....	3·51	108·7	·032	21	·17	5·2
February .....	1·34	29·9	·045	15	·09	2·0
March .....	2·56	60·2	·043	25	·10	2·4
April .....	·14	2·0	·070	2	·07	1·0
May .....	3·28	49·8	·066	14	·23	3·6
June .....	4·52	60·3	·075	24	·19	2·5
July .....	4·82	48·5	·099	18	·27	2·7
August .....	4·79	72·5	·066	21	·23	3·5
September .....	1·35	24·5	·055	8	·17	3·1
October .....	2·30	25·9	·089	12	·19	2·2
November .....	2·41	37·8	·064	14	·17	2·7
December .....	2·43	36·3	·067	16	·15	2·3
Year .....	33·45	556·4	·060	190	·18	2·9

*Duration of Rainfall at Hesketh Park, Southport, Lancashire, in 1912.*

Halliwell Recording Gauge. 39 feet above Sea Level.

MR. J. BAXENDELL, F.R.Met.Soc.

	in.	hours.	in.		in.	hours.
January .....	3·52	105·0	·034	17	·21	6·2
February .....	1·64	53·8	·031	16	·10	3·4
March .....	4·79	115·7	·041	25	·19	4·6
April .....	·39	6·6	·059	4	·10	1·7
May .....	2·22	62·4	·036	14	·16	4·5
June .....	4·71	71·8	·066	23	·20	3·1
July .....	4·23	49·6	·085	16	·26	3·1
August .....	4·81	96·0	·050	24	·20	4·0
September .....	1·39	30·4	·046	10	·14	3·0
October .....	4·12	62·7	·066	16	·26	3·9
November .....	2·48	56·1	·044	20	·12	2·8
December .....	2·83	73·2	·039	27	·10	2·7
Year .....	37·13	783·3	·047	212	·18	3·7

*Duration of Rainfall at Huddersfield Cemetery, Yorkshire, in 1912.*

Halliwell Recording Gauge. 410 feet above Sea Level.

MR. J. FIRTH.

	in.	hours.	in.		in.	hours.
January .....	4·45	139·0	·032	21	·21	6·6
February .....	2·18	60·8	·036	21	·10	2·9
March .....	3·71	100·4	·037	27	·14	3·7
April .....	1·03	21·5	·048	6	·17	3·6
May .....	3·55	88·5	·040	17	·21	5·2
June .....	5·14	98·4	·052	25	·21	3·9
July .....	4·03	70·4	·057	19	·21	3·7
August .....	5·71	124·0	·046	25	·23	5·0
September .....	1·46	35·5	·041	9	·18	3·9
October .....	4·07	58·5	·069	14	·29	4·2
November .....	3·20	66·7	·048	17	·19	3·9
December .....	5·30	110·0	·048	23	·23	4·8
Year .....	43·83	973·7	·045	224	·20	4·3

*Duration of Rainfall at Town Hall, Skipton, Yorkshire, in 1912.*

Negretti and Zambra's Hyetograph. 370 feet above Sea Level.

MR. A. E. W. ALDRIDGE.

1912.	Rainfall.	Duration.	Rate per hour.	Number of rain days.	Rate per rain day.	Duration per rain day.
	in.	hours.	in.		in.	hours.
January .....	4·17	...	...	19	·22	...
February .....	1·67	...	...	15	·11	...
March .....	3·90	...	...	27	·14	...
April .....	·67	...	...	6	·11	...
May .....	2·20	...	...	15	·15	..
June .....	6·42	...	...	24	·27	...
July .....	4·18	...	...	16	·26	...
August.....	5·71	...	...	22	·26	...
September .....	1·79	34·8	·051	10	·18	3·5
October .....	3·67	60·5	·061	11	·33	5·5
November .....	2·79	81·5	·034	18	·16	4·5
December .....	4·64	101·9	·046	22	·21	4·6
Year .....	41·81	..	...	205	·20	...

*Duration of Rainfall at Mount St. John, Thirsk, Yorkshire, in 1912.*

Halliwell Recording Gauge. 542 feet above Sea Level.

MR. A. J. WALKER, F.R.Met.Soc.

	in.	hours.	in.		in.	hours.
January .....	3·22	115·5	·028	21	·15	5·5
February .....	1·99	50·5	·039	18	·11	2·8
March .....	3·14	98·5	·032	21	·15	4·7
April .....	·10	3·2	·031	4	·03	·8
May .....	2·49	62·2	·040	15	·17	4·1
June .....	6·02	89·1	·068	22	·27	4·1
July .....	4·17	66·2	·063	16	·26	4·1
August.....	5·10	97·5	·052	26	·20	3·8
September .....	2·15	43·6	·049	13	·17	3·4
October .....	2·61	59·8	·044	17	·15	3·5
November .....	3·31	78·2	·042	18	·18	4·3
December .....	1·10	32·2	·034	16	·07	2·0
Year.....	35·40	796·5	·044	207	·17	3·8

*Duration of Rainfall at Mount St. John, Thirsk, Yorkshire, in 1912.*

Newey Recording Gauge. 542 feet above Sea Level.

MR. A. J. WALKER, F.R.Met.Soc.

	in.	hours.	in.		in.	hours.
January .....	3·22	113·6	·028	21	·15	5·4
February.....	1·99	49·8	·040	18	·11	2·8
March .....	3·14	95·7	·033	21	·15	4·6
April .....	·10	2·8	·036	4	·03	·7
May .....	2·49	54·3	·046	15	·17	3·6
June .....	6·02	82·3	·073	22	·27	3·7
July .....	4·17	64·1	·065	16	·26	4·0
August .....	5·10	100·2	·051	26	·20	3·9
September .....	2·15	42·9	·050	13	·17	3·3
October .....	2·61	64·8	·040	17	·15	3·8
November .....	3·31	76·3	·043	18	·18	4·2
December .....	1·10	32·9	·033	16	·07	2·1
Year.....	35·40	779·7	·045	207	·17	3·8



*Duration of Rainfall at Mount St. John, Thirsk, Yorkshire, in 1912.*

Lander and Smith's Recording Gauge. 542 feet above Sea Level.

MR. A. J. WALKER, F.R. Met. Soc.

1912.	Rainfall.	Duration.	Rate per hour.	Number of rain days.	Rate per rain day.	Duration per rain day.
	in.	hours.	in.		in.	hours.
January .....	3·22	97·0	·033	21	·15	4·6
February .....	1·99	44·0	·045	18	·11	2·4
March .....	3·14	89·8	·035	21	·15	4·3
April .....	·10	1·1	·091	4	·03	·3
May .....	2·49	54·7	·046	15	·17	3·6
June .....	6·02	84·1	·072	22	·27	3·8
July .....	4·17	62·6	·067	16	·26	3·9
August .....	5·10	97·6	·052	26	·20	3·8
September .....	2·15	43·8	·049	13	·17	3·4
October .....	2·61	62·8	·042	17	·15	3·7
November .....	3·31	72·4	·046	18	·18	4·0
December .....	1·10	27·5	·040	16	·07	1·7
Year .....	35·40	737·4	·048	207	·17	3·6

*Duration of Rainfall at Percy Park, Tynemouth, Northumberland, in 1912.*

Negretti &amp; Zambra's Hyetograph. 92 feet above Sea Level.

MR. J. E. BURNETT, F.R. Met. Soc.

	in.	hours.	in.		in.	hours.
January .....	2·31	61·0	·038	19	·12	3·2
February .....	2·30	49·9	·046	19	·12	2·6
March .....	1·80	44·0	·041	20	·09	2·2
April .....	·11	2·2	·050	6	·02	0·4
May .....	2·55	52·7	·048	15	·17	3·5
June .....	4·36	74·8	·058	23	·19	3·3
July .....	4·25	48·4	·088	16	·27	3·0
August .....	4·45	91·3	·049	26	·17	3·5
September .....	2·04	39·2	·052	12	·17	3·3
October .....	3·80	45·3	·084	14	·27	3·2
November .....	1·75	30·0	·058	16	·11	1·9
December .....	1·29	28·2	·046	15	·09	1·9
Year .....	31·01	567·0	·055	201	·15	2·8

*Duration of Rainfall at Cray Reservoir, Breconshire, in 1912.*

Halliwell Recording Gauge. 1,030 feet above Sea Level.

MR. R. H. WYRILL, M. Inst. C. E.

	in.	hours.	in.		in.	hours.
January .....	7·13	236·0	·030	24	·30	9·8
February .....	7·09	179·3	·040	27	·26	6·6
March .....	13·04	220·2	·059	28	·47	7·8
April .....	·63	40·8	·015	12	·05	3·4
May .....	2·26	88·5	·026	20	·11	4·4
June .....	7·61	132·2	·057	25	·30	5·3
July .....	6·08	104·8	·058	22	·28	4·8
August .....	12·20	189·5	·064	30	·41	6·3
September .....	1·07	33·7	·032	10	·11	3·4
October .....	7·77	134·5	·058	18	·43	7·5
November .....	5·13	143·3	·036	25	·21	5·7
December .....	12·82	242·2	·053	31	·41	7·8
Year .....	82·83	1745·0	·047	272	·30	6·4

*Duration of Rainfall at Aber Clyd, Black Mountains, Breconshire,  
in 1912.*

Halliwell Recording Gauge. 1,880 feet above Sea Level.

THE REFEREES under the Abertillery and District Water Board Act.

1912.	Rainfall.	Duration.	Rate per hour.	Number of rain days.	Rate per rain day.	Duration per rain day.
	in.	hours.	in.		in.	hours.
January .....	6·72	181·0	·037	21	·32	8·6
February .....	4·31	139·4	·031	26	·17	5·4
March .....	9·69	196·1	·049	27	·36	7·3
April .....	·47	...	...	6	·08	...
May .....	2·50	...	...	14	·18	...
June .....	5·11	...	...	21	·24	...
July .....	6·24	...	...	23	·27	...
August .....	12·21	...	...	28	·44	...
September .....	1·89	...	...	10	·19	...
October .....	6·03	...	...	17	·36	...
November .....	3·02	...	...	18	·17	...
December .....	7·52	...	...	30	·25	...
Year .....	65·71	...	...	241	·27	...

*Duration of Rainfall at Aber Clyd, Black Mountains, Breconshire,  
in 1912.*

Negretti and Zambra's Hyetograph. 1,880 feet above Sea Level.

THE REFEREES under the Abertillery and District Water Board Act.

	in.	hours.	in.		in.	hours.
January .....	6·72	174·3	·039	21	·32	8·3
February .....	4·31	110·3	·039	26	·17	4·2
March .....	9·69	167·3	·058	27	·36	6·2
April .....	·47	23·9	·020	6	·08	4·0
May .....	2·50	55·0	·045	14	·18	3·9
June .....	5·11	85·3	·060	21	·24	4·1
July .....	6·24	88·8	·070	23	·27	3·9
August .....	12·21	162·7	·075	28	·44	5·8
September .....	1·89	29·7	·064	10	·19	3·0
October .....	6·03	105·3	·057	17	·36	6·2
November .....	3·02	71·3	·042	18	·17	4·0
December .....	7·52	129·8	·058	30	·25	4·3
Year .....	65·71	1203·7	·055	241	·27	5·0

*Duration of Rainfall at Pinewood, Crathes, Kincardineshire, in 1912.*

Negretti and Zambra's Hyetograph.

MR. J. SMITH.

	in.	hours.	in.		in.	hours.
January .....	6·43	...	...	21	·31	...
February .....	2·83	...	...	18	·16	...
March .....	2·51	...	...	20	·13	...
April .....	·49	...	...	10	·05	...
May .....	1·93	...	...	16	·12	...
June .....	2·04	...	...	21	·10	...
July .....	1·55	21·8	·071	10	·16	2·2
August .....	5·68	70·7	·080	20	·28	3·5
September .....	2·64	49·4	·053	10	·26	4·9
October .....	5·17	86·8	·060	20	·26	4·3
November .....	2·55	50·3	·051	17	·15	3·0
December .....	1·10	32·0	·034	13	·08	2·5
Year .....	34·92	...	...	196	·18	...

## HEAVY RAINS IN SHORT PERIODS.

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THE value of this section of *British Rainfall* is not yet so great as it might become if more attention were devoted to the subject by those Observers whose occupations admit of the opportunity to make a reading of their rain gauges immediately on the cessation of heavy falls of rain. Very heavy rains of short duration, sufficiently remarkable to be worthy of putting on record, do not, of course, take place frequently in the same place, but the repeated appearance of a few stations in the lists year after year suggests that interesting results might be obtained by almost any Observer. It is, of course, necessary when a fall of rain of great intensity is to be put upon record not only that a reading should be made directly the rain ceases or slackens, but that the gauge should be known to have been empty, or to have contained only a known amount, before the commencement of the shower in question. Some Observers we know take a reading of the gauge, or ascertain the fact of its being empty, whenever the promise of exceptional rain offers, but we are not altogether without fear that in a few instances slight showers occurring earlier in the day of the heavy rain may pass unnoticed and be measured along with it. If this defect is known to exist in the observation we do not include the statement in the list unless the fall is of so great intensity that it would be remarkable in any case, and even when this is so a query is added. Other instances of heavy falls which we prefer to qualify are those in which the words of the Observer are not perfectly definite. The use of such expressions as "about an hour," or "about an inch of rain," for example, hardly justify us in accepting the record as fully as if the measurement of time or amount were made with precision. A query is, therefore, inserted against any figure thus qualified. Complaints are sometimes received from Observers who suppose that the queries, inserted to call attention to their conscientious disclaimer to greater accuracy than was possible in the circumstances, cast a slur upon their character as Observers. As the explanation given above shows, the reverse is the case. The presence of these queries in the list adds

to, rather than takes away from, its utility, by insisting on its limitations, and we are particularly grateful when Observers warn us of the necessity of accepting any observation with reserve. The scope of what is possible in the way of heavy rainfall is so great that one can hardly refuse credence to any statement of heavy rainfall in a short period purely on the score of its reported intensity and it is, therefore, of paramount importance to insist on all possible corroboration for every remarkable fall which is placed on record.

With these limitations the lists which have appeared in *British Rainfall* yearly since 1868 contain a store of information as to the possibilities of heavy rain in the British Isles, and provide a rough means of measuring the degree of probability of such heavy rainfalls occurring. A careful study of the records of heavy rainfalls in periods of less than an hour back to 1878, made in *British Rainfall*, 1908, pp. [73]—[76], suggested the limits given in Table I. No record falling below the “worthy of notice” limit is included in the lists and in the diagram on p. [104] the space where such falls would be marked is shaded. Falls reaching the “remarkable” limit are marked in the list with a cross, and if any pass the limit of “very rare” a double cross distinguishes them. The crosses are added to

TABLE I.—*Limits of Remarkable Falls.*

Minutes.	WORTHY OF NOTICE.		REMARKABLE.		VERY RARE.	
	Amount.	Rate per hour.	Amount.	Rate per hour.	Amount.	Rate per hour.
	in.	in.	in.	in.	in.	in.
10.....	·30	1·80	·65	3·90	1·00	6·00
20.....	·53	1·59	1·06	3·18	1·58	4·74
30.....	·70	1·40	1·35	2·70	2·00	4·00
40... ..	·82	1·23	1·54	2·31	2·26	3·39
50.....	·92	1·10	1·67	2·00	2·42	2·90
60.....	1·00	1·00	1·75	1·75	2·50	2·50

falls with a longer duration than one hour if they appear to be sufficiently notable, but a precise numerical basis for these longer falls has not yet been definitely arrived at.

Table II. comprises all instances recorded since 1878 of falls of one hour or less in duration passing the limits of “very rare.” Two new records have been added to it from the 1912 list, both, however, only claiming insertion by a narrow margin. The first, namely, ·26 in. in 1½ minutes, at Alexandria, in Dumbartonshire, on May 8th, is the shortest of these “very rare” falls we have on record and with the

most careful timing might easily have an error of a few seconds. This would, of course, introduce an appreciable error into the rate per hour. This rate, 10·40 in., is the largest ever put on record for

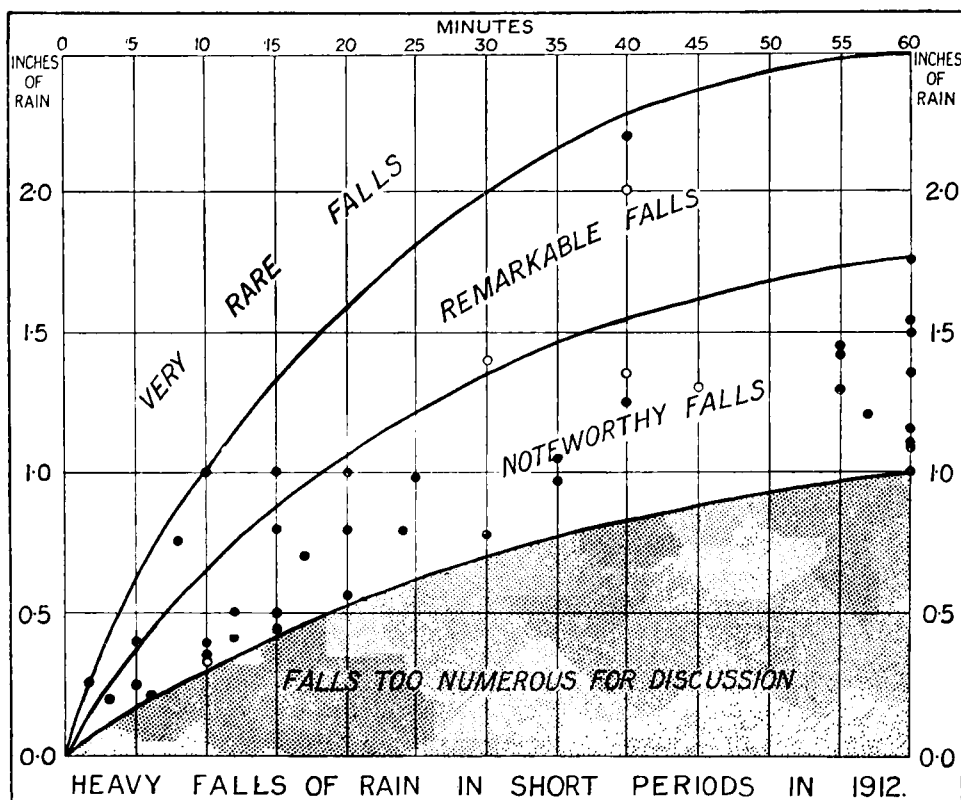
TABLE II.—*Rainfalls of very rare Intensity lasting for one hour or less.*

Year.	Date.	Div.	Station	Amount.	Duration.		Rate per hour.
				in.	hr.	min.	in.
1912	May 8	XV.	Alexandria .....	·26	0	1½	10·40
1888	Mar. 24	XI.	Chepstow, Shirenewton Hall..	·33	0	2	9·90
1906*	June 17	IX.	Ilkley, Eaton Road.....	·50	0	4	7·50
1893	Aug. 10	VIII.	Preston, Corporation Offices...	1·25?	0	5?	15·00?
"	June 14	XI.	Chepstow, Shirenewton Hall..	·62	0	5	7·44
1906	Aug. 2	II.	Guildford, Piccard's Rough ...	·89	0	8	6·68
1892	July 3	VIII.	Bolton, The Park.....	1·00?	0	9?	6·67?
1902	May 30	III.	Cambridge, Sydney Street....	1·10	0	10	6·60
1878	June 23	I.	St. Pancras, Camden Square..	1·00	0	10	6·00
1912	July 22	VII.	Wirksworth, Manor House ...	1·00	0	10	6·00
1906	Aug. 2	II.	Haslemere, Lower Street.....	1·46	0	15?	5·84?
1878	June 23	I.	St. Pancras, Camden Square..	1·43	0	15	5·72
1875	Aug. 7	II.	Canterbury, Harbledown.....	2·12	0	20	6·36
1878	June 23	I.	St. Pancras, Camden Square..	1·80	0	20	5·40
1897	" 24	III.	Luton Pumping Station .....	1·65	0	20	4·95
1878	" 23	I.	St. Pancras, Camden Square..	2·30	0	28	4·93
1880	July 22	XI.	Cowbridge, Ash Hall.....	2·90	0	30	5·80
1895	June 27	IX.	Middleton-in-the-Wolds .....	2·00	0	30	4·00
1902	Sep. 10	II.	Surbiton, Vronvelin.....	2·00	0	30	4·00
1904	July 27	"	Cooling, Broomy Farm .....	2·66	0	45	3·55
1909	Sep. 29	V.	Ilfracombe Reservoir.....	2·50?	0	45	3·33?
1895	June 26	"	Marlborough .....	2·71	0	50	3·25
1903	July 18	VI.	Betley Hall [Crewe].....	2·53	0	50	3·04
1905	" 9	III.	Enfield, Carisbrooke.....	2·44	0	50	2·93
1911	May 31	II.	Epsom, Ashley Road .....	2·44	0	50	2·93
1901	July 29	"	Wadhurst, Lower Cousley Wood..	3·25?	0	55	3·55?
"	" 12	"	Maidenhead, Lowood.....	3·63	1	0?	3·63?
1903	May 30	"	Beddington Corner.....	3·50	1	0	3·50
1911	" 26	"	Fareham, The Mount .....	3·00	1	0	3·00
1897	July 21	IV.	Ipswich, Bishops Hill .....	2·95	1	0	2·95
1895	June 26	VI.	Worcester, Diglis Lock.....	2·75	1	0	2·75
1909	" 1	XII.	Carsphairn, Shiel.....	2·71	1	0?	2·71?
1873	July 28	XVII.	Fettercairn .....	2·60	1	0	2·60
1889	June 7	II.	Tonbridge, Ferndale.....	2·60?	1	0?	2·60?
1886	July 25	VIII.	Sale, Brooklands.....	2·58	1	0	2·58
1899	" 22	V.	Dorchester Water Works.....	2·56	1	0?	2·56?
1875	" 22	"	Trowbridge, Sunnyside.....	2·53	1	0	2·53
"	June 29	III.	Cardington .....	2·50	1	0	2·50
1886	July 25	IX.	Wakefield, Stanley Vicarage..	2·50	1	0	2·50

\* Did not appear in *British Rainfall*.

the British Isles with the single exception of the fall of 1·25 in. in five minutes at Preston, in August, 1893, which, however, must be accepted with some reserve.

Other heavy falls during the year which were sufficiently remarkable to merit special mention were those of July 12th, at Baslow, and July 13th, at Sudbury. That at Baslow gave the remarkable record of 2·20 in. in 40 minutes, but we have no further details of the storm. On the following day an extraordinarily intense and very local fall of rain mingled with large hail stones took place in the south of Suffolk. Several stations in the immediate neighbourhood of Sudbury registered a large total, and the most noteworthy was a fall of 2·01 in. in about 40 minutes at Cornard Road.



Ten days later, from July 22nd to 24th, there were severe thunderstorms chiefly in the Midlands, and on the 23rd the neighbourhood of Hitchin experienced what is described as the severest storm for 75 years, and a number of the entries in the table refer to that occasion, but the heaviest individual rainfalls were in other parts of the country, that of 1·00 in. in ten minutes at Wirksworth, on July 22nd, being the most noteworthy. Only two previous instances of so intense a rainfall lasting for so long as ten minutes have been reported as occurring in this country. A fall of an inch of rain

also occurred in 15 minutes at London Colney, near St. Albans, on July 23rd.

During August there were two intense rains of quite short duration at Southwater, in Sussex, and a heavy rainfall near Greenock, which produced 1·87 in. in 80 minutes and did considerable damage with the flooding of the West Burn. All the other remarkable entries during this month are taken from the detailed records of a few Observers during the great East Anglian rainfall of August 26th. The intensity of the rain on that occasion was certainly less remarkable than its persistence, but rainfall at the rate of an inch per hour was maintained in one instance for three hours, and at a slightly lower rate for five or six hours at several other stations mostly near Norwich and Worstead. Full details of this rainstorm are given in a special article in Part I. of this volume.

TABLE III.—*Heavy Rains in Short Periods in 1912.*

Date.	Div.	Station.	Amount.	Duration.	Rate per hour.
			in.	hr. min.	in.
May 8 ...	XV.	Alexandria .....	·26	... 1½	10·40xx
June 24 ...	II.	Frimmingham Lodge .....	·19	... 3	3·80
Aug. 19 ...	„	Southwater .....	·40	... 5	4·80 x
July 23 ...	III.	Hitchin, Chiltern Road.....	·25	... 5	3·00
Aug. 12 ...	XVI.	Dunkeld, Snaigow .....	·21	... 6	2·10
„ 7 ...	II.	Southwater .....	·75	... 8	5·63 x
July 22 ...	VII.	Wirksworth, Manor House ...	1·00	... 10	6·00xx
Aug. 20 ...	II.	Bournemouth, Vale View .....	·40	... 10	2·40
June 9 ...	VII.	Wirksworth, Manor House....	·40	... 10	2·40
July 13 ...	„	Osbaston Hall .....	·36	... 10	2·16
„ 12 ...	IX.	West Witton .....	·35	... 10	2·10
Nov. 26 ...	III.	Hampton Poyle .....	·33?	... 10	1·98?
July 26 ...	„	Raunds Day School .....	·50	... 12	2·50
„ 12 ...	„	Great Billing .....	·42	... 12	2·10
„ 23 ...	„	London Colney .....	1·00	... 15	4·00 x
„ „ ...	„	Cranford, Woodford House ...	·80	... 15	3·20
June 8 ...	XXI.	Castle Forbes Gardens .....	·50	... 15	2·00
July 25 ...	IV.	N. Walsham, Empson House..	·44	... 15	1·76
June 19 ...	VII.	Claypole .....	·71	... 17	2·51
Aug. 4 ...	VI.	Redditch .....	1·00	... 20	3·00
„ „ ...	IX.	Rawdon .....	1·00?	... 20	3·00?
July 27 ...	VII.	Darley Hall .....	·80	... 20	2·40
June 12 ...	X.	Casterton, Clergy Daughters' Sch.	·56	... 20	1·68
July 27 ...	VII.	Hodsock Priory .....	·80	... 24	2·00
„ 13 ...	IV.	Sudbury, Friars Street .....	·98	... 25	2·35
„ „ ...	„	„ Great Cornard .....	1·40?	... 30?	2·80? x
„ 23 ...	III.	Oxford, Banbury Road .....	·78	... 30	1·56
June 22 ...	XXII.	Cong, The Glebe.....	1·05	... 35	1·80
July 1 ...	X.	Heddon-on-the-Wall .....	·97	... 35	1·66
„ 12 ...	VII.	Baslow, The Beeches....	2·20	... 40	3·30 x

TABLE III.—*Heavy Rains in Short Periods in 1912—(continued).*

Date.	Div.	Station.	Amount.	Duration.		Rate per hour.
			in.	hr.	min.	in.
July 13 ...	IV.	Sudbury, Cornard Road.....	2·01	...	40?	3·02?x
„ 27 ...	VII.	Chesterfield Sewage Works ...	1·35	...	40?	2·02?
May 30 ...	„	Mansfield, West Bank .....	1·26	...	40	1·89
Oct. 28 ...	IV.	Reepham, Old Brewery House	1·30	...	45?	1·73?
May 30 ...	VII.	Mansfield, High Oakham .....	1·46	...	55	1·59
„ „ ...	„	„ „ „ Berry Hill .....	1·43	...	55	1·56
July 23 ...	VI.	Radford House .. .....	1·30	...	55	1·42
„ 1 ...	X.	Heddon-on-the-Wall .....	1·21	...	57	1·28
„ 12 ...	„	Bamburgh .....	1·75	1	0	1·75 x
May 30 ...	VII.	Mansfield, West Bank .....	1·54	1	0	1·54
June 12 ...	IV.	Grays Sewage Works.....	1·50	1	0	1·50
Aug. 26 ...	„	Worstead, Westwick Gardens	1·36	1	0	1·36
„ „ ...	„	Norwich, Ipswich Road .....	1·15	1	0	1·15
„ „ ...	„	„ „ „ „ .....	1·10	1	0	1·10
May 22 ...	„	Sporle .....	1·10	1	0	1·10
July 12 ...	X.	Darlington, Cleveland Parade.	1·08	1	0	1·08
„ 23 ...	III.	Hitchin, Preston.....	1·00	1	0	1·00
Aug. 5 ...	XIV.	Greenock, Prospect Hill.....	1·87	1	20	1·40 x
July 24 ...	VII.	Horkstow.....	2·12	1	30	1·41 x
Aug. 26 ...	IV.	Worstead, Westwick Gardens	1·96	1	30	1·31 x
July 25 ...	XVI.	Forfar, Lilyfield .....	1·43	1	30	·95
„ 23 ...	III.	St. Albans Gas Works .....	1·40	1	30	·93
Aug. 26 ...	IV.	Norwich, Ipswich Road .....	2·25	2	0	1·13 x
July 24 ...	IX.	Beverley, East Riding Asylum	2·00	2	0	1·00
„ 23 ...	III.	Barnet, Summerhill .....	1·50	2	0	·75
„ „ ...	„	„ „ Dyrham Park.....	2·81	2	12	1·28 x
„ „ ...	„	London Colney ... ..	2·33	2	30?	·93?
Aug. 26 ...	IV.	Worstead, Westwick Gardens	2·66	2	40	1·00 x
„ „ ...	„	Norwich, Ipswich Road .....	3·05	3	0	1·02 x
„ „ ...	„	Worstead, Westwick Gardens	3·04	3	10	·96 x
„ „ ...	„	Norwich, Ipswich Road .....	3·75	4	0	·94 x
„ „ ...	„	Worstead, Westwick Gardens	3·41	4	0	·85
„ „ ...	„	Keswick Old Hall .....	3·35	4	15	·79
„ „ ...	„	Worstead, The Grange .....	3·19	4	30	·71
„ „ ..	„	Norwich, Ipswich Road .....	4·34	5	0	·87 x
„ „ ...	„	Long Stratton, Great Moulton Rec.	3·30	5	0	·66
„ „ ...	„	Worstead, Westwick Gardens	4·04	5	30	·73
„ „ ...	„	Norwich, Ipswich Road .....	4·90	6	0	·82 x
„ „ ...	„	Baconsthorpe Rectory .....	4·50	6	0	·75 x
„ „ ...	„	Norwich, Christ Church Rd., Eaton	4·96	6	15	·79 x



## HEAVY FALLS ON RAINFALL DAYS IN 1912.

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FROM being merely an account of the amount of rain recorded on the *wettest* day in the year at each station the scope of this section has been extended during the last thirteen years to include not only the maximum daily rainfall during the year, but as far as possible a study of the distribution and intensity of the most remarkable rain storms of the year. In this work we are confined by the nature of our material to the rainfall day as a time unit, since very few of the 4315 Observers whose records have been utilized for the purpose of the discussion on this occasion read their rain gauges more than once during the twenty-four hours. Whenever it is possible, however, we endeavour to identify and to deal with each complete heavy shower as an individual phenomenon. It is often possible to do this by combining together the rainfall of two or more days when there is reason to believe that the amounts measured on those days were part of a single continuous fall. In addition to this we are always glad when Observers are able to provide the traces of recording rain gauges, or the results of observations specially made at hours other than 9 a.m. during heavy rains, as these afford a means of following the time relations of such phenomena. So far it has proved impossible to take account of each heavy fall when two or more of these occurred on the same rainfall day. Thus a series of thunderstorms separated by intervals of six or eight hours would be confused together, and the maps of thunderstorm rains have so far been subject to this uncertainty. The increase in the number of self-recording rain gauges leads us to hope that before very long it may be possible to analyse the rainfall of individual days into its component parts.

The treatment of maximum falls alone, which for so many years appeared in *British Rainfall*, was by no means without value, and we are anxious, as far as possible, to continue to place on record similar data, by means of which the comparative value of so many years' work may be retained. We therefore continue to print along with the description of the distribution of rainfall on each of the days the amount of the rainfall at all stations where the maximum daily fall

for the year occurred on that day whenever the amount of the fall exceeded 2·50 in., or 7·5 per cent. of the year's total.

In *British Rainfall*, 1910, was printed on pages 31-36 a list of the greatest rainfalls ever recorded on a rainfall day in each county, and on page [137] of *British Rainfall*, 1911, we inserted a short list of corrections and additions, bringing the earlier one up to date. We have now, on account of the unprecedented rainfall of August 26th in East Anglia, to introduce so many additional heavy falls in the east of England that we think it will be most convenient to re-write the list for Division IV., which is accordingly given below.

*The Greatest Rainfall on the Wettest Day.*

Div.	County.	Station.	Date.	M*
IV.	Essex.	North Ockendon .....	Aug. 1, 1888 ...	4·56
"	"	Upminster .....	Aug. 1, 1888 ...	4·50
"	"	North Ockendon .....	Sept. 2, 1889 ...	4·45
"	"	Buckhurst Hill .....	July 23, 1903 ...	4·35
"	"	Upminster .....	Sept. 2, 1889 ...	4·32
"	"	Buckhurst Hill House .....	July 23, 1903 ...	4·25
"	"	" " Reservoir .....	July 23, 1903 ...	4·16
"	Suffolk.	Stradbroke Vicarage .....	Aug. 26, 1912 ...	5·00
"	"	Fritton Hall .....	Aug. 26, 1912 ...	4·66
"	"	Herringfleet, The Gables .....	Aug. 26, 1912 ...	4·28
"	"	Lound Pumping Station .....	Aug. 26, 1912 ...	4·01
"	"	Burgh Hall .....	Aug. 26, 1912 ...	4·01
"	NORFOLK.	Brundall, Blofeld Road ..	Aug. 26, 1912 ...	7·31
"	"	Sprowston Council School .....	Aug. 26, 1912 ...	7·20
"	"	Old Catton .....	Aug. 26, 1912 ..	6·90
"	"	Sprowston, Oak Lodge .....	Aug. 26, 1912 ...	6·90
"	"	Norwich, Carrow House .....	Aug. 26, 1912 ...	6·67
"	"	" Heigham Cemetery.	Aug. 26, 1912 ...	6·59
"	"	" Ipswich Road .....	Aug. 26, 1912 ...	6·49
"	"	Gunton Park .....	Aug. 26, 1912 ...	6·46
"	"	Sprowston Hall ..	Aug. 26, 1912 ...	6·40
"	"	Worstead, Westwick Gardens	Aug. 26, 1912 ...	6·38
"	"	Brooke School .....	Aug. 26, 1912 ...	6·31
"	"	Norwich, Eaton .....	Aug. 26, 1912 ...	6·31
"	"	Worstead, The Grange ..	Aug. 26, 1912 ...	6·31
"	"	Coltishall ..	Aug. 26, 1912 ...	6·18
"	"	Dunston Hall .....	Aug. 26, 1912 ...	6·13
"	"	Keswick Old Hall .....	Aug. 26, 1912 ...	6·06
"	"	Moulton ..	Aug. 26, 1912 ...	6·01
"	"	Swainsthorpe, The Rookery...	Aug. 26, 1912 ...	5·90
"	"	Baconsthorpe Rectory .....	Aug. 26, 1912 ...	5·76
"	"	Cromer, The Warren .....	Aug. 26, 1912 ...	5·76
"	"	Drayton ..	Aug. 26, 1912 ...	5·70
"	"	Honingham Hall .....	Aug. 26, 1912 ...	5·62
"	"	Hethersett .....	Aug. 26, 1912 ...	5·58
"	"	Worstead, Lyngate Cottage...	Aug. 26, 1912 ...	5·55
"	"	Aylsham, Rippon Hall .....	Aug. 26, 1912 ...	5·54
"	"	" Millgate .....	Aug. 26, 1912 ...	5·46
"	"	Saxlingham Nethergate .....	Aug. 26, 1912 ...	5·45

Div.	County.	Station.	Date.	M*
IV.	NORFOLK.	Mundesley-on-Sea .....	Aug. 26, 1912 ...	5·42
"	"	Wymondham .....	Aug. 26, 1912 ...	5·33
"	"	Bylaugh Park Gardens .....	Aug. 26, 1912 ...	5·30
"	"	Cawston Rectory.....	Aug. 26, 1912 ...	5·30
"	"	Long Stratton, Fritton Rec....	Aug. 26, 1912 ...	5·21
"	"	Yarmouth, Ormesby St. Michael..	Aug. 26, 1912 ...	5·17
"	"	Worstead, The Rookery, Dilham	Aug. 26, 1912 ...	5·16
"	"	North Walsham, Beech Grove	Aug. 26, 1912 ...	5·16
"	"	Lodden, Langley Park .....	Aug. 26, 1912 ...	5·05
"	"	Spooner Row, Wattlefield Hall	Aug. 26, 1912 ...	5·04
"	"	Cromer, Northrepps Hall .....	Aug. 26, 1912 ...	4·90
"	"	Yarmouth, Sailors' Home.....	Aug. 26, 1912 ...	4·80
"	"	Pulham St. Mary, The Firs ..	Aug. 26, 1912 ...	4·77
"	"	Swanington Rectory .....	Aug. 26, 1912 ...	4·71
"	"	Thurlton School .....	Aug. 26, 1912 ...	4·63
"	"	Long Stratton, Gt. Moulton Rec	Aug. 26, 1912 ...	4·50
"	"	Fakenham.....	July 11, 1893 ...	4·48
"	"	Pulham St. Mary School .....	Aug. 26, 1912 ...	4·40
"	"	Yarmouth, Northgate House.	Aug. 26, 1912 ...	4·35
"	"	Diss, The Cedars.....	Aug. 26, 1912 ...	4·21
"	"	North Walsham, Empson Ho.	Aug. 26, 1912 ...	4·05

In addition to the modification introduced by the above long list the other additions and corrections required are as follows:—

			1912	in.
CUMBERLAND..	<i>add</i>	Seathwaite .....	Dec. 13 ...	5·70
WESTMORLAND	<i>add</i>	Grasmere, The Wray.....	Dec. 13 ...	5·14
<i>Merioneth</i> .....	<i>add</i>	Blaenau Festiniog, Oakley Quarries..	June 17 ...	4·25
CARNARVON ...	<i>add</i>	Lake Cowlyd, Llethyr Gwyn ...	Oct. 26 ...	4·47
" .....	<i>add</i>	Snowdon, Cwm Dyli .....	Oct. 26 ...	4·28
" .....	<i>add</i>	Lake Cowlyd, Ffrith Fawr .....	Oct. 26 ...	4·26
" .....	<i>add</i>	Snowdon, Pen-y-Gwyrdd.....	Oct. 26 ...	4·25
ARGYLL .....	<i>add</i>	Loch Awe, Cruachan .....	Apr. 4 ...	4·32
" .....	<i>add</i>	Mull, Knock.....	Dec. 10 ...	4·21
Perth .....	<i>substitute</i>	Stronvar .....	Dec. 19 ...	4·35
INVERNESS.....	<i>add</i>	Kinlochquoich .....	Apr. 3 ...	4·75

## Part I.—The Chronicle.

### January 16th.

A very deep and nearly stationary depression lying off the west coast of Ireland was accompanied by heavy rain, chiefly in the English Midlands, and heavy snow in parts of Scotland. Nearly a hundred stations recorded their maximum fall for the year, but the amount of rain was exceptional only in Perthshire. One station in Argyll also recorded more than 3 inches.

XV.	Ardkinglas .....	3·16 in.	or 3·4 per cent.
XVI.	Balquhidder (Edinchip) .....	3·55 "	4·0 "
"	Aberfeldy (Dall Avon).....	3·82 "	8·2 "
"	" (Dunros) .....	2·86 "	7·0 "

**January 17th.**

Snow fell in nearly all parts of England and the maximum rainfall of the year was recorded at 160 stations. In the southern counties rain was followed by a remarkable glazed frost, which is described by many of the Observers in their notes on pages [4]—[6]. A photograph of the effects of this frost at Chatham forms the frontispiece of this volume. Only one record passed the limit for insertion in this list.

VIII. Liverpool (Huyton Vicarage)..... 3·00 in. or 7·6 per cent.

**March 4th.**

A depression which passed in a westerly direction across the centre of Ireland, and afterwards north-westwards through the Isle of Man and the English Lake District, was accompanied by heavy rainfall in Wales and moderate rainfall in the south-west of England, the rain area lying almost entirely to the right of the track. At nearly 80 stations the maximum daily rainfall of the year occurred, and two stations in a rainy part of Breconshire had more than 2·50 in.

XI. Swansea W.W. (Bwlch) ..... 3·66 in. or 2·1 per cent.  
 „ Trecastle (Blaenau-hydfwr)..... 2·59 „ 3·1 „

**March 12th.**

An isolated heavy fall in Argyllshire.

XV. Morvern (Kingairloch)..... 2·65 in. or 2·3 per cent.

**March 16th.**

Again an isolated fall, on this occasion in South Wales.

XI. Nantyrwydd ..... 3·10 in. or 3·2 per cent.

**April 3rd—7th.**

Whilst the south of the British Isles was experiencing the most severe drought of the year, very disturbed barometric conditions brought a week of great wetness to the west and north of Scotland. The district is not well supplied with rain gauges, and fewer than 50 stations had the maximum fall of the year on any one of the five days. Had there been more stations in the large area affected the following list would be longer, and we should have been able to prepare maps of the distribution of rainfall on each day, which would certainly have brought out features of interest. As things are we must be content with a summary of the falls reported. The

		3rd. in.	4th. in.	5th. in.	6th. in.	7th. in.	Total 5 days. in.
XV.	Glenleven (Blackwater Dam, S. end)	·90	3·66	2·25	·07	1·50	8·38
	N. end)	·75		7·28		1·60	9·63
XVIII.	Loch Quoich (Kinlochquoich) ...	4·75	3·54	·31	·01	4·50	13·11
	(Glenquoich) .....	2·02	3·18	2·82	·03	2·96	11·01
	Loch Shiel (Glenfinnan) .....	1·75	3·76	1·35	·17	2·71	9·74
	Loch Arkaig (Glendessary) ...	·85	3·74	2·33	·70	2·77	10·39
	Glenleven (Kinlochmore) .....	·94	3·59	2·69	·04	1·62	8·88
	Glencarron Lodge .....	1·18	2·68	1·90	·04	2·62	8·42

**April 3rd.**

**April 4th.**

**April 7th.**

**May 22nd.**

Although no record was large enough to claim insertion in the chronicle, the maximum rainfall of the year was recorded at about 90 stations, chiefly in Yorkshire. The area of heavy rainfall lay entirely to the left of the track of the accompanying atmospheric

depression, which, as indicated in the Monthly Weather Report of the Meteorological Office, passed up the Bristol Channel and crossed England in an east-north-easterly direction to Norfolk.

### June 17th.

A wet day in North Wales ; 19 stations, partly in Ireland, partly in the north-west of England, but principally in North Wales, had their heaviest fall for the year.

XI.	Festiniog (Morwynion Lake).....	3·50 in.	or 4·2 per cent.
„	Blaenau Festiniog (Oakley Quarries) ...	4·25 „	3·7 „
„	Portmadoc (Wern Gardens) .....	2·50 „	4·3 „
„	Snowdon (Old Road) .....	3·35 „	2·3 „

### June 21st.

Two stations in the Inner Hebrides had their maximum fall. One of these is given.

XVIII.	Rum (Kinloch Castle) .....	3·35 in.	or 3·0 per cent.
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### July 12th and 13th.

Severe thunderstorms brought heavy local rain on these two days in England. On the 12th about 30 stations in the Midlands and north recorded their maximum rainfall for the year. The only stations with more than 2 inches were Baslow in Derbyshire, where, of a total fall of 2·28 in., 2·20 in. fell in 40 minutes, and Bamburgh, where 2·16 in. fell, the smaller amount being the only one which can be quoted, according to our system of comparing maximum falls of less than 2·50 in. according to the percentage they form of the whole rainfall of the year.

On the 13th the neighbourhood of Sudbury experienced an exceptional storm of rain and hail, and three stations recorded their maximum fall for the year during the day, two of these having more than 2 inches. Neither of these falls, however, was sufficiently heavy to be quoted.

### July 12th.

X.	Bamburgh .....	2·16 in.	or 8·3 per cent.
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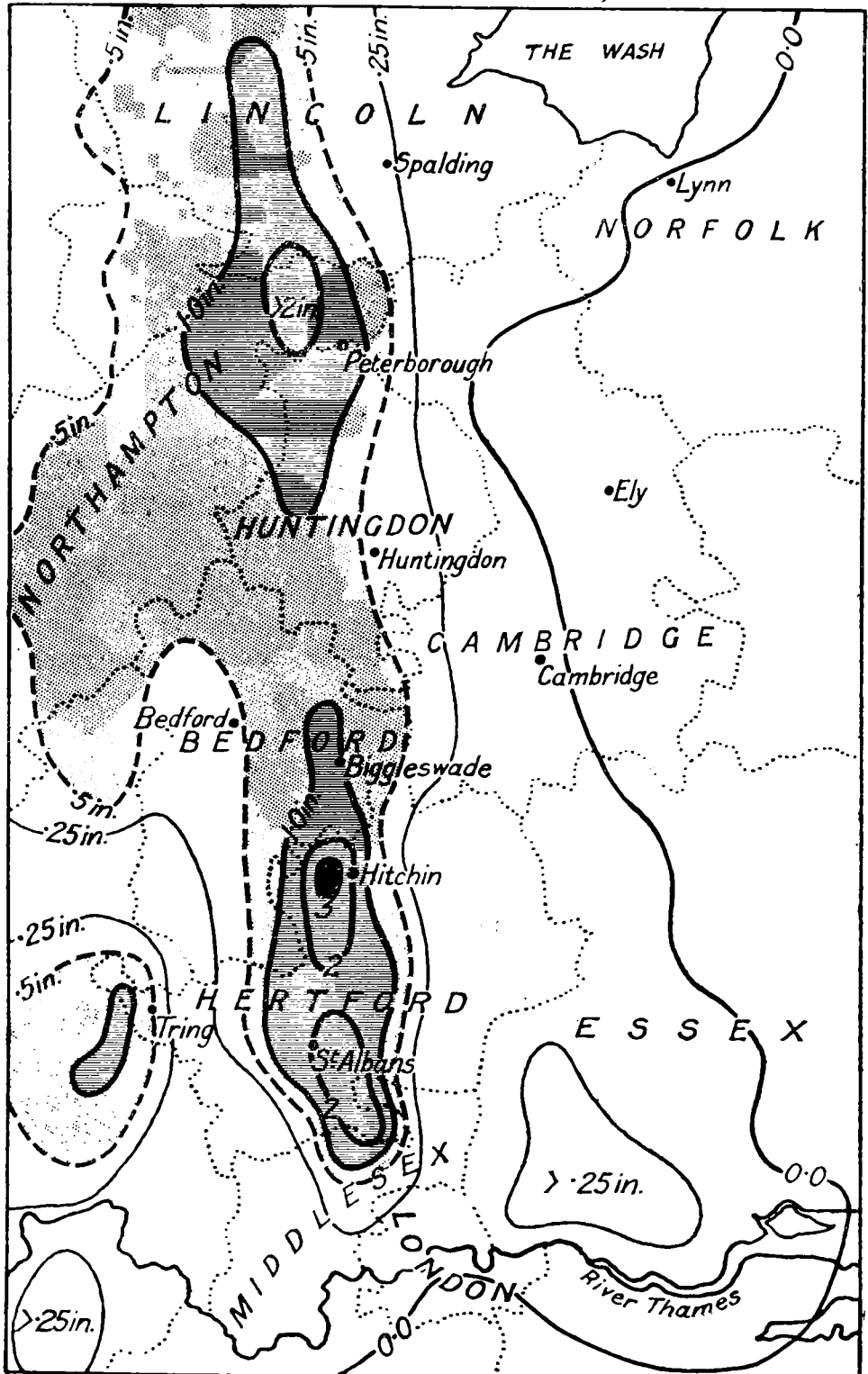
### July 23rd.

Another day of very local thunderstorms affecting chiefly the east midland counties of England. The most prominent feature of the rainfall on this day was a well defined strip of heavy rainfall stretching in a due north to south direction from Lincolnshire almost to London. We give a map of the wettest part of this strip only,

HEAVY FALLS ON RAINFALL DAYS.

[ 113 ]

RAINFALL JULY 23<sup>RD</sup>, 1912.



as to give the whole would involve the use of a very small scale. The storm appears to have been most severe in the neighbourhood of Hitchin, where considerable flooding occurred. More than 1 inch of rain also fell in spots in Buckinghamshire, Warwickshire, Worcestershire, Shropshire and the south of Ireland. As the map only represents a portion of the area of the fall, it has not been considered necessary to measure the areas or to compute the general rainfall. The maximum fall for the year occurred at 37 stations, and the following, all lying within the area shown in the map, had falls sufficiently remarkable to be quoted.

III.	Dyrham Park [Barnet] .....	2·81 in.	or 9·0 per cent.
„	Totteridge (West Lodge).....	2·45 „	7·5 „
„	St. Alban's (Hill End) .....	2·52 „	7·9 „
„	Hitchin (Preston) .....	2·84 „	9·1 „
„	„ (The Maples) .....	3·07 „	9·2 „
„	„ (The Chilterns) .....	2·36 „	7·5 „
„	Etton [Market Deeping].....	2·53 „	7·2 „

#### July 24th.

Thunderstorms with heavy rain occurred, culminating in north Lincolnshire and the East Riding of Yorkshire. Only one record claims insertion out of the 14 for which the maximum fall occurred.

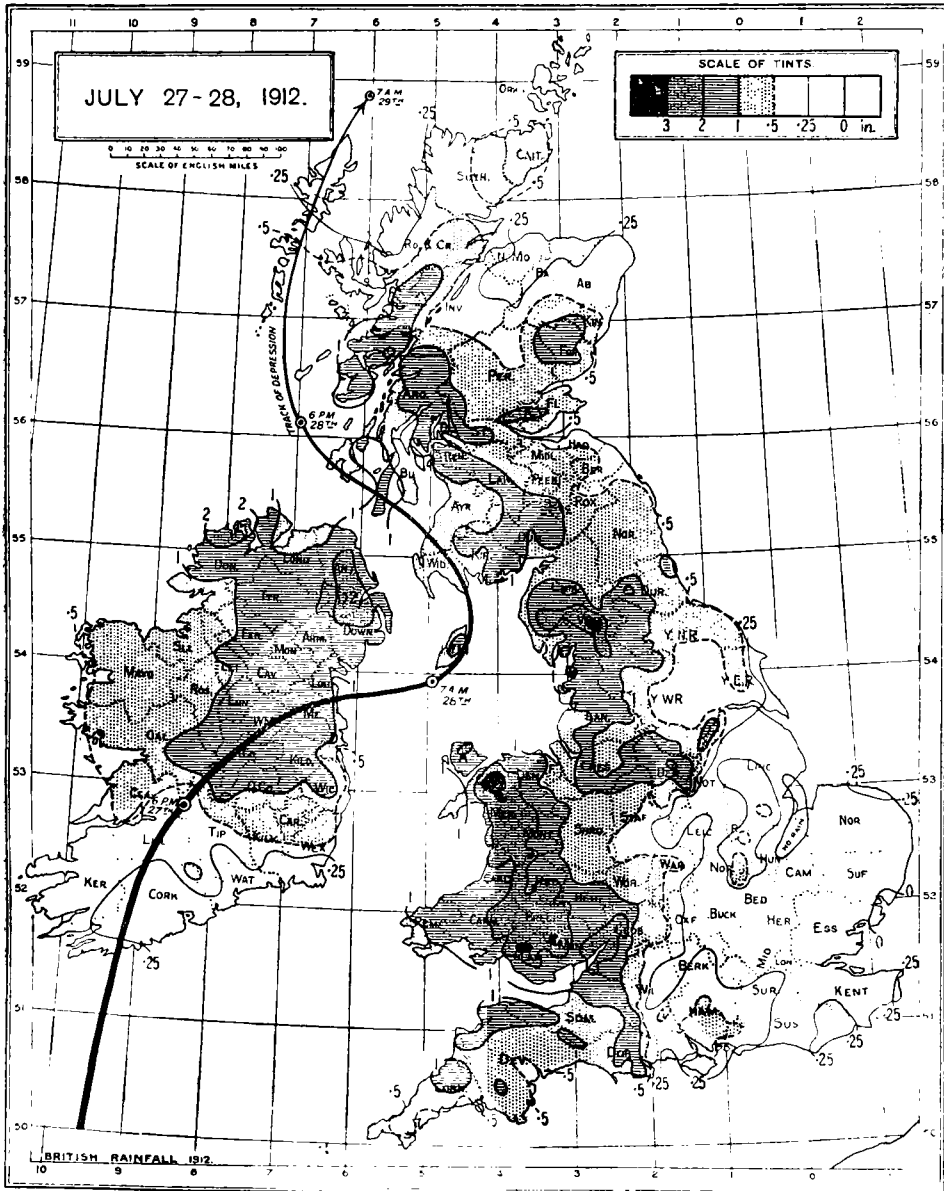
VII.	Horkstow .....	2·76 in.	or 6·6 per cent.
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#### July 27th and 28th.

The rainfall on these two days was of the winter type and was unusually widespread. A depression, shallow in its early stages, but deepening as it advanced, moved northwards from the south of Ireland, and turning rather towards the east during the night of the 27th was situated with its centre near the Isle of Man on the morning of the 28th. During the 28th the centre moved north-westwards and northwards along the west of Scotland, reaching a point near Stornoway on the morning of the 29th. Heavy rain fell generally over the British Isles, except in the south of Ireland, the north of Scotland, and the south-east of England. In all 37,360 square miles had more than 1 inch of rain, this area comprising nearly the whole of the western districts in England, the whole of Wales, large patches in the west and south of Scotland, and the north-eastern quarter of Ireland. Nearly the whole of Wales, a large part of the lower Severn Valley, the northern Pennines and the hills of Antrim had more than 2 inches, the fall being more than



3 inches in Snowdonia and in parts of Glamorganshire. At many places, especially in England, thunderstorms occurred on the 27th, and at Chatsworth and Darley in central Derbyshire a local and very heavy rainstorm occasioned much damage by flooding in the



river Derwent. At Haddon Tunnel, between Rowsley and Bakewell, on the Midland Railway, a landslide took place and the line was flooded, and also the grounds of the historic Haddon Hall, close by.

The area with more than 1 inch of rain in the whole of the

British Isles has been measured and the general rainfall calculated, with the following results.

	Area, sq. miles	General Rainfall, inches.	Volume of Rain, sq. miles x inches.
More than 3 inches .....	210	3·34	701
2—3 inches .....	5,097	2·25	11,469
1—2 „ .....	32,053	1·35	43,272
Total more than 1 inch...	37,360		55,442

The general rainfall of the area with more than 1 inch was 1·48 in.

Although about 125 stations, mostly in the west of England, in South Wales and in the north east of Ireland, recorded the maximum fall of the year on the 27th, one only has to be quoted, and we print it with some diffidence owing to lack of confirmation, and as we have not received the full daily record.

#### July 27th.

XI. Newtown (Dolfor)..... 3·42 in. or 9·2 per cent.

On the 28th, 37 stations reported their maximum fall, and of these three reached the limit for publication. Probably a few hours difference in the time of commencement of the rain would have thrown so much more of it into one day or the other as to give a substantial number of quotable falls.

#### July 28th.

X. Ravenstonedale (The Chantry)..... 3·08 in. or 4·9 per cent.  
 XI. Glyncoirwg Colliery..... 2·50 „ 2·4 „  
 XXIII. Belfast (Outfall Works) ..... 2·61 „ 6·2 „

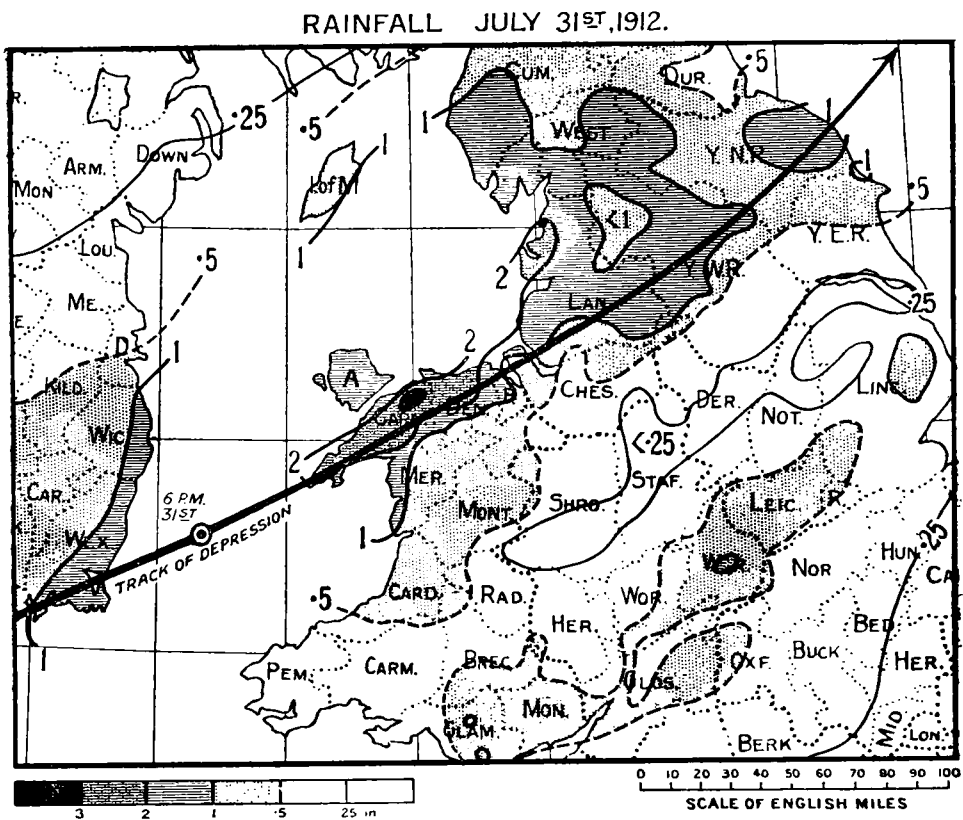
#### July 31st.

During the twenty-four hours commencing on the morning of July 31st a shallow depression moved eastwards along the south coast of Ireland, through Carnarvonshire, and passed into the North Sea near Scarborough. More than 1 inch of rain fell on the Irish coast between Waterford and Bray, in North Wales and in England over an area extending across, but chiefly on the left hand side of, the track of the depression. The rainfall was heaviest in the Snowdon district, where more than 3 inches fell, and a narrow strip with more than 2 inches extended from the Pwllheli peninsula along the coast almost to Lancaster. There was some indication of a parallel strip of comparatively heavy rainfall to the south, more than ·50 inch falling over a tract of country stretching from South Wales into Lincolnshire. The fall reached 1 inch in Glamorganshire and possibly also in Warwickshire. Part of this strip is shown in the

map. The accompanying map shows the extent of the area with more than 1 inch of rain. Measurement of the map gives the following areas for the various zones.

	Area, sq. miles.	General Rainfall, inches.	Volume of Rain, sq. miles x inches.
More than 3 inches .....	29	3.07	89
2—3 inches .....	704	2.30	1,619
1—2 „ .....	6,144	1.26	7,742
<b>Total more than 1 inch...</b>	<b>6,877</b>		<b>9,450</b>

The general rainfall of the 6,877 square miles with more than 1 inch of rain was 1.37 in.

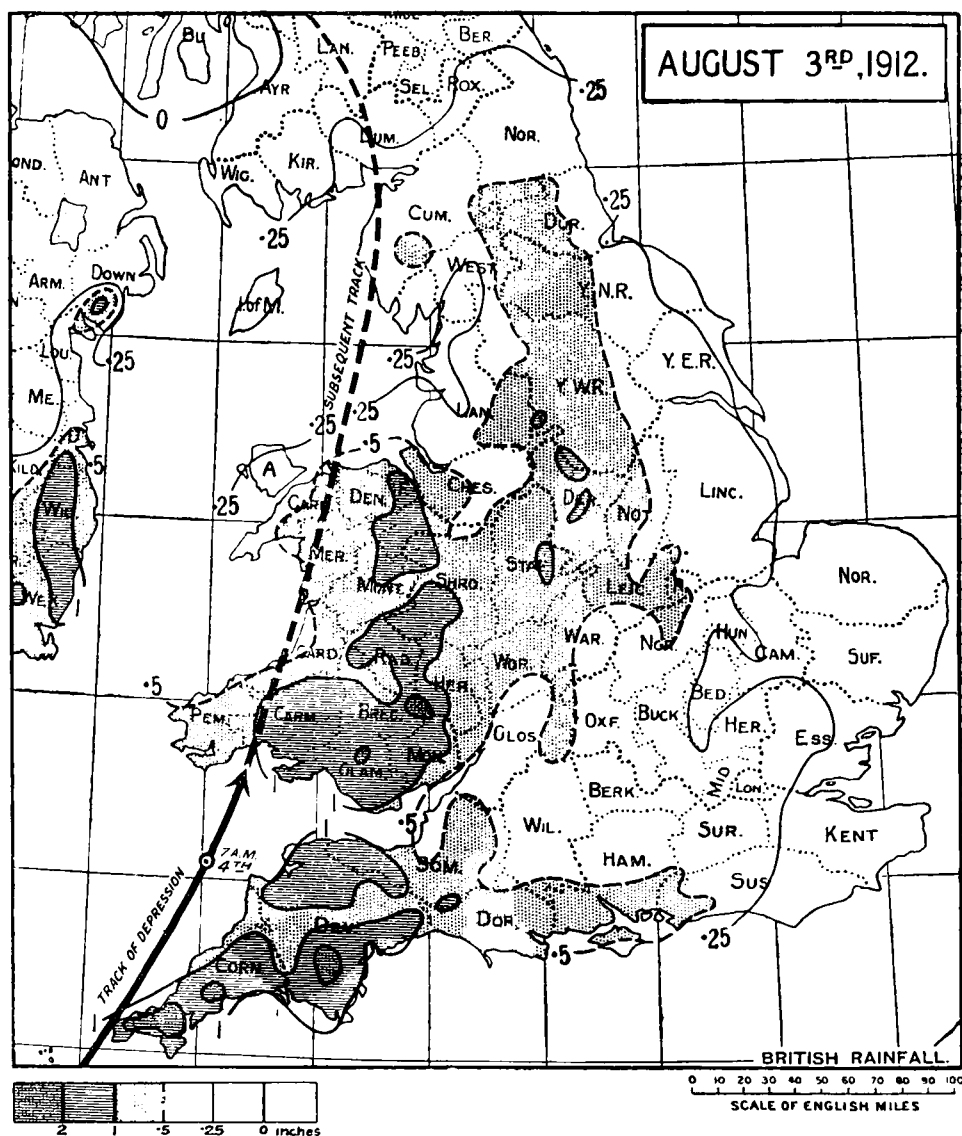


The maximum fall for the year was recorded at about 110 stations, of which 28 lay in a very circumscribed area in North Wales.

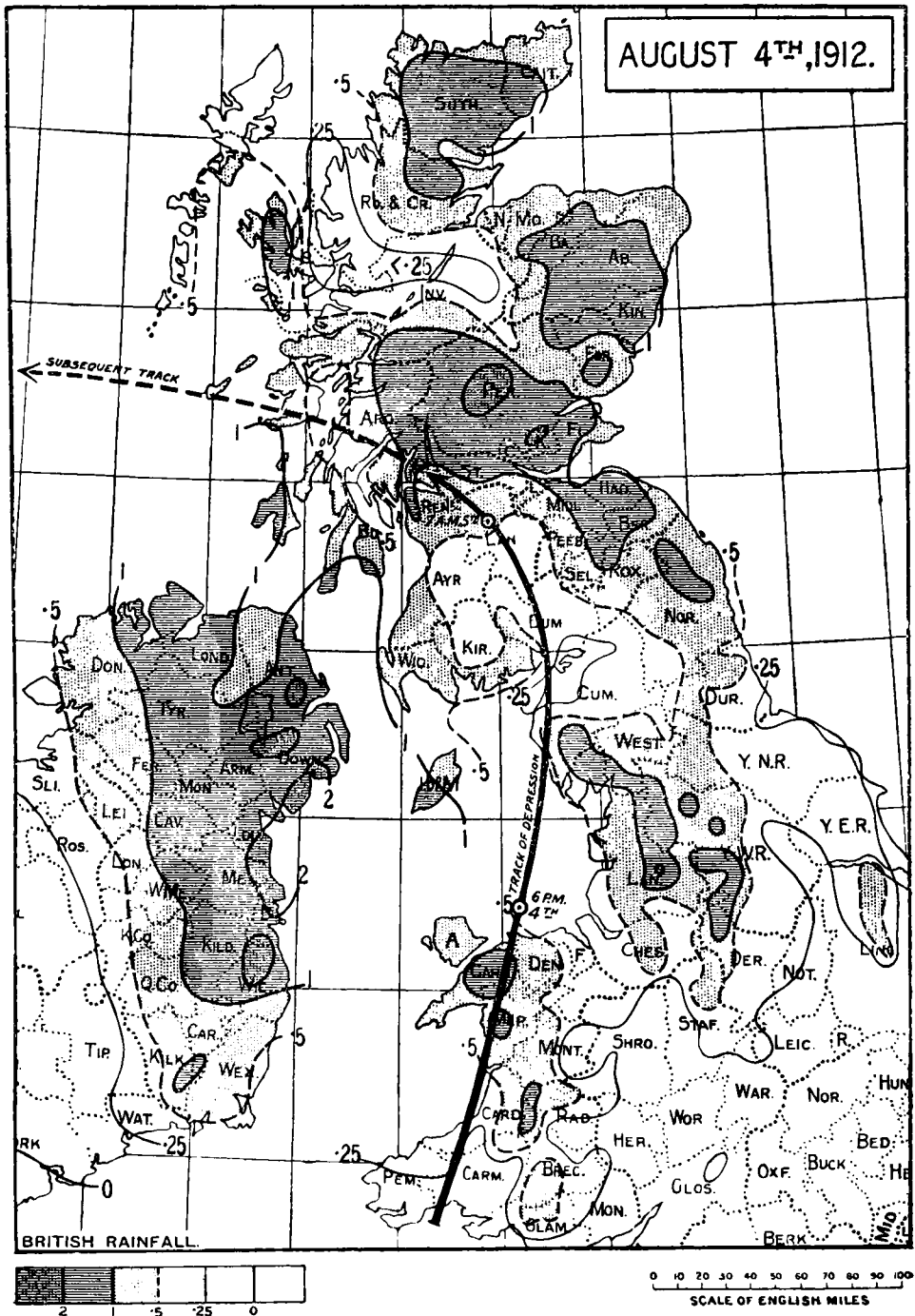
VIII.	St. Michael's-on-Wyre School .....	2·67 in.	or	6·3 per cent.
	" " Vicarage .....	2·58 "		6·1 "
XI.	Llanefydd (Glascoed Reservoir).....	2·68 "		8·0 "
"	Lake Eigiau (Dam Site) .....	3·20 "		3·5 "
"	Tal-y-Cafn (Bodnant Hall).....	3·10 "		7·6 "
"	Llanberis (Mount Pleasant) .....	2·50 ,		3·0 "

**August 3rd, 4th, and 5th.**

A deep depression which travelled northwards from the Bay of Biscay on August 3rd, the centre reaching the Bristol Channel on the morning of the 4th, traversed Wales and the eastern part of the Irish Sea. The centre was at Glasgow on the evening of the 4th, and took



a more westerly course on the 5th. On the 5th another depression entered Cornwall from the south-west. The rainfall associated with the earlier system was very widespread though not extremely heavy. Its intimate connection with the movement of the centre, from south



to north, can be seen in the fact that the heavy falls on the 3rd all took place in the south-west of England, more than 2 inches falling



on Dartmoor and in Cornwall. More than 1 inch fell on the 4th on a number of different areas in Wales and the Pennine range, over

the whole of the east of Ireland north of Carlow, and over the greater part of the east of Scotland. More than 2 inches fell on the east coast of Ireland and over a small area in Perthshire. It is interesting to observe that on this day whilst 1 inch or more of rain fell on a larger area on the right hand of the track of the depression than on the left, practically the whole of the area with more than 2 inches lay on the left, and was so distributed as to form a string of 2 inch splashes almost exactly parallel with the path of the depression. On the 5th the rainfall associated with this depression was curiously local, being chiefly centred round the Clyde estuary, more than 2 inches falling over a small area near Greenock and also along the hills on the east side of Loch Eck, in the Cowal peninsula, where enormous damage is reported.

On the same day the rainfall exceeded 2 inches in parts of Cornwall, but this rain, clearly associated with the second depression, and independent of the one now passing away to the north, was comparatively local as heavy rain. More than .50 inch, however, fell well into the Midlands. In the three maps which we reproduce the area affected by this rain is shown in the third. Measurements of the area with more than 1 inch on each of the three days give, of course, only a partial account of the precipitation, but the coincidence of the two rainstorms in the south-west of England makes it difficult to deal with the first as a whole.

<i>August 3rd.</i>	Area. sq. miles.	General Rainfall, inches.	Volume of Rain, sq. miles x inches.
More than 2 inches .....	379	2.16	819
1—2 inches .....	7,863	1.28	10,064
Total—More than 1 inch	8,242		10,883

<i>August 4th.</i>			
More than 2 inches .....	1,274	2.17	2,765
1—2 inches .....	20,408	1.30	26,530
Total—More than 1 inch	21,682		29,295

<i>August 5th—Scotland.</i>			
More than 2 inches .....	72	2.32	167
1—2 inches .....	437	1.28	559
Total—More than 1 inch	509		726

<i>August 5th—England.</i>	Area, sq. miles.	General Rainfall, inches.	Volume of Rain, sq. miles x inches.
More than 2 inches .....	285	2·13	607
1—2 inches .....	1,488	1·45	2,157
Total—More than 1 inch	1,773		2,764

The general rainfall of the area with more than 1 inch of rain on August 3rd was 1·32 in. ; on 4th 1·35 in. ; and on 5th 1·43 in. in Scotland, and 1·56 in. in England.

The maximum fall for the year was registered at about 100 stations on the 3rd, all in England and Wales ; at about 130 on the 4th, of which 30 were in Scotland and 70 in Ireland ; and at about 50 on the 5th, 40 of which referred to the Cornish depression. The following reached the limits for quotation.

#### August 3rd.

V.	Princetown (Huccaby House) .....	2·74 in.	or 3·2 per cent.
„	Leusdon Vicarage.....	2·71 „	3·7 „

#### August 4th.

XVI.	Lochearnhead (Ardvorlich).....	2·57 in.	or 3·0 per cent.
XXI.	Glenasmoel (Rathmines W.W.) .....	2·56 „	5·1 „
„	Malahide (The Green) .....	2·43 „	8·9 „
„	Skerries (Milverton Hall) .....	2·29 „	8·1 „
„	Drogheda (Mullacroghan).....	2·46 „	7·7 „
XXIII.	Carrickfergus (South Woodburn).....	2·58 „	5·1 „

#### August 5th.

V.	Liskeard (Dean Terrace).....	2·58 in.	or 4·6 per cent.
XIV.	Shaws W.W. (Compensation Res.) .....	2·60 „	3·3 „
„	„ „ (Loch Thom).....	2·80 „	3·4 „
„	Greenock (Prospect Hill).....	2·63 „	3·5 „

#### August 6th.

The depression which entered Cornwall on the 5th, passed north-eastwards through the Midlands, and there was moderately heavy rain, chiefly in the south-west. One station only needs to be mentioned out of the 50 which had their maximum fall on this day.

V.	Trowbridge (Rood Ashton).....	2·64 in.	or 5·8 per cent.
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#### August 12th.

The wettest day of the year in the Channel Islands, but apparently nowhere else ; 8 stations had their maximum fall for the year.

XI.	St. Helier's W.W. (St. Lawrence Valley)	2·50 in.	or 5·6 per cent.
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**August 20th.**

A dozen stations in Somersetshire registered the highest fall during the year. The only one to be quoted stands out rather noticeably above the amounts recorded at neighbouring stations, but we see no other reason to doubt its accuracy.

V. Shepton Mallet (Sewage Farm)..... 2·59 in. or 5·0 per cent.

**August 22nd and 23rd.**

The maximum fall for the year occurred on the 22nd at about two dozen stations in all parts of Ireland. Only one station, Killaloe, however, had as much as 2 inches. On the 23rd heavy rain fell in the south-west and north-west of England and in Wales. Two stations had more than the limit for quotation, but of one of these, Machynlleth, we only know with certainty that the fall was 4·90 in. for the two days, 22nd and 23rd, one of which days, most probably the latter, must have had as much as 3 inches. As it is we are only able to quote

**August 23rd.**

XI. Dolgelly (Bryntirion) ..... 2·89 in. or 4·1 per cent.

**August 25th-26th.**

The rainfall of these two days, more especially in East Anglia, where it far surpassed any previously recorded rainstorm in the British Isles, was so extraordinary that a special article in Part I. of this volume is devoted to it. We, therefore, omit from this section any description of the phenomenon and include only the lists of maximum rainfalls in order to put them on record in the usual place. It should be remarked here, however, that for the purpose of this list, we confine heavy rainfalls to the "rainfall day," from 9 a.m. on the day for which the date is given, till 9 a.m. on the following morning. The whole of the rain on August 25th and 26th, in East Anglia, at any rate, probably fell within 24 hours, but as these 24 hours did not coincide with the rainfall day, the amounts figure on two separate days. Thus in the south-east of the area affected, and also in some other parts of England and Wales, the bulk of the rain fell during the 24 hours terminating at 9 a.m. on the 26th, and the maximum fall at about 60 stations was, therefore, credited to the 25th. Further to the north the rain of the very wet area commenced at a rather later hour and continued longer, so that the second of the

two days, *i.e.*, the 26th, was by far the wetter. On this day more than 400 stations, all in England, had their maximum fall. In no case did the whole of the rain which fell in that tremendous 24 hours' storm occur entirely on one of the two days, so that in no case do the figures in the following lists do full justice to the whole shower.

The reader is referred to the detailed account and maps of the rainfall of these two days in Part I. of this Volume.

#### August 25th.

IV.	Clacton-on-Sea (Clacton College) .....	1·77 in.	or 7·8 per cent.
„	Great Clacton (Clay Hall) .....	1·88 „	8·5 „
„	Felixstowe (The Shrubbery) .....	2·25 „	7·7 „
XI.	Black Mountains (Cwm Grigus Uchaf)..	2·58 „	3·8 „
„	„ „ (Blaen Grwyne Fawr).	2·55 „	4·2 „

#### August 26th.

III.	Great Gidding Rectory .....	2·49 in.	or 8·3 per cent.
„	Cottenham (Bernard House) .....	2·32 „	7·9 „
„	Fordham .....	2·38 „	8·6 „
„	Streatham (Dimocks Cote).....	2·62 „	8·6 „
„	„ Engine.....	3·70 „	11·8 „
„	„ (Orchard House) .....	2·56 „	8·2 „
„	Ely (The Palace) .....	2·46 „	7·9 „
„	Chatteris (Holwood Farm) .....	2·61 „	7·8 „
„	Littleport (Highfield House) .....	2·67 „	8·6 „
„	Upwell (Marmont Priory Lock).....	2·26 „	7·5 „
„	„ (Euximoor House) .....	2·85 „	8·6 „
„	Wisbech (Bank House).....	2·52 „	7·6 „
„	„ (Monica Road) .....	2·80 „	8·1 „
IV.	Cockfield Rectory .....	2·21 „	7·8 „
„	Haughley House .....	2·86 „	10·4 „
„	Woodbridge (Boulge Hall) .....	3·00 „	10·2 „
„	Parham (The High House) .....	3·08 „	10·3 „
„	Aldborough (Aldringham House).....	2·18 „	7·9 „
„	Leiston (Lower Abbey) .....	2·09 „	7·8 „
„	Halesworth (Estate Office).....	2·38 „	7·8 „
„	Wangford (Henham Gardens) .....	2·77 „	9·8 „
„	„ (Reydon Grove).....	2·09 „	7·9 „
„	Beccles (Sotterley Hall) .....	3·30 „	10·6 „
„	Wrentham (Henstead Hall) .....	2·48 „	8·2 „
„	Bacton .....	2·77 „	9·1 „
„	Mendlesham .....	2·56 „	„ „
„	Stradbroke Vicarage.....	5·00 „	„ „
„	Halesworth (Rumburgh Vicarage) .....	2·99 „	10·0 „
„	St. Olave's Priory (Paddock) .....	3·63 „	12·6 „
„	Bungay (Flixton Vicarage).....	3·62 „	11·7 „
„	Lowestoft (Mill Road).....	2·78 „	9·1 „
„	Blundeston House.....	3·30 „	10·6 „
„	Herringfleet (The Gables) .....	4·28 „	13·8 „
„	Lound Pumping Station .....	4·01 „	13·5 „
„	Fritton Hall.....	4·66 „	15·7 „
„	„ Warren .....	4·19 „	13·5 „

IV.	Burgh Hall [Yarmouth] .....	4·01 in. or 13·0 per cent.	
„	Little Saxham Rectory .....	2·56 „	8·3 „
„	Bury St. Edmunds (Albert Crescent)....	2·71 „	9·1 „
„	„ „ (Westley) .....	2·83 „	9·1 „
„	„ „ (Fornham St. Martin) .....	3·14 „	11·4 „
„	Walsham-le-Willows .....	3·28 „	9·6 „
„	Herringswell Rectory .....	2·40 „	8·2 „
„	Mildenhall (Holland House Gardens) ...	2·82 „	8·8 „
„	Elveden Hall .....	3·78 „	10·8 „
„	Brandon (North Court Lodge) .....	3·93 „	12·7 „
„	Diss (The Cedars) .....	4·21 „	13·3 „
„	Pulham St. Mary (The Firs) .....	4·77 „	14·2 „
„	„ „ School.....	4·40 „	12·7 „
„	Geldeston [Beccles] ..	3·61 „	12·4 „
„	Long Stratton (Gt. Moulton Rectory)...	4·50 „	12·9 „
„	„ „ (Fritton Rectory) .....	5·21 „	15·8 „
„	Hedenham Rectory .....	3·29 „	11·6 „
„	Spooner Row (Wattlefield Hall) .....	5·04 „	14·4 „
„	Raveningham Hall [Beccles] ..	3·45 „	11·6 „
„	Saxlingham Nethergate .....	5·45 „	17·1 „
„	Brooke School.....	6·31 „	21·5 „
„	Thurlton School.....	4·63 „	15·4 „
„	Loddon (Langley Park) .....	5·05 „	15·8 „
„	Swainsthorpe (The Rookery) .....	5·90 „	18·3 „
„	Wymondham .....	5·33 „	14·8 „
„	Hingham Hall .....	2·57 „	8·1 „
„	Dunston Hall.....	6·13 „	18·0 „
„	Keswick Old Hall.....	6·06 „	17·8 „
„	Hethersett .....	5·58 „	15·2 „
„	Yarmouth (Sailors' Home) ...	4·80 „	14·3 „
„	„ (Northgate House) .....	4·35 „	14·3 „
„	Norwich (Christchurch Road, Eaton) ...	6·31 „	18·0 „
„	„ (Carrow House).....	6·67 „	22·2 „
„	Brundall (Blofeld Road) .....	7·31 „	21·3 „
„	Norwich (Ipswich Road).....	6·49 „	18·3 „
„	„ (Heigham Cemetery) .....	6·59 „	18·9 „
„	Honingham Hall .....	5·62 „	17·6 „
„	Old Catton .....	6·90 „	18·5 „
„	Drayton .....	5·70 „	16·2 „
„	Bylaugh Park Gardens.....	5·30 „	13·0 „
„	Swanington Rectory.....	4·71 „	13·4 „
„	Great Massingham.....	2·85 „	7·8 „
„	Cawston Rectory .....	5·30 „	13·7 „
„	East Rudham.....	2·80 „	8·7 „
„	Moulton .....	6·01 „	17·9 „
„	Sprowston Council School .....	7·20 „	19·1 „
„	„ Hall .....	6·40 „	18·0 „
„	„ (Oak Lodge).....	6·90 „	20·0 „
„	Yarmouth (Ormesby St. Michael).....	5·17 „	13·9 „
„	Coltishall .....	6·18 „	17·8 „
„	Aylsham (Rippon Hall) .....	5·54 „	15·9 „
„	„ (Millgate) .....	5·46 „	15·0 „
„	Worstead (The Rookery, Dilham) .....	5·16 „	15·4 „
„	„ (Lyngate Cottage).....	5·55 „	15·6 „
„	„ (The Grange) .....	6·31 „	16·9 „
„	„ (Westwick Gardens).....	6·38 „	... „
„	North Walsham (Empson House).....	4·05 „	12·1 „

IV.	North Walsham (Beech Grove).....	5·16 in. or 14·8 per cent.
„	Guntton Park .....	6·46 „ 16·8 „
„	Mundesley-on-Sea .....	5·42 „ 17·7 „
„	Baconsthorpe Rectory .....	5·76 „ 15·4 „
„	Cromer (Northrepps Hall) .....	4·90 „ 13·1 „
„	Sandringham House Gardens.....	2·91 „ 7·8 „
„	Cromer (The Warren) .....	5·76 „ 17·0 „
„	Blakeney .....	3·94 „ 11·5 „
„	„ .....	3·95 „ 10·6 „
„	Wells (Holkham Hall).....	3·18 „ 10·0 „
„	Riddlesworth Hall Gardens .....	3·58 „ 11·7 „
„	Thetford (Waterworks).....	3·53 „ 10·1 „
„	„ (Ford Place Gardens).....	3·37 „ 10·5 „
„	„ (Ford Street Gardens).....	3·70 „ 11·3 „
„	Kenninghall (Quidenham Hall).....	3·09 „ ... „
„	Santon [Brandon] .....	3·27 „ 8·9 „
„	Weeting [ „ ] .....	3·66 „ 11·5 „
„	Hargham .....	2·95 „ 9·0 „
„	Caston Rectory .....	2·89 „ 7·9 „
„	Watton .....	2·80 „ 7·4 „
„	Denver .....	3·07 „ 9·2 „
„	Stoke Ferry (Wereham) .....	3·57 „ 9·4 „
„	Swaffham (The Paddocks) ....	2·96 „ 8·0 „
„	„ (Homewood) .....	3·19 „ 8·2 „
„	Wiggenhall (St. Germans Sluice).....	2·97 „ 9·9 „
„	Middleton Hall.....	3·94 „ 12·5 „
„	Gayton Pumping Station .....	2·45 „ 8·0 „
„	Tittleshall.....	2·78 „ 7·4 „
VII.	Tydd (North Level House).....	2·94 „ 8·6 „
„	Leake (Lade Bank Engines) .....	2·25 „ 8·1 „
„	Revesby.....	2·51 „ 8·1 „

#### August 28th.

A couple of dozen scattered stations had more rain on this day than on any other during the year, but one only requires to be mentioned,

XXIII. Mourne Mountains (Foffanny Reservoir) 3·20 in. or 3·5 per cent.

#### September 3rd.

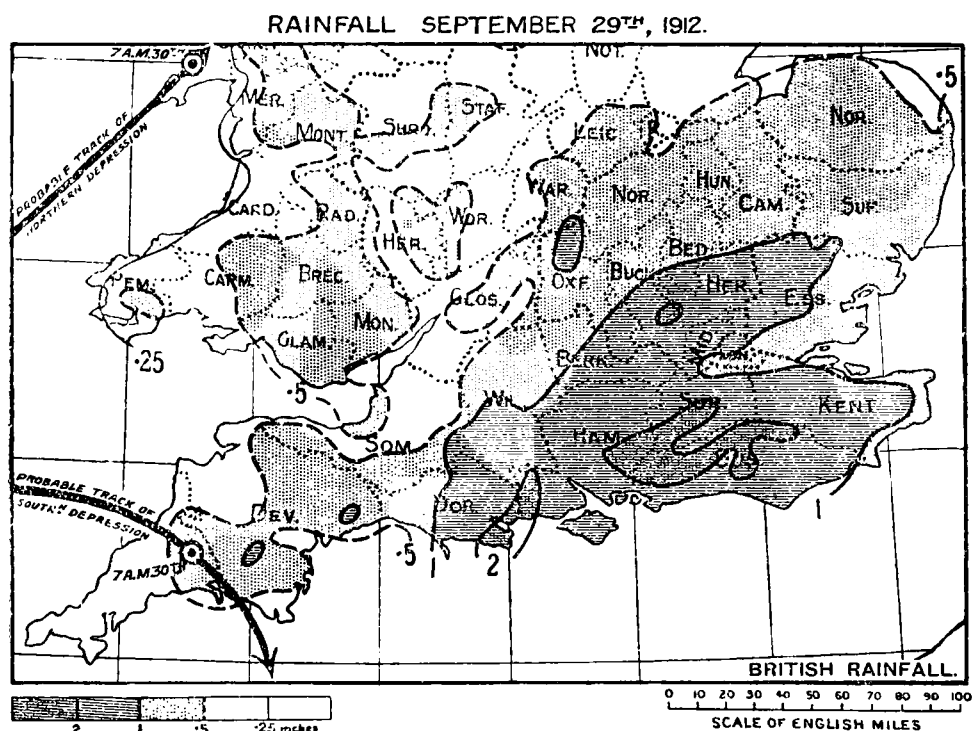
A rather deep depression passed eastwards far to the north of Scotland, whilst anticyclonic conditions prevailed in the south of England. As might be expected in these conditions westerly winds brought heavy rain on the west coast of Scotland. About 70 stations, from Carlisle on the south to western Inverness-shire on the north, recorded their maximum. Of these the following have to be quoted.

XIV.	Shaws W.W. (Gryfe Reservoir).....	2·67 in. or 3·6 per cent.
XV.	Helensburgh (Fernigair) .....	2·60 „ 3·9 „
„	„ (Valve House) .....	2·54 „ 4·4 „

XV.	Roseneath (Achnashie) .....	2·85 in.	or 4·1 per cent.
„	Loch Awe (Ford) .....	2·83 „	3·6 „
„	Ardishaig (Canal Office) .....	2·63 „	3·5 „
„	Dunoon Reservoir .....	2·60 „	2·7 „
„	Holy Loch (Ardnadam) .....	2·75 „	2·9 „
„	Lock Eck (Benmore).....	3·85 „	3·7 „
„	Mull (Lochbuie Castle) .....	2·56 „	2·6 „
XVIII.	Loch Ness (Inverie) .....	2·68 „	2·8 „

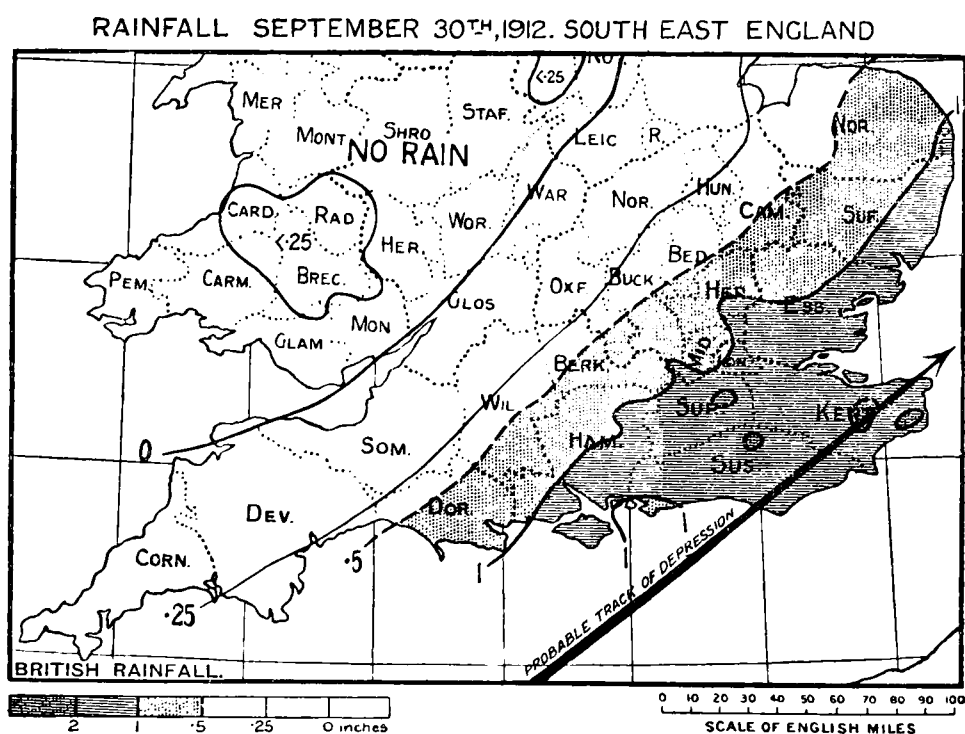
### September 29th and 30th.

On the two closing days of the otherwise almost rainless month of September very disturbed atmospheric conditions were experienced, and several depressions travelled from the Atlantic across the British Isles, taking an unusually southerly track. On the morning



of the 29th a shallow system, which had remained almost stationary off the south-west of Ireland for several days, moved eastwards, having apparently two minima which diverged, the northern passing across the north of Wales and Lancashire to the mouth of the Tees, and the southern, which was probably associated with the heavy rainfall of this day, turning southwards towards the Bay of Biscay and possibly uniting with a second and deeper depression which passed up the Channel on the 30th and entered the North Sea by

way of Kent. During the 29th the rainfall exceeded 1 inch over most of the south-eastern part of England, reaching 2 inches in a central core which included most of the north of Sussex and parts of Surrey and Hampshire. On the 30th the south-east of England was again affected, more than 1 inch falling south-east of a nearly straight line from Swanage to Great Yarmouth. On this day very heavy rain fell over the east of Scotland, the east coast strip from Huntly southwards into Northumberland having more than 1 inch and numerous small areas having more than 2 inches. It is difficult to associate this well-defined and comparatively local rainfall with

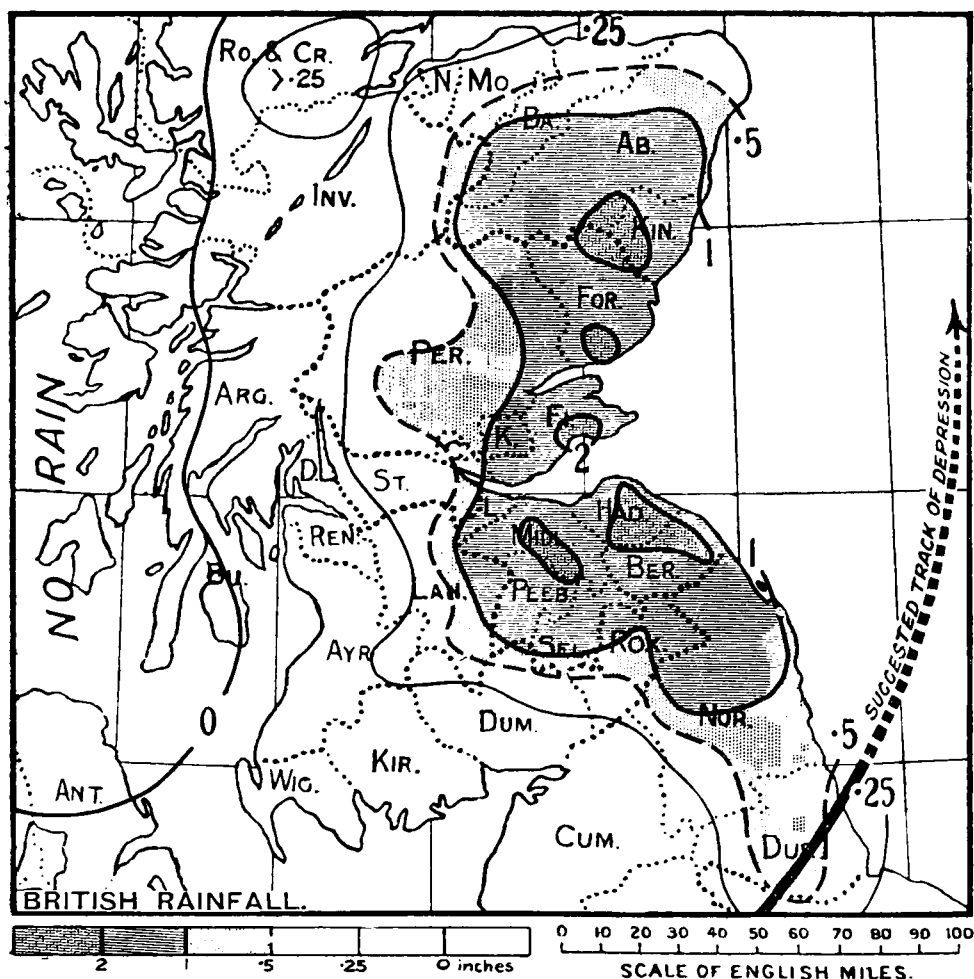


the southern depression, and it seems not impossible that the northern branch of the original depression passed northward over the North Sea before filling up, and was accompanied by rain falling on the left of the track as is commonly the case. On this assumption we prefer to treat the rainfall of the northern area as a separate storm, and we give maps showing the two days' rainfall in the south of England, both separately and taken together, associating them with the southern cyclonic track which, however, falls for the most part outside the map. The wet area in Scotland is illustrated



The district shown in the first three maps is one of those where there are more rain gauges to the square mile than anywhere else, possibly in the world, and consequently, although the area with more than 2·00 in. on the two days is not more than one-sixth of that of England and Wales, more than 700 stations recorded their maximum on the 29th, and more than 400 on the 30th in England, besides about 70 in Scotland on the latter day. Owing, however, to the total fall in England being divided between two days, only the following were big enough to quote for either day.

RAINFALL SEPTEMBER 30<sup>TH</sup>, 1912. SCOTLAND.



**September 29th.**

II.	Haslemere (Clammer Hill) .....	2·56 in.	or 6·3 per cent.
"	" (Whitwell Hatch).....	3·30 "	7·6 "
"	" (The Laurels).....	2·58 "	6·0 "
"	" (Beech Road).....	2·50 "	6·1 "



II.	Hindhead (Lingholt School) .....	2·65 in.	or 7·1 per cent.
„	Witley (Sandhills).....	2·50 „	6·2 „
„	Gomshall (Hazel Hall).....	2·62 „	6·0 „
„	Guildford (Briarfield) .....	2·58 „	7·3 „
„	Cocking Rectory .....	2·68 „	6·3 „
„	Bepton (Fairfield) .....	2·75 „	6·7 „
„	Midhurst (Pendean).....	2·72 „	6·1 „
„	Selham Rectory.....	2·65 „	6·5 „
„	Stedham (Rotherhill) .....	2·92 „	6·5 „
„	Petworth Park .....	2·70 „	7·0 „
„	Tillington (River House)..	2·62 „	6·8 „
„	Midhurst (King Edward VII. San.) .....	2·69 „	6·4 „
„	Hurstpierpoint (Danny Park) .....	2·53 „	5·3 „
„	Bournemouth (Pleasure Gardens) .....	2·50 „	5·8 „
„	Christchurch (Heron Court) .....	2·69 „	6·0 „
„	„ (Hurn Bridge House) .....	2·79 „	6·4 „
„	Petersfield (Weston).....	2·73 „	5·7 „
„	Selborne (The Wakes) .....	2·80 „	6·1 „
„	Grayshott .....	2·71 „	6·4 „
V.	Swanage (Royal Victoria Hotel) .....	2·68 „	6·9 „

**September 30th.**

I.	Clapham (Macaulay Road).....	1·85 in.	or 7·5 per cent.
II.	Leatherhead (Emlyn House) .....	2·63 „	7·9 „
„	Downe Council School .....	2·70 „	7·6 „
„	West Harting [Petersfield].....	2·88 „	6·3 „
IV.	Pitsea Pumping Station .....	1·78 „	7·6 „
XVI.	Colinsburgh Manse .....	2·09 „	7·5 „
„	„ (Balcarres) .....	2·32 „	7·5 „
„	Elie (The Castle) .....	1·89 „	7·8 „
„	Buddonness (Low Light) .....	2·66 „	8·8 „

**October 15th.**

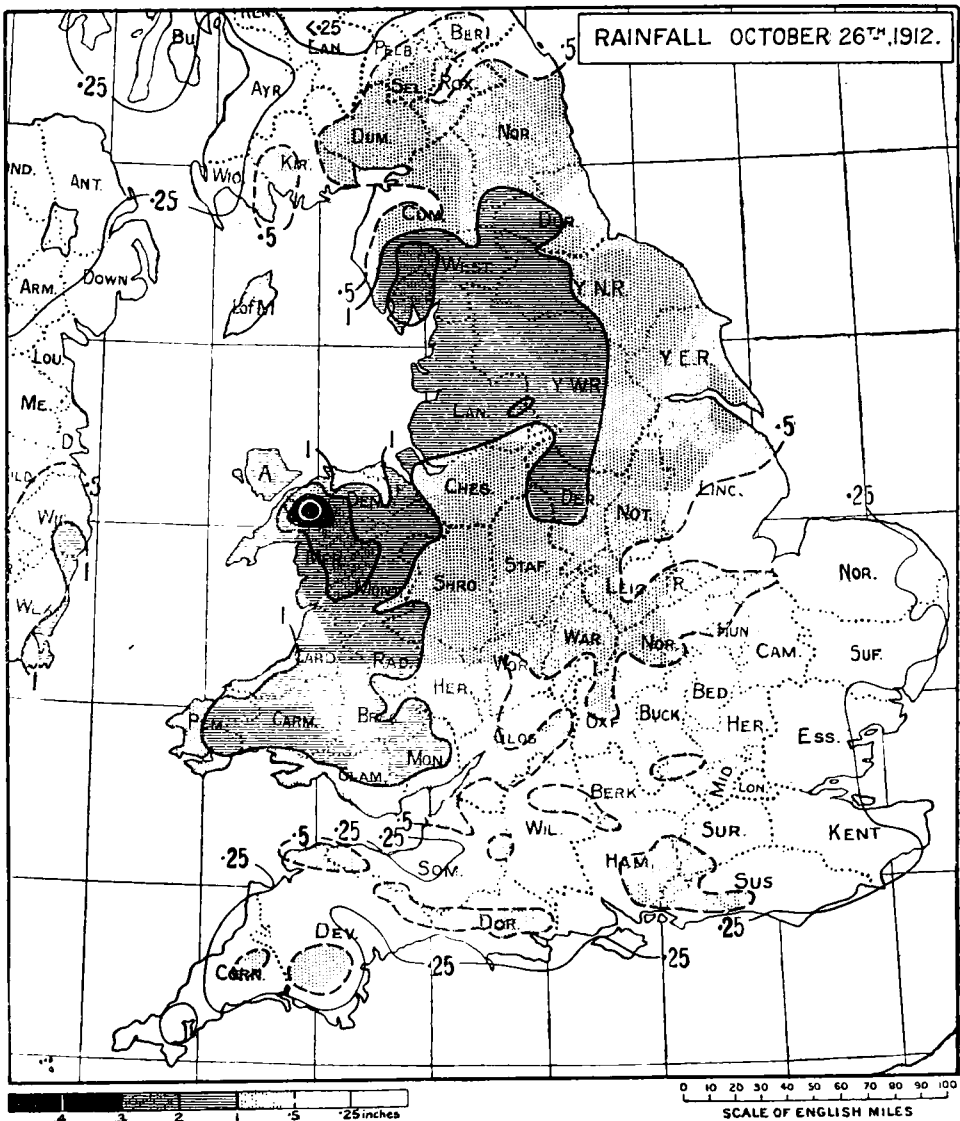
Heavy rain chiefly round the estuary of the Clyde.

XV.	Dunoon (Castle Gardens) .....	3·58 in.	or 3·6 per cent.
„	Mull (Glencannel) .....	2·53 „	2·1 „

**October 26th.**

The rainfall of this day appears to have been connected with secondary atmospheric depressions on the outskirts of a large and deep cyclonic system lying off the west of Ireland. The distribution of rain in England and Wales was singularly like that of the total rainfall of an average month, being obviously dependent, in a very large degree, upon the configuration of the land. On this account, although over the greater part of England the day was not by any means a very wet one, we give a map of the whole of England and Wales. It will be seen that more than one inch of rain fell over

practically the whole of Wales, in Lancashire and the Pennines and on a small strip in the south-east of Ireland. More than 2 inches fell in the Lake District, on a small patch of moor north of Rochdale and over a portion of North Wales, including Snowdonia, where more than 4 inches was recorded by some of the mountain



gauges. Some of the wettest spots in the district, however, cannot always be visited daily, and at some of these the rainfall of this very wet day was measured together with the more moderate, but still substantial, rainfall of the following day. At the gauge at the Intake at Llyn Llydaw the two days yielded 6.37 in., whilst the

gauge at the Copper Mill gave 6·19 in. There is little doubt that of this enormous total for the 48 hours at least 5 inches must be attributed to the 24 hours ending at 9 a.m. on 27th, but we do not feel justified in quoting this amount among the measured readings for the day.

The area over which more than 1 inch of rain fell was measured and the general rainfall computed, with the following result.

	Area, sq. miles.	General Rainfall, inches.	Volume of Rain, sq. miles × inches.
More than 4 inches .....	47	4·30	202
3—4 inches .....	101	3·50	354
2—3 „ .....	1,098	2·28	2,513
1—2 „ .....	12,714	1·38	17,546
Total more than 1 inch...	13,960		20,615

The general rainfall over the 13,960 square miles with more than 1 inch of rain was 1·48 in.

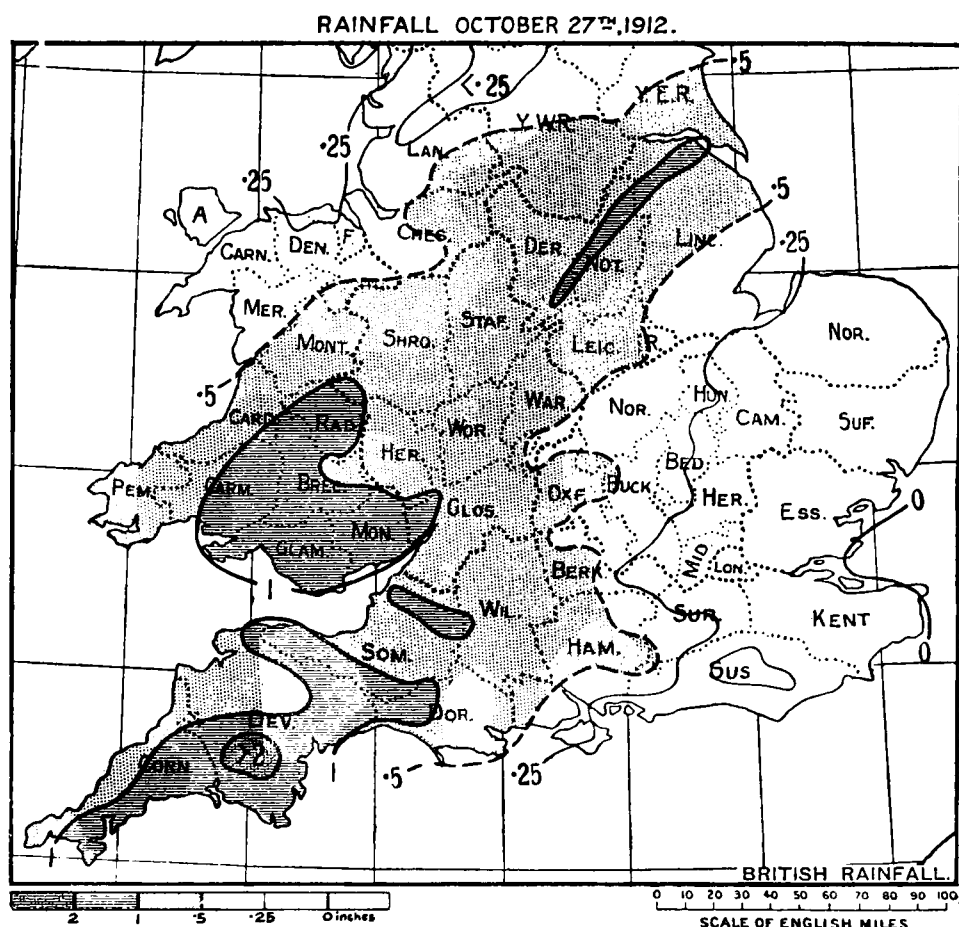
About 300 stations had their maximum fall on this day : of these 18 are worthy of being put upon record.

VIII.	Ulverston (Urswick School House) .....	2·51 in.	or 4·7 per cent.
„	Broughton-in-Furness .....	2·52 „	4·0 „
„	Cartmel (Holker Hall).....	2·52 „	4·5 „
„	Greenodd (Pennybridge School) .....	3·06 „	4·6 „
„	„ (Summerhill) .....	3·25 „	4·5 „
„	Blawith Vicarage .....	2·54 „	3·8 „
„	Coniston (Holywath) .....	2·78 „	2·5 „
„	„ (Water Park).....	2·70 „	3·7 „
IX.	Slaidburn (Thorneyholme) .....	2·60 „	3·6 „
„	„ (Dunsop Houses).....	2·50 „	3·5 „
X.	Ambleside (Skelwith Bridge).....	2·79 „	2·7 „
„	Loughrigg (Silverthwaite) .....	2·50 „	2·8 „
XI.	Llanrwst (Poplar Grove).....	2·93? „	4·4 „
„	Snowdon (Pen-y-Gwryd) .....	4·25 „	3·1 „
„	Lake Cowlyd (Llethyr Gwyn) .....	4·47 „	4·6 „
„	„ „ (Gors-y-Llithrig) .....	3·05 „	3·5 „
„	„ „ (Ffrith Fawr) .....	4·26 „	4·5 „
„	„ „ (Carreg Wen) .....	3·95 „	4·1 „
„	Snowdon (Cwm Dyli) .....	4·28 „	3·0 „

#### October 27th.

The conditions did not differ greatly from those of the previous day. A small depression which crossed Scotland in an easterly direction was probably not connected with the heavy rainfall in the south-west of England and Wales, which was more likely to have been associated with a secondary depression to the south-east of the main low-pressure area still situated in the Atlantic Ocean. The

rainfall exceeded 1 inch over practically the whole of the Devon-Cornwall peninsula, over the Mendip Hills, and in South Wales. In addition a curious strip, 80 miles in length and not much more than 5 miles in width, within which more than 1 inch fell, stretched from



Derby to near Hull. We reproduce a map of the south of England and Wales, but the rainfall of the day was not sufficiently important to justify the labour of measurement.

About 140 stations, of which 20 were in Wales, recorded the maximum fall for the year.

V. Sheepstor Vicarage .....	2·84 in.	or 3·4 per cent.
„ „ (Redstone) .....	3·06 „	3·5 „
„ „ (Burrator).....	2·75 „	3·3 „
„ Dartmoor (Deancombe Farm) .....	2·72 „	3·5 „
„ „ (Leather Tor Farm) .....	2·74 „	3·2 „
„ South Brent (Great Aish) .....	2·51 „	3·1 „
„ Holne Vicarage .....	2·60 „	3·4 „
„ Ashburton (Druid House) .....	2·54 „	3·8 „
„ Princetown (H.M. Prison) .....	3·57 „	3·2 „
„ „ (Two Bridges) .....	3·21 „	3·0 „

**November 4th.**

Nearly 2 inches of rain fell over a considerable area in the north-west of England, where, however, such a fall is by no means uncommon. About 50 stations had more than on any other day in the year.

IX. Ingleton (Kingsdale Head)..... 2·74 in. or 3·1 per cent.

**December 10th.**

Stations in Mull recorded a heavy rainfall, two having the maximum for the year.

XV. Mull (Knock) ..... 4·21 in. or 4·5 per cent.

**December 11th.**

A local wet day in South Wales.

XI. Rhondda W.W. (Llyn Fawr Reservoir) 2·69 in. or 2·4 per cent.

**December 13th.**

With barometric conditions which were favourable for a steady west wind, this was the wettest day of the year in the English Lake District where 20 stations recorded their maximum fall. Six stations in various parts of Scotland and three in North Wales also had their maximum falls, but, except in the Lake District and North Wales, the fall was not a very important one, the area with 1 inch or more falling short of the Pennines. A large number of stations in the very rainy part of Cumberland and Westmorland had more than 3 inches, a very moderate maximum fall for the district, and two stations the more notable total of 5 inches, the maximum of 5·70 in. being reached at Seathwaite. An interesting account appears on p. [ 25 ] of this Volume of the effect of this rain at Llanrwst in the Conway Valley, where much flooding was caused by the bursting of an embankment.

X.	Borrowdale (Seathwaite).....	5·70 in.	or 4·0 per cent.
"	" (Grange) .....	4·08 "	4·0 "
"	" (The Moraine) .....	4·82 "	4·7 "
"	Ambleside (White Craggs).....	2·62 "	3·1 "
"	" (Lesketh How) .....	2·52 "	2·7 "
"	Rydal (The Stepping Stones).....	3·32 "	3·5 "
"	" .....	3·92 "	4·2 "
"	Dungeon Ghyll .....	3·81 "	3·1 "
"	Grasmere (The Wray) .....	5·14 "	4·8 "

XI.	Penygraig (Hendrecafn House).....	2·51 in.	or 2·3 per cent.
„	Bettws-y-Coed (Tyn-y-Bryn) .....	2·68 „	4·2 „

### December 19th.

The conditions were again favourable for heavy rainfall in the west, with a steady south-westerly air-current maintained by low-pressure to the north-west and high-pressure to the south-east of the British Isles. Heavy rain fell in parts of Scotland where there are very few stations, and three of the six which recorded their maximum fall had an amount large enough to put on record.

XVI.	Balquhider (Stronvar) .....	4·35 in.	or 4·8 per cent.
XVIII.	Loch Arkaig (Achnacarry).....	3·64 „	3·7 „
„	Fort William (Atholl Bank) .....	2·50 „	3·0 „

### December 30th.

In circumstances almost exactly the same as those of December 19th described above, heavy rain fell in the west of Scotland. Six stations recorded their maximum rainfall, and three of these, on the borders of Argyll and Inverness-shire, are quoted.

XV.	Ardgour House .....	3·61 in.	or 3·3 per cent.
„	Ballachulish (Glencoe).....	3·00 „	2·7 „
„	Loch Eil (Corran) .....	3·17 „	3·4 „

## Part II.—Abstract.

It is an extremely difficult matter to find a basis for the comparison of one year with another from the point of view of its heavy rainfalls. The tables which have appeared for so many years at the end of this section provide data for nearly half a century, arrived at by precisely similar methods in each year of that period, and appear at first sight to solve the problem, but it requires very little thought to show that this is not the case. It is clear, for example, that the average of all maximum values for the year, irrespective of the localities in which the individual records were taken, must give undue preponderance to the well represented parts of the country and insufficient weight to the enormous, and often very wet, tracts of land where inhabitants being few, rain gauges are still fewer. This being the case a heavy local rain will have a far greater effect on the year's average if it occurs in a thickly inhabited place where many stations report it, than if it falls on a lonely moor and is reported by a single Observer only, but where, from a

meteorological point of view, it is of equal importance. The number of stations changes year by year, and every year fresh efforts are made to effect a better representation of all parts of the country, but even were it possible that the representation should be perfected the disparity with previous years would only be increased thereby. At present, however, the comparative tables are the best means we have of making any sort of statistical comparison between the years, and until a more just basis can be arrived at we prefer to make no further break of continuity than that involved in the trifling changes introduced in *British Rainfall*, 1911.

The heaviest daily rainfalls of 1912 were, with one tremendous exception, not very remarkable ones. The significance of that exception is, however, shown in all the tables, and the year, from the point of view of heavy daily rainfall, is raised from being merely commonplace into a position of historic pre-eminence. The large place taken by the East Anglian rainfall of August 26th among the rains of the year may be judged by the fact that it is the only fall represented in either Table I. or Table II., containing respectively the 20 highest daily falls and the 20 highest percentages of the annual rainfall, among the 4315 records examined. Previous to 1911 the tables contained only the 16 highest of each, and there is no table since 1865, when they were first compiled, in which more than 14 of the first 16 heavy rainfalls, or in which more than 12 of the 16 highest percentage values, occurred on the same day, and there is only one other instance in which Division X. has not been represented in Table I, namely, in 1875, when a great rainfall in Monmouthshire and South Wales usurped a large part of the entries in the Table.

In Table III. are given the absolute maximum fall and the absolute maximum percentage of the year in comparison with those since 1865. There have been two previous instances of higher individual daily records than that of 7·31 in. at Brundall, but the localities in which they were recorded, namely at the Ben Nevis Observatory, where 7·74 in. fell on February 6th, 1894, and Seathwaite, where 8·03 in. was recorded on November 12th, 1897, places them far behind the Brundall rainfall from the point of view of historical importance. On October 2nd, 1890, 7·29 in. fell at the Ben Nevis Observatory, and on October 29th, 1911, 7·00 in. at Seathwaite, but these are, as far as we have any record, the only previously recorded instances of seven inches of rain on the rainfall

day. There were two instances of seven inch measurements and 17 instances of six inch measurements reported from the small area in Norfolk where the rain of August 26th was at its worst, and it should be remembered that on the same day at nearly all the

TABLE I.—*The Largest Maximum Falls in 1912.*

Date.	Div.	Station.	Depth.	Per Cent.	Total.
Aug. 26 ...	IV.	Brundall, Blofeld Road .....	7·31 in.	21·3	34·42 in.
„ ...	„	Sprowston Council School...	7·20 „	19·1	37·69 „
„ ...	„	„ (Oak Lodge) .....	6·90 „	20·0	34·50 „
„ ...	„	Old Catton.....	6·90 „	18·5	37·31 „
„ ...	„	Norwich, Carrow House....	6·67 „	22·2	30·05 „
„ ...	„	„ Heigham Cemetery	6·59 „	18·9	34·82 „
„ ...	„	„ Ipswich Road.....	6·49 „	18·3	35·47 „
„ ...	„	Gunton Park.....	6·46 „	16·8	38·48 „
„ ...	„	Sprowston Hall.....	6·40 „	18·0	35·55 „
„ ...	„	Worstead, Westwick Gdns.	6·38 „	...	...
„ ...	„	Brooke School.....	6·31 „	21·5	29·29 in.
„ ...	„	Norwich, Christchurch Rd., Eaton	6·31 „	18·0	35·03 „
„ ...	„	Worstead, The Grange .....	6·31 „	16·9	37·27 „
„ ...	„	Coltishall .....	6·18 „	17·8	34·70 „
„ ...	„	Dunston Hall .....	6·13 „	18·0	34·18 „
„ ...	„	Keswick Old Hall.....	6·06 „	17·8	34·10 „
„ ...	„	Moulton .....	6·01 „	17·9	33·59 „
„ ...	„	Swainsthorpe, The Rookery.	5·90 „	18·3	32·27 „
„ ...	„	Cromer, The Warren .....	5·76 „	17·0	33·72 „
„ ...	„	Baconsthorpe Rectory.....	5·76 „	15·4	37·26 „

TABLE II.—*The Largest Maximum Percentages in 1912.*

Date.	Div.	Station.	Per cent.	Depth.	Total.
Aug. 26 ...	IV.	Norwich, Carrow House....	22·2	6·67 in.	30·05 in.
„ ...	„	Brooke School .....	21·5	6·31 „	29·29 „
„ ...	„	Brundall, Blofeld Road .....	21·3	7·31 „	34·42 „
„ ...	„	Sprowston (Oak Lodge) .....	20·0	6·90 „	34·50 „
„ ...	„	„ Council School...	19·1	7·20 „	37·69 „
„ ...	„	Norwich, Heigham Cemetery	18·9	6·59 „	34·82 „
„ ...	„	Old Catton.....	18·5	6·90 „	37·31 „
„ ...	„	Norwich, Ipswich Road.....	18·3	6·49 „	35·47 „
„ ...	„	Swainsthorpe, The Rookery	18·3	5·90 „	32·27 „
„ ...	„	Sprowston Hall.....	18·0	6·40 „	35·55 „
„ ...	„	Norwich, Christchurch Rd., Eaton	18·0	6·31 „	35·03 „
„ ...	„	Dunston Hall .....	18·0	6·13 „	34·18 „
„ ...	„	Moulton .....	17·9	6·01 „	33·59 „
„ ...	„	Coltishall .....	17·8	6·18 „	34·70 „
„ ...	„	Keswick Old Hall .....	17·8	6·06 „	34·10 „
„ ...	„	Mundesley-on-Sea .....	17·7	5·42 „	30·60 „
„ ...	„	Honingham Hall .....	17·6	5·62 „	32·02 „
„ ...	„	Saxlingham Nethergate.....	17·1	5·45 „	31·82 „
„ ...	„	Cromer, The Warren .....	17·0	5·76 „	33·72 „
„ ...	„	Worstead, The Grange .....	16·9	6·31 „	37·27 „



TABLE III.—*Comparison of Maximum Fall and Maximum Percentage with those in previous years.*

Year.	ABSOLUTE HIGHEST RAINFALL.				ABSOLUTE HIGHEST PERCENTAGE.			
	Depth	Per cent.	STATION.	Div.	Per cent.	Depth	STATION.	Div.
	in.					in.		
1865	6·41	5·5	Seathwaite .....	10	13·0	4·40	Fleckney .....	7
1866	6·38	3·6	„ .....	„	10·0	2·48	Burton .....	6
1867	4·78	17·7	Hartlip .....	2	17·7	4·78	Hartlip .....	2
1868	5·60	4·8	Camusinas .....	15	11·0	4·00	Tongue .....	19
1869	6·70	4·5	Seathwaite .....	10	10·0	3·40	Tillydesk .....	17
1870	6·00	17·1	Tongue .....	19	17·1	6·00	Tongue .....	19
1871	4·24	9·6	Melbury .....	5	11·5	3·62	Warter .....	9
1872	5·82	3·2	Seathwaite .....	10	10·0	3·70	Hillington Hall .....	4
1873	4·20	2·9	„ .....	„	11·8	2·77	Oscott .....	6
1874	5·32	4·4	Bryn Gwynant .....	11	11·9	2·50	Welwyn .....	3
1875	5·33	9·7	Newport W.W. ....	„	13·2	3·95	Letheringsett .....	4
1876	4·50	5·5	Foffany .....	23	8·5	3·70	Cragside .....	10
1877	4·98	5·3	Skye, Portree .....	18	9·3	3·09	Wellington .....	6
1878	4·24	8·6	Springfield .....	11	11·8	3·90	Haverstock Hill .....	1
1879	4·05	4·1	Little Langdale .....	10	12·3	3·80	Cambridge, Merton V. ....	3
1880	4·75	3·9	Seathwaite .....	„	11·7	3·34	Marmont Priory Lock .....	„
1881	5·42	4·7	Sligachan .....	18	10·6	3·20	Aboyne Castle .....	17
1882	4·51	3·0	Seathwaite .....	10	9·1	2·80	Bothalhaugh .....	10
1883	5·27	9·0	Glen-na-Smoel .....	21	12·3	4·31	Skegness .....	7
1884	6·78	5·0	Seathwaite .....	10	13·8	2·66	Diss, Thelveton .....	4
1885	4·62	3·2	„ .....	„	9·6	2·62	Beccles, Ellough .....	„
1886	4·20	9·9	Little Bredy .....	5	11·5	4·10	Leeds, Methley Park..	9
1887	4·93	13·0	Galway, Queen's Coll.	22	13·0	4·93	Galway, Queen's Coll.	22
1888	5·20	5·4	Wythburn Vicarage ...	10	11·8	3·24	Rothamstead .....	3
1889	4·45	16·5	North Ockendon .....	4	16·5	4·45	North Ockendon .....	4
1890	7·29	3·7	Ben Nevis Observatory	18	17·2	3·68	Slough, Langley .....	3
1891	6·14	4·2	Seathwaite .....	10	14·4	4·00	Montrose, Sunnyside..	16
1892	5·80	4·5	„ .....	„	15·0	4·27	Flax Bourton .....	5
1893	4·96	3·5	„ .....	„	16·2	4·48	Cranmer Hall .....	4
1894	7·74	5·1	Ben Nevis Observatory	18	11·1	3·56	Sidcup .....	2
1895	4·83	16·1	Mellington Hall .....	11	16·1	4·83	Mellington Hall .....	11
1896	4·59	3·7	Seathwaite .....	10	11·1	2·78	Barkby .....	7
1897	8·03	5·6	„ .....	„	14·1	2·40	Chatteris, Horseway L.	3
1898	6·70	18·1	Angerton Hall .....	„	18·1	6·70	Angerton Hall .....	10
1899	5·21	5·6	Borrowdale, Grange...	„	14·6	3·10	Wallingford .....	2
1900	5·40	11·9	Ilkley, Cherry Bank...	9	13·1	4·50	Gilstead Filters .....	9
1901	5·66	5·7	Dungeon Ghyll .....	10	17·9	4·24	Maidenhead, The Firs	2
1902	5·92	3·8	Ben Nevis Observatory	18	15·5	3·51	Esher Sewage Works..	„
1903	4·78	2·2	„ „ „ .....	„	12·8	4·41	Dartford, West Hill Ho.	„
1904	5·62	6·0	Skelwith Bridge .....	10	15·8	3·48	Leamington, Binswood Av.	6
1905	5·71	14·0	Glen-na-Smoel .....	21	14·9	3·98	Cofton Vicarage .....	5
1906	6·15	4·7	Seathwaite .....	10	11·9	2·50	Cambridge, Herschel Ho.	3
1907	4·86	9·4	Kingsbridge .....	5	12·5	3·40	Lincoln, St. Botolph's	7
1908	4·80	9·9	Treharris .....	11	16·0	3·45	Great Glenham .....	6
1909	6·46	5·7	Kinlochquoich .....	18	11·1	3·30	Tidworth Ho. [Ludgershall]	2
1910	4·51	3·4	Seathwaite .....	10	13·0	3·93	Wheatley, Waterstock	3
1911	7·00	4·7	„ .....	„	14·2	3·25	Haxby, Moorlands ...	9
1912	7·31	21·3	Brundall .....	4	22·2	6·67	Norwich, Carrow Ho.	4

NOTE.—The maximum values in each column are printed in heavy type and the minimum in italic type.

TABLE IV.—*Comparison of the Mean of all the Maximum Falls of 1912 with similar data for previous years.*

Years.	Number of Returns.	Mean Percentage.	Mean Amount.	Mean Total Fall in year.	Ratio taking 33=100.	Total Fall being assumed =33in. Mean Max. =
			in.	in.		
1865.....	481	5·1	1·70	33	100	5·2 per cent
1866.....	590	3·7	1·48	40	121	4·5 „
1867.....	584	4·6	1·44	31	94	4·4 „
1868.....	676	4·3	1·43	33	100	4·3 „
1869.....	637	4·2	1·42	34	103	4·3 „
1870.....	687	4·9	1·30	27	82	3·9 „
1871.....	752	4·9	1·49	30	91	4·5 „
1872.....	743	m 3·4	1·59	M 47	M 142	4·8 „
1873.....	809	4·6	1·35	29	88	4·1 „
1874.....	1010	4·4	1·41	32	97	4·3 „
1875.....	1081	5·0	M 1·83	37	112	M 5·5 „
1876.....	1112	3·9	1·49	38	115	4·5 „
1877.....	1180	3·8	1·56	41	124	4·7 „
1878.....	1186	4·3	1·49	35	106	4·5 „
1879.....	978	4·2	1·52	36	109	4·6 „
1880.....	1117	4·8	1·72	36	109	5·2 „
1881.....	1194	4·1	1·45	35	106	4·4 „
1882.....	1463	3·6	1·42	39	118	4·3 „
1883.....	1505	4·0	1·41	35	106	4·3 „
1884.....	1691	4·8	1·32	28	85	4·0 „
1885.....	1801	4·5	1·41	31	94	4·3 „
1886.....	1718	4·6	1·64	35	106	5·0 „
1887.....	1921	4·5	m 1·14	m 25	m 76	m 3·5 „
1888.....	1974	4·4	1·41	32	97	4·3 „
1889.....	1812	4·8	1·41	29	88	4·3 „
1890.....	2081	5·0	1·46	29	88	4·4 „
1891.....	2218	4·1	1·47	35	106	4·5 „
1892.....	2231	5·4	1·62	30	91	4·9 „
1893.....	2267	4·8	1·30	27	82	3·9 „
1894.....	2321	4·2	1·46	35	106	4·4 „
1895.....	2423	4·5	1·37	30	91	4·2 „
1896.....	2465	4·4	1·33	30	91	4·0 „
1897.....	2598	4·1	1·36	33	100	4·1 „
1898.....	2691	5·0	1·42	28	85	4·3 „
1899.....	2791	4·7	1·42	30	91	4·3 „
1900.....	2702	4·6	1·61	35	106	4·9 „
1901.....	2747	M 5·7	1·58	28	85	4·8 „
1902.....	2832	4·4	1·20	27	82	3·6 „
1903.....	2936	4·0	1·67	41	124	5·1 „
1904.....	3093	4·6	1·31	29	88	4·0 „
1905.....	3250	4·8	1·31	27	82	4·0 „
1906.....	3365	4·5	1·40	31	94	4·2 „
1907.....	3465	4·1	1·32	32	97	4·0 „
1908.....	3596	4·4	1·31	30	91	4·0 „
1909.....	3666	4·4	1·51	34	103	4·6 „
1910.....	3894	3·8	1·34	35	106	4·1 „
1911.....	4130	4·2	1·38	33	100	4·2 „
Average.	1967	4·4	1·45	33	100	4·4 „
1912.....	4315	3·8	1·57	41	124	4·8 „
Difference	2348	—0·6	+·12	+8	+24	+0·4 „

stations quoted about an inch of rain had fallen before 9 a.m. on the day in question, and was consequently included in the rainfall of the previous day by the rules which bind us in treating these statistics. On the right hand side of the same table the percentage values are compared in the same way, the station given being that at which the maximum daily rainfall of each year bore the highest ratio to the year's total at that station. Judged by this standard of comparison, by means of which the very wet stations are ruled out on account of their high annual rainfall, the East Anglian fall has no competitor in the whole period, the nearest approach to its record of 22·2 per cent. at Norwich being 18·1 per cent., the figure reached in the great Angerton rainstorm of September 7th, 1898, an account of which appears in *British Rainfall*, 1898, page 30.

Table IV. expresses in a measure the effect of the year's maximum rainfalls taken together. It shows that whilst, on account of the rainfall of August 26th, the mean maximum fall was ·12 in. above the mean value for 47 years the mean percentage was 0·6 lower, suggesting that on the average of the whole country the wetness of the year as a whole was more marked than the wetness of individual days, a conclusion borne out by the general nature of the year's weather. Taking the year's rainfall as 33, that is the average value for all the stations for 47 years, the rainfall of 1912 appears to be 24 per cent. in excess, and the mean maximum fall 0·4 per cent. in excess of the average value.

Table V. has a more real value, for it shows, both in the shape of total numbers and also in the more comparable form of percentages of the total number of records received, the number of records of daily maximum rainfall exceeding the fixed limits of 2·00 in. and 3·00 in. The number of records examined exceeded the number in the previous year by 185, and was therefore greater than ever before, so that the fact that more falls of 2·00 in. and 3·00 in. were recorded than in any previous year is not of itself a proof that they were relatively more numerous. By means of the percentage column, however, we are able to see that six years out of the previous 30 had relatively a larger number of two inch records, but only two years, 1892 and 1900, a relatively larger number of three inch records. The infrequency of three inch rainfalls, apart from August 26th, which is shown in the chronicle at the beginning of this section, makes it clear that the whole of this preponderance may be attributed to that day.

We give as usual a summary comparing the data for England and Wales, for Scotland and for Ireland, one with another, and with previous years since 1905. The mean maximum fall and also the

*Summary of Maximum Falls in 1912.*

	No. of Records.	Mean Amount.	Mean Percent- age of Annual Fall.	Falls of 2·00 in. or more.	Per Cent. of Total Number.	Falls of 3·00 in. or more.	Per Cent. of Total Number.
		in.		No.		No.	
England & Wales...	3643	1·56	3·9	546	15·0	105	2·9
Scotland .....	435	1·75	3·5	110	25·3	25	5·8
Ireland .....	237	1·46	3·5	28	11·8	1	0·4
British Isles....	4315	1·57	3·8	684	15·8	131	3·0

*Comparison of Maximum Falls.*

	No. of Records.	Mean Amount.	Mean Percent- age.	Falls of 2·00 in. or more.	Per Cent. of Total.	Falls of 3·00 in. or more.	Per Cent. of Total.
		in.		No.		No.	
<b>ENGLAND AND WALES—</b>							
1905.....	2719	1·28	4·9	176	6·5	12	0·4
1906.....	2846	1·31	4·6	310	10·9	24	0·8
1907.....	2915	1·30	4·2	95	3·3	16	0·6
1908.....	3002	1·26	4·5	178	5·9	25	0·8
1909.....	3069	1·47	4·4	427	13·9	37	1·2
1910.....	3254	1·34	3·8	232	7·1	30	0·9
1911.....	3430	1·34	4·3	278	8·1	58	1·7
1912.....	3643	1·56	3·9	546	15·0	105	2·9
<b>SCOTLAND—</b>							
1905.....	332	1·29	3·5	32	9·6	2	0·6
1906.....	325	1·68	3·9	78	24·0	6	1·8
1907.....	342	1·59	3·9	21	6·1	3	0·9
1908.....	386	1·54	4·2	68	17·6	9	2·3
1909.....	393	1·81	4·3	117	29·8	31	7·9
1910.....	405	1·51	3·6	63	15·6	2	0·5
1911.....	467	1·63	3·6	116	24·9	27	5·8
1912.....	435	1·75	3·5	110	25·3	25	5·8
<b>IRELAND—</b>							
1905.....	199	1·88	5·9	72	36·2	31	15·6
1906.....	194	1·14	3·3	7	3·6	0	0·0
1907.....	208	1·21	3·1	2	1·0	2	1·0
1908.....	208	1·47	4·0	29	13·9	2	1·0
1909.....	204	1·46	4·0	14	6·9	1	0·5
1910.....	235	1·48	3·6	23	9·8	1	0·4
1911.....	233	1·41	3·7	22	9·4	2	0·9
1912.....	237	1·46	3·5	28	11·8	1	0·4

numbers of falls of 2·00 in. and 3·00 in. were greater than in any year in that period for England and Wales, but for Scotland and Ireland, although the mean values were not low, they had several times been exceeded. For 2 inch and 3 inch rainfalls the year 1905 was very remarkable in Ireland, though in all other years falls of 3 inches have been rare, and in 1912 only one was recorded.

TABLE V.—*Maximum Falls in each year exceeding 2·00 in., and exceeding 3·00 in.*

Year.	Total number of records.		Falls of 2·00 in. or more.		Falls of 3·00 in. or more.	
			Number.	Per cent. of total No.	Number.	Per cent. of total No.
1882	.....	1463	.....	140	.....	9·6
3	.....	1505	.....	170	.....	11·3
4	.....	1691	.....	138	.....	8·2
5	.....	1801	.....	179	.....	10·0
6	..	1718	.....	158	.....	9·2
7	.....	1921	.....	52	.....	m 2·7
8	.....	1974	.....	374	.....	18·9
9	.....	1812	.....	170	.....	9·4
1890	.....	2081	.....	345	.....	16·6
1	.....	2218	.....	270	.....	12·2
2	.....	2231	.....	470	.....	21·1
3	.....	2267	.....	183	.....	8·1
4	.....	2321	.....	313	.....	13·5
5	.....	2423	.....	249	.....	10·3
6	.....	2465	.....	249	.....	10·1
7	.....	2598	.....	275	.....	10·6
8	.....	2691	.....	373	.....	13·9
9	.....	2791	.....	283	.....	10·0
1900	.....	2702	.....	641	.....	M 23·7
1	.....	2747	.....	497	.....	18·1
2	.....	2832	.....	163	.....	5·8
3	.....	2936	.....	625	.....	21·3
4	.....	3093	.....	246	.....	8·0
5	.....	3250	.....	280	.....	8·6
6	.....	3365	.....	395	.....	11·7
7	.....	3465	.....	118	.....	3·4
8	.....	3596	.....	275	.....	7·7
9	.....	3666	.....	558	.....	15·2
1910	.....	3894	.....	318	.....	8·2
1	.....	4130	.....	416	.....	10·1
<hr/>						
Average	...	2588	.....	297	.....	11·6
1912	.....	4315	.....	684	.....	15·9
Difference	+	1727	.....	+387	.....	+4·3
					.....	+89
					.....	+1·6

## MONTHLY RAINFALL IN 1912.

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No change has been introduced into the method of describing the monthly rainfall of the year, and we give, as in previous volumes, a double set of maps showing for each month the actual amount of the rainfall in inches and the percentage which that amount bore to the average rainfall of the month in question. The tables of actual rainfall contain the monthly and annual totals at 300 stations carefully selected, not only as records of the highest accuracy and uniformity, but also for equal representation of all parts of the British Isles. By this means we are able to obtain mean values for the different countries, and for the whole, which may be trusted as closely approximating to the true general values. The distribution of the rainfall over the country in each month is indicated in more minute detail in the maps which are placed on the left-hand page at each opening, from pages [152] to [175]. These maps have been constructed by plotting on a map to the scale of 19 miles to the inch, *i.e.*, about 3 feet long by 2 feet 8 inches wide, the monthly total rainfall at more than 2,000 stations. Lines of equal rainfall were then drawn and the maps were subsequently recopied and reduced by photography to the size of our page. In the copies made for reproduction the eye is assisted in following the run of the isohyetal lines by means of tints covering the areas with more than 3 inches, 6 inches and 10 inches respectively, the tint being darker as the rainfall is greater. In rare cases areas with more than 20 and even more than 30 inches of rain are indicated by a white line, or a white patch, on the heavy black tint which marks that part of the country where more than 10 inches fell.

The relation of the rainfall of each month to the average is treated, of necessity, in a more general manner. The average used is that of the 35 years, 1875—1910, and the number of records covering that long period is not very great. It was possible, how-

ever, to select 102 stations fairly well distributed which when meaned will not give undue weight to one part of the country at the expense of any other. In some cases it has been necessary to utilise averages of a somewhat shorter period, but these short period averages have in every case been corrected, by means of longer records close by, in order to bring them into uniformity with the 35 year averages. The stations, the records of which are used, will be found in Table I. on pages [146] to [148]. They are substantially the same as those in the similar Table on pages [179] to [181] of *British Rainfall*, 1911, but this year we have been confronted with a peculiar difficulty owing to the termination of several old and trusted records in Ireland, where long series of observations are rare, and the representative records when they come to an end are very difficult to replace. In the south of Ireland, which we are obliged to regard as the least satisfactory district in this respect, the failure of the record at Cork, owing to the death of the late Bishop of Cork, makes it necessary to resort to the computation of average values for the station at Lota Lodge, Glanmire. The existing record is short but of just sufficient duration to enable us to ascertain its relation to the old records at Cork, and we have the advantage of knowing that the observations are made with unimpeachable accuracy. The percentage values at the 102 stations for each month given in Table I. were plotted on maps together with a small number of additional percentage values, and the lines of equal percentage difference from the average rainfall were based upon them. The positions of the stations are indicated on the maps by dots, these being hollow in the case of the supplementary stations not used in calculating the mean values. In drawing the lines reference is made to the maps of distribution of actual rainfall which frequently give substantial assistance in deciding the run of the lines in the intervals between the stations shown on the percentage map. In the percentage maps a tint is introduced over the area which had more than the average rainfall, leaving that with less than the average white; should the rainfall of any area reach twice, or, as in rare cases, three times the average, darker tints are used to throw such districts into relief. The space below each map is devoted to a short description of the salient features of the month from the point of view of its rainfall, with additional notes on the weather conditions where these throw any light on the peculiarities of the distribution.

Over the British Isles as a whole four months only during 1912

TABLE I.—*Monthly Rainfall in 1912: the Average, 1875–1909, being taken as 100.*

Div.	Station.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
I.	St. Pancras, Camden Square ..	223	103	167	2	62	142	56	205	107	75	68	131	111
II.	Tenterden, View Tower.....	129	129	196	8	28	164	46	257	141	111	86	122	120
"	Arundel, Patching .....	143	146	225	4	84	153	85	306	124	101	57	127	128
"	Fawley, Cadland .....	169	110	184	6	65	155	127	228	91	90	79	140	122
III.	Basingstoke, Sherborne St. John	167	110	208	4	96	165	78	242	109	95	66	172	127
"	Royston, Therfield .....	202	86	204	8	76	120	72	227	126	80	77	126	117
"	Oxford, Magdalen College.....	244	125	193	1	114	143	121	187	52	107	74	152	126
"	Wellington, Croyland Abbey	167	101	136	6	79	150	165	269	54	79	81	139	121
IV.	March .....	199	83	160	11	87	198	139	297	69	74	96	139	133
"	Shoeburyness .....	220	93	147	7	43	105	78	192	119	80	74	106	105
"	Braintree, Bocking .....	149	73	163	13	46	84	53	241	136	67	92	90	100
"	Rendlesham Hall .....	109	78	159	15	22	104	82	300	131	55	92	89	104
"	Bury St. Edmunds, Westley....	153	74	179	24	63	100	105	329	120	69	102	113	122
"	Geldeston .....	139	69	170	25	33	152	139	341	116	53	122	93	123
"	Blakeney .....	150	80	131	16	100	213	174	382	121	63	129	110	144
V.	Bishops Cannings.....	184	120	223	3	78	136	80	170	54	117	63	170	117
"	Evershot, Melbury House .....	165	136	258	11	53	171	91	221	48	115	54	152	123
"	Sidmouth, Sidmount .....	141	145	204	8	104	243	88	224	51	124	51	176	129
"	Barnstaple .....	107	75	218	17	75	313	142	307	25	111	76	122	129
"	Falmouth Observatory .....	126	134	224	8	97	174	152	324	30	97	79	137	130
"	Altarnon .....	108	107	207	15	76	265	125	313	43	89	93	134	128
VI.	Litton, Sherborne Reservoir....	166	128	323	8	84	161	126	248	28	151	67	207	144
"	Stroud, Upfield .....	187	123	234	10	103	263	215	250	39	117	61	160	149
"	Church Stretton, Wolstaston ..	151	77	240	12	106	169	103	213	38	87	92	135	121
"	Wolverhampton, Wrottesley ..	192	70	207	8	111	200	93	208	36	86	92	126	121
"	Malvern, Church Street.....	235	114	228	6	113	215	163	315	36	104	57	129	145
"	Coventry, Kingswood .....	234	108	171	9	172	178	132	230	41	81	63	145	130
VII.	Market Overton .....	181	105	166	11	132	245	200	205	54	91	90	150	137
"	Revesby .....	156	78	121	17	101	166	168	232	75	64	117	148	123
"	Lincoln, Doddington .....	176	77	146	10	145	172	177	207	68	78	110	135	128
"	Mickleover Manor .....	190	106	188	16	117	209	142	239	42	106	99	140	137
VIII.	Northwich, Highfield .....	165	56	225	17	91	119	115	169	61	96	101	106	112
"	Chutburn, Middlewood .....	106	59	178	54	88	231	114	135	53	113	116	109	114
"	Southport, Hesketh Park .....	138	79	227	21	104	208	145	129	45	110	78	91	114
IX.	Sheffield, Redmires Reservoir ..	162	85	158	43	136	150	186	197	72	75	64	135	122
"	Wetherby, Ribston Hall .....	237	93	194	12	163	218	161	193	62	86	95	84	133
"	Hull, Pearson Park .....	167	78	150	8	151	234	142	162	93	85	136	91	126



TABLE I.—*Monthly Rainfall in 1912: the Average, 1875–1909, being taken as 100—(continued).*

Div.	Station.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
IX.	Scarborough, Osgodby .....	171	117	132	20	146	208	165	122	128	99	93	49	118
X.	Darlington, Cleveland Parade..	154	113	114	3	107	309	136	190	115	76	82	57	122
"	Newcastle, Town Moor .....	173	161	74	9	133	249	118	135	100	108	62	52	113
"	Howick Hall .....	189	165	98	10	102	261	165	160	129	101	90	39	124
"	Borrowdale, Seathwaite .....	86	70	200	53	67	157	115	111	58	114	115	155	111
"	Appleby, Castle Bank .....	94	113	159	25	76	360	110	130	76	99	120	140	124
XI.	Abergavenny, Larchfield .....	190	127	250	10	113	203	201	259	39	116	51	129	139
"	Ystalyfera, Wern School .....	91	110	249	21	72	221	107	198	40	107	106	178	129
"	Cardiff, Ely .....	149	105	241	17	73	295	107	218	26	112	84	165	133
"	Haverfordwest Castle .....	138	119	238	3	50	216	129	182	16	131	93	126	121
"	Aberystwyth, Gogerddan .....	72	90	297	26	50	194	115	197	15	127	125	153	125
"	Birmingham W.W., Tyrmynydd	106	77	220	17	48	182	110	216	28	99	97	129	114
"	Bala .....	82	94	253	24	64	258	150	169	41	115	125	169	131
"	Llandudno .....	90	78	161	23	85	174	165	176	44	92	94	103	109
"	Holyhead .....	78	98	191	11	68	199	166	102	29	133	75	84	102
"	Douglas, Borough Cemetery .....	91	120	154	27	79	165	102	131	41	99	104	94	101
XII.	Auchencarn, Torr House .....	103	114	191	42	73	236	101	137	64	107	102	142	118
"	Drumlanrig Castle .....	118	109	197	52	52	168	123	94	59	94	85	217	117
"	Canonbie, Byreburnfoot .....	79	94	158	17	76	192	82	124	66	122	99	127	105
XIII.	North Esk Reservoir .....	87	110	130	47	34	204	87	109	133	106	93	146	109
"	Marchmont House .....	105	127	95	12	65	210	49	128	122	89	59	89	95
XIV.	Airdrie, Hillend Reservoir .....	53	85	157	56	63	199	67	113	76	99	99	143	101
"	Girvan, Pinmore .....	141	111	157	68	54	193	50	107	79	89	99	133	107
"	Loch Thom .....	112	131	182	102	91	182	71	136	71	150	101	195	128
XV.	Inveraray, Newtown .....	81	93	139	137	98	134	72	72	70	129	132	230	119
"	Islay, Eallabus .....	89	84	143	109	64	187	106	99	67	140	92	149	111
"	Mull, Quinish .....	75	81	104	113	94	154	111	76	47	111	74	168	100
XVI.	Loch Leven Sluices .....	69	93	134	21	57	165	92	126	111	102	72	201	107
"	Balquhiddier, Stronvar .....	102	130	137	79	63	198	69	76	60	112	94	283	123
"	Blair Atholl .....	205	112	146	28	84	191	60	100	67	91	124	237	124
"	Dundee, Eastern Necropolis .....	142	111	100	5	74	156	86	117	109	120	73	76	98
XVII.	Fettercairn, The Burn .....	199	159	82	13	66	97	70	127	98	141	86	102	105
"	Braemar .....	221	114	68	37	53	122	93	136	100	104	106	175	113
"	Aberdeen, Cranford House .....	145	142	89	23	83	114	66	174	80	141	97	38	99
"	Keith Station .....	194	99	108	78	170	117	52	190	69	92	84	86	109
"	Cawdor .....	50	58	67	88	104	175	53	145	46	71	111	141	92
XVIII.	Fort Augustus, St. Benedict's ..	44	67	106	184	75	182	82	96	64	117	138	216	113

TABLE I.—*Monthly Rainfall in 1912: the Average, 1875-1909, being taken as 100—(continued).*

Div.	Station.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
XVIII.	Fort William, Atholl Bank .....	61	72	118	196	71	147	71	48	62	121	119	221	110
"	N. Uist, Lochmaddy .....	57	136	131	156	100	138	81	83	17	119	139	183	115
"	Loch Torridon, Bendaunph .....	62	91	95	150	73	106	68	88	54	113	151	167	104
XIX.	Sornoway .....	71	127	131	149	109	131	90	146	11	102	128	135	113
"	Dunrobin Castle .....	63	70	121	111	91	130	77	235	41	72	134	127	106
"	Thurso, Holborn Head .....	79	77	157	157	166	34	60	158	70	75	101	72	98
XX.	Glannire, Lota Lodge .....	102	150	134	21	67	161	210	96	36	69	46	78	94
"	Killarney, District Asylum .....	90	127	148	35	51	241	96	133	21	74	61	139	103
"	Valencia, Glanleam .....	134	115	186	33	53	191	79	99	70	103	72	109	101
"	Waterford, Brook Lodge .....	111	112	183	40	54	186	191	125	9	89	48	94	108
"	Nenagh, Castle Lough .....	87	121	153	42	66	221	135	85	15	95	73	136	102
"	Ennistymon House .....	80	87	163	46	61	178	134	90	14	90	76	137	96
XXI.	Carrigaholt Castle .....	88	110	189	50	115	204	111	88	10	108	86	142	106
"	Gorey, Courtown House .....	75	183	187	76	54	193	193	183	13	77	52	81	121
"	Abbey Leix, Blandsfort .....	115	131	163	32	56	198	169	125	16	68	61	111	104
"	Dublin, FitzWilliam Square .....	164	133	138	65	50	130	118	171	28	58	55	83	100
"	Mullingar, Belvedere .....	140	137	187	36	49	199	138	139	14	92	88	153	116
XXII.	Ardee, Lissrenny .....	136	131	173	53	45	129	146	154	20	65	73	121	106
"	Tuan, Gardenfield .....	83	130	150	57	72	166	115	98	15	108	107	166	107
"	Crossmolina, Enniscroe .....	77	94	137	56	99	136	103	101	14	71	106	218	104
XXIII.	Markree Observatory .....	78	126	174	63	75	177	113	138	36	103	124	153	115
"	Belturbet, Cloverhill .....	142	125	195	50	88	132	109	117	17	81	99	151	110
"	Armagh Observatory .....	142	138	145	94	57	186	91	171	32	39	89	155	112
"	Seaforde .....	147	189	164	62	62	203	128	173	26	100	57	109	117
"	Bushmills, Dundarave .....	118	77	148	104	50	188	83	137	48	120	126	116	110
"	Ballymena, Harryville .....	145	117	144	89	74	231	134	169	72	91	121	158	130
"	Omagh, Edenfel .....	96	123	163	81	60	211	134	121	45	118	136	173	123
"	Buncrana, Rockfort .....	89	85	149	191	49	208	97	97	58	89	109	126	101
<hr/>														
	England (Mean of 43 Stations)	151	100	189	16	94	188	126	216	72	96	87	130	123
	Wales ( " 9 " )	109	99	237	17	68	216	133	192	30	114	97	143	123
	Scotland ( " 27 " )	94	103	129	90	80	160	77	114	70	111	107	170	110
	Ireland ( " 22 " )	113	125	161	57	64	186	127	125	29	88	85	135	108
	British Isles ( " 102 " )	118	107	167	47	80	182	112	161	57	101	94	145	116

had a general rainfall below the average, namely, April, May, September and November. Of these April had less than half, and September little more than half, the average. October, with 101 per cent., and February, with 107 per cent., may be regarded as almost normal months, but the remaining six months were wet, especially March, June and August; June, with an excess of 82 per cent., being relatively the wettest month of the year.

In England the same months were dry, but April much more so, the percentage value falling to 16. In other words only one-sixth of the average rain fell over the whole of England. October also had slightly less than the average rainfall, and February exactly the average. March, June and August were the wettest months in England with respectively 189, 188 and 216 per cent. of the average.

In Wales, February, April, May, September and November were dry, February and November only nominally so, but April was as dry as in England and September much more so. Of the wet months, March and June were the most markedly so, both having more than double the average rainfall. August was also extremely wet.

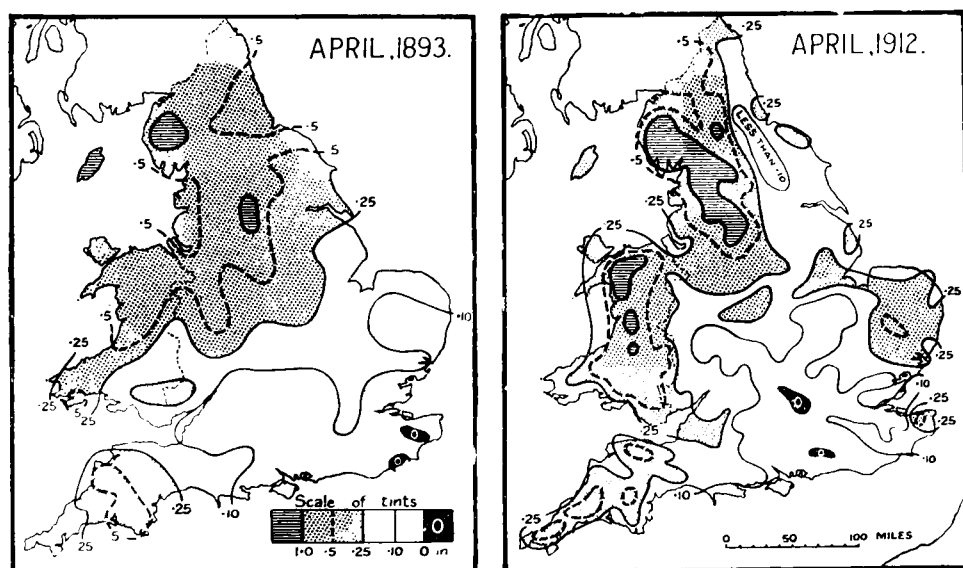
Taking England and Wales together, August comes out as the wettest of the three wet months with an excess of 110 per cent., March following with an excess of 100 per cent., and June with 92 per cent. excess above the average. The three summer months, June, July and August together had 78 per cent. more than their normal rainfall. April had only 17 per cent. of its average, or a deficiency of 83 per cent.

In Scotland, January, April, May, July and September had less than their average rainfall, but the greatest deficiency was 30 per cent. in September. June and December alone had more than 30 per cent. excess, so that the fluctuations were not by any means so great as in England and Wales.

In Ireland, April, May, September, October and November were dry, September being the only remarkably dry month with a deficiency of 71 per cent. The remaining months showed moderate excesses, March with 61 per cent. excess, and June with 86 per cent. above the average, being the only really wet months.

April, May and September were the only months which were dry in all four of the great divisions, whilst March, June, August and December were everywhere wet. The wetness of the summer months of 1912 taken as a whole, particularly in England and Wales, was so

extraordinary that we devote a special article in Part I. of this volume to a critical comparison with previous wet summers. The two months which stand out as especially remarkable for the whole country were April for dryness and June for wetness, but the more pronounced contrast is found between April and August when England and Wales alone are considered, and we have searched the records of the last 50 years with great care with the result that August stands quite without precedent for wetness not only among months of that name but among all summer months. With regard to April, dry months are, perhaps, more common in spring than in any other season, and for England and Wales the month which stands out beyond all others was February, 1891, when the general rainfall for



England and Wales, as deduced from 120 well distributed stations, was only  $\cdot 14$  in. With this exception we are able to point to one month only in the past half century which was so dry over England and Wales as a whole as April, 1912, namely, April, 1893. It should be borne in mind, however, that whilst April, 1912, followed a March of unusual wetness and a distinctly wet winter, April, 1893, was preceded by a March of almost equally intense dryness and a winter in which the rainfall was not above the normal. It is interesting to compare the distribution of the rainfall of April, 1893, with that of April, 1912, and we give two little maps for this purpose. The districts in which the months were without rain are specially marked with a white O on a black ground. In both months these rainless

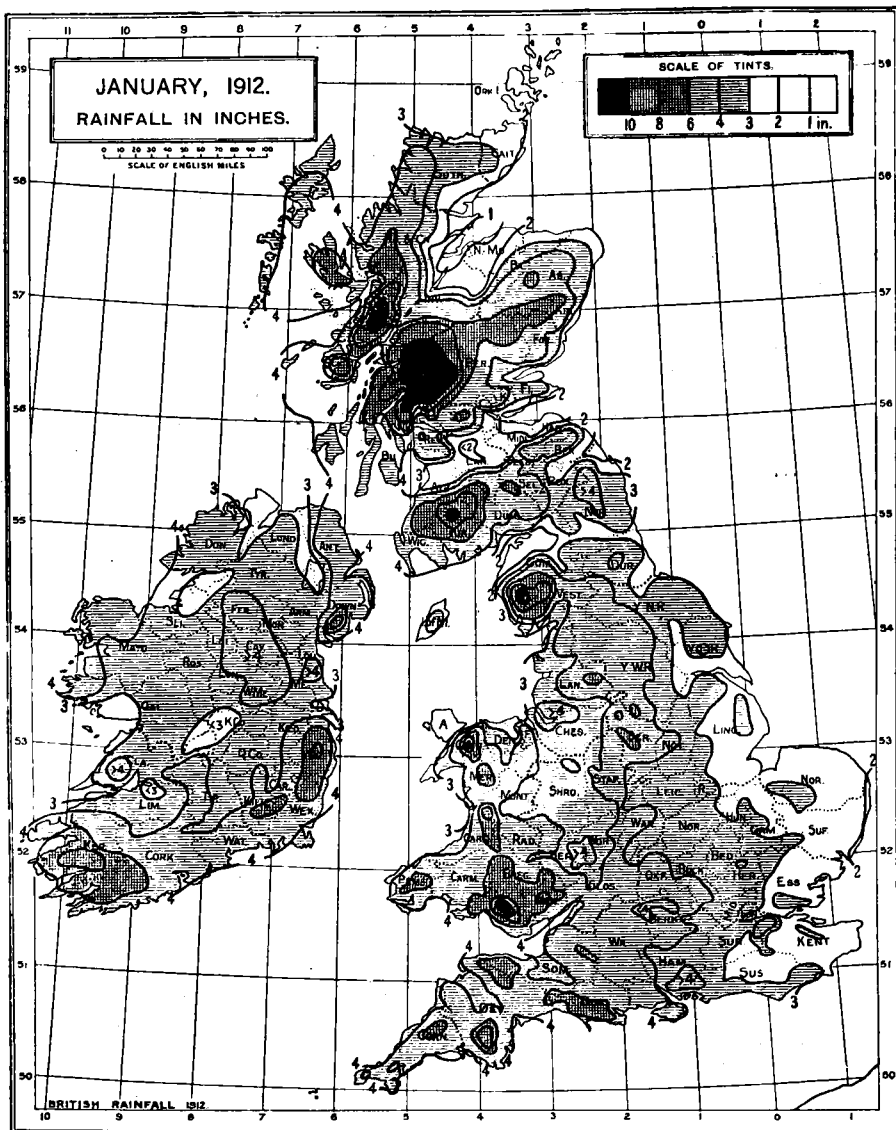
areas lay in the south-east of England, and there was a rough coincidence between the driest districts on the two occasions, the chief exception being that in 1912 less than .25 in. was registered as far north as Northumberland but with a rather wetter patch in East Anglia. South Wales appears to have been drier in April, 1893, and, generally speaking, the normally rainy parts of the country had less rain in that month than in April, 1912.

Measurement of the areas of the rainfall zones on the two maps gives the following results :—

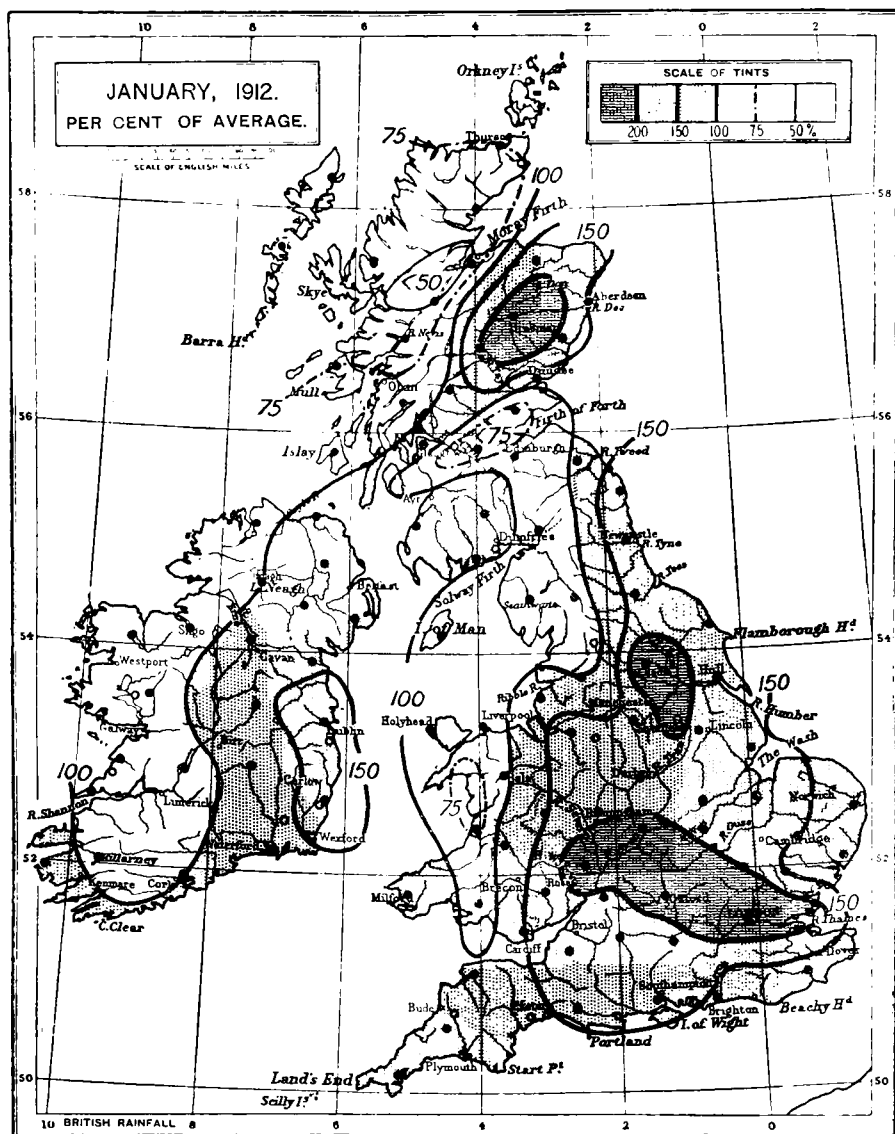
	No rain.	.01 in.— .10 in.	.10 in.— .25 in.	.25 in.— .50 in.	.50 in.— 1.00 in.	More than 1.00 in.	
April, 1893 ...	179	12,921	14,621	14,412	15,380	795	sq. mi.
April, 1912 ...	393	11,465	19,222	15,979	7,635	3,614	sq. mi.

Thus whilst in April, 1912, the area on which no rain fell was larger by 214 square miles, a far larger area received more than 1.00 inch. In April, 1893, probably no place in England or Wales had so much as 2 inches of rain, but in April, 1912, more than 3 inches fell in the Lake District and more than 2 inches on several parts of the Pennine range.

The general rainfall as calculated from these measurements was .350 in. for April, 1893, and .355 in. for April, 1912. The workings are carried to the third place of decimals not because the third figure has any great significance, but it shows that the very trifling difference between the general rainfall of April, 1912, and April, 1893, indicated that the latter was very slightly drier, and although April, 1912, ranks as a historically dry April it must share the distinction of being the driest in the half century with April, 1893.



**January.**—In the first few and last few days anticyclonic conditions prevailed, but during the remaining three weeks the conditions were unsettled under the influence of large cyclonic disturbances in the North Atlantic. Severe snow storms occurred in parts of the east and centre of Scotland about the 16th. A large area with more than 6 inches of rain during the month covered the greater part of the west of Scotland, and extended eastward from Blair Atholl nearly to Aberdeen. Less than 2 inches of rain fell on the shores of Moray Firth and the Firth of Forth, but practically nowhere in England or Ireland. More than 4 inches fell over the western half of England and Wales, but a large part of the central



plain of Ireland had rather less than that amount.

Less than the average rain fell generally over the north-western half of Scotland and the western half of Ireland. A narrow strip with less than the average also occupied central Wales, the Lake District, and part of the south of Scotland. More than twice the average amount was recorded to the east of the Spey valley, and also over two patches in the north and the south of the English Midlands.

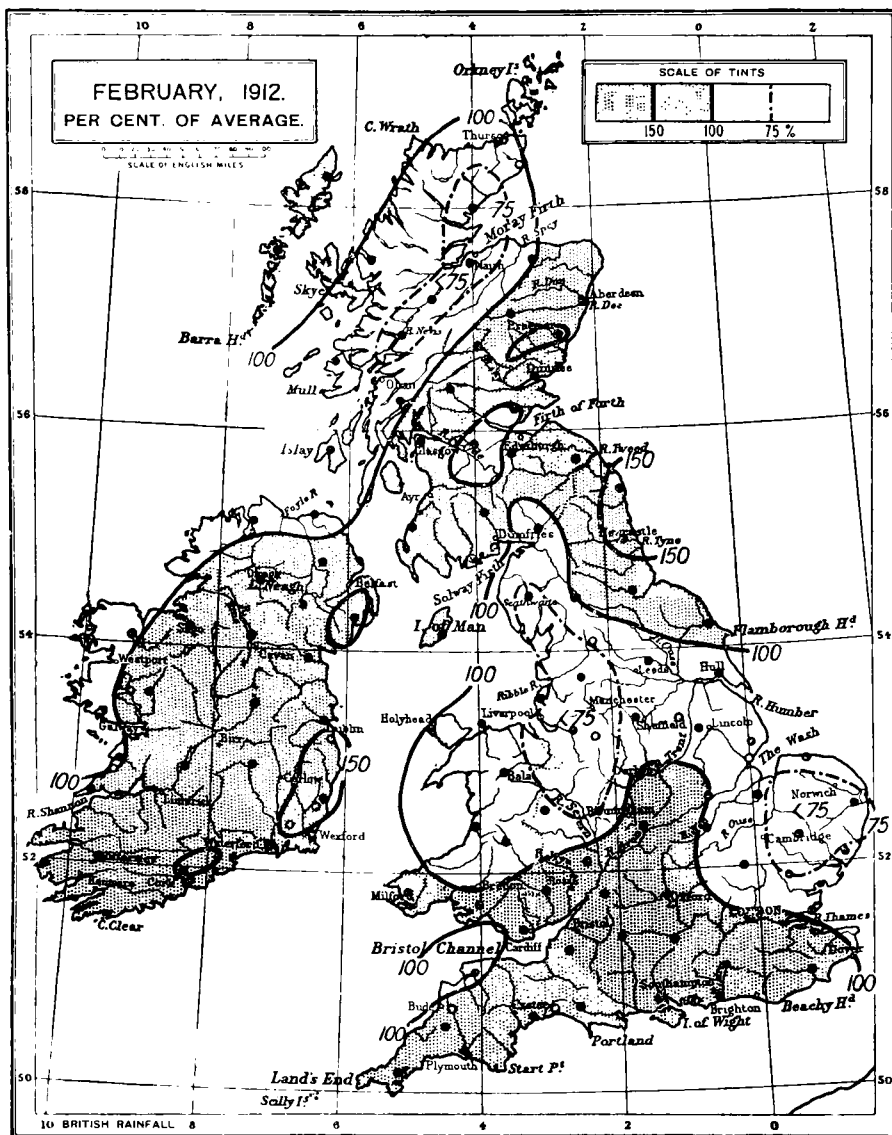
The general rainfall was 51 per cent. in excess of the average in England, but only 9 and 13 per cent. in Wales and Ireland respectively. Scotland had a deficiency of 6 per cent., and the British Isles as a whole had an excess of 18 per cent.



**February.**—As in January the pressure conditions were very disturbed, and frequent depressions from the Atlantic brought unsettled weather to the country generally. The rainfall was not heavy, and about half of the area of England and Wales had less than 2 inches. Less than 2 inches also fell over part of the east coast of Scotland. Ireland was wetter, and only a small area had less than 3 inches. More than 6 inches fell in a few small patches in the normally rainy districts, but 10 inches was reached only on Snowdon and in the English Lake District.

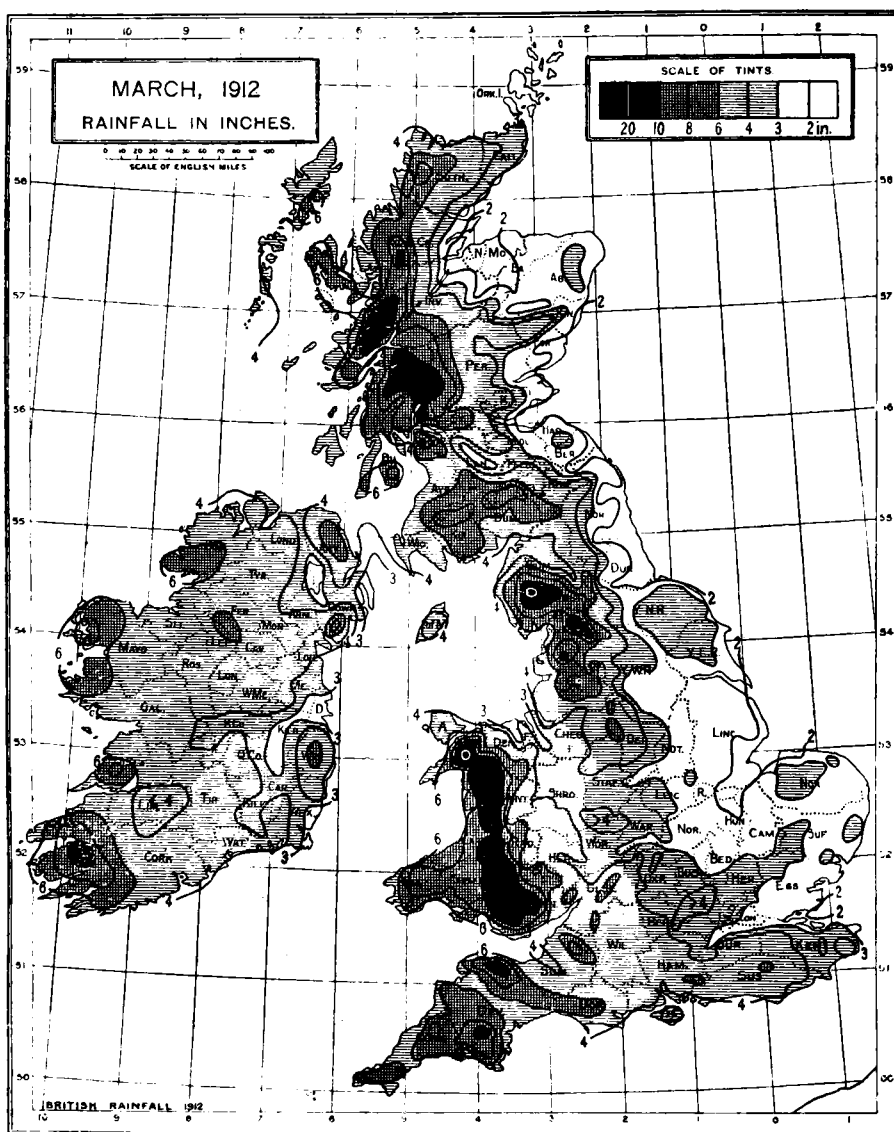
A broad strip with less than the average rainfall stretched across Scotland on both sides of, and parallel with, the Great Glen, and





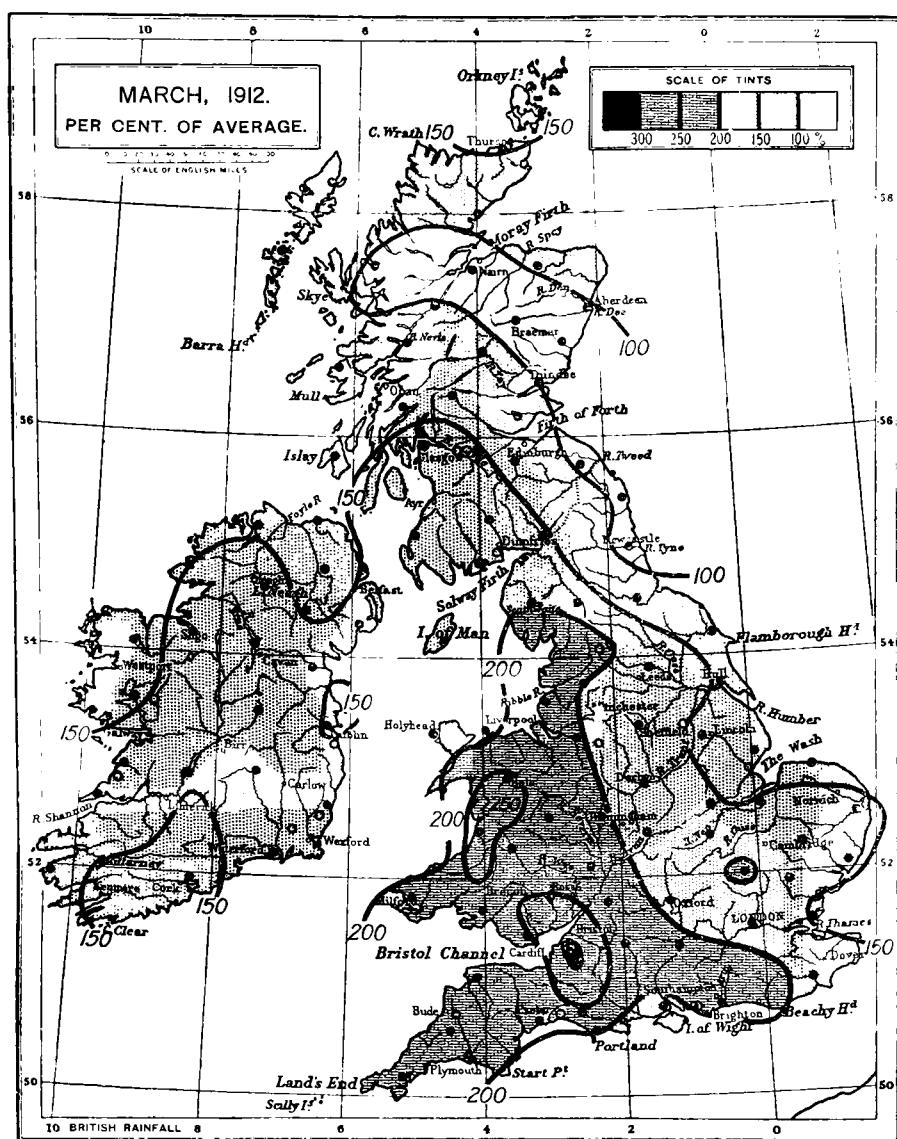
extended to the north-west coast of Ireland, and as far south on the west coast as Galway Bay. Another relatively dry area occupied the north of Wales, the north-western counties of England, the north Midlands and East Anglia. The south of England, the north-east of England, the south-east of Scotland, and almost the whole of Ireland had more than the average rainfall, the wettest districts being in the east of Ireland.

The general fall was exactly the average in England, 1 per cent. below in Wales, 3 per cent. above in Scotland, and 25 per cent. above in Ireland, while for the British Isles as a whole there was an excess of 7 per cent.



**March.**—The unsettled weather which characterised the whole of the winter of 1911-1912 was maintained throughout March, which was in Wales, and possibly also in parts of the south-west of England, relatively to its average the wettest month of the year. More than 10 inches of rain fell over the whole of central Wales and in the Lake District, but the areas with more than 10 inches in Scotland were not so conspicuous as they sometimes are. Less than 2 inches fell nearly all along the east coast of Great Britain, but about half of England and Wales and almost the whole of Scotland and Ireland had more than 4 inches.

Only a strip of country from the west coast of Inverness-shire.



eastwards to Aberdeen on the north, and to Sunderland on the south, had less than the average rainfall. The whole of England and Wales west of a line drawn from the English Lakes to Beachy Head, except a narrow strip on the south coast, had more than twice the average, two large patches within this area having more than two and a half times, and a part of the Mendips more than three times the average.

Wales was relatively the wettest of the large divisions, having 137 per cent. more than its average rainfall. England followed with an excess of 89 per cent. ; Ireland had an excess of 61 per cent., and Scotland was the least rainy with 29 per cent. excess. For the British Isles as a whole 67 per cent. more than the average fell.



**April.**—Anticyclonic conditions prevailed almost throughout, but in the first week of the month deep depressions passed from west to east, north of Scotland, and very heavy rain fell in places. With this exception the month was not far from being rainless, less than .25 in. falling over nearly half the area of Great Britain, and no rain at all at a few stations in the south of England. In England and Wales more than an inch fell only on the higher mountains, but the whole of the north and west of Scotland, and nearly the whole of Ireland, had more than that amount. In Ireland no place had so much as four inches, but a large area in the west of Scotland, where the storms of the first week of the month were felt, had over 6 inches,



and in one spot the fall even reached 20 inches.

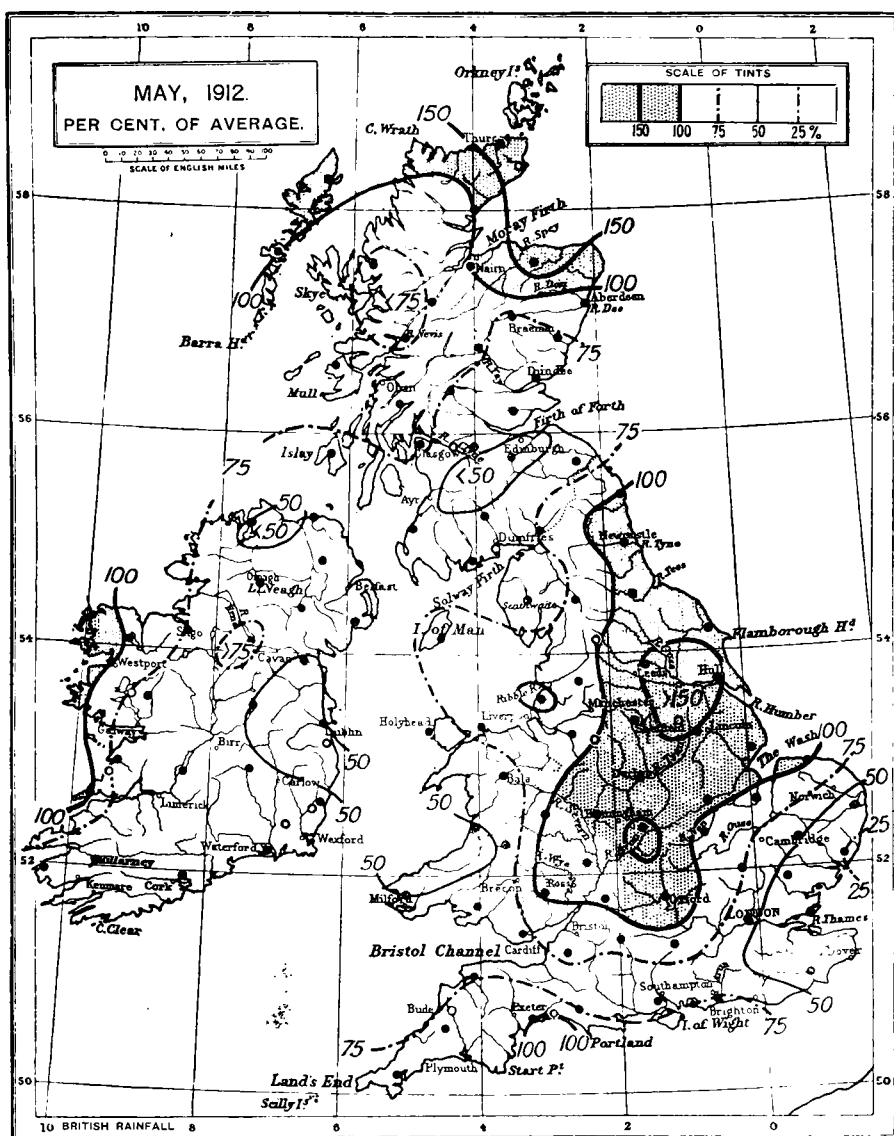
The rainfall reached the average only in the west and north of Scotland. It was less than a quarter of the average over nearly the whole of England and Wales, part of the east coast of Scotland, and the south of Ireland. Less than one-tenth of the average fell in the south of England, and over a considerable part of the east coast northwards to Forfarshire.

The general rainfall was only 10 per cent. below the average in Scotland, and 43 per cent. below in Ireland, but the deficiency in England was 84 per cent., and in Wales 83 per cent. ; that for the whole country being 53 per cent.



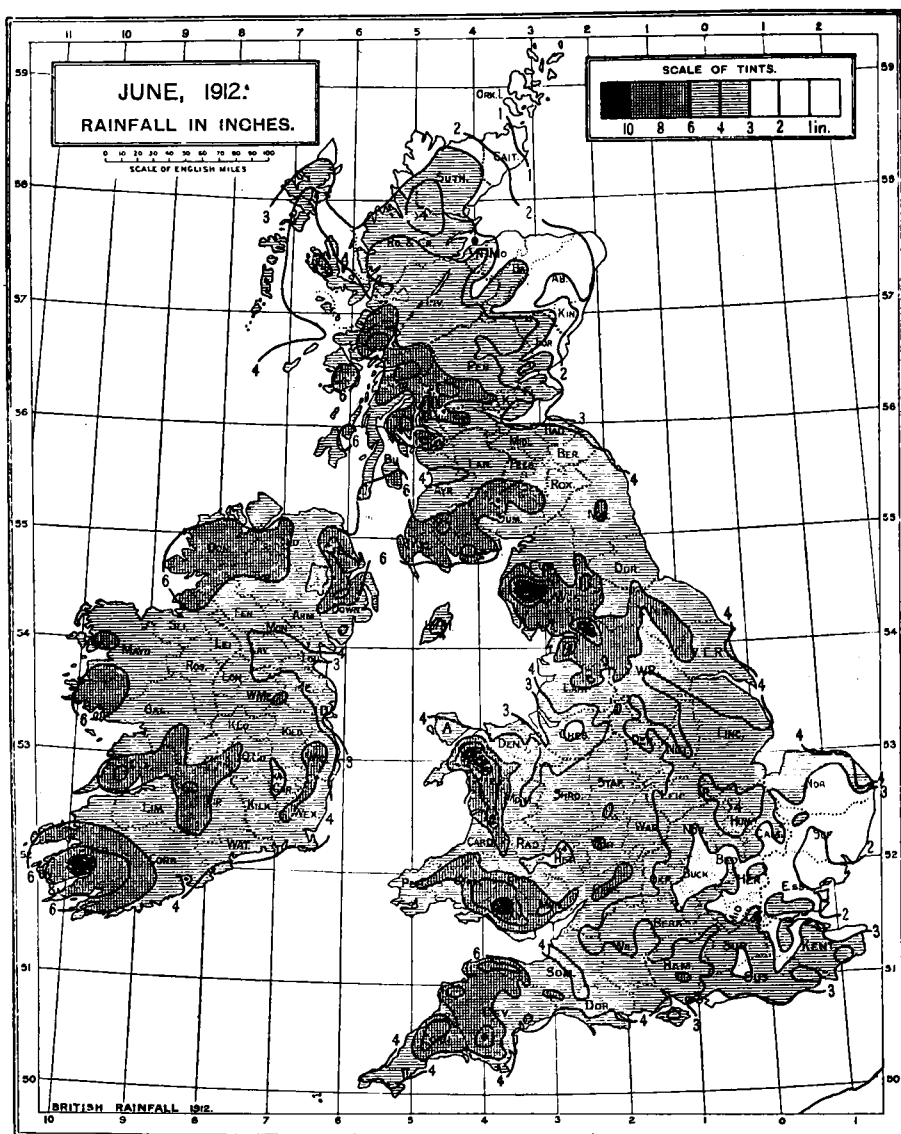
**May.**—May was generally a rather dry month. Less than 2 inches of rain fell over the southern half of Scotland, the south of England, and nearly the whole of Wales and Ireland. There were patches with more than 3 inches in the North Midlands and in the west and north-east of Scotland, but only in very limited areas in Ireland. Less than 1 inch fell in places in the Thames estuary, and along a narrow strip of the east of Ireland.

The distribution of rainfall relatively to the average was rather complicated. A large area in the centre and north-east of England had a fall in excess of the average, but this was surrounded by a band of relative dryness, most intense on the east coast south of



Yarmouth, and falling to about a quarter of the average around Felixstowe. The fall was also less than 50 per cent. of the average in the south-west of Wales, and this dryness extended to the east of Ireland. In Scotland the percentage was less than 50 over Lanarkshire, but increased to more than 100 in the north and north-east. A very narrow strip of the west coast of Ireland also possibly had slightly more than the average.

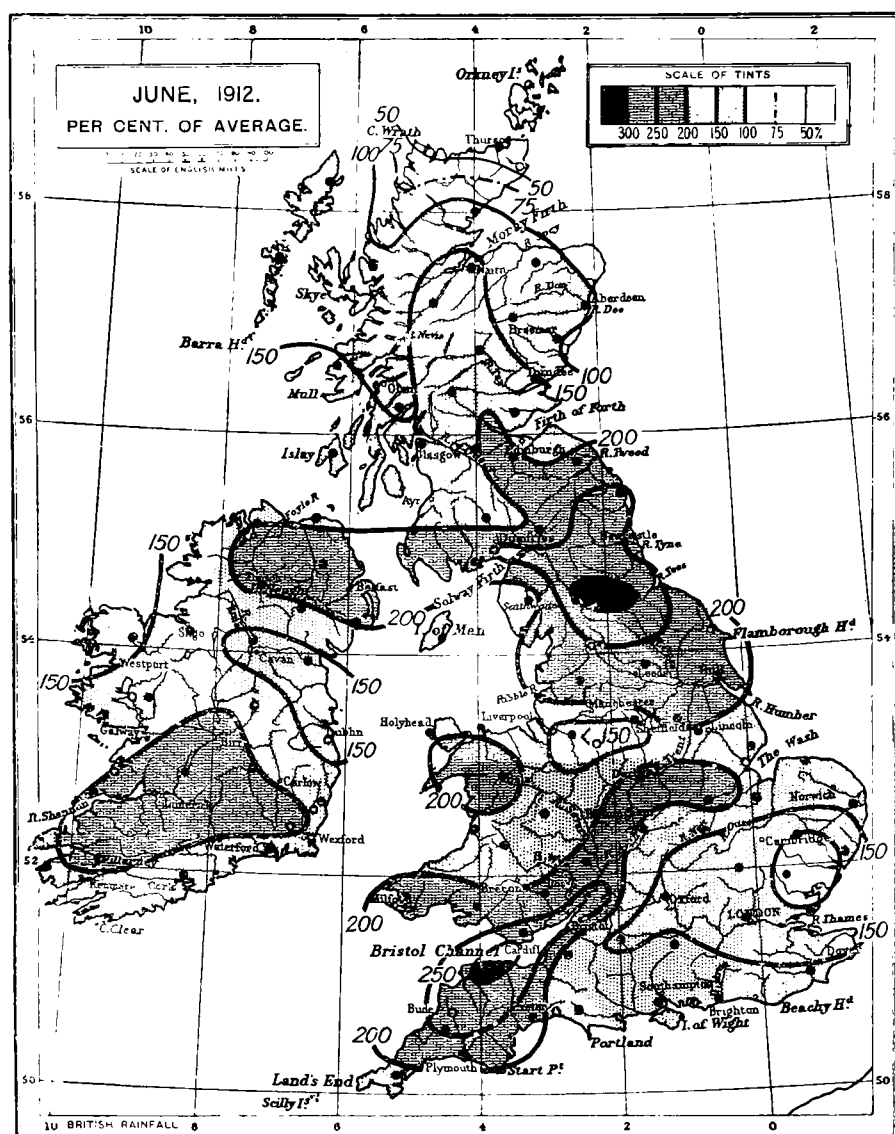
The general fall was deficient to the extent of 36 per cent. in Ireland, 32 per cent. in Wales, and 20 per cent. in Scotland, but only 6 per cent. in England. For the British Isles, as a whole, the deficiency was 20 per cent.



**June.**—A series of shallow and slow-moving depressions, for the most part passing eastward or northward, dominated the weather of the month, and rain was generally frequent. The only areas with less than 2 inches lay in the north-east of Scotland and in the east of Essex. Generally speaking, less than 4 inches fell only in the south-east of England and the north and east of Scotland; and large areas with over six inches appeared in all the western counties, penetrating to the eastward as far as the Yorkshire Wolds in England, and the Wicklow Hills and uplands of Antrim in Ireland.

The rainfall was most excessive in relation to the average in the north and in the south-west of England. In both these districts,





large areas had twice the average fall, and small areas three times the average. Part of the south and the north-east of Ireland also had twice the average rainfall. The average was hardly reached, however, in the Thames estuary; and a portion of the north of Scotland, comprising most of Sutherland and Caithness, had less than the average, less than half falling in the extreme north.

The rainfall of the month was in excess in all four divisions; the excess being 116 per cent. in Wales, 88 per cent. in England, 86 per cent. in Ireland, and 60 per cent. in Scotland. For the British Isles, as a whole, the excess was 82 per cent.



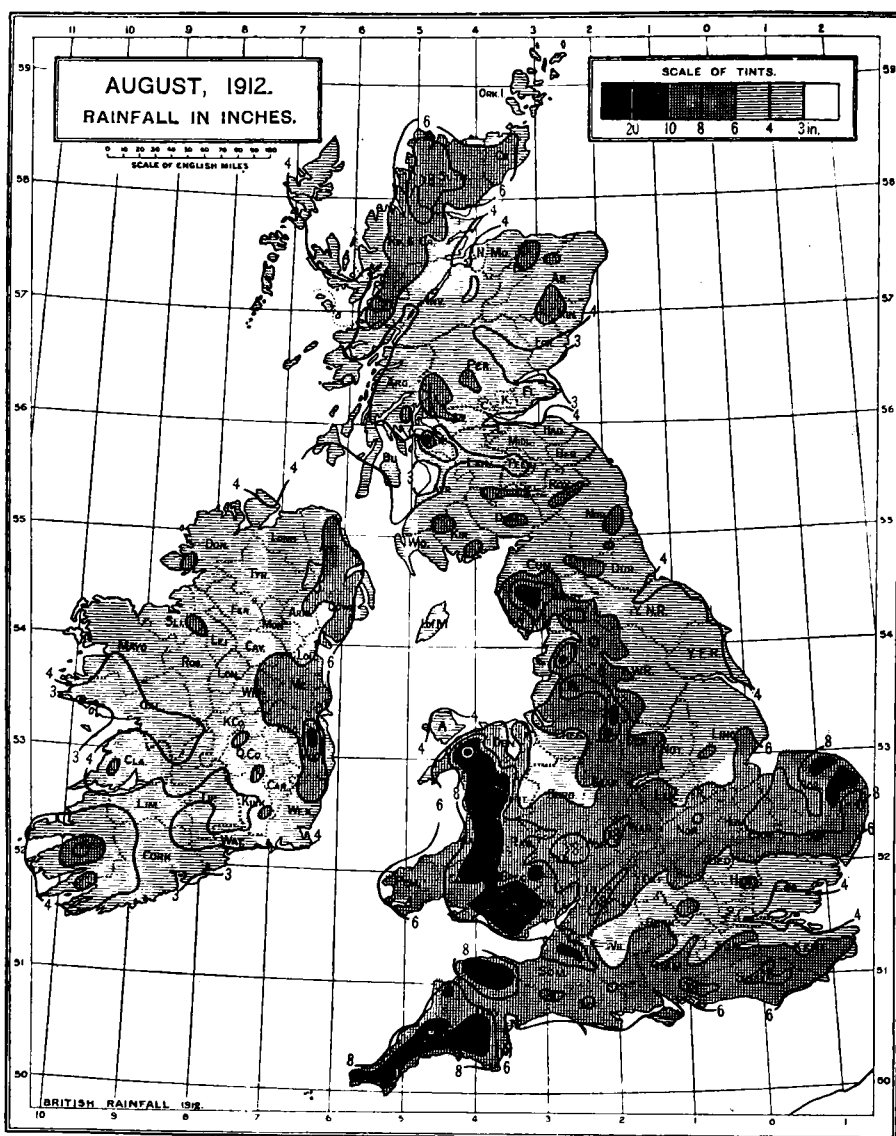
**July.**—The weather continued unsettled and variable, and all parts of the kingdom were wet except Scotland. The south-east of England from Yarmouth to Salcombe, and, generally speaking, the eastern half of Scotland, had less than 3 inches of rain; but in the west of Scotland the wet areas were much more restricted in area than usual. Patches with more than 6 inches were scattered more widely than is usually the case over England, appearing as far to the east as Northamptonshire and the East Riding of Yorkshire. Nearly 8 inches fell near the mouth of the Humber, the already large total being augmented by a severe local thunderstorm on the 24th.

The rainfall was below the average over nearly the whole of



Scotland and also in the south-eastern counties of England, falling to less than half the average in Kent. The relatively wettest places were in the south of Ireland, in Gloucestershire and Nottinghamshire, in all of which the rainfall was more than twice the average amount.

There was a deficiency of 23 per cent. in Scotland; but an excess of 26 per cent. in England, 33 per cent. in Wales, and 27 per cent. in Ireland. For the whole British Isles, the rainfall of the month exceeded the average by 12 per cent.



**August.**—The barometric conditions were very unusual, and the number of depressions crossing the British Isles, especially the south of England, was extraordinarily large. The rainfall was most remarkable in England and Wales, and it was for that part of the kingdom at any rate the wettest August for at least half-a-century. Very limited strips with less than 4 inches appeared on the east coast of Great Britain, though much of Ireland had less than that amount. More than 6 inches fell over about half of England and practically the whole of Wales, in the north of Scotland, and in the east of Ireland. Extensive areas in England and Wales had more than 10 inches, the most notable being in Cornwall, Devon, Wales and East Anglia.



The rainfall was below the average on the west coasts of Scotland and Ireland. It exceeded twice the average in England and Wales, south-east of a line drawn from Carmarthen to Grimsby. Within this wet area a band of still greater rainfall stretched from Cornwall to Norfolk, surpassing three times the average in three patches, and approaching four times the average in Norfolk, on account of the storm of the 25th to 26th. A similar wet patch lay in Sussex.

The general rainfall exceeded the average by only 14 per cent. in Scotland, by 25 per cent. in Ireland, by 92 per cent. in Wales, and by 116 per cent. in England; the excess for the whole country being 61 per cent.



**September.**—Rain fell during the first ten days in the west of Scotland, but otherwise the month was extremely dry till the 29th, when heavy falls took place in the south-east of England ; followed on the 30th by equally heavy rain, which occurred over much the same area in the south-east of England as that of the 29th, and also appeared in the east of Scotland. The month, which would otherwise have been abnormally dry in these districts, thus became, as far as total rainfall was concerned, a wet one. Less than 3 inches of rain fell almost everywhere except in Surrey, Sussex and Kent, and over a large part of Scotland. Less than 1 inch was recorded over the whole of the central part of Ireland, in the west of England, and the



west of Wales ; and less than half-an-inch over a large part of Ireland.

The rainfall exceeded the average along the east coast of Great Britain, and fell off in an unusually uniform manner towards the west, culminating in a dry area in the centre of Ireland and the west of Wales, where less than a quarter of the average fell.

The deficiency was thus greatest in Ireland, where it reached 71 per cent., and in Wales, where it reached 70 per cent. In Scotland the deficiency was 30 per cent., and in England 28 per cent. ; the whole country having a deficiency of 43 per cent.



**October.**—Generally speaking the first half of the month was dry and the second half rainy. More than 6 inches of rain fell over most of the west of Scotland, the Lake District, the interior of Wales, Exmoor and Dartmoor, but the rainfall reached 10 inches only at a few of the normally wet spots. The greater part of the English Midlands and the eastern half of the central plain of Ireland, but only a very small part of Scotland, had less than 3 inches.

The distribution of rainfall relatively to the average was irregular. Broadly speaking Scotland had rather more than the average, except in the north and south. In the border counties, however, the fall exceeded the average, and a wide strip with a slight excess





stretched from there along the west of England and Wales to Devonshire. Part of the west of Ireland also had a small excess. The east and south of Ireland, East Anglia and the shores of the Moray Firth were relatively the driest parts of the country, with a deficiency of more than 25 per cent.

Each of the countries had excesses and deficiencies in different parts which almost balanced one another. England on the whole had a deficiency of 4 per cent. and Ireland of 12 per cent., Wales an excess of 14 per cent., and Scotland of 11 per cent. For the whole the rainfall was 1 per cent. in excess of the average.



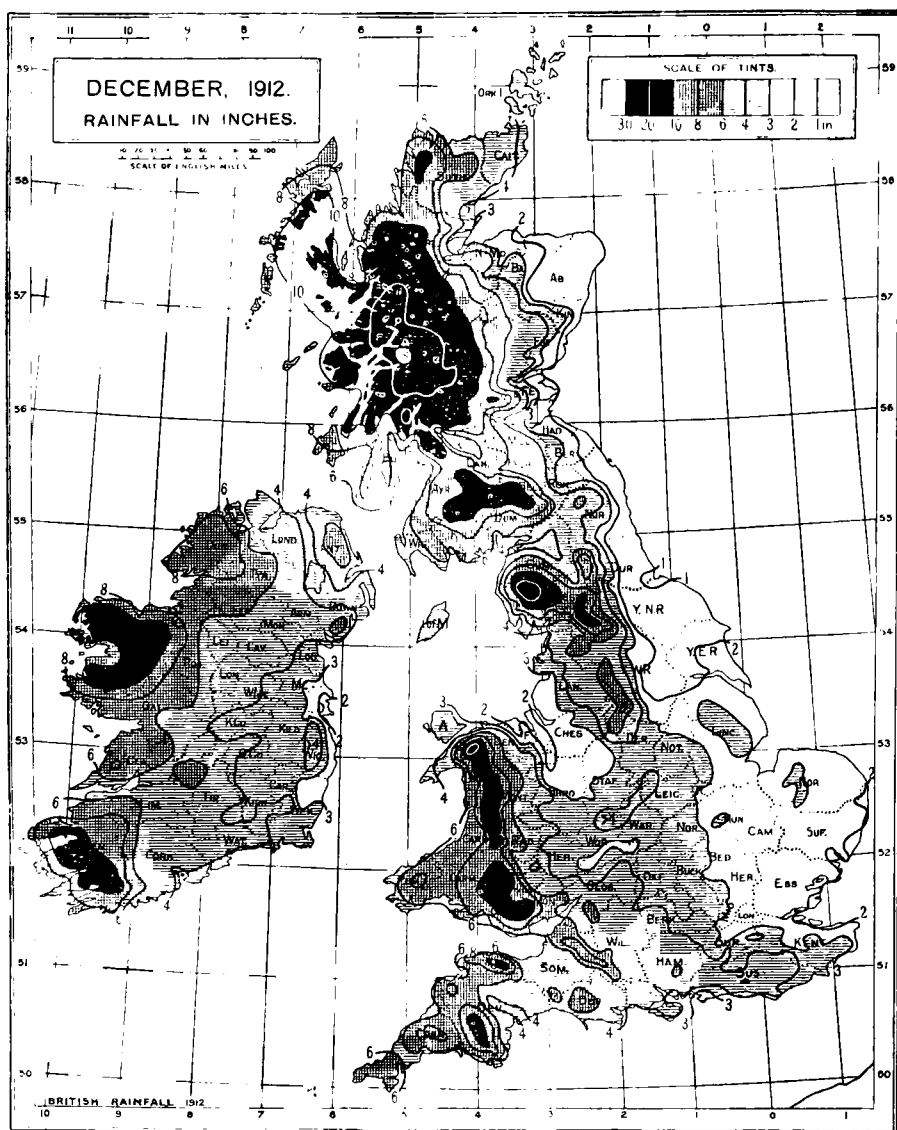
**November.**—The distribution of rainfall was normal in type, but it was rather excessive in Scotland and deficient in England and Ireland. An extensive tract of land in the west of Scotland had over 10 inches of rain, and a small patch more than 20 inches. This amount was also reached in the English Lake District. The east of Scotland was comparatively dry, having less than 2 inches in the south and round the Moray Firth. Less than 2 inches fell over a great part of the Midlands, but more than 3 inches on the coast of Yorkshire, Lincolnshire and Norfolk. The east of Ireland also had less than 2 inches.

West of a line from the Moray Firth to Galway Bay more than



the average rain fell, and this was also the case over the greater part of Wales, in the north-western counties of England and over a strip of the east coast from Flamborough Head to Lowestoft. The greatest deficiency occurred in the south-east of Ireland, where a part of the country near the coast had less than half the average; and in the south of England.

Except in Scotland the general fall was below the average, England having a deficiency of 13 per cent., Wales of 3 per cent., and Ireland of 15 per cent. Scotland had 7 per cent. more than the average, and the British Isles as a whole 6 per cent. less than the average.



**December.**—The weather was of a pronounced south-westerly type, with many depressions passing in a north-easterly direction outside the British Isles. The rainfall was very heavy in the west of Scotland, about one quarter of the country receiving more than 10 inches of rain, a very large area more than 20 inches, and a small district, picked out on the map by a white patch, more than 30 inches. The western highlands of England and Wales and the west coast of Ireland also had considerable areas with over 10 inches. Only the east coast of Great Britain, the Cheshire Plain, and a slight strip of the east of Ireland had less than 3 inches of rain, but less than 1 inch fell at a few stations near Middlesbrough.



The map of rainfall in relation to the average shows that there were three wet centres, viz., in the south of England, in the west of Ireland and in the centre of Scotland. In each of these centres the rainfall exceeded twice the average, the excess in Scotland being the most pronounced. Generally speaking only the south-east of Ireland and the east coast of Great Britain had less than the average rainfall, less than half the average occurring in the extreme east from Peterhead to Scarborough.

The rainfall exceeded the average by 70 per cent. in Scotland, by 43 per cent. in Wales, by 35 per cent. in Ireland, by 30 per cent. in England, and by 45 per cent. for the British Isles as a whole.

# MONTHLY RAINFALL AT 300 STATIONS IN THE BRITISH ISLES DURING 1912.

## ENGLAND.

Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
I.	London	St. Pancras (Camden Sq.)	4.08	1.71	2.84	.04	1.08	3.23	1.44	4.89	2.14	2.04	1.59	2.80	27.88
II.	Surrey	Worlingham (Redvers Rd.)	3.18	2.66	4.69	.05	1.19	3.72	1.80	6.15	3.85	3.46	2.75	3.98	37.48
"	"	Haslemere (Hazelhurst)	3.98	3.81	5.50	.04	1.99	3.91	2.79	6.50	4.43	4.78	2.56	5.31	45.60
"	"	Woking (The Grange)	3.20	1.93	3.06	.07	1.45	3.54	1.91	5.15	2.87	2.82	2.14	2.96	31.10
"	Kent	Tenterden (View Tower)	2.76	2.46	3.83	.14	.47	3.33	1.02	6.23	3.17	3.88	2.63	3.38	33.30
"	"	Hythe (Hillcrest Road)	2.77	2.10	3.37	.20	.70	4.17	1.73	6.19	2.57	3.17	2.05	2.47	31.49
"	"	St. Peter's Court	2.42	1.27	2.72	.42	.90	3.42	1.84	5.16	2.78	3.14	1.73	2.01	28.14
"	"	Ospringe (Lorenden)	2.41	1.83	4.01	.07	.90	2.71	1.04	5.46	3.59	3.23	2.17	2.72	29.84
"	"	Tonbridge (Beech Hurst)	2.62	2.15	4.58	.07	.98	2.87	1.29	6.00	3.05	3.40	2.21	3.24	32.45
"	"	Arundel (Patching)	3.70	3.16	4.38	.07	1.51	3.27	2.09	7.70	3.21	4.06	2.02	3.71	38.88
"	Sussex	Balcombe (The Gables)	2.94	3.03	4.95	.09	1.56	3.60	1.48	7.13	3.91	4.29	2.80	4.11	39.89
"	"	Polegate (Alciston)	3.54	3.17	4.44	.08	1.52	3.37	1.88	7.11	3.25	4.95	2.20	4.29	39.80
"	"	Totland Bay (Aston House)	4.12	2.62	3.41	.12	1.23	3.77	1.85	5.80	2.50	3.45	2.67	3.70	35.24
"	Hampshire	West Dean	4.30	2.68	4.49	.10	1.76	5.64	2.35	7.21	2.48	3.52	1.73	4.25	40.51
"	"	Bps. Waltham (Swanmore Ho.)	4.45	3.56	4.99	.02	1.20	5.07	2.77	7.54	3.38	4.62	2.64	5.80	46.04
"	"	Basingstoke (Sherborne S. J.)	3.88	2.46	4.32	.07	1.84	3.78	1.89	6.18	2.43	3.31	1.96	4.79	36.91
"	"	Farnborough Rectory	5.24	3.59	6.67	.18	2.17	4.20	3.03	6.33	1.96	4.91	3.57	5.24	47.09
III.	Berkshire	St. Albans (County Museum)	3.62	2.11	3.55	.07	1.38	3.21	3.15	5.48	2.50	2.87	2.66	3.23	33.83
"	Hertfordshire	Royston (Therfield Rec.)	3.33	1.40	3.40	.13	1.53	2.85	1.97	6.22	2.49	2.19	1.81	2.53	29.85
"	"	Slough (Upton)	3.75	1.80	3.45	.10	1.65	3.09	1.31	5.85	2.58	2.30	1.80	3.09	30.77
"	"	Saunderton (Speen)	4.16	2.12	4.94	.00	2.11	3.21	2.88	5.29	2.77	2.90	2.41	3.95	36.74
"	"	Buckingham (Adstock Fields)	3.54	1.82	3.08	.04	1.42	2.60	2.07	6.49	1.38	2.66	1.47	3.18	29.75
"	Oxfordshire	Oxford (Magdalen College)	4.35	2.02	2.80	.01	2.07	3.24	2.95	4.57	1.03	3.02	1.66	3.14	30.86
"	Northamptonshire	Libbourne Vicarage	3.71	1.44	3.25	.15	2.73	3.77	4.71	6.51	1.34	2.34	1.74	3.51	35.20
"	"	Wellingboro' (Croyland Abbey)	3.15	1.71	2.30	.11	1.57	3.14	4.20	6.41	1.16	2.05	1.80	2.96	30.56
"	Huntingdonshire	Huntingdon (Bosworth Ho.)	3.08	1.32	2.31	.10	1.77	3.96	3.41	6.83	1.36	2.10	1.70	2.39	30.33
"	Bedfordshire	Shillington	3.53	1.47	2.73	.04	1.73	3.40	2.96	5.88	1.93	2.30	2.03	2.43	30.43
"	Cambridgeshire	Ely (The Palace)	2.91	1.50	2.45	.22	1.36	2.74	5.01	8.20	1.69	1.96	2.46	2.28	30.98
"	"	Wisbech (Monica Road)	2.78	1.15	2.40	.14	2.12	4.04	3.23	7.91	1.63	1.90	2.45	2.87	34.42
IV.	Essex	Grays Sewage Works	2.64	1.24	2.22	.06	.87	4.09	1.05	3.46	2.49	2.16	1.62	2.13	24.03
"	"	Epping (The Hemnalls)	4.12	1.90	3.30	.11	1.01	2.99	2.36	6.31	3.15	2.70	2.33	3.66	33.94

# ENGLAND—(continued.)

Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
IV.	Essex	Dengie (Land Wick) .....	2·61	1·24	2·08	·16	·76	1·92	2·04	3·72	2·54	1·61	1·24	2·11	22·03
"	"	Braintree (Bocking, Fennes) .....	2·34	1·08	2·60	·21	·82	1·82	1·32	5·45	2·62	1·68	2·16	1·80	23·90
"	Suffolk	Clare (Hawkedon Rectory) .....	3·16	1·38	3·31	·39	·33	1·87	2·20	6·08	2·64	2·24	2·46	2·75	30·71
"	"	Ipswich (Woolverstone Pk.) .....	2·23	1·23	2·78	·26	·71	1·82	2·34	5·93	2·60	1·87	1·94	1·97	25·68
"	"	Aldborough (Aldringham Ho.) .....	2·42	1·46	2·72	·41	·78	2·45	1·96	5·98	3·22	1·75	2·27	2·09	27·51
"	"	Walsham-le-Willows .....	2·80	2·20	2·99	·55	1·01	2·27	3·68	8·62	2·82	1·70	2·72	2·79	34·15
"	Norfolk	Geldeston [Beccles] .....	2·12	·97	2·67	·38	·58	2·70	3·30	7·56	2·48	1·50	3·04	1·93	29·23
"	"	Aylsham (Millgate) .....	2·89	1·49	3·03	·28	1·15	2·50	3·86	9·48	2·68	2·75	3·78	2·49	36·38
"	"	Sandringham House .....	3·22	1·29	3·71	·33	2·00	3·69	3·83	8·36	2·82	2·19	3·25	2·82	37·12
"	"	Watton .....	3·82	2·11	3·19	·45	2·70	2·66	3·01	8·40	3·01	2·85	3·00	3·01	37·61
V.	Wiltshire	Trowbridge W. W. (Biss) .....	4·73	2·83	5·76	·09	1·75	4·76	2·73	7·19	1·49	5·09	1·98	6·32	44·72
"	"	Mere (Charnage) .....	4·91	3·03	5·06	·25	1·50	5·59	3·46	6·38	1·70	4·51	2·23	5·42	44·04
"	"	Salisbury Plain (Shrewton) .....	4·75	2·43	4·12	·18	1·51	3·35	2·41	5·75	1·60	4·14	1·83	4·60	36·67
"	"	Marlborough (Mildenhall) .....	4·80	2·76	5·58	·04	1·80	4·05	2·64	5·57	1·11	4·05	1·88	4·78	39·06
"	Dorsetshire	Swanage (R. Victoria Hotel) .....	5·06	2·58	3·62	·01	1·03	3·61	2·09	6·54	3·69	4·36	1·79	4·68	39·06
"	"	Beaminster Vicarage .....	6·01	4·26	6·88	·12	1·63	4·51	2·29	7·54	1·54	5·12	2·13	5·54	47·57
"	"	Horton Vicarage .....	4·25	2·55	4·53	·11	1·52	3·59	2·84	7·34	2·08	3·52	1·69	4·08	33·10
"	South Devonshire	Kingsbridge (Collapit Creek) .....	4·18	3·64	4·78	·26	2·05	5·26	2·80	7·68	1·34	4·76	2·58	5·75	45·08
"	"	Princetown (H. M. Prison) .....	9·88	9·75	13·93	·98	3·53	11·08	4·77	19·07	3·08	11·56	8·74	15·91	112·28
"	"	Teignmouth (Den Gardens) .....	4·63	3·79	5·30	·03	1·21	3·85	2·60	5·39	1·00	4·52	1·45	4·14	37·91
"	"	Cullompton .....	4·95	3·72	7·38	·30	2·20	5·34	3·03	7·09	1·57	5·24	1·48	5·31	47·61
"	North	Chumleigh (Leigh House) .....	4·01	2·11	5·35	·24	1·83	6·34	2·45	8·40	·78	5·23	2·93	5·38	45·00
"	"	Barnstaple (N. Devon Athenæum) .....	3·45	2·10	5·37	·37	1·61	6·91	4·04	10·08	·78	5·24	2·99	5·12	48·06
"	"	Okehampton (Oaklands) .....	3·83	3·94	7·24	·31	2·13	6·43	2·30	10·44	1·59	6·15	3·78	7·65	55·79
"	Cornwall	St. Agnes .....	3·74	3·16	5·05	·32	1·20	4·82	3·22	7·46	·92	3·70	2·17	6·14	41·90
"	"	Bodmin (Castle Hill) .....	5·79	5·42	6·81	·74	2·44	8·04	5·16	11·84	1·48	5·35	4·30	7·12	64·49
"	"	Stratton (Poughill) .....	3·71	2·12	5·47	·32	1·69	6·81	3·54	8·68	·96	4·66	3·56	6·51	48·03
"	"	Penzance (Morrah Garden) .....	4·75	4·31	6·23	·42	1·61	3·71	4·70	10·19	1·19	3·99	4·38	6·80	52·28
"	"	Altarnon Vicarage .....	6·49	5·30	9·03	·57	2·35	8·20	4·95	14·96	1·90	6·24	5·67	9·93	75·59
"	Somersetshire	Street (Hind Hayes) .....	4·16	2·20	4·60	·21	2·37	3·39	2·18	6·95	·71	3·99	1·84	4·44	37·04
"	"	Burnham (Chalbury) .....	3·99	2·23	3·83	·26	2·06	4·13	2·68	6·90	·72	4·20	1·98	4·96	37·94
"	"	Winsford School .....	6·81	4·18	10·27	·34	2·53	7·58	4·25	10·72	1·71	6·98	4·12	10·57	70·06
VI.	Gloucestershire	Stroud (Upfield) .....	4·36	2·61	4·71	·20	2·16	6·39	5·90	7·24	·93	3·77	1·70	4·34	44·31
"	"	Mickleton (Bank House) .....	4·13	1·85	3·61	·12	2·70	4·04	4·23	6·42	·61	1·96	1·42	2·80	33·89
"	"	Clifton (Pembroke Road) .....	3·92	2·57	5·07	·32	2·51	4·76	4·89	8·38	·60	4·57	2·44	6·57	46·60
"	"	Fairford (Hatherop Castle) .....	6·14	2·55	4·95	·16	2·07	1·44	3·49	5·92	1·04	3·57	1·76	3·93	40·02

# ENGLAND --(continued.)

Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
VI.	Herefordshire .....	Ross (The Graig) .....	4.03	2.26	4.34	.17	3.20	4.05	3.88	6.22	.67	3.32	1.29	3.33	36.76
	Shropshire.....	Ludlow (Ashford House)...	4.26	1.82	5.57	.14	2.20	4.43	3.21	8.16	.87	3.36	1.95	4.13	40.10
	" .....	Bishop's Castle Vicarage...	3.52	1.51	4.68	.29	1.61	5.03	2.50	6.72	.70	3.58	2.70	4.14	36.98
	" .....	Much Wenlock (Willey Pk.)	4.02	1.12	3.66	.15	3.02	4.68	2.98	6.13	.82	3.10	2.58	3.04	35.30
	" .....	Oswestry (The Mount Res.)	4.49	2.17	3.91	.33	2.75	3.92	3.35	5.42	.77	3.75	2.73	3.24	36.83
	Staffordshire .....	Market Drayton (Old Springs)	4.03	1.20	3.83	.23	2.44	4.33	3.34	6.93	1.05	2.93	2.95	2.05	35.31
	" .....	Shugborough.....	4.04	1.25	3.80	.28	2.21	4.99	3.57	6.46	1.51	2.70	2.78	3.15	36.74
	" .....	Burton (Shobnall) .....	3.55	1.36	2.96	.23	2.52	5.00	3.22	5.89	.74	2.60	1.95	3.27	33.29
	" .....	Mayfield Ho. [Ashbourne]	4.89	1.56	4.08	.36	2.31	4.41	4.34	6.75	1.38	3.95	3.10	3.96	41.09
	Worcestershire .....	Worcester (Belmont Road)	3.46	1.51	3.14	.06	2.22	4.24	4.22	7.03	.72	2.61	1.38	2.96	33.55
VII.	" .....	Dudley (Borough Cemetery)	2.72	1.37	4.01	.17	3.28	5.45	2.81	6.45	.92	2.52	1.98	3.14	34.82
	" .....	Wormleighton Hall.....	3.54	1.81	3.37	.17	2.65	4.19	4.32	7.20	1.21	2.78	1.44	3.25	35.93
	Warwickshire .....	Bedworth Cemetery.....	4.08	1.26	3.14	.37	3.68	4.73	3.55	6.00	.95	2.50	1.80	3.94	36.00
	" .....	Loughboro' (NanPanton Res.)	4.62	1.68	3.61	.25	2.50	3.89	4.00	6.43	1.23	3.22	1.84	4.25	37.52
	Leicestershire .....	Belvoir Castle .....	2.99	1.37	2.74	.26	3.46	3.67	4.81	5.57	.98	2.04	2.09	3.56	33.54
	" .....	Stamford (St. George's Sq.)	3.15	1.42	2.11	.08	2.63	3.43	5.48	6.04	.92	3.16	1.38	2.64	32.44
	Lincolnshire .....	Boston (Black Sluice, Skirbeck)	2.71	1.05	1.88	.24	2.42	3.31	4.16	6.30	1.44	1.97	2.37	3.18	31.03
	" .....	Sleaford (Rauceby Hall)...	3.09	1.19	2.40	.25	3.04	3.84	5.18	5.77	1.51	2.06	2.26	3.08	33.67
	" .....	Willingham-by-Stow .....	3.05	1.16	2.57	.19	2.65	3.75	3.81	4.56	1.51	2.56	2.42	2.25	30.48
	" .....	Skegness .....	2.76	.89	2.05	.22	2.91	3.35	4.17	5.43	2.13	2.33	3.48	2.80	32.52
VIII.	" .....	Louth (Westgate).....	3.16	1.56	3.00	.19	2.44	4.51	3.89	4.85	2.48	2.75	3.35	2.93	35.11
	" .....	Burton-upon-Stather Vic...	2.84	1.37	2.48	.08	2.79	4.73	4.90	5.10	1.69	2.66	2.91	1.15	32.70
	Nottinghamshire ...	Mansfield (West Bank) ...	4.24	1.69	3.37	.32	3.87	3.64	3.95	6.20	1.23	2.93	2.45	2.60	36.49
	Derbyshire .....	Buxton (Devonshire Hospital)	5.40	1.80	6.54	.98	3.16	4.19	6.03	8.64	2.57	4.51	4.03	6.52	54.37
	" .....	Sandbach (Malkins Bank)	2.12	.47	3.57	.15	1.72	3.18	2.52	4.11	.94	2.23	2.39	1.94	25.34
	Cheshire .....	Frodsham (Helsby) .....	3.77	.78	3.70	.15	2.06	3.23	2.73	6.00	1.30	2.56	2.63	2.21	31.12
	" .....	Manchester (Whitworth Pk.)	2.56	.83	3.90	.72	2.45	3.84	4.15	5.39	1.61	3.56	2.32	3.60	34.93
	South Lancashire...	Burnley (Swinden) .....	5.61	2.17	5.60	.57	2.72	6.75	5.34	7.33	2.45	4.78	4.42	5.45	53.87
	Central .....	Wigan Waterworks .....	3.68	1.81	5.85	.39	2.19	4.05	4.36	7.09	2.38	4.70	2.85	3.27	42.80
	" .....	Southport (Hesketh Park)	3.52	1.64	4.79	.39	2.22	4.71	4.23	4.81	1.39	4.12	2.48	2.83	37.13
IX.	" .....	Broughton-in-Furness .....	6.05	2.87	8.52	1.19	2.73	6.13	4.50	7.65	2.69	7.22	6.54	6.03	62.12
	Noth .....	Morecambe .....	3.50	2.92	7.99	.69	1.56	5.43	4.97	5.56	1.72	5.11	5.71	4.26	49.42
	" .....	Garstang (Grizedale Intake)	4.60	2.04	7.30	.42	2.33	7.74	5.41	6.22	2.64	4.93	5.68	4.34	53.65
	" .....	Settle (Giggleswick School)	4.58	2.27	6.65	.97	2.51	6.04	4.20	4.85	1.99	4.22	3.86	5.89	45.03
	Yorkshire, W.R. ...	Doncaster (Wadsworth Hall)	3.73	1.55	3.13	.20	3.99	4.59	4.62	4.98	1.24	2.46	2.50	2.60	35.59
	" .....	Sheffield (Weston Park) ...	5.05	1.60	3.42	.52	3.64	3.85	5.18	5.70	1.19	2.84	2.27	3.93	39.19
	" .....	" .....	" .....	" .....	" .....	" .....	" .....	" .....	" .....	" .....	" .....	" .....	" .....	" .....	" .....
	" .....	" .....	" .....	" .....	" .....	" .....	" .....	" .....	" .....	" .....	" .....	" .....	" .....	" .....	" .....
	" .....	" .....	" .....	" .....	" .....	" .....	" .....	" .....	" .....	" .....	" .....	" .....	" .....	" .....	" .....
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ENGLAND—continued.

Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
I.N.	Yorkshire, W.R.	8 Meltham(HarewoodLodge)	5.36	2.07	5.00	1.48	3.95	4.35	4.99	6.92	2.25	4.27	4.30	7.25	52.19
"	"	"	4.36	1.81	2.40	.15	3.82	4.02	3.77	4.99	1.38	2.46	2.14	1.82	33.12
"	"	"	5.65	2.31	4.76	.67	2.64	5.88	4.54	6.51	1.88	3.91	2.50	4.51	45.76
"	"	"	3.83	1.24	2.99	.09	2.98	6.47	4.28	4.75	1.60	2.21	2.28	2.12	34.84
"	E.R.	10 York (Mount Villas)	3.55	1.49	3.70	.14	2.52	5.35	3.47	4.79	1.97	2.69	2.86	1.63	34.16
"	"	"	2.98	1.14	2.30	.11	2.13	4.62	2.46	3.76	2.10	2.60	3.14	2.10	29.44
"	"	"	4.07	1.76	3.30	.28	3.57	5.47	6.24	5.26	2.14	3.10	3.22	2.27	40.68
"	"	"	3.15	1.52	2.62	.21	3.22	4.34	2.93	3.78	2.13	2.91	2.72	1.68	31.21
"	"	"	4.16	2.65	3.24	.34	2.44	5.67	4.75	4.85	1.73	2.87	2.31	3.52	38.53
"	N.R.	1 Leyburn (Bolton Hall)	3.21	1.99	2.83	.09	2.46	5.97	3.92	4.73	1.97	2.85	3.11	.90	33.48
"	"	"	2.90	1.37	2.73	.31	3.27	5.54	5.36	4.16	2.58	2.30	2.83	1.15	35.05
"	"	"	2.46	1.37	2.04	.14	2.53	4.26	3.88	4.00	1.32	2.06	2.50	1.00	27.56
"	"	"	3.37	1.77	2.32	.22	2.62	4.97	2.81	5.67	2.36	2.17	1.97	2.81	33.06
"	Durham	1 BarnardCastle(CountySchool)	3.70	4.21	5.61	.98	2.48	5.25	3.42	6.05	3.08	4.72	4.99	8.86	53.35
"	"	"	3.27	2.41	2.20	.08	2.63	4.75	3.68	5.47	1.43	2.61	1.72	1.92	32.17
"	Northumberland	2 Haltwhistle(BellisterCastle)	2.15	2.59	5.31	.76	2.98	6.76	3.07	5.31	3.27	3.26	4.28	5.01	44.75
"	"	"	2.63	2.35	1.74	.42	2.88	4.41	2.86	5.85	2.13	3.20	1.91	2.69	33.07
"	"	"	2.77	2.91	3.72	.42	2.36	5.47	1.77	5.63	3.02	3.61	3.05	3.98	38.71
"	"	"	3.22	2.76	1.73	.10	2.73	5.12	2.81	4.50	1.88	4.12	1.74	1.96	32.67
"	"	"	3.56	3.01	2.10	.18	2.23	5.40	4.42	4.71	2.92	3.42	2.57	1.10	35.62
"	"	"	2.83	2.51	2.09	.19	1.83	5.22	2.81	5.16	2.78	3.65	1.94	1.48	32.49
"	"	"	3.28	2.08	3.21	.51	1.69	4.62	3.62	5.15	1.57	3.08	3.06	5.17	37.04
"	"	"	1.67	1.41	3.76	.38	2.07	5.63	4.13	5.05	2.07	2.90	3.25	5.08	37.40
"	"	"	11.58	7.64	21.26	3.66	5.02	10.88	10.26	12.75	6.51	14.53	15.64	23.42	143.15
"	"	"	3.08	2.72	5.15	.73	2.35	5.66	3.75	5.49	1.41	4.50	4.06	5.30	44.20
"	"	"	3.85	4.50	5.53	.34	1.71	5.86	5.75	4.94	2.88	4.16	4.38	6.86	50.76
"	Westmorland	1 Kirby Stephen(Redman Ho.)	4.71	4.31	8.19	1.67	2.84	6.82	5.73	6.84	2.05	7.24	5.81	7.11	63.32
"	"	"	3.86	2.26	4.29	.32	2.14	4.50	3.46	6.54	1.97	3.56	2.78	4.05	39.73
England. Mean of 130 stations															

MONMOUTH, WALES AND THE ISLANDS.

N.I.	Monmouth	3 Abergavenny (The Chain)	7.10	3.63	6.86	.23	2.79	4.54	4.79	7.94	1.05	4.67	2.17	5.08	50.85
"	"	4 Chepstow (PiercefieldPark)	4.68	3.08	5.39	.27	2.42	6.02	5.89	8.08	.74	4.52	2.17	6.00	49.26
"	Glamorgan	3 Swansea (The Knoll)	5.89	4.00	7.89	.26	2.10	5.66	4.40	9.56	.66	7.08	4.00	8.97	60.47
"	"	6 Merthyr Tydfil(MardyHosp.)	7.01	4.97	10.44	.47	1.65	6.57	5.10	11.79	1.14	6.32	4.29	9.27	69.02

**MONMOUTH, WALES AND THE ISLANDS—(continued.)**

Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
XI.	Glamorgan	Cardiff (Penylan) .....	4.69	3.04	5.95	.35	1.88	6.94	3.53	8.95	.81	5.18	2.81	7.26	51.39
"	Carmarthen	Carmarthen (The Friary) ..	4.61	4.70	7.30	.54	1.16	5.84	4.29	8.72	.75	5.62	4.66	7.28	55.47
"	"	Llanwrda (Dolaucothy) ...	4.46	5.19	9.01	.58	1.85	5.95	5.38	11.30	1.37	6.72	5.66	8.67	66.14
"	Pembroke	Castle Malgwyn [Llechryd]	4.49	3.17	6.34	.25	.84	4.94	2.59	6.39	.57	4.90	4.45	6.08	45.01
"	"	St. David's .....	3.62	3.27	5.37	.21	1.17	4.98	3.11	6.63	.20	4.45	4.22	4.86	42.09
"	"	Tenby (Glendower) .....	4.44	3.53	6.98	.18	.87	4.50	3.37	7.20	1.06	5.51	4.58	6.34	48.56
"	Cardigan	Aberystwyth(NorthParade)	2.10	2.10	6.56	.48	.98	4.60	3.61	6.34	.39	4.65	4.19	5.70	41.70
"	"	Birmingham W.W. (Claerddu)..	6.30	4.00	11.10	1.10	2.60	7.20	5.95	18.00	2.30	7.35	9.00	8.60	83.50
"	Brecon	Brecon (New Inn) .....	7.11	4.83	12.27	.81	1.81	5.75	5.74	12.27	2.72	7.78	5.17	14.03	80.29
"	"	Hay (Waunderwen) .....	3.95	2.44	5.26	.26	1.60	3.88	3.01	7.94	1.16	4.03	1.94	4.60	40.07
"	Radnor	Llandrindod Wells (Kimberley)	4.02	2.18	6.23	.38	1.57	4.40	3.91	7.70	.74	4.70	2.70	4.62	43.15
"	Montgomery	Newtown (Gregynog) .....	3.30	1.63	5.33	.47	1.81	4.25	3.80	6.14	.95	3.99	3.70	5.32	40.69
"	Flint	Bodfari (Henblas) .....	20	1.40	2.72	.32	1.63	3.55	4.29	6.23	1.18	3.02	2.40	2.25	31.19
"	Denbigh	Gresford (Trewythen) .....	3.80	1.57	2.81	.38	3.15	3.13	2.14	4.91	.79	2.96	2.29	2.00	29.93
"	Merioneth	Llanderfel (Palé Gardens) ..	3.95	3.25	9.13	1.22	1.81	5.77	3.88	6.35	1.44	5.26	5.01	7.89	54.96
"	"	Blaenau Ffestiniog (Oakley Qrs.)	6.78	6.60	14.50	1.42	4.15	11.64	11.40	15.21	2.22	12.53	12.32	16.43	115.20
"	"	Dolgelly (Bryntirion) .....	5.33	3.22	11.93	1.18	1.95	7.92	5.43	11.52	1.72	6.14	7.55	7.08	70.97
"	Carnarvon	Llandudno .....	2.27	1.65	3.44	.42	1.58	3.42	4.17	5.55	1.11	3.48	3.01	2.93	33.03
"	"	Abersoch .....	2.97	2.74	6.84	.39	1.33	5.02	4.35	6.73	.73	6.25	4.75	3.96	46.06
"	Anglesey	Llanerchymedd Llwyrddarth Esgob..	2.35	2.01	5.16	.38	1.94	3.92	5.66	5.02	.84	5.98	4.45	3.48	41.19
<b>Wales. Mean of 24 stations</b> .....			<b>4.48</b>	<b>3.26</b>	<b>7.28</b>	<b>.52</b>	<b>1.86</b>	<b>5.43</b>	<b>4.57</b>	<b>8.61</b>	<b>1.11</b>	<b>5.55</b>	<b>4.48</b>	<b>6.61</b>	<b>53.76</b>
XI.	Isle of Man	Douglas ..	3.27	3.69	4.40	.66	1.94	4.13	3.28	5.17	1.46	4.67	4.67	4.43	41.77

**SCOTLAND.**

XII.	Wigtown	Stoneykirk (Ardwell Ho.)	4.94	3.42	4.21	.86	1.51	6.30	1.76	4.67	2.84	4.82	3.32	4.42	43.07
"	"	Gariestown (Galloway House)	4.54	3.35	5.12	1.01	1.53	5.54	2.20	4.86	2.50	4.36	3.71	6.94	45.66
"	Kirkcudbright	Dalry (Glendarroch) .....	7.78	5.01	6.55	1.68	1.63	6.54	3.07	5.26	2.66	4.62	3.96	9.04	57.80
"	"	Dalbeattie (Little Richorn)	4.60	3.42	5.58	.57	1.91	5.68	4.44	6.32	1.98	4.40	3.54	7.25	49.69
"	Dumfries	Moffat (Auchen Castle) ...	4.36	4.60	6.81	1.20	1.36	5.94	3.72	4.32	2.36	4.98	4.52	11.75	55.92
"	"	Langholm(Ewes, Burnfoot)	4.50	3.45	6.34	.85	1.83	5.24	3.94	5.74	2.08	6.30	4.44	8.17	52.88
"	Roxburgh	Hawick (Wolfelee) .....	3.79	3.03	3.26	.49	1.62	5.77	3.23	6.13	3.15	3.41	2.52	3.97	40.37
"	Selkirk	Selkirk (The Hangingshaw)	3.30	2.24	3.82	.52	1.31	4.10	1.64	5.02	2.66	3.08	2.41	4.41	34.51
XIII.	Peebles	Stobo (Dawick Gardens) ..	4.40	2.16	3.98	.52	1.11	4.66	2.49	3.55	3.57	3.10	3.13	5.83	38.50
"	Berwick	Marchmont House .....	2.53	2.73	2.51	.27	1.64	5.00	1.62	4.53	3.26	3.42	1.90	2.52	31.93
"	Haddington	Dunbar (Broxmouth Park)	3.57	2.63	1.98	.54	1.45	2.78	1.32	4.20	.80	2.75	1.48	1.49	24.99

# SCOTLAND—(continued.)

Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
XIII.	Midlothian	West Calder (Addiewell) ..	1·54	1·91	3·20	1·90	1·44	4·90	2·67	3·60	2·23	4·81	3·60	7·40	39·20
"	"	Edinburgh (Blackford Hill)	1·14	1·81	1·77	·24	1·42	3·94	2·01	4·75	2·60	2·49	1·62	3·11	26·90
XIV.	Lanark	Leadhills	5·59	5·79	7·77	2·21	1·77	6·97	4·38	6·11	3·38	6·91	4·83	10·77	66·48
"	"	Strathaven (E. Overton Ho.)	2·38	2·42	5·02	1·86	1·68	4·81	3·37	3·58	2·83	4·06	3·79	8·30	44·10
"	Ayr	Dalry (Blair)	4·33	3·97	6·65	2·73	1·99	5·44	3·39	3·74	4·53	6·54	5·31	7·58	56·20
"	"	Mauchline (Catrine) .....	2·32	1·90	4·20	2·18	1·50	3·95	2·12	3·02	2·70	3·65	4·50	4·23	36·27
"	"	Maybole (Culzean Gardens)	3·00	2·40	4·05	1·55	·93	5·75	1·38	2·85	2·60	3·50	3·80	5·25	37·06
"	"	Barrhill (Dochroyfe) .....	4·20	2·46	4·69	·98	1·08	4·85	1·70	4·19	2·15	4·75	3·60	6·05	40·70
"	Renfrew	Glasgow (Queen's Park) ..	2·53	2·71	3·74	1·38	1·10	4·64	2·13	4·06	2·38	3·40	3·85	7·09	39·01
XV.	Dumbarton	Cardross (Kilmahew) .....	5·78	4·42	5·59	2·39	1·96	4·75	2·38	4·16	3·36	5·21	4·55	8·95	53·50
"	"	Falkirk (Westbank) .....	2·36	2·79	4·20	·83	1·54	4·45	2·19	3·54	2·36	3·51	3·38	7·94	39·09
"	Stirling	Buchlyvie (The Manse) .....	4·06	4·58	5·75	2·40	2·26	5·33	2·51	4·56	3·08	5·24	3·70	8·40	51·87
"	"	Rothsay (Crichton Road)	5·95	4·63	6·44	2·45	2·95	7·15	3·35	3·80	3·78	5·55	6·21	9·60	61·86
"	Argyll	Glenleven (Kinlochleven) ..	9·56	6·37	9·01	9·13	3·84	5·88	3·41	4·80	5·41	9·26	11·41	25·85	103·93
"	"	Taynuilt (Barguilean) .....	5·39	5·09	7·35	6·35	2·88	6·74	3·86	4·95	5·16	8·06	8·35	20·63	84·81
"	"	Loch Awe (Ford) .....	7·49	4·85	6·43	5·14	3·33	5·56	2·87	4·92	5·29	8·08	10·16	13·50	77·62
"	"	Muasdale (Killean Manse)	4·85	2·78	4·84	1·68	1·40	4·51	2·94	3·71	2·22	5·85	5·05	7·59	47·42
"	"	Campbeltown (Witchburn)	4·44	4·02	7·15	1·99	1·82	6·45	3·55	6·10	2·34	5·73	5·16	8·67	57·42
"	"	Otter Ferry (Ballimore) ..	7·70	5·50	4·20	1·25	2·00	3·50	3·00	3·80	4·02	6·50	6·50	11·00	58·97
"	"	Lochgoilhead (Nuthill) ..	9·82	7·38	9·65	4·89	2·77	5·95	3·69	5·59	4·33	8·81	9·45	18·93	91·26
"	"	Islay (Ardbeg) .....	2·60	2·74	5·11	2·57	2·05	5·38	2·90	4·01	2·95	5·52	5·63	7·73	49·19
"	"	Jura (Ardfin) .....	4·30	4·41	5·55	2·87	1·83	6·24	3·71	3·86	3·24	6·25	6·52	10·01	58·73
"	"	Iona .....	3·78	4·07	4·29	2·81	2·07	4·69	4·36	3·37	3·21	6·22	5·40	8·91	52·74
"	"	Mull (Quinish) .....	4·16	3·62	4·44	3·36	2·81	5·08	4·56	3·80	2·45	6·52	4·62	11·04	56·46
"	"	Tiree (Cornaigmore) .....	4·57	3·79	4·59	2·87	2·31	5·11	3·22	3·66	2·82	7·19	4·03	8·91	53·07
XVI.	Fife	Colinsburgh (Balcarres) ..	2·49	2·33	2·73	·10	1·48	4·22	1·77	4·67	3·06	3·35	1·57	3·03	30·80
"	"	Cupar (Rankellour) .....	2·99	2·17	2·44	·14	1·21	3·88	3·07	4·38	2·86	3·31	1·67	3·02	31·14
"	Perth	Balquhiddie (Stronvar) ..	8·89	8·23	8·23	3·26	2·58	8·06	2·98	4·70	3·49	8·20	7·43	24·95	91·00
"	"	Glendevon (Tormaukin) ..	3·69	4·96	7·53	·82	2·15	5·66	3·02	4·53	3·77	5·88	6·10	16·97	65·08
"	"	Grieff (Strathearn Hydro.)	4·32	4·31	4·43	·58	1·35	5·39	2·29	4·61	2·76	4·15	2·90	9·47	46·56
"	"	Aberfeldy (Dall Avon) ..	9·52	3·70	3·51	·70	·99	3·92	1·70	5·62	2·34	3·14	3·24	8·06	46·44
"	"	Glenlyon (Meggernie Castle)	8·66	5·58	6·31	2·32	1·96	4·94	2·67	4·27	3·44	5·93	6·33	16·70	69·11
"	"	Coupar Angus .....	3·97	2·54	2·15	·18	1·58	2·96	2·58	3·34	2·12	3·73	1·82	4·37	31·34
"	"	Arbroath (Dishland Hill) ..	1·71	2·22	1·70	·08	1·45	1·96	1·81	3·19	2·11	3·17	1·75	1·68	22·83
"	Forfar	Glen Prosen (Pearsie) .....	5·03	3·91	3·08	·24	1·97	4·50	3·63	4·39	3·09	4·72	2·94	5·01	42·51
XVII.	"	Fettercain (The Burn) ..	5·31	4·02	2·20	·31	1·52	2·17	2·12	4·52	2·77	5·05	2·97	3·51	36·47

**SCOTLAND—(continued.)**

Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
XVII.	Kincardine .....	Crathes (Pinewood).....	6.43	2.83	2.51	.49	1.93	2.04	1.55	5.68	2.64	5.17	2.55	1.10	34.92
	Aberdeen .....	Braemar (Derry Lodge) ...	5.01	2.81	2.83	1.94	2.38	2.64	2.25	4.66	3.17	3.83	5.15	6.46	42.63
	" .....	Aberdeen (Cranford House) ..	3.43	3.35	2.37	.52	1.98	2.30	1.98	5.34	2.14	4.54	3.20	1.29	32.44
	" .....	Strathdon Estate Office ...	6.46	2.31	2.31	1.37	2.63	2.17	1.73	5.29	3.38	4.81	4.22	1.55	38.23
	" .....	New Deer School House...	3.03	2.11	3.38	.98	3.18	2.87	1.24	4.50	2.12	3.96	2.62	1.41	31.40
	" .....	Huntly (Cruchie) .....	3.11	2.00	2.72	1.42	3.05	2.34	1.64	6.48	1.99	3.97	2.68	1.15	32.55
	Moray ..	Gordon Castle .....	2.45	1.82	2.14	1.30	3.28	2.76	1.90	5.57	1.39	2.54	2.66	1.88	29.69
	" .....	Grantown-on-Spey .....	2.09	1.74	1.61	1.17	2.80	2.47	2.28	5.54	1.95	2.41	3.51	3.02	30.59
	Nairn ...	Nairn (Achareidh) .....	.96	1.56	1.53	1.57	1.87	4.03	1.41	4.48	1.03	2.19	2.36	3.16	26.15
	Inverness .....	Kingussie .....	1.55	1.45	2.70	1.54	1.66	3.17	1.89	2.78	1.17	3.89	4.11	7.20	33.11
XVIII.	" .....	Fort Augustus (S. Benedict's)	2.47	2.81	4.02	4.09	1.78	3.76	2.45	3.39	2.25	4.85	6.23	12.16	50.26
	" .....	Loch Quoich (Glenquoich)	8.33	7.26	10.62	13.11	4.49	6.04	4.14	3.59	7.05	13.20	16.86	29.59	124.28
	" .....	Drumnadrochit .....	.96	2.32	2.52	1.96	1.34	5.70	2.18	4.62	1.89	3.46	4.09	7.26	38.30
	" .....	Loch Shiel (Glenfinnan) ...	10.25	6.90	11.10	12.65	4.90	7.03	6.05	5.04	7.87	13.50	17.73	26.57	129.59
	" .....	Arisaig House .....	4.71	3.55	6.57	5.68	2.84	3.91	3.89	4.13	3.90	6.58	10.21	11.04	67.01
	" .....	Skye (Glendrynoch, L. Harport)	6.15	6.68	5.14	4.44	3.57	4.61	4.87	5.15	2.80	10.25	10.06	12.65	76.37
	" .....	" (Dunvegan) .....	5.97	7.01	6.90	6.05	4.36	7.90	4.27	4.40	2.72	10.26	9.00	16.39	85.23
	" .....	Barra (Castle Bay) .....	3.54	4.09	3.44	2.05	2.31	3.49	2.45	3.63	2.93	5.65	3.67	5.97	43.22
	" .....	North Uist (Lochmaddy)...	2.87	5.13	4.72	4.06	2.62	3.80	2.65	3.33	2.03	6.10	7.26	10.32	54.89
	Ross and Cromarty ..	Evanton (Novar Gardens)...	1.81	2.14	3.18	2.71	2.63	3.89	2.14	4.96	1.99	3.38	5.23	5.23	39.29
XIX.	" .....	Ullapool (Inverpolly Lodge)	2.81	4.08	5.35	5.39	2.36	3.01	2.77	7.56	1.77	4.96	7.70	8.18	55.94
	" .....	Poolwee (Inverewe Gdns.)	4.61	4.40	5.78	6.32	2.84	3.52	2.73	5.03	1.47	6.35	9.32	10.83	63.20
	" .....	Applecross Gardens .....	4.74	5.40	4.34	4.01	3.11	3.59	4.00	4.72	1.89	7.20	12.45	9.77	65.22
	" .....	Glencarron Lodge .....	6.05	5.44	8.08	10.95	4.19	4.63	4.24	6.17	5.15	8.84	14.71	16.92	95.37
	" .....	Stornoway .....	3.63	5.34	5.17	3.94	2.78	3.18	2.65	5.59	1.77	5.51	7.13	8.05	54.74
	Sutherland.....	Invershin .....	2.36	1.86	4.01	3.46	2.87	3.51	1.39	5.08	2.22	2.07	4.00	3.25	36.08
	" .....	Dunrobin Castle .....	1.73	1.80	3.19	2.24	1.99	2.74	2.25	6.38	1.03	2.28	4.35	3.92	33.90
	" .....	Tongue Manse .....	3.00	3.54	4.14	3.54	2.53	3.27	2.31	6.86	2.09	3.42	5.10	4.32	44.12
	" .....	Loch Stack (Ardrchullin)...	4.42	5.41	7.94	7.78	2.83	2.69	3.45	9.42	5.00	6.77	10.50	10.29	76.50
	Caithness .....	Berriedale (Langwell) .....	2.85	3.20	2.44	2.98	3.88	2.16	2.24	6.74	1.58	3.08	5.13	4.54	40.82
"	" .....	Thurso (Buckies) .....	2.58	3.30	3.69	3.53	3.53	1.57	3.02	5.60	2.15	3.69	6.16	4.57	43.39
	Scotland. Mean of 78 stations.....		4.35	3.72	4.70	2.66	2.23	4.46	2.78	4.73	2.87	5.23	5.37	8.46	51.56

# IRELAND.

Div.	County.	Station.	Jan	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
XX.	Cork	Skibbereen Rectory.....	5.80	4.60	6.27	.41	2.67	6.24	2.79	3.76	1.41	6.03	3.64	7.53	51.15
"	"	Clonakilty (Shannon Vale Ho.)	4.85	4.70	4.67	.26	1.95	5.76	4.77	3.52	1.55	4.78	3.32	4.98	45.11
"	"	Dunmanway (The Rectory)	7.26	8.07	6.84	.45	1.94	7.59	5.03	4.36	1.53	6.61	4.86	10.43	64.97
"	"	Midleton (Ballynacurra) ...	4.65	4.87	4.01	.57	1.79	4.55	5.22	3.59	.99	3.30	1.74	3.41	38.69
"	"	Mallow (Summer Hill) ...	4.29	5.53	4.21	1.29	1.45	5.33	4.84	3.42	.98	3.00	2.33	5.47	42.14
"	"	Mitchelstown Castle .....	3.92	4.36	4.70	1.18	1.60	6.27	7.73	4.52	.93	3.27	3.43	5.12	47.03
"	Kerry	Gap of Dunloe (Garrymeen)	9.50	9.50	14.50	1.50	3.00	14.00	6.00	9.80	2.30	9.50	9.50	17.50	106.60
"	"	Lough Carragh (Lickeen) ..	8.00	9.31	9.87	1.78	1.73	8.77	4.04	6.08	2.12	6.96	6.14	15.24	80.04
"	"	Darrynane Abbey.....	5.12	4.61	7.39	1.08	2.54	8.43	2.86	5.12	2.87	6.31	3.87	6.07	56.27
"	"	Kenmare (Dromore) .....	7.23	6.74	8.70	1.22	2.11	9.96	4.12	5.87	1.93	6.62	3.85	8.88	67.23
"	"	Lismore Castle.....	5.26	6.41	4.98	.75	1.79	4.94	5.25	4.43	.58	2.67	1.94	4.40	43.40
"	Waterford	Waterford (Brook Lodge) ..	5.32	4.51	4.82	1.07	1.25	5.20	5.98	4.68	.28	3.57	1.83	4.05	42.56
"	"	Nenagh (Traverston) .....	5.13	4.97	5.11	1.53	1.91	7.06	5.21	4.23	.53	2.72	3.29	7.29	48.98
"	Tipperary	Clonmel (Bruce Villa).....	4.66	4.25	4.35	1.34	1.60	4.34	6.01	3.59	.49	1.82	2.01	4.00	38.46
"	"	Cashel (Ballinamona) .....	4.41	4.04	4.77	1.64	1.64	5.92	7.60	4.73	.46	2.57	2.11	4.97	44.86
"	"	Foynes (Mount Trenchard)	3.44	2.89	4.60	1.34	1.54	8.76	5.27	4.25	.63	3.46	3.21	5.73	45.12
"	Limerick	Ennisymon House .....	3.44	2.99	5.29	1.30	1.64	5.66	4.78	4.53	.58	3.95	3.51	6.88	44.55
"	Clare	Carrigaholt Castle .....	2.90	2.98	4.77	1.12	2.46	5.07	3.13	3.47	.34	3.82	3.15	5.65	38.86
"	"	Derravoher [Limerick] ...	2.89	2.59	4.02	.84	1.64	5.69	5.01	3.35	.59	2.98	2.36	4.07	36.03
"	"	Newmarket-on-Fergus (Limerick) ..	3.57	2.80	4.70	1.17	1.59	6.54	4.74	4.34	.70	3.66	2.98	5.78	42.57
"	"	Scarriff (Woodpark).....	3.95	3.40	4.96	1.38	2.13	6.36	3.81	3.45	.46	3.09	2.74	5.70	41.43
XXI.	Wexford	Wexford (Tate School) ...	3.90	4.90	5.28	1.44	1.03	4.46	5.62	6.03	.22	4.54	2.24	3.94	43.58
"	"	Enniscorthy (Ballyhyland)	5.72	5.30	3.96	1.17	1.13	7.30	6.49	5.62	.73	3.80	2.09	4.94	48.25
"	"	Gorey (Courtown House) ..	5.57	5.04	4.26	1.80	1.21	5.01	5.60	6.05	.37	2.88	1.78	2.77	42.34
"	Kilkenny	Kilkenny (Lavistown Ho.) ..	3.38	2.90	3.01	.55	1.05	4.92	4.92	3.71	.24	2.15	1.31	3.08	31.22
"	Wicklow	Laragh (Glendalough) .....	9.22	8.47	8.79	1.96	1.61	6.80	6.61	9.19	1.56	4.37	3.99	4.70	67.27
"	"	Bray (Fassaroe) .....	6.82	5.61	5.07	1.82	1.27	3.39	4.27	7.73	.68	2.72	1.54	2.91	43.83
"	"	Tullow (Hardymount).....	3.87	3.49	3.13	1.06	1.25	4.19	3.73	4.88	.32	2.62	1.31	3.05	32.90
"	Queen's County	Abbey Leix (Blandsfort) ...	3.62	3.34	4.23	.81	1.35	5.12	5.06	4.93	.47	2.41	2.00	3.89	37.23
"	"	Birr Castle.....	2.71	3.16	3.58	.99	1.33	4.96	4.78	4.63	.38	2.17	1.70	4.10	34.49
"	"	Ballycumber (Moorock Lodge)	2.56	2.91	3.93	.64	1.26	4.64	4.52	3.75	.23	2.10	2.47	3.24	32.25
"	Kildare	Monasterevan (Moore Abbey)	3.30	2.51	3.06	1.00	1.22	4.80	4.27	5.50	.23	2.07	1.97	3.16	33.09
"	Dublin	Balbriggan (Ardgillan) ...	3.55	2.83	3.08	1.12	1.01	3.58	3.27	6.21	.75	1.88	1.49	2.33	31.10
"	"	Dunboyne (Stirling Clonee)	2.98	1.87	2.84	1.26	1.35	3.85	4.41	6.59	.51	2.36	2.15	2.76	32.93
"	Meath	Athboy (Frankville).....	4.34	3.04	4.66	1.00	.88	5.06	3.91	6.73	.65	2.55	2.48	4.03	39.33
"	"	Mullingar (Belvedere).....	4.33	3.65	4.95	.85	1.22	5.42	4.37	5.55	.41	2.91	2.97	5.19	41.85

# IRELAND—(continued).

Div.	County.	Station.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
XXI.	Westmeath	Castlepollard (Pakenham Hall)	4.49	3.06	4.94	.80	1.39	3.78	4.23	6.01	.59	2.66	2.41	3.95	38.31
"	Louth	Ardee (Lissrenny)	3.93	2.90	4.23	1.21	1.10	3.20	4.38	5.39	.54	1.96	2.17	3.80	34.81
"	"	Greenore	2.73	2.74	5.00	1.32	1.41	4.15	2.90	6.08	.55	2.54	2.35	3.24	35.01
XXII.	Longford	Ballymahon (New Castle)	3.58	2.91	4.00	.71	1.28	4.18	3.85	4.70	.38	2.42	2.88	4.70	35.59
"	Galway	Knockboy House	2.74	2.80	5.36	1.39	1.83	7.63	3.91	2.94	.75	2.97	4.48	7.09	43.89
"	"	Tuam (Gardenfield)	3.29	4.11	4.82	1.46	2.04	4.81	3.61	4.36	.52	4.25	4.57	7.77	45.61
"	"	Woodlawn	3.52	3.57	4.41	1.20	1.30	5.75	4.22	3.94	.37	3.19	3.40	4.57	39.44
"	Mayo	Crossmolina (Enniscoe)	4.10	3.95	5.99	1.74	3.13	4.31	3.26	4.75	.62	3.91	6.07	13.29	55.22
"	"	Westport (St. Helens)	3.72	4.05	5.20	1.32	3.05	5.53	3.11	3.57	.54	3.63	4.74	9.23	47.69
"	"	Cong (The Glebe)	3.24	4.35	5.43	1.41	2.22	5.96	3.82	3.58	.71	3.76	5.59	10.70	50.77
"	"	Dugort (Slievemore Hotel)	5.27	3.44	9.16	1.74	5.49	5.60	2.91	4.08	1.35	5.96	8.52	11.91	65.43
"	Sligo	Collooney (Markree Obs.)	3.03	4.04	5.79	1.58	2.11	5.51	3.79	5.93	1.31	4.33	4.97	6.66	49.05
"	Leitrim	Mohill (Rectory)	3.91	3.29	5.04	.87	1.43	4.29	2.41	5.35	.57	2.82	3.46	4.95	38.39
XXIII.	Cavan	Killeshandra (Drom Mullac)	4.84	3.55	6.45	1.24	2.32	4.15	4.37	4.74	.82	2.95	3.70	5.51	44.64
"	Fermanagh	Enniskillen (Portora)	4.23	4.08	5.32	1.52	2.10	4.38	4.91	4.16	.66	3.62	4.03	6.52	45.53
"	"	Belleek	2.35	3.01	5.64	2.05	1.39	6.57	3.42	4.29	1.03	4.97	5.76	6.99	47.47
"	"	Dartrey [Cootehill]	4.04	3.17	5.14	1.41	2.00	4.51	3.59	5.53	.76	2.47	2.90	5.10	40.62
"	Monaghan	Armagh Observatory	3.67	2.92	3.34	1.94	1.38	4.77	2.79	6.01	.89	1.12	2.55	4.38	35.76
"	Armagh	Seaford	5.02	5.32	4.65	1.72	1.68	5.85	4.25	6.28	.83	3.61	2.20	4.12	45.56
"	Down	Donaghadee	3.81	2.81	2.81	1.08	1.33	4.87	3.35	5.91	1.08	3.24	2.65	3.18	36.12
"	"	Belfast (Queen's University)	4.16	2.90	4.28	1.53	1.38	7.53	3.83	6.48	1.28	3.94	3.24	3.88	44.43
"	Antrim	Glenarm Castle	5.87	4.31	5.96	2.31	1.76	6.20	3.61	5.68	1.84	4.13	4.01	6.39	52.07
"	"	Bushmills (Dundarave)	3.76	1.97	4.03	2.17	1.18	4.82	2.71	5.57	1.68	4.32	4.75	4.50	41.46
"	"	Ballymena (Harryville)	5.40	3.49	4.43	2.28	2.10	6.75	4.61	7.05	2.47	3.43	4.79	6.28	53.08
"	Londonderry	Limavady (Drenagh)	3.22	1.90	5.31	2.09	1.25	6.31	2.78	5.07	2.21	3.28	3.90	4.44	41.76
"	Tyrone	Cookstown (Lissan)	3.86	2.95	4.33	1.24	1.40	4.41	3.82	4.10	1.09	3.45	2.93	4.77	38.35
"	"	Omagh (Edenfel)	3.31	3.31	4.87	2.02	1.59	5.94	4.49	5.12	1.53	4.42	4.96	6.76	48.32
"	Donegal	Buncrana (Rockfort)	3.14	2.36	4.64	2.49	1.26	5.77	3.34	3.97	2.03	3.79	4.51	5.33	42.63
"	"	Dunfanaghy (Horn Head)	3.20	3.24	4.08	3.40	1.36	5.39	5.32	4.88	2.36	3.57	5.46	6.68	48.94
"	"	Killybegs	3.71	3.44	7.34	3.39	2.08	6.49	4.22	6.16	1.93	6.04	8.57	8.86	62.23
"	"	Convoys	3.05	4.01	6.07	2.44	2.00	6.98	3.93	4.88	1.20	4.64	5.52	9.30	54.02
Ireland. Mean of 67 stations			4.32	3.99	5.16	1.40	1.72	5.70	4.36	5.06	.96	3.64	3.51	5.85	45.67
BRITISH ISLES. Mean of 300 stations			4.14	3.11	4.83	1.19	2.05	4.83	3.57	5.90	1.91	4.17	3.76	5.80	45.26

## SEASONAL RAINFALL, 1911-12.

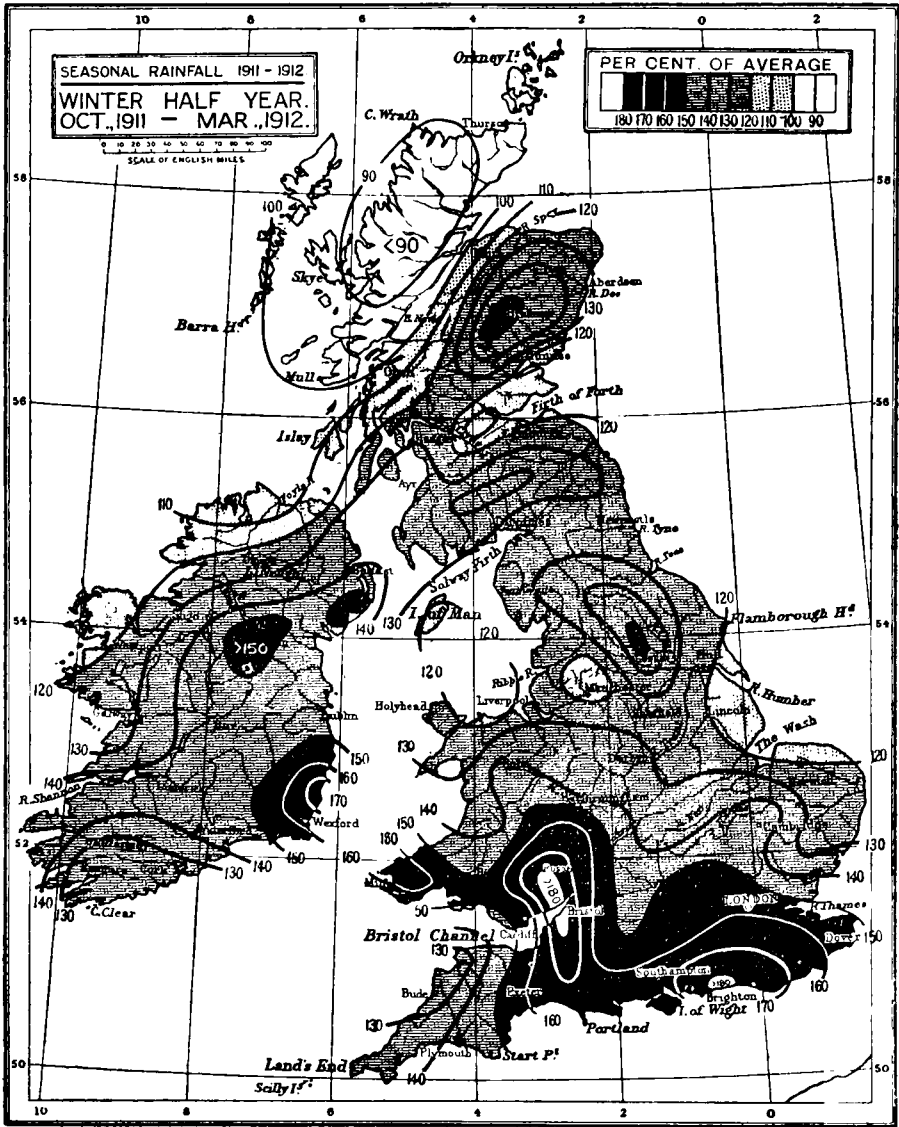
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THE year ending on December 31st is, of course, not a natural period for the grouping of meteorological statistics, though the convenience of making use of that division of time is sufficiently great to prevent us from departing from it in general practice. There is, however, a distinct advantage in also studying the rainfall of twelve monthly periods otherwise grouped ; and we have for several years included in *British Rainfall* a section dealing with the rainfall of the year ending on September 30th, as well as the winter and summer half-years, October-March and April-September. The subdivision of the year in this way presents the advantage of bringing the whole of the winter into one group and the whole of the summer into the other, whereas in the civil year the winter is divided into two halves, one half being in one year and the other in the following year. By this means, any excess or deficiency of rainfall affecting the whole winter can be studied in its entirety.

The data are presented in the form of the table, on pages [190]-[193], and are set out cartographically on three maps. The table contains the total rainfall for the two six-monthly periods at each of the 102 well distributed stations, used for the study of monthly rainfall, and the average of 35 years for that period for each half-year for each station. The relation of the rainfall to the average is given both in the form of the difference in inches, and the percentage which the actual rainfall forms of the average. The last column of the table deals with the seasonal year, comprising the two half-years, and gives the percentage of the average only. The percentage values for the three groups of months are plotted on maps, and lines are drawn, representing the difference of the rainfall from the average, at intervals of 10 per cent. The areas where the rainfall exceeded the average are tinted, the deepness of the tint increasing by steps of 20 per cent.

The winter half-year 1911-12 was one of very exceptional rainfall. November, December and March were all extremely wet. January was also very wet in England and the east of Scotland. The map

shows that in the north-west of Scotland the rainfall of the six months failed to reach the average ; but that south of the Great Glen the only variations were variations in the degree of wetness. Round the Firth of Forth, the Wash and the Irish Sea, the excess was not more than 20 per cent. ; but patches in the east and south of Scotland and in Yorkshire had more than 40 per cent., and so had



the whole of the south-east of Ireland and the south of England and Wales, except Cornwall, where the excess was only about 35 per cent. The most conspicuous feature of the map is the broad band of relatively high rainfall stretching from the south-east of Ireland to Kent ; within this band the rainfall was more than 60 per cent.



in excess in Co. Wexford, over the south coast of England from Dungeness to Sidmouth, and northwards from the latter place to the borders of Shropshire. Two small patches within this great area, one stretching from Monmouthshire into Somersetshire, the other in Sussex, had an excess of 80 per cent ; that is to say, little short of twice their average rainfall.



The general values for the countries show that the excess was greatest in Wales, where the rainfall was 45 per cent. above the average. In England the excess was 39 per cent.; in Ireland, 35 per cent.; in Scotland only 14 per cent.; and for the British Isles, as a whole, 31 per cent.

The map of the summer half-year is interesting on account of the strong marks left upon it by the abnormal rainfall of August in East Anglia, and the persistently wet weather of the summer which was most severely felt in the lower Severn valley. A strongly marked belt of high rainfall stretched from Cornwall in a north-easterly direction, spreading northwards on the east coast as far as Northum-



berland. It culminated in an excess of more than 50 per cent. in the whole of Norfolk, and reached 80 per cent. where the great storm of August 25th and 26th occurred. The rainfall was also high in Sussex, and a series of roughly parallel bands of excessive rainfall may be traced crossing the British Isles from west to east,

at intervals as we pass northwards. This structure appears also in the map of the winter months. Generally speaking, only the western half of Ireland and central Scotland had less than the average rainfall during the summer half-year, but excesses in the east of Ireland and in the north and south of Scotland nearly counterbalanced the deficiency, and the general fall for the six months was only 1 per cent. deficient for Ireland and 3 per cent. deficient for Scotland. In England, on the other hand, there was an excess of 25 per cent., and in Wales an excess of 15 per cent. For the whole of the British Isles there was an excess of 10 per cent.

The rainfall was very excessive in both half-years over a great part of the south of England, over the east coast of England, and in the north-east and south-east of Ireland. These districts consequently stand out conspicuously in the map of the rainfall of the twelve months combining the two half-years. The pronounced wetness in the south of England is again the outstanding feature in the map of the seasonal year. A considerable area, comprising most of Gloucestershire, Monmouthshire and Herefordshire, and parts of the neighbouring counties, had an excess of more than 50 per cent. over the average rainfall. More than 40 per cent. in excess fell all along the south coast of England east of Start Point, also in Norfolk, in Yorkshire, and in Co. Wexford. The whole of England and Wales, except one station in North Wales, and the Isle of Man, had more than 20 per cent. above the average. The same excess occurred in the eastern half of Ireland and the south of Scotland. The west of Scotland from Mull northwards to Caithness was the only part of the British Isles where the rainfall failed to reach the average, but the deficiency there was not large, exceeding 10 per cent. only in western Ross and Cromarty. The rainfall of the seasonal year was in excess in all the great divisions, the excess being least, 7 per cent., in Scotland. In Ireland the excess was 19 per cent., in England 32 per cent. and in Wales 32 per cent. For the British Isles, as a whole, the fall was 21 per cent. above the average.

*Seasonal Rainfall, 1911-1912, in Relation to the Average, 1875-1909.*

Div.	Stations.	Winter Six Months, October, 1911—March, 1912.				Summer Six Months, April — September, 1912.				12 Months, Oct., 1911—Sept., 1912.
		Rainfall.	Aver- age.	Difference from Average.	Per cent. of Aver.	Rainfall.	Aver- age.	Difference from Average.	Per cent. of Aver.	
I.	St. Pancras, Camden Square.....	19.59	12.38	+ 7.21	158	12.83	12.73	+ .10	101	129
II.	Tenterden, View Tower .....	25.02	15.31	+ 9.71	163	14.36	12.33	+ 2.03	117	142
"	Arundel, Patching .....	31.06	17.17	+ 13.89	181	17.85	13.31	+ 4.54	134	160
"	Fawley, Cadland .....	29.23	17.89	+ 11.34	163	16.69	13.98	+ 2.71	119	144
III.	Basingstoke, Sherborne St. John	24.70	15.86	+ 8.84	156	16.19	13.31	+ 2.88	122	140
"	Royston, Therfield .....	17.83	12.02	+ 5.81	148	15.19	13.54	+ 1.65	112	129
"	Oxford, Magdalen College .....	18.30	11.98	+ 6.32	153	13.87	12.60	+ 1.27	110	131
"	Wellingborough, Croyland Abbey	15.51	12.24	+ 3.27	127	16.59	12.93	+ 3.66	128	128
IV.	March .....	14.31	10.71	+ 3.60	134	17.82	12.32	+ 5.50	145	139
"	Shoeburyness.....	14.66	9.82	+ 4.84	149	9.20	9.46	- .26	97	124
"	Braintree, Bocking .....	14.84	11.52	+ 3.32	129	12.24	12.30	- .06	100	114
"	Rendlesham Hall .....	15.49	11.98	+ 3.51	129	13.61	11.70	+ 1.91	116	123
"	Bury St. Edmunds, Westley.....	17.51	12.26	+ 5.25	143	17.55	13.14	+ 4.41	134	138
"	Geldeston .....	14.65	11.91	+ 2.74	123	17.00	11.82	+ 5.18	144	133
"	Blakeney .....	14.15	11.96	+ 2.19	118	21.47	11.87	+ 9.60	181	149
V.	Bishops Cannings.....	22.41	15.70	+ 6.71	143	14.03	15.17	- 1.14	92	118
"	Evershot, Melbury House .....	37.20	22.27	+ 14.93	167	16.39	15.93	+ .46	103	140
"	Sidmouth, Sidmount .....	28.34	17.49	+ 10.85	162	17.40	14.51	+ 2.89	120	143
"	Barnstaple .....	27.02	21.30	+ 5.72	127	23.79	15.84	+ 7.95	150	137
"	Falmouth Observatory.....	35.39	26.14	+ 9.25	135	22.31	16.55	+ 5.76	135	135
"	Altarnon .....	46.62	35.83	+ 10.79	130	32.93	23.14	+ 9.79	142	135
"	Litton, Sherborne Reservoir .....	38.49	21.38	+ 17.11	180	21.19	18.25	+ 2.94	116	151
VI.	Stroud, Upfield .....	23.81	15.15	+ 8.66	157	22.82	14.66	+ 8.16	156	157
"	Church Stretton, Wolstaston ..	24.02	16.57	+ 7.45	145	18.30	15.84	+ 2.46	115	131
"	Wolverhampton, Wrottesley.....	17.11	12.64	+ 4.47	135	16.31	13.75	+ 2.56	119	127
"	Malvern, Church Street .....	23.16	14.14	+ 9.02	164	22.02	14.43	+ 7.59	152	158
"	Coventry, Kingswood .....	20.07	14.59	+ 5.48	138	19.22	14.39	+ 4.83	134	136
VII.	Market Overton .....	18.42	13.40	+ 5.02	137	20.14	13.70	+ 6.44	147	142

*Seasonal Rainfall, 1911-1912, in Relation to the Average, 1875-1909—(continued).*

Div.	Stations.	Winter Six Months, October, 1911—March, 1912.				Summer Six Months, April — September, 1912.				12 Months, Oct., 1911—Sept., 1912.  Per cent. of Average.
		Rainfall. in.	Aver- age.	Difference from Average.	Per cent. of Aver.	Rainfall. in.	Aver- age.	Difference from Average.	Per cent. of Aver.	
VII.	Revesby .....	14.36	12.59	+ 1.77	114	17.12	12.56	+ 4.56	136	125
"	Lincoln, Doddington .....	14.31	11.42	+ 2.89	125	16.95	12.17	+ 4.78	139	133
"	Mickleover Manor .....	17.05	12.75	+ 4.30	134	19.27	13.90	+ 5.37	139	136
VIII.	Northwich, Highfield .....	19.35	14.98	+ 4.37	129	16.21	15.70	+ .51	103	116
"	Chatburn, Middlewood .....	27.41	23.39	+ 4.02	117	23.10	20.28	+ 2.82	114	116
"	Southport, Hesketh Park .....	20.57	16.73	+ 3.84	123	17.75	15.97	+ 1.78	111	117
IX.	Sheffield, Redmires Reservoir .....	27.12	22.20	+ 4.92	122	25.93	19.11	+ 6.82	136	128
"	Wetherby, Ribston Hall .....	20.23	13.31	+ 6.92	152	19.16	13.56	+ 5.60	141	147
"	Hull, Pearson Park .....	15.25	13.17	+ 2.08	116	18.26	13.25	+ 5.01	138	127
"	Scarborough, Osgodby .....	17.64	14.17	+ 3.47	125	16.22	12.23	+ 3.99	133	128
X.	Darlington, Cleveland Parade .....	17.04	12.59	+ 4.45	135	19.42	13.18	+ 6.24	147	141
"	Newcastle, Town Moor .....	16.85	13.92	+ 2.93	121	17.73	14.02	+ 3.71	126	124
"	Howick Hall .....	19.06	14.91	+ 4.15	128	19.86	13.87	+ 5.99	143	135
"	Borrowdale, Seathwaite .....	98.72	76.47	+ 22.25	129	49.08	53.01	— 3.93	93	114
"	Appleby, Castle Bank .....	25.19	18.62	+ 6.57	135	20.51	15.79	+ 4.72	130	133
XI.	Abergavenny, Larchfield .....	37.68	20.77	+ 16.91	181	22.81	16.34	+ 6.47	140	163
"	Ystalyfera, Wern School .....	55.67	36.79	+ 18.88	151	31.74	27.25	+ 4.49	117	136
"	Cardiff, Ely .....	35.25	23.26	+ 11.99	152	24.12	19.02	+ 5.10	127	140
"	Haverfordwest Castle .....	43.67	27.12	+ 16.55	161	19.98	19.69	+ .29	101	136
"	Aberystwyth, Gogerddan .....	33.32	24.58	+ 8.74	135	22.56	20.88	+ 1.68	108	123
"	Birmingham W.W., Tyrnynydd .....	49.94	37.20	+ 12.74	134	26.23	24.86	+ 1.37	106	123
"	Bala .....	45.09	31.10	+ 13.99	145	25.53	21.08	+ 4.45	121	135
"	Llandudno .....	18.97	16.56	+ 2.41	115	16.25	13.80	+ 2.45	118	116
"	Holyhead .....	24.91	19.96	+ 4.95	125	14.63	15.06	— .43	97	113
"	Douglas .....	27.55	23.40	+ 4.15	118	16.65	18.15	— 1.50	92	106
XII.	Auchencarn, Torr House .....	33.58	25.53	+ 8.05	132	23.51	21.27	+ 2.24	111	122
"	Drumlanrig Castle .....	36.39	25.17	+ 11.22	145	17.05	18.54	— 1.49	92	122
"	Canonbie, Byreburnfoot .....	29.38	23.47	+ 5.91	125	18.25	19.09	— .84	96	112

*Seasonal Rainfall, 1911-1912, in Relation to the Average, 1875-1909—(continued.)*

Div.	Stations.	Winter Six Months, October, 1911—March, 1912.				Summer Six Months, April—September, 1912.				12 Months, Oct., 1911—Sept., 1912.	
		Rainfall.		Difference from Average.		Rainfall.		Difference from Average.		Per cent. of Aver.	Per cent. of Average.
		in.	in.	Aver. age.	in.	in.	in.	Aver. age.	in.		
XIII.	North Esk Reservoir .....	27·00	21·46	+ 5·54	126	19·20	18·29	105	·91	105	116
XIV.	Marchmont House .....	22·00	17·06	+ 4·94	129	16·32	16·70	98	·38	98	113
	Airdrie, Hillend Reservoir .....	21·56	19·99	+ 1·57	108	17·13	17·73	97	·60	97	103
" "	Girvan, Pinnure .....	38·52	28·37	+ 10·15	136	19·48	21·40	91	— 1·92	91	117
	Loch Thom .....	47·08	36·37	+ 10·71	129	30·04	28·10	107	+ 1·94	107	120
XV.	Inveraray, Newtown .....	46·04	40·92	+ 5·12	113	25·39	27·75	91	— 2·36	91	104
" "	Islay, Eallabus .....	31·96	28·38	+ 3·58	113	20·82	20·41	102	+ ·41	102	108
	Mull, Quinish .....	31·14	32·98	— 1·84	94	22·06	23·59	94	— 1·53	94	94
XVI.	Loch Leven Sluices .....	22·60	19·86	+ 2·74	114	16·62	16·68	100	— ·06	100	107
" "	Balquhadder, Stronvar .....	56·00	45·08	+ 10·92	124	25·07	28·69	87	— 3·62	87	110
	Blair Atholl .....	27·65	17·91	+ 9·74	154	12·47	14·44	86	— 1·97	86	124
" "	Dundee, Eastern Necropolis .....	15·59	14·08	+ 1·51	111	13·76	14·56	94	— ·80	94	102
	Fettercairn, The Burn .....	26·21	18·36	+ 7·85	143	13·41	16·39	82	— 2·98	82	114
XVII.	Braemar, Bank .....	28·83	19·11	+ 9·72	151	14·85	15·82	94	— ·97	94	125
" "	Aberdeen, Cranford House .....	23·12	17·32	+ 5·80	133	14·26	15·41	93	— 1·15	93	114
	Keith Station .....	21·79	16·05	+ 5·74	136	19·75	17·35	114	+ 2·40	114	124
" "	Cawdor .....	14·85	14·77	+ ·08	101	14·56	14·56	100	·00	100	100
	Fort Augustus, St. Benedict's .....	25·90	27·84	— 1·94	93	17·72	16·69	106	+ 1·03	106	98
XVIII.	Fort William, Atholl Bank .....	43·62	46·72	— 3·10	93	26·10	29·08	90	— 2·98	90	92
" "	North Uist, Lochmaddy .....	28·08	28·38	— ·30	99	18·49	19·55	95	— 1·06	95	97
	Loch Torridon, Bendauph .....	42·82	51·38	— 8·56	83	28·09	32·55	86	— 4·46	86	84
" "	Stornoway .....	29·00	30·03	— 1·03	97	19·91	18·37	108	+ 1·54	108	101
	Dunrobin Castle .....	15·66	17·46	— 1·80	90	16·63	14·44	115	+ 2·19	115	101
XIX.	Thurso, Holburn Head .....	17·43	18·99	— 1·56	92	14·78	13·72	108	+ 1·06	108	98
" "	Glannire, Lota Lodge .....	32·79	25·64	+ 7·15	128	17·59	18·44	95	— ·85	95	114
	Killarney, District Asylum .....	43·19	33·49	+ 9·70	129	20·74	21·32	97	— ·58	97	117
" "	Valencia, Glanleum .....	47·09	32·08	+ 15·01	147	20·93	23·93	87	— 3·00	87	121
	Waterford, Brook Lodge .....	32·36	21·72	+ 10·64	149	18·46	17·85	103	+ ·61	103	128

## Seasonal Rainfall, 1911-1912, in Relation to the Average, 1875-1909—(continued).

Div.	Stations.	Winter Six Months, October, 1911—March, 1912.				Summer Six Months, April — September, 1912.				12 Months, Oct., 1911—Sept., 1912.
		Rainfall.	Aver- age.	Difference from Average.	Per cent. of Aver.	Rainfall.	Aver- age.	Difference from Average.	Per cent. of Aver.	
XX.	Nenagh, Castle Lough.....	30.05	21.46	in. + 8.59	140	16.66	17.97	in. — 1.31	93	118
"	Ennistymon House .....	30.66	25.03	+ 5.63	123	18.49	21.49	— 3.00	86	106
"	Carrigaholt Castle .....	28.10	19.74	+ 8.36	142	15.59	16.86	— 1.27	92	119
XXI.	Gorey, Courtown House.....	32.84	18.80	+ 14.04	175	20.04	16.19	+ 3.85	124	151
"	Abbey Leix, Blandsfort .....	26.23	18.51	+ 7.72	142	17.74	17.41	+ .33	102	122
"	Dublin, Fitz William Square.....	19.68	13.84	+ 5.84	142	13.86	13.84	+ .02	100	121
"	Mullingar, Belvedere .....	27.28	18.37	+ 8.91	148	17.82	17.78	+ .04	100	125
"	Ardee, Lissrenny .....	24.10	16.58	+ 7.52	145	15.82	16.34	— .52	97	121
XXII.	Tuam, Gardenfield.....	30.29	23.27	+ 7.02	130	16.80	19.42	— 2.62	87	110
"	Crossmolina, Enniscoe .....	35.93	31.04	+ 4.89	116	17.91	21.83	— 3.92	82	102
"	Markree Observatory .....	29.89	22.97	+ 6.92	130	20.23	19.74	+ .49	102	117
XXIII.	Belturbet, Cloverhill .....	26.28	17.24	+ 9.04	152	14.59	16.50	— 1.91	88	121
"	Annagh Observatory .....	20.91	15.52	+ 5.39	135	17.79	16.36	+ 1.43	109	122
"	Seaforde .....	31.24	20.34	+ 10.90	154	20.61	18.57	+ 2.04	111	133
"	Bushmills, Dundarave.....	21.60	19.72	+ 1.88	110	18.13	17.84	+ .29	102	106
"	Ballymena, Harryville.....	28.99	21.49	+ 7.50	135	25.26	19.35	+ 5.91	131	133
"	Omagh, Edenfel.....	25.96	20.45	+ 5.51	127	20.69	18.93	+ 1.76	109	118
"	Buncrana, Rockfort .....	23.61	22.04	+ 1.57	107	18.86	18.85	+ .01	100	104
<hr/>										
Means.	England (43 stations).....	23.70	17.04	+ 6.66	139	18.98	15.17	+ 3.81	125	132
	Wales (9).....	38.29	26.38	+ 11.91	145	22.65	19.78	+ 2.87	115	132
	Scotland (27).....	29.77	26.04	+ 3.73	114	19.10	19.67	— .57	97	107
	Ireland (22).....	29.50	21.79	+ 7.71	135	18.39	18.49	— .10	99	119
	British Isles (102).....	27.88	21.33	+ 6.55	131	19.19	17.52	+ 1.67	110	121

## THE RELATION OF THE TOTAL FALL OF RAIN IN 1912 TO THE AVERAGE.

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THE table at the end of this section gives the rainfall in 1912 at 209 stations distributed over all parts of the country as equally as possible, in comparison with the average rainfall for the period 1875-1909. It also contains in another column the average of the shorter period 1900-1909. In the last column is given the difference of the rainfall of the year 1912 from the 35 years' average, both in inches and in the form of the percentage differences.

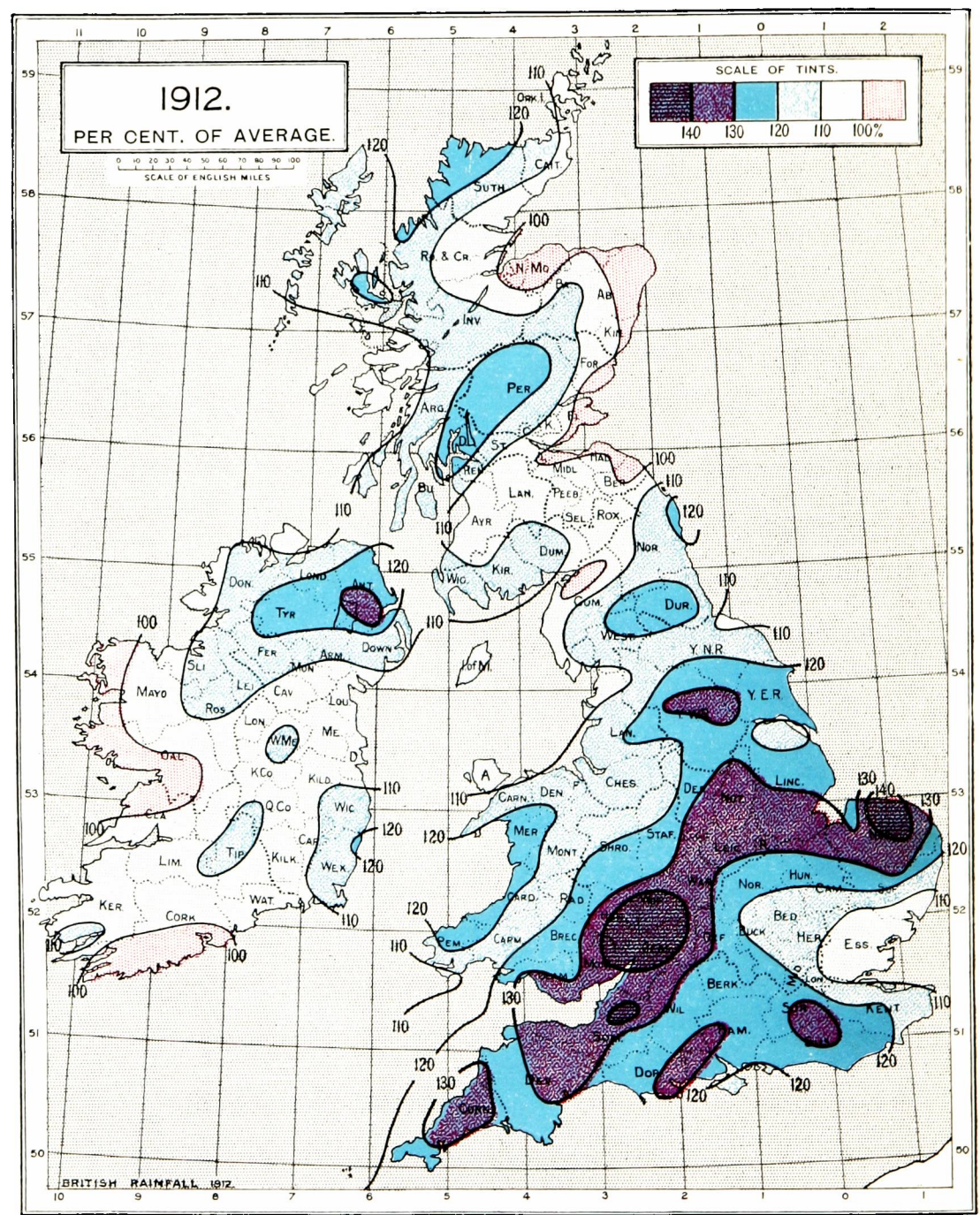
The percentage values for each station were plotted, together with a number of supplementary values for stations which do not appear in the table, on a map, and lines were drawn in the usual manner representing equal intervals of 10 per cent. departure from the average. The successive zones have been coloured on the map exactly as in the coloured maps of the rainfall of each year, in relation to the average, which have appeared in *British Rainfall* since 1906. The only points in which the maps of successive years differ in construction is that, from 1910, the average used has been that of the 35 years 1875-1909, whereas formerly the average of the 30 years 1870-1899 was used as the best then available.

Comparing the map for 1912 with those of previous years one is struck by the similarity between it and that for 1910, the only wet year in the series. In both 1910 and 1912 the relatively highest rainfall occurred in the south of England, culminating in almost the same place in the lower Severn valley. There is, further, a marked coincidence in the relatively less wet district to the north of the Thames estuary and in the bands of high rainfall lying across the English Midlands, the north of England, and from the north of Ireland to central Scotland. The possibility of erroneous records or averages reproducing similar apparent departures from the average year after year is sufficiently discountenanced by the equally strongly marked dissimilarity between the maps in other years. Thus in 1908 and 1911 the Midlands and the south-west of England were centres of low rainfall; in 1909 the Thames estuary was relatively very wet, and although the banded structure of the maps,





RELATION OF RAINFALL OF 1912 TO THE AVERAGE OF 1875-1909.



The area coloured Red had rainfall below the average, that coloured Blue had rainfall above the average.

showing a tendency for alternating strips of high and low rainfall, with their axes running from south-west to north-east, is a common feature, these axes appear to shift somewhat from year to year.

Five main axes of relatively high rainfall may be traced in the map for 1912, and it is possible that other subsidiary maxima lay between them. (i.) Of the most northerly wet axis lying across the Outer Hebrides and the Isle of Skye to Cape Wrath, there are only suggestions, and since, for the most part, the data upon which we have to rely for the north of Scotland are scanty and some of them imperfect, we do not lay much stress upon it. (ii.) The second axis is clearly indicated by a band with more than 10 per cent. excess stretching from Co. Roscommon to Banffshire. Within this band more than 20 per cent. excess occurred over two large patches, one in the north-east of Ireland, the other in the centre of Scotland; in southern Antrim the rainfall exceeded the average by 30 per cent. There are indications of a possible additional wet band situated between numbers ii. and iii., but if it exists it is ill defined. In this suggested axis more than 10 per cent. excess apparently fell on a small area in central Ireland and also over a part of the south of Scotland from Galloway to Dumfriesshire; more than 10 per cent. excess also occurred in the northern counties of England, with 20 per cent. above the average in Durham and Northumberland. There was, however, a small area around Carlisle where the rainfall of the year failed to reach the average. (iii.) The third main wet axis stretched from the south-east coast of Ireland to the East Riding of Yorkshire, with its wettest spots round Cardigan Bay and in the West Riding, where a considerable area in the neighbourhood of Leeds probably had an excess of more than 30 per cent. It is not of course possible to say with certainty that this wet band continued without a break across the Irish Sea, but the high rainfall at one station on the coast of Wexford suggests that this was most probably the case. (iv.) The chief interest in the year's rainfall centres round the strip of extremely high rainfall which occupied the south-west, the centre and the east of England. The line limiting the area with an excess of 20 per cent. runs unbroken from Land's End to Flamborough Head, and to the south-east of this line the rainfall rapidly increased, more than 30 per cent. excess falling beyond a line which stretched, with one slight interruption in Devonshire, from St. Ives Bay to the Wash. There was a still higher fall, the excess being more than 40 per cent., on two, or possibly three,

intensely wet patches, the largest in the lower Severn valley, affecting chiefly Monmouthshire and Gloucestershire, the second in the north of Norfolk and the other, which is less clearly established, on part of the Mendip Hills. The Norfolk area may be attributed entirely to the great rainfall of August 25th-26th, and the wedge-shaped intrusion of the area with less than 30 per cent. excess which appears on the east of the Wash coincides almost exactly with the area over which that storm was less severe, as shown by the coloured map of the distribution of the rainfall on that day which appears in Part I. of this volume. The more westerly wet patches were the result of persistently wet weather during both the summer and the winter months. (v.) The most southerly wet strip makes itself evident in an extension of the area with more than 20 per cent. excess over the south-eastern counties to Mid-Kent; patches with 30 per cent. excess appeared between Swanage and Winchester, and also on the borders of Surrey and Sussex.

The only parts of the map where the pink colour occurs, indicating a deficiency of rainfall during the year, are a long narrow strip of the east coast of Scotland from the Moray Firth to Berwickshire, the small area near Carlisle already mentioned, and part of the east and south of Ireland. It is impossible to speak with any certainty of the relative rainfall of the two areas in Ireland since the records upon which we must depend are few and far between, and the average values are in most cases incapable of being tested, so that we do not refer to this part of the map with the same confidence as the remainder. The rainfall of the year was probably not greatly in excess of the average in Essex, but there is no evidence that it fell below the average at any point in this comparatively dry patch.

## ABSTRACT.

COUNTRIES.	No. of Records utilized.	Average. 10 years 1900-09.	Average. 35 years 1875-1909.	1912.	Diff. from Average 1875-1909.	
					Amount.	Per cent.
England .....	90	in. 31·12	in. 32·06	in. 39·31	in. 7·25	+ 23
Wales .....	16	46·51	47·18	56·19	9·01	+ 19
England and Wales...	106	33·44	34·34	41·85	7·51	+ 22
Isle of Man .....	1	41·35	41·55	41·77	·22	+ 1
Scotland .....	58	45·29	44·31	49·01	4·70	+ 11
Ireland .....	44	40·64	40·63	44·06	3·43	+ 8
British Isles .....	209	38·28	38·47	44·31	5·84	+ 15

The general values for the countries, taken from the lists at the end of the section, are brought together in the foregoing summary. As will be readily gathered from the map and the description we have given, the rainfall was most excessive in England, where the departure from the average amounted to 23 per cent. ; for Wales there was an excess of 19 per cent., the fall for England and Wales taken together being 22 per cent. above the average. Scotland had an excess of 11 per cent., and Ireland an excess of 8 per cent. For the British Isles as a whole the year had an excess of 5·84 in., or 15 per cent. The average values which appear in the Abstract are probably very near the general average values for the countries and differ slightly from those used in the rough comparison on p. [198]. The latter were deduced several years ago by cartographical methods and refer to the 30 years, 1870–1899. They have been used as a rough standard for comparison for several years, and until we have secured definitely superior data we prefer to continue to use them for this purpose. For Scotland and Ireland there is little doubt that the records available in the earlier years were not sufficiently representative to yield true general values, but for England and Wales the data may be regarded as reasonably comparable throughout. To make allowance for the defect in Scotland and Ireland, corrected values for the British Isles are added in a supplementary column.

In the 32 years over which the comparison extends two only, 1882 and 1903, were wetter than 1912 in England and Wales, and of these 1882 had only 1 per cent. more rain. For the British Isles, as far as the corrected values can be trusted, the same two years were the only wetter ones, but their excess over 1912 was greater, viz. 5 per cent. in 1882 and 13 per cent. in 1903. It should be noted that the comparison does not extend back far enough to take account of several extremely wet years in the decade 1871–1880, several of which, including certainly 1872 and probably 1877 and 1879, must have had greater general excesses.

We have called attention on many occasions to the well marked recurrence of one wet year following two dry years which held good in England and Wales for 21 years from 1889 to 1909 and for the whole of the British Isles from 1889 to 1905. In 1910, for the first time since this period commenced, a wet year in England and Wales followed immediately on another wet year, 1909, and we pointed out at the time that the sequence had at last broken down. It is probable that this was the case and that the phase, to whatever



*Rough Comparison of the Rainfall for 32 Years ; based on assumed average values.*

	ENGLAND & WALES.			SCOTLAND.			IRELAND.			BRITISH ISLES.			Corrected Values.
	Fall.	Diff. from Average.		Fall.	Diff. from Average.		Fall.	Diff. from Average.		Fall.	Diff. from Average.		
		Amt.	p.c.		Amt.	p.c.		Amt.	p.c.		Amt.	p.c.	
Average	in. 33·92	in. ...	...	in. 46·85	in. ...	...	in. 42·28	in. ...	...	in. 39·25	in. ...	...	
Year.													
1881	35·81	1·89	+ 6	38·09	8·76	—19	36·11	6·17	—15	36·26	2·99	— 8 + 2	
1882	41·91	7·99	+24	44·75	2·10	— 4	40·83	1·45	— 3	42·42	3·17	+ 8 +18	
1883	36·82	2·90	+ 8	39·81	7·04	—15	39·91	2·37	— 6	37·51	1·74	— 4 + 6	
1884	29·24	4·68	—14	40·25	6·60	—14	35·50	6·78	—16	31·56	7·69	—20 —10	
1885	33·25	·67	— 2	33·78	13·07	—28	35·52	6·76	—16	33·41	5·84	—15 — 5	
1886	37·53	3·61	+11	37·31	9·54	—20	41·61	·67	— 2	37·59	1·66	— 4 + 6	
1887	23·60	10·32	—30	29·14	17·71	—38	24·72	17·56	—42	24·80	14·45	—37 —27	
1888	31·66	2·26	— 7	37·10	9·75	—21	39·61	2·67	— 6	32·98	6·27	—16 — 6	
1889	31·10	2·82	— 8	32·81	14·04	—30	33·49	8·79	—21	31·52	7·73	—20 —10	
1890	30·07	3·85	—11	46·56	·29	— 1	38·54	3·74	— 9	36·20	3·05	— 8 — 3	
1891	37·36	3·44	+10	43·59	3·26	— 7	39·35	2·93	— 7	39·41	·16	+ 0 + 5	
1892	30·35	3·57	—11	42·55	4·30	— 9	39·13	3·15	— 7	35·42	3·83	—10 — 5	
1893	28·21	5·71	—17	41·67	5·18	—11	32·50	9·78	—23	32·63	6·62	—17 —12	
1894	36·14	2·22	+ 6	44·20	2·65	— 6	40·82	1·46	— 3	39·18	·07	— 0 + 5	
1895	31·32	2·60	— 8	39·32	7·53	—16	37·63	4·65	—11	34·66	4·59	—12 — 7	
1896	30·94	2·98	— 9	42·11	4·74	—10	37·35	4·93	—12	35·06	4·19	—11 — 6	
1897	34·14	·22	+ 1	43·70	3·15	— 7	43·53	1·25	+ 3	38·38	·87	— 2 + 3	
1898	29·42	4·50	—13	49·82	2·97	+ 6	38·40	3·88	— 9	36·46	2·79	— 7 — 2	
1899	31·52	2·40	— 7	47·82	·97	+ 2	40·04	2·24	— 5	37·28	1·97	— 5 — 5	
1900	36·37	2·45	+ 7	53·38	6·53	+14	45·48	3·20	+ 8	42·34	3·09	+ 8 + 8	
1901	29·83	4·09	—12	41·04	5·81	—12	40·33	1·95	— 5	34·85	4·40	—11 —11	
1902	28·01	5·91	—17	38·73	8·12	—17	37·56	4·72	—11	32·71	6·54	—17 —17	
1903	43·81	9·89	+29	59·05	12·20	+26	51·11	8·83	+21	49·26	10·01	+26 +26	
1904	30·25	3·67	—11	43·70	3·15	— 7	40·67	1·61	— 4	35·81	3·44	— 9 — 9	
1905	28·80	5·12	—15	43·04	3·81	— 8	35·80	6·48	—15	33·92	5·33	—14 —14	
1906	34·23	·31	+ 1	48·69	1·84	+ 4	37·85	4·43	—10	38·71	·54	— 1 — 1	
1907	33·61	·31	— 1	47·33	·52	+ 1	41·55	·73	— 2	38·87	·38	— 1 — 1	
1908	30·65	3·27	—10	45·09	1·76	— 4	40·63	1·65	— 4	36·44	2·81	— 7 — 7	
1909	35·30	1·38	+ 4	45·59	1·26	— 3	38·13	4·15	—10	38·56	·69	— 2 — 2	
1910	38·53	4·61	+14	46·47	·38	— 1	44·23	1·95	+ 5	41·77	2·52	+ 6 + 6	
1911	32·60	1·32	— 4	45·35	1·50	— 3	40·54	1·74	— 4	37·65	1·60	— 4 — 4	
1912	41·85	7·93	+23	49·01	2·16	+ 5	44·06	1·78	+ 4	44·31	5·06	+13 +13	

cause it may have been due, had begun to give place to some other, but it is a significant fact that the very wet year 1912 falls into place in the old order, maintaining the tradition that every third year should be wetter than the two preceding.

**COMPARISON OF THE RAINFALL OF THE YEAR 1912  
WITH THE AVERAGE OF THE PERIODS  
1900-09 & 1875-1909.**

**ENGLAND.**

DIV.	COUNTY and river-division.	STATION.	Average 1900-09.	Average 1875- 1909.	Depth in 1912.	Difference from Average 1875-1909.	
						Per Amount.	cent
			in.	in.	in.	in.	
I.	London .....	2 St. Pancras (Camden Square)	24·57	25·11	27·88	2·77	+ 11
II.	Surrey .....	5 Dorking (Denbies) .....	32·31	31·83	41·92	10·09	+ 32
	" .....	6 Haslemere (Hazlehurst) .....	35·84	36·15	45·60	9·45	+ 26
	Kent .....	1 Tenterden (View Tower).....	26·34	27·64	33·30	5·66	+ 20
	" .....	2 Margate (Cliftonville) .....	21·03	23·29	25·29	2·00	+ 9
	" .....	3 Selling (Harefield) .....	29·86	29·85	35·61	5·76	+ 19
	" .....	4 Tonbridge (Beech Hurst).....	26·79	27·31	32·46	5·15	+ 19
	Sussex .....	2 Arundel (Patching) .....	29·61	30·48	38·88	8·40	+ 28
	" .....	5 Hailsham .....	30·02	30·48	38·55	8·07	+ 26
	Hampshire .....	1 Ventnor (Flint Cottage) .....	27·95	28·97	33·76	4·79	+ 17
	" .....	8 Basingstoke (Sherborne St. John)	29·27	29·17	36·91	7·74	+ 27
III.	Hertfordshire .....	1 Tring (Cowroast Lock) .....	28·73	28·89	33·54	4·65	+ 16
	" .....	3 Royston (Therfield Rectory)..	24·64	25·56	29·85	4·29	+ 17
	Buckinghamshire ...	4 Slough (Langley) .....	23·52	24·18	30·11	5·93	+ 25
	" .....	5 Buckingham (Adstock Fields)	24·25	25·96	29·75	3·79	+ 15
	Oxfordshire .....	3 Oxford (Magdalen College)...	23·31	24·58	30·86	6·28	+ 26
	Northampton .....	4 Wellingborough (Croyland Abbey)	23·32	25·17	30·56	5·39	+ 21
	Cambridgeshire ...	2 Cambridge (Quy Hall).....	22·00	23·11	28·46	5·35	+ 23
	" .....	2 March .....	22·37	23·03	30·55	7·52	+ 33
IV.	Essex .....	3 Shoeburyness .....	18·69	19·28	20·19	·91	+ 5
	" .....	4 Chelmsford (High Street).....	22·66	23·02	24·43	1·41	+ 6
	" .....	6 Langham Rectory .....	23·96	24·50	26·25	1·75	+ 7
	" .....	7 Newport .....	24·06	24·92	28·22	3·30	+ 13
	Suffolk .....	3 Rendlesham Hall.....	22·20	23·68	24·72	1·04	+ 4
	" .....	5 Walsham-le-Willows .....	23·58	25·55	34·15	8·60	+ 34
	Norfolk .....	1 Geldeston [Beccles] .....	22·74	23·73	29·23	5·50	+ 23
	" .....	1 Cawston Rectory .....	25·29	26·91	38·72	11·81	+ 44
	" .....	3 Blakeney .....	22·64	23·83	34·30	10·47	+ 44
	" .....	4 Swaffham .....	24·61	26·42	34·32	7·90	+ 30
V.	Wiltshire .....	3 Warminster (Rye Hill) .....	35·21	36·75	47·46	10·71	+ 29
	" .....	4 Landford (Northlands) .....	30·04	30·11	41·01	10·90	+ 36
	" .....	6 New Swindon .....	26·38	28·05	34·61	6·56	+ 23
	Dorset .....	1 Evershot (Melbury House) ...	37·70	38·20	47·06	8·86	+ 23
	" .....	3 Wareham (South Street).....	32·10	31·39	43·13	11·74	+ 37
	South Devon .. ...	2 Devonport (Rowdens Res.)...	33·78	35·58	45·80	10·22	+ 29
	" ..	2 Polapit Tamar [Launceston]..	38·62	38·27	49·99	11·72	+ 31
	" ..	4 Ashburton (Druid House) ...	48·68	51·64	66·34	14·70	+ 28
	" ..	6 Cullompton .....	33·22	35·18	47·61	12·43	+ 36
	" ..	7 Sidmouth (Sidmount) .....	30·58	32·00	41·23	9·23	+ 29
	North Devon .. ...	1 Lynton (Lee Abbey).....	37·90	37·92	51·90	13·98	+ 37
	" ..	2 Barnstaple (N.Devon Athenæum)	35·64	37·14	48·06	10·92	+ 29

## ENGLAND—(continued).

DIV.	COUNTY and river-division.	STATION.	Average 1900-09.	Average 1875- 1909.	Depth in 1912.	Difference from Average 1875-1909. Per Amount. cent
			in.	in.	in.	in.
V.	North Devon ..... 3	Okehampton (Oaklands).....	43·95	46·25	55·79	9·54 + 21
	„ Cornwall ..... 2	Falmouth (New Observatory)	41·95	42·69	55·51	12·82 + 30
	„ „ ..... 2	St. Austell (Trevarna).....	43·85	46·21	60·47	14·26 + 31
	„ „ ..... 4	Scilly (St. Mary's) .....	30·44	32·36	36·45	4·09 + 13
	„ Somerset ..... 2	Street.....	28·73	29·94	37·08	7·14 + 24
VI.	Gloucestershire ... 3	Stroud (Upfield) .....	29·03	29·81	44·31	14·50 + 49
	„ „ ..... 5	Clifton (Pembroke Road) ...	32·43	34·88	46·60	11·72 + 34
	„ „ ..... 7	Great Barrington .....	28·59	29·83	41·57	11·74 + 39
	„ Herefordshire ..... 1	Kington (Lynhales).....	31·55	33·28	42·85	9·57 + 29
	„ Shropshire ..... 3	Church Stretton (Wolstaston)	31·74	32·41	39·08	6·67 + 21
	„ Staffordshire..... 2	Market Drayton (Old Springs)	29·47	29·41	35·31	5·90 + 20
	„ „ ..... 3	Wolverhampton (Wrottesley)	24·65	26·39	32·02	5·63 + 21
	„ „ ..... 5	Cheadle (The Heath House)	32·10	32·65	38·91	6·26 + 19
	„ Worcestershire..... 2	Stourport (Lincombe Lock)..	25·09	26·17	35·32	9·15 + 35
	„ Warwickshire ..... 1	Coventry (Kingswood) .....	27·50	28·98	37·69	8·71 + 30
VII.	Leicestershire ... 4	Thornton Reservoir.....	25·73	26·44	35·04	8·60 + 33
	„ Rutland..... 3	Market Overton .....	26·74	27·10	37·00	9·90 + 37
	„ Lincolnshire..... 3	Boston (Black Sluice, Skirbeck).	23·21	23·35	31·03	7·68 + 33
	„ „ ..... 4	Louth (Westgate).....	27·30	28·74	35·11	6·37 + 22
	„ „ ..... 5	Brigg .....	25·83	26·21	30·41	4·20 + 16
	„ „ ..... 6	Lincoln (Doddington).....	22·63	23·59	30·27	6·68 + 28
	„ Nottinghamshire ... 4	Eastwood Colliery .....	27·78	28·46	38·74	10·28 + 36
	„ „ ..... 5	Worksop (Hodsock Priory)...	23·15	24·46	33·45	8·99 + 37
VIII.	Cheshire ..... 1	Torrside Reservoir .....	42·95	44·46	53·14	8·68 + 19
	„ „ ..... 2	Northwich (Highfield).....	30·07	30·68	34·29	3·61 + 12
	„ South Lancashire... 3	Bolton (Smithills Hall) .....	46·80	46·29	56·12	9·83 + 21
	„ Central „ ..... 1	Stoneyhurst College.....	45·88	46·79	54·13	7·34 + 16
	„ „ „ ..... 3	Southport (Hesketh Park) ...	31·13	32·70	37·13	4·43 + 14
	„ North „ ..... 1	Barrow-in-Furness .....	37·01	38·30	39·31	1·01 + 3
	„ „ „ ..... 4	Wray Vicarage .....	43·74	44·34	46·16	1·82 + 4
IX.	Yorks, West Riding 7	Sheffield (Redmires Res.) ...	40·25	41·31	50·45	9·14 + 22
	„ „ „ „ ..... 11	Wetherby (Ribston Hall).....	28·10	26·87	35·81	8·94 + 33
	„ „ „ „ ..... 11	Pateley Bridge (Castle Stead)	37·42	40·59	50·93	10·34 + 25
	„ „ East „ ..... 2	Pocklington (Warter) .....	27·43	29·75	38·01	8·26 + 28
	„ „ „ „ ..... 3	Patrington .....	22·40	24·05	29·44	5·39 + 22
	„ „ North „ ..... 1	Leyburn (Bolton Hall).....	31·72	32·79	38·53	5·74 + 18
	„ „ „ „ ..... 2	Rounton Grange .....	25·56	25·82	30·36	4·54 + 18
	„ „ „ „ ..... 4	Scarborough (Osgodby) .....	24·09	26·40	31·23	4·83 + 18
	„ „ „ „ ..... 5	Guisborough (Lockwood Beck)	31·89	33·13	36·14	3·01 + 9
	„ „ „ „ ..... 6	East Layton Hall.....	27·99	28·71	34·06	5·35 + 19
X.	Durham..... 2	Weardale W.W. (Waskerley)	32·19	32·04	40·00	7·96 + 25
	„ „ ..... 2	Sunderland (W. Hendon Ho.)	25·29	26·07	31·01	4·94 + 19
	„ Northumberland ... 4	Hallington (Fawcett) .....	28·11	28·95	31·70	2·75 + 10
	„ „ ..... 5	Rothbury (Cragside) .....	33·66	34·24	39·40	5·16 + 15
	„ „ ..... 5	Howick Hall.....	29·69	28·78	35·62	6·84 + 24
	„ Cumberland ..... 1	Carlisle (Spital Cemetery) ...	33·21	32·17	31·69	·48 — 1
	„ „ ..... 2	Borrowdale (Seathwaite).....	126·16	129·48	143·15	13·67 + 11
	„ „ ..... 3	Whitehaven (Irish Street) ...	43·57	41·70	44·20	2·50 + 6
	„ Westmorland ..... 1	Appleby (Castle Bank) .....	35·15	34·41	42·83	8·42 + 24



## WALES.

DIV.	COUNTY and river-division.	STATION.	Average 1900-09.	Average 1875- 1909.	Depth in 1912.	Difference from Average 1875-1909.	
						Per Amount, cent	
			in.	in.	in.	in.	
XI.	Monmouth .....	3 Abergavenny (Larchfield) ...	34·83	37·11	51·39	14·28	+ 39
„	Glamorgan .....	3 Ystalyfera (Wern School)....	63·92	64·04	82·34	18·30	+ 29
„	„ .....	5 Cardiff (Ely Pumping Station)	41·02	42·28	56·38	14·10	+ 33
„	Carmarthen .....	2 Carmarthen (The Friary).....	47·85	48·80	55·47	6·67	+ 14
„	„ .....	2 Llanwrda (Dolaucothy) .....	55·89	56·60	66·14	9·54	+ 17
„	Pembroke.....	3 St. Davids.....	37·72	36·75	42·09	5·34	+ 14
„	„ .....	4 Pembroke (Stackpole Court)	37·83	40·26	43·83	3·57	+ 9
„	Cardigan .....	2 Aberystwyth (Gogerddan) ...	45·81	45·46	56·75	11·29	+ 25
„	Brecon .....	4 Nanthir Reservoir [Aberdare]	57·23	59·39	73·26	13·87	+ 23
„	Radnor .....	1 Birmingham WW (Tyrmynydd)	59·27	62·06	70·49	8·43	+ 14
„	Montgomery.....	5 Lake Vyrnwy (Bank Cynon Isaf)	54·83	55·33	62·82	7·49	+ 14
„	Flint .....	1 Bagillt (Dee Bank Lead Wks.)	28·32	28·47	31·51	3·04	+ 11
„	Merioneth.....	1 Llanderfel (Palé Gardens) ...	47·34	47·21	54·96	7·75	+ 16
„	„ .....	3 Tan-y-bwlch (The Gardens)..	62·93	62·25	77·46	15·21	+ 24
„	Carnarvon .....	2 Llandudno.....	29·76	30·36	33·03	2·67	+ 9
„	Anglesey .....	Llanerchymedd (Llywdiarth Esgob)	39·66	38·57	41·19	2·62	+ 7

## ISLE OF MAN.

XI.	Isle of Man .....	Douglas (Borough Cemetery)	41·35	41·55	41·77	·22	+ 1
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## SCOTLAND.

XII.	Wigtown .....	3 Stoneykirk (Ardwell House)..	38·52	36·40	43·07	6·67	+ 18
„	Kirkcudbright .....	3 Dalry (Glendarroch) .....	55·17	52·60	57·80	5·20	+ 10
„	„ .....	4 Auchencairn (Torr House) ...	48·94	46·80	55·37	8·57	+ 18
„	Dumfries .....	3 Durrisdeer (Drumlanrig Gdns.)	46·22	43·71	51·08	7·37	+ 17
„	„ .....	4 Moffat (Craigielands) .....	53·06	53·20	55·72	2·52	+ 5
„	Roxburgh ..	3 Hawick (Branxholme).....	32·27	33·80	36·66	2·86	+ 8
XIII.	Selkirk .....	5 Galashiels (Stantling Craigs)	33·63	34·75	36·49	1·74	+ 5
„	Peebles .....	3 N. Esk Reservoir [Penicuik]	39·94	39·75	43·35	3·60	+ 9
„	Berwick.....	4 Marchmont House .....	32·52	33·76	31·93	1·83	— 5
„	Haddington .....	4 Prestonkirk (Smeaton) .....	26·00	25·47	25·94	·47	+ 2
XIV.	Lanark .....	1 Biggar (Cambus Wallace) ...	29·09	30·14	31·81	1·67	+ 6
„	„ .....	4 Airdrie (Hillend Reservoir)...	38·13	37·72	38·21	·49	+ 1
„	Ayr .....	3 Kilmarnock (North Craig Res.)	45·21	40·92	43·30	2·38	+ 6
„	„ .....	8 Girvan (Pinmore) .....	53·19	49·77	53·47	3·70	+ 7
„	Renfrew .....	2 Glasgow (Queen's Park) .....	38·60	35·97	39·01	3·04	+ 8
„	„ .....	3 Shaws W. W. (Loch Thom)...	67·46	64·47	82·58	18·11	+ 28
XV.	Bute .....	1 Rothesay (Crichton Road) ...	54·65	52·10	61·86	9·76	+ 19
„	Argyll .....	2 Loch Sunart (Glenborrodale)	69·47	66·99	72·73	5·74	+ 9
„	„ .....	7 Kilmelfort (Arduaine) .....	59·13	57·60	62·78	5·18	+ 9
„	„ .....	9 Mull of Kintyre .....	46·02	41·42	49·01	7·59	+ 18
„	„ .....	11 Inveraray (Newtown) .....	71·25	68·67	82·01	13·34	+ 19
„	„ .....	14 Islay (Eallabus) .....	51·26	48·79	53·99	5·20	+ 11
„	„ .....	14 Mull (Quinish) .....	57·55	56·57	56·46	·11	— 0
XVI.	Kinross .....	2 Loch Leven Sluice ..	36·70	36·54	39·05	2·51	+ 7
„	Fife .....	2 Colinsburgh (Balcarres) .....	32·78	33·37	30·80	2·57	— 8

## SCOTLAND—(continued.)

DIV.	COUNTY and river-division.	STATION.	Average 1900-09.	Average 1875- 1909.	Depth in 1912.	Difference from Average 1875-1909. Per Amount. cent
			in.	in.	in.	in.
XVI.	Perth .....	3 Balquhiddel (Stronvar) .....	74·43	73·77	91·00	17·23 + 23
	„ .....	14 Blair Atholl .....	33·36	32·35	40·10	7·75 + 24
	„ .....	15 Blairgowrie (Ballintuim Ho.) .....	38·58	37·68	45·36	7·68 + 20
	Forfar .....	1 Kirriemuir (Lintrathen) .....	35·32	35·33	39·54	4·21 + 12
	„ .....	2 Dundee (Eastern Necropolis) .....	27·72	28·64	28·09	·55 — 2
XVII.	Kincardine .....	1 Fettercairn (The Burn) .....	35·13	34·75	36·47	1·72 + 5
	Aberdeen .....	1 Braemar (Bank) .....	34·11	34·93	39·64	4·71 + 13
	„ .....	1 Logie Coldstone (Loanhead). .....	32·72	30·67	30·97	·30 + 1
	„ .....	1 Aberdeen (Cranford House).. ..	32·70	32·73	32·44	·29 — 1
	„ .....	4 New Deer Schoolhouse .....	32·89	34·74	31·40	3·34 — 10
	Banff .....	2 Keith Station .....	35·28	33·40	36·44	3·04 + 9
	Moray .....	3 Grantown-on-Spey .....	32·65	31·23	30·59	·64 — 2
	Nairn .....	2 Cawdor .....	29·38	29·33	27·03	2·30 — 8
XVIII.	Inverness .....	3 Kingussie .....	29·66	29·62	33·11	3·49 + 12
	„ .....	6 Fort Augustus (St. Benedict's) ..	45·19	44·53	50·26	5·73 + 13
	„ .....	7 Glenquoich .....	115·15	109·34	124·28	14·94 + 14
	„ .....	9 Drumnadrochit .....	35·09	35·00	38·30	3·30 + 9
	„ .....	13 Arisaig House .....	62·88	61·75	67·01	5·26 + 9
	„ .....	17 Fort William .....	77·59	75·80	83·15	7·35 + 10
	„ .....	18 Skye (Scalpay Island) .....	77·22	74·40	90·86	16·46 + 22
	„ .....	19 N. Uist (Lochmaddy) .....	43·81	47·93	54·89	6·96 + 15
	Ross & Cromarty ..	4 Strathpeffer .....	30·85	30·35	31·37	1·02 + 3
	„ .....	5 Fearn (Lower Pitkerrie) .....	23·49	23·19	23·28	·09 + 0
	„ .....	7 Braemore House .....	61·89	60·02	65·70	5·68 + 9
	„ .....	9 Applecross Gardens .....	60·41	56·08	65·22	9·14 + 16
	„ .....	9 Glencarron .....	87·59	86·50	95·37	8·87 + 10
	„ .....	10 Stornoway .....	50·49	48·40	54·74	6·34 + 13
XIX.	Sutherland .....	1 Invershin .....	34·19	33·17	36·08	2·91 + 9
	„ .....	2 Dunrobin Castle .....	33·07	31·90	33·90	2·00 + 6
	„ .....	4 Cape Wrath .....	35·88	39·58	51·87	12·29 + 31
	Caithness .....	2 Wick .....	31·35	29·88	32·52	2·64 + 9
	„ .....	3 Dunnet Head .....	29·16	29·89	33·99	4·10 + 14
	Orkney .....	Shapinsay (Balfour Castle) ...	30·57	32·13	33·33	1·20 + 4

## IRELAND.

XX.	Cork .....	7 Glanmire (Lota Lodge) .....	41·90	44·08	41·38	2·70 — 94
	„ .....	9 Mallow (Summer Hill) .....	38·20	38·90	42·14	3·24 + 8
	Kerry .....	3 Killarney (District Asylum).. ..	50·48	54·81	56·23	1·42 + 3
	„ .....	4 Darrynane Abbey .....	47·76	49·98	56·27	6·29 + 13
	„ .....	6 Valencia (Glanleam) .....	56·10	56·01	58·43	2·42 + 4
	Waterford .....	3 Waterford (Brook Lodge) ...	40·12	39·57	42·56	2·99 + 8
	Tipperary .....	1 Nenagh (Castle Lough) .....	38·55	39·43	40·22	·79 + 2
	„ .....	3 Clonmel (Bruce Villa) .....	35·90	37·10	38·46	1·36 + 4
	„ .....	4 Roscrea (Timoney Park) .....	36·50	36·00	40·04	4·04 + 11
	Clare .....	2 Ennistymon House .....	47·77	46·52	44·55	1·97 — 4
	„ .....	3 Carrigaholt Castle .....	36·97	36·60	38·86	2·26 + 6
	„ .....	3 Newmarket-on-Fergus (Carrigoran)	41·99	42·00	42·57	·57 + 1
XXI.	Wexford .....	3 Enniscorthy (Ballyhyland) ...	42·13	42·70	48·25	5·55 + 13

## IRELAND—(continued).

DIV.	COUNTY and river-division.	STATION.	Average 1900-09.	Average 1875- 1909.	Depth in 1912.	Difference from Average 1875-1909.	
						Per Amount.	cent
			in.	in.	in.	in.	
XXI.	Wexford .....	4 Gorey (Courtown House) ...	33·34	34·99	42·34	7·35	+ 21
„	Kilkenny .....	2 Kilkenny (Lavistown House)	30·92	31·15	31·22	·07	+ 0
„	Wicklow .....	3 Laragh (Glendalough).....	58·10	58·70	67·27	8·57	+ 15
„	„ .....	4 Bray (Fassaroe).....	39·80	41·10	44·86	3·76	+ 9
„	Carlow .....	2 Carlow (Browne's Hill) ..	34·30	34·36	35·46	1·10	+ 3
„	King's County .....	1 Birr Castle.....	32·77	32·86	34·49	1·63	+ 5
„	Kildare .....	1 Monasterevan (Moore Abbey)	32·18	32·50	33·09	·59	+ 2
„	„ .....	2 Straffan House.....	30·56	31·61	34·25	2·64	+ 8
„	Dublin .....	3 Balbriggan (Ardgillan) .....	28·62	29·57	31·10	1·53	+ 5
„	Meath .....	4 Kells (Headfort) .....	34·25	37·25	37·79	·54	+ 1
„	Westmeath .....	1 Athlone (Twyford) .....	34·99	37·35	40·01	2·66	+ 7
„	„ .....	1 Mullingar (Belvedere).....	35·89	36·15	41·85	5·70	+ 16
„	Louth .....	2 Dundalk (Farndreg).....	31·16	30·91	32·99	2·08	+ 7
XXII.	Galway .....	3 Tuam (Gardenfield).....	44·06	42·69	45·61	2·92	+ 7
„	„ .....	4 Woodlawn.....	42·19	41·50	39·44	2·06	— 5
„	Mayo .....	2 Crossmolina (Enniscoe) .....	54·37	52·87	55·22	2·35	+ 4
„	„ .....	4 Westport (St. Helen's) .....	47·10	46·20	47·69	1·49	+ 3
„	„ .....	6 Cong (The Glebe) .....	49·78	48·90	50·77	1·87	+ 4
„	Sligo .....	2 Collooney (Markree Obs.) ...	44·40	42·71	49·05	6·34	+ 15
XXIII.	Cavan .....	1 Belturbet (Cloverhill) .....	35·52	33·74	37·23	3·49	+ 10
„	Armagh .....	5 Armagh (Observatory).....	32·09	31·88	35·76	3·88	+ 12
„	Down .....	2 Seaforde.....	39·47	38·91	45·56	6·65	+ 17
„	„ .....	4 Donaghadee .....	31·71	31·70	36·12	4·42	+ 14
„	Antrim .....	1 Belfast (Queen's University)..	35·89	33·81	44·43	10·62	+ 31
„	„ .....	3 Bushmills (Dundarave) .....	37·91	37·56	41·46	3·90	+ 10
„	„ .....	5 Ballymena (Harryville) .....	42·52	40·84	53·08	12·24	+ 30
„	Londonderry .....	5 Londonderry (Creggan Res.)	42·94	41·78	47·01	5·23	+ 13
„	Tyrone .....	3 Omagh (Edenfel) .....	42·30	39·38	48·32	8·94	+ 23
„	Donegal .....	3 Dunfanaghy (Horn Head) ...	45·18	44·40	48·94	4·54	+ 10
„	„ .....	5 Killybegs .....	60·95	60·60	62·23	1·63	+ 3
„	„ .....	8 Convoy .....	48·64	45·94	54·02	8·08	+ 18

**EXTREMES OF RAINFALL IN 1912.**

<b>Greatest Rainfall, at Snowdon (Crib Goch) .....</b>	<b>205·17 in.</b>
<b>Least Rainfall, at Stifford (Coppid Hall) .....</b>	<b>19·24 ,,</b>

**ENGLAND.**

GREATEST.		LEAST.	
Div.	in.	Div.	in.
X. The Sty, B.....	196·43	IV. Stifford (Coppid Hall) .....	19·24
„ Styhead Tarn .....	156·20	„ Shoeburyness .....	19·74
„ Borrowdale (Seathwaite).....	144·18	„ Southend (Corporation Obsy.)..	20·50
„ Ullscarf .....	139·10	„ Cold Norton (Latchingdon Rect.)	21·03
„ Dungeon Ghyll .....	129·98	„ Bradwell-on-Sea (Bradwell Hall)	21·06
„ Little Langdale (Fell Foot) ..	122·41	II. Erith (Crossness).....	21·23

**MONMOUTH AND WALES.**

GREATEST.		LEAST.	
Div.	in.	Div.	in.
XI. Snowdon (Crib Goch) .....	205·17	XI. Hawarden Bridge .....	26·47
„ Plynlimon .....	118·70	„ Dyserth Castle.....	28·26
„ Taff Fechan (Neuadd Res.) No.6	117·38	„ Ruthin (Llanbedr Hall).....	28·32
„ Blaenau Festiniog (Oakley Quarries)	115·20	„ Cilcain .....	28·47
„ Rhondda WW (Llyn Fawr Res)	110·46	„ Llanefydd (Plas Uchaf Res.) ..	28·99
„ Clydach Vale (Caes Newydd) ..	108·39	„ Trefnant (Greenfield).....	29·00

**SCOTLAND.**

GREATEST.		LEAST.	
Div.	in.	Div.	in.
XVIII. Loch Quoich (Loan) .....	178·95	XIII. Aberlady Manse .....	22·41
„ „ „ (Kinlochquoich) ..	140·88	XVI. Arbroath (Dishland Hill) .....	22·83
„ Loch Arkaig (Glendessary) ..	132·30	XVII. Forres (Balnaferry).....	22·85
„ Loch Shiel (Glenfinnan) .....	129·59	XVIII. Fearn (Lower Pitkerrie).....	23·28
„ Achnashellach (Glenuaig) ....	124·50	XIII. Gullane (The Warren) .....	23·66
„ Loch Quoich (Glenquoich) ....	124·28	„ St. Abbs (Northfield) .....	23·73

**IRELAND.**

GREATEST.		LEAST.	
Div.	in.	Div.	in.
XX. Gap of Dunloe (Gearahameen)	106·60	XXI. Dublin (Trinity College) .....	25·40
XXII. Aasleagh House .....	88·79	„ „ (Leeson Park).....	26·90
XX. Lough Caragh (Lickeen) .....	80·04	„ „ (Phoenix Park) .....	27·04
„ Kenmare (Derreen).....	79·13	„ Malahide (The Green) .....	27·37
„ „ (Dunkerron Castle) ..	71·23	„ Dublin (FitzWilliam Square) ..	27·65
XXI. Laragh (Glendalough) .....	67·27	„ Glasnevin (Roy. Botanic Gdens.)	27·73

**NOTE.**

Second gauges and those at Lighthouses are excluded from the above, and also those to which a ? has been attached in the General Table. In selecting the minima, records are only used from gauges the receiving surface of which is known to be less than 3 feet above the ground. The highest only of the records from the Snowdon Power Company's gauges in Carnarvonshire has been quoted, and records from the Isles of Scilly and the Channel Islands have been excluded. Italics signify corrected values.

BRITISH RAINFALL, 1912.

PART III.

GENERAL TABLE

OF

TOTAL RAINFALL IN 1912,

AT MORE THAN

5000 STATIONS

IN

GREAT BRITAIN AND IRELAND,

WITH THE NAMES OF

THE OBSERVERS

OR OTHER AUTHORITIES FOR THE OBSERVATIONS.

---

COMPILED UNDER THE DIRECTION OF

HUGH ROBERT MILL,

*Director of the British Rainfall Organization,*

BY

CARLE SALTER,

*Chief Assistant.*

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62, CAMDEN SQUARE, LONDON, N.W.



## EXPLANATORY NOTE.

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The counties are divided up into numbered areas, corresponding to the river-basins. A full description of these river-divisions for England and Wales was given in a special article in Part I. of *British Rainfall, 1910*, (pp. 37—66), and a similar article on the river-divisions of Scotland and Ireland appears in Part I. of *British Rainfall, 1911*, (pp. 49—72), with detailed maps showing all the river-divisions in each Division. These maps are now placed at the beginning of the Divisions to which they refer.

The Divisions in the General Table are shown on the map on p. [206]. They are the same as those adopted by the Registrars General of England and Scotland. The stations in each river-division are arranged nearly in the order of their latitude from South to North.

For convenience, the first name is always that of a place which can be easily found on any large scale map; the second name is added to fix the site of Observation more closely. In a very few instances, when in [ ] instead of ( ), it is that of the nearest town in an adjoining county; *e.g.*, “Haslemere (Courts Hill)” means Courts Hill, near Haslemere, both in one county; but “Geldeston [Beccles]” means Geldeston near Beccles, which is in another county.

In the column headed “diameter,” figures in old-style type indicate the length of the sides of rectangular mouthed gauges.

The letter **D** denotes that a copy of the daily record has been received, that it is complete for the year, and that the printed amount is the correct total of the daily entries. The letter **M** indicates that the gauge is read only on the first of each month. (**R**) denotes that the gauge used is a self-registering or a recording instrument, the correct reading of which depends upon the mechanism being in working order.

A few entries of total rain will be found in italics—indicating that the values have been corrected, *e.g.*, when snow has been lost, when the amount for a short period has been computed from other records, or when the gauge has been moved for a short distance during the year. The rule has been observed that a record is not printed if the gauge has been moved more than a mile, or if there is a greater difference than 50 feet of altitude between the two positions.

A dagger (†) denotes that the rain gauge has been visited and examined by the Editor or one of his assistants. A note of interrogation (?) implies doubt, not necessarily error; it is not intended to cast any suspicion on the accuracy of the Observer. The absence of information is indicated by ...

In the column of altitudes the sign **ℳ** means that a series of levels has been taken from the gauge to an Ordnance Survey bench mark; **I**, that the height has been ascertained approximately from the Ordnance Survey maps; and **B**, that the altitude has been taken by the barometer.

## COUNTY INDEX TO GENERAL TABLE.

### E N G L A N D .

Bedfordshire .....	240	Herefordshire .....	269	Oxfordshire .....	237
Berkshire .....	229	Hertfordshire .....	234	Rutland.....	278
Buckinghamshire...	236	Huntingdonshire...	240	Shropshire.....	270
Cambridgeshire ...	241	Kent .....	218	Somerset .....	262
Cheshire.....	286	Lancashire .....	287	Staffordshire...	271
Cornwall and Scilly	260	Leicestershire .....	277	Suffolk .....	246
Cumberland .....	308	Lincolnshire.....	278	Surrey .....	213
Derbyshire .....	281	London .....	210	Sussex .....	222
Devonshire .....	255	Middlesex.....	233	Warwickshire .....	274
Dorsetshire .....	253	Monmouth .....	313	Westmorland .....	310
Durham .....	306	Norfolk .....	248	Wiltshire .....	252
Essex .....	244	Northamptonshire.	239	Worcestershire ..	273
Gloucestershire.....	267	Northumberland ...	307	Yorkshire .....	295
Hampshire.....	226	Nottinghamshire...	280		

### W A L E S .

Anglesey .....	323	Carnarvon.....	322	Merioneth.....	321
Brecon .....	317	Denbigh.....	320	Montgomery.....	319
Cardigan .....	316	Flint ...	320	Pembroke.....	316
Carmarthen .....	315	Glamorgan .....	313	Radnor .....	319

### I S L A N D S .

Isle of Man.....	323	Channel Islands .....	324
------------------	-----	-----------------------	-----

### S C O T L A N D .

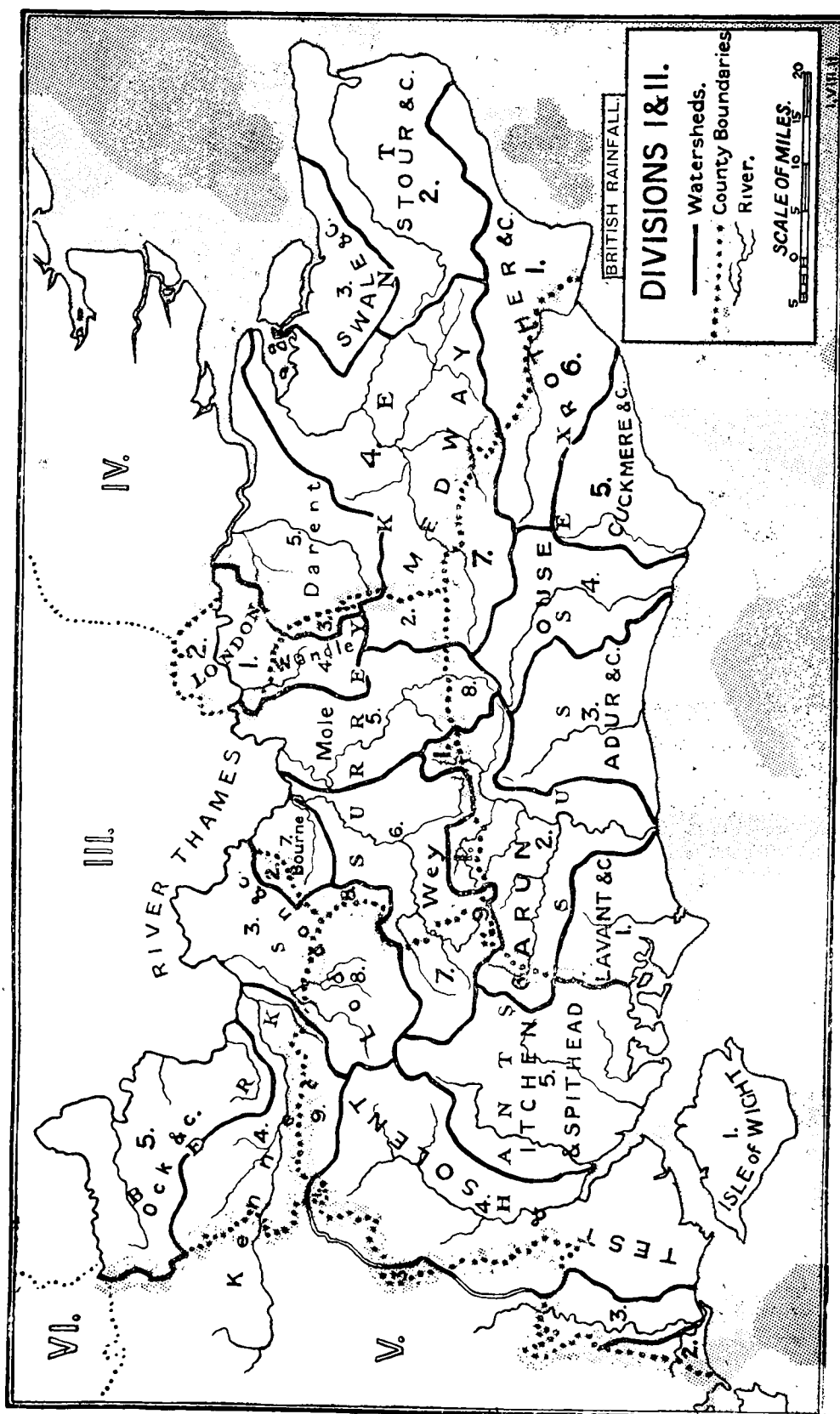
Aberdeen .....	349	Fife .....	344	Orkney .....	355
Argyll .....	340	Forfar .....	346	Peebles.....	330
Ayr .....	336	Haddington .....	331	Perth .....	345
Banff .....	350	Inverness .....	352	Renfrew .....	337
Berwick.. .....	331	Kincardine .....	349	Ross and Cromarty	353
Bute .....	340	Kinross .....	344	Roxburgh .....	328
Caithness .....	355	Kirkcudbright .....	326	Selkirk.....	330
Clackmannan .....	344	Lanark .....	335	Shetland .....	356
Cromarty and Ross	353	Linlithgow .....	333	Stirling .....	339
Dumbarton .....	339	Midlothian .....	331	Sutherland .....	355
Dumfries .....	327	Moray or Elgin ...	350	Wigtown .....	326
Elgin or Moray ...	350	Nairn.....	351		

### I R E L A N D .

Antrim .....	371	Kerry.....	359	Monaghan.....	370
Armagh.....	370	Kildare .....	364	Queen's County ...	363
Carlow .....	363	Kilkenny ..	362	Roscommon .....	367
Cavan.....	370	King's County .....	363	Sligo .....	368
Clare .....	360	Leitrim .....	368	Tipperary .....	359
Cork .....	358	Limerick .....	360	Tyrone .....	372
Donegal.....	372	Londonderry.....	371	Waterford.. .....	359
Down .....	370	Longford .....	365	Westmeath .....	365
Dublin .....	364	Louth.....	365	Wexford.....	362
Fermanagh.....	370	Mayo .....	367	Wicklow .....	362
Galway .....	367	Meath .....	365		

Detailed Maps showing the river-division of each county into River Basins are given in the General Table.





# ENGLAND AND WALES.

## DIVISION I.—LONDON. (Area, 117 sq. mi.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with .01 or more recorded.
		Diameter	Height Above Ground		Height Above Sea Level	1912
		in.	ft.	in.	feet.	inches.
1.—THAMES—Right Bank Tributaries. 67 sq. mi.						
BERMONDSEY,						
D Shad Thames Pumping Station	London County Council	6	27	5	43 $\nabla$	23·80 174
SOUTHWARK,						
D Walworth (Brettell Street)	Miss Moor .....	5	1	5	...	26·12 193
D LAMBETH (Brockwell Park).....	London County Council	8	1	3	140 $\nabla$	29·17 176
D „ (Brixton Hill Res.) ...	Met. Water Board.....	5	3	2	115 $\nabla$	25·35 191
D BATTERSEA (Battersea Park) ...	London County Council	5	9	8	23	26·15 169
D† „ (Water Works) .....	Mr. F. J. Goldsworthy	5	3	6	26	24·20 168
D „ Nine Elms (Heathwall)	London County Council	8	39	4	54 $\nabla$	23·86 179
WANDSWORTH,						
D† Streatham (Southwark W.W.)	Met. Water Board.....	5	4	1	120	25·33 174
D „ „ Hill Reservoir ...	„ „ „ „ .....	5	3	1	197 $\nabla$	26·35 189
D „ (Putney Heath Reservoir) ...	„ „ „ „ .....	5	1	0	180 $\nabla$	28·44 189
„ Wimbledon Pk. (Woodhouse)	Sir A. E. Bateman, KCMG	5	1	1	150	30·03 161
D† „ (Balham High Road)..... (R)	P. Dodd, Esq., C.E. ...	6	1	6	89 $\nabla$	28·91 190
D „ Wandsworth Com. (Patten Rd)	F. C. Bayard, Esq. ...	5	1	0	100	25·20 190
D† „ Southfields (Coronation Gdns.) (R)	P. Dodd, Esq., C.E. ...	6	1	6	37 $\nabla$	28·43 183
„ Clapham Com. (Macaulay Rd.)	Miss A. H. Boyson.....	5	1	0	75 $\nabla$	24·65 154
„ „ „ (The Chase) ...	H. N. Prentice, Esq. ....	5	1	5	70	25·04 ...
CAMBERWELL (Dulwich Wood Pk)	F. C. Bayard, Esq. ...	5	1	2	276	29·63 ...
D „ Dulwich (Alley Park).....	W. Marriott, Esq. ...	5	1	0	171	27·41 180
D† „ Nunhead (Southwark W.W.)	Met. Water Board.....	5	1	0	173	24·87 201
D† „ (The Green) .....	F. C. Bayard, Esq. ...	8	2	2	17	23·16 173
D DEPTFORD (Telegraph Hill) .....	London County Council	5	9	6	135	22·37 156
D† „ „ (Kent Water Works)	Met. Water Board.....	5	1	0	20	23·37 153
GREENWICH						
† (Deptford Pumping Station)	London County Council	10	4	0	18 $\nabla$	26·37 ...
D† „ (Royal Observatory) No. 8	F. W. Dyson, Esq. F.R.S.	8	1	0	150 $\nabla$	24·62 176
D† „ ( „ „ ) No. 6	„ „ „ „	8	0	5	150 $\nabla$	24·86 182

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with '01 or more recorded.
		Diameter	Height Above Ground		Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.	
1.—THAMES—Right Bank Tributaries—(con.)							
GREENWICH							
† (Royal Observatory) No. 7	F.W. Dyson, Esq. F.R.S.	8	0	5	155	17	179
† „ { „ „ } No. 5	„ „ „	8	10	0	165	27	184
† „ { „ „ } No. 4	„ „ „	8	21	6	176	05	180
† „ { „ „ } No. 3	„ „ „	8	38	4	193	69	173
LEWISHAM,							
Sydenham (Lethen Grange)	G. F. Chambers, Esq...	5	1	5	220	30-90	205
† „ Forest Hill (Barr Beacon)...	Met. Water Board.....	5	1	0	344	26-60	180
† „ (Limes Grove) .....	G. E. Dacey, Esq. ....	5	1	0	36	26-04	192
„ Woolwich, Eltham (High St.)...	Met. Water Board.....	5	1	0	245	25-41	170
„ Plumstead Com. (St. John's Rd.)	R. J. Allison, Esq.....	8	1	0	310	24-45	192
2.—THAMES—Left Bank Tributaries. 50 sq. mi.							
„ PADDINGTON (Harrow Road) ...	C. W. Heinemann, Esq.	8	1	0	101	27-87	191
† KENSINGTON (V. & A. Museum).	J. Storr, Esq. ....	8	0	6	27	25-53	194
† „ (Meteorological Office)	Meteorological Office ...	8	57	0	70	24-39	168
„ „ (Holland House) ...	Mr. C. Dixon .....	5	4	0	68	26-61	187
„ „ (Addison Gardens).	G. H. M. Whish, Esq..	5	1	1	23	26-07	181
† „ (Campden Hill) ...	Met. Water Board.....	8	1	0	142	30-42	182
„ HAMMERSMITH (The Creek).....	London County Council	8	20	0	35	25-49	176
† FULHAM (Acfold Road).....	Miss Adrienne Carter...	5	1	0	13	26-09	183
„ „ (Hammersmith Cemetery) ...	Mr. J. D. Robertson ...	5	1	0	16	26-79	183
† „ „ W. Kensington (Edith Rd.)	G. Searle, Esq.....	5	0	10	16	26-48	182
„ CHELSEA (Lots Road) .....	London County Council	8	33	6	54	23-59	168
„ „ (Pumping Station) ...	„ „ „	8	1	0	19	26-17	191
„ „ (Physic Garden) .....	W. Hales, Esq. ....	5	1	0	20	25-88	182
„ „ (St. Luke's Gardens)...	T. W. E. Higgins Esq. CE	5	1	0	25	26-36	185
WESTMINSTER							
„ „ (King's Scholars Pond)	London County Council	8	11	6	31	29-48	178
„ „ (Winchester Street)...	Mr. G. T. Osborn .....	5	6	6	21	23-60	...
† „ „ (Buckingham Palace)	Mr. W. Osborne.....	5	8	6	35	27-05	188
† „ „ (St. James's Park) ...	Meteorological Office ..	8	1	0	54	24-29	175
„ „ (Hyde Park) .....	Royal Humane Society	8	1	3	...	23-38	177
„ „ (Spring Gardens) ... (1)	London County Council	8	66	4	95	24-97	182
„ „ { „ „ } ... (2)	„ „ „	12	65	11	95	24-50	182
„ „ { „ „ } ... (3)	„ „ „	8	6	0	35	24-83	183
„ „ (Strand) .....	J. J. Steward, Esq. ...	5	40	0	80	26-67	170
ST. MARYLEBONE,							
„ Regent's Pk (R Botanic Gdns)	J. B. Sowerby, Esq. ...	8	0	8	126	27-97	157
„ „ (Hamilton Terrace) .....	E. Heron Allen, Esq...	5	0	6	...	25-99	...
„ „ { „ „ } .....	Miss Cobb .....	5	0	11	125	26-33	169
† HAMPSTEAD (Barrow Hill Res.)..	Met. Water Board.....	5	3	4	197	25-49	174
„ „ (Akenside Road) ...	E. L. Hawke, Esq. ...	5	1	0	285	29-57	188
„ „ (Arkwright Road) ...	E. Farmiloe, Esq. ....	5	0	10	...	28-74	159
„ „ (Kemplay Road) ...	C. Clarke, Esq. ....	5	2	0	...	28-78	...
† „ „ (Kidderpore Res.)...	Met. Water Board.....	5	2	0	323	25-00	168
„ „ (New End Square)...	Mr. W. Pikesley .....	5	1	0	...	29-01	177

## DIVISION I.—LONDON—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with .01 or more recorded.	
		Diameter	Height Above Ground		Height Above Sea Level		1912
		in.	ft.	in.	feet.	inches.	
2.—THAMES—Left Bank Tributaries—(con.)							
D† HAMPSTEAD Observatory .....	E. L. Hawke, Esq. ...	8	1	0	451 ⅞	29.07	191
† „ (Golders Hill) .....	London County Council	5	9	8	350 ⅞	25.48	...
D† ST. PANCRAS (Camden Square) .....	Dr. H. R. Mill .....	8	0	9	111 ⅞	27.88	180
† „ ( „ „ ) weekly .....	„ „ „ .....	5	1	2	111 ⅞	27.77	...
D† „ ( „ „ ) Snow g. .....	„ „ „ .....	8	3	5	113 ⅞	26.61	170
† „ ( „ „ ) float g. M .....	„ „ „ .....	8	0	11	111 ⅞	27.39	...
STOKE NEWINGTON							
D† „ (New River Filter Beds) .....	Met. Water Board.....	5	1	0	101 ⅞	24.50	152
D† „ „ ( „ „ Reservoirs) .....	„ „ „ .....	5	4	0	105 ⅞	27.48	182
D HACKNEY (Clapton Pond) .. (R)	Norman Scorgie, Esq. CE	8	2	6	70 ⅞	26.21	166
D† HOLBORN (Stone Yard) .....	E. F. Spurrell, Esq. ...	5	12	0	89 ⅞	27.07	159
D† FINSBURY (New River Head) ...	Met. Water Board.....	5	3	8	100	25.57	178
CITY OF LONDON (Guildhall) ...	F. Sumner, Esq., C.E..	8	51	0	95 ⅞	26.66	...
„ „ „ ( „ „ ) .....	„ „ „ .....	8	2	6	46 ⅞	25.81	...
D STEPNEY (Mile End) .....	J. Metson, Esq. ....	5	10	0	50	28.14	169
D POPLAR, Isle of Dogs (Stewart Rd.)	London County Council	8	1	0	15 ⅞	25.03	179
„ „ (Island Gardens) .....	„ „ „ .....	5	4	6	...	22.30	...
D „ „ (Old Ford) .....	Met. Water Board.....	8	0	9	19 ⅞	24.53	178
D „ „ ( „ „ Penstock Ho.)	London County Council	8	1	0	35 ⅞	24.92	155
WOOLWICH (N. Woolwich Pumpg. Sta.)	„ „ „ .....	8	0	9	12 ⅞	21.55	...
D „ „ (Barking Outfall) ...	„ „ „ .....	8	0	6	6 ⅞	21.61	176

## DIVISION II.—SOUTH EASTERN COUNTIES.

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with .01 or more recorded.
		Diameter	Height Above Ground	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
<b>SURREY. (Area, 725 sq. mi.)</b>						
<b>1.—ARUN. 45 sq. mi.</b>						
†Haslemere (Clammer Hill) .....	Col. Farquhar Glennie..	5	1 0	400	40·63	184
„ (Grayswood Tower).....	S. Barker, Esq. ....	5	1 2	600	42·08	154
Dunsfold (Durfold) .....	Miss Billiter .....	5	1 0	225 †	35·67	...
„ Rectory .....	Rev. W. H. Winn.....	5	1 0	170 †	33·65	...
D Oakwood Vicarage.....	Rev. Canon J. Shearme	5	0 9	285 †	33·82	181
Abinger (Feldemore).....	E. Waterhouse, Esq....	5	3 6	505 †	36·62	161
D „ (Joldwynds, Holmbury)	Mr. F. Cornish .....	5	1 0	550	38·30	184
<b>2.—MEDWAY. 50 sq. mi.</b>						
D Lyden Croft [Edenbridge] .....	Surg.-Gen. C. Planck ..	8	1 0	212 †	32·58	184
<b>3.—THAMES—Darent. 22 sq. mi.</b>						
Chelsham (Fairchildes).....	A. S. Daniell, Esq. ...	8	1 0	600 †	37·34	...
„ „ „ .....	Mr. G. T. Mansfield ...	5	0 10	600 †	36·45	...
D Addington (Hares Bank).....	F. C. Bayard, Esq. ...	8	1 0	331 †	32·51	190
D† „ Hills Reservoir.....	G. F. Carter, Esq., C.E.	8	0 9	473 †	32·79	203
South Norwood (Woodside) .....	Rev. P. M. Bowman ...	...	1 0	...	28·85	...
D „ „ (Holmesdale Road)	E. A. Martin, Esq.....	5	1 0	200	28·46	180
D „ „ (Apsley Road) ...	W. H. Cullis, Esq.....	5	1 2	125	27·49	180
D Norwood (Auckland Road) .....	Miss J. Cooper .....	5	1 5	230 †	25·27	170
D Penge (Anerley Town Hall).....	H.W. Longdin, Esq. C.E.	5	1 6	120 †	27·16	167
<b>4.—THAMES—Wandle. 71 sq. mi.</b>						
D Upper Gatton.....	F. Druce, Esq. ....	5	1 0	601	35·46	193
D Caterham Reservoir .....	A. E. Cornwall-Walker, Esq.	5	1 0	705 †	37·72	202
D Chaldon Rectory .....	F. C. Bayard, Esq. ...	5	1 0	542	36·27	176
D Chipstead (Eyhurst) .....	D. Morphew, Esq.....	5	0 11	538	36·27	210
D „ (Dial Cottage) .....	F. C. Bayard, Esq. ...	5	1 0	550	34·40	194
D Caterham (Ashfield) .....	A. Malden, Esq.....	5	1 6	610	34·82	198
D „ Asylum.....	Dr. P. E. Campbell ...	5	1 0	610 †	36·12	212
D „ Valley (Bradenhurst)	Henry Haes, Esq. ....	5	1 0	600 †	38·98	215
D Warlingham (The Larches) .....	Mrs. B. F. Harris .....	5	1 0	615	38·16	211
D „ (Redvers Road) ...	R. H. Curtis, Esq.....	8	1 0	610 †	37·48	208
D „ (Egremont) .....	H. Rogers, Esq.....	5	1 0	614 †	38·32	198
D Caterham Valley (Mount Vernon)	M. Ll. Evans, Esq. ...	5	0 10	500	36·93	183
D „ „ Dépôt .....	A. E. Cornwall-Walker, Esq.	5	1 6	431 †	37·88	218
D Banstead (Burgh Heath) .....	Capt. E. R. Taylor.....	5	1 0	571 †	36·58	197
D „ „ „ Reservoir	W. Vaux Graham Esq. CE	5	1 0	570 †	38·85	159
D Chipstead (The Lodge) .....	F. E. Goad, Esq. ....	5	0 9	558 †	37·52	196
D „ (How Green Reservoir)	W. Vaux Graham Esq. CE	5	1 0	528 †	36·94	180
D Kenley (Elmhurst) .....	Mrs. Jay Jones .....	5	0 8	430 †	36·04	202
D „ (Shord Hill) .....	A. Wildy, Esq. ....	5	0 10	450	35·03	199
D „ Pumping Station.....	A. E. Cornwall-Walker, Esq.	5	1 0	284 †	34·07	198
D Purley (Riddlesdown Road) No.1	J. Edmund Clark, Esq.	5	1 0	360 †	34·42	196
D „ „ „ „ No.2	„ „ „ „	5	1 0	360 †	34·04	195
D „ (Pumping Station) .....	A. E. Cornwall-Walker, Esq.	5	1 0	215 †	33·64	207
D Sanderstead (Beechwood Road) ..	E. Alexander, Esq. ...	5	0 10	370	32·84	202
D South Croydon (Avondale Road)	Dr. G. J. Hinde, F.R.S.	5	1 0	225 †	33·56	211
D Wallington (Cotswold).....	F. C. Bayard, Esq. ...	5	4 1	140 †	31·95	222
„ „ „ „	„ „ „ „	8	1 0	140 †	31·66	210

## DIVISION II.—SOUTH EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with '01 or more recorded.
		Diameter	Height Above Ground		Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.	
SURREY—(con.)							
4.—THAMES—Wandle—(con.)							
D Carshalton (Sewage Works).....	Baldwin Latham Esq CE	5	1	0	118 A	29·05	164
D Beddington (Sewage Farm) .....	F. C. Bayard, Esq. ...	5	1	0	129	26·35	180
D Croydon (Croham Manor Road)...	" " " " ...	5	1	0	318	31·67	193
D " (Waddon New Road)...	G. Corden, Esq. ....	5	1	0	146	31·19	188
D " (Park Hill Rise).....	H. F. Parsons, Esq., M.D.	5	1	3	240	29·44	190
D " ( " " House).....	Baldwin Latham Esq CE	8	1	0	265 A	31·90	205
D Beddington Corner (Millgreen Rd)	G. Miller, Esq. ....	5	4	0	50	29·15	178
Thornton Heath (Thornton Lodge)	H. Wyndham, Esq. ...	5	0	9	172 I	28·55	...
D Wimbledon (Kingston Road) ...	H. A. Marshall, Esq. ...	5	1	0	54 A	29·48	201
D " Park (Park View)...	S. Single, Esq. ....	5	1	0	150 I	29·57	184
D " (Sewage Works).....	C. H. Cooper, Esq., C.E.	5	1	0	55 A	26·00	172
5.—THAMES—Mole & c. 229 sq. mi.							
D Charlwood (Greenings).....	J. Innes, Esq. ....	5	1	0	300	33·90	177
D Outwood (The Orchards) .....	F. C. Bayard, Esq. ...	5	1	0	280	34·14	198
Dorking (Stone House, Rose Hill)	Lt.-Col. J. R. Greenhill	5	1	0	240 I	38·94	...
D " (West Street) ...	Mrs. W. A. Marsh.....	8	26	0	224 I	41·84?	160
D " (Denbies).....	Mr. J. Ansell .....	5	0	9	610 I	41·92	205
D† " (Pixham Firs).....	J. Croft Deverell, Esq..	8	0	6	150 ?	37·13	211
Brockham (North Lodge) .....	H. R. Kempe, Esq. ...	8	0	9	160 I	37·90	168
D Reigate (Hartswood).....	R. W. Clutton, Esq. ...	5	1	0	174	34·06	197
D South Nutfield (Hale Edge).....	R. C. Grant, Esq. ....	5	1	0	270	32·00	196
D Earlswood (Sewage Farm) .....	F. T. Clayton, Esq., C.E.	5	1	6	196 A	31·44	168
D Redhill (Station Road) .....	W. H. Fowler, Esq. ...	5	18	0	270 A	34·19	192
D " (Wigmore).....	W. A. Gunner, Esq. ...	5	1	0	250 B	34·95	198
D " (Warwick Road).....	A. E. Cornewall-Walker, Esq.	5	1	6	284 A	36·47	227
D Reigate (Holmfels) .....	T. Jackson, Esq. ....	5	1	2	260 I	31·42	193
D " (The Gas Works).....	F. C. Bayard, Esq. ...	8	1	0	275	34·80	202
D " (The Knowle) .....	G. Weston, Esq. ....	5	1	0	390 I	34·16	190
D " (Wray Lodge) .....	A. Rosling, Esq. ....	5	1	0	316 I	36·26	206
D " ( " Park Road) .....	F. W. Hedges, Esq. ...	5	0	6	281 I	38·01	189
D " (Castle Grounds) .....	F. T. Clayton, Esq., C.E.	5	1	6	350 A	32·76	205
D " (Laglands) .....	J. Welch, Esq. ....	5	1	2	375 I	36·50	186
D Redhill (Sid Court) .....	Miss Janvrin .....	5	1	0	290	35·69	209
D Nutfield Priory .....	Mrs. Fielden .....	8	1	2	468 A	33·46	232
D " " .....	Mr. J. Moffatt .....	8	1	2	331 I	35·44	222
D " (Holmesdale) .....	C. Trenham Maw, Esq.	8	3	0	500 I	34·14	204
D Blechingley House .....	Rev. Canon AHS Barwell	5	1	0	550 A	35·66	209
Betchworth.....	C. J. Whittington, Esq.	8	...	...	...	34·49	198
D " (The Holmes) ..	F. R. Rushton, Esq. ...	5	0	8	322 I	37·26	206
D Reigate (Hatherlow Observatory)	S. T. Klein, Esq. ....	5	1	6	405	34·06	181
D Dorking (High Ashurst) .....	late Dow. Lady Harrowby	5	3	0	550	37·14	198
Mickleham (Juniper Hall) .....	G. MacAndrew, Esq. ...	5	1	0	185 I	38·71	...
D " (Norbury Park) .....	Mr. G. Kent .....	9	0	8	500 ?	36·25	153
Headley (The Hurst) .....	Mrs. Lyall .....	5	1	3	450	37·73	...
D Walton-on-the-Hill (Hedgecroft)	G. R. Crompton, Esq. ...	5	1	0	570 I	37·33	209
D " " (Walton Manor)	Mr. J. Millichamp.....	5	1	0	600	36·69	191

## DIVISION II.—SOUTH EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with .01 or more recorded.	
		Diameter	Height Above Ground	Height Above Sea Level	1912		
		in.	ft.	in.	feet.	inches.	
SURREY—(con.)							
5.—THAMES—Mole & c—(con.)							
D Great Bookham (Sole Farm) ...	E. H. Sharp, Esq., K.C.	5	2	0	150 ?	34.44	184
D Leatherhead (Downside) .....	the late A. Tate, Esq...	5	1	0	250	33.73	180
„ (Emlyn House) ...	A. T. Miller, Esq. ....	5	1	0	160	33.36	...
D Ashtead (Hill Field).....	C. F. Howell, Esq.....	5	1	0	215	32.07	173
D „ (D'Abernon Chase).....	Sir W. Vincent, Bart..	5	1	0	280 †	31.57	187
D „ (Barnet Wood Lane) ...	Rev. Theodore E. R. Phillips	5	1	0	167 †	30.32	193
D „ (Oakfield Road) .....	H. F. Acocks, Esq. ...	5	0	9	189	30.93	178
D „ (The Hut) .....	F. C. Bayard, Esq. ....	5	0	5	200	30.79	177
D Cobham (Hatchford Park) .....	Sir H. B. Samuelson, Bart	8	1	0	170	30.91	...
„ Court .....	C. Talbot Agar, Esq....	5	0	7	68	28.72	...
D Oxshott (Oaklands) .....	J. J. Morrish, Esq. ...	...	0	6	246 †	31.70	157
D Banstead (The Hall).....	F. C. Bayard, Esq. ....	8	1	0	480	34.17	183
D „ (Basing House) .....	„ „ „	8	1	0	456	34.38	183
D Epsom (The Durdans) .....	J. Barclay, Esq.....	8	0	11	217	32.75	182
„ (Water Works) .....	W. Vaux Graham Esq. CE	5	3	1	149 †	29.86	...
D Weybridge (Burcote) .....	Mrs. C. Sanger .....	5	0	9	117 †	28.45	188
D Sutton (Camborne Road) .....	F. E. Wright, Esq. ...	5	1	0	250 †	32.46	179
D Claygate (Hertslets) .....	N. C. Armitage, Esq....	5	1	0	106 †	28.26	203
D Esher (Sewage Works).....	F. C. Bayard, Esq. ...	5	1	0	42 †	26.80	175
D Sutton (High School, Cheam Rd.)	Miss A. D. Hunt .....	5	1	0	187 †	28.11	155
D „ (Water Works).....	W. Vaux Graham Esq. CE	5	1	6	166 †	29.49	180
D „ (Sewage Works) .....	W. H. Grieves, Esq., C.E.	8	1	0	100 †	34.70	174
Walton-upon-Thames (Ryden's Rd.)	Surrey Advertiser.....	...	...	...	...	29.87	...
D† Surbiton (Seething Wells) ...	Met. Water Board.....	5	0	10	34 †	28.35	185
D „ (Vronvelin, Lovelace Rd.)	F. J. Barclay, Esq.....	5	1	0	50	29.26	187
„ (Tandridge House) .....	Charles Price, Esq. ...	5	0	10	...	28.87	170
East Molesey (Ember House) ...	Wilfrid Taylor, Esq....	5	1	0	30 †	29.00	181
D† West „ (Walton Works)...	Met. Water Board.....	5	0	6	35 †	26.16	169
D New Malden Sewage Works ...	F. C. Bayard, Esq. ...	5	1	0	45	25.67	158
D „ „ (Edenfield).....	W. J. Carter, Esq.....	5	1	0	40 †	27.77	180
D Kingston (County Hall) .....	E. Underwood, Esq. ...	5	0	9	31 †	29.75	161
D „ Sewage Works .....	F. C. Bayard, Esq. ...	5	1	0	25	31.36	197
D „ (Union Street) .....	Mr. T. Davis .....	8	3	0	26	28.16	174
D† Wimbledon (Raynes Park).....	Messrs. J. Carter & Co.	8	1	0	75	27.09	182
D „ „ „ Ppg. Stat.)	C. H. Cooper, Esq., C.E.	5	1	0	50 †	27.40	172
D „ (Worple Road) .....	N. Langsmith, Esq. ...	5	1	1	100 ?	27.00	182
D „ (Alyn Bank, The Downs)	F. C. Bayard, Esq. ...	5	1	1	162 †	29.12	190
D† Richmond (The Terrace) .....	„ „ „	8	1	6	109	27.00	180
D „ (The Old Palace).....	Rev. A. Welsh Owen...	8	0	9	...	27.81	183
D† „ (Kew Observatory) (R)	Dr. C. Chree, F.R.S. ...	11	1	9	19 †	28.01	194
D Kew (Kew Gardens Road) .....	Dr. L. Burrell .....	5	1	2	19	28.32	184
6.—THAMES—Wey. 236 sq. mi.							
D Haslemere (Whitwell Hatch) ...	Marquis of Sligo .....	5	1	6	680 †	43.54	159
† „ (Courts Hill) .....	Mr. J. I. Kennard .....	8	4	0	481 †	41.79	213
D „ (The Laurels) .....	Stanley Smallpiece, Esq.	5	0	9	540 †	43.28	207
D „ (Beech Road) .....	Nelson K. Cherrill, Esq.	5	0	9	540 †	41.16	203
D† „ (Hazelhurst) .....	T. P. Newman, Esq....	5	1	0	550 †	45.60	224

## DIVISION II.—SOUTH EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge			Depth of Rain.	Days with .01 or more recorded.
		Diameter	Height Above Ground.	Height Above SeaLevel	1912	
					in.	
SURREY—(con.)						
6.—THAMES—Wey—(con.)						
Hindhead (Lingholt School) ...	Miss D. L. Fuller .....	5	1	0	667 T	37·49 170
D† „ (Stoatley Hall).....	Mr. H. Simmons .....	5	1	0	800	43·23 173
D Churt (Furze Hills) .....	Rev. Clements G. O. Bond	5	1	6	390 T	38·27 187
Witley (Sandhills).....	L. W. Lodge, Esq. ...	8	1	0	450 ?	40·30 205
„ (Rockwoods, Brook).....	<i>Surrey Advertiser</i> .....	...	...	...	450	38·24 ...
D „ (King Edward's School)...	J. Wood, Esq. ....	5	1	3	330	39·13 181
D „ (Great Roke).....	C. W. Dixon, Esq. ...	5	4	6	300	34·81 191
D „ (The Mount) .....	Mrs. J. H. Foster .....	5	1	0	375 B	39·97 221
D Hascombe Rectory.....	C. T. Musgrave, Esq...	8	1	0	450 T	37·64 172
D Cranleigh Common (Homefield Cott.)	A. F. Jones, Esq. ....	5	1	2	175 T	35·65 203
„ (Stonewall) .....	W. Welch, Esq.....	5	1	0	182 T	36·53 ...
D „ (County School) .....	W. Hayward, Esq. ...	5	1	0	232 T	26·88 204
D „ (Warren Cottage) ...	Miss Lumsden .....	5	1	0	600 ?	37·42 175
D „ (Winterfold) .....	Mr. R. Turvey .....	8	3	6	603 T	36·07 181
D Bramley (Grafham Grange).....	S. A. Shepherd, Esq....	8	0	4	180 T	37·27 180
Godalming (Milford Nurseries)...	<i>Surrey Advertiser</i> .....	...	...	...	...	35·13 ...
D Ewhurst (Downhurst Lodge) ...	Mr. W. Bradfield .....	5	1	0	350	37·10 193
„ (Garlands).....	G. Johnston, Esq. ....	5	1	0	360 T	37·86 182
D „ (Malquoits).....	W. Webb, Esq.....	5	1	0	400	38·25 183
D „ (Coneyhurst) .....	Mr. J. Russell .....	8	1	0	581 T	36·18 195
„ (Woolpit) .....	Mr. H. W. Perrin .....	8	1	6	600	37·21 ...
D Wonersh (Lee Crouch, Shamley Green)	P. E. W. Street, Esq...	5	1	0	165 T	36·57 195
D Godalming (Charterhouse) .....	O. H. Latter, Esq.....	5	1	0	315 T	35·94 213
Bramley (The Limes) .....	Rev. C. J. Etty .....	5	1	0	136 T	37·03 ...
D Farnham (Charleshill) .....	Mrs. Oliver .....	5	1	0	230 B	31·76 190
„ (The Lower Bourne)...	G. Sturt, Esq. ....	5	1	0	320	34·07 197
D Godalming (Tilthams) .....	Col. A. C. Bigg-Wither	5	1	0	130 T	33·81 205
D Shere (Burrows Lea).....	Miss Barnard .....	8	1	0	400 T	36·04 210
Albury (Lockner Holt Gardens)...	<i>Surrey Advertiser</i> .....	...	...	...	...	37·27 ...
D „ (Dalton Hall Gardens)...	Harold Agar, Esq.....	5	1	0	220 T	37·01 188
D Gomshall (Hazel Hall).....	F. E. J. Blackburn, Esq. ....	...	...	...	...	44·00 186
D Abinger Rectory .....	Miss Brodie Hall .....	5	1	0	381 T	41·28 190
D „ Hall.....	Lord Farrer .....	8	2	0	320 T	41·55 195
D Farnham (Crooksbury Ridges)...	F. R. Walters, Esq. M.D.	5	1	4	440 T	34·83 212
D „ (High Park Road).....	V. B. Longhurst, Esq..	5	1	1	260 ?	35·01 209
D „ (Short Heath) .....	Morris Birkbeck, Esq..	5	1	0	352 T	34·87 247
D „ ( „						



## DIVISION II.—SOUTH EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with '01 or more recorded.
		Diameter	Height Above Ground	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
SURREY—(con.)						
6.—THAMES—Wey—(con.)						
D Merrow (Craigie) .....	Miss Lomer.....	5	0 9	250 T	33·38	185
" ( " ) ..... <i>Paddock</i>	" " .....	...	...	250 T	34·60	...
D Guildford (Burpham) .....	W. H. Burbidge, Esq..	5	0 8	...	34·59	191
High Clandon .....	F. B. Eastwood, Esq...	5	0 6	500 T	39·72	...
D Horsley Towers .....	The Earl of Lovelace...	8	1 2	285 T	40·23	218
D " (Woodcote Lodge) .....	Rt. Hon. Sir H. E. Roscoe	7	0 6	600	41·26	186
Worplesdon (Perry Hill Farm)..	Mr. G. H. Claydon.....	5	1 0	140 ?	27·87	...
Send (Sendholme) .....	<i>Surrey Advertiser</i> .....	...	...	...	31·74	...
D Ripley (Dunsborough House) ..	C. F. M. Cleverly, Esq.	5	1 6	70	29·71	163
D Woking (The Grange) .....	Rev. F. Wilson .....	5	0 8	78 T	31·10	205
" (Northwood) .....	S. Price-Williams, Esq.	5	1 3	115 T	28·19	177
" (The Green) .....	Mrs. Howlett .....	5	0 9	100	27·87	...
D Pyrford (Pyrford Croft) .....	H. W. Page Phillips, Esq.	5	1 6	100 ?	28·95	155
D Horsell (Lindisaye) .....	H. Horncastle, Esq. ...	5	4 2	120 T	27·95	168
" ( " ) ... <i>weekly g.</i>	" " .....	5	0 9	120 T	27·95	...
D " (Kettlewell Hill) .....	Claude Marzetti, Esq...	5	0 9	115 T	29·89	183
D Wisley (R.H.S. Gardens) .....	S. T. Wright, Esq. ...	8	1 0	150	27·98	177
" (West Hall Gardens) .....	Mr. G. Carpenter .....	5	1 6	61 T	27·90	...
Woking (Woodham Hall) .....	Mr. R. N. Stevens .....	...	1 0	105 ?	29·42	...
D West Byfleet (Kilmeena) .....	F. Littleboy, Esq.....	5	1 0	100	28·07	186
D " (Hollywood) .....	Allanson Bailey, Esq...	5	1 1	100 ?	27·64	188
Byfleet .....	J. E. Dowell, Esq.....	5	1 1	59	27·20	...
D Weybridge (Field Place) .....	Mrs. Yool .....	5	1 0	118 T	28·77	194
" ( " ) ..... M	" " .....	5	1 0	109 T	28·28	...
D " (Heath Field) .....	Miss A. T. Gardiner ...	5	1 0	100 T	29·76	199
D " (Portmore Road) ..	Mr. W. E. Anderson...	5	1 0	47	30·29	171
D " (West Oaks) .....	A. Whittet, Esq. ....	5	1 0	36 T	28·95	188
D " (Station Road) .....	H. K. G. Rogers, Esq..	5	1 1	85	30·62	197
D " (Lyncroft) .....	Maj.-Gen. J P Battersby	5	0 10	70	28·92	166
7.—THAMES—Bourne. 55 sq. mi.						
D Brookwood (Knapp Hill) .....	Mr. G. C. H. Simmonds	5	1 0	181 T	29·38	188
" ( " , Lynbrook)	C. Wigan, Esq. ....	5	1 8	200	29·42	189
D Chobham (Sandpit Hall) .....	K. A. H. Power, Esq...	5	1 0	100	29·88	194
D " (Chobham House) .....	Miss C. M. Perceval ...	5	1 6	80	34·25	182
D " (The Manor House) ...	F. A. Walter, Esq. ...	5	1 0	150	29·89	178
D Chertsey (Ottershaw) .....	R. H. Otter, Esq. ....	5	1 0	200 T	29·58	187
D " (Long Cross) .....	F. A. Baker, Esq.....	5	3 0	205 T	29·46	152
D " (Botleys Park Gardens)	Mr. H. Whitmarsh ...	5	1 5	111 T	31·76	187
D† Sunningdale (The Camp) .....	Lady Hooker .....	5	2 0	286	30·74	153
D Virginia Water (St. Ann's Heath)	Rev. J. Peck .....	8	1 1	120	27·89	179
D Egham Park .....	J. R. FitzGerald, Esq.	5	0 11	150 ?	29·35	178
Englefield Green (Queenswood)..	W. G. Rigden, Esq. ...	8	3 0	200	33·76	208
D " (Harvest Road) .....	H. Fermor, Esq.....	5	0 9	205	30·62	206
8.—THAMES—Loddon. 17 sq. mi.						
D Frimley Green Waterworks ...	F. J. Garland, Esq. ...	5	8 0	220 T	30·57	170
D " (Ridgemount) ...	C. C. Haviland, Esq....	5	0 9	350	32·53	212
D " (Tomlinscote) .....	Mr. T. Dawson .....	5	1 9	200	31·47	224

## DIVISION II.—SOUTH EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with 40 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.	
SURREY—(con.)							
8.—THAMES—Loddon—(con.)							
Camberley (Pembroke Lodge) ...	Lt.-Col. A. de B. V. Paget	5	1	0	300	36·38	193
„ (Waverley Court) ...	H. J. Hunt, Esq. ....	6	0	6	400 ?	33·39	...
KENT. (Area, 1532 sq. mi.)							
1.—ROTHER & C. 217 sq. mi.							
D Hawkhurst (Hensill).....	F. Ross Thomson, Esq.	5	3	0	200	37·38	158
Tenterden (Summerhill) .....	Mrs. Wilkin .....	8	1	0	150 T	32·65	185
„ ( „ „ ) .....	„ „ „ .....	5	1	0	150 T	33·57	185
Benenden (Pullington) .....	Major H. Neve .....	5	1	0	330	36·52	174
D Tenterden (View Tower) .....	J. Ellis Mace, Esq. ....	8	1	5	190 T	33·97	207
D „ ( „ „ ) Snowdon .....	„ „ „ „ .....	8	1	5	190 T	33·30	194
„ (West Cross) .....	J. Munn Mace, Esq. ...	5	1	0	170 T	33·49	157
Cranbrook (Hartley) .....	G. Pile, Esq. ....	5	2	0	405 T	38·59	199
Benenden (East End Sanatorium)	Dr. J. C. Smyth.....	5	1	0	190 ?	36·55	187
Biddenden (Sandpit Wood) .....	J. Ellis Mace, Esq. ..	5	1	0	218 T	34·93	...
Dungeness .....	Meteorological Office ...	8	1	3	21	30·47	200
Hythe .....	C. Jones, Esq., C.E. ...	5	1	0	0	30·62	153
D „ (Hillcrest Road) .....	J. B. Jordan, Esq. ....	5	1	0	190 T	31·49	202
D „ (Sandling Park) .....	Rt. Hon. L. Hardy, M.P.	8	1	0	260	33·03	157
D Sandgate .....	C. J. Conquest, Esq., C.E.	5	1	6	52 T	25·87	162
D Folkestone (Borough Sanatorium)	M. Yunge Bateman, Esq.	5	1	0	102 T	31·83	188
D „ (Cheriton Road) .....	J. Duncan Walker, Esq.	5	1	0	160	31·23	182
D „ (Radnor Park) .....	A. E. Nichols, Esq., C.E.	5	0	11	102 T	31·96	191
„ .....	Meteorological Office ...	8	1	0	121	31·15	171
D „ (Cherry Gardens) ...	H. Turner, Esq.....	5	1	6	230 T	33·72	193
D „ (Lower Standen, Capel)	„ „ „ „ .....	5	2	11	250 T	35·57	176
Dover .....	Meteorological Office ...	8	1	0	231	29·19	209
D „ (Water Works) .....	W. C. Hawke, Esq., C.E.	5	1	6	200 T	33·63	179
D Kearsney (Chilton Farm) .....	„ „ „ .....	5	1	6	127 T	35·27	169
2.—STOUR & C. 386 sq. mi.							
D Ashford (Oakwood) .....	H. F. Horsnail, Esq....	5	1	4	170 T	35·29	173
D Dover (Martin Mill) .....	F. L. Ball, Esq.....	5	11	0	298 T	28·56	153
D Wye (S.E. Agricultural College)	H. C. Chapelow, Esq....	8	1	0	150	35·26	180
D „ (Bilting House) .....	W. W. Knight, Esq....	5	1	3	158	38·55	209
D Ashford (Eastwell Park Gdns.) (R)	Mr. J. G. Weston .....	...	3	6	...	34·69	168
D Charing Pumping Station.....	F. L. Ball, Esq.....	5	1	0	593 T	34·17	186
Deal and Walmer W. W. ....	M. A. Mantle, Esq. ....	12	1	0	110 T	30·98	...
D „ „ „ „ .....	„ „ „ „ .....	5	1	0	110 T	30·98	188
D Hardres (Junipers) .....	G. Marshall, Esq. ....	8	1	9	327	35·89	177
D Eastry (Brewery) .....	T. N. Cheatle, Esq. ...	5	0	10	85 T	33·31	184
D Sandwich (Upton House, Word)	W. Elwin Napier, Esq.	5	1	0	32 T	32·48	190
D Chilham (Lower Ensden) .....	F. Ivo Neame, Esq. ...	5	3	0	305 T	32·75	199
Wingham (Margate W. W.) .....	Mr. W. R. Hosking ...	5	1	0	138 T	34·24	175
D Sandwich (St. George's Golf Club)	W. Ryder Richardson Esq	6	1	1	3	24·65?	181
D Littlebourne House .....	T. M. Patterson, Esq...	5	2	4	37	30·87	199

DIVISION II.—SOUTH EASTERN COUNTIES—(*continued*).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with .01 or more recorded.
		Diameter	Height Above Ground		Height Above Sea Level	
		in.	ft.	in.	feet.	inches.
<b>KENT—(<i>con.</i>)</b>						
<b>2.—STOUR &amp; C.—(<i>con.</i>)</b>						
D Canterbury (Oaten Hill House)..	Rev. Canon H. M. Carr	5	1	3	50	32·11 180
„ (Irrigation Works)..	C. Terry, Esq., C.E. ...	5	2	6	15 $\pi$	32·03 193
„ (St. Thomas' Hill)...	J. Spillett, Esq. ....	5	0	6	230 $\pi$	34·20 ...
D Wickhambreux (The Willows)..	A. Baird, Esq. ....	5	0	8	22 $\pi$	31·05 192
Minster (Gas Works).....	W. Thomson, Esq., C.E.	6	1	0	60 $\pi$	27·48 ...
D Ramsgate (Southwood W.W.)...	„ „ „	6	1	0	169 $\pi$	27·70 165
D† „ (Archer House) .....	Miss L. M. Wainwright	5	0	11	75 $\pi$	27·99 170
D† Broadstairs (Providence House).	Cecil Hamersley, Esq. ...	5	2	0	50 $\pi$	29·33 194
D Reculver .....	Allington Collard, Esq.	5	5	2	27 $\pi$	23·60 173
D† St. Peter's .....	Rev. H. C. V. Snowden	5	0	9	140 $\pi$	27·38 206
D† „ „ Court.....	A. J. Richardson, Esq.	5	1	0	135 $\pi$	28·14 195
D Birchington (Hollydene) .....	W. Tomlin, Esq., Junr.	6	6	0	75 $\pi$	25·11 155
D† „ (Rose Bank).....	Mr. G. Hoare .....	5	5	0	45 $\pi$	27·36 202
D† „ (Fernleigh) .....	R. Grant, Esq. ....	5	1	0	40	27·32 203
D Westgate-on-Sea (Garlinge) ...	D. W. Horner, Esq. ...	5	1	5	75 $\pi$	25·55 197
D† Margate (Cliftonville) .....	J. Stokes, Esq. ....	5	1	0	77	25·29 176
† Kingsgate (White Ness) .....	Mr. T. Tullett .....	5	3	0	98	27·69 189
<b>3.—SWALE &amp; C. 167 sq. mi.</b>						
D Selling (Luton) .....	F. Ivo Neame, Esq. ...	5	4	9	263 $\pi$	34·98 207
D „ (Harefield).....	Sidney Neame, Esq. ...	5	4	6	219 $\pi$	35·61 210
Sittingbourne (Sharsted Court).	H. Court, Esq. ....	5	1	6	287 $\pi$	22·86 ...
D Bicknor Rectory..... <i>Snowdon g.</i>	Rev. W. T. Martin ...	5	0	9	540	33·18 181
D Boughton-under-Blean Vic. ...	Rev. W. H. Rammell..	5	2	4	116 $\pi$	29·52 183
D Ospringe (Lorenden) .....	Walter C. Stunt, Esq..	5	1	6	180 $\pi$	29·84 160
D Faversham (Westwood Court)...	L. H. Finn, Esq. ....	...	...	...	30 $\pi$	29·70 166
D Teynham (New Gardens) .....	J. F. Honeyball, Esq. ...	5	1	5	30 $\pi$	27·13 171
D Faversham (Uples Marshes) ...	W. J. Wright, Esq. ...	5	4	4	9 $\pi$	21·95 193
D Whitstable (Western House) ...	J. W. Hayward, Esq..	5	0	10	17 $\pi$	25·54 172
D „ (Tankerton) .....	F. Gaster, Esq. ....	8	0	11	73	24·26 167
Herne Bay (Water Works) .....	J. Roberts, Esq. ....	5	0	6	122 $\pi$	25·94 ...
† Sheppey (Old Rides, Eastchurch)	H. C. Warren, Esq. ...	5	2	0	40 $\pi$	25·39 ...
D Sheerness (Technical Institute)..	A. H. Bell, Esq. ....	...	...	...	...	22·31 156
<b>4.—MEDWAY. 506 sq. mi.</b>						
Goudhurst (Scotney Castle) .....	E. W. Hussey, Esq. ....	5	4	4	203 $\pi$	35·52 ...
D „ (Maypole) .....	G. Parker Hinds, Esq..	8	1	8	412	38·12 166
D „ (Lidwells) .....	Rev. H. Purefoy FitzGerald	5	1	0	250 $\pi$	38·02 181
„ (Brandfold).....	Dr. Douglas .....	5	2	0	238 $\pi$	41·47 189
„ (Gore Court) .....	J. A. Druce, Esq. ....	5	1	0	196	37·05 161
D Horsmonden (Broad Ford House)	Mrs. L. E. Maude .....	5	1	0	96	37·34 211
D Tunbridge Wells (Hawkenbury)	D. W. Horner, Esq. ...	5	1	2	435 $\pi$	39·38 209
D „ „ (Bredbury) ...	J. Chamberlain, Esq. ...	5	1	0	418 $\pi$	38·14 191
D „ „ (Courtlands)(R)	E. Weldon, Esq. ....	8	5	6	470 $\pi$	37·09 178
D† Speldhurst (Etherton Hill) .....	E. W. Winton, Esq. ....	5	1	5	282 $\pi$	36·36 191
D Tunbridge Wells (Pembury WW)	W. H. Maxwell, Esq. C.E.	8	1	8	196 $\pi$	34·58 177
D Paddock Wood (Matfield Grange)	J. A. Perkin, Esq. ....	5	0	9	370	36·87 187

## DIVISION II.—SOUTH EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with '01 or more recorded.
		Diameter	Height Above Ground	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
<b>KENT—(con.)</b>						
<b>4.—MEDWAY—(con.)</b>						
D Paddock Wood (Matfield).....	D'Arcy W. Reeve, Esq.	5	1 0	321 $\nabla$	37·00	191
D Southborough (The Hall).....	Rev. G. A. Robins.....	5	3 0	400 $\nabla$	37·83	164
D „ (Bentham Hill) ...	C. Stanley Pott, Esq... ..	5	1 0	350 $\nabla$	34·51	172
D Edenbridge (Falconhurst) .....	Hon. Mrs. John Talbot	5	1 3	400	38·61	187
D „ (Edells, Markbeech)	Miss M. F. Pearse .....	5	1 0	320 $\nabla$	33·20	195
D „ (High Buckhurst, „)	Edmund Dean, Esq. ...	5	...	400	33·86	171
D Chiddingstone Hoath (Truggers)	Alsager Vian, Esq. ...	5	0 8	350 $\nabla$	35·66	182
Tonbridge (Colebrooke).....	W. A. Smith, Esq.....	5	0 10	350 $\nabla$	35·69	153
„ ( „ „ ) Snowdon	J. „ „ „ „ .....	5	1 0	350 $\nabla$	34·64	153
Staplehurst (Lindridge Farm)...	J. Norris, Esq. ....	5	1 4	310 $\nabla$	33·05	188
Penshurst Place.....	Lord De L'Isle .....	5	1 6	150 ?	38·13?	...
D „ Park.....	Mr. J. M. Sturgess ...	5	0 9	265 $\nabla$	30·47	190
D Tonbridge (Mabledon Park).....	J. F. W. Deacon, Esq.	5	1 2	190 ?	32·41	171
„ (Brooklands) .....	G. J. Kimmins, Esq....	5	0 10	120 $\nabla$	32·18	176
D „ (Beech Hurst) .....	W. C. Punnett, Esq....	5	1 6	102 $\nabla$	32·59	185
„ ( „ „ ) Snowdon	„ „ „ „ .....	5	1 6	102 $\nabla$	32·46	185
„ ( „ „ ) .....	M „ „ „ „ .....	8	4 0	105 $\nabla$	32·18	...
D „ (The Manor House)...	M. S. David, Esq. ....	5	1 1	135 $\nabla$	30·62	196
D „ (London Road) .....	Dr. G. H. Cressy .....	5	1 6	105	32·13	218
„ (Pinnacles) .....	A. H. Neve, Esq. ....	5	1 0	140 $\nabla$	30·43	195
„ ( „ „ ) .....	M „ „ „ „ .....	5	1 0	140	30·17	...
D Edenbridge (Cluny) .....	J. L. Boyson, Esq.....	5	1 6	161 $\nabla$	32·00	181
D Hadlow Place.....	C. J. G. Hulkes, Esq... ..	5	1 0	50	29·74	212
D „ (Golden Green) .....	F. W. E. Shrivell, Esq.	5	1 0	100	30·48	189
D Hildenborough (Hollanden Ho.)	C. H. Scott, Esq. ....	8	1 0	100	27·26	180
D „ (Fairhill) .....	Mr. F. King .....	5	1 0	200	31·85	187
D Ulcombe Place .....	A. O. Walker, Esq. ...	5	2 0	350 $\nabla$	28·88	192
D Linton Park .....	Mr. C. Pratt .....	5	0 8	...	30·60	185
D Langley (Rumwood) .....	Mr. W. J. Gould .....	5	1 9	354	29·05	203
D Leeds (Schoolhouse) .....	H. E. Bridge, Esq. ...	5	1 0	300 ?	25·52	208
D† Sevenoaks (River Hill).....	Lt.-Col. J. M. Rogers, DSO	8	4 0	535 $\nabla$	30·54	193
D „ (Soar Farm, Plaxtol)	H. Stonham, Esq. ....	5	3 0	300 $\nabla$	29·09	179
D Maidstone (Lower Tovil) .....	Lawrence Green, Esq..	5	1 0	30	27·85	184
D „ (W. W., Barming) ...	W. J. Ware, Esq., C.E.	8	1 0	30 $\nabla$	30·48	213
D† „ (Brenchley Gardens)...	T. F. Bunting, Esq., C.E.	5	0 9	50	29·31	188
D† „ (Mill Street).....	„ „ „ „ .....	8	6 0	38 $\nabla$	28·95	187
D East Malling (Broadwater) .....	C. B. Mercer, Esq. ...	5	1 6	169	29·42	189
D West Malling (St. Leonards) ...	G. Phillips, Esq. ....	5	1 0	...	31·43	185
D Maidstone (Allington Lock).....	Mr. J. Rose .....	5	1 0	45 ?	26·95	166
„ ( „ „ ) Nursery)...	Messrs. G. Bunyard & Co.	5	1 6	112	26·48	...
D† Detling (The Croft) .....	R. Cooke, Esq. ....	5	1 2	330 $\nabla$	30·88	214
D „ ( „ „ ) .....	„ „ „ „ .....	5	1 0	330 $\nabla$	31·10	215
„ (Pollhill Fields) .....	M „ „ „ „ .....	5	1 0	...	31·34	...
D† Wrotham (Whitehill) .....	A. F. Bowker, Esq., C.E.	5	1 0	365 $\nabla$	30·75	199
† „ ( „ „ ) .....	M „ „ „ „ .....	8	1 0	365 $\nabla$	30·92	...
D Bredhurst Vicarage .....	Rev. E. E. Phillips ...	5	1 0	450	31·51	180
D Halling Pumping Station.....	F. L. Ball, Esq.....	5	1 0	75 $\nabla$	25·98	152

## DIVISION II.—SOUTH EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with $\geq 0.1$ or more recorded.
		Diameter	Height Above Ground	Height Above Sea Level		
		in.	ft. in.	feet.	inches.	
<b>KENT—(con.)</b>						
<b>4.—MEDWAY—(con.)</b>						
D Rainham (Meresborough).....	S. Wakeley, Esq. ....	5	...	230	30.01	180
D Chatham (Luton W.W.) .....	W. Coles Finch, Esq....	5	3 0	88 $\nabla$	25.38	181
D Rochester (Knights Place) .....	F. H. Pye, Esq.....	5	3 0	320	27.75	180
Strood Water Works .....	W. Banks, Esq., C.E..	5	3 0	112 $\nabla$	26.31	198
D Frindsbury (The Shrubbery) ...	Warwick Stunt, Esq...	5	1 6	150	24.41	176
D „ (Stonehouse) .....	E. W. Wood, Esq.....	5	5 0	20	25.43	184
D Hoo St. Mary (St. Mary's Hall)..	H. Pye, Esq. ....	5	5 6	146 $\uparrow$	22.57	183
<b>5.—THAMES—Darent. 256 sq. mi.</b>						
Westerham (Quebec Square) ...	Met. Water Board.....	5	1 0	380	41.15	189
D „ Hill Estate .....	„ „ „ .....	5	1 0	539	36.06	206
D Seal (Bitchet Wood) .....	Admiral G.S. Bosanquet	5	1 0	580 $\nabla$	37.63	175
†Sevenoaks (Tonbridge Rd. Res.)M	A. Grainger, Esq. ....	5	1 6	556	31.72	...
D† „ (The Old House) .....	W. Tattersall, Esq. ...	8	1 0	510 $\uparrow$	34.32	210
D „ (Speldhurst Close) ...	Rev. D. D. Mackinnon	5	1 0	470	33.83	191
D† „ (Wilderness Gardens)	Mr. J. Shelton .....	5	1 0	300 ?	31.17	194
D† Brasted (Combe Bank) .....	Robert L. Mond, Esq..	8	0 10	323 $\nabla$	35.13	201
D Tatsfield (Betsom Hill).....	Met. Water Board.....	5	0 7	820 $\nabla$	41.39	198
†Seal (St. Lawrence Reservoir) ...	A. Grainger, Esq. ....	8	1 0	665 $\nabla$	32.52	...
† „ (Oak Bank Reservoir) .....	„ „ „ .....	8	1 0	550 $\nabla$	34.46	...
† „ (Kemsing Pumping Station)	„ „ „ .....	5	1 0	324 $\nabla$	32.80	...
D Sevenoaks (Chevening Gardens)	Mr. C. Sutton.....	5	1 0	360	35.18	191
D† Knockholt (Kent Waterworks)..	Met. Water Board.....	5	1 0	785	36.85	185
D Otford (Beechy Lees) .....	Mr. R. Edwards.....	5	0 10	480 $\uparrow$	33.60	209
D† Halstead Rectory .....	Rev. F. H. Deane .....	5	1 0	539 $\uparrow$	33.40	208
Downe (Petleys) .....	Miss Murton .....	5	0 11	...	33.49	...
D „ (Council School) .....	A. J. Ridge, Esq. ....	5	0 8	500 $\uparrow$	35.30	196
D Keston (Forest Lodge) .....	F. C. Bayard, Esq. ...	5	1 0	300	34.20	169
D West Wickham (Wickham Court)	„ „ „ .....	5	1 2	300	34.26	174
Hayes (Hayes Place).....	„ „ „ .....	8	1 0	350	31.77	...
D† Orpington (Kent Waterworks)...	Met. Water Board.....	5	1 0	220	32.13	185
Meopham .....	Jesse Garratt, Esq. ...	5	1 1	290 $\nabla$	25.01	156
Cobham (Sole Street).....	J. Scrutton, Esq. ....	5	1 8	311 $\uparrow$	29.54	...
D Bromley Common (Elmfield) ...	Rev. J. P. Faunthorpe..	5	0 9	240 $\nabla$	28.44	195
D Bickley (Sunnydene).....	Sir J. Wrench Towse..	5	1 0	270 $\uparrow$	28.59	181
D „ (Farrants) .....	L. E. Chalmers, Esq....	8	3 6	...	30.15	179
Bromley (Widmore Road) .....	D. G. Simpson, Esq....	8	0 6	260 $\uparrow$	29.12	189
D „ (The Palace) .....	F. C. Bayard, Esq. ...	5	1 0	187	28.50	174
D „ (Ravensfell) .....	H. L. Richardson, Esq.	5	1 0	200	27.54	179
„ (Gilbert Road) .....	Edward Kinder, Esq...	5	2 3	200	27.87	...
„ (Lansdown Road) .....	C. A. Case, Esq. ....	5	1 0	220	28.41	...
D „ (Kinnaird Avenue) ...	C. T. Drew, Esq. ....	8	3 0	300 ?	26.82	191
Shortlands (The Gables) .....	A. March Tapp, Esq....	5	1 0	200	26.65	...
D Beckenham (Croydon Road).....	J. A. Angell, Esq....	8	1 0	110 $\uparrow$	34.47	193
D Chislehurst (Hawkwood) .....	F. C. Bayard, Esq.....	5	1 0	300	26.03	162
D Gravesend (Thong) .....	C. H. Scriven, Esq. ...	5	1 0	255 B	27.58	188
D Southfleet (Kent Waterworks)...	Met. Water Board.....	5	1 0	82	26.37	181

DIVISION II.—SOUTH EASTERN COUNTIES—(*continued*).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with '01 or more recorded.
		Diameter	Height Above Ground		Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.	
KENT—( <i>con.</i> )							
5.—THAMES—Darent—( <i>con.</i> )							
D Wilmington (Kent Waterworks)	Met. Water Board.....	5	1	0	25	25·31	175
Dartford (West Hill House).....	F. C. Bayard, Esq. ...	5	1	3	100	26·08	...
D Higham Waterworks .....	W. A. Walker, Esq....	8	1	0	142 $\nabla$	24·59	163
D „ (Oakleigh) .....	C. Lake, Esq.....	8	1	2	25	25·19	151
D Erith (Crossness) .....	London County Council	14	0	6	16 $\nabla$	21·23	153
SUSSEX. (Area, 1458 sq. mi.)							
1.—LAVANT & C. 175 sq. mi.							
D† Selsey (Large Acres) ... <i>Field g.</i>	E. Heron Allen, Esq...	5	1	0	25	31·68	180
D† „ ( „ „ ) ... <i>Snowdon</i>	„ „ „ „ „ „ „ „	5	1	0	25	32·24	180
„ Sidlesham (Ivy Grange) .....	J. W. „ Moore, „ Esq. ....	5	1	1	10	31·98	...
D Bognor .....	A. G. Thompson, Esq....	8	1	0	21 $\nabla$	31·21	175
D „ (Albert Road) .....	HLFGuermonprez, Esq.	8	1	0	20	31·06	193
„ (Lidsey Lodge) .....	H. Neale, Esq. ....	8	1	2	25	32·88	161
D West Thorney (The Manor House)	H. Padwick, Esq. ....	5	1	0	23 $\nabla$	33·37	199
Arundel (Bonhams, Yapton) ...	W. Harrison, Esq.....	5	1	0	24 $\nabla$	31·56	170
„ (Drove Farm, „ ) ...	„ „ „ „ „ „ „ „	5	1	0	14 $\nabla$	29·82	170
D Chichester (Westgate) .....	G. A. Tyacke, „ Esq. ...	8	0	6	40 $\nabla$	34·59	186
D „ (Oakwood House) ...	F. B. Du Pré, Esq. ...	5	6	0	101 $\nabla$	37·19	203
D West Bourne [Emsworth] .....	Rev. L. B. Birkett.....	5	1	0	50	38·70	200
D Funtington.....	J. A. Greenwood, Esq.	5	1	0	95 $\nabla$	38·06	184
West Stoke Rectory .....	Rev. Preb. W. F. Shaw	5	1	0	176 $\nabla$	38·75	181
Chichester (Goodwood Gardens).	Mr. F. Brock .....	5	1	3	133	40·65	185
D „ (Watergate House) ...	W. M. Christy, Esq....	5	1	0	236 $\nabla$	42·11	209
„ (West Dean Park) ...	Mr. W. H. Smith .....	10	1	6	190 $\nabla$	44·70	155
„ (Chilgrove) .....	J. W. Woods, Esq. ...	5	0	6	284 $\nabla$	40·93	...
D Compton House [Petersfield] ...	Rev. H. M. Langdale...	5	1	0	255 $\nabla$	46·12	224
2.—ARUN. 285 sq. mi.							
Angmering .....	Rev. J. B. Orme.....	5	0	9	44	35·92	...
D Tortington House .....	Major J. A. Travers ...	5	1	0	25 $\nabla$	34·52	197
D Arundel (Patching) .....	J. Drewitt, Esq.....	5	1	0	180	38·88	183
Sutton (Coldharbour) .....	Mr. J. Campbell.....	5	2	0	140	39·98	176
West Chiltington (Gaywood) ...	E. Burney-Young, Esq.	5	0	8	134 $\nabla$	35·72	...
D Cocking Rectory .....	Mrs. Randall .....	5	1	0	193 $\nabla$	42·87	191
D Elsted (Telegraph House).....	The Earl Russell .....	5	1	0	625 $\nabla$	43·90	160
Bepton (Linch Farm) .....	G. Eames, Esq. ....	5	0	8	276 $\nabla$	48·31	170
„ (Fairfield) .....	Major W. A. Chauncy..	5	0	8	155 $\nabla$	40·85	168
D Midhurst (Pendean) .....	Lt.-Col. P. C. Bulloch	5	1	0	206 $\nabla$	44·31	191
D West Harting [Petersfield] .....	Miss Monkhouse.....	5	0	6	...	46·10	194
D Selham Rectory .....	Rev. R. D. H. Gray ...	5	1	0	77 $\nabla$	40·98	194
D Stedham (Rotherhill).....	Dr. W. A. Wills .....	8	0	8	170 $\nabla$	44·63	178
D Rogate (Durford Abbey Farm)...	J. Harmsworth, Esq....	5	4	6	156 $\nabla$	44·05	180
D Easebourne (Hollist).....	Nigel V. Combe, Esq...	5	0	10	107 $\nabla$	44·56	177
D Petworth Park .....	Mr. E. W. Pull.....	5	1	0	182 $\nabla$	38·75	173

## DIVISION II.—SOUTH EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with $\geq 0.1$ or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.	
SUSSEX—(con.)							
2.—ARUN—(con.)							
Tillington (River House) .....	The Hon. Lady Cunliffe	5	1	0	230	38.38	172
Midhurst (Lodsworth) .....	Lt.-Col. E.O. Hollist, R.A.	8	1	3	230	36.38	...
„ (K. Edward VII. San.) .....	Meteorological Office ...	5	1	0	489	42.27	203
Wisborough Green (Lowfold) ...	B. de F. Osmaston, Esq.	5	1	6	120	32.83	...
D Linchmere (Borden Wood) .....	E. G. Lamb, Esq. ....	8	1	0	260 T	44.09	191
„ (Hollycombe) .....	J. C. Hawkshaw, Esq..	8	6	6	550	36.55	...
D Fernhurst (Blackdown House)...	Lady Philipson Stow...	5	1	10	488 T	38.88	158
D Lower Beeding (The Warren) ...	Leicester M. Reed, Esq.	5	0	10	430 T	37.00	181
Horsham (Christ's Hospital).....	S. H. Jennings, Esq....	5	1	0	161 T	32.70	167
+ „ (Manor House) .....	H. Padwick, Esq. ....	8	0	10	140 T	34.96	171
D† „ (Richmond Road) .....	Miss L. E. Whitling ...	5	1	2	190	36.62	214
D† „ (Wimblehurst) .....	Miss E. M. Allcard ...	5	1	0	195 T	35.64	219
D Slinfold (Rapkyns) .....	W. Duncan Knight, Esq.	5	1	0	170	31.66	161
3.—ADUR & C. 237 sq. mi.							
D Rottingdean .....	G. Mason, Esq. ....	5	1	0	120 T	33.23	163
D Worthing (Victoria Park) .....	Dr. R. H. Wilshaw ...	8	1	0	36 T	35.95	192
„ (Esperston, Rugby Rd.) .....	Rev. H. E. Cooper.....	5	1	6	30 T	37.00	202
D „ (Hillmorton Lo. „ „) .....	A. Morris Butler, Esq..	5	1	0	30 T	36.39	186
D† Brighton (Old Steyne) .....	D. Forbes, Esq., M.D..	5	1	0	32 T	33.00	183
D Hove (Town Hall) .....	Dr. A. Griffith .....	8	1	0	25	34.43	183
D Brighton W.W. (Goldstone Bottom)	J. Johnston, Esq., C.E.	8	0	7	140 T	35.52	175
D „ „ (Lewes Road).....	„ „ „	8	3	6	88 T	36.75	193
D „ „ (Shoreham) .....	„ „ „	8	1	9	12 T	35.80	184
D „ „ (Upper Portslade) .....	„ „ „	8	1	3	167 T	37.75	197
D „ „ (Race Hill Reservoir) .....	„ „ „	8	1	0	466 T	37.86	192
D „ „ (Ashford Road, Preston) .....	C. Biddlesden, Esq. ...	5	5	3	315 B	37.38	186
„ „ (The Knowle, Withdeane) .....	P. J. Trouncer, Esq. ...	8	1	3	100	39.10	...
D† „ „ (Ditchling Rd., Preston) .....	G. Berry Hamlin, Esq.	5	1	0	302 T	37.31	192
„ „ ( „ „ „) weekly g. „ „ „	„ „ „	5	1	3	302 T	37.07	...
+ „ „ (Upper Roedale) .....	„ „ „	5	1	0	385 T	39.22	...
D Falmer (Brighton W.W.) .....	J. Johnston, Esq., C.E.	8	1	8	209 T	37.10	211
D Patcham ( „ „) .....	„ „ „	5	1	6	207 T	42.13	212
Steyning (Crescent Road) .....	Mr. H. J. Hide .....	5	1	0	80 T	43.22	189
D Hassocks (Pyecombe) .....	Mr. F. S. Mitchell.....	5	0	7	392	41.45	192
Clayton Windmills .....	E. A. Martin, Esq. ....	5	1	0	584 T	43.80	...
„ Rectory .....	Rev. T. H. R. Shand...	5	1	6	201 T	44.35	196
D Hurstpierpoint (Danny Park) ...	Mr. J. J. Bunney .....	8	1	3	180	48.03	161
D Ditchling .....	E. A. Martin, Esq. ....	5	1	0	220 T	40.97	171
Keymer (The Limes) .....	Miss Berry .....	5	1	1	145 T	42.28	...
Burgess Hill (Ote Hall) .....	Mrs. Woods .....	5	1	6	...	40.17	...
Cowfold (Maple Bank) .....	Mr. S. Ford .....	5	1	6	373 ?	29.96	...
Cuckfield (Workhouse) .....	Meteorological Office ...	8	1	0	389	37.83	...
D „ (Henmead Hall) .....	Mrs. Maxwell Campbell	5	3	5	365 T	37.38	207
D Lower Beeding (Leonardslee) ...	Sir E. G. Loder, Bart...	8	1	0	365	37.83	193
4.—OUSE. 224 sq. mi.							
D Seaford College .....	Col. F. W. Savage.....	5	1	6	38 T	34.78	181

## DIVISION II.—SOUTH EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with 41 or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level.	1912	
		in.	ft. in.	feet.	inches.	
SUSSEX—(con.)						
4.—OUSE—(con.)						
D Newhaven (Poverty Bottom) ...	J. T. Bickford, Esq. ...	8	1 1	51 $\frac{1}{2}$	32·88	176
D Lewes (Little Dene) ...	Miss B. Brand ...	8	0 11	93 $\frac{1}{2}$	40·00	191
D Falmer Court ...	Miss K. Moulden ...	5	3 0	312 $\frac{1}{2}$	41·26	204
D Lewes W.W. (Kingston Pump. Sta.)	A. Wells, Esq. ...	8	1 3	13 $\frac{1}{2}$	41·02	196
D „ (Bedford Lodge) ...	Mrs. C. R. Kemp ...	5	1 0	85 $\frac{1}{2}$	31·70	209
East Hoathley (Old Whyly) ...	H. C. Harbord, Esq. ...	5	1 0	160	36·45	...
D Isfield Place ...	Major H. King ...	5	1 0	51	35·10	179
„ „ weekly g. ...	„ „ ...	5	1 0	51	35·20	...
„ „ monthly g. ...	„ „ ...	5	1 0	51	35·18	...
D Uckfield (Agricultural College) ...	Prof. S. Allinson Woodhead ...	8	1 0	166 $\frac{1}{2}$	35·27	187
„ „ „ „ „	Mrs. C. Powell ...	5	1 5	134 $\frac{1}{2}$	33·26	173
D Haywards Heath (Franklyn Road)	Mr. R. Inglis ...	5	1 0	260 $\frac{1}{2}$	40·82	189
D „ „ (S. Wilfrid's Par.)	Mr. J. E. Shirley ...	5	1 0	300 $\frac{1}{2}$	39·16	188
D Buxted Park ...	Mr. G. Phillips ...	8	0 7	94	41·85	199
„ „ (Strawberry Hall) ...	C. Rintoul, Esq. ...	5	1 0	180	38·41	195
D Mayfield (Five Ashes) ...	Miss Emily Aston ...	5	1 5	300	38·77	206
D Nutley Vicarage ...	Rev. H. J. Peckham ...	5	1 0	386 $\frac{1}{2}$	38·06	203
D „ (The Hall) ...	Miss Cook ...	5	0 10	417	39·73	197
D Haywards Heath (Brook House)	H. R. G. Clarke, Esq. ...	8	1 0	240	36·45	168
D Ardingly (Lywood House) ...	G. Forrester Scott, Esq. ...	5	0 9	240 $\frac{1}{2}$	36·78	198
D Balcombe (The Gables) ...	Mr. G. J. Warren ...	8	1 3	358 $\frac{1}{2}$	39·89	206
D „ „ (Stockcroft) ...	R. Newton, Esq. ...	5	1 1	341 $\frac{1}{2}$	39·85	191
D „ „ (Waterworks) ...	F. Martin, Esq., C.E. ...	8	1 0	471 $\frac{1}{2}$	41·95	160
D „ „ (Highley Manor) ...	H. Faure Walker, Esq. ...	8	1 6	420	34·85	192
5.—CUCKMERE & C. 189 sq. mi.						
D† Eastbourne (Wilmington Square)	Dr. W. G. Willoughby ...	5	1 0	39	37·53	187
D „ „ (Glenthorne) ...	Miss Woodd ...	8	1 6	86 $\frac{1}{2}$	37·91	194
D „ „ (Arundel Road) ...	J. C. Wright, Esq. ...	5	1 0	70	38·20	...
D „ „ (Ocklynge Cemetery)	C. Montague Wood, Esq. ...	5	3 6	167 $\frac{1}{2}$	36·80	173
D „ „ (Staveley Cross) ...	J. Weston, Esq. ...	5	1 6	110 $\frac{1}{2}$	37·31	201
D West Dean ...	A. J. Howard, Esq. ...	8	1 0	112 $\frac{1}{2}$	31·01	188
D Jevington (Church Farm) ...	„ „ „ „ „	8	0 9	274 $\frac{1}{2}$	39·01	213
D Litlington (Plough & Harrow Inn)	„ „ „ „ „	8	1 0	19 $\frac{1}{2}$	35·91	170
Willington Sewage Farm ...	Eastbourne R.D.C. ...	5	1 0	24	39·91	...
Bexhill (Marina) ...	Bexhill Observer ...	8	1 0	27	28·60	192
† St. Leonards (West Marina) ...	H. Colborne, Esq. ...	8	1 0	24 $\frac{1}{2}$	31·53	199
† „ „ (Gensing Gardens) ...	„ „ „ „ „	8	1 0	179 $\frac{1}{2}$	31·96	207
D Berwick (Aloiston) ...	R. Matthews, Esq. ...	5	1 0	172 $\frac{1}{2}$	39·80	196
D Hailsham ...	Rev. F. Clyde Harvey..	5	1 0	105	38·55	154
D „ „ (Magham Down) ...	W. E. Bear, Esq. ...	5	2 9	90 $\frac{1}{2}$	33·23	166
D Hurstmonceux Place ...	H. A. James, Esq. ...	5	1 8	83 $\frac{1}{2}$	31·95	152
Hastings ...	Meteorological Office ...	8	1 0	174	31·96	207
D „ „ (Newgate) ... (R)	P. H. Palmer, Esq., C.E.	8	5 6	240	33·32	167
„ „ (Filsham Reservoir) ...	H. Colborne, Esq. ...	5	0 10	91	32·30	...
„ „ (Halton Reservoir) ...	„ „ „ „ „	5	0 10	301	34·44	...
„ „ (Fairlight Reservoir) ...	„ „ „ „ „	5	0 10	517	34·45	...
D „ „ (Cemetery) ...	Walter Field, Esq. ...	5	0 8	478	33·02	196



## DIVISION II.—SOUTH EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with 40 or more recorded.
		Diameter	Height Above Ground		Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.	
<b>SUSSEX—(con.)</b>							
<b>5.—CUCKMERE &amp; C—(con.)</b>							
Battle (Crowhurst Park) .....	Mr. A. Munday .....	5	1	0	350	37·35	...
„ Catsfield (Parkgate Gardens) ...	Mr. E. P. Edwards ...	5	1	0	300	34·76	175
„ Horeham Grange .....	W. F. Beauford, Esq..	5	1	2	260 †	38·89	187
„ „ Road (Hollycroft Cottage) ..	J. Hamlin, Esq.....	5	1	0	300 †	39·10	181
„ Heathfield (The White Cottage) ..	J. F. Leigh Clare, Esq.	5	1	3	500 †	39·02	185
<b>6.—ROTHER. 194 sq. mi.</b>							
„ Hastings (Guestling Rectory) ...	Rev. E. N. Bloomfield.	5	1	5	125 †	35·58	183
„ Winchelsea (Nesbit Cottage) ...	Miss G. Leigh.....	5	1	1	124 †	35·49	201
„ „ (Mariteau House) ...	C. W. Campion, Esq...	5	1	0	120	35·77	182
„ Battle (Whatlington) .....	Miss H. Gripper.....	5	1	3	90 †	39·37	188
„ Udimore (The Hammonds) .....	J. G. Mair-Rumley, Esq.	8	1	0	144 †	33·28	170
„ Rye (Point Hill) .....	Dr. C. S. Ticehurst ...	5	1	0	127	32·59	160
„ Beckley (Bixley Lodge) .....	B. E. de N. Ramus, Esq.	5	1	0	280	38·36	164
„ Heathfield (Tottingworth Park) ..	Mr. J. Masson.....	5	1	0	500 †	41·36	177
„ Bodiam (South Park) .....	Mrs. Jackson .....	5	1	1	208 †	37·05	205
„ Wadhurst (The Olives).....	Miss Edith P. Luck ...	5	1	0	380 †	40·95	210
„ Etchingham (Shoywell Manor) ..	I. Seligman, Esq.....	4	1	9	250	42·74	...
„ Hurst Green (Boarzell) .....	Sir F. Fison, Bart. ...	8	1	0	270 †	36·65	198
„ Ticehurst (Myskyns).....	E. H. Cartwright, Esq.	5	1	0	340 †	41·12	199
„ „ House .....	Mr. J. D. Jordan .....	5	4	9	423 †	39·27	159
<b>7.—MEDWAY. 117 sq. mi.</b>							
„ Crowborough (Jarvis Brook).....	Crowborough Water Co.	5	1	0	325 †	42·53	184
„ „ (Uckfield Lodge) .....	J. J. S. Driberg, Esq. ...	8	1	0	796 †	46·47	243
„ „ (Te Whare).....	Miss Hames .....	5	1	0	796 †	49·58	259
„ Wadhurst (Lower Cousley Wood) ..	F. Wilkin, Esq.....	5	1	0	416 †	37·22	187
„ Nutley (Pippingford Park) .....	Mr. P. Sutherland .....	5	1	0	600	43·71	187
„ Forest Row (Wych Cross Place) ..	D. W. Freshfield, Esq..	5	0	10	600 †	43·61	174
„ „ „ (Hindleap Lodge) .....	Mr. A. Adam .....	5	1	6	620	38·83	171
„ „ „ (Charwood Farm) .....	A. Hoare, Esq.....	5	1	0	250 †	41·46	...
„ Frant (Hazelhurst) .....	C. E. Ashfield, Esq. ...	5	1	8	450	38·57	198
„ „ (Henley Lodge) .....	E. Malden, Esq.....	5	1	0	445 †	38·58	194
„ „ „ (Snowdon g.) .....	„ „ „ „ .....	5	1	6	440	39·56	198
„ „ (Eridge Castle) .....	Mr. A. Wilson .....	5	1	0	400	42·15	166
„ „ (Highfield) .....	C. M. R. Cleeve, Esq...	5	2	3	413	37·42	...
„ Crawley Down (The Grange).....	T. H. W. Buckley, Esq.	5	1	0	430 †	39·77	215
„ East Grinstead (Brookhurst Obsy.) ..	W. S. Franks, Esq. ...	8	1	0	435 †	37·51	216
„ „ „ (Highfields) .....	G. Mason, Esq.....	5	0	9	400	35·27	193
„ „ „ (Cranston Road) .....	Mr. G. Mitchell .....	8	2	2	420 †	39·79	197
„ „ „ (Shovelstrode) .....	Capt. Stanhope Bartley	5	2	6	320 †	36·44	180
„ Glen Andred (Groombridge) .....	Mrs. Boardman .....	8	1	0	320	38·04	173
„ Cozleigh [ „ „ ] .....	J. Anderson, Esq.....	8	2	0	230	37·59	194
<b>8.—THAMES—Mole. 27 sq. mi.</b>							
„ Worth (South Hill) .....	T. E. Ravenshaw, Esq.	8	1	6	558 †	41·42	213
<b>9.—THAMES—Wey. 10 sq. mi.</b>							

## DIVISION II.—SOUTH EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain. 1912	Days with or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level		
		in.	ft.	in.	feet.	inches.	
<b>HAMPSHIRE. (Area, 1622 sq. mi.)</b>							
<b>1.—ISLE OF WIGHT. 150 sq. mi.</b>							
† Ventnor (Flint Cottage) .....	J. S. Ineson, Esq. ....	5	1	0	99	33·76	180
† „ (Royal National Hospital) .....	Miss M. Gibson .....	5	1	0	60	30·03	189
† Shanklin .....	E. C. Cooper, Esq., C.E. ....	8	1	0	184	38·94	171
† Sandown (Free Library) .....	C. E. Gilchrist, Esq. ....	8	1	0	15	38·26	200
† Totland Bay (Aston House) .....	J. Dover, Esq. ....	8	1	3	145	35·24	195
† Newport (Grammar School) .....	C. D. Vibert, Esq. ....	5	1	0	65	40·35	191
Brading (Ryde W.W., Knighton) .....	J. T. Harvey, Esq., C.E. ....	8	2	0	53	46·63	163
† Ryde (New Lodge, St. John's Park) .....	Mrs. Dobie .....	5	1	1	147	37·45	189
„ (Perivale) .....	Major E. C. Murray .....	5	1	3	193	39·57	179
† „ (Pier Street) .....	G. Nicholson, Esq. ....	12	10	8	15	40·90	170
† „ (Esplanade Gardens) .....	C. Mathew, Esq. ....	8	2	0	6	35·66	171
† „ (Beldornie Tower) .....	P. Craven Hall, Esq. ....	5	1	0	30	33·16	183
† Wootton (Fernhill) .....	C. G. Brodie, Esq. ....	8	0	6	118	41·83	167
Binstead (Quarr Hill) .....	Dr. J. Winthrop Woodruff .....	5	0	10	150	36·37	...
† East Cowes (Spring Hill) .....	G. Shedden, Esq. ....	5	1	0	121	36·65	180
Cowes W.W. (Broadfield) .....	J. W. Webster, Esq., C.E. ....	5	0	10	161	37·36	171
„ (High Street) .....	Mr. H. S. Benzie .....	5	6	0	20	38·99	171
„ (R. Yacht Squad. Castle) .....	„ „ „ .....	8	4	0	0	33·01	167
<b>2.—STOUR. 32 sq. mi.</b>							
† Bournemouth (Coastguard Stat.) .....	Messrs. Primavesi Bros. ....	5	1	0	100	38·86	211
† „ (South Cliff) .....	C. Dales, Esq. ....	5	1	0	41	35·87	195
† „ (Pleasure Gardens) .....	„ „ „ .....	5	1	0	41	43·20	195
† „ (West Cliff) .....	Rev. G. A. Rideout .....	5	1	0	130	42·58	192
† „ (Clarendon Court) .....	G. Galpin, Esq. ....	5	1	0	130	39·69	183
† „ (Vale View) .....	C. Dales, Esq. ....	5	1	0	145	43·67	202
† Christchurch (The White House) .....	A. H. Searle, Esq. ....	5	1	4	18	41·32	213
† „ (Heron Court) .....	The Earl of Malmesbury .....	5	1	2	25	45·19	194
† „ (Hurn Bridge House) .....	C. W. T. Drake, Esq. ....	8	1	0	30	43·71	215
<b>3.—EAST AVON &amp; C. 114 sq. mi.</b>							
† Christchurch (Winkton Lodge) .....	Miss Lassell .....	5	1	0	34	37·41	208
† Hinton Admiral (East Close) .....	Col. A. M. Blake .....	5	1	0	185	40·54	182
† Ringwood (West Mount) .....	R. F. Williams, Esq. ....	5	1	0	100	41·67	217
„ Vicarage .....	Rev. W. D. Bodkin .....	5	2	0	70	38·72	...
„ (Ellingham Vicarage) .....	Rev. E. W. Poore .....	8	0	6	66	40·75	198
„ (Somerley Gardens) .....	Mr. W. Potts .....	5	3	3	68	40·30	160
† Fordingbridge (Cuckoo Hill) .....	Heywood Sumner, Esq. ....	5	1	0	150	41·46	194
† „ (Oaklands) .....	S. B. Rake, Esq. ....	8	1	0	135	42·60	191
<b>4.—TEST &amp; SOLENT. 551 sq. mi.</b>							
† Milford-on-Sea (Salt Grass) .....	A. C. G. Heygate, Esq. ....	5	1	0	6	36·45	176
„ „ „ (Milford House) .....	E. L. Agar, Esq. ....	5	0	8	40	34·74	196
† Lymington (The Salterns) .....	P. A. Ouvry, Esq. ....	5	1	0	1	37·56	188
„ Milton (Wootton Hill) .....	Lt.-Col. R. Harman .....	5	1	0	188	41·44	182
† Burley (Park View) .....	Rev. W. Esdaile .....	5	1	0	200	44·25	177
† Fawley (Cadland) .....	Mr. L. Smith .....	8	4	6	52	38·72	209
„ Hythe (The Garth, Dibden) .....	P. C. Crossley, Esq. ....	8	1	0	127	38·71	191
„ „ (Heathfield, „) .....	Mr. Jesse Reeves .....	5	1	3	127	41·18	196
„ „ (Heatherdown, Purlieu) .....	J. H. S. Gilman, Esq. ....	5	1	4	126	41·42	196

DIVISION II.—SOUTH EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with $\cdot 01$ or more recorded
		Diameter	Height Above Ground.	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
<b>HAMPSHIRE—(con.)</b>						
<b>4.—TEST &amp; SOLENT—(con.)</b>						
Lyndhurst (Cuffnells) .....	R. G. Hargreaves, Esq.	6	1 0	195	48.42	...
Marchwood (Byams) .....	Maj. H. J. G. Lloyd ...	5	1 0	0	37.97	183
Southampton (East Park) .....	Col. C. F. Close, C.M.G.	8	1 0	65 $\pi$	37.27	189
„ (Hulse Road) .....	A. Spooner, Esq. ....	5	1 1	88	39.01	...
„ Common Res. ....	M. E. C. Rodda, Esq. ....	5	1 0	193 $\pi$	36.85	...
D Ampfield Vicarage .....	Rev. Vere Awdry .....	5	3 0	233 $\uparrow$	37.54	199
Romsey (Paultons) .....	A. H. Ridout, Esq. ....	8	1 0	54	40.09	...
D „ (Timsbury) .....	(R) W. Matthews, Esq., C.E.	8	1 8	96 $\pi$	38.68	182
D West Dean .....	Rev. E. Wells .....	5	1 0	149 B	40.51	197
Horsebridge (Bossington House)	W. H. Deverell, Esq. ...	8	0 9	92 $\pi$	39.11	186
D† Stockbridge (Ashley) .....	Leph S. Powell, Esq. ...	5	1 3	235 $\pi$	39.97	191
D Broughton .....	W. Steele Tomkins, Esq.	5	1 0	125 $\uparrow$	41.78	195
D Barton Stacey (Moody's Down) ..	H. J. Gardiner, Esq. ...	5	1 3	230 $\uparrow$	37.05	177
D Micheldever (Northbrook House)	Miss E. M. Hare .....	5	0 11	325 $\uparrow$	39.30	198
D Sutton Scotney (The Nursery) ...	R. d'Eyncourt Day, Esq.	5	1 0	200	37.48	182
Longparish House .....	Mrs. Diggle .....	5	0 9	190 B	36.15	...
Andover (Fyfield) .....	Andover Advertiser ...	...	...	...	34.82	196
D Oakley Rectory .....	Rev. F. G. Hume .....	5	1 6	400	39.48	207
„ (Malshanger) .....	G. Walter, Esq. ....	5	1 0	400	40.08	185
„ (Upper Wootton) .....	W. R. Thomson, Esq. ...	5	1 4	500	38.20	183
D Faccombe Manor .....	H. Gibson, Esq. ....	8	1 3	760 $\uparrow$	42.63	205
Vernhams Dean (Rowe House) ...	Adm. E. H. Gamble, C.B.	5	0 7	650 $\uparrow$	39.36	...
<b>5.—ITCHEN &amp; SPITHEAD. 422 sq. mi.</b>						
D Alverstoke (Monckton House) ...	J. Blake, Esq. ....	5	1 0	15	31.44	173
D† Portsmouth (Eastney) .....	A. W. Ward, Esq., C.E.	8	0 9	16 $\pi$	29.88	156
D† „ (Victoria Park) .....	Dr. A. Mearns Fraser ...	5	1 0	18 $\pi$	31.95	174
Hayling Island (Richmond House)	E. S. McEuen, Esq. ....	5	1 2	20 ?	33.74	168
D „ „ (Littlemead) .....	Douglas S. Bird, Esq. ...	5	1 2	5 $\pi$	32.18	183
D „ „ (Lama House) .....	J. Johnson, Esq. ....	5	1 2	14 $\pi$	30.84	168
Porchester (Noel Cottage) .....	Miss Montgomerie Frost	5	2 0	...	30.97	194
Fareham (Cams Hall) .....	late Capt. J. Ramsay ...	5	1 6	40	32.25	...
„ (Burpham House) .....	W. S. Stevenson, Esq. MD	5	1 6	30	33.50	172
D „ (The Mount) .....	H. R. Pink, Esq. ....	5	1 6	250 $\pi$	34.62	188
D „ (Roche Court) .....	Mrs. H. F. Rawstorne ..	5	1 0	104 $\pi$	37.32	183
D Warsash (Hook Vicarage) .....	Rev. C. B. Lloyd .....	5	1 2	60 $\uparrow$	35.89	188
D† Havant (Farlington) .....	H. Ashley, Esq., C.E. ...	5	1 0	77 $\uparrow$	31.38	189
† „ ( „ ) .....	M „ „ „ „ „ „ „	5	1 0	77 $\uparrow$	31.90	...
D† „ „ „ „ „ „ „	„ „ „ „ „ „ „	5	1 0	25 $\uparrow$	34.61	202
† „ „ „ „ „ „ „	M „ „ „ „ „ „ „	5	1 0	25 $\uparrow$	34.82	...
„ (Warblington Cottage) ...	G. H. Evans, Esq. ....	5	0 6	30 $\uparrow$	33.86	...
Cosham (Purbrook Grange) .....	Miss F. A. Deverell ...	8	0 9	100 ?	38.74	174
Netley (Lake House) .....	Miss Pennington .....	8	1 0	54 $\pi$	38.25	215
Wickham (Park Place) .....	Lt.-Col. H. R. Farquhar	5	1 0	150 $\uparrow$	37.33	181
Southampton (Thornhill Park) ...	Mr. G. Busby .....	5	1 8	220 $\uparrow$	38.64	172
„ (Bitterne, Moorlands) .....	Courtenay F. Wilson Esq	5	1 0	200	37.63	179
D Botley (Hedge End) .....	Rev. T. H. Philpott ...	8	1 1	178 $\pi$	39.67	193
† „ (Brook House) .....	Beckett Powell, Esq. ...	5	3 2	45	37.89	...

DIVISION II.—SOUTH EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with "or more recorded."
		Diameter	Height Above Ground	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
<b>HAMPSHIRE—(con.)</b>						
<b>5.—ITCHEN &amp; SPITHEAD—(con.)</b>						
+ Botley (Rectory) ... ..	Rev. G. E. C. Osborne..	5	1 0	50 ?	38·93	...
d+ „ (Botley Hill) .....	Lady Jenkyns .....	5	1 6	36 I	39·36	202
d+ „ (Beechcroft, Curdridge)..	Miss L. M. S. Pasley...	5	1 0	96 A	38·92	216
d+ Horndean (Blendworth Lodge)...	Mrs. Long .....	8	0 10	217	47·00	199
d Catherington (St. Catherine's) ...	Capt. R.H.Archer,R.N.	5	1 3	370 T	42·41	207
d Hambledon (Rosecroft).....	Mr. L. Dawes.....	5	1 0	200 T	44·21	189
Chalton (Woodcroft) .....	M C. J. P. Cave, Esq. ...	5	1 0	230 T	43·58	...
d Bishops Waltham(The PalaceHo.)	A. F. Hardy, Esq.....	5	1 3	116 T	38·03	176
„ „ (Swanmore House) .....	W. H. Myers, Esq. ...	8	1 0	390 T	46·04	178
d „ „ (Hill Place) .....	Major W. A. Daubeny..	8	0 9	260 T	41·46	194
d „ „ (WintershillHall)	J. S. Moss, Esq.....	5	1 0	290 A	40·22	175
d Droxford (Uplands) .....	Miss Bridge .....	5	1 0	279 T	45·00	199
d „ (Fairfield House) .....	H. HamiltonBridge, Esq	5	1 0	254	41·58	204
d „ (Fir Hill) .....	Capt.Mackenzie-Grieve	5	3 6	212 A	42·10	194
d Eastleigh (Fair Oak Park) .....	G. H. Pember, Esq. ...	5	1 0	180	37·22	170
d Chandlers Ford (Fryern) .....	Miss Grace Stuart .....	5	1 2	150	37·06	177
d+ Petersfield (Ditcham Park) .....	C. J. P. Cave, Esq. ...	8	1 0	555 A	46·03	202
+ „ (Downley) .....	M „ „ „ „ „ „ „ „ „ „	5	1 2	374 A	46·99	...
d+ East Meon (Westbury House) ...	Col.LeRoyLewis,D.S.O.	5	2 6	296 A	43·65	169
d Otterbourne (The Gorse,Colden Com.)	R. Wigram, Esq. ....	5	2 0	143	37·92	181
d „ (Elderfield) .....	G. Norsworthy, Esq....	5	1 0	137 A	39·01	193
d „ (W.W., Shawford). .....	E. C. Rodda, Esq.....	5	1 0	113 A	36·14	181
Winchester (Owslebury House)..	W. Welsh, Esq.....	...	...	365	38·56	178
d Twyford (Pumping Station)..(R)	W. Matthews, Esq.C.E.	8	1 9	139 A	38·08	178
Kilmeston Manor .....	C. G. Heathcote, Esq...	5	4 6	323 T	43·51	...
d Petersfield (Broadhanger).....	Mrs. R. M. Caulfeild...	5	1 0	730	50·69	...
Privett (Basing Park Gardens)..	Mr. T. S. H. Down ...	...	...	530 ?	46·64	...
d Colmer Rectory .....	Rev. A. C. Hervey.....	5	1 1	560 A	45·42	173
d Ovington Rectory .....	Rev.H.F. La M.Stowell	5	1 0	221 T	46·36	204
„ (Barley Down) .....	J. Stevens, Esq.....	5	1 10	300	41·36	232
East Tisted (Rotherfield Park)...	Mr. W. H. Yates .....	5	1 0	550 T	49·88	203
d Newton Valence Vicarage.....	Rev. A. C. Maclachlan.	5	1 0	586	42·51	197
d Swarraton Rectory .....	Rev. W. L. W. Eyre...	5	1 0	310 A	37·83	200
d Medstead Manor .....	(R) Capt. E. Jervoise, R.N.	8	1 10	705 T	38·77	202
d Ellisfield Manor.....	H. Hoare, Esq. ....	...	0 9	630	41·93	186
<b>6.—ARUN. 32 sq. mi.</b>						
+ Petersfield (Sunwood) .....	M C. J. P. Cave, Esq. ...	5	0 10	479 A	46·91	...
„ (The Miscombe) ... M	„ „ „ „ „ „ „ „ „ „	5	1 1	250 B	47·17	...
+ „ (Old Ditcham).....	„ „ „ „ „ „ „ „ „ „	5	1 1	250 B	45·87	...
d „ (Nursted House) .....	J. Rowe Bennion, Esq..	5	1 9	350	45·92	157
„ „ (Weston) .....	Capt. P. W. Seward ..	5	1 0	330 T	48·17	183
d+ „ (Fairley) .....	A.WLeachman,Esq.MD	5	0 9	202 T	45·63	194
„ (The Mount,Ramshill)	F. G. Padwick, Esq....	8	1 0	250	48·03	192
Steep (Bushy Hill).....	Gen.Sir W.F.Kelly,KCB	5	1 0	440 T	46·90	184
d Liss (Overcombe) .....	Miss Jebb .....	5	1 0	500	42·69	194
d „ (Highfield).....	J S GambleEsq.CIE.,FRS	5	0 9	325 A	44·83	211

## DIVISION II.—SOUTH EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with .01 or more recorded.
		Diameter	Height Above Ground		Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.	
HAMPSHIRE—(con.)							
6.—ARUN—(con.)							
D Liss (Kippences) .....	Rev. W. A. H. Thorold	5	0	9	250	43·61	179
D Greatham (King's Holt) .....	Mrs. Chase Parr.....	5	1	7	325 †	42·01	187
„ (Manor House).....	F. Coryton, Esq. ....	7	0	7	250	41·81	...
7.—THAMES—Wey. 92 sq. mi.							
D Liphook (Fowley) .....	E. A. Lee, Esq. ....	5	0	10	296 †	43·25	219
D Selborne (The Wakes) .....	Col. A. Bibby .....	5	1	0	400 †	45·68	201
D† Grayshott .....	Mrs. Lyndon .....	5	1	0	661 †	42·47	208
D Headley (Eveley) .....	Mr. T. Carter.....	5	1	3	295 †	42·65	179
Liphook (Bordon Camp) .....	The Division Officer R.E.	8	1	0	268 †	37·96	163
Headley Park .....	Mr. G. Glaysher.....	8	1	6	250 ?	33·87	...
Alton (Holybourne Lodge) .....	Capt. Francis D. Webb	5	1	0	365 †	37·14	164
„ (Shalden Manor) .....	J. Gathorne Wood, Esq.	8	3	0	594 †	42·42	204
D Froyle (Park Edge) .....	R. B. Sedgwick, Esq...	5	1	0	350 †	32·85	199
Bentley (Marelands) .....	Mrs. Seawell .....	5	0	8	310	34·41	159
8.—THAMES—Loddon. 164 sq. mi.							
D Herriard Vicarage.....	Rev. E. L. Crawhall ...	5	1	0	557 †	38·60	190
D Warren Corner [Farnham] .....	F. Wilkin, Esq.....	5	1	0	560 †	32·36	205
D Upton Grey (Hoddington Ho.)...	Lord Basing .....	8	1	0	378 †	39·42	184
Mapledurwell .....	Miss Thorp .....	8	1	2	270	35·67	...
D Aldershot (Sewage Works) .....	Mr. J. Edwards .....	5	1	0	231 †	34·97	212
D Basingstoke (Queen's School) ...	L. S. Theobald, Esq. ...	5	1	0	289	38·74	180
D „ (Pumping Station) ..	F. R. Phipps, Esq., C.E.	5	0	6	320 †	36·35	180
D „ (Sherborne St. John) ..	Rev. D. W. Chute.....	5	1	2	267 †	36·91	208
D Winchfield (Elvetham Park) ...	Mr. G. B. Mitchison ...	8	1	0	217 †	36·11	206
D Hartley Wintney .....	W. G. Machin, Esq. ...	5	1	2	222 †	36·46	202
D „ Grange .....	F. Walkinshaw, Esq... 8	1	0	221 †	38·72	183	
D Blackwater (Hawley) .....	D. Morland, Esq. ....	5	1	0	210 †	32·02	183
D Strathfieldsaye Rectory .....	Rev. F. Page-Roberts..	5	1	0	164	33·72	199
D „ Gardens .....	Mr. A. G. Nichols .....	5	1	8	166	34·74	184
D Heckfield (Park Corner) .....	Miss Martineau .....	5	1	2	257	31·48	188
9.—THAMES—Kennet. 65 sq. mi.							
D Kingsclere (Tower Hill House)...	Dr. R. Maples.....	5	0	3	327 †	37·90	200
BERKSHIRE. (Area, 722 sq. mi.)							
1.—TEST. 2 sq. mi.							
2.—THAMES—Bourne. 15 sq. mi.							
D Sunningdale (Lynwood) .....	G. Rodie Thompson, Esq.	5	1	0	266 †	33·50	208
3.—THAMES—Loddon & c. 162 sq. mi.							
D Wellington College .....	C. A. Stocken, Esq. ...	5	1	0	283 †	34·42	179
Finchampstead (West Court) ...	C. E. Harris-St. John, Esq	5	1	0	180 †	32·36	218
Swallowfield Park .....	Sir Charles Russell, Bart.	5	1	0	150 †	31·31	...
D Ascot (Winkfield Manor) .....	C. A. Ferard, Esq.....	5	1	0	240 †	34·26	211
D Wokingham (East Heath) .....	J. R. James, Esq. ....	5	1	0	210 †	32·24	178
D „ (Staverton) .....	H. C. Mylne, Esq. ....	5	1	0	220 †	31·55	206
D „ (Pinewood) .....	Meteorological Office...	8	1	0	219	31·46	186

## DIVISION II.—SOUTH EASTERN COUNTIES—(continued).

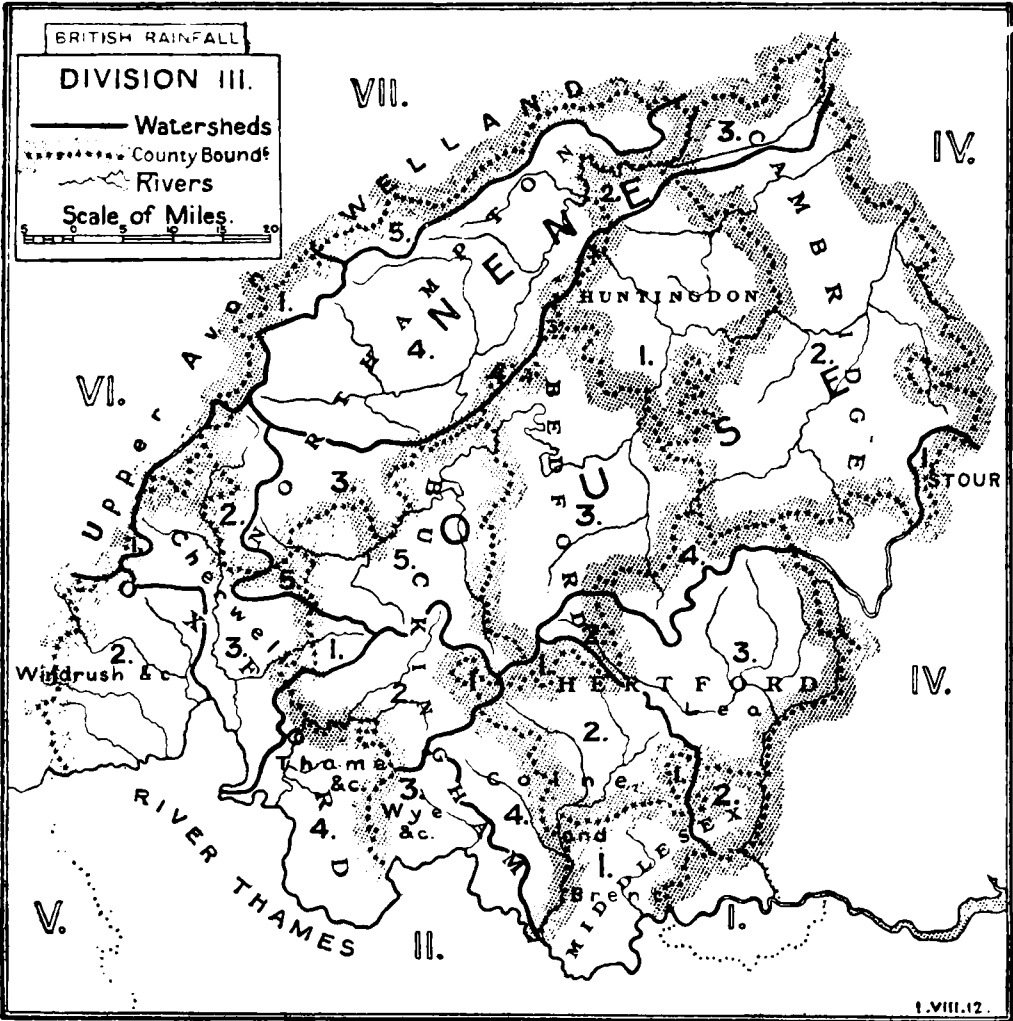
STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with $\frac{1}{4}$ or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
<b>BERKSHIRE—(con.)</b>						
<b>3.—THAMES—Loddon &amp; c—(con.)</b>						
Winkfield (Ryemead) .....	Mrs. Aubrey Elliott ...	5	0 10	220 T	33·23	22
Warfield (Hawthorndale) .....	G. H. Burges, Esq. ...	5	1 0	207	31·99	202
Windsor (Royal Gardens) .....	Mr. T. Edwards. ....	5	1 0	88 T	31·64	210
„ (Osborne Road) .....	Miss M. G. Cookson ...	8	1 0	80	30·63	190
„ (Alma Road) .....	C. Sainty, Esq., C.E....	5	1 0	72	30·22	193
Reading (Earley) .....	M. J. Sutton, Esq. ...	8	1 6	150 T	28·54	...
Maidenhead (Heywood Park) ...	Greville H. Palmer, Esq.	8	1 0	102	31·65	166
„ (Hall Place) .....	Sir G. A. C. East, Bart.	8	1 2	275 A	31·76	183
Bisham Vicarage .....	Rev. W. Farrer .....	5	1 0	100	33·65	193
Temple House [Marlow] .....	Mr. G. Groves. ....	5	1 0	106	34·64	218
<b>4.—THAMES—Kennet &amp; c. 224 sq. mi.</b>						
Mortimer (Wokefield Park) .....	A. Palmer, Esq. ....	5	4 0	180 A	29·62	179
Brimpton (Stonehouse) .....	F. Hadden, Esq. ....	5	0 7	350	34·89	165
Newbury (Sandleford Priory) ...	Mr. R. H. Butcher ...	8	2 0	381 A	44·18	193
„ (Greenham Common) ..	H. L. Bowman, Esq. D. Sc	5	1 0	328 A	38·49	186
Sulhampstead (Firlands) .....	J. T. Strange, Esq. ...	5	1 0	300 T	35·00	211
Woolhampton (Douai Abbey) ...	Rev W. B. Buggins, O.S.B.	5	1 3	365 T	32·63	190
Beenham House .....	Capt. W. Waring .....	8	2 2	320	32·11	182
Bucklebury Place .....	Mr. G. Nye .....	5	1 0	420	34·47	188
Reading (Leighton Park School)	Meteorological Office...	8	1 0	265	29·24	...
„ W.W. (Bath Road) ...	L. C. Walker, Esq., C.E.	8	...	218	27·46	162
„ (Fobney Pumping Stat.)	„ „ „ „ „ „ „ „ „ „	5	1 3	132	25·49	168
„ (Forbury Gardens) .....	J. Bowen, Esq., C.E....	5	1 5	145 A	30·80	203
„ (University College) ...	Dr. H. N. Dickson. ....	5	1 0	152 A	27·70	179
„ (Victoria Square) .....	W. Haynes, Esq. ....	5	1 6	145 T	31·08	193
„ (Caversham Lock) .....	R. A. Swarbreck, Esq..	5	3 5	...	28·42	178
Newbury (Welford Park) .....	Mr. C. Pope .....	5	1 0	341 T	39·04	200
Lambourn (East Garston) .....	J. H. Spackman, Esq..	5	2 6	395 T	34·51	201
„ (Clarlionville) .....	F. Gullett, Esq. ....	5	1 6	500	32·65	156
<b>5.—THAMES—Ock &amp; c. 1319 sq. mi.</b>						
Reading (Englefield) .....	J. H. Benyon, Esq. ...	5	1 1	175 ?	32·52	178
Frilsham House .....	Mr. W. E. Austen. ....	5	1 0	370	32·79	178
Yattendon Court .....	Mr. F. Pitman .....	5	0 10	440 T	33·02	170
Farnborough Rectory .....	Rev. J. B. H. Whitehurst	5	1 3	713 T	47·09	204
Wallingford (Aston Tirrold) ...	J. Harold Slade, Esq..	5	1 1	250	32·44	167
„ ( „ Upthorpe) ...	L. G. Slade, Esq. ....	8	1 2	202	32·69	187
Didcot (Upton) .....	Miss Fry .....	5	2 3	240 T	30·52	188
„ ( „ ) .....	„ „ „ „ „ „ „ „ „ „	5	1 0	240 T	30·03	190
Wantage (Ginge Manor) .....	Miss Elliot .....	3	3 0	332 T	34·64	203
„ „ „ „ „ „ „ „ „ „	W. Hanson, Esq., C.E.	5	1 0	304	33·64	186
„ (St. Katherine's School)	Sister Jean .....	5	1 0	300	31·33	...
Steventon (Milton Hill) .....	R. H. Betteridge, Esq.	5	2 0	300	31·03	159
Wallingford (Woodlea) .....	G. F. Slade, Esq. ....	5	0 6	200 ?	30·31	190
„ Castle .....	Miss Hedges .....	5	1 0	175 A	30·45	...
„ (Shillingford Hill) ..	Lt.-Col. G. Hart Dyke	5	1 4	218 T	30·16	193

DIVISION II.—SOUTH EASTERN COUNTIES—(*continued*).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	
		in.	ft.	in.	feet.	inches.
BERKSHIRE—( <i>con.</i> )						
5.—THAMES—Ock & c—( <i>con.</i> )						
D Little Wittenham .....	J. Latham, Esq.....	5	2	0	189	26·16 171
D Long Wittenham (Manor Ho.)...	Adm. W. R. Clutterbuck	12	1	0	170 $\frac{1}{2}$	30·48 168
D „ „ (Willington)...	H. J. Hewett, Esq.....	5	1	0	167 $\frac{1}{2}$	31·28 196
D Faringdon .....	Mr. C. Luker .....	5	1	0	333 $\frac{1}{2}$	34·24 172
D „ (Bleak House) .....	Miss Turner .....	5	1	0	367 $\frac{1}{2}$	33·90 188
D Abingdon (The Square House)...	E. Estridge, Esq. ....	5	1	9	180 $\frac{1}{2}$	30·36 190
„ (Twickenham House) ..	Mr. A. Fawdry .....	5	10	0	220	28·70 165
„ (Caldecott House) ...	Maj.-Gen. T. M. Bailie	5	1	6	177 $\frac{1}{2}$	22·92 ...
„ (Sewage Works) .....	G. Winship, Esq., C.E.	5	0	6	169	27·24 ...
D „ Union .....	Mr. J. Fray .....	5	1	0	196	31·42 187
„ (Donnington) .....	R. W. Langford, Esq...	5	1	6	196	29·29 196
„ (Oakley Warren) .....	Mrs. Blakeney .....	8	0	11	253 $\frac{1}{2}$	31·08 ...
„ (Northcourt House)...	M. T. Tatham, Esq. ...	5	0	7	190 $\frac{1}{2}$	30·00 ...
Hinton Waldrist .....	Capt. F. C. Loder Symonds	5	4	0	331	32·21 159

MAP OF DIVISION III.

SOUTH MIDLAND COUNTIES,  
Showing the River-Divisions.



The River Thames is a county boundary throughout.



## DIVISION III.—SOUTH MIDLAND COUNTIES.

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with 0.1 or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
<b>MIDDLESEX. (Area, 232 sq. mi.)</b>						
<b>1.—THAMES—Colne &amp; Brent. 185 sq. mi.</b>						
† Hampton .....	Met. Water Board.....	8	1 0	42 ½	26.47	174
„ Wick (Park House) ...	A. Shorter, Esq.....	5	1 0	28 ½	29.46	175
„ Teddington (Clarence Road) ...	T. Gale, Esq. ....	5	1 3	32 ½	27.69	162
„ Staines (Belle Vue) .....	J. Gundry, Esq. ....	5	1 0	51 ½	30.36	181
„ (Cambria House).....	C. Ashby, Esq. ....	5	0 10	50 ?	29.38	160
„ Reservoir.....	Met. Water Board.....	5	1 0	...	27.79	...
„ Twickenham (Sewage Works)...	F.W. Pearce, Esq., C.E.	5	1 7	37 ½	26.45	178
„ Isleworth (Mandeville House) ...	A. Worsley, Esq. ....	12	1 0	24	33.17	...
„ Sipson (Hollycroft) .....	Mr. W. J. Mitchell ...	5	1 0	95 ?	26.27	...
† Kew Bridge (M.W.B. Works)...	Met. Water Board.....	8	1 0	37 ½	30.29	183
„ Chiswick (Grove Park).....	M. G. Brounger, Esq....	5	1 1	18 ½	27.65	178
„ (Sewage Works) ... (R)	T. W. Abbott, Esq. ...	8	3 0	24 ½	25.86	179
„ Hayes (Council Offices).....	Douglas C. Fidler, Esq.	8	4 0	135 ½	28.65	...
† Ealing (Grange Park) .....	H. M. Baker, Esq.....	5	1 6	97 ½	27.73	193
„ ( „ „ ) .....	M	5	1 6	97 ½	26.95	...
„ (Longfield Avenue) .....	C. Jones, Esq., C.E. ...	5	9 0	114	27.77	176
† „ (St. Stephen's Road) ...	Mr. C. Edwards.....	5	0 10	156 ½	28.16	178
† Perivale (Northern Sewage Farm)	C. Jones, Esq., C.E. ...	5	12 0	56	27.43	222
† Willesden Reservoir .....	Met. Water Board.....	5	2 6	199 ½	26.03	163
„ Green (Strode Road)...	Miss Lamport.....	5	1 0	150	28.42	186
„ (High Road) .....	W. Godden, Esq. ....	5	1 0	170 8	27.06	193
„ (Stonebridge Farm) (R)	O. C. Robson, Esq., C.E.	10	5 9	100 ½	26.07	184
„ Highgate (North Hill) .....	L. J. Tatham, Esq. ....	5	1 0	400	27.99	175
„ ( „ „ Depôt) .....	E. J. Lovegrove, Esq., CE	5	3 10	302	29.72	173
„ Wembley (Scarle Road) .....	A. B. Jackson, Esq. ...	5	1 0	130	24.07	151
„ Harrow (Bessborough Road Depôt)	J. P. Bennetts, Esq., C.E.	5	1 0	215 ½	31.00	190
† Hendon Sewage Works .....	S. S. Grimley, Esq., C.E.	6	1 8	150	23.45	178
„ (Temple Fortune Lane)	J. W. Duncan, Esq. ...	5	1 0	232	29.61	196
† „ (Central School) .....	J. W. Butler, Esq. ...	5	1 4	220	29.12	205
„ Wealdstone House .....	K. R. Cobb, Esq. ....	5	0 11	236 ½	27.02	...
„ Pinner (Hatch End) .....	W. M. Cann, Esq.....	5	0 11	260	30.62	200
† Northwood (Haslemere) .....	Miss McBean .....	5	1 0	200 ?	31.37	188
„ (Murray Road) .....	Dr. H. Dane .....	5	1 0	240	30.82	209
„ Harrow Weald (Hill House) ...	A. Crossman, Esq.....	5	3 6	284	28.84	220
„ North Finchley .....	Miss M. Shoults.....	5	0 8	295 ½	29.70	189
† Mill Hill (The Hollies) .....	Mrs. H. R. Mill.....	5	1 0	380	30.19	197
„ ( „ „ ) .....	M	5	1 0	350	28.97	...
„ Dyrham Park [Barnet].....	Mr. H. Juniper .....	5	1 0	310	31.12	...
† Potters Bar (Little Heath) .....	Henry Ellis, Esq. ....	5	4 8	375	29.28	191
† „ „ ( „ „ ) Snowdon	„ „ „ „ .....	5	1 0	375	30.23	191
„ „ (Mount Grace) .....	J. Forbes, Esq. ....	5	1 0	380	29.33	182
<b>2.—THAMES—Lea. 47 sq. mi.</b>						
„ Crouch End (Barrington Road)...	E. J. Lovegrove, Esq., CE	6	...	140 ?	29.31	169
„ Harringay (Wightman Rd. Depôt)	„ „ „ „ .....	...	...	...	23.86	159
„ Highgate (Avenue Road) .....	C. S. Nicholson, Esq... 5	1 0	...	30.59	182	
„ Tottenham (Drayton Road) .....	Meteorological Office ...	5	1 3	53 ½	26.04	...
† Hornsey (High Street) .....	Met. Water Board.....	5	4 0	109	30.22	183

## DIVISION III.—SOUTH MIDLAND COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with 0.1 or more recorded
		Diameter	Height Above Ground		Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.	
<b>MIDDLESEX—(con.)</b>							
<b>2.—THAMES—Lea—(con.)</b>							
† Muswell Hill (Grand Avenue)...	G Michael Williams, Esq	5	1	0	317	31.18	...
D " " (Hillfield Park) ...	E. A. Lee, Esq. ....	5	1	0	294 B	30.22	202
D† " " (Tollington School)	W. Campbell Brown, Esq	5	1	3	380 T	31.58	184
D " " (Colney Hatch Lane)	Miss Abethell.....	5	0	10	310 T	32.18	208
D " " (Irish Corner Sewage Farm)	E. J. Lovegrove, Esq., CE	8	4	8	216 A	30.96	199
D Wood Green (Maryland Road)...	Mr. F. C. Hornsey.....	8	9	4	118 A	26.25	166
D Finchley (Victoria Park) .....	C. J. Jenkin, Esq., C.E.	5	1	0	272 A	32.13	194
D " (Etchingham Park) ...	Mrs. J. W. Scott .....	5	1	2	295 T	31.90	209
D Southgate (Reservoir Road).....	W. B. Butler, Esq.....	5	1	0	255 A	30.86	193
D Ponders End (Bylock Hall) .....	H. E. Freir, Esq. ....	5	1	0	50	26.73	188
D† " " .....	Met. Water Board.....	8	1	0	45 A	27.16	187
D Hadley Wood (Camlot).....	Miss Paget .....	5	1	1	350	30.39	162
D Enfield (Southbury Road) .....	Met. Water Board.....	5	4	0	109 T	28.76	177
D " (Public Offices).....	Dr. W. P. Warren.....	8	43	0	141	27.54	208
D† " (Carisbrooke Culloden Rd.)	J. McEwan, Esq. ....	5	1	0	204 A	30.23	199
D " (Clay Hill).....	G. H. C. Lea, Esq.....	5	1	0	200 P	30.03	227
D " (Roselands, Turkey Street)	E. S. Rashleigh, Esq...	5	0	7	80	27.66	185
D Potter's Bar (North Lodge) .....	W. Gundry, Esq. ....	...	...	...	...	29.14	164
D† Rammev Marsh [Waltham Abbey]	Met. Water Board.....	8	1	6	60 A	29.78	169
<b>HERTFORDSHIRE. (Area, 635 sq. mi.)</b>							
<b>1.—THAMES—Thame. 10 sq. mi.</b>							
D Tring (Grove Lodge) .....	Miss Boyson .....	8	1	0	450	34.36	201
D " (Pendley Manor) .....	Mrs. Williams .....	5	2	0	420	36.24	216
D " (Cowroast Lock) .....	Gordon C. Thomas, Esq.	5	3	8	394 A	33.54	162
<b>2.—THAMES—Colne. 199 sq. mi.</b>							
D Easby [Northwood] .....	Mrs. Sandford Fawcett	8	0	10	400 T	35.40	180
D Gate House [ " ] .....	O. S. Holt, Esq.....	8	4	6	448	29.62	192
D Rickmansworth (Moor Park)....	Lord Ebury .....	5	2	0	340	30.11	214
D " (Sandy Lo. Golf Club)	J. F. Markes, Esq.....	...	...	...	...	30.07	186
D " (Croxley Green) ...	S. Ingleby Oddie, Esq..	5	0	7	250 T	32.90	152
D† Totteridge (West Lodge) .....	W. H. Newman, Esq...	5	1	0	390 A	32.76	192
D† " (Dollis Brae) .....	C. Stewart King, Esq..	5	1	0	350 T	30.70	181
D Elstree (Bays Hill) .....	H. S. Winter, Esq. ...	5	1	0	430 T	31.42	...
D† " (Aldenharn House) ... (R)	Mr. E. Beckett .....	10	4	9	305	28.10	165
D Watford (Oxhey Grange) .....	J. Doyle Penrose, Esq.	5	1	0	...	31.43	168
D " (Bushey Hall Road) ...	J. Durst, Esq. ....	5	1	2	230	30.88	182
D " (Colne Valley W.W.) ...	C. P. Sinclair, Esq. ...	5	1	0	200 A	30.41	190
D " (Park Road).....	E. J. Slinn, Esq. ....	5	1	5	263 T	30.12	189
D " (London Orphan Asylum)	Rev. Dr. O. C. Cockrem	5	1	0	230 T	30.45	215
D " (Weetwood) .....	J. Hopkinson, Esq. ...	5	1	0	269 A	31.59	213
D " ( " ) .....	M " " " .....	5	1	0	269 A	31.29	...
D Radlett (Sewage Disposal Works)	E. Lailey, Esq. ....	5	0	10	347 A	28.46	168
D† Shenley (Kitwells).....	T. H. Riches, Esq. ...	5	1	0	420	33.69	186
D " ( " ) .....	M " " " .....	5	1	0	420	31.74	...
D Chipperfield (Little Callipers) ...	A. W. Rivington, Esq.	5	1	0	407 T	28.42	...

## DIVISION III.—SOUTH MIDLAND COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with '01 or more recorded.
		Diameter	Height Above Ground	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
<b>HERTFORDSHIRE—(con.)</b>						
<b>2.—THAMES—Colne—(con.)</b>						
D London Colney (Bowmans) .....	C. Barwell Field, Esq...	5	1 0	235 T	31·67	188
D Hemel Hempstead (Apsley Mills) .....	Messrs. J. Dickinson & Co.	24	1 4	260	34·37	207
D " " (Church Croft) .....	Rev. Canon F. H. Fisher	5	3 0	300	35·87	199
D St. Albans (Hill End Asylum) ...	G. Goodchild, Esq. ...	5	1 0	295 T	31·72	168
D " (County Museum) ...	J. Hopkinson, Esq. ...	5	1 0	389 T	33·83	204
D " (Gorhambury) .....	Mr. W. Newberry .....	5	1 0	423 T	33·01	161
D† Berkhamsted (Anglefield) .....	E. T. Browne, Esq. ...	5	1 0	450 T	35·32	196
D† " (Rosebank) .....	E. Mawley, Esq. ....	8	1 0	401 T	32·82	198
† " " " .....	" " " .....	8	1 0	401 T	32·36	...
D Gt. Gaddesdon (Golden Parsonage) ..	Elliott Kitchener, Esq.	8	1 0	536 T	33·48	218
Harpenden (Rothamsted) .....	Lawes Agricultural Trust	5	0 9	420 T	34·90	190
" " " .....	" " " .....	8	0 9	420 T	33·57	177
D " " " .....	" " " .....	72X87	0 9	420 T	36·59	234
D " (Beesthorpe) .....	C. Paget, Esq. ....	5	0 6	350	33·31	195
<b>3.—THAMES—Lea. 340 sq. mi.</b>						
D New Barnet (Gas Works) .....	F. J. Bancroft, Esq., C.E.	8	0 9	212	29·21	182
D Barnet (Summerhill) .....	F. A. Milne, Esq. ....	5	0 10	400 T	28·53	192
D " (Bedford Avenue) .....	Miss Haines .....	5	1 3	350	32·63	231
New Barnet .....	F. L. Halliwell, Esq....	5	1 0	215	27·49	...
D Hadley (Hadley Bourne) .....	Mrs. Weber .....	5	1 0	430	32·51	201
Northaw (Barvin Park) .....	W. E. Balston, Esq....	...	...	250 ?	29·36	...
D Cheshunt (Goff's Oak House) ...	W. M. Cunningham, Esq.	5	1 0	310 T	29·38	195
D Northaw (St. Just) .....	Miss Poland .....	5	1 0	400	31·06	213
D† Broxbourne (Stafford House) ...	A. F. Newbery, Esq. ...	5	1 0	118 T	31·63	194
D† Hoddesden (Feilde's Weir) .....	Met. Water Board .....	8	3 8	95 T	27·44	193
D Haileybury College .....	P. H. Latham, Esq. ...	8	1 0	270 T	28·77	192
D Gilston Park .....	Mr. E. Leach .....	8	1 0	175 T	29·90	183
D Hatfield (Holwell House) .....	Wilfrid E. Laurie, Esq.	5	1 6	240 T	29·90	175
D Hertford (Bayfordbury) .....	H. W. Clinton Baker, Esq.	8	1 2	250	31·25	206
D Stanstead Abbots .....	E. H. Barlow, Esq. ...	5	1 2	115 T	28·21	164
D† Hertford (Sewage Works) .....	Met. Water Board .....	8	1 0	121 T	26·40	161
D " (The Cedars, Bengoe) ...	Rev. H. Willes Southey	5	1 2	...	29·61	155
D Ware (Red House) .....	Met. Water Board .....	5	4 0	115 T	29·58	200
D Welwyn (Bridge House) .....	Dr. B. W. Thomas ...	5	2 3	216	33·25	181
D Much Hadham .....	T. W. Mott, Esq. ....	5	1 0	212	27·47	199
D Bishops Stortford (Barrell's Down Rd.)	H. Sheppard, Esq. ....	5	1 2	300	28·83	176
D Bennington House .....	Miss E. A. Parker .....	5	1 0	406 T	28·68	198
D† " Lordship .....	A. F. Bott, Esq. ....	5	0 10	365 T	30·71	201
D Little Hadham (Hadham Hall) ..	W. Minet, Esq. ....	5	0 10	338 T	29·97	195
D Standon (Libury Hall) .....	S. Knothe, Esq. ....	5	1 3	380	28·70	200
D† Stevenage (Green Street) .....	M. L. Nicholas, Esq. ...	5	1 6	300 T	30·00	217
D Buntingford (Hamels Park) .....	H. Shepherd Cross, Esq.	5	1 3	390 T	30·25	200
D " (Westmill, Coles Pk.) ..	T. Greg, Esq. ....	5	0 8	379 T	28·36	171
D Hitchin (Preston) .....	R. de V. Pryor, Esq....	8	2 5	480 T	31·25	201
D Weston Park .....	M. R. Pryor, Esq. ....	5	0 8	470 T	33·65	221
D Buntingford (Throcking Rectory) ..	Rev. B. W. Harvey ...	5	1 0	487 T	32·50	245
D Royston (Therfield Rectory) ....	Mr. J. Cracknell .....	5	1 0	513 T	29·85	188

## DIVISION III.—SOUTH MIDLAND COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with $\geq 0.1$ or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level		
		in.	ft. in.	feet.	inches.	
<b>HERTFORDSHIRE—(con.)</b>						
4.—OUSE. 86 sq. mi.						
D Offley Vicarage .....	Rev. E. P. Gatty .....	5	1 6	525	33.94	210
D Graveley Rectory .....	Rev. R. E. C. Walker...	5	0 10	325 T	31.97	159
D† Hitchin (The Chilterns) .....	F. Ransom, Esq. ....	5	0 9	300 T	31.36	198
D† „ (The Maples) .....	W. Hill, Esq. ....	8	1 1	220 T	33.43	207
D „ (Chiltern Road) .....	A. Latchmore, Esq. ...	5	1 0	297 T	29.78	197
D† „ (High Down) .....	Miss E. Pollard .....	5	1 1	422 T	32.06	197
D „ (Roxley Court, Willian)	Mrs. H. Bendixson .....	5	1 6	360	28.54	171
D Letchworth (Garden City) .....	A. W. E. Bullmore, Esq.	5	1 0	218 T	29.41	191
D Baldock (High Street) .....	Dr. F. W. Langston Day	5	1 0	214 T	28.88	190
D Royston (Barley) .....	W. W. Cook, Esq. ....	5	1 0	300	28.92	187
D „ (Earlshill House) .....	J. Phillips, Esq. ....	8	1 6	225 T	29.62	201
<b>BUCKINGHAMSHIRE. (Area, 743 sq. mi.)</b>						
1.—THAMES—Cherwell. 30 sq. mi.						
2.—THAMES—Thame. 158 sq. mi.						
D Wendover (Halton Gardens) ...	Mr. R. C. Sanders .....	5	1 10	400	35.03	216
D Weston Turville (Yaxley Lodge)	Miss Morris .....	5	1 1	335	29.60	188
D Bulbourne [Tring] .....	Gordon C. Thomas, Esq.	5	2 3	401 T	31.94	153
Thame (Chearsley Hill) .....	Mrs. Bernard .....	...	...	395	24.94?	...
Mentmore Gardens .....	Mr. J. MacGregor .....	5	1 2	400 ?	32.82	...
3.—THAMES—Wye & c. 129 sq. mi.						
Eton (Tangier Islands) .....	C. Sainty, Esq. ....	5	1 0	67 T	31.39	188
† Slough (Upton) .....	M R. Bentley, Esq. ....	8	2 0	80 T	28.97	...
D† „ ( „ ) .....	„ „ „ .....	5	2 0	78 T	30.77	208
„ ( „ Park) .....	„ „ „ .....	...	...	...	30.49	...
Taplow Court .....	Lord Desborough, KCVO	8	1 0	217 T	30.36	...
Burnham (Burnham Cottage) ...	G. J. Williams, Esq. ...	5	3 0	182 T	31.90	152
Farnham Royal (The Chase) .....	F. C. Carr-Gomm, Esq.	5	3 0	169 T	31.76	190
Greenlands [Henley-on-Thames]	Hon. W. F. D. Smith, MP	8	1 3	116	32.44	176
D Hedsor .....	Lord Boston .....	8	1 0	170 T	34.59	181
D Bourne End (The Bourne) .....	A. Morse, Esq. ....	5	1 0	240 T	32.10	166
D Marlow (Thames Bank) .....	S. H. Wright, Esq. ...	8	2 0	105	35.04	218
Beaconsfield (Norfolk House) ...	Meteorological Office ...	8	1 0	360	31.46	...
D High Wycombe .....	H. S. Wheeler, Esq. ...	5	0 11	253 T	35.45	201
Penn (Rayners) .....	Sir P. F. Rose, Bart. ...	5	1 3	547 T	37.05	188
D Bradenham House .....	J. H. Tempest, Esq. ...	8	0 6	420 T	34.46	152
Saunderton (Speen) .....	H. R. McCarthy, Esq. ...	5	1 0	650	36.74	167
D Hampden House .....	The Earl of Buckinghamshire	5	1 0	690 T	35.18	193
4.—THAMES—Colne. 133 sq. mi.						
D Wraysbury (Elmslea) .....	Comm. P. C. Pearson, R.N.	5	1 0	50	30.91	181
D Slough (Langley) .....	R. H. Major, Esq. ....	8	0 10	85 T	30.11	176
D Chalfont St. Peter (Chalfont Park)	Mr. G. Barrell .....	5	1 0	201 T	34.52	167
D Chalfont St. Giles (The Stone) ...	Col. R. W. Phipps .....	5	1 0	270 T	33.11	202
„ „ ( „ ) M	„ „ „ .....	5	1 0	270 T	33.31	...
D „ „ (Woodlands) ...	A. D. Gordon, Esq. ...	5	0 11	400 T	33.78	197
„ „ ( „ ) M	„ „ „ .....	5	0 11	400 T	33.73	...

DIVISION III.—SOUTH MIDLAND COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with .01 or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
<b>BUCKINGHAMSHIRE—(con.)</b>						
<b>4.—THAMES—Colne—(con.)</b>						
d Amersham (Winchmore Hill) ...	Dr. A. Morley Davies..	5	1 0	494 T	35·37	215
d+ „ (St.Mary's Boys' Sch.) .....	W. Garton, Esq. ....	5	1 0	400 T	34·95	200
d+ „ (The Plantation) ...	G. Weller, Esq.....	8	1 0	464 T	34·95	204
d „ (Latimer Ho. Gardens)	Mr. W. Stephens .....	8	1 7	400	35·06	196
d Chesham (Chesham Bois Rectory)	Rev. T. H. Fitzpatrick..	5	0 11	530 T	35·32	192
<b>5.—OUSE. 293 sq. mi.</b>						
d Oving House .....	H. Yates Thompson, Esq..	5	1 0	515 T	33·13	205
d „ „ „ M „ „ „	„ „ „	5	1 6	515 T	32·99	...
d Swanbourne House .....	Lord Cottesloe .....	5	1 0	411 T	32·72	192
Winslow (Norden House).....	Dr. T. F. Vaisey.....	5	0 7	...	29·91	...
Stockgrove Pk.[Leighton Buzzard]	Mr. J. Clues .....	5	1 2	500	30·25	159
d Buckingham (Adstock Fields)...	W. Weston, Esq. ....	5	0 9	352 T	29·75	182
Stony Stratford .....	Mrs. Hawkins .....	5	1 3	230	29·48	175
d Wolverton (St. George's Vic.)...	Rev. W. L. Harnett ...	5	1 0	270 T	31·15	191
d „ (The School House)...	H. J. Hipsley, Esq....	5	1 0	264 T	30·38	193
d „ (Council School) .....	F. „ Littleboy, Esq.....	5	5 0	263 T	28·82	...
d Newport Pagnell (The Croft) ...	F. J. Taylor, Esq.....	5	2 0	191 T	30·97	181
d „ „ (Lovat Bank)...	Rev. J. H. Harvey ...	5	2 0	190	30·50	176
d North Crawley Rectory.....	...	5	1 0	300 T	27·89	193
<b>OXFORDSHIRE. (Area, 756 sq. mi.)</b>						
<b>1.—SEVERN—Upper Avon. 10 sq. mi.</b>						
d Sibford Ferris.....	Joshua Lamb, Esq. ...	5	1 0	590 T	35·90	204
<b>2.—THAMES—Windrush &amp; c. 261 sq. mi.</b>						
d Witney (Ringwood Farm) .....	J. W. Abraham, Esq....	5	5 0	400 ?	34·89	186
d „ (Hailey School) .....	S. Heaton, Esq. ....	5	2 6	360 T	36·85	190
Woodstock (Freeland House) ...	W. J. Short, Esq. ....	8	0 9	345	34·47	181
d Wootton Rectory .....	Rev. F. R. Marriott ...	5	0 10	370 T	37·25	188
Ascot-under-Wychwood (Chilson School)	S. Heaton, Esq. ....	5	1 0	320 T	41·62	201
d Charlbury (Wychwood House)...	J. H. Glen, Esq. ....	5	0 8	450	34·62	219
d Lyneham.....	R. de M. Pratt, Esq....	5	1 7	351 T	39·93	208
d Chadlington (Langston House)..	Major F. W. Schofield..	5	0 11	420	37·10	184
Churchill School.....	W. H. Anson, Esq. ...	8	1 3	524 T	37·53	...
d Sarsden (Estate Office).....(R)	J. M. Blair, Esq. ....	8	3 0	492 T	34·91	201
d „ Gardens.....	Mr. J. E. Vine .....	5	0 10	538 T	36·23	180
Chipping Norton (Heythrop) ...	Albert Brassey, Esq....	10	4 0	700	28·48?	183
d „ „ („ School)	S. Heaton, Esq.....	6	2 0	658 T	37·20	175
<b>3.—THAMES—Cherwell. 250 sq. mi.</b>						
Nuneham Park Gardens .....	Mr. C. E. Munday.....	8	3 0	280 T	30·06	...
d Oxford (Hincksey Pumping Sta.)	W.H.White, Esq., C.E.	8	1 0	187 T	32·04	187
d „ (Magdalen College) .....	R. T. Günther, Esq....	5	1 0	186 T	30·86	184
d „ („ „) .....	„ „ „	5	33 11	223 T	28·31	...
d+ „ (Radcliffe Observatory)..	Dr.A.A.Rambaut, FRs	8	1 8	210 T	32·42	190
d+ „ („ „ „)(R)	„ „ „	11	2 4	210 T	32·80	203
d „ (Banbury Road) .....	Miss E. M. Tawney ...	5	1 1	211 T	31·07	178
d „ (Warneford Asylum) ...	Dr. J. Neil .....	5	1 0	300 T	31·36	176

DIVISION III.—SOUTH MIDLAND COUNTIES—(*continued*).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with no or more recorded.
		Diameter	Height Above Ground	Height Above Sea Level		
		in.	ft. in.	feet.	inches.	
<b>OXFORDSHIRE—(con.)</b>						
<b>3.—THAMES—Cherwell—(con.)</b>						
D Oxford (Headington Hill) .....	Miss Davenport .....	5	0 10	354	32·03	195
D „ (Elsfield Manor House)..	Miss M. J. Parsons ..	5	1 0	355 T	33·13	195
D Islip .....	Col. G. E. Eliot .....	5	3 0	200 T	30·98	172
D Hampton Poyle Rectory .....	Rev. S. T. Gwilliam ...	5	1 0	201 T	32·78	191
Charlton-on-Otmoor School .....	E. Cartwright, Esq. ...	6	1 3	197 T	33·44	...
D Bicester (Bank) .....	H. A. Fane, Esq. ....	5	0 10	231 T	34·84	181
„ (Launton School) .....	S. Heaton, Esq. ....	6	1 0	212 T	40·09?	243
„ (Middleton Park) .....	The Earl of Jersey .....	5	2 6	326 T	34·44	181
D Steeple Aston (The Grange) .....	Miss Bradshaw .....	8	1 0	400 T	35·91	199
D Swerford .....	W. Hall, Esq. ....	5	1 0	500 T	38·41	214
D Adderbury (Cross Hill) .....	G. H. Norris, Esq. ....	5	1 1	338 T	32·91	198
D Bloxham Grove .....	W. H. Warriner, Esq. ...	8	3 10	387 T	37·85	195
D Bodicote House .....	J. F. Starkey, Esq. ...	8	1 3	388 T	34·12	190
„ (Draycott House) .....	F.B.JudgeBaldwin, Esq	5	1 8	391 T	33·37	191
Wroxton .....	Hon. Mrs. FitzGerald...	8	1 3	600 ?	40·49	192
D Shenington School Gardens .....	Rev. A. Blythman .....	5	1 3	540	43·33	211
<b>4.—THAMES—Thame &amp; c. 210 sq. mi.</b>						
D Caversham (Rectory Road) .....	W. Simpson, Esq. ....	5	1 0	129 T	29·41	202
„ (Eastfield) .....	C. M. Powell, Esq. ....	5	1 0	180 T	29·13	186
D „ (St. Benet's Home) .....	Mr. H. Hall .....	5	1 3	300	31·04	188
D „ (Kidmore End School) .....	T. F. Higgins, Esq. ...	5	0 11	330 T	32·28	192
D Harpsden (Cray) .....	B. E. D. Kilburn, Esq. ...	5	1 10	230 T	29·21	172
D Goring (Elmcroft) .....	Major E. Gambier Parry	5	0 10	160	32·86	193
D Henley-on-Thames (Peppard) ..	Rev. Hubert Shears ...	5	1 0	336	31·98	223
D „ „ „ (GreysGreen) .....	Miss Mary Davis .....	5	2 0	350 T	34·71	205
D „ „ „ ( „ Lane) .....	G. Potter, Esq. ....	5	0 9	123	30·79	170
D Nettlebed (Joyce Grove) Gauge A	Mr. A. Johnstone .....	5	1 0	590 T	36·40	181
D Assenton .....	Mr. J. Ratty .....	5	1 0	281 T	35·13	170
Crowmarsh School [Wallingford]	S. Heaton, Esq. ....	5	1 3	160 T	37·16	...
D Dorchester (Bishops Court) .....	T. Latham, Esq. ....	5	2 0	169	27·92	199
D Abingdon (Culham School House)	F. Mitchell, Esq. ....	5	0 10	180	28·75	190
D „ „ „ ( „ College) .....	R. L. Treble, Esq. ....	8	0 11	213 T	28·32	190
D Clifton Hampden (Manor House)	Lord Aldenham .....	5	1 0	190 T	28·93	181
Watlington (Howe Combe) .....	Meteorological Office...	8	1 0	474	38·25	...
D† „ (Pyrton Hill) .....	W.H.Dines, Esq. F.R.S.	5	1 0	520 T	35·73	193
D „ ( „ Manor) .....	Mrs. E. Hamersley ...	5	1 6	321 T	34·68	195
Lewknor (Manor House) .....	Miss Spencer .....	5	1 3	360	33·80	218
D Toot Baldon (Potlands) .....	D. Clinkard, Esq. ....	5	1 0	288 T	33·05	191
Great Haseley School .....	S. Heaton, Esq. ....	5	1 0	319 T	30·74	...
D „ „ „ (Manor House) ...	F. Gelderd-Somervell, Esq. ...	5	1 0	280 T	29·73	166
D† Waterstock .....	W. H. Ashhurst, Esq. ...	8	3 2	200 ?	33·04	209
D† Wheatley (Schoolhouse) .....	R. Leyshon, Esq. ....	6	1 3	280	33·82	222
D Thame (Tythrop House) .....	A. W. Smith, Esq. ....	...	...	230 ?	30·50	166
Stanton St. John (Woodperry)...	J. Thomson, Esq. ....	6	1 0	399 T	34·08	195
<b>5.—OUSE. 25 sq. mi.</b>						

## DIVISION III.—SOUTH MIDLAND COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with .01 or more recorded.
		Diameter.	Height Above Ground.	Height Above Sea Level.		
		in.	ft. in.	feet.	inches.	
NORTHAMPTONSHIRE. (Area, 1003 sq. mi.)						
1.—SEVERN—Upper Avon. 60 sq. mi.						
▷ Winwick Warren .....	Col. R. H. Ainsworth...	8	1 5	648 ↑	35·44	205
▷ Lilbourne Vicarage .....	Rev. T. R. Price .....	8	1 3	320 ↗	35·20	207
▷ Welford (Salford House) .....	J. Gee, Esq. ....	5	1 3	566	33·32	212
2.—THAMES—Cherwell. 77 sq. mi.						
▷ King's Sutton (Astrop).....	E. Browne, Esq. ....	5	1 0	338 ↗	30·94	192
▷ Grimsbury (Banbury W.W.) ...	W. E. Wood, Esq. ....	5	1 3	320 ↑	31·10	203
3.—OUSE. 148 sq. mi.						
▷ Brackley House .....	J. Allen, Esq.....	5	1 0	425 ↑	35·29	194
▷ Hargrave House.....	C. K. Murchison, Esq..	5	1 0	273	30·04	...
4.—NENE. 622 sq. mi.						
▷ Blisworth (Crieff House) .....	A. Westley, Esq.....	5	5 0	330	30·82	188
▷ „ .....	T. W. Millner, Esq. ...	5	1 6	300 ↗	31·94	216
▷ Litchborough Hall.....	C. A. Markham, Esq...	5	1 10	500	34·55	189
▷ Daventry (Fawsley Park) .....	The Lady Knightley ..	5	1 0	477 ↑	33·30	174
▷ Castle Ashby ... ..	R. G. Scriven, Esq. ...	5	1 0	263 ↗	34·34	203
▷ Little Houghton House.....	Christopher Smyth, Esq.	5	2 2	271 ↑	32·55	184
▷ Northampton (Hazlewood Road)	C. A. Markham, Esq... ..	...	...	...	31·96	200
▷ „ (Dallington Av.)...	„ „ „ ..	5	1 0	265 ↗	30·20	196
▷ „ (Berry Wood).....	„ „ „ ..	8	1 4	399 ↗	30·02	214
▷ „ (General Hospital)	„ „ „ ..	...	...	...	30·88	185
▷ Great Billing Rectory .....	Rev. G. H. Mullins ...	8	1 6	275 ↗	31·33	211
▷ Daventry (Oxford Street).....	C. A. Markham, Esq... ..	5	1 0	486	34·62	196
▷ „ (Tunnel End) .....	T. W. Millner, Esq. ...	5	1 6	394	36·68	222
▷ Great Brington .....	C. A. Markham, Esq... ..	5	2 9	448	28·95	182
▷ Althorp House .....	„ „ „ ..	8	3 10	310 ↗	32·54	185
▷ Sywell Hall .....	T. A. Dickson, Esq. ...	5	1 0	371 ↗	34·42	212
▷ Pitsford (Sedgebrook) .....	C. A. Markham, Esq... ..	5	1 0	311 ↗	30·80	195
▷ „ ( „ ) .....	„ „ „ ..	5	1 0	311 ↗	30·33	...
▷ Rushden (Alfred Street School)..	S. Saddler, Esq.....	5	1 3	200 ?	28·81	186
▷ Wellingborough (Swanspool) ...	N. P. Sharman, Esq. ...	5	0 2	155	30·39	200
▷ „ (Croyland Abbey)	E. Sharman, Esq. ....	5	1 0	174 ↗	30·56	189
▷ Watford Court .....	C. A. Markham, Esq... ..	9	1 2	380	34·28	165
▷ Ravensthorpe (Coton Mill) .....	G. S. Eunson, Esq. ...	5	1 0	355	33·42	191
▷ Orlingbury Hall.....	late Rev. W. B. Jacques	5	3 0	400 ↗	31·72	173
▷ Scaldwell.....	Capt. R. Soames.....	5	1 0	404 ↗	29·77	...
▷ Lamport Hall Gardens .....	Mr. S. W. Pettit .....	8	1 0	464 ↑	32·89	192
▷ Raunds (Day School) .....	Léon G. H. Lee, Esq... ..	8	1 0	205 ↗	32·25	184
▷ Cranford (Woodford House).....	E. N. Plevins, Esq. ...	8	0 8	252 ↗	31·36	185
▷ Kettering W.W. (Cransley) .....	T. R. Smith, Esq., C.E.	8	0 6	275 ↗	31·25	173
▷ „ (Workhouse) .....	A. Sattin, Esq. ....	5	0 5	297 ↑	33·74	172
▷ „ (Sewage Works) .....	T. R. Smith, Esq., C.E.	8	1 0	199 ↗	32·77	194
▷ „ (George Street) .....	C. W. Lane, Esq. ....	5	1 0	288 ↗	33·15	192
▷ „ W.W. (Thorpe Malsor)	T. R. Smith, Esq., C.E.	5	0 11	352 ↗	34·11	197
▷ „ „ (Clover Hill)...	„ „ „ ..	5	0 7	344 ↗	33·47	188
▷ „ (Warkton) .....	Mr. R. H. Brett.....	5	1 3	275 ↗	33·19	189
▷ Rothwell (Loddington) .....	Mr. J. Oliff.....	5	1 0	400	33·77	...
▷ Thrapston (Islip) .....	J. Edmonds, Esq. ....	5	1 6	145 ↗	30·78	...

DIVISION III.—SOUTH MIDLAND COUNTIES—(*continued*).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with 0.1 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.	
NORTHAMPTONSHIRE—(con.)							
4.—NENE—(con.)							
Thrapston (Drayton House).....	J. Edmonds, Esq. ....	5	1	6	220 $\nabla$	32.98	175
D Clopton Manor .....	Mrs. Buckley .....	6	0	11	245 $\nabla$	34.06	201
D Aldwinkle St. Peter Rectory ...	C. A. Markham, Esq. ...	5	0	11	175	30.52	178
D Rushton Manor .....	R. A. Willows, Esq. ...	5	1	0	400 $\nabla$	35.02	179
Rothwell (Shotwell Mill) .....	A. Harris, Esq. ....	5	1	6	320 $\nabla$	34.41	180
D Desborough.....	C. A. Markham, Esq. ...	5	3	0	457 $\nabla$	33.30	186
D Barnwell (Lilford Hall) .....	Mr. E. Wilson .....	5	1	0	...	32.38	162
Oundle (Milton Road) .....	J. M. Siddons, Esq. ...	5	3	4	131 $\nabla$	30.37	...
„ Waterworks .....	Meteorological Office...	5	1	0	147	33.64	...
D Corby (Weldon Grange) .....	John Rooke, Esq. ....	8	1	0	342 $\nabla$	32.18	220
D Peterborough (Westbourne Ho.)	E. H. Colman, Esq. ...	8	1	0	30 $\nabla$	30.59	174
D „ (Ashfield) .....	J. A. Percival, Esq. ...	5	0	7	30	29.21	185
D „ (Abbeyfields) .....	J. Shipley Ellis, Esq. ...	5	0	6	49 $\nabla$	31.68	186
D „ (Milton House) ...	C. A. Markham, Esq. ...	...	...	...	...	35.64	161
D Wittering Rectory.....	Rev. S. B. Warde .....	5	1	0	180	34.83	180
D Eye (Northolm) .....	S. W. Egar, Esq. ....	5	1	0	17 $\nabla$	29.83	201
D „ (Newborough) .....	R. Williams, Esq. ....	5	1	0	8 $\nabla$	30.85	198
5.—WELLAND. 96 sq. mi.							
D Marston Trussell Rectory ... (R)	Rev. J. Knight Law... 10	2	6	314 $\nabla$	33.10	195	
D Dingley Hall [Market Harboro']	E. C. Purton, Esq. ....	5	1	6	...	31.90	187
D Rockingham Castle Gardens.....	C. A. Markham, Esq. ...	5	4	4	300 $\nabla$	35.04	170
D Gretton (Gretton House) .....	Mr. J. Rogers.....	5	1	0	354 $\nabla$	33.52	180
Kings Cliffe (Fineshade Abbey)..	C. A. Markham, Esq. ...	5	0	9	200	32.44	...
D Etton [Market Deeping] .....	J. C. Gill, Esq., C.E. ...	8	1	0	25 $\nabla$	35.19	171
HUNTINGDONSHIRE. (Area, 366 sq. mi.)							
1.—OUSE. 327 sq. mi.							
D St. Neots (Waresley Park) .....	Col. Duncombe .....	5	0	11	190	29.01	186
D „ (Great Paxton) .....	Rev. A. G. Cane.....	5	1	0	100 $\nabla$	30.32	166
D Fenstanton .....	N. Royds, Esq. ....	...	...	...	...	29.03	168
D Huntingdon (Brampton Grange)	Rev. A. T. Thompson... 5	1	6	47 $\nabla$	31.87	162	
D „ (Bosworth House)..	H. Lucas, Esq. ....	5	1	6	35 $\nabla$	30.33	205
D „ (Hinchingbrooke)(R)	Earl of Sandwich .....	10	6	0	74 $\nabla$	31.82	161
D St. Ives (Slepe House) .....	Dr. W. R. Grove .....	5	1	0	25	31.00	178
D Houghton Grange .....	C. H. Coote, Esq. ....	5	1	0	114	33.25	198
D Catworth.....	Miss E. M. Conway ...	5	0	9	210 $\nabla$	33.17	203
D Great Gidding Rectory .....	E. N. Plevins, Esq. ...	5	1	0	169 $\nabla$	30.15	181
D Whittlesea Mere .....	A. Lunn, Esq., C.E. ...	8	1	6	10 $\nabla$	31.39	151
2.—NENE. 39 sq. mi.							
BEDFORDSHIRE. (Area, 467 sq. mi.)							
1.—THAMES—Colne 20 sq. mi.							
D Dunstable (Kensworth).....	Mrs. Miller.....	5	1	5	630 $\nabla$	29.07	185
Luton (Stockwood) .....	J. E. Wood, Esq. ....	5	3	0	539 $\nabla$	29.70	200



## DIVISION III.—SOUTH MIDLAND COUNTIES—(continued).

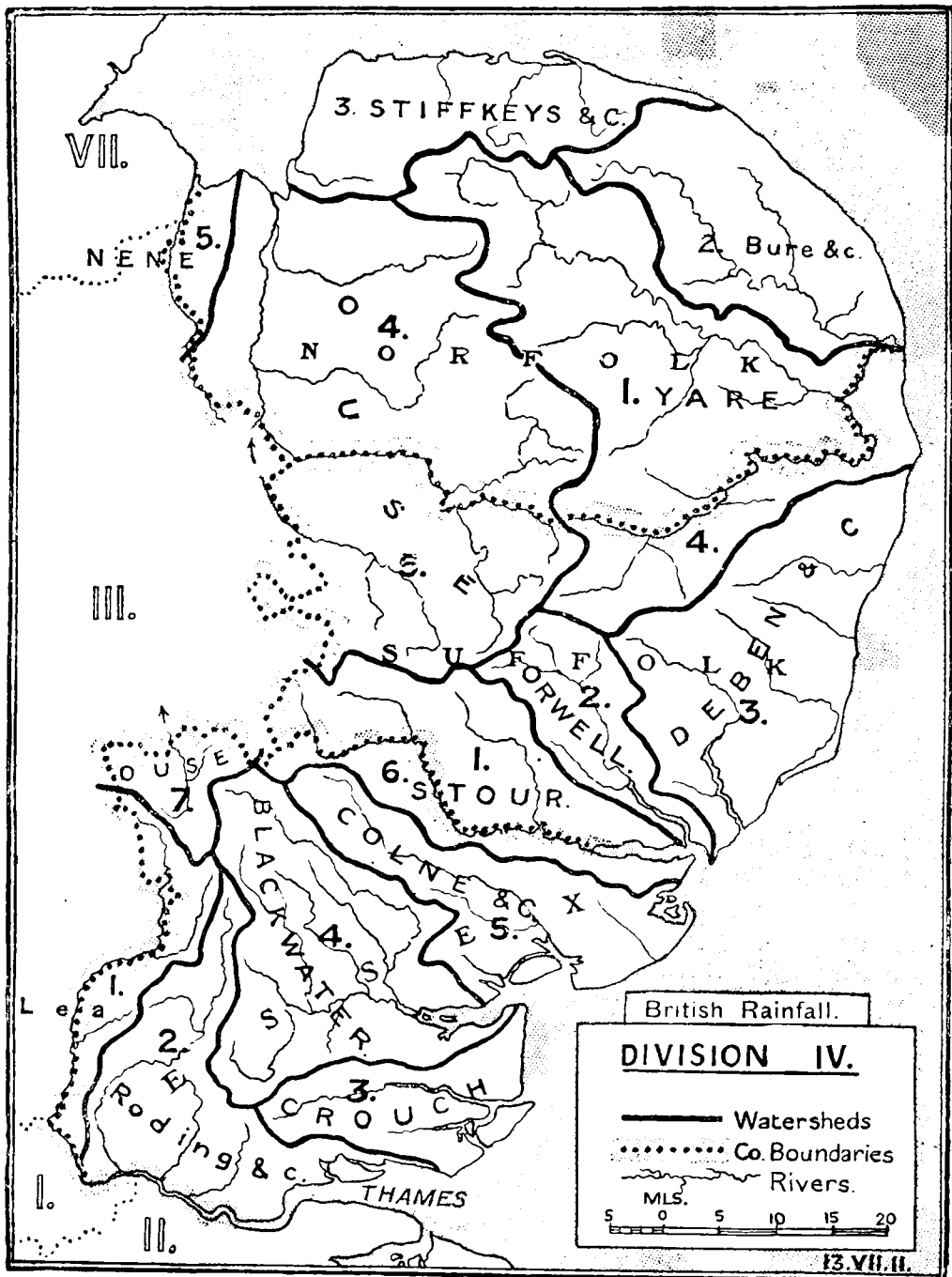
STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with .01 or more recorded.
		Diameter	Height Above Ground		1912	
		in.	ft.	in.	feet.	inches.
<b>BEDFORDSHIRE—(con.)</b>						
2.—THAMES—Lea. 32 sq. mi.						
D Luton (Pumping Station).....	J. W. Tomlinson, Esq. CE	5	1	0	343 $\nabla$	28.35 216
D „ (Tennyson Road) .....	Harold F. Smith, Esq.	5	1	1	530 $\nabla$	30.06 206
D „ (The Downs) .....	G. W. Pryer, Esq.....	5	1	0	479	32.15 190
D Dunstable (The Grammar School)	W. D. Coales, Esq. ...	5	0	8	480	30.91 209
3.—OUSE. 408 sq. mi.						
D Woburn (Milton Bryant).....	Mr. C. J. Kilby .....	5	1	0	510	31.07 174
D Shillington .....	Kilham Roberts, Esq... .....	5	1	0	182 $\nabla$	30.43 182
D Holwell Bury [Hitchin] .....	C. Chittick, Esq. ....	5	1	0	185 $\nabla$	30.48 167
D Ampthill (Higham Bury).....	E. J. Jekvill, Esq. ....	5	1	0	310 $\nabla$	28.89 186
D Shefford (Upper Stondon).....	R. Long, Esq. ....	5	1	0	241 $\nabla$	29.68 156
Apsley Guise (Oaklands) .....	Mrs. Dymond.....	5	1	0	410	26.71 168
D† Woburn (Crawley Mill Farm)...	H. M. Freear, Esq. ...	8	1	0	292 $\nabla$	27.82 192
D† „ (Fruit Farm, Ridgmont) .....	W. H. Neild, Esq.....	5	1	0	270 $\nabla$	28.07 202
D Stotfold (Three Counties Asylum)	Dr. L. O. Fuller.....	5	1	0	220 $\nabla$	28.43 204
Shefford (Clifton Bury) .....	A. Inskip, Esq. ....	5	2	1	150	28.68 ...
D „ Council School .....	G. F. Aldritt, Esq. ...	5	1	0	134 $\nabla$	29.48 190
„ Hardwick .....	H. Inskip, Esq. ....	5	2	6	90 ?	29.06 ...
D Cranfield School.....	Alfred Death, Esq. ...	5	1	6	365	30.66 182
D Biggleswade (Waterworks) .....	H. Carne, Esq., C.E....	5	1	6	170 $\nabla$	26.23 197
D „ (Old Warden Park) .....	Mr. W. C. Modral .....	8	1	2	90	31.48 191
Sandy (The Lodge) .....	Viscount Peel.....	5	1	0	200 ?	27.82 163
D „ (Beeston Grange) .....	Col. Maunsell Bowers..	5	1	0	85 ?	27.65 199
D „ Rectory .....	Rev. J. Richardson ...	5	1	0	120	28.54 206
D Bedford (The Park) .....	(R) N. Greenshields, Esq... .....	8	5	8	123 $\nabla$	26.63 180
„ (Castle Road) .....	Miss M. E. Newbery...	5	7	0	108 $\nabla$	28.50 179
Goldington (Castle Mills).....	W. H. Rogers, Esq. ...	5	1	6	90 $\nabla$	26.00 154
D Great Barford House.....	J. Arnold Whitchurch Esq	5	1	0	120 $\nabla$	29.93 179
D Sharnbrook (Colworth Gardens)	Mr. J. Hoad .....	5	2	0	250	29.00 156
Melchbourne Park.....	Bedfordshire Times ...	...	1	6	281	31.86 168
4.—NENE. 7 sq. mi.						
<b>CAMBRIDGESHIRE. (Area, 859 sq. mi.)</b>						
1.—STOUR. 17 sq. mi.						
D Brinkley Hall.....	R. W. King, Esq.....	5	1	0	380	30.46 164
2.—OUSE. 740 sq. mi.						
D Odsey [Ashwell] .....	Sir H. G. Fordham ...	5	1	0	256 $\nabla$	28.45 190
Abington Pigotts .....	Mr. J. N. Woodham ...	5	0	8	130	27.98 ...
D Melbourn Vicarage .....	Mrs. de Courcy-Ireland	5	1	2	...	27.36 163
D Meldreth (Chiswick Farm) .....	A. Howard, Esq. ....	5	1	1	70 $\nabla$	26.18 168
D „ (Belmington Close) ...	G. Warren Bindloss, Esq	5	1	0	65 $\nabla$	25.38 163
D Foxton (The Bury) .....	J. Gifford, Esq. ....	5	1	0	60 $\nabla$	28.59 214
D Great Abington (Abington Hall)	Mr. F. Ripley.....	3	0	7	90 ?	26.56 173
D Whittlesford (Sawston Hall) ...	D. L. Huddleston, Esq.	5	1	1	86 $\nabla$	28.66 173
D Harston Vicarage .....	Mrs. C. M. Baldwin ...	5	0	8	47 $\nabla$	27.41 179
D Wimpole Hall .....	Mr. W. J. Snell.....	5	1	0	141	29.35 183
Little Shelford Manor House ...	Miss M. C. Walton ...	5	1	0	52	28.06 184

DIVISION III.—SOUTH MIDLAND COUNTIES—(*continued*).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with .01 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.	
<b>CAMBRIDGESHIRE—(<i>con.</i>)</b>							
2.— <b>OUSE—(<i>con.</i>)</b>							
D Stapleford House .....	J. H. H. Linton, Esq..	5	2	3	64	27·67	162
D Balsham Rectory .....	Rev. H. J. E. Burrell..	5	1	6	399 T	29·25	158
D West Wrattling Park .....	R. W. Ross, Esq. ....	5	1	0	385 T	30·71	195
D Weston Colville .....	Gerald H. Long, Esq..	5	1	0	327 T	27·73	154
D Trumpington .....	C. Parsons, Esq. ....	5	1	0	60 T	28·23	174
D Grantchester Mill .....	J. Nutter, Esq. ....	5	5	0	31 T	25·82	164
D Cambridge W.W. (Fleam Dyke)	W. W. Gray, Esq., C.E.	5	1	5	99 T	26·42	178
D " " (Fulbourne) ...	" " "	5	1	0	37 T	26·21	192
D " " (Cherryhinton)	" " "	5	1	0	35 T	24·78	190
† " (Herschel House) ...	C. N. H. Lock, Esq. ...	5	1	1	36 T	23·53	...
† " ( " " " ) ...	" " " " "	5	1	0	36 T	25·36	...
D† " (Sidney Street) .....	Percy Pain, Esq. ....	8	53	0	83 T	26·12	192
D " (Corporation Store Yd.)	Julian Julian, Esq., C.E.	5	1	0	52 T	26·39	172
D† " (Tenison Avenue) ...	W. B. Parsons, Esq. ...	8	1	2	...	26·71	181
D† " (Pinehurst) .....	C. F. Foster, Esq. ....	5	0	10	36	26·91	196
D† " (Botanic Gardens) ...	R. Irwin Lynch, Esq. ...	8	0	10	43	27·29	182
D " (Corporation Pumping Sta.)	Julian Julian, Esq., C.E.	5	1	0	28 T	27·33	215
D " (Quy Hall) .....	T. Musgrave Francis Esq	5	0	5	24 T	28·46	201
D Croxton Park .....	G. D. Newton, Esq. ...	5	2	6	200 ?	30·24	157
D Boxworth [St. Ives] .....	E. H. Thornhill, Esq. ...	5	1	0	76 T	30·96	189
D Burwell .....	R. Stephenson, Esq. ....	5	2	0	58	30·13	185
D Conington Hall [St. Ives] .....	Philip T. Gardner, Esq.	8	0	5	50 T	33·88	194
D Cottenham (Bernard House) .....	A. Bull, Esq. ....	5	3	6	30 T	29·47	169
Fordham (Washington House) ...	W. V. Bloom, Esq. ...	5	1	0	30	27·75	...
D Soham .....	T. Everett, Esq. ....	5	2	0	25 T	30·13	156
D Stretham (Dimocks Cote) .....	H. Nightingale, Esq. ...	5	13	7	...	30·41	151
D " Engine .....	Mr. J. Housley .....	9	4	9	13 T	31·27?	158
D " (Orchard House) .....	C. Wright, Esq. ....	8	5	0	42	31·41	168
D Ely (The Palace) .....	Mr. A. Sewell .....	5	1	0	64 T	30·98	198
Chatteris (Holwood Farm) .....	Mr. G. Argent .....	5	0	10	12	33·68	...
Mepal Engine .....	Mr. J. Goodman .....	5	20	6	25	24·86	...
D Littleport (Highfield House) ...	H. G. Martin, Esq. ...	8	2	7	67 T	31·11	163
D Chatteris (Aylesby House) .....	A. H. Ruston, Esq. ...	8	0	6	31	32·63	166
D " (The Priory) .....	H. F. Fryer, Esq. ....	5	0	7	31	32·17	161
D March .....	A. Lunn, Esq., C.E. ...	9	2	0	...	30·55	170
D Upwell (Marmont Priory Lock) ..	" " " " "	8	1	1	...	30·01	187
D " (Euximoor House) .....	H. West, Esq., jun. ...	5	0	8	15	33·12	176
3.— <b>NENE. 102 sq. mi.</b>							
D Stanground Sluice .....	A. Lunn, Esq., C.E. ...	8	1	6	...	30·00	161
D Thorney (Bedford Office) .....	Hugh R. Brodie, Esq. ...	8	3	6	9 T	28·51	169
Wisbech (Bank House) .....	Lord Peckover of Wisbech	8	0	8	6	33·31	...
D " (Monica Road) .....	F. W. Climenson, Esq.	8	1	2	6	34·42	174

MAP OF DIVISION IV.

EASTERN COUNTIES,  
Showing the River-Divisions.



#### DIVISION IV.—EASTERN COUNTIES.

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with -01 or more recorded.
		Diameter	Height Above Ground	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
<b>ESSEX. (Area, 1532 sq. mi.)</b>						
<b>1.—THAMES—Lea. 132 sq. mi.</b>						
d West Ham (Abbey Mills).....	London County Council	8	1 0	11 A	24·94	170
d Leyton (Town Hall) .....	E. H. Essex, Esq. ....	5	1 0	22 A	24·18	160
d†Lea Bridge.....	Met. Water Board.....	8	0 6	23 A	25·04	162
d†Walthamstow (Ferry Lane).....	" " "	8	0 10	30 A	24·05	150
d†Woodford (Haggar Lane) .....	" " "	8	0 8	176 A	25·30	161
d†Buckhurst Hill Reservoir.....	" " "	8	1 7	275 A	26·36	196
d " " (Ardmore) .....	Mrs. Eliot Howard ...	8	1 0	270	26·47	171
d†Chingford Mill .....	Met. Water Board.....	8	0 6	40 A	25·28	161
d " " (Sewardstone Lodge)..	W. P. Robertson, Esq.	8	0 10	200 ?	26·31	168
d†Loughton (High Beech Reservoir)	Met. Water Board.....	8	1 0	376 A	28·47	197
d†Waltham Abbey.....	" " "	8	5 0	66 A	30·09	182
d " " (Gunpr. Factory)	The Superintendent ...	5	2 0	64 A	27·82	233
d Hatfield Broad Oak (Barrington Hall)	A. H. Gosling, Esq. ...	5	0 10	300 T	27·25	190
d Hassobury [Bishop Stortford]...	L. D. Gosling, Esq. ...	5	0 10	290 ?	27·43	216
d Elsenham (Gaunts End) .....	Sir Walter Gilbey, Bart.	5	1 0	363 T	27·57	197
<b>2.—THAMES—Roding &amp; c. 316 sq. mi.</b>						
d Grays Sewage Works .....	A. C. James, Esq., C.E.	8	2 3	9 A	24·03	175
d Stifford (Coppid Hall) .....	Miss Scott .....	5	2 0	75	19·24	...
d East Ham (Central Park).....	Medical Officer of Health	5	1 0	13 A	24·78	166
d " " Well .....	Met. Water Board.....	8	0 11	17 A	24·00	161
d Barking Cemetery .....	H. Hargreaves, Esq....	5	1 0	18	22·87	159
d Ilford Sewage Works .....	H. Shaw, Esq. ....	5	1 1	31 T	22·72	171
d Bulvan (Pear Tree Corner) .....	Mrs. Read-Andrews ...	5	1 0	12	22·95	181
d Vange Pumping Station .....	Southend Water Wks Co	5	1 0	43 A	23·72	153
d Pitsea " " .....	" " "	5	1 0	29 A	23·34	159
d Hornchurch .....	W. J. Grant, Esq.....	8	1 9	46 A	22·48	178
d Wanstead (Red Bridge) .....	Met. Water Board.....	8	8 0	33 A	23·21	153
d Manor Park (Albany Road).....	A. J. Wilmshurst, Esq.	5	3 0	40	25·32	198
d Upminster Hall ...	Captain G. H. T. Swinton	5	1 0	121 T	23·27	185
d Romford (Harold Wood) .....	J. G. Broodbank, Esq..	5	4 0	120	23·58	184
d " " (Herongate House) ...	H. A. F. Chambers, Esq.	...	...	240	25·20	204
d Havering Grange .....	G. P. Hope, Esq. ....	5	1 0	255 A	26·59	239
d " " -atte-Bower (Fernside)	Benjamin Smith, Esq..	5	1 0	341 T	28·99	238
d Theydon Bois (Suttons) .....	late Lady Cunliffe Smith	5	0 4	115 ?	25·31	...
d " " (Thriffs Hall) ...	H. B. Debenham, Esq..	5	0 9	200	27·18	220
d Epping (The Hemnalls) .....	A. Nicholl, Esq.....	8	0 8	345	33·94	158
d North Weald (Canes) .....	H. W. Hart, Esq. ....	5	1 11	250 ?	26·45	171
<b>3.—CROUCH. 186 sq. mi.</b>						
d Shoeburyness .....	Superintendt. of Expts.	8	1 0	13 A	20·19	168
d " " M .....	" " "	5	1 0	13 A	19·74	...
d Southend (Corporation Obsy.) ...	E. J. Elford, Esq., C.E.	8	1 0	90	20·50	179
d " (Southchurch Road) ...	B. C. Hall, Esq. ....	5	1 2	96 A	22·74	...
d " (Broadway) .....	H. J. G. Ralph, Esq....	5	1 0	85 B	22·13	189
d " (Water Works) .....	Southend Water Wks Co	8	1 0	112 A	22·20	196
d Leigh Reservoir .....	" " "	5	1 0	177 A	23·92	161
d Eastwood Pumping Station .....	" " "	8	1 0	50 A	23·31	193
d Thundersley Reservoir .....	" " "	5	1 0	277 A	23·90	161

## DIVISION IV.—EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with .01 or more recorded.
		Diameter	Height Above Ground	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
<b>ESSEX—(con.)</b>						
<b>3.—CROUCH—(con.)</b>						
Nevedon Pumping Station .....	Southend Water Wks Co	5	1 0	43 $\nearrow$	23.78	...
D Billericay (Service Tank) .....	" " "	5	1 0	310 $\nearrow$	25.83	184
D " (Ramsden Hall) .....	T. W. Bacon, Esq. ....	5	0 9	260 $\nearrow$	26.32	197
D Wickford (Runwell Hall) .....	Lt.-Col. H. Kemble ...	5	1 0	75 $\uparrow$	28.20	181
D Dengie (Land Wick) .....	Mrs. H. G. Owen .....	5	1 0	10	22.03	167
D Bradwell-on-Sea (Bradwell Hall)	J.C. Chillingworth, Esq.	5	1 1	27	21.06	155
<b>4.—BLACKWATER. 425 sq. mi.</b>						
D Brentwood (Shenfield, The Lodge)	H. P. Landon, Esq. ...	5	0 7	303 $\nearrow$	26.01	183
D Cold Norton (Latchingdon Rec.)	Mrs. Pope ...	5	1 0	175 ?	21.03	152
D Ingatestone (Fryerning) .....	A. E. Christy, Esq. ...	5	1 0	291 $\nearrow$	23.27	208
D " { " Furze Hall) ...	Mrs. Wilde .....	5	1 0	285 $\uparrow$	24.57	196
" { " " " " ) M	" " " " " " " " " " " "	5	1 0	285 $\uparrow$	24.50	...
D Maldon (Hazeleigh Rectory) ...	Rev. G. H. Raynor ...	7	1 1	161 $\nearrow$	22.50	172
D Danbury Rectory .....	Rev. J. Bridges Plumptre	5	1 0	365 $\uparrow$	23.21	176
Maldon .....	R. H. Eve, Esq. ....	5	0 8	...	22.81	...
D Writtle (Melbourne) .....	E. Rosling, Esq. ....	5	0 9	140 $\uparrow$	24.52	199
" .....	R. Woodhouse, Esq. ...	8	2 0	100 ?	23.77	174
D " (The House) .....	Miss Usborne .....	5	4 0	110	27.22	160
Chelmsford (High Street) .....	F. Chancellor, Esq. ...	8	1 0	92 $\nearrow$	24.43	199
D " (Spergula) .....	J.C. Thresh, Esq., M.D.	5	1 0	136 $\uparrow$	23.78	187
D " (Springfield Place) .....	Miss Jackson .....	5	0 11	143 $\nearrow$	25.94	230
Roxwell .....	R. W. Christy, Esq. ...	5	1 0	180 $\uparrow$	22.90	...
D Witham (Terling Vicarage) .....	H. C. Boutflower, Esq.	5	1 0	115 $\uparrow$	25.40	172
D Great Leighs (Lyons Hall) .....	J. H. Tritton, Esq. ...	5	3 0	130 $\nearrow$	27.01	175
Witham (Faulkbourne Hall) ...	Miss C. L. Parker .....	5	0 8	100 ?	24.87	198
D Kelvedon (Lawn House) .....	F. Randolph-Symmons, Esq.	5	1 0	96	25.42	168
D " (White Barn) .....	W. & H. J. Sheldrake, Esqs.	5	1 5	135 $\uparrow$	23.23	173
" (Feering Vicarage) ...	Rev. A. F. Curtis .....	5	1 0	100 $\uparrow$	27.98	175
Little Dunmow Council School ...	Miss M. G. Archer ...	5	1 0	258 $\uparrow$	26.25	155
D Braintree (Bocking, Fennes) .....	H. S. Tabor, Esq. ....	5	1 0	240 $\uparrow$	23.90	163
Great Saling (Saling Grove) .....	Capt. J. N. Harrison ...	8	1 0	290 $\uparrow$	23.45	171
<b>5.—COLNE &amp; C. 283 sq. mi.</b>						
Mersey Island (Waldegraves) ...	<i>E. Anglian Daily Times</i>	...	...	55 ?	23.62	...
D Clacton-on-Sea (Clacton College)	H. Picton, Esq. ....	5	0 9	40 $\uparrow$	22.67	188
D " " " " " " " " " " " "	Mr. A. W. Shadick ...	8	1 2	55 $\nearrow$	22.39	170
Great Clacton (Clay Hall) .....	Philip Smith, Esq. ....	5	2 0	45	22.11	162
D Fingringhoe (Ballast Quay Farm)	T. B. Grubb, Esq. ....	5	2 0	47	24.95	158
Colchester (Berechurch) .....	R. P. Blyth, Esq. ....	5	1 3	120 ?	25.63	174
" " (King's Ford) .....	Hon. Lady Digby .....	5	1 0	103 $\uparrow$	24.90	217
D " (Borough Surveyor's Office)	H. Goodyear, Esq., C.E.	8	17 0	82 $\nearrow$	23.69	178
D " (Hill House, Lexden)	S. F. Hurnard, Esq. ...	5	1 0	90 $\uparrow$	24.13	182
" ( " " " " ) M	" " " " " " " " " " " "	5	1 0	90 $\uparrow$	23.76	...
" (Home Farm, " " )	Mr. W. Bird .....	5	1 0	125 $\uparrow$	23.95	...
Great Bromley (Broughton) .....	W. Arnold Roberts, Esq.	5	1 3	115 $\uparrow$	26.62	...
Earls Colne (Chalkney House) ...	H. F. Hills, Esq. ....	5	1 3	188 $\uparrow$	24.09	171
Wakes Colne Place .....	<i>Essex County Standard</i>	...	...	...	25.86	205
D Manningtree (Bradfield Lodge) ..	G. Hempson, Esq. ....	5	1 0	113 $\uparrow$	25.73	170

## DIVISION IV.—EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with $\geq 1$ or more recorded.
		Diameter	Height Above Ground		Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.	
<b>ESSEX—(con.)</b>							
<b>5.—COLNE &amp; C—(con.)</b>							
D Halstead (The Brewery) .....	E. T. Adams, Esq.....	5	1	0	140 T	25·09	174
D „ (Grammar School).....	Miss Coles .....	7	1	0	220 T	25·22	179
Great Maplestead (Monk's Lodge)	T. F. Miller, Esq. ....	5	0	9	245 T	26·37	...
D Great Yeldham (The Oak House)	G. A. Goodchild, Esq... 5	5	1	6	150	25·19	163
<b>6.—STOUR. 110 sq. mi.</b>							
Harwich (Hill House, Ramsey)..	Miss K. Hempson .....	5	0	6	80	25·57	171
„ (Coastguard Station)...	Mr. W. Bevan .....	5	1	0	40	21·32	...
D Lawford (Dale Hall).....	W. H. Richardson, Esq. 5	5	1	0	110 T	26·46	173
D Dedham (Dalethorpe) .....	J. D. Tremlett, Esq.... 5	5	1	1	54	26·90	197
Langham Rectory .....	Rev. T. S. Raffles .....	5	0	11	134	26·25	...
D Bulmer Lodge [Sudbury].....	The Misses Burke .....	5	1	3	200 T	29·61	191
<b>7.—OUSE. 80 sq. mi.</b>							
D Newport (Belmont House) .....	Dr. J. Arthur Brown... 5	5	1	0	180 T	28·22	165
Arkesden (Wood Hall) .....	Charles Beadle, Esq.... 5	5	1	0	380	31·70	165
Saffron Walden (Market Place)..	<i>Herts &amp; Essex Observer</i> 5	5	1	5	201 A	27·77	202
D „ „ (Audley End)...	Mr. J. Vert .....	5	1	0	155 A	27·14	195
D Great Chesterford Mills .....	Ernest H. King, Esq... 5	5	1	0	130	27·09	192
<b>SUFFOLK. (Area, 1489 sq. mi.)</b>							
<b>1.—STOUR. 271 sq. mi.</b>							
D Brantham [Manningtree].....	H. M. Greenstock, Esq. 6	6	1	0	22	34·67	183
D East Bergholt (Ackworth House)	A. Harwood, Esq. ....	8	1	6	145	25·67	198
D Capel St. Mary School .....	B. B. Taylor, Esq.....	5	1	0	135 ?	29·68	184
D Sudbury (Great Cornard).....	A. B. Legard, Esq.....	5	1	0	100 ?	27·71	183
D „ (Cornard Road) .....	W. I. Tait, Esq., C.E. 5	5	1	3	90 T	27·09	198
D „ (Lunt Fall Reservoir)...	„ „ „ 5	5	1	3	194 A	27·10	210
D „ (Friars Street) .....	E. Ransom, Esq. ....	5	1	7	93 T	27·90	211
D Haverhill Vicarage .....	Rev. H. C. Newbery ... 5	5	...	...	...	28·28	186
Hitcham Rectory .....	Rev. R. R. Cobbold ... 5	5	1	5	255 T	26·09	206
D „ (Loose Hall) .....	T. A. Harwood, Esq.... 5	5	1	0	275 T	25·20	174
Stansfield (Cordell Hall) .....	J. Slater, Esq. ....	5	1	0	300 A	29·60	...
Hartest (Hop Hall) .....	Sheriff A. Long, Esq... 5	5	1	6	300	28·88	176
D Hawkedon Rectory .....	Rev. B. P. Oakes .....	5	3	4	305 A	30·71	258
D Wickhambrook Schools.....	W. Brown, Esq. ....	5	1	3	390	28·42	186
D Cockfield Rectory .....	Rev. Edwin Hill .....	5	1	0	305 T	28·31	199
<b>2.—ORWELL. 166 sq. mi.</b>							
D Trimley (The Avenue) .....	G. Binyon, Esq.....	8	1	0	80 T	25·51	190
D Ipswich (Woolverstone Park) ...	C. H. Berners, Esq. ... 8	8	1	0	100 T	25·68	186
D „ (Orwell Park) .....	E. G. Pretymann, Esq. MP 8	8	1	0	60 A	26·28	219
„ (Belstead Hall) .....	R. Wilson, Esq.....	5	1	0	100	28·98	184
D „ (Rookwood, Copdock)...	F. L. Bland, Esq. ....	5	1	6	170 T	26·65	196
D „ (Museum).....	F. Woolnough, Esq.... 8	8	0	10	72 A	27·38	177
D „ (Parkside) .....	F. Turner, Esq.....	5	0	6	125 T	26·37	169
D „ (Dale Hall) .....	Percy Turner, Esq..... 8	8	1	0	135 T	26·95	192

## DIVISION IV.—EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with .01 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	
		in.	ft.	in.	feet.	inches.
SUFFOLK—(con.)						
2.—ORWELL—(con.)						
Ash Bocking Vicarage.....No. 1	Rev. M. B. Cowell.....	5	1	0	231 $\nabla$	28·60 178
" " " ".....No. 2	" " " ".....	5	3	4	231 $\nabla$	28·29 178
Needham Market (Hurstlea) ...	R. G. Wylde, Esq.....	5	4	0	95 $\uparrow$	26·94 ...
Haughley House .....	Mr. E. Quinton .....	5	0	8	145 ?	27·46 190
3.—DEBEN & C. 466 sq. mi.						
D Felixstowe (The Shrubbery).....	S. Alexander, Esq.....	5	1	0	70 B	29·07 175
D " (Wireless Tel. Station) .....	Mr. A. H. Jenkinson...	8	1	0	17	23·58 197
Waldringfield Old Rectory .....	Rev. T. H. Waller.....	8	1	2	60 ?	23·71 ...
D Hollesley School .....	Frederick Bell, Esq. ...	7	1	0	30	23·41 182
" Manor .....	G. P. Hope, Esq. ....	5	1	0	65 $\uparrow$	23·76 ...
D Woodbridge Abbey .....	Col. R. J. Carthew ...	8	1	2	46 $\nabla$	26·13 202
D " (Melton Asylum) ...	late Dr. S. G. Longworth	8	1	4	74 $\nabla$	26·56 170
D Orford (The Gables) .....	A. E. Rope, Esq. ....	5	0	9	30	25·73 186
Woodbridge (Boulge Hall) .....	R. Eaton White, Esq...	8	1	10	145	29·58 194
D Rendlesham Hall .....	Lord Rendlesham .....	5	1	0	88 $\nabla$	24·72 179
Otley Rectory.....	Rev. H. W. C. Geldart	5	0	0	180	29·24 194
Charsfield Hall .....	Hugh P. Youngman Esq.	5	...	...	150	29·90 ...
D Snape .....	G. H. Garrett, Esq. ...	5	2	5	...	25·24 175
Parham (The High House) .....	H. R. Smith, Esq.....	5	1	0	93	29·80 ...
D Aldborough (Aldringham Ho.)..	F. Garrett, Esq.....	8	4	5	50 B	27·51 200
D Great Glemham (Glemham Grove)	Col. A. Bloomfield .....	5	1	2	80 $\uparrow$	31·82 191
Leiston (Lower Abbey).....	M. K. Rope, Esq. ....	5	0	7	30 $\uparrow$	26·70 ...
Westleton (St. Helena).....	J. R. Grimsey, Esq. ...	8	2	0	65 $\nabla$	30·15 198
D Halesworth (Estate Office) .....	H. S. R. Stanford, Esq.	5	2	0	25 ?	30·51 195
D Wangford (Henham Gardens)...	Earl of Stradbroke.....	5	3	6	50	28·40 178
D " (Reydon Grove) .....	C. P. Runnacles, Esq...	5	3	0	20 $\uparrow$	26·52 175
D " (Ford House) .....	Hon. Agnes Eden .....	5	0	10	25 ?	30·79 166
D Beccles (Sotterley Hall) .....	Capt. Miles Barne .....	5	0	11	50 $\nabla$	31·06 195
Wrentham (Henstead Hall).....	Rev. Canon R. V. Barker	5	1	3	20	30·14 ...
4.—YARE & C. 208 sq. mi.						
Bacton.....	W. R. Church, Esq. ...	5	1	0	186 $\uparrow$	30·38 206
D Halesworth (Rumburgh Vic.) ...	Rev. W. Linton Wilson	5	3	0	148 $\nabla$	29·80 217
Bungay (Flixton Vicarage) .....	Rev. H. Trethewy .....	5	1	0	80 $\uparrow$	31·05 191
D Lowestoft (Mill Road) .....	Mark Bean, Esq. ....	8	1	1	18	30·47 211
† " (Belle Vue Park).....	Meteorological Office ...	5	1	0	86 $\uparrow$	28·88 189
Blundeston House .....	L. J. Peto, Esq.....	...	...	...	30 ?	31·22 ...
D Herringfleet (The Gables) .....	G. H. Wyllys, Esq. ...	5	0	8	52	31·02 199
D Lound Pumping Station .....	Lowestoft Water & Gas Co.	8	1	0	34	29·80 181
Fritton Hall .....	Mrs. H. E. Buxton.....	8	0	10	40	29·78 184
" Warren .....	Gen. R. Upcher, C.B...	5	0	6	...	30·90 182
D St. Olave's Priory (Paddock) ...	Surg.-Gen. W. A. S. Wynne	8	1	2	10 $\nabla$	28·78 192
D " " (Boat House) .....	" " " ".....	5	1	0	9 $\nabla$	29·40 199
D Burgh Hall [Yarmouth] .....	H. P. Frederick, Esq...	8	0	6	45 $\uparrow$	30·71 203
5.—OUSE. 378 sq. mi.						
D Little Saxham Rectory .....	Rev. H. I. Kilner .....	8	0	10	220	30·97 202
D Bury St. Edmunds (Albert Cres.)	J. R. Burdon, Esq.....	5	1	0	196 $\nabla$	29·84 208

## DIVISION IV.—EASTERN COUNTIES—(continued).

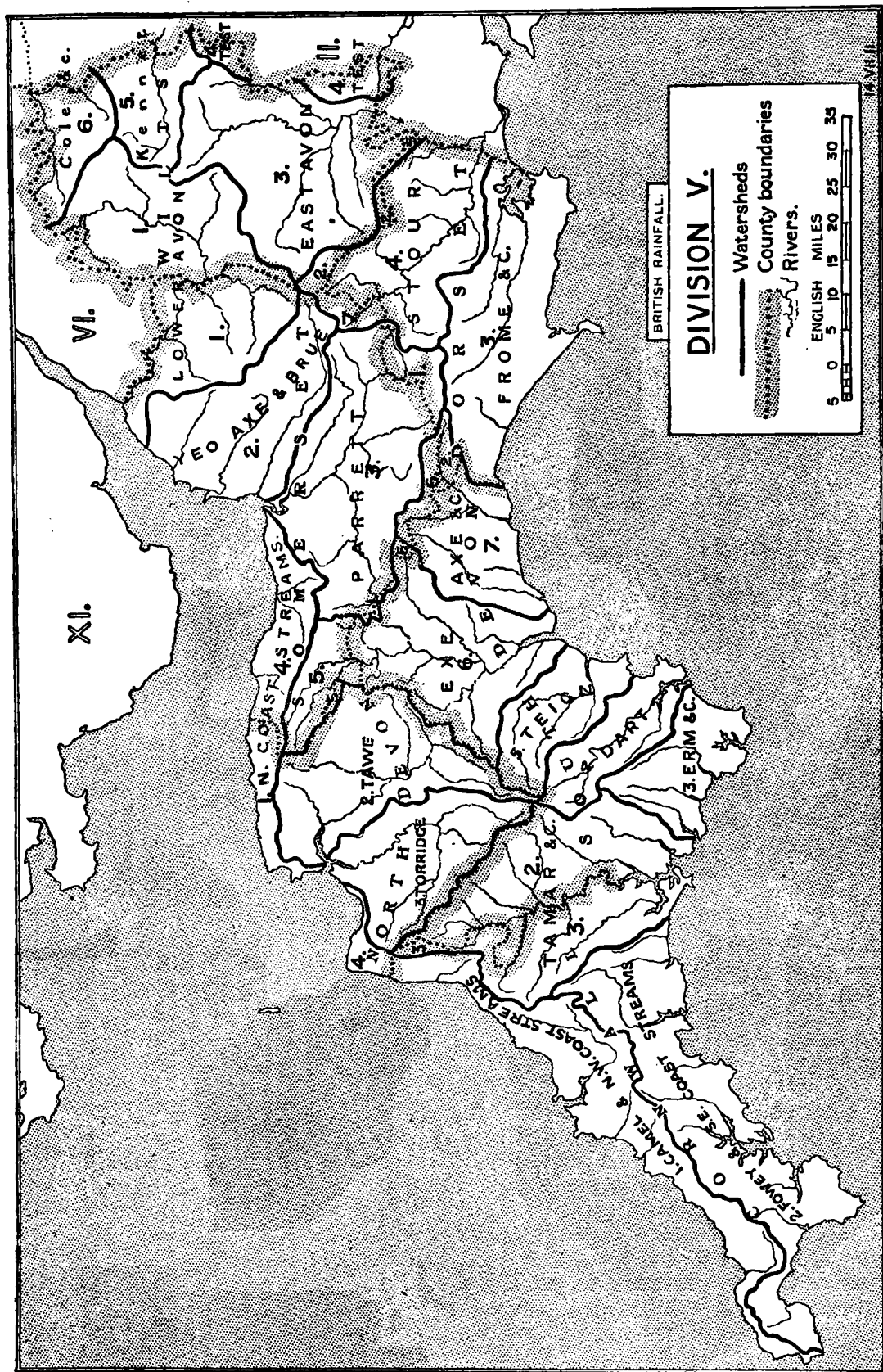
STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain. 1912	Days with .01 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level		
		in.	ft.	in.	feet.	inches.	
SUFFOLK—(con.)							
5.—OUSE—(con.)							
D Bury St. Edmunds (Westley) ...	R. Burrell, Esq.....	5	1	0	226 $\pi$	31.11	189
D „ „ „ (Fornham St. Martin)	Rev. J. S. Pratt .....	5	1	0	100	27.53	185
D†Walsham-le-Willows .....	Mr. J. Pamment .....	5	1	0	140	34.15	208
D Herringswell Rectory .....	Rev. E. H. Wright ...	5	0	6	...	29.31	190
Mildenhall (Holland Ho. Gardens)	Mr. J. Reynolds.....	9	0	9	40 $\uparrow$	32.10	190
†Barningham (The Beeches) ... M	Miss A. K. Lingwood...	8	0	9	136	29.93	...
D Elveden Hall .....	Viscount Iveagh, K.P..	5	1	0	130 $\uparrow$	35.07	236
Brandon (North Court Lodge) ...	Mr. T. Caiger.....	5	2	0	50	30.95	189
NORFOLK. (Area, 2044 sq. mi.)							
1.—YARE. 658 sq. mi.							
Diss (The Cedars) .....	Dr. H. M. Speirs .....	5	0	9	108 $\pi$	31.64	178
D Pulham St. Mary (The Firs) ...	W. G. Rutter, Esq. ...	5	1	2	...	33.55	209
„ „ „ School.....	W. H. Pumphrey, Esq.	5	1	0	131 $\pi$	34.55	194
D Geldeston [Beccles] .....	E. T. Dowson, Esq. ...	5	1	0	38 $\pi$	29.23	210
„ „ „ „ „ „ „ „ „ M	„ „ „ „ „ „ „ „ „	8	1	0	38 $\pi$	28.86	...
D Long Stratton (Gt. Moulton Rec.)	Rev. T. D. Chute .....	5	1	3	100	34.72	176
D „ „ „ (Fritton Rectory) ..	Mrs. Howes .....	5	1	0	120 $\uparrow$	32.97	216
D Hedenham Rectory ... ..	Ven. Dr. T. H. Bindley	5	1	0	104 $\uparrow$	28.39	204
Toft Monks School.....	W. B. Alexander, Esq.	5	1	0	60 $\uparrow$	27.59	160
Spooner Row (Wattlefield Hall)	E. F. Routh Clarke, Esq.	5	1	5	165 ?	34.99	210
D Raveningham Hall [Beccles] ...	N. H. Bacon, Esq. ...	8	1	3	...	29.81	164
D Saxlingham Nethergate .....	Mrs. Pitt.....	5	1	5	...	31.82	218
D Brooke School .....	Roy Meteorological Soc.	...	...	...	...	29.29	173
D Thurlton School.....	Eric Youngs, Esq.....	5	1	0	20	30.11	190
Loddon (Langley Park) .....	Mr. A. Bentley .....	5	2	2	80	31.88	152
D Swainsthorpe (The Rookery) ...	Miss E. M. Cross .....	5	...	...	105 ?	32.27	228
D Wymondham .....	J. B. Pomeroy, Esq. ...	8	1	3	118 $\pi$	36.17	225
D Hingham Hall .....	E. Noel, Esq.....	5	1	1	190 $\uparrow$	31.53	216
D Dunston Hall.....	G. F. Buxton, Esq. ..	5	4	0	100 ?	34.18	197
D Rockland St. Mary Vicarage ...	Rev. J. K. Swinburne..	5	1	0	60 ?	34.42	192
D†Keswick Old Hall .....	E. Knight, Esq.....	5	1	0	90 ?	34.10	224
D Hethersett (Cedar Grange) .....	F. A. Bainbridge, Esq.	5	0	9	150 $\uparrow$	36.62	209
Yarmouth (Sailors' Home) .....	Meteorological Office...	8	4	0	27	33.60	198
D „ „ (Northgate St.) <i>Snowdon g.</i>	G. W. Hughes, Esq....	5	1	0	7 $\pi$	30.34	186
D „ „ „ „ „ „ „ „ „ <i>Glaisher g.</i>	„ „ „ „ „ „ „ „ „	8	0	11	7 $\pi$	30.67	186
D „ „ „ „ „ „ „ „ „ <i>Howard g.</i>	„ „ „ „ „ „ „ „ „	5	1	0	7 $\pi$	29.86	186
D†Norwich (Christ Church Rd. Eaton)	A. W. Preston, Esq. ...	5	1	0	98 $\pi$	35.03	225
D „ „ (Carrow House) .....	Miss Colman .....	5	1	3	35 $\pi$	30.05	212
D Brundall (Blofeld Road) .....	A. W. Preston, Esq....	5	1	0	55	34.42	194
D Norwich (Ipswich Road) .....	J. H. Willis, Esq.....	5	1	0	110 $\uparrow$	35.47	243
D „ „ (Heigham Cemetery) ...	A. W. Preston, Esq....	5	3	2	37 $\pi$	34.82	227
D Honingham Hall .....	(R) Mr. E. H. Starling.....	10	4	10	100 ?	32.02	206
D Drayton .....	Rev. A. J. Spencer ...	...	...	...	...	35.23	248
D Bylaugh Park Gardens .....	Mr. G. Beeton .....	5	1	0	130 $\uparrow$	40.74	209
D Swanington Rectory .....	Rev. G. B. Atkinson...	5	2	7	90 $\uparrow$	35.23	206



## DIVISION IV.—EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with .01 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	
		in.	ft.	in.	feet.	inches.
<b>NORFOLK—(con.)</b>						
<b>1.—YARE—(con.)</b>						
D Reepham (Great Witchingham) ..	Maj. W. Amphlett Moss	5	1	4	66	33·31?
D Great Massingham .....	W. S. Freuer, Esq. ...	5	3	2	245 †	36·68
D Cawston Rectory .....	A. W. Preston, Esq. ...	5	1	0	120	38·72
D East Rudham .....	Miss F. E. Mays .....	5	2	0	240	32·13
<b>2.—YARE—Bure &amp; c. 368 sq. mi.</b>						
D Moulton .....	A. W. Preston, Esq. ....	4	...	...	...	33·59
D Acle .....	" " " " " " " " " "	5	0	6	51	36·49
D Sprowston Council School .....	T. Delves, Esq. ....	5	1	0	100 †	37·69
D " (Oak Lodge) .....	A. Cozens-Hardy, Esq. ...	5	1	0	100	34·50
D " Hall .....	Sir Eustace Gurney ...	5	1	0	90 †	35·55
D Old Catton .....	W. S. Tillett, Esq. ....	8	...	...	...	37·31
D Yarmouth (Ormesby St. Michael)	Gt. Yarmouth W. W. Co.	8	1	0	21 †	37·01
Hemsby School .....	R. Cobden Jones, Esq. ...	5	5	0	15	29·44
D Coltishall .....	A. W. Preston, Esq. ....	...	...	...	...	34·70
D Aylsham (Rippon Hall) .....	Major H. S. Marsham ..	5	0	6	90 ?	34·79
D " (Millgate) .....	R. J. W. Purdy, Esq. ...	5	1	0	40	36·38
D Worstead (Dilham) .....	Rev. J. A. Laurence ...	5	0	8	...	35·35
D " (The Rookery, Dilham)	H. Morse Taylor, Esq. ...	5	28	0	53 †	33·49
D " (Lyngate Cottage) ...	R. J. Cross, Esq. ....	8	1	0	55 †	35·54
D " (The Grange) .....	Rev. F. W. Walter ...	3	3	0	40 †	37·27
D North Walsham (Beech Grove) ..	Sydney Hare, Esq. ....	5	1	0	140	34·81
D " " (Empson House)	W. S. Horn, Esq. ....	5	1	0	102 †	33·40
D " " (Guntun Park) ..	A. W. Preston, Esq. ....	...	...	...	...	38·48
Mundesley-on-Sea .....	R. W. Cross, Esq. ....	8	1	2	65	30·60
D Baconsthorpe Rectory .....	Rev. H. Milnes Walker	5	1	3	280 †	37·26
D Cromer (Northrepps Hall) .....	Mrs. R. Gurney .....	5	1	4	200	37·38
<b>3.—STIFFKEYS &amp; C. 288 sq. mi.</b>						
D Sandringham House Gardens ...	Mr. T. H. Cook .....	5	1	1	121 †	37·12
D Cromer .....	Meteorological Office ...	8	1	0	197 †	32·34
D " (The Warren) .....	F. H. Barclay, Esq. ...	8	1	8	...	33·72
D Blakeney .....	Mr. R. Lee .....	5	1	3	29	34·30
D " .....	A. W. Preston, Esq. ....	...	...	...	...	37·21
D Wells (Holkham Hall) .....	Earl of Leicester, G.C.V.O.	12	4	6	43	31·79
<b>4.—OUSE &amp; C. 683 sq. mi.</b>						
D Riddlesworth Hall Gardens .....	Mr. H. Simpson .....	5	1	0	80 ?	30·66
D† Thetford (Waterworks) .....	Mr. E. S. Greenwood ...	8	1	0	170 †	34·99
D† " (Ford Place Gardens) ..	Mr. P. Horn .....	5	1	0	50	32·16
D " ( " Street Gardens) ..	Mr. A. Pipe .....	5	1	0	44	32·79
D Kenninghall (Council School) ...	A. B. Smith, Esq. ....	5	0	6	100 ?	30·13
D Santon [Brandon] .....	A. W. Preston, Esq. ....	5	0	10	32	36·89
Weeting [ " ] .....	S. J. Adcock, Esq. ....	5	0	7	32 †	31·93
Hargham .....	H. R. Beevor, Esq. ...	5	2	0	120 †	32·68
D Southery .....	J. Stanley, Esq. ....	5	1	3	13	32·05
D Caston Rectory .....	Rev. W. H. Partridge ..	5	1	0	148 †	36·56
D Watton .....	A. A. Gompertz, Esq. ...	5	1	0	166 †	37·61
D Denver Rectory .....	Rev. G. D. Barry .....	5	...	...	...	33·36
D Stoke Ferry (Wereham) .....	G. Read, Esq. ....	5	2	3	66 †	38·17





## DIVISION V.—SOUTH WESTERN COUNTIES.

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with 10 or more recorded.
		Diameter.	Height Above Ground.		Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.	
WILTSHIRE. (Area, 1375 sq. mi.)							
1.—LOWER AVON. 386 sq. mi.							
Corsley (Sturford Mead) .....	H. Theodore Cookson Esq	5	0	9	460 $\pi$	47.13	220
D Edington Vicarage .....	Rev. E. C. Alexander..	5	0	8	...	36.19	188
Market Lavington .....	Miss A. P. Bouverie ...	5	0	10	290 $\uparrow$	35.86	195
D " " (Littleton Panell) .....	W. A. Wilson, Esq. ...	5	2	0	...	35.96	208
D Trowbridge W.W. (Biss Bottom) .....	W.W. Gray, Esq., C.E.	5	1	0	311	44.72	196
D " (Rood Ashton) .....	Mr. W. Strugnell .....	8	1	6	250	45.15	236
D " (Wingfield) .....	T. H. Clark, Esq. ....	5	1	0	190	38.30	200
D Bradford (Winsley Manor) .....	E. W. Knatchbull, Esq.	5	0	6	400	38.25	197
D " (Bearfield House) .....	G. A. R. FitzGerald, Esq.	5	1	10	290 $\uparrow$	39.02	189
D " (Woolley Grange) .....	P. K. Stothert, Esq., C.E.	5	0	8	216 $\pi$	39.41	219
Seend (Cleeve House) .....	(R) W. Heward Bell, Esq..	...	1	0	160 $\uparrow$	33.07	199
D Holt (The Retreat) .....	A. V. H. Beaven, Esq.	5	2	6	145 $\uparrow$	37.30	207
D Devizes (Wilts Co. Asylum) ...	Dr. J. Ireland Bowes...	8	2	3	385 $\pi$	33.97	167
D " (Southbroom House) ...	R. H. Caird, Esq. ....	5	1	0	434 $\pi$	37.90	217
D Cherhill Rectory .....	Rev. Septimus Firman	12	3	0	390 $\uparrow$	37.17	179
D Calne (High Street) .....	E. W. Brown, Esq. ....	4	1	0	242	36.39	192
D " (Compton Bassett Gardens) .....	Lt-Col A. W. H. H. Drake	6	1	0	500 $\uparrow$	40.77	206
Chippenham (Kington Langley) .....	Charles Garnett, Esq...	5	1	6	235	40.99	210
D Wroughton (Basset Down House) .....	Mrs. Story Maskelyne..	5	1	0	500 ?	37.46	176
D Wootton Bassett (The Lime Kiln) .....	H. Bevir, Esq. ....	5	1	6	422 $\uparrow$	36.45	197
Malmesbury (Cowbridge House) .....	Meteorological Office ...	5	1	0	236	40.42	210
D " (Charlton Cottage) .....	Countess of Suffolk ...	6	0	9	400	42.76	202
2.—STOUR. 33 sq. mi.							
D Mere (Townend) .....	W. W. Farnfield, Esq.	5	2	6	340 $\uparrow$	45.01	228
D " (Charnage) .....	A. R. White, Esq. ....	5	1	0	426 $\uparrow$	44.04	235
D Stourhead .....	Sir H. Hoare, Bart. ...	5	1	0	583 $\uparrow$	48.20	195
D Kilmington Rectory .....	Rev H G Fox Strangways	5	1	6	710 $\uparrow$	54.98	267
3.—EAST AVON. 554 sq. mi.							
D Donhead St. Mary (Charlton Ho.) .....	Dowager Lady Wynford	5	0	7	515	49.56	204
D Longford Castle .....	The Earl of Radnor ...	5	1	0	141 $\pi$	40.91	198
D Tisbury (The Academy) .....	J. Bristol, Esq. ....	5	0	9	380 $\uparrow$	44.75	200
D East Knoyle (Slades) .....	E. H. Miles, Esq. ....	5	2	0	560 $\uparrow$	46.58	219
D Salisbury .....	W. J. Goodwin, Esq., C.E.	5	2	2	153 $\pi$	37.97	193
D " (Fowlers Hill) .....	Mrs. T. Awdry .....	5	1	0	225 $\pi$	36.72	167
D† " (Brown Street) .....	T. H. Baker, Esq. ....	5	1	0	155 $\uparrow$	40.64	227
D " (Castle Street) .....	C. H. De Mello, Esq....	5	3	6	150	37.40	...
D " (Atherton House) .....	Wilfred Fletcher, Esq.	5	0	11	250	39.28	210
D† " (Leehurst) .....	Miss Farebrother .....	5	1	4	350	38.94	206
D " (Wilton House) .....	Mr. T. Challis .....	8	1	0	180 $\pi$	47.93	234
D Stratford-sub-Castle (The Manor Ho.) .....	J. Carpenter, Esq. ....	5	0	9	165 $\uparrow$	35.36	201
Woodford (Court House) .....	Mrs. E. G. Chetwynd Stapylton	5	0	10	200	35.41	192
D Codford St. Mary (Stockton Ho.) .....	G. Knowles, Esq. ....	5	1	0	260	41.16	214
Sutton Veney (Greenhill) .....	R W Pretor-Pinney, Esq	5	1	0	390	40.96	184
D Warminster (Rye Hill) .....	Stiles E. Jefferys, Esq..	8	2	0	466 $\uparrow$	47.46	236
D† " (Bishopstrow) .....	P. Benton, Esq. ....	5	0	10	380 $\uparrow$	41.02	200
D Cholderton Rectory .....	Rev. A. E. Brisco Owen	8	1	0	320 $\pi$	38.14	215
D Salisbury Plain (Chitterne House) .....	R. Hayward, Esq. ....	11	4	0	319 $\uparrow$	34.26	177

## DIVISION V.—SOUTH WESTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain. 1912	Days with .01 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level		
		in.	ft.	in.	feet.	inches.	
<b>WILTSHIRE—(con.)</b>							
<b>3.—EAST AVON—(con.)</b>							
†Salisbury Plain (Shrewton) .....	F. J. Wardale, Esq. ...	5	0	9	322	36·67	218
Collingbourne Kingston .....	Baldwin Latham Esq. CE	5	1	0	470	36·30	...
D Chirton Old Manor House .....	Mr. T. Selfe .....	5	3	0	374	36·84	205
D Pewsey (Wilcot) .....	W. R. Wilbraham, Esq.	5	0	6	415	36·74	210
„ (Stowell Park) .....	J. H. Smith-Barry, Esq.	5	1	0	470	35·52	...
D Bishops Cannings .....	Mrs. H. H. Mogg .....	5	1	0	446	36·21	204
<b>4.—TEST. 77 sq. mi.</b>							
Landford (Northlands) .....	Mrs. Wigram .....	5	1	10	167	41·01	230
D Ludgershall (Conholt Park) .....	E. A. Wigan, Esq. ...	5	1	3	800	42·06	189
<b>5.—THAMES—Kennet. 169 sq. mi.</b>							
D Grafton (Wexcombe) .....	K. A. MacAndrew, Esq.	5	1	0	570	43·92	209
Shalbourne (The Manor) .....	Mr. J. H. Brown .....	5	1	0	640	34·75	...
D Marlborough (College) .....	Meddows Taylor, Esq. ...	5	1	0	425	40·35	200
D „ (Mildenhall) .....	Rev. Gordon Soames ...	5	1	0	456	39·06	188
D Ramsbury (Eastridge) .....	Mr. A. Stainford .....	6	1	0	600	37·78	204
D Aldbourne (The Warren) .....	Henry Brown, Esq. ...	5	1	0	550	38·29	204
<b>6.—THAMES—Cole &amp; C. 156 sq. mi.</b>							
D Wroughton (Water Works) .....	H. J. Hamp, Esq. ....	8	1	3	450	34·84	188
D „ (Burderop Park) ...	A. Ashford, Esq. ....	5	0	9	570	37·17	182
D New Swindon .....	H. J. Southwell, Esq. ...	8	0	11	378	34·61	207
D South Marston Vicarage .....	Rev. A. Macdonald ...	...	...	...	...	31·02	183
D Highworth (Hannington Hall) ...	Mrs. Hussey-Freke ...	5	1	0	375	35·25	200
<b>DORSETSHIRE. (Area, 988 sq. mi.)</b>							
<b>1.—PARRETT. 61 sq. mi.</b>							
D Evershot (Melbury House) .....	Mr. R. Rintoul .....	5	1	6	500	47·06	186
D Chedington Court .....	Sir Henry Peto, Bart. ...	5	1	0	605	49·46	213
D Leigh Vicarage .....	Dorset Field Club .....	...	1	0	250	46·49	202
D Sherborne Castle .....	Mr. T. Turton .....	5	1	0	195	39·53	207
<b>2.—AXE. 25 sq. mi.</b>							
Broadwindsor Vicarage .....	Dorset Field Club .....	5	0	7	535	53·06	201
D „ (Blackdown House) .....	C. E. M. Pinney, Esq. ...	5	0	9	515	54·84	222
<b>3.—FROME &amp; C. 502 sq. mi.</b>							
Portland Bill (New Lighthouse) ..	Meteorological Office ...	8	1	0	23	29·03	172
„ (Easton) .....	R. S. Henshaw, Esq. C.E.	5	1	6	265	39·15	200
D „ (H.M. Naval Depot) ...	H. A. Brain, Esq., C.E.	8	1	5	23	42·16	193
D Weymouth (Westham) .....	J. H. Bolam, Esq. ....	5	1	0	25	37·87	191
D „ (Massandra) .....	H. W. Green, Esq. ...	5	1	6	40	40·55	201
D Swanage (Royal Victoria Hotel) ..	H. B. Vincent, Esq. ...	5	1	11	50	39·06	184
D Chickerell (Montevideo) .....	Mrs. N. M. Richardson	5	1	0	100	38·53	211
D „ Rectory .....	Rev. Sealy Poole .....	8	1	0	94	34·64	179
East Fleet (Fleet House) .....	Dorset Field Club .....	5	1	2	40	37·85	...
† West Lulworth Vicarage .....	Rev. W. Percy Schuster	5	1	0	128	41·08	159
D East Lulworth Vicarage .....	Dorset Field Club .....	5	0	9	173	45·33	169
Creech Grange .....	J. W. G. Bond, Esq. ...	5	1	2	240	45·72	163

## DIVISION V.—SOUTH WESTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with '01 or more recorded.
		Diameter	Height above Ground.		Height above Sea Level	1912
		in.	ft.	in.	feet.	inches.
<b>DORSETSHIRE—(con.)</b>						
<b>3.—FROME &amp; C.—(con.)</b>						
D Abbotsbury (New Barn) .....	J. C. P. White, Esq. ....	5	1	6	111 T	38·96 207
D Upwey (Portland W.W.) .....	R. S. Henshaw, Esq. C.E.	8	1	0	290 A	43·34 207
D Warmwell (Warmwell House) ...	Lord Wynford .....	5	0	4	155 A	46·62 205
D Wareham (East Holme) .....	Gerald D. Bond, Esq. ...	5	1	0	24 T	43·19 170
D Stoborough (King Barrow) .....	L. G. Pike, Esq. ....	5	0	9	14	41·73 161
D Wareham (Worgate Hill) .....	Mr. W. Sargent .....	5	1	1	108	39·89 199
D „ (South Street) .....	S. W. Bennett, Esq. ...	5	2	6	18	43·13 198
D „ (Binnegar Hall) .....	Lt.-Col. P. Farrer .....	5	1	0	65	44·95 176
D „ (Trigon) .....	Mrs. L. Sturdy .....	8	1	4	60 T	41·75 184
D Herringston House .....	Miss H. G. Williams ...	5	...	...	...	48·60 165
D Abbotsbury (Littlebrey) .....	Rev. A. C. Moule .....	5	0	9	355	49·91 187
D Winterbourne Steepleton .....	late H. Stilwell, Esq. ...	8	1	0	316 A	51·85 214
D Dorchester Water Works .....	H. D. Strange, Esq. ...	8	1	0	315 A	48·15 185
D „ (Wollaston House) ...	Capt. J. E. Acland .....	5	1	0	200 A	48·90 192
D Poole (Parkstone) .....	W. H. Symes, Esq. ....	5	1	3	160 T	42·21 188
D† Branksome (Bourne Valley) .....	H. W. Woodall, Esq. ...	8	1	3	84 T	41·69 193
D „ (Alderney Reservoir) .....	„ „ „ „ „ „ „ „	8	1	3	213 T	34·34? 175
D Broadstone (Lypiatt Cottage) ...	F. W. Beckford, Esq. ...	5	1	0	220 B	46·04 269
D Lyme Regis (Holme Cleve) .....	Mrs. Cave .....	5	1	0	230 T	40·17 180
D Charmouth (Leslie Cottage) .....	M. E. Mills, Esq. ....	8	1	3	120 A	39·71 208
D „ „ „ „ „ „ „ „ weekly	„ „ „ „ „ „ „ „	5	1	0	120 A	39·13 ...
D Bridport (Coneygar) .....	H. Gordon, Esq., C.E. ...	5	1	0	110 T	39·54 192
D Bradford Peverell House .....	Mrs. Middleton .....	6	1	1	381	50·09 184
D Charminster (Brooklands) .....	Capt. R. Dymond .....	8	1	3	...	48·29 170
D Puddletown Vicarage .....	Rev. A. Helps .....	5	2	8	195	48·47 193
D Wynford Eagle .....	F. M. Walter, Esq. ...	5	0	11	...	46·05 210
D Bere Regis (Barrow Hill) .....	Mr. A. C. Lucas .....	5	1	0	120	45·42 193
D „ „ (Bloxworth Rectory) .....	Rev O. P. Cambridge FRS	5	1	6	205 T	44·84 175
D „ „ „ „ „ „ „ „ House) ...	F. G. A. Lane, Esq. ...	5	1	6	118	47·88 197
D Netherbury .....	B. J. T. Stott, Esq. ....	5	1	0	143 T	48·89 187
D Maiden Newton (Cattistock Lodge) ..	Major H. H. F. Fagan	5	1	0	361	53·69 205
D Bere Regis (Longthorns) .....	Mr. S. Smart .....	5	1	0	...	51·00 201
D Cerne Abbas (Dole's Ash) .....	Mark Lane Express ...	...	...	...	...	52·00 ...
D Beaminster Vicarage .....	Rev. G. C. Hutchings ..	5	1	0	216 T	47·57 210
D „ „ „ „ „ „ „ „ „ „	Fiennes Trotman, Esq.	5	1	0	210 T	47·79 209
D Milton Abbas (Milton Abbey) ...	Mr. C. H. Perkins .....	5	0	10	333 T	54·17 224
<b>4.—STOUR. 388 sq. mi.</b>						
Kinson (Eglington) .....	W. C. Keevil, Esq. ...	5	0	6	44 T	44·80 214
D Wimborne (Corfe Mullen) .....	G. V. Sparrow, Esq., C.E.	5	1	6	82	43·28 156
D „ „ „ „ „ „ „ „ „ „ Forest Hill)	E. Philip Belben, Esq.	8	2	0	300	43·29 ...
D Winterbourne Whitchurch Vic. ...	Rev. H. H. T. Bassett.	8	0	6	241	48·28 183
D Sturminster Marshall (Baillie Ho.) ..	Rev. J. Cross .....	5	0	6	85	42·50 193
D Wimborne (Westfield) .....	Countess of Moray .....	5	...	...	...	42·46 158
D „ (St. John's Hill) .....	E. H. Widnell, Esq. ...	5	1	0	146 B	42·92 201
D „ (Codford House) .....	G. H. Batterbury, Esq. MD	5	0	9	69 T	42·23 220
D „ (Stoneham) .....	H. J. Tuck, Esq. ....	5	1	0	200 T	41·25 194

## DIVISION V.—SOUTH WESTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with .01 or more recorded.
		Diameter	Height Above Ground		Height Above Sea Level	
		in.	ft.	in.	feet.	inches.
<b>DORSETSHIRE—(con.)</b>						
<b>4.—STOUR—(con.)</b>						
D Witchampton .....	Miss A. L. Homer .....	5	1	0	130 T	43·83 171
Horton Vicarage .....	Rev. G. Wellington ...	5	1	0	133 T	38·10 212
D Wimborne St. Giles (St. Giles Ho.)	Earl of Shaftesbury ...	5	1	0	165 T	45·49 195
Gussage St. Michael Manor .....	Miss Ellen Good .....	5	1	3	200	43·03 195
D Iwerne Courtney (Ranston) .....	Sir R. L. Baker, Bart. MP	5	1	7	180 ?	43·37 178
D Sturminster Newton (Riverside).	A. R. Hallett, Esq. ...	5	5	0	205	38·25 187
D " " Vicarage..	Dorset Field Club .....	5	2	7	180 T	41·63 195
D Iwerne Minster House Gardens..	J. H. Ismay, Esq. ....	5	1	0	244 T	45·55 208
D " " " " (R)	" " " " .....	8	1	1	244 T	45·54 205
D Ashmore Rectory .....	Rev. A. J. Reed .....	8	1	3	700	51·08 219
D Shaftesbury .....	Rev. F. Ehlers .....	5	1	2	722	39·72 205
D Buckhorn Weston Rectory .....	Rev. W. Hughes D'Aeth	5	1	0	285	40·69 212
D Gillingham .....	S. H. Stephens, Esq. ....	5	1	2	244 T	42·47 217
<b>5.—EAST AVON. 12 sq. mi.</b>						
<b>SOUTH DEVON. (Area, 1707 sq. mi.)</b>						
<b>1.—PARRETT. 7 sq. mi.</b>						
<b>2.—TAMAR &amp; C. 395 sq. mi.</b>						
D† Plymouth (The Hoe) .....	H. Victor Prigg, Esq. CE	8	1	0	116 T	47·04 219
D " (Drake's Reservoir) ..	F. Howarth, Esq., C.E.	5	1	0	149 T	48·06 206
D " (Hartley Reservoir) ..	" " " "	5	1	0	321 T	52·08 218
D " (Freedom Fields) .....	H. Victor Prigg, Esq. CE	8	1	0	208 T	49·82 204
D Devonport (Rowdens Res.) .....	F. W. Lillierap, Esq., CE	5	1	0	201 T	45·80 226
D Plympton (Leigham) .....	Vere Cholmondeley, Esq	5	1	0	50	54·60 226
D Bickley (Roborough Reservoir)..	F. Howarth, Esq., C.E.	5	1	0	548 T	62·01 251
Lee Moor Clay Works .....	T. Martin, Esq. ....	8	1	6	950	80·40 ...
Bere Ferrers Rectory .....	<i>Western Morning News</i>	5	1	0	100	56·59 213
D Bere Alston (Mount Tamar) .....	T. Ching, Esq. ....	5	2	0	350	54·71 233
D " " (Rumleigh) .....	Sir A. W. Croft, K.C.I.E.	5	1	6	123 T	55·05 230
Sheepstor Vicarage .....	Meteorological Office ...	8	1	0	730 T	83·50 250
" " " " M	F. Howarth, Esq., C.E.	5	1	0	1024 T	70·46 ...
D " (Red Stone) .....	" " " "	5	1	0	763 T	86·65 240
D " (Burrator) .....	" " " "	5	1	0	755	82·82 240
D " (Head Weir) .....	" " " "	5	1	0	720	69·19 241
D Dousland .....	F. W. Lillierap, Esq. C.E.	5	1	0	721	71·69 233
D Dartmoor (Deancombe Farm) ...	F. Howarth, Esq., C.E.	5	1	0	830 T	78·28 223
D " (Leather Tor Farm) ..	" " " "	5	1	0	910 T	86·24 232
" (Siwards Cross) .....	" " " "	5	1	0	1200 T	81·71 ...
" (Cramber Tor) .....	" " " "	5	1	0	1435 T	71·08 ...
D Tavistock (Statsford, Ashbrook)..	Rev. H. B. Grylls .....	5	1	0	400	64·35 250
D " (Public Library) .....	Mr. J. Quick .....	8	20	0	283 T	58·26 231
D " .....	W. J. Monk, Esq. ....	5	1	0	375 T	61·50 237

## DIVISION V.—SOUTH WESTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with $\geq 0.1$ or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	1912
		in.	ft.	in.	feet.	inches.
<b>SOUTH DEVON—(con.)</b>						
<b>2.—TAMAR &amp; C—(con.)</b>						
Dartmoor (Leeden Tor)..... M	F. Howarth, Esq., C.E.	5	1	0	1270 $\nabla$	65.53 ...
„ (N. Hessary Tor) No. 1	„ „ „	5	1	0	1625 $\nabla$	76.55 ...
„ ( „ „ ) No. 2	„ „ „	5	1	0	1502 $\nabla$	76.45 ...
Marytavy Rectory.....	Rev. Irvine K. Anderson	8	1	0	560 $\nabla$	65.60 ...
Milton Abbot (Endsleigh).....	Mr. F. Yole .....	5	1	0	180 $\nabla$	59.83 ...
D Lifton (Kelly House).....	Rev. Maitland Kelly...	8	2	6	462 $\nabla$	56.36 236
D Coryton Rectory .....	Rev. H. N. Fowler ...	5	1	6	400	57.46 233
D Polapit Tamar [Launceston] ...	R. C. Coode, Esq. ....	5	1	0	315 $\nabla$	49.99 235
<b>3.—ERM &amp; C. 217 sq. mi.</b>						
D† Salcombe (Sandhills).....	W. H. Pike, Esq. ....	5	1	0	118 $\nabla$	44.38 203
D† „ (The Park) .....	Capt. J. Partridge .....	5	1	0	40	46.77 197
D† „ (Springfield) .....	Dr. A. Pearce.....	5	1	0	...	47.25 194
† South Huish .....	W. Balkwill, Esq.....	5	5	6	68 $\nabla$	52.71 ...
D† Kingsbridge (Collapit Creek) ...	A. A. Froude, Esq. C.M.G.	5	0	9	50 $\nabla$	45.08 215
D† Slapton (Higher Start House)...	Horace G. Morgan, Esq.	5	1	0	130 $\nabla$	50.46 216
D Revelstoke (Membland) .....	Mr. G. Baker.....	5	1	0	180 $\nabla$	51.80 175
D† East Allington (Fallapit Gardens)	W. H. Tucker, Esq. ...	5	1	0	305	61.47 204
D† Dartmouth (Stoke Fleming).....	C. F. Selby, Esq. ....	5	0	9	356 $\nabla$	49.22 221
Ermington (Strode) .....	H. Gore Hawker, Esq.	5	1	0	100 $\nabla$	55.20 222
D Ivybridge (Langham Hill) .....	Miss Glanville .....	5	1	0	400 $\nabla$	63.53 228
D „ (Woodhayes) .....	H. Alger, Esq. ....	5	1	0	300	64.88 221
D Ugborough (Venn) .....	Capt. Hon. V. Colborne	5	0	8	500 $\nabla$	66.96 205
D South Brent (Blackadon Asylum)	H. Victor Prigg, Esq. CE	5	1	0	607 $\nabla$	77.05 254
D „ „ (Great Aish).....	Miss Kingwell .....	5	1	0	500 $\nabla$	80.17 224
<b>4.—DART. 197 sq. mi.</b>						
D Paignton (Queen's Park) .....	A. J. Holman, Esq.....	8	1	0	11 $\nabla$	41.81 198
D Totnes (North Gate House) .....	Horace F. Lovejoy, Esq.	8	1	0	...	53.58 206
D „ (Berry Pomeroy) .....	C. Barran, Esq. ....	5	1	0	185 $\nabla$	49.40 192
D „ ( „ „ Vicarage)	Rev. H. Cooper .....	5	2	1	130 $\nabla$	49.26 169
D „ (Staverton).....	J. A. Devenish, Esq. ...	5	0	11	50	50.97 191
D „ (Broadhempston) .....	Charles Mole, Esq.....	5	1	0	135 $\nabla$	51.10 209
D Buckfastleigh (Harewood) .....	J. S. Trelawny, Esq....	5	1	0	230 $\nabla$	69.88 200
Ashburton (Landscope).....	A. F. Parbury, Esq. ...	5	1	0	350	52.68 209
D Holne Vicarage .....	Rev. J. Gill.....	5	1	6	650 $\nabla$	75.50 215
D Ashburton (Dolbear) .....	late Maj. Battiscombe..	5	1	0	300 $\nabla$	60.57 209
D „ (Druid House).....	J. S. Amery, Esq. ....	5	1	0	584 $\nabla$	66.34 218
D „ (Leusdon Vicarage)...	Rev. A. Woolcombe...	5	1	0	900 $\nabla$	73.19 204
D Princetown (Huccaby House) ...	Capt. H. H. Joll, R.A.	5	0	11	900 $\nabla$	85.13 208
D „ (H.M. Prison).....	Meteorological Office ...	5	1	0	1359	112.50 243
D „ (Two Bridges) .....	T. C. Bridges, Esq. ...	5	0	9	1170 $\nabla$	106.80 233
† Dartmoor (Cowsic Valley).....	F. W. Lillierap, Esq., CE	8	1	6	1352 $\nabla$	91.25 ...
† „ (Black Dunghill) No. 5	„ „ „	8	1	0	1590 $\nabla$	67.75 ...
† „ (Beardown Tor) No. 3	„ „ „	8	1	0	1550 $\nabla$	64.05 ...
† „ (White Tor) ..... No. 1	„ „ „	8	1	0	1640 $\nabla$	66.95 ...
† „ (Devil's Tor) ..... No. 2	„ „ „	8	1	0	1785 $\nabla$	66.28 ...
† „ (Cowsic Head) ... No. 4	„ „ „	8	1	0	1580 $\nabla$	86.00 ...



## DIVISION V.—SOUTH WESTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with .01 or more recorded.	
		Diameter	Height Above Ground		Height Above Sea Level		
			ft.	in.	feet.		1912
SOUTH DEVON—(con.)							
5.—TEIGN. 209 sq. mi.							
D Torquay (Cockington Court) ...	Roger C. Mallock, Esq.	5	1	0	180	47·25	184
† „ (Princess Gardens) .....	F. March, Esq. ....	5	1	0	12	37·05	191
D† „ (Cary Green) .....	„ „ „ .....	5	1	0	12	37·53	191
D „ (Barton Road).....	W. M. F. Mellor, Esq.	5	1	0	130 T	38·41	192
D „ (Roby Hall) .....	Sir J. Edwards-Moss, Bt.	5	1	0	500 T	44·42	212
D Kingskerswell (South Hill) .....	E. A. Foster, Esq. ...	5	1	0	270 T	43·48	204
Abbotskerswell (Court Grange) ..	Mrs. Marcus Hare .....	5	1	1	150 B	52·37	208
D Newton Abbot (The Chestnuts) ..	E. D. Wylie, Esq. ....	5	0	6	100 T	42·73	212
D Teignmouth (Woodlands) .....	W. B. Harris, Esq. ...	8	1	2	98 T	37·02	197
D „ (Den Gardens) .....	G. Rossiter, Esq. ....	5	1	0	20 T	37·91	188
D „ (Landscape Res.) ...	„ „ „ .....	8	1	0	136	39·88	197
D „ (Hazledown Res.) ...	„ „ „ .....	8	2	0	227	34·27	180
D „ (Shaldon) .....	„ „ „ .....	5	1	0	227	42·46	179
D „ (Bonnieliff) .....	Miss M. Horner.....	5	1	0	260 T	38·28	209
D „ (Benton) .....	W. C. Lake, Esq., M.D.	5	1	0	320	36·55	216
„ (Holcombe) .....	G. Rossiter, Esq. ....	...	...	...	...	40·38	...
Dawlish (Thorns Reservoir).....	S. F. C. Churchward, Esq	5	1	0	550 T	41·97	...
D „ (Burrows Reservoir) ...	„ „ „ .....	5	1	0	420 T	35·94	151
D Chudleigh (Ideford Rectory) ...	Rev. G. J. Ford.....	4	1	0	300 T	40·49	206
D Ilstington.....	W. J. J. H. Burnett, Esq.	5	1	0	650	59·03	226
D Bovey Tracey (Blenheim House)	Mr. E. E. Underdown..	5	1	0	300	49·09	196
D Hennock Vicarage.....	Rev. A. H. Skipper ...	5	1	0	600	64·28	185
Chudleigh (Trusham) .....	Rev. Offley H. Cary ...	5	0	6	322 T	41·67	191
D Moretonhampstead (Bullaton) ...	S. C. Chapman, Esq., C.E.	8	1	0	928 T	53·11	223
D „ (Mardon) ...	„ „ „ .....	8	1	0	835	49·81	225
D North Bovey (Manor House) ...	Mr. W. Turnham .....	5	1	0	700	58·84	220
D Christow (Kennick) .....	S. C. Chapman, Esq., C.E.	8	1	0	836 T	47·45	237
D „ (Barne House) .....	Harford J. Lowe, Esq. ..	5	1	0	410 T	45·54	216
D Moretonhampstead (Blackingstone)	S. C. Chapman, Esq. C.E.	8	1	0	1158 T	52·25	228
D Christow (Laployd) .....	„ „ „ .....	5	1	6	1041 T	53·10	225
D Moretonhampstead Rectory .....	Rev. S. D. Dewey .....	5	1	0	600 B	51·52	228
6.—EXE. 445 sq. mi.							
D Starcross (Cofton Vicarage) .....	Rev. C. F. Benthall ...	5	1	9	60	37·31	189
Exmouth (Douglas Avenue).....	Rev. S. G. Gillum .....	5	0	10	80 B	36·87	190
D „ (Nidderdale) .....	Mrs. Herbert Stewart...	5	1	0	51	34·91	194
„ (Manor Grounds) .....	S. Hutton, Esq., C.E. ...	5	1	0	13 T	37·33	185
„ (Filters, Salterton Rd.) ..	„ „ „ .....	8	8	6	195	39·91	210
„ ( „ Capel Lane) ...	„ „ „ .....	5	8	0	240	38·98	195
D „ (Marpool Hall) .....	Mrs. Chichester .....	5	1	0	87 T	36·25	183
D Aylesbeare (Rosamondford) .....	A. T. Loram, Esq. ....	5	0	10	220 T	37·77	199
Exeter (Ide) .....	Press-cutting .....	8	1	0	130	44·15	204
† „ (Franklyn, St. Thomas) ..	E. N. Snow, Esq. ....	5	0	8	65	43·88	202
D† „ (Devon & Exeter Inst.) ...	J. E. Coombes, Esq. ...	5	13	7	155 T	38·12	208
D† „ (Elmfield House) .....	W. B. Heberden, Esq. CB	5	1	0	100 T	38·06	192
D Rockbeare (The Grange) .....	Col. J. W. Stirling ...	5	1	5	150	38·13	198

## DIVISION V.—SOUTH WESTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with $\geq 0.1$ or more recorded.
		Diameter	Height Above Ground		Height Above Sea Level	1912
		in.	ft.	in.	feet.	inches.
<b>SOUTH DEVON—(con.)</b>						
<b>6.—EXE—(con.)</b>						
†Broad Clyst (Brockhill) .....	W.T. Bayne, Esq. LL.D.	5	1	0	80	36.59 210
▮ Newton St. Cyres (Sherwood) ..	Capt. A. L. Cave .....	5	1	0	400	39.28 207
▮ Upton Pyne (The Parsonage) ..	Rev. A. Hillyard .....	5	1	0	213 T	42.54 207
▮† Bramford Speke Station .....	Mr. A. Tucker .....	5	1	0	79 T	39.75 193
▮ Crediton (Trobridge House) .....	R. Stanley Clarke, Esq.	8	1	2	250 T	36.52 212
▮ Silverton (Killerton) .....	Mr. J. Wilson .....	5	1	0	161	41.52 209
▮ Crediton (Okefield) .....	Seymour F. Pope, Esq.	5	1	0	325 T	38.68 229
▮ Copplestone (Copplestone House) ..	Miss Pope .....	5	0	11	315 T	38.00 223
▮ Cullompton .....	M. T. Foster, Esq. ....	5	1	0	202 T	47.61 248
▮† Tiverton (Broomhill) .....	Rev. J. Dickinson .....	5	1	0	380	46.64 225
▮† „ (Highfield) .....	Maj.-Gen. G. W. Hanson	5	1	10	450 T	51.89 238
▮ „ (St. Peter Street) .....	Miss Gill .....	5	6	0	245	43.66 222
▮ „ (Templeton Rectory) ..	Rev. J. Fowler .....	5	1	0	600	54.50 227
▮ Halberton .....	Capt. G. Izat, R.N. ...	5	0	6	240 T	46.23 192
▮ Uffculme (Bullmoor) .....	Miss M. E. Gowing .....	5	1	0	280	46.90 229
▮ Tiverton (Lythecourt) .....	A. L. Sadler, Esq. ....	5	0	8	230	51.99 ...
▮ Bampton (Huntsam Court) ..	H. Acland Troyte, Esq..	8	1	0	640 T	53.63 212
▮ „ (Wonham) .....	Mrs. J. R. Holland ...	5	1	0	530	55.81 206
<b>7.—AXE &amp; C. 237 sq. mi.</b>						
▮ Budleigh Salterton (West Hill Lo.)	E. C. Thurgood, Esq. ...	5	3	6	120	37.72 185
▮ „ „ (Knowle Ho.) ..	Capt. Arthur Pepys ...	5	1	0	200	38.17 ...
▮ „ „ (Squabmoor) ..	S. Hutton, Esq., C.E. ...	5	1	0	267	40.68 213
▮† East Budleigh (Otterton Vic.) ..	Rev. R. Seymour .....	5	0	7	80	39.29 210
▮† „ „ (Bicton) .....	Mr. E. H. High .....	5	1	0	90	39.37 196
▮ „ „ „ ( „ Common)	S. Hutton, Esq., C.E. ...	5	1	0	300	40.20 ...
▮† Sidmouth (Eaglehurst) .....	E. S. McEuen, Esq. ...	5	1	2	60 B	39.27 191
▮† „ „ (Sidmount) .....	Miss C. M. Radford ...	5	1	0	149 T	41.23 219
▮ „ „ (Winslade Cottage) ..	Mrs. Collins .....	5	1	0	150 T	44.37 219
▮† „ „ (Salcombe Regis Vic.)	Rev. Canon D. McLaren	5	1	2	410 T	39.95 213
▮† Seaton .....	Mrs. Pattinson .....	5	0	10	25	40.30 203
▮ Axmouth (Millmead) .....	E. H. Waters, Esq. ...	5	4	9	20 T	40.05 199
▮ Rousdon [Lyne Regis] .....	Mr. C. Grover .....	5	1	0	516 T	41.44 192
▮ Pinhay [ „ „ ] .....	Mr. J. F. Stobo .....	5	1	11	465 T	44.00 203
▮† Ottery St. Mary (West Hill) ...	B. Stansbury, Esq. ....	5	1	6	340 T	43.56 218
▮† „ „ „ (Broad Street) ..	H. D. Badcock, Esq. ...	5	4	0	170 B	47.83 196
▮† „ „ „ (Manor House) ..	W. A. Willock, Esq. ...	5	1	2	200	47.56 216
▮ Northleigh Rectory .....	Mrs. W. Champenowne	5	0	6	335 T	51.03 225
▮ Kilminster (Haddon Corner) ...	A. Hitchcock, Esq. ....	5	1	0	400 T	50.05 217
▮ Axminster (Lea Combe House) ..	A. C. F. Luttrell, Esq..	5	2	0	170 T	46.85 190
▮ Honiton (Combe Raleigh) .....	Lt.-Col. M. James .....	5	2	4	500 T	46.03 217
▮ Chardstock Vicarage .....	Rev. A. Lewis .....	5	0	8	317 T	48.26 208
<b>NORTH DEVON. (Area, 898 sq. mi.)</b>						
<b>1.—NORTH COAST STREAMS. 77 sq. mi.</b>						
▮† Braunton (Preston Ho., Saunton)	Miss Durham .....	5	0	8	120 B	39.84 183
▮ Woolacombe .....	Miss Chichester .....	5	1	0	60 T	46.45 220

## DIVISION V.—SOUTH WESTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain. 1912	Days with '01 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level		
		in.	ft.	in.	feet.	inches.	
<b>NORTH DEVON—(con.)</b>							
<b>1.—NORTH COAST STREAMS—(con.)</b>							
D Morthoe (Twitchen House) .....	Dr. G. B. Longstaff ...	8	1	0	430 T	52.29	226
Parracombe .....	Rev. J. F. Chanter ...	5	1	0	795 T	66.95	215
D Ilfracombe (Reservoir) .....	O. M. Prowse, Esq., C.E.	5	1	0	395	59.85	216
D „ (Bickleighscombe) ...	Mrs. Slade King .....	5	1	0	250	57.74	229
D† „ (Meteorological Station)	O. M. Prowse, Esq., C.E.	5	1	0	25	56.90	222
D Martinhoe Rectory .....	Rev. R. W. Oldham ...	5	2	3	808	58.20	206
Lynton (Lee Abbey) .....	C. F. Bailey, Esq. ....	5	0	6	320 T	51.90	...
D Lynmouth (Gwynallt) .....	A. L. Ford, Esq. ....	8	0	8	284 T	59.07	220
D „ (Rock House) .....	T. H. Mead-Briggs, Esq.	5	0	11	22 A	54.83	218
<b>2.—TAW. 442 sq. mi.</b>							
D Spreyton (Lynderies) .....	Capt. C. W. R. Hooper, R.N.	5	1	0	...	46.30	206
Morchard Bishop (Hartnolls) ..	Mrs. Owen Wynne ...	5	1	0	420 T	42.17	...
D Chumleigh (Leigh House).....	Mr. W. Gillies .....	5	1	0	350	45.00	223
Witheridge .....	H. J. Mansfield, Esq. ...	5	1	2	600	49.76	...
D Warkleigh Rectory .....	Rev. J. H. Thompson ...	5	1	0	439 A	48.91	240
D South Molton .....	F. Day, Esq. ....	5	1	0	450 T	65.22	224
Filleigh (Castle Hill Gardens)...	The Countess Fortescue	12	3	6	317	53.46	232
D Molland .....	S. J. Case, Esq. ....	5	1	9	674 T	64.24	252
D East Anstey (Rhyll Manor) .....	Mrs. Hancock .....	5	1	0	900	66.22	208
West Buckland (County School)	T. Wainwright, Esq. ....	...	...	...	680	52.92	212
Barnstaple (King's Close, Newport)	G. H. Ridge, Esq. ....	5	1	0	138	53.29	...
D† „ (N. Devon Athenæum)	T. Wainwright, Esq. ....	8	1	0	25 A	48.06	217
„ (Pilton) .....	Capt. G. F. Hibbert ...	5	1	0	87 A	49.81	223
Stoke Rivers (Higher Davies) ...	Mrs. Chamings .....	5	1	0	700	58.06	...
Bratton Fleming .....	T. Wainwright, Esq. ...	5	1	0	600	64.21	200
Braunton (Tyspane) .....	„ „ „ .....	...	...	...	95	46.24	199
D Arlington Court .....	No. 1 Miss Chichester .....	5	1	0	613 B	66.07	205
„ „ .....	No. 2 „ „ „ .....	5	1	0	613 B	68.05	201
D Challacombe .....	O. M. Prowse, Esq., C.E.	5	1	2	815 A	86.70	227
<b>3.—TORRIDGE. 342 sq. mi.</b>							
D Okehampton (Oaklands) .....	Maj.-Gen. E. H. Holley	5	1	0	500 T	55.79	192
D Petrockstow (Heanton Satchville)	Mr. A. Eames .....	5	1	0	332 A	48.54	222
Dolton (Hilliers) .....	A. Smythies, Esq. ....	5	1	3	380 A	47.55	177
D Beaford (Abbots Hill) .....	J. Stuckey, Esq. ....	5	1	3	380 T	46.61	219
D Roborough (Ebberly) .....	J. S. C. Davis, Esq. ....	5	1	0	506 T	43.04	217
D Torrington (Enfield) .....	G. M. Doe, Esq. ....	5	1	0	336 A	48.07	226
D „ (Little Silver) .....	L. L. Lloyd, Esq. ....	5	1	0	395 T	51.95	223
D Parkham (Melbury Moor) .....	Baldwin Latham Esq CE	5	1	0	623 A	62.95	265
D „ ( „ Reservoir) ...	„ „ „ .....	5	1	0	516 A	67.83	262
D Abbotsham (High Park) .....	G. Sheldon, Esq. ....	5	0	11	300 T	50.88	232
D „ (Riccard's Down) ...	Mrs. Hibbert .....	5	1	0	87 A	46.52	244
D Bideford (Gammaton W. W.) ...	Baldwin Latham Esq CE	5	1	0	335 A	51.20	238
D „ (Webbery) .....	Mrs. C. E. Boyd .....	5	1	10	355 A	49.98	227
D „ Rectory .....	Rev. T. Newton Leeke.	5	1	2	150 T	48.71	211
D „ (Beechcroft) .....	A. H. Hobhouse, Esq. ...	2	1	0	125 T	48.88	233
D „ ( „ ) .....	„ „ „ .....	5	1	0	125 T	47.43	227
D „ (Northam Road) .....	Mr. W. Littlejohns ...	5	0	6	20	46.69	176

## DIVISION V.—SOUTH WESTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with 01 or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
<b>NORTH DEVON—(con.)</b>						
<b>3.—TORRIDGE—(con.)</b>						
Bideford (Horwood House) .....	Rev. J. Dene .....	5	1 0	288 T	44.54	240
Northam (St. Helens) .....	Miss Bowles .....	5	1 0	67 T	42.63	210
D „ Vicarage .....	Rev. Preb. Dimond-Churchward .....	5	1 3	173 A	43.54	233
D „ (Fairlea).....	Col. F. W. Bennet.....	5	2 6	200 ?	42.58	219
D Westward Ho! (Bellevue) .....	A. H. Boyd, Esq. ....	8	1 0	200 A	41.44	231
D Instow.....	Miss Lock .....	5	1 0	100 B	41.70	200
<b>4.—WEST COAST STREAMS. 32 sq. mi.</b>						
D Hartland Abbey.....	Mr. G. Sleep .....	5	1 6	222 T	42.14	201
D Clovelly Court .....	Mr. H. Tuke .....	5	0 11	350 ?	58.79	236
<b>5.—EXE. 5 sq. mi.</b>						
<b>CORNWALL. (Area, 1357 sq. mi.)</b>						
<b>1.—CAMEL &amp; N.W. COAST STREAMS. 458 sq. mi.</b>						
Phillack Rectory .....	Cornwall County Council .....	5	1 0	70 A	43.10	210
D St. Ives (Lower Bussow) .....	S. Palmer, Esq. ....	5	0 8	393 A	61.99	251
D „ „ (Penwyn).....	Dr. J. M. Nicholls.....	5	4 0	60 A	46.03	227
D Redruth (Tolvean).....	A. Lanyon, Esq. ....	5	0 9	365	57.59	236
D „ (Trewirgie) .....	A. P. Jenkin, Esq. ....	5	1 0	399 A	58.37	244
D „ (Tehidy Park).....	Mr. F. J. Clark .....	5	1 5	187 T	52.43	220
St. Agnes (Rosemundy Gardens) .....	W. Whitworth, Esq....	5	3 8	318 A	41.90	225
Newquay (Reservoir) .....	Dr. C. C. Vigurs .....	5	1 0	210	43.18	...
D „ (Mount Wise) ...No. 1	„ „ „ .....	5	1 0	190	43.81	220
D „ ( „ „ ) ...No. 2	„ „ „ .....	5	1 0	190	44.51	...
D St. Wenn Vicarage .....	Rev. J. G. Addenbrooke .....	8	1 3	431 T	57.81	234
D Withiel Rectory.....	Rev. W. S. Cruddas ...	5	0 11	360 T	61.30	253
D Bodmin (Polgwin).....	H. D. Foster, Esq. ....	5	1 0	280	61.61	250
D „ (Castle Hill).....	Rev. Prebendary Every .....	5	0 9	480 T	64.49	267
D Wadebridge (St. Kew) .....	Major W. C. Braddon..	5	1 0	100	52.39	221
St. Tudy (Hengar).....	Western Morning News .....	...	...	...	58.64	...
D Camelford (Stannon Clay Works) .....	Capt. R. M. Richards... ..	8	1 0	800 T	70.16	241
Tintagel (K. Arthur's Castle Hotel) .....	Cornwall County Council .....	5	1 0	245	40.74	226
D Bude (The School House).....	Karl Durston, Esq. ...	5	1 0	51 T	44.27	231
D Stratton (Poughill) .....	Miss Field .....	5	1 0	200 B	48.03	244
D Morwenstow Vicarage .....	Rev. H. Lynne Jones... ..	5	0 10	331 A	50.92	261
<b>2.—FOWEY &amp; S.E. COAST STREAMS. 620 sq. mi.</b>						
Lizard .....	A. P. Jenkin, Esq. ....	5	1 0	244 A	42.34	...
Mullion (Polurrian Hotel) .....	Mr. R. Thomas .....	5	1 0	230	37.88	181
St. Keverne (Lanarth) .....	P. D. Williams, Esq.. ..	5	0 10	290 T	56.81	236
D „ „ (Rosuick Cottage)...	G. W. Jevons, Esq. ...	5	1 0	250 T	57.22	255
Bosahan .....	Cornwall County Council .....	...	...	240	38.41	195
Helston (Tenderah) .....	J. Walker Tyacke, Esq. ..	5	1 0	220 T	54.06	235
D † Penzance (Morrab Garden) .....	C. H. Benn, Esq. ....	5	1 0	55	52.28	240
„ „ (Rosehill) .....	(R) David Howell, Esq. ...	10	3 0	212 T	46.88	228
† „ (Trewgainton House) .....	T. Robins Bolitho, Esq. ..	10	1 0	400 T	61.53	215
D „ ( „ Gardens) .....	„ „ „ .....	10	0 10	400 T	63.31	239



## DIVISION V.—SOUTH WESTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with 0.1 or more recorded.	
		Diameter	Height Above Ground.		Height Above Sea Level		1912
		in.	ft.	in.	feet.	inches.	
CORNWALL—(con.)							
4.—INSULAR—Isles of Scilly.							
St. Mary's .....	Meteorological Office...	8	1	6	152	36.45	241
D Tresco Abbey.....	T.A.DorrienSmith,Esq.	11	3	0	40	43.29	244
SOMERSETSHIRE. (Area, 1630 sq. mi.)							
1.—LOWER AVON. 300 sq. mi.							
D Cranmore Hall .....	Rev. H. A. Boys.....	8	1	9	600 T	57.66	233
Shepton Mallet (Pondsmead, Oakhill)	Mr. J. Fletcher .....	8	1	0	710	58.69	226
D " " (Hillylands, " )	Mr. E. Stock .....	5	0	10	659 T	59.76	227
D† Frome W.W. (Egford) .....	F. W. Jones, Esq., C.E.	8	2	0	270 T	45.44	215
† " (Selwood School) .....	Miss A. K. Coombs ...	5	1	6	310 T	44.14	...
D Mells (Wadbury House) .....	Mrs. Sykes .....	5	1	0	394 T	49.17	201
D " (Selwood) .....	Miss E. G. Horner.....	5	1	0	344 T	48.12	221
D Binegar (Gurneyslade) .....	VeryRevGA Kindersley	5	1	0	588 T	57.08	206
D Stratton-on-the-Fosse (Downside Abbey)	" " "	8	1	0	600 T	52.28	210
D Frome (Orchardleigh) .....	Rev. Canon Duckworth	8	0	10	303 T	43.12	210
D " (Beckington) .....	E. M. Nelson, Esq. ...	8	1	3	270 T	41.96	215
D Chewton Mendip (The Priory)...	The Earl Waldegrave..	5	1	0	550 T	59.48	226
Ston Easton .....	H. E. Hippisley, Esq..	5	3	0	480 T	52.99	207
D Midsomer Norton (Island House)	Dr. G. S. Pollard .....	5	1	6	300	49.64	187
D " " (Dymboro) ...	A. Bulleid, Esq.....	5	1	0	357 T	45.30	196
D Radstock.....	G. H. Gibson, Esq.....	8	8	0	330	50.13	174
D E. Harptree (Sherborne Res., Litton)	J.A.McPherson,Esq CE	5	1	0	338 T	57.17	214
D " " (Harptree Court) ...	W. W. Kettlewell, Esq.	5	1	0	346 T	58.12	222
" " ( " Hill) ...	J.A.McPherson,Esq.CE	8	1	0	784	51.01	...
D Temple Cloud.....	Dr. Theodore Martin...	5	1	0	340 T	47.58	211
D Clutton (Council School) .....	J. Pullen, Esq. ....	5	1	6	420 T	47.92	209
D Pensford (Sutton Court) .....	Rt. Hon. Lord Strachie	8	1	0	280	48.34	214
D Dunkerton Rectory .....	Rev. F. C. Newbery ...	5	1	0	300	40.95	185
D Bath (Crossways, Monkton Combe)	M. J. Lipscomb, Esq....	5	1	0	180	42.74	189
D " (Combe Down) .....	Miss Scriven .....	5	5	0	500	44.35	196
Chew Magna .....	J. A. McPherson, Esq CE	5	1	4	180 T	46.60	205
Pensford (Publow School House)	A. Hayes, Esq. ....	5	1	0	230 T	40.34	190
D " (Norton Court) .....	H. H. Palairret, Esq. ...	5	1	0	300	44.09	216
D Bath (Claverton Manor) .....	E. A. Whittuck, Esq....	5	1	0	238 T	40.49	205
† " (Royal Institution) .....	Dr. W. H. Symons ...	6	8	0	74	40.10	...
D† " (Henrietta Park) .....	" " " "	5	1	0	67 T	39.28	190
D " (Statutory Hospital).....	" " " "	5	1	0	520	39.70	183
D† " (Kingswood School) .....	" " " "	5	1	0	620 T	39.85	190
D " (Somerset Place) .....	R. Lewis Lloyd, Esq....	5	0	10	350	39.55	223
D " (Charlcombe).....	J. Dent Young, Esq. C.E.	8	2	0	325 T	41.09	211
† " ( " Hamilton Ho.)	F. E. Rogers, Esq.....	5	1	6	740 T	41.02	...
D Saltford House .....	Col. W. V. Rolleston...	8	0	8	100	41.18	202
D Batheaston .....	Col. Linley Blathwayt.	5	1	0	166 T	40.77	198
" " M	" " "	5	1	0	166 T	40.63	...
D " Reservoir .....	J.DentYoungEsq.,C.E.	6	2	0	248 T	43.22	231

## DIVISION V.—SOUTH WESTERN COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with 40 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	
		in.	ft.	in.	feet.	inches.
<b>SOMERSETSHIRE—(con.)</b>						
<b>1.—LOWER AVON—(con.)</b>						
Barrow Gurney Reservoir.....	J.A.McPherson, Esq. CE	5	1	6	300 $\nabla$	45.76 210
D Keynsham (West View Road)...	S. B. Froude, Esq.....	5	1	0	102 $\nabla$	40.82 189
D Long Ashton (Estate Office).....	H. B. Napier, Esq. ...	8	1	0	134 $\nabla$	50.72 194
Bristol (Coronation Road) .....	H. C. Martin, Esq. ...	5	0	10	50	43.07 ...
D† Failand House .....	Miss Agnes Fry .....	5	1	0	410 ?	45.38 218
D Abbots Leigh (Leigh Court).....	Sir Henry Miles, Bart.	5	1	0	170 $\nabla$	44.19 201
<b>2.—YEO, AXE &amp; BRUE. 405 sq. mi.</b>						
D Castle Cary (Alford House) .....	Admiral P. F. Tillard...	5	1	0	98 $\nabla$	38.71 210
D Somerton (Butleigh Court) .....	R. Neville Grenville Esq.	8	1	2	95	39.20 188
D Bruton (Sunny Hill) .....	H. E. Makins, Esq. ...	5	1	0	280 $\nabla$	40.16 192
D „ (King's School) .....	D. E. Norton, Esq.....	5	1	2	200	43.59 226
D Ditcheat .....	Rev. H. A. Boys.....	...	...	...	200	39.82 193
D Street (Hind Hayes).....	Joseph Clark, Esq.....	5	1	5	78 $\nabla$	37.04 198
D „ .....	W. S. Clark, Esq. ....	8	1	0	100	37.08 207
D Evercreach Vicarage.....	Rev. W. T. Dyne .....	5	1	0	284 $\nabla$	41.53 210
Edington.....	A. C. F. Luttrell, Esq..	5	2	6	90 $\nabla$	42.45 199
D Glastonbury (Ynyswytryn) .....	Mrs. Swayne .....	5	1	8	245 $\nabla$	37.51 211
D Shepton Mallet (Pilton) .....	J. Dredge Allen, Esq...	5	1	3	354	44.80 221
D† „ „ (Charlton) .....	C. E. Burnell, Esq.. ...	5	1	0	481 $\nabla$	49.53 216
D† „ „ (Field House) ...	F. H. Berryman, Esq..	5	1	0	500 $\nabla$	49.42 210
D† „ „ (Grammar School)	William Aldridge, Esq.	5	1	0	475 $\nabla$	48.88 213
D „ „ (Sewage Farm) ..	W. Reader, Esq. ....	5	0	8	310 $\nabla$	51.86 220
D Wells (Somerset & Bath Asylum)	J. E. P. Shera, Esq., M.D.	5	1	0	300	36.03 212
D† „ (Wookey Hole Paper Mills)	Guy A. Hodgkinson, Esq	5	1	4	180	46.64 193
† Priddy Vicarage.....	Rev. W. H. Creaton ...	5	1	0	800 ?	52.51 ...
D Burnham (Dunstan Ho., Chalbury)	H. A. Smith Spark, Esq.	5	1	0	20 $\nabla$	37.94 181
D „ (Brent Knoll).....	Miss FitzGerald.....	5	2	0	26 $\nabla$	40.07 207
Compton Martin.....	J.A.McPherson, Esq. CE	8	1	0	276	52.32 ...
Ubley (Rookery Farm).....	„ „ „	8	1	0	525	59.03 ...
Blagdon (Nordrach-on-Mendip) ..	R. Thurnam, Esq., M.D.	5	0	4	862 $\nabla$	58.64 229
D Winscombe (The Down) .....	J. Grubb, Esq. ....	5	1	0	295 $\nabla$	47.37 213
D „ (Wintrath).....	F. A. Knight, Esq.....	5	5	5	300 $\nabla$	43.90 199
D Banwell (Eversley) .....	Kenneth Anderson, Esq.	5	1	6	50 $\nabla$	44.96 209
Blagdon Hill .....	J.A.McPherson, Esq. CE	8	1	0	550	51.20 ...
„ (Pumping Station).....	„ „ „	8	0	8	112 $\nabla$	49.94 207
„ (Coombe Lodge).....	„ „ „	8	1	0	388 $\nabla$	51.37 ...
Ubley (Pixey Hole) .....	„ „ „	8	1	0	300	44.01 ...
Nempnett (West Town) .....	„ „ „	8	1	0	263	47.07 ...
D Burrington (Langford).....	Miss M. B. Smith .....	5	1	6	60	45.78 209
D Weston-spr.-Mare (Leycroft Ho.)	C. Brown, Esq. ....	8	1	0	15	40.74 181
D „ „ „ (Town Hall)...	W. H. Allen, Esq.....	5	1	0	21	41.89 183
D „ „ „ (Worle) .....	Dr. St. John Kemm ...	5	1	0	...	44.15 208
Butcombe (Cholwell).....	J.A.McPherson, Esq., CE	8	1	0	370	48.99 ...
D Wrington (The Cottage) .....	H. C. Bristowe, Esq. M.D.	5	1	0	100	43.59 195
D „ (The Rectory) .....	Rev. G. M. Ashdown..	5	5	0	68	46.92 202
Yatton (Chelvey) .....	J.A.McPherson, Esq. CE	8	0	8	60	42.79 189

## DIVISION V.—SOUTH WESTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with $\geq 0.1$ or more recorded.
		Diameter	Height Above Ground	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
SOMERSETSHIRE—(con.)						
2.—YEO, AXE & BRUE—(con.)						
Flax Bourton (Backwell House)	<i>Bristol Times &amp; Mirror</i> ...	...	...	...	46.96	...
" " ( " Hill Ho.)	W. Garnett, Esq. ....	8	1 10	490 T	44.22	200
" " (The Grange) ...	C. Onslow Master, Esq. ...	5	1 0	180 ?	48.28	211
† Clevedon W.W. (Old Street) ...	J. Harger Pye, Esq. ...	5	1 10	28 T	42.15	191
† " " (Tickenham Rd.)	" " " " " " ...	5	1 6	...	39.77	213
† " " (Bowling Green) ....	Maj. A. B. Trestrail ...	5	0 11	126 T	43.96	...
Wraxall (Boys' School).....	Ebenezer Brown, Esq..	5	1 2	...	45.38	211
3.—PARRETT. 568 sq. mi.						
D Crewkerne (W.W. Office).....	E. H. Munford, Esq....	8	1 0	426	44.75	209
D " (Bincombe House) ...	Miss Sparks .....	5	1 2	294 T	43.71	221
D " (Merefield House) ...	J. Tompsett, Esq. ....	8	1 1	231 T	48.89	210
Coker Court Gardens .....	Mr. T. H. Gilham .....	8	1 0	250 ?	43.89	184
D West Coker .....	G. F. Deedes, Esq.....	5	1 6	265	39.79	200
D Ilminster (Laurel Bank) .....	W. Beckwith, Esq. ...	5	1 0	180 T	40.97	202
D " (Whitelackington Ho.)	S. Creed, Esq. ....	5	3 0	200 T	43.69	202
D " (Dillington Park)....(R)	Mr. W. Goldthorpe ...	8	2 0	161 T	45.94	205
Montacute (Odcombe Rectory)...	Rev. H. Cornish.....	5	1 0	379 T	44.65	217
D Yeovil (Gas Works) .....	E. Howell, Esq.....	5	22 0	122 T	35.12	193
D Wellington (Old Way House)...	T. Fox, Esq. ....	5	1 1	300	45.98	246
D Stoke-under-Ham .....	Miss Gillett.....	8	1 0	...	41.67	208
D Tintinhull (Manor House).....	Rev. Dr. S. J. M. Price	5	0 10	145	39.97	198
D Angersleigh (Blagdon Reservoir)	H. T. Coles, Esq. ....	8	1 6	590 T	44.18	180
D " (Leigh Hill Reservoir)	" " " " " " .....	8	1 6	525 T	43.34	180
D " ( " Court) .....	A. Eastwood, Esq.....	8	1 0	360 T	45.47	223
D Rimpton .....	H. H. G. Andrews, Esq.	8	3 0	100	35.53	192
D Langford Budville (Ritherdens)	Miss Rodd .....	5	0 10	380 T	45.19	235
D " " (Bindon) ...	Major T. G. C. Reynolds	5	6 0	406	43.47	211
D Milverton (Spring Grove).....	C. Roberts Gawen, Esq.	5	0 8	500 T	46.79	240
D " (Old Halls) .....	Charles Bere, Esq.....	5	1 0	250	46.10	216
D Taunton (Linden Grove) .....	H. Le B. Gunner, Esq.	5	1 0	70 B	34.41	206
D " .....	Dr. H. J. Alford.....	5	1 0	64	39.18	199
D Wiveliscombe (Culverhead) .....	T. R. Marsh, Esq.....	5	1 0	450 T	49.42	206
D Langport (The Grange).....	Dr. H. Markant Page..	5	1 0	50 T	35.15	234
D " (Huish Episcopi) .....	Miss A. M. Kelway ...	8	1 1	30 ?	30.57	...
D Milverton (The Mount, Halse)...	Miss J. E. Smith .....	5	1 2	254 B	42.11	205
D Wincanton (Maperton Ho. Gdns.)	Rev. H. A. Boys .....	...	...	...	46.40	249
D North Cadbury Rectory .....	" " " " " " .....	8	1 3	256 T	40.10	221
D Somerton (Kingweston) .....	Rev. G. de Y. Aldridge	5	2 6	200 T	40.14	222
Cothelstone House .....	C. E. J. Esdaile, Esq...	5	1 0	430	44.02	...
D North Petherton (Shovell) .....	A. M. Wilson, Esq. ...	8	1 0	206 T	36.58	209
D " " (The Old Rectory)	E. C. Curtis, Esq. ....	8	0 6	136 T	37.95	194
Bridgwater (Nurseries) .....	Mr. H. Corder .....	5	0 6	30 ?	36.40	200
D " (Blake Gardens).....	F. Parr, Esq., C.E. ...	5	3 1	27 T	38.18	181
D " (Ashford) .....	" " " " " " .....	5	1 5	102 T	40.99	197
D " (Northfield).....	H. C. Salmon, Esq. ...	5	4 10	50 T	41.42	210
Fiddington (Keenthorne) .....	T. W. Cuffe, Esq. ....	5	1 0	220 T	43.17	188
D Cannington (Brymore) .....	H. H. P. Bouverie, Esq.	5	1 6	65 T	38.84	201



## DIVISION V.—SOUTH WESTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with .01 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	
		in.	ft.	in.	feet.	inches.
<b>SOMERSETSHIRE—(con.)</b>						
<b>4.—NORTH COAST STREAMS. 158 sq. mi.</b>						
Williton (Aller Farm) .....	T. Hosegood, Esq. ....	5	3	6	210	43·90 ...
Sampford Brett Rectory .....	Rev. H. H. Tripp .....	5	1	0	125	44·51 ...
Holford (Dytche School) .....	J. E. Overend, Esq. ...	5	1	0	260 T	43·05 210
D Quantockshead (St. Audries) ...	Mr. F. S. Hayne .....	8	1	0	260 T	45·71 193
Stockland Bristol (Manor House)	Mr. W. Whittaker ...	5	1	0	65	40·90 200
Watchet (Chapel Cleeve) .....	Rev. F. Sterry .....	5	0	11	65 T	39·78 214
D Minehead (Mariansleigh) .....	T. F. Twist, Esq. ....	5	1	0	45 B	41·70 207
D " .....	R. Shafto Adair, Esq. ...	5	1	0	105	40·94 197
Porlock (Lynch Mead, Allerford)	J. Dyke Acland, Esq. ...	5	1	3	100 T	43·88 217
<b>5.—EXE. 122 sq. mi.</b>						
D Dulverton (Exebridge Fishery)..	T. F. Tracy, Esq. ....	5	1	0	410	56·27 205
D Brushford Rectory .....	Rev. B. J. du Boe .....	5	1	0	450 T	56·70 219
D Hawkridge (Liscombe) .....	Mr. E. W. Darby .....	5	3	6	980	73·22 263
D Winsford School .....	W. Dicker, Esq. ....	5	1	2	685 T	70·06 236
D Simonsbath .....	Rev. H. F. Ramsay ...	5	1	3	1080 T	83·81 256
<b>6.—AXE. 42 sq. mi.</b>						
Chard (Tatworth Vicarage) .....	Rev. H. Stuart King...	5	1	4	347 T	52·47 206
D " Vicarage .....	Rev. Preb. Walter Farrer	5	1	0	380 T	53·39 220
Cricket St. Thomas (Cricket Ho.)	Mr. S. Lyon .....	5	1	0	444	51·51 200
<b>7.—STOUR. 35 sq. mi.</b>						
D Henstridge (Inwood Ho. Gardens)	Mr. W. Hester .....	5	1	0	350	40·77 196
D Temple Combe Rectory .....	Rev. J. C. Fox .....	5	0	6	215	42·76 216
D " " (Cheriton House).	Rev. H. A. Boys .....	...	...	...	...	40·91 202
Wincanton (Holbrook) .....	Mrs. Angerstein .....	5	2	4	450 T	44·73 177
D " (Roundhill Grange)..	General C. H. P. Ducat	5	1	9	380	42·57 219
D Pen Selwood Rectory .....	Rev. Newton Parsons..	5	0	10	650 T	47·52 197

## MAP OF DIVISION VI.

WEST MIDLAND COUNTIES,

Showing the River-Divisions.



## DIVISION VI.—WEST MIDLAND COUNTIES.

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with .01 or more recorded.
		Diameter	Height Above Ground	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
<b>GLOUCESTERSHIRE.</b> (Area, 1243 sq. mi.)						
1.—WYE. 50 sq. mi.						
D Castleford [Chepstow] .....	Mrs. W. R. Lysaght ...	5	0 8	146 T	48·75	204
D Pen Moel [ " ] .....	W. R. Price, Esq. ....	5	1 0	240 T	51·53	226
D Forest of Dean (Braceland) .....	C. O. Hanson, Esq. ...	8	1 0	500 T	51·03	199
D " " " (Ruardean Hill Lo.) .....	" " " ...	8	1 0	932 T	50·50	191
2.—SEVERN—Right Bank Tributaries. 176 sq. mi.						
D Sedbury Park [Chepstow] .....	Sir W. H. Marling, Bart.	8	1 0	175 T	47·73	189
D Lydney (Clanna) .....	Captain W. B. Marling	5	1 0	260 T	48·94	212
D Forest of Dean (Whitemead Park) .....	C. O. Hanson, Esq. ...	8	1 0	200 T	51·67	199
D " " " (Blakeney Hill Lo.) .....	" " " ...	8	1 0	500 T	47·19	189
D " " " (Worcester Lodge) .....	" " " ...	8	0 11	712 T	48·73	195
D " " " (Edgehills Lodge) .....	" " " ...	8	1 0	914 T	48·92	176
D Westbury-on-Severn (Chaxhill) .....	Mrs. Grant .....	5	3 0	122 T	44·51	207
Mitcheldean (Blaisdon) .....	Colin MacIver, Esq. ...	5	1 0	117 T	47·16	164
Tibberton Court .....	W. R. Price, Esq. ....	5	1 0	109 T	41·56	192
D Tewkesbury (Forthampton Court) .....	Mr. H. French .....	5	1 0	48 T	38·64	191
D " (Upper Lode) .....	E. D. Marten, Esq., C.E.	5	1 0	41 T	34·96	195
D Bromsberrow Pumping Station .....	W. Osborne Thorpe Esq. CE	5	1 0	181 T	37·14	183
3.—SEVERN—Left Bank Tributaries. 372 sq. mi.						
Tortworth Court .....	The Earl of Ducie .....	8	1 0	264 T	45·19	208
" School .....	E. A. Smith, Esq. ....	5	2 0	264	44·71	206
Dursley (Woodmancote) .....	E. Fryar Smith, Esq. ...	5	1 0	257	47·91	173
D Avening House .....	Maj. Hon. L. Byng ...	8	1 3	350 ?	45·72	196
D Berkeley Castle Gardens .....	Mr. S. Wathen .....	5	1 6	62 T	42·11	163
D " (Sharpness Docks) .....	F. A. Jones, Esq., C.E.	5	3 6	50	41·78	199
D Nailsworth (Dunkirk Manor) .....	Miss M. C. Meade-King	5	1 3	400 B	47·73	220
Chalford (Hyde Grange) .....	C. J. Bowstead, Esq. ...	5	2 6	527 T	46·28	...
D " ( " House) .....	Piers F. Legh, Esq. ...	5	1 6	527 T	47·26	203
D Stroud (Stanley Park) .....	Sir W. H. Marling, Bart.	8	1 0	365 T	46·95	203
D " (Upfield) .....	Miss E. R. Stanton ...	5	1 0	226 T	44·31	226
D Stonehouse (Wycliffe College) .....	W. A. Sibly, Esq. ....	5	1 0	130 T	42·67	204
" (Parklands) No. 1 (R) .....	W. Grey Robinson, Esq.	8	2 6	103 T	40·82	203
" ( " ) No. 2 .....	" " " ...	5	2 6	103 T	40·10	208
Stroud (Park Farm, Lypiatt) .....	E. Armitage, Esq. ....	5	0 11	720 T	48·45	...
D Whitminster .....	F. A. Jones, Esq., C.E.	5	1 0	32 T	43·70	213
Haresfield Court .....	Mr. R. J. Tidswell .....	5	1 0	100	43·96	238
D Harescombe Grange .....	Stamford Hutton, Esq.	5	1 0	545 T	43·12	217
D Brookthorpe (Chambers Farm) .....	Mr. H. C. Prinsep .....	8	1 0	157 T	40·64	209
Quedgeley House .....	Col. Curtis Hayward ...	5	1 0	65 T	41·01	207
D Witcombe Reservoir .....	R. Read, Esq., C.E. ...	8	3 0	297 T	42·84	186
D Gloucester (Park Road) .....	G. Embrey, Esq. ....	8	1 3	56 T	38·59	208
D " (Belgrave Road) .....	W. Piffe Brown, Esq. ...	5	1 0	52 T	38·04	202
" (Denmark Road) .....	Harley Butt, Esq. ....	5	1 5	79 T	37·08	...
" (Clovelly) .....	Albert J. Stephens, Esq.	5	1 0	80 T	37·05	...
D " (Barnwood Vicarage) .....	Rev. F. H. Fowler .....	5	1 0	80 T	40·19	203
D " (Llanthony Lock) .....	E. D. Marten, Esq., C.E.	5	1 2	39 T	38·99	212
D " (Wotton Asylum) .....	Dr. E. F. Kough .....	8	0 9	93 T	39·31	177
D " (Maisemore Lock) .....	E. D. Marten, Esq., C.E.	5	1 1	39 T	37·34	209

## DIVISION VI.—WEST MIDLAND COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with .01 or more recorded.
		Diameter	Height Above Ground		Height Above Sea Level	
		in.	ft.	in.	feet.	inches.
<b>GLOUCESTERSHIRE—(con.)</b>						
3.—SEVERN—Left Bank Tributaries—(con.)						
Churchdown (Barrow Hill) .....	Mrs. J. H. Jones .....	5	1	0	225 T	38.92
D Dowdeswell Reservoir .....	J.S.Pickering, Esq., C.E. ....	5	1	3	357 T	45.54
Leckhampton (Thirlestaine Hall) (R) ..	J. Player, Esq. ....	8	1	6	200 B	39.20
D Charlton Kings (The Grange) ...	Miss E. M. Heberden ...	5	0	9	300	42.90
D Cheltenham (Hewletts Res.) ...	J.S.Pickering, Esq. C.E. ....	8	1	6	419 T	39.01
D " (Sandford Mead) ...	" " " " .....	5	2	6	210 T	36.79
D " (Kemerton Lodge) ...	Rev. Percy Burd .....	5	1	0	211	37.80
D " (High Street) .....	Meteorological Office ...	5	1	0	214	34.66
D " (Prestbury) .....	J. W. Guy, Esq. ....	5	0	10	...	38.92
D " (Brookville, Swindon) ..	J. C. M. Stanton, Esq. ....	8	1	2	137	35.42
4.—SEVERN—Upper Avon. 99 sq. mi.						
D Winchcombe .....	Dr. J. Halliwell .....	5	1	2	295	41.24
Beckford .....	Meteorological Office ...	...	...	...	130	35.11
Wormington Grange .....	R. E. S. Thomas, Esq. ....	8	0	10	200	38.73
Chipping Campden .....	W. Godson, Esq. ....	5	0	4	473 T	34.96
D† " (Hidcote) ...	Major W. Wright .....	5	1	0	525	35.54
D† Mickleton (Bank House) .....	M. J. Salter, Esq. ....	5	1	0	233 T	33.89
5.—LOWER AVON & C. 198 sq. mi.						
D Monkswood Reservoir [Bath] ...	J. Dent Young Esq., C.E. ....	5	2	0	365 T	42.18
D Bristol Docks (Underfall Yard) ..	Engineer, Bristol Docks ..	8	19	6	45 T	39.40
" (Telephone Avenue) .....	J.A.McPherson, Esq. CE ..	5	50	0	80	42.27
Clifton (Oakfield Road) .....	" " " " .....	5	1	0	200	41.61
D " (Harley Place) .....	Miss Hooper .....	5	1	5	260 B	43.73
D " (Durdham Down) .....	the late Mrs. Dix .....	5	1	6	310	45.54
D " (Pembroke Road) .....	R. F. Sturge, Esq. ....	8	0	10	215	46.60
D " College .....	D. Rintoul, Esq. ....	8	1	2	230	44.66
D " (Stoke Bishop) .....	H. L. P. Lowe, Esq. ...	8	1	3	230 T	44.62
D Stapleton (Milton Cottage) .....	R. C. Sikes, Esq., C.E. ....	5	1	0	114 T	41.06
Westbury-on-Trym (Cote House) ..	Mrs. H. St. V. Ames ...	8	1	3	243 T	45.63
D Filton .....	F. W. Gayner, Esq. ....	5	2	0	202 T	40.06
D Winterbourne (Kendleshire) ...	J. Marsh, Esq. ....	5	1	0	170 T	41.04
D Frampton Cotterell (Park House) ..	H. H. Harding, Esq. ....	5	1	0	158 T	40.77
D Chipping Sodbury (Stanshawes Ct) ..	R. N. Hooper, Esq. ....	5	1	3	280 T	40.57
D " (The Ridge) ...	Lt.-Col. P. Burges .....	5	1	4	375 T	40.67
Almondsbury (Over Court, Field) ..	R. C. C. Lippincott, Esq. ....	5	1	0	260 T	41.79
D " ( " " " Park) ..	" " " " .....	5	0	11	147 T	44.49
D " ( " " " " M) ..	" " " " .....	5	1	0	147 T	46.60
D " ( " " " " Garden) ..	" " " " .....	8	1	0	137 T	44.09
Badminton .....	Mr. W. Nash .....	8	1	0	407	47.99
6.—THAMES—Right Bank Tributaries. 15 sq. mi.						
7.—THAMES—Windrush & c. 333 sq. mi.						
D Fairford (Dunfield, Kempsford) ..	A. T. Iles, Esq. ....	5	0	8	260	36.53
D " (The Close) .....	W. Cobbett Arkell, Esq. ....	5	1	9	...	38.61
D " (Draycott) .....	C. W. Edmonds, Esq. ....	5	2	0	200	40.28
D Lechlade (Claydon House) .....	T. T. S. Metcalfe, Esq. ....	5	1	0	250 T	35.99
D " (Southrop) .....	Thomas Arkell, Esq. ....	...	1	0	...	36.20

## DIVISION VI.—WEST MIDLAND COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with .01 or more recorded.
		Diameter	Height Above Ground	Height Above Sea Level		
		in.	ft. in.	feet.	inches.	
GLOUCESTERSHIRE—(con.)						
7.—THAMES—Windrush & c—(con.)						
D† Cirencester (Roy. Agricultl. Coll.)	Prof. M. Kershaw .....	5	0 10	443	39.25	210
† „ (Waterloo) .....	W. Griffith, Esq. ....	5	0 6	350 T	40.13	172
D† „ (Cripps Mead) .....	Mrs. Wilfred Cripps ...	5	0 8	366 T	41.34	211
D† „ (Dollarward House) ..	C. P. Hooker, Esq. ...	5	1 6	366	42.01	213
D† „ „ „ „ „ „ „ „ „ „	„ „ „ „ „ „ „ „ „ „	8	1 6	366	41.45	213
D Baunton (Manor Farm) .....	E. S. Burton, Esq. ....	5	1 0	370 ?	40.57	175
Fairford (Hatherop Castle) .....	Mrs. Bazley .....	5	1 0	410 T	40.02	207
Colesborne .....	Mr. W. H. Walters ...	5	0 9	500	50.64	194
D Little Barrington (Barrington Grove)	C. J. B. Hurst, Esq., C.B.	5	1 0	395 T	41.76	185
D Great Barrington .....	H. J. Barrett, Esq. ...	5	1 6	430 T	41.57	173
D Northleach (Sherborne House) ..	Mr. A. Mitchell .....	5	1 0	420	42.47	197
D „ (The Vicarage) .....	Rev. R. C. S. Jones ...	5	0 9	545 T	40.57	207
D „ (Leygore Manor) .....	Arthur E. Moss, Esq. ...	5	1 0	700	41.21	225
D Bourton-on-the-Water .....	E. W. Kendall, Esq. ...	5	1 6	434 T	40.44	200
„ „ „ „ „ „ „ „ „ „	G. F. Moore, Esq. ....	5	2 6	430	41.30	206
„ „ „ „ „ „ „ „ „ „	Rev. W. E. White ...	5	0 10	433 T	40.54	200
D Wyck Rissington Rectory .....	Rev. P. H. Kempthorne	5	1 0	500 T	39.83	216
Stow-on-the-Wold (Icomb Place)	G. H. Simpson Hayward, Esq.	8	1 3	500 T	37.96	198
D „ „ „ „ (Quar Wood) ..	Mrs. Bryant .....	5	1 0	690	39.81	204
D „ „ „ „ (Maugersbury) ..	D. W. Horner, Esq. ...	5	1 0	590 T	38.39	200
D „ „ „ „ (Duncomb House)	R. I. Arkell, Esq. ....	5	0 9	700	40.03	168
Temple Guiting .....	Major G. T. Noel .....	5	1 2	665 T	39.65	...
Moreton-in-Marsh (Batsford Pk.)	<i>The Times</i> .....	...	...	...	44.18	...
HEREFORDSHIRE. (Area, 840 sq. mi.)						
1.—WYE. 685 sq. mi.						
D† Walford-on-Wye Vicarage .....	Rev. Kentish Bache ...	5	3 0	112 T	40.52	218
D Weston-under-Penyard (The Sandiway)	Dr. G. W. Prevost .....	5	0 6	290 ?	37.49	184
D† Ross (The Graig) .....	H. Southall, Esq. ....	5	1 0	213 T	36.76	199
D „ (Broad Street) .....	A. Neame, Esq. ....	5	1 3	123 T	39.59	206
D Kentchurch Rectory .....	Rev. R. P. Dansey .....	5	1 0	215 T	44.59	225
† Ross (Perrystone Court) .....	General Clive .....	5	1 3	450	37.47	203
† Much Dewchurch (Bryngwyn) ..	Sir J. Rankin, Bart., M.P.	5	0 9	421 T	43.61	198
D Fownhope (Lower House) .....	Miss F. Cresswell .....	5	1 5	200 ?	36.33	197
D Woolhope (The Hyde) .....	J. A. Thompson, Esq. ...	5	1 0	440 T	38.50	209
Vowchurch (Whitehouse) .....	Arthur S. Wood, Esq. ..	5	5 0	450 T	44.52	231
Tyberton Court .....	C. B. Lee Warner, Esq. ...	5	0 10	276 T	39.43	193
D† Hereford (St. Michael's Priory) ..	Dom. A. Buisseret, O.S.B.	8	1 0	291 T	33.90	183
D „ (Breinton Court) .....	H. A. Wadworth, Esq. ...	5	3 0	238 T	32.45	192
D† „ (Richmond Place) .....	W. Cooke, Esq. ....	8	0 8	184 T	33.65	201
D „ (White Horse Street) ..	<i>Hereford Times</i> .....	5	1 0	210	35.02	204
D „ (Quarry House) .....	Rev. Preb. W. Selwyn ..	5	1 0	180 ?	36.48	195
D† „ (Broadlands) .....	Miss Ida M. Lea .....	5	1 0	280 T	35.05	205
† „ (Hinton Court) .....	A. Battiscombe, Esq. ...	5	1 0	185 T	34.88	199
D† „ (Holmer Hall) .....	Rev. Preb. M. Hopton ..	8	1 3	241 T	32.78	210

DIVISION VI.—WEST MIDLAND COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with '01 or more recorded.
		Diameter	Height Above Ground		Height Above Sea level	1912	
		in.	ft.	in.	feet.	inches.	
<b>HEREFORDSHIRE—(con.)</b>							
<b>1.—WYE—(con.)</b>							
Bartestree (Hagley Park) .....	Mr. T. Alford .....	5	0	6	311 T	34·37	...
D Credenhill (Stretton Sugwas) ...	S. H. Armitage, Esq. ...	5	1	0	226 T	35·32	191
D† „ „ .....	R. M. Whiting, Esq. ...	5	1	5	275 T	36·25	211
†Yarkhill Vicarage.....	Rev. A. G. Jones .....	8	1	0	200 T	35·68	194
D†Burghill Court .....	Miss E. D. Woodhouse .....	5	1	2	293 T	32·30	200
D†Ocle Pychard (Ocle Court) .....	G. Cresswell, Esq. ....	8	1	2	298 T	37·70	219
D Marden (Fruit Farm) .....	M. Piper, Esq. ....	8	0	9	270 ?	33·53	176
D Whitney-on-Wye .....	Mr. W. Burgess.....	8	1	0	428 B	42·94	248
D Brilley Vicarage .....	Rev. W. Head .....	5	1	0	590 T	41·67	234
†Sarnesfield Rectory .....	Rev. W. Marshall .....	5	0	11	400 T	35·11	182
D†Bodenham (Pigeon House) .....	R. C. Bailey, Esq. ....	5	1	0	215	34·08	197
†Pencombe Rectory.....	Rev. J. Seymour St. John .....	5	1	0	520 T	39·66	211
D Huntington Court.....	E. Radclyffe Crump, Esq. ....	5	1	1	833 T	47·36	253
D†Pembridge (Dilwyn).....	Dr. T. Lambert Hall... ..	5	0	8	290 T	34·70	202
† „ (Burton Court) .....	Col. P. L. Clowes .....	5	1	8	400	37·45	196
D Bromyard (Dumbleton Cottage) ..	T. V. Philpott, Esq. ...	5	1	0	393 T	42·44	218
D† „ (Rowden Abbey).....	H. J. Bailey, Esq. ....	5	1	0	450 T	39·81	211
D† „ (Buckenhill).....	Mrs. Phipps .....	8	1	6	410	40·64	183
D†Kington (Lynhales) . . . . .	S. Robinson, Esq. ....	5	1	0	566	42·85	226
D† „ (Gravel Hill) .....	Col. G. F. Pearson.....	5	0	8	535 T	41·75	242
D†Pembridge (Marston) .....	H. Langston, Esq. ....	5	1	5	347 T	37·24	216
D „ (Byletts) .....	Gen. Sir E. Wood, K.C.B. ..	5	1	5	350 T	36·18	212
<b>2.—SEVERN—Right Bank Tributaries. 155 sq. mi.</b>							
D Much Marcle (The Mount) .....	Miss A. M. Charles ...	5	0	8	240 T	38·04	205
D†Ledbury (Orchardleigh) .....	M. A. Wood, Esq. ....	5	3	6	180	40·39	205
D† „ (Underdown) .....	S. H. Bickham, Esq. ...	5	1	0	307 T	40·18	211
† „ ( „ ) .....	„ „ „ .....	5	1	0	306 T	39·32	...
„ (Putley Court) .....	J. Riley, Esq. ....	5	1	0	290	41·24	204
D „ (Wellington Heath) ..	Rev. F. S. Stooke-Vaughan ..	5	1	2	505 T	42·51	217
Cradley .....	Bernard G. Abel, Esq. ..	5	0	7	299	37·44	185
†Whitbourne Court .....	Dow. Lady Harington..	5	1	0	130	36·71	...
D Leintwardine .....	E. Charnock, Esq. ....	5	1	6	450 T	40·65	232
<b>SHROPSHIRE. (Area, 1343 sq. mi.)</b>							
<b>1.—MERSEY—Weaver. 27 sq. mi.</b>							
<b>2.—DEE. 30 sq. mi.</b>							
D Whitechurch (Fenns Bank) .....	M. W. Sowden, Esq., C.E. ..	8	1	0	271 T	29·89	188
<b>3.—SEVERN—Right Bank Tributaries. 722 sq. mi.</b>							
D Ludlow (Ashford House) .....	W. Downes Hall, Esq. ....	5	0	5	315 T	40·10	215
D Bromfield (Oakly Park) .....	Mr. T. Reason .....	5	1	0	300	35·39	253
D „ (Warwick House) ...	F. Brayshaw, Esq. ....	5	1	0	320 T	36·89	232
Bitterley (Clee Hill Quarry) ...	J. C. Mackay, Esq. ....	...	...	...	1510	43·54	238
D „ Rectory.....	Rev. Preb. J. R. Burton ..	5	1	3	509	36·56	215
Craven Arms (Stokesay Court)...	Mr. J. R. Francis .....	5	1	4	432 T	36·19	...
D Clunbury Vicarage .....	Rev. W. G. Clark Maxwell ..	5	1	0	497 T	37·25	215
D Hopesay Rectory .....	Rev. R. J. Roberts ...	5	1	0	565 T	35·80	206



## DIVISION VI.—WEST MIDLAND COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with $\geq 0.1$ or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level		
		in.	ft. in.	feet.	Inches.	
<b>STAFFORDSHIRE—(con.)</b>						
<b>2.—SEVERN—Left Bank Tributaries—(con.)</b>						
D Wombourne (The Bratch) .....	Baldwin Latham Esq. CE	5	0 9	271 $\pi$	33.64	197
† Wolverhampton (Town Hall) ...	G. Green, Esq., C.E.	5	15 6	481 $\pi$	33.69	198
† " (West Park) ...	" " " "	5	1 4	432 $\pi$	34.51	194
D Patshull Park .....	The Earl of Dartmouth	8	1 3	273	34.70	161
D Weston Park [Shifnal] .....	The Earl of Bradford...	5	1 6	400 $\pi$	35.29	209
D Norbury Junction .....	G. R. Jebb, Esq., C.E.	8	1 0	332 $\pi$	33.28	202
D Market Drayton (Old Springs)...	F. E. Harding, Esq. ...	5	1 0	423 $\pi$	35.31	215
Maer Hall Gardens .....	F. J. Harrison, Esq. ...	8	1 6	390 $\pi$	38.85	186
<b>3.—TRENT—Right Bank Tributaries. 518 sq. mi.</b>						
D West Bromwich .....	(R) A. D. Greatorex, Esq., CE	8	1 7	546 $\pi$	38.15	194
D Wednesbury (Ocker Hill) .....	A. W. Willet, Esq., C.E.	5	0 8	474 $\pi$	34.68	193
D Walsall (Brockhurst Sew. Farm)	J. Taylor, Esq. ....	8	0 11	376 $\pi$	34.23	205
D " (Wednesbury Sewage Wks.)	T. Wicks, Esq. ....	5	2 8	381 $\pi$	32.68	194
D Bilston (The Lunt Outfall) .....	Vincent Turner, Esq. CE	5	1 0	422 $\pi$	36.09	189
D Wolverhampton (Coton House)...	H. Rudge, Esq. ....	...	...	...	42.20	200
† " (Graiseley) ...	K. C. Berrington, Esq.	6	0 9	506 $\pi$	36.15	192
D " (Wrottesley) ...	Mr. E. Simpson .....	8	1 0	500	32.02	191
D Bloxwich (Sneyd Reservoir) .....	A. W. Willet, Esq., C.E.	5	1 0	507 $\pi$	34.56	208
D Hammerwich (Cannock Chase Res)	" " " "	5	1 0	475 $\pi$	34.01	210
D Brewood (Belvide Reservoir) ...	G. R. Jebb, Esq., C.E.	5	1 0	367 $\pi$	30.67	191
D Lichfield (St. John Street) .....	Dr. F. M. Rowland ...	5	0 10	269 $\pi$	36.52	213
" (Maple Hayes) .....	A. O. Worthington, Esq.	5	0 11	380 $\pi$	32.92	...
D Penkridge (Rodbaston) .....	Mrs. J. Ward .....	5	0 9	324 $\pi$	34.76	203
D Hednesford (Scout House) .....	H. A. Hill, Esq., C.E.	5	1 0	750 $\pi$	31.95	175
Shugborough .....	The Earl of Lichfield...	5	1 0	260	36.74	243
D Stafford (Tipping Street) .....	W. Fred. Wright, Esq.	5	2 6	258 $\pi$	33.82	203
" (West Bank, Doxey) M	Leslie Wilson, Esq. ...	5	0 6	250 $\pi$	34.08	...
Ingestre Park .....	H. H. Goddard, Esq. ...	5	1 8	320 $\pi$	32.14	...
D Eccleshall (Walton Hall) .....	Sir H. A. Wiggin, Bart.	5	1 0	344 $\pi$	39.95	207
Stone (Meece House) .....	E. J. W. Wood, Esq. ...	5	1 6	331 $\pi$	36.62	...
<b>4.—TRENT—Left Bank Tributaries. 193 sq. mi.</b>						
D Burton (Hoar Cross) .....	F. W. Lycett, Esq. ....	8	1 0	400 $\pi$	38.03	183
D " (Rangemore) .....	Mr. W. Bennett .....	5	5 6	424 $\pi$	34.24	157
D " (Shobnall) .....	Messrs. Bass & Co. ...	5	5 6	156 $\pi$	33.29	197
D Longton (The Meir) .....	R. C. Frain, Esq., C.E.	5	1 0	618 $\pi$	34.84	202
D " High School .....	H. O. Smith, Esq. ....	5	0 8	500	34.34	184
<b>5.—TRENT—Dove. 250 sq. mi.</b>						
D Hanbury Hall .....	the late Miss Bott .....	5	0 11	483 $\pi$	37.55	219
Cheadle (The Heath House) .....	Mr. Rufus Horne .....	5	0 6	647 $\pi$	38.91	191
D Oakamoor (Woodbank) .....	(R) M. A. Bolton, Esq. ....	8	4 10	500	38.07	221
D Mayfield House [Ashbourne] ...	Graham C. Lawson, Esq.	8	1 0	374 $\pi$	41.09	214
D " (Doveside) .....	Mr. T. Bridge .....	8	1 0	421 $\pi$	40.31	211
Ipstones (Sharpcliffe Hall) .....	A. S. Boucher, Esq. ...	5	0 4	925 $\pi$	42.74	...
D Leek (Wall Grange) .....	R. C. Frain, Esq., C.E.	5	1 0	458 $\pi$	40.04	214
" (Hillesdon) .....	J. Wilson, Esq. ....	5	1 0	750 ?	43.63	...
D " (Haregate) .....	Mr. G. Sweetmore .....	5	0 9	680	42.65	217



## DIVISION VI.—WEST MIDLAND COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with '01 or more recorded.
		Diameter	Height Above Ground		Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.	
WORCESTERSHIRE. (Area, 751 sq. mi.)							
1.—SEVERN—Right Bank Tributaries. 231 sq. mi.							
Redmarley (Haselden) .....	Miss F. L. Newbury ...	5	0	5	280	38·27	186
Upton-on-Severn (Willow Bank) ..	J. Selwyn Cowley, Esq.	5	1	3	42	37·70	209
D " " " (The Eades)...	Major E. W. Tennant..	5	0	9	100 †	37·17	227
D Malvern (British Camp Res.) ...	W. Osborne Thorp, Esq., C.E.	5	0	11	677 †	42·12	214
D† " (Church Street) .....	" " "	5	1	0	350 †	41·41	200
D† " (Belle Vue House) .....	A. Mander, Esq. ....	5	4	0	520	43·00	206
D " (Davenham Gardens) ...	Mr. C. A. Bayford.....	5	2	0	300	37·93	209
D† " (Hornyard Road) .....	Rev. T. Wolseley Lewis	5	1	0	492 †	41·10	213
D " (Madresfield Court) ...	Mr. W. Crump .....	8	2	6	125 †	38·34	199
D Knightwick Sanatorium .....	H. Gordon Smith, Esq.	5	1	0	300 †	38·76	204
D† Worcester (Diglis Lock) .....	E.D. Marten, Esq., C.E.	5	1	0	49 †	35·38	223
D " (Bromwich House) ...	Rev. Manley Power ...	5	1	3	86 †	35·22	214
D Martley Rectory.....	Rev. J. F. Hastings ...	5	1	0	220 †	41·78	197
D Ombersley (Holt Lock).....	E.D. Marten, Esq., C.E.	5	1	1	55 †	37·56	161
D Clifton-on-Teme .....	Mrs. H. Tayleur.....	5	0	10	640 †	39·29	163
D Tenbury (St. Michael's) .....	Mrs. & Miss Hewitt ...	5	0	8	343 †	37·62	199
D " (Rochford Rectory) ...	Rev. J. Tomson .....	5	1	0	317 †	35·99	189
D Stockton-on-Teme (Eardiston)...	Miss M. Wallace .....	5	1	4	200 †	38·49	186
D† Bewdley (Winterdyne).....	Miss K. M. Sturt .....	5	1	0	100 ?	34·06	187
" (Kates Hill) .....	Legh S. Powell, Esq....	...	...	...	...	37·27	...
2.—SEVERN—Left Bank Tributaries. 194 sq. mi.							
D Kempsey (Draycott House) .....	Col. C.E. Southouse Scott	5	1	0	55 †	37·66	219
D† Worcester (Belmont Road) .....	G. B. Wetherall, Esq..	5	1	1	180 †	33·55	197
D† " (Water Works) .....	T. Caink, Esq., C.E. ...	5	0	9	56 †	33·40	192
D " (Bevere Lock) .....	E.D. Marten, Esq., C.E.	5	1	1	52 †	36·48	188
D " (Hawford Lodge) .....	F. Ames, Esq. ....	5	1	1	70	40·90	181
D Droitwich (Friar Street Dépôt)...	H. Hulse, Esq., C.E....	12	2	9	98 †	37·09	195
D Bromsgrove (Tardebigge Res.)...	F. A. Jones, Esq. C.E.	5	4	6	455 †	38·94	205
D Barnt Green (Upwood) .....	Miss M. Gibbins .....	5	0	9	650 †	34·59	196
D Stourport (Lincombe Lock).....	E. D. Marten, Esq., C.E.	5	1	0	62 †	35·32	173
D Bewdley (Spring Grove) .....	T. W. Binyon, Esq. ...	5	0	5	150	36·29	198
D† Kidderminster (Brinton Park)...	Mr. J. T. Cowderoy ...	5	1	0	160 †	32·74	185
" (Honeybrook Ho.) .....	Col. R. Talbot Watson..	5	0	9	75	34·98	...
D Netherton (Lodge Farm Res.) ...	A.W. Willet, Esq., C.E.	5	1	0	445 †	34·52	198
D Dudley (Borough Cemetery) ...	J. Gammage, Esq., C.E.	5	1	3	591 †	34·82	201
3.—SEVERN—Upper Avon. 260 sq. mi.							
D Blockley (Upton Wold).....	E. W. Arkell, Esq. ...	5	1	0	800 ?	45·66	206
Shipston (Tidmington House) ...	Miss Staunton .....	5	1	1	230	37·59	...
D Evesham (Bengeworth).....	Messrs. Ross Bros., Ltd.	5	1	0	128 †	36·90	210
D† " (Lansdowne) .....	Miss Burlingham .....	5	5	0	108 †	35·22	177
" .....	H. S. Harvey, Esq. ...	8	2	0	86 †	35·29	194
D " (Great Hampton).....	H. C. Boutflower .....	5	1	0	150 †	35·43	193
D " (Port Street) .....	A. Fowler, Esq. ....	5	1	6	80 †	35·40	203
D Pershore (The Poplars).....	Col. J. F. Miller .....	5	1	6	104 †	38·37	170

## DIVISION VI.—WEST MIDLAND COUNTIES—(continued).

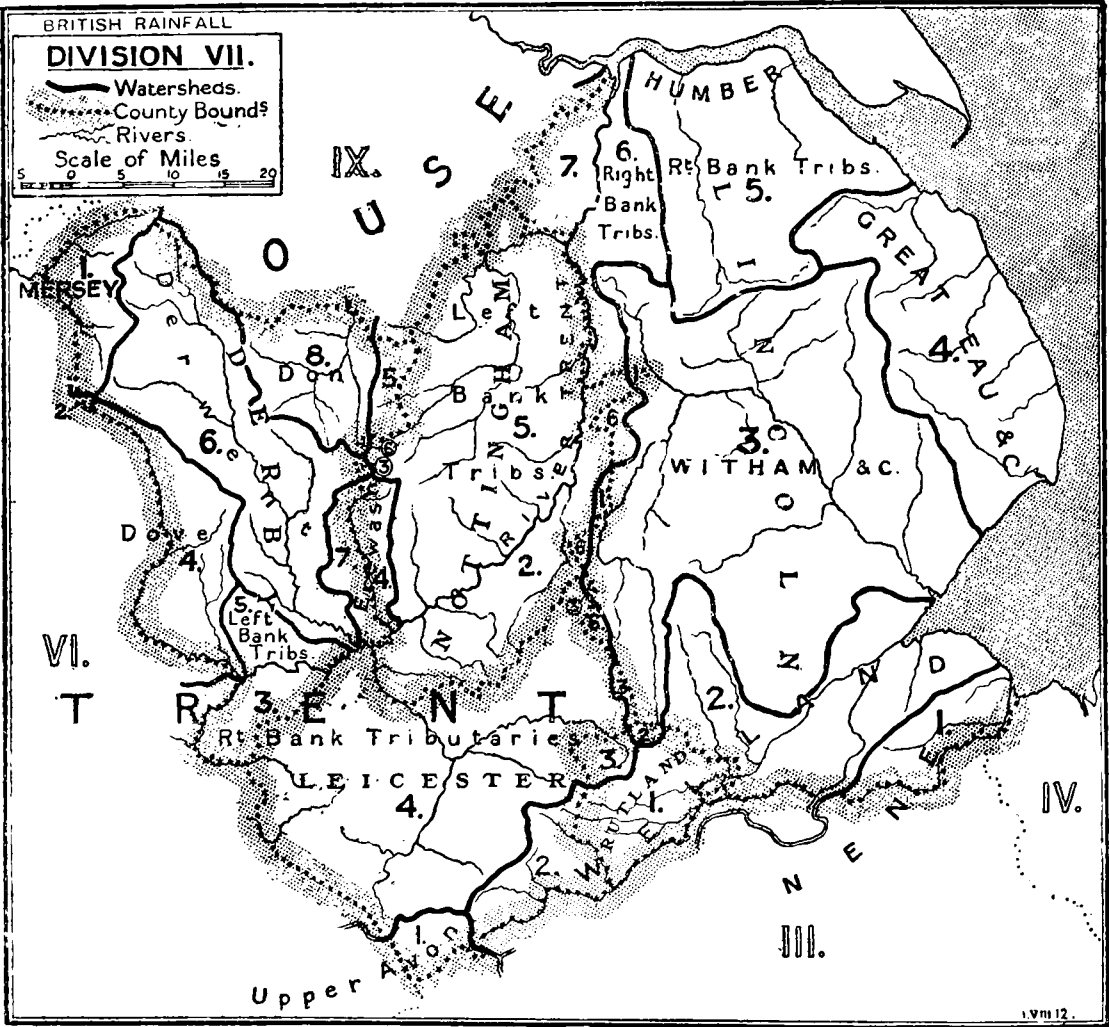
STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with 0.1 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	
		in.	ft.	in.	feet.	inches.
<b>WORCESTERSHIRE—(con.)</b>						
3.—SEVERN—Upper Avon—(con.)						
D Shipston (Armscote) .....	W. L. Stanton, Esq. ...	5	1	1	241 $\nabla$	34.26 207
D „ (Talton) .....	Capt. G. Lainson Field	8	1	0	160 $\nabla$	32.34 181
Redditch (Holmwood Gardens)...	Mr. J. G. Blakey .....	5	0	10	480 $\nabla$	40.43 172
D „ (Hewell Gardens) .....	Mr. A. A. Pettigrew ...	5	1	0	469 $\nabla$	39.40 221
Alvechurch (Bordesley Hall) ...	A. H. Wiggin, Esq. ...	...	4	0	...	42.72 191
D „ (High Croft) .....	D. B. Grubb, Esq. ....	5	1	0	580	41.95 208
D „ (Fairfield) .....	D. McMichael, Esq. ...	8	0	8	400 $\nabla$	44.57 189
D Bromsgrove (Lower Bittal Res.)	F. A. Jones, Esq., C.E.	5	3	0	457 $\nabla$	40.14 202
4.—THAMES—Windrush & c. 10 sq. mi.						
5.—TRENT—Right Bank Tributaries. 56 sq. mi.						
D Northfield (West Heath House)	Prof. A. J. Brown, F.R.S.	5	1	0	...	39.31 211
D Halesowen (Frankley) .....	E. Antony Lees, Esq. ...	5	0	10	570 $\nabla$	42.71 203
Selly Oak (Lodge Hill Cemetery)	Mr. W. Garden .....	5	1	4	540 $\nabla$	40.30 170
Moseley (Prospect Road) .....	Rev. F. Oscar Lane ...	5	1	0	550 $\nabla$	38.06 ...
D „ (Chantry Road) .....	G. F. Lyndon, Esq. ....	5	1	0	472 $\nabla$	38.51 210
D Sparkhill [Birmingham] .....	D. H. Owen, Esq. ....	5	1	0	426 $\nabla$	37.98 203
<b>WARWICKSHIRE. (Area, 902 sq. mi.)</b>						
1.—SEVERN—Upper Avon. 603 sq. mi.						
Long Compton (Weston Park)...	H. A. Warriner, Esq. ...	8	3	0	510 $\nabla$	36.98 196
Shipston (Honington Vicarage)...	Rev. E. H. Boddington	5	0	10	215 $\nabla$	33.21 183
Bidford (Moor Hall) .....	E. H. Cubberley, Esq. ...	5	4	3	125 ?	33.43 ...
D Wormleighton Hall .....	F. W. Burnett, Esq. ....	5	4	9	515 $\nabla$	35.93 186
Stratford-on-Avon (Avonfield) ..	G. W. Everard, Esq. ....	5	0	10	120 $\nabla$	33.11 177
D „ „ (Shottery Hall)	R. C. Carter, Esq. ....	5	0	8	140 $\nabla$	36.15 185
Alcester (Ragley Hall) .....	Mr. C. Harding .....	5	1	0	270 $\nabla$	35.57 ...
D Snitterfield .....	Roden Dixon, Esq. ....	8	1	6	274 $\nabla$	41.35 166
Barford Rectory .....	Rev. W. Ingham Brooke	8	0	11	167 $\nabla$	39.54 ...
D Radford Semele (Radford House)	C. E. G. Hatherell, Esq.	5	1	2	240 $\nabla$	35.33 211
D Warwick (Castle Gardens) .....	Mr. H. F. Smale .....	8	1	2	197 $\nabla$	34.75 163
D Leamington (Pump Room Gardens)	Mr. G. T. Osborn .....	8	1	0	166	36.32 183
D „ (Binswood Avenue)...	Rev. A. Corbet .....	5	0	9	...	33.86 178
D „ (West Hill, Cubbington)	Mrs. Robins .....	5	1	0	282 $\nabla$	35.80 207
Lapworth (Ardenhill) .....	A. R. Walker, Esq. ...	8	4	8	450	38.14 182
„ Croft .....	T. Birkett Barker, Esq.	5	2	0	400	41.73 205
D Rugby (Bilton Grange) .....	W. H. G. Southcomb, Esq.	5	1	0	400	30.44 185
D „ (Temple Observatory) ...	Rev. Denys E. Shorto..	5	1	1	383 $\nabla$	35.24 194
D Ryton-on-Dunsmore (Ryton Ho.)	Charles Browett, Esq. ...	5	1	2	260 $\nabla$	36.75 169
D Coventry (City Hospital) .....	E. H. Snell, Esq., M.D.	8	1	0	269 $\nabla$	37.02 212
D „ (St. Paul's Road) .....	J. B. Morris, Esq. ....	5	1	0	341 $\nabla$	36.25 201
D „ (Kingswood) .....	R. B. Caldicott, Esq. ...	8	1	0	340 $\nabla$	37.69 184
D Foleshill (Foxford School) .....	A. F. Smith, Esq. ....	5	10	9	311 $\nabla$	38.30 184
D Coventry (Keresley Grange) .....	Miss H. Rotherham ...	5	0	10	413 $\nabla$	36.77 239
D Bedworth Cemetery .....	Mr. G. O. Bosworth ...	5	1	0	385 $\nabla$	36.00 180

## DIVISION VI.—WEST MIDLAND COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with '01 or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
WARWICKSHIRE—(con.)						
2.—THAMES—Windrush & c. 2 sq. mi.						
3.—THAMES—Cherwell. 15 sq. mi.						
D Farnborough .....	Miss Prater .....	5	1 0	515 T	39·06	199
4.—TRENT—Right Bank Tributaries. 282 sq. mi.						
Hockley Heath (Packwood) .....	E. S. Fry, Esq. ....	5	1 2	400	39·82	180
D Hampton-in-Arden (Hampton Manor) .....	Mr. W. R. Cooper .....	8	0 7	345 T	47·64?	205
Meriden .....	Mr. A. T. Sidwell .....	...	...	...	38·61	...
D Birmingham (Bournville) .....	Messrs Cadbury Bros. Ltd	5	1 0	434 T	39·53	204
D „ (Edgbaston) .....	A. Cresswell, Esq. ....	8	1 0	515 T	35·98	205
D „ (Hagley Road) .....	H. E. Stilgoe, Esq., C.E.	5	0 9	612 T	39·40	214
D „ (The Crescent) ... M	J. J. Gilbert, Esq. ....	5	7 0	480 T	38·65	...
D „ (Sewage Works, Saltley) .....	J. D. Watson, Esq., C.E.	5	1 5	293 T	30·96	193
D „ (Gravelly Hill) .....	W. Ll. Mold, Esq. ....	5	3 0	470	37·35	182
D „ (Erdington) .....	E. Antony Lees, Esq. ...	5	1 3	472	32·84	203
D Castle Bromwich Hall .....	Viscount Newport .....	5	0 10	364 T	38·13	199
D Minworth .....	J. D. Watson, Esq., C.E.	8	0 6	286 T	32·51	193
Nuneaton (Chilvers Coton Vic.) .....	Rev. R. Chadwick .....	5	0 10	283 T	35·35	185
D Whitacre (Birmingham W.W.) .....	E. Antony Lees, Esq. ...	5	1 5	269 T	33·37	203
D Sutton Coldfield (The Park) .....	Mr. H. Harlond .....	5	1 0	371 T	35·21	184
Atherstone (Mancetter Manor) .....	Hon. George Peel .....	5	2 0	250	37·21	183

MAP OF DIVISION VII.

NORTH MIDLAND COUNTIES,  
Showing the River-Divisions.



## DIVISION VII.—NORTH MIDLAND COUNTIES.

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with $\geq 0.1$ or more recorded.
		Diameter	Height Above Ground		Height Above Sea Level	
		in.	ft.	in.	feet.	inches.
<b>LEICESTERSHIRE.</b> (Area, 824 sq. mi.)						
1.—SEVERN—Upper Avon. 41 sq. mi.						
2.—WELLAND. 96 sq. mi.						
D Market Harborough (Rose Hill).	G. O. Nicholson, Esq...	5	1	0	350 T	33.71 192
D East Langton Grange .....	J. W. Logan, Esq., M.P.	5	1	0	...	33.38 160
D Kibworth Beauchamp .....	E. V. Phillips, Esq. ...	5	2	6	390 T	35.52 196
Hallaton Hall .....	S. N. Bankart, Esq. ...	8	1	3	366	31.91 ...
Horninghold House <i>Snowdon g.</i> M	Mr. B. Inchley .....	5	1	6	380	30.58 ...
" " <i>Flout g.</i> M	" " " .....	6	2	0	380	29.50 ...
Withcote Hall Gardens .....	Mr. W. Rouse .....	5	0	9	500	33.36 ...
3.—WITHAM. 7 sq. mi.						
4.—TRENT—Right Bank Tributaries. 680 sq. mi.						
D Countesthorpe (Wigston Sew. Fm.)	W. G. J. Clark, Esq., C.E.	8	0	9	257 T	33.94 194
D Newton Harcourt .....	Hon. T. F. Fremantle..	5	1	0	352 T	32.39 154
D Blaby (Whetstone Road) .....	G. F. Shoults, Esq. ...	5	0	6	239 T	33.39 195
" (The Rosary) .....	James Oldacres, Esq...	5	1	0	...	33.59 ...
D Leicester (Stoneygate Road) ...	T. Spencer Smithson Esq	5	0	6	258 T	32.10 185
D " (Priory Lodge) .....	Bernard Stracey, Esq...	5	1	0	190 T	32.48 182
D " (Town Hall Square) ...	E. G. Mawbey, Esq., C.E.	5	0	6	211 T	31.74 197
D† " ( " " " " ) (R)	" " " " " "	7	2	0	213 T	31.51 196
D Market Bosworth (Osbaston Hall)	Thomas Cope, Esq.....	8	1	0	393 T	37.27 223
D Desford (Industrial School) .....	C. Oxley, Esq. ....	5	1	0	370 T	36.10 184
Scraptoft (Nether Hall) .....	W. R. Kendall, Esq....	5	3	0	350	30.87 ...
Humberstone Asylum .....	S. C. Leak, Esq.....	8	1	0	266 T	35.07 204
D Leicester (Gilroes Cemetery) ...	E. G. Mawbey, Esq., C.E.	5	1	0	285 T	33.75 192
" (Anstey Pastures) .....	W. P. Viccars, Esq. ...	5	1	1	280 T	33.55 ...
D Thornton Reservoir .....	F. Griffith, Esq., C.E..	8	1	2	371 T	35.04 193
D Cropstone (Bradgate Reservoir)..	" " " " " "	8	1	0	246 T	37.67 197
D Markfield (Ulverscroft) .....	Capt. W. G. Lillingston	8	2	7	560 B	35.99 202
D Hungerton (Baggrave Hall) .....	A. E. Burnaby, Esq....	5	1	3	350	31.27 ...
D Barkby Hall .....	Victor R. Pochin, Esq..	5	0	3	217 T	32.75 175
Syston .....	Meteorological Office ...	5	1	6	180 T	35.80 ...
Hugglescote (Kilham Bridge Sew. Fm.)	L. L. Baldwin, Esq., C.E.	8	1	0	432 T	34.81 177
Coalville W. W. (Bardon Hill)...	" " " " " "	8	1	0	520 T	37.16 192
D Swithland (The Brand) .....	F. Griffith, Esq., C.E..	8	1	0	172 T	36.44 202
D Ratcliffe-on-Wreake College ...	Rev. J. Cremonini .....	5	1	0	288 T	30.59 193
D Ashby-de-la-Zouch (Coleorton Hall)	Mr. H. T. Wilson .....	5	2	0	540 T	36.60 187
D Barrow-upon-Soar (The Mount).	Mrs. C. Stuart Thomson	5	1	6	...	33.05 183
D Charnwood Forest (Blackbrook Res.)	A. H. Walker, Esq., C.E.	8	1	0	367	36.37 206
D Loughborough (Nan Pantan Res.)	" " " " " "	8	1	0	269 T	37.52 192
Osgathorpe (Snarrows Sew. Fm.)	L. L. Baldwin, Esq., C.E.	8	1	0	295 T	34.42 156
D Loughborough (The Widenings)	Adrian Young, Esq. ...	5	0	7	197 T	32.66 192
D " (Sewage Farm)...	A. H. Walker, Esq., C.E.	8	1	0	134 T	29.50 181
D Burton-on-the-Wolds (Burton Hall)	Lord Ernest St. Maur...	5	1	0	270 T	32.26 193
D Prestwold Hall .....	E. H. Packe, Esq. ....	8	1	0	209 T	31.73 205
D Waltham-on-the-Wolds .....	G. Higgins, Esq. ....	5	1	0	568	35.39 208
D Croxton Kerrial Vicarage .....	Rev. W. E. P. Malden	5	1	0	480 T	34.67 206
D Belvoir Castle Gardens .....	W. H. Divers, Esq. ...	8	1	0	260 T	33.54 212

## DIVISION VII.—NORTH MIDLAND COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with .01 or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
<b>RUTLAND. (Area, 152 sq. mi.)</b>						
1.—WELLAND. 125 sq. mi.						
D Liddington (Uppingham W.W.)	Messrs G. & F. W. Hodson	5	1 0	152 $\pi$	29.55	158
D Uppingham (Ridlington) .....	N. W. Wortley, Esq....	5	4 7	527 $\uparrow$	34.51	197
Wing (The Cottage) .....	J. P. W. Lightfoot, Esq.	5	1 1	370 $\uparrow$	32.56	184
Oakham (Fritham House) .....	Mrs. Chapman .....	5	1 0	300	36.89	...
D Whitwell Rectory .....	Rev. T. E. Woodhouse.	5	0 11	320	36.05	223
D Great Casterton Rectory .....	E. N. Plevins, Esq. ...	8	1 0	126 $\pi$	34.89	176
2.—WITHAM. 5 sq. mi.						
3.—TRENT—Right Bank Tributary es. 22 sq. mi.						
D Market Overton .....	Miss Grace Wingfield...	8	0 11	475 $\uparrow$	37.00	221
<b>LINCOLNSHIRE. (Area, 2646 sq. mi.)</b>						
1.—NENE. 100 sq. mi.						
Tydd (North Level House) .....	Mr. S. Fovargne .....	5	3 6	10 ?	34.08	...
2.—WELLAND. 341 sq. mi.						
Stamford (St. George's Square) ..	T. Booth, Esq. ....	5	4 0	88 $\pi$	32.44	171
D Market Deeping (Welby House)	B. J. Walker, Esq. ....	5	1 4	29 $\uparrow$	35.87	152
D " " (Wilsthorpe) ...	J. C. Gill, Esq., C.E....	8	3 10	55 $\pi$	32.00	181
Holywell Hall .....	Col. Birch Reynardson	5	0 6	190 ?	37.30	190
Bourne (Council School) .....	Oliver Davies, Esq. ...	5	1 0	23	32.40	...
D " (Guthram) .....	F. S. Robins, Esq., C.E.	5	1 6	19	26.61	175
D Spalding (Pode Hole) .....	H. Bain, Esq. ....	8	1 3	13	29.38	190
D Holbeach Marsh (Somerset House)	Miss M. E. West .....	5	0 8	1 $\pi$	31.99	201
3.—WITHAM & C. 1085 sq. mi.						
D Stainby Rectory .....	Rev. W. L. de B. Thorold	4	0 9	490 $\uparrow$	33.66	179
Stroxton Rectory .....	Rev. S. C. Wood .....	5	0 10	350 ?	34.17	...
D Little Ponton Rectory .....	Rev. P. R. Worsley ...	5	1 0	250 $\uparrow$	37.87	234
D Denton Manor .....	Sir C. G. E. Welby, Bt. CB	5	3 0	310	33.52	218
D Grantham (Saltersford) .....	H. Preston, Esq. ....	5	0 6	188 $\pi$	33.84	184
D " (Guildhall) .....	W. Wright, Esq., C.E.	5	13 6	202 $\pi$	30.35	181
D " (High Street) .....	Messrs. R. & W. Bird..	5	1 0	202	33.83	185
D Boston (Black Sluice, Skirbeck).	F. S. Robins, Esq., C.E.	5	1 3	11	31.03	229
" (High Street) .....	Mssrs John Swinn & Sons	5	5 0	13	28.94	...
D " (Main Ridge) .....	F. L. Bothamley, Esq..	5	2 0	13 $\pi$	29.62	162
D " (Sleaford Road) .....	J. Shaw, Esq. ....	5	1 2	9	32.14	194
D " .....	G. E. Clarke, Esq., C.E.	8	1 0	13 $\pi$	30.10	202
D " (Grand Sluice) .....	J. H. Johnson, Esq., C.E.	8	8 0	18 $\uparrow$	29.58	170
" (Bargate End) .....	A. O. Scrivener, Esq...	8	1 0	9	30.60	194
D Sleaford (Rauceby Hall) .....	Rev. V. F. Willson ...	5	1 0	125 $\uparrow$	33.67	201
D Claypole Rectory .....	Rev. F. R. A. Hamilton	8	2 0	70	30.13	188
Fulbeck .....	Meteorological Office ...	5	0 8	180 $\pi$	32.72	212
D Welbourn .....	Miss M. Burt .....	5	3 6	120 $\uparrow$	30.16	187
Temple Bruer .....	Miss A. S. Morley .....	5	1 0	300 ?	33.90	175
D New Leake (Lade Bank Engines)	J. H. Johnson, Esq., C.E.	8	1 0	10 $\pi$	27.78	152
D Carrington Grange .....	Mr. T. J. Ward .....	5	6 0	15 $\pi$	30.36	190
Navenby Rectory .....	Mr. J. Thompson .....	5	1 0	218 $\uparrow$	31.67	193
D Carlton-le-Moorland .....	J. Brocklebank, Esq....	5	1 2	49	29.41	171

## DIVISION VII.—NORTH MIDLAND COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with $\cdot 01$ or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.	
LINCOLNSHIRE—(con.)							
3.—WITHAM & C—(con.)							
Mareham-le-Fen .....	Meteorological Office ...	5	3	0	11	32.46	...
D Revesby .....	J. Shaw, Esq. ....	5	2	0	135 $\nabla$	30.93	152
D Woodhall Spa (Galm House) ..	J. Collins, Esq. ....	5	1	0	72	31.03	201
D Spilsby (Hagnaby Priory) .....	Miss Pocklington .....	8	1	8	47 $\nabla$	35.25	212
Lincoln (Branston Hall) .....	A. S. Leslie Melville, Esq	5	1	0	122 $\nabla$	27.12	194
Bardney Railway Station .....	C. A. Kirby, Esq. ....	8	7	6	25 $\uparrow$	27.75	182
D Bucknall .....	Mr. Joshua Bint .....	5	1	0	33 $\nabla$	30.73	198
D Horncastle .....	H. R. Maynard, Esq. ....	5	1	6	110	31.29	192
Lincoln (Boultham) .....	Neil McK. Barron Esq. CE	5	1	0	19 $\nabla$	26.75	152
„ (Skellingthorpe Hall) ..	A. H. B. Coupland, Esq.	5	1	0	...	28.71	181
„ (Station) .....	Great Central Rly. Co.*	9	3	6	26	27.70	190
D „ (Sessions House) .....	H. Hoe, Esq. ....	5	1	0	59 $\nabla$	27.76	193
D „ (D'Isney Place) .....	A. H. Leslie Melville Esq	4	1	0	215 $\downarrow$	30.18	225
D „ (Cottesford Place) .....	F. A. Peacock, Esq. ...	5	0	9	220	30.69	200
D Scampton House .....	Mrs. G. E. Sandars ...	5	1	11	80	28.44	171
D Biscathorpe .....	R. S. Fieldsend, Esq. ...	5	4	3	317 $\uparrow$	36.34	228
Willingham-by-Stow .....	R. C. Bacon, Esq. ....	8	2	0	70 $\uparrow$	30.48	205
D Springthorpe Rectory .....	Rev. B. Davies .....	5	1	0	75 $\uparrow$	31.85	172
4.—GREAT EAU & C. 443 sq. mi.							
D Wainfleet (Bridge House) .....	G. Booth Walker, Esq.	5	1	0	17 $\nabla$	31.59	201
D Skegness (Estate Offices) .....	S. Coetmore Jones, Esq.	8	1	0	13 $\uparrow$	32.52	209
D East Keal Rectory .....	Rev. R. H. Simpson ...	5	0	7	180 $\uparrow$	31.38	205
D Halton Holgate .....	G. Rattenbury, Esq. ....	5	1	0	89 $\uparrow$	32.65	200
D Spilsby .....	L. T. Dean, Esq. ....	5	2	0	150 $\uparrow$	33.53	187
D „ (Ashby Road) .....	J. J. Rainey .....	5	1	0	160 $\uparrow$	31.33	196
D Hagworthingham .....	Mr. R. Wright .....	5	1	1	252 $\nabla$	34.69	181
D Harrington Hall .....	Mr. E. Burgess .....	5	0	4	163 $\uparrow$	35.28	174
Alford Cemetery .....	Mr. E. Hodgson .....	5	1	0	29 $\nabla$	28.18	195
D Mablethorpe (Trusthorpe Hall) ..	I. N. Woodiwiss, Esq. ...	8	1	3	10 $\uparrow$	29.03	173
D Louth (Westgate) .....	Dr. F. Fawcett .....	5	0	9	120 $\nabla$	35.11	189
D Kirmond .....	C. Fieldsend, Esq. ....	5	1	2	309 $\uparrow$	36.20	220
5.—HUMBER—Right Bank Tributaries. 428 sq. mi.							
D Market Rasen .....	F. C. Burrell, Esq. ...	5	0	8	84	33.82	178
„ „ .....	Great Central Rly. Co. ...	9	3	6	100	30.79	195
Caistor (Grammar School) .....	A. Roebuck, Esq. ....	6	1	6	300	32.64	...
„ (Cabourne) .....	Rev. R. Thomas .....	5	1	2	280 $\uparrow$	33.90	...
D Waltham Hall Gardens .....	Mr. C. Frankish .....	5	1	1	80	32.68	221
Brigg Station .....	Great Central Rly. Co. ...	...	...	...	16	26.74	176
D „ (Grammar School) .....	A. Bartle, Esq. ....	5	1	0	25 $\uparrow$	24.94	151
D „ .....	A. Atkinson, Esq., C.E.	8	1	2	11 $\nabla$	30.41	180
D Irby-on-Humber .....	H. B. Parker, Esq. ....	5	1	0	175	33.74	235
D Grimsby (Abbey Road) .....	W. J. Wood, Esq., C.E.	5	3	0	23	31.11?	179
„ .....	Great Central Rly. Co. ...	9	15	0	42	27.48	...
Barnetby .....	„ „ „	9	3	6	51	31.76	160
D Brocklesby Park .....	Mr. F. C. Stainsby .....	5	2	0	108 $\nabla$	36.29	199
D Burton-upon-Stather (Normanby)	A. G. Wilkes, Esq. ....	5	0	10	185 $\uparrow$	34.24	201
D Thornton Curtis Vicarage .....	Rev. C. B. Goodacre ...	8	1	4	66	33.52	191

\* Kept for the Canal Department of the Great Central Railway Company. Returns supplied by T. Chappell, Esq.

## DIVISION VII.—NORTH MIDLAND COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with .01 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.	
LINCOLNSHIRE—(con.)							
5.—HUMBER—Right Bank Tributaries—(con.)							
D Horkstow .....	E. J. Turton, Esq.....	5	0	10	75 $\pi$	42.19?	182
Ferriby Sluice .....	A. Atkinson, Esq., C.E.	5	1	0	18 $\pi$	35.60	202
New Holland .....	Great Central Rly. Co..	9	3	6	18	30.08	168
6.—TRENT—Right Bank Tributaries. 172 sq. mi.							
Woolsthorpe .....	A. Brown, Esq., C.E....	...	1	3	182	30.72	170
D Swinderby (Ling Moor).....	Cecil H. Wray, Esq....	5	0	9	...	31.64	168
D Lincoln (Doddington Hall) .....	G. E. Jarvis, Esq. ....	8	1	2	92 $\pi$	30.27	184
Gainsborough .....	Great Central Rly. Co..	...	...	...	76	28.50	187
„ (N. Sandsfield).....	Mr. J. Creed .....	5	1	5	23 $\uparrow$	29.83	...
D Burton-upon-Stather Vicarage...	Rev. Canon F. A. Jarvis	5	1	6	212 $\uparrow$	32.70	172
7.—TRENT—Left Bank Tributaries. 77 sq. mi.							
D Wroot (S. Level Pumping Station)	Mr. F. S. Trafford.....	10	5	0	13 $\uparrow$	26.43	150
Crowle (N. „ „ „ )	Mr. H. G. Trafford.....	5	2	6	10 $\uparrow$	28.94	...
„ (Keadby) .....	Great Central Rly. Co.	9	3	6	17	27.48	154
NOTTINGHAMSHIRE. (Area, 843 sq. mi.)							
1.—WITHAM. 10 sq. mi.							
2.—TRENT—Right Bank Tributaries. 218 sq. mi.							
D Kingston (Midland Agric. Inst.)..	F. Wakerley, Esq. ...	5	1	0	126 $\pi$	29.06	185
„ Hall .....	Mr. W. H. Cooke .....	5	0	9	130	32.50	202
D Plumtree (Normanton-on-Wolds)	T. A. Hill, Esq. ....	8	1	0	170 $\pi$	30.43	214
D Nottingham (Wilford Hill Res.)	F. W. Davies, Esq. ...	8	0	11	296 $\pi$	26.41	203
Cropwell Bishop (Cropwell Grove)	H. Smith, Esq., jun....	5	1	1	160 $\uparrow$	29.97	...
Bingham (Whatton Manor) .....	Capt. M. H. Hall .....	5	3	0	104 $\pi$	29.43	196
D Newark Castle Gardens .....	Mr. W. Yorke .....	5	0	8	63 $\uparrow$	28.02	155
North Collingham (Markham Ho.)	Miss Turton .....	5	1	0	28 $\uparrow$	31.65	212
3.—DERWENT. 2 sq. mi.							
4.—TRENT—Erewash. 42 sq. mi.							
D Beeston (West End) .....	Dr. F. Rothera .....	5	1	0	104 $\uparrow$	33.88	202
D Nottingham (Strelley) .....	T. L. K. Edge, Esq. ...	8	1	0	396 $\pi$	33.07	201
D „ „ „ Hall) .....	„ „ „ „ .....	5	1	0	378 $\pi$	33.84	203
„ „ „ „ „) .....	„ „ „ „ „) .....	5	1	0	379 $\pi$	33.38	...
D Bulwell (Watnall Reservoir) ...	F. W. Davies, Esq.....	8	0	11	472 $\pi$	39.01	227
D Eastwood Colliery .....	J. W. Fryar, Esq.....	5	1	0	245 $\pi$	38.74	221
„ (Moorgreen Reservoir)...	A. Brown, Esq., C.E....	...	6	0	301	36.78	221
D Annesley (Selston W.W.).....	S. Maylan, Esq.....	5	1	0	475 $\pi$	33.52	178
5.—TRENT—Left Bank Tributaries. 569 sq. mi.							
Nottingham (Lenton Hall) .....	C. A. Hingston, Esq....	5	0	7	188 $\uparrow$	31.32	...
„ (Trent Lane) ... (R)	A. Brown, Esq., C.E....	8	0	10	85 $\pi$	30.10	188
D „ (The Castle) .....	„ „ „ „ .....	8	1	2	192 $\pi$	31.14	205
„ „ „ „ „) .....	„ „ „ „ „) .....	8	7	0	268 $\pi$	29.82	191
„ (Carisbrook Ho., The Park)	W. Bradshaw, Esq. ...	5	0	6	247 $\uparrow$	32.43	199
„ (Stoke Bardolph) .....	A. Brown, Esq., C.E....	8	1	0	66 $\pi$	32.02	178
„ (Mapperley Hall Drive)...	„ „ „ „ .....	...	1	0	245	35.92	153
D „ „ „ Hill) .....	E. Powell, Esq. ....	8	1	0	400 $\pi$	35.13	202
Bagthorpe (Isolation Hospital)...	P. Boobbyer, Esq., M.D.	8	2	0	189 $\pi$	32.13	219



## DIVISION VII.—NORTH MIDLAND COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with .01 or more recorded.
		Diameter	Height Above Ground		Height Above Sea Level	
		in.	ft.	in.	feet.	inches.
NOTTINGHAMSHIRE—(con.)						
5.—TRENT—Left Bank Tributaries—(con.)						
D Nottingham (Basford W.W.) ...	F. W. Davies, Esq. ...	8	1	0	169 $\nabla$	33.21 188
D Burton Joyce Water Works.....	" " " " " " " " " " " "	8	0	9	64 $\nabla$	33.20 203
Bulcote (Corporation Farm).....	A. Brown, Esq., C.E....	10	1	3	65 $\nabla$	31.26 171
Lowdham (Chilwell Nurseries)...	Mr. J. D. Pearson .....	5	...		90	28.53 ...
D Bulwell (Bestwood W.W.) .....	F. W. Davies, Esq. ...	8	1	2	317 $\nabla$	34.46 191
D Daybrook (Ramsdale Hill Res.)..	" " " " " " " " " " " "	8	0	10	495 $\nabla$	36.30 231
Bulwell Hall Park.....	A. Brown, Esq., C.E....	8	1	0	252	36.95 196
D Hucknall Torkard (Forge Mills)...	J. D. Walker, Esq.....	5	4	3	200 ?	32.48 177
D Papplewick (Water Works) .....	F. W. Davies, Esq. ...	8	0	10	317 $\nabla$	36.91 211
D Southwell (Elmfield).....	Dr. H. Handford .....	5	1	0	132 $\nabla$	30.95 192
" " " " " " " " " " " "	" " " " " " " " " " " "	5	1	0	132 $\nabla$	30.64 ...
D " (Halam House) .....	Rev. Canon Singleton..	5	1	0	170 $\nabla$	31.28 179
D† Farnsfield .....	Dr. C. Wills .....	5	1	0	210 $\nabla$	32.23 208
D† Sutton-in-Ashfield W.W. ....	Messrs G. & F. W. Hodson	5	1	1	462 $\nabla$	36.15 183
D† Mansfield (W.W. Rainworth) ...	" " " " " " " " " " " "	5	1	0	360 $\nabla$	36.02 172
D " (Berry Hill) .....	W. Hollins, Esq. ....	5	1	0	528 $\nabla$	41.01 207
" (High Oakham) .....	P. J. Shacklock, Esq...	5	1	0	425 $\nabla$	40.57 216
D† " (West Bank) .....	W. Pickard, Esq. ....	8	1	0	405 $\nabla$	36.49 204
D Clipstone Water Works .....	Messrs G. & F. W. Hodson	5	1	0	236 $\nabla$	34.48 171
D Ollerton (Boughton W.W.) .....	F. W. Davies, Esq. ...	8	0	7	141 $\nabla$	32.65 184
D " (Thoresby Gardens).....	Mr. A. Simmons .....	8	0	9	125 $\nabla$	38.16 176
D East Markham Vicarage .....	Rev. A. E. Briggs .....	5	1	0	163	30.21 184
Clumber Gardens ... ..	A. P. Elliott, Esq.....	5	4	0	164 $\nabla$	31.57 ...
Elkesley Pumping Station .....	N. McK. Barron, Esq. CE	5	1	0	118 $\nabla$	31.00 166
Rampton Manor.....	C. E. Ellis, Esq.....	6	1	0	50	32.84 187
D Worksop (Carlton Road) .....	J. Edeson, Esq. ....	5	1	1	...	33.52 168
" " " " " " " " " " " "	Great Central Rly. Co..	9	3	6	127	32.37 205
D " (Osberton Gardens) ...	Mr. J. B. Allan .....	5	3	6	70	32.61 192
Retford .....	Great Central Rly. Co..	9	3	6	52	28.42 184
D " (Grammar School).....	G. R. Davies, Esq.....	8	0	11	53 $\nabla$	30.48 213
D " (Morton Hall) .....	W. H. Mason, Esq. ...	5	1	0	140 $\nabla$	31.06 178
" (Babworth Hall) .....	Col. H. Denison .....	5	1	0	92 $\nabla$	31.41 ...
D Sturton-le-Steeple .....	S. Ingham, Esq.....	5	4	6	50	27.76 173
D Worksop (Wigthorpe Hill) .....	R. C. Ramsden, Esq....	5	1	0	100	32.73 179
D† " (Hodsock Priory) .....	Lt.-Col. H. Mellish ...	8	1	0	56 $\nabla$	33.45 190
† " " " " " " " " " " " "	" " " " " " " " " " " "	5	1	0	56 $\nabla$	32.90 ...
† " " " " " " " " " " " "	" " " " " " " " " " " "	11	1	0	56 $\nabla$	32.77 180
D Scrooby .....	Mr. J. Mallender .....	5	1	0	40	30.92 204
The Gardens [Bawtry Hall].....	Mr. F. Hogbin .....	5	1	3	31 $\nabla$	31.83 187
Stockwith .....	Great Central Rly. Co..	9	3	6	21	30.94 198
D Bawtry (Hesley Hall) .....	B. I. Whitaker, Esq....	8	0	11	61 $\nabla$	30.95 191
6.—OUSE—Don. 2 sq. mi.						
DERBYSHIRE. (Area, 1029 sq. mi.)						
1.—UPPER MERSEY. 93 sq. mi.						
Comb's Reservoir .....	Great Central Rly. Co..	9	3	6	710 $\nabla$	42.44 250

## DIVISION VII.—NORTH MIDLAND COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with -01 or more recorded.
		Diameter	Height Above Ground		Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.	
DERBYSHIRE—(con.)							
1.—UPPER MERSEY—(con.)							
Chapel-en-le-Frith .....	Great Central Rly. Co..	9	3	6	965 T	40·72	219
D Whaley Bridge (Elnor Lane) ...	W. C. Shaw, Esq. ....	5	1	0	750	44·41	221
D „ „ (Mosley Hall)...	S. Arrowsmith, Esq. ...	9	1	2	760 B	44·63	226
D Glossop W.W. (Swineshaw) .....	Mr. J. Garner .....	12	4	0	733 A	48·20	239
Woodhead Station.....	Great Central Rly. Co..	9	3	6	878 T	61·16	255
2.—MERSEY—Weaver. 2 sq. mi.							
3.—TRENT. Right Bank Tributaries. 68 sq. mi.							
D Repton.....	H. C. Hayward, Esq....	5	1	4	170	35·97	201
Stanton-by-Bridge .....	F. Worrall, Esq., C.E..	8	1	2	144 A	33·01	170
4.—TRENT—Dove. 156 sq. mi.							
D Snelston Rectory .....	Rev. A. Evans .....	8	2	6	500 T	42·83	166
Osmaston (Yeldersley Hall) .....	H.F. Wright, Esq., M.P.	5	1	0	635	38·18	206
D Ashbourne Water Works.....	Mr. J. W. Twigg .....	5	1	0	582 A	45·36	215
5.—TRENT—Left Bank Tributaries. 84 sq. mi.							
Willington W.W. (Milton) .....	Messrs G.&F.W. Hodson	5	1	0	134 A	33·65	...
D Chellaston .....	H. Chambers, Esq.....	5	1	0	170 T	35·37	219
Findern (The Longlands).....	Mrs. B. W. Spilsbury..	5	0	9	186 A	33·06	187
D Etwall (Blakeley Lodge) .....	Mr. R. Giles .....	5	1	0	190 A	34·13	167
D „ (Sewage Farm).....	Mr. B. Hydes.....	5	13	0	201 A	33·79	182
Mickleover (County Asylum) ...	R. Legge, Esq., M.D...	5	3	0	300 T	34·65	187
D „ Manor.....	Mr. J. Campbell .....	5	2	0	280	36·46	203
Littleover (The Knoll) .....	W. B. Robotham, Esq..	5	2	6	315	36·46	204
D „ Old Hall .....	E. McInnes, Esq. ....	5	2	6	346	38·44	205
6.—TRENT—Derwent. 428 sq. mi.							
D Spondon (Derby Sewage Works)	J. Ward, Esq., C.E. ...	5	1	3	135 A	34·92	207
D Derby (Wild Street).....	Messrs. J. Davis & Son	5	1	0	174	36·67	219
D+ „ (Midland Railway).....	J. Sayers, Esq. ....	5	1	5	156 A	35·15	218
D „ (Royal Infirmary) .....	E. Forster, Esq.....	5	1	0	195 T	33·69	223
D „ (The Arboretum) .....	J. Ward, Esq., C.E. ...	8	1	0	196 A	37·00	196
„ (Duffield Road) .....	Dr. W. G. Copestake...	5	1	2	190 A	35·69	...
Kirk Langley (Langley Hall) ...	G. W. Peach, Esq. ...	5	1	10	396 T	40·69	216
D Breadsall Lodge.....	Col. W. B. Woodforde.	5	1	3	280 T	35·95	201
D „ Priory .....	Miss H. A. Haslam ...	5	1	6	380 A	36·70	196
D Duffield (Castle Hill House).....	Messrs. J. Davis & Son	...	...	...	...	38·82	240
D „ (Kirkstyles).....	WB Worthington Esq	5	1	0	235 A	36·32	202
Belper (Herbert Strutt School)...	W.W. Tunnicliffe, Esq.	8	1	0	223 A	42·41	195
D „ (Quarry Bank) .....	J. Hunter, Esq., C.E....	5	0	8	281 A	40·40	194
D „ (Highfield).....	Lt.-Col. M. Hunter ...	8	0	8	310 A	41·10	191
D Wirksworth (Greengates).....	Thomas Gibbs, Esq. ...	5	1	0	495 T	47·90	224
D „ (Manor House).....	T. Atkinson, Esq. ....	5	1	0	498 T	47·56	219
Whatstandwell (Meerbrook Sough)	Messrs G.&F.W. Hodson	5	1	0	246	44·70	218
D Brackenfield (Lindway Reservoir)	R. F. Ward, Esq. ....	5	1	0	595 A	41·67	183
Matlock Bath.....	Miss E. Chadwick .....	5	1	1	500	43·66	...
D „ (The Gables) .....	Mrs. R. Wildgoose.....	5	1	0	450 A	43·83	225
D „ (Rockside).....	J. D. Evans, Esq. ....	5	1	0	637 A	41·50	228
D Darley Dale (Whitworth Inst.)..	J. H. Dawson, Esq. ...	5	1	8	361 A	33·75	174

DIVISION VII.—NORTH MIDLAND COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with '01 or more recorded.
		Diameter	Height Above Ground	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
<b>DERBYSHIRE—(con.)</b>						
<b>6.—TRENT—Derwent—(con.)</b>						
Darley Hall.....	A. Clay, Esq.....	5	1 0	400 T	38·74	213
Clay Cross (Press Reservoir).....	G. Frith, Esq., C.E. ....	8	1 0	810	40·83	197
Bakewell (Catcliff).....	Dr. T. Fentem .....	12	3 1	411 T	42·84	193
Chatsworth Gardens .....	Mr. F. Jennings.....	5	1 0	436 T	48·05	216
Buxton (Portobello Bar) .....	F. Langley, Esq., C.E.	8	1 0	1600 T	65·27	266
„ (Stanley Moor) .....	„ „ „	8	1 0	1340 T	61·94	262
„ (Burbage Edge) .....	„ „ „	8	1 0	1400 T	60·84	264
„ (Devonshire Hospital).....	W. Pilkington, Esq....	5	1 0	988 T	54·37	232
Baslow (The Beeches) .....	Rev. W. Vale Bagshawe	5	1 0	440 T	45·09	211
Holmesfield (Barbrook Reservoir)	Gilbert Frith, Esq., C.E.	8	1 0	1080	48·34	313?
Eyam (The Rectory) .....	Rev. F. L. Shaw .....	5	1 0	856 T	44·23	224
„ (The School) .....	R. Owen, Esq. ....	8	1 6	856 T	44·20	222
„ (Eyam View) .....	Mr. P. Thorpe.....	5	1 0	945	46·05	238
„ (Bretton).....	Rev. F. L. Shaw .....	5	1 0	1250	66·15	185
Grindleford (Grouse Inn) No. 58	S. B. Winser, Esq., C.E.	5	1 0	990	47·39	208
Hathersage .....	No. 57 „ „ „	5	1 0	525	43·40	192
Bamford .....	No. 60 „ „ „	8	2 0	680	43·27	221
„ (Engineer's Office) No. 36	„ „ „	8	2 1	509	44·00	251
Castleton .....	No. 55 „ „ „	5	1 0	625	55·15	210
Hope School.....	No. 56 „ „ „	5	1 0	545	49·28	218
Edale (Dale Head).....	No. 54 „ „ „	5	1 0	1015	62·43	219
„ (Upper Booth) .....	No. 53 „ „ „	5	1 0	910	59·19	223
Bamford (Yorkshire Br. Weir) 59	„ „ „	5	1 0	540	47·45	225
Ashton (Win Hill) .....	No. 34 „ „ „	5	1 0	1240	44·54	...
„ (Cockbridge Farm) No. 33	„ „ „	5	1 0	620	49·83	222
„ (Wooler Knoll) No. 52	„ „ „	5	1 0	1080	51·61	...
„ Inn.....	No. 32 „ „ „	8	1 0	610	49·92	230
„ (Grimbo Carr)....	No. 51 „ „ „	5	1 0	1100	43·26	...
„ (Cutthroat Brdg.) No. 31	„ „ „	8	1 0	994	50·05	...
„ (Moscar Flat) ...	No. 30 „ „ „	8	1 0	1154	52·10	...
Derwent Bridge End .....	No. 28 „ „ „	5	1 0	624	52·35	223
„ Dam .....	No. 26 „ „ „	5	1 0	790	47·67	230
Ashton (Haglee) .....	No. 50 „ „ „	8	1 0	783	47·71	231
Blackdean Moor (Crookstone) 49	„ „ „	5	1 0	1460	59·50	...
Derwent (Lockerbrook Fm.) No. 27a	„ „ „	5	1 0	1174	53·54	237
Woodland Dale (Woodlands, S.) 48	„ „ „	8	1 0	1044	52·78	210
„ „ „ ( „ „ N.) 47	„ „ „	8	1 0	1063	52·02	210
The Peak (Fairbrook).....	No. 46 „ „ „	5	1 0	1009	68·97	227
„ (Nungrain).....	No. 45 „ „ „	5	1 0	1320	69·77	...
Hayfield (Ashop Head) ...	No. 43 „ „ „	5	1 0	1650	57·50	...
Woodland Dale (Rowlee) No. 24	„ „ „	5	1 0	1540	49·42	...
Derwent Dale (Walker Ho.) No. 22	„ „ „	5	1 0	758	51·30	239
Alport Dale (Alport Castles) No. 42	„ „ „	5	1 0	955	62·23	218
Featherbed Moss (Redgate Clough) 44	„ „ „	5	1 0	1730	59·60	...
Derwent Dale (Birchinlee) No. 23	„ „ „	5	1 0	870	57·15	247
Birchinlee Moor (Cote Ridge) No. 18	„ „ „	5	1 0	1440	57·97	...
Lady Clough Moor .....	No. 41 „ „ „	5	1 0	1720	59·50	...

## DIVISION VII.—NORTH MIDLAND COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with .01 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	1912	
		in.	ft	in.	feet.	inches.	
<b>DERBYSHIRE—(con.)</b>							
<b>6.—TRENT—Derwent—(con.)</b>							
Coldharbour Moor (Summit) No. 39	S. B. Winsor, Esq., C.E.	8	1	0	1670	55·67	...
Derwent Dale (Howden Dam) 17	" " "	8	1	0	829	53·65	235
" " (Banktop Hey) 16	" " "	8	1	0	1340	64·15	...
" " (Ridge Farm)...13	" " "	5	1	0	1175	47·38	...
Alport Moor (Glethering Clough)...40	" " "	5	1	0	1640	56·68	...
Westend Moor (Blacklow Cote) 15	" " "	5	1	0	970	61·90	...
" " ..... No. 10	" " "	5	1	0	1560	58·51	...
Alport Moor ..... No. 38	" " "	5	1	0	1790	59·20	...
Derwent Dale (Back Dyke) No. 12	" " "	5	1	0	1546	60·70	...
" " (Mosley Bank) No. 5	" " "	5	1	0	1350	60·40	...
Ridgewalk Moor ..... No. 9	" " "	5	1	0	1650	58·20	...
Bleaklow Stones ..... No. 8	" " "	5	1	0	2060	71·10	...
Derwent Dale (Roundhill) No. 4	" " "	5	1	0	1675	61·20	...
<b>7.—TRENT—Erewash. 50 sq. mi.</b>							
Long Eaton (Trent College) .....	C. V. Temperley, Esq...	5	1	3	120 †	27·84	...
d Codnor (Cross Hill) .....	A. F. Pine, Esq.....	5	1	0	372 †	37·95	198
d " Park .....	Midland Railway Co....	5	1	0	243 †	40·47	231
<b>8.—OUSE—Don. 148 sq. mi.</b>							
Hardwick Hall .....	Mr. E. Wilson .....	8	2	6	594 †	41·15	201
d Grassmoor Colliery .....	Mr. J. Norman .....	5	19	10	370 †	28·84	179
d† Chesterfield (Gas Works).....	Chesterfield Corporation	5	1	0	279	35·59	171
" .....	Great Central Rly. Co..	9	3	6	250	33·20	187
d " (Sewage Works) ...	Mr. W. Tomlinson.....	5	2	0	222	33·92	180
d† " (Linacre Reservoir)	Chesterfield Corporation	8	1	0	460	41·74	207
d† " ( " " )	" " " " " "	5	1	0	490	39·22	207
" (Tapton Grove).....	Mr. W. R. Bloxham ...	5	4	3	400	35·43	...
d Totley Hall.....	W. A. Milner, Esq. ...	5	1	0	700	46·79	206
d Eckington (Mosbrough C.E. Sch.)	W. H. Holmes, Esq....	5	1	0	330 †	38·27	190
Killamarsh (Norwood) .....	Great Central Rly. Co..	9	3	6	226 †	35·14	233
† Norton.....	Col. Sir N. Creswick, KCB	5	0	8	700 †	42·41	208

## MAP OF DIVISION VIII.

NORTH WESTERN COUNTIES,

Showing the River-Divisions.



## DIVISION VIII.—NORTH WESTERN COUNTIES.

[illegible]

## DIVISION VIII.—NORTH WESTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with $\geq 0.1$ or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level		
		in.	ft. in.	feet.	feet.	
<b>CHESHIRE—(con.)</b>						
<b>2.—MERSEY—Weaver—(con.)</b>						
Northwich .....	Great Central Rly. Co.	9	3 6	76 $\uparrow$	30.69	180
D „ (Highfield) .....	J. A. Saner, Esq., C.E.	8	1 0	116 $\uparrow$	34.29	231
D „ (Winnington) .....	Messrs Brunner Mond & Co	5	1 0	64 $\uparrow$	33.32	212
D „ (Lostock Gralam) ..	„ „ „	5	3 6	75 $\uparrow$	32.33	204
<b>3.—LOWER MERSEY &amp; C. 142 sq. mi.</b>						
Duddon (Clotton Hoofield School) ..	Miss L. E. Line .....	5	5 6	138 $\uparrow$	27.95	...
D Frodsham (Helsby) .....	J. H. Howell, Esq. ....	5	1 1	190	31.12	200
D „ (Simonsdelf) .....	E. H. Lewis .....	5	1 0	420 $\uparrow$	31.88	209
D Ince Hall .....	Mrs. Park-Yates .....	5	0 7	80	34.08	203
D Hooton Water Works .....	P. H. Bettle, Esq. ....	5	1 0	97	31.79	155
D Eastham (Mill Hey) .....	Roger P. Sing, Esq. ....	5	1 7	125 $\uparrow$	35.79	206
„ House .....	J. H. Vernon, Esq. ....	5	1 0	100 $\uparrow$	33.39	210
D Wirral W.W. (Prenton) .....	P. H. Bettle, Esq. ....	5	1 0	91 $\uparrow$	31.28	213
D Rock Ferry (Elmhurst) .....	Miss Shepherd .....	8	6 0	110	33.12	192
Birkenhead (Bidston Observatory) ..	W. E. Plummer, Esq. ....	8	1 0	189 $\uparrow$	30.17	209
Hoylake (District Council Office) ..	Meteorological Office ..	5	1 0	33 $\uparrow$	29.05	197
D Wallasey (Marine Park) .....	Dr. T. W. N. Barlow ..	5	1 0	35 $\uparrow$	33.29	198
<b>4.—DEE. 127 sq. mi.</b>						
D Aldford .....	Miss M. Meredith .....	5	1 1	46 $\uparrow$	30.86	229
D Eaton Hall Gardens .....	Mr. N. F. Barnes .....	5	3 0	72 $\uparrow$	24.83	168
D Eccleston .....	E. Wells, Esq. ....	5	1 1	94 $\uparrow$	27.23	179
D Chester (Sewerage Works) .....	W. D. Scouller, Esq. ....	5	1 0	34 $\uparrow$	28.84	192
D „ (Christleton Hall) .....	Mr. J. Weaver .....	5	1 2	142 $\uparrow$	30.05	211
D „ (Water Works) .....	C. Wilfrid Bennett, Esq. ..	5	0 10	85 $\uparrow$	23.39	199
„ (Northgate Station) .....	Great Central Rly. Co. ..	9	3 6	84 $\uparrow$	27.08	150
D Neston (Vine House) .....	H. F. Russell, Esq. ....	5	1 0	111 $\uparrow$	27.87	196
D West Kirby (Greenfield) .....	H. Bell, Esq. ....	5	1 0	75 $\uparrow$	29.45	191
<b>SOUTH LANCASHIRE. (Area, 687 sq. mi.)</b>						
<b>1.—ALT &amp; C. 103 sq. mi.</b>						
D Liverpool (Huyton Vicarage) ..	Mrs. E. M. Sanderson ..	5	0 11	116 $\uparrow$	39.62	219
D „ (Knotty Ash) .....	W. M. Reade, Esq. ....	5	1 0	100	34.94	221
D West Derby (Basil Grange) .....	Mr. G. Harris .....	8	1 3	100 ?	38.39	200
D „ „ (Croxteth Hall) ..	Mr. J. Gibbins .....	5	1 0	79 $\uparrow$	37.46	190
D Blundellsands (Myra) .....	H. Montgomery, Esq. ....	5	1 0	35	33.84	206
D Ormskirk (Bickerstaffe Pump Sta.) ..	S. R. Raffety, Esq. ....	5	1 2	128 $\uparrow$	37.20	206
D „ (Aughton Springs) ..	C. E. Maples, Esq. ....	5	1 0	138 $\uparrow$	37.10	230
D† Downholland (Barton Moss) .....	J. Baxendell, Esq. ....	5	0 9	14 $\uparrow$	32.93	207
<b>2.—LOWER MERSEY. 240 sq. mi.</b>						
Garston .....	J. A. Brodie, Esq., C.E.	10	1 10	84 $\uparrow$	37.45	199
D „ (Grassendale Park) .....	Miss E. C. Abraham ..	5	1 0	35 $\uparrow$	32.87	205
D Aigburth (Holmfield) .....	Miss Maxwell .....	5	1 0	100 $\uparrow$	34.09	221
D Woolton (Roseleigh Gardens) ..	Mr. J. Stoney .....	8	1 0	180 $\uparrow$	38.28	212
D Warrington (Howley Yard) .....	A. M. Ker, Esq. ....	10	0 10	19 $\uparrow$	34.07	193

## DIVISION VIII.—NORTH WESTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain. 1912	Days with '01 or more recorded.
		Diameter	Height Above Ground		Height Above Sea Level		
		in.	ft.	in.	feet.	inches.	
<b>SOUTH LANCASHIRE—(con.)</b>							
<b>2.—LOWER MERSEY—(con.)</b>							
Warrington (Central Station) ...	Great Central Rly. Co..	9	3	6	59 $\nabla$	31·98	190
n† Liverpool (Monument Place) (R)	J. A. Brodie, Esq., C.E.	10	4	6	129 $\nabla$	32·52	215
„ (Smithdown Road) ...	„ „ „	10	0	9	135 $\nabla$	36·71	222
„ (Rathbone Road) .....	„ „ „	10	1	0	199 $\nabla$	39·36	217
„ (Lank Lane) .....	„ „ „	10	10	8	101 $\nabla$	36·48	218
„ (Newsham Park) .....	„ „ „	10	1	0	140 $\nabla$	35·11	216
„ (Breeze Lane) .....	„ „ „	5	0	9	135 $\nabla$	38·49	223
„ (Huskisson Station) ...	Great Central Rly. Co.	9	3	6	40 $\nabla$	32·35	206
St. Helen's (Eccleston Hill).....	J. J. Lackland, Esq., C.E.	12	2	9	268 $\nabla$	32·90	191
n Earlestown (Newton Cemetery)...	Newton-in-Makerfield U.D.C.	5	1	0	75 $\nabla$	41·80	171
n Leigh (Leesrigg) .....	Major T. Hunter, C.E.	5	1	0	71 $\nabla$	34·13	210
Tyldesley Gas Works .....	H. Hoy, Esq. ....	5	1	0	150	40·86	191
<b>3.—MERSEY—Irwell. 299 sq. mi.</b>							
Urmston (Sew. Wks., Davyhulme)	Mr. A. B. Ogden .....	8	2	3	72 $\nabla$	35·28	196
n Manchester (Whalley Range) ...	J. H. Cooke, Esq. ....	5	1	0	100 $\nabla$	35·64	217
n „ (Godlee Observatory) ...	W. C. Jenkins, Esq. ...	8	1	3	140	38·39	217
n „ ( „ „ ) (R) „ „ „ „	„ „ „ „	11	1	6	140	38·20	221
„ (Piccadilly) .....	Great Central Rly. Co..	9	40	0	194 $\nabla$	35·68	225
„ (Fairfield) .....	„ „ „	9	6	0	312 $\nabla$	39·29	223
n† „ (Oldham Road) .....	Dr. J. Niven .....	5	1	0	191 $\nabla$	40·59	227
† „ (Whitworth Park)...	Meteorological Office ...	8	1	5	126	34·93	197
Eccles (Worsley New Hall) .....	Mr. W. B. Upjohn ...	8	10	0	80 $\nabla$	40·50	202
„ ( „ Old Hall) .....	„ „ „	6	1	6	150	43·13	195
n Ashton-under-Lyne (Knott Hill Res.)	F. J. Dixon, Esq., C.E.	8	1	3	605 $\nabla$	43·07	213
n Swinton (Endsley).....	G. A. T. Jesson, Esq. ...	5	0	8	220 $\nabla$	43·61	216
Prestwich Reservoir .....	G. H. Hill, Esq., C.E. ...	12	2	0	356 $\nabla$	40·92	...
n „ (Heaton Park) .....	T. DeC. Meade, Esq., C.E.	8	1	0	312 $\nabla$	43·06	206
n† Oldham (Alexandra Park) .....	Dr. J. B. Wilkinson ...	5	1	0	600	47·19	236
„ (Honeywell Lane) .....	Great Central Rly. Co..	8	3	6	553	43·11	234
„ (Brushes Clough) <i>old g.</i>	C. J. Batley, Esq., C.E.	5	4	0	930 $\nabla$	53·00	238
„ ( „ „ ) <i>new g.</i> „ „ „	„ „ „	5	5	0	955 $\nabla$	53·03	238
n† Bolton (Queen's Park) .....	T. Midgley, Esq. ....	5	1	0	342 $\nabla$	53·61	232
n† „ (Heaton Reservoir) .....	Lewis Mitchell, Esq. C.E.	5	1	0	500	51·53	248
n „ (Bloomfield, Heaton) ...	Mrs. F. Taylor .....	5	1	0	530 $\nabla$	51·92	246
„ (Smithills).....	R. E. Proffitt, Esq. ...	5	6	0	492 $\nabla$	55·85	215
n† „ ( „ Hall) .....	Col. R. H. Ainsworth...	8	1	2	510 $\nabla$	56·12	202
„ ( „ Moor) .....	„ „ „	8	1	2	1375 $\nabla$	58·94	...
n Bury (Parsons Lane).....	R. B. Rigby, Esq. ....	8	9	8	316 $\nabla$	52·21	217
„ (Bridge Hall) .....	O. O. Wrigley, Esq. ...	5	0	6	...	52·22	229
n† Milnrow (Piethorne, Kitcliffe)...	C. J. Batley, Esq., C.E.	5	4	6	769 $\nabla$	51·10	252
† „ ( „ Coldgreave) „ „ „	„ „ „	5	4	6	894 $\nabla$	48·33	238
† „ ( „ Norman Hill) „ „ „	„ „ „	5	4	6	1076 $\nabla$	46·57	236
† „ ( „ Rooden Res.) „ „ „	„ „ „	5	4	6	1131 $\nabla$	45·83	237
n† Rochdale (Broadfield Park Obsy.)	Dr. A. G. Anderson ...	8	0	6	472	51·85	253
n „ (Fieldhead Yard) .....	S. S. Platt, Esq., C.E..	8	12	0	484 $\nabla$	46·79	209
n „ ( „ „ )... (R) „ „ „	„ „ „	8	12	0	484 $\nabla$	47·16	209





DIVISION VIII.—NORTH WESTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with 0·1 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.	
SOUTH LANCASHIRE—(con.)							
4.—UPPER MERSEY—(con.)							
D Ashton-under-Lyne (Henrietta St. Yard)	F. J. Dixon, Esq., C.E.	7	1	0	394 N	42·17	235
" " " (Waterhouses)...	Great Central Rly. Co..	9	3	6	345 T	38·63	231
D Lower Swineshaw Reservoir.....	F. J. Dixon, Esq., C.E.	7	3	0	886 N	52·21	212
D Mossley (Manor House Yard) ...	" " "	5	1	0	636 N	45·61	208
CENTRAL LANCASHIRE. (Area, 536 sq. mi.)							
1.—RIBBLE & C. 326 sq. mi.							
† Rivington (Higher Hill) .....	J. Parry, Esq., C.E. ....	8	1	4	733 N	45·22	...
D Haslingden (Mitchells House Res.)	C. Harrison, Esq. ....	5	1	6	990	57·50	195
D Darwen (Sunnyhurst Hey Res.)..	R. W. S. Saville, Esq..	8	1	8	915 T	58·53	236
D " (Earnsdale Reservoir)...	" " "	8	1	8	705 T	57·99	236
D " (Sewage Works) .....	" " "	5	1	6	460 N	56·38	202
D " (Bold Venture Park) ...	Dr. F. G. Haworth ...	8	2	4	722	62·89	262
" (Hoddlesden) ..... No.1	W. Stubbs, Esq., C.E..	8	4	0	680	56·92	238
" " " ..... No.2	" " " " ...	8	1	0	675	55·91	238
† " (Daisy Green) ..... No.1	" " " " ...	8	1	0	969	53·06	237
" " " ..... No.2	" " " " ...	8	1	0	969	52·21	238
" (Pickup Bank) ..... No.1	" " " " ...	8	1	0	720	53·93	238
" " " ..... No.2	" " " " ...	8	1	0	720	53·61	238
Brindle (Whiteholme) .....	Victor H. Gatty, Esq..	5	...	...	315 T	38·32	...
† Blackburn (Guide Reservoir) ...	W. Stubbs, Esq., C.E..	8	1	0	650	46·49	222
" (Witton) .....	" " " " ...	8	2	6	315 N	50·65	205
" (Store Yard) .....	" " " " ...	8	30	0	373 N	39·15	176
" (Water Works Office)	" " " " ...	8	60	0	436 N	32·36	182
T " (Corporation Park) ...	" " " " ...	8	0	6	584 N	49·10	226
† " (Pumping Station) ...	" " " " ...	8	6	0	600 N	48·28	211
D Accrington (St. James's Vicarage)	Rev. A. Spencer.....	8	1	6	475 T	51·88	227
" (Milnshaw Park).....	Accrington Corporation	5	1	6	464 N	47·86	209
D " (Victoria Hospital) .....	Mr. L. T. Whipp .....	5	1	2	540 T	53·43	223
D Preston (Corporation Offices) ...	J. H. Smethurst, Esq...	8	18	7	148 N	43·97	215
Blackburn (Samlesbury Sew Wks)	W. Stubbs, Esq., C.E.	8	...	...	240	42·47	219
† Causeway Side (Burnley W.W.)	W. Williamson, Esq....	8	2	0	1116 N	51·55	...
† Sheddin { " " }	" " " " ...	8	2	0	960 N	52·36	...
† Cant Clough, S. Side { " " }	" " " " ...	8	2	0	900 N	52·14	251
† " " N. Side { " " }	" " " " ...	8	2	0	900 T	50·40	252
Rams Clough Head { " " }	" " " " ...	8	2	0	1260 T	52·58	...
D Huncoat (Burnley Road Res.)...	C. Harrison, Esq. ....	9	1	6	620 N	56·89	224
D Great Harwood (Dean Clough)...	" " " " ...	12	1	6	540	53·60	229
Salesbury School .....	T. Counsell, Esq. ....	5	1	0	447 T	52·96	...
D Burnley (Queen's Park) .....	Dr. Thomas Holt .....	8	1	0	459 N	48·11	219
" (Yorkshire Street) .....	W. Williamson, Esq...	8	30	0	420 N	42·12	239
† " (Swinden)..... Upper g.	" " " " ...	8	12	0	820 N	53·78	255
† " ( " )..... Lower g.	" " " " ...	8	2	0	745 N	53·87	255
† " (Extwistle Moor Top)...	" " " " ...	8	2	0	1310 T	55·08	...
D " (Gawthorpe Hall) .....	Alfred Ford, Esq.....	8	0	9	316 N	51·08	233

DIVISION VIII.—NORTH WESTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with '01 or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level		
		in.	ft. in.	feet.	inches.	
<b>CENTRAL LANCASHIRE-(con.)</b>						
<b>1.—RIBBLE &amp; C—(con.)</b>						
D Burnley (Huntroyde).....	N. G. Howsin, Esq. ...	5	1 0	423 $\pi$	50.99	230
D Kirkham (The Hill, Westby) ...	E. T. Wilson, Esq. ...	5	1 3	100 $\uparrow$	39.29	208
D Fulwood (Haighton).....	A. E. Coupe, Esq., C.E.	5	1 2	255 $\pi$	44.94	213
Alston Reservoir .....	J. H. Smethurst, Esq...	8	1 2	320 $\pi$	49.37	...
†Stonyhurst College .....	Rev. W. Sidgreaves, S.J.	8	1 10	377 $\pi$	54.13	231
D† " " " " (R) .....	" " " " " "	11	1 10	377 $\pi$	54.12	230
† " " " " " " (M) .....	" " " " " "	11	1 0	376 $\pi$	53.60	...
Knowle Green (Preston W.W.) M	J. H. Smethurst, Esq.	8	1 2	400 $\uparrow$	51.72	...
Loud Scales ( " " " ) M	" " " " " "	8	1 2	400 $\uparrow$	49.66	...
Spade Mill ( " " " ) M	" " " " " "	8	1 2	400 $\uparrow$	48.46	...
Jeffrey Hill ( " " " ) M	" " " " " "	8	1 2	900 $\uparrow$	59.80	...
D Beacon Fell (Barnsfold Reservoir)	A. E. Coupe, Esq., C.E.	5	1 6	506 $\pi$	51.77	223
" " " " " " (M) .....	" " " " " "	5	1 6	506 $\pi$	51.60	...
D† Colne (Cemetery Grounds) ... (R)	T. H. Hartley, Esq. ...	8	2 11	619 $\pi$	48.13	230
Barrowford Reservoir .....	Leeds & L'pool Canal Co.	8	1 0	473	50.48	...
Foulridge (Upper Reservoir) ...	" " " " " "	8	1 0	582	49.73	...
† Clitheroe (Downham Hall) .....	R. C. Assheton, Esq. ...	10	1 6	464 $\pi$	49.32	...
D " " " " " " ) check g.	Ralph Assheton, Esq. ...	5	0 9	470	52.05	237
D† Chatburn (Middlewood) .....	W. K. Wilkinson, Esq.	5	1 3	363 $\uparrow$	49.72	208
<b>2.—RIBBLE—Douglas. 156 sq. mi.</b>						
Upholland Grammar School .....	C. H. Cox, Esq. ....	5	1 0	310 $\uparrow$	39.69	195
D Wigan Water Works .....	W. Bolton, Esq. ....	8	1 6	225 $\pi$	42.80	226
Horwich (Wallsuches) .....	C. E. Barr, Esq. ....	5	1 0	655 $\uparrow$	40.93	...
D† " (Lower Rivington) ...	J. Parry, Esq., C.E. ...	8	1 0	440 $\pi$	46.53	220
† " (Lower Knoll) .....	" " " " " "	8	1 4	742 $\pi$	48.36	...
† Rivington (Brown Hill) .....	" " " " " "	8	1 4	843 $\pi$	48.28	...
D† " (Stoneshouse) ... No. 1	" " " " " "	8	1 4	623 $\pi$	48.24	235
† " ( " " " ) ... No. 2	" " " " " "	8	1 4	623 $\pi$	47.88	...
† " (Hurst Hill) .....	" " " " " "	8	1 10	1029 $\pi$	48.75	...
† " (Coppice Stile) .....	" " " " " "	8	1 8	879 $\pi$	44.89	...
† " (Gamekeeper's) .....	" " " " " "	8	0 8	850 $\pi$	52.72	...
Rufford .....	J. G. Heggie, Esq. ...	5	1 0	41 $\uparrow$	40.47	150
D Chorley (Park Road) .....	Rev. A. Shipham .....	5	0 11	278 $\pi$	40.68	214
Leyland (Worden Hall) .....	H. Nowell Farrington Esq	5	1 0	125 $\pi$	40.71	216
" " " " " " ) M	" " " " " "	5	1 0	125 $\pi$	40.34	...
D Bamber Bridge (Cuerden Hall) ..	R. A. Tatton, Esq. ....	5	1 0	230 $\uparrow$	41.71	213
<b>3.—COAST STREAMS. 52 sq. mi.</b>						
Southport (Birkdale) .....	J. Baxendell, Esq. ....	5	1 0	27 $\pi$	36.68	...
D " (Linaker Street) .....	J. H. Bonny, Esq. ....	5	1 6	25	35.09	222
D† " (Hesketh Park) .....	J. Baxendell, Esq. ....	5	1 0	38 $\pi$	36.89	213
D† " ( " " " ) M.O.g.	" " " " " "	8	1 0	38 $\pi$	37.13	212
D† " ( " " " ) ... (R)	" " " " " "	11	1 5	39 $\pi$	37.15	219
† " (Lord Street Station).	Great Central Rly. Co. ...	9	3 6	21 $\pi$	34.49	197
<b>4.—OUSE—Aire. 2 sq. mi.</b>						
Worthdale (Watersheddles Res.)	W. Fowlds, Esq., C.E.	5	1 0	1115 $\uparrow$	61.75	...
Foulridge (Canal Office) .....	Leeds & L'pool Canal Co.	8	1 0	497	56.39	...
" (Cragg Nook Hill) ..	" " " " " "	8	1 0	690	51.26	...

## DIVISION VIII.—NORTH WESTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with .01 or more recorded.
		Diameter	Height Above Ground		Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.	
NORTH LANCASHIRE. (Area, 609 sq. mi.)							
1.—DUDDON & C. 77 sq. mi.							
D Barrow-in-Furness .....	W. Fergusson, Esq. ...	11	1	6	36 $\nabla$	39.31	201
D Ulverston (Urswick School Ho.)..	J. Dobson, Esq. ....	5	1	3	140 $\nabla$	53.39	225
Lindal (Moor Mines).....	Messrs. Harrison, Ainslie & Co.	5	7	0	...	51.02	187
D Broughton-in-Furness .....	late C. P. Chambers, Esq.	5	1	3	101 $\nabla$	62.12	217
D Duddon Valley (Seathwaite Vic.)	Rev. J. B. Ditchfield...	5	1	0	330 $\nabla$	91.46	243
2.—LEVEN & C. 135 sq. mi.							
D† Cartmel (Flookburgh Lodge) ...	late J. J. Myres, Esq. ...	5	1	0	75 $\nabla$	55.78	233
D† „ (Carke).....	W. R. Nash, Esq. ....	5	1	0	76 $\nabla$	52.85	231
D „ (Holker Hall) .....	Lord Richard Cavendish	5	0	9	85 $\nabla$	55.44	248
D Ulverston (Poaka Beck) .....	W. Fergusson, Esq. ...	11	1	6	512 $\nabla$	55.61	230
D† Cartmel (Aynsome) .....	J. Stewart Remington Esq.	8	2	0	137 $\nabla$	63.51	260
D „ W. W. (Newton Res.) (R)	T. Huddleston, Esq. C. E.	10	1	0	586	60.76	253
Ulverston (Graythwaite) .....	Meteorological Office...	8	1	0	185	65.61	...
D Greenodd (Pennybridge School)..	W. White, Esq. ....	5	1	0	118	66.76	222
D „ (Summerhill).....	J. L. Altham, Esq. ....	5	4	6	241 $\nabla$	72.02	223
D Finsthwaite Vicarage .....	Rev. S. Inman .....	8	1	2	250	68.06	237
D Coniston (Water Park).....	Miss C. Marshall .....	5	1	0	165	72.40	232
D Blawith Vicarage .....	Rev. J. Ashburner.....	5	0	10	185	67.48	224
D† Coniston (Holywath) .....	Miss C. Marshall .....	8	0	8	200	109.92	241
D† Hawkshead (Tower Bank, Sawrey)	Miss Alcock-Beck .....	5	1	0	342 $\nabla$	78.76	242
† Monk Coniston .....	Miss C. Marshall .....	5	1	2	305 $\nabla$	91.66?	192
† Hawkshead (Esthwaite Mount)..	C. E. S. Headlam, Esq.	5	1	0	246 $\nabla$	78.89	...
„ (Black Fell) .....	M Miss C. Marshall .....	5	1	6	1055	85.89	...
D† Skelwith Fold [Ambleside] .....	„ „ „ .....	5	1	0	333	94.95	252
† „ „ [ „ ] .....	M „ „ „ .....	5	1	0	333	93.95	...
3.—KENT & C. 45 sq. mi.							
D Heysham Harbour.....	Midland Railway Co....	5	1	6	28 $\nabla$	42.15	215
D „ House.....	Miss Tomlinson .....	5	1	6	80	52.31	255
D Morecambe .....	Mr. T. B. Lamb .....	8	1	0	24 $\nabla$	49.42	213
D Bolton-le-Sands Vicarage.....	Rev. A. R. Tomlinson.	5	1	2	70 $\nabla$	44.73	233
D Carnforth (Over Kellet) .....	W. Farrer, Esq. ....	8	1	0	192	43.98	221
„ (Capernwray) .....	Neville Holden, Esq. ....	...	...	...	...	50.77	...
D Yealand Conyers (Beechfield) ...	W. E. Roper, Esq. ....	5	1	0	250	47.79	252
D „ „ .....	J. Rawlinson Ford, Esq.	5	1	0	278 $\nabla$	50.71	243
D† Grange-over-Sands (Nutwood)...	Miss S. M. Arkwright .	5	2	6	...	54.28	228
D† „ „ „ (Merlewood)...	E. C. Miller, Esq. ....	5	0	9	280 $\nabla$	59.36	228
D† Cartmel Fell (The Schoolhouse)..	R. J. Cragghill, Esq. ...	5	5	0	220 $\nabla$	65.71	246
4.—LUNE. 135 sq. mi.							
D† Hampson-in-Ellel .....	W. G. Welch, Esq. ...	5	1	6	145 $\nabla$	43.68	231
D† Lancaster (Bailrigg) .....	H. L. Storey, Esq. ....	5	1	3	200	45.63	229
† Quernmore (Brow Top).....	A. G. Bradshaw, Esq. ...	8	1	0	552 $\nabla$	53.42	218
D† Lancaster (Strathspey) .....	A. B. S. Welch, Esq. ...	5	1	0	87 $\nabla$	42.38	226
„ (Blea Tarn Reservoir)...	A. G. Bradshaw, Esq. ...	8	1	0	330	43.68	226
D „ (Greg Observatory) ...	Neville Holden, Esq. ....	8	1	0	312	46.99	244

## DIVISION VIII.—NORTH WESTERN COUNTIES—(continued).

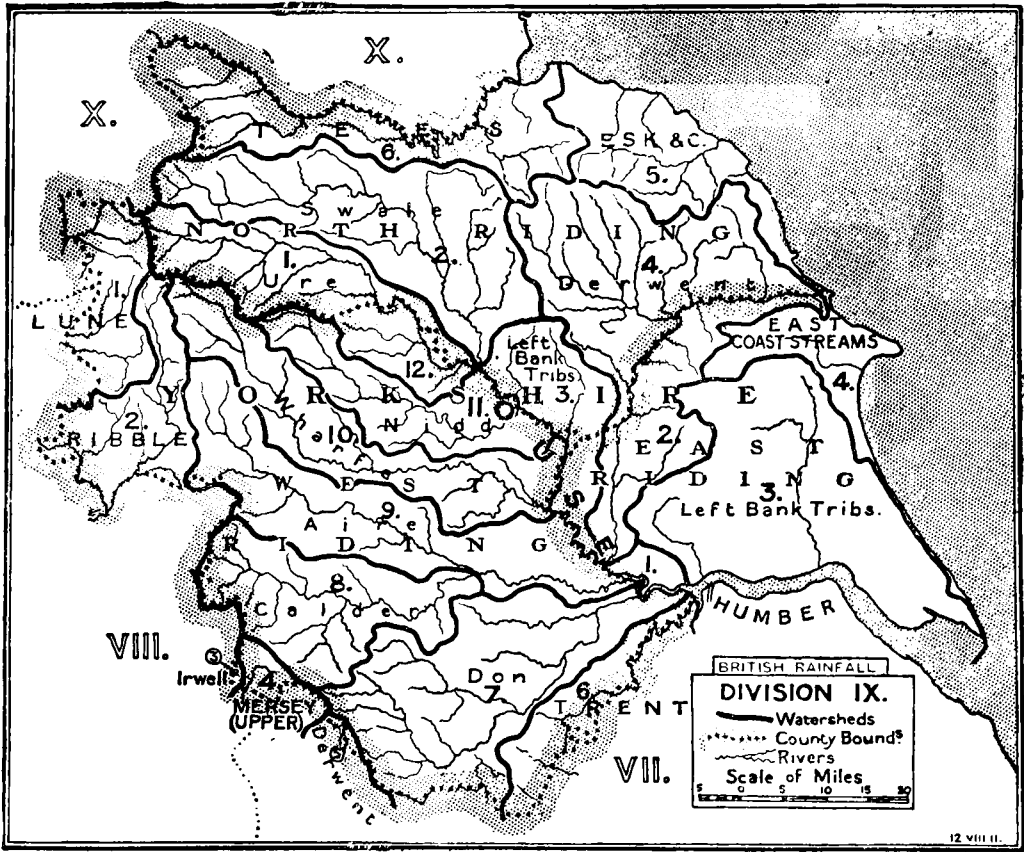
STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with .01 or more recorded.	
		Diameter	Height Above Ground		Height Above Sea Level		1912
		in.	ft.	in.	feet.	inches.	
NORTH LANCASHIRE—(con.)							
4.—LUNE—(con.)							
Lancaster (Robert Street).....	A. G. Bradshaw, Esq...	8	1	0	62 †	44·26	245
„ (Halton Park) .....	Neville Holden, Esq....	...	...	...	...	46·93	...
Caton (Caton Green) .....	„ „ „ „	...	...	...	...	48·77	...
† Wray Vicarage .....	Rev. C. L. Reynolds...	5	1	0	165 †	46·16	246
† Leek Vicarage .....	Rev. J. Turner .....	5	1	1	400	46·94	228
5.—WYRE & C. 213 sq. mi.							
† St. Anne's-on-the-Sea (Whitehall)	M. B. Copland, Esq. ...	8	1	8	5 ?	40·22	228
„ „ „ „	Mr. W. E. Procter .....	5	1	0	25 †	38·94	213
† Weeton Reservoir .....	No. 1 J. Cook, Esq., C.E. ...	5	1	0	133 †	40·64	198
† „ „ „ „	No. 3 „ „ „ „	5	1	0	108 †	40·48	201
„ Barton (Anderton Fold) .....	W. H. Mason, Esq. ...	5	0	6	90 †	41·22	191
† Blackpool (Met. Observatory) ...	E. W. Rees Jones, Esq. MD	5	1	0	67 †	38·51	216
Poulton-le-Fylde (Singleton Pk.)	T. H. Miller, Esq. ....	8	0	11	50 ?	40·91	215
† St. Michael's-on-Wyre School...	J. Moss, Esq. ....	5	1	0	27 †	42·56	226
† „ „ „ „ Vicarage	Ven Archdeacon Hornby	5	1	0	26 †	42·15	219
„ Garstang (Beacon Fell).....	A. E. Coupe, Esq., C.E.	5	1	2	875 †	40·38	...
† Fleetwood .....	(R) E. Frobisher, Esq. ....	8	1	8	29 †	37·83	214
† Garstang (Bruna Hill) .....	Mrs. Wilson .....	5	1	0	90 †	48·77	244
† „ (Holme Ho., Bleasdale)	A. Wilson, Esq. ....	5	1	0	650 †	64·24	...
„ „ (Fairsnape Fell) .....	„ „ „ „	5	1	0	1630 †	86·82	...
„ „ (Calder Intake).....	J. Cook, Esq., C.E. ...	5	1	0	632 †	55·80	...
† „ „ (Barnacre Reservoir)...	„ „ „ „	5	1	0	616 †	53·83	230
† „ „ (Grizedale Reservoir) ..	„ „ „ „	5	1	0	517 †	52·35	230
† „ „ ( „ Intake)* ..	„ „ „ „	5	1	0	644 †	53·65	...
Pilling (Smallwood Hey) .....	M Mr. J. H. Curwen .....	5	0	9	12 †	35·76	...
† Wyresdale (Abbeystead Res.) ...	A. G. Bradshaw, Esq...	8	1	0	366 †	58·28	192
† „ „ „ „ Gardens	Mr. T. Wyton .....	8	0	6	420 †	57·30	217
Quernmore (Old Gauge Basin) M	A. G. Bradshaw, Esq...	8	1	0	963 †	52·74	...
Wyresdale (Wardstone) .....	„ „ „ „	8	1	0	1440 †	68·83	...
6.—INSULAR. 4 sq. mi.							

\* Formerly called Stake House.

MAP OF DIVISION IX.

YORKSHIRE,

Showing the River-Divisions.



## DIVISION IX.—YORKSHIRE.

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with '01 or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level		
		in.	ft. in.	feet.	inches.	
<b>WEST RIDING. (Area, 2791 sq. mi.)</b>						
<b>1.—LUNE. 178 sq. mi.</b>						
D High Bentham .....	Mr. Bryan Holmes.....	5	1 0	412 T	39·92	221
D Ingleton (Kingsdale Head) .....	Mr. L. Pye .....	5	0 10	994 T	88·43	172
Hawes Junction.....	Mr. W. H. Bunce .....	5	1 0	1130 T	70·86	252
Sedbergh (Dent Post Office) .....	Mr. J. Mason .....	5	1 0	484 T	77·71	234
D „ (Akay) .....	C. E. Taylor, Esq.....	5	1 0	400 T	64·77	234
D „ (Cemetery).....	Mr. J. Anderson.....	5	1 0	374 T	63·00	248
D „ (Bynac) .....	Mrs. B. Wilson .....	5	1 0	480 T	61·11	223
D „ (Howgill School) .....	W. Woodhead, Esq. ...	5	1 0	550 T	58·39	226
<b>2.—RIBBLE. 225 sq. mi.</b>						
D Laneshaw Reservoir [Colne].....	J. F. Bedford, Esq. ...	5	1 0	842	43·96	225
D Barnoldswick (Rainhall Road)...	Asa Burniston, Esq. ...	5	0 10	549 T	47·81	217
† Bolton-by-Bowland (Bolton Hall) .....	Mr. G. Wrightson .....	8	0 6	300 T	53·14	203
† Slaidburn (Knowlmore Manor)...	W. Peel, Esq.....	5	1 0	417 T	66·89	...
D „ (Thorneyholme) .....	R. A. Tatton, Esq.....	5	1 6	380	71·26	189
„ (Hareden Brook) ... M	J. H. Smethurst, Esq..	8	1 2	540	74·90	...
† „ (Langden Brook) ... M	„ „ „ „	8	1 2	556	74·65	...
† „ (Whiteholme) .....	W. K. Wilkinson, Esq.	5	1 3	475 T	59·62	217
„ (Dunsop Houses) .....	W. Stubbs, Esq., C.E..	8	1 0	450 T	71·67	214
„ (Middle Knoll)..... M	„ „ „	8	2 6	1298 T	61·60	...
„ (Brennand) .....	„ „ „	8	1 0	820 T	77·40	218
„ (Whitendale) .....	„ „ „	8	1 0	830 T	73·22	211
„ (Cabin Hill)..... M	„ „ „	8	3 1	1559 T	72·50	...
„ (Baxton Fell) .....	„ „ „	8	2 6	1540 T	64·10	...
D† Settle (The Terrace) .....	J. W. Shepherd, Esq..	8	1 2	531 T	50·07	231
D† „ (Giggleswick School).....	P. Haswell, Esq. ....	8	1 0	500 T	48·03	237
<b>3.—MERSEY—Irwell. 2 sq. mi.</b>						
<b>4.—UPPER MERSEY. 35 sq. mi.</b>						
Greenfield (Upperwood Moor) ...	F. J. Dixon, Esq., C.E.	5	1 0	1518 T	56·78	...
„ (Chew Mount) .....	„ „ „	5	1 0	1600 T	57·68	...
D „ (Yeoman Hey).....	„ „ „	5	1 0	784 T	56·33	215
„ (Ashway Moss).....	„ „ „	5	1 0	1581 T	52·27	...
„ (Birchen Clough).....	„ „ „	5	1 0	1017 T	62·55	...
Saddleworth Station .....	E. Prebble, Esq., C.E..	5	4 2	630 T	39·99	...
Strinesdale [Oldham] .....	C. J. Batley, Esq., C.E.	5	4 0	815 T	46·90	242
D Standedge (Castleshaw, Broadhead)	„ „ „	8	4 6	876 T	50·30	228
† „ ( „ Cudworth) .....	„ „ „	5	4 6	1410 T	42·67	227
„ (Redbrook Reservoir)...	E. Prebble, Esq., C.E...	8	1 6	1150	55·30	...
† Denshaw (Ox Hey) .....	C. J. Batley, Esq., C.E.	8	4 6	1030 T	47·68	230
D† „ (New Year's Bridge)...	„ „ „	8	4 0	1012 T	55·89	230
† „ (Ready Con Dean).....	„ „ „	8	4 0	1414 T	52·87	230
<b>5.—TRENT—Derwent. 7 sq. mi.</b>						
Derwent Dale (Low Seat) No. 21	S. B. Winsor, Esq., C.E.	5	1 0	1565	51·44	...
„ „ (Howden Ho.) 19	„ „ „	8	1 0	775 T	52·04	244
„ „ (Row Top) No. 20	„ „ „	5	1 0	1260	58·21	...
„ „ (Sandy Lee) No. 7	„ „ „	5	1 0	1340	54·34	...
„ „ (Cranberry Clough) 6	„ „ „	8	1 0	960	62·70	...

## DIVISION IX.—YORKSHIRE—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with $\geq 0.1$ or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	1912
		in.	ft.	in.	feet.	inches.
<b>WEST RIDING—(con.)</b>						
<b>5.—TRENT—Derwent—(con.)</b>						
Derwent Dale (Crowstones) No. 3	S.B. Winsor, Esq., C.E.	5	1	0	1660	58.89 ...
" " (Featherbed Moss) 1	" " "	5	1	0	1670	58.95 ...
<b>6.—TRENT—Left Bank Tributaries</b>						
s. 143 sq. mi.						
D Tickhill (Sandbeck Park) .....	Mr. G. Summers .....	8	1	0	150 T	33.57 180
D " .....	G. G. Phillips, Esq. ...	8	1	0	61 T	35.74 168
D Doncaster (Wadworth Hall) .....	Rev. J. C. Ross .....	8	1	0	190 T	35.59 210
<b>7.—OUSE—Don. 564 sq. mi.</b>						
D Woodhouse (Handsworth Sew. Wks.)	Bernard Powell, Esq. ...	8	0	6	180 T	36.74 176
D Sheffield (Fulwood House) .....	J. Dixon, Esq. ....	5	1	0	670 T	46.41 221
D " (Stumperlow Hall) ...	" " " " .....	5	1	0	700 T	45.80 226
D " W.W. (Redmires Res.) (R)	L.S.M. Marsh, Esq., C.E.	10	5	0	1110 T	50.45 243
D " " ( " ) weekly	" " " " .....	8	4	0	1110 T	50.24 ...
D " " (Rivelin) .....	" " " " .....	10	4	0	564 T	44.25 213
D " " ( " ) weekly	" " " " .....	8	4	0	564 T	44.31 ...
D " " (Crookes) .....	" " " " .....	10	2	0	629 T	38.30 217
D " " ( " ) weekly	" " " " .....	8	2	0	629 T	38.42 ...
D† " (Weston Park) .....	E. Howarth, Esq. ....	8	1	0	430 T	39.19 204
Darnall (High Hazels) .....	" " " " .....	8	1	0	275 T	33.93 199
Sheffield (Victoria Station) .....	Great Central Rly. Co..	9	3	6	188 T	34.10 197
" W.W. (Broadcar) No. 1	L.S.M. Marsh, Esq., C.E.	5	1	0	1004 T	55.15 ...
" " (Oaks Fm., Damflask)	" " " " .....	5	1	0	650 T	46.14 ...
Loxley Valley (Loftshaw, Strines)	" " " " .....	5	1	0	1011 T	55.34 ...
D " " (Dale Dyke Res.) (R)	" " " " .....	10	3	0	715 T	50.04 243
D " " ( " ) weekly	" " " " .....	8	3	0	715 T	49.43 ...
D " " (Thornseat) No. 2	" " " " .....	5	1	0	1326 T	54.93 ...
D " " (Rocher Flat) No. 5	" " " " .....	5	1	0	1106 T	48.34 ...
D " " (Mortimer Ho.) No. 4	" " " " .....	5	1	0	1036 T	50.34 ...
Rotherham (Ulley Reservoir) ...	E. B. Martin, Esq., C.E.	5	1	0	184 T	30.82 ...
Sheffield (Tinsley Locks) .....	Great Central Rly. Co..	9	...	...	117 T	32.25 182
D Rotherham (Sitwell Vale) .....	Mr. G. Howard .....	5	1	0	300 T	38.56 201
D " (Moorgate Grange) ...	C. E. Chrimes, Esq. ...	5	1	0	262	33.57 171
D " (Thrybergh) .....	F. Oscar Kirby, Esq. C.E.	8	1	0	184 T	34.52 211
D Chapelton (Potter Hill) .....	Mr. D. Bell .....	8	5	0	581 T	35.34 189
D Deepcar (Broomhead Hall) ... (R)	Mr. W. Harrison .....	8	4	6	925 T	56.19 228
D Doncaster (Firby Reservoir) ...	F. Oscar Kirby, Esq. C.E.	8	1	4	189 T	35.08 202
D Wentworth Woodhouse .....	Mr. A. Third .....	5	0	10	360 T	37.21 179
D Mexborough .....	G. Fenwick Carter Esq. C.E.	5	1	6	76 T	31.04 198
Wortley .....	Great Central Rly. Co..	9	3	6	548 T	38.96 212
Elsecar .....	" " " " .....	9	3	6	181 T	32.86 172
Langsett Moor (Catcleugh) ... M	L.S.M. Marsh, Esq., C.E.	8	1	6	1516 T	56.33 ...
D " " (Mickleden) ... M	" " " " .....	5	1	6	1217 T	56.19 ...
D " " (Upper Midhope) .....	" " " " .....	8	1	6	925 T	49.98 226
D " " (Midhope) .....	J. H. Taylor, Esq., C.E.	5	1	0	830 T	48.64 216
D Little Don Val. (Underbank Res.)	L.S.M. Marsh, Esq., C.E.	8	1	6	604 T	44.86 205
D " " (Brockholes) ... M	" " " " .....	5	1	6	934 T	41.66 ...
D " " (Sheep House) ... M	" " " " .....	5	1	6	974 T	44.52 ...
D† " " (Bridge Lane) .....	" " " " .....	8	4	9	761 T	45.98 225
D† Langsett Moor (Flouch Road) ...	" " " " .....	8	4	3	960 T	51.47 226



## DIVISION IX.—YORKSHIRE—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with .01 or more recorded.
		Diameter	Height Above Ground	Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.
WEST RIDING—(con.)						
7.—OUSE—Don—(con.)						
Langsett Moor (Fiddlers Green) M	L.S.M. Marsh, Esq., C.E.	8	1	6	1493 $\nabla$	59.49 ...
" " (Border Hill) ... M	" " "	5	1	6	1148 $\nabla$	54.69 ...
<sup>D</sup> " " (Swinden Lodge) ..	" " "	8	1	6	1037 $\nabla$	53.05 226
<sup>D</sup> Wath-upon-Dearne (Chapel St.)	Dr. F. J. Burman .....	8	2	2	188 $\nabla$	35.15 193
Bolton-upon-Dearne .....	T. Washington, Esq. ....	5	1	0	130 $\nabla$	34.53 173
Worsborough .....	Great Central Rly. Co. ..	9	3	6	225 $\nabla$	40.76 201
<sup>D</sup> Stainborough (Wentworth Castle)	W. Fisher, Esq. ....	8	2	6	520 $\nabla$	38.87 168
Doncaster (Hexthorpe Hall) ...	H. Morris, Esq. ....	5	1	0	25	32.65 104
" " .....	Great Central Rly. Co. ..	9	3	6	32 $\nabla$	30.75 180
<sup>D</sup> " " (Pumping Station) ...	F. Oscar Kirby, Esq. C.E.	8	1	2	30 $\nabla$	33.31 180
Dunford Bridge (Windleden) ...	H. Dearden, Esq., C.E.	12	2	2	1100	57.61 ...
" " { " Stream) ..	" " " " ..	...	...	...	...	55.72 ...
" " (Dearden Res.) ..	" " " " ..	12	1	6	1244 $\nabla$	56.21 ...
" " Station .....	Great Central Rly. Co. ..	9	3	6	954 $\nabla$	55.88 236
<sup>D</sup> " " Reservoir .....	H. Dearden, Esq., C.E.	12	2	0	1111 $\nabla$	66.13 253
Penistone .....	Great Central Rly. Co. ..	9	3	6	717 $\nabla$	41.12 207
" (Hazlehead) .....	" " " " ..	9	3	9	868 $\nabla$	50.27 224
" (Ingbirchworth Res.) ..	J. H. Taylor, Esq. C.E.	8	1	3	853 $\nabla$	46.91 217
Silkstone (Champany Hill Res.)	" " " " ..	5	1	0	...	34.05 ...
Barnsley (Jordan Hill) .....	" " " " ..	8	1	0	460 $\nabla$	36.97 176
" " .....	Great Central Rly. Co. ..	9	3	6	317 $\nabla$	32.28 182
Cawthorne .....	Rev. C. T. Pratt .....	5	1	6	340 $\nabla$	41.19 214
Cudworth (Lund Lane Sew. Wks.)	J. H. Taylor, Esq., C.E.	5	1	0	150 $\nabla$	38.86 197
<sup>D</sup> Burntwood Hall .....	J. Dymond, Esq. ....	5	0	9	370	38.61 165
Doncaster (Wyndthorpe) .....	Viscountess Chetwynd ..	5	0	11	13	28.77 ...
Kirk Bramwith .....	H. A. Brundell, Esq. C.E.	5	1	0	17 $\nabla$	30.20 185
Hemsworth Hall .....	Mr. E. T. Bendall .....	5	1	0	250 $\nabla$	32.49 175
<sup>D</sup> " Collieries .....	C. P. Finn, Esq. ....	5	1	3	246 $\nabla$	32.05 189
<sup>D</sup> Ackworth School .....	E. Priestman, Esq. ....	8	1	0	125 $\nabla$	33.16 198
<sup>D</sup> " (Hillthorpe) .....	Mrs. F. Hatchard .....	5	1	5	175 $\nabla$	31.85 175
" (Nostell Priory) .....	Mr. T. L. Allison .....	5	4	0	...	32.43 173
+Goole (Swinefleet) .....	Mr. G. Harrison .....	5	5	6	10 $\nabla$	36.16 ...
<sup>D</sup> " " .....	W. E. Grayburn, Esq.	5	2	0	18 $\nabla$	31.15 165
8.—OUSE—Aire—Calder. 361 sq. mi.						
Holmbridge (Yateholme Farm) ...	J. C. Barrowclough Esq. C.E.	7	1	0	861 $\nabla$	69.20 ...
" (Holme Styes Res.) ...	Mr. B. T. Woodcock ...	7	2	0	830 $\nabla$	52.50 ...
" (Boshaw Whams Res.) ..	" " " " ..	7	2	0	930 $\nabla$	58.10 ...
" (Bilberry Reservoir) ..	" " " " ..	7	2	0	820 $\nabla$	59.90 ...
Meltham (Harden Moss) .....	J. W. Armitage, Esq. C.E.	8	1	2	1212 $\nabla$	56.08 ...
" ( " " ) <i>new g.</i> ..	" " " " ..	8	1	0	1212 $\nabla$	55.88 ...
Wessenden Head .....	" " " " ..	8	1	0	1270 $\nabla$	53.55 ...
" (Hollin Bank Moss) ...	" " " " ..	8	1	0	1360 $\nabla$	85.19? ...
" (Great Butterley) .....	" " " " ..	8	1	0	1110 $\nabla$	56.44 ...
" (Bobus) .....	" " " " ..	8	1	0	1200 $\nabla$	44.31 ...
Meltham (Brow Grains) .....	" " " " ..	8	1	0	900 $\nabla$	52.92 ...
" (Royd Edge) <i>Glaisher g.</i>	C. L. Brook, Esq. ....	8	1	0	585 $\nabla$	59.43 ...
" ( " " ) <i>M. O. g.</i> ..	" " " " ..	8	1	0	585 $\nabla$	58.77 ...
<sup>D</sup> " (Harewood Lodge) .....	" " " " ..	8	1	0	514 $\nabla$	52.19 230

## DIVISION IX.—YORKSHIRE—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with $\cdot 01$ or more recorded.
		Diameter	Height above Ground.		Height above Sea Level	1912	
		in.	ft	in.	feet.	inches.	
WEST RIDING—(con.)							
8.—OUSE—Aire—Calder—(con.)							
Meltham Grange .....	J. W. Armitage, Esq. C.E.	8	1	2	850 T	50·08	...
Marsden (Deer Hill) ..... <i>old g.</i>	" " "	8	1	0	1149 T	51·70	...
" " " ..... <i>new g.</i>	" " "	8	1	0	1149 T	55·00	...
Wakefield (Woolley Park Gardns.)	Mr. T. Wells .....	9	1	0	400	35·20	...
D Slaithwaite (Blackmoorfoot).....	J. W. Armitage, Esq. C.E.	8	1	0	800 T	55·25	243
D " (Inglewood) .....	J. Woodhead, Esq. ...	5	1	0	546 T	54·15	234
D Huddersfield (Carr End, Dalton)	J. W. Robson, Esq. ...	8	1	0	350 T	38·57	212
" (Bankfield, Golcar)	J. R. Sykes, Esq. ....	5	1	0	400 T	46·71	196
D " (Cemetery) .....	Mr. J. Firth .....	8	1	0	410 T	43·83	224
D Walton (Willington Lodge).....	E. Simpson, Esq. ....	5	1	0	200 T	32·54	162
D† Rishworth Moor (Gt. Walden Edge)	C. Clemesha Smith Esq. C.E.	5	0	10	1135 T	59·56	252
D " (Stott Hall) .....	" " "	5	1	0	935 T	49·62	244
D† " (Ringstone Res.) .....	" " "	5	1	0	990 T	53·73	239
" Moor (Greystones) ...	" " "	5	1	0	1175 T	59·34	...
Soyland Moor (Summit) .....	" " "	5	1	0	1290 T	55·83	...
D " " (Baitings Gate) ...	" " "	5	1	0	935 T	62·55	257
" " (Manshead) .....	" " "	5	1	0	1240	57·80	...
Horbury (Highfields) .....	J. H. Green, Esq. ....	5	1	0	226 T	35·44	...
D Mirfield (Cote Wall) .....	J. Watson-Kaye, Esq..	8	1	2	200	46·04	214
D Wakefield .....	Dr. H. Maclean Wilson	8	1	0	174 T	31·41	195
D† " (Field Head).....	C. Clemesha Smith Esq. C.E.	5	1	0	250 T	31·39	170
Elland.....	P. H. Whitwam, Esq..	8	1	0	307 T	42·83	...
Mytholmroyd (Cragg Hall) .....	W. A. Simpson-Hinchliffe, Esq.	5	1	0	615 T	55·59	...
Sowerby Bridge (Brockwell, Triangle)	Mrs MacDougall Rawson	8	1	0	500 T	55·18	...
D† " " (Haugh End) No. 4 .....	J. Selwyn Rawson, Esq.	5	0	8	450 T	53·46	233
D Todmorden W.W. (Ramsden Res.)	F. H. Brunt, Esq., C.E.	8	1	0	980 T	61·46	212
D " (Walsden) .....	E. W. Cockcroft, Esq..	5	1	0	550 T	62·81	220
D " (Fielden Hospital) ...	Mr. F. Rogers .....	5	1	0	650 T	55·18	208
D " (Sourhall Hospital) ...	" " "	5	1	0	1020 T	63·87	224
D Halifax (Hall Ings, S. Ofram)...	Rev. G. E. Aspinall ...	5	0	7	750 T	36·12	241
† Sowerby Bridge (Thorpe) No. 1 M .....	J. Selwyn Rawson, Esq.	8	0	8	345 T	56·58	...
D† " " " " No. 2 ...	" " "	5	0	8	345 T	56·57	212
D† Halifax (Public Library) .....	E. Green, Esq. ....	8	1	0	625 T	44·04	208
Batley (Staincliffe Reservoir) ...	J. C. Barrowclough Esq. C.E.	7	1	0	492 T	31·00	...
D " (Woodwell Dépôt) .....	O. J. Kirby, Esq., C.E.	8	1	0	301 T	37·10	200
D† Ardsley Reservoir .....	C. Clemesha Smith Esq. C.E.	5	1	2	395 T	33·88	194
D† " (Jaw Hill Filters) .....	" " "	5	1	0	315 T	32·31	162
Halifax W.W. (Albert) .....	R. J. Hartley, Esq., C.E.	5	1	0	795 T	44·95	...
" " (Gibbet) .....	" " "	5	3	9	568 T	46·34	...
" " (Ramsden Wood) .....	" " "	8	1	2	816 T	49·03	...
Gomersall (Castle Hill).....	A. J. Pyrah, Esq. ....	5	1	0	480	36·77	181
Hebden Bridge (Falling Royd)...	A. R. Crossley, Esq....	4	1	0	479 T	58·23	230
D " (Summerfield)...	J. Hoyle, Esq. ....	5	1	0	800 T	54·91	224
Halifax W.W. (Castle Carr Lodge)	R. J. Hartley, Esq., C.E.	5	0	6	1060 T	55·20	...
" " (Midgley Moor) M .....	" " "	8	0	9	1350 T	57·23	...
" " (Warley Moor) M .....	" " "	8	1	2	1325 T	55·46	...
" " (Ogden) .....	" " "	5	0	10	990 T	54·56	...
" " (Ovenden Moor)...	" " "	8	0	9	1375	57·95	...

## DIVISION IX.—YORKSHIRE—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with .01 or more recorded.	
		Diameter	Height Above Ground.		Height Above Sea Level		1912
		in.	ft.	in.	feet.	inches.	
WEST RIDING—(con.)							
8.—OUSE—Aire—Calder—(con.)							
Halifax W.W. (Widdop) .....	R. J. Hartley, Esq., C.E.	5	1	3	1050	53.63	...
„ „ (Walshaw Dean Lodge) .....	„ „ „	5	1	0	1040	61.96	...
„ „ ( „ „ ) ... M	„ „ „	8	1	0	1380 T	58.26	...
9.—OUSE—Aire. 504 sq. mi.							
D Pontefract .....	T. K. Heseltine, Esq. ...	5	1	0	180	32.24	173
D Whitley Bridge (Roall Pump Stat.)	J. E. Pickard, Esq., C.E.	8	0	10	44 T	25.42	152
Castleford Secondary School ...	W. A. D. Lawson, Esq.	8	1	3	100 ?	32.85	197
D Morley (The Secondary School) ..	W. E. Burgess, Esq. ...	5	1	0	535 T	37.60	185
Pudsey (Tong Hall) .....	J. H. Tempest, Esq. ...	...	...	...	525	41.89	186
„ (Fulneck) .....	Miss E. C. Lawford ...	5	1	0	490 T	41.04	...
D Garforth (Manor Farm) .....	Prof. R. S. Seton .....	8	1	2	194 T	33.12	208
Bradford (Grange Road, Horton)	Mr. A. E. Chilton .....	5	3	0	450 T	44.50	233
„ (Queensbury) .....	R. J. Foster, Esq. ....	8	2	2	1050	48.16	217
„ (Brayshaw Reservoir) ..	J. Watson, Esq., C.E..	5	1	0	982 T	47.61	204
D „ (Lister Park) .....	Mr. H. Lander .....	8	1	0	475 T	43.65	198
„ (Thornton Moor Filters)	J. Watson, Esq., C.E..	5	1	0	1218 T	57.01	283
„ (Stubden Res.) ... old g.	„ „ „	8	1	0	1075 T	58.67	266
„ ( „ „ ) new g.	„ „ „	8	1	0	1075 T	58.54	265
„ ( „ „ ) .....	„ „ „	5	1	0	1071 T	56.97	265
„ (Stairs Top, „ ) M	„ „ „	5	1	0	1401 T	58.82	...
„ (Leeming Reservoir) M	„ „ „	5	1	0	850 T	51.65	255
„ (Doe Park Reservoir) ...	„ „ „	8	1	0	810 T	56.31	228
„ ( „ „ „ ) ...	„ „ „	5	1	0	811	50.53	228
„ (Leeshaw Res.) .....	„ „ „	5	1	0	875 T	60.08	...
„ (Chellow Dean Res.) ...	„ „ „	5	1	0	645 T	50.58	231
„ ( „ Heights Res.) .....	„ „ „	5	1	0	848	49.09	234
„ (Hewenden Res.) ... old g.	„ „ „	5	1	0	700 T	50.52	215
„ ( „ „ ) new g.	„ „ „	5	1	0	701 T	47.75	214
„ (Heaton Reservoir) ...	„ „ „	8	1	0	530 T	44.32	200
„ ( „ „ „ ) ...	„ „ „	5	1	0	531 T	43.06	200
Leeds (Wortley Reservoir) .....	C. G. Henzell, Esq., C.E.	8	0	9	307 T	34.83	196
„ (Knostrop) .....	„ „ „	8	0	9	72 T	31.69	190
D „ (Holbeck W.W. Depot) ...	C. G. Henzell, Esq., C.E.	8	0	9	93 T	34.33	184
D „ (Museum) .....	H. Crowther, Esq. ....	10	46	0	177 T	33.53	173
„ (Woodhouse Moor) .....	C. G. Henzell, Esq., C.E.	8	0	9	307 T	36.53	191
„ (Weetwood Reservoir) No.1	„ „ „	8	0	9	328 T	34.44	199
„ ( „ „ „ ) No.2	„ „ „	8	0	9	328 T	36.30	199
„ (Chapel Allerton) .....	F. J. Kitson, Esq. ....	5	1	6	282	35.06	...
„ (Allerton Hill) .....	T. Harding Churton, Esq.	5	0	7	418 T	35.26	...
Shipley (Cragg End) .....	Leeds & L'pool Canal Co.	8	1	0	304	40.23	...
D „ (West Point) .....	M. Paterson, Esq., C.E.	5	1	0	382 T	44.32	210
D Oakworth (Oldfield Filters) .....	W. Fowlds, Esq., C.E.	5	1	0	1008 T	53.55	239
Bingley (Gilstead Filters) .....	J. Watson, Esq., C.E..	5	1	0	572 T	36.86	199
Rawdon (Barningham) .....	H. Killick, Esq. ....	5	0	9	525	39.54	...
D Adel (Lawns Wood Cemetery) ...	Mr. S. R. Dyson .....	5	1	0	475 T	40.61	211
Bingley (Oakwood) .....	T. Garnett, Esq. ....	5	1	0	525 T	45.67?	...
D Keighley (The Knowle) .....	P. Clough, Esq. ....	5	1	0	385 T	46.95	219

## DIVISION IX.—YORKSHIRE—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with $\geq 0.1$ or more recorded.	
		Diameter	Height Above Ground.				Height Above Sea Level
		in.	ft.	in.	feet.	inches.	
WEST RIDING—(con.)							
9.—OUSE—Aire—(con.)							
D Keighley (Long Lee).....	C. Croft, Esq. ....	8	1	0	725 T	43.96	223
D " (Victoria Park) .....	Mr. R. Butterfield.....	5	1	0	305 T	43.87	221
Bingley (Sunnydale).....	J. Watson, Esq., C.E..	5	1	0	825	43.66	231
" (East Morton).....	Keighley News .....	...	...	...	...	40.25	211
D Earby (Sewage Works).....	J. E. Aldersley, Esq....	8	1	0	425 T	46.84	224
D Silsden (Bolton Road) .....	Mr. A. Elder .....	5	1	0	432 T	40.36	190
" (Gill Grange).....	J. Watson, Esq., C.E..	5	1	0	883	42.15	...
" Reservoir .....	" " " .....	5	1	0	560 T	41.04	211
" (Cringles Reservoir Site)..	" " " .....	5	1	0	760 T	43.09	211
Skipton (Sewage Works) .....	Mr. F. Morrison.....	8	0	9	315 T	40.31	193
D† " (Town Hall).....	A. E. W. Aldridge, Esq.	8	1	6	367 T	41.81	205
" (Hawthorne Cottage) ...	Leeds & L'pool Canal Co.	8	1	0	380	37.74	...
Gargrave (Banks Hill Bank Newton)	" " " .....	8	1	0	545	43.24	...
" (Ray Bridge Hill) .....	" " " .....	8	0	10	459	42.45	...
D Skipton (Embsay) .....	J. A. Edmondson, Esq.	5	6	0	560 T	49.84	228
" ( " Moor) .....	A. E. W. Aldridge, Esq.	8	1	3	670	42.57	210
Gargrave (Great Scarnber Hill)...	Leeds & L'pool Canal Co.	8	0	9	676	48.76	...
Winterburn (Long Hill) .....	" " " .....	8	0	9	705	48.47	...
" (Brown Hill).....	" " " .....	8	1	0	961	50.79	...
D† Malham Tarn.....	Mr. John Winskill " ..	8	1	0	1296 T	68.11	245
10.—OUSE—Wharfe. 408 sq. mi.							
Aberford (Lotherton Hall) .....	Mrs. Trench Gascoigne	8	1	0	200	33.87	...
D Saxton Vicarage.....	Rev. C. D. Ash .....	5	2	6	95	33.76	204
Adel (Eccup, South) .....	C. G. Henzell, Esq., C.E.	8	0	9	390 T	40.35	230
" ( " East) .....	" " " .....	8	0	9	375 T	41.15	220
Harewood (Arthington).....	" " " .....	8	0	9	139 T	47.57	195
D " House .....	Countess of Harewood.	5	0	10	300	38.55	170
D Otley (Sewage Works) ..	C. F. Hodgson, Esq. ...	5	0	9	169 T	37.18	173
D† Ilkley (Silverwell Cottage) .....	Mr. T. C. Gill.....	5	1	0	904 T	48.60	216
D† " (Glen Rosa).....	F. A. Aykroyd, Esq....	5	1	1	450	48.45	239
D† " (St. James' Road) .....	Miss Brown .....	5	1	0	325 T	45.76	225
D† " (Brook Street) .....	G. W. Worfolk, Esq....	5	20	0	312 T	45.23	193
Leathley (Lindley Wood, S.) ...	C. G. Henzell, Esq., C.E.	8	0	9	312 T	44.78	235
" ( " " N.) ...	" " " .....	8	0	9	320 T	44.25	235
Ilkley (March Gill Reservoir) ...	C. F. Hodgson, Esq. ...	5	0	9	665 T	42.42	180
D† York (Mount Villas) .....	Mrs. Rowntree .....	5	1	0	70	34.84	233
† " (Cherry Hill) .....	Mssrs H Richardson & Co	5	1	6	50	33.59	184
† " (Museum Gardens) .....	Oxley Graham, Esq....	9	1	0	57	33.47	219
D " (The Retreat) .....	Dr. H. J. Mackenzie ...	5	1	0	74 T	34.24	192
D " (Acomb Landing).....	W. H. Humphreys, Esq.	5	1	0	40 T	31.56	169
Skipton (Counter Hill).....	M J. Watson, Esq., C.E..	5	1	0	951 T	40.73	...
Fewston (Timble Ings) .....	C. G. Henzell, Esq., C.E.	8	0	9	912 T	43.92	230
" ( " ) .....	" " " .....	8	0	9	720 T	43.38	231
" (Swinsty, E.) .....	" " " .....	8	0	9	460 T	43.84	229
" ( " W.) .....	" " " .....	8	0	9	425 T	44.03	229
" South .....	" " " .....	8	0	9	525 T	47.65	230
" North .....	" " " .....	8	0	9	525 T	45.92	230

## DIVISION IX.—YORKSHIRE—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with .01 or more recorded.	
		Diameter	Height Above Ground.		Height Above Sea Level		1912
		in.	ft.	in.	feet.	inches.	
WEST RIDING—(con.)							
10.—OUSE—Wharfe—(con.)							
Fewston (Blubberhouses) .....	C. G. Henzell, Esq., C.E.	8	0	9	575 T	45·65	231
Bolton Abbey Estate Office .....	A. Downs, Esq. ....	5	1	2	368 T	48·00	207
Barden Reservoir .....	J. Watson, Esq., C.E..	8	1	0	746 T	52·28	254
„ „ .....	„ „ „	5	1	0	746 T	51·54	254
„ „ Upper .....	„ „ „	5	1	0	1250 T	47·36	239
Burnsall (Thorpe Fell) .....	M „ „ „	5	1	0	1661 T	48·16	...
„ (Sandbed Beck) .....	M „ „ „	5	1	0	676 T	48·73	...
D „ Rectory .....	Rev. W. J. Stavert ...	8	4	7	503 T	52·68	229
Grimwith Reservoir .....	J. Watson, Esq., C.E..	8	1	0	890 T	55·80	254
„ „ .....	„ „ „	5	1	0	893 T	54·56	253
Hawkswick .....	M Roland Miall, Esq. ....	5	1	6	650 ?	64·45	...
† Arncliffe Vicarage .....	Rev Canon W A Shuffrey	5	1	0	732 T	66·93	208
11.—OUSE—Nidd. 254 sq. mi.							
Spofforth (Sewage Works) .....	C. E. Rivers, Esq., C.E.	5	1	0	184 T	36·54	203
D Wetherby (Ribston Hall) .....	Mr. J. McClelland .....	5	1	2	130 T	35·81	172
Harrogate (Ling Cottage) .....	A. S. West, Esq., C.E.	8	...	...	...	38·66	...
„ (Ten Acres Reservoir) .....	„ „ „	8	1	6	620 T	39·69	190
„ (Scargill Reservoir) .....	„ „ „	8	1	0	646 T	43·70	201
„ (Beaver Dyke Res.) .....	„ „ „	8	0	11	575 T	41·47	203
D „ (Harlow Moor Obsy.) .....	C. E. Rivers, Esq., C.E.	5	1	0	480 T	41·80	199
„ ( „ Hill Res.) .....	A. S. West, Esq., C.E.	8	1	0	551 T	39·00	187
„ (Irongate Bridge Res.) .....	„ „ „	8	1	6	555 T	42·72	174
D „ (The Stray) .....	Mr. G. W. Gledhill ...	5	1	0	380	38·79	185
D „ (Park Parade) .....	„ „ „	5	1	0	400	39·64	185
D Goldsborough Hall .....	Mr. R. Goodall .....	5	1	0	118 T	37·75	196
Knaresborough (Water Tower) .....	A. S. West, Esq., C.E.	8	1	0	240 T	38·20	198
D „ (Grammar School) .....	J. H. Hislop, Esq. ....	5	1	0	230	36·43	187
Harrogate (Bilton Sewage Works) .....	C. E. Rivers, Esq., C.E.	5	1	0	208 T	38·71	196
D Birstwith (Swarcliffe) .....	Capt. C. S. Greenwood.	5	1	0	510 T	43·55	195
D „ (The Moss) .....	C. S. Dixon, Esq. ....	5	1	0	230	41·27	174
D Ouseburn (Thorpe Underwood Hall) .....	F. W. Slingsby, Esq. ....	5	1	1	60 T	33·75	191
D Pateley Bridge (Castle Stead) .....	Mr. C. May .....	5	1	0	410	50·93	204
Ramsgill (Raygill House) .....	J. Watson, Esq., C.E..	5	1	0	925 T	60·03	212
„ „ .....	„ „ „	5	1	0	450 T	38·01?	165
Nidderdale (High Riggs) .....	„ „ „	5	1	0	1010 T	52·24	209
„ (East Gill Head) .....	„ „ „	5	1	0	1710 T	75·55	...
„ (Rain Stang) .....	„ „ „	5	1	0	1470 T	59·06	...
„ (New Houses) .....	„ „ „	5	1	0	755 T	51·81	200
12.—OUSE—Ure. 110 sq. mi.							
† Dallow Moor (Harper Hill) .....	C. G. Henzell, Esq., C.E.	8	0	9	858 T	45·06	225
D Ripon (Studley Royal Gardens) .....	O. H. Wade, Esq. ....	5	1	6	250	40·16	203
D „ (The Red House) .....	F. D. Wise, Esq. ....	5	1	0	120	35·68	169
† Kirkby Malzeard (Drovers' Inn) .....	C. G. Henzell, Esq., C.E.	5	0	9	576 T	49·44	229
† „ „ (Hawset) .....	„ „ „	8	0	9	820 T	46·48	216
„ „ (Hambleton Hill) .....	„ „ „	8	0	9	1106 T	50·87	...
† „ „ (Bagwith Brae) .....	„ „ „	5	0	9	703 T	43·82	228

## DIVISION IX.—YORKSHIRE—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with $\geq 0.1$ or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.	
WEST RIDING—(con.)							
12.—OUSE—Ure—(con.)							
Kirkby Malzeard (Bagwith Brae).	C. G. Henzell, Esq., C.E.	8	0	9	703 $\pi$	43.95	226
„ „ (Stone & Ears Wham)	„ „ „	8	0	9	1118 $\pi$	51.04	...
d Ripon (High Bank, Mickley) ...	Miss Harrison	5	1	6	225 $\uparrow$	37.88	181
EAST RIDING. (Area, 1176 sq. mi.)							
1.—OUSE—Left Bank Tributaries. 82 sq. mi.							
d Deighton Grove [York] .....	Miss M. L. Whitehead.	5	2	0	47 $\uparrow$	35.57	228
d Heslington [ „ ] .....	Hon. L. de Yarburgh-Bateson	8	0	7	35	34.81	202
d Dunnington Hall [York] .....	Miss Hildyard	8	1	2	110	32.04	200
2.—OUSE—Derwent. 248 sq. mi.							
d Warter .....	Mrs. J. Coxon	5	1	10	230 $\uparrow$	38.01	192
d Birdsall Gardens .....	Mr. J. Anderson	5	1	3	303 $\pi$	34.16	215
d Malton (The Leat House) .....	W. R. Innes Hopkins Esq.	5	0	10	60 $\uparrow$	33.46	199
d Rillington (Scampston Hall) ...	Mr. F. C. Puddle	5	1	6	102 $\pi$	35.55	223
Hunmanby (Holly Bank) .....	Miss Suter	5	1	2	...	32.23	...
3.—HUMBER—Left Bank Tributaries. 675 sq. mi.							
Patrington (Spurn Head) .....	Meteorological Office	8	1	0	27	29.30	197
d „ .....	Miss H. Kirman	5	2	6	46 $\pi$	29.44	167
d Hull (Pearson Park) .....	H. B. Witty, Esq.	5	0	10	12	33.23	205
d „ (Springhead) .....	C. B. Newton, Esq., C.E.	5	1	0	16 $\pi$	33.94	239
d Cottingham (Water Works) .....	„ „ „	5	1	1	26 $\uparrow$	33.45	207
North Cave (The Croft) .....	W. H. Carver, Esq.	8	2	0	50	35.72	...
d Holme upon Spalding Moor .....	C. J. Pybus, Esq.	8	4	0	35 $\uparrow$	33.38	202
Beverley (East Riding Asylum).	Dr. M. A. Archdale	5	1	0	175 $\uparrow$	37.70	228
„ (New Walk) .....	W. Evans, Esq., C.E.	5	3	0	38 $\pi$	32.17	212
„ (Hull Bridge) .....	„ „ „	5	2	6	11 $\pi$	37.56	226
d Market Weighton (Dalton Hall)	Mr. W. Jackson	5	1	6	150 $\uparrow$	40.68	195
Brandesburton (Hempholm Lock)	W. Evans, Esq., C.E.	5	2	6	11 $\pi$	32.68	226
Driffeld (York Road) .....	W. E. Lovel, Esq.	5	1	0	76 $\uparrow$	33.72	193
„ (Highfield) .....	Mr. R. Marson	5	1	0	80	33.90	...
d Lowthorpe (The Elms) .....	F. K. Hawes, Esq.	5	1	0	63 $\pi$	33.41	206
4.—EAST COAST STREAMS. 171 sq. mi.							
d Hornsea .....	F. Lord, Esq.	8	1	0	40 $\pi$	29.23	230
d Bridlington .....	S. R. Crofts, Esq.	5	1	0	59 $\uparrow$	31.21	211
d Filey (Deepdene) .....	A. V. Machin, Esq.	5	0	8	44 $\pi$	30.82	211
NORTH RIDING. (Area, 2155 sq. mi.)							
1.—OUSE—Ure. 273 sq. mi.							
Masham Moor (Benjy Guide) .....	C. G. Henzell, Esq., C.E.	5	0	9	1411 $\pi$	47.66	...
† „ „ (Somerside) .....	„ „ „	5	0	9	928 $\pi$	45.28	191
„ „ (Atherlands) ...	„ „ „	5	0	9	1237 $\pi$	51.98	...
† „ „ (High Sour Mire)	„ „ „	5	0	9	884 $\pi$	42.91	...
„ „ (Spruce Gill) .....	„ „ „	5	0	9	1187 $\pi$	53.55	...
„ „ (Leighton Res.) ...	„ „ „	5	0	9	634 $\pi$	45.32	189
„ „ (Thorney Grange) ..	„ „ „	5	0	9	1175 $\pi$	50.07	...

## DIVISION IX.—YORKSHIRE—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with .01 or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level		
		in.	ft. in.	feet.	inches.	
<b>NORTH RIDING—(con.)</b>						
<b>1.—OUSE—Ure—(con.)</b>						
Masham Moor (Bracken Hill) ...	C. G. Henzell, Esq., C.E.	5	0 9	1450 $\nabla$	48.16	...
" " (Towler Hill)....	" " "	8	0 9	820 $\nabla$	44.57	209
" " (Spruce Gill, East)	" " "	5	0 9	915 $\nabla$	43.83	...
" " ( " " North)	" " "	5	0 9	883 $\nabla$	43.99	...
† " " (Breary Bank) ...	" " "	5	0 9	600 $\nabla$	45.24	202
" " (Healey).....	" " "	5	0 9	542 $\nabla$	40.48	218
† " " (Low Houses).....	" " "	5	0 9	693 $\nabla$	44.63	241
" " (Black Brunt) ...	" " "	5	0 9	1160 $\nabla$	47.45	...
" " (Brown Beck) ...	" " "	5	0 9	1150 $\nabla$	43.41	...
D " " (Roundhills Res.)	A. S. West, Esq., C.E.	8	1 0	743 $\nabla$	42.40	197
D Middleham Rectory .....	Rev. H. G. Topham ...	5	1 0	430	36.75	189
D West Witton (Ivy House) .....	J. B. Espiner, Esq. ...	5	1 0	606 $\nabla$	40.27	221
D Leyburn (Bolton Hall) .....	Mr. F. Scrivener .....	8	1 0	420 $\nabla$	38.53	223
Hawes (The Stone House).....	H. Arden Crallan, Esq.	5	1 6	845	53.54	225
<b>2.—OUSE—Swale. 569 sq. mi.</b>						
D Dalton Parsonage .....	Rev. G. H. Chilman ...	5	1 0	87 $\nabla$	30.08	189
D Thirsk (Baldersby Park) .....	Mr. J. E. Hathaway ...	10	2 0	100	29.44	199
D " (Spital Hill) .....	C. H. Gill, Esq. ....	5	1 0	...	33.16	177
" (Sowerby) .....	William Brown, Esq. ...	5	1 0	100	34.06	...
D " (Brynkehlhow) .....	A. B. Hall, Esq. ....	8	1 0	115 $\nabla$	33.35	207
D " (The Hall) .....	Reginald Bell, Esq. ...	5	1 10	121 $\nabla$	32.58	192
D " (Sutton-under-Whitstonecliffe)	F. R. Hansell, Esq. ...	5	1 0	246 $\nabla$	32.52	176
" (Mount St. John) <i>Snow g.</i>	A. J. Walker, Esq. ...	5	1 7	535 $\nabla$	34.02	...
D " { " " " } " " "	" " " " " " "	5	1 0	523 $\nabla$	33.48	198
" " { " " " } <i>Cary g.</i>	" " " " " " "	5	1 0	523 $\nabla$	32.82	...
D " { " " " } .....	" " " " " " "	5	1 10	542 $\nabla$	35.40	207
" " { " " " } <i>M</i>	" " " " " " "	5	1 10	542 $\nabla$	34.09	...
" (Boltby).....	" " " " " " "	5	0 7	495 $\nabla$	33.04	...
" ( " Cliff Head) No. 2M	" " " " " " "	5	1 4	772 $\nabla$	35.37	...
" (Newbuilding) .....	G. S. Thompson, Esq. ...	8	1 3	580	39.86	183
D " (Knayton) .....	Gilbert E. Talbot, Esq.	5	1 0	267 $\nabla$	36.38	194
D Bedale (Burneston) .....	Rev. Canon J. T. Hartley	5	1 0	110 $\nabla$	30.91	188
" (Thorpe Perrow) .....	Mr. W. Pattison .....	8	1 6	140	33.43	200
" (Park House).....	Miss M. Greenwood ...	5	1 1	180	32.10	220
" (Newton House) ..	Mr. W. Paylor .....	5	2 6	125	31.47	...
" (Leeming Garth) .....	Capt. D. A. G. Lascelles	5	2 0	...	30.13	...
D Thornton-le-Moor .....	Col. R. W. Peckitt ...	5	1 0	136 $\nabla$	32.02	184
Scruton Hall .....	Rev. A. T. Coore .....	5	1 6	110	30.38	187
Muker (Gunnerside Lodge) ...	M. W. M. Christy, Esq. ...	5	1 0	900 $\nabla$	57.31	...
D Northallerton (Osmotherley).....	T. Yeoman, Esq. ....	8	0 8	660	33.21	172
D Rounton Grange.....	Mr. J. Hanagan.....	8	1 0	249	30.36	223
D Richmond (Sedbury Park) .....	G. Gilpin Brown, Esq. ...	5	1 0	450	33.70	200
D " (Gilling West).....	G. Roper, Esq. ....	5	1 3	303 $\nabla$	37.62	169
Middleton Tyas .....	J. F. B. Baker, Esq. ...	5	0 10	380 $\nabla$	32.42	...
<b>3.—OUSE—Left Bank Tributaries. 153 sq. mi.</b>						
Haxby (Moorlands) .....	(R) E. G. Tew, Esq. ....	8	0 8	58 $\nabla$	31.70	...
Alne .....	J. T. Weighell, Esq. ...	5	0 10	80	29.69	179

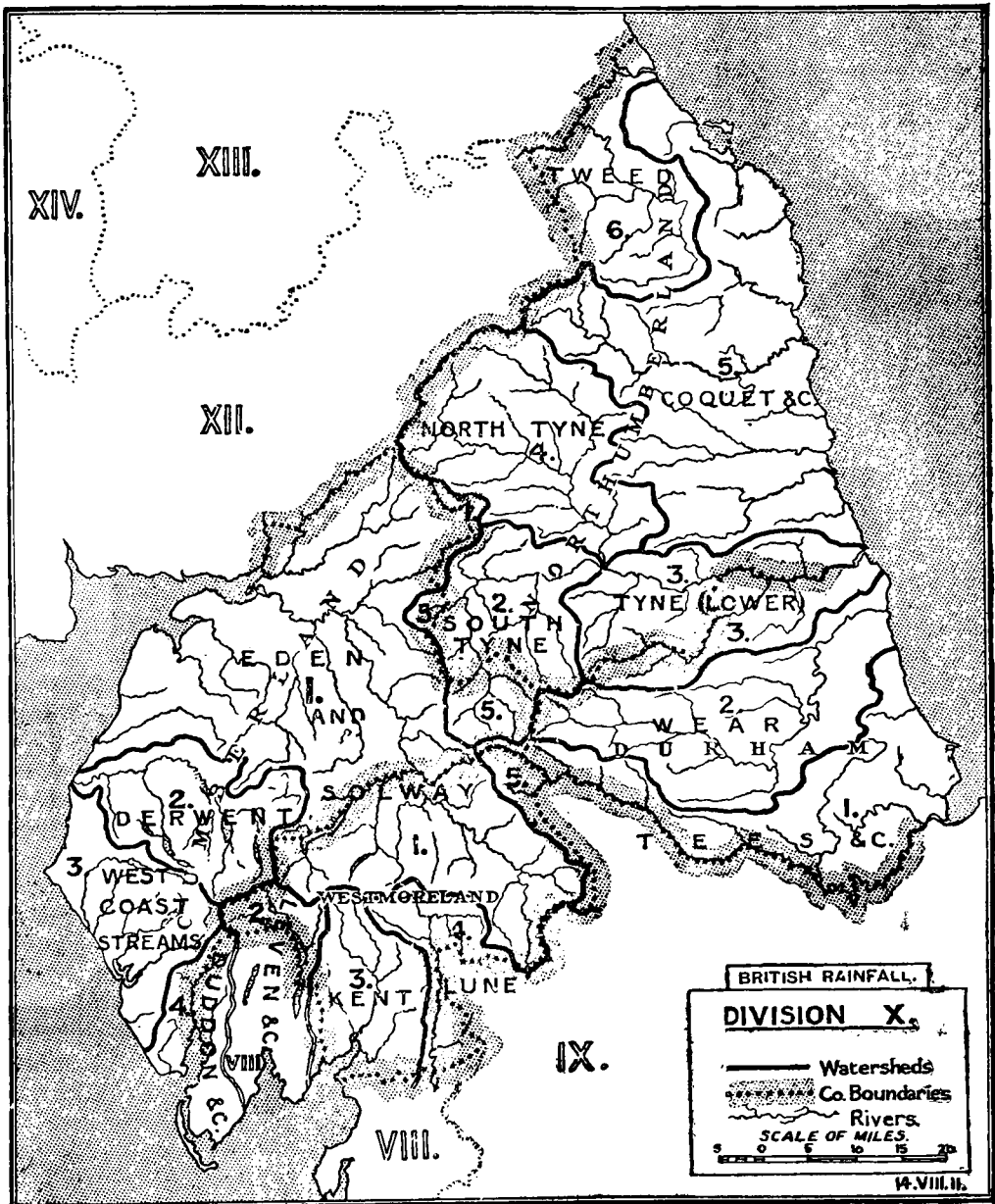
STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with or more recorded.	
		Diameter	Height Above Ground.		Height Above Sea Level		1912
		in.	ft.	in.	feet.	inches.	
<b>NORTH RIDING—(con.)</b>							
<b>3.—OUSE—Left Bank Tributaries —(con.)</b>							
Easingwold (Sutton Hall).....	Mrs. Grey .....	5	1	0	125	32·29	...
<b>4.—OUSE—Derwent. 509 sq. mi.</b>							
Terrington Hall.....	Mr. T. Suffield .....	5	1	5	300 I	33·31	253
d Malton (Broughton Rise).....	C. C. Laverack, Esq....	5	1	0	164	32·34	203
Hovingham Hall .....	Sir W. H. A. Worsley, Bt.	5	0	6	120 I	34·65	186
d Ampleforth Abbey.....	Rev. H. de Normanville, O.S.B.	8	1	0	351	34·94	217
d Helmsley (Duncombe Park Gdns.)	Mr. D. Williams .....	5	3	0	176 I	38·29	160
d Thornton-le-Dale (Beckside) ...	Miss E. M. Priestman..	5	0	8	125	35·57	204
d Pickering (Hungate Hall).....	Dr. J. L. Kirk .....	5	1	0	90	34·71	224
d Seamer (Irton Pumping Station)	W. Millhouse, Esq. C.E.	8	1	0	94 A	32·55	205
d Scarborough (Osgodby).....	" " "	8	1	0	166 A	31·23	180
<b>5.—ESK &amp; C. 278 sq. mi.</b>							
d Scarborough .....	W. W. Larkin, Esq....	5	1	0	101 A	27·84	207
d " (Manor Road) .....	H. W. Smith, Esq., C.E.	5	1	0	170 A	32·27	225
d " (May Lodge) .....	Mrs. Kitson.....	5	0	4	200	32·47	188
d " (Scalby) .....	Mrs. J. W. Rowntree...	5	0	11	300 B	37·56	183
d Glaisdale (The Gables Gardens)..	Mr. H. Hope .....	5	0	9	...	40·64	176
Fylingdales Vicarage .....	Rev. R. Jermynd Cooper	6	0	10	125	28·37	...
d Sleights (Brook Park) .....	E. Isle Hubbard, Esq....	5	1	0	80 I	33·78	200
d Whitby (Park Hall, Aislaby) ...	Rev. J. H. Richardson..	5	1	0	500	35·60	217
d " (Mulgrave Castle) .....	Mr. J. Corbett .....	5	1	0	410 I	35·05	223
d Guisborough (Lockwood Beck Res)	W. P'Anson, Esq., C.E.	8	1	0	632 A	36·14	189
d " " " " "M	" " " " " "	8	1	0	632 A	35·91	...
d Saltburn-by-the-Sea (Skelton Castle)	Mr. J. R. Batty.....	5	0	9	272 A	32·26	220
d " " " " " "	W. Marston, Esq. ....	8	4	6	200	24·46?	178
<b>6.—TEES. 373 sq. mi.</b>							
d Ingleby Manor .....	Lord De L'Isle .....	5	0	11	460 I	37·24	192
d " Greenhow Vicarage .....	Rev. M. A. Horsfall ...	5	...	...	480	38·65	211
d " " (The School House)	P. Huntington, Esq....	5	1	0	430 I	36·68	220
d Croft (Dalton-on-Tees).....	Mr. W. Wrather .....	8	2	0	170 ?	30·32	181
d East Layton Hall .....	Mrs. Proud .....	11	1	0	575 I	34·06	163
d Forcett Park .....	Capt. P. M. French ...	11	1	0	351 I	34·50	198
d Great Ayton (Easby Hall) .....	J. J. Emerson Esq., LL.D.	5	1	0	355	35·75	226
d Kildale Hall .....	R. B. Turton, Esq. ...	5	1	2	600 I	40·01	214
Stokesley (Seamer).....	J. Pounder, Esq. ....	5	1	4	315	29·25	172
d Middlesbrough (Ormesby) .....	W. Stewart Tail your Esq	5	1	0	100 I	27·56	201
d " (Linthorpe) .....	Mrs. C. L. Bell .....	8	1	0	48 I	24·82	198
d " (Albert Park) ...	J. M. Parnaby, Esq. ...	8	1	0	30	32·16?	214
Baldersdale (Blackton Reservoir)	Hugh Wilson, Esq. ...	5	1	0	935 I	46·60	...
d " (Balderhead) .....	" " " " " "	5	1	0	1360	49·30	...
d† " (Hury Reservoir) ...	" " " " " "	5	1	0	866 I	41·62	212
Lunedale (Lunehead).....	M " " " " " "	5	1	0	1450	61·40	...
d " (Selset) .....	M " " " " " "	5	1	0	924 I	48·10	...
d† " (Grassholme Reservoir)	" " " " " "	5	1	0	936 A	46·83	209
† Mickleton (Lime Kiln Pasture) M	Mr. J. Harvey .....	8	1	0	1175 I	40·00	...



## MAP OF DIVISION X.

## NORTHERN COUNTIES,

Showing the River-Divisions.



## DIVISION X.—NORTHERN COUNTIES.

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with 0.1 or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
<b>DURHAM.</b> (Area, 1011 sq. mi.)						
1.—TEES & C. 396 sq. mi.						
D Darlington (Hurworth Grange)..	J. R. Backhouse, Esq...	5	1 0	161 A	30.37	193
" (Public Park).....	North Mail .....	5	1 0	150 ?	35.89	196
D " (Cleveland Parade)..	W. W. Willmott, Esq.	5	1 3	160 T	31.34	194
D " (Hummersknot) ...	Mr. J. Short .....	5	1 0	200	31.73	170
D† Barnard Castle (County School)..	R. Hitchcock, Esq. ...	5	1 6	540 A	33.06	207
D Stockton (Ropner Park) .....	M. H. Sykes, Esq.....	5	1 9	61 A	25.60	187
D Staindrop (Raby Gardens) .....	Lord Barnard.....	5	1 6	460	35.80	221
D Hurworth Burn (Crookfoot Res.)	T. Bower, Esq., C.E...	10	1 6	293 A	28.99	217
D West Hartlepool (Lynn Street)..	Mr. H. Lamb.....	5	65 0	84	18.77	185
" " (Water Works)	T. Bower, Esq., C.E...	10	1 0	35 A	24.27	...
D " " (Bradgate).....	the late G. H. Baines, Esq.	8	1 3	100 T	30.96	185
D Hurworth Burn Reservoir .....	T. Bower, Esq., C.E...	10	1 0	357 A	29.74	195
D Hartlepool (Hart Reservoir).....	" " " " " " " " " " " "	10	1 0	172 A	26.06	193
Seaham (Dalton Pumping Sta.)..	A. B. E. Blackburn, Esq.	8	1 0	345 A	32.37	207
2.—WEAR. 464 sq. mi.						
D Wolsingham (Dryderdale) .....	Mr. G. Cranston.....	5	1 0	580 ?	37.82	182
D Willington Rectory .....	Rev. T. Urmson .....	5	1 0	285 T	31.19	186
D Wolsingham (Martagon House)..	Miss F. E. Stobbs .....	5	1 0	464	37.80	186
D Stanhope (Parson Byer's Quarry)	Messrs. Bell, Bros., Ltd.	5	6 8	846 T	39.94	175
D Wearhead Station .....	Mr. R. Rust .....	5	0 6	1104	53.35	221
Durham Observatory.....	Meteorological Office ...	12	4 0	352	29.19	194
D Ushaw (St. Cuthbert's College)..	Rev. Dr. C. Gelderd ...	5	0 9	600 A	32.17	194
Pittington (Elemore Hall) .....	Miss Baker Baker .....	8	0 6	323 T	32.85	...
D Weardale W.W. (Tunstall Res.)	R. Askwith, Esq., C.E.	8	1 2	724 A	40.19	201
" " (Waskerley 6)	" " " " " " " " " " " "	8	4 2	1229 A	35.06	...
" " ( " 3)	" " " " " " " " " " " "	8	4 6	1433 A	40.94	...
" " ( " 4)	" " " " " " " " " " " "	8	4 7	1321 A	35.38	...
" " ( " 5)	" " " " " " " " " " " "	8	4 2	1244 A	37.75	...
D " " ( " 2)	" " " " " " " " " " " "	8	0 11	1179 A	40.00	235
" " ( " 1)	" " " " " " " " " " " "	8	4 5	1367 A	37.16	...
" " ( " )	" " " " " " " " " " " "	8	4 4	1317 A	36.74	...
Fence Houses (Chilton Moor) ...	V. W. Corbett, Esq. ...	5	1 4	186 T	29.53	160
Chester-le-Street (Biddick Hall)	Mr. A. Bentley .....	5	1 0	150 T	32.87	187
Ryhope Pumping Station .....	A. B. E. Blackburn, Esq.	8	1 1	228 A	30.99	194
D† Sunderland (W. Hendon Ho.) No. 5	T. W. Backhouse, Esq.	5	1 0	130 A	31.01	205
† " ( " " " " " " " " " " " ") No. 6	" " " " " " " " " " " "	5	1 0	130 A	31.02	205
D " (Mowbray Park) .....	H. Renney, Esq., M.D.	5	1 0	105	29.17	176
" (Claxheugh Grove) ...	J. P. Cornett, Esq.....	5	2 6	90	29.60	...
D " (The Cedars) .....	W. F. Vint, Esq. ....	5	1 0	115 T	29.83	195
" (Southwick Cemetery)	Mr. J. R. Hodgson.....	8	1 0	171 A	30.22	189
3.—TYNE, LOWER. 151 sq. mi.						
D Weardale W.W. (Smiddy Shaw)	R. Askwith, Esq., C.E.	8	1 3	1128 A	45.21	235
Consett Park Farm .....	J. D. Brown, Esq.....	5	4 3	641 T	31.12	175
D Burnopfield (Priestfield) .....	H. F. Bulman, Esq. ...	5	1 0	532 T	34.78	190
D Rowlands Gill (Armstrong College)	J. F. Annand, Esq. ...	8	1 0	446	37.65	211
D† Washington (Usworth School)...	H. W. Walbank, Esq...	5	1 0	284 A	29.36	211
Sunderland (Boldon Rectory) ...	Rev. J. G. B. Knight...	5	0 9	100 ?	24.31	165

## DIVISION X.—NORTHERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with .01 or more recorded.	
		Diameter	Height Above Ground.	Height Above Sea Level	1912		
DURHAM—(con.)		in.	ft.	in.	feet.	inches.	
3.—TYNE, LOWER—(con.)							
Sunderland (Cleadon Pumpg. Sta.)	A. B. E. Blackburn, Esq.	8	1	0	216 $\nabla$	30.17	213
Ryton-on-Tyne .....	J. P. Dalton, Esq. ....	5	1	0	258 $\nabla$	33.97	...
D " " (Balgonie House)	J. W. Smith, Esq., M.D.	5	1	6	258	33.89	180
D South Shields (North Marine Park)	Dr. M. Mathieson .....	5	7	6	30 $\nabla$	29.12	210
NORTHUMBERLAND. (Area, 2015 sq. mi.)							
1.—EDEN. 20 sq. mi.							
2.—SOUTH TYNE. 232 sq. mi.							
Allenheads .....	J. W. Metcalfe, Esq. ....	8	1	0	1353 $\nabla$	48.04?	...
Bardon Mill (Allans Green) .....	Meteorological Office ...	5	...		1000	40.23	...
D Haltwhistle (Bellister Castle) ...	J. M. Clark, Esq. ....	5	1	0	380	44.75	240
3.—TYNE, LOWER. 227 sq. mi.							
D Corbridge (Howden Dene) .....	J. H. Straker, Esq. ....	5	0	9	200 $\nabla$	33.07	222
D " (Monksholme) .....	H. Palmer, Esq. ....	5	1	0	127 $\nabla$	30.52	210
Newcastle (Lit. and Phil. Soc.)..	H. Richardson, Esq. ...	8	55	0	160	34.00	...
" (Chronicle Office) ...	Newcastle Chronicle ...	8	30	0	148	30.96	...
" (Northumberland Rd.)	N. H. Martin, Esq. ...	8	45	0	200	29.74	204
D " (Leazes Park) .....	R. Moffat, Esq. ....	5	1	0	255 $\nabla$	30.95	158
D " (Town Moor) .....	D. C. Baldie, Esq. ...	5	2	0	201 $\nabla$	31.54	215
" (Wellburn, Jesmond).	J. H. Holmes, Esq. ...	5	1	6	163 $\nabla$	30.63	171
Heddon-on-the-Wall Vicarage...	Meteorological Office ...	5	1	0	420 $\nabla$	35.75	228
North Shields (Dockwray Square)	" " " " ...	8	1	4	117	32.30	217
D Tynemouth (Tyne Pier Works)..	N. G. Gedy, Esq., C.E.	5	1	8	65 $\nabla$	34.21	246
D " (Percy Park) .....	J. E. Burnett, Esq. ...	8	1	0	91 $\nabla$	31.01	201
D " ( " " ) .....	" " " " " " ...	6	1	6	91 $\nabla$	30.21	198
D " ( " " ) .....	" " " " " " ...	8	6	0	96 $\nabla$	30.18	210
Whittle Dean (Newcastle W.W.)	A. L. Forster, Esq., C.E.	5	0	6	380	31.67	225
" " Filters ( " " )	" " " " " " ...	5	1	1	353	34.44	227
4.—NORTH TYNE. 433 sq. mi.							
N. Tyne (Green Crag) (Newcastle W.W.)	A. L. Forster, Esq., C.E.	5	1	6	896 $\nabla$	31.80	...
Hallington Village ( " " )	" " " " " " ...	5	1	0	467 $\nabla$	32.61	...
" Reservoirs ( " " )	" " " " " " ...	5	1	0	470	32.01	228
" (Fawcett) ( " " )	" " " " " " ...	5	1	2	537 $\nabla$	31.70	...
" (Cheviot) ( " " )	" " " " " " ...	5	1	2	576	30.58	...
Gunnerton Burn (Campbell) ( " " )	" " " " " " ...	5	1	1	650 $\nabla$	32.59	...
Colt Crag ( " " )	" " " " " " ...	5	1	0	654	30.80	227
D Bellingham (High Green Manor)	Capt. C. Morrison-Bell	5	1	0	849 $\nabla$	38.71	270
D Otterburn (Horsley Vicarage) ...	Miss Stephens .....	5	1	2	700	37.99	243
Redewater (Chattlehope) .....	A. L. Forster, Esq., C.E.	5	1	0	900	50.27	253
" (Catcleugh) .....	" " " " " " ...	5	1	0	819	50.21	253
5.—COQUET & C. 840 sq. mi.							
Whittington (Newcastle W.W.)	A. L. Forster, Esq., C.E.	8	0	9	528	30.48	...
Burnside ( " " )	" " " " " " ...	5	0	9	419	31.65	...
Ryal Cottage ( " " )	" " " " " " ...	10	0	9	463	32.52	...
D Scots Gap (Wallington Gardens)	Mr. E. Keith .....	8	2	9	446 $\nabla$	47.42	198
† Morpeth .....	T. Matheson, Esq. ....	8	1	6	100	34.60	159

## DIVISION X.—NORTHERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with $\geq 0.1$ or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level		
		in.	ft. in.	feet.	inches.	
NORTHUMBERLAND—(con.)						
5.—COQUET & C—(con.)						
D† Morpeth (Bothalhaugh Garden) ..	Hon. & Rev. W. C. Ellis	5	1 10	35	34.69	238
† " ( " " " ) M	" " " "	5	1 10	35	33.57	...
D† " ( " " " " )	" " " "	5	1 10	137	32.67	237
† " ( " " " " ) M	" " " "	5	1 10	137	33.09	...
" (Longwitton Hall) .....	C. H. S. Perceval, Esq.	5	0 6	570 T	40.74	212
D " (Cockle Park) .....	R. Thornton, Esq. ....	8	1 0	325 T	36.29	242
D Font Res. (Tynemouth W.W.) ..	J. W. McKerrow, Esq.	10	1 0	614 T	38.63	275
D† Acklington (Broomhill Colliery)	S. Pedelty, Esq. ....	5	7 0	94	32.20	200
Rothbury (Brinkburn Priory) ...	Mrs. Hugh Fenwick ...	8	1 2	257 T	40.17	...
D " (Cragside) .....	Mr. W. Bertram ...	8	1 0	405 T	39.40	213
Flotterton .....	G. H. Phillips, Esq. ...	...	...	541	34.03	...
D Felton (Newton-on-the-Moor) ...	J. A. Charlton, Esq. ...	5	1 6	500 T	34.83	179
Alnwick Castle .....	Meteorological Office ...	5	0 4	210	36.87	219
D Howick Hall .....	Earl Grey, G.C.M.G. ....	8	0 10	121 T	35.62	190
Bamburgh .....	T. W. Little, Esq. ....	5	1 0	75 L	26.09	...
Beal (Barmoor Castle) .....	the late Dr. T. Hodgkin	8	3 6	400	32.43	152
6.—TWEED. 262 sq. mi.						
D Glanton (Glanton Pyke Gardens)	Mr. J. Henderson .....	8	4 2	521 T	34.68	208
D Ilderton (Lilburn Tower) .....	A. B. Collingwood, Esq.	10	6 0	300 T	31.72	193
D " ( " Cottage) .....	N. D. Cowans, Esq. ...	5	1 0	340 T	32.49	209
D Wooler (St. Ninians) .....	Dr. R. Walker .....	8	0 10	176 T	35.29	...
" (Victoria House) .....	Miss Dodds .....	5	1 0	176 T	28.41	...
" (The Thirlings) ....	Col. J. M. W. Anderson	5	1 6	200	30.52	...
D " (Doddington Vicarage) ..	Rev. J. G. Shotton .....	8	1 0	140 T	32.11	173
D Milfield (Flodden) .....	C. Waterston, Esq. ...	5	1 9	200	29.20	191
Pawston [Coldstream] .....	B. P. Selby, Esq. ....	5	1 0	327 T	34.92	213
D Berwick-on-Tweed (Church St.)	Lt.-Col. A. W. Pennyman	5	2 0	95	25.19	189
7.—INSULAR. 1 sq. mi.						
CUMBERLAND. (Area, 1516 sq. mi.)						
1.—EDEN & SOLWAY. 887 sq. mi.						
Ullswater (Hallsteads) .....	Miss C. Marshall .....	5	2 0	497 T	63.00	248
Penrith (Lowther Street) .....	H. Lester, Esq. ....	5	1 0	575 T	38.28	223
" (Fir Bank, Fell Lane) ..	T. Lester, Esq. ....	5	1 0	575 T	37.04	220
" (Nandana) .....	G. Varty Smith, Esq. ...	5	1 0	650	31.82	298
" (Benson House) .....	Carlisle Journal .....	...	...	...	43.45	226
" (Newton Rigg) .....	W. T. Lawrence, Esq. ...	8	1 0	559	38.78	233
" (Greystoke) .....	H. Walker, Esq. ....	5	1 3	650 T	49.62	...
D " ( " Belle Vue) ..	Miss E. A. Rowe .....	5	4 0	680 T	43.26	239
" (Ennim) .....	Mrs. Hamlet Riley ...	8	0 6	660	42.00	204
" (Inglewood) .....	W. Thompson, Esq. ....	5	1 0	550 T	38.99	210
Uldale (Chapel House Reservoir)	J. Smith Hill, Esq. ...	8	1 0	600 T	49.80	222
D Penrith (Nunwick Hall) .....	Mrs. Heywood Thompson	5	1 0	298 T	35.13	221
Aspatria (Agricultural College) ..	J. Smith Hill, Esq. ...	8	1 0	251 T	41.89	214
" (Brayton Hall) .....	Sir Wilfrid Lawson Bart.	8	0 8	200	41.98	192
Wigton (Winscombe) .....	R. M. Lidbetter, Esq. ...	5	0 10	150 T	34.22	202

## DIVISION X.—NORTHERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with .01 or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
<b>CUMBERLAND—(con.)</b>						
<b>1.—EDEN &amp; SOLWAY—(con.)</b>						
D Wigton (Brookfield) .....	J. Ransom Marsh, Esq.	5	1 6	124 A	37.40	201
D Wreay Vicarage.....	Rev. Canon A. R. Hall	5	2 0	310 T	31.70	224
D Geltsdale.....	H. C. Marks, Esq., C.E.	5	1 2	778 A	42.66	264
D Carlisle (Spital Cemetery) .....	J. T. Charlton, Esq. ...	8	4 0	118	31.69	216
„ (Denton Holme) .....	<i>Carlisle Journal</i> .....	5	2 0	57	29.07	...
„ (Rickerby) .....	Mr. T. Stoddart .....	8	1 2	52 T	28.95	...
„ (Stanwix).....	Sir Benjamin Scott ...	8	1 6	100 T	30.82	191
D „ (Newby Grange) .....	T. H. Hodgson, Esq....	5	0 8	64 A	29.95	224
D „ (Brunstock) .....	M. T. Scott, Esq. ....	5	1 6	86 A	31.06	204
„ (Scaleby Hall) .....	Sir R. A. Allison, M.P.	5	1 0	112	33.57	234
D Longtown (Arthuret) .....	Miss S. A. Graham ...	5	1 0	75	36.50	222
D Penton (Warwickland School)..	W. Roden, Esq.....	5	1 0	250 B	39.46	232
<b>2.—DERWENT. 257 sq. mi.</b>						
Styehead Tarn .....	M Dr. H. R. Mill .....	4	0 6	1472 T	156.20	...
†The Stye B .....	M „ „ „ .....	4	1 0	1077 T	196.43	...
† „ C .....	M „ „ „ .....	4	1 0	1077 T	193.86	...
† „ D .....	M „ „ „ .....	4	1 0	1077 T	159.32	...
†Borrowdale (Seathwaite) .....	M „ „ „ .....	4	0 6	422 T	144.18	...
† „ ( „ ) weekly .....	„ „ „ .....	5	1 0	422 T	143.45	...
D† „ ( „ ) .....	„ „ „ .....	5	1 0	423 T	143.15	251
Ullscarf .....	M G. H. Hill, Esq., C.E..	7	1 8	2100 T	139.10	...
Helvellyn (Birkside) .....	M „ „ „ .....	7	1 3	1900 T	113.60	...
Wythburn .....	M „ „ „ .....	7	1 4	580 T	95.40	...
D†Borrowdale (The Moraine) .....	J. Reay, Esq.....	5	0 9	...	102.18	216
Buttermere (Hassness) .....	Miss C. Marshall .....	5	1 0	355	121.70	...
D†Borrowdale (Grange) .....	Mr. J. Threlkeld .....	5	0 9	271 T	101.05	220
Armboth Fells (The Pewitts).....	G. H. Hill, Esq., C.E..	7	1 6	1650 T	76.00	...
Helvellyn (Whiteside) .....	„ „ „ .....	7	1 6	2100 T	92.30	...
Thirlmere (Dale Head Hall) ...	„ „ „ .....	7	1 5	620 T	87.60	...
D†Keswick (Deer Close) .....	Miss C. Marshall .....	7	1 9	300 T	63.29	235
„ (Derwent Island) old g. .....	John Marshall, Esq. ...	5	0 7	280	62.92	208
„ ( „ „ ) new g. .....	„ „ „ .....	5	0 6	290	62.44	208
D† „ (The Bank) .....	Mr. G. C. Furlong.....	5	1 6	265 T	56.53	222
D† „ (Shu-le-crow) .....	A. Mitchell Dawson, Esq.	5	0 7	296 T	66.78	241
D† „ (Crosthwaite School)...	H. Swinburn, Esq.....	5	1 0	254 T	57.97	223
D „ (Mirehouse) .....	Miss Spedding .....	5	1 1	300	54.80	231
D Ullock.....	J. H. Walker, Esq. ...	5	1 0	313 A	55.33	232
D Cockermouth (Whinell Hall)...	Mrs. Peile .....	5	0 1	255 A	60.96	217
„ (Brandlingill).....	Mrs. Sewell.....	5	1 0	320	59.87	200
D „ (Shatton Hall).....	Miss Irwin .....	5	4 5	300 T	42.82	235
D Threlkeld (Blencathra Sanatorium.)	Dr. W. Goodchild .....	5	1 0	885 A	60.41	243
Camerton Vicarage .....	Rev. E. C. Bennett ...	5	1 0	200 A	38.54	...
Bassenthwaite (Higham) .....	Joseph Fisher, Esq.....	5	0 9	500	54.37	169
D „ (Bassenfell) .....	late Mrs. S. G. Rathbone	8	1 0	384	45.62	236
D Cockermouth (Broughton Grange)	G. S. Wilson, Esq. ...	5	1 3	209 A	45.81	223
D „ (Dovenby Hall) (R)	H. B. Dykes, Esq.....	8	4 0	255 T	43.94	207

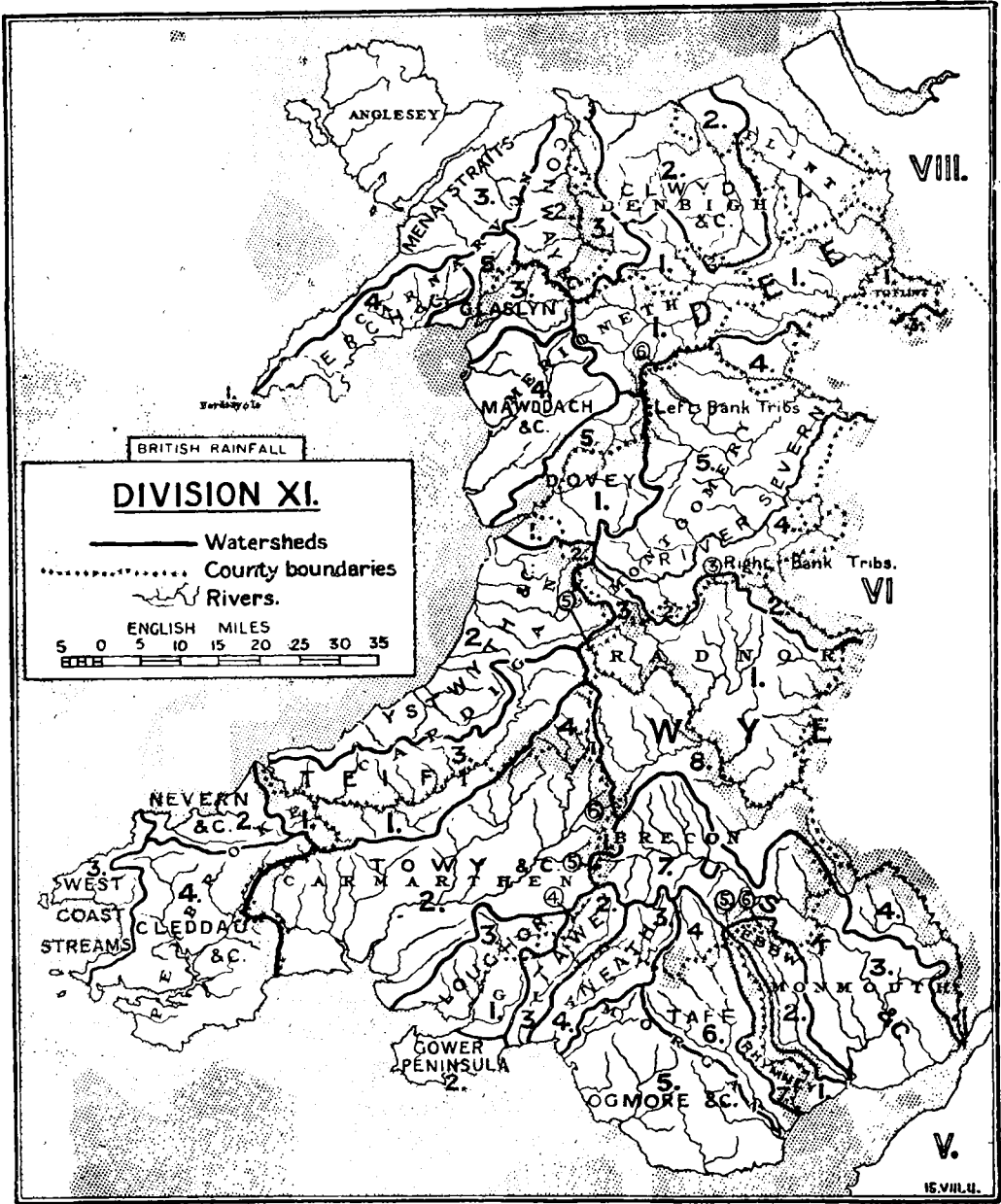
STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with -01 or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
<b>CUMBERLAND—(con.)</b>						
<b>3.—WEST COAST STREAMS. 235 sq. mi.</b>						
Ravenglass (The Grove) .....	A. Watt, Esq. ....	5	2 8	77 A	47·67	196
Eskdale Green (Gatehouse) .....	Miss C. Marshall .....	5	0 10	150	64·89	238
Beckfoot .....	" " " " .....	5	1 0	180 T	72·55	204
Seascale (Whinthwaite) .....	Dr. R. Hellon .....	5	1 0	52 A	42·00	211
Gosforth (Bolton Hall).....	Mr. C. Stratton .....	5	1 8	135 T	52·31	229
Netherwasdale Vicarage .....	Rev. J. Hodgson .....	5	1 0	182 A	63·87	206
Braystones .....	H. H. Watson, Esq. ...	10	3 6	36 T	39·93	...
Egremont (The Grange) .....	J. Sherwen, Esq. ....	8	1 0	351 A	57·41	237
" (Ringingstone).....	Harold Adair, Esq. ...	5	1 0	260 A	48·94	222
Cleator Moor W.W. (Dent Res.)	R. Robertson, Esq., C.E.	5	1 0	395 A	57·37	215
Whitehaven (Seragill Reservoir)	E. E. Stiven, Esq., C.E.	8	1 0	188 A	43·52	234
" (Irish Street) .....	Dr. Eldon Pratt.....	5	1 1	21 A	44·20	229
Distington (Gilgarran).....	Mr. A. Kydd .....	5	4 9	470 T	46·63	216
Workington (Winscales House)..	J. A. Trench, Esq.....	5	1 6	440 T	41·35	197
<b>4.—DUDDON &amp; C. 50 sq. mi.</b>						
<b>5.—SOUTH TYNE. 87 sq. mi.</b>						
<b>WESTMORLAND. (Area, 783 sq. mi.)</b>						
<b>1.—EDEN. 373 sq. mi.</b>						
Ravenstonedale (The Chantry)...	J. R. Highmoor, Esq... 5	1 11	900	63·26	239	
Kirkby Stephen (Redman House)	Mrs. T. Mason .....	5	1 0	574 T	50·76	227
Hayes Water (High Street) No. 3	Baldwin Latham Esq., CE	5	1 0	2600 A	101·90	...
" " " " " " " " " " " " " "	" " " " " " " " " " " " " "	5	1 0	1750 A	105·10	...
Shap Vicarage .....	Rev. W. H. Crompton.	5	1 0	863 T	53·73	226
Grizedale (Ruthwaite Lodge) ...	Miss C. Marshall .....	8	1 6	1750	114·95	...
Patterdale Hall .....	" " " " " " " " " " " " " "	5	1 3	490 T	100·87	244
" (Greenside Mine).....	W. H. Borlase, Esq. ...	7	1 6	1000 T	92·28	...
Appleby (Castle Bank) .....	C. R. Rivington, Esq... 5	1 2	440 T	42·83	241	
Ullswater (Sharroo Bay) .....	Mr. G. Robinson .....	5	0 7	600	51·78	...
Great Strickland (Greencroft) ...	Mrs. Whiteside .....	5	2 0	648 A	44·10	220
Morland [Penrith].....	Miss M. F. Markham... 5	1 0	456 T	40·86	242	
Lowther Castle [Penrith] .....	Mr. F. Clarke .....	8	4 0	760 T	35·46	215
Temple Sowerby .....	Mrs. Burton .....	5	2 0	349 T	33·12	...
<b>2.—LEVEN. 60 sq. mi.</b>						
+Bowness (Lindeth Howe) .....	F. G. Senior, Esq. ....	5	1 0	250 T	72·73	238
+ " (Fallbarrow) .....	Miss E. F. Rawson ...	8	1 0	155 T	74·73	226
+Windermere (Hammer Bank) ...	Miss C. Marshall .....	5	1 0	290 A	73·36	246
+Bowness (Fellside) .....	T. D. Lingard, Esq. ...	5	0 6	310 A	73·81	232
+Windermere (Holebird) .....	W. G. Groves, Esq. ...	5	1 0	483 L	83·51	255
+ " (Brockhole) .....	W. Gaddum, Esq. ....	5	1 6	145	80·75	251
+Ambleside (Wansfell) .....	O. O. Wrigley, Esq. ...	5	1 0	150 P	88·43	246
+ " (Skelwith Bridge) ...	A. J. Adams, Esq.....	5	1 9	190 T	101·62	237
+Little Langdale (Fell Foot) ...	Miss C. Marshall .....	5	2 2	380	122·41	...
+Ambleside (White Craggs) .....	C. H. Hough, Esq.....	5	2 4	252	85·01	258
+ " (Gale House) .....	G. A. Johnston, Esq. M.D.	5	1 0	180 T	89·14	252

DIVISION X.—NORTHERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with '01 or more recorded.	
		Diameter	Height Above Ground.		Height Above Sea Level		1912
		in.	ft.	in.	feet.	inches.	
WESTMORLAND—(con.)							
2.—LEVEN—(con.)							
Ambleside (Lesketh How).....	Mrs. Benson .....	5	2	6	175 T	92·37	254
Elterwater Hall .....	Miss C. Marshall .....	5	1	1	200	102·13	...
† Rydal (The Stepping Stones) ...	Gordon Wordsworth Esq	5	1	0	190	95·78	256
† " ( " " " ) M	" " "	5	1	3	190	93·85	...
† Loughrigg Fell .....	Gauge A " " "	5	1	3	690	71·76	...
† " " " " " Gauge B	" " "	8	1	3	690	88·80	...
„ Rydal .....	Miss C. Marshall .....	5	1	0	370	93·31	250
„ „ (High Close) .....	F.E.T. Jones Balme, Esq.	8	0	9	553 T	93·70	231
„ „ (Silverthwaite) .....	Miss A. Sharp .....	5	1	0	292 B	88·74	235
Ambleside (Rydal Farm) .....	Ralph Fletcher, Esq....	5	1	4	160	93·39	248
„ Dungeon Ghyll .....	Miss C. Marshall .....	5	1	0	310	121·43	255
† " " " " " M	" " "	5	1	0	311	129·98	...
† Mickleden .....	M " " "	5	1	6	490	166·61?	...
„ Grasmere (The Wray) .....	Miss G. M. Simpson ...	5	1	0	221 T	106·27	260
3.—KENT. 188 sq. mi.							
„ Milnthorpe (St. Anthony's) .....	G. E. Clayton, Esq. ...	5	3	0	...	53·66	232
„ Heversham (Plumtree Hall).....	T. Carrick Watson, Esq.	5	0	8	115 T	56·20	242
„ „ (Leasgill) .....	T. A. Argles, Esq.....	5	0	8	130	51·73	245
„ Kendal (Crosthwaite Vicarage)...	Rev. T. Heelis .....	5	1	0	200	63·32	243
„ „ (Vicarage Terrace) .....	G. F. Braithwaite, Esq.	8	0	6	160 T	56·00	226
„ „ (Holmcroft) .....	R. Rhodes, Esq.....	5	1	3	170	58·06	240
† „ „ (Birchfield) .....	H. W. Baron, Esq.....	5	1	6	200	59·92	227
„ „ (Low Slack) .....	A. W. Wilson, Esq. ...	5	1	0	350 T	58·76	233
„ „ (Brantfield) .....	Mrs. W. H. Somervell..	5	1	6	290 T	61·68	235
† „ „ (Ellergreen) .....	Miss C. Marshall .....	5	1	6	270 T	66·82	...
„ „ (Potter Fell).....	" " "	...	...	...	...	85·93	...
4.—LUNE. 122 sq. mi.							
Kirkby Lonsdale .....	J. R. Picard, Esq.....	7	0	8	215 T	55·03	...
„ „ „ (Casterton).....	R. A. Clarke, Esq.....	8	1	0	305	55·76	249
„ „ „ „ „ „ „	Miss Williams .....	8	1	0	320 T	56·12	234
Barbon (Underfell) .....	Miss C. E. Wilson .....	5	1	5	405 T	53·88	216
„ „ „ Manor .....	A. Ford, Esq.....	6	1	3	650 T	58·42	184
„ „ „ .....	Miss Wilkinson .....	5	1	0	310 T	57·57	200
5.—TEES. 40 sq. mi.							

MAP OF DIVISION XI.

MONMOUTH, WALES, AND THE ISLANDS,  
Showing the River-Divisions.





## DIVISION XI.—MONMOUTH, WALES, AND THE ISLANDS.

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with $\cdot 01$ or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	1912
		in.	ft.	in.	feet.	inches.
<b>MONMOUTH.</b> (Area, 534 sq. mi.)						
1.—RHYMNEY. 39 sq. mi.						
D Rumney (Witla Court).....	Mr. J. F. Matthyssens..	5	1	3	168 $\nabla$	49·99 199
2.—EBBW. 88 sq. mi.						
D Newport (Tredegar Park).....	Mr. J. Bone .....	5	0	10	0	52·52 185
Bassaleg (Bryn Hedydd) .....	Blethyn T. Rees, Esq., CE	5	8	0	333 $\nabla$	60·59 228
D Rogerstone (Rhiwderin) .....	L. Forestier-Walker Esq	5	1	3	259 $\nabla$	54·71 228
Blackwood .....	H. Caldwell, Esq., C.E.	8	3	6	620	63·29 ...
D Abertillery (The Park) .....	A. E. R. Weaver, Esq., MD	5	1	0	700 $\nabla$	75·53 229
D „ (Cwmtilerry) .....	W. Y. Hobkirk, Esq...	5	1	0	970 $\nabla$	84·82 216
D Tredegar (Llys wedog) .....	Mrs. L. Whitehead ...	5	1	3	1050 $\nabla$	71·04 227
D Ebbw Vale (Iron Works) .....	J. H. Gogerty, Esq. ...	8	1	0	902 $\nabla$	70·74 222
D Nant-y-bwch (Shon Sheffrey's Well)	D. W. Davies, Esq. ...	5	1	5	1204	74·47 238
3.—USK & C. 290 sq. mi.						
D Portskewett (Sudbrook) .....	W. K. Laurence, Esq. CE	8	0	10	22 $\nabla$	41·55 176
D Caerleon (Llanwern House) .....	D. A. Thomas, Esq., M.P.	8	1	0	190 $\nabla$	45·40 193
D Newport (Friar Street Yard) ...	Newport Corporation...	5	6	0	32	53·52 217
„ (Ynis-y-fro Reservoir)..	„ „ ...	5	1	0	130 $\nabla$	55·07 219
D „ (Pant-y-reos Res.).....	„ „ ...	5	1	0	435 $\nabla$	70·68 234
„ W. W. (Llanvaches)...	„ „ ...	5	0	10	456 $\nabla$	48·94 228
„ (Nantpridd, Wentwood)	„ „ ...	5	1	0	500 $\nabla$	55·67 226
D Chepstow (Itton Court) .....	E. Curre, Esq. ....	5	1	0	390	50·15 204
D Llanfrechfa Grange .....	F. J. Mitchell Esq. ...	5	4	0	326 $\nabla$	61·68 229
D Newport W. W. (Newchurch) ...	Newport Corporation...	5	1	0	550 $\nabla$	56·17 223
D Devauden (Tredean) .....	W. W. Hood, Esq., C.E.	5	3	6	700	47·93 176
Abersychan (The Hawthorns)...	J. W. Mulligan, Esq, MD	5	1	0	755 $\nabla$	67·98 245
„ (Glansychan).....	Pontypool Free Press..	3	2	0	698	69·00 ...
Blaenavon .....	E. J. John, Esq. ....	8	1	6	1150 $\nabla$	71·66 ...
Abergavenny (Larchfield) .....	Dr. J. Glendinning ...	5	1	0	240 $\nabla$	51·39 202
D† „ (The Chain).....	W. Baker Gabb, Esq...	5	1	3	300 $\nabla$	50·85 207
D „ (Linda Vista) .....	A. V. Whitehead, Esq.	5	1	6	180	51·76 218
D† Grwyne Fawr (Coed Dias) .....	W. Baker Gabb, Esq...	5	1	0	900 $\nabla$	55·18 228
D† „ „ (Ffwydd Fwthog)	Baldwin Latham, Esq CE	5	0	8	1380 $\nabla$	58·78 284
4.—WYE. 117 sq. mi.						
D Chepstow (Piercefield Park).....	H. Clay, Esq.....	5	1	6	310	49·26 208
Monmouth (The Elms) .....	Mrs. Hall .....	5	1	1	91	39·36 ...
D „ (The Hendre) .....	Mr. T. Coomber .....	8	1	0	176 $\nabla$	38·81 212
D „ (Pentwyn) .....	Rev. Canon J. Harding	5	1	0	191 $\nabla$	42·18 205
D Llantilio Court .....	Sir H. Mather-Jackson Bt	5	0	11	231	46·27 172
D „ Crosseny (Brynderi) ...	Miss Jackson .....	5	1	5	570	44·53 196
D Pandy (Trewyn).....	P. B. Barneby, Esq. ...	8	1	0	444 $\nabla$	46·85 196
D† Llanthony Abbey .....	Baldwin Latham, Esq CE	5	1	0	792 $\nabla$	58·45 238
<b>GLAMORGAN.</b> (Area, 808 sq. mi.)						
1.—LOUGHOR. 55 sq. mi.						
D Gorseinon (Penllergaer).....	Sir J. T. D. Llewelyn, Bt.	5	3	0	240 $\nabla$	64·10 260

# DIVISION XI.—MONMOUTH, WALES, AND THE ISLANDS—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain. 1912	Days with '01 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level		
		in.	ft.	in.	feet.	inches.	
GLAMORGAN—(con.)							
1.—LOUGHNOR—(con.)							
D Felindre (Lower Lliw Reservoir)	R. H. Wyrill, Esq., C.E.	8	1	3	426 T	67·80	237
D „ (Upper „ „)	„ „ „	8	1	0	610	77·87	252
2.—GOWER PENINSULA. 62 sq. mi.							
D Penmaen (Cefn Mor).....	R. A. Bostock, Esq. ...	5	1	5	300	52·87	222
Mumbles (Bristol Ch. Yacht Club)	E. N. Henham, Esq....	5	1	0	20	58·14	231
Swansea (Killay House) .....	M. B. Williams, Esq...	5	0	6	265 T	59·40	215
3.—TAFE. 47 sq. mi.							
D Swansea (Victoria Park) .....	Mr. D. Bliss .....	8	1	0	24	57·31	195
D „ (The Knoll) .....	E. H. Perkins, Esq. ...	5	1	0	150 T	60·47	240
Morriston (The Vicarage).....	Dr. E. Rice Morgan ...	5	1	0	236	64·42	217
D Pontardawe (Plas Cilybebyll) ...	H. Lloyd, Esq. ....	5	3	0	510	67·49	228
D Ystalyfera (Wern School) .....	J. Williams, Esq. ....	5	1	3	240 T	82·34	245
4.—NEATH. 82 sq. mi.							
D Briton Ferry (Brynsiriol).....	H. A. Clarke, Esq. C.E.	5	1	0	33 T	59·93	195
Neath .....	D.M. Jenkins, Esq., C.E.	5	1	0	204 T	76·18	220
D „ (Glynfeln) .....	T. Gibbins, Esq.....	5	1	4	180 B	65·64	169
D „ (Bryntirion).....	Major E. Ll. Green ...	5	1	6	250 T	61·00	235
D Glyn Neath (Aberpergwm) .....	F. Stoten, Esq. ....	...	...	...	...	71·32	212
5.—OGMORE & C. 350 sq. mi.							
Cowbridge (Fonmon Castle).....	O. H. Jones, Esq. ....	8	1	2	130	48·23	193
D Barry W. W. (Biglis).....	T.E. Franklin, Esq. C.E.	5	1	0	20 T	47·62	202
„ „ (Merthyr Dyfan Res.)	„ „ „	5	1	0	300 T	50·55	...
„ „ (Pencoedtre Res.)...	„ „ „	5	1	0	200 T	45·02	...
„ „ (Dinas Powis Res.)...	„ „ „	5	1	0	165 T	41·79	...
D Lower Penarth .....	E. I. Evans, Esq., C.E.	5	1	0	67 T	44·94	226
D Penarth .....	„ „ „	5	5	0	160 T	48·30	227
Cardiff (Cogan Pill, Llandough).	C.H. Priestley, Esq., CE	5	1	0	121 T	53·00	214
D „ (Ely Pumping Station)...	„ „ „	5	1	0	53 T	56·38	237
Cowbridge (Ash Hall) .....	E. Tudor Owen, Esq...	8	3	0	315 T	61·96	205
Bridgend .....	Dr. A. D. Low .....	5	1	0	87 T	58·05	229
D Llantrisant (Talgarn).....	G. L. Clark, Esq. ....	5	4	3	250	80·81	236
„ „ (S. Rhondda Colliery)	W. W. Hood, Esq., C.E.	5	19	0	520	79·25	...
D „ „ (Llanilid Reservoir)	T. Saunders, Esq. ....	8	1	3	582 T	82·95	184
D Port Talbot (Twyn-yr-hydd, Margam)	G. Lipscomb, Esq.....	5	1	0	180 T	60·52	224
D Glyncoerrwg Colliery .....	Mr. C. Stephens .....	5	4	6	725 T	104·38	231
6.—TAFF. 157 sq. mi.							
Cardiff (Trade Street Depot) ...	C.H. Priestley, Esq. C.E.	5	1	0	45	49·69	223
D „ „ (Park Place) .....	Dr. C. T. Vachell .....	5	1	0	42 T	50·72	247
D Llandaff (Howell's School) .....	Miss A. G. Winny .....	5	1	4	86 T	51·62	209
„ „ (West Hill) .....	J. E. Gladstone, Esq...	5	1	0	110 T	55·36	224
Pontypridd (Maesderwen, Graig)	T. Bowen, Esq. ....	5	10	0	425 T	73·65	216
D „ „ (Lan Wood Reservoir)	E. W. Terrey, Esq., C.E.	5	1	0	300	73·89	231
Porth (Cemetery Road).....	D. Hawkins, Esq. ....	5	1	0	500 T	87·12	...
D Penygraig (Hendrecafn House)...	F. D. Llewelyn, Esq...	5	1	0	668 T	107·17	236
D Clydach Vale (Caes-Newydd) ...	A. G. Brown, Esq.....	5	1	6	879 T	108·39	237
D Ystradyfodwg (Tyntyla Hospital)	J. D. Jenkins, Esq., M.D.	5	1	0	590 T	82·30	221
D Treharris Service Reservoir .....	T. F. Harvey, Esq., C.E.	5	1	0	865	67·97	216

# DIVISION XI.—MONMOUTH, WALES, AND THE ISLANDS—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with .01 or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
<b>GLAMORGAN—(con.)</b>						
<b>6.—TAFF—(con.)</b>						
Rhondda (Ferndale) .....	G. Childs, Esq. ....	5	1 0	830 N	79·88	...
d† Mountain Ash (Maesydderwen)..	M. Morgan, Esq. ....	5	1 0	483 N	73·13	229
d† " " (Darranlas Res.)..	W. G. Thomas, Esq. ...	5	0 11	540	80·30	231
d† Treherbert (Bute Colliery) .....	Lord Merthyr, G.C.V.O.	5	1 0	670	102·73	230
d† " (Tyn-y-waun).....	O. Thomas, Esq.....	5	1 0	801	107·54	255
† " " " ).....M	" " " " " " " "	5	1 0	801	107·09	...
d Cwmaman Colliery .....	W. H. Heppell, Esq....	5	2 2	930 N	90·40	230
d Rhondda (Pont Lluest Wen Res.)	E. W. Terrey, Esq., C.E.	5	1 0	1225	79·47	228
d " W.W. (Llyn Fawr Res.)	J. Veevers, Esq.....	8	1 0	1220	110·46	255
d† Aberdare (The Mardy) .....	Lord Merthyr, G.C.V.O.	5	1 0	431	78·45	223
d " (Abernant House) ...	" " " " " " " "	5	1 0	431	75·09	233
d Merthyr Tydfil (Mardy Hospital)	T. F. Harvey, Esq., C.E.	5	1 0	640	69·02	242
d " " (Penbryn Filters)	" " " " " " " "	5	1 0	936	66·55	249
" " " " " " " ")M	" " " " " " " "	5	1 0	936	66·13	...
d Dowlais (Gwernllwyn) .....	R. C. Harrison, Esq....	5	1 6	1071 N	59·79	230
<b>7.—RHYMNEY. 55 sq. mi.</b>						
Cardiff (Roath Park) .....	Cardiff Nat. Society ...	5	1 0	49	53·20	241
d† " (Penylan) .....	E. Walford, Esq., M.D.	5	1 0	204	51·39	219
" (New Filters, Heath) ...	C.H.Priestley, Esq.C.E.	5	1 0	132	52·97	227
" (Llanishen Reservoir) ...	" " " " " " " "	5	1 0	155	50·94	217
d " (Lisvane Reservoir) .....	" " " " " " " "	5	1 0	150	46·61	216
Caerphilly (Ystrad Mynach) ...	Lt.-Col. M. Lindsay ...	5	0 5	315 N	68·34	190
d " .....	A.W.Branson, Esq.C.E.	8	1 0	400 T	67·31	208
Rhymer Bridge Reservoir .....	" " " " " " " "	5	1 0	1098	72·59	...
<b>CARMARTHEN. (Area, 918 sq. mi.)</b>						
<b>1.—TEIFI. 87 sq. mi.</b>						
d Llanybyther (W. Wales Sanatorium)	Dr. H. O. Blanford ...	5	1 0	785 T	66·66	236
<b>2.—TOWY &amp; C. 715 sq. mi.</b>						
Llanddarog (Lletherllestry) .....	H. L. Puxley, Esq. ...	4	1 0	242 T	62·80	231
d Carmarthen (The Friary).....	L.M.Bowen-Jones, Esq.	5	1 5	62 N	55·47	253
† Llandilo (Golden Grove Gardens)	Mr. F. Surman .....	6	1 6	125 N	66·45	190
d† " (Cae-glas) .....	Mrs. Thomas .....	5	3 0	170 T	59·28	216
† " (Dynevor Castle) .....	Lord Dynevor.....	8	1 0	202 T	60·96	256
d Llanddeusant (School House) ...	T. I. Griffiths, Esq. ...	5	1 0	655 T	65·46	237
d Llanwrda (Dolaucothy).....	Gen. Sir J. Hills-Johnes	5	2 6	498 T	66·14	263
<b>3.—LOUGHOR &amp; C. 104 sq. mi.</b>						
d Llanelly (Old Market Yard) ...	G. Watkeys, Esq., C.E.	5	10 0	35 T	55·08	230
d " (Cwmlledi W.W.).....	" " " " " " " "	5	3 0	240 N	62·18	264
<b>4.—TAWE. 7 sq. mi.</b>						
<b>5.—USK. 5 sq. mi.</b>						
<b>6.—WYE.</b>						

## DIVISION XI.—MONMOUTH, WALES, AND THE ISLANDS—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with '01 or more recorded.	
		Diameter	Height Above Ground.		Height Above Sea Level		1912
		in.	ft.	in.	feet.	inches.	
PEMBROKE. (Area, 617 sq. mi.)							
1.—TEIFI. 37 sq. mi.							
D Castle Malgwyn [Llechryd] .....	Mrs. Gower.....	5	1	0	30 ?	45.01	213
2.—NEVERN & C. 91 sq. mi.							
D Fishguard (Goodwick Station)...	G. Lambert Gibson, Esq.	5	7	4	57 $\frac{1}{2}$	43.31	226
D Newport (Llwyngwair).....	G. B. Bowen, Esq.....	8	1	1	40 $\frac{1}{2}$	51.76	209
3.—WEST COAST STREAMS. 82 sq. mi.							
D St. Brides .....	Lord Kensington, D.S.O.	5	0	11	100 $\frac{1}{2}$	44.05	192
D St. Davids .....	D. P. Williams, Esq....	5	1	0	216	42.09	203
4.—CLEDDAU & C. 407 sq. mi.							
Pembroke (Stackpole Court).....	Mr. W. B. Fisher ...	6	1	6	60 $\frac{1}{2}$	43.83	222
Tenby (Glendower) .....	J. T. C. Burgess, Esq..	5	2	6	20	48.56	210
St. Ann's Head .....	Meteorological Office ...	8	0	8	150	41.04	220
D Pembroke Dock (Admiralty Res.)	D. J. Morgan, Esq. ....	8	1	0	101 $\frac{1}{2}$	42.49	201
D " " (County School)	G. H. West, Esq. ....	5	1	0	85 $\frac{1}{2}$	46.28	214
D Saundersfoot (Hean Castle) .....	Hon. Herbert C. Lewis	5	1	11	206 $\frac{1}{2}$	41.03	210
Haverfordwest (Picton Castle)...	Sir C. E. G. Philipps, Bt.	5	0	10	138	56.81	230
D " (Poyston) .....	Dr. Henry Owen .....	...	...	...	...	54.85	170
D " (Portfield) .....	J. W. Phillips, Esq. ...	5	1	0	220 $\frac{1}{2}$	52.09	230
D " Castle .....	" " " .....	5	1	0	95 $\frac{1}{2}$	56.59	226
D Whitland (Trewern) .....	G. Protheroe-Beynon Esq	5	3	0	30	59.81	241
D Treffgarne Hall .....	Col. R. O. Lloyd, R.E.	5	1	1	286 $\frac{1}{2}$	50.72	226
Mynachlogddu .....	J. Edwal Williams, Esq.	5	0	7	620	76.31	...
D Fishguard (Langton, Dwrbach)...	J. C. Yorke, Esq. ....	5	1	0	320	47.85	238
CARDIGAN. (Area, 688 sq. mi.)							
1.—DOVEY. 20 sq. mi.							
2.—YSTWYTH & C. 347 sq. mi.							
D Lampeter (Llanlear) .....	Miss Lewes.....	5	1	1	226	47.26	239
D Strata Florida (Hafod) .....	T. J. Waddingham, Esq.	5	1	0	580 $\frac{1}{2}$	64.82	250
Aberystwyth (N. Parade).....	Dr. A. Thomas .....	8	2	6	20	41.70	228
D " (Gogerddan) .....	Mr. W. Penwill.....	5	1	1	83 $\frac{1}{2}$	56.75	227
3.—TEIFI. 260 sq. mi.							
D Lampeter (Falcondale) .....	Mr. W. Taylor .....	5	1	10	498	56.32	239
4.—TOWY. 46 sq. mi.							
D Nantneuadd [Abergwesyn] .....	Mr. W. Roberts .....	5	1	0	1290	76.18	210
Tregaron (Maes-y-bettws) ...	Dr. H. R. Mill .....	5	1	0	910	76.30	...
Strata Florida (Towy-fechan) M	" " " .....	5	1	0	1330	76.00	...
5.—WYE. 15 sq. mi.							
† Birmingham W.W. (Bwlchyrhendre) M	E. Antony Lees, Esq...	5	1	0	1585	73.15	...
" " (Claerddu) .....	" " " .....	5	1	0	1500	83.50	...
" " (Gwngu) .....	" " " .....	5	1	0	1650	83.93	...
D " (Abergwngu) .....	" " " .....	5	1	0	1200	74.35	216
Plynlimon .....	M. Dr. H. R. Mill .....	5	1	0	1740	118.70	...

## DIVISION XI.—MONMOUTH, WALES AND THE ISLANDS—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with '01 or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
<b>BRECON.</b> (Area, 733 sq. mi.)						
1.—TOWY. 17 sq. mi.						
2.—TAWE. 41 sq. mi.						
d Swansea W.W. (Nantyrwydd)...	R. H. Wyrill, Esq., C.E.	5	1 0	920	95·97	239
3.—NEATH. 48 sq. mi.						
† Pont Neath Vaughan [Glyn Neath]	W. N. Hogben, Esq. ...	5	1 5	297	76·40	226
4.—TAFF. 48 sq. mi.						
d Nanthir Reservoir [Aberdare] ...	O. Williams, Esq., C.E.	5	1 0	860	73·26	260
" " [ " ] M	" " " " " "	5	1 0	860	73·77	...
Penderyn .....	J. R. Fox, Esq., C.E. ...	5	1 0	1003	64·92	...
Taff Fechan (Pontsticill) No. 12	T. F. Harvey, Esq., C.E.	5	1 0	1031	62·84	...
" " { " West) No. 14	" " " "	5	1 0	1254	70·87	...
" " { " East) No. 13	" " " "	5	1 0	...	62·51	...
d † Cardiff W.W. (Llwynon Res.) ...	C. H. Priestley, Esq., C.E.	5	1 0	860	72·68	266
" " (Pont-ar-daf) ...	" " " "	5	1 0	850	83·42	261
" " (Garw-nant) .....	" " " "	5	1 0	1100	84·41	...
" " (Nant Gwineu) ...	" " " "	5	1 0	1275	68·59	...
" " (Nant-y-gou-garn) ...	" " " "	5	1 0	...	89·98	...
d † Taff Fechan (Pentwyn Res.) ...	T. F. Harvey, Esq., C.E.	5	1 0	1120	81·26	275
† " " ( " " " ) ... M	" " " "	5	1 0	1120	80·85	...
Cardiff W.W. (Nant Goch) .....	C. H. Priestley, Esq., C.E.	5	1 0	...	68·14	...
" " (Nant Ddu) .....	" " " "	5	1 0	1560	85·04	...
† " " (Pentwyn Uchaf, No. 5)	" " " "	5	1 0	1143	78·33	...
† " " (Storey Arms, No. 4)	" " " "	5	1 0	1430	85·04	...
" " (Tyle Brith, No. 1) ...	" " " "	5	1 0	2350	96·68	...
† " " (Cantref Res., No. 2)	" " " "	5	1 0	1120	88·60	254
d † " " (Beacons Res., No. 6)	" " " "	5	1 0	1340	93·43	256
" " (Nant Penig, No. 3) ...	" " " "	5	1 0	2000	95·20	...
d † Taff Fechan (Neuadd Res.) No. 1	T. F. Harvey, Esq., C.E.	5	1 0	1462	91·04	263
† " " ( " " " ) No. 1M	" " " "	5	1 0	1462	87·38	...
d † " " ( " " " ) No. 4	" " " "	5	1 0	1487	99·44	263
d † " " ( " " " ) No. 4A	" " " "	5	1 0	1487	99·66	263
† " " ( " " " ) No. 2M	" " " "	5	1 0	1993	94·47	...
† " " ( " " " ) No. 5M	" " " "	5	1 0	1515	83·48	...
† " " ( " " " ) No. 10M	" " " "	5	1 0	1700	92·76	...
d † " " ( " " " ) No. 11	" " " "	5	1 0	1524	84·62	263
† " " ( " " " ) No. 7M	" " " "	5	1 0	2017	105·21	...
† " " ( " " " ) No. 8M	" " " "	5	1 0	1723	108·79	...
† " " ( " " " ) No. 3M	" " " "	5	1 0	1843	77·95	...
" " ( " " " ) No. 3AM	" " " "	5	1 0	1843	76·92	...
† " " ( " " " ) No. 9M	" " " "	5	1 0	1997	78·95	...
† " " ( " " " ) No. 6M	" " " "	5	1 0	2099	117·38	...
5.—RHYMNEY. 2 sq. mi.						
6.—EBBW. 7 sq. mi.						
d † Ebbw Vale W.W. (Filters) No. 1	T. J. Thomas, Esq., C.E.	5	1 0	1413	73·94	243
† " " " " West g. No. 3	" " " "	5	1 0	1468	80·66	249
† " " " " N.W.g. No. 2	" " " "	5	1 0	1471	76·77	248

## DIVISION XI.—MONMOUTH, WALES, AND THE ISLANDS—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with $\geq 0.1$ or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level		
		in.	ft. in.	feet.	inches.	
<b>BRECON—(con.)</b>						
<b>6.—EBBW—(con.)</b>						
† Ebbw Vale W.W. (Carno, E.)...	T.J. Thomas, Esq., C.E.	5	1 0	1391 $\pi$	72.34	251
† " " " ( " W.)...	" " "	5	1 0	1412 $\pi$	73.47	249
† " " " ( " N.)...	" " "	5	1 0	1533 $\pi$	68.99	250
<b>7.—USK. 299 sq. mi.</b>						
Crickhowell (Glanusk Park).....	Lord Glanusk.....	5	1 0	290	51.22	184
d† " (Gwernvale) .....	E. Pirie Gordon, Esq...	5	1 0	393 $\pi$	50.90	213
" (Penmyarth) .....	J. H. Furmedge, Esq..	5	1 0	330	48.52	186
Llanbedr (Wernbystack) .....	Dr. H. R. Mill .....	5	1 0	...	53.40	...
d Swansea W.W. (Bwlch) .....	R. H. Wyrill, Esq., C.E.	8	1 0	1246	176.89?	262
" " (Gihirych) .....	" " "	5	1 0	...	106.55	...
d " " (Cray Res.) No.1 .....	" " "	5	1 0	1032	82.83	272
" " ( " " ) No.2 .....	" " "	5	1 0	1015	101.50	...
Talybont (Cui) .....	Lt.-Col. H. Jones Williams	5	1 0	490 $\uparrow$	59.40	...
d† Brecon (New Inn) .....	Mr. W. Williams .....	5	1 0	810	80.29	191
† Cray Station .....	Mr. J. Jones .....	5	1 0	930	74.70	...
† Crickhowell (Cwmdu) .....	Mr. J. P. Edwards.....	5	1 0	430	47.60	...
d " (Ffordlas Farm) ...	Dr. H. R. Mill .....	5	1 0	1170	56.19?	182
† Llanfrynach (Tymawr).....	Miss D. de Winton ...	5	1 0	450 $\uparrow$	55.08	203
† Crickhowell (Tal-y-maes).....	Dr. H. R. Mill .....	5	1 0	1250	61.90	...
d Treacastle (Blaena-hydfwr).....	" " " .....	5	1 0	1070	83.06	221
d Brecon (Ffrwdgrech) .....	J. D. D. Evans, Esq....	8	1 0	570	59.12	230
d " (The Laurels) .....	C. J. E. Large, Esq. ...	5	1 0	492 $\pi$	51.39	244
" " " .....	" " " .....	8	1 0	492	49.91	...
† Black Mountains (Waun Fach)..	{ The Referees, Aber- }	5	1 0	2650 $\uparrow$	66.78	...
d† " " (Cwm Grigus Uchaf) }	{ tillery Water Bd. Act }	5	1 0	1980 $\uparrow$	68.49	238
d† " " (Dam Site, Grwyne Fawr)	" " "	5	1 0	1620 $\uparrow$	68.77	236
d† " " (Aber Clyd) .....	" " "	5	1 0	1880 $\uparrow$	65.71	241
† " " (Pen-y-Manllwyn) .....	" " "	5	1 0	2512 $\pi$	61.81	...
d† " " (Taren-yr-Esgob)..	" " "	5	1 0	2039 $\pi$	61.15	234
d† " " (Twyn Tal-y-Cefn) .....	" " "	5	1 0	2130 $\uparrow$	60.95	234
d† " " (Blaen Grwyne Fawr) .....	" " "	5	1 0	2150 $\uparrow$	60.84	234
d† Llanfihangel Nant-Bran (Cwmeynog)	Dr. H. R. Mill .....	5	1 0	790	55.70	166
† Upper Chapel (Tymawr) .....	Mrs. Probert .....	5	1 0	945	56.05	...
<b>8.—WYE. 271 sq. mi.</b>						
† Cathedine Rectory .....	Rev. D. H. Picton.....	5	1 0	660	43.36?	...
† Capel-y-ffin [Llanthony] .....	J. R. Gethin Jones, Esq.	5	1 0	1200 $\uparrow$	69.83	...
d Talgarth (Dan-y-garth) .....	F. J. Morgan, Esq.....	5	4 0	404 $\pi$	40.19	185
Gwernyfed Park [Glasbury] ...	Capt. A. Glen Kidston	5	1 0	375 $\pi$	37.73	230
d Hay (Waunderwen) .....	Col. R. D. Garnons-Williams	5	1 4	400	40.07	207
Llanwrtyd Wells (Brynderw) ...	Mrs. W. T. Rees .....	5	1 0	800	69.53	236
d† Llangammarch Wells .....	Dr. W. Black Jones ...	8	1 0	551 $\pi$	59.31	252
d Builth Wells (Tyn-y-berllan)...	Dr. W. W. Baldock Fry	5	1 0	430 $\uparrow$	47.89	221
† Abergwesyn (Trallwn) .....	Dr. H. R. Mill .....	5	1 0	1000 ?	92.45	...
† Pen-graig [Newbridge] .....	" " "	5	1 0	960	68.70	...
d† Llysdyman [ " ] .....	C Venables Llewelyn Esq	5	1 3	646 $\uparrow$	54.59	260
" [ " ] .....	" " "	5	1 0	646 $\uparrow$	55.05	...

## DIVISION XI.—MONMOUTH, WALES, AND THE ISLANDS—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with '01 or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
<b>BRECON—(con.)</b>						
<b>8.—WYE—(con.)</b>						
† Birmingham W.W. (Nant-y-car) M	E. Antony Lees, Esq...	5	1 0	1545	89·24	...
† „ „ (Esgair Garthen) M	„ „ „ „	5	1 0	1600	76·45	...
d† „ „ (Elan Village)...	„ „ „ „	5	1 0	...	65·72	245
<b>RADNOR. (Area, 474 sq. mi.)</b>						
<b>1.—WYE. 424 sq. mi.</b>						
Boughrood Castle ..... (R)	F. J. Morgan, Esq.....	8	1 0	400 ?	43·56	...
d Wellfield [Builth] .....	E. A. Thomas, Esq. ...	5	1 10	740	51·18	164
Builth Road (St. John's Vicarage)	Rev. J. L. Bryans .....	5	0 11	550 A	46·98	228
Llandrindod Wells .....	J. P. Davies, Esq.....	5	...	...	46·79	202
d „ „ (Kimberley)...	W. B. de Winton Esq. CIE	5	1 0	699 T	43·15	248
New Radnor (Ednol)..... M	Mr. F. Dorrell .....	5	1 0	951 T	44·18	...
Radnor Forest (Great Rhos) .....	H. Langston, Esq.....	5	1 6	2150 T	53·42	...
d† Birmingham W.W. (Tyrmynydd)	E. Antony Lees, Esq...	5	1 0	832 A	70·49	250
d† „ „ (Nantgwillt)...	„ „ „ „	5	1 0	845	74·27	250
† „ „ (Dwfnant)...	„ „ „ „	5	1 0	...	74·35	...
† „ „ (Esgair Gader) No 1 M	„ „ „ „	5	1 0	1500	70·70	...
d† „ „ (Claerwen)...	„ „ „ „	5	1 0	1250	75·00	242
d† „ „ (Tynant) ...	„ „ „ „	5	1 0	1250	72·75	249
† Birmingham WW (Cerrigllwydion) M	„ „ „ „	5	1 0	1700	80·04	...
† „ „ (Pen-y-gareg) M	„ „ „ „	5	1 0	1500	60·12	...
† „ „ (Calettwr) ... M	„ „ „ „	5	1 0	1500	79·93	...
„ „ (Figin) ..... M	„ „ „ „	5	1 0	1700	87·18	...
„ „ (Aberhenllan) M	„ „ „ „	5	1 0	1250	64·15	...
Llanbister (Llananno) .....	Dr. H. R. Mill .....	5	1 0	900	51·00	...
<b>2.—SEVERN—Right Bank Tributaries. 50 sq. mi.</b>						
<b>MONTGOMERY. (Area, 797 sq. mi.)</b>						
<b>1.—DOVEY. 120 sq. mi.</b>						
d Machynlleth (The Plas).....	W. E. Whitehouse, Esq.	5	1 0	41 T	70·71	229
<b>2.—YSTWITH. 7 sq. mi.</b>						
<b>3.—WYE. 37 sq. mi.</b>						
d Llangurig (Dernol) .....	Dr. H. R. Mill .....	5	1 0	870	66·60	239
<b>4.—SEVERN—Right Bank Tributaries. 154 sq. mi.</b>						
d Llandinam (Plas Dinam) .....	Mr. D. Bowen .....	5	4 0	504 T	42·26	194
Newtown (Dolfor) ...	Mr. S. Jones .....	5	2 6	1027	37·15?	...
d „ (Penarth Weir) .....	G. R. Jebb, Esq., C.E..	8	1 0	321 A	38·76	237
<b>5.—SEVERN—Left Bank Tributaries. 479 sq. mi.</b>						
d Newtown (Gregynog).....	W. E. Whitehouse, Esq.	5	1 0	660 T	40·69	230
d Berriew (Rhiewport Gardens) ...	„ „ „ „	5	1 0	370 T	38·32	214
d Castle Caerinion (Sylfaen Gardens)	Mr. J. Edwards .....	5	1 3	605 T	39·91	243
d Welshpool (Llwynderw) ..	W. E. Whitehouse, Esq.	8	1 0	243 T	32·87	213
d „ (County School) .....	„ „ „ „	5	1 0	263 A	34·61	239
d „ (Fron Llwyd) .....	„ „ „ „	5	1 0	540 T	38·69	234

DIVISION XI.—MONMOUTH, WALES, AND THE ISLANDS—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with .01 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	1912
		in.	ft.	in.	feet.	inches.
<b>MONTGOMERY—(con.)</b>						
5.—SEVERN—Left Bank Tributaries—(con.)						
Garthbibio (Bwlch Tomlyd) ... M	Dr. H. R. Mill .....	5	1	0	1370 T	87·50 ...
D Meifod (Coed-y-Maen) .....	W. E. Whitehouse, Esq. ...	5	1	3	280 T	37·98 238
D Lake Vyrnwy .....	E. D. Marten, Esq. C.E. ...	5	0	7	770 T	56·08 214
„ „ (Bryn Gwyn) .....	J. Parry, Esq., C.E. ...	8	1	0	1311 T	67·25 ...
D „ „ (Bank Cynon Isaf) .....	„ „ „ „ .....	8	1	0	750 T	62·82 223
„ „ (Ty Uchaf) .....	„ „ „ „ .....	8	1	0	860 T	63·49 ...
„ „ (Heol-y-ffridd) No.1 .....	„ „ „ „ .....	8	1	0	912 T	86·86 ...
„ „ ( „ „ „ „ ) No.2 .....	„ „ „ „ .....	8	1	0	912 T	83·90 ...
„ „ (Tyn-y-ffridd) ...	„ „ „ „ .....	8	1	0	1010 T	59·77 ...
„ „ (Lluestwen) .....	„ „ „ „ .....	8	1	0	1667 T	78·72 ...
„ „ (Llwynrhiw) .....	„ „ „ „ .....	8	1	0	1428 T	93·29 ...
„ „ (Craig-y-Gribbin) ..	„ „ „ „ .....	8	1	0	1100 T	73·25 ...
„ „ (Eunant Bridge) ..	„ „ „ „ .....	8	1	0	830 T	85·39 ...
„ „ (Carreg Goch) .....	„ „ „ „ .....	8	1	0	1750 T	83·91 ...
„ „ (Fawnog) .....	„ „ „ „ .....	8	1	0	1315 T	63·43 ...
<b>FLINT. (Area, 256 sq. mi.)</b>						
1.—DEE. 198 sq. mi.						
D Hanmer (Gredington) .....	Lord Kenyon, K.C.V.O. ...	5	0	10	300	32·12 217
D Overton (Fairleigh) .....	B. J. E. Wright, Esq. ...	5	1	8	220 P	29·14 200
D The Elms [Gresford] .....	P. L. Rooper, Esq. ....	8	1	0	...	31·15 211
Cilcain .....	W. Simmons, Esq. ....	5	1	0	790 T	28·47 206
Hawarden .....	Great Central Rly. Co. ..	9	3	6	35	28·38 194
Northop (Soughton Hall) .....	Sir John E. Bankes ...	5	1	0	418 T	37·74 193
D „ (Highfield) .....	Rev. Canon A. Atkinson ...	5	1	0	400	34·69 193
D Hawarden Bridge .....	J. E. Griffiths, Esq. ...	9	1	0	15	26·47 194
Bagillt (Dee Bank Lead Works) ..	Messrs. Walkers, Parker & Co.	5	1	0	20	31·51 ...
D Mostyn Vicarage .....	Rev. W. Vaughan-Jones ...	5	1	0	100	36·69 220
2.—CLWYD. 51 sq. mi.						
D† Bodfari (Henblas) .....	Mrs. Scott Bankes .....	5	1	0	283 T	31·19 207
D „ (Cae Gwyn) .....	Mrs. Morgan .....	5	0	5	542 T	31·59 223
D St. Asaph (St. Beuno's College) ..	St. Beuno's College ...	8	1	0	480 T	31·08 197
Dyserth Castle .....	J. B. Price, Esq. ....	5	0	6	350	28·26 ...
Rhyl (Sewage Works) .....	Dr. A. Eyton Lloyd ...	8	1	0	31 T	31·14 214
Prestatyn (Edlestone House) ...	T. J. Scott, Esq. ....	5	0	6	30	30·13 ...
3.—SEVERN—Left Bank Tributaries. 7 sq. mi.						
<b>DENBIGH. (Area, 668 sq. mi.)</b>						
1.—DEE 270 sq. mi.						
D Chirk (Penissa Glyn Lodge) .....	Prof. Fraser Story .....	...	...	...	500	40·27 175
Glynceiriog .....	F. E. Rooper, Esq. ....	5	1	6	750 T	43·61 ...
D Erbistock House .....	Mrs. Hamlyn Price ...	5	0	10	310 T	31·53 213
D Cerrig-y-Druidion (Garthmeilio) ..	Col. S. Parr Lyles .....	5	1	0	925 T	47·51 201



## DIVISION XI.—MONMOUTH, WALES, AND THE ISLANDS—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with .01 or more recorded.	
		Diameter	Height Above Ground.		Height Above Sea Level		1912
		in.	ft.	in.	feet.	inches.	
DENBIGH—(con.)							
1.—DEE—(con.)							
n†Cerrig-y-Druidion (Bwlch-y-beudy)	Col. C. S. Mainwaring..	5	1	0	1050 †	48·98	227
Wrexham (Ty Mawr Reservoir).	F. Storr, Esq., C.E. ...	5	0	9	805	40·67	205
„ (Pack Saddle Res.) ...	„ „ „ „ ...	5	0	9	370 †	35·29	215
„ (Cae Llwyd Res.) ...	„ „ „ „ ...	8	0	9	918 †	42·35	206
„ „ „ „ „ „ „ „ „ „	„ „ „ „ „ „ „ „ „ „	5	0	9	918 †	41·61	206
„ (Esclusham Vicarage)	Rev. J. E. Tompson ...	5	1	5	327	33·12	207
n „ (Broughton).....	J. Hall, Esq. ....	5	1	0	500 †	36·22	223
„ (Gwersyllt) .....	S. H. V. Simmons, Esq. ...	5	1	0	283 †	30·68	...
Gresford (Trewythen) .....	Miss Howell Evans ...	5	1	0	350	29·93	191
„ (Horsley Hall) .....	Mr. Henry Young .....	5	1	0	135	30·09	189
†Cerrig-y-Druidion (Hafod-llan-isaf)	J. H. Parkin, Esq.....	5	1	2	1200	41·20	...
n†Pentre Voelas (Nant Heilyn) ...	„ „ „ „ „ „ „ „ „ „	5	1	0	1225	50·27	236
n†Cerrig-y-Druidion (Hafod-yr-Onen)	„ „ „ „ „ „ „ „ „ „	5	1	0	1175	42·31	232
†Nantglyn (Pant-y-maen) .....	M „ „ „ „ „ „ „ „ „ „	8	1	0	1320 †	43·53	...
2.—CLWYD & C. 267 sq. mi.							
n Gyffylliog (Fachlwyd Hall) .....	Elliott S. Currey, Esq... 5	1	0	640 †	41·58	254	
n Ruthin (Tymawr) .....	Maj.-Gen. C. L. Cary... 5	1	0	400	29·55	207	
n „ (Llanbedr Hall).....	Dr. G. A. Crace-Calvert 5	1	0	451 †	28·32	203	
Llangerniew (Hafodunos) .....	Col. T. Gee .....	5	3	0	600	44·72	...
Llanefydd (Rhyl W.W., S.)...M	L. G. Hall, Esq., C.E.. 5	1	0	600	35·45	...	
„ „ „ „ „ „ „ „ „ „	„ „ „ „ „ „ „ „ „ „	5	1	0	580	31·15	...
n „ (Plas Uchaf Res.) ...	„ „ „ „ „ „ „ „ „ „	5	1	0	485	28·99	169
n „ (Glascoed Reservoir)..	„ „ „ „ „ „ „ „ „ „	5	1	0	360	33·49	181
n Llangynhafal (Plas Draw) .....	Col. C. J. Bromhead, C.B. 5	1	0	419 †	32·73	249	
n†Denbigh (Asylum).....	W. Barker, Esq. .... 5	0	10	316 †	33·28	198	
n „ (Garn) .....	W. D. W. Griffith, Esq. 5	1	0	447 †	36·20	223	
„ (Gallt-faenan).....	Mr. J. B. Pritchard ... 5	1	0	400	35·71	...	
n Trefnant (Greenfield) .....	Lt.-Col. J. H. Hamersley 5	0	6	220 †	29·00	197	
„ (Maes Elwy) .....	Major R. F. Birch..... 5	1	3	190 †	30·25	168	
Wygfair [St. Asaph] .....	Col. H. R. L. Howard, C.B. 8	2	6	250	31·59	...	
n Colwyn Bay (Four Crosses) .....	W. Jones, Esq., C.E.... 5	1	0	400 †	31·20	176	
n „ „ (Council Offices) ...	„ „ „ „ „ „ „ „ „ „	8	1	0	82 †	32·76	176
3.—CONWAY. 84 sq. mi.							
n Pentre Foelas (Voelas Hall).....	Mr. T. Dickie .....	5	1	3	640 †	60·65	235
n†Llanrwst (County School).....	Rev. J. I. Farr .....	5	1	4	55 †	54·51	226
n „ (Poplar Grove) .....	J. O. Gethin Jones, Esq. 5	0	8	35	66·83?	235	
n Tal-y-cafn (Bodnant Hall) .....	Mr. George Gurney ... 8	1	6	120	40·67	215	
4.—SEVERN—Left Bank Tributaries. 47 sq. mi.							
n Llangadwaladr (Penygwely Res.)	G. W. Lacey, Esq., C.E. 5	1	0	1094 †	44·37	229	
MERIONETH. (Area, 661 sq. mi.)							
1.—DEE. 218 sq. mi.							
n†Bala (Eryl Aran) .....	Mrs. Burton .....	8	1	0	600 †	68·16	230
†Llanderfel (Palé Gardens) .....	Mr. E. J. Edwards ... 8	1	0	606 †	54·96	241	
2.—CLWYD. 7 sq. mi.							

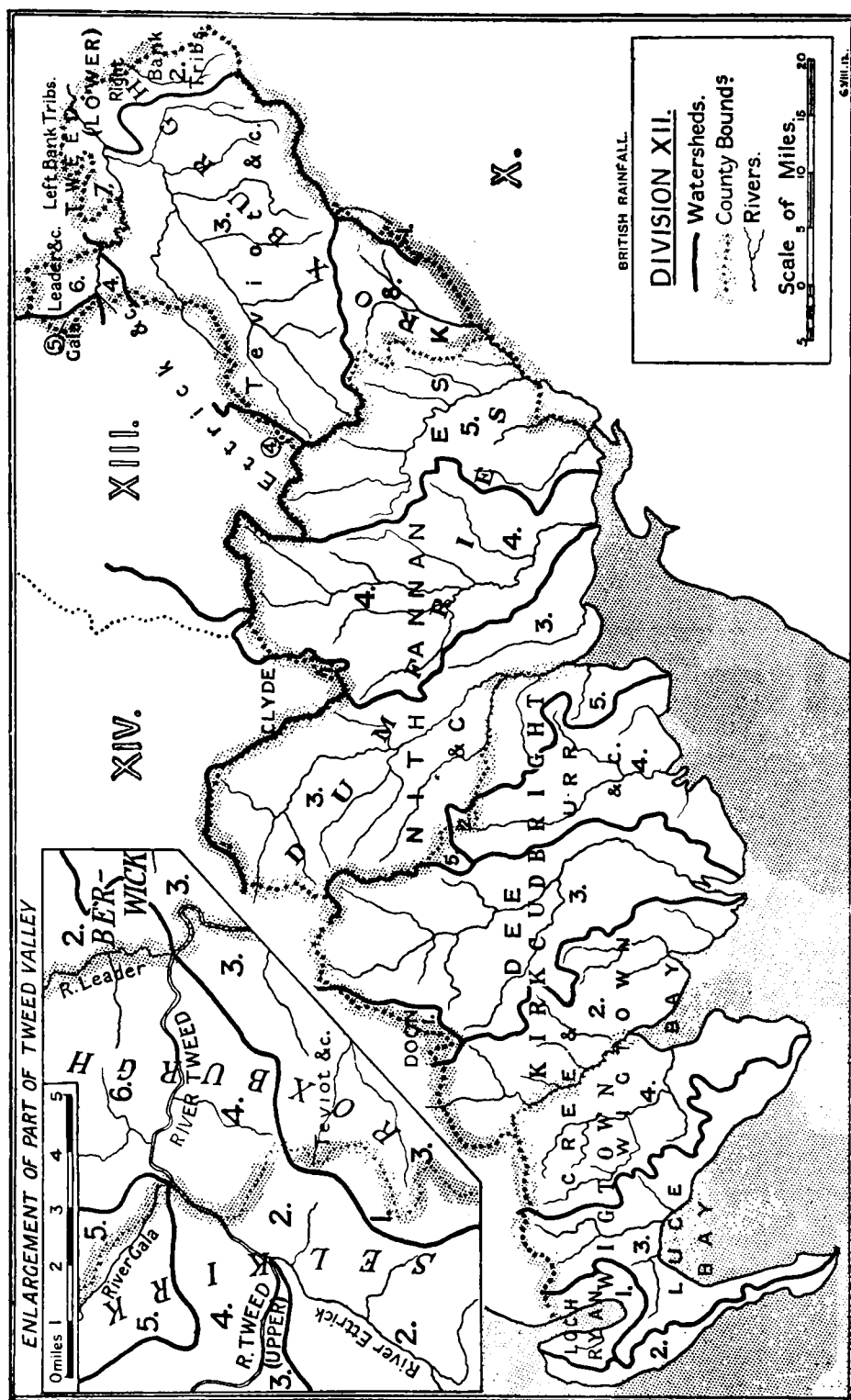
DIVISION XI.—MONMOUTH, WALES, AND THE ISLANDS—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with 0.1 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.	
MERIONETH—(con.)							
3.—GLASLYN. 92 sq. mi.							
D Tan-y-bwlch (The Gardens) ...	Mr. J. Roberts .....	5	1	0	50 ?	77.46	243
D Festiniog (Morwynion Lake)..(R)	E. Lewis Evans, Esq. ...	4	10	0	1320 T	83.62	250
†Blaenau Festiniog (Oakley Quarries)	R. H. Jones, Esq. ....	5	10	0	1100	115.20	244
4.—MAWDDACH & C. 262 sq. mi.							
D Towyn (Peniarth) .....	Mrs. Wynne .....	8	1	0	25	57.14	219
Dolgelly (Dr. Williams's School)	Miss F. A. Anstey .....	5	2	0	30	61.00	191
D „ (Bryntirion) .....	E. P. Beale, Esq. ....	5	0	10	50	70.97	212
5.—DOVEY. 82 sq. mi.							
D Aberdovey .....	W. J. Eves, Esq. ....	5	1	0	15	43.17	216
6.—SEVERN—Left Bank Tributaries.							
CARNARVON. (Area, 572 sq. mi.)							
1.—[BARDSEY ISLAND.]							
2.—CONWAY & C. 146 sq. mi.							
Dolwyddelan (Diwaunedd) .....	A. Lockwood, Esq. ....	5	1	0	1213	101.48	...
D Snowdon (Pen-y-Gwryd)..No. 13	„ „ „ .....	5	2	0	910 T	135.39	249
D† Bettws-y-Coed (Tyn-y-bryn) ...	Dr. Hugh W. Fox .....	8	2	6	153 T	63.24	218
D† Lake Cowlyd (Llethyr Gwyn) C	T.B. Farrington Esq. CE	5	1	0	1700	97.16	236
D† „ „ (Gors-y-Llithrig) D	„ „ „ .....	5	1	0	1900	87.33	235
D† „ „ (Ffrith Fawr) ... B	„ „ „ .....	5	1	0	1700	94.67	236
D† „ „ „ „ Carreg Wen) A	„ „ „ .....	5	1	0	1168	96.31	236
D Lake Eigiau (Dam Site) .....	H. J. Jack, Esq. ....	5	1	0	1245 T	90.34	219
Llanbedr-y-Cennin (Plasdulyn).	W. T. Ward, Esq. ....	8	1	0	509 T	64.10	...
„ „ „ (Llyndulyn)	„ „ „ .....	8	1	6	1632 T	91.27	...
Deganwy (Y Berlfa).....(R)	Willoughby Gardner Esq	8	1	0	30 T	32.65	...
D† Llandudno .....	W. Little, Esq. ....	5	1	0	72 T	33.03	200
3.—MENAI STRAITS. 221 sq. mi.							
Nantlle (Dorothea Quarries).....	W. J. Griffith, Esq. ...	8	2	0	450	71.63	...
†Llandwrog (Glynllivon Park) ...	Hon. F. G. Wynn .....	5	1	0	100 T	49.66	...
† „ „ „ ( „ Nursery)	„ „ „ .....	5	1	0	180 T	55.44	231
† „ „ „ ( „ Garden).	„ „ „ .....	5	1	0	100 T	47.96	...
† „ „ „ ( „ Fort) ..	„ „ „ .....	5	1	0	180 T	49.69	...
„ „ „ ( „ Bowling Green)	„ „ „ .....	5	1	0	160	55.48	...
Carnarvon (Belan Fort).....	„ „ „ .....	5	1	0	26 T	37.90	...
D Llanberis (Mount Pleasant).....	Mr. J. J. Jones .....	5	2	0	369 T	84.27	248
D „ „ (Brynrefail) .....	J. Rees Foster, Esq. ...	5	1	0	356 T	66.32	242
D „ „ (Llandinorwig School)	John Roberts, Esq. ....	5	1	0	800	72.81	245
D Llanrug (Llys Eiddon) .....	J. Rees Foster, Esq. ...	5	1	0	400 T	49.85	224
D Bethesda (St. Ann's Vicarage) ..	Rev. W. Morgan .....	5	1	6	500	71.19	231
D „ „ (Penrhyn Quarries) ...	W. D. Hobson, Esq. ...	8	1	0	528 T	72.76	240
D Bangor (Penrhyn Castle Gdns.)..	Mr. W. Speed .....	5	1	0	150 T	44.39	239
D Llanfairfechan .....	Mr. W. Timmins .....	5	1	0	144	42.04	192
Penmaenmawr (Mountain Res.)..	R. J. Hughes, Esq. ...	5	1	6	1200 T	56.84	...
D „ „ (Council Offices).	„ „ „ .....	5	1	6	100 T	39.94	189

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with .01 or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level		
		in.	ft. in.	feet.	inches.	
<b>CARNARVON—(con.)</b>						
<b>4.—ERCH &amp; C. 155 sq. mi</b>						
Abersoch.....	W H Winterbotham Esq	8	1 0	100 T	46·06	217
Bryncroes (Schoolhouse) .....	E. R. Williams, Esq...	5	0 11	320 T	47·49	221
†Criccieth (Cefn-Maen) .....	J. E. Greaves, Esq. ...	8	1 0	220 T	53·01	...
Pwllheli (Bodfean Hall) .....	Hon. F. G. Wynn .....	5	1 0	200 T	48·19	...
<b>5.—GLASLYN. 50 sq. mi.</b>						
†Portmadoc (Wern Gardens) .....	R. M. Greaves, Esq. ...	5	1 0	90 ?	57·88	173
Snowdon (Wenallt) .....	No. 6 A. Lockwood, Esq.....	5	1 2	1050 T	172·69	...
„ (Cwm Dyli).....	No. 11 „ „ „ .....	5	1 0	310 T	140·27	233
„ (Old Road) .....	No. 14 „ „ „ .....	5	0 10	325 T	143·60	237
„ (Lliwedd) .....	No. 2 „ „ „ .....	5	1 3	1485 T	178·54	...
„ (Delta) .....	No. 7 „ „ „ .....	5	1 0	1435 T	186·47	...
„ (Glaslyn) .....	No. 3 „ „ „ .....	5	0 8	2050 T	169·10	...
„ (Lluchfa) .....	No. 4 „ „ „ .....	5	0 10	2500 T	246·68?	...
„ (Teyrn) .....	No. 1 „ „ „ .....	5	1 0	1080 T	171·12	...
„ (Llyn Llydaw Intake) No. 10	„ „ „ .....	5	1 0	1480 T	165·91	251
„ ( „ „ Copper Mill) No. 9B	„ „ „ .....	5	1 5	1480 T	193·72	...
„ ( „ „ „ „ ) No. 9A	„ „ „ .....	5	1 0	1480 T	196·19	253
„ (Crib Goch) .....	No. 8 „ „ „ .....	5	1 3	2340 T	205·17	...
„ (Llyn Llydaw, N.) No. 5	„ „ „ .....	5	1 0	1470 T	168·12	...
<b>ANGLESEY. (Area, 275 sq. mi.)</b>						
Llanddwyn Island.....	Hon. F. G. Wynn .....	5	1 0	40 T	36·19	...
D Dwyran (Menaifron).....	W. E. Sotheby, Esq....	8	1 0	17	42·20	219
D Llanddaniel-Fab (Porthamel) ..	Hon. Cecil S. Irby.....	5	0 9	70 T	44·18	220
†Llangadwaladr (Bodorgan) .....	Mr. W. Pilgrim.....	5	1 0	100 ?	40·64	229
D Llangefni (Benrhos) .....	C. N. Jones, Esq. ....	8	0 9	132	45·56	219
D „ (County School) .....	F. A. Evans, Esq. ....	7	4 4	129	39·71	221
D Llangwilog (Trescawen) .....	J. H. Pritchard-Rayner, Esq.	5	1 0	239 T	46·97	215
†Holyhead (Sailors' Home) .....	Meteorological Office ..	8	1 0	48	35·88	212
D Bodedern (Pressaddfed) .....	Major W. A. Fox-Pitt.	5	0 11	150 T	40·46	198
D Llantrisant Rectory .....	Rev. Daniel Morgan ...	5	1 6	300	40·85	234
D Llanerchymedd Llwydiarth Esgob	T. Prichard, Esq. ....	5	1 0	175 T	41·19	249
D Lligwy .....	Lord Boston .....	5	1 0	170	35·83	215
Amlwch (Dyffryn Adda) .....	T. Fanning Evans, Esq.	5	1 2	178 T	38·50	241
<b>ISLE OF MAN. (Area, 227 sq. mi.)</b>						
Castletown (Langness) .....	Bd. of Northern Lights	8	1 0	75	24·22	...
Santon Vicarage .....	Rev. R. Jones.....	5	0 10	245 T	41·40	201
†Douglas (Borough Cemetery) ..	F. Cottle, Esq. ....	8	1 0	284 T	41·77	230
† „ (Clypse Res., Onchan)..	Mr. W. Crebbin.....	8	1 0	420	45·87	234
„ (Baldwin) .....	F. Cottle, Esq. ....	8	1 0	720	54·36	...
D Kirk Michael (Bishop's Court)...	Mr. W. Brew.....	5	1 0	80	36·66	182
†Ramsey .....	G. W. Kewin, Esq. ...	8	15 0	18	49·95	197
Point of Ayre.....	Bd. of Northern Lights	3	4 6	116	28·20	108

DIVISION XI.—MONMOUTH, WALES, AND THE ISLANDS—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with -01 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	1912
		in.	ft.	in.	feet.	inches.
CHANNEL ISLANDS.						
JERSEY. (45 sq. mi.)						
D St. Helier (Brooklands).....	Col. C. M. Sumner ...	5	1	0	100 T	43·34 205
D† „ „ W.W. (Millbrook Valley).....	A. J. Jenkins, Esq., C.E.	8	1	3	53	44·38 202
D† „ „ (St. Louis Obsy.)...(R)	Rev.M.Dechevrens, S.J.	8	5	0	180	41·25 192
† St. Aubins (Railway Station) ...	Meteorological Office ...	8	1	9	36	43·32 216
† „ „ (Belle Vue) .....	Miss M. M. Sumner ...	5	1	0	220	42·19 184
St. Ouen's Manor .....	R.Malet de Carteret, Esq	5	2	0	250	42·35 189
GUERNSEY. (25 sq. mi.)						
† St. Peter-in-the-Wood (Les Hêches)	A. Collenette, Esq. ...	5	3	0	350	41·90 220
D† St. Martins (Les Blanchés) .....	B. T. Rowswell, Esq....	5	1	0	310 T	45·55 237
D† „ „ (Hautnez) .....	A.H.P. Davey, Esq.C.E.	5	0	8	343 T	44·72 228
D† Villiaze .....	„ „ „	5	0	6	337 T	41·37 226
† St. Saviours (Le Mont Saint) ...	S. Carey Curtis, Esq...	5	1	0	105 T	39·89 191
D† St. Peter Port (St. Martin's Rd.)	A. Collenette, Esq.....	5	1	0	295 T	46·51 237
D† „ „ (Market Street)...	B. T. Rowswell, Esq....	5	52	8	100 T	47·59 211
D† „ „ (Villa Carey).....	Dr. F. E. Carey ... ..	8	1	6	180 B	46·13 219
† „ „ (Rohais).....	A. Collenette, Esq.....	5	1	0	145	46·20 214
D Castel (St. George) .....	Rev. H. G. deC.S.Guille	5	0	10	120 T	42·06 234
D† Fort Doyle .....	E. O. Catford, Esq. ...	5	1	0	25 T	36·75 199
SARK. (2 sq. mi.)						
D† Vallée du Creux .....	B. T. Rowswell, Esq...	5	1	0	320	37·87 197
HERM. (1 sq. mi.)						
ALDERNEY. (3 sq. mi.)						
D Le Huret .....	B. T. Rowswell, Esq...	5	1	0	245	39·04 197



# SCOTLAND.

## DIVISION XII.—SOUTHERN COUNTIES.

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with $\cdot 01$ or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level		
		in.	ft. in.	feet.	inches.	
<b>WIGTOWN.</b> (Area, 488 sq. mi.)						
1.— <b>LOCH RYAN.</b> 46 sq. mi.						
Loch Ryan Lighthouse .....	Bd. of Northern Lights	...	...	46	39·46	174
2.— <b>WESTERN GALLOWAY.</b> 44 sq. mi.						
Mull of Galloway .....	Bd. of Northern Lights	...	...	327	30·53	186
Logan House .....	K. McDouall, Esq.....	7	0 8	80 ?	43·67	221
Lochnaw Castle ..	Scot.Meteorological Soc.	5	0 8	230 ?	45·53	...
Corsewall .....	Bd. of Northern Lights	...	3 4	112	40·42	157
3.— <b>LUCE BAY.</b> 186 sq. mi.						
Stoneykirk (Ardwell House).....	Sir M. McT.Stewart,Bt.	8	3 9	107 $\nabla$	43·07	...
D Glenluce (Crews) .....	Peter Taylor, Esq.....	5	1 9	218 $\nabla$	42·28	212
4.— <b>CREE &amp; WIGTOWN BAY.</b> 212 sq. mi.						
D Whithorn (Cutroach) .....	J. G. Martin, Esq.....	5	0 6	120 $\nabla$	42·16	199
D „ .....	Dr. J. F. Smith .....	5	2 3	207 $\nabla$	47·48	205
D Garliestown (Galloway House)...	Mr. J. Day.....	5	4 6	20 ?	45·66	188
<b>KIRKCUDBRIGHT.</b> (Area, 902 sq. mi.)						
1.— <b>DOON.</b> 16 sq. mi.						
2.— <b>CREE &amp; WIGTOWN BAY.</b> 222 sq. mi.						
Gatehouse (Cally) .....	Scot.Meteorological Soc.	5	1 0	120	52·21	196
Creetown (Cassencary) .....	JA Henryson-Caird, Esq	5	0 8	50	45·55	209
Palnure (Bargaly) .....	Scot.Meteorological Soc.	...	...	...	51·57	...
Glenhead of Trool.....	J. McMillan, Esq. ....	5	0 11	320	71·50	...
3.— <b>DEE.</b> 377 sq. mi.						
Kirkcudbright (Balmae) .....	The Countess of Selkirk	5	0 8	150 $\nabla$	40·30	...
D „ (St. Mary's Isle) .....	Mr. J. Jeffrey .....	5	1 0	20	50·67	195
Twynholm (Barwhinnock) .....	R. W. Laidlay, Esq....	8	1 0	300 $\nabla$	56·01	...
D Dalry (Glendarroch) .....	Miss M. Barbour .....	5	0 11	192 $\nabla$	57·80	234
D „ (Clenerie) .....	Mr. G. Geddes .....	8	0 10	850	83·15	200
D „ (The Old Garroch) .....	Miss Bruce .....	8	0 9	448 $\nabla$	70·17	221

## DIVISION XII.—SOUTHERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with '01 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.	
KIRKCUDBRIGHT—(con.)							
3.—DEE—(con.)							
D Carsphairn (Shiel) .....	Mr. S. Wilson .....	5	1	0	850 T	83.78	245
D „ (Knockgray) .....	Miss Clark Kennedy ...	8	0	11	641 T	64.00	233
4.—URR & C. 196 sq. mi.							
Auchencairn (Torr House) .....	W. Ovens, Esq. ....	5	0	8	50	55.37	...
D Dalbeattie (Kirkennan).....	Wellwood Maxwell, Esq.	5	0	9	30 T	54.47	241
„ (Little Richorn) .....	Mr. W. Kerr .....	5	0	9	54 T	49.69	196
D Kirkpatrick Durham (Glenlair)..	Major W. Maxwell ...	5	0	6	250 T	57.02	226
Corsock (Monybuie) .....	Scot. Meteorological Soc.	...	...	...	...	53.35	...
5.—NITH & C. 91 sq. mi.							
Kirkbean (Arbigland) .....	Scot. Meteorological Soc.	...	...	...	50 ?	43.15	...
D Cargen [Dumfries] .....	R. F. Dudgeon, Esq....	5	0	4	80 T	54.37	225
D Lochrutton (Dumfries W.W.)...	Nigel B. Wilson, Esq.	5	1	0	273 T	49.07	246
D Lincluden House [Dumfries] ...	Miss Young .....	5	1	0	60 T	44.89	220
D Jardington [Dumfries].....	J. Rutherford, Esq. ...	5	1	0	70 ?	44.23	215
DUMFRIES. (Area, 1074 sq. mi.)							
1.—CLYDE—Right Bank Tributaries. 5 sq. mi.							
2.—URR. 6 sq. mi.							
3.—NITH & C. 421 sq. mi.							
D Ruthwell (Comlongan Castle) ...	Mr. W. H. Whellens...	5	1	0	68 T	42.19	203
Dumfries (Crichton Roy. Inst.)..	Meteorological Office ...	6	0	8	155	40.07	221
Moniaive (Glencrosh) .....	Miss Macmillan .....	5	1	2	350	53.90	229
D „ (Maxwelton House) ...	Rev. Sir E. Laurie, Bt.	5	1	6	400 T	51.80	235
„ (Jarbruck).....	Cecil E. Laurie, Esq....	8	1	2	350 T	59.23	230
D Durrisdeer (Drumlanrig Gardens)	Mr. D. Inglis .....	5	0	9	191 T	51.08	159
4.—ANNAN. 367 sq. mi.							
Dalton (Whitecroft) .....	(R) W. Maitland-Heriot Esq	8	1	8	240 T	32.90	192
D Hoddum Castle .....	Scot. Meteorological Soc.	5	1	4	150	42.17	224
Ecclefechan (Knockhill) .....	A. Johnson-Fergusson, Esq.	5	0	9	170 T	39.72	...
D Dalton (Kirkwood) .....	Arthur J. Steel, Esq....	5	0	8	245 T	49.00	219
D Lockerbie (Castle Milk) .....	Mr. J. T. Jeffrey .....	5	1	6	199 T	43.63	217
D Lochmaben (Esthwaite) .....	W. J. Halliday, Esq....	5	1	0	166 T	45.87	222
Beattock (Kinnelhead) .....	J. Bartholomew, Esq...	5	1	0	820 T	65.13	...
Moffat (Craigielands).....	Mr. L. Fraser.....	5	1	0	331	55.72	...
D „ (Auchen Castle).....	Mr. J. Macgregor .....	5	0	6	500 T	55.92	227
„ (Hope Lodge).....	Scot. Meteorological Soc.	5	1	0	450	48.13	...
5.—ESK. 275 sq. mi.							
D Rigg .....	W. H. Whellens, Esq..	5	1	0	65 T	41.04	216
D Canonbie (Watch Hill House) ...	Col. H. J. Johnston ...	5	0	9	230 T	44.22	218
„ (Byreburnfoot) .....	Mr. David Crabbe .....	3	0	9	160	44.75	...
D „ (Irvine House) .....	J. H. Milne Home, Esq.	5	0	6	200	48.59	225
Langholm (Westwater).....	J. M. Elliot, Esq. ....	3	1	0	450 T	53.69	...
D „ (Drove Road) .....	Mrs. Jackson .....	5	0	9	270	55.68	207
„ (Ewes, Burnfoot) ...	Miss H. C. Little .....	5	0	6	541 T	52.88	...
„ ( „ School) .....	Mr. J. C. Lyall .....	5	1	0	445 T	54.70	..

DIVISION XII.—SOUTHERN COUNTIES—(continued).

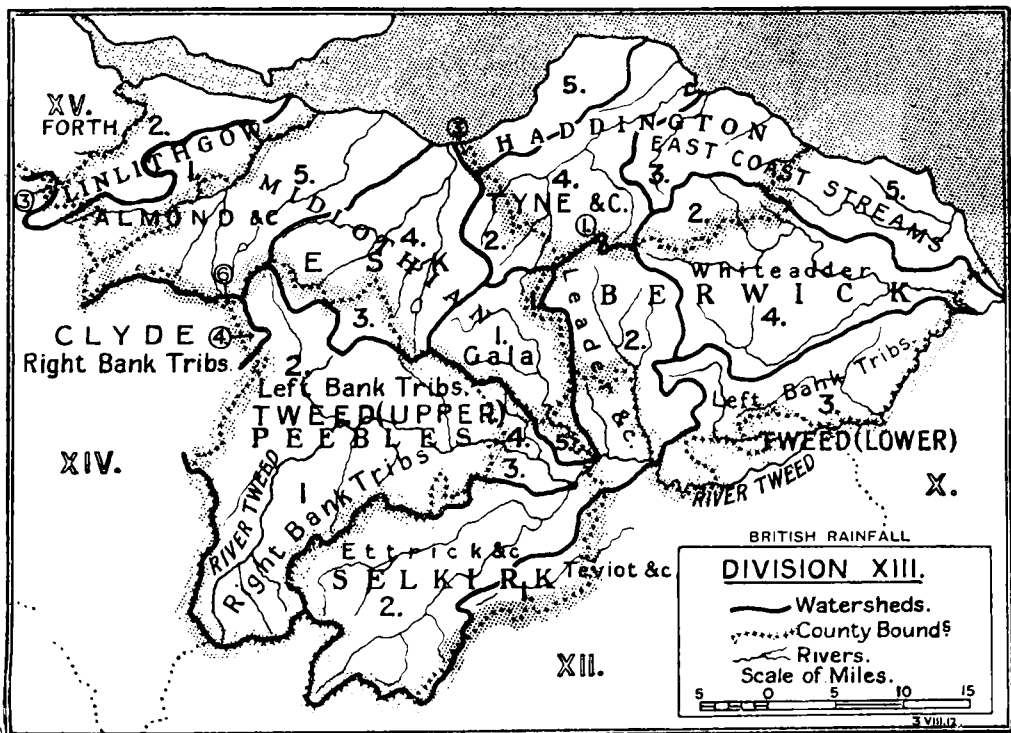
STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with $\geq 0.1$ or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.	
<b>DUMFRIES—(con.)</b>							
5.— <b>ESK—(con.)</b>							
Eskdale Muir Observatory .....	Meteorological Office ...	8	0	8	778	58.74	243
<b>ROXBURGH. (Area, 666 sq. mi.)</b>							
1.— <b>NORTH TYNE. 6 sq. mi.</b>							
2.— <b>TWEED, LOWER—Right Bank Tributaries. 57 sq. mi.</b>							
Kelso (Springwood Nurseries) ...	Messrs. Laing & Mather	5	1	0	200	29.92	241
3.— <b>TWEED—Teviot &amp; c. 431 sq. mi.</b>							
Teviothead (Skelfhill) .....	Miss Grieve .....	3	1	2	950 T	54.90	...
Hawick (Wolfelee) .....	Scot. Meteorological Soc.	5	0	10	587	40.37	...
D „ (Bransholme) .....	J. G. Winning, Esq. ....	5	0	6	457 T	36.66	227
D Jedburgh (Anerum Bridge) .....	A. Finlayson, Esq. ....	5	2	0	229	27.80	203
D „ (Ploughlands) .....	J. Scott, Esq. ....	5	1	0	301 T	26.88	229
St. Boswells (Monksford) .....	A. Mitchell, Esq. ....	5	0	11	320	25.94	...
D „ „ (The Fens) .....	J. J. Fairbairn, Esq. ....	5	1	6	260	29.42	205
D Kelso (Springwood Park) .....	Mr. W. Chaplin .....	5	1	3	130 L	28.45	196
4.— <b>TWEED—Ettrick &amp; c. 10 sq. mi.</b>							
D Melrose (Asylum) .....	gauge A Mr. A. C. Pattman ...	5	0	6	480 T	33.49	228
D „ ( „ ) .....	gauge B „ „ „ ...	5	1	0	480 T	32.68	228
5.— <b>TWEED—Gala. 6 sq. mi.</b>							
6.— <b>TWEED—Leader &amp; c. 25 sq. mi.</b>							
Melrose (Drygrange) .....	J. T. S. Roberts, Esq. ....	5	1	0	360	28.56	...
7.— <b>TWEED, LOWER—Left Bank Tributaries. 25 sq. mi.</b>							
D Kelso (Broomlands) .....	J. Brunton, Esq. ....	8	1	3	205	27.15	159
Smailholm (Sandyknowe) .....	Mr. J. E. Templeton ...	5	1	2	500	25.39	...
8.— <b>ESK. 106 sq. mi.</b>							



## MAP OF DIVISION XIII.

## SOUTH EASTERN COUNTIES,

Showing the River-Divisions.



## DIVISION XIII.—SOUTH EASTERN COUNTIES.

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with '01 or more recorded.
		Diameter	Height Above Ground	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
<b>SELKIRK. (Area, 268 sq. mi.)</b>						
1.— <b>TWEED</b> —Teviot & c. 34 sq. mi.						
d Selkirk (Whitmuir Hall) .....	C. W. Dunlop, Esq. ....	5	1 0	850	35·07	211
2.— <b>TWEED</b> —Ettrick & c. 192 sq. mi.						
Meggat Head (Edinburgh W.W.) No. 1	Messrs. Leslie & Reid, C.E.	5	1 3	1496 $\pi$	56·90	...
d " Water (Cramilt Lodge) ...	Mr. A. Sim. ....	5	0 4	1005 $\pi$	52·56	242
d Selkirk (The Hangingshaw) .....	Miss Johnstone of Alva	6	0 6	670 $\uparrow$	34·51	190
3.— <b>TWEED, UPPER</b> —Right Bank	Tributaries. 17 sq. mi.					
4.— <b>TWEED, UPPER</b> —Left Bank	Tributaries. 19 sq. mi.					
d Caddonfoot (Fairnilee) .....	Scot. Meteorological Soc.	5	1 0	450 $\uparrow$	35·08	206
Galashiels (The Peel, Clovenfords)	W. R. Ovens, Esq. ....	6	1 6	500	36·36	...
5.— <b>TWEED</b> —Gala. 6 sq. mi.						
d Galashiels (Abbotsford Rd.) .....	Dr. J. W. Somerville ...	5	0 8	416 $\uparrow$	32·64	220
" (Stantling Craigs) ...	Mr. J. Murray .....	12	1 3	800	36·49	...
<b>PEEBLES. (Area, 348 sq. mi.)</b>						
1.— <b>TWEED, UPPER</b> —Right Bank	Tributaries. 127 sq. mi.					
Ravenscraig (Edinburgh W.W.) No. 3	Messrs. Leslie & Reid, C.E.	5	1 3	2258 $\pi$	73·97	...
Gameshope Loch ( " " ) No. 4	" " "	5	1 3	1860 $\pi$	81·36	...
" Farm ( " " ) No. 5a	" " "	5	1 3	1538 $\pi$	76·52	...
" " " ( " " ) No. 5	" " "	8	1 3	1538 $\pi$	78·61	...
Talla Linns Foot ( " " ) No. 6a	" " "	5	1 3	966 $\pi$	70·13	...
" " " ( " " ) No. 6	" " "	8	1 3	966 $\pi$	68·78	...
Quarter Hill ( " " ) No. 7a	" " "	5	1 3	1196 $\pi$	50·13	...
" " " ( " " ) No. 7	" " "	8	1 3	1196 $\pi$	49·19	...
" " " ( " " ) No. 8	" " "	5	1 3	904 $\pi$	49·11	...
" " " ( " " ) No. 8A	" " "	8	1 3	904 $\pi$	46·25	...
d Stobo (Dawyck Gardens) .....	Mr. J. Simpson .....	5	1 1	600 $\uparrow$	38·50	179
2.— <b>TWEED, UPPER</b> —Left Bank	Tributaries. 192 sq. mi.					
Stobo Castle .....	Scot. Meteorological Soc.	3	1 0	600	37·72	...
Innerleithen (The Glen) .....	" " "	...	...	750	44·02	...
Peebles (Swinton Bank) .....	C. A. Ainslie, Esq. ...	5	0 5	600 $\pi$	36·54	191
d " ( " " ) (R) .....	" " "	8	4 6	600 $\pi$	36·57	211
d Castlecraig [Dolphinton] .....	Scot. Meteorological Soc.	...	...	820	36·16	213
d West Linton (Broomlee Cottage)	Messrs. Leslie & Reid, C.E.	...	1 0	801	32·25	221
" " Rectory .....	Rev. J. S. Begg .....	5	1 0	780 $\uparrow$	37·03	237
3.— <b>ESK. 23 sq. mi.</b>						
Eddlestone (Portmore Reservoir)	Messrs. Leslie & Reid, C.E.	11	1 0	1000	37·39	...
" " " " " " " " " " " "	" " " " " " " " " " " "	11	1 0	1000	37·05	...
d West Linton (Rutherford House)	Miss Cameron .....	5	3 9	970 $\pi$	40·96	239
N. Esk Reservoir [Penicuik] ...	Mr. W. Tod .....	11	0 6	1150 $\pi$	43·35	...
4.— <b>CLYDE</b> —Right Bank	Tributaries. 6 sq. mi.					

## DIVISION XIII.—SOUTH EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with .01 or more recorded.
		Diameter	Height Above Ground	Height Above Sea Level		
		in.	ft. in.	feet.	inches.	
<b>BERWICK. (Area, 457 sq. mi.)</b>						
1.—TWEED—Gala. 6 sq. mi.						
2.—TWEED—Leader. 92 sq. mi.						
D Earlston (Cowdenknowes) .....	Mr. J. Robertson .....	5	0 10	360 N	32·10	217
3.—TWEED, LOWER—Left Bank	Tributaries. 115 sq. mi.					
Coldstream (Lochton) .....	J. Aitchison, Esq. ....	5	1 0	151 B	30·28	...
„ (Birgham) .....	Lord Dunglass .....	5	1 10	...	29·04	177
D „ (The Hirsell) .....	Mr. P. MacAndrew ...	5	1 0	94 N	29·18	193
4.—TWEED—Whiteadder. 164 sq. mi.						
D Marchmont House .....	Mr. J. A. Wood.....	5	1 0	498 T	31·93	197
D Duns Castle .....	Mr. P. Smith .....	5	1 0	500	29·56	174
„ (Manderston) .....	Mr. F. J. Marshall.....	8	1 6	356 N	34·47	...
West Foulden .....	J. Hewat Craw, Esq....	5	1 0	250 T	27·57	...
5.—EAST COAST STREAMS. 80 sq. mi.						
St. Abb's (Northfield) .....	J. A. Morrison, Esq....	5	0 8	130 T	23·73	...
„ „ Head.....	Bd. of Northern Lights	8	4 3	224	27·20	...
<b>HADDINGTON. (Area, 267 sq. mi.)</b>						
1.—TWEED—Leader. 1 sq. mi.						
2.—TWEED—Whiteadder. 35 sq. mi.						
3.—EAST COAST STREAMS. 69 sq. mi.						
Garvald (Donolly Reservoir) ...	W. Ross Young, Esq., CE	11	1 6	560 N	32·04	...
„ (Thorter Reservoir).....	„ „ „	12	1 6	...	26·27	...
Prestonkirk (Beil) .....	Scot. Meteorological Soc.	5	1 6	180	25·23	...
Dunbar (Broxmouth Park) .....	„ „ „	...	...	...	24·99	...
4.—TYNE & C. 114 sq. mi.						
Prestonkirk (Smeaton) .....	Scot. Meteorological Soc.	7	7 10	100	25·94	...
5.—FIRTH OF FORTH. 48 sq. mi.						
Drummore [Musselburgh] .....	Scot. Meteorological Soc.	5	1 0	75 T	26·15	...
D Gosford House Gardens.....	Mr. W. Galloway .....	5	1 0	24	24·70	220
Aberlady Manse .....	Rev. J. Hart .....	5	0 11	15	22·41	157
D Gullane (The Warren) .....	H. E. Meek, Esq. ....	8	1 0	115	23·66	206
D North Berwick Reservoir ... ..	W. Ross Young, Esq., CE	5	1 6	150 T	26·01	169
6.—INSULAR.						
<b>MIDLOTHIAN. (Area, 369 sq. mi.)</b>						
1.—TWEED—Gala. 68 sq. mi.						
2.—TYNE. 28 sq. mi.						
3.—FIRTH OF FORTH. 3 sq. mi.						
D Musselburgh .....	Miss C. Husband .....	5	1 0	15 N	26·04	195
4.—ESK. 129 sq. mi.						
Moorfoot Hills (Bowbate) .....	Messrs. Leslie & Reid, C.E.	11	0 6	1260	51·42	...
„ „ (Gladhouse Res.).	„ „ „	5	0 8	900	40·11	...
„ „ ( „ „ ) M	„ „ „	8	1 0	900	39·08	...
„ „ (Rosebery) .....	„ „ „	5	0 9	750	36·99	...
„ „ ( „ „ ) ...M	„ „ „	11	0 9	750	36·60	...

## DIVISION XIII.—SOUTH EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with .01 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.	
MIDLOTHIAN—(con.)							
4.—ESK—(con.)							
Moorfoot Hills (Edgelaw) .....	Messrs. Leslie & Reid, CE	5	0	10	654	37.83	...
" " ( " ) .....	" " "	11	0	10	654	36.00	...
D Penicuik (Brunstane Cottage)...	" " "	5	1	0	...	38.00	216
" " .....	Scot. Meteorological Soc.	...	...	...	604	34.35	...
Pentland Hills (Harehill) .....	Messrs. Leslie & Reid, CE	11	1	7	1470	43.13	...
D " " (Martyrs Cross)...	" " "	5	1	0	750	39.24	235
" " (Loganlea) .....	" " "	5	1	0	850	39.92	...
" " ( " ) .....	M " " "	8	1	4	850	38.07	...
" " (Glencorse Filters) .....	" " "	5	1	0	787	41.32	...
" " ( " " ) .....	M " " "	11	1	0	787	42.15	...
" " (Glen Cottage) ...	" " "	5	1	2	...	41.86	...
" " ( " " ) .....	M " " "	8	1	2	...	39.91	...
D Loanhead (Elmswood) .....	H. B. Dunlop, Esq. ...	5	1	0	520 T	31.69	201
Pentland Hills (Swanston) .....	Messrs. Leslie & Reid, C.E.	5	0	6	550 ?	31.23	...
" " ( " ) ... M	" " "	11	0	6	550 ?	32.30	...
" " ( " ) ... M	" " "	4	0	6	550 ?	32.53	...
" " (Fairmilehead)...	" " "	5	1	0	590	34.77	...
D Dalkeith Gardens .....	Mr. J. Whytock.....	5	1	0	144	28.45	180
Liberton (Alnwick Hill) .....	Messrs. Leslie & Reid, C.E.	5	1	0	407	30.16	...
" " ( " " ) .....	M " " "	8	1	0	407	30.05	...
5.—ALMOND & C. 140 sq. mi.							
Pentland Hills (Crosswood) .....	Messrs. Leslie & Reid, C.E.	5	1	0	950	40.99	...
" " ( " ) ... M	" " "	8	1	0	950	40.40	...
" " (Harperrig) .....	" " "	5	1	0	900	43.51	...
" " ( " ) ... M	" " "	8	1	0	900	42.59	...
" " (Morton) .....	" " "	5	1	0	749	37.50	...
West Calder (Addiewell) .....	John Fyfe, Esq.....	5	0	6	600	39.20	...
D Balerno (Cockburn Hill) .....	R. Cross, Esq.....	5	1	0	767 T	38.30	202
Pentland Hills (Harlaw Res.) ...	Messrs. Leslie & Reid, CE	5	1	0	800	34.39	...
" " ( " ) ... M	" " "	11	0	9	800	34.17	...
" " (Bonally Res.)*..	" " "	11	0	6	1112	40.60	...
" " (Clubbiedean Res.) ..	" " "	4	0	6	750	31.12	...
" " ( " ) ... M	" " "	11	0	9	750	35.41	...
" " (Firhill Tank) ...	" " "	5	0	6	412	28.72	...
D† Edinburgh (R. Obs., Blackford Hill)	T. Heath, Esq. ....	8	1	0	442 T	26.90	177
D† " (Univ. Engin. Lab.) ..	Prof. T. Hudson Beare.	5	1	0	227 T	28.07	198
† " ( " " " ) ... M	" " "	5	1	0	227 T	26.93	...
D " (City Observatory) ...	W. Peck, Esq. ....	8	1	0	349	23.95	167
† " (Charlotte Square)...	Messrs. Leslie & Reid, CE	11	1	6	190 T	26.39	...
† " ( " " ) ...	" " "	12	63	0	300	21.36	...
Leith .....	Meteorological Office ...	8	1	8	37	25.25	199
" (Navigation School).....	Scot. Meteorological Soc.	5	0	5	76	27.33	...
D Davidson's Mains (Broomfield)...	Mr. C. Comfort .....	5	0	10	42 L	24.79	172
6.—CLYDE—Right Bank Tributaries. 1 sq. mi.							

\* Formerly called Harbour Hill.



MAP OF DIVISION XIV.

SOUTH WESTERN COUNTIES.

Showing the River-Divisions.



STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with ·01 or more recorded.
		Diameter	Height Above Ground	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
LANARK. (Area, 881 sq. mi.)						
1.—TWEED, UPPER—Left Bank Tributaries. 20 sq. mi.						
D Biggar .....	J. Eunson, Esq. ....	8	1 0	691 T	32·04	219
D „ (Cambus Wallace).....	T. W. M. Watson, Esq. ....	6	0 6	748 T	31·81	156
2.—ALMOND. 14 sq. mi.						
3.—FORTH—Right Bank Tributaries. 9 sq. mi.						
4.—CLYDE—Right Bank Tributaries. 378 sq. mi.						
Coulter Reservoir.....No. 2	W. Ross, Esq., C.E. ....	11	1 0	...	52·67	...
„ .....No. 1	„ „ „ „ „ „	11	1 0	...	50·66	...
Lamington (Cowgill Reservoir)...J. Chisholm, Esq., C.E.	„ „ „ „ „ „	5	1 0	1012 T	48·11	...
„ „ „ „ „ „	Scot.Meteorological Soc.	5	1 4	800	39·28	...
Biggar (Shieldhill) .....	Miss Dunlop .....	5	1 2	850 T	30·47	...
D „ „ „ „ „ „	„ „ „ „ „ „	5	on roof	850 T	27·79	214
Lanark (Rhyber Lodge) .....	R. Swann, Esq. ....	6	3 0	650	33·30	...
n Cleghorn Gardens .....	Mrs. Elliott Lockhart...	5	0 6	720 T	34·11	188
Carluke (Coldstream Reservoir)..W. Ross, Esq., C.E. ....	„ „ „ „ „ „	11	1 0	800 ?	38·45	...
D „ (Mauldslie Castle) .....	Mr. D. Bryson .....	5	1 0	140	33·15	181
D Motherwell (Dalzell Gardens) ...Mr. W. Mackie .....	„ „ „ „ „ „	6	5 6	170	35·21	214
D Bothwell .....	Dr. J. T. Wilson .....	5	0 9	150 T	33·91	179
D Glasgow (Belvedere Hospital) ...Dr. A. Johnston .....	„ „ „ „ „ „	5	1 1	60 T	37·31	207
„ (Tolleross Park).....	J. Whitton, Esq. ....	5	0 6	85	40·07	...
„ Green.....	„ „ „ „ „ „	5	0 6	35	37·67	...
„ (George Square) .....	„ „ „ „ „ „	8	6 0	40	39·18	...
„ (Alexandra Park) .....	„ „ „ „ „ „	5	0 6	141	41·06	...
„ Observatory..... (R)	Prof. L. Becker .....	11	2 0	182	40·95	214
† „ (Botanic Gardens).....	J. Whitton, Esq. ....	5	0 6	110	38·47	...
„ (Kelvingrove Park) ...	„ „ „ „ „ „	5	0 6	48	39·71	...
„ (Ruchill Park) . .....	„ „ „ „ „ „	5	0 6	220	39·36	...
„ (Springburn Park).....	„ „ „ „ „ „	5	0 6	361	42·69	...
†Airdrie (Airdrie Street) .....	J. Chisholm, Esq., C.E.	5	1 0	402 T	38·59	...
D „ (Hillend Reservoir) .....	Mr. W. A. Ritchie .....	6	4 6	620 T	38·21	198
†Roughrigg Res.[Slamannan] ...J. Chisholm, Esq., C.E.	„ „ „ „ „ „	5	1 0	661 T	36·27	...
5.—CLYDE—Left Bank Tributaries. 448 sq. mi.						
†Leadhills.....	Scot.Meteorological Soc.	5	1 1	1300	66·48	...
D†Strathaven (GlengavelReservoir)J. McMillan, Esq., C.E.	„ „ „ „ „ „	5	1 0	880 T	48·66	239
† „ (Dungavel).....	Scot.Meteorological Soc.	5	1 0	800 T	55·64	...
† „ (Kype Reservoir) ...	W. H. Purdie, Esq. ....	11	3 0	941	49·80	185
D „ (Dunside Reservoir)..	J. McMillan, Esq., C.E.	5	...	1010 T	52·86	165
D „ (East Overton House)	H. Lee Dykes, Esq. ....	5	5 6	700 T	44·10	178
D „ (Glassford Filters)....	J. McMillan, Esq., C.E.	5	...	750 T	45·50	216
Hamilton W.W. (Townhill).....	W. H. Purdie, Esq. ....	7	1 0	436 T	40·55	...
D „ (Laighstone Hall) .....	Rev. T. M. B. Paterson	5	1 9	260 T	38·82	186
„ Palace .....	Scot.Meteorological Soc.	...	...	140	34·51	...
D Busby (Thornton Hall).....	A.HendersonBishopEsq	5	1 0	441 T	44·72	197
D Cambuslang (Greenlees Filters)..	J. McMillan, Esq., C.E.	8	...	322	32·00	178
Glasgow (Bellahouston Park) ...J. Whitton, Esq. ....	„ „ „ „ „ „	5	0 6	160	39·05	...
6.—IRVINE. 2 sq. mi.						
7.—AYR. 1 sq. mi.						

## DIVISION XIV.—SOUTH WESTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with '01 or more recorded.	
		Diameter	Height Above Ground		Height Above Sea Level		1912
		in.	ft.	in.	feet.	inches.	
LANARK—(con.)							
8.—NITH. 2 sq. mi.							
9.—ANNAN. 7 sq. mi.							
AYR. (Area, 1135 sq. mi.)							
1.—CLYDE—Left Bank Tributaries. 20 sq. mi.							
D Glengarnock (Chemical Works).	G. Harrower, Esq. ....	8	1	6	100 ?	56·71	193
2.—FIRTH OF CLYDE. 60 sq. mi.							
Saltcoats .....	Scot. Meteorological Soc. ....	...	...		...	38·99	...
Shaws Water Works (Kelly Dam)	D. Macalister, Esq., C.E.	6	1	0	640	72·90	...
„ „ (Knockencorsan)	„ „ „	6	1	0	1040	76·20	...
3.—IRVINE & C. 283 sq. mi.							
D Kilmarnock (Agricultural College)	Prof. R. A. Berry .....	8	1	2	80	36·76	202
„ „ (North Craig Res.) ...	R. Blackwood, Esq. ...	12	1	0	319 ?	43·30	...
D Kilwinning (Eglinton Castle) ...	Mr. W. Priest. ....	5	1	0	50 ?	45·60	194
D Stevenston (Greenhead Filters) ...	Gilbert Christie, Esq., CE	5	1	0	186 ?	44·18	200
D Dalry (Blair Gardens) .....	Mr. W. Mair .....	5	1	3	155 ?	56·20	212
D „ „ (Munnoch Reservoir) .....	Gilbert Christie, Esq., CE	5	1	0	325 ?	53·50	200
D „ „ (Caaf Reservoir) .....	„ „ „	11	1	3	515 ?	56·50	186
D „ „ W.W. (Filters) .....	Mr. W. Wightman „ ...	5	1	0	320 ?	54·34	227
„ „ „ (Thirdpart) ... M	„ „ „	5	1	0	560 ?	58·89	...
„ „ „ (Camphill Reservoir) .....	James Lee, Esq., C.E. ...	12	1	6	611	69·35	...
Beith (Filter Station) .....	W. C. Dale, Esq. ....	5	6	0	384 ?	48·67	207
4.—AYR. 222 sq. mi.							
Ayr (Glendrishaig) .....	P. Murdoch, Esq. ....	10	3	0	42	38·05	186
D Mauchline (Catrine) .....	Messrs. J. Finlay & Co.	6	1	0	301 ?	36·27	189
5.—DOON. 119 sq. mi.							
Loch Finlas .....	J. Young, Esq., C.E. ....	5	1	0	849 ?	62·69	...
D Dalrymple (Bow Hill) ....	A. Gillespie, Esq. ....	5	0	8	978	55·08	253
Maybole (Knockdon Farm) .....	Mr. W. Muir .....	5	2	0	352	39·02	...
Ayr (Doonside) .....	W. H. Dunlop, Esq. ....	5	1	0	90	42·81	224
D „ „ (Doonholm) .....	J. Kennedy, Esq. ....	5	1	0	90	44·61	206
6.—CULZEAN BAY & C. 32 sq. mi.							
Turnberry (Lighthouse) .....	Bd. of Northern Lights	...	...		...	34·18	...
„ „ (Hotel) .....	Mr. J. Richards .....	5	1	0	97 ?	26·79	176
D Maybole (Culzean Gardens) .....	Mr. R. G. Hepburn ...	8	2	8	200	37·06	162
7.—GIRVAN. 105 sq. mi.							
Girvan (Glendoune Gardens) ...	Mr. J. Simons .....	5	1	0	100 ?	43·58	187
Loch Bradan .....	Messrs J. & H. V. Eaglesham, CE	8	1	0	991 ?	64·29	...
8.—STINCHAR & C. 155 sq. mi.							
Barrhill (Dochroyle) .....	Mr. J. Scott .....	6	0	6	548 ?	40·70	...
Colmonell (Knockdolian) .....	Meteorological Office ...	5	1	0	150	47·90	216
D Girvan (Pinmore) ..	Miss Hamilton .....	5	0	5	207 ?	53·47	247
Barr Manse .....	Rev. G. Dods .....	5	1	0	330	56·55	210
9.—LOCH RYAN. 12 sq. mi.							
10.—LUCE BAY. 15 sq. mi.							
11.—CREE. 40 sq. mi.							
12.—DEE. 9 sq. mi.							



## DIVISION XIV.—SOUTH WESTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with .01 or more recorded.
		Diameter	Height Above Ground	Height Above Sea Level		
		in.	ft. in.	feet.	inches.	
<b>AYR—(con.)</b>						
13.—NITH. 62 sq. mi.						
D New Cumnock (Ayr Sanatorium)	Dr. E. E. Prest .....	5	1 0	850	59·52	222
14.—INSULAR. 1 sq. mi.						
<b>RENFREW. (Area, 241 sq. mi.)</b>						
1.—CLYDE—Right Bank Tributaries. 3 sq. mi.						
2.—CLYDE—Left Bank Tributaries. 194 sq. mi.						
Lochwinnoch (Garthland).....	H. Macdowall, Esq. ...	5	0 11	150	68·98	...
Gorbals Dist. W. W. (Ryat Lynn)	J. R. Sutherland, Esq. CE	8	0 5	310	51·60	...
„ „ „ (Waulk Glen)	„ „ „	12	0 5	280	49·70	...
„ „ „ (Middleton)...	„ „ „	12	0 5	550	58·40	...
„ „ „ (Nether Cairn)	„ „ „	12	0 5	700	63·00	...
Paisley W. W. (Stanely) .....	James Lee, Esq., C.E.	12	1 0	190	46·92	...
„ „ (Back Thornley muir)	„ „ „	12	1 0	646	59·92	...
„ „ (Muirhead).....	„ „ „	12	1 0	482	63·88	...
„ „ (Springside) .....	„ „ „	12	1 0	532	69·57	...
D Pollokshaws (Pollok House).....	Sir J. Stirling-Maxwell, Bt...	5	1 0	50	37·82	201
D Glasgow (Queen's Park) .....	J. Whitton, Esq. ....	8	0 9	144	39·01	201
„ (Maxwell Park) .....	„ „ „	5	0 6	69	40·88	...
D Kilbarchan (Glentyan).....(R)	R. H. Hunter, Esq. ...	8	3 9	300	61·75	231
D† Paisley (The Coats Observatory)	D. Maclean, Esq. ....	10	1 8	107	50·51	223
Kilmalcolm Water Works.....	D. S. Carson, Esq.....	5	1 0	500 ?	80·92	...
Shaws W. W. (Duchall Moor) ...	D. Macalister, Esq., C.E.	6	1 0	1150	93·70	...
„ „ (Creuch Hill) .....	„ „ „	6	1 0	1350	82·00	...
„ „ (Green Water) ...	„ „ „	6	1 0	788	77·00	...
Kilmalcolm (St. Oswald's) ... (R)	D. S. Carson, Esq. ....	5	1 0	350	64·10	...
D Shaws W. W. (Gryfe Reservoir)..	D. Macalister, Esq., C.E.	6	1 0	640	73·15	229
D „ „ (Mansfield) .....	„ „ „	5	1 0	573	75·04	230
„ „ (Darndaff Moor)....	„ „ „	6	1 0	850	83·20	...
Bishopton (Ingliston) .....	D. Cross, Esq.....	5	1 0	195	50·06	...
<b>3.—FIRTH OF CLYDE. 34 sq. mi.</b>						
Wemyss Bay (Kelly).....	J. Clark-Neill, Esq. ...	...	...	230	57·18	...
Shaws W. W. (Largs Road) .....	D. Macalister, Esq. C.E.	5	1 0	910	68·87	...
Dougliehill Filters (Pt. Glasgow WW)	James Murray, Esq. ...	8	1 6	540	70·81	...
Parkhill „ „ „ „	„ „ „	8	1 6	275	57·68	...
D Shaws W. W. (Compensation Res.)	D. Macalister, Esq., C.E.	5	1 0	600	78·23	272
D „ „ (Loch Thom) .....	„ „ „	5	1 0	643	82·58	273
„ „ (Shielhill) .....	„ „ „	6	1 0	962	80·30	...
„ „ (Spango Burn) ...	„ „ „	6	0 9	757	78·90	...
D „ „ (Hole Glen).....	„ „ „	5	1 0	603	74·88	276
D „ „ (New Yetts Dam)...	„ „ „	5	1 0	800	79·54	278
D Port Glasgow (Elmworth) .....	A. F. Gray, Esq.....	5	1 3	107	68·76	216
D Greenock (Prospect Hill).....	D. Macalister, Esq., C.E.	5	1 0	233	75·82	234
Langbank (East Bank Gardens).	A. Cross, Esq.....	5	2 6	150	51·12	...
<b>4.—IRVINE. 10 sq. mi.</b>						



## DIVISION XV.—WEST MIDLAND COUNTIES.

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with '01 or more recorded.
		Diameter	Height Above Ground	Height Above Sea Level		
		in.	ft. in.	feet.	inches.	
<b>DUMBARTON.</b> (Area, 270 sq. mi.)						
1.—FORTH—Right Bank Tributaries. 10 sq. mi.						
2.—FIRTH OF CLYDE & COWAL. 52 sq. mi.						
D Cardross (Kilmahew).....	Claud A. Allan, Esq....	5	1 0	130 T	53·50	214
D Helensburgh (Fernigair) .....	J.N. Stirling, Esq., C.E.	8	1 0	22	66·87	228
D " (Valve House).....	" " "	8	1 0	293	57·83	235
D Roseneath (Achnashie) .....	Scot. Meteorological Soc.	6	1 0	25	70·25	203
Garelochhead (Aikenshaw) .....	Mr. W. S. Turnbull ...	6	1 0	32	76·50	...
3.—CLYDE—Leven. 149 sq. mi.						
D Dumbarton (Leven Shipyard) ...	Messrs W. Denny & Bros.	5	1 0	9 T	49·10	198
Kilpatrick Hills (Burncrooks Res.) No. 1	T. L. Rae, Esq., C.E....	5	1 0	835 T	46·64	...
" " ( " " ) No. 2	" " " " " "	5	1 0	959 T	59·86	...
" " ( " " ) No. 3	" " " " " "	5	1 0	920 T	51·34	...
" " ( " " ) No. 4	" " " " " "	5	1 0	1080 T	48·90	...
" " ( " " ) No. 5	" " " " " "	5	1 0	897 T	51·17	...
" " ( " " ) No. 6	" " " " " "	5	1 0	905 T	52·12	...
D Renton (Carman Reservoir) .....	Mr. Chas. Brown .....	8	4 0	292	52·70	224
D Alexandria (The Rectory) .....	Rev. J. Eldon Ellison...	5	1 0	58 T	54·25	227
D Glen Finlas Reservoir .....	Mr. D. Murray .....	5	1 0	820	96·23	223
4.—CLYDE—Right Bank Tributaries. 59 sq. mi.						
D Drumchapel .....	F. C. Thomson, Esq. ...	5	1 0	68 T	38·54	225
D Duntocher (Cochno Filters) .....	T. L. Rae, Esq., C.E....	5	1 0	400 T	51·48	221
Milngavie (Dougalston).....	R. M. Ker, Esq.....	5	1 0	120	48·69	...
Kilpatrick Hills (Greenside Res.)	T. L. Rae, Esq., C.E....	5	1 0	876 T	58·38	...
" " (Loch Cochno)...	" " " " " "	5	1 0	909 T	61·24	...
" " (Jaw Reservoir) .....	" " " " " "	5	1 0	912 T	64·16	...
<b>STIRLING.</b> (Area, 463 sq. mi.)						
1.—FORTH—Right Bank Tributaries. 263 sq. mi.						
Muiravonside Ho. [Linlithgow].	Mr. C. Leeder.....	5	4 8	175	35·33	...
D Polmont (Vellore).....(R)	W. Brown, Esq.....	8	4 6	320 T	34·88	218
D Falkirk (Inglewood, Laurieston)	W. Ballantine, Esq. ...	5	1 3	133 T	39·96	183
D " (Westbank) .....	A. Nimmo, Esq.....	5	0 9	75 T	39·09	196
D " (Burgh Buildings) .....	David Ronald, Esq., C.E.	5	1 0	107 T	37·53	180
D " (Burnfield) .....	" " " " " "	5	1 0	50	39·95	206
" (Ardenlea) .....	J. Aitken, Esq., F.R.S.	5	1 0	105 T	39·27	208
" (Kerse) .....	C. Brown, Esq. ....	8	1 0	18 T	35·60	...
" ( " ) .....	" " " " " "	5	0 10	18 T	36·07	...
Little Denny Reservoir .....	C. Massie, Esq. ....	8	1 0	326	48·80	...
" " Filters .....	" " " " " "	8	1 0	268 T	49·25	...
Kilsyth (Faughlin Res.) .....	" " " " " "	8	1 0	707 T	68·18	...
Earlsburn Reservoir .....	" " " " " "	8	1 0	1202 T	71·70	...
D Stirling (Touch Reservoir) No. 1	A. H. Goudie, Esq. ...	8	1 6	707	60·83	233
D " ( " " ) No. 2	" " " " " "	8	2 0	765	62·31	233
" (Polmaise Castle).....	C. Stirling, Esq.....	6	...	200	48·43	177
" (Victoria Place) .....	R. Kidston, Esq., F.R.S.	5	2 10	100	44·13	...
D Buchlyvie (The Manse).....	Rev. J. A. Macdonald..	5	1 3	118 T	51·87	248

## DIVISION XV.—WEST MIDLAND COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with .01 or more recorded.
		Diameter	Height above Ground.		Height above Sea Level	
		in.	ft.	in.	feet.	inches.
<b>STIRLING—(con.)</b>						
1.—FORTH—Right Bank Tributaries—(con.)						
Gargunnoch House .....	C. Stirling, Esq.....	5	5	8	85 ↑	46·21
d Kippen (Arngomery) .....	Mr. P. McCowan .....	5	4	2	150	56·41
Ben Lomond (Hd. of Duchray Val.)	J.R. Sutherland, Esq. CE	8	0	6	1800	102·90
2.—FORTH—Teith. 5 sq. mi.						
† Glengyle .....	J.R. Sutherland, Esq. CE	8	0	6	380	106·40
3.—FORTH—Left Bank Tributaries. 15 sq. mi.						
† Bridge of Allan (The Lea) .....	Laurence Pullar, Esq...	5	1	0	80	41·34
4.—CLYDE—Leven. 128 sq. mi.						
d Strathblane (The Manse) .....	Rev. W. B. Moyes.....	5	0	6	235 ↑	61·51
Kilpatrick Hills (Burncrooks Res.) No. 7	T. L. Rae, Esq., C.E....	5	1	0	955 ↑	57·49
d Killearn (Achnagowan) .....	Miss Guthrie-Smith ...	5	0	10	332 ↑	63·34
Loch Arklet (Corrieichon) .....	J.R. Sutherland, Esq. CE	8	0	6	870	115·00
„ „ (Corriearklet) .....	„ „ „	8	0	6	950	111·90
5.—CLYDE—Right Bank Tributaries. 52 sq. mi.						
d Torrance (Glenorchard) .....	Miss Bartholomew .....	5	1	6	200	49·67
Strathblane (Mugdock Reservoir)	J.R. Sutherland, Esq. CE	8	0	6	320	52·05
„ (Craigend Castle) ...	C. Stirling, Esq. ....	5	1	2	533 ↑	47·41
„ (Craigbarnet) .....	Capt. G. H. Miller Stirling	5	0	6	300 ↑	58·70
d Kilsyth (Currymire) .....	James Smith, Esq. ...	5	1	2	200	53·89
<b>BUTE. (Area, 218 sq. mi.)</b>						
1.—ISLE OF BUTE. 50 sq. mi.						
d Rothesay (Crichton Road) .....	H. Lauder, Esq., jun...	5	4	0	97	61·86
d „ (Glenburn Hydro.) ...	Mr. D. Penney .....	5	1	0	86	59·84
Port Bannatyne (Ettrickdale) ...	Lt.-Col. M.R. Gray Buchanan	5	1	0	190 B	58·41
2.—CUMBRAES. 4 sq. mi.						
d Great Cumbrae (Millport) .....	R. Elmhirst, Esq. ....	5	1	0	15 ↑	45·31
3.—ARRAN. 164 sq. mi.						
Pladda .....	Bd. of Northern Lights	...	...	...	130	53·43
Holy Island (Pillar Rock) .....	„ „ „	3	0	3	46	49·85
<b>ARGYLL. (Area, 3181 sq. mi.)</b>						
1.—TAY—Tummel. 36 sq. mi.						
2.—SOUND OF ARISAIG, SOUND OF MULL & C. 317 sq. mi.						
d Morvern (Ardtornish) .....	G. Craig Sellar, Esq....	5	1	0	48 ↑	83·63
d „ (Drimnin) .....	Mrs. Gordon .....	5	1	0	225	69·87
d Loch Sunart (Glenborrodale) ...	C. D. Rudd, Esq. ....	5	0	2	60 ↑	72·73
Ardnamurchan .....	Bd. of Northern Lights	8	4	3	180	49·73
3.—LOCH LINNHE—Right Bank Tributaries. 139 sq. mi.						
d Morvern (Kingairloch) .....	G. Herbert Strutt, Esq.	5	1	0	40 ↑	113·87
d Ardgour House .....	Capt. A. J. N. Maclean	5	0	10	60 ↑	108·93
4.—LOCH LINNHE—Left Bank Tributaries. 165 sq. mi.						
d Duror (The Rectory) .....	Rev. E. J. Benwell ...	5	1	0	120	84·94

## DIVISION XV.—WEST MIDLAND COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with .01 or more recorded.	
		Diameter	Height Above Ground		Height Above Sea Level		1912
		in.	ft.	in.	feet.	inches.	
ARGYLL—(con.)							
4.—LOCH LINNHE—Left Bank Tributaries—(con.)							
D Ballachulish House .....	F.C. Beresford Drummond Esq.	5	1	0	56 $\nabla$	96.76	251
D „ (Glencoe Gardens) ...	J. D. Sutherland, Esq.	8	1	0	20	112.31	222
Glenleven (Blackwater Ho.) No. 4	British Aluminium Co.	8	1	0	1069	93.24	...
D „ ( „ Dam, S.) 2	„ „ „	8	1	0	1072	102.88	249
„ (Invercann).....No. 6	„ „ „	8	1	0	1070	97.89	...
„ (Kinlochleven) ..No. 1	„ „ „	8	1	0	140	103.93	247
Loch Eil (Corran) .....	Bd. of Northern Lights	3	1	6	38	94.59	235
5.—LOCH ETIVE. 197 sq. mi.							
D Taynuilt (Barguilean) .....	Scot. Meteorological Soc.	...	...		230	84.81	204
Glen Etive .....	„ „ „	...	...		...	118.99	...
6.—LOCH ETIVE—Loch Awe. 319 sq. mi.							
D Loch Awe (Ford) .....	J. Boyd, Esq. ....	8	1	0	150 $\uparrow$	77.62	249
D „ „ (Cruachan) .....	„ „ „	8	1	0	208 $\uparrow$	96.29	229
7.—FIRTH OF LORNE. 112 sq. mi.							
D Kilmelfort (Arduaine) .....	J. A. Campbell, Esq....	5	0	10	23 $\nabla$	62.78	214
D† Oban .....	Dr. E. Baily .....	8	1	0	17 $\nabla$	61.21	242
8.—SOUND OF JURA. 163 sq. mi.							
D Lochgilphead (Poltalloch).....	Mr. D. S. Melville.....	5	1	2	135	65.98	232
9.—KINTYRE, WEST. 146 sq. mi.							
Mull of Kintyre .....	Bd. of Northern Lights	...	...		279 ?	49.01	191
D Muasdale (Killeen Manse) .....	Rev. D. J. Macdonald ..	5	1	0	30 $\nabla$	47.42	221
Largie Castle .....	J. R. M. Macdonald, Esq.	5	1	0	160 $\uparrow$	53.78	260
D Carse .....	J. Birkmyre, Esq., jun.	6	1	6	20 $\nabla$	45.22	237
10.—KINTYRE, EAST. 177 sq. mi.							
D† Campbelltown (South Park) .....	J. A. Gardiner, Esq. ....	8	0	10	20 $\nabla$	59.02	222
† „ (The Rectory) .....	Rev. Canon Wakeham..	5	1	0	30 ?	58.88	...
D† „ (Witchburn) .....	Mr. John Giffen .....	5	1	6	75	57.42	234
„ (Devaar) .....	Bd. of Northern Lights	...	3	4	120 ?	58.25	219
D Skipness Castle .....	R. F. Graham, Esq. ...	5	1	6	14 $\uparrow$	49.20	224
11.—LOCH FYNE. 264 sq. mi.							
Kilbride (Craig Cottage) .....	Philip Barne, Esq.....	5	1	0	9	52.65	209
Otter Ferry (Ballimore) .....	Mr. W. MacKenzie ...	5	0	6	70 $\nabla$	58.97	...
D „ „ (School House) .....	Mrs. Stewart .....	5	1	0	37 $\uparrow$	55.88	227
D Ardrishaig (Canal Office) .....	L. J. Groves, Esq., C.E.	5	1	0	48 $\nabla$	75.58	235
D Loch Fyne (Furnace).....	Mr. W. Nicol .....	5	3	0	15 $\nabla$	85.24	220
D „ „ ( „ Brenchoillie) .....	A. E. Lewis, Esq. ....	5	1	0	240 ?	87.25	187
D Strachur (The Clachan) .....	Mr. J. Montgomery ...	5	1	0	100 ?	86.26	223
D† Inveraray (Newtown) .....	Mrs. Little .....	5	1	0	17	82.01	245
D† „ „ Castle Gardens .....	A. E. Lewis, Esq. ....	5	1	0	40	93.04	246

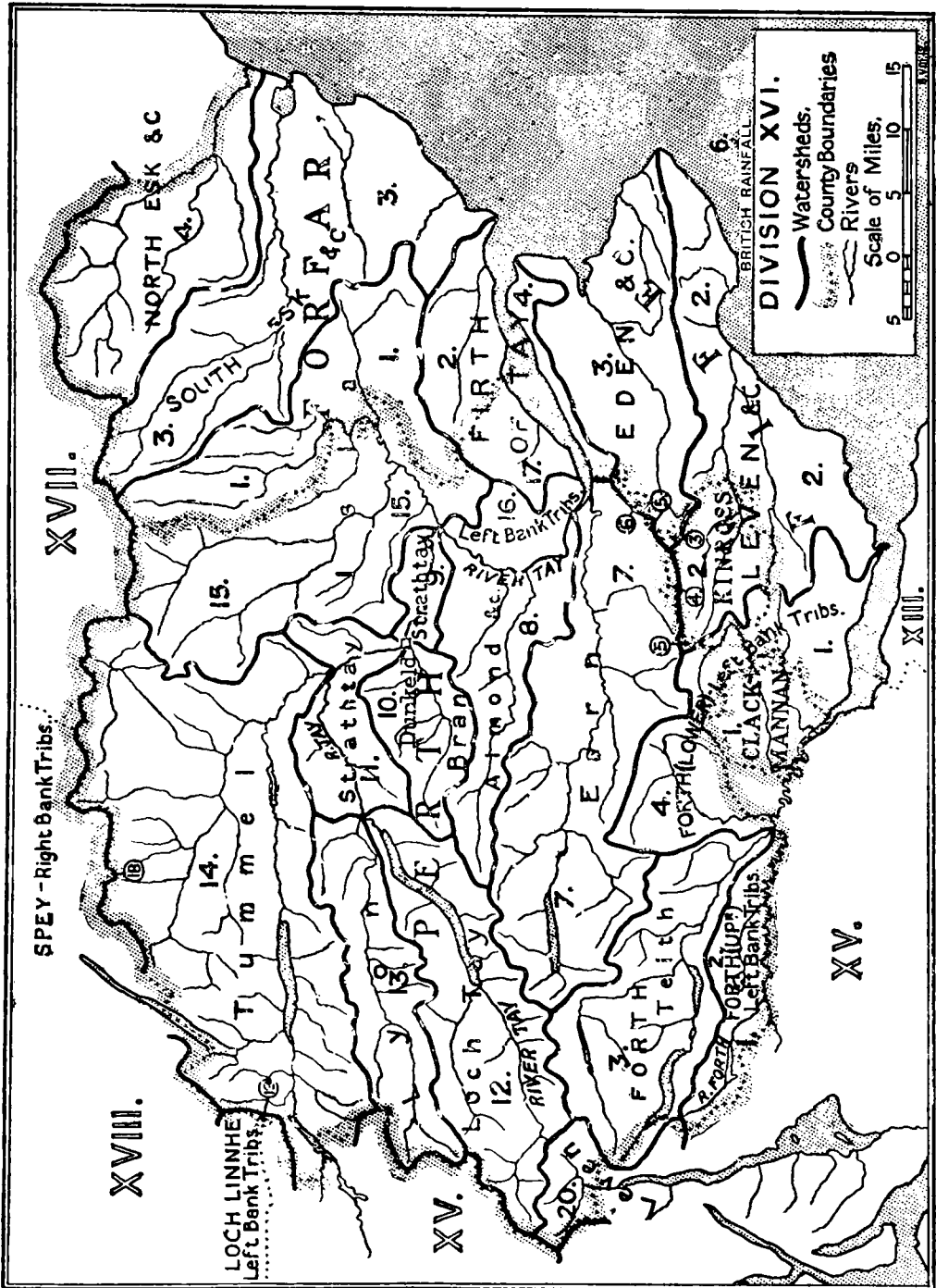
## DIVISION XV.—WEST MIDLAND COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with '01 or more recorded.	
		Diameter	Height Above Ground.		Height Above Sea Level		1912
		in.	ft.	n.	feet.	inches.	
ARGYLL—(con.)							
11.—LOCH FYNE—(con.)							
D Ardkinglas .....	Sir Andrew Noble, Bt..	8	1	6	37 $\pi$	92.54	239
D†Glen Aray (Ladyfield) .....	A. E. Lewis, Esq. ....	5	1	0	400 ?	112.66	187
Glen Shira (Drimlie).....	Rev. Gillespie Campbell	5	1	6	400	82.27	...
12.—FIRTH OF CLYDE & COWAL. 242 sq. mi.							
Innellan .....	Scot. Meteorological Soc.	...	...	...	15	65.48	...
D Tighnabruaich (Wellpark) ...	R. Paton, Esq. ....	12	5	0	50 B	62.08	193
D Dunoon (Castle Gardens) .....	W. Rodger, Esq., C.E.	12	35	0	56 $\pi$	98.35	226
D „ (Reservoir) .....	„ „ „	12	3	6	245 $\pi$	96.81	226
D „ (Redhurst) .....	Dr. J. Banks .....	5	1	6	60	91.18	222
D Holy Loch (Ardnadam) .....	Rev. J. Cairns Mitchell	5	1	0	66 B	93.65	237
D Loch Eck (Benmore).....	Mr. R. Greenlaw .....	5	1	3	40	104.85	208
D†Lochgoilhead (Nuthill) .....	G. Murray Knox, Esq..	5	1	0	15	91.26	231
13.—CLYDE—Leven. 4 sq. mi.							
14.—INSULAR. 900 sq. mi.							
D Islay (Ardbeg) .....	C. E. Hay, Esq.....	5	7	0	46 $\pi$	49.19	224
„ (Rhinns) .....	Bd. of Northern Lights	7	3	6	150	44.79	199
„ (Lochindaul).....	„ „ „	3	0	6	52	51.04	...
„ (McArthur's Head) .....	„ „ „	3	0	4	128	70.18	178
D „ (Eallabus).....	J. Forbes, Esq. ....	5	1	0	68 $\pi$	53.99	236
„ (Rhuvaal).....	Bd. of Northern Lights	3	1	3	147	46.41	196
D Jura (Ardfin).....	Colin Campbell, Esq....	5	1	0	160	58.73	231
„ (Fladda) .....	Bd. of Northern Lights	3	1	0	42	62.97	188
Lismore (Mousedale).....	„ „ „	7	3	10	105	54.18	206
Eriska (Ledaig) .....	Scot. Meteorological Soc.	5	1	6	30	65.91	...
Mull (Kilfinichen) .....	J. A. Hunter, Esq.....	5	1	0	50	74.15	...
D† „ (Iona Manse).....	Rev. A. Macmillan .....	5	1	2	45	52.74	224
D† „ (Bunessan) .....	Duncan Cameron, Esq.	5	1	4	50 B	50.13	213
D „ (Lochbuie Castle) .....	Mr. E. Lovesey .....	8	1	4	10	98.83	231
D „ (Ulva) .....	F. W. Clark, Esq.....	5	1	0	30 $\pi$	65.38	259
D† „ (Knock) .....	Duncan Cameron, Esq.	5	1	4	50	94.02	207
D „ (Glencannel) .....	„ „ „	5	1	3	140	123.12	229
D† „ (Gruline) .....	J. W. Melles, Esq. ...	8	1	0	101 ?	85.18	247
D „ (Quinish) .....	J. N. Forsyth, Esq. ...	5	1	3	35 B	56.46	229
„ Sound of .....	Bd. of Northern Lights	3	1	4	55	68.20	171
D†Tiree (Cornaigmore) .....	J. Ross, Esq. ....	5	1	0	25 $\pi$	53.07	254
Sanda .....	Bd. of Northern Lights	...	...	...	165	38.93	215

### MAP OF DIVISION XVI.

EAST MIDLAND COUNTIES,

### Showing the River-Divisions.



## DIVISION XVI.—EAST MIDLAND COUNTIES.

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with .01 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.	
CLACKMANNAN. (Area, 55 sq. mi.)							
1.—FORTH, LOWER—Left Bank Tributaries. 55 sq. mi.							
D Alloa House Gardens .....	Earl of Mar & Kellie, K.T.	5	2	6	40	38·71	207
„ (Mar Street) .....	A. Mitchell, Esq. ....	5	0	6	70	35·89	...
„ W.W. (Gartmorn Res.) ...	Andrew Mackie, Esq. CE	11	1	0	172 7/8	33·83	...
D Dollar (Wellhall, Dollarbeg) ...	James Bleloch, Esq. ...	5	0	9	265 1/2	42·66	202
D „ Academy .....	Mr. T. Aitken .....	9	1	0	178	42·06	183
KINROSS. (Area, 87 sq. mi.)							
1.—FORTH, LOWER—Left Bank Tributaries. 15 sq. mi.							
Blairingone Manse [Dollar] .....	Rev. J. F. Cameron ...	5	1	6	300 1/2	43·76	197
2.—LEVEN & C. 87 sq. mi.							
Blairadam Wood [Kelty] .....	D. Mackenzie, Esq., C.E.	8	0	5	761 1/2	46·02	164
D Loch Leven Sluice .....	Mr. W. Hay .....	8	0	9	360 1/2	39·05	188
3.—EDEN. 2 sq. mi.							
4.—TAY—Earn. 3 sq. mi.							
FIFE. (Area, 505 sq. mi.)							
1.—FORTH, LOWER—Left Bank Tributaries. 66 sq. mi.							
D Dunfermline (Broomhall Gardens) .....	Mr. J. Mitchell .....	5	1	0	15 1/2	28·00	170
D „ (Keavil) .....	J. J. Dalgleish, Esq. ...	5	2	0	150	27·64	177
D „ (Victoria Place) ...	J. Blyth, Esq. ....	5	1	2	365	35·74	181
D Culross (Westgrange) .....	J. J. Dalgleish, Esq. ...	5	2	0	116 7/8	31·49	206
Carnock (Luscar House) ... No. 1	A. Mitchell, Esq. ....	5	0	10	430 1/2	34·04	...
„ „ „ „ „ No. 2	„ „ „ „ „	5	0	10	430 1/2	34·00	...
„ (Craigluscar) .....	W. R. Maxwell, Esq. ...	12	0	4	280 7/8	39·45	...
2.—LEVEN & C. 208 sq. mi.							
D Dunfermline (Fordell House) ...	Earl of Buckinghamshire	5	1	0	250 1/2	31·34	162
D Cowdenbeath (Northbank) .....	J. S. Rae, Esq. ....	5	1	0	473 7/8	44·02	225
Cleish Hills (Deanhead) .....	„ „ „	5	1	0	725 1/2	36·20	...
„ „ (Loch Glow Res.) ...	D. Mackenzie, Esq., C.E.	7	0	7	897 1/2	46·60	164
Leslie (Lothrie Reservoir) .....	Scot. Meteorological Soc.	5	0	5	702	38·29	...
D Elie House (The Gardens) .....	Mr. A. A. Law .....	5	0	10	55 1/2	26·87	190
D „ (The Castle) .....	Miss E. E. Scott Moncrieff	5	...	...	...	24·25	188
Largo (Carlton) .....	Mr. E. Tate .....	5	2	6	150 1/2	31·15	201
„ (Roselea) .....	Scot. Meteorological Soc.	5	1	0	...	27·44	...
D Colinsburgh Manse .....	Rev. Robert Dick .....	5	2	0	130 1/2	28·00	196
D „ (Balcarres) .....	Mr. J. M. Paul .....	5	1	0	300 1/2	30·80	203
D Carnbee (Ovenstone W.W.) .....	A. P. Watson, Esq. ...	5	1	0	168 7/8	26·53	160
3.—EDEN & C. 205 sq. mi.							
Cupar (Clatto Reservoir) .....	Scot. Meteorological Soc.	...	...	...	500	31·05	...
D „ (Rankeillour) .....	Capt. J. Kerr .....	5	1	0	240 1/2	31·14	199
D „ (Fife & Kinross Asylum) ..	Mr. J. Ness .....	5	1	0	210	30·72	175
D St. Andrews (Water Works) .....	W. Watson, Esq. ....	5	1	0	217 7/8	27·93	180
D „ „ (Brownhills) .....	G. Cheetham, Esq. ....	5	0	10	188 1/2	29·01	196
D „ „ (Queen's Gardens) ..	Miss Macadam .....	5	1	0	55 1/2	29·54	212



## DIVISION XVI.—EAST MIDLAND COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with .01 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	
		in.	ft.	in.	feet.	inches.
<b>FIFE—(con.)</b>						
4.—FIRTH OF TAY. 25 sq. mi.						
D Newport (Tayfield) .....	W. Berry, Esq. ....	5	0	7	100	31·04 178
D Tayport (Lighthouse) .....	J.H.Thompson, Esq., CE	5	1	0	27	26·99 192
5.—TAY—Earn. 1 sq. mi.						
6.—INSULAR.						
Inchkeith .....	Bd. of Northern Lights	...	...	...	160	21·25 ...
Isle of May .....	" " "	6	3	0	...	20·59 161
<b>PERTH. (Area, 2535 sq. mi.)</b>						
1.—FORTH—Right Bank Tributaries. 17 sq. mi.						
2.—FORTH, UPPER—Left Bank Tributaries. 64 sq. mi.						
† Aberfoyle (The Inn) .....	J.R.Sutherland, Esq., CE	8	0	6	60	75·70 ...
† Loch Dhu .....	" " "	8	0	6	325	99·00 ...
Ledard .....	" " "	8	0	6	1500	70·60 ...
3.—FORTH—Teith. 276 sq. mi.						
Ochertyre [Stirling] .....	Capt. J. Dundas .....	5	1	0	18 T	46·76 ...
D Doune (U.F. Manse) .....	J. R. S. Mackay, Esq. ...	5	1	0	125 T	46·60 237
Loch Drunkie .....	J.R.Sutherland, Esq., CE	8	0	6	420	68·90 ...
† Loch Vennachar .....	" " "	8	0	6	275	70·10 ...
† Bridge of Turk .....	" " "	8	0	6	275	73·80 ...
Doune (Cauldhame) .....	J. Forbes, Esq. ....	5	1	0	830	59·59 200
† Loch Katrine (Tunnel Hill Top)	J.R.Sutherland, Esq., CE	8	0	6	830	102·60 ...
Between Glen Finlas & Ben Ledi No.1	" " "	8	0	6	1800	81·55 ...
" " " No.2	Mr. A. Robertson .....	8	0	6	1400 ?	86·25 ...
Callander (Leny House) .....	J. H. Buchanan, Esq. ...	5	0	6	340 T	74·70 ...
† Balquhidder (Blaircreach) .....	J. Carnegie, Esq. ....	5	1	0	460	112·70 ...
D† " (Stronvar) .....	" " "	5	1	0	422 T	91·00 202
4.—FORTH, LOWER—Left Bank Tributaries. 107 sq. mi.						
D Dunblane (Kippenross) .....	Mr. J. Doig .....	3	1	3	237	50·50 269
" (Kippendavie) .....	Scot. Meteorological Soc.	8	2	9	300	49·79 ...
Glendevon (Glenquey Reservoir)	D. Mackenzie, Esq., C.E.	11	0	11	945 T	61·60 ...
D " (Tormaukin) .....	Mr. W. Phillips .....	5	0	10	770 T	65·08 182
" (Glensherup) .....	W. R. Maxwell, Esq. ...	12	0	4	945	74·26 ...
Braco (Nether Cambushinnie) ...	J. W. Stirling, Esq. ...	5	0	10	380 T	53·25 ...
5.—LEVEN. 1 sq. mi.						
6.—EDEN. 4 sq. mi.						
7.—TAY—Earn. 376 sq. mi.						
Slateford Burn (Shire End) .....	Messrs. Leslie & Reid, C.E.	8	...	...	930	42·31 ...
" " (Whitehill) .....	" " "	8	...	...	810	41·82 ...
Upper Farg (Plains) .....	" " "	8	...	...	900	40·60 ...
" " (Deuglie) .....	" " "	5	...	...	710	39·10 ...
" " (Heatherieleys) .....	" " "	5	...	...	790	39·70 ...
" " ( " Quarry) .....	" " "	8	...	...	715	39·28 ...
Auchterarder .....	Scot. Meteorological Soc.	...	...	...	...	35·85 ...
Abernethy (Ayton House) .....	" " "	5	0	11	120	33·19 ...
Bridge of Earn (Ballendrick) ...	R. Richardson, Esq. ...	3	4	10	50	29·27 ...
" " (Gateside) .....	John Ellis, Esq. ....	5	1	0	28 T	32·74 ...

## DIVISION XVI.—EAST MIDLAND COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with .01 or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level		
		in.	ft. in.	feet.	inches.	
PERTH—(con.)						
7.—TAY—Earn—(con.)						
n† Lochearnhead (Edinchip) .....	Sir Malcolm MacGregor, Bt.	5	1 0	542	88·91	239
n „ (Ardvorlich) .....	Col. J. Stewart, C.I.E..	5	1 0	325 T	84·94	214
n Comrie (Clathick) .....	Mr. T. Elvidge .....	5	1 0	300	50·92	177
n Crieff (Strathearn Hydro.) .....	late Dr. T. H. Meikle...	5	1 0	436 T	46·56	211
8.—TAY—Almond & c. 149 sq. mi.						
n Perth (Craigie Road) .....	Sydney Wilson, Esq....	5	1 0	56 T	31·53	192
9.—TAY—Strathtay below Dunkel d. 33 sq. mi.						
Murthly (Douglasfield) .....	W. A. Rae, Esq.....	5	0 6	237 T	39·02	...
n† Dunkeld (Snaigow) .....	(R) W. H. Cox, Esq. ....	10	1 0	370	36·07	192
10.—TAY—Bran. 81 sq. mi.						
11.—TAY—Strathtay above Dunkel d. 95 sq. mi.						
n Aberfeldy (Urlar) .....	J. A. Macdonald, Esq..	...	...	1000 T	44·25	169
Dalguise Gardens .....	J. H. Tempest, Esq. ....	...	...	200	41·84	121
n† Aberfeldy (Dall Avon) .....	Dr. N. D. Mackay .....	5	1 0	300	46·44	213
n† „ (Dunros) .....	H. W. Johnston, Esq..	5	1 0	400	40·76	208
12.—TAY—Loch Tay. 186 sq. mi.						
13.—TAY—Lyon. 142 sq. mi.						
n Glenlyon (Meggernie Castle) ...	Mr. W. Taylor ... ..	5	1 0	760	69·11	213
14.—TAY—Tummel. 587 sq. mi.						
n Pitlochry (Bonskeid) .....	G. F. Barbour, Esq. ...	5	1 0	540 T	41·24	209
† Blair Atholl .....	Mr. D. McLachlan.....	5	1 0	420	40·10	...
15.—TAY—Isla. 282 sq. mi.						
n† Coupar Angus .....	Mr. J. Robertson .....	5	1 3	183 T	31·34	191
n Blairgowrie (Kinloch Manse) ...	Ian Milne, Esq. ....	5	1 0	280 T	32·98	200
n† „ (Ballintuim House). .....	Miss M. A. Macdonald	5	1 4	700	45·36	231
16.—TAY—Left Bank Tributaries. 51 sq. mi.						
n Perth (Laurelbank) .....	A. M. Rodger, Esq. ...	5	1 0	85 T	30·10	178
Dunsinnan .....	J. Mackay Bernard, Esq. ....	...	...	400 ?	35·07	...
17.—FIRTH OF TAY. 45 sq. mi.						
18.—SPEY. Right Bank Tributaries. 1 sq. mi.						
19.—LOCH LINNHE. Left Bank Tributaries. 2 sq. mi.						
20.—CLYDE—Leven. 38 sq. mi.						
FORFAR. (Area, 875 sq. mi.)						
1.—TAY—Isla. 211 sq. mi.						
n Kettins School .....	W. Andrew, Esq. ....	5	1 0	218 T	35·38	199
Glamis Castle .....	Mr. T. Wilson .....	5	1 6	250	29·44	...

## DIVISION XVI.—EAST MIDLAND COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with .01 or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
<b>FORFAR—(con.)</b>						
<b>1.—TAY—Isle—(con.)</b>						
D Forfar (Lilyfield) .....	D. M. Mackie, Esq. ...	5	0 5	225 T	32.87	180
Kirriemuir (Lintrathen) .....	M G. Baxter, Esq., C.E..	8	1 0	700	37.00	...
D " ( " ) .....	" " " " .....	8	1 0	700	39.54	179
" ( " Balnakeilly) M	" " " " .....	8	1 0	700	38.20	...
" ( " Creich Hill, S.) M	" " " " .....	8	1 0	1482	33.80	...
" ( " " " ) M	" " " " .....	8	1 0	1500	36.50	...
" ( " " " N.) M	" " " " .....	8	1 0	1491	39.10	...
<b>2.—FIRTH OF TAY. 80 sq. mi.</b>						
D Buddonness (Low Light) .....	J.H.Thompson, Esq., CE	5	1 0	27	30.32	186
D Dundee (Harbour) .....	" " " " .....	5	0 10	14	29.64	201
D Broughty Ferry (Tayside Cottage)	Mr. A. Robb .....	5	5 6	25	25.64	185
Dundee (Eastern Necropolis) ...	Mr. J. Carnochan .....	3	1 0	199 T	27.45	...
D " ( " " ) .....	" " " " .....	5	1 0	199 T	28.09	195
" (Dens Works) ... roof g.	Messrs. Baxter Bros. Ltd.	5	1 5	119 T	28.81	213
" (Camperdown Works) ...	Messrs. Cox, Bros., Ltd.	5	3 8	290	26.23	...
" (Innisearra) .....	Scot. Meteorological Soc.	...	...	...	28.57	...
D " (Balruddery) .....	J. Martin White, Esq..	5	1 0	266 T	29.63	172
Murroes Schoolhouse .....	H. A. Forsyth, Esq. ...	5	1 0	425 T	36.61	...
<b>3.—SOUTH ESK &amp; C. 371 sq. mi.</b>						
Carnoustie .....	Peter Sinclair, Esq., C.E.	8	...	39 T	27.08	191
D Craigton .....	G. Baxter, Esq., C.E..	8	1 0	484	33.08	184
" .....	" " " " .....	11	3 0	484	32.45	...
" (Hillhead) .....	" " " " .....	11	3 0	370	33.14	...
Crombie Reservoir .....	" " " " .....	11	3 0	522 T	36.35	...
D Arbroath (Dishland Hill) .....	Mr. J. Campbell .....	5	1 0	69 T	22.83	190
" (Muirheads Reservoir) .....	P. C. Smith, Esq., C.E.	5	1 0	251 T	28.63	...
Montroseness .....	Bd. of Northern Lights	3	1 0	124	23.88	...
D Montrose (Melville Gardens) ...	S. L. Christie, Esq. ...	5	9 0	20 T	24.12	151
D Forfar W.W. (Den of Ogil) .....	A. Watterston, Esq. ...	12x4	0 3	633 T	43.68	192
D Glen Prosen (Pearsie) .....	Scot. Meteorological Soc.	5	1 0	600 T	42.51	207
D " " (Lednathie) .....	Mr. W. G. Lindsay ...	5	1 0	720	45.90	173
<b>4.—NORTH ESK &amp; C. 213 sq. mi.</b>						
Montrose (Sunnyside Asylum) ...	Dr. J. G. Havelock ...	5	0 10	200	26.28	...
D " (Kinnaber W.W.) .....	S. L. Christie, Esq. ...	5	1 0	38 T	28.32	182
Logie Pert (Loanhead of Craigo)	Mr. G. D. Cramond ...	5	0 9	200 T	29.05	...
Brechin (Stracathro Gardens) ...	Mr. A. Dunlop .....	5	1 0	200 T	32.66	...

MAP OF DIVISION XVII.

NORTH EASTERN COUNTIES,  
Showing the River-Divisions.



STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with '01 or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
KINCARDINE. (Area, 382 sq. mi.)						
1.—NORTH ESK & C. 99 sq. mi. Laurencekirk (Johnstone Lodge)	Scot.Meteorological Soc.	5	1 0	400	30·51	...
d† Fettercairn (The Burn) .....	Col. C. McInroy, C.B. ...	5	0 11	250	36·47	194
" (Police Station) .....	Mr. A. Mackenzie .....	5	1 0	230 †	36·12	187
+ " (Fasque Gardens) ...	Sir J.R. Gladstone, Bart.	5	1 0	320 †	36·27	211
2.—BERVIE, COWIE & C. 139 sq. mi.						
Todhead .....	Bd. of Northern Lights	3	4 0	125	23·43	...
d Stonehaven (Mains of Cowie) ...	John Hart, Esq.....	5	1 0	80	26·22	195
Girdleness .....	Bd. of Northern Lights	7	4 0	185	24·83	...
3.—DEE. 144 sq. mi.						
† Strachan (Bridge of Dye).....	Sir J.R. Gladstone, Bart.	5	1 0	500 †	46·53	201
d† Crathes (Crossroad, Durris) .....	A. Macdonald, Esq. ...	5	1 0	420 †	36·07	208
Durris House [Drumoak].... (R)	Mr. A. Reid .....	5	3 6	200 ?	36·08	...
d† Banchory (Invercannie) .....	Cecil H. Roberts, Esq. CE	12	0 10	205 †	38·74	206
† Crathes (Pinewood) .....	J. Smith, Esq. ....	5	1 0	145 †	34·92	196
d† " (Woodbank Cottage)....	Mr. D. Murchison .....	5	0 6	165 †	34·69	188
Banchory (Hirn) .....	Mr. W. Caird .....	5	1 0	287 †	33·49	...
ABERDEEN. (Area, 1974 sq. mi.)						
1.—DEE. 672 sq. mi.						
† Braemar (Canmore) .....	M A. M. Shirran, Esq. ...	8	0 9	1114 †	40·22	...
d† " (Bank) .....	M " " " " " "	5	1 0	1114 †	39·64	188
d† " (Derry Lodge) ... No. 6	Cecil H. Roberts, Esq., CE	5	1 0	1400	42·63	190
d† Balmoral Castle Gardens .....	Mr. J. M. Troup .....	8	1 0	927 †	38·27	211
d Abergeldie Castle .....	Mr. R. F. Chalmers ...	5	1 0	...	37·01	214
d Ballater (Irrigation Farm) .....	Cecil H. Roberts, Esq., CE	5	1 0	637 †	35·06	178
d† Glen Gairn (Gairn Shiel Lo.) No 14	" " " "	5	1 0	1100	36·22	227
† " " (Corndavon Lodge) No 13	" " " "	5	1 0	1500	41·34	...
d† Cromar (Logie Coldstone School)..	J. B. Anderson, Esq....	5	1 0	608 †	30·75	216
d† " ( " " Loanhead)	Mr. A. Farquharson ...	5	1 0	743 †	30·97	231
d Aberdeen (Mannofield Reservoir)	Cecil H. Roberts, Esq. CE	8	1 0	171 †	29·42	219
d† " (Cranford House) .....	D. McHardy, Esq. ...	5	1 0	120 †	32·44	200
d " (Cornhill Road).....	J. B. Innes, Esq. ....	5	1 0	150 †	32·41	209
2.—DON. 512 sq. mi.						
† Aberdeen (King's College) .....	Meteorological Office ...	8	2 0	90	29·33	193
Upper Don (Delnadampf) No. 15	Cecil H. Roberts, Esq., CE	5	1 0	1850	39·00	...
d† Strathdon (Estates Office) .....	C. Christie, Esq. ....	5	1 2	990 †	38·23	230
d Alford (Lynturk Manse) .....	Rev. J. B. Duncan.....	5	1 0	600 †	34·14	204
d Dyce (Parkhill House) .....	J. E. Crombie, Esq. ...	5	0 11	200 †	33·74	223
Insch (Thornhill) .....	J. Bisset, Esq.....	8	1 0	430 †	33·20	210

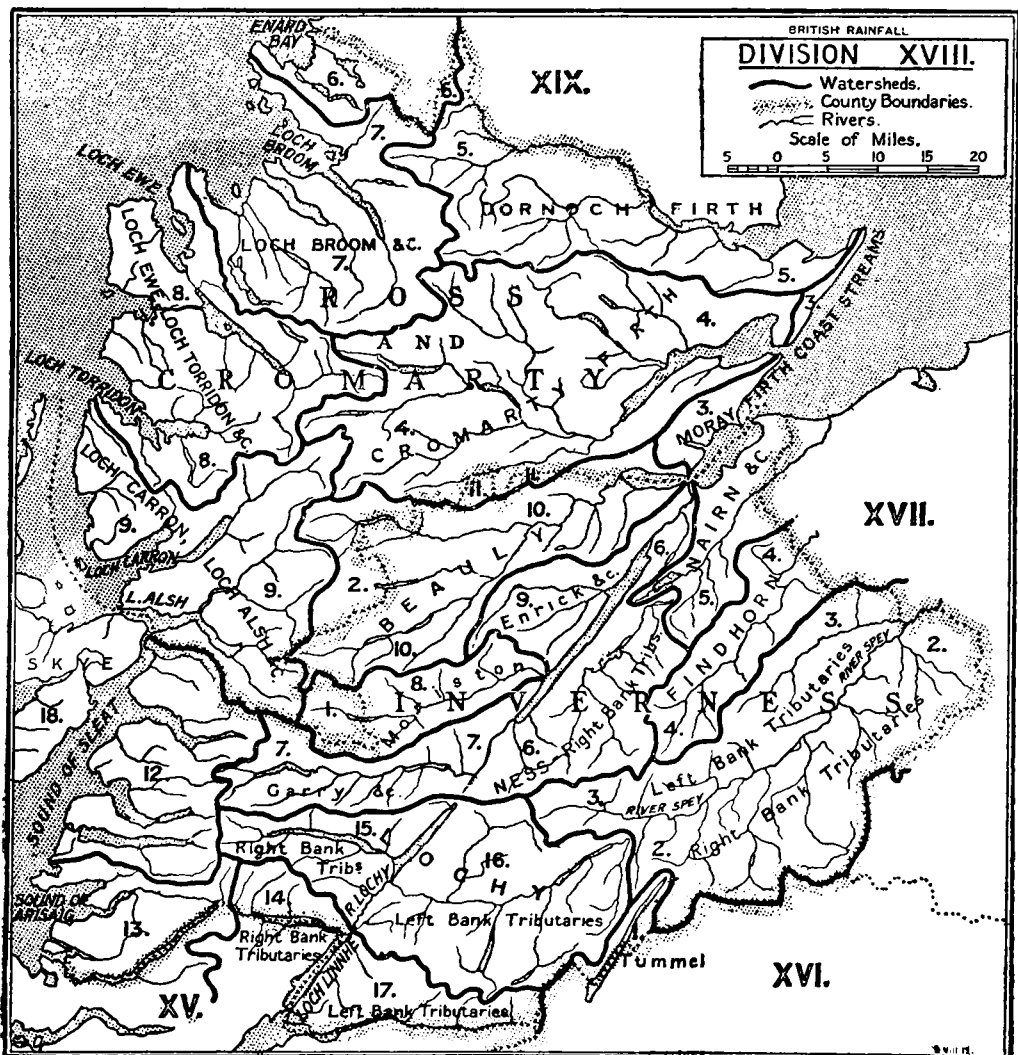
DIVISION XVII.—NORTH EASTERN COUNTIES—(*continued*).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with .01 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.	
<b>ABERDEEN—(<i>con.</i>)</b>							
3.—YTHAN & C. 285 sq. mi.							
D House of Schivas .....	Lord Haddo .....	5	0	9	200 T	30.56	223
D Fyvie Castle .....	Col. C. R. Burn .....	5	0	6	200 T	35.69	189
4.—UGIE & C. 257 sq. mi.							
Buchanness.....	Bd. of Northern Lights	3	3	0	130	24.33	...
D New Deer Schoolhouse .....	H. Cowie, Esq. ....	5	1	0	397 T	31.40	214
D Peterhead (Thunderton) .....	Miss Oldman .....	5	1	1	150	30.44	219
D „ (Mains of Buthlaw)... ..	G. Johnston, Esq. ....	5	1	6	120	29.08	221
Kinnairdhead.....	Bd. of Northern Lights	3	2	6	120	25.65	156
5.—DEVERON & C. 248 sq. mi.							
Drumblade (Public School) .....	G. Harper, Esq.....	5	1	6	485 T	33.28	216
Huntly (Union Bank) .....	Alex. Smith, Esq. ....	5	1	0	450 T	34.18	...
D „ (Cruchie) .....	John Joss, Esq. ....	5	4	0	400 T	32.55	205
<b>BANFF. (Area, 630 sq. mi.)</b>							
1.—YTHAN. 1 sq. mi.							
2.—DEVERON & C. 344 sq. mi.							
D Keith Station .....	Mr. A. Kennedy .....	5	1	0	364 T	36.44	229
Cullen House .....	Mr. A. Grant .....	5	1	0	100 T	35.60	...
3.—SPEY—Right Bank Tributaries. 285 sq. mi.							
D Dufftown (Victoria Terrace) ...	Miss Walker .....	5	2	0	579 T	35.66	237
Aberlour .....	J. F. McGowan, Esq....	4	1	0	298	31.48	...
„ Orphanage .....	J. G. White, Esq. ....	5	4	0	320	31.86	...
Craigellachie .....	Scot. Meteorological Soc.	3	0	1	339 T	32.21	...
<b>MORAY. (Area, 477 sq. mi.)</b>							
1.—DEVERON & C. 7 sq. mi.							
2.—SPEY—Right Bank Tributaries. 35 sq. mi.							
D Gordon Castle.....	Mr. C. Webster .....	5	1	0	107 T	29.69	212
3.—SPEY—Left Bank Tributaries. 133 sq. mi.							
Grantown-on-Spey .....	Mr. W. Duncan.....	5	1	1	700	30.59	203
Archiestown (Benview).....	Mr. J. Milne .....	5	1	0	750 T	31.25	191
4.—LOSSIE & C. 154 sq. mi.							
Elgin (The Manse).....	Rev. Dr. R. Macpherson	6	1	3	38 T	25.25	...
D Duffus House .....	Mr. W. Ogg .....	5	1	0	55 T	27.34	186
Covesea Skerries .....	Bd. of Northern Lights	7	3	6	52	23.41	159
5.—FINDHORN & C. 148 sq. mi.							
D Darnaway Castle Gardens.....	Mr. A. Dow.....	5	1	3	...	25.87	162
Forres (Balnaferry) .....	W. Fraser, Esq.....	5	1	0	65	22.85	...
Kinloss .....	Mrs. Mackessack .....	5	1	3	23 T	25.26	...

## DIVISION XVII.—NORTH EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with .01 or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level		
		in.	ft. in.	feet.	inches.	
<b>NAIRN.</b> (Area, 163 sq. mi.)						
1.—FINDHORN & C. 102 sq. mi.						
D Ardelach (Glenferness).....	Mr. A. Mackenzie .....	8	1 6	750 T	33.45	200
2.—NAIRN & C. 61 sq. mi.						
Cawdor .....	J. Birnie, Esq. ....	5	1 0	250 T	27.03	...
D „ Castle .....	(R) Mr. D. Chapman .....	8	4 3	225 T	29.32	199
D Nairn (Achareidh).....	H. A. Clarke, Esq.....	8	1 0	59 T	26.15	225
„ (Delnies) .....	Meteorological Office...	8	1 9	84	26.94	248

## MAP OF DIVISION XVIII.—NORTH WESTERN COUNTIES.



## DIVISION XVIII.—NORTH WESTERN COUNTIES.

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with '01 or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level		
		in.	ft. in.	feet.	inches.	
INVERNESS. (Area, 4146 sq. mi.)						
1.—TAY—Tummel. 28 sq. mi.						
2.—SPEY—Right Bank Tributaries. 437 sq. mi.						
3.—SPEY—Left Bank Tributaries. 257 sq. mi.						
Kingussie ..... No. 1	Scot. Meteorological Soc.	5	1 0	828	36·88	229
" ..... No. 2	" " "	5	1 0	840	33·11	...
d Alvey Manse .....	Rev. J. Anderson .....	5	1 0	760 T	29·26	190
Carrbridge Manse .....	Scot. Meteorological Soc.	...	...	...	27·37	...
Muckerach Lodge [Grantown]...	Mr. J. Fraser .....	5	1 3	760	29·44	227
4.—FINDHORN. 164 sq. mi.						
5.—NAIRN & C. 131 sq. mi.						
6.—NESS—Right Bank Tributaries. 252 sq. mi.						
d Fort Augustus (St. Benedict's)...	Rev. C. von Dieckhoff..	5	1 0	68 T	50·26	244
Loch Ness (Killin, Whitebridge).	British Aluminium Co.	5	1 0	1200	36·07?	...
d " " (Garthbeg).....	" " "	5	1 0	645 T	39·50	209
" " (Foyers).....	" " "	5	1 6	52 T	41·22	...
" " (Aberchalder) .....	" " "	5	1 0	700 T	37·36	...
7.—NESS—Garry & c. 185 sq. mi.						
Loch Quoich (Loan) .....	W. M. Christy, Esq. ....	5	1 6	650 T	178·95	...
d " " (Kinlochquoich) ...	Col. D. W. Cameron ..	5	1 0	560 T	140·88	257
d " " (Glenquoich) .....	Scot. Meteorological Soc.	5	1 2	569 T	124·28	238
d Glen Garry (Inchlaggan) .....	Mr. M. Matheson .....	5	1 0	370 T	83·41	268
Invergarry .....	Mr. G. Robertson .....	5	1 0	130 ?	73·83	...
8.—NESS—Moriston. 120 sq. mi.						
9.—NESS—Enrick. 131 sq. mi.						
d Drumnadrochit .....	Mr. Angus Grant .....	5	1 0	138 T	38·30	232
d Inverness (High School) .....	W. G. MacConnachie Esq	5	1 0	98 T	28·15	180
10.—BEAULY. 341 sq. mi.						
11.—CROMARTY FIRTH. 13 sq. mi.						
12.—SOUND OF SLEAT. 259 sq. mi.						
Loch Morar (Meoble Lodge).....	E. M. Crosfield, Esq....	8	1 3	104 T	116·13	...
d Loch Nevis (Inverie) .....	Mr. J. Huggins ....	5	0 6	10	97·53	239
d Glenelg Manse .....	Rev. A. Mactaggart ...	5	1 0	85 T	53·66	246
13.—SOUND OF ARISAIG. 128 sq. mi.						
d Moidart (Kinlochmoidart).....	J. C. Stewart, Esq.....	5	1 3	13	78·68	204
d " (Roshven) .....	Mrs. Blackburn .....	5	1 0	40 T	75·01	268
d Loch Shiel (Glenfinnan) .....	Col. J. A. Macdonald...	5	0 8	50 ?	129·59	241
d Arisaig (Point of Rhue) .....	Mr. D. McVarish .....	5	1 0	100 T	58·24	208
d " (Faire-na-Sguir) .....	Miss C. C. Astley .....	5	1 8	30	63·17	235
d " House .....	Mr. W. Grant .....	5	1 0	30 ?	67·01	235
14.—LOCH LINNHE—Right Bank Tributaries. 48 sq. mi.						
15.—LOCHY—Right Bank Tributaries. 143 sq. mi.						
d Loch Arkaig (Achnacarry) .....	Col. D. W. Cameron ...	5	1 0	110	97·81	242
d " " (Glen Dessary) .....	" " "	5	1 0	300 T	132·30	226
16.—LOCHY—Left Bank Tributaries. 362 sq. mi.						
Spean Bridge (Spean Lodge) ...	Miss W. Davy .....	5	1 5	204	70·58	233
Loch Lochy (Invergloyle) .....	Major G. I. Bailey.....	5	1 0	210 T	60·86	234
17.—LOCH LINNHE—Left Bank Tributaries. 120 sq. mi.						
d North Ballachulish (Alltshellach)	B. Chinnery-Haldane Esq	5	2 1	80 B	83·74	229



## DIVISION XVIII.—NORTH WESTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with 0.1 or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
<b>INVERNESS—(con.)</b>						
17.— <b>LOCH LINNHE—Left Bank Tributaries—(con.)</b>						
D Glenleven (Blackwater Dam, N.)	British Aluminium Co.	8	1 0	1072	103.34	250
D " (Kinlochmore) .....	Brian Bibby, Esq. ....	5	1 0	115	111.67	243
D " (Chiaron House) No. 3	British Aluminium Co.	8	1 0	1200 T	97.21	...
D " (Cam Bridge) ... No. 5	W. " T. Kilgour, Esq. "	8	1 0	1260 T	75.73	...
D Fort William (Atholl Bank) .....	W. " T. Kilgour, Esq. "	5	1 0	171 T	83.15	230
18.— <b>INSULAR, INNER HEBRIDES. 786 sq. mi.</b>						
D Eigg (Kildonan) .....	Mrs. Glendinning .....	5	1 0	35	62.05	189
Hyskier .....	Bd. of Northern Lights	...	...	...	40.98	175
Rum (Kinloch Castle) .....	Mr. P. R. Hills .....	5	1 8	25 ?	111.29	237
Skye (Oronsay) .....	Bd. of Northern Lights	...	0 6	58	58.29	209
D " (Kyleakin) .....	" " "	5	4 6	53	53.81	245
D " (Scalpay Island) .....	Mr. D. Gunn .....	5	1 0	4	90.86	240
D " (Glendrynoch, L. Harport) .....	Rev. H. Harbord .....	5	1 0	40	76.37	...
D " (Neist Point) .....	Bd. of Northern Lights	...	...	...	67.21	219
D " (Portree) .....	D. Dewar, Esq. ....	5	1 0	65	64.75	215
D " (Dunvegan) .....	Mrs. Mackenzie .....	5	3 0	47 T	85.23	230
D " (Lynedale) .....	Scot. Meteorological Soc. ....	...	...	100 ?	78.55	234
Rona .....	Bd. of Northern Lights	3	1 3	212	39.36	190
19.— <b>INSULAR, OUTER HEBRIDES. 243 sq. mi.</b>						
Barra (Barrahead) .....	Bd. of Northern Lights	7	3 0	683	35.73	...
" (Castle Bay) .....	Meteorological Office...	8	1 0	48	43.22	247
South Uist (Ushenish) .....	Bd. of Northern Lights	3	1 0	178 ?	47.53	208
North " (Monach) .....	" " "	8	5 6	20	45.76	200
D " " (Lochmaddy) .....	W. S. Hetherington, Esq. ....	5	0 9	20	54.89	222
D Harris (Island Glass) .....	Bd. of Northern Lights	7	4 2	130	40.40?	198
D " (West Tarbert) .....	J. Fraser, Esq. ....	5	1 6	33 L	84.47	229
<b>ROSS &amp; CROMARTY. (Area, 3237 sq. mi.)</b>						
1.— <b>NESS—Moriston. 35 sq. mi.</b>						
2.— <b>BEAULY. 109 sq. mi.</b>						
Achnashellach (Glenuaig) .....	W. M. Christy, Esq. ....	5	1 0	1150 T	124.50	...
3.— <b>MORAY FIRTH COAST STRAITS. 64 sq. mi.</b>						
D Fortrose .....	A. Thom, Esq. ....	5	1 0	69 T	24.42	178
4.— <b>CROMARTY FIRTH. 714 sq. mi.</b>						
Strathpeffer .....	Meteorological Office...	8	1 0	210	31.37	230
D Achterneed (Glenskiach) .....	Mr. T. Dalling .....	5	1 6	...	38.87	272
D Evanton (Novar Gardens) .....	Mr. J. Edmonstone .....	5	0 6	...	39.29	249
D Cromarty House .....	Col. W. C. Ross, C.B. ...	5	0 6	80 T	26.16	214
D " .....	Bd. of Northern Lights	3	1 0	28	24.45	184
D Alness (Fyrish) .....	Oswald B. Cowan, Esq. ....	8	1 0	350	32.15	211
Invergordon (The Ord) .....	W. G. Paterson, Esq. ....	5	0 9	25 ?	25.32	190
D Kildary (Tarbat Gardens) .....	Mr. C. Dyer .....	5	1 0	15	39.24	168
D Alness (Ardross Castle) .....	Mr. W. L. Minty .....	5	1 0	450 T	39.51	244
5.— <b>DORNOCH FIRTH. 355 sq. mi.</b>						
D Fearn (Lower Pitkerrie) .....	R. Gordon, Esq., C.E. ....	5	1 0	95	23.28	170
Tarbatness .....	Bd. of Northern Lights	8	4 0	175	22.06	166

## DIVISION XVIII.—NORTH WESTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with '01 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.	
ROSS & CROMARTY—(con.)							
6.—ENARD BAY. 78 sq. mi.							
D Ullapool (Inverpollly Lodge).....	G. Wotherspoon, Esq...	5	4	0	29	55.94	225
7.—LOCH BROOM & C. 367 sq. mi.							
Loch Vraon.....	Lady Fowler .....	8	0	7	750	67.13	...
Loch Drome .....	" " .....	8	0	7	850 T	69.80	...
Braemore House.....	" " .....	8	0	7	750	65.70	...
8.—LOCH EWE, LOCH TORRIDON & C. 423 sq. mi.							
D Loch Torridon (Bendamph) .....	The Earl of Lovelace ...	5	0	5	20 T	87.59	233
D Gairloch (The Manse) .....	Rev. Dugald Maclean ..	5	1	0	40 B	54.41?	195
D Poolewe (Inverewe Gardens) ...	Mr. R. B. Campbell ...	5	0	6	20	63.20	197
9.—LOCH CARRON, LOCH ALSH & C. 401 sq. mi.							
Glen Shiel (Shiel House) .....	M Mr. Colin Campbell ...	5	...		...	92.83	...
D Loch Carron (Plockton) .....	Mrs. Anstruther Mackay	5	1	0	4	59.53	207
Applecross Gardens .....	Mr. D. McCowan .....	5	1	0	70 T	65.22	...
D Glencarron Lodge .....	Mr. D. D. Munro .....	5	1	0	504 T	95.37	246
" " .....	M " " " .....	5	1	0	504 T	98.20	...
10.—INSULAR, OUTER HEBRIDES. 691 sq. mi.							
Stornoway .....	Meteorological Office ...	8	1	0	52	54.74	268
" (Tiumpanhead) .....	Bd. of Northern Lights	...	...		170	39.48?	...
" (Butt of Lewis) .....	" " " .....	8	4	6	170	41.11	198

MAP OF DIVISION XIX.  
NORTHERN COUNTIES,  
Showing the River-Divisions.



## DIVISION XIX.—NORTHERN COUNTIES.

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with .01 or more recorded.
		Diameter	Height Above Ground.	Hcight Above SeaLevel		
		in.	ft. in.	feet.	inches.	
SUTHERLAND. (Area,	2080 sq. mi.)					
1.—DORNOCH FIRTH. 413 sq. mi.						
d Invershin .....	G. Young, Esq. ....	5	4 0	20 T	36·08	203
2.—FLEET, BRORA & C. 309 sq. mi.						
d Dunrobin Castle.....	Mr. D. Melville .....	5	1 6	14 T	33·90	170
" " " " M	Mr. J. MacRae .....	5	1 0	14 T	36·37	...
d Brora (Gordonbush) .....	Mr. J. MacRae .....	5	0 11	100	42·40	171
3.—HELMSDALE & C. 226 sq. mi.						
4.—NORTH COAST STREAMS. 736 sq. mi.						
d Altnaharra .....	Rev. Malcolm Gillies...	5	1 0	300 T	49·88	242
Strath More (Altnacaillich) .....	Mr. Duncan Fraser ...	5	1 0	60 T	66·21	248
d Tongue Manse .....	Rev. David Lundie ...	5	1 0	180 T	44·12	277
d Bettyhill.....	Mr. Evander Mackay...	5	1 0	100	41·38	265
d Melvich Schoolhouse.....	Mr. A. MacIntosh .....	5	1 0	...	40·96	208
Cape Wrath .....	Bd. of Northern Lights	7	4 8	400	51·87	213
5.—LOCH LAXFORD & C. 256 sq. mi.						
d Loch Stack (Ardchullin) .....	Mr. J. Munro .....	5	1 0	167 T	76·50	251
6.—ENARD BAY. 138 sq. mi.						
7.—INSULAR. 2 sq. mi.						
CAITHNESS. (Area,	696 sq. mi.)					
1.—BERRIEDALE, DUNBEATH & C. 169 sq. mi.						
d Berriedale (Langwell) .....	Mr. M. MacKenzie ...	5	1 6	100 T	40·82	196
2.—WICK & C. 184 sq. mi.						
d Wick .....	Meteorological Office...	8	1 9	77	32·52	245
Nosshead .....	Bd. of Northern Lights	7	4 7	175	20·67?	173
d Watten (Stanstill) .....	Miss Davidson .....	5	1 0	127 T	34·07	217
3.—THURSO & C. 238 sq. mi.						
d Thurso (Buckies) .....	J. H. M. Davidson, Esq.	5	0 11	240 ?	43·39	255
Castletown (WestGreenlandFm.)	Capt. J. Calder .....	...	...	...	37·46	...
d " (The Clett) .....	" " " " .....	5	1 0	73 T	40·51	265
Thurso (Holburn Head) .....	Bd. of Northern Lights	3	0 8	75 ?	32·13	207
Dunnet Head .....	" " " " .....	3	1 0	246	33·99	...
4.—FORSS & C. 104 sq. mi.						
d Reay .....	Rev.Dugald Carmichael	8	1 0	50 T	35·67	237
5.—INSULAR. 1 sq. mi.						
Stroma .....	Bd. of Northern Lights	...	...	104	33·09	...
Pentland Skerries .....	" " " " .....	7	3 9	170	28·51	172
ORKNEY. (Area,	389 sq. mi.)					
Hoy (Cantickhead) .....	Bd. of Northern Lights	3	1 0	115	32·85	...
" (GraemsaySound,East=High)	" " " " .....	5	0 4	115	35·93	202
" ( " " West=Low)	" " " " .....	8	4 3	55	25·05?	229
Pomona (Deerness) .....	Magnus Spence, Esq....	5	1 0	161 T	34·62	217
d " (Kirkwall) .....	A. G. Spence, Esq. ...	5	1 0	72	41·95	255

DIVISION XIX.—NORTHERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with '01 or more recorded.	
		Diameter	Height Above Ground.		Height Above Sea Level		1912
		in.	ft.	in.	feet.	inches.	
ORKNEY—(con.)							
Hellyar Holm.....	Bd. of Northern Lights	3	1	0	60	35·80	223
Shapinsay (Balfour Castle) .....	Mr. W. Liddell .....	5	0	6	50	33·33	...
Auskerry .....	Bd. of Northern Lights	3	2	6	10	36·38	...
Sanday (Start Point).....	„ „ „	3	1	0	80	34·30	...
Westray (Noup Head) .....	„ „ „	3	1	0	260	31·75	228
North Ronaldshay .....	„ „ „	3	0	4	140	36·30	207
SHETLAND. (Area, 558 sq. mi.)							
Bressay .....	Bd. of Northern Lights	3	1	0	105	42·03	192
D Lerwick (Fort Charlotte) .....	J. B. Rundle, Esq.....	5	1	0	59 7	47·15	256
Sule Skerry .....	Bd. of Northern Lights	3	0	6	113	38·40	257
D Northmavine (Lochend) .....	Scot. Meteorological Soc.	5	1	10	10	49·56	260
D Fetlar (The Manse) .....	Rev. J. A. Campbell ...	5	1	0	30 1	41·37	258
D Unst (Balta Sound, Halligarth)..	Dr. T. E. Saxby.....	5	1	0	31 7	39·23	282

## MAP OF DIVISION XX.

MUNSTER,

Showing the River-Divisions.



## IRELAND.

## DIVISION XX.—MUNSTER.

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with '01 or more recorded.
		Diameter	Height above Ground.		Height above SeaLevel	1912	
		in.	ft.	in.	feet.	inches.	
<b>CORK.</b> (Area, 2873 sq. mi.)							
1.—SHANNON—Left Bank Tributaries.	79 sq. mi.						
2.—DINGLE BAY.	4 sq. mi.						
3.—KENMARE & C.	47 sq. mi.						
4.—BANTRY BAY.	197 sq. mi.						
5.—DUNMANUS BAY.	57 sq. mi.						
6.—BANDON & C.	694 sq. mi.						
D Castletownshend (Glen Barrabane)..	Sir E. B. Coghill, Bart.	5	3	0	25 A	51·60	194
Skibbereen (Hollybrook) .....	Col. A.H. Morgan, D.S.O.	8	1	2	60 T	53·05	233
D „ Rectory .....	RevCanonHWTownsend	5	1	6	55 A	51·15	244
D Caheragh (The Rectory) .....	Rev. A. W. Whitley...	5	0	11	98 T	60·33	249
D Clonakilty (Shannon Vale House)	T. J. Bennett, Esq. ...	5	1	3	135 T	45·11	235
Ballineen (Kilmeen Rectory) ...	Rev. W. A. Lamb.....	5	1	6	370 T	58·85	225
D Dunmanway (The Rectory) .....	Rev. A. Wilson .....	5	1	6	205 T	64·97	241
D Enniskean (Kilcoleman) .....	late J. E. Longfield, Esq.	5	2	6	192 T	51·87	224
<b>7.—CORK HARBOUR.</b> 726 sq. mi.							
†Roches Point .....	Meteorological Office...	8	1	9	32	41·14	283
D†Midleton (Ballynacurra) .....	J. H. Bennett, Esq. ...	8	1	0	24 A	38·69	204
D†Cork (Corn Market) .....	D. J. O'Mahony, Esq... 12	1	9		19 A	35·78	183
D† „ (University College).....	J. J. Lalor, Esq.....	8	1	0	65 A	36·88	244
D „ (Wellington Road) .....	R. C. Sikes, Esq., C.E.	5	2	6	120 T	42·03	217
D†Queenstown (Fota Island) .....	Mr. W. Beswick.....	5	1	6	35 B	46·83	230
D†Glanmire (Lota Lodge).....No. 1	A. F. Sharman Crawford, Esq.	5	1	0	200 T	41·38	226
D† „ ( „ „ ).....No. 2	„ „ „	5	1	0	100 T	40·38	222
<b>8.—WOMANAGH &amp; C.</b> 118 sq. mi.							
Shanagarry (Kinoith) .....	Miss L. P. Strangman..	5	1	0	75 T	34·78	...
<b>9.—BLACKWATER.</b> 922 sq. mi.							
D Mallow (Summer Hill) .....	J. F. Williamson, Esq.	5	1	10	261 T	42·14	241
D „ (Longueville) .....	R. E. Longfield, Esq...	5	1	1	310	40·63	239

## DIVISION XX.—MUNSTER—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with .01 or more recorded.
		Diameter	Height Above Ground	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
<b>CORK—(con.)</b>						
9.—BLACKWATER—(con.)						
D Mitchelstown Castle .....	W. D. Webber, Esq....	8	3 0	340 $\nabla$	47.03	224
10.—SUIR. 3 sq. mi.						
11.—INSULAR. 26 sq. mi.						
<b>KERRY. (Area, 1851 sq. mi.)</b>						
1.—SHANNON—Left Bank Tributaries. 372 sq. mi.						
2.—TRALEE BAY & C. 221 sq. mi.						
3.—DINGLE BAY. 789 sq. mi.						
† Cahirciveen .....	Meteorological Office ...	8	2 0	45	56.82	270
† Gap of Dunloe (Gearahameen) M	Dr. H. R. Mill .....	8	3 0	75	106.60	...
Lough Caragh (Lickeen) .....	Admiral Jeffreys, C.V.O.	5	1 0	60	80.04	...
D† Killarney (District Asylum) ...	E. W. Griffin, Esq., M.D.	5	0 10	178 $\uparrow$	56.23	261
4.—KENMARE & C. 426 sq. mi.						
D† Darrynane Abbey .....	D. O'Connell, Esq.....	5	1 1	13 $\nabla$	56.27	292
D Kenmare (Derreen) .....	Mr. W. H. Arrowsmith	5	1 0	74	79.13	231
D Waterville (Iveragh Lodge).....	R. J. Hughes, Esq. ...	5	1 0	86 $\nabla$	45.99	255
Kenmare (Dunkerron Castle) ...	Miss L. Palmer .....	5	1 6	70	71.23	...
D „ (Dromore) .....	E. Hood, Esq.....	5	...	...	67.23	239
5.—BLACKWATER. 30 sq. mi.						
6.—INSULAR. 13 sq. mi.						
Valencia (Glanleam) .....	Meteorological Office ...	8	1 0	12	58.43	...
<b>WATERFORD. (Area, 715 sq. mi.)</b>						
1.—BLACKWATER. 243 sq. mi.						
D Lismore Castle .....	J. E. Penrose, Esq.....	5	2 9	115 $\nabla$	43.40	194
2.—COLLIGAN & C. 259 sq. mi.						
3.—SUIR. 213 sq. mi.						
D Knockaderry .....	No. 1 J. J. Fleming, Esq., C.E.	5	7 7	247 $\uparrow$	43.48	180
D „ .....	No. 2 „ „ „	5	7 7	247 $\uparrow$	43.91	180
D† Waterford (Whitfield Court) ...	Major H. Chavasse.....	5	0 7	67 $\nabla$	41.99	203
D† „ (Brook Lodge).....	C. P. Bolton, Esq., C.E.	5	1 0	104 $\uparrow$	42.56	196
D† „ (Tycor Waterworks). J. J. Fleming, Esq., C.E.		5	0 7	171 $\uparrow$	41.67	162
D „ (Grange House) .....	G. D. Croker, Esq.....	5	1 0	200 $\uparrow$	36.60	207
D „ (De La Salle College) Prof. M. J. Healy .....		8	1 0	20 $\nabla$	42.26	198
D† „ (St. Andrew's Terrace) E. A. White, Esq.....		5	1 0	28	37.88	177
D† „ (Rocklands).....	J. N. White, Esq. ....	5	1 0	40 ?	41.83	197
D Portlawn (Mayfield).....	J. Anderson, Esq. ....	5	4 0	70	44.16	225
„ (The Gardens, Curraghmore) Mr. D. Crombie .....		5	1 0	95 $\uparrow$	48.99	173
D Seskin [Carrick-on-Suir] .....	J. Ernest Grubb, Esq...	8	1 4	542 $\nabla$	49.49	217
<b>TIPPERARY. (Area, 1660 sq. mi.)</b>						
1.—SHANNON—Left Bank Tributaries. 582 sq. mi.						
D Ballina [Killaloe] .....	F. Dudley Fletcher, Esq...	5	2 0	...	46.61	224

DIVISION XX.—MUNSTER—(*continued*).

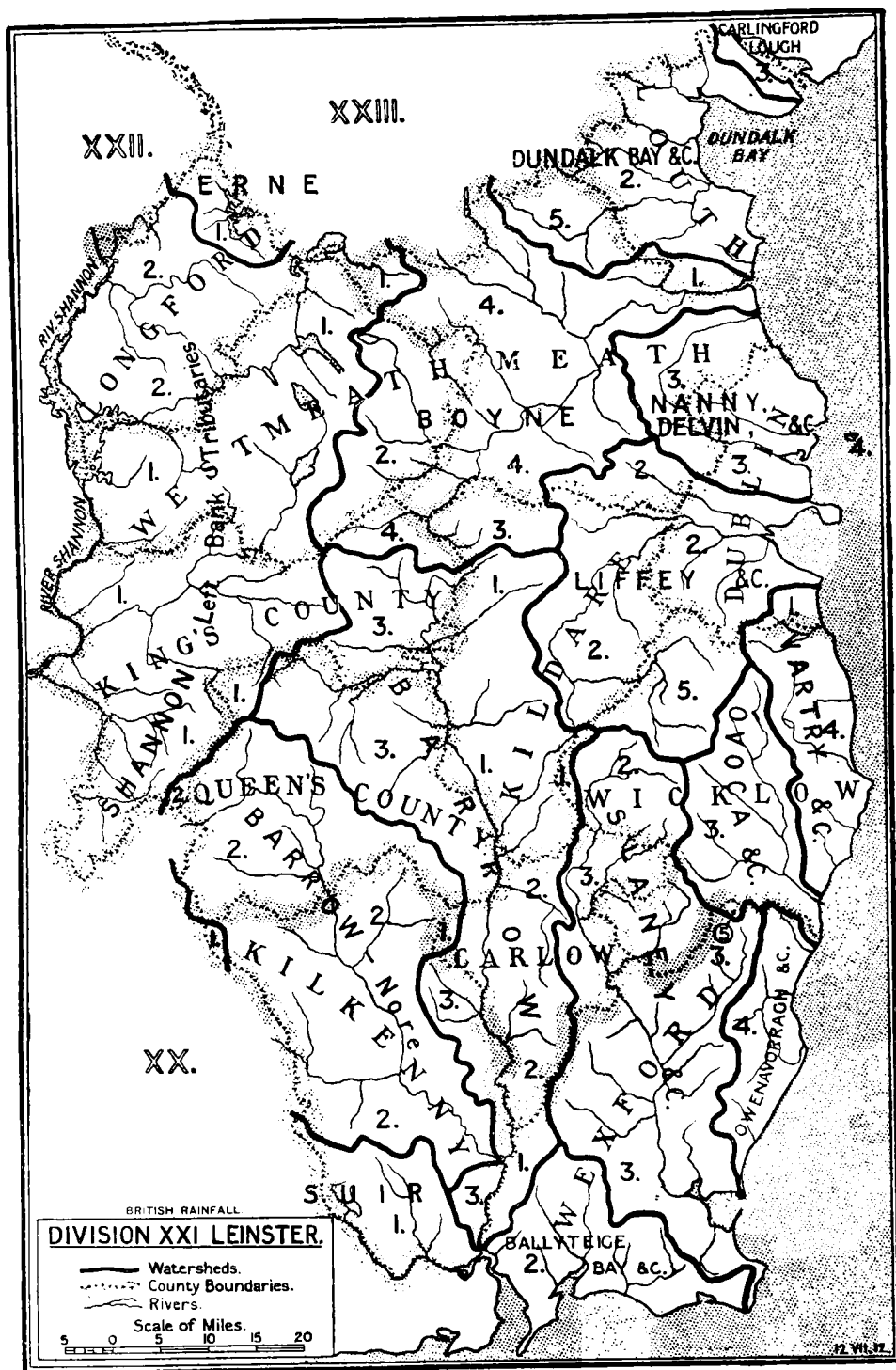
STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with $\geq 0.1$ or more recorded.	
		Diameter	Height Above Ground		Height Above Sea Level		1912
		in.	ft.	in.	feet.	inches.	
TIPPERARY—(con.)							
1.—SHANNON—Left Bank Tributaries—(con.)							
D Nenagh (Traverston) .....	Miss Norris .....	5	1	0	...	48.98	277
„ (Kilboy) .....	The Lady Dunalley ...	8	1	0	326	47.75	241
D „ (Castle Lough) .....	S.G.J. Parker-Hutchinson Esq.	5	1	3	120 T	40.22	223
D „ (Highlands) .....	John Mounsey, Esq. ...	5	1	2	400 T	33.58?	229
2.—BLACKWATER. 21 sq. mi.							
3.—SUIR. 965 sq. mi.							
D Clonmel (Bruce Villa) .....	J. H. Grubb, Esq. ....	5	1	3	110 T	38.46	224
„ (Oaklands) .....	A. E. Rogers, Esq. ....	5	1	0	220 T	35.06	...
D Cahir (Suirvale) .....	George Palmer, Esq., CE	5	1	0	200	38.61	222
D „ (Bengurragh) .....	R. W. Smith, Esq., junr.	5	1	0	199 A	43.42	251
„ Abbey .....	Mrs. W. Rochfort .....	5	1	0	...	41.61	222
D Cashel (Ballinamona) .....	E. W. M. Murphy, Esq.	5	1	0	260 T	44.86	248
4.—BARROW—Nore. 92 sq. mi.							
D Roscrea (Timoney Park) .....	S.G.J. Parker-Hutchinson Esq.	5	1	0	475 T	40.04	233
LIMERICK. (Area, 1040 sq. mi.)							
1.—SHANNON—Right Bank Tributaries. 7 sq. mi.							
2.—SHANNON—Left Bank Tributaries. 944 sq. mi.							
Foynes .....	Meteorological Office ...	...	...	...	108	45.12	277
D Limerick (Mungret College) ...	Rev. W. O'Leary, S.J.	5	1	0	49 A	33.48	198
† „ (George Street) .....	J. Horan, Esq. ....	5	1	0	52 A	37.91	220
D „ (Lansdowne) .....	W. J. C. Horne, Esq. ...	5	1	0	50	37.11	241
„ (St. Michael's School)..	Mr. J. G. Boyd .....	5	1	3	43 T	35.26	...
Glenstal Castle .....	Mr. W. Earley .....	8	1	0	400	44.76	187
3.—BLACKWATER. 64 sq. mi.							
4.—SUIR. 25 sq. mi.							
CLARE. (Area, 1270 sq. mi.)							
1.—GALWAY BAY, SOUTH. 100 sq. mi.							
2.—MAL BAY & C. 294 sq. mi.							
Inagh (Mount Callan) .....	Meteorological Office ...	5	1	0	479	63.49	...
D Lahinch (Moy House) .....	Dr. C. H. Blood .....	5	1	0	120 T	42.66	254
D Ennistymon House .....	H. V. Macnamara, Esq.	5	1	0	37 A	44.55	254
3.—SHANNON—Right Bank Tributaries. 854 sq. mi.							
D Carrigaholt Castle .....	W. C. V. Burton, Esq.	5	1	0	16 T	38.86	246
† Derravoher [Limerick] .....	Sir A. W. Shaw .....	5	1	0	40 T	36.03	232
Whitehall [ „ ] .....	„ „ „ „ „ „ „ „ „ „	...	...	...	...	37.71	...
D Killadysert (Paradise Hill) .....	F. B. Henn, Esq. ....	5	0	11	125 A	46.16	227
D Newmarket-on-Fergus (Carrigoran)	Mr. A. Barker .....	5	1	0	86 T	42.57	236
D „ (Fenloe)..	Maj. S. C. Hickman ...	5	1	2	175 T	40.09	256
D Broadford (Hurdlestown) .....	Colonel W. A. Bentley.	5	1	0	167 A	42.49	247
D Scarriff (Woodpark) .....	R. F. Hibbert, Esq. ...	5	1	0	170 A	41.43	235
4.—INSULAR. 22 sq. mi.							



MAP OF DIVISION XXI.

LEINSTER,

### Showing the River-Divisions.



## DIVISION XXI.—LEINSTER.

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with '01 or more recorded.
		Diameter	Height Above Ground	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
<b>WEXFORD.</b> (Area, 902 sq. mi.)						
1.—BARROW. 43 sq. mi.						
2.—OWENDUFF & C. 240 sq. mi.						
D Fethard-on-Sea Rectory .....	Rev. W. F. A. Ellison..	5	1 0	40 B	36·13	206
3.—SLANEY & C. 467 sq. mi.						
Wexford (Tate School) .....	C. Bain, Esq. ....	5	1 0	117	43·58	...
D Templeudigan (Ballindoney) ...	Janssen Budgen, Esq... 5	1 0	434 B	43·46	176	
D Enniscorthy (Ballyhyland) .....	Mrs. Moffat.....	5	1 0	365 T	48·25	259
D „ (Summerville) .....	W. Waring, Esq. ....	5	6 10	106 T	37·16	198
„ (Monksgrange).....	Goddard H. Orpen, Esq. 5	1 0	600	54·21	164	
„ (Woodbrook) .....	late Rev. Canon Blacker 5	1 0	370 T	50·51	189	
4.—OWENAVORRAGH & C. 146 sq. mi.						
D Oulart (Wells) .....	C. M. Doyne, Esq..... 5	1 0	250 T	40·16	178	
D Gorey (Courtown House) .....	The Earl of Courtown.. 5	3 0	60 T	42·34	194	
5.—OVOCA & C. 6 sq. mi.						
<b>KILKENNY.</b> (Area, 798 sq. mi.)						
1.—SUIR. 162 sq. mi.						
D Rockenham [Waterford] .....	A. E. Graves, Esq..... 5	1 0	140 T	41·66	189	
D Piltown (Bessborough) .....	Mr. T. E. Tomalin .....	8	3 7	60 T	41·60	228
2.—BARROW—Nore. 527 sq. mi.						
Inistioge (Woodstock, Mt. Alto).	Mr. W. Leath.....	9	0 3	...	49·88	...
„ „ „ .....	„ „ „ .....	6	1 0	400 T	41·23	174
D Thomastown (Ballyduff) .....	Lt.-Col. Hon. F. Shore 5	1 5	65 T	44·87	221	
Kilkenny Castle .....	Meteorological Office... 8	1 0	195	36·38	251	
† „ (Lavistown House) ...	Miss Butler.....	5	2 5	170	31·22	205
D Castlecomer House.....	R.H. Prior-Wandesforde, Esq 5	0 9	380	40·44	216	
3.—BARROW. 109 sq. mi.						
D Goresbridge (Barraghcore House)	H. de M. Fleming, Esq. 5	1 0	130 T	34·37	220	
<b>WICKLOW.</b> (Area, 781 sq. mi.)						
1.—BARROW. 12 sq. mi.						
2.—SLANEY. 200 sq. mi.						
Shillelagh (Coollattin Gardens)...	Duncan Brough, Esq... 5	0 7	383	45·50	217	
3.—OVOCA & C. 241 sq. mi.						
D Rathdrum (Avondale) .....	A. C. Forbes, Esq..... 5	0 6	414 T	45·93	184	
† Laragh (Glendalough) .....	A. A. Wynne, Esq. ... 5	2 9	460 T	67·27	...	
4.—VARTRY & C. 193 sq. mi.						
Arklow (The Sycamores) .....	Mrs. Udal .....	5	3 0	40	35·71	...
D Wicklow (Summer Hill) .....	Rev. H. Ellison .....	5	0 7	50	39·22	179
D Rathnew (Clonmannon) .....	Rev. W. H. A. Truell.. 5	1 0	27	35·08	203	
Roundwood (Vartry Lodge) .....	J.G.O'Sullivan Esq.C.E. 5	1 0	720	50·53	...	
„ .....	„ „ „ .....	5	1 6	800 T	52·25	...
„ (Knockatemple).....	„ „ „ .....	5	1 6	760 T	51·20	...
„ (Filter Beds) .....	„ „ „ .....	...	...	...	51·02	...

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with '01 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	1912	
		in.	ft.	in.	feet	inches.	
<b>WICKLOW—(con.)</b>							
<b>4.—VARTRY &amp; C—(con.)</b>							
Newcastle (Killadreenan) .....	Sir J. W. Moore, M.D.	8	1	2	260 T	40·68	193
Tithewere .....	J.G. O'Sullivan Esq., CE	5	1	6	1000 T	48·09	...
Annacarter Schoolhouse .....		5	1	6	750 T	50·75	...
Greystones .....	Sir J. W. Moore, M.D.	5	0	8	50 T	36·65	200
" (Coolagad) .....		5	0	9	190 T	44·89	214
D† Bray (Fassaroe) .....	R. M. Barrington, Esq.	10	5	0	250	44·86	207
D " ( " ) .....	" " "	5	1	0	250	43·83	207
<b>5.—LIFFEY &amp; C. 135 sq. mi.</b>							
<b>CARLOW. (Area, 346 sq. mi.)</b>							
<b>1.—BARROW—Nore. 9 sq. mi.</b>							
<b>2.—BARROW. 216 sq. mi.</b>							
Bagnalstown (Fenagh House) ...	D. R. P. Beresford, Esq	5	1	0	340	34·70	216
" ( " " ) M	" " "	5	1	0	340	32·59	...
Tulow (Hardymount) .....	Capt. C. L. Connellan...	5	1	3	300 T	32·90	199
Carlow (Browne's Hill) .....	Major Browne Clayton.	5	1	0	291 T	35·46	...
<b>3.—SLANEY. 121 sq. mi.</b>							
Hacketstown Rectory .....	Rev. C. S. S. Ellison ...	5	1	2	600 T	41·52	226
<b>QUEEN'S COUNTY. (Area, 664 sq. mi.)</b>							
<b>1.—SHANNON—Left Bank Tributaries. 25 sq. mi.</b>							
<b>2.—BARROW—Nore. 339 sq. mi.</b>							
D Abbey Leix (Blandsfort) .....	H. Bland, Esq. ....	5	2	6	532 T	37·23	233
Mountrath (Castletown) .....	Dr. T. E. Dunne .....	5	4	9	452 T	37·88	198
D " (Ballyfin) .....	Mr. J. B. McLaren ...	8	1	0	600 T	46·00	221
<b>3.—BARROW. 300 sq. mi.</b>							
Sunnyside [Carlow] .....	E. Shackleton, Esq. ...	5	1	0	178 T	35·60	199
Mountmellick (Drogheda Square)	Meteorological Office ...	8	1	0	239	40·73	228
<b>KING'S COUNTY. (Area, 772 sq. mi.)</b>							
<b>1.—SHANNON—Left Bank Tributaries. 560 sq. mi.</b>							
D Birr Castle .....	No. 1 Dr. O. Boeddicker .....	8	1	0	183	34·49	232
D Victoria Lock [Meelick] .....	F Dudley Fletcher Esq CE	5	2	0	119	31·43	206
D Tullamore (Rathrobbin) .....	(R) Lt.-Col. M. W. Biddulph	8	1	6	400	36·91	226
" (St. Catherine's) .....	Rev. R. S. Craig .....	5	1	0	201 T	34·18	...
D Ballycumber (Moorock Lodge) ...	H. P. Mulock, Esq. ...	5	1	0	210	32·25	202
D " ( " ) .....	Mr. Michael Glasheen..	5	1	0	...	28·91	222
<b>2.—BARROW—Nore. 5 sq. mi.</b>							
<b>3.—BARROW. 156 sq. mi.</b>							
<b>4.—BOYNE. 51 sq. mi.</b>							

## DIVISION XXI.—LEINSTER—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with .01 or more recorded.
		Diameter	Height Above Ground.	Height Above Sea Level	1912	
		in.	ft. in.	feet.	inches.	
<b>KILDARE.</b> (Area, 654 sq. mi.)						
1.— <b>BARROW.</b> 332 sq. mi.						
D Castledermot .....	Very Rev. M. Walsh...	5	2 8	...	36·74	199
D „ (Millbrook) .....	T. Westland Greene, Esq.	8	1 4	225 T	34·22	213
D Monasterevan (Moore Abbey) ...	Mr. C. Pilgrim .....	5	1 0	236 T	33·09	227
D „ (Umeras) .....	J. Cockburn, Esq. ....	5	3 6	247	32·17	216
2.— <b>LIFFEY.</b> 246 sq. mi.						
Sallins (Palmerstown) .....	The Countess of Mayo..	5	1 0	321 T	37·02	252
D Straffan House .....	Mr. F. Bedford .....	5	1 0	240 T	34·25	217
D Clongowes Wood College .....	Rev. J. Neary, S.J. ...	8	1 0	246 T	32·73	255
3.— <b>BOYNE.</b> 76 sq. mi.						
Kilcock (Knockanally) .....	W. C. Coates, Esq. ....	5	1 0	290 T	40·22	...
<b>DUBLIN.</b> (Area, 354 sq. mi.)						
1.— <b>VARTRY &amp; C.</b> 23 sq. mi.						
Carrickmines (Claremont).. .....	John Read, Esq. ....	5	0 11	250	33·56	151
D Killiney (Druid Lodge).....	Mrs. Symes. ....	5	1 0	245 T	29·79	168
D Ballybrack (Marino) .....	Rt. Hon. L. A. Waldron	5	3 6	...	29·00	174
2.— <b>LIFFEY &amp; C.</b> 188 sq. mi.						
D Glen-na-Smoel (Rathmines W.W.)	F. P. Dixon, Esq., C.E.	5	1 0	510 T	50·01	260
Crooksling Sanatorium .....	Dr. A. Y. Blake .....	5	1 6	970	34·01	212
D Ballyboden (Rathmines W.W.)..	F. P. Dixon, Esq., C.E.	5	1 0	344 T	35·20	186
† Blackrock (Charleville).....	S. Harold Pim, Esq. ...	5	1 0	260 ?	32·21	...
D Dundrum (Manor Mill Lodge)...	G. B. Edmondson, Esq.	5	1 3	192 T	32·84	216
D Kingstown (Harbour Yard) .....	Office of Public Works	8	1 0	52 T	28·61	159
Rathmines (Terenure) .....	F. P. Dixon, Esq., C.E.	5	0 6	125 T	28·52	196
D „ (Leinster Road) .....	E. H. Cannon, Esq. ...	5	0 11	125 T	29·19	209
D „ (Ormond Road) .....	W. R. Stephens, Esq. C.E.	5	1 0	99 T	28·95	203
Donnybrook (Belmont Avenue)...	Douglas Waring, Esq..	5	0 9	100 ?	30·21	192
Clondalkin (Cheeverstown) .....	Sir J. W. Moore, M.D.	5	1 4	350 ?	33·77	226
Dublin (Leeson Park) .....	„ „ „	5	1 4	75 ?	26·90	199
D† „ (Fitz William Square) ...	„ „ „	8	1 6	54 T	27·65	208
† „ (Trinity College) .....	Prof. W. E. Thrift....	8	1 0	13 T	25·40	178
D† „ (Phoenix Park) .....	Ordnance Survey Office	8	1 0	155 T	27·04	197
D „ (Ringsand Pumping Sta.)	J. G. O'Sullivan, Esq., CE	10	1 1	...	27·89	192
D Clontarf (Pumping Station).... (R)	„ „ „	5	4 9	22	22·86	186
D Dublin (Drumcondra Road).....	A. Roycroft, Esq. ....	5	4 9	76 T	27·86	202
D Glasnevin (Roy. Botanic Gardens)	Sir F. W. Moore .....	8	1 0	55 T	27·73	202
D Howth (Balkill Reservoir) .....	Messrs. Kaye-Parry & Ross, CE	8	1 0	304 T	31·31	163
3.— <b>NANNY, DELVIN &amp; C.</b> 142 sq. mi.						
D Malahide (Seamount) .....	J. G. Jameson, Esq. ...	5	1 0	150 T	29·31	196
„ (The Green) .....	T. Bateman, Esq. ....	5	1 0	25 T	27·37	190
D† Skerries (Milverton Hall).....	Capt. E. G. Woods.....	5	1 0	190 T	28·13	202
D† Balbriggan (Ardgillan) ... No. 1	Capt. E. R. Taylor.....	5	1 0	211 T	31·10	206
† „ „ „ „ „ No. 3	„ „ „ „ „	5	1 0	211 T	30·87	...
4.— <b>INSULAR.</b> 1 sq. mi.						
D Lambay Island .....	Hon. Cecil Baring .....	5	1 0	20	27·83	182

## DIVISION XXI.—LEINSTER—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with .01 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	1912	
		in.	ft.	in.	feet.	inches.	
<b>MEATH. (Area, 909 sq. mi.)</b>							
1.—SHANNON—Left Bank Tributaries. 32 sq. mi.							
2.—LIFFEY & C. 72 sq. mi.							
D Dunboyne (Stirling, Clonee).....	Mr. J. Pilkington .....	8	1	0	231 T	32·93	215
3.—NANNY, DELVIN & C. 150 sq. mi.							
D Drogheda (Mullacroghan).....	W. Brydon Hill, Esq....	5	1	6	300	31·98	192
4.—BOYNE. 560 sq. mi.							
D Summerhill House.....	Lord Langford .....	5	1	0	372 T	37·16	236
D Athboy (Mitchelston) .....	W. J. Hopkins, Esq....	5	1	0	260 P	38·58	234
D „ (Frankville) .....	C. P. Coghill, Esq.....	8	1	3	227	39·33	209
D Navan (Durhamstown) .....	Miss M. Roberts.....	5	0	8	...	33·65	213
D „ (Staffordstown) .....	R. J. Butler, Esq. ....	5	2	0	250 T	32·97	218
D Kells (Headfort).....	The Marquis of Headfort	8	0	6	227	37·79	218
5.—DUNDALK BAY. 95 sq. mi.							
D Drumconrath (Aclare House) (R)	Mrs. Singleton .....	10	1	0	119 T	33·40	231
<b>WESTMEATH. (Area, 712 sq. mi.)</b>							
1.—SHANNON—Left Bank Tributaries. 517 sq. mi.							
D Athlone .....	F. Dudley Fletcher Esq. CE	5	2	0	128 T	30·61	216
D „ (Twyford) .....	J. P. Hodson, Esq.....	5	5	0	188 T	40·01	234
D Moate (Coolatore) .....	H. A. S. Upton, Esq...	5	1	6	369 T	36·70	225
D Mullingar (Belvedere) .....	Mr. J. Bayliss .....	5	1	0	367 T	41·85	240
D „ (Ballynegall) .....	Mr. J. Campbell.....	5	1	3	365 T	40·94	238
Rathowen (Cromlyn)..... (R)	Gen. J. P. Battersby ...	8	1	6	250 T	36·50	241
D Castlepollard (Pakenham Hall)...	Mr. G. Bogie .....	5	1	6	300 P	38·31	238
D Coole (Mayne Rectory) .....	Rev. R. Butler .....	5	1	0	300	36·69	238
2.—BOYNE. 195 sq. mi.							
<b>LOUTH. (Area, 316 sq. mi.)</b>							
1.—BOYNE. 32 sq. mi.							
2.—DUNDALK BAY & C. 264 sq. mi.							
D Ardee (Lissrenny) .. .	T. F. Filgate, Esq.....	5	0	10	75 T	34·81	218
D „ (Mullanstown) .....	M „ „ „ „	8	1	0	106 T	34·47	...
D Dundalk (Farndreg) .....	late J. Barton, Esq., C.E.	5	1	6	90 T	32·99	...
D „ (Mount Pleasant) .....	Telford Macneill, Esq...	5	1	0	60 T	38·26	231
3.—CARLINGFORD LOUGH. 20 sq. mi.							
D Greenore.....	T. Chambers, Esq., C.E.	5	1	0	4	35·01	222
<b>LONGFORD. (Area, 424 sq. mi.)</b>							
1.—ERNE. 61 sq. mi.							
2.—SHANNON—Left Bank Tributaries. 363 sq. mi.							
D Ballymahon (New Castle).....	Col. W. H. King-Harman	5	2	5	250 T	35·59	229
D Cloondrah .....	F. Dudley Fletcher Esq. CE	5	2	0	130	34·21	245
D Longford.....	J. W. Gunnis, Esq. ...	8	3	6	180 T	39·75	200
D Castle Forbes Gardens .....(R)	The Earl of Granard...	8	1	0	168 T	39·41	231

MAP OF DIVISION XXII.

CONNAUGHT,

Showing the River-Divisions.



## DIVISION XXII.—CONNAUGHT.

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1912	Days with .01 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	
		in.	ft.	in.	feet.	inches.
<b>GALWAY.</b> (Area, 2377 sq. mi.)						
1.—ERIFF & C. 141 sq. mi.						
2.—GALWAY BAY, NORTH. 277 sq. mi.						
D Knockboy House .....	D. H. Thompson, Esq...	5	0	10	150 T	43·89 230
3.—CORRIB. 846 sq. mi.						
Tuam (Gardenfield) ..... No. 3 M	H. Kirwan, Esq. ....	5	1	0	155 T	45·61 ...
" { " } ..... No. 1	" " " ....	5	6	0	160 T	44·90 242
" { " } ..... No. 2 weekly	" " " ....	5	1	0	155 T	46·55 ...
4.—GALWAY BAY, SOUTH. 281 sq. mi.						
D Woodlawn .....	Mr. C. Farmer .....	5	3	6	300 T	39·44 238
5.—SHANNON—Right Bank Tributaries. 803 sq. mi.						
Ballinasloe (District Asylum) ...	Dr. J. St. L. Kirwan ...	5	1	0	154 T	36·07 226
D Ahascragh (Clonbrock) .....	Lord Clonbrock, K.P...	10	5	6	200 T	52·22? 200
6.—INSULAR. 29 sq. mi.						
<b>ROSCOMMON.</b> (Area, 961 sq. mi.)						
1.—SLIGO BAY. 6 sq. mi.						
2.—MOY. 11 sq. mi.						
3.—CORRIB. 16 sq. mi.						
4.—SHANNON—Right Bank Tributaries. 928 sq. mi.						
D Strokestown (Castlenode) .....	W. J. Walpole, Esq....	5	2	0	160 T	36·32 195
D Albert Lock [Jamestown] .....	F. Dudley Fletcher Esq. CE	5	2	0	146 T	33·82 207
D French Park .....	Lord De Freyne .....	8	1	2	...	47·24 183
<b>MAYO.</b> (Area, 2149 sq. mi.)						
1.—SLIGO BAY. 10 sq. mi.						
2.—MOY & C. 797 sq. mi.						
D Castlebar House .....	A. C. Larminie, Esq....	5	3	4	...	52·04 253
Crossmolina (Enniscoe) .....	J. Pratt, Esq. ....	5	0	11	74 T	55·22 ...
3.—BLACKSOD BAY & C. 411 sq. mi.						
Blacksod Point .....	Meteorological Office...	8	0	10	41	52·19 250
4.—CLEW BAY. 254 sq. mi.						
D Westport House .....	the late Marquis of Sligo	...	12	0	40	47·78 237
D " (St. Helen's) .....	Miss Kelly .....	6	0	11	35 T	47·69 253
D Newport (Burrishoole House) ...	H. M. Anketell Jones Esq	5	1	10	30	51·80 248
5.—ERIFF & C. 121 sq. mi.						
D Aasleagh House .....	Marquis of Sligo .....	5	1	0	35	88·79 199
6.—CORRIB. 432 sq. mi.						
D Cong (The Glebe) .....	Rev. Canon R. Y. Lynn	5	1	11	112 T	50·77 246
7.—SHANNON—Right Bank Tributaries. 35 sq. mi.						
8.—INSULAR. 89 sq. mi.						
D Dugort (Slievemore Hotel) .....	Mrs. J. R. Sheridan ...	5	1	0	50 ?	65·43 226

DIVISION XXII.—CONNAUGHT—(continued).

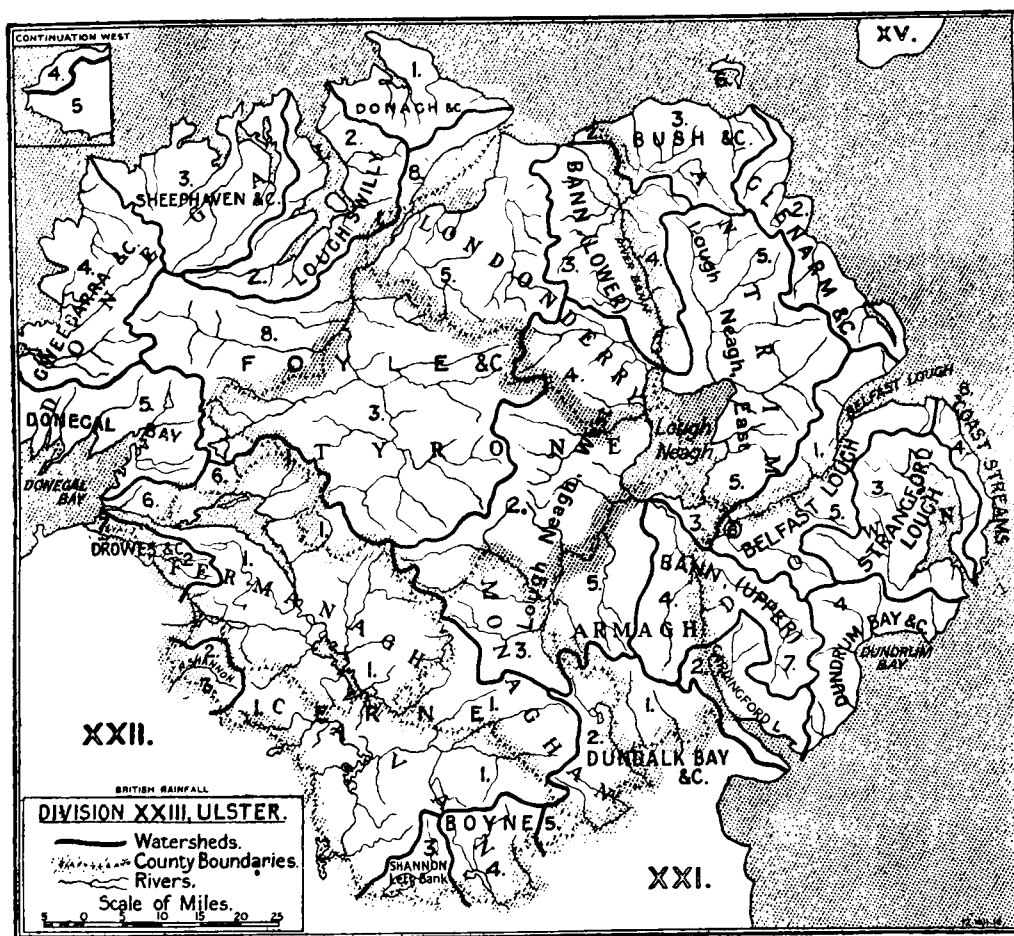
STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with '01 or more recorded.	
		Diameter	Height Above Ground.		Height Above Sea Level		1912
		in.	ft.	in.	feet.	inches.	
SLIGO. (Area, 716 sq. mi.)							
1.—DROWES & C. 49 sq. mi.							
2.—SLIGO BAY. 444 sq. mi.							
Collooney (Markree Observatory)	J. R. Armstrong, Esq..	5	1	0	127 7/8	49·05	238
" " "	" " "	5	16	6	143 7/8	46·69	237
3.—MOY & C. 166 sq. mi.							
4.—SHANNON—Right Bank Tributaries. 56 sq. mi.							
5.—INSULAR. 1 sq. mi.							
LEITRIM. (Area, 615 sq. mi.)							
1.—ERNE. 152 sq. mi.							
Carrigallen (Bredagh School) ...	Miss Morrow .....	5	0	8	285 1/2	43·60	242
2.—DROWES & C. 85 sq. mi.							
3.—SLIGO BAY. 135 sq. mi.							
4.—SHANNON—Right Bank Tributaries. 47 sq. mi.							
5.—SHANNON—Left Bank Tributaries. 196 sq. mi.							
Ruskey .....	F Dudley Fletcher Esq CE	5	2	0	139 7/8	28·58	214
Mohill Rectory .....	Rev. H. Justice .....	5	1	0	300 1/2	38·39	232
Drumshanbo (Lough Allen Sluices)	F Dudley Fletcher Esq CE	5	2	0	169 7/8	42·48	179



MAP OF DIVISION XXIII.

ULSTER,

### Showing the River-Divisions.



## DIVISION XXIII.—ULSTER.

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with -01 or more recorded.
		Diameter	Height Above Ground.		Height Above SeaLevel	1912	
		in.	ft.	in.	feet.	inches.	
<b>CAVAN.</b> (Area, 753 sq. mi.)							
1.—ERNE. 489 sq. mi.							
D Killeshandra (Castle Hamilton) ..	Major W. J. Hamilton	5	1	0	251 T	39·68?	206
D „ (Drom Mullac) ..	Miss Prudence M. Lough	5	1	0	280 T	44·64	237
D Cootehill Workhouse .....	T. Conolly, Esq. ....	5	0	9	306 T	38·91	213
D „ (Errigle) .....	Dr. T. H. Moorhead ...	5	0	9	273 T	33·67	210
D „ (Cabragh House) .....	Lt.-Col. W. A. C. Roe..	5	1	3	260	40·02	210
D Belturbet (Cloverhill) .....	Mrs. Sanderson .....	5	1	0	202 T	37·23	218
2.—SHANNON—Right Bank Tributaries. 34 sq. mi.							
3.—SHANNON—Left Bank Tributaries. 91 sq. mi.							
4.—BOYNE. 122 sq. mi.							
5.—DUNDALK BAY. 17 sq. mi.							
<b>FERMANAGH.</b> (Area, 713 sq. mi.)							
1.—ERNE. 667 sq. mi.							
D Newtownbutler (Crom Castle) ...	Mr. A. Reid .....	5	0	9	174 T	40·08	266
Enniskillen (Portora) .....	W. N. Tetley, Esq. ...	5	1	0	251 T	45·53	...
Belleek (Heronshaw) .....	J. Beacom, Esq. ....	5	1	5	150 B	47·47	245
2.—DROWES & C. 48 sq. mi.							
<b>MONAGHAN.</b> (Area, 498 sq. mi.)							
1.—ERNE. 208 sq. mi.							
D Dartrey [Cootehill] .....	The Earl of Dartrey ...	5	2	6	265	40·62	217
2.—DUNDALK BAY. 132 sq. mi.							
3.—BANN—Lough Neagh, West. 158 sq. mi.							
D Monaghan (Rowantree House)...	Dr. J. Campbell Hall...	5	5	6	240	36·13	223
<b>ARMAGH.</b> (Area, 514 sq. mi.)							
1.—DUNDALK BAY. 118 sq. mi.							
2.—CARLINGFORD LOUGH. 23 sq. mi.							
D Bridge Street [Newry] .....	J. L. D. Meares, Esq. C. E.	5	0	9	22 T	46·10	221
D Bessbrook (Deramore) .....	Mr. W. Smith .....	5	1	6	252 T	39·95	198
3.—BANN—Lough Neagh, East. 37 sq. mi.							
D Lurgan (Belle Vue) ...	S. A. Bell, Esq. ....	5	0	5	200 T	37·19	201
4.—BANN, UPPER. 144 sq. mi.							
D Tanderagee .....	Dr. J. Taylor .....	5	1	6	198 T	40·19	205
„ .....	„ „ „ .....	8	1	6	198 T	40·17	...
5.—BANN—Lough Neagh, West. 192 sq. mi.							
D Armagh Observatory .....	Dr. J. L. E. Dreyer ...	8	1	0	210 T	35·76	223
D Loughgall (Manor House) .....	Mrs. Sowter .....	5	1	0	210 T	34·75	203
<b>DOWN.</b> (Area, 961 sq. mi.)							
1.—CARLINGFORD LOUGH. 104 sq. mi.							
D Warrenpoint .....	Lt.-Col. A. W. Mansergh	8	1	4	20 T	48·39	207

## DIVISION XXIII.—ULSTER—(continued).

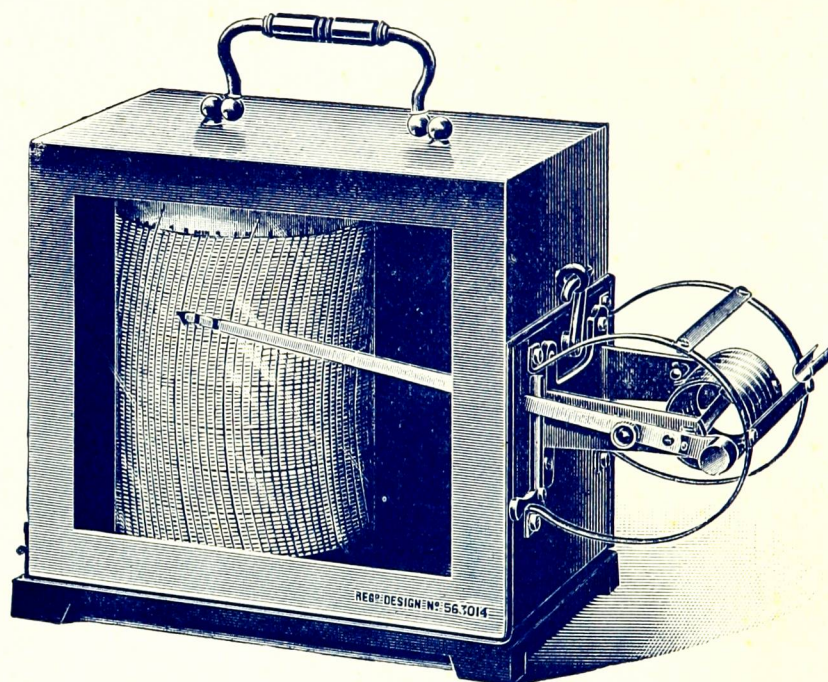
STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days with 0.1 or more recorded.
		Diameter	Height Above Ground.		Height Above Sea Level	
		in.	ft.	in.	feet.	inches.
DOWN—(con.)						
2.—DUNDRUM BAY & C. 173 sq. mi.						
D Newcastle (Tullymore Park) ...	The Earl of Roden.....	5	1	0	276 T	67.15 213
D Seaforde .....	Major W. G. Forde ...	8	0	5	180 T	45.56 209
3.—STRANGFORD LOUGH. 260 sq. mi.						
4.—COAST STREAMS. 47 sq. mi.						
Donaghadee .....	Meteorological Office...	8	1	6	40	36.12 238
5.—BELFAST LOUGH. 206 sq. mi.						
6.—BANN—Lough Neagh, East. 7 sq. mi.						
7.—BANN, UPPER. 162 sq. mi.						
D Mourne Mountains (Fofanny Res.)	J. H. H. Swiney, Esq. C.E.	5	1	0	938	90.58? 209
D Rathfryland (Ballynagappoge)...	J. Smyth, Esq., C.E. ...	5	1	0	300	33.28 169
D Castlewella (Lough Island Res.)	„ „ „ „	5	1	0	440 T	51.43 228
Banbridge (Katesbridge) .....	A. A. Mulligan, Esq. ...	5	1	0	230 T	35.40 207
D „ (Corbet Reservoir) ...	J. Smyth, Esq., C.E. ...	5	1	0	234	32.89 165
D „ (Milltown) .....	„ „ „ „	8	0	8	200 T	34.73 206
D Moyallon House [Portadown] ...	Mr. J. Lynas .....	5	0	5	130 T	34.79 204
8.—INSULAR. 2 sq. mi.						
ANTRIM. (Area, 1193 sq. mi.)						
1.—BELFAST LOUGH. 107 sq. mi.						
D Lisburn (Ulster Provincial School)	J. Ridges, Esq. ....	5	1	6	208	52.51 215
D† Belfast (Queen's University) ..	Mr. G. Robinson ...	5	1	0	62 T	44.43 239
D „ (Cave Hill Road) .....	Miss Firth ...	5	1	0	200 T	46.00 227
D „ (Sewage Outfall Works) (R)	Belfast Corporation ...	8	2	11	19	42.01 206
„ (Oldpark Filters) .....	F. W. McCullough Esq. C.E.	5	3	6	203 T	42.86 195
Carrickfergus (Dorisland) .....	„ „ „	5	1	0	250 T	39.20 211
„ (South Woodburn) .....	„ „ „	5	1	0	640 T	50.29 247
„ (North „) .....	„ „ „	5	1	0	735 T	57.53 261
„ (Copeland) .....	„ „ „	5	1	0	424 T	50.77 240
„ (Lough Mourne)...	„ „ „	5	1	0	596 T	43.11 232
2.—GLENARM & C. 186 sq. mi.						
D Glenarm Castle .....	The Earl of Antrim ...	8	0	9	70 T	52.07 215
3.—BUSH & C. 193 sq. mi.						
D† Bushmills (Dundarave).....	Mr. J. Hatty .....	5	1	0	162 T	41.46 213
4.—BANN, LOWER. 112 sq. mi.						
Ballymoney (Balnamore) .....	George Smyth, Esq. ...	5	1	5	50 T	34.95 250
5.—BANN—Lough Neagh, East. 590 sq. mi.						
Stonyford (Belfast W. W.) ...	F. W. McCullough Esq. C.E.	5	1	6	437 T	41.84 173
Antrim (Ardnaveigh) .....	H. B. Murray, Esq. ...	5	1	0	210	36.10 205
D Ballymena (Harryville) .....	J. R. Williams, Esq. ...	5	1	5	150 T	53.08 246
D Broughshane (Quolie) .....	H. O'Hara, Esq., C.E..	5	1	4	893	63.52 261
6.—INSULAR. 5 sq. mi.						
LONDONDERRY. (Area, 816 sq. mi.)						
1.—LOUGH SWILLY. 6 sq. mi.						
D Londonderry (Dunruadh) .....	J. H. Welch, Esq. ....	5	0	6	130 T	44.55 235

## DIVISION XXIII.—ULSTER—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.	Days with '01 or more recorded.
		Diameter	Height Above Ground.		Height Above SeaLevel	1912	
		in.	ft.	in.	feet.	inches.	
<b>LONDONDERRY—(con.)</b>							
2.—BUSH & C. 9 sq. mi.							
3.—BANN, LOWER. 240 sq. mi.							
4.—BANN—Lough Neagh, West. 196 sq. mi.							
5.—FOYLE & C. 365 sq. mi.							
D Londonderry (Creggan Res.).....	Mr. W. Hutchison.....	8	1	0	320 T	47·01	273
Limavady (Drenagh) .....	M.M. McCausland, Esq.	5	1	6	80 T	41·76	236
D „ (Culmore Ho., Myroe)	J. B. Martin, Esq.....	8	1	0	15	39·20	219
D Bellarena .....	Dowager Lady Heygate	5	1	3	7	43·56	233
<b>TYRONE. (Area, 1257 sq. mi.)</b>							
1.—ERNE. 46 sq. mi.							
2.—BANN—Lough Neagh, West. 442 sq. mi.							
Dungannon (Killyman Rectory)..	Rev. E. F. Campbell ...	5	0	11	150	38·40	...
D Cookstown (Lissan House) .....	J. H. Staples, Esq.....	5	0	10	310	38·35	202
3.—FOYLE. 769 sq. mi.							
D Omagh (Edenfel) .....	Lt.-Col. J. B. Buchanan	8	1	0	280 T	48·32	232
D Newtown Stewart (Baron's Court)	Mr. R. Bell.....	5	1	0	250 T	50·89	231
D Sion Mills (Sion House) .....	Miss G. I. Herdman ...	5	3	0	100 ?	42·71	232
<b>DONEGAL. (Area, 1875 sq. mi.)</b>							
1.—DONAGH & C. 146 sq. mi.							
2.—LOUGH SWILLY. 273 sq. mi.							
D Letterkenny (District Asylum)..	E. E. Moore, Esq., M.D.	5	1	0	183 T	53·16	258
D Rathmullen (Fort Royal) .....	Col. C. Montgomery ...	5	1	4	35	48·60	276
D Buncrana (Rockfort).....	T. Colquhoun, Esq. ...	5	1	0	55 T	42·63	218
D Fanad (Tamney Rectory) .....	Rev. A.C. Digby French	5	1	0	110 T	48·89	257
D Lough Swilly (Carrablagh) .....	„ „ „	5	1	0	130	50·26	226
3.—SHEEPHAVEN & C. 307 sq. mi.							
D Milford (The Manse) .....	Rev. W. J. Young.....	5	1	6	150	45·79	248
Dunfanaghy (St. Helen's).....	J.J. MacGrath, Esq., MD	8	1	0	55 T	50·59	244
D „ (Horn Head) .....	C. F. Stewart, Esq. ...	5	2	0	163	48·94	247
4.—GWEEBARRA & C. 341 sq. mi.							
5.—DONEGAL BAY. 322 sq. mi.							
D Killybegs (Rockmount).....	Comm. G. G. Philipps, R.N.	5	1	0	65	62·23	258
6.—ERNE. 68 sq. mi.							
7.—DROWES & C. 10 sq. mi.							
8.—FOYLE. 396 sq. mi.							
D Convoy .....	Rev. Preb. K. Thompson	5	0	9	150 T	54·02	239
9.—INSULAR. 12 sq. mi.							



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