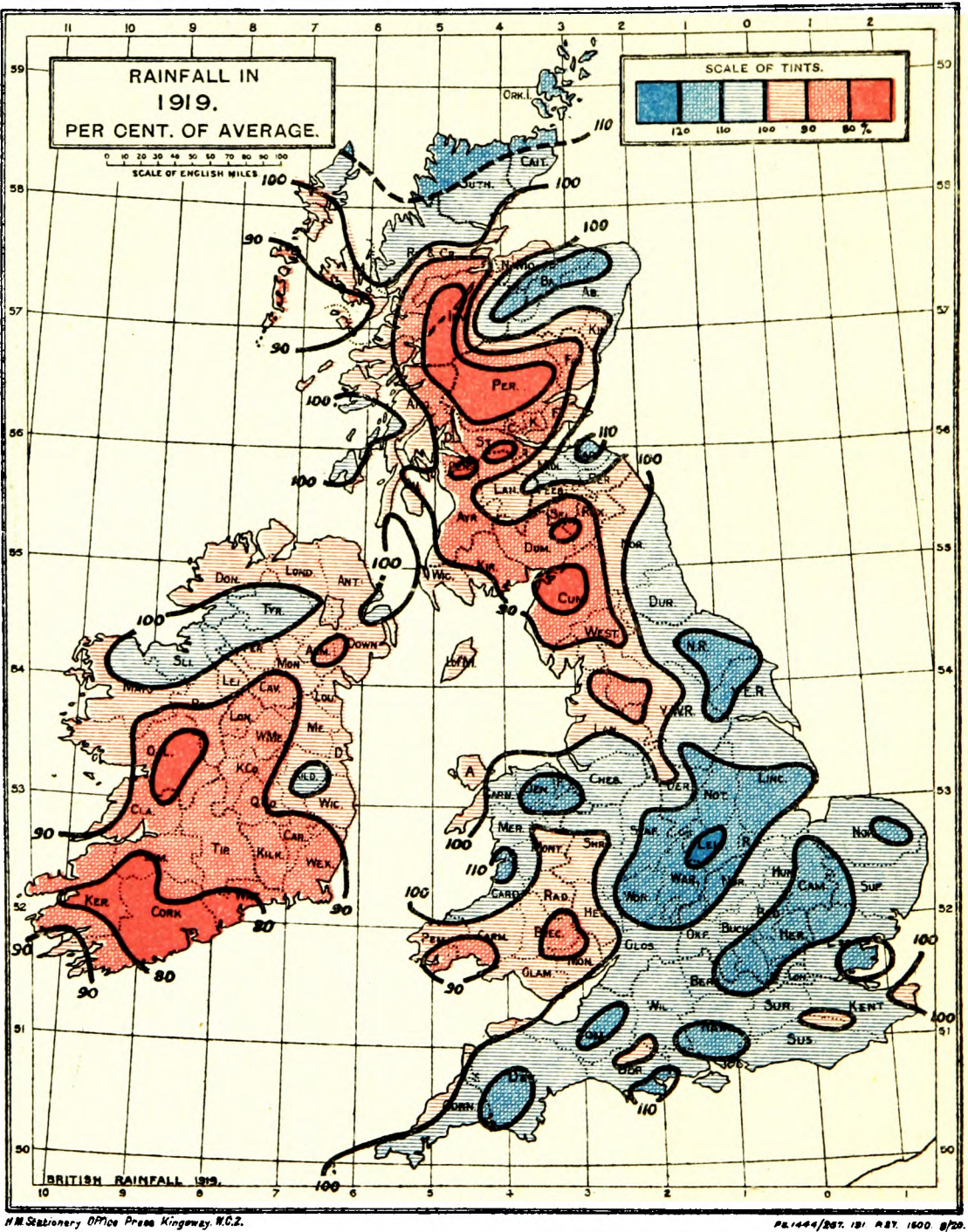


Lending Library.

BRITISH RAINFALL,
1919.

RELATION OF RAINFALL IN 1919 TO THE AVERAGE OF 1875-1909.



The area coloured Red had rainfall below the average, that coloured Blue had rainfall above the average.

FOR OFFICIAL USE.



METEOROLOGICAL OFFICE—AIR MINISTRY

BRITISH RAINFALL, 1919.

THE FIFTY-NINTH ANNUAL VOLUME OF THE
BRITISH RAINFALL ORGANIZATION.

REPORT ON
THE DISTRIBUTION OF RAIN
IN SPACE AND TIME OVER
THE BRITISH ISLES
DURING THE YEAR
1919

AS RECORDED BY ABOUT 5,000 OBSERVERS
IN GREAT BRITAIN AND IRELAND.

WITH MAPS AND ILLUSTRATIONS.

ISSUED BY THE AUTHORITY OF THE METEOROLOGICAL COMMITTEE.

LONDON :
PRINTED AND PUBLISHED BY
HIS MAJESTY'S STATIONERY OFFICE.

To be purchased through any Bookseller or directly from
H. M. STATIONERY OFFICE at the following addresses:
IMPERIAL HOUSE, KINGSWAY, LONDON, W.C. 2, and 28, ABINGDON STREET, LONDON, S.W.1 ;
37, PETER STREET, MANCHESTER ; 1, ST. ANDREW'S CRESCENT, CARDIFF ;
23, FORTH STREET, EDINBURGH ;
E. PONSONBY, LTD., 116, GRAFTON STREET, DUBLIN ;
also from THE METEOROLOGICAL OFFICE, AIR MINISTRY, KINGSWAY, LONDON, W.C.2,
and the BRITISH RAINFALL ORGANIZATION, 62, CAMDEN SQUARE, LONDON, N.W.1.

1920.

Price 12s. 6d. Net.

ERRATA IN "BRITISH RAINFALL, 1908 to 1918."

Westmorland, **2**, *for* Amb eside (Gale House) *read* Ambleside (Market Square).

ERRATA IN "BRITISH RAINFALL, 1916."

p. [132], line 21 of table, *for* Epsom (Waterworks) *read* Epsom (Sewage Works)

p. [158], line 11 of table, Little Dunmow (Farm), *delete the record*.

p. [160], line 10 of table [Gorleston], *transfer* line to Norfolk 1, line 17.

ERRATA IN "BRITISH RAINFALL, 1917."

p. [122], line 12 of table, *for* Epsom (Waterworks) *read* Epsom (Sewage Works).

p. [148], line 18 of table, *for* Yarmouth (Sailors' Home) *read* Gorleston (Coast-guard Station).

p. [149], 4.—*Ouse, etc.*, *for* 638 sq. mi. *read* 683 sq. mi.

ERRATA IN "BRITISH RAINFALL, 1918."

p. [35], in table line *for* 1917, *for* 476·3 *read* 475·9.

p. [123], line 2 of table, Plumstead Common, Height above Sea, *for* 270 *read* 31.
(this erratum appears in each volume from 1912 to 1918).

p. [126], line 16 of table, *for* Epsom (Waterworks) *read* Epsom (Sewage Works).

p. [134], line 1 of table, *for* Jevington (Church Farm) *read* Jevington.

p. [138], line 5 from bottom, *for* Upton Nervet *read* Ufton Nervet.

p. [150], line 5 of table, Little Dunmow (Farm), *delete the record*.

p. [152], line 14 of table, *for* Yarmouth (Sailors' Home) *read* Gorleston (Coast-guard Station).

p. [170], line 3 of table *for* Malvern (High School) *read* Malvern (Free Library).

p. [209], Carnarvonshire 5—

Line 2 Snowdon (Wenallt) *for* 176·66 *read* 177·66.

„ 7 Snowdon (Teyrn), *for* 189·12 *read* 190·12.

„ 8 Snowdon (L. Llydaw Intake), *for* 177·78 *read* 178·78.

„ 9 Snowdon (L. Llydaw Copper Mill), *for* 194·47 *read* 201·47.

p. [225] Perthshire 12, line 2, Height above Sea, *for* 200 *read* 530.

„ 12, „ 3 „ „ „ „ 550 „ 450.

(These two errata appear also in previous volumes.)

ERRATUM IN "BRITISH RAINFALL, 1919."

p. [210], Haverfordwest (Portfield). Height above Sea, *for* 220 *read* 250.

CONTENTS.

	PAGE
PREFACE	vii

PART I.

REPORT OF THE SUPERINTENDENT TO THE DIRECTOR OF THE METEOROLOGICAL OFFICE	ix
LIST OF SUBSCRIBERS TO THE GENERAL FUND FROM SEPTEMBER 18TH, 1919, TO OCTOBER 30TH, 1920	xiv
THE STAFF OF OBSERVERS.. .. .	xviii
OBITUARY	xxii

PART II.

RAINFALL AND METEOROLOGY OF 1919:

EVAPORATION AND PERCOLATION IN 1919	2
THE RELATION OF EVAPORATION TO OTHER METEOROLOGICAL ELEMENTS	6
THE DISTRIBUTION OF RAINFALL IN TIME— <i>Rain Days—Wet Days—Droughts—Dry Spells—Rain Spells—Wet Spells—The Duration of Rainfall—Heavy Rains in Short Periods</i>	14
HEAVY FALLS ON RAINFALL DAYS	61
MONTHLY RAINFALL	80
SEASONAL RAINFALL	122
THE TOTAL FALL OF RAIN IN 1919 AND ITS RELATION TO THE AVERAGE	131

PART III.

EXPLANATORY NOTE	144
COUNTY INDEX TO GENERAL TABLE	145
GENERAL TABLE OF RAINFALL AT 4,893 STATIONS.. .. .	146

PART IV.

SPECIAL ARTICLES :—

- | | |
|---|-----|
| (1) <i>The Effect of Rainfall on the Saturation-Level in the Chalk at Chilgrove, West Sussex, from 1836–1919.</i> By D. HALTON THOMSON, M.A., Assoc.M.Inst.C.E. | 247 |
| (2) <i>The Exposure of Rain Gauges.</i> By M. DE CARLE S. SALTER | 263 |

LIST OF ILLUSTRATIONS.

	PAGE.
Coloured Map of the Relation of Rainfall in 1919 to the Average	<i>Frontispiece</i>
Evaporation from a Water Surface and other Meteorological Phenomena, 1905-1918	<i>face p. 11</i>
Distribution of Wet Days in 1919 (Map)	25
Maps of Heavy Daily Rainfall—	
June 11th, 1919	66
June 12th, 1919	67
July 19th, 1919	70
August 25th, 1919	72
August 26th, 1919	73
Maps of the Total Rainfall and of the Percentage of the Average in each Month in 1919.. .. .	94-117
Maps of Seasonal Rainfall—	
Winter Half-year, 1918-19	123
Summer Half-year, 1919	124
Twelve Months, October, 1918, to September, 1919	125
Maps of the Total Rainfall in 1919	132, 133
Monthly Observations of Rainfall and Saturation-Level in the Chalk at Chilgrove, West Sussex, 1836-1919 (2 diagrams)	252, 253

PREFACE.

The British Rainfall Organization was transferred to the Director of the Meteorological Office by an Indenture dated 24th July, 1919, and from that date the responsibility for the conduct of the work of the Organization has been added to the other duties of the Office.

By that instrument the number of Observers who furnish observations to the Office for the advancement of science and for the public benefit has been increased from something like 500 to about 5,000.

At the same time, Dr. Mill, who had been in charge of the Organization for nearly twenty years with such conspicuous success, retired. In accordance with a provision of the deed of transfer, the premises which have been the home of the Organization for fifty-two years were acquired by H.M. Office of Works and Public Buildings in order that the continuity of the work might not be interrupted; and, with the same object in view, as little change as possible has been made in the arrangements for carrying on the work as organised by Dr. Mill.

Mr. M. de Carle S. Salter, who had been Dr. Mill's coadjutor, remained in charge of the establishment with the provision that, among others, Mr. R. G. K. Lempfert, Assistant Director of the Office for Contributive Stations, and Mr. F. J. W. Whipple, Superintendent of the Statistics Division, would be specially available for consultation on the details of the work of the Organization.

Further, in accordance with the agreement, such of the other members of the staff as were remaining, were also continued in the service of the Organization as members of the staff of the Meteorological Office.

The volume of *British Rainfall* for 1918, which was nearly completed at the time of the transfer, was issued in the usual manner on the authority of Dr. Mill. The data for 1919 have been collected largely under the direction of the Meteorological Office, and for the issue of the volume for 1919 the Committee and Director of the Office have to bear the responsibility.

The work of preparing the volume for the press, of compiling and discussing the results, and of putting together the articles upon various branches of work on rainfall, has been placed in the hands of Mr. Salter and the staff of the Organization in his charge.

The year during which the responsibility for the Organization has rested with the Director of the Office has been indeed an unusually laborious one, because the attachment of the Office to the Air Ministry in accordance with a decision of the Home Affairs Committee of the Cabinet of 8th May, 1919, began to take effect at the same time as the transfer of the Organization. In the circumstances, no other

course was practicable than to entrust the continuance of the work upon rainfall to those who already had experience of it without any important change in method or procedure.

Consequently, the volume for 1919 is, as nearly as may be, a continuation of previous volumes, and it is placed at the disposal of the public with the confidence that it will be appreciated on that ground as well as for its intrinsic merits.

For the future, the Meteorological Office relies upon the continuance of the work of voluntary Observers in every part of the country. Indeed, no other course can be contemplated. Anyone who compiles particulars about the weather at a central office recognises that he is dependent upon Observers at every kind of distance, who are personally interested in the work for its own sake and for its scientific value. If there should come a time when the provision of observations were left entirely to what a central office could provide for itself, it would be clear evidence that the opinion of those who had the matter in hand was that the memory of the weather might interest the Government but was no concern of the public, and the system which has been of such great utility in the past would have to come to an end.

But in return for the information from any locality the Office can be of some assistance in arranging for a uniform system, and in placing the information at the disposal of anyone who wishes to consult it; and in the long run it is for the advantage of every locality that the facts about its weather should be known.

There is still much to be done in the study of British rainfall. It is a matter of surprise that we have no adequate maps of average monthly rainfall of the British Isles. When this curious matter is inquired into the explanation is not to be found in the statement that we have fewer observations for every hundred square miles of country than have, for example, the United States or Australia, for which authoritative monthly maps exist; but in the fact that we have more. We know so much about our own rainfall that we can see that there would be local disturbances in the lines of the crude observations which would puzzle rather than inform the reader.

We have, therefore, to work out a scheme of monthly maps on some other plan than the plotting of average results; and the first stage in the process is the completion of a detailed annual map. That solution is being gradually reached.

NAPIER SHAW,

Director.

Meteorological Office,

Air Ministry.

4th August, 1920.

BRITISH RAINFALL, 1919.

PART I.

The British Rainfall Organization has now been carried on as a Department of the Meteorological Office for a complete year, and in presenting the fifty-ninth annual volume of *British Rainfall*, embodying the rainfall observations for the year 1919, I have the honour to report as follows.

Reorganization.—Owing to the retirement of Dr. H. R. Mill and the transfer of the Organization to the Meteorological Office, considerable re-arrangement of the duties of the staff have been necessary. They are dealt with in the Report of the Meteorological Committee.

The main part of the work of the Organization has been continued on the old lines, the appeal to the Observers to continue their support having met with a ready response. Steps have been taken to economise the work of the large body of Observers who reported both to the Meteorological Office, or the Scottish Meteorological Society, and to the British Rainfall Organization, and in future the returns from all stations formerly reporting only rainfall to the Meteorological Office will be received at the British Rainfall Organization, whilst those sending full climatological records to the Office, either in London or Edinburgh, are relieved of the necessity of sending duplicates of the rainfall records to Camden Square, except the small summary (Form B). Copies of their daily records are made at South Kensington and transferred to Camden Square. An incidental advantage is that the number of full daily rainfall records placed on our permanent files is considerably increased. Arrangements have also been made to supplement the rainfall data published in the *Monthly Weather Report* by a table giving additional values for about 200 well-distributed stations. This scheme has been in operation since January, 1920, and the monthly rainfall map based on about 1,000 records has also been continued.

In order to meet the needs of the growing body of rainfall Observers who now make their records in millimetres, new forms, A2, B2, and C2, were designed and brought into use at the beginning of 1920, resulting in a great saving of time.

A new and enlarged edition of *Rules for Rainfall Observers* has been prepared and issued gratis for the use of Observers. It is particularly desired that Observers who are not familiar with this pamphlet should apply for copies and use every endeavour to secure more complete uniformity of practice in rainfall recording.

The series of meteorological observations at Camden Square has been continued, the year 1919 being the sixty-second consecutive year; the records have been published in the *Daily* and *Monthly Weather Reports*. Owing to the growth of trees in neighbouring gardens the exposure of the sunshine recorder has become defective and the official sunshine record for the station has therefore been transferred to the Royal Botanic Gardens, Regents Park.

Advisory Committee on Rainfall.—In May, 1920, the Meteorological Committee appointed a special sub-committee to advise on the rainfall work. The minute was as follows:—

“ *Advisory Committee for the work on Rainfall.* Reported—That authority for appointing a Committee on Rainfall had been given in Minute 799. The following names were put forward and approved:—Sir Thomas Middleton, representing the Ministry of Agriculture, Dr. Wedderburn, Mr. Lempfert, The Superintendents of Statistics (Mr. Whipple), British Rainfall (Mr. Salter), and Instruments (Mr. Corless).

It was further agreed to invite Mr. H. Mellish, C.B., a former trustee of the British Rainfall Organization, to join the Committee.”

The first meeting of the Sub-Committee was held on June 23rd, 1920, Sir Napier Shaw, Director of the Meteorological Office, in the chair. The contents of the present volume of *British Rainfall* were discussed and approved. The Superintendent reported on the work in hand on the rainfall maps for the Climatological Atlas, being prepared under the supervision of a joint-committee of the Meteorological Office and Royal Meteorological Society, and also put forward suggestions for the extension of the Rainfall Survey Map and for the more extensive inspection of rainfall stations.

The Staff of Observers.—There has again been a slight shrinkage in the total number of Observers, but it is gratifying to notice that the improvement in the distribution, which is of vastly more importance than mere numbers, continues, the number of stations in the more remote districts showing an increase. A most encouraging sign has been the unqualified success of the Irish Rainfall Association, formed by Colonel E. W. M. Murphy in 1918 as the “Munster Rainfall Association,” but now extending its scope to embrace the whole of Ireland. The chief objects are to get new stations established, to encourage and assist existing Observers, and to publish an annual statement of rainfall. The present membership is about 130, and 12 new stations were established in Munster during 1919, many helping to fill large vacant areas on the map.

We have again been greatly helped by the large number of existing local rainfall organizations, and take the opportunity of expressing appreciation of the really valuable work being done in this

direction. The co-operation of municipal authorities and other public institutions in all parts of the country has been continued.

In another section of this volume mention is made of the death of two of the now very small band of rainfall Observers whose records appeared in the first volume, *English Rainfall*, 1860. These were Dr. W. C. LAKE, of Teignmouth, and LORD PECKOVER OF WISBECH. The remaining members of the original observing corps are :—

R. BURRELL, Esq., of Bury St. Edmunds ;
W. S. CLARK, Esq., of Street, Somerset ;
J. G. WOOD, Esq., of London.

It has been possible during this year to a certain extent to revive the inspection of rainfall stations, after an almost entire cessation brought about by the war. The number of gauges inspected was 100, distributed as follows :—

London	4	Somersetshire	2
Surrey	5	Gloucestershire	9
Sussex	15	Worcestershire	11
Hampshire	5	Warwickshire	4
Middlesex	4	Glamorganshire	7
Hertfordshire	3	Breconshire	5
Essex	2	Perthshire	15
Devonshire	5	Inverness-shire	4

In addition to the above, 11 sites of gauges either discontinued or about to be established were inspected, as follows :—

Somersetshire	2	Perthshire	2
Glamorganshire	2	Inverness-shire	2
Breconshire	3		

British Rainfall, 1919.—The arrangement of the volume has been kept unchanged with one exception. In order to bring together all the administrative and non-scientific sections and to obviate the awkward double pagination which has hitherto been necessary, the Special Articles have been transferred to the end of the volume, forming Part IV. Part I., which has been modified as mentioned, is paged as an introduction to the volume in roman figures and the ordinary page numbers run direct from the beginning of Part II. The contents of Part II. include a special discussion of the relation of the measured evaporation at Camden Square to other meteorological elements based on five-day means over a period of fourteen years. This takes the place of the discussions of the annual values which have appeared for several years past. The complete monthly meteorological observations at Camden Square, which now appear in detail in other publications of the Meteorological Office, have been omitted. In the Section dealing with the "Distribution of Rainfall in Time" an account is given of a tentative experiment in the revision of the units hitherto used or the discussion of rainfall frequency. Together with the whole of the

data for rain days, droughts and rain spells, based on the unit $\cdot 01$ inch, are given parallel tables based on the unit $\cdot 04$ inch or $1\cdot 0$ millimetre. No definite step is suggested in the direction of abandoning the older definitions at present, but it is proposed to publish the data in both forms for a few years until sufficient information is available to enable the relative advantages of the two sets of definitions to be appraised. A point of great importance is that should the suggested new definitions prove practicable the incompatibility of records taken in inches and millimetres in respect of frequency values will to a large extent disappear. In the Section on Seasonal Rainfall the maps showing the relation of the fall in the Winter and Summer half-years, and the Seasonal year, to the average, are again included. An important innovation is the introduction for the first time of two maps showing the distribution of total rainfall during the year and a description based upon them. These form a supplement to the coloured map showing the relation of the total fall to the average. The article on "Extremes of Rainfall" is incorporated in this Section.

In Part IV. is printed a valuable article on "The Effect of Rainfall on the Saturation-Level in the Chalk at Chilgrove, West Sussex, from 1836 to 1919," by Mr. D. Halton Thomson, C.E., illustrated by diagrams showing the monthly readings throughout the whole period of eighty-four years covered by this remarkable record. A paper on "The Exposure of Rain Gauges," drawing attention to some important sources of error hitherto commonly overlooked is also printed.

The Meteorological Magazine.—Volume 54, for the year 1919, including the issue for January, 1920, was completed on the old lines. In February, 1920, the Magazine was amalgamated with the *Meteorological Office Circular*, under the title *The Meteorological Magazine*, edited jointly by Mr. Salter and Mr. F. J. W. Whipple, Superintendent of the Statistics Division of the Meteorological Office. Opportunity was taken to re-arrange the contents and to introduce some new features, including a considerable extension of the Climatological Tables for the British Empire and an article dealing with the Weather of the World in the preceding month. The Magazine, whilst retaining its character as the organ of the British Rainfall Organization, becomes in addition that of the combined Meteorological Services of Great Britain.

Testing of Rain Gauges and Measures.—During the year, besides tests carried out in the course of inspections, certificates of accuracy have been issued for 29 rain gauges and 79 measures. In two cases certificates have been refused. Two new or improved types of self-recording rain gauge have been tested at Camden Square and some modifications suggested. Arrangements are in contemplation for transferring the work of testing rain gauges to the Instruments Division of the Office, where similar work has been done for a long time in connection with instruments issued for official purposes.

Rainfall Survey Map.—The incomplete average rainfall map of the British Isles, on the scale of 2 miles to the inch, has been revised or extended in parts of Cornwall, Yorkshire, Monmouthshire, Glamorganshire, Carmarthenshire, Breconshire, Perthshire and Inverness-shire. A draft scheme for the completion of this map has been submitted for consideration. The great economic importance of issuing a detailed rainfall survey map of the British Isles is emphasized by the Reports of the Water Power Resources Committee of the Board of Trade.

Scientific Work and Advice.—A large and increasing number of requests for rainfall data, and advice, have been received from the public, including professional men, and from newspapers, and these have been in every case complied with. Among the more important may be mentioned reports on the rainfall of areas in England and Wales supplied to the Metropolitan Water Board and to various municipal authorities in connection with existing or proposed schemes for water supply; the preparation of an average rainfall map of the Dee Basin and explanatory memorandum at the special request of the Water Power Resources Committee of the Board of Trade; and the selection of representative records of daily rainfall for the last fifteen years at a very large number of places in England and Wales for the purpose of working out a scheme of Rainfall Insurance.

On several occasions special maps have been prepared for exhibition purposes, including one of the distribution of rainfall during the great flood at Louth on May 29th, 1920.

The Superintendent read a paper on "The Exposure of Rain Gauges" before the Conference of Delegates of Scientific Societies at the meeting of the British Association at Bournemouth in September, 1919, which is reprinted in this volume, and delivered a lecture on "Rainfall considered as a Geographical Function" at the Annual Meeting of the Geographical Association in January, 1920.

CARLE SALTER,

Superintendent.

British Rainfall Organization,
62, Camden Square,
London, N.W.1.

29th July, 1920.

SUBSCRIPTIONS AND PAYMENTS OF £1 OR MORE FOR PUBLICATIONS AND CONTRIBUTIONS TO THE GENERAL EXPENSES OF RAINFALL INVESTIGATIONS FROM SEPTEMBER 18TH, 1919, TO OCTOBER 30TH, 1920.

HIS MAJESTY THE KING.....£2 2s.

CORPORATIONS, WATER COMPANIES, ETC.

	£	s.	d.		£	s.	d.
Barry Urban D.C. (1919) ..	1	1	0	Middlesbrough Corporation.	1	1	0
Bolton Corporation	1	1	0	Newport ..	1	1	0
Bradford ..	1	1	0	Nottingham ..	1	1	0
Brighton ..	1	10	0	Oldham ..	1	9	6
Bristol Waterworks Co.	1	1	0	Ramsgate ..	1	10	0
Cardiff Corporation	1	1	0	Sheffield ..	1	1	0
Doncaster ..	1	1	0	Southport ..	1	1	0
Glasgow ..	1	1	0	Southend Waterworks Go...	1	17	6
Gosport Waterworks Co. ..	1	1	0	South Staffs. ..	1	0	0
Hull Corporation	2	3	0	Staffordshire Potteries W.Co.	1	1	0
Leeds and Liverpool Canal Co	1	1	0	Torquay Corporation	1	1	0
Leicester Corporation (2years)	2	16	6	Wakefield ..	1	1	0
Liverpool Corporation (1919)	1	1	0	Weaver Navigation Trust ..	5	5	0
Lowestoft Gas and Water Co.	1	1	0	Yorkshire Fisheries Board..	1	1	0

	£	s.	d.		£	s.	d.
Agelasto, Thurston, Esq. ..	1	7	0	Bickham, Spencer H., Esq...	1	0	0
Aldenharn, Lord	1	0	3	Biddulph, Lt.-Col. M. W.,			
Allan, Capt. Claud A.....	1	0	0	D.L.	1	10	0
Allison, Sir R. A.....	1	0	0	Birkmyre, John, Esq.....	2	0	0
Anderson, M. Douglas, Esq.	1	1	0	Blackburn, Mrs. W.....	1	1	0
Appach, Miss	1	1	0	Blake, J., Esq.....	1	1	6
Argles, Major T. A.....	1	0	0	Bolton, M. A., Esq.....	1	0	0
Assheton, R. C., Esq.....	1	0	0	Bond, J. W. G., Esq.....	1	1	0
Astley, Miss C. C.	1	10	2	Bonney, Prof. T. G., F.R.S.	1	1	0
Aston, Miss E. A.....	1	7	0	Boston, Lord	4	4	0
Backhouse, the late T. W.,				Boughton, Miss F. H. Rouse	2	0	0
Esq.	2	15	0	Boutflower, H. C., Esq.....	1	0	0
Bacon, Capt. R. C.....	1	1	0	Bouverie, Miss A. Pleydell..	1	0	0
Bacon, T. W., Esq.....	1	1	0	Bouverie, H. H. P., Esq. ..	2	2	0
Bain, H., Esq.....	1	1	0	Bowers, Col. Maunsell.....	1	0	0
Barnes, A. A., Esq., C.E. ..	4	1	6	Boyd, A. H., Esq.	1	0	0
Bayard, F. Campbell, Esq...	1	17	6	Boys, Rev. H. A.....	2	2	0
Beauchamp, E. B., Esq.....	1	0	0	Bradford, The Earl of.....	1	0	0
Bell, S. A., Esq., J.P.....	1	1	0	Bromhead, Col. C. J., C.B...	1	1	0
Benyon, J. H., Esq.	1	10	0	Broodbank, Sir J. G.....	1	8	6
Berryman, F. H., Esq.	1	1	0	Brook, C. L., Esq.	15	0	0

SUBSCRIPTIONS.

xv.

	£	s.	d.		£	s.	d.
Brounger, A. E., Esq.....	1	0	0	Eastwood, F. B., Esq.....	1	1	0
Brown, W., Esq.	1	0	0	Eccles, H., Esq.	1	1	0
Brunner, Mond, & Co., Messrs.	4	4	0	Edge, T. L. K., Esq.	1	0	0
Buckinghamshire, The Earl of	2	4	6	Ekins, J. Edward, Esq.....	1	1	0
Buckley, T. H. W., Esq.....	1	1	0	Elliott, Mrs. Aubrey	1	1	0
Budgen, Janssen, Esq.	1	0	0	Ellis, Major J. Shipley.....	1	1	0
Budgen, P. H., Esq.	1	1	0	Ellis, Rev. the Hon. W. C....	2	2	0
Bullied, Dr. Arthur	1	10	0	Farrah, J. S., Esq. (2 years)	2	2	0
Burlingham, R., Esq.....	1	1	0	Farrer, Ven. Archdeacon Walter	1	1	0
Burlingham, S. S., Esq.....	1	8	8	Farrer, Rev. William.....	1	1	0
Burn, Col. C. R., M.P.....	1	0	0	Ferard, C. A., Esq.....	1	1	0
Burnell, C. E., Esq.....	1	1	0	ffarington, H. Nowell, Esq...	2	2	0
Burton, Mrs.....	1	1	0	Fison, Sir F., Bart.....	1	0	0
Butterworth, C. F., Esq....	1	10	0	Fleming, T. R., Esq. (2 years)	2	1	0
Calver, W. E., Esq.....	1	4	2	Fletcher, Wilfrid, Esq.	1	1	0
Carter, W. J., Esq.....	1	5	0	Forster, H. R. W., Esq.....	1	0	0
Casella & Co., Messrs. C. F. (1918-19)	3	3	0	Foster, C. F., Esq.....	2	2	0
Caulfield, Mrs. R. M.	1	1	0	Foster, Mrs. J. H.	1	2	6
Cave, Capt. Charles J. P. ..	3	3	6	Fox, Rev. J. C.....	1	1	0
Charlton, T. Gardhouse, Esq. (4 years)	3	0	0	Fraser, H. Malcolm, Esq. ..	1	1	0
Chavasse, Major H.....	1	0	0	Freshfield, D. W., Esq.....	2	2	0
Christy, W. M., Esq.....	1	0	0	Fry, Miss Agnes T.....	1	0	0
Clark, J. Edmund, Esq.....	1	1	0	Fry, E. S., Esq.	1	1	0
Clark, W. D., Esq.....	2	7	6	Garnett, W., Esq.	1	1	0
Clarke, Harvey R. G., Esq...	1	1	0	Garnons-Williams, Mrs. R. D.	1	6	0
Clarke, R. Stanley, Esq. ..	1	5	0	Garrett, G. H., Esq.....	1	0	0
Clay, Alfred, Esq.	2	0	0	Gosling, L. D., Esq.....	1	2	6
Clay, Henry, Esq.	1	0	0	Green, Laurence, Esq.....	1	11	0
Cole, Rev. Canon R. E. G. (1919)	1	0	0	Greenwood, Capt. C. S....	1	0	0
Coode, R. C., Esq.	2	0	0	Greenwood, J. Anderton, Esq.	1	5	8
Cooke, R., Esq.	1	0	0	Greves, S. Hyla, Esq.....	2	2	0
Cookson, H. Theodore, Esq.	1	4	6	Griffith, W. D. W., Esq.....	1	0	0
Cottesloe, Col. Lord.....	1	1	0	Grubb, J., Esq.....	1	1	0
Courtown, The Earl of (6 years)	2	17	6	Guest and Chrimes, Messrs.	3	3	0
Creagh, Major S. H.....	1	7	6	Gurney, Sir Eustace.....	1	1	0
Cripps, Mrs. Wilfred	1	1	0	Halliwell, F. L., Esq. (1919)	1	10	0
Crombie, J. E., Esq.....	1	3	0	Hambleton, Viscount.....	3	0	0
Cross, R. T., Esq.....	1	1	0	Hammond, Col. P. H.....	1	0	0
Crossman, Alex., Esq.....	1	1	0	Harrison, A., Esq.	1	10	0
Crump, E. Radclyffe, Esq...	1	1	0	Harrison, Sir Heath, Bart...	2	0	0
Cuffe, T. W., Esq.	1	7	0	Harrison, Capt. R. N.....	2	2	0
Curral, E. P., Esq.....	1	10	0	Hart, Hugh W., Esq.....	1	0	0
Currey, Eliot S., Esq.....	2	17	2	Hasler & Co., Ltd.	1	1	0
Dansey, Rev. R. P.....	2	0	0	Hatchard, Mrs. Frank.....	1	0	0
Decker, C., Esq. (4 years) ..	1	0	0	Hayward, J. W., Esq.....	1	1	8
Deverell, the late W. H., Esq.	1	1	0	Heathcote, Rowland, Esq...	1	1	0
Dickson, T. A., Esq.	1	1	0	Hicks, W. F., Esq.....	2	5	3
Dixon, Sir George, Bart....	1	1	0	Hill, Thos. A., Esq.	1	10	0
Dobie, Mrs.	1	0	0	Hitchcock, A., Esq.....	1	5	6
Dunlop, Miss	1	10	0	Hodson, Messrs. G. & F. W.	1	11	6
Duval, Rev. Dr. S. P.....	1	0	0	Holmes, J. H., Esq., C.E...	1	0	0
East, Sir G. A. Clayton, Bart.	1	0	0	Hood, Major E.	1	0	0
				Hooper, J. K., Esq.....	1	1	0
				Hope, G. P., Esq.....	1	1	6
				Horner, D. W., Esq.	1	4	5

	£	s.	d.		£	s.	d.
Horsfall, T. C., Esq.	1	11	0	Margary, Lieut. I. D.	1	5	8
Hounsom, W. A., Esq.	2	0	0	Markham, Major C. A.	1	10	0
Howell, J. M., Esq.	1	1	0	Marling, Capt. W. B. (2 years)	2	18	6
Howells, T. M., Esq.	1	3	8	Marling, late Sir W. H.,			
Hunter, J., Esq., C.E.	1	1	0	Bart. (1919)	1	1	0
Hurnard, S. F., Esq.	3	14	6	Marriot, W. K., Esq.	1	0	0
Hutchinson, Miss.	1	1	0	Marsh, G. R., Esq.	1	0	0
Hutton, Miss	1	0	0	Mason, Mrs. T.	1	1	0
Hutton, Stamford, Esq.	1	0	0	Mathews, Capt. G. E., R.E.	1	1	0
Innes, Mrs. A. J.	1	0	0	Maxwell, Miss.	1	0	0
Irvine, Alex. F., Esq.	1	12	2	Mead-Briggs, T. H., Esq. ..	1	7	0
Irwin, Wilfrid, Esq.	1	1	0	Melles, J. W., Esq.	1	1	0
Iveagh, The Earl of.	1	1	0	Mellish, Lt.-Col. Henry, C.B.	2	0	0
Jameson, J. G., Esq.	1	1	6	Melville, A. H. Leslie, Esq. .	1	0	0
Jenkin, A. P., Esq.	1	8	2	Merthyr, Lord	1	1	2
Jenkyns, Lady.	1	1	0	Metcalfe, T. T. S., Esq.	1	0	0
Jersey, The Earl of.	1	0	0	Metcalfe, W. P., Esq.	1	8	6
Johnston, H. W., Esq.	1	1	0	Mitchell, Col. Alex.	2	2	0
Ker, Major R. M.	3	5	8	Moat, Major W.	1	0	0
Kershaw, G. B., Esq. (3 years)	1	10	6	Moore, Sir J. W., M.D., D.Sc.	1	0	0
Kilburn, B. E. Dunbar, Esq.	2	17	2	Morphew, D., Esq.	1	8	6
King, L. G., Esq.	1	10	0	Morrison-Bell, Capt. Sir C.,			
Knowles, G., Esq.	1	1	0	Bart.	1	0	0
Laidlay, R. W., Esq.	1	0	0	Mulock, H. P., Esq.	1	0	0
Lamb, E., Esq., M.P.	1	0	0	Murphy, Col. E. W. M.	1	1	0
Langer, Dr. Carl	1	1	0	Myers, W. H., Esq.	1	1	0
Latchmore, A., Esq.	1	1	0	Napier, H. B., Esq.	1	1	0
Latham, P. H., Esq.	1	10	0	Napier, Capt. W. Elwin.	1	0	0
Latham, T., Esq.	1	0	0	Nimmo, A., Esq.	1	8	0
Latter, O. H., Esq. (1918-19)	1	0	0	Oakes, Rev. B. Porteous.	1	1	0
Lawson, Graham C., Esq. ..	2	0	0	Ouvry, P. Arnold, Esq.	1	0	0
Lee, E. A., Esq.	1	1	0	Pain & Sons, Messrs. W. E. .	1	1	0
Leigh, W. B., Esq.	1	1	0	Palairret, H. H., Esq.	2	0	0
Leslie & Reid, Messrs. J. & A.	1	11	0	Palmer, Miss L. (2 years) ..	1	0	0
Lingard, T. D., Esq.	1	1	0	Parker, Miss	1	1	0
Little, Mrs.	1	1	0	Paterson, Rev. T. M. B.	1	5	0
Llewelyn, F. D., Esq.	2	13	6	Pease, J. H., Esq.	2	8	0
Llewelyn, Sir J. T. D., Bart.	1	11	0	Philipson-Stow, Lady	1	11	6
Lodge, L. W., Esq.	1	3	0	Philpott, Mrs. T. H.	1	1	0
Lomer, Miss E. S.	2	0	0	Phipps, Col. R. W.	1	0	0
Longstaff, Lieut.-Col. R.	1	0	0	Pick, Everard & Keay,			
Lovelace, The Earl of.	1	5	0	Messrs., C.E.	1	1	0
Macadam, Miss.	1	1	0	Pickard, W., Esq.	3	3	0
McDouall, Kenneth, Esq. ..	2	0	0	Pink, Sir H. R.	1	0	0
Mace, J. Ellis, Esq.	1	8	11	Pirie-Gordon, E., Esq.	1	0	0
McEwan, J., Esq.	1	1	0	Player, J., Esq.	1	1	0
Machin, A. V., Esq.	1	1	0	Plenderleath, Capt. C. W. M.,			
Mackinnon, Maj. A. D., M.D.,				R.N.	1	5	0
C.M.G.	1	0	0	Powell, C. M., Esq.	1	0	0
Mair-Rumley, J. G., Esq. ..	2	2	0	Powell, Legh S., Esq.	1	0	0
Major, R. H., Esq.	1	1	0	Preston, A. W., Esq.	1	0	0
Malden, Rev. Eustace.	1	1	0	Price, C., Esq.	1	1	0
Mann, E., Esq.	1	0	0	Price, John B., Esq.	1	1	0
Mansergh, Lt.-Col. A. W. ..	1	1	0	Procter, J. W., Esq.	1	1	0
Mansergh, Messrs. T. & Sons,				Radnor, The Earl of	1	1	0
C.E. (2 years)	4	4	0	Ramsden, R. C. P., Esq.	1	0	0

SUBSCRIPTIONS

xvii.

	£	s.	d.		£	s.	d.
Ransom, F., Esq.....	1	4	0	Tailyour, W. Stewart, Esq...	1	0	0
Rashleigh, Rev. A. S.....	1	0	0	Tatham, M. T., Esq.	1	0	0
Rashleigh, E. S., Esq.....	2	17	0	Tatton, R. A., Esq.....	1	1	0
Rawstorne, Mrs.	1	2	6	Tatton, T. Egerton, Esq. ..	1	10	0
Rees, Lt.-Col. Blethyn T., C.E.	1	1	0	Tawney, Miss E. M.....	1	0	0
Reynolds, E. W., Esq.....	1	1	0	Tawse & Allen, Messrs. C. E.	1	1	0
Rhodes, Robert, Esq.....	-1	0	0	Taylor, C. E., Esq.....	1	1	0
Richardson, Ralph, Esq. ..	1	0	0	Taylor, Capt. E. R.....	5	13	6
Richardson, R. T., Esq.....	1	0	0	Thomas, J. F. Esq.....	1	1	0
Robertson, Robert, Esq., C.E.	2	0	0	Thomas, Octavius, Esq. (3 years)	1	11	0
Robins, F. Sanderson, Esq...	1	0	0	Thompson, Mrs. Heywood..	1	1	0
Robinson, A. H., Esq.....	1	10	0	Thompson H. Yates, Esq...	1	1	0
Robson, Rev. E. F.....	2	2	6	Tiarks, Mrs. H. F. (1919) ..	1	0	0
Rogers, H. K. G., Esq.	1	13	6	Tidswell, R. I., Esq.	1	1	0
Rogers, Lt.-Col. J. M., D.S.O.	1	6	0	Towse, Sir J. Wrench.....	2	0	8
Rolleston, Col. W. V.....	1	11	6	Trew, J. P., Esq.....	1	1	0
Roper, Mrs.	2	2	0	Tritton, J. H., Esq.....	1	8	6
Ross, Mrs. (2 years).....	1	1	0	Truell, Rev. W. H. A.....	1	1	0
Rowntree, Mrs. J. S.	1	1	0	Turnbull, J. S. S., Esq. (1919)	1	0	0
Royal N. Devon Golf Club..	1	9	6	Tyack, G. Ashley, Esq.....	1	2	4
Sanderson, Mrs.	1	10	0	Urmson, Rev. Canon T.....	1	13	6
Scott, C. H., Esq.....	1	1	0	Vernon, Sir J. H., Bart.....	1	1	0
Scott, J., Esq.	1	1	0	Waldegrave, The Earl of ..	1	16	0
Scott, The Lady Mary.....	1	1	0	Walkden, H. W., Esq. (2 years)	1	2	0
Scratton, Arthur, Esq.	1	1	0	Walker, Capt. A. J.	2	19	8
Scrutton, J. H., Esq.	1	1	0	Walker, Messrs. J. & T....	1	0	0
Sellar, G. Craig, Esq.	1	1	0	Walter, Rev. F. W.....	1	0	0
Sharman-Crawford, A. F. Esq.	2	0	0	Walters, F. R., Esq., M.D...	1	1	0
Shepherd, J. W., Esq.....	1	0	0	Wardale, F. J., Esq.	1	1	0
Shoults, G. F., Esq.....	1	1	0	Webb, Capt. F. D.....	1	0	0
Simpson, J. A. G., Esq., (2 years)	1	0	0	Webber, W. Downes, Esq...	1	0	0
Sing, Alex. M., Esq.	1	1	0	Weber, Mrs. E. (1919).....	1	1	0
Sing, Roger P., Esq.	1	1	0	Welch, J., Esq.....	1	1	0
Sligo, The Marquis of.....	1	0	0	Welch, W. G., Esq.....	2	0	0
Snell, Sir John F. C., C.E...	2	2	0	Weldon, E., Esq.....	1	1	0
Snowden, Rev. H. C. V.....	1	1	0	Weller, G., Esq.	1	0	0
Somerset, The Duke of	1	1	0	Westminster, Duke of	1	0	0
Stanton, A. W., Esq.	1	1	0	Weston, J., Esq.....	1	1	0
Stanton, J. C. M., Esq.....	1	1	0	Whitaker, B. I., Esq.....	1	0	0
Stephens, A. J., Esq.	1	16	0	Whitaker, W. H., Esq.	1	0	0
Stewart, Sir Mark J. McT., Bt., M.P.	1	1	0	Whitchurch, J. Arnold, Esq.	1	1	0
Stewart, Rev. W. E.	1	5	0	Wilkin, F., Esq.	1	12	6
Stirling, C., Esq.	1	0	0	Wilson, Albert, Esq.	1	9	5
Storey, F., Esq.	1	1	0	Wolferstan, Mrs.	1	1	0
Stothert, Sir Percy K., K.B.E.	1	1	0	Wood, J. G., Esq.	2	0	0
Strutt, G. Herbert, Esq., D.L.	1	0	0	Woodhouse, Miss E. D.....	1	0	0
Sturt, Mrs.	1	0	0	Woodruff, Dr. J. Winthrop..	1	1	0
Sugden, Hatton G., Esq. ..	1	0	0	Woods, Miss	1	1	0
Sykes, A. H., Esq.....	1	0	0	Wright, P. Lennox, Esq. ..	1	1	0
				Wynford, Col. Lord, D.S.O.	1	0	0
				Wynne, E. N., Esq., C.E...	1	8	2

THE STAFF OF OBSERVERS.

Contrary to our hopes and expectations, there has this year been a further diminution in the number of rainfall returns available for publication. The falling-off is, however, not serious, and the impairment of the utility or representative nature of the data upon which the annual volume is built up is not even appreciable; but the fact must, nevertheless, be put upon record. The explanation is probably not far to seek, and may be found, as we are fully convinced, not in any decrease in the widespread interest in rainfall recording, but in the number of our helpers who have been compelled by the circumstances attendant on the war to change their places of residence, or otherwise disturb the routine of their lives. We have been forcibly struck by the large number of instances brought to our notice recently in which rainfall records have been interrupted from this cause. It is, of course, not impossible that a certain fraction of the records which have not been sent in in response to enquiry may have been withheld on account of the change of control of the Organization; but, so far as we are able to ascertain, this is not the case. Two instances only have come to our notice in which observers refused to send their records; but in one of these an explanation smoothed away the difficulty, and the return was subsequently sent.

A closer examination of the changes in the lists of stations for which records are published this year, in comparison with those of several years past, reveals the fact that, although the total numbers have declined, the decrease is confined almost entirely to those parts of the country where the number of stations is greatest, whilst there is no appreciable loss, and in some cases a definite gain, in those districts where stations are fewest. This is all to the good. Save for the study of individual thunderstorms, for which purpose the closest possible network of observers is desirable, the number of stations in certain districts has grown to an extent which makes it necessary to consider whether we are not in some cases actually overburdening ourselves with an unnecessary accumulation of data to the possible detriment of research and other activities. The question is a difficult one, and for the moment we have no intention of modifying the traditional custom of searching for, welcoming, and publishing every trustworthy rainfall record in whatever part of the British Isles it has been taken. At the same time, the inequality in the geographical distribution of the existing corps of observing stations makes it an obvious duty to bend our chief endeavours to obtaining new records

in those outlying and thinly populated areas, which are often so poorly represented, and which, from the point of view of scientific and economic rainfall study, are of supreme importance. The increased attention shown in recent years to the development of water power, and the realization of the need to conserve our natural sources of water supply, have led to the establishment of numerous rainfall records in areas where no other agencies but the public bodies interested in these matters are able to maintain them, and it is almost entirely to these sources that we must look for information as to the rainfall in mountain areas. In many places, especially the West Highlands and west of Ireland, the number of stations is still woefully deficient, and many interesting scientific questions, depending for their solution on observations in these districts, are as yet unsolved on this account. On the whole, however, there is reason to regard the observing staff, from the point of view of geographical distribution, as well as of the quality of its work, as distinctly tending to improve—a fact which, set against a small diminution in numbers in the more thickly peopled districts, enables the latter to be viewed with equanimity.

British Rainfall, 1919, compared with 1918.

Number of Records Published.

		Total Gain.		Total Loss.		Difference.		Per cent. change in year.	
England	192	..	306	..	-114	..	-3.2
Wales	32	..	26	..	+ 6	..	+1.4
Scotland	41	..	45	..	- 4	..	-0.5
Ireland	23	..	14	..	+ 9	..	+3.3
British Isles	288	..	391	..	-103	...	-2.1

Turning to the changes in the lists for 1919 compared with those for 1918, there is in all a net decrease of 103 records. These, it will be noted, were almost confined to England, where there was a net loss of 114 records, Wales having a gain of 6, Scotland a loss of 4, and Ireland a gain of 9. For the whole country the loss represents 2 per cent. of the whole.

In **England** the losses were most numerous in Surrey, Essex, Warwickshire, Lincolnshire, and Nottinghamshire. There were important gains in Cornwall, and some new stations on Dartmoor improved the distribution in Devonshire. The discontinuance of part of a valuable group of mountain rain gauges, maintained by the Leeds Corporation on Masham Moor, reduced the number of records in the North Riding of Yorkshire; but the improvement on the North York Wolds continues, and some valuable new records in the Pennines are added. The most important additions in England, however, are fourteen new records, established in 1918 round Haweswater by the Manchester Corporation, and now included for the first time. There is also a useful addition at Falstone, in the Cheviots.

In **Wales** several groups of new records, established by the Welsh Education Authorities, are published for the first time, and we are much gratified to have among these five new stations to the west of Plynlimon, where we have frequently urged the need for more observations. There are also four new stations on the west of the Brecon Beacons, and two in Merionethshire, which are of the utmost interest.

The changes in **Scotland** are not numerous, and call for little comment. Of the losses perhaps the most serious are Buchlyvie, in Stirlingshire, Blair Atholl, and Fort Augustus; but the Blair Atholl record has since been re-established, and should appear again next year. The gains include Ettrick Manse, in Selkirkshire, Ardgoil, on Loch Goil, and Logiealmond, the latter in a region which of late years has been barren of stations.

In **Ireland** we are glad to see a distinct tendency to improvement, due almost entirely to the unstinted enthusiasm with which Colonel E. W. M. Murphy, the Secretary of the Irish Rainfall Association, has taken up the work of recruiting. The most important gains are in Counties Cork and Tipperary, where the improvement is very great, and promises to continue. There are, in addition, two new high-level stations near Glenedra, in Co. Londonderry, which, with the record for Glenedra Lodge commented on last year, fill an important gap.

The following table carries on the comparison of numbers of records with previous years, and the subsequent lists give the numbers for each county and the changes from 1918:—

*Number of Rainfall Records Published in the Volumes of
“British Rainfall” for the undermentioned years.*

Years.	England.	Wales, etc.	Scotland.	Ireland.	British Isles.	Change from previous year.	No. of Stations per 100 sq. mi.
1861 ..	333 ..	9 ..	109 ..	20 ..	471 ..	+ 47 ..	0·4 ..
1871 ..	1038 ..	88 ..	311 ..	67 ..	1504 ..	+ 5 ..	1·2 ..
1881 ..	1548 ..	131 ..	313 ..	153 ..	2145 ..	+ 41 ..	1·8 ..
1891 ..	2091 ..	168 ..	359 ..	181 ..	2799 ..	+ 23 ..	2·3 ..
1901 ..	2616 ..	253 ..	442 ..	195 ..	3506 ..	+ 13 ..	2·9 ..
1911 ..	3705 ..	397 ..	701 ..	271 ..	5074 ..	+ 198 ..	4·2 ..
1912 ..	3834 ..	429 ..	732 ..	277 ..	5272 ..	+ 198 ..	4·4 ..
1913 ..	3902 ..	440 ..	749 ..	279 ..	5370 ..	+ 98 ..	4·4 ..
1914 ..	3962 ..	450 ..	753 ..	288 ..	5453 ..	+ 83 ..	4·5 ..
1915 ..	3882 ..	448 ..	794 ..	288 ..	5412 ..	— 41 ..	4·5 ..
1916 ..	3711 ..	440 ..	772 ..	269 ..	5192 ..	— 220 ..	4·3 ..
1917 ..	3591 ..	446 ..	778 ..	270 ..	5085 ..	— 107 ..	4·2 ..
1918 ..	3532 ..	429 ..	770 ..	268 ..	4999 ..	— 86 ..	4·1 ..
1919 ..	3418 ..	435 ..	766 ..	277 ..	4896 ..	— 103 ..	4·1 ..

Difference from 1918:—

—114 .. +6 .. —4 .. +9 .. —103 0·0

County.	Records in 1918.	Records Lost.	Records Gained.	Records in 1919.	Records per 100 sq. mi. of area.	County.	Records in 1918.	Records Lost.	Records Gained.	Records in 1919.	Records per 100 sq. mi. of area.
ENGLAND.						SCOTLAND.					
LONDON	73	4	3	72	62	WIGTOWN	8	1	2	9	1.8
SURREY	207	29	11	189	26	KIRKCUDBRIGHT..	18	0	2	20	2
KENT	160	14	9	155	10	DUMFRIES	24	3	1	22	2
SUSSEX	144	16	7	135	9	ROXBURGH	14	2	1	13	2
HAMPSHIRE ..	157	13	7	151	9	SELKIRK	8	0	1	9	3
BERKSHIRE ..	59	7	1	53	7	PEEBLES	19	0	0	19	5
MIDDLESEX ..	64	4	1	61	26	BERWICK	11	0	0	11	2
HERTFORDSHIRE..	78	2	5	81	13	HADDINGTON ..	11	1	0	10	4
BUCKINGHAM ..	39	6	1	34	5	MIDLOTHIAN ..	58	0	0	58	16
OXFORDSHIRE ..	58	4	2	56	7	LINLITHGOW ..	16	1	3	18	15
NORTHAMPTON ..	74	13	7	68	7	LANARK	43	3	1	41	5
HUNTINGDON ..	7	1	0	6	1.6	AYR	34	0	5	39	3
BEDFORDSHIRE ..	26	0	1	27	6	RENFREW	39	2	0	37	15
CAMBRIDGE ..	44	2	1	43	5	DUMBARTON ..	22	2	0	20	7
ESSEX	107	19	7	95	6	STIRLING	37	2	0	35	8
SUFFOLK	48	4	3	47	3	BUTE	8	1	0	7	3
NORFOLK	79	9	4	74	4	ARGYLL	62	3	4	63	2
WILTSHIRE ..	64	9	1	56	4	CLACKMANNAN ..	3	0	0	3	5
DORSET	71	3	3	71	7	KINROSS	4	1	0	3	3
SOUTH DEVON ..	134	8	5	131	8	FIFE	37	4	1	34	7
NORTH DEVON ..	42	4	4	42	5	PERTH	58	5	5	58	2
CORNWALL	56	4	11	63	5	FORFAR	39	0	1	40	5
SOMERSET	136	19	14	131	8	KINCARDINE ..	13	0	1	14	4
GLOUCESTERSHIRE	92	7	5	90	7	ABERDEEN	40	2	2	40	2
HEREFORDSHIRE..	41	2	5	44	5	BANFF	9	0	0	9	1.4
SHROPSHIRE ..	45	0	1	46	3	MORAY	12	1	0	11	2
STAFFORDSHIRE ..	49	2	4	51	4	NAIRN	4	0	0	4	2
WORCESTERSHIRE	61	3	0	58	8	INVERNESS ..	57	4	5	58	1.4
WARWICKSHIRE ..	49	12	3	40	4	ROSS & CROMARTY	23	4	4	23	7
LEICESTERSHIRE..	36	1	1	36	4	SUTHERLAND ..	9	1	0	8	0.4
RUTLAND	3	1	0	2	1.3	CAITHNESS ..	11	1	0	10	1.4
LINCOLNSHIRE ..	81	10	1	72	3	ORKNEY	13	1	1	13	3
NOTTINGHAM ..	65	7	0	58	7	SHETLAND	6	0	1	7	1.3
DERBYSHIRE ..	84	5	1	80	8	IRELAND.					
CHESHIRE	76	3	4	77	8	CORK	28	1	6	33	1.2
SOUTH LANCs. ..	106	5	2	103	15	KERRY	12	1	0	11	0.6
CENTRAL LANCs. ..	80	1	3	82	15	WATERFORD ..	14	2	1	13	1.8
NORTH LANCs. ..	70	5	3	68	11	TIPPERARY ..	12	1	6	17	1.0
YORKSHIRE, W.R.	325	11	12	326	12	LIMERICK	11	1	1	11	1.1
YORKSHIRE, E.R.	28	3	2	27	2	CLARE	8	1	0	7	0.6
YORKSHIRE, N.R.	110	15	12	107	5	WEXFORD	8	0	0	8	0.9
DURHAM	42	4	2	40	4	KILKENNY	7	0	0	7	0.9
NORTHUMBERLAND	47	5	3	45	2	WICKLOW	13	0	1	14	1.8
CUMBERLAND ..	67	7	4	64	4	CARLOW	4	0	0	4	1.2
WESTMORLAND ..	48	3	16	61	8	QUEEN'S COUNTY	5	1	0	4	0.6
MONMOUTH, WALES, ETC.						KING'S COUNTY..	9	0	0	9	1.2
MONMOUTH	38	1	2	39	7	KILDARE	5	2	0	3	0.5
GLAMORGAN ..	55	0	6	61	8	DUBLIN	31	2	1	30	8
CARMARTHEN ..	13	1	0	12	1.3	MEATH	7	0	0	7	0.8
PEMBROKE	20	4	3	19	3	WESTMEATH ..	8	0	1	9	1.3
CARDIGAN	15	0	6	21	3	LOUTH	5	0	0	5	1.6
BRECON	87	5	4	86	12	LONGFORD	4	0	0	4	0.9
RADNOR	24	0	1	25	5	GALWAY	4	0	0	4	0.2
MONTGOMERY ..	25	0	1	26	3	ROSCOMMON ..	2	0	0	2	0.2
FLINT	13	0	0	13	5	MAYO	11	1	1	11	0.5
DENBIGH	34	3	0	31	5	SLIGO	3	0	1	4	0.6
MERIONETH ..	14	2	2	14	2	LEITRIM	2	0	0	2	0.3
CARNARVON ..	43	5	5	43	8	CAVAN	4	0	0	4	0.5
ANGLESEY	15	4	1	12	4	FERMANAGH..	3	0	0	3	0.4
ISLE OF MAN ..	10	0	0	10	4	MONAGHAN ..	2	0	0	2	0.4
CHANNEL ISLANDS	23	1	1	23	30	ARMAGH	5	1	0	4	0.8
						DOWN	11	0	0	11	1.1
						ANTRIM	16	0	0	16	1.3
						LONDONDERRY ..	6	0	2	8	1.0
						TYRONE	4	0	0	4	0.3
						DONEGAL	4	0	2	6	0.3

OBITUARY.

WE have this year to record the deaths of 93 Observers, a complete list of whose names is given on pages xxvii - xxviii. Included in it are many whose work for the Organization had been exceptionally valuable, and we may mention in particular two of the now very small band of original Observers whose records appeared in *English Rainfall*, 1860, the first volume of the series, of which the present is the fifty-ninth. These were Lord Peckover of Wisbech, who commenced rainfall observations in 1859, and Dr. W. C. Lake, who, though he commenced in 1854, failed to beat Lord Peckover's record of sixty-one years owing to certain interruptions in his series of records at Teignmouth. Special mention should also be made of Mr. T. W. Backhouse, whose records, although not printed in 1860, also extended back to 1859; Mr. John Hopkinson, the energetic Secretary of the Hertfordshire Natural History Society; Mr. J. R. Gethin Jones, and Dr. J. G. Bartholomew of the Edinburgh Geographical Institute. The last mentioned, although not actually an Observer of rainfall, was so intimately associated in the work of the Organization that we include his name. No fewer than 16 of the Observers whose loss we have to deplore had rainfall records of as much as thirty years to their credit; seven of these exceeded forty years, and the two already mentioned sixty years.

Records of Thirty years and upwards.

Mr. T. W. Backhouse.....	61 years	Prof. A. J. Brown	38 years
Lord Peckover of Wisbech .	61 „	Mr. H. Colborne.....	38 „
Mr. G. Corden.....	46 „	Mr. W. H. Dobson	38 „
Mr. G. Roper	45 „	Sir E. G. Loder	36 „
Mr. J. Hopkinson.....	44 „	Rt. Hon. Sir J. T. Brunner	35 „
Mr. J. Bodenham	43 „	The Marquess of Ormonde	35 „
Dr. W. C. Lake	43 „	Mr. A. Grant.....	34 „
Mr. W. H. Bartholomew...	38 „	Mr. M. R. Pryor	31 „

In every case in which we know it the age is added in the main list. Of the 64 persons whose ages we have been able to ascertain, the average was 74; as many as 16 were 80 or more, and two more than 90, whilst only one was less than 59 years of age. One Observer, Captain J. H. Cuthbert, whose name should, properly speaking, have appeared in a previous list, was killed on Active Service.

We are able to add short biographical notices of a few of our helpers who have passed away. In many cases fuller accounts of their lives

are published elsewhere, and we therefore confine attention principally to the scientific interests which in most cases probably played a great part in bringing them into contact with the British Rainfall Organization.

MR. JOHN AITKIN, F.R.S., of Falkirk, who died on November 13th, 1919, at the age of 80, was trained as a marine engineer, but devoted his long life almost entirely to scientific pursuits and left meteorology deeply in his debt. His name will always be associated especially with the discovery of the part played by dust in the functions of the atmosphere, and the ingenious apparatus which he devised for counting dust particles was used in various parts of the world and gave results of extraordinary interest and scientific value. Dr. Aitken wrote numerous important papers dealing with the physics of the atmosphere, and his researches on the formation of dew will for long stand as classical meteorological work.

MR. T. W. BACKHOUSE was an example of the best type of non-professional men of science. Like so many of the members of the Society of Friends, he took a keen interest in meteorological and astronomical work, and carried on for more than sixty years an unbroken series of observations at his home, West Hendon House, Sunderland. A great part of the results of these observations he condensed into a book published in 1915, containing summaries of the records for fifty years. Amongst his original investigations was a discussion of the amount of rain falling with wind blowing from the various points of the compass, an investigation to which the situation of Sunderland gave peculiar interest. At the time of his death he had in the press an atlas of star maps. Mr. Backhouse was a Fellow of the Royal Meteorological Society for twenty-eight years and served as Vice-President in 1918 and 1919.

DR. J. G. BARTHOLOMEW was probably the greatest modern exponent of map-making the world has seen, and as such contributed very materially to the advance of natural science, whilst the artistic merit of his work raised the standard of British cartography to a high level. To meteorologists his memory will always be enshrined in the "Atlas of Meteorology," by far the most comprehensive and carefully compiled compendium of meteorological facts ever published in this form. His invention of the "layer" system of contouring on orographical maps is of the greatest value in the study of rainfall distribution and all other natural phenomena connected with the configuration of the land. Dr. Bartholomew was primarily the founder of the Royal Scottish Geographical Society, and was a member of numerous other scientific societies both at home and abroad. He was a consistent supporter of the British Rainfall Organization, and prepared most of the working maps required for the extensive cartographical studies of Dr. Mill.

MR. J. MACKAY BERNARD was an ardent student of science and devoted much time and money to the cause of meteorology, particularly in Scotland. He served for many years as a Member of the Council of the Scottish Meteorological Society, was Vice-President from 1910, and President from 1912 to 1915. It was largely owing to his efforts and munificence that the regrettable closing of the Ben Nevis Observatory did not occur even earlier than it did, since it is on record that during the last few years of its existence his personal contributions towards its upkeep amounted to no less than £2,000.

MR. GEORGE CORDEN carried on records of rainfall at Croydon without intermission for forty-six years. Commencing in the capacity of dispenser to a firm of physicians, and acting later for the Croydon Rural District Council, his general meteorological observations extended over more than fifty years and form one of the most valuable summaries in existence of the climate of North Surrey. Among Mr. Corden's other interests may be mentioned photography and music, to which he was greatly devoted.

MR. ANGUS GRANT, for thirty years schoolmaster of Urquhart, Inverness-shire, and later Inspector of the Poor and Registrar for the Parish, was a noted lover of Nature in all her aspects, an ardent geologist and botanist, and an active member of the Inverness-shire Field Club. No one was better versed than he in the folk-lore and ancient history of the Highlands. A member of the Antiquarian Society of Scotland, he wrote several monograms on old Celtic stones, implements, Druidical circles, and other matters of local interest, and as one of the Presidents of the Mycological Society of Great Britain he was regarded as an authority on the fungi of the Highlands. Mr. Grant took up rainfall observing in 1886 and carried on till his death a conscientious and extremely valuable record of the rainfall at Drumnadrochit, on Loch Ness.

MR. JOHN HOPKINSON, of Watford, who died on July 5th, 1919, at the age of 74, was a familiar figure to all who were in the habit of attending scientific meetings, and his interests were extraordinarily wide. He edited for more than forty years the *Transactions of the Hertfordshire Natural History Society*, including rainfall and other meteorological records for the County, and was Secretary from 1875-91 and President in 1891-93. He was for many years a member of the Council and was a past Vice-President of the Royal Meteorological Society, and he established a well-equipped meteorological observatory at St. Albans, taking much trouble in arranging for its continuance after his death. In 1899 Mr. Hopkinson became Treasurer of the Rae Society, and his later years were devoted largely to work on their publications, dealing with natural history in its widest sense. He wrote numerous papers on scientific subjects, being specially interested in natural history and geology. He was a recognized authority on the underground water in

the chalk. As an Observer for the long term of forty-four years to the British Rainfall Organization, and especially in his capacity as collector of local rainfall records for Hertfordshire, Mr. Hopkinson was always ready to extend courteous help to us in our work, and the loss of his genial co-operation will be severely felt.

MR. J. R. GETHIN JONES was born at Penmachno, near Bettws-y-Coed, and was the son of Mr. Owen Jones, a well-known architect and contractor, who in private life gained a reputation as a Welsh Bard, in respect of which he received the name *Gethin* (ability) retained by his son. An inborn lover of Nature, and especially of the then hardly explored mountains of his native Snowdonia, the younger Gethin Jones early devoted himself to their study, and interested himself especially in turning to account his engineering training in developing the potential water powers of the district, which have since become so famous. In this connection he set up a large number of rain gauges in remote spots in the higher valleys of Snowdon and obtained records which not only convinced him of the commercial soundness of his views but at the same time were of very great scientific value in throwing light on the control of rainfall exercised by the configuration of the land. Mainly owing to his enterprise a company was formed for the exploitation of the almost inexhaustible stores of energy then running to waste, and from this modest beginning has sprung the great Aluminium Corporation, which now includes the North Wales Power Company, of which Mr. Gethin Jones was also the originator. In the near future the Corporation will supply electricity to the whole of North Wales, and their current is at present, among numerous other uses, supplied to the great Marconi station at Waenfawr and transmitted to the other side of the Atlantic. In 1910, at the suggestion of Dr. Mill, Mr. Gethin Jones undertook the arduous task of measuring the daily rainfall and stream flow in the Black Mountains in Breconshire, and it is mainly owing to the ability and devotion with which he carried out this piece of work during seven years that one of the most complete series of hydrological data in existence for the British Isles was obtained. Mr. Gethin Jones was a keen student of meteorology; his occasional contributions to its literature, among which may be mentioned his article on the Snowfall of the Snowdonian Range, in *British Rainfall*, 1909, betrayed a wide knowledge and a keen insight into natural phenomena. His devotion to Nature, intense and poetical love for his native country and language, and his keen sense of humour, made him an inspiring companion and one whose memory will long be cherished among those with whom he came into contact.

DR. W. C. LAKE, of Teignmouth, who died in February, 1920, at the great age of 94, was, after the death of Lord Peckover of Wisbech, in October, 1919, one of the only two Observers of rainfall whose records appeared in *English Rainfall*, 1860, and who were still sending in their

returns. So far as we are able to ascertain, Dr. Lake commenced recording rainfall at Teignmouth in 1854, and continued with some breaks throughout the remaining sixty-six years of his long life.

SIR EDMUND GILES LODER, BART., of Leonardslee, Horsham, was better known as a naturalist and sportsman than as a meteorologist, but found time in an exceptionally busy life to contribute records of rainfall for a period covering in all thirty-six years. He was a noted rifle-shot, and his museum, said to be the second best of its kind in the kingdom, contained a wonderful collection of horns and heads from all parts of the world. He had also brought together a unique collection of conifers and of rhododendrons, on which he was a great authority.

LORD PECKOVER OF WISBECH, a well-known member of the Society of Friends, passed his life in the quiet country town of Wisbech, where he was for many years a partner in the old banking firm of Gurney, Birkbeck, Peckover & Co., whose business was later taken over by Messrs. Barclay & Co. He was a great collector of books, manuscripts and maps, and made a large collection of early and rare atlases, many of which he presented to the Royal Geographical Society. He also had a remarkable collection of Greek MSS. of the Bible. His record of rainfall at Wisbech was commenced in 1859, and maintained throughout the whole of the subsequent sixty-one years without a break. We believe that it is still being kept up by his family.

MR. M. R. PRYOR, of Weston, Stevenage, in early life showed promise of a very unusual ability in the pursuit of science, gaining the first Natural Science Scholarship and first Natural Science Fellowship at Trinity College, Cambridge, besides ranking as seventh Senior Optime in the Mathematical Tripos of 1870. He devoted himself for a short time to these pursuits, but later, to the great loss of the scientific world, applied his powers to business, in which he was remarkably successful. He, however, took every opportunity of participating in and aiding scientific work and was a keen ornithologist and a student of architecture. He inherited Weston Park from his uncle, and in 1890 commenced observations of rainfall, which he continued to carry on personally till his death in April, 1920.

MR. MAGNUS SPENCE, one of the few rainfall Observers who contributed records from the remote Orkney Islands, took up the task of official meteorological recorder at Deerness in 1891. His work was of the highest quality, and during the strenuous years of war, in addition to his professional duties as a schoolmaster, he found it possible to act as telegraphic reporter to the Meteorological Office, taking observations five times each day. Mr. Spence was an antiquarian of distinction and a great authority on the flora of the Orkneys. His paper on the Climate of Orkney, published in the *Journal of the Scottish Meteorological Society* (No. 25, pp. 238-255) is of permanent value.

Observers deceased to June 30th, 1920.

Small Capitals designate Observers with Records of Thirty years and upwards.

*Aitken, John, LL.D., F.R.S. (80)	Ardenlea, Falkirk
Anderson, Col. J. W. Macclesfield (82)	The Thirlings, Wooler
*BACKHOUSE, THOMAS WILLIAM (78) .	West Hendon House, Sunderland
Bailey, Major George James	Invergloy, Inverness-shire
*Bartholomew, John George (60)	Edinburgh
BARTHOLOMEW, WILLIAM HAMMOND (89)	Leeds
Beacom, J.	Belleek, co. Fermanagh
*Bernard, John Mackay, B.Sc., F.R.S.E. (63)	Dunsinnan, Perth
Bibby, Col. Alfred	Selborne, Hants.
Birch-Reynardson, Col. Charles (73) . .	Holywell Hall, Lincs.
Birkbeck, Morris (81)	Shorth Heath, Farnham
Blathwayt, Lieut.-Col. Linley (80) . .	Batheaston, Som.
BODENHAM, JOHN (87)	Edgmond, Newport, Salop.
Bradshaw, Miss Emma Luisa	Steeple Aston, Oxon.
Bridgeman-Simpson, William	Park Hill, Wetherby
BROWN, PROF. ADRIAN JOHN, F.R.S. (68)	Northfield, Birmingham
Brown, Miss Clara (59)	Esthwaite Lodge, Hawkshead
BRUNNER, RT. HON. SIR JOHN T., BT., P.C., M.P., D.L. (78)	Chertsey
Bull, Arthur (72)	Cottenham, Cambs.
Carter, Mrs.	Maugersbury, Stow-on-the-Wold
Carver, Hugh Ruscombe, J.P. (60) . .	Chilton Polden, Som.
COLBORNE, HENRY, M.R.C.S.	St. Leonards-on-Sea
Colville, Ed. Leigh Mansel (63)	Kempsey, Bournemouth
Copland, Montague Bigg (74)	Preston
*CORDEN, GEORGE (80)	Croydon
Crewdson, Rev. Canon George (80) . .	Cambridge
†Cuthbert, Capt. J. H.	Beaufront Castle, Hexham
Dartrey, Rt. Hon. The Earl of (78) . .	Dartrey, co. Monaghan
Dell, J. C.	Kennington, Ashford, Kent
Deverell, William Henry (84)	Bossington House, Stockbridge
DOBSON, W. H.	Stapleton Park Gardens, Pontefract
Driberg, John James Street (79)	Uckfield Lodge, Crowborough
Duffus, George, M.B. (64)	Normanhurst, Woking
Evans, Wilfred J. O.	Ashburton, Devon
Estridge, Edward, M.A. (76)	Abingdon
*GRANT, ANGUS	Drumnadrochit, Inverness-shire
Grant, Robert, J.P. (86)	Birchington, Kent
Grey, Joseph	Low Fell, Gateshead
Hamersley, Cecil Shafto (67)	Broadstairs
Hansell, Francis Robert (65)	Sutton, Thirsk
Harbord, Rev. Henry, M.A. (76)	Colwood Park, Sussex
Harvey, Henry S.	Evesham
Haswell, F. W.	Shifnal, Salop.
Hodgson, Rev. Canon Francis Greaves (79)	Aldwincle, Northants.
Hollis, James (74)	Waldegrave House, Chewton Mendip
*HOPKINSON, JOHN, F.L.S., F.G.S. (74)	Weetwood, Watford
Hughes, T. L., C.E.	Wigan
*Jones, John Robert Gethin (59)	Llandudno

* See Biographical Note *ante*. † Killed in action.

Observers deceased to June 30th, 1920.—con.

Kempthorne, Rev. Philip Henry (79)	Wyck Risington, Glos.
King, Robert William (74)	Brinkley Hall, Cambs.
Knox, G. Murray	Nuthill, Lochgoilhead
*LAKE, WILLIAM CHARLES, M.D. (94) ..	Benton, Teignmouth
Langford, Lord, K.C.V.O. (72)	Summerhill House, co. Meath
Larkin, William Waugh (81)	Scarborough
Lassell, Miss Jane (88)	Winkton Lodge, Christchurch
Lea, George Henry Clarke (61)	Clay Hill, Enfield
Leatham, Samuel Gurney (78)	Hemsworth Hall, Yorks.
*LODER, SIR EDMUND GILES, BT. (70)	Leonardslee, Horsham
Machin, H. V., M.A., J.P. (61)	Gateford Hill, Worksop
Mainwaring, Col. Chas. Salusbury (75)	Galltfaenan, Denbighshire
Marling, Sir William Henry, BT. (84) .	Stanley Park, Stroud
Meek, Henry Edgar (63)	The Warren, Gullane
Moate, R. F.	Littlemoor Terrace, Doncaster
Morgan, Rev. Daniel	Llantrisant, Anglesey
Morriſh, James Jeffrey (79)	Oxshott, Surrey
Mylne, Henry Charles (67)	Wokingham
Norton, Arthur Mangles (67)	Tyspane, Braunton
ORMONDE, THE MARQUESS OF, K.P. (75)	Kilkenny
Palmer, Greville Horsley (74)	Dagnam Priory, Essex
*PECKOVER OF WISBECH, LORD, LL.D. (90)	Bank House, Wisbech
Pepys, Capt. Arthur (73)	Knowle House, Budleigh Salterton
Picot, W. J.	Alderney, Channel Islands
Pocklington-Senhouse, Mrs. F. C. (63)	Netherhall, Maryport
Pritchard-Rayner, John Henry (47) .	Trescawen, Anglesey
*PRYOR, MARLBOROUGH ROBERT (72)	Weston, Stevenage
Raikes, Robert Taunton (76)	Treberfydd, Breconshire
Rigden, William Gardener (75)	Englefield Green, Surrey
Rooke, John (82)	Weldon Grange, Corby
ROPER, GEORGE, J.P. (79)	Gilling West, Yorks.
Rose, Sir Philip Frederick, BT., D.L., J.P. (77)	Rayners, Penn, Bucks.
Selkirk, Rt. Hon. the Countess of	Balmae, Kirkcudbright
Smith, Dr. J. F.	Whithorn, Kirkcudbright
Smith, Miss Susan	Halse, Taunton
*Spence, Magnus	Deerness, Orkney
Straker, Joseph Henry, D.L., J.P. (70)	Corbridge-on-Tyne
Tate, E.	Carlton, Upper Largo, Fifeshire
Thompson, Rev. John Edward	Childswyckham, Glos.
Trelawney, John Salusbury	Harewood, Buckfastleigh
Tucker, A.	Brampford Speke, Exeter
Wallroth, Frederick Anthony (73)	Sunbury Lodge, Sunbury
Waring, Arthur Thomas (69)	Woodlands, Chelsfield
White, Ernest Albert (66)	Cooleagreen, Waterford
Wills, Dr. Charles	Farnsfield, Notts.

* See Biographical Note *ante*.

BRITISH RAINFALL, 1919

PART II

RAINFALL AND METEOROLOGY

OF

1919

EVAPORATION AND PERCOLATION IN 1919.

The hoped-for improvement in the number and distribution of stations reporting these important supplementary observations has not yet materialized. Percolation records are available from five stations, at one of which, Rothamsted, there are three gauges of varying depth. Of these five stations, all but one are in the south of England, and none in Wales, Scotland, or Ireland. We have, however, received from Mr. R. J. Kirwan, of Sligo, the results of observations of percolation in that town, which we omit from the table since the gauge used is not of standard pattern, so that the results are not strictly comparable. The record in this case is made through twelve inches of natural grassed soil below which is placed one inch of screened cinders enclosed in a wire net for the purpose of giving free passage to the drainage. The measurements for 1918 and 1919 were as follows:—

Percolation and Calculated Evaporation at Sligo, 1918 and 1919.

	1918.		1919.	
	Rainfall. in.	Percolation. in.	Rainfall. in.	Percolation. in.
January	3·42	2·48	5·32	4·52
February	4·46	3·11	1·09	·04
March	1·56	·35	3·35	1·51
April	1·27	1·06	2·65	·86
May	2·39	·02	3·14	2·09
June	2·33	·01	3·62	·00
July.....	4·45	·89	1·85	·03
August	3·45	1·05	4·33	·47
September	6·50	1·37	3·95	·74
October.....	5·42	3·20	1·87	·23
November	4·08	2·92	4·30	2·00
December	5·54	2·66	7·78	4·50
Year	44·87	19·12	43·25	16·99
Calculated Evaporation .....	..	25·75	..	26·26

Mr. Kirwan draws attention to the large value for calculated evaporation and the inference that evaporation from a grass surface, even in so humid a climate as the West of Ireland, is active throughout the winter, the greater wind movement presumably counterbalancing the diminished capacity of the air for absorbing moisture. He adds, "Heavy falls on a porous wet soil penetrate with little loss, but on a dry soil in summer a fall of ·82 in. in twenty-four hours gave no percolation through twelve inches of soil."

Of the records of direct evaporation from standard tanks, or comparable apparatus, we have lost that from Isfield Place, Sussex, and include one, not previously published, from Ormesby St. Michael, near Great Yarmouth. The records in all cases where averages are available show only small departures from the average value for the twelve years 1908-1919, the most divergent being at Harrogate with a deficiency of 1.54 in. A conspicuous feature of the year was the relatively small evaporation in July at most English stations. At Camden Square, where observations have now been taken for thirty-five years, the total of 1.90 in. was 1.11 in. below the average, and the smallest with one exception in the whole period. For the remaining summer months of 1919 the evaporation values were generally high. For the whole year the totals of measured evaporation, so far as can be judged from the available records, were distinctly higher than the totals of calculated evaporation at the percolation stations, arrived at by deducting the observed percolation from the rainfall. If the stations are sufficiently representative to warrant this generalization, it may be inferred that during part of the year evaporation from the soil would have been greater had a sufficiency of moisture been present to supply it.

Stations recording Evaporation in 1919.

Station.	County.	Observer.	Particulars of Tank.					
			Height above			Diameter.	Capacity.	
			Ground. Sea Level.					
			ft.	in.	ft.	ft.	in.	Gals.
Camden Sq. .	London	2 Brit. Rainfall Org.	0	3	111	6	0	450
New Malden.	Surrey	5 W. J. Carter, Esq.	0	3*	40	0	8	..
Otterbourne.	Hampshire	5 E. C. Rodda, Esq.	0	3	112	6	0	450
Ormesby St.	Norfolk	2 Gt. Yarmouth	0	3	21	6	0	450
Michael		W W. Co.						
Worstead ..	Norfolk	2 R. J. Cross, Esq..	0	4	55	2	6	..
Kennick	South Devon ...	5 S.C. Chapman, Esq.	0	3	835	6	0	450
Revesby	Lincoln	3 J. Shaw, Esq. . . .	0	2	130	6	0	450
Southport ..	Cent. Lancashire	3 J. Baxendell, Esq.	0	3	27	3	0	112
Ardley No. 1	Yorkshire, W.R.	8 C. C. Smith, Esq.	0	3	395	6	0	450
" No. 2	"	" 8	0	3	326	6	0	450
Lower Laithe	"	" 9 M.R. Barnett, Esq.	0	6†	772	6	0	450
Harrogate ..	"	" 11 A. S. West, Esq. .	Flush		589	6	0	450
Talla Water	Peebles	1 Messrs. Leslie and Reid	0	3	904	6	0	450

* Above water. † Varying from 2½ to 9 in.

Rainfall, Percolation and Calculated Evaporation in 1919.

1919.	Grayshott, Hants. Mrs. Lyndon.		Rothamsted, Herts. Dr. E. J. Russell.			
	Rainfall.	Percolation.	Rainfall.	Percolation.		
				20 in. Soil.	40 in. Soil.	60 in. Soil.
	in.	in.	in.	in.	in.	in.
January	6·59	5·82	4·28	2·96	3·08	2·98
February	3·24	3·94	3·29	3·97	3·96	3·92
March	5·46	5·08	3·75	2·80	2·87	2·80
April	3·07	1·71	3·69	1·97	2·03	2·02
May	·42	·61	·54	·21	·36	·37
June	·86	·00	1·16	·00	·01	·02
July	1·64	·00	2·77	·33	·39	·38
August	3·35	·00	3·40	1·34	1·39	1·35
September	1·63	·00	1·29	·07	·12	·09
October	·52	·00	1·07	·00	·00	·00
November	2·28	·00	2·24	1·57	1·33	1·24
December	6·47	6·33	5·57	5·72	5·84	5·80
Year	35·53	23·49	33·05	20·94	21·38	20·97
Calculated Evaporation } .....	..	12·04	..	12·11	11·67	12·08

1919.	Timsbury, Hants. D. Kitchingman, Esq.		Twyford, Hants. D. Kitchingman, Esq.		Harrogate, Yorks. Harrogate Corporation.	
	Rainfall.	Percolation.	Rainfall.	Percolation.	Rainfall.	Percolation.
	in.	in.	in.	in.	in.	in.
January	4·87	4·38	4·62	4·19	3·83	·57
February	2·56	2·13	2·94	3·00	1·74	·68
March	5·51	4·98	5·22	4·04	2·93	·78
April	1·92	·66	2·02	1·16	1·49	·21
May	·55	·01	·32	·00	1·29	·65
June	·81	·00	·69	·00	1·34	·00
July	1·50	·00	1·38	·00	2·23	·12
August	2·45	·00	3·06	·00	2·17	·11
September	2·40	·00	2·47	·00	1·01	·02
October	·89	·00	·72	·00	3·10	1·09
November	2·03	·00	2·17	·00	1·71	1·66
December	6·01	4·98	6·38	4·07	4·12	3·95
Year	31·50	17·14	31·99	16·46	26·96	9·84
Calculated Evaporation } .....	..	14·36	..	15·53	..	17·12

Evaporation in 1919.

	Camden Square.	New Malden.	Otter- bourne.	Ormesby St. Michael	Worstead.	Kennick.	Revesby.
	in.	in.	in.	in.	in.	in.	in.
January	c .12	.12	c .10	1.02?	.04	c .20	.08
February .....	.13	.02	.27	.56	.09	.17	.22
March .....	.66	.57	.82	1.35	.97	.86	.83
April	1.06	1.10	1.97	1.94	1.50	1.88	.83
May	2.94	3.77	3.42	3.54	2.67	3.04	2.94
June	3.39	3.73	4.31	3.56	3.18	4.06	3.03
July	1.90	1.85	2.89	2.53	1.77	3.21	1.75
August	2.78	3.48	3.61	2.75	2.36	3.69	2.11
September	1.53	1.59	2.12	1.89	1.82	1.39	1.37
October .....	.61	.56	1.09	1.55	.75	1.06	.48
November .....	.08	.21	.04	.62	.47	.09	.38
December .....	.06	.06	c .09	.49	.31	c .42	.05
Year	15.02	17.06	20.35	21.80	15.93	18.83	14.07
Average, } 1908-1919	15.21	...	19.55	...	...	18.52	14.61
Difference	-.19	...	+.80	...	...	+.31	-.54
RAIN. { Year	26.21	23.95	33.55	29.28	28.61	43.35	29.63
Average, } 1908-1919	27.39	27.16	32.65	29.38	28.11	43.29	26.16
Difference	-1.18	-3.21	+.90	-.10	+.50	+.06	+3.47

	Southport.	Ardley. No. 1.	Ardley. No. 2.	Lower Laithe.	Harrogate	Talla Water.	Mean of 13 Records.
	in.	in.	in.	in.	in.	in.	in.
January	c .03	c .07	c .14	.15	.31	.25	.10
February .....	.10	.14	.10	c .02	.02	.26	.16
March .....	.57	.67	.56	.67	.18	.30	.69
April	1.28	1.52	1.38	1.15	1.30	1.17	1.39
May	2.37	3.11	2.79	2.76	2.28	3.28	3.00
June	3.37	4.00	3.56	3.63	3.25	3.22	3.56
July	2.86	2.97	2.77	2.75	2.65	3.21	2.53
August	2.31	3.09	2.71	2.74	2.68	2.31	2.83
September	1.32	1.82	1.58	1.51	1.73	1.36	1.62
October .....	.73	.96	.82	.55	1.39	.63	.86
November	c .04	.03	c .06	.03	.29	.17	.18
December .....	.05	c .03	c .06	.06	.69	.30	.11
Year	14.89	18.21	16.01	15.98	16.77	16.46	17.03
Average, } 1908-1919	...	17.38	...	...	18.31	17.32	...
Difference .....	...	+.83	...	...	-1.54	-.86	...
RAIN. { Year	30.96	27.32	27.56	44.81	26.96	42.12	31.87
Average, } 1908-1919	33.34	26.08	...	...	28.87	47.93	...
Difference	-2.38	+1.24	...	...	-1.91	-5.81	...

NOTE.—In the Table c indicates condensation.

Evaporation at Camden Square, 1885-1919.

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	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
1912 ..	·24	·16	·79	2·34	2·44	2·49	2·55	1·69	1·41	·39	·33	·12	14·95
1913 ..	·10	·32	·77	1·25	2·49	3·13	2·15	2·09	1·07	·61	·36	·32	14·66
1914 ..	·09	·24	·52	1·84	2·56	2·93	2·72	1·99	1·68	·70	·28	·05	15·60
1915 ..	·11	·13	·66	1·65	2·90	3·15	2·50	1·76	1·61	·56	·25	c·03	15·25
1916 ..	·19	·34	·30	1·61	2·32	2·20	2·23	2·34	1·20	·76	·34	c·04	13·79
1917 ..	·11	·17	·53	1·18	3·06	3·01	2·81	1·95	1·16	·75	·34	·12	15·19
1918 ..	·14	·27	·85	·89	2·38	3·01	2·59	2·04	1·69	·40	·24	·16	14·66
Average 1885-1918 }	·11	·25	·66	1·53	2·41	2·89	3·01	2·31	1·38	·62	·25	·09	15·51
1919 .. c	·12	·13	·66	1·06	2·94	3·39	1·90	2·78	1·53	·61	·08	·06	15·92
Diff. ..	-·23	-·12	-·00	-·47	+·53	+·50	-1·11	+·47	+·15	-·01	-·17	-·03	-·04

NOTE.—c indicates condensation.

EVAPORATION AND OTHER METEOROLOGICAL ELEMENTS.

In place of the annual diagram showing the five-day evaporation totals at Camden Square in their relation to other meteorological elements we give this year a composite diagram showing the mean values for the fourteen years for which such data have been tabulated. The series was commenced in 1905 and carried on without a break till 1918, the only changes introduced being the omission of the curves for Duration of Rainfall, Relative Humidity and Mean Shade Temperature after the first two years, and the introduction of readings of Water Temperature in 1906, and of the Wilson Radio-Integrator Records in 1907. The relative humidity values referring solely to 9 a.m. were found to be inapplicable, whilst the mean shade temperature differed

so slightly from that of the water and soil that it appeared unnecessary to include all three. The water temperature is obtained from readings at the surface and bottom of the evaporation tank : these were given separately in 1906, but meaned in subsequent years. In order to make the series as far as possible homogeneous, these values have now been tabulated on a uniform plan back to the year 1906, but only thirteen years' records are available.

A description of the Wilson Radio-Integrator, with an illustration, is given in *British Rainfall*, 1907. Uniform observations were unfortunately available for only eleven complete years, 1908-1918. There is, however, reason to think that this does not greatly affect the mean for the whole period. In the case of the evaporation the mean curve for the eleven years, 1908-1918, is almost identical with that for the whole fourteen years. It should be mentioned that owing to the very small amount of spirit condensed in the receiver of the radio-integrator during the winter the instrument is at that season set only once a week in order to avoid residual errors. In summer it is set daily.

The meteorological observations tabulated were in all cases obtained by standard instruments exposed in an enclosed garden, and read at 9 a.m. (G.M.T.) throughout the year. The evaporation tank which is six feet square in plan and one foot nine inches deep, contains approximately 450 gallons of water, and is sunk in the soil so that the lip protrudes about three inches above the grass and the water surface is about level with the ground. The readings are made in duplicate by means of a brass rule fitted with a vernier, and secondly by Messrs. Negretti & Zambra's Evaporimeter, which consists of a float attached to an index arm, read by means of a graduated arc. In both cases the water surface from which the actual reading is obtained is protected from ripples by being enclosed in a small still-water pond. In case of frost the ice is detached from the sides of the tank and allowed to float on the surface, the reading being made in the free water. The water is occasionally drawn off or added to in order to prevent overflow or undue depletion, and is entirely renewed once a year when the tank is cleaned.

The records of wind-movement are taken by means of a Robinson cup anemometer specially fixed by the side of the tank, the cups being about eighteen inches above the surface of the water. The observations are of course not comparable with those from freely exposed anemometers being designed to record the air movement in the immediate vicinity of the tank.

The observations of water temperature are made once daily at nine a.m., one thermometer being continually immersed in the water at the bottom of the tank and being drawn up momentarily for the purpose of observation, and another immersed for about twenty minutes prior to reading, at a depth of about two inches. The two readings are meaned before plotting the curve,

Comparison of Evaporation with other Meteorological Elements at Camden Square, 1905-1918.

Mean Values in Five-day Periods, smoothed in threes.

Pentad.	Date.			Evaporation. (Totals.)	Radio-Integrator. 11 Years. (Totals.)	Duration of Sunshine. (Totals.)	Wind Movement. (Totals.)	Black Bulb Temp. (Means.)	Water Temp. 13 Years. (Means.)	Soil Temp. at 1 foot below Surface. (Means.)	Rainfall. (Totals.)
				In.	Units.	Hours.	Miles.	° F.	° F.	° F.	In.
1	Jan.	1-5	....	.02	1.2	3.8	96.2	52.5	39.5	40.0	.41
2	"	6-10	....	.02	1.3	4.9	101.6	53.7	39.4	39.7	.42
3	"	11-15	....	.02	1.2	5.2	94.1	53.8	39.2	39.3	.37
4	"	16-20	....	.02	1.1	4.9	75.1	52.6	38.8	38.7	.35
5	"	21-25	....	.03	1.1	5.2	67.2	53.4	38.5	38.3	.27
6	"	26-30	....	.03	1.6	6.2	73.6	55.4	38.2	37.8	.19
7	"	31-Feb. 4	..	.03	2.3	8.1	80.0	59.4	38.4	38.0	.19
8	Feb.	5-9	....	.03	3.1	8.5	78.0	61.8	38.6	38.3	.25
9	"	10-14	....	.04	3.7	9.3	86.3	65.0	39.3	39.0	.33
10	"	15-19	....	.05	4.4	10.1	98.1	66.9	39.7	39.4	.35
11	"	20-24	....	.06	5.9	11.0	103.2	68.7	39.6	39.2	.33
12	"	25-Mar. 1	..	.06	7.0	11.9	90.5	70.1	39.6	39.2	.32
13	Mar.	2-6	....	.07	7.9	11.2	89.9	71.2	39.7	39.3	.36
14	"	7-11	....	.08	8.9	11.7	93.9	73.0	40.4	40.0	.41
15	"	12-16	....	.10	11.4	13.2	99.9	76.0	40.8	40.6	.40
16	"	17-21	....	.11	16.0	15.1	87.6	79.7	41.2	41.0	.35
17	"	22-26	....	.13	19.8	16.9	78.1	82.6	41.6	41.3	.32
18	"	27-31	....	.15	27.8	18.5	71.4	85.6	42.2	41.9	.29
19	April	1-5	....	.18	36.9	21.9	77.0	88.2	43.1	42.7	.30
20	"	6-10	....	.21	45.5	23.8	77.4	91.1	44.1	43.7	.28
21	"	11-15	....	.24	52.7	25.4	86.7	93.1	45.1	44.7	.32
22	"	16-20	....	.27	60.4	25.3	83.5	95.9	46.4	46.0	.28
23	"	21-25	....	.30	73.0	26.8	88.8	98.8	47.9	47.3	.32
24	"	26-30	....	.31	77.1	26.4	78.8	100.8	49.5	48.7	.32
25	May	1-5	....	.34	84.4	28.2	73.9	102.5	51.2	50.3	.34
26	"	6-10	....	.36	83.8	27.2	62.4	104.3	52.9	51.9	.34
27	"	11-15	....	.39	95.5	29.6	53.4	106.1	54.5	53.4	.32
28	"	16-20	....	.41	104.5	29.6	51.6	108.6	56.1	55.0	.29
29	"	21-25	....	.46	120.2	32.7	47.6	111.2	57.7	56.6	.25
30	"	26-30	....	.47	122.7	31.5	48.8	112.4	59.1	58.1	.26
31	"	31-June 4	..	.47	119.9	31.0	46.5	111.9	59.8	58.9	.34
32	June	5-9	....	.46	112.8	28.7	47.9	111.0	60.2	59.4	.33
33	"	10-14	....	.47	118.5	31.0	42.9	113.1	60.5	59.8	.39
34	"	15-19	....	.49	117.4	31.8	50.7	114.9	61.1	60.6	.36
35	"	20-24	....	.49	117.4	31.7	54.8	116.3	61.3	61.2	.48
36	"	25-29	....	.48	113.4	29.9	54.1	115.8	61.7	61.6	.40

Comparison of Evaporation, etc. (con.).

Pentad.	Date.	Evaporation (Totals.)	Radio-Integrator. 11 Years. (Totals.)	Duration of Sunshine. (Totals.)	Wind Movement. (Totals.)	Black Bulb Temp. (Means.)	Water Temp. 13 Years. (Means.)	Soil Temp. at 1 foot below Surface. (Means.)	Rainfall. (Totals.)
		In.	Units.	Hours.	Miles.	° F.	° F.	° F.	In.
37	June 30-July 4 ..	·46	111·7	28·4	46·6	115·7	62·0	61·8	·47
38	July 5-9	·46	111·0	27·9	38·7	115·8	62·6	62·2	·38
39	" 10-14	·46	101·4	26·5	44·9	115·4	63·1	62·8	·42
40	" 15-19	·45	99·5	25·5	44·4	114·6	63·2	63·2	·36
41	" 20-24	·45	100·3	26·1	46·2	115·2	63·5	63·6	·38
42	" 25-29	·44	104·0	27·9	44·7	116·0	63·6	63·6	·43
43	" 30-Aug. 3 ..	·42	101·6	27·2	43·0	116·4	63·6	63·6	·39
44	Aug. 4-8	·41	99·5	26·9	40·8	116·0	63·5	63·6	·30
45	" 5-13	·39	96·5	26·6	39·9	115·6	63·2	63·5	·26
46	" 14-18	·39	93·0	27·0	42·1	114·9	62·7	63·1	·31
47	" 19-23	·35	80·5	25·8	44·7	112·7	61·9	62·5	·44
48	" 24-28	·32	69·8	24·6	42·3	109·9	60·8	61·5	·44
49	" 29-Sept. 2 ..	·29	65·0	23·9	39·4	108·3	59·7	60·6	·44
50	Sept. 3-7	·29	60·6	24·0	35·8	106·8	58·6	59·7	·32
51	" 8-12	·27	57·0	22·6	36·8	105·6	57·7	58·8	·30
52	" 13-17	·26	50·6	23·0	35·5	103·6	56·7	57·8	·26
53	" 18-22	·22	47·3	21·8	30·7	101·9	55·8	56·7	·26
54	" 23-27	·20	40·4	20·9	27·3	98·1	54·9	55·7	·34
55	" 28-Oct. 2 ..	·17	31·7	18·2	34·6	95·1	54·0	54·7	·36
56	Oct. 3-7	·14	21·1	15·4	31·9	90·1	53·0	53·7	·40
57	" 8-12	·11	14·0	13·0	42·8	85·9	52·0	52·8	·32
58	" 13-17	·10	10·4	11·8	37·1	82·3	51·0	51·8	·32
59	" 18-22	·09	8·4	11·1	41·6	78·8	49·5	50·5	·39
60	" 23-27	·08	7·4	10·4	45·4	76·8	48·0	49·1	·48
61	" 28-Nov. 1 ..	·07	6·1	8·8	49·4	73·0	46·7	48·0	·58
62	Nov. 2-6	·06	5·2	8·5	50·2	71·1	45·4	47·0	·57
63	" 7-11	·06	3·7	8·0	51·3	68·0	44·1	45·9	·48
64	" 12-16	·05	2·9	7·6	50·6	64·6	42·5	44·2	·41
65	" 17-21	·04	2·5	6·7	57·0	61·0	41·7	43·1	·35
66	" 22-26	·03	2·3	5·8	58·6	58·7	41·3	42·5	·39
67	" 27-Dec. 1 ..	·03	2·0	5·3	71·4	57·8	41·6	42·7	·41
68	Dec. 2-6	·02	1·6	4·5	72·4	56·5	41·7	42·7	·52
69	" 7-11	·02	1·2	4·0	77·4	55·2	41·5	42·4	·56
70	" 12-16	·01	1·1	3·3	65·6	53·3	41·2	41·9	·50
71	" 17-21	·01	1·0	3·1	63·4	52·1	40·6	41·3	·45
72	" 22-26	·02	1·0	3·1	64·7	51·3	40·2	40·6	·37
73	" 27-31	·02	1·1	3·4	80·3	51·6	39·6	40·3	3

The temperature of the soil is obtained from an ordinary Symons earth thermometer suspended in an iron tube sunk in the earth to a depth of one foot. Readings are taken once daily at nine a.m.

The duration of sunshine as recorded by the Campbell-Stokes recorder is undoubtedly affected by the proximity of trees in the surrounding gardens. It cannot thus be accepted as comparable with records at stations with clear horizons, but is of sufficient accuracy to demonstrate any well marked correlation with the evaporation.

In tabulating the records for plotting on the diagrams, they were grouped in seventy-three pentads, commencing with 1st-5th January, and ending with 27th-31st December in each year. In the case of temperature the mean value for the five days in each pentad is the figure used; in the case of the other elements it is the aggregate for the five days. For the pentad 25th February to 1st March it should be noted that in leap years (1908, 1912, 1916) six days are included instead of five. The means or totals respectively for the successive pentads were subsequently bloxamed in groups of three, as follows:—

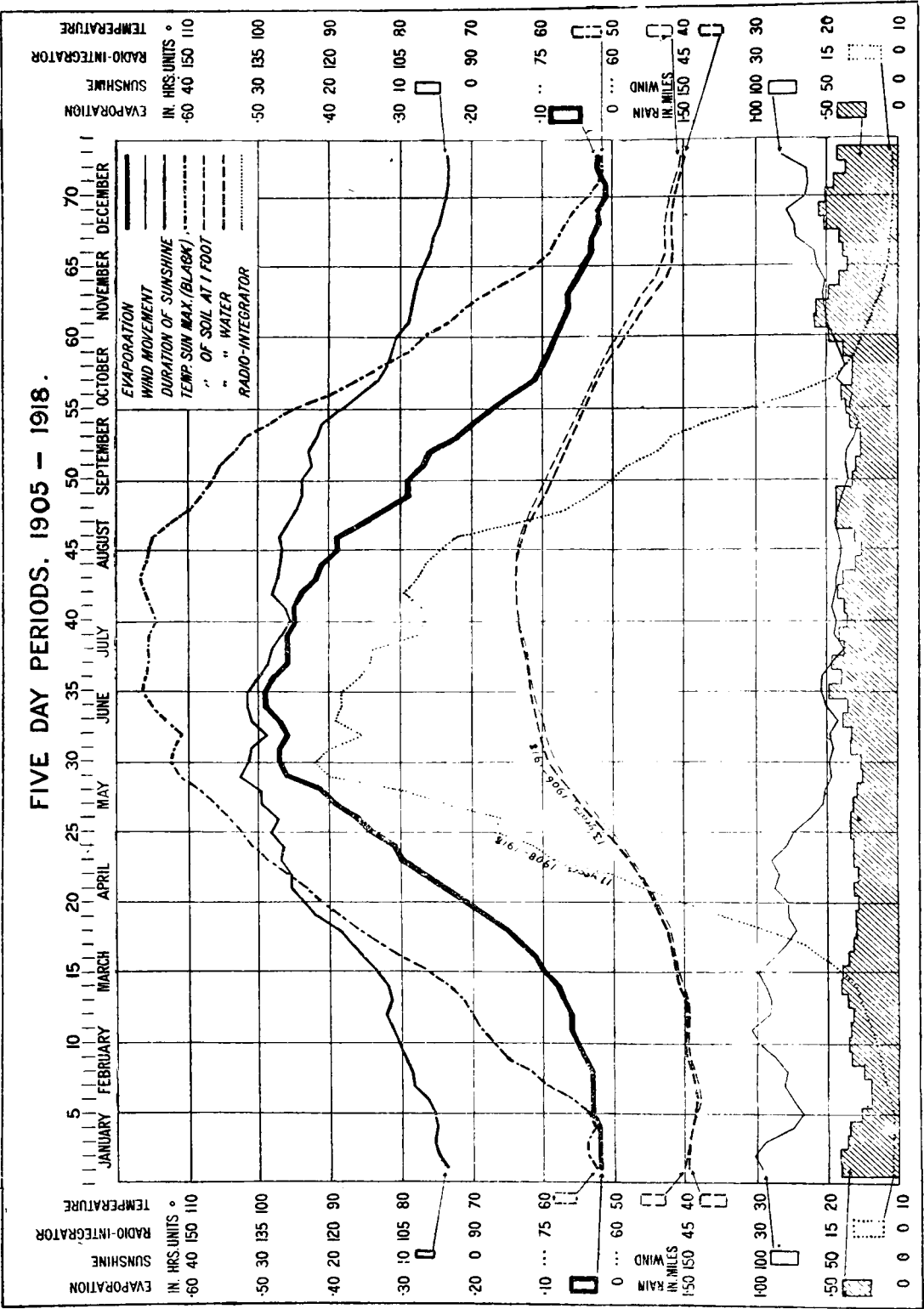
$$\begin{array}{ccc} \frac{a+b+c}{3} & \frac{b+c+d}{3} & \frac{c+d+e}{3} \end{array}$$

and so on throughout the year. In the case of leap years opportunity was taken of this process to make allowance for the additional day, the effect of which may thus be disregarded.

The Evaporation Curve.—The evaporation values shown in the diagram by a heavy black line have a very pronounced seasonal distribution. Although some evaporation occurs, on the average of the period under consideration, during each pentad, the amount during the first nine and last nine pentads of the year (19th November to 12th February) does not reach .05 in., or a mean of .01 in. per day. About the beginning of March the curve begins to rise steadily, and continues to do so until the 30th pentad (28th May), when it reaches .47 in., or .09 in. per day. From the 30th to the 41st pentad the curve is comparatively flat, reaching the highest point, .49 in., or .10 in. per day, at the 34th and 35th pentads, 15th to 24th June. From the 41st pentad there is a steady decline to .11 in., or .02 in. per day, at the 57th pentad (10th October), and subsequently a slower fall to the winter minimum.

Before passing to a consideration of the other elements individually, it is of interest to remark on a well-marked and precisely synchronized dip in the four upper curves of the diagram occurring at the 32nd pentad (7th June), and a second, less conspicuous, but equally well-synchronized, at the 40th pentad (17th July). Examination of the individual years' curves shows that the phenomenon of a pronounced check in the rise of the temperature, sunshine and evaporation curves during the late spring occurs annually, but with considerable range of date and intensity. Taking the mean date from the evaporation curves, this is shown to be approximately 21st May, and the mean drop from maximum to minimum is .15 in. The discrepancy in date is probably due to the

Evaporation from a Water Surface and other Meteorological Observations.



fact that in the years when the phenomenon was most pronounced it occurred late. The amount of the drop exceeded $\cdot 10$ in. in ten out of the fourteen years and exceeded $\cdot 20$ in. in four years. The second conspicuous dip (better marked in the sunshine and radio-integrator curves than in that for evaporation), although quite clearly indicated in the diagram, was far less persistent in individual years than was the earlier one.

Wind-Movement.—Unfortunately no separate record has been kept of the frequency of wind from different points of the compass. There would appear to be no doubt on theoretical grounds that evaporation is facilitated by the rapid renewal of air at a low relative humidity. The fact that in the course of a year by far the greater part of the aggregate wind-movement is made up of wind from between south and west bringing air of a high degree of humidity, undoubtedly to a large extent accounts for the want of correlation between the wind curve and that for evaporation. During the period of the year when evaporation is most active, namely from April to September, the wind-movement is at its minimum and the five-day totals rise to twice their summer values during the late winter, when there is practically no evaporation.

Temperature of Water and Soil.—These two curves follow one another very closely, the water being slightly the warmer during the first half of the year and slightly cooler during the second half. The annual variation of the two elements shows a well-marked correlation with that of evaporation, the latter being active when the temperature exceeds 40° F. and practically ceasing when it falls below that level. The spring cold spell referred to above is represented only by a slight check in the rapid seasonal rise at the 30th pentad (26th to 30th May), and the July cold spell at the 40th pentad is not apparent. It should be remarked that the water temperature refers to 9 a.m., before the sun (except at midsummer) has had time to heat up the water; and furthermore that the observations refer to the mean temperature of the whole mass. It is probable that evaporation is most readily induced by the heating up of a very thin surface layer by direct radiation during sunshine.

Duration of Sunshine.—The curve rises from a minimum of about three hours per five days to about thirty-three hours at the 29th pentad (23rd May). Save for the check at the 32nd pentad already alluded to there is no conspicuous variation till the 35th (23rd June), after which there is a slow decline, with a minimum at the 40th (17th July), till the 54th (25th September), and subsequently a slightly more abrupt one. There are marked relationships between the sunshine curve and that for evaporation, both in the type of annual variation and in the minor irregularities which may or may not be incidental to the particular period dealt with. The correlation coefficient is $\cdot 959$, with a probable error of $\cdot 006$.

Maximum Temperature in Sun (Black Bulb).—This curve is constructed from one observation daily, representing the highest temperature reached by a black bulb thermometer *in vacuo* exposed to the full rays of the sun. The great sensitiveness of the instrument renders it liable to run up to high readings even on generally dull days if bright sunshine occurs for a short spell, and it is therefore only in conjunction with the curve for duration of sunshine that close correlation with the evaporation would be expected. There is, however, a marked relationship throughout the year, the only notable point of difference being that the summer maximum at the 35th pentad, which coincides with that for evaporation, is followed by a second maximum at the 43rd pentad (1st August), which is absent from the evaporation curve. The pronounced rise in the spring precedes the corresponding rise in the evaporation curve by about a month.

Radio-Integrator.—The curve is decidedly flat until the 14th pentad (9th March), when an abrupt rise occurs, corresponding closely with the rise in the evaporation curve. There is a slight check at the 25th pentad, not reproduced in the evaporation curve, but evidently associated with a dip in the duration of sunshine values. With this exception the rise continues till the 30th pentad (28th May), when a fall corresponding with that shown in the other three top curves in the diagram is sharply indicated. From the 33rd pentad there is a fall to a secondary minimum at the 40th pentad and a rise to a secondary maximum at the 42nd, in correspondence with similar points in the sunshine curve. The autumnal fall is gradual till the 46th pentad and afterwards extremely rapid till the winter level is reached at the 57th (10th October). The difference in scale on the diagram somewhat masks the extremely high correlation between the radio-integrator curve and that for evaporation, but the very high coefficient of $\cdot 995$, with a probable error of only $\cdot 001$, emphasizes the close relationship.

Rainfall.—*Prima facie*, some inverse relationship might be expected between the incidence of rainfall and evaporation, but this cannot be said to be apparent in the somewhat short period available. The rainfall curve is by far the least regular of those shown, and but for an absence of high values in the spring months and a fairly high frequency of these in the autumn the seasonal variation is not clearly indicated. There is a conspicuous minimum of $\cdot 19$ in. in five days, or $\cdot 04$ in. per day, for two pentads occurring at the end of January and beginning of February, and a late spring minimum occurs at about the 29th pentad (23rd May). The summer maxima about the 35th and 37th pentads (20th June to 4th July) presumably arise from thunderstorm rains. The autumn maxima occur at the 61st and 69th pentads (30th October and 9th December), when the five-day means reach $\cdot 58$ in. and $\cdot 56$ in. respectively, i.e., $\cdot 12$ and $\cdot 11$ in. per day. The negative correlation between the rainfall curve and the evaporation curve is low, the coefficient being $- \cdot 154$, with a probable error of $\cdot 077$.

It would appear to be abundantly clear that sunshine and temperature are the prime factors in promoting evaporation, any modification introduced by variations in the wind-movement and rainfall being too slight appreciably to affect the high correlation. The very close relationship of the radio-integrator records suggests that a wider use of this ingenious instrument might supply valuable data in the absence of direct evaporation records, which are both expensive and somewhat difficult to obtain. It appears, however, that further investigation is necessary in order to establish the complete relationship of the records with those for evaporation, since these are clearly liable to vary in an irregular manner, as the following table shows. It gives for the period 1908 to 1918 the value of $\frac{E}{I}$, where E is the total amount of evaporation in inches and I the total number of units on the radio-integrator scale. The very small readings for both elements during the winter makes the individual month's coefficients from October to January valueless, and these are omitted as unimportant.

Relation of Radio-Integrator Readings to Evaporation.

Camden Square, London, 1908-1918.

Value of $\frac{E}{I}$

	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918
April .....	.66	.60	.70	.69	.53	.34	.29	.36	.34	.37	.38
May .....	.52	.51	.46	.50	.47	.33	.33	.36	.37	.38	.33
June .....	.54	.52	.46	.53	.46	.35	.31	.36	.37	.39	.42
July .....	.51	.55	.51	.45	.46	.34	.39	.33	.32	.34	.42
August .....	.55	.45	.54	.49	.47	.34	.31	.30	.43	.37	.36
September ..	.57	.45	.69	.48	.62	.27	.40	.36	.40	.35	.66
Summer half-year..	.54	.51	.52	.50	.49	.33	.34	.35	.37	.37	.41
Whole year	...	.56	.58	.54	.52	.37	.36	.36	.39	.40	.43

The most striking fact brought out by the above table is the abrupt change in the relationship of the two elements between 1912 and 1913. Dividing the period into two, the first portion from 1908 to 1912 indicates only a small range of variation, especially in the months of high evaporation. In the second period, 1913 to 1918, the range is scarcely higher but the values are consistently and notably lower. No explanation has as yet been assigned, but the subject is receiving further attention.

THE DISTRIBUTION OF RAINFALL IN TIME.

It is not practicable rigidly to distinguish between the discussion of the time and space distributions of rainfall during the year, but these may be roughly separated by bringing together in one set of Sections those aspects of the year's rainfall which derive their importance principally from the time element, and in another those in which geographical distribution is the chief consideration. The former category includes as a matter of course the records of "Duration of Rainfall" and of "Heavy Falls of Rain in Short Periods." We include also the study of the incidence of daily rainfall as indicated by the number of days with rain, and by the occurrence of exceptional spells of dry or of wet weather. All these elements of rainfall have, of course, their geographical aspect, but this cannot be regarded as the prime consideration as in the case of the study of monthly and annual rainfall.

So much has been written in recent volumes of *British Rainfall* on the difficulties encountered in endeavouring to frame generalizations as to the frequency of daily rainfall, and the occurrence and duration of droughts and rain spells, that the reader will not be altogether unprepared for some change in the method of dealing with the subject. It has long been recognized that the unit of the "Rain Day," upon which the existing definitions were built up, was in many respects unsuitable for the purpose. It involves the accurate measurement of an amount of rainfall of frequent occurrence, and so small as to have little physical significance, and at the same time so disproportionate to the magnitude of the possible instrumental and personal errors of observation, that a very wide margin of uncertainty exists, and the value of the frequency data is in many cases seriously vitiated.

The use of the metric system for official rainfall recording in this country has introduced a fresh element of discordance. The recognised "Rain Day" for Observers measuring rainfall in millimetres is a day on which 0.2 mm. or more is recorded. With the inch as unit a recorded fall of .01 in. or more constitutes a rain day. In a 5-inch rain gauge these amounts are represented by respectively 3.2 c.c. and 2.5 c.c. of water, and thus an actual discrepancy in the unit of measurement is added to the already existing sources of uncertainty.

The natural remedy for the original difficulty, that arising from the very small unit employed, is to increase the unit to a larger quantity, thus insuring that days of insignificant drizzle, or of fog or dew deposit, shall be effectively excluded from the count, and at the same time raising the minimum quantity considered to an amount at which the instru-

mental and personal error can be safely ignored. It is true that this method leaves out of the counted days a number of days on which unmistakable showers will have occurred, but the main consideration involved in rainfall measurement is the deposition of precipitation in sufficient quantities to be of real significance.

The smallest value on the respective rainfall scales at which the inch and millimetre measurements virtually coincide is 1 millimetre or $\cdot 04$ in. ; 1 millimetre of rain in a 5-inch rain gauge gives 12·7 c.c. of water ; $\cdot 04$ in. gives 12·9 c.c. The amount is sufficiently large to outweigh the small errors occasioned by the difficulty of accurate measurement, and sufficiently small to include all days of significant rainfall. Frequency values of days with 1 mm. or $\cdot 04$ in. of rain have been published for some years past in the *Monthly Weather Report* of the Meteorological Office.

It seems advisable, experimentally, to examine the frequency of days with $\cdot 04$ in. or more of rain, and we propose, therefore, for the present to supplement the tables of "Rain Days, Droughts and Rain Spells" with parallel tables based upon the following definitions :—

A **Wet Day** is a day ending at 9 h. (G.M.T.) on which 1 mm., or $\cdot 04$ in., or more, of rain is recorded.

A **Dry Spell** is a period of fifteen or more consecutive days, no one of which is a "Wet Day" according to the foregoing definition.

A **Wet Spell** is a period of fifteen or more consecutive days, each one of which is a "Wet Day" according to the foregoing definition.

It will be observed that no suggestion is made for providing a parallel to the existing "Partial Drought," but it appears reasonable to regard the proposed "Dry Spell" as likely to include most periods of the nature catered for by the "Partial Drought."

A further consideration of some practical importance lies in the fact that during the seventeen years for which detailed lists of "Rain Spells" have been extracted and published in *British Rainfall*, it has become increasingly evident that their normal frequency, taking the British Isles as a whole, has been much greater than that of Absolute Droughts, their natural antithesis. That the two should be in some measure balanced one against the other is desirable, and it is hoped that the new definitions will tend to remedy the disparity.

As a preliminary to the framing of the above suggested revised definitions, we have examined the daily rainfall records for Camden Square, London, for the sixty-two years, 1858 to 1919, inclusive. The station is, of course, a very dry one, the average annual rainfall being only 25 inches, and since the definitions are designed to apply to the British Isles at large, with an average annual rainfall over all, of about 40 in., the dry periods in London are relatively greatly preponderant over the wet, and the fact that no instance of a "wet spell"

has occurred in London in no way invalidates the proposed definition. It has not been possible in the time at disposal to make a similar analysis of a long daily record at a station situated in the district of high rainfall frequency in the west of the British Isles.

Camden Square, London.
Frequency of Absolute Droughts and Dry Spells, 1858–1919.

1858 to 1919.	Number of Instances recorded in 62 years.	Mean Duration.	Greatest Duration.	Greatest number in any one year.	Greatest number of days involved in one year.	Number of years with none.
Absolute Droughts....	69	Days 19	Days 29	4	74	15
Dry Spells	163	19	41	6	127	1

Frequency of Rain Spells and Wet Spells, 1858–1919.

Rain Spells	7	17	20	1	20	53
Wet Spells.....	0	..	..	..	..	60

It should be made quite clear that the suggestion now put forward is not to make any modification in the existing method of *measurement* of rainfall. That is well-established, and meets all existing requirements. Neither should we propose for the time being to discontinue printing the number of rain days computed by the old system.

The Tables of “Rain Days, Droughts and Rain Spells,” in 1919, under the old definitions, and of “Wet Days,” “Dry Spells,” and “Wet Spells,” under the suggested new definitions, have been prepared, as in previous years, from one hundred carefully selected records representative of all parts of the British Isles. The complete list is given, with the names of the counties, in Tables I. and IV. In the lists of Droughts and Rain Spells, and of Dry and Wet Spells, the names of Stations at which none occurred, respectively, are omitted in order to economise space.

DAYS WITH RAIN IN 1919.

As will be seen by the introductory paragraphs of this section two definitions are required to cover the data dealt with.

(i.) A **Rain Day** is a day on which $\cdot 01$ in. of rain or more is recorded. A fall of rain exceeding $\cdot 005$ in. but less than $\cdot 01$ in. is recorded as $\cdot 01$ in. A fall of rain less than $\cdot 005$ in. is ignored.

(ii.) A **Wet Day** is a day on which 1 mm. or $\cdot 04$ in. of rain, or more, is recorded.

Both the above definitions, of course, refer to the "rainfall day," commencing at 9 h. (G.M.T.) on the day to which the observation is recorded, and ending at 9 h. (G.M.T.) on the following day.

Table I. gives the number of Rain Days during each month of 1919 at one hundred stations. The total number of such days in the year was, taking the British Isles as a whole, almost exactly the average of twenty years, there having been an excess of four days, or 2 per cent. in England and Wales, a deficiency of two days, or 1 per cent, in Scotland, and a deficiency of ten days, or 4 per cent, in Ireland.

TABLE II.—*Rain Days, 1903–1919, compared with Average, 1892–1911.*

Year.	England and 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
1913	190	+ 3	102	212	— 4	98	220	— 3	99	203	— 1	100
1914	192	+ 5	103	214	— 2	99	222	— 1	100	205	+ 1	100
1915	182	— 5	97	206	— 10	95	217	— 6	97	197	— 7	97
1916	205	+ 18	110	232	+ 16	107	239	+ 16	107	220	+ 16	108
1917	185	— 2	99	217	+ 1	100	224	+ 1	100	203	— 1	100
1918	200	+ 13	107	226	+ 10	105	227	+ 4	102	214	+ 10	105
1919	191	+ 4	102	214	— 2	99	213	— 10	96	203	— 1	100

Over most of the north of England there were more than two hundred rain days; and this was also the case over the greater part of Wales, and the whole of Scotland and Ireland except the east and south. In restricted areas in the east and centre of England and round the Forth and Moray Firths many stations recorded less than 175 rain days, but no authentic area of any appreciable size had fewer than 150. The number of rain days was distinctly below the average in the south of Ireland and above it in the north-west of Scotland, where a large area had more than 250 days.

TABLE I.—*Number of Rain Days in 1919.*

Station.	County.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year.	Total Rain fall.	Amount per Rain Day.	
ENGLAND & WALES.																	
St. Pancras, Camden Square	London	2	20	21	18	4	9	14	11	10	8	22	25	175	25.65	.15	
Tenterden, View Tower	Kent	1	23	20	13	6	4	15	13	8	10	24	26	178	28.36	.16	
Patcham	Sussex	3	25	14	23	6	5	15	11	12	8	23	28	184	36.94	.20	
Lymington, The Salterns	Hampshire	4	23	18	20	12	11	7	11	10	9	17	25	174	32.55	.19	
Petersfield, Ditcham Park	"	5	24	15	19	15	8	7	13	11	9	19	27	177	39.74	.22	
Upton	Berkshire	5	23	11	20	13	5	10	12	14	13	19	26	177	27.44	.16	
Newport Pagnell, The Croft	Buckinghamshire	5	23	12	21	16	4	12	18	13	10	13	19	23	184	28.06	.15
Eye, Northolt	Northamptonshire	4	21	10	21	15	6	9	14	11	13	21	23	176	24.49	.14	
Cambridge, Cherryhinton	Cambridgeshire	2	20	14	20	17	3	7	18	12	9	11	20	22	173	24.74	.14
Bradwell-on-Sea, Bradwell Hall	Essex	3	21	11	18	17	4	8	14	12	7	10	16	25	163	23.91	.15
Woodbridge Abbey	Suffolk	3	24	15	20	19	6	11	19	14	7	12	23	186	29.46	.16	
Yarmouth, Burgh Hall	"	4	21	13	17	18	4	11	21	11	10	16	21	25	188	29.74	.16
Great Massingham	Norfolk	1	21	15	22	14	7	8	11	13	9	22	28	183	31.34	.17	
Salisbury Plain, Shrewton	Wiltshire	3	23	16	21	15	10	5	12	11	10	9	19	27	179	40.97	.23
Dorchester, Wollaston House	Dorsetshire	3	24	16	21	15	8	8	13	15	13	19	29	190	56.66	.30	
Ashburton, Druid House	South Devon	4	26	15	22	13	9	8	13	15	13	19	29	190	56.66	.30	
Martinhoe Rectory	North Devon	1	25	12	23	16	10	14	10	13	16	10	18	28	195	42.69	.22
Morwenstow Vicarage	Cornwall	1	28	14	22	18	15	15	12	17	12	24	31	225	37.87	.17	
St. Austell, Trevana	"	2	25	16	23	15	12	9	10	10	12	15	19	28	194	49.40	.25
Angersleigh, Leigh Court	Somersetshire	3	25	15	21	14	7	10	12	15	10	17	28	186	39.60	.21	
Mickleton, Bank House	Gloucestershire	4	25	11	22	16	8	9	14	12	13	12	16	25	183	27.20	.15
Clifton, Harley Place	"	5	26	12	21	17	7	13	15	11	16	11	20	27	196	36.77	.19
Hereford, Holmer Hall	Herefordshire	1	22	13	20	11	8	10	12	12	14	12	20	24	178	23.19	.13
Shifnal, National School	Shropshire	4	20	12	17	18	8	13	13	11	13	14	17	24	180	28.63	.16
Ashbourne, Mayfield House	Staffordshire	5	20	10	21	18	8	12	12	14	13	11	19	26	184	36.03	.20
Desford Industrial School	Leicestershire	4	22	12	19	15	4	10	11	11	13	20	24	172	32.91	.19	
Spilsby, Ashby Road	Lincolnshire	4	16	10	17	13	5	10	15	9	11	14	22	21	163	27.81	.17
Workop, Hodsock Priory	Nottinghamshire	5	20	12	15	17	8	16	12	14	16	24	20	188	26.69	.14	
Northwich, Winnington	Cheshire	2	21	9	18	19	8	17	13	15	13	21	25	196	32.66	.17	
St. Michael's-on-Wyre Vicarage	North Lancashire	5	24	7	17	16	9	13	9	17	16	25	182	33.98	.19		
Settle Gas Works	Yorkshire, W.R.	2	24	10	16	19	13	17	12	21	15	24	25	210	42.14	.20	
Meltham, Harewood Lodge	"	8	24	11	20	12	15	13	18	14	13	26	28	214	44.98	.21	
Hull, Pearson Park	"	3	19	14	17	13	7	13	14	15	17	27	26	195	27.50	.14	
Felixkirk, Mount St. John	"	2	22	10	21	16	12	15	14	12	18	23	24	199	28.89	.15	
Aislaby, Park Hall	"	5	21	15	20	16	9	12	20	16	12	19	29	209	32.81	.16	
Sunderland, West Hendon House	"	2	23	15	20	16	12	16	16	12	13	18	27	21	209	28.23	.14
Glanton, Glanton Pyke Gardens ..	Northumberland	6	23	15	21	16	9	16	11	14	13	17	24	21	200	32.25	.16

TABLE I.—Number of Rain Days in 1919—(con.).

Station.	County.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year.	Total Rain-fall.	Amount per Rain Day
ENGLAND & WALES—(con.).															in.	in.
Appleby, Castle Bank	Westmorland	23	9	20	19	11	19	12	19	15	13	22	27	209	30.20	.14
Dungeon Ghyll	"	24	11	19	23	12	18	11	18	16	14	20	28	217	96.59	.45
Treherbert, Tyn-y-waun	Glamorgan	26	14	21	18	10	16	12	15	16	13	20	30	211	80.02	.38
Carmarthen, The Friary	Carmarthen	24	16	23	20	16	17	12	15	20	11	18	29	221	42.64	.19
Fishguard, Dwrbach	Pembroke	26	15	23	18	16	15	12	16	21	19	21	31	233	46.34	.20
Birmingham W.W., Tyrmynydd ..	Radnor	22	12	19	18	7	13	11	14	14	13	17	24	189	55.36	.29
Newtown, Penarth Weir	Montgomery	26	18	22	18	9	15	11	12	13	13	17	24	198	30.61	.16
Denbigh, Garn	Denbigh	22	11	18	14	4	15	12	15	16	14	16	24	181	40.95	.23
Dolgelly, Bryntirion	Merioneth	20	9	16	18	9	16	11	13	13	13	17	25	180	66.02	.37
Abersoch	Carnarvon	23	11	19	15	11	16	9	10	11	12	16	29	182	44.10	.24
Llanerchymedd, Llwydiarth Esgob ..	Anglesey	26	15	21	20	16	16	14	17	17	17	22	26	227	37.80	.17
England & Wales	(Mean of 48 Stations)	23	13	20	16	9	12	13	13	13	13	20	26	191	37.27	.20
ISLE OF MAN.																
Douglas, Clype Res., Onchan	Isle of Man	27	12	19	19	16	18	10	19	17	14	17	25	213	42.81	.20
SCOTLAND.																
Whithorn, Cutroach	Wigtown	26	5	14	15	10	15	5	19	12	13	13	21	168	32.69	.20
Dumfries, Jardington	Kirkcudbright	5	20	6	12	13	18	6	21	18	11	18	26	189	31.27	.17
Canonbie, Irvine House	Dumfries	18	10	15	15	9	15	7	17	17	12	17	25	177	42.24	.24
Swinton House	Berwick	25	17	21	13	7	14	6	13	14	16	28	24	198	25.10	.13
Balerno, Cockburn Hill	Midlothian	5	21	13	17	6	13	6	13	14	9	24	23	172	35.87	.21
Strathaven, East Overton House ..	Lanark	20	8	14	19	5	19	7	18	21	13	20	26	190	36.48	.19
Girvan, Pinmore	Ayr	26	5	14	22	12	17	6	24	18	13	17	26	200	44.22	.22
Stirling, Touch Reservoir, No. 1 ..	Stirling	1	20	13	15	16	10	3	15	17	10	21	26	184	38.71	.21
Great Cumbrae, Millport	Bute	26	9	15	23	13	24	8	19	21	10	19	29	221	38.34	.17
Kilmelfort, Arduane	Argyll	7	23	10	18	24	13	24	8	19	14	13	27	214	58.53	.27
Campbeltown, South Park	"	23	9	20	20	15	22	7	23	22	18	17	29	229	55.46	.24
Islay, Eallabus	"	26	11	19	18	9	23	9	25	25	18	18	29	230	51.82	.22
Mull, Ulva	"	23	9	24	27	17	25	11	28	25	23	17	28	259	62.37	.24
St. Andrew's, Water Works	Fife	14	25	12	10	7	21	6	15	9	13	21	17	172	26.52	.15
Aberfeldy, Dull Avon	Perth	3	20	10	17	16	12	19	6	15	14	17	24	185	26.79	.14
Banchory, Invercarnie	Kincardine	11	12	17	17	7	15	9	10	11	19	19	20	179	31.23	.17
Balmoral Castle Gardens	Aberdeen	3	21	12	20	13	19	10	9	17	20	22	24	210	32.46	.15
New Deer Schoolhouse	"	24	12	20	20	9	20	12	17	19	26	25	26	233	37.75	.16
Dufftown, Fife Street	Banff	4	26	13	21	19	9	20	12	21	23	22	25	236	39.14	.17
Cluny Castle	Inverness	3	22	11	24	8	23	18	21	21	23	22	29	234	37.02	.16

TABLE I.—Number of Rain Days in 1919—(con.).

Station.	County.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year.	Total Rain-fall.	Amount per Rain Day.	
SCOTLAND—(con.).																	
Drumnadrochit	Inverness	9	22	11	21	7	22	8	20	21	19	17	19	210	29.42	in. .14	
Loch Nevis, Inverie	"	12	22	12	19	8	25	14	27	26	21	16	30	246	80.65	.33	
Glenleven, Kinlochmore	"	17	25	9	18	25	14	26	10	26	25	18	29	248	77.58	.31	
Skye, Portree	"	18	22	13	19	25	12	24	12	27	28	25	18	30	255	51.43	.20
Achnasheen, Ledgowan	Ross	4	22	9	25	26	8	26	13	28	25	23	19	28	252	73.03	.29
Dornoch, St. Gilberts	Sutherland	2	17	11	16	18	6	17	7	12	20	10	23	20	177	24.44	.14
Loch More, Achfary	"	5	25	14	24	28	10	26	14	27	26	24	26	30	274	91.58	.33
Thurso, Buckies	Caithness	3	26	18	24	24	8	23	16	23	24	26	25	260	43.76	.17	
Scotland	(Mean of 28 Stations)	23	11	19	20	10	20	9	20	20	17	20	25	214	44.86	.21	
IRELAND.																	
Castletownshend, Seafeld	Cork	6	25	15	20	11	15	9	14	12	11	14	30	184	38.82	.21	
Mallow, Summer Hill	"	9	25	16	23	16	20	12	10	13	14	13	15	27	204	31.73	.16
Killarney, District Asylum	Kerry	3	27	15	27	25	20	18	15	17	19	12	16	29	240	41.06	.17
Valentia, Glanleam	"	6	27	13	21	16	9	15	13	16	14	5	14	27	190	46.66	.25
Waterford, Brook Lodge	Waterford	3	23	16	23	12	14	9	10	13	10	5	16	28	179	33.79	.19
Nenagh, Castle Lough	Tipperary	1	21	11	25	20	18	16	9	21	19	9	14	29	212	34.60	.16
Cashel, Ballinamona	"	3	25	12	23	19	16	13	10	19	16	13	18	30	214	32.29	.15
Killadysert, Paradise Hill	Clare	3	25	10	18	22	17	9	10	19	20	5	13	31	199	35.41	.18
Gorey, Courtown House	Wexford	4	22	16	14	14	10	6	9	14	8	22	24	173	32.00	.18	
Abbey Leix, Blandsfort	Queen's County	2	25	15	22	16	14	16	10	13	14	11	17	229	32.55	.16	
Straffan House	Kildare	2	22	12	19	15	9	13	10	12	16	13	17	23	181	33.30	.18
Kells, Headfort	Meath	4	27	14	21	20	16	16	7	12	16	14	20	27	210	33.75	.16
Moate, Coolatore	Westmeath	1	21	13	27	22	16	15	11	17	22	17	19	30	230	30.55	.13
Ballynahinch Castle	Galway	3	26	13	21	25	17	22	12	24	24	20	18	31	253	56.08	.22
Headfort, Ower House	"	3	24	10	17	21	16	15	7	17	10	20	30	199	48.17	.24	
Crossmolina, Enniscoe	Mayo	2	27	16	26	24	22	20	13	20	21	22	31	262	55.37	.21	
Collooney, Markree Observatory ..	Sligo	2	25	12	20	25	18	23	14	19	21	15	18	31	241	45.42	.19
Belurbet, Cloverhill	Cavan	1	24	9	19	15	13	16	8	17	18	14	15	28	196	30.34	.15
Seaford	Down	2	24	12	17	13	13	5	14	19	14	16	24	187	38.08	.20	
Ballymena, Harryville	Antrim	5	26	9	22	20	13	21	8	22	19	20	19	30	229	39.99	.17
Omagh, Edenfel	Tyrone	3	21	5	20	24	18	19	7	18	23	19	20	31	225	41.55	.19
Milford, The Manse	Donegal	3	30	10	23	20	13	22	13	20	23	20	21	30	245	41.46	.17
Killybegs, Rockmount	"	5	23	9	21	26	18	23	11	22	23	19	16	31	242	59.99	.25
Ireland	(Mean of 23 Stations)	25	12	21	19	16	16	10	17	18	13	17	29	213	39.69	.19	
British Isles	(Mean of 100 Stations)	23	12	20	18	11	16	11	16	16	14	20	26	203	40.01	.20	

TABLE IV.—Number of Wet Days (Days with 1 mm. or .04 in. of Rain) in 1919.

Station.	County.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.	Total Rain Days.	Days with .04 as % of Rain Days.
ENGLAND AND WALES.																
St. Pancras, Camden Square	London	14	11	17	11	3	5	12	9	8	4	8	12	114	175	65
Tenterden, View Tower	Kent	20	10	13	11	3	2	10	12	5	5	18	16	125	178	70
Patcham	Sussex	21	10	18	10	4	3	12	10	7	6	17	23	140	184	76
Lymington, The Salters	Hampshire	19	13	15	9	5	5	6	11	7	7	13	18	127	174	73
Petersfield, Ditcham Park	"	22	11	16	11	5	3	9	11	8	5	15	23	139	177	79
Upton	Berkshire	14	8	13	10	3	6	9	9	8	6	13	15	114	177	64
Newport Pagnell, The Croft	Buckinghamshire	5	5	13	10	1	5	11	10	8	8	9	17	119	184	65
Eye, Northolt	Northamptonshire	17	8	15	10	3	7	12	9	8	5	11	14	118	176	67
Cambridge, Cherry Hinton	Cambridgeshire	4	11	14	14	3	7	12	9	8	8	11	18	133	173	77
Bradwell-on-Sea, Bradwell Hall	Essex	16	11	12	14	2	6	12	10	6	8	14	15	130	163	80
Woodbridge Abbey	Suffolk	20	11	12	14	5	7	13	12	5	10	13	19	136	186	73
Yarmouth, Burgh Mall	"	3	17	8	10	4	11	12	9	6	15	15	18	135	193	70
Great Massingham	Norfolk	17	9	11	10	4	10	15	8	6	13	15	20	139	188	74
Salisbury Plain, Shrewton	Wiltshire	15	9	13	11	4	5	9	9	7	5	11	22	125	183	68
Dorchester, Wollaston House	Dorsetshire	16	10	16	11	7	4	11	8	9	6	12	22	138	179	77
Ashburton, Druid House	South Devon	20	12	18	11	5	6	6	12	12	11	18	25	160	190	84
Martinhoe Rectory	North Devon	23	13	18	11	5	10	9	9	8	8	13	23	156	195	80
Morwenstow Vicarage	Cornwall	24	10	22	11	5	6	6	10	11	10	17	25	154	225	68
St. Austell, Trevana	"	24	15	19	14	9	6	6	10	11	10	17	25	154	225	68
Angersleigh, Leigh Court	Somerset	19	12	17	12	5	6	6	10	11	10	17	25	146	186	78
Mickleton, Bank House	Gloucestershire	17	6	15	9	4	7	11	10	8	9	9	17	122	183	67
Clifton, Harley Place	"	19	10	16	11	4	10	8	8	11	6	13	23	139	196	71
Hereford, Holmer Hall	Herefordshire	16	9	15	7	5	6	8	11	9	7	9	16	120	178	67
Shifnal National School	Shropshire	17	8	12	12	6	8	10	7	9	12	10	20	129	180	72
Ashbourne, Mayfield House	Staffordshire	16	8	17	11	8	8	9	10	10	8	13	20	138	184	75
Desford Industrial School	Leicestershire	19	9	16	12	4	7	10	9	9	9	15	19	138	172	80
Spilsby, Ashby Road	Lincashire	14	9	11	11	5	8	11	8	7	11	17	18	130	163	80
Workshop, Hodsock Priory	Nottinghamshire	13	8	11	13	5	9	8	8	10	9	13	17	124	188	66
Northwich, Winnington	Cheshire	14	8	14	13	5	11	9	10	9	10	11	23	137	196	70
St. Michael's-on-Wyre Vicarage	North Lancashire	18	5	13	11	8	10	8	10	12	8	10	21	134	182	74
Settle Gas Works	Yorkshire, W.R.	20	7	14	13	10	10	10	16	10	11	16	24	161	210	77
Meltham, Harewood Lodge	"	19	7	15	13	4	6	10	7	10	14	18	20	153	214	72
Hull, Pearson Park	"	17	9	11	9	4	8	9	7	10	14	21	17	134	195	69
Felixkirk, Mount St. John	"	18	9	12	11	4	8	10	6	6	13	22	16	135	199	68
Aislaby, Park Hall	"	14	13	17	9	7	8	11	10	10	18	20	15	152	209	73
Sunderland, West Hendon House	Durham	17	12	16	9	7	7	7	9	7	14	21	13	139	209	66
Glanton, Glanton Pyke Gardens	Northumberland	19	12	17	11	7	13	10	12	11	16	23	14	165	200	82

TABLE IV.—Number of Wet Days (Days with 1 mm. or .04 in. of Rain) in 1919—(con.).

Station.	County.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.	Total Rain Days.	Days with .04 as % of Rain Days.
ENGLAND AND WALES—(con.).																
Appleby, Castle Bank	Westmorland.....	1	19	6	15	10	12	8	12	9	11	16	24	157	209	75
Dreghon Ghyll	"	2	22	6	16	11	14	8	14	16	7	13	26	169	217	78
Treherbert, Tyn-y-waun	Glamorgan	6	22	13	18	8	10	10	13	15	10	16	28	179	221	85
Carmarthen	Carmarthen	2	22	11	19	10	11	8	12	13	9	13	26	167	221	76
Fishguard, Dwrbach	Pembroke	4	23	14	16	10	10	9	14	15	12	14	28	180	233	77
Birmingham W.W., Tymynydd	Radnor	1	20	10	18	4	11	8	11	14	12	14	25	162	189	86
Newtown, Penarth Weir	Montgomery.....	4	21	11	16	3	9	9	10	8	10	14	18	141	198	71
Denbigh, Garn	Denbigh	2	16	9	16	4	9	11	11	10	11	11	19	137	181	76
Dolgelly, Bryntirion	Merioneth	4	20	8	15	8	11	10	12	12	10	15	24	162	180	90
Abersoch	Carnarvon	4	20	19	15	10	13	9	10	11	12	16	29	174	182	96
Llanerchymedd, Llwydiarth Esgob	Anglesey	4	20	9	17	7	7	7	10	14	11	15	21	151	227	67
England and Wales.																
(Mean of 48 Stations) ..																
ISLE OF MAN.																
Douglas, Clype Res., Onchan.....	Isle of Man	8	25	12	15	13	13	6	13	14	12	13	22	166	213	78
SCOTLAND.																
Whithorn, Cutroach	Wigtown	4	23	5	12	8	13	4	17	11	8	12	21	147	168	87
Dumfries, Jardington	Kirkcudbright	5	16	5	11	9	11	3	14	13	4	15	23	138	189	73
Canonbie, Irvine House	Dumfries.....	5	16	16	11	8	13	2	12	14	8	16	25	144	177	81
Swinton House	Berwick	3	18	1	13	5	10	3	10	7	13	24	13	134	198	68
Balerno, Cockburn Hill	Midlothian	5	18	9	12	5	12	6	11	11	9	24	21	148	172	86
Strathaven, East Overton House	Lanark	5	14	5	11	13	14	5	15	18	7	17	25	149	190	78
Girvan, Pinnore	Ayr	8	20	3	11	7	13	3	13	15	9	14	25	149	200	75
Stirling, Touch Reservoir No. 1 ..	Stirling	1	15	6	13	6	13	3	11	14	6	17	24	141	184	77
Great Cumbrae, Millport	Bute	2	20	6	11	10	16	4	16	14	8	14	27	163	221	74
Kilmelfort, Arduaine	Argyll	7	20	8	15	11	23	8	18	20	12	11	27	195	214	91
Campbeltown, South Park	"	10	21	7	13	11	17	4	19	18	12	14	28	179	229	78
Islay, Eallabus	"	14	24	6	16	9	20	5	20	23	12	17	26	196	230	85
Mull, Ulva	"	14	21	7	19	11	24	6	25	22	19	14	27	217	259	84
St. Andrew's, Water Works	Fife	14	15	8	8	7	13	3	12	7	8	19	16	128	172	74
Aberfeldy, Dall Avon	Perth	11	14	7	10	8	13	3	9	11	8	15	19	125	185	68
Banchory, Invercarnie	Kincardine	3	17	11	17	6	12	5	9	11	16	19	18	160	179	89
Balmoral Castle Gardens	Aberdeen	1	14	7	17	8	11	3	7	15	12	19	18	141	210	67
New Deer Schoolhouse	"	4	23	11	17	6	15	5	11	15	22	21	21	180	233	77
Dufftown, Fife Street	Banff	4	23	11	13	5	16	10	13	12	18	21	19	172	236	73
Cluny Castle	Inverness	3	17	10	18	8	19	6	14	16	18	19	26	189	234	81

TABLE IV.—Number of Wet Days (Days with 1 mm. or .04 in. of Rain) in 1919—(con.).

Station.	County.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.	Total Rain Days.	Days with .04 as % of Rain Days.
SCOTLAND—(con.).																
Drumadrochit	Inverness	18	6	13	15	4	14	5	10	14	12	14	16	141	210	67
Loch Nevis	"	19	8	16	25	7	23	12	20	25	20	13	30	218	246	89
Glenleven, Kinlochmore	"	21	6	17	24	9	23	9	24	22	20	17	26	218	248	88
Skye, Portree	"	17	10	16	25	8	24	10	19	24	22	17	28	220	255	86
Achnasheen, Ledgowan	Ross	14	9	20	25	5	24	8	23	24	20	19	25	221	252	89
Dornoch, St. Gilbert's	Sutherland	14	9	12	14	3	13	5	9	14	9	21	17	140	177	79
Loch More, Achfary	"	22	11	19	26	7	25	12	27	25	22	25	27	248	274	91
Thurso, Buckies	Caithness	19	13	18	18	3	18	8	19	20	18	25	22	201	260	77
Scotland	(Mean of 28 Stations) ..	18	8	15	16	7	17	6	15	16	13	18	23	172	214	80
IRELAND.																
Castletownshend, Seafield	Cork	23	12	16	9	12	5	6	10	10	6	11	29	149	184	81
Mallow, Summer Hill	"	18	11	16	13	15	7	7	11	11	5	11	23	148	204	73
Killarney, District Asylum	Kerry	21	12	24	15	15	12	12	11	13	8	13	26	182	240	76
Valentia, Glanleam	"	25	11	20	13	7	11	11	13	12	5	12	26	166	190	87
Waterford, Brook Lodge	Waterford	18	14	17	9	13	9	7	10	7	5	11	24	144	179	80
Nenagh, Castle Lough	Tipperary	15	11	14	12	16	10	7	12	12	5	11	28	153	212	72
Cashel, Balinamona	"	18	12	14	10	15	8	7	13	9	6	11	26	149	214	70
Killadysert, Paradise Hill	Clare	21	10	14	14	14	8	7	15	15	4	13	27	162	199	81
Gorey, Courtown House	Wexford	19	12	13	9	8	4	4	9	10	6	19	19	132	173	76
Abbey Leix, Blandsfort	Queen's County	21	10	16	10	12	12	7	12	9	5	15	22	151	202	75
Straffan House	Kildare	20	12	18	13	8	12	9	12	15	11	16	23	169	181	93
Kells, Headfort	Meath	19	7	16	15	11	14	6	9	14	6	13	23	153	210	73
Moate, Coolatore	Westmeath	20	11	15	12	9	12	9	11	15	6	13	24	157	230	68
Ballynahinch Castle	Galway	26	12	18	22	16	20	9	17	21	12	17	31	221	253	87
Crossmolina, Enniscoe	"	25	13	15	16	15	13	6	10	15	10	19	29	177	199	89
Collooney, Markree Observatory	Mayo	23	13	16	19	15	19	10	19	21	19	19	29	240	262	92
Belurbet, Cloverhill	Sligo	19	7	13	11	10	13	5	12	13	9	12	22	146	196	74
Seaford	Down	20	8	13	12	11	15	1	12	13	10	14	22	153	187	82
Ballymena, Harryville	Antrim	21	6	21	17	9	19	7	18	18	17	18	29	200	229	87
Omagh, Edenfel	Tyrone	19	5	16	18	11	18	3	15	22	13	15	24	179	225	80
Millford, The Manse	Donegal	21	7	17	18	10	20	17	14	14	14	18	27	197	245	80
Killybegs, Rockmount	"	20	8	20	22	13	19	9	16	23	12	15	29	206	242	85
Ireland	(Mean of 23 Stations) ..	21	10	17	14	12	13	8	13	14	9	14	26	171	213	80
British Isles	(Mean of 100 Stations) ..	19	9	15	14	8	12	8	12	13	11	15	22	158	203	78

Practically everywhere December was the month of greatest frequency of rain days, the general value for the British Isles being twenty-six. In the west of Ireland rain fell every day in this month. January, March and November were also months of high frequency, but in February there were only 12 rain days in general, and in May and July, respectively, 11; May and June showed exceptionally small rain frequency in the south of England, but during the remainder of the summer and early autumn, although dry conditions prevailed, the number of technical rain days was fully the normal.

In the last column of Table I. is given the mean amount of rain per rain day for each station. These values, which are somewhat indicative of the type of rainfall which prevailed during the year, were close to the average values.

TABLE III.—*Mean Amount of Rain per Rain Day, 1903-1919.*

General Values.

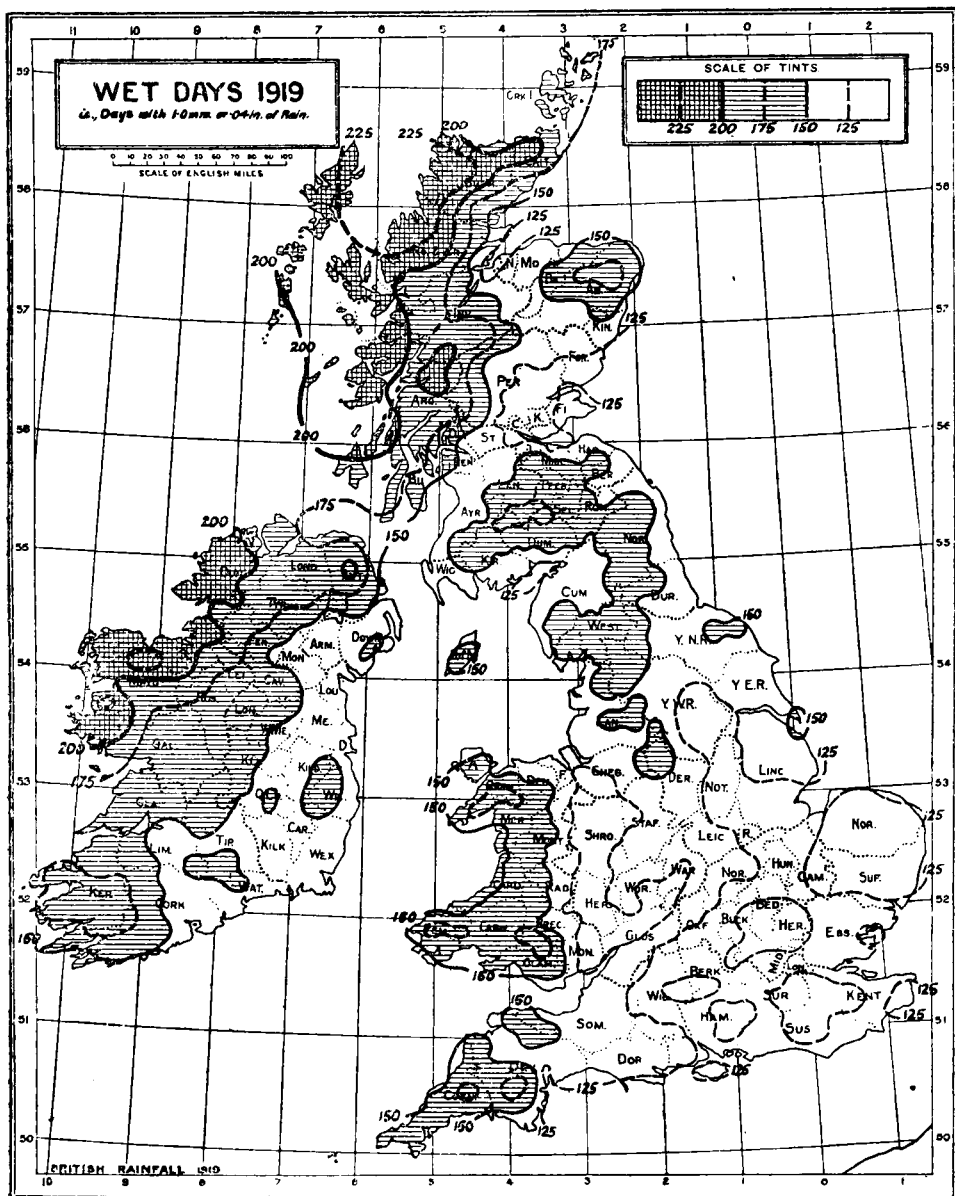
	England and Wales. in.	Scotland. in.	Ireland. in.	British Isles. in.
1903 .....	.21	.24	.20	.22
1904 .....	.17	.20	.18	.18
1905 .....	.16	.19	.16	.17
1906 .....	.19	.21	.17	.19
1907 .....	.18	.20	.17	.18
1908 .....	.17	.20	.17	.18
1909 .....	.19	.21	.18	.19
1910 .....	.20	.22	.19	.20
1911 .....	.20	.22	.20	.21
1912 .....	.21	.24	.19	.21
1913 .....	.19	.22	.20	.20
1914 .....	.20	.23	.20	.21
1915 .....	.22	.22	.20	.21
1916 .....	.19	.24	.20	.21
1917 .....	.19	.22	.19	.20
1918 .....	.20	.22	.21	.21
1919 .....	.20	.21	.19	.20
Average ...	.19	.22	.19	.20

Turning from Table I. to Table IV., we are now dealing, not with the number of rain days, but with the number of "wet days," i.e., days with a rainfall reaching or exceeding 1 mm., or .04 in. In the last two columns are given for comparison the number of rain days and the percentage which the recorded "wet days" formed of the latter. This percentage value varies from about 65 at one or two stations in the south-east of England to more than 90 at a few places in the extreme west of Wales, Scotland, and Ireland. There is thus some geographical meaning in the distribution, but a close examination of the figures confirms the opinion that the "accidental" variations are of almost equal magnitude to the geographical variations.

Whilst numerous experiments have compelled us to come to the conclusion that satisfactory mapping of rain days is a task of almost insuperable difficulty under the existing definition, the mapping of "wet days" has proved perfectly practicable. In addition to the data given in Table IV., those published in the Annual Summary to the *Monthly Weather Report* were added to the map, bringing the total number of records utilized to about four hundred. It is worthy of mention that of the records given in the *Monthly Weather Report*

Distribution of Wet Days in 1919.

Number of Days with 1·0 mm. or ·04 in. of Rain.



approximately equal numbers are measured in inches and in millimetres, thus providing a severe test of the possibility of using either unit indiscriminately for the purpose of counting "Wet Days."

The map, which is reproduced on p. 25, shows that extremely well-defined areas with more than 150 wet days during 1919 occupied the north-western half of Scotland and of Ireland, the limiting line being roughly straight and stretching from Dornoch Firth to Bantry Bay. Smaller areas with more than 150 wet days were located in Aberdeenshire, the south of Scotland, the Pennines, Wales, and the Devon-Cornwall peninsula. In the more elevated parts of all these areas were districts with more than 175 wet days, but outside the great rainy area of the north-west these were not conspicuous and contained no patches with as many as 200 wet days. Broad strips in the west of Scotland, from Thurso to Islay, and in the north-west of Ireland from Horn Head to Galway Bay had, however, more than 200 such days, whilst in the west of Sutherlandshire and in part of Co. Mayo as many as 240 were recorded. In England a large part of the Midlands and south-east had fewer than 125 wet days during the year, the areas of least frequency coinciding closely with those of smallest rainfall. We have no means at present of judging to what extent the distribution shown in 1919 was abnormal. It is clear that "wet days" show a much more definitely marked regional distribution than do "rain days" and that this distribution is more or less akin to that of the amount of rainfall, but is not entirely governed by it.

Of the values for the individual months of the year, it is interesting to note that for the British Isles as a whole 22 out of the 26 rain days in December were "wet days," the proportion in Ireland being 26 out of 29. The greatest disparity occurred in March and November, when only 15 out of the 20 rain days in each month were "wet." For the country as a whole, no month from February to November inclusive had more than 15 wet days, and no month from May to October more than 13. For England and Wales no month in the last-mentioned period had more than 10 wet days, May being the month of least frequency with 6, whilst the three months May, June and July together had only 23.

The general values for the year were 143 for England and Wales, 172 for Scotland, 171 for Ireland, and 158 for the British Isles, these being respectively 75, 80, 80, and 78 per cent. of the full number of rain days for the countries as computed from Table I. It will be observed that the number of rain days which were not "wet days" was greatest in England and Wales, where the general value was 48, and practically equal in Scotland and Ireland with 42, the number for the British Isles being 45.

DROUGHTS IN 1919.

The definitions used for the purpose of this Section of *British Rainfall* since 1887 are as follows :—

An **Absolute Drought** is a period of *more than* fourteen consecutive days (*i.e.*, fifteen or more), no one of which is a rain day.

A **Partial Drought** is a period of *more than* twenty-eight consecutive days (*i.e.*, twenty-nine or more), the mean rainfall of which does not exceed $\cdot 01$ in. per day.

For reasons set out in the introduction to this Section (see pp. 14—16) we add this year a third definition :—

A **Dry Spell** is a period of fifteen or more consecutive days no one of which is a “Wet Day.” [A “Wet Day” for the purpose of this definition is a day ending at 9 h. (G.M.T.) on which 1 mm., or $\cdot 04$ in., or more, of rain is recorded.]

The old definition of a Partial Drought was designed to insure the inclusion, in the lists, of periods which whilst undoubtedly sufficiently dry to be regarded as droughty were not so absolutely dry as to have no very small falls. The new definition does not altogether exclude such periods, and no counterpart of the Partial Drought is therefore required.

It would be premature at the present moment to abandon the older definitions in favour of a new and almost untested one, even though the latter promises on many grounds to have great advantages ; and for the time we print all recorded instances under the three definitions occurring at any of the hundred selected stations, the names of which are given in full in Tables I. and IV. in the Section discussing the frequency of Days with Rain in 1919.

The number of Absolute Droughts recorded in all at these hundred stations was, in 1919, only 33, or only half the average number during the previous thirty-two years. The average duration was normal. No Absolute Droughts occurred at sixty-eight out of the hundred stations, or over about two-thirds of the area of the British Isles. The number of Partial Droughts was slightly larger, being 44, or 8 fewer than the average, and their mean duration was 38 days, or 2 above the average. No Partial Droughts were recorded at sixty-three stations out of the hundred. The districts in which Droughts under both these definitions occurred were as usual almost entirely confined to the east and south.

Comparative Summary of Droughts, 1887-1919.

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
1912	105	19	32	26	68	37	69	42
1913	67	17	26	33	52	37	62	54
1914	49	20	25	65	54	33	50	57
1915	68	18	33	38	56	36	50	57
1916	52	20	29	51	44	33	43	57
1917	109	19	28	23	64	33	61	46
1918	20	16	18	83	14	34	47	87
Average	65	18	26	50	52	36	56	59
1919	33	18	31	68	44	38	50	63
Diff.	-32	0	+5	+18	-8	+2	-6	+4

NOTE.—The values previous to 1910 have been increased to the equivalent of 100 Stations for ready comparison. In the columns headed "Greatest," the figures refer to the selected Stations only.

The "Dry Spell" is obviously of greater frequency than the Absolute Drought, and it is interesting to supplement the above Table by the following summary :—

Dry Spells in 1919.

Number at 100 Stations.	Duration.		Number of Stations with			
	Mean.	Greatest.	None.	One or two.	Three or four.	Five or more.
98	Days. 19	Days. 38	35	62	3	0

The mean rainfall during all "Dry Spells" in 1919 was only $\cdot 002$ in. per day, and in no individual spell recorded did the mean reach $\cdot 01$ in. per day.

It will be seen that the area of the British Isles unaffected by "Dry Spells" was only half the size of that at which no Absolute Drought occurred. The districts in which no "Dry Spells" occurred lay almost entirely along the west coasts, but included part of the English Midlands and extended across Ireland to the east coast in the centre and north.

The most conspicuous, and indeed the only widespread period of drought in 1919, occurred in May and June. Absolute Drought was general in the south of England, and in parts of the South Midlands and east of Scotland for a period occupying roughly the last three weeks of May. Only at a few stations did Absolute Drought extend beyond 3rd June, but at Dorchester it continued unbroken till 18th June, covering in all 31 days. In London the period of 25 days was the fourth longest Absolute Drought in the sixty-two years covered by the Camden Square rainfall record. As a Partial Drought, the period covered was considerably longer, and the area affected wider. Nearly the whole of the east and south of England, and part of the east of Scotland were affected, the mean period being about 40 days between about 8th May and 18th June, but varying considerably. At four stations, Tenterden, Brighton, Eye (near Peterborough) and Bradwell-on-Sea, the period reached 50 days, in each case from 1st May to 19th June.

Under the new definition, a "Dry Spell" occurred at this time, nearly coincident with the Absolute Drought in date, but slightly longer, and covering a rather wider area. This included the south of England, the east coast from Whitby to St. Andrews, and from Inverness to Thurso, and small areas in Lancashire, Cheshire and Co. Wexford. The duration was greatest in the extreme south, exceeding 30 days at three stations and reaching 38 days at Brighton and Petersfield, where it lasted from 12th May to 18th June.

The other dry periods of 1919 were in every case comparatively local. In the first half of February a "Dry Spell" was recorded in the south and part of the east of Scotland, and also at a few stations in the north of England. Almost the same districts in Scotland as well

as part of the north of Ireland experienced a short "Dry Spell" in early July, and at a few stations in the south of Ireland and in parts of the south and east of England a Dry Spell of rather variable duration occurred at the end of July and beginning of August. Periods satisfying the definition of a Dry Spell were recorded extremely locally in many parts of the British Isles throughout the autumn, the most important being during about the last week of October and the first eight or ten days of November. This Dry Spell was of special interest in that it affected the south-west of Ireland, together with parts of the north-west of Ireland and of the Western Highlands, all districts where periods of lack of rainfall are exceedingly rare. Simultaneously, and accentuating the abnormality of the occurrence, a Rain Spell was taking place on the east coast of Great Britain.

Droughts in 1919.

Station and County.	ABSOLUTE DROUGHTS.			PARTIAL DROUGHTS.			
	Began.	Ended.	Last- ed.	Began.	Ended.	Last- ed.	Rain.
ENGLAND & WALES.			Days.			Days.	in.
St. Pancras (Camden Sq.)..	May 10	June 3	25	May 1	June 18	49	·42
London—2.							
Tenterden (View Tower) ..	June 5	June 19	15	May 1	June 19	50	·49
Kent—1.							
Patcham	May 19	June 3	16	May 1	June 19	50	·48
Sussex—3.							
Lymington (The Salterns)..	May 18	June 3	17	May 7	June 19	44	·40
Hampshire—4.							
Petersfield (Ditcham Park).	May 20	June 3	15	May 7	June 18	43	·38
Hampshire—5.							
Upton	May 12	June 2	22	May 3	June 11	40	·38
Berkshire—5.							
Newport Pagnell (The Croft)	May 10	May 31	22	May 7	June 18	43	·27
Buckinghamshire—5.							
Eye (Northolm)	May 7	May 23	17	May 1	June 19	50	·47
Northamptonshire—4.				Sept. 23	Oct. 23	31	·30
Cambridge (Cherryhinton).	May 3	May 24	22	May 1	June 18	49	·39
Cambridgeshire—2.				Sept. 24	Oct. 27	34	·31
Bradwell-on-Sea (Bradwell	May 3	May 17	15	May 1	June 19	50	·44
Essex—3. Hall)							
Woodbridge Abbey	Sept. 4	Sept. 18	15	May 3	June 18	47	·46
Suffolk—3.							
Yarmouth (Burgh Hall) ..	Aug. 1	Aug. 15	15	None.			
Suffolk—4.							
Great Massingham	None.			May 2	June 11	41	·38
Norfolk—1.							
Salisbury Plain (Shrewton)	May 16	June 2	18	May 7	June 19	44	·26
Wiltshire—3.				July 20	Aug. 18	30	·29
				Sept. 23	Oct. 22	30	·25
Dorchester (Wollaston Ho).	May 19	June 18	31	May 12	June 19	39	·26
Dorsetshire—3.							

Droughts in 1919—(con.)

Station and County.	ABSOLUTE DROUGHTS.			PARTIAL DROUGHTS.			
	Began..	Ended.	Last- ed.	Began.	Ended.	Last- ed.	Rain.
ENGLAND & WALES —(con.).			Days.			Days.	in.
Ashburton (Druid House) ..	None.			May 15	June 19	36	.36
<i>South Devon</i> —4.				July 20	Aug. 17	29	.21
St. Austell (Trevarna)	May 22	June 10	20	None.			
<i>Cornwall</i> —2.							
Angersleigh (Leigh Court) ..	May 15	June 3	20	May 15	June 19	36	.26
<i>Somerset</i> —3							
Mickleton (Bank House) ..	None.			May 8	June 22	46	.45
<i>Gloucestershire</i> —4.							
Clifton (Harley Place)	None.			May 2	June 10	40	.40
<i>Gloucestershire</i> —5.							
Hereford (Holmer Hall) ...	None.			May 6	June 11	37	.36
<i>Herefordshire</i> —1.							
Worksop (Hodsock Priory)	None.			Sept. 23	Oct. 22	30	.28
<i>Nottinghamshire</i> —5.							
Settle Gas Works	None.			May 12	June 11	31	.30
<i>Yorkshire, W.R.</i> —2.							
Hull (Pearson Park)	None.			May 12	June 16	36	.33
<i>Yorkshire, E.R.</i> —3.							
Felixkirk (Mount St. John)	None.			May 12	June 18	38	.37
<i>Yorkshire, N.R.</i> —2.							
Aislaby (Park Hall)	May 18	June 2	16	May 12	June 22	42	.41
<i>Yorkshire, N.R.</i> —5.							
Sunderland (W.Hendon Ho.)	None.			May 12	June 12	32	.28
<i>Durham</i> —2.							
Glanton (Glanton Pyke) .	May 19	June 2	15	None.			
<i>Northumberland</i> —6.							
Treherbert (Tyn-y-waun) ..	May 17	June 3	18	None.			
<i>Glamorgan</i> —6.							
Birmingham W.W. (Tyr- mynydd)	None.			May 4	June 7	35	.35
<i>Radnor</i> —1.							
Newtown (Penarth Weir) ..	None.			May 2	June 2	32	.30
<i>Montgomery</i> —4.							
SCOTLAND.							
Whithorn (Cutroach)	Jan. 30	Feb. 14	16	None.			
<i>Wigtown</i> —4.							
Swinton House	None.			July 3	Aug. 7	36	.29
<i>Berwick</i> —3.							
Balerno (Cockburn Hill) ..	May 19	June 2	15	May 9	June 7	30	.30
<i>Midlothian</i> —5.							
Strathaven (E. Overton Ho.)	May 12	June 2	22	May 6	June 3	29	.21
<i>Lanark</i> —5.				July 2	July 30	29	.27
Stirling (Touch Res., No. 1)	May 18	June 2	16	None.			
<i>Stirling</i> —1.							
St. Andrews (Water Works)	May 18	June 1	15	None.			
<i>Fife</i> —3.							
Aberfeldy (Dall Avon)	None.			June 5	Aug. 12	49	.47
<i>Perth</i> —11.							

Droughts in 1919—(con.)

Station and County.	ABSOLUTE DROUGHTS.			PARTIAL DROUGHTS.			
	Began.	Ended.	Last- ed.	Began.	Ended.	Last- ed.	Rain.
SCOTLAND—(con.).			Days.			Days.	in.
Banchory (Invercannie) ... <i>Kincardine—3.</i>	None.			July 1	Aug. 11	42	·38
Balmoral Castle Gardens .. <i>Aberdeen—1.</i>	None.			July 1	Aug. 16	47	·41
Drumnadrochit..... <i>Inverness—9.</i>	May 13	June 2	21	May 3	June 2	31	·27
Dornoch (St. Gilberts)..... <i>Sutherland—2.</i>	None.			April 28 July 1	June 2 July 29	36 29	·34 ·26
Thurso (Buckies) <i>Caithness—3.</i>	None.			May 2	June 2	32	·26
IRELAND.							
Killarney (District Asylum) <i>Kerry—3.</i>	Oct. 24	Nov. 7	15	None.			
Valentia (Glanleam) <i>Kerry—6.</i>	Oct. 4 Oct. 23	Oct. 18 Nov. 8	15 17	None.			
Waterford (Brook Lodge).. <i>Waterford—3.</i>	Aug. 1	Aug. 16	16	July 19	Aug. 16	29	26
Killadysert (Paradise Hill) . <i>Clare—3.</i>	Oct. 23	Nov. 11	20	None.			
Gorey (Courtown House) .. <i>Wexford—4.</i>	Aug. 1	Aug. 16	16	None.			
Belturbet (Cloverhill) <i>Cavan—1.</i>	Oct. 24	Nov. 7	15	None.			
Seaforde..... <i>Down—2.</i>	July 20	Aug. 3	15	None.			

DRY SPELLS IN 1919.

Station and County.	Began.	Ended.	Last- ed.	Rain- fall.
ENGLAND AND WALES.			Days.	in.
St. Pancras (Camden Square) <i>London—2.</i>	May 10	June 3	25	·00
Tenterden (View Tower) <i>Kent—1.</i>	May 3 May 26	May 24 June 19	22 25	·07 ·03
Patcham <i>Sussex—3.</i>	May 12 Oct. 3	June 18 Oct. 23	38 21	·05 ·03
Lymington (The Salterns) <i>Hampshire—4.</i>	May 12	June 3	23	·04
Petersfield (Ditcham Park) <i>Hampshire—5.</i>	May 12	June 18	38	·06
Upton..... <i>Berkshire—5.</i>	May 7 July 23	June 3 Aug. 17	28 26	·03 ·02
Newport Pagnell (The Croft) <i>Buckinghamshire—5.</i>	May 7	June 3	28	·04
Eye (Northolm) <i>Northamptonshire—4.</i>	May 2 Oct. 2	May 23 Oct. 22	22 21	·05 ·07

Dry Spells in 1919—(con.).

Station and County.	Began.	Ended.	Last.	Rain- fall.
ENGLAND & WALES—(con.).				
Cambridge (Cherryhinton)	May 3	May 24	22	·00
Cambridgeshire—2.	July 24	Aug. 17	25	·12
	Oct. 13	Oct. 27	15	·05
Bradwell-on-Sea (Bradwell Hall)	May 3	May 24	22	·02
Essex—3.				
Woodbridge Abbey	May 26	June 18	24	·02
Suffolk—3.	Aug. 31	Sept. 18	19	·02
Yarmouth (Burgh Hall)	Aug. 1	Aug. 15	15	·00
Suffolk—4.	Aug. 30	Sept. 17	19	·04
Great Massingham	May 26	June 11	17	·03
Norfolk—1.	Aug. 1	Aug. 17	17	·02
Salisbury Plain (Shrewton)	May 12	June 3	23	·03
Wiltshire—3.				
Dorchester (Wollaston House)	May 19	June 18	31	·00
Dorsetshire—3.	July 28	Aug. 17	21	·04
Ashburton (Druid House)	May 17	June 11	26	·04
South Devon—4.				
Martinhoe Rectory	May 15	June 2	19	·03
North Devon—1.				
St. Austell (Trevarna)	May 22	June 10	20	·00
Cornwall—2.				
Angersleigh (Leigh Court)	May 15	June 3	20	·00
Somerset—3.	July 23	Aug. 15	24	·06
Mickleton (Bank House)	May 8	May 24	17	·01
Gloucestershire—4.				
Clifton (Harley Place)	May 12	June 3	23	·02
Gloucestershire—5.				
Shifnal (National School)	May 7	May 23	17	·03
Shropshire—4.				
Spilsby (Ashby Road)	Jan. 30	Feb. 14	16	·04
Lincolnshire—4.				
Northwich (Winnington)	May 7	May 23	17	·03
Cheshire—2.	Sept. 3	Sept. 17	15	·07
St. Michaels-on-Wyre Vicarage	Jan. 28	Feb. 13	17	·04
North Lancashire—5.	May 9	May 23	15	·01
Meltham (Harewood Lodge)	Jan. 30	Feb. 14	16	·05
Yorkshire, W. Riding—8.				
Hull (Pearson Park)	July 23	Aug. 16	25	·13
Yorkshire, E. Riding—3.				
Felixkirk (Mount St. John)	May 12	June 2	22	·06
Yorkshire, N. Riding—2.				
Aislaby (Park Hall)	May 18	June 3	17	·03
Yorkshire, N. Riding—5.	Sept. 33	Oct. 7	15	·05
Sunderland (West Hendon House)	May 18	June 2	16	·05
Durham—2.				
Glanton (Glanton Pyke Gardens)	May 19	June 2	15	·00
Northumberland—6.				
Treherbert (Tyn-y-waun)	May 15	June 3	20	·02
Glamorgan—6.				
Newtown (Penarth Weir)	May 4	May 24	21	·10
Montgomery—4.				
Denbigh (Garn)	Sept. 2	Sept. 17	16	·07
Denbigh—2.				

Dry Spells in 1919—(con.).

Station and County.	Began.	Ended.	Lasted.	Rain- fall.
			Days.	in.
SCOTLAND.				
Whithorn (Cutroach)	Jan. 30	Feb. 14	16	·00
Wigtown—4.				
Dumfries (Jardington)	May 12	June 2	22	·05
Kircudbright—5.	July 2	July 17	16	·03
	Oct. 6	Oct. 21	16	·11
Canonbie (Irvine House)	Jan. 27	Feb. 14	19	·05
Dumfries—5.	July 1	July 17	17	·08
Swinton House	May 18	June 2	16	·03
Berwick—3.	July 3	July 17	15	·05
Balerno (Cockburn Hill)	May 9	June 2	25	·03
Midlothian—5.				
Strathaven (East Overton House)	Jan. 27	Feb. 14	19	·08
Lanark—5.	May 12	June 3	23	·03
Girvan (Pinmore)	Jan. 28	Feb. 14	18	·04
Ayr—8.				
Stirling (Touch Res., No.1)	May 18	June 2	16	·00
Stirling—1.				
Kilmelfort (Arduaine)	Oct. 26	Nov. 10	16	·04
Argyll—7.				
St. Andrews (Water Works)	Jan. 30	Feb. 14	16	·05
Fife—3.	May 18	June 1	15	·00
	July 20	Aug. 5	17	·02
Aberfeldy (Dall Avon)	July 3	July 17	15	·04
Perth—11.				
Balmoral Castle Gardens	Jan. 30	Feb. 13	15	·05
Aberdeen—1.	July 22	Aug. 11	21	·04
New Deer Schoolhouse	July 3	July 18	16	·09
Aberdeen—4.				
Cluny Castle	May 12	June 2	22	·04
Inverness—3.				
Drumnadrochit	Jan. 29	Feb. 12	15	·05
Inverness—9.	May 12	June 2	22	·01
Loch Nevis (Inverie)	Oct. 27	Nov. 14	19	·09
Inverness—12.				
Dornoch (St. Gilberts)	May 12	May 31	20	·05
Sutherland—2.	July 2	July 17	16	·02
Thurso (Buckies)	May 13	June 2	21	·06
Caithness—3.				
IRELAND.				
Castletownshend (Seafield)	July 22	Aug. 14	24	·09
Cork—6.	Oct. 24	Nov. 8	16	·00
Mallow (Summer Hill)	July 23	Aug. 14	23	·03
Cork—9.	Oct. 24	Nov. 7	15	·01
Killarney (District Asylum)	Oct. 23	Nov. 7	16	·03
Kerry—3.				
Valentia (Glanleam)	Oct. 4	Oct. 18	15	·00
Kerry—6.	Oct. 23	Nov. 8	17	·00

Dry Spells in 1919—(con.).

Station and County.	Began.	Ended.	Lasted.	Rain-fall.
IRELAND—(con.).			Days.	In.
Waterford (Brook Lodge)	Aug. 1	Aug. 16	16	·00
<i>Waterford</i> —3.	Sept. 4	Sept. 19	16	·04
Nenagh (Castle Lough)	Oct. 23	Nov. 7	16	·06
<i>Tipperary</i> —1.				
Cashel (Ballinamona)	Aug. 2	Aug. 16	15	·06
<i>Tipperary</i> —3.	Oct. 24	Nov. 10	18	·08
Killadysert (Paradise Hill)	Oct. 4	Oct. 18	15	·01
<i>Clare</i> —3.	Oct. 23	Nov. 11	20	·00
Gorey (Courtown House)	May 25	June 9	16	·02
<i>Wexford</i> —4.	July 23	Aug. 16	25	·01
Ballynahinch Castle	Oct. 22	Nov. 6	16	·04
<i>Galway</i> —3.				
Belturbet (Cloverhill)	June 26	July 12	17	·12
<i>Cavan</i> —1.	Oct. 24	Nov. 8	16	·03
Seaforde	July 1	July 17	17	·06
<i>Down</i> —2.	July 19	Aug. 3	16	·03
Omagh (Edenfel)	Oct. 27	Nov. 10	15	·11
<i>Tyrone</i> —3.				

RAIN SPELLS IN 1919.

A **Rain Spell** is a period of *more than* fourteen days (*i.e.*, fifteen or more), every one of which is a Rain Day.

A **Wet Spell** is a period of fifteen or more days, every one of which is a Wet Day. [A "Wet Day" for the purpose of this definition is a day ending at 9 h. (G.M.T.) on which 1 mm., or ·04 in., or more, of rain is recorded.]

The number of Rain Spells, under the first of the two definitions, recorded at the hundred selected stations during the year 1919 was 143, or 26 fewer than the average of the seventeen years for which such data have been extracted. The number of stations at which no Rain Spells were recorded in 1919 was 29, or exactly the average value. The number recording 3 or more Rain Spells was below the average by 9, or 33 per cent, suggesting that a somewhat smaller area of the British Isles than usual was affected by frequent recurrences of protracted wet weather. The districts where Rain Spells did not occur lay chiefly in the English Midlands, and included also parts of the east coasts of England, Scotland and Ireland, and small areas in North Wales and Central Scotland. Over a practically continuous coastal strip extending from Sutherlandshire to Kerry more than 60 days during the year were involved in Rain Spells, and this was also the case in the extreme south-west of England and Wales. In Connemara the total number of days involved exceeded 100.

Comparative Table of Rain Spells at 100 Stations.

Year.	No. of Rain Spells.	DURATION OF SPELLS.				STATIONS WITH			
		Mean.		Greatest.		None.	1 or 2.	3 or 4.	5 or more.
		Days.	Mean rain per day. in.	Days.	Mean rain per day. in.				
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
1913	128	21	·29	64	·19	44	34	19	3
1914	150	22	·29	70	·28	30	44	25	1
1915	132	20	·27	38	·25	34	47	16	3
1916	231	20	·29	62	·28	19	41	28	12
1917	152	22	·28	52	·19	30	48	17	5
1918	186	23	·30	56	·21	21	51	19	9
1919	143	20	·26	46	·31	29	53	14	4
Average	169	21	·27	51	·27	29	44	19	8

NOTE.—The values previous to 1910 have been increased to the equivalent of 100 Stations for comparison. In the columns headed "Greatest" the figures refer to the selected Stations only.

The number of "Wet Spells" under the new definition was, as might be expected, considerably smaller than the number of Rain Spells. A summary extracted on the same lines as the above is as follows :—

Wet Spells in 1919.

Year.	Number of Wet Spells.	DURATION OF SPELLS.				STATIONS WITH			
		Mean.		Greatest.					
		Days.	Mean rain per day.	Days.	Mean rain per day.	None.	1 or 2.	3 or 4.	5 or more
1919	49	17	· 29	33	· 34	66	29	5	0

It will be observed that the number of stations at which no Wet Spells were observed is sixty-six out of one hundred, compared with thirty-five out of one hundred at which no Dry Spell was recorded, suggesting that the two definitions are practically complementary. The districts in which Wet Spells occurred lay almost entirely along the rainy western coasts, extending from Co. Cork to Sutherlandshire.

The south-west of England and Wales was also included. In parts of the west of Ireland and of the West Highlands, more than 50 days during the year were involved in Wet Spells, the maximum being reached at Ballynahinch in Co. Galway with as many as 82 days.

The conspicuously rainy periods of 1919 were principally at the beginning and end of the year. A widespread Rain Spell which commenced in December, 1918, continued unbroken at many stations until about the middle of January, but the date of termination was rather variable and in the west generally an independent Rain Spell occupied the greater part of January. The total duration of the Rain Spell was longest in the north-west of Ireland, there being 68 consecutive rain days at Milford, Co. Donegal, from 24th November, 1918, to 30th January, inclusive. At Glanleam, Co. Kerry, during the 56 days of this Rain Spell, 17·74 in. of rain fell. This rainy period reached the intensity of a Wet Spell only along the western fringe of Ireland, in the Devon and Cornwall peninsula, and in the Isle of Man. The greatest duration of the Wet Spell was 33 days at Ballynahinch.

A Rain Spell occurred at a few westerly stations in April, including a sharply defined Wet Spell in the West Highlands, from 6th to 19th April. The mean rainfall per day was extremely high reaching ·75 in. at Achfary, Sutherlandshire, where 11·27 in. fell in the 15 days of the Wet Spell.

The somewhat similarly distributed Rain Spell of September to October affected a west coast strip from Cape Wrath to Galway Bay, and reached the intensity of a Wet Spell in Inverness-shire, Islay, and parts of north-western Ireland. The duration was in no case great, and the mean rainfall per day was distinctly lower than in the spring period.

Coincident with the Dry Spell of October to November in the west of Scotland and Ireland referred to on p. 30, a Rain Spell affected a remarkably well-defined strip of the east coast of Great Britain stretching from the Moray Firth to North Yorkshire. At three stations in this strip a Wet Spell was recorded. The period in question was one of unusual barometric conditions, high pressure persisting to the north of the British Isles and being associated with strong north-easterly winds.

The second great winter Rain Spell of the year occurred in December and affected nearly the whole of Ireland, the western half of Scotland, the south-west of England and Wales, and parts of the north of England. The duration was greatest in Ireland, in many districts of which it occupied the whole month. At Ower, Co. Galway, it lasted for 46 days, from 15th November to 30th December, and at Morwenstowe, Cornwall, for the same number of days, from 16th November to 31st December. In Scotland the period was shorter, being in most districts only from 9th to 24th December. The mean rainfall per day was not unduly great for a winter Rain Spell, averaging ·28 in. for the

whole area involved, but it rose to the high figure of $\cdot 72$ in. at Dungeon Ghyll, in the Lake District, and $\cdot 61$ in. at Treherbert. In south Wales and over the greater part of the rainy district between Inverness-shire and Co. Cork a Wet Spell was recorded: the dates of commencement and termination were rather variable, but the duration exceeded 16 days only over small areas, though it reached the considerable length of 33 days at Ballynahinch, where $9\cdot 61$ in. of rain fell from 29th November to 31st December, inclusive. At Treherbert the total rainfall during the fifteen days of this Wet Spell was $10\cdot 19$ in. or a mean of $\cdot 68$ in. per day.

There were only fourteen instances of Rain Spells in 1919, during which the mean rainfall per day reached or exceeded $\cdot 40$ in., and thirteen instances of Wet Spells with a similarly high mean fall: none of the Rain Spell values reached a notable figure in comparison with previous years.

Rain Spells in 1919.

Station and County.	Began.	Ended.	Lasted.	Total Rain.	Rain per Day.		
					Max.	Min.	Mean.
ENGLAND & WALES.			Days.	In.	In.	In.	In.
Tenterden (View Tower) ... Kent—1.	Dec. 17 (1918)	Jan. 12	27	$4\cdot 40$	$\cdot 84$	$\cdot 01$	$\cdot 16$
Patcham	Jan. 1	Jan. 16	16	$4\cdot 38$	$\cdot 79$	$\cdot 01$	$\cdot 27$
Sussex—3.	Dec. 10	Dec. 31	22	$4\cdot 65$	$1\cdot 05$	$\cdot 01$	$\cdot 21$
Lymington (The Salterns).. Hampshire—4.	Jan. 1	Jan. 17	17	$3\cdot 98$	$\cdot 61$	$\cdot 01$	$\cdot 23$
Petersfield (Ditcham Park) .. Hampshire—5.	Dec. 13	Dec. 31	19	$4\cdot 68$	$1\cdot 39$	$\cdot 01$	$\cdot 25$
Newport Pagnell (The Croft) Buckinghamshire—5.	Dec. 26 (1918)	Jan. 9	15	$2\cdot 09$	$\cdot 76$	$\cdot 01$	$\cdot 14$
Cambridge (Cherryhinton) . Cambridgeshire—2.	Feb. 26	Mar. 12	15	$2\cdot 14$	$\cdot 40$	$\cdot 01$	$\cdot 14$
Salisbury Plain (Shrewton)· Wiltshire—3.	Jan. 1	Jan. 16	16	$3\cdot 97$	$1\cdot 23$	$\cdot 01$	$\cdot 25$
Dorchester (Wollaston House) Dorsetshire—3.	Dec. 17	Dec. 31	15	$2\cdot 29$	$\cdot 47$	$\cdot 01$	$\cdot 15$
Ashburton (Druid House).. South Devon—4.	Jan. 1	Jan. 21	21	$6\cdot 90$	$1\cdot 21$	$\cdot 02$	$\cdot 33$
Martinhoe Rectory	Dec. 17	Dec. 31	15	$3\cdot 35$	$\cdot 83$	$\cdot 01$	$\cdot 22$
North Devon—1.	Jan. 1	Jan. 21	21	$8\cdot 41$	$1\cdot 14$	$\cdot 03$	$\cdot 40$
	Dec. 17	Dec. 31	15	$4\cdot 88$	$1\cdot 37$	$\cdot 01$	$\cdot 33$
	Dec. 21	Jan. 16	27	$6\cdot 62$	$\cdot 82$	$\cdot 02$	$\cdot 25$
	(1918)						
	Dec. 13	Dec. 31	19	$5\cdot 63$	$\cdot 96$	$\cdot 01$	$\cdot 30$
Morwenstowe Vicarage Cornwall—1.	Dec. 21 (1918)	Jan. 21	32	$6\cdot 69$	$\cdot 50$	$\cdot 02$	$\cdot 21$
	Aug. 17	Sept. 2	17	$2\cdot 76$	$\cdot 46$	$\cdot 01$	$\cdot 16$
	Nov. 16	Dec. 31	46	$9\cdot 33$	$\cdot 90$	$\cdot 01$	$\cdot 20$

Rain Spells in 1919—(con.).

Station and County.	Began	Ended.	Lasted.	Total Rain.	Rain per Day.		
					Max.	Min.	Mean.
ENGLAND & WALES—(con.)			Days.	In.	In.	In.	In.
St. Austell (Trevarna) Cornwall—2.	Nov. 23 (1918)	Jan. 21	60	15·60	·94	·01	·26
	Feb. 25	Mar. 14	18	4·01	·63	·02	·22
	Dec. 13	Dec. 31	19	5·30	·76	·02	·28
Angersleigh (Leigh Court) .. Somerset—3.	Jan. 1	Jan. 16	16	5·38	1·18	·01	·34
Clifton (Harley Place) Gloucestershire—5.	Dec. 25 (1918)	Jan. 16	23	4·33	·73	·01	·19
Settle (Gas Works) Yorkshire, W. Riding—2.	Dec. 26 (1918)	Jan. 10	16	5·91	1·44	·02	·37
	Apr. 23	May 8	16	2·15	·65	·01	·13
	June 19	July 4	16	2·10	·40	·01	·13
Meltham (Harewood Lodge) . Yorkshire, W. Riding—8.	Nov. 12	Nov. 27	16	2·94	1·04	·01	·18
	Dec. 10	Dec. 31	22	5·86	·83	·01	·27
Hull (Pearson Park) Yorkshire, E. Riding—3.	Nov 29	Dec. 15	17	1·60	·39	·01	·09
Felixkirk (Mount St. John) .. Yorkshire, N. Riding—2.	Dec. 25 (1918)	Jan. 9	16	3·08	·55	·02	·19
	Oct. 23	Nov. 6	15	4·83	1·41	·01	·32
Aislaby (Park Hall) Yorkshire, N. Riding—5.	Oct. 23	Nov. 17	26	6·05	·87	·01	·23
Sunderland (West Hendon House) Durham—2.	Oct. 23	Nov. 19	28	7·73	1·52	·01	·28
Glanton (Glanton Pyke Gardens) Northumberland—6.	Oct. 22	Nov. 12	22	6·77	1·18	·02	·31
Appleby (Castle Bank) Westmorland—1.	Dec. 10	Dec. 24	15	3·13	·86	·01	·21
Dungeon Ghyll Westmorland—2.	Dec. 26 (1918)	Jan. 11	17	13·40	3·19	·04	·79
	Dec. 9	Dec. 24	16	11·49	2·70	·03	·72
Treherbert (Tyn-y-waun) ... Glamorgan—6.	Dec. 26 (1918)	Jan. 16	22	12·29	1·53	·03	·56
	Dec. 9	Dec. 31	23	13·98	1·85	·01	·61
Carmarthen (The Friary) .. Carmarthen—2.	Dec. 11	Dec. 31	21	5·41	1·11	·01	·26
Fishguard (Dwrbach) Pembroke—4.	Jan. 5	Jan. 22	18	4·98	·81	·01	·28
	Aug. 23	Sept. 8	17	3·63	·99	·02	·21
	Nov. 29	Dec. 31	33	9·17	1·35	·01	·28
Birmingham W.W. (Tyrmynydd) Radnor—1.	Dec. 9	Dec. 26	18	7·00	1·59	·01	·39
Newtown (Penarth Weir) ... Montgomery—4.	Dec. 8 (1918)	Jan. 3	27	4·53	·67	·01	·17
	Jan. 5	Jan. 21	17	3·17	·85	·02	·19
Dolgelly (Bryntirion) Merioneth—4.	Dec. 8 (1918)	Jan. 3	27	8·56	·87	·01	·32
Llanerchymedd (Llwydiarth Esgob) Anglesey	Dec. 26 (1918)	Jan. 15	21	4·70	·59	·01	·22
	Dec. 10	Dec. 26	17	3·14	·87	·01	·18

Rain Spells^a in 1919—(con.).

Station and County.	Began.	Ended.	Lasted.	Total Rain.	Rain per Day.		
					Max.	Min.	Mean.
ISLE OF MAN.			Days.	In.	In.	In.	In.
Douglas (Clypse Reservoir) ..	Dec. 26 (1918)	Jan. 11	17	4·31	·65	·04	·25
	Apr. 23	May 7	15	2·61	·62	·01	·17
SCOTLAND.							
Whithorn (Cutroach)	Jan. 13	Jan. 27	15	2·08	·45	·03	·14
Wigtown—4.							
Swinton House	Oct. 26	Nov. 20	26	4·03	·44	·01	·16
Berwick—3.							
Balerno (Cockburn Hill) ..	Oct. 28	Nov. 12	16	3·22	·73	·06	·20
Midlothian—5.							
Strathaven (East Overton House)	Dec. 10	Dec. 24	15	3·06	·41	·03	·20
Lanark—5.							
Girvan (Pinmore)	Jan. 6	Jan. 27	22	3·93	·78	·01	·18
Ayr—8.							
Great Cumbræ (Millport) ..	Nov. 22 (1918)	Jan. 4	44	8·61	1·06	·01	·20
Bute—2.							
	Jan. 6	Jan. 27	22	3·52	·60	·01	·16
	Apr. 2	Apr. 18	17	1·99	·63	·01	·12
	June 6	June 23	18	3·46	1·14	·01	·19
	Dec. 8	Dec. 24	17	4·48	1·15	·03	·26
Kilmelfort (Arduaine)	Dec; 9	Dec. 24	16	5·78	1·20	·08	·36
Argyll—7.							
Campbeltown (South Park) ..	Jan. 5	Jan. 28	24	7·42	2·62	·01	·31
Argyll—10.	Sep. 18	Oct. 6	19	2·50	·62	·01	·13
	Dec. 9	Dec. 24	16	6·80	1·68	·04	·42
Islay (Eallabus)	Nov. 30 (1918)	Jan. 2	34	9·14	1·08	·01	·27
Argyll—14.							
	Jan. 11	Jan. 27	17	4·12	1·04	·01	·24
	Aug. 24	Sep. 11	19	2·84	·44	·01	·15
	Sep. 17	Oct. 5	19	4·04	·84	·01	·21
	Dec. 9	Dec. 24	16	4·02	·79	·01	·25
Mull (Ulva).....	Jan. 6	Jan. 20	15	3·11	·99	·02	·21
Argyll—14.	Mar. 25	Apr. 19	26	4·77	·90	·01	·18
	July 30	Aug. 13	15	3·99	1·00	·02	·27
	Sep. 16	Oct. 5	20	6·41	·85	·02	·32
	Dec. 9	Dec. 24	16	5·76	1·23	·06	·36
St. Andrew's (Water Works) .	Oct. 26	Nov. 11	17	2·61	·60	·03	·15
Fife—3.							
Banchory (Invercannie)	Oct. 26	Nov. 12	18	5·06	·92	·03	·28
Kincardine—3.							
Balmoral Castle Gardens ..	Oct. 22	Nov. 12	22	5·15	·80	·02	·23
Aberdeen—1.							
New Deer (Schoolhouse) ...	Sep. 17	Oct. 2	16	4·85	1·40	·01	·30
Aberdeen—4.	Oct. 22	Nov. 12	22	4·67	·53	·01	·21
Dufftown (Fife Street)	Oct. 22	Nov. 12	22	4·35	·44	·05	·20
Banff—3.							

Rain Spells in 1919—(con).

Station and County.	Began.	Ended.	Lasted.	Total Rain.	Rain per Day.		
					Max.	Min.	Mean.
SCOTLAND—(con.).			Days.	In.	In.	In.	In.
Cluny Castle	Dec. 9	Dec. 24	16	2.75	.68	.01	.17
<i>Inverness—3.</i>							
Loch Nevis (Inverie Gardens)	Apr. 4	Apr. 19	16	8.80	2.60	.09	.55
<i>Inverness—12.</i>	Aug. 25	Sep. 11	18	4.32	.82	.01	.24
	Sep. 16	Oct. 5	20	10.76	1.22	.06	.54
	Dec. 9	Dec. 31	23	7.90	.82	.05	.34
Glenleven (Kinlochmore Gardens)	Apr. 2	Apr. 19	18	7.71	2.08	.03	.43
<i>Inverness—17.</i>	June 14	June 30	17	7.34	1.47	.01	.43
	Sep. 16	Oct. 5	20	7.74	2.79	.02	.39
	Oct. 9	Oct. 23	15	3.62	.98	.01	.24
	Dec. 9	Dec. 24	16	5.71	.87	.03	.36
Skye (Portree)	Apr. 2	Apr. 18	17	3.80	.55	.04	.22
<i>Inverness—18.</i>	Aug. 24	Sep. 11	19	3.73	.73	.01	.20
	Sep. 16	Oct. 1	16	4.51	.83	.05	.28
	Nov. 30	Dec. 24	25	6.16	.78	.02	.25
Achnasheen (Ledgowan) ...	Apr. 4	Apr. 19	16	7.22	1.53	.05	.45
<i>Ross—4.</i>	June 14	July 1	18	6.88	1.08	.02	.38
	Aug. 11	Aug. 31	21	6.67	1.25	.01	.32
	Sep. 16	Oct. 5	20	8.70	1.30	.02	.44
	Dec. 9	Dec. 23	15	3.89	.70	.02	.26
Loch More (Achfary)	Mar. 26	Apr. 19	25	15.35	3.06	.02	.61
<i>Sutherland—5.</i>	June 14	July 1	18	6.06	1.12	.01	.34
	Sep. 16	Oct. 5	20	9.24	1.30	.07	.46
	Dec. 9	Dec. 31	23	5.08	.64	.02	.22
Thurso (Buckies)	Dec. 21	Jan. 9	20	4.57	.64	.02	.23
<i>Caithness—3.</i>	(1918)						
IRELAND.							
Castletownshend (Seafeld) ..	Nov. 22	Jan. 2	42	11.45	.94	.01	.27
<i>Cork—6.</i>	(1918)						
	Nov. 30	Dec. 16	17	4.58	.68	.04	.27
Killarney (District Asylum) .	Nov. 22	Jan. 3	43	10.65	.95	.01	.25
<i>Kerry—3.</i>	(1918)						
	Jan. 6	Jan. 28	23	5.25	.62	.02	.23
	Mar. 26	Apr. 18	24	3.20	.82	.01	.13
	Nov. 29	Dec. 14	16	4.40	.75	.04	.28
Valentia (Glanleam)	Nov. 22	Jan. 16	56	17.74	1.58	.02	.32
<i>Kerry—6.</i>	(1918)						
Waterford (Brook Lodge) ..	Nov. 30	Dec. 14	15	4.16	1.14	.01	.28
<i>Waterford—3.</i>							
Nenagh (Castle Lough)	Aug. 22	Sep. 6	16	3.08	.56	.01	.19
<i>Tipperary—1.</i>	Dec. 12	Dec. 30	19	4.18	.45	.04	.22
Cashel (Ballinamona)	Aug. 22	Sep. 6	16	2.08	.39	.02	.13
<i>Tipperary—3.</i>	Dec. 12	Dec. 31	20	2.99	.37	.01	.15
Killadysert (Paradise Hill) ..	Nov. 30	Jan. 2	34	8.52	1.03	.01	.25
<i>Clare—3.</i>	(1918)						
	Jan. 5	Jan. 27	23	4.56	.48	.01	.20
	Nov. 29	Dec. 31	33	7.68	.66	.01	.23

Rain Spells in 1919—(con.).

Station and County.	Began.	Ended.	Lasted.	Total Rain.	Rain per day.		
					Max.	Min.	Mean.
IRELAND—(con.).			Days.	In.	In.	In.	In.
Abbey Leix (Blandsfort)	Nov. 30	Dec. 14	15	3.65	1.11	.01	.24
<i>Queens County—2.</i>	Dec. 16	Dec. 30	15	2.63	.45	.01	.18
Kells (Headfort)	Jan. 11	Jan. 27	17	1.74	.30	.01	.10
<i>Meath—4.</i>	Nov. 29	Dec. 14	16	3.47	.64	.01	.22
Moate (Coolatore)	Mar. 15	Apr. 3	20	1.31	.39	.01	.07
<i>Westmeath—1.</i>	Nov. 30	Dec. 30	31	6.26	1.15	.01	.20
Ballynahinch Castle	Dec. 15	Jan. 16	33	8.87	1.36	.04	.27
<i>Galway—3.</i>	(1918)						
	Apr. 5	Apr. 19	15	2.18	.39	.02	.15
	Aug. 17	Sep. 9	24	7.09	1.53	.01	.30
	Sep. 17	Oct. 7	21	4.78	1.29	.01	.23
	Nov. 29	Dec. 31	33	9.61	1.26	.06	.29
Headford (Ower House) ...	Nov. 15	Dec. 30	46	14.14	1.22	.02	.31
<i>Galway—3.</i>							
Crossmolina (Enniscoe)	Dec. 15	Jan. 27	44	12.35	.98	.02	.28
<i>Mayo—2.</i>	(1918)						
	Apr. 22	May 6	15	2.66	.55	.03	.18
	Sep. 17	Oct. 3	17	3.43	.61	.03	.20
	Nov. 29	Dec. 31	33	10.64	1.21	.02	.32
Collooney (Markree Obsy.) .	Dec. 15	Jan. 3	20	5.27	.64	.03	.26
<i>Sligo—2.</i>	(1918)						
	Jan. 6	Jan. 22	17	3.71	.72	.01	.22
	Sep. 17	Oct. 3	17	3.19	.55	.01	.19
	Nov. 30	Dec. 31	32	8.03	.93	.02	.25
Belturbet (Cloverhill)	Nov. 30	Dec. 14	15	3.41	.42	.04	.23
<i>Cavan—1.</i>							
Seaforde.....	Dec. 26	Jan. 9	15	4.70	1.06	.02	.31
<i>Down—2.</i>	(1918)						
Ballymena (Harryville)	Dec. 16	Jan. 2	18	4.07	.71	.03	.23
<i>Antrim—5.</i>	(1918)						
	Jan. 11	Jan. 27	17	3.06	.70	.02	.18
	Dec. 9	Dec. 31	23	5.31	.98	.02	.23
Omagh (Edenfel)	Sep. 17	Oct. 3	17	3.08	.45	.03	.18
<i>Tyrone—3.</i>	Nov. 30	Dec. 31	32	9.38	1.46	.02	.29
Milford (The Manse).....	Nov. 24	Jan. 30	68	10.10	.97	.01	.15
<i>Donegal—3.</i>	(1918)						
	Sep. 17	Oct. 3	17	3.05	.49	.02	.18
	Nov. 30	Dec. 14	15	3.01	.39	.02	.20
	Dec. 16	Dec. 31	16	5.37	1.16	.02	.34
Killybegs (Rockmount)	Dec. 11	Jan. 1	22	7.70	1.40	.01	.35
<i>Donegal—5.</i>	(1918)						
	Sep. 17	Oct. 3	17	5.82	.85	.02	.34
	Nov. 30	Dec. 31	32	11.02	1.60	.02	.34

Wet Spells in 1919.

Station and County.	Began.	Ended.	Lastest.	Total Rain.	Mean Rain, per day.
ENGLAND & WALES.			Days.	In.	In.
Ashburton (Druid House)....	Jan. 1	Jan. 17	17	6·85	·40
<i>South Devon</i> —4.					
Morwenstow Vicarage	Dec. 28	Jan. 16	20	4·34	·22
<i>Cornwall</i> —1.	(1918)				
St. Austell (Trevarna)	Jan. 1	Jan. 21	21	6·24	·30
<i>Cornwall</i> —2.					
Aislaby (Park Hall)	Oct. 23	Nov. 6	15	5·09	·34
<i>Yorkshire, N. Riding</i> —5.					
Dungeon Ghyll	Dec. 26	Jan. 11	17	13·40	·79
<i>Westmorland</i> —2.	(1918)				
Treherbert (Tyn-y-waun)	Dec. 17	Dec. 31	15	10·19	·68
<i>Glamorgan</i> —6.					
Carmarthen (The Friary)	Dec. 11	Dec. 26	16	4·24	·26
<i>Carmarthen</i> —2.					
Fishguard (Dwrbach)	Nov. 29	Dec. 22	24	6·83	·28
<i>Pembroke</i> —4.					
ISLE OF MAN.					
Douglas (Clypse Reservoir) ...	Dec. 26	Jan. 11	17	4·31	·25
	(1918)				
SCOTLAND.					
Balerno (Cockburn Hill)	Oct. 28	Nov. 12	16	3·22	·20
<i>Midlothian</i> —5.					
Great Cumbrae (Millport)	Dec. 9	Dec. 24	16	4·45	·28
<i>Bute</i> —2.					
Kilmelfort (Arduaine)	Dec. 9	Dec. 24	16	5·78	·36
<i>Argyll</i> —7.					
Campbeltown (South Park) ..	Dec. 9	Dec. 24	16	6·80	·42
<i>Argyll</i> —10.					
Islay (Eallabus)	Sep. 17	Oct. 3	17	3·97	·23
<i>Argyll</i> —14.					
Mull (Ulva)	Dec. 9	Dec. 24	16	5·76	·36
<i>Argyll</i> —14.					
Dufftown (Fife Street)	Oct. 22	Nov. 12	22	4·35	·20
<i>Banff</i> —3.					
Loch Nevis (Inverie Gardens)	Apr. 4	Apr. 19	16	8·80	·55
<i>Inverness</i> —12.	Sep. 16	Oct. 5	20	10·76	·54
	Dec. 9	Dec. 31	23	7·90	·34
Glenleven (Kinlochmore Gdns)	Apr. 4	Apr. 19	16	7·60	·48
<i>Inverness</i> —17.	Sep. 16	Oct. 1	16	7·14	·45
Skye (Portree)	Apr. 2	Apr. 18	17	3·80	·22
<i>Inverness</i> —18.	Sep. 16	Oct. 1	16	4·51	·28
Achnasheen (Ledgowan)	Apr. 4	Apr. 19	16	7·22	·45
<i>Ross</i> —4.	Aug. 16	Aug. 31	16	6·25	·39
	Sep. 16	Oct. 3	18	8·29	·46
Loch More (Achfary)	Apr. 4	Apr. 18	15	11·29	·75
<i>Sutherland</i> —5.	Sep. 16	Oct. 5	20	9·24	·46

Wet Spells in 1919—(con.).

Station and County.	Began.	Ended.	Lasted.	Total Rain.	Mean Rain, per day.
IRELAND.			Days.	In.	In.
Castletownshend (Seafeld) ... <i>Cork</i> —6.	Nov. 30	Dec. 16	17	4·58	·27
Killarney (District Asylum) .. <i>Kerry</i> —3.	<i>Dec. 14</i> (1918)	<i>Jan. 3</i>	21	6·50	·31
Valentia (Glanleam)	Nov. 29	Dec. 14	16	4·40	·28
<i>Kerry</i> —6.	Jan. 2	Jan. 16	15	5·82	·39
Nenagh (Castle Lough)	Dec. 12	Dec. 30	19	4·18	·22
<i>Tipperary</i> —1.					
Killadysert (Paradise Hill) ..	Dec. 16	Dec. 30	15	4·18	·28
<i>Clare</i> —3.					
Ballynahinch Castle	Dec. 15	Jan. 16	33	8·87	·27
<i>Galway</i> —3.	(1918)				
	Aug. 23	Sep. 7	16	6·15	·38
Headford (Ower House)	Nov. 29	Dec. 31	33	9·61	·29
<i>Galway</i> —3.	Nov. 30	Dec. 15	16	5·27	·33
Crossmolina (Enniscoe)	<i>Dec. 15</i> (1918)	<i>Jan. 6</i>	23	6·84	·30
<i>Mayo</i> —2.	Sep. 17	Oct. 2	16	3·40	·21
	Nov. 29	Dec. 14	16	5·26	·33
Collooney (Markree Obsy.)	Jan. 6	Jan. 20	15	3·64	·24
<i>Sligo</i> —2.	Sep. 17	Oct. 2	16	3·18	·20
	Nov. 30	Dec. 14	15	3·78	·25
	Dec. 16	Dec. 31	16	4·23	·26
Belturbet (Cloverhill)	Nov. 30	Dec. 14	15	3·41	·23
<i>Cavan</i> —1.					
Ballymena (Harryville)	Dec. 16	Dec. 31	16	3·89	·24
<i>Antrim</i> —5.					
Omagh (Edenfel)	Sep. 17	Oct. 1	15	2·99	·20
<i>Tyrone</i> —3.					
Milford (The Manse)	<i>Dec. 15</i> (1918)	<i>Jan. 2</i>	19	5·12	·27
<i>Donegal</i> —3.					
Killybegs (Rockmount)	Sep. 17	Oct. 1	15	5·77	·38
<i>Donegal</i> —5.	Nov. 30	Dec. 14	15	4·65	·31
	Dec. 17	Dec. 31	15	6·32	·42

DURATION OF RAINFALL IN 1919.

Owing to the re-organisation of the Government meteorological services set up for special purposes during the war, several important records of Rainfall were interrupted in 1919, and we are unable on this account to include the duration values for Pulham St. Mary, Walney Island, Howden, Pembroke, Luce Bay, East Fortune, Inchinnan, and Longside, and have been obliged to omit portions of several others. There are, however, again a number of new records, including one in Ireland, and the total number available for publication, counting a few which are imperfect, is the same as last year, viz., sixty.

The record at Camden Square, London, again shows a large excess over the average of the 38 previous years, the total duration for the year being 610·6 hours or 37 per cent. above the average. The amount of the fall was only 5 per cent. above the average for the same period and the mean rate of fall per hour was thus as low as ·043 in., the smallest value in the whole period except ·042 in. in 1904. It appears probable that the average rate per hour for the 38 years, viz., ·056 in. is rather unduly high, the old Casella Standard gauge used until 1918 being certainly less sensitive to light rain than the Halliwell Recorder from the traces of which the duration values are now measured, but even making all possible allowances for this, the year 1919 must certainly be regarded as one of exceptionally small intensity of rainfall, a feature which accords well with the notable infrequency of thunderstorm rains, to which attention is drawn elsewhere in this volume.

A slight change has been introduced into the tables this year owing to the increasingly large proportion of the records dealt with in the section having the rainfall amounts measured in millimetres instead of inches. It has been thought better in these cases to print the values as received and to use the same unit for the values of "rate per hour." For the convenience of those who wish to compare the various records, it should be noted that 1·00 in. is equal to 25·40 mm., and 1·00 mm. is equal to ·039 in. For most practical purposes 1 in. is equivalent to 25 mm., and 1 mm. to ·04 in.

In some cases the duration amounts have been extracted by a method slightly different from others, all rain of an intensity less than 0·1 mm. per hour (about ·01 in. in three hours) being omitted. This probably makes little difference in the monthly totals in most cases, tending of course to make the duration slightly smaller and the

mean rate per hour slightly higher. In order to distinguish them, the records in question are printed in old style type.

Comparison of Amount, Duration and Intensity of Rainfall, and Number of Rain Days at Camden Square in 1919 with the Average for 38 Years 1881-1918.

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.		Days.	
1881	27.92	112	486.3	109	.057	102	152	93
1882	27.14	108	480.7	108	.056	100	165	101
1883	24.40	98	393.5	98	.062	111	164	100
1884	20.35	82	336.8	76	.060	107	150	91
1885	26.64	107	470.0	105	.057	102	165	101
1886	27.01	108	427.2	96	.063	112	176	107
1887	19.21	77	300.3	68	.064	114	140	85
1888	27.74	111	435.7	98	.064	114	173	105
1889	23.85	95	428.5	96	.056	100	169	103
1890	21.23	85	409.5	92	.052	93	161	98
1891	28.15	113	490.3	110	.057	102	178	109
1892	22.61	90	372.5	84	.061	109	158	96
1893	19.80	79	388.0	87	.051	91	148	90
1894	27.94	112	477.7	107	.058	104	185	113
1895	21.47	86	380.0	85	.057	102	137	84
1896	23.52	94	404.3	91	.058	104	159	97
1897	22.86	91	371.2	83	.062	111	164	100
1898	<i>m</i> 17.69	71	<i>m</i> 298.5	67	.059	105	140	85
1899	22.54	90	337.5	76	.067	120	144	88
1900	23.28	93	366.3	82	.064	114	174	106
1901	22.17	89	310.2	70	<i>M</i> .071	127	<i>m</i> 128	78
1902	20.84	83	357.8	80	.059	105	162	99
1903	<i>M</i> 38.10	152	<i>M</i> 688.5	155	.055	98	179	109
1904	20.65	83	491.8	111	<i>m</i> .042	75	160	98
1905	22.97	92	456.4	102	.050	89	162	99
1906	24.26	97	420.4	94	.058	104	163	99
1907	23.01	92	418.8	94	.055	98	175	107
1908	23.67	95	500.7	112	.047	84	157	96
1909	26.75	107	576.5	129	.046	82	190	116
1910	25.36	101	491.2	110	.052	93	186	113
1911	24.79	99	473.0	106	.052	93	155	95
1912	27.88	111	517.0	116	.054	96	180	110
1913	22.41	90	453.0	102	.049	87	163	99
1914	25.72	103	513.6	116	.050	89	168	102
1915	32.18	129	568.9	128	.057	102	152	93
1916	34.01	136	627.8	141	.054	96	<i>M</i> 193	118
1917	30.04	120	475.9	107	.063	112	175	107
1918	29.69	119	520.2	117	.057	102	195	119
Average.	25.00	100	445.2	100	.056	100	164	100
1919	26.21	105	610.6	137	.043	77	182	111
Diff. from average.	+1.21	+5	+165.4	+37	— .013	—23	+18	+11

*Shad Thames Pump. Stat., London.D***London County Council.**

N. and Z.'s Hyetograph. 42 ft. above Sea.

1919	Rainfall	Duration	Rate per hour
	in.	hours.	in.
Jan.	2·39	121·5	·020
Feb.	2·17	81·0	·027
Mar.	3·13	101·5	·031
Apr.	3·26	60·8	·054
May	·23	5·9	·039
June ....	..	..	..
July ....	..	..	..
Aug.	1·99	35·5	·056
Sept.	·93	15·7	·059
Oct.	·66	24·5	·027
Nov.	·84	50·8	·017
Dec.	2·75	73·0	·038
Year ....	..	..	..

*South Kensington, London.D****Meteorological Office.**

Halliwell Recorder. 70 ft. above Sea.

1919	Rainfall†	Duration	Rate per hour
	mm.	hours.	mm.
Jan.	79·5	76·1	1·04
Feb.	61·3	(64·7)	0·95
Mar.	90·4	(106·7)	0·85
Apr.	79·2	53·1	1·49
May	9·4	4·0	2·35
June	42·3	24·3	1·74
July	79·7	51·2	1·56
Aug.	57·6	33·1	1·74
Sept.	29·2	14·7	1·99
Oct.	17·6	27·0	0·65
Nov.	33·5	41·9	0·80
Dec.	87·9	71·1	1·24
Year	667·6	567·9	1·18

*Hammersmith, London.D***London County Council.**

N. and Z.'s Hyetograph. 35 ft. above Sea.

	in.	hours.	in.
Jan.	2·86	127·5	·022
Feb.	2·03	76·3	·027
Mar.	2·94	111·2	·026
Apr.	2·63	71·3	·037
May	·19	4·2	·045
June	1·42	27·8	·051
July	2·34	51·5	·045
Aug.	2·07	35·7	·058
Sept.	1·37	15·0	·091
Oct.	·53	(24·0)	·022
Nov.	1·08	55·3	·020
Dec.	3·24	79·5	·041
Year	22·70	679·3	·033

*St. James's Park, London.D****Meteorological Office.**

N. and Z.'s Hyetograph. 27 ft. above Sea.

	mm.	hours.	mm.
Jan.	68·2	(66·5)	1·03
Feb.	58·6	59·3	0·99
Mar.	88·8	(83·6)	1·06
Apr.	79·3	(46·0)	1·72
May	8·4	(4·8)	1·75
June	38·0	23·3	1·63
July	50·8	36·5	1·39
Aug.	48·7	29·3	1·66
Sept.	23·9	14·2	1·68
Oct.	16·1	18·9	0·85
Nov.	29·8	38·0	0·78
Dec.	79·0	62·9	1·26
Year	589·6	483·3	1·22

*Admiralty Arch, London.D***Hydrographic Dept., Admiralty.**

N. & Z.'s Hyetograph. 101 ft. above Sea.

	mm.	hours.	mm.
Jan.	62·3	52·8	1·18
Feb.	46·3	52·5	0·88
Mar.	83·8	80·8	1·04
Apr.	68·5	44·8	1·53
May	7·1	2·9	2·45
June	36·5	19·6	1·86
July	45·4	36·5	1·24
Aug.	48·0	28·1	1·71
Sept.	21·5	9·8	2·19
Oct.	13·0	14·9	0·87
Nov.	24·2	35·8	0·68
Dec.	73·8	57·4	1·28
Year	530·4	435·9	1·22

*Camden Square, London.D****British Rainfall Organization.**

Halliwell Recorder. 111 ft. above Sea.

	in.	hours.	in.
Jan.	3·22	89·7	·036
Feb.	2·65	71·3	·037
Mar.	3·62	103·2	·035
Apr.	3·93	57·7	·068
May	·33	5·6	·059
June	1·51	27·3	·055
July	1·75	49·1	·036
Aug.	2·37	37·7	·063
Sept.	1·29	14·4	·090
Oct.	·69	22·4	·031
Nov.	1·38	56·8	·024
Dec.	3·47	75·4	·046
Year	26·21	610·6	·043

† Amount of rainfall recorded at Kensington Palace.

*Old Ford, Poplar, London.D***London County Council.**

N. & Z.'s Hyetograph. 43 ft. above Sea.

1919	Rainfall	Duration	Rate per hour
	in.	hours.	in.
Jan.	2·87	120·3	·024
Feb.	2·23	92·2	·024
Mar.	3·03	99·0	·031
Apr.	3·13	60·8	·051
May	·39	4·5	·087
June	1·52	21·2	·072
July	2·01	46·3	·043
Aug.	1·96	31·5	·062
Sept. ...	·93	17·0	·055
Oct.	·83	23·5	·035
Nov.	1·07	56·2	·019
Dec.	3·13	74·3	·042
Year	23·10	646·8	·036

*Edenfield, New Malden, Surrey.***W. J. Carter, Esq., F.R.Met.Soc.**

Casella's Recorder. 39 ft. above Sea.

1919	Rainfall	Duration	Rate per hour
	in.	hours.	in.
Jan.	2·94	93·3	·032
Feb.	1·90	64·6	·029
Mar.	3·26	95·4	·034
Apr.	2·77	54·9	·050
May	0·19	3·7	·051
June	1·35	25·1	·054
July	2·14	45·9	·047
Aug.	2·20	36·5	·060
Sept. ...	1·46	16·7	·087
Oct.	0·81	22·4	·036
Nov.	1·28	43·9	·029
Dec.	3·65	66·4	·055
Year	23·95	568·8	·042

*Kew Observatory, Surrey.***Meteorological Office.**

Beckley Gauge. 20 ft. above Sea.

	mm.	hours.	mm.
Jan.	89·6	71·0	1·26
Feb.	56·1	(67·2)	0·84
Mar.	77·7	(98·3)	0·79
Apr.	59·5	(46·1)	1·29
May	9·2	3·7	2·49
June	30·0	27·7	1·08
July	67·4	38·1	1·77
Aug.	54·7	35·4	1·54
Sept. ...	36·9	18·4	2·00
Oct.	14·6	(20·0)	0·73
Nov.	26·6	46·8	0·57
Dec.	95·1	(72·3)	1·32
Year	617·4	(545·0)	1·13

*Capel, Kent.D****Air Ministry.**

N. & Z.'s Hyetograph. 480 ft. above Sea.

	mm.	hours.	mm.
Jan. ....	..	..	..
Feb. ....	..	..	..
Mar.	77·5	64·0	1·21
Apr.	62·3	49·2	1·27
May	5·1	5·8	0·88
June	19·5	11·0	1·77
July	40·7	37·7	1·08
Aug.	38·8	20·6	1·88
Sept. ...	..	..	..
Oct. ....	..	..	..
Nov. ....	..	..	..
Dec. ....	..	..	..
Year ....	..	..	..

*Isle of Grain, Kent.D***Air Ministry.**

N. & Z.'s Hyetograph. 17 ft. above Sea.

	mm.	hours.	mm.
Jan.	56·0	48·4	1·16
Feb.	36·4	49·7	0·73
Mar.
Apr.
May
June
July
Aug.
Sept.
Oct.
Nov.
Dec.
Year

*The Old House, Sevenoaks, Kent.D***W. Tattersall, Esq., F.R.Met.Soc.**

N. & Z.'s Hyetograph. 510 ft. above Sea.

	mm.	hours.	mm.
Jan.	117·3	126·0	0·93
Feb.	67·4	74·0	0·91
Mar.	103·8	123·0	0·84
Apr.	93·2	73·5	1·27
May	1·9	5·0	0·38
June	27·3	17·0	1·60
July	59·7	57·0	1·05
Aug.	71·4	57·0	1·25
Sept. ...	36·0	19·5	1·85
Oct.	17·8	23·5	0·76
Nov.	63·4	78·5	0·81
Dec.	123·5	109·0	1·13
Year	782·7	763·0	1·026

<i>Beachy Head, Sussex.D</i> Air Ministry N. & Z's. Hyetograph 506 ft. above Sea.				<i>Calshot, Hampshire.D</i> Air Ministry. N. & Z's. Hyetograph. 11 ft. above Sea.			
1919	Rainfall	Duration	Rate per hour	1919	Rainfall	Duration	Rate per hour
	mm.	hours.	mm.		mm.	hours.	mm.
Jan.	110·2	131·9	0·84	Jan.	96·8	100·4	0·96
Feb.	68·9	68·6	1·00	Feb.	50·2	40·9	1·23
Mar.	112·8	144·5	0·78	Mar.	98·8	(71·5)	1·38
Apr.	50·6	43·8	1·15	Apr.	38·0	39·2	0·97
May	8·4	12·0	0·70	May	7·6	13·6	0·56
June	11·4	3·9	2·92	June	(20·5)	(28·2)	0·73
July	34·8	25·4	1·37	July	21·6	13·7	1·58
Aug.	43·1	34·4	1·25	Aug.	63·2	39·9	1·58
Sept.	20·4	22·3	0·91	Sept.	54·9	19·9	2·76
Oct.	31·0	24·8	1·25	Oct.	12·2	12·5	0·98
Nov.	112·1	76·6	1·46	Nov.	61·0	74·9	0·81
Dec.	110·9	102·7	1·08	Dec.	131·0	98·4	1·33
Year	714·6	690·9	1·03	Year	(655·8)	(553·1)	1·19

<i>Timsbury, Hants.D</i> D. Kitchingman, Esq., M.Inst.C.E. N. & Z. Tipping-bucket. 96 ft. above Sea.				<i>Ashley Old Manor, Hants.D</i> Legh S. Powell, Esq. N. & Z's. Hyetograph. 235 ft. above Sea.			
	in.	hours.	in.		in.	hours.	in.
Jan.	4·87	193·3	·025	Jan.	4·82	110·5	·044
Feb.	2·56	93·2	·027	Feb.	2·61	75·0	·035
Mar.	5·51	124·5	·044	Mar.	5·85	133·4	·043
Apr.	1·92	40·8	·047	Apr.	2·12	43·7	·048
May	·55	20·5	·027	May	·47	15·9	·029
June	·81	28·5	·028	June	·93	28·5	·033
July	1·50	43·5	·034	July	1·73	32·3	·053
Aug.	2·45	64·7	·038	Aug.	3·15	36·2	·087
Sept.	2·40	41·0	·059	Sept.	2·45	25·6	·096
Oct.	·89	36·0	·025	Oct.	·97	30·5	·032
Nov.	2·03	63·5	·032	Nov.	2·00	56·5	·035
Dec.	6·01	146·5	·041	Dec.	6·26	119·5	·052
Year	31·50	896·0	·035	Year	33·36	707·6	·047

<i>Twyford, Hants.D</i> D. Kitchingman, Esq., M.Inst.C.E. N. & Z. Tipping-bucket. 139 ft. above Sea.				<i>Hendon, Middlesex.D</i> Air Ministry. N. & Z's. Hyetograph. 167 ft. above Sea.			
	in.	hours.	in.		mm.	hours.	mm.
Jan.	4·62	170·0	·027	Jan.	97·8	(90·5)	1·08
Feb.	2·94	69·0	·043	Feb.	72·8	69·8	1·04
Mar.	5·22	95·0	·055	Mar.	90·6	(101·0)	0·90
Apr.	2·02	42·5	·047	Apr. ....	..	..	..
May	·32	10·0	·032	May ....	..	..	..
June	·69	21·8	·032	June ....	..	..	..
July	1·38	28·5	·049	July ....	..	..	..
Aug.	3·06	54·0	·057	Aug. ....	..	..	..
Sept.	2·47	39·5	·063	Sept. ....	..	..	..
Oct.	·72	33·0	·022	Oct. ....	..	..	..
Nov.	2·17	59·0	·037	Nov. ....	..	..	..
Dec.	6·38	135·2	·047	Dec. ....	..	..	..
Year	31·99	757·5	·042	Year ....	..	..	..

*Palmers Green, Middlesex.D***R. Phillips, Esq.**

Casella's Recorder. 138 ft. above Sea.

1919	Rainfall	Duration	Rate per hour
	in.	hours.	in.
Jan.	3.98	..	..
Feb.	3.09	..	..
Mar.	3.33	..	..
Apr.	3.30	..	..
May ....	.37	..	..
June	1.31	21.8	.060
July	1.62	38.0	.042
Aug.	2.79	40.2	.069
Sept.	1.14	11.0	.104
Oct. ....	.63	16.5	.038
Nov.	1.45	48.5	.030
Dec.	3.94	70.5	.056
Year	26.95	..	..

*Chiltern Road, Hitchin, Herts.D***A. Latchmore, Esq.**

N. & Z.'s Hyetograph. 297 ft. above Sea.

1919	Rainfall	Duration	Rate per hour
	in.	hours.	in.
Jan.	4.21	83.4	.050
Feb.	2.85	80.0	.036
Mar.	3.04	99.5	.031
Apr.	3.72	61.7	.060
May ....	.33	6.1	.054
June	1.30	31.8	.041
July	3.18	58.9	.054
Aug.	2.72	34.8	.078
Sept.	1.14	20.5	.056
Oct. ....	.69	14.3	.048
Nov.	1.39	53.7	.026
Dec.	4.36	71.6	.061
Year	28.93	616.3	.047

*Benson Observatory, Oxfordshire.***W. H. Dines, Esq., F.R.S.**

Dines Gauge. 186 ft. above Sea.

	in.	hours.	in.
Jan.	2.61	69.6	.037
Feb.	1.61	56.3	.029
Mar.	3.75	98.8	.038
Apr.	2.35	38.5	.061
May ....	.45	19.8	.023
June	1.21	23.4	.052
July	2.67	47.5	.056
Aug.	2.53	34.7	.073
Sept.	2.16	18.2	.119
Oct.	1.49	32.5	.046
Nov.	1.43	39.4	.036
Dec.	3.88	80.6	.048
Year	26.14	559.3	.047

*Cardington, Bedfordshire.D***Air Ministry.**

N. & Z.'s Hyetograph. 120 ft. above Sea.

	mm.	hours.	mm.
Jan.	80.6	..	..
Feb.	57.3	..	..
Mar.	71.0	(85.2)	0.83
Apr.	54.5	(53.6)	1.02
May	20.2	(25.5)	0.79
June	25.8	..	..
July	53.4	..	..
Aug.	55.1	..	..
Sept.	46.4	..	..
Oct.	17.3	27.7	0.63
Nov.	33.3	89.5	0.37
Dec. ....	..	..	..
Year ....	..	..	..

*Rookwood, Copdock, Suffolk.D***F. L. Bland, Esq.**

N. & Z.'s Tipping-bucket. 174 ft. above Sea.

	mm.	hours.	mm.
Jan.	64.1	66.0	.97
Feb.	77.3	74.0	1.04
Mar.	57.0	94.0	.61
Apr.	84.3	68.5	1.23
May	8.5	10.0	.85
June	32.6	33.5	.97
July	63.1	47.0	1.34
Aug.	60.9	41.0	1.49
Sept.	14.0	10.0	1.40
Oct.	26.6	23.0	1.16
Nov.	50.8	69.0	.74
Dec.	83.9	86.5	.97
Year	623.1	622.5	1.00

*Felixstowe, Suffolk.D***Air Ministry.**

N. & Z.'s Hyetograph. 15 ft. above Sea.

	mm.	hours.	mm.
Jan.	70.1	85.6	.82
Feb.	62.9	78.9	.80
Mar.	50.8	75.8	.67
Apr.	90.4	71.7	1.26
May	9.3	10.8	.86
June	29.7	30.1	.99
July	46.8	37.4	1.25
Aug.	54.3	55.4	.98
Sept.	17.6	20.3	.87
Oct.	32.8	36.0	.91
Nov.	50.8	60.2	1.01
Dec.	92.1	94.4	.98
Year	607.6	656.6	.92

*Lyngate Cottage, Worstead, Norfolk.D***Robert J. Cross, Esq.**

N. & Z.'s Hyetograph. 50 ft. above Sea.

1919	Rainfall	Duration	Rate per hour
	in.	hours.	in.
Jan.	2.68	73.4	.036
Feb.	2.62	68.0	.039
Mar.	1.91	56.4	.034
Apr.	1.81	29.2	.062
May	1.18	18.1	.065
June	1.25	25.0	.050
July	3.06	36.4	.084
Aug.	1.67	23.7	.070
Sept.	1.10	19.3	.057
Oct.	3.58	39.9	.090
Nov.	2.67	68.0	.039
Dec.	5.08	96.9	.052
Year	28.61	554.3	.052

*The Hoe, Plymouth, Devon.D****James Paton, Esq., C.E.**

Halliwell Recorder. 117 ft. above Sea.

1919	Rainfall	Duration	Rate per hour
	in.	hours.	in.
Jan.	5.89	132.9	.044
Feb.	6.31	95.5	.066
Mar.	5.63	(114.6)	.049
Apr.	2.80	(71.1)	.039
May	1.53	37.3	.041
June ....	.97	25.7	.038
July	1.25	23.1	.054
Aug.	3.20	37.3	.086
Sept.	2.02	(43.4)	.047
Oct.	1.85	27.6	.067
Nov.	3.69	61.8	.060
Dec.	6.72	120.5	.056
Year	41.86	790.8	.053

*Freedom Park, Plymouth, Devon.D****James Paton, Esq., C.E.**

N. & Z.'s Hyetograph. 208 ft. above Sea.

	in.	hours.	in.
Jan.	6.45	132.2	.049
Feb.	6.61	90.3	.073
Mar.	5.60	118.9	.047
Apr.	3.19	80.5	.040
May	1.84	33.7	.055
June	1.08	23.8	.045
July	1.09	19.9	.055
Aug.	3.56	38.0	.094
Sept.	2.24	43.2	.052
Oct.	2.00	33.7	.059
Nov.	3.87	70.1	.055
Dec.	7.42	134.9	.055
Year	44.95	819.2	.055

*Moretonhampstead Rectory, Devon.D***Rev. S. D. Dewey, F.R.Met.Soc.**

N. & Z.'s Hyetograph. 600 ft. above Sea.

	in.	hours.	in.
Jan.	7.32	99.7	.073
Feb.	6.13	85.7	.072
Mar.	5.38	91.4	.059
Apr.	2.55	34.4	.074
May	1.32	12.8	.103
June ....	.73	13.8	.053
July	1.72	17.9	.096
Aug.	3.27	26.0	.126
Sept.	1.92	23.6	.081
Oct.	1.94	28.7	.068
Nov.	4.00	68.4	.058
Dec.	7.13	102.3	.070
Year	43.41	604.7	.072

*Dry Tree, Mullion, Cornwall.D***Air Ministry.**

N. & Z.'s Hyetograph. 600 ft. above Sea.

	mm.	hours.	mm.
Jan.	187.0	..	..
Feb.	(180.0)	..	..
Mar.	119.0	..	..
Apr.	65.9	..	..
May	45.2	..	..
June	29.1	..	..
July	25.7	(49.0)	0.52
Aug.	92.7	(50.1)	1.85
Sept.	42.1	51.5	0.82
Oct.	(39.8)	(33.4)	1.19
Nov.	(79.5)	..	..
Dec.	200.0	..	..
Year	1106.0	..	..

*Falmouth Observatory, Cornwall.***Meteorological Office.**

Beckley Gauge. 169 ft. above Sea.

	mm.	hours.	mm.
Jan.	179.7	125.1	1.44
Feb.	158.5	96.6	1.64
Mar.	142.8	116.6	1.22
Apr.	73.4	64.1	1.14
May	46.6	51.6	0.90
June	24.7	24.8	1.00
July	17.7	18.6	0.95
Aug.	94.2	39.8	2.37
Sept.	43.4	25.9	1.67
Oct.	40.9	23.7	1.72
Nov.	91.0	56.0	1.62
Dec.	207.7	112.1	1.85
Year	1120.6	754.9	1.48

*Dollarward House, Cirencester, Glos.D***C. P. Hooker, Esq., F.R.Met.Soc.**

N. & Z.'s Hyetograph. 366 ft. above Sea.

1919	Rainfall	Duration	Rate per hour
	in.	hours.	in.
Jan.	5.48	122.5	.045
Feb.	3.36	83.0	.041
Mar.	5.05	153.3	.033
Apr.	2.88	60.4	.048
May	1.54	23.6	.065
June	1.61	33.9	.047
July	2.62	40.0	.066
Aug.	2.47	42.3	.058
Sept.	1.82	67.6	.027
Oct.	1.70	44.5	.038
Nov.	1.72	67.9	.025
Dec.	5.31	114.9	.046
Year	35.56	853.9	.042

*Mayfield House, Ashbourne, Staffs.D***Graham C. Lawson, Esq.**

Casella's Recorder. 374 ft. above Sea.

	mm.	hours.	mm.
Jan.	118.2	104.5	1.13
Feb.	53.1	55.2	0.96
Mar.	143.2	132.9	1.08
Apr.	48.1	56.2	0.85
May	35.8	31.7	1.13
June	32.9	37.3	0.88
July	56.7	44.8	1.27
Aug.	73.2	56.7	1.29
Sept.	64.0	55.2	1.16
Oct.	76.9	50.5	1.52
Nov.	74.4	91.9	0.81
Dec.	155.5	118.9	1.31
Year	932.0	835.8	1.12

*Trent Lane, Nottingham.D***A. Brown, Esq., M.Inst.C.E., F.R.Mt.Soc.**

Halliwell Recorder. 85 ft. above Sea.

	in.	hours.	in.
Jan.	3.28	84.8	.039
Feb.	2.37	58.7	.040
Mar.	4.12	105.5	.039
Apr.	1.67	32.0	.052
May	1.24	25.5	.048
June ....	.81	20.3	.040
July	3.00	54.0	.056
Aug.	2.58	42.0	.061
Sept.	1.34	32.0	.042
Oct.	2.39	40.8	.058
Nov.	1.72	64.2	.027
Dec.	3.62	81.3	.044
Year	28.14	641.1	.044

*Almeley, Herefordshire.D***B. G. Ronalds, Esq., F.R.Met.Soc.**

N. & Z.'s Hyetograph. 396 ft. above Sea.

1919	Rainfall	Duration	Rate per hour
	in.	hours.	in.
Jan.	3.19	..	..
Feb.	3.55	..	..
Mar.	5.58	..	..
Apr.	1.62	..	..
May ....	.34	..	..
June ....	.96	..	..
July	1.82	28.8	.063
Aug.	2.96	37.6	.079
Sept.	2.01	42.2	.048
Oct.	1.41	25.1	.056
Nov.	1.59	32.5	.049
Dec.	3.75	83.3?	.045
Year	28.78	..	..

*Cranwell, Lincolnshire.D***Air Ministry.**

N. & Z.'s Hyetograph. 236 ft. above Sea.

	mm.	hours.	mm.
Jan.	82.5	165.3	0.50
Feb.	65.4	102.1	0.64
Mar.	69.3	128.7	0.54
Apr.	38.0	57.9	0.66
May	21.6	18.6	1.16
June	37.0	32.5	1.14
July	56.7	61.5	0.92
Aug.	73.6	67.1	1.10
Sept.	49.6	24.5	2.03
Oct.	44.6	30.1	1.48
Nov.	41.1	79.8	0.52
Dec.	67.2	82.6	0.81
Year	646.6	850.7	0.76

*Hodsock Priory, Nottinghamshire.D***Lt.-Col. H. Mellish, C.B., F.R.Met.Soc.**

Halliwell Recorder. 56 ft. above Sea.

	in.	hours.	in.
Jan.	3.00	74.4	.040
Feb.	2.63	59.8	.044
Mar.	3.59	94.2	.038
Apr.	1.70	32.4	.053
May	1.07	18.4	.058
June ....	.92	20.5	.045
July	2.40	42.6	.056
Aug.	2.25	43.5	.052
Sept.	1.86	32.0	.058
Oct.	2.27	46.8	.048
Nov.	1.65	49.2	.034
Dec.	3.35	61.3	.055
Year	26.69	575.1	.046

Bidston Observatory, Cheshire.D
Mersey Docks and Harbour Board.
 Osler's Gauge. 189 ft. above Sea.

1919	Rainfall	Duration	Rate per hour
	in.	hours.	in.
Jan.	2.48	86.8	.029
Feb.	1.06	44.7	.024
Mar.	4.91	126.2	.039
Apr.	1.08	53.5	.020
May ....	.96	27.9	.034
June	1.40	41.4	.034
July	1.76	45.9	.038
Aug.	3.74	53.6	.070
Sept.	2.90	64.0	.045
Oct.	2.67	60.8	.044
Nov.	1.32	47.3	.028
Dec.	4.84	114.6	.042
Year	29.12	766.7	.038

Blundellsands, Lancashire.D
Hugh Montgomery, Esq., F.R.Met.Soc.
 N. & Z.'s Hyetograph. 35 ft. above Sea.

1919	Rainfall	Duration	Rate per hour
	in.	hours.	in.
Jan.	3.00	89.0	.034
Feb.	1.12	41.8	.027
Mar.	5.72	132.5	.043
Apr.	1.27	46.2	.027
May ....	.99	20.5	.048
June	1.42	39.5	.036
July	2.00	32.5	.062
Aug.	3.43	70.0	.049
Sept.	2.23	58.0	.039
Oct.	3.02	59.5	.051
Nov.	1.83	44.0	.042
Dec.	4.98	109.0	.046
Year	31.01	742.5	.042

Queen's Park, Bolton, Lancashire.D
Thos. Midgley, Esq., F.R.Met.Soc.
 Casella's Recorder. 342 ft. above Sea.

	mm.	hours.	mm.
Jan.	124.6	101.0	1.23
Feb.	29.2	19.8	1.47
Mar.	185.5	138.5	1.34
Apr.	78.8	72.5	1.09
May	46.6	34.0	1.37
June	58.2	76.0	.77
July	46.8	64.2	.73
Aug.	122.6	138.0	.89
Sept.	56.4	87.3	.65
Oct.	74.7	78.0	.96
Nov.	102.3	82.7	1.24
Dec.	198.9	152.0	1.31
Year	1124.6	1044.0	1.08

Worden Hall, Leyland, Lancs.D
H. Nowell Farrington, Esq., F.R.Mt.Soc.
 N. & Z.'s Hyetograph. 125 ft. above Sea.

	in.	hours.	in.
Jan.	4.34	96.7	.045
Feb.	1.14	37.1	.031
Mar.	5.76	132.2	.044
Apr.	1.95	61.7	.031
May	1.54	34.8	.044
June	2.11	42.5	.050
July	1.39	24.1	.058
Aug.	3.41	65.0	.052
Sept.	2.28	44.7	.051
Oct.	2.96	45.7	.065
Nov.	2.30	54.8	.042
Dec.	5.45	111.4	.049
Year	34.63	750.7	.046

Hesketh Park, Southport, Lancashire.D
J. Baxendell, Esq., F.R.Met.Soc.
 N. & Z.'s Fernley gauge. 39 ft. above Sea.

	in.	hours.	in.
Jan.	4.17	102.0	.041
Feb.	1.10	34.2	.032
Mar.	5.31	134.2	.040
Apr.	1.37	49.9	.027
May	1.10	30.3	.036
June	1.35	29.8	.045
July	1.48	27.9	.053
Aug.	3.27	70.1	.047
Sept.	2.35	47.9	.049
Oct.	2.87	59.2	.048
Nov.	2.20	51.3	.043
Dec.	4.39	103.6	.042
Year	30.96	740.4	.042

Greg Observatory, Lancaster, Lancs.
Neville Holden, Esq.
 Beckley Gauge. 312 ft. above Sea.

	in.	hours.	in.
Jan.	5.43	106.5	.051
Feb.	1.71	35.5	.048
Mar.	5.03	111.0	.045
Apr.	2.01	51.8	.039
May	1.86	44.5	.042
June	2.14	33.5	.064
July	1.57	26.9	.058
Aug.	4.22	59.7	.071
Sept.	2.93	62.0	.047
Oct.	3.08	56.0	.055
Nov.	2.91	60.5	.048
Dec.	6.10	123.5	.049
Year	38.99	771.4	.051

*Huddersfield Cemetery, Yorkshire.***J. Firth, Esq.**

Halliwell Recorder. 410 ft. above Sea.

1919	Rainfall	Duration	Rate per hour
	in.	hours.	in.
Jan.	4.92	101.1	.049
Feb.	1.91	51.1	.037
Mar.	5.58	131.8	.042
Apr.	1.50	38.6	.039
May	1.56	35.6	.044
June ....	.85	25.8	.033
July	2.72	49.5	.055
Aug.	2.79	61.4	.045
Sept.	1.45	44.8	.032
Oct.	2.12	54.9	.039
Nov.	2.94	83.4	.035
Dec.	5.29	132.9	.040
Year	33.63	810.9	.041

*Earby Sewage Works, Yorkshire.D***J. E. Aldersley, Esq.**

N. & Z.'s Hyetograph. 426 ft. above Sea.

	in.	hours.	in.
Jan.	5.79	137.7	.042
Feb.	1.46	42.0	.035
Mar.	5.35	108.1	.049
Apr.	2.06	35.4	.058
May	1.77	38.8	.046
June	1.38	26.7	.052
July	2.01	32.8	.061
Aug.	2.92	40.6	.072
Sept.	2.06	35.3	.058
Oct.	2.25	42.9	.052
Nov.	3.04	55.9	.054
Dec.	5.70	99.9	.057
Year	35.79	696.1	.051

*Mount St. John, Thirsk, Yorkshire.D***A. J. Walker, Esq., F.R.Met.Soc.**

Halliwell Recorder. 542 ft. above Sea.

	in.	hours.	in.
Jan.	3.59	89.0	.040
Feb.	1.06	39.9	.027
Mar.	2.87	80.9	.035
Apr.	1.84	39.0	.047
May ....	.83	15.8	.053
June	1.32	29.7	.044
July	2.80	47.4	.059
Aug.	2.27	42.0	.054
Sept.	1.30	21.0	.062
Oct.	5.14	98.5	.052
Nov.	2.68	65.2	.041
Dec.	3.19	57.3	.056
Year	28.89	625.7	.046

*Lower Laithe Res., Haworth, Yorks.D***M. R. Barnett, Esq., M.Inst.C.E.**

N. & Z.'s Hyetograph. 772 ft. above Sea.

1919	Rainfall	Duration	Rate per hour
	in.	hours.	in.
Jan.	6.93	194.0	.036
Feb.	1.92	80.3	.024
Mar.	6.69	168.0	.040
Apr.	2.25	69.0	.033
May	2.42	45.2	.054
June	1.32	41.0	.032
July	2.41	56.5	.043
Aug.	3.46	87.5	.039
Sept.	1.99	80.5	.025
Oct.	2.45	68.5	.036
Nov.	4.45	131.5	.034
Dec.	8.52	190.5	.045
Year	44.81	1212.5	.037

*Town Hall, Shipton, Yorkshire.D***A. E. W. Aldridge, Esq.**

N. & Z.'s Hyetograph. 367 ft. above Sea.

	in.	hours.	in.
Jan.	4.37	102.0	.043
Feb.	1.47	47.8	.031
Mar.	4.59	118.0	.039
Apr.	1.67	39.5	.042
May	1.29	26.5	.049
June	1.02	26.5	.038
July	1.79	33.7	.053
Aug.	2.46	44.8	.055
Sept.	1.17	33.0	.035
Oct.	2.52	65.0	.039
Nov.	2.60	65.0	.040
Dec.	5.08	96.0	.053
Year	30.03	697.8	.043

*Mount St. John, Thirsk, Yorkshire.D***A. J. Walker, Esq., F.R.Met.Soc.**

N. & Z.'s Hyetograph. 542 ft. above Sea.

	in.	hours.	in.
Jan.	3.59	77.9	.046
Feb.	1.06	37.7	.028
Mar.	2.87	68.6	.042
Apr.	1.84	31.0	.059
May ....	.83	11.3	.073
June	1.32	25.6	.052
July	2.80	43.3	.065
Aug.	2.27	38.8	.059
Sept.	1.30	17.5	.074
Oct.	5.14	92.7	.055
Nov.	2.68	47.2	.057
Dec.	3.19	49.0	.065
Year	28.89	540.6	.053

*Mount St. John, Thirsk, Yorkshire.D***A. J. Walker, Esq., F.R.Met.Soc.**

Casella's Recorder. 542 ft. above Sea.

1919	Rainfall	Duration	Rate per hour
	in.	hours.	in.
Jan.	3.59	..	..
Feb.	1.06	..	..
Mar.	2.87	..	..
Apr.	1.84	..	..
May ....	.83	..	..
June	1.32	..	..
July	2.80	..	..
Aug.	2.27	..	..
Sept.	1.30	..	..
Oct.	5.14	..	..
Nov.	2.68	..	..
Dec.	3.19	58.7	.054
Year	28.89	..	..

*Cray Reservoir, Breconshire.D***Lt. G. R. Collinson, C.E.**

Halliwell Recorder. 1044 ft. above Sea.

1919	Rainfall	Duration	Rate per hour
	in.	hours.	in.
Jan.	10.11	205.5	.049
Feb.	5.38	146.3	.037
Mar.	9.98	232.3	.043
Apr.	3.74	105.4	.036
May	1.83	55.1	.033
June	3.34	92.3	.036
July	1.40	46.6	.030
Aug.	4.68	73.7	.063
Sept.	4.18	108.3	.039
Oct.	3.10	79.6	.039
Nov.	5.42	131.6	.041
Dec.	14.03	268.2	.052
Year	67.19	1544.9	.043

*Aber Clyd, Black Mtns., Breconshire.D***J. F. Jupp, Esq., C.E.**

N. & Z.'s Hyetograph. 1880 ft. above Sea.

	in.	hours.	in.
Jan.	6.36	117.4	.054
Feb.	2.94	55.0	.053
Mar.	6.26	100.5	.062
Apr.	2.77	56.8	.049
May ....	.74	27.3	.027
June	1.99	64.3	.031
July	1.99	36.1	.055
Aug.	4.22	52.2	.081
Sept.	2.75	45.6	.060
Oct.	3.20	47.7	.067
Nov.	2.79	67.0	.042
Dec.	7.39	108.9	.068
Year	43.40	778.8	.056

*Llangefni, Anglesey.D***Air Ministry.**

N. & Z.'s Hyetograph. 189 ft. above Sea.

	mm.	hours.	mm.
Jan.	125.2	132.4	0.95
Feb.	42.4	72.0	0.59
Mar.	135.8	148.2	0.92
Apr.	54.0	68.9	0.78
May	26.2	40.8	0.64
June	43.3	47.9	0.90
July ....	..	..	..
Aug. ....	..	..	..
Sept. ....	..	..	..
Oct. ....	..	..	..
Nov. ....	..	..	..
Dec. ....	..	..	..
Year ....	..	..	..

*Eskdalemuir Observatory, Dumfries.***Meteorological Office.**

Beckley Gauge. 799 ft. above Sea.

	mm.	hours.	mm.
Jan.	135.2	144.1	0.94
Feb.	18.9	30.2	0.63
Mar.	103.9	102.6	1.01
Apr.	75.4	87.7	0.86
May	49.7	44.9	1.10
June	62.8	50.5	1.24
July	34.1	24.3	1.40
Aug.	111.3	76.2	1.46
Sept.	154.3	78.0	1.98
Oct.	72.6	54.3	1.34
Nov.	137.6	129.3	1.06
Dec.	259.4	191.2	1.36
Year	1215.2	1013.3	1.20

*Pinewood, Crathes, Kincardineshire.D***James Smith, Esq.**

N. & Z.'s Hyetograph. 142 ft. above Sea.

	in.	hours.	in.
Jan.	4.06	98.1	.041
Feb.	2.04	59.7	.034
Mar.	2.27	68.8	.033
Apr.	3.88	69.6	.056
May ....	.93	25.7	.036
June ....	.93	24.9	.037
July ....	.46	16.1	.029
Aug.	2.67	33.7	.079
Sept.	2.13	50.9	.042
Oct.	2.64	71.6	.037
Nov.	5.46	120.0	.046
Dec.	5.65	96.5	.059
Year	33.12	735.6	.045

*King's College, Aberdeen.***Meteorological Office.**

Beckley Gauge. 44 ft. above Sea.

1919	Rainfall	Duration	Rate per hour
	mm.	hours.	mm.
Jan.	89·1	89·3	1·00
Feb.	44·6	(63·0)	0·71
Mar.	46·1	57·1	0·81
Apr.	72·5	62·7	1·16
May	15·0	19·2	0·78
June	33·8	39·8	0·85
July	27·0	24·8	1·09
Aug.	50·7	43·4	1·17
Sept.	66·6	52·3	1·27
Oct.	74·9	64·0	1·17
Nov.	113·5	93·7	1·21
Dec.	144·0	102·7	1·40
Year	777·8	712·0	1·09

*University College, Cork.D***H. N. Walsh, Esq.**

N. & Z.'s Hyetograph. 66 ft. above Sea.

1919	Rainfall	Duration	Rate per hour
	in.	hours.	in.
Jan.	4·51	72·8	·062
Feb.	3·63	56·9	·064
Mar.	2·42	52·7	·046
Apr.	1·20	18·6	·065
May	5·24	55·0	·095
June	·63	11·0	·057
July	1·28	17·7	·072
Aug.	3·07	35·3	·087
Sept.	2·13	35·2	·060
Oct.	·49	16·6	·030
Nov.	1·89	44·6	·042
Dec.	4·55	97·3	·047
Year	31·04	513·7	·060

*Queenstown, Co. Cork.D***Air Ministry.**

N. & Z.'s Hyetograph. 200 ft. above Sea.

	mm.	hours.	mm.
Jan. ....	..	..	..
Feb.	84·7	(68·1)	1·25
Mar.	56·6	(62·4)	0·91
Apr.	21·9	24·2	0·90
May	62·3	(54·5)	1·14
June ....	..	..	..
July ....	..	..	..
Aug. ....	..	..	..
Sept. ....	..	..	..
Oct. ....	..	..	..
Nov. ....	..	..	..
Dec. ....	..	..	..
Year ....	..	..	..

*Valentia Observatory, Co. Kerry.D***Meteorological Office.**

Beckley Gauge. 30 ft. above Sea.

	mm.	hours.	mm.
Jan.	208·2	117·0	1·78
Feb.	73·3	49·5	1·48
Mar.	108·8	80·9	1·34
Apr.	50·5	41·7	1·21
May	118·5	74·6	1·59
June	53·6	39·6	1·35
July	47·0	39·0	1·20
Aug.	72·3	44·3	1·63
Sept.	101·9	47·6	2·14
Oct.	66·0	51·7	1·28
Nov.	81·8	48·2	1·70
Dec.	179·8	95·6	1·88
Year	1161·7	729·7	1·60

*Armagh Observatory, Co. Armagh.D****Meteorological Office.**

Beckley Gauge. 210 ft. above Sea.

	mm.	hours.	mm.
Jan.	104·6	..	..
Feb.	23·7	..	..
Mar.	61·8	..	..
Apr.	30·9	..	..
May	45·6	30·1	1·51
June	52·0	(33·4)	1·56
July	16·0	9·3	1·72
Aug.	82·3	(23·4)	3·51
Sept.	80·4	(57·6)	1·40
Oct.	37·9	26·3	1·44
Nov.	48·9	(39·4)	1·24
Dec.	155·8	105·7	1·47
Year	739·9	..	..

*Glenedra Lodge, Co. Londonderry.D****M. A. Robinson, Esq., C.E.**

N. & Z.'s Hyetograph. 950 ft. above Sea.

	in.	hours.	in.
Jan.	5·71	139·7	·041
Feb.	1·87	61·0	·031
Mar.	5·15	108·2	·047
Apr.	3·81	103·2	·037
May	1·44	45·0	·032
June	5·33	88·7	·060
July	1·47	28·8	·051
Aug.	4·63	95·2	·049
Sept.	5·19	88·6	·059
Oct.	2·43	63·0	·039
Nov.	5·64	105·3	·053
Dec.	9·94	206·2	·048
Year	52·61	1132·9	·046

HEAVY RAINS IN SHORT PERIODS IN 1919.

Since the year 1868 a Section of *British Rainfall* has been devoted annually to a discussion of exceptionally heavy falls of rain during comparatively short periods of time. The title was somewhat loosely applied in the earlier years and only as a considerable amount of information began to accumulate did it become possible to introduce any definitions. This, of course, from the nature of the data, involved the use of a sliding scale and the latter was arrived at by means of plotting all the values received and drawing a freehand curve dividing the falls too numerous to be worth putting on record from those sufficiently noteworthy to print, the latter again from "remarkable" falls, and putting finally in a class by themselves "very rare" falls. The limiting values adopted for each ten minutes up to two hours are given in Table I.

TABLE I.—*Limits of Exceptional 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
70	1.07	.92	1.81	1.55	2.54	2.18
80	1.12	.84	1.85	1.39	2.57	1.93
90	1.15	.77	1.89	1.26	2.60	1.73
100	1.18	.71	1.92	1.15	2.62	1.57
110	1.21	.66	1.93	1.05	2.64	1.44
120	1.23	.61	1.94	.97	2.65	1.33

Since the introduction of this classification in 1908, the lists have been confined to falls which exceeded the lowest limit mentioned, whilst "remarkable" and "very rare" falls have been distinguished by being marked with one or two crosses respectively. Whilst the changes in the number of recording stations, and other factors, undoubtedly make any comparison between the number of instances of heavy falls in one year and the number in another a poor guide to the relative prevalence of such phenomena, there can be no doubt that a rough relationship must exist, and that an exceptionally long list will be indicative of a year in which intense rainfalls were common, whilst a very short list will point to their comparative infrequency. The approximate idea thus obtained can be, and usually is, confirmed by the study of Heavy Rainfalls on Rainfall Days, in the following Section.

The number of noteworthy intense rainfalls in 1919 was the smallest put on record since 1885, the smallest number previously since 1869 being eight in that year; the year 1919 was the first since 1869 with no instance of a "remarkable" fall. The sources from which such records are commonly drawn, viz., the notes of Observers, the *Weather Reports* of the Meteorological Office, all published statements brought to our notice, and lastly, all available charts of self-recording rain gauges, have been examined with care, and there seems no reasonable doubt of the reality of the phenomenon. Table III. below contains only fourteen records, of which no fewer than five refer to portions of an individual storm at Glasgow, each by itself

TABLE III.—*Heavy Rains in Short Periods in 1919.*

Date.	Div.	Station.	Amount.	Duration.		Rate per Hour.
			in.	hr.	min.	in.
Dec. 10 ..	XXIII.	Glenedra Lodge	·15	0	3	3·00
July 18 ..	"	" " "	·23	0	4	3·45
Mar. 6 ..	"	" " "	·20	0	5	2·40
June 12 ..	XIV.	Glasgow Observatory	·44	0	15	1·76
July 2 ..	I.	South Kensington	·60	0	18	2·00
Mar. 12 ..	III.	Adderbury, The Rookery	·80	0	26	1·85
Aug. 28 ..	V	Moretonhampstead Rectory ..	1·50	1	0	1·50
May 10 ..	VIII.	Caton, School House	1·82	1	30	1·21
June 12 ..	XIV.	Glasgow Observatory	1·39	2	0	·69
" 12 ..	"	" " "	1·64	3	0	·55
" 12 ..	"	" " "	2·13	4	0	·53
May 10 ..	X.	Keswick, The Bank	1·98	4	0	·50
June 12 ..	XIV	Glasgow Observatory	2·30	4	45	·48
" 12 ..	"	Ayr Cemetery	2·80	6	0	·47

worthy of record. There were only eight separate records of two hours duration or less compared with 55 in 1918, and an average of 33 for the preceding 51 years.

Number of Noteworthy Rains of Two Hours Duration or less.

		England and Wales.					Scotland, Ireland.		British Isles.	Per cent. of records received.
		S.E.	S.W.	N.E.	N.W.	Total.				
Average 1868-1918	}	16·1	7·4	4·4	2·0	29·9	2·2	1·1	33·2	1·0
		2	1	0	1	4	1	3	8	0·2

There is strong evidence in the notes from Observers in all parts of the British Isles of the unusual scarcity, and in some cases complete absence of thunderstorms during the year 1919, and it is, of course,

almost entirely in thunderstorms that notably heavy rains occur. Such thunderstorms as did take place were for the most part slight, and this remark applies in particular to the rainfall. An exception must, however, be made in regard to the widespread storm of rain and hail which occurred in the south-west of Scotland on 12th June, the records from which form the bulk of Table III. The region of greatest intensity appears to have extended from the south of Ayrshire to the Glasgow district, and at Glasgow Observatory a measured rainfall of 2·30 in. in about 4 hours 45 minutes eclipsed all previous records for intensity at that place for at least sixty years, the most remarkable fall hitherto recorded having been 1·79 in. in four hours. During the most intense phase of the storm of June 12th at Glasgow, ·44 in. fell in fifteen minutes from 17h. 20m. to 17h. 35m. Even heavier falls occurred in Ayrshire, though we have no details of their duration except the record of 2·80 in. in 6 hours at Ayr, and 3 in. in 8 hours 30 minutes at Patna, and it will be more convenient to deal with the distribution of the rainfall of the day in the following Section. Heavy thunderstorm rains are undoubtedly less common in the district affected by the storm of June 12th than in some other parts of the British Isles, and it is of interest to note that, in spite of the unprecedented nature of the rainfall, the intensity as recorded, nowhere reached the "remarkable" rate.

The only other intense rainfall reported during 1919 calling for special mention was that of 10th May, in north Lancashire, when 1·82 in. of rain fell in 1 hour 30 minutes during a thunderstorm. Owing to the hilly nature of the district serious damage was done by flood water, roads having their surfaces torn away and being blocked by debris. At one point a beck was diverted from its natural course, a hole 40 ft. deep being cut out, and a bridge almost washed away.

Mr. W. Shaw, of Caton, to whom we are indebted for some particulars, adds an interesting note relative to a remarkable storm on 26th July, 1872, which has hitherto apparently escaped notice in *British Rainfall*. On that occasion the reputed rainfall measured in Escowbeck Gardens, Caton, is given as $2\frac{1}{4}$ in. in little more than half an hour. The rain gauge in use was unfortunately of the now obsolete pattern of float gauge fitted with a fixed measuring rod projecting from the funnel. The exposed portion of the rod undoubtedly acts as a collecting surface, and the precision of the reading was thus vitiated, so that we cannot accept the record as authentic, but even allowing for the error introduced by this means, the phenomenon is of sufficient importance to be put on record. On the occasion in question all the bridges over the Artle Beck and Bull Beck were washed away, and a child carried from the road into the torrent was drowned.

By way of contrast to Table III. we reprint the historical list of "Very Rare" rainfalls put on record during the past 52 years.

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
1917	July 14	IV.	Norwich, Ipswich Road	·47	0 2½	11·28
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
1918	" 16	II.	Purley, Oakwood Avenue	1·10?	0 11	6·00?
1914	Aug. 14	XI.	Guernsey, St. Martin's Road ..	1·50	0 15	6·00
1906	" 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
1915	" 4	XI.	Abergavenny, The Chain	2·20	0 30	4·40
1918	" 17	I.	Shad Thames Pumping Station.	2·07	0 30	4·14
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	II.	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
1915	" 30	IV.	Mildenhall	2·63	0 50	3·16
1903	July 18	VI.	Crewe, Betley Hall	2·53	0 50	3·04
1905	" 9	III.	Enfield, Carisbrooke	2·44	0 50	2·93
1911	May 31	II.	Epsom, Ashley Uoad	2·44	0 50	2·93
1901	July 29	"	Wadhurst, Lower Cousley Wood	3·25?	0 55	3·55?
1913	June 17	IV.	Elveden Hall	2·85	0 58	2·95
1901	July 12	II.	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*.

HEAVY FALLS ON RAINFALL DAYS IN 1919.

The gradual development of this Section of *British Rainfall*, from a study of the *maximum* daily rainfalls of each year to that of the *heavy* daily rainfalls, is now carried a stage further by the inclusion in the lists which form the basis of the "Chronicle" of *all* rainfalls, considered to be accurate, recorded on the rainfall day during the year, which exceeded the limits of 2·50 in., or alternatively 7·5 per cent. of the annual total. In previous volumes the lists were confined to a single fall for any one station, and were thus apt to be incomplete. In order to avoid any unnecessary break of continuity, the practice has been adopted of printing rainfalls other than the maximum daily fall in italics. The districts in which more than one daily rainfall during an ordinary year exceeds the limit for quotation are not large, being confined, as a rule, to the rainy regions of the west of Great Britain. The distribution of such stations in 1919 is indicated by the following list:—

Number of Stations with Two or more Falls of 2·50 in. or more in 1919.

County.	Number of Stations.	Number of Falls.	Station with largest number.	
Lancashire	1	2	Coniston	2
Westmorland	4	14	Dungeon Ghyll	7
Cardigan	2	4	{ Hafod	2
			{ Devil's Bridge	2
Radnor	1	2	Abergwngu	2
Merioneth	4	8	Several	2
Carnarvon	1	2	Penrhyn Quarry	2
Ayr	1	2	Lagafater	2
Argyll	4	8	Several	2
Inverness	3	8	Kinlochquoich	4
Sutherland	1	2	Achfary	2
Total	22	52	Dungeon Ghyll	7

The total number is the smallest recorded during recent years. It should be noted, however, that daily rainfall records for the group of stations in the Snowdon district, which have provided so many instances of remarkable daily rainfalls in previous years, have not this year been available. It is almost certain that numerous days with 2·50 occur every year in this very rainy district. The corresponding values for the whole British Isles since 1914 were as follows:—

Year.	Number of Stations.	Number of Falls.	Station with largest number.	
1914	55	176	Pen-y-Gwryd	12
1915	31	71	"	6
1916	46	130	Kinlochleven	7
1917	23	67	Kinlochquoich	11
1918	39	112	Cwm Dyli	8
1919	22	52	Dungeon Ghyll	7

Ten records in 1919, three on 10th April, three on 12th June, three on 22nd December, and one other, require to be added to the historical lists of outstanding daily rainfalls published in *British Rainfall*, 1910, and kept up to date in subsequent volumes. None calls for special comment.

Div.	County.	Station.	Date.	Rainfall.
XI.	Merioneth	..... <i>Add</i> Festiniog, Hafod Fawr	Dec. 22nd, 1919	.. 4·34
"	"	..... " Blaenau Festiniog, Llechwedd Q...	Dec. 22nd, 1919	.. 4·34
"	"	..... " Devil's Bridge	June 12th, 1919	.. 4·10
"	"	..... " Blaenau Festiniog, Oakley Quarry	Dec. 22nd, 1919	.. 4·04
"	Carnarvon	..... " Beddgelert Council School	Sept. 1st, 1919	.. 4·06
XIV.	Ayr	..... <i>Substitute</i> Ayr Cemetery	June 12th, 1919	.. 3·57
XV.	Argyll	..... <i>Add</i> Corran Lighthouse	Apr. 10th, 1919	.. 4·50
"	"	..... " Ardgour House	Apr. 10th, 1919	.. 4·20
XVIII.	Inverness	..... " Kinlochquoich	Apr. 10th, 1919	.. 4·18
XXI.	Queens Co.	..... <i>Substitute</i> Mountrath, Baunreagh	June 12th, 1919	.. 3·33

A point of interest to which attention was drawn in the introduction to this section in *British Rainfall*, 1918, was the unusual infrequency of thunderstorm and cyclonic rainfalls in that year. The year 1919 now under review was probably even more remarkable in this respect. Observers from widely scattered parts of the British Isles remarked upon the entire absence of thunderstorms, and the fact was well borne out by the very unusual scarcity of intense rains during the year commented upon in the previous section. The only exception of importance was the storm of 12th June, which exhibited some features of great interest.

Part I.—Chronicle of Heavy Daily Falls.

January 1st.

A low-pressure system of the common winter type, crossing the centre of Scotland, brought considerable rain on the north-west coasts, several stations in the English Lake District recording more than 2·50 in.

VIII. (Eng., N.W.)	in	or	%	X. (Eng., N.)	in.	or	%
Coniston (Holywath) ...	2·75		3·5	Rydal (Stepping Stones)	2·98		4·3
X. (Eng., N.)				Dungeon Ghyll	2·63		2·7
Ambleside (Lesketh Howe)	2·61		3·8	Grasmere (The Wray) ..	2·54		3·2

January 4th.

Snowfalls in the North Midlands of England reached a depth of 14 inches at Buxton. An unusual feature was the great density of the snow, the water content as observed at Meltham being nearly double the normal. As a consequence telegraph and telephone wires were seriously damaged.

January 7th.

Rainfall was general in the west, but was unusually heavy only in Kintyre, where 2·62 in. of rain fell in about five hours, causing considerable flooding at Campbeltown and the neighbouring country.

XV. (Scot., W. Mid.)	Campbeltown (South Park) ..	2·62 in. or 4·7 per cent.
----------------------	-----------------------------	---------------------------

January 9th.

A depression passing north-westward and northward, from Galway to Stornoway, brought heavy winter rains in north-western districts.

X. (<i>Eng., N.</i>)	<i>in</i>	or %	X. (<i>Eng., N.</i>)	<i>in.</i>	or %
Buttermere (Hassness) . .	3·03	3·9	Dungeon Ghyll	3·19	3·3

March 7th.

V. (*Eng., S.W.*) Princetown (H.M. Prison) 3·04 in. or 3·5 per cent.

March 10th—11th.

Very widespread rainfall was associated with the passage of a series of unusually slow-moving depressions. Westerly districts in England and Wales experienced 2 inches on both days. In the low-lying parts of Merioneth and Denbighshire large tracts were flooded. Near Beaumaris, in Anglesey, landslides occurred.

March 10th.

V. (<i>Eng., S.W.</i>)	<i>in.</i>	or %	X. (<i>Eng., N.</i>)	<i>in.</i>	or %
Chagford (Thornworthy)	2·56	3·6	Dungeon Ghyll	2·60	2·7
IX. (<i>Yorks.</i>)			Grasmere (The Wray) . .	2·51	3·2
Ingleton (Kingsdale Hd.)	2·50	3·8	XI. (<i>Wales</i>)		
Slaidburn (Thorneyholme)	3·25	5·5	Bl.Festiniog (Llechwedd Q)	3·12	3·1
„ (Dunsop Hses)	2·63	4·3	Aberdovey (Plas Penhelig)	2·70	5·7

March 11th.

XI. (*Wales*). Llanefydd (Glascoed Res.) 2·78 in. or 6·5 per cent.

March 18th.

A small secondary depression brought local heavy rains, chiefly in Ireland. The only fall sufficiently large to quote was, however, at Campbeltown, where the rain was accompanied by a gale and sleet from the S.E.

March 18th.

XV. (*Scot., W. Mid.*) Campbeltown (South Park) 2·61 in. or 4·7 per cent.

March 19th.

Another small depression brought stormy weather and sleet, chiefly in the north of England and west of Scotland. At Hoar Cross, near Burton-on-Trent, one of the worst snow and rain storms ever experienced in the district took place, continuing without intermission

for upwards of forty-eight hours from 3 p.m. on the 18th. All telephone wires were broken down.

VI. (<i>Eng., W. Mid.</i>).	<i>in.</i>	<i>or</i>	<i>%</i>	XV. (<i>Scot., W. Mid.</i>).	<i>in.</i>	<i>or</i>	<i>%</i>
Burton (Hoar Cross)	2.91		8.3	Dumbarton (Leven			
XIV. (<i>Scot., S.W.</i>).				Shipyard)	2.53		6.8
Skelmorlie (West Park) .	2.88		5.7				

March 26th.

X. (*Eng., N.*) Dungeon Ghyll 2.55 in. or 2.6 per cent.

March 29th.

Snowfalls occurred, more especially in the south-east of England. A depth of more than 12 inches was reported at Lewisham.

April 4th.

XIX. (*Scot., N.*) Loch More (Achfary) 3.06 in. or 3.3 per cent.

April 10th.

Widespread rainfall of the orographical type. More than 4 inches fell in parts of Argyll and Inverness-shire.

XV. (<i>Scot., W. Mid.</i>).	<i>in.</i>	<i>or</i>	<i>%</i>	XVIII. (<i>Scot., N.W.</i>).	<i>in.</i>	<i>or</i>	<i>%</i>
Morvern (Kingairloch) .	2.52		2.9	Loch Quoich (Kinloch-			
Ardgour House	4.20		4.8	quoich)	4.18		3.7
Corran Lighthouse	4.50		5.9	„ „ (Glenquoich) .	2.50		2.7
Glen Etive	2.90		3.3	Loch Nevis (Inverie			
Loch Awe (Dalavich) ..	2.97		3.9	Gardens)	2.60		3.2
Dalmally (Manse of Glen-				Fort William (Atholl			
orchy)	2.50		3.5	Bank)	2.57		4.4
Mull (Glencannel)	3.00		2.6	Skye (Duisdale House)	2.60		3.2

April 27th.

A snowstorm of unusual severity for so late in the season occurred generally over the British Isles, and was particularly severe in the south-east of England. In the morning a subsidiary disturbance developed in Scotland, and afterwards moved southward and eastward over England, the parent disturbance being centred over Denmark. Snow or hail fell in all districts, commencing in London about 1 p.m., after somewhat heavy rain, and covering the ground by 3 p.m. The depth by the early morning of the 28th in the north of London was 12 inches to 15 inches. The snowfall occasioned much dislocation of the telegraph and telephone services, and the rapid melting caused floods in many parts. The temperature was abnormally low for so late in the season. The total fall of snow was most noteworthy in Hertfordshire and Essex, and was considerable, even in parts of Cornwall. In some respects this snowstorm resembled the remarkable

snow of April 25th-26th, 1908, especially in the unusually late date of occurrence for the south of England.

IV. (<i>Eng., E.</i>).	<i>in.</i>	<i>or</i>	<i>%</i>	IV. (<i>Eng., E.</i>).	<i>in.</i>	<i>or</i>	<i>%</i>
Rayleigh (Wheatley's La.)	1.80		8.1	Lexden Rectory	1.92		7.5
S. Hanningfield (Pea-				Gt. Bromley (Broughton)	2.21		8.3
downs)	2.10		8.2	Manningtree (Bradfield			
Writtle (Melbourne)	2.18		8.6	Lodge)	1.84		7.6
Chelmsford (County Lab.)	1.83		7.5	Halstead (The Brewery)	2.11		8.3
Gt. Leighs (Lyons Hall)	2.16		8.7	Widdington Rectory . .	2.00		7.7
Witham (Faulkbourne H.)	2.03		8.6	Sudbury (Gt. Cornard) .	2.05		8.1
Kelvedon (White Barn) .	1.83		7.6	Felixstowe (Wireless Sta.)	1.94		8.1
Colchester (Berechurch)	1.95		7.9				

May 10th.

A rather exceptional local thunderstorm occurred at Caton, near Lancaster, where 1.82 in. of rain fell in one hour thirty minutes, causing serious damage by flooding.

May 13th.

Steady and continuous rain in the south of Ireland. At Ballinacorney 2.99 in. fell between 17 h. on the 13th and 17 h. 30 m. on the 14th.

XX. (*Munster*), Cork (Corn Market), 2.30 in. or 7.5 per cent.

June 1st.

"A very violent hailstorm visited South Northamptonshire on Sunday evening. The districts which suffered most were Silverstone, Whittlebury and Paulerspury. Over a much wider district there were heavy peals of thunder and vivid lightning. Several persons had narrow escapes from death; and many farmers, allotment holders, and gardeners suffered heavy losses from the extensive damage done. The hailstorm lasted about half an hour, and was most serious in Paulerspury, where fields were almost as white as after the last snowstorm. Many windows were broken at Pury End, where stones as big as pigeons' eggs were found lying about. A basketful of these was taken into Paulerspury as a curiosity . . . Heaps of hailstones three feet high were lying about the Park after the storm had passed."—*Northamptonshire Mercury*.

June 11th and 12th.

A shallow depression, the only low-pressure system which crossed the British Isles during the whole of June, traversed the north of Scotland during the 11th, and, turning to the south-south-west, passed across the north of England, being centred near Anglesey on the morning of the 12th. At 7 h. on that day the track apparently turned abruptly to the north-east, and the depression re-crossed the northern counties of England to the North Sea, after which it moved away to Denmark. The distribution of rainfall on both days was definitely associated with the track, the areas of heavy fall being conspicuously grouped round the loop over the Irish Sea, as is clearly brought out by the map of the total fall on the 12th, reproduced on p. 67. In previous instances of looped tracks the heaviest rain has

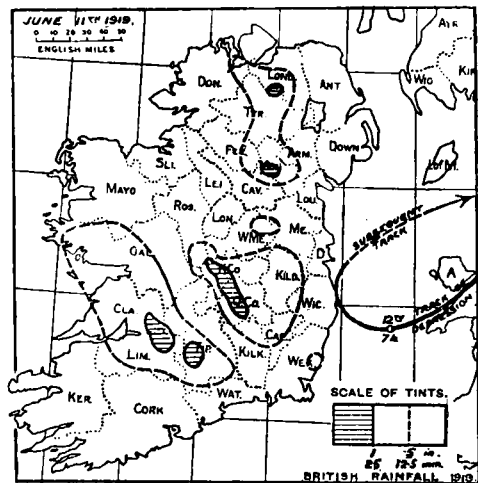
been found within the loop ; and, of course, this may have happened in this case.

On June 11th considerable rain occurred in the centre of Ireland, culminating in a string of 1-inch areas at wide intervals, extending from Cos. Limerick and Tipperary to Co. Londonderry. No individual total was of great magnitude, but, taken in conjunction with the great rainfall of the following day, the distribution was of interest, and we reproduce a map. It will be observed that the maximum rainfall for Ireland on *both* days occurred in King's Co.

On the 12th rainfall was general over nearly the whole of the British Isles, the zero line passing from Co. Cork along the south and east coasts of Great Britain, and cutting off portions of the north of Scotland. The marked coincidence of the rain area with the land area of the British Isles shown by this parallelism with the coast line suggests orographical influences. At the same time, a very definite cyclone track is indicated, and thunderstorm phenomena of a violent nature occurred in the central areas, so that the day's rainfall, so far from falling into any one of the recognized rainfall types, appears to have partaken in some measure of the nature of all.

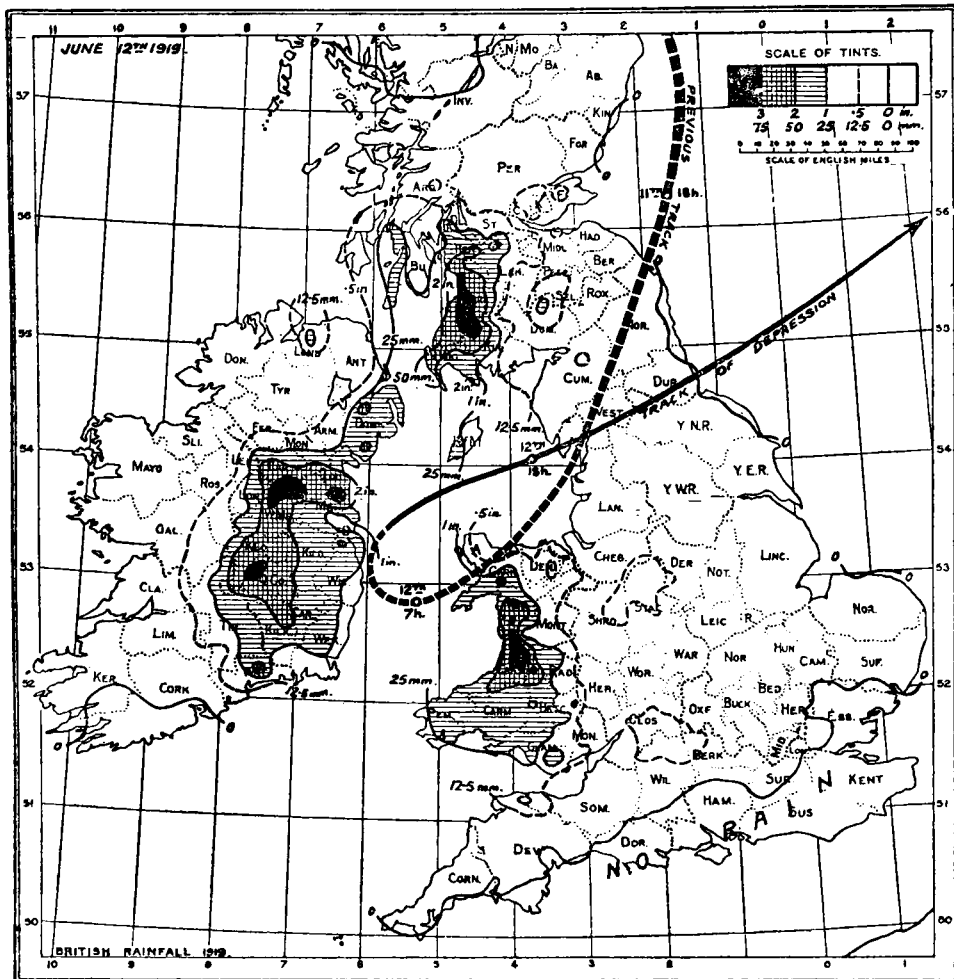
Areas with as much as .50 inch of rain during the day occupied the eastern half of Ireland, the south-western counties of Scotland, the whole of Wales, and a small part of the south-west and Midlands of England, but it was the unusually large 1-inch area which constituted the outstanding feature of the distribution. This extended on the western side from the north of Co. Waterford to Kintyre, and on the east from Glamorgan to Stirlingshire. Part of the south-eastern coast of Ireland, the western extremity of Pembrokeshire, and the Isle of Anglesey had slightly less than one inch ; but it appears probable that at least this amount fell over most of St. George's Channel, and of the Irish Sea west of the Isle of Man. A number of 2-inch areas appeared in the Irish portion of the huge land area affected, the only large one apparently stretching unbroken from Tipperary to Louth. In Scotland a similar area extended from Galloway to Glasgow, and a third in Wales from Cardiganshire to Merioneth. In each of these three main 2-inch areas violent local rains brought more than 3 inches to numerous stations, those in Ireland being in Queen's Co., West Meath, and Meath ; in Scotland chiefly in Ayrshire, and in Wales mainly in Cardiganshire. At Devil's Bridge, about ten miles east of Aberystwyth, more than 4 inches is reported.

RAINFALL, JUNE 11th, 1919.



So far as we are able to ascertain, the rainfall in Wales, and probably also in Ireland, was cyclonic, with the thunderstorm accompaniment commonly associated with the more intense rains of this type ; but in Scotland very pronounced thunderstorm phenomena were the principal feature, exceptionally intense rainfall, violent lightning, and heavy hail occurring over wide areas. Some particulars of the rainfall intensity during the storm are given on pp. 58-59 *ante*. Reports

RAINFALL, JUNE 12th, 1919.



of serious flooding and of damage by lightning were received from the whole district between Helensburgh and Girvan ; and at Ayr, where the rains reached their maximum violence, the storm is said to have been unequalled in severity for at least forty years.

Somewhat further to the east the storm, though less prolonged, was for a time equally violent, and we reprint an abstract of an account from the Teviothead district, giving a description of the hail.

On June 12th, 1919, a startling hailstorm was experienced six miles to the south from Bransholme. This storm passed north-west in a belt well within two miles in width. At Carlanrig Farmhouse, 757 feet above sea, at the head of the Teviot river, and situated in the centre of this belt, the hailstorm appears to have been at its worst and not much trace of it can be got further south. It commenced about 3.30 p.m., and lasted violently for about five minutes. There was at the time a warm gusty wind from the south, and the hail came with considerable force. The stones were not all shaped alike; but mostly nearly round, of the size of marbles or pigeon's eggs, icy hard, and clear.

Though rounded they cut the stems of plants, and were painful to people. A man who was outside during most of the storm, and who was wearing a cloth cap, had bumps and swellings all over the surface of his head caused by the hail. Cattle got quite distracted, and could not be gathered together. In the farm-house about fifty panes of glass were broken. Leaves and twigs were stripped off trees, and garden crops severely damaged.

At Teviothead, shortly after 2 p.m., there was hail for a few minutes, then a lull, and then the blinding shower after 3 p.m. This last covered the ground to the depth of three to four inches. The whole lasted about half an hour. The darkness at this time could almost "be felt." For three miles at least going north-west from Carlanrig, there was the same story of broken glass and damaged gardens. At Teviothead some of the hailstones seemed to have sharp pieces of ice protruding from the ball. A few taken at random and measured were found to be from two to three inches in circumference.

Measurement of the areas on which more than 1 inch fell during the 12th were as follows:—

<i>England, Wales & Isle of Man.</i>	Area, sq. miles.	General Rainfall, inches.	Volume of Rainfall, sq. miles × inches.
More than 4 inches	11	4.05	45
3-4 inches	218	3.41	745
2-3 „	907	2.42	2,192
1-2 „	3,789	1.41	5,349
Total more than 1 inch ..	4,925		8,331

Scotland.

More than 3 inches	333	3.20	1,065
2-3 inches	1,069	2.34	2,498
1-2 „	1,809	1.41	2,549
Total more than 1 inch ..	3,211		6,112

Ireland.

More than 3 inches	411	3.10	1,273
2-3 inches	2,853	2.39	6,811
1-2 „	6,279	1.52	9,529
Total more than 1 inch ..	9,543		17,613

<i>British Isles.</i>	Area, sq. miles.	General Rainfall, inches.	Volume of Rainfall, sq. miles × inches.
More than 4 inches	11	4·05	45
3-4 inches	962	3·20	3,083
2-3 „	4,829	2·38	11,501
1-2 „	11,877	1·47	17,427
Total more than 1 inch ..	17,679		32,056

The general rainfall of the area of 4,925 square miles with more than 1 inch in England and Wales was 1·69 inch, corresponding to a volume of 120,627 million gallons; for the 3,211 square miles in Scotland it was 1·90 inch, or 88,498 million gallons; and for the 9,543 square miles in Ireland 1·85 inch, or 255,025 million gallons. The whole land area in the British Isles over which more than 1 inch fell amounted to 17,679 square miles with a general rainfall of 1·81 inch and a total volume of precipitation of 464,150 million gallons of water, which, it should be noticed, is irrespective of the unmeasured fall over the sea, and of the very large volume which fell beyond the 1-inch areas.

June 12th.

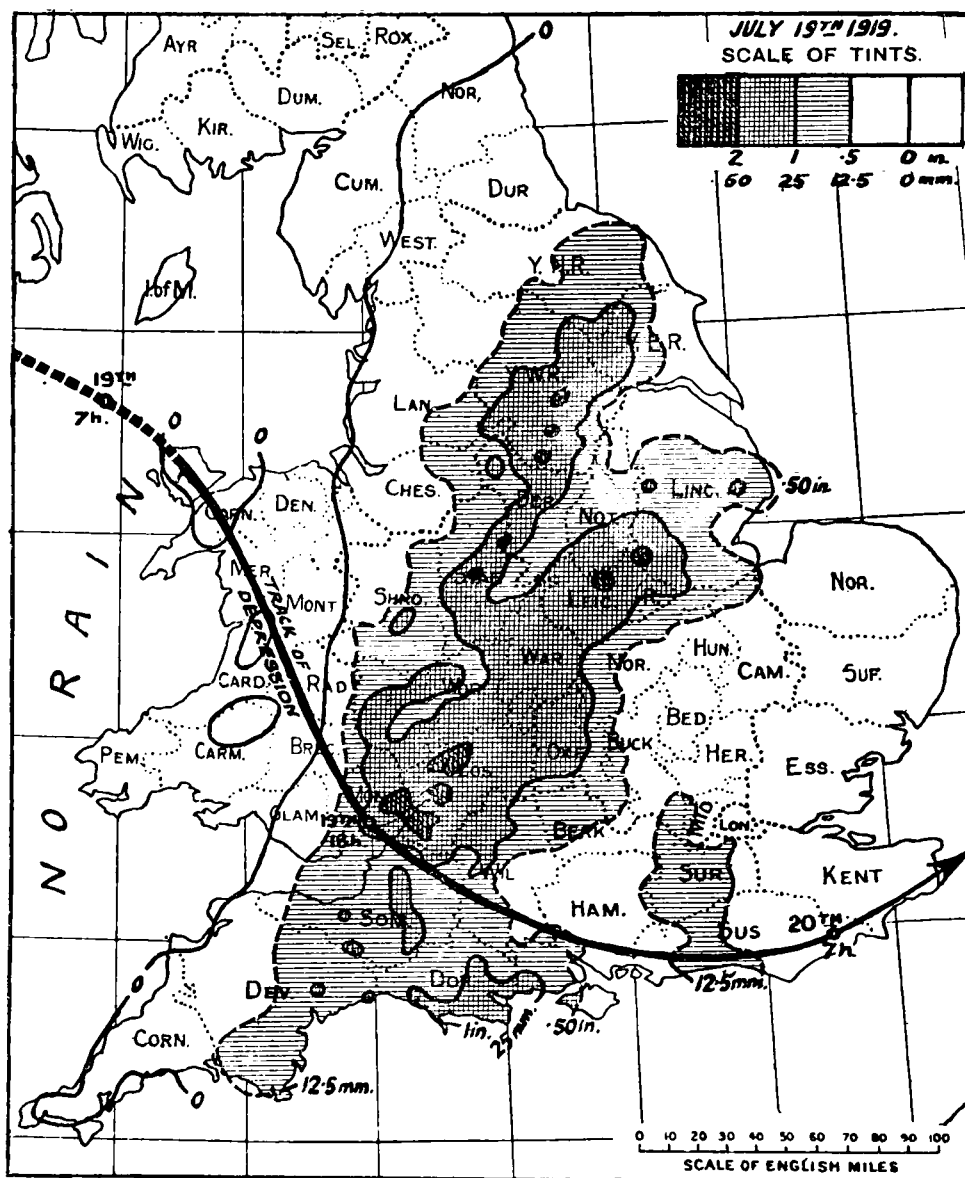
XI. (<i>Wales</i>).	in.	or %	XIV. (<i>Scot., S.W.</i>)—(<i>con</i>).	in.	or %
Strata Florida (Hafod) ..	3·59	5·7	Turnberry Lighthouse .	1·82	8·3
Devils Bridge	4·10	6·3	Colmonell (Knock-		
Aberystwyth (Gogerddan)	2·95	5·6	dolian)	2·71	6·8
Pant-y-ffynon (Elerch) ..	3·75?	6·7?	Ballantrae (Lagafata		
Talybout	3·44	6·6	Lodge)	2·67	4·6
Birmingham, W.W. (Aber-					
gwngu)	2·65	4·1	XX. (<i>Munster</i>).		
Dolgelly (Bryntirion) ..	2·90	4·4	Roscrea (Timony Park) .	2·57	8·3
Aberdovey (Plas Penhelig)	2·62	5·5			
Pennal (Talgarth Hall)	3·58	5·5	XXI. (<i>Leinster</i>).		
			Castlecomer House ...	2·56	7·4
XII. (<i>Scot., S.</i>).			Mountrath (Baunreagh)	3·33	6·5
Loch Ryan Lighthouse ..	2·26	8·7	Mountmellick	2·68	7·7
Logan House	2·73	7·6	Birr Castle	2·21	7·8
Dalry (Garroch)	3·20	5·9	„ (Moneyguynen) .	2·25	7·9
Glasserton	2·60	5·6	Tullamore (Rathrobin) .	2·54	8·4
Carsphairn (Shiel)	2·94	4·6	„ (St.Catherine's Rect.)	2·76	10·1
			Rathmines (Ormond Rd.)	2·23	8·2
XIV. (<i>Scot., S.W.</i>).			„ (Dartrey Road)	2·22	7·8
Glasgow Observatory ..	2·36	7·6	Ranelagh (Sandford Ldg.)	2·08	7·9
Glengarnock Chemical			Donnybrook (Belfort Av.)	2·57	9·3
Works	2·90	5·9	Dublin (Ringsand P.S.)	1·87	7·6
Ayr (Collier Row, St.			Drogheda (Mullacroghan)	3·23	11·0
Quinox	3·13	10·1	Kells (Headfort)	3·31	9·8
Irvine (Gailes)	3·40	9·0	Mullingar (Ballynegall) .	2·79	7·7
Dalry (Munnock Reser-			Castlepollard (Gillards-		
voir)	2·53	5·6	town)	3·00	9·2
Ayr Cemetery	3·57	11·1	„ (Pakenham Hall)	3·21	9·6
Dalmellington (Benwhat)	3·07	6·8			
Patna (Kerse Filters) ..	3·43	8·7	XXIII. (<i>Ulster</i>).		
Ayr (Doonholm)	3·10	8·3	Bailieborough	2·70	7·2

June 15th.

XV. (Scot., W. Mid.).	in.	or	%	XVIII. (Scot., N.W.).	in.	or	%
Ardgour House	2.73	3.1		Skye (Duisdale House).	3.53	4.4	

July 19th.

The day set apart for the official celebration of Peace was marked in the English Midlands by one of the very few heavy cyclonic rains of the year. The depression associated with this rainfall extended in a south-easterly direction from the Atlantic during the early hours of the day, and during the twenty-four hours included in the rainfall day the centre passed from a point near Holyhead to the neighbourhood of Dover. Rain appears to have commenced about 9 h. (G.M.T.)

RAINFALL, JULY 19th, 1919.

at Gloucester, but at Wirksworth not until 19 h., suggesting progress north-eastward nearly at right angles to the path of the depression. This is further borne out by the fact that about an inch of rain fell in Norfolk on the following day.

Apart from light showers in North Wales, an extremely well-marked zero line stretched from Cornwall to Northumberland. The eastern boundary of the rain area was less well defined, but little rain fell along most of the east coast. A broad belt, with more than $\cdot 50$ in., extended from Plymouth and Southampton on the south to Whitby in the north, and enclosed a large irregular tract with more than 1 inch. The outline of the 1-inch area suggests two parallel lines of maximum fall, the more westerly stretching from Newport (Mon.) to York, and the more easterly from about Weymouth to Newark. A string of small 2-inch patches between Chepstow and Pontefract marked the culminating axis of the westerly maximum; whilst the easterly reached 2 inches between Leicester and Grantham, where nearly 3 inches fell locally. More than an inch fell also in parts of Devon, Somerset, and Dorset.

The total land area with more than 1 inch of rain during this day was 9,553 square miles with a general rainfall of 1·31 inch, corresponding to a total volume of 181,441 million gallons.

	Area, sq. miles.	General Rainfall, inches.	Volume of Rainfall, sq. miles \times inches.
More than 2 inches	414	2·19	908
1-2 inches	9,139	1·27	11,623
Total more than 1 inch ..	9,553		12,531

VI. (<i>Eng., W. Mid.</i>).	<i>in.</i>	<i>or %</i>	VIII. (<i>Eng., N. Mid.</i>).	<i>in.</i>	<i>or %</i>
Haresfield Court	3·00	8·3	Radcliffe-on-Wreake Coll.	2·90	7·1
Quedgeley House).....	2·31	7·8	Croxton Kerrial	2·80	8·1
Gloucester(Denmark Rd.)	2·38	8·7	IX. (<i>Yorks.</i>).		
„ (Barnwood Vic.) .	2·48	8·0	Wentworth Woodhouse	2·50	7·4
„ (Llanthony Lock)	2·80	9·9	Ackworth School	2·50	8·3
„ (Maisemore Lock)	2·29	8·2	XI. (<i>Wales</i>).		
Churchdown(Barrow Hill)	2·16	7·5	Chepstow (Itton Court).	2·51	6·6

August 17th.

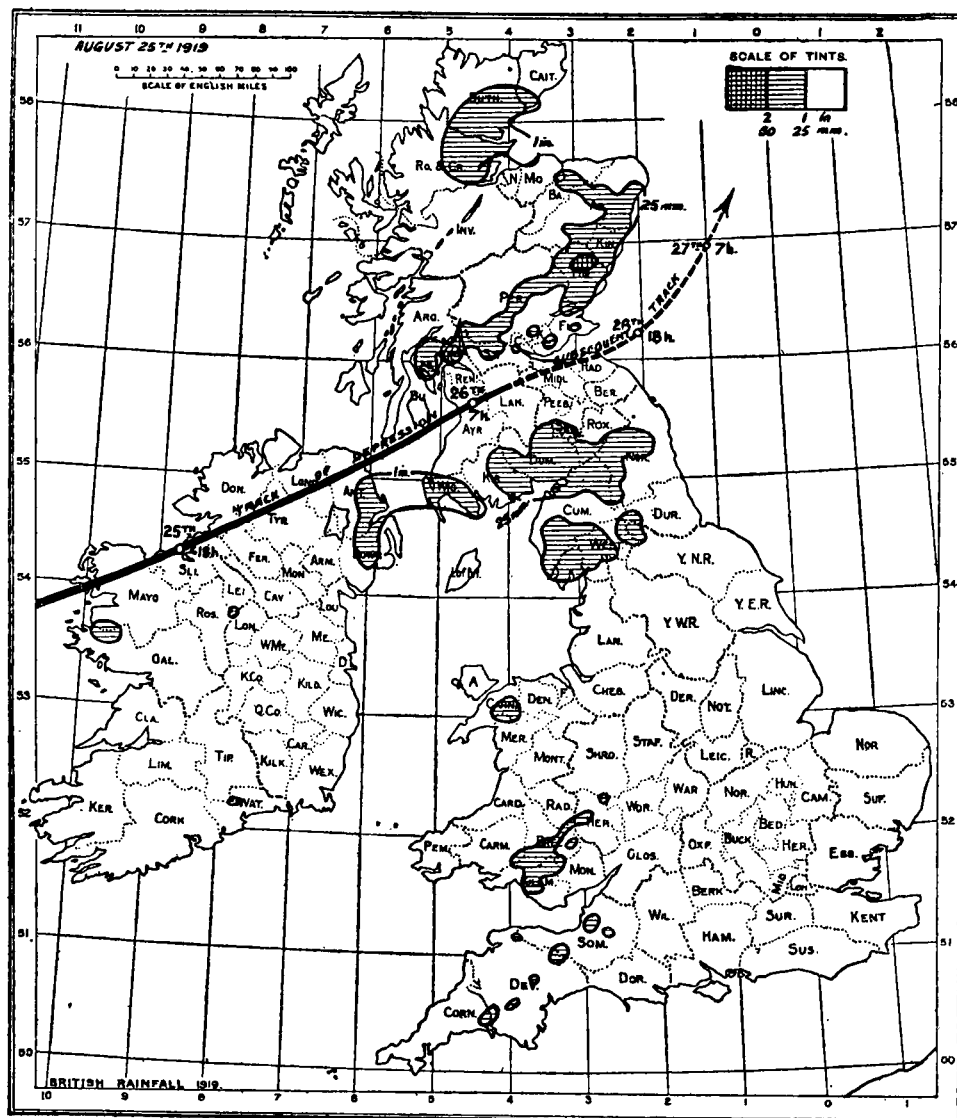
X. (*Eng., N.*) Kendal (Potter Tarn Res.) 2·53 in. or 3·4 per cent.

August 25th—26th.

A large depression moved eastward from the Atlantic, crossing the north of Ireland on the 25th, and passing slowly over the south of Scotland on the following day into the North Sea. On the 25th scattered areas with more than 1 inch of rain occurred at intervals over a large area, extending from Co. Mayo in the west to Caithness in the north and Devonshire in the south. In England and Wales the rain of this day was probably orographical, being associated with the westerly and south-westerly winds on the southern flank of the passing low-pressure

system ; but in more northerly districts the arrangement of the 1-inch splashes suggests a more definite cyclonic origin. On the right-hand side of the path more than an inch fell in Connemara, at Drumod on the Shannon, in the neighbourhood of Belfast, and thence in an

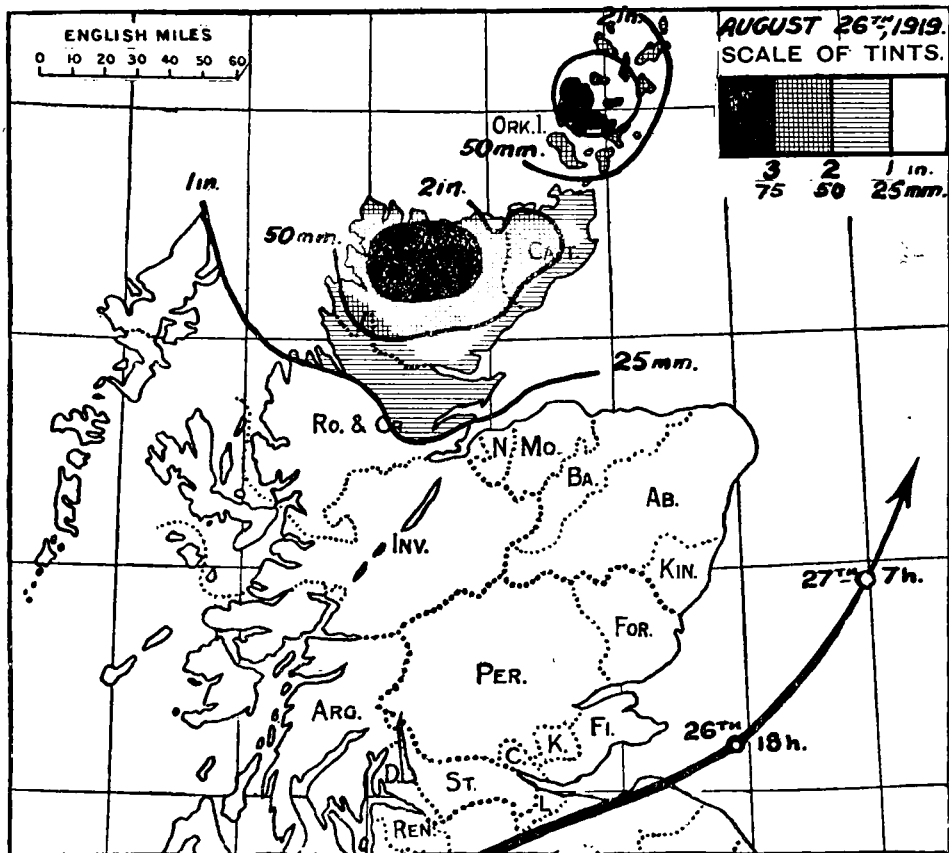
RAINFALL, AUGUST 25th, 1919.



almost unbroken belt eastward to Rothbury in Northumberland. On the left hand, or northern side of the track, a long narrow strip, with more than 1 inch, stretched from the Kyles of Bute to Peterhead. An extension north-westward in Aberdeenshire, at right angles to the depression track, pointed in the direction of another ill-defined 1-inch area in eastern Ross-shire and Sutherlandshire. The last-mentioned splash probably represents the commencement of the fall of the 26th,

which, as a heavy rain, was confined to the north of Scotland, including the Orkney Islands. It is difficult, owing to the small number of rainfall stations in the district, to lay down the distribution of rainfall on the 26th with any precision, but it is clear that more than an inch fell everywhere to the North of the Moray Firth, except in the Hebrides and the northern Shetlands. More than 2 inches fell over Sutherlandshire and western Caithness, and also over the Orkneys and more than 3 inches

RAINFALL, AUGUST 26th, 1919.



widely in the centre of each of these districts. For information as to the rainfall in the islands we are largely dependent upon lighthouse records, and there is some doubt as to whether spray may have affected the readings.

Small areas in Wales and the Pennines had a fall of over an inch on this day, but, as on the 25th, these rains were probably orographical, and not definitely associated with the passage of the depression, which brought the rainfalls farther north.

The maps reproduced can be regarded only as sketch maps, and that of the 26th is not of sufficient accuracy to justify planimeter measurements.

August 26th.

XIX. (<i>Scot., N.</i>).			XIX. (<i>Scot., N.</i>).		
	<i>in</i>	<i>or %</i>		<i>in.</i>	<i>or %</i>
Tongue Manse	3·80	8·5	Pomona (Kirkwall) ...	3·85	9·1
Bettyhill (Farr Schoolho.)	2·96	...	Hellyar Holm	2·60	6·9
Loch More (Achfary) ...	3·76	4·1	Auskerrie	3·10	10·4
Pentland Skerries	2·50	4·5	Sanday (Start Point) ..	2·50	7·0
Hoy (Cantickhead)	2·30	7·5	Westray (Noup Head) .	3·11	9·0
Pomona (Deerness)	3·62	8·7			

August 27th.

A fresh depression approached Cornwall on the evening of this day ; and, although no falls actually reached the limit for quotation, extensive rains occurred in the south-western counties, as much as 2 inches falling on Dartmoor.

September 1st.

Widespread rain, heaviest in the north-west of England and Wales, appears to have been associated with a secondary pressure system on the outskirts of a large depression lying between Iceland and the British Isles. More than 3 inches fell at some stations in the Lake District, and more than 4 inches at Beddgelert, in Carnarvonshire.

VIII. (<i>Eng., N.W.</i>).			X. (<i>Eng., N.</i>).		
	<i>in.</i>	<i>or %</i>		<i>in.</i>	<i>or %</i>
Duddon Valley (Seathwaite Vic.)	2·83	4·2	Rydal (Stepping Stones)	3·07	4·4
Pennybridge School	2·82	5·1	Rydal	3·36	4·8
Coniston (Holywath) ...	3·61	4·5	„ (High Close)	3·32	4·7
Hawkshead (Esthwaite Lodge)	2·65	4·1	Dungeon Ghyll	2·62	2·7
Skelwith Fold	2·79	4·1	Grasmere (The Wray) ..	2·98	3·8
			Kentmere	2·50	3·9
X. (<i>Eng., N.</i>).			XI. (<i>Wales</i>).		
Whitehaven (Irish Street)	2·50	6·4	Beddgelert (Council Sch.)	4·06	4·3
Silecroft (Old Chappels) ..	2·61	5·1	Snowdon (Cwm Dyli) ..	3·61	3·5
Ambleside (Lesketh Hwe)	2·63	3·8	Nebo Council School ...	3·67	6·3

September 2nd.

Another secondary depression brought more than 2 inches to numerous stations in Guernsey.

XI. (*Channel I.*). St. Martin's (Les Blanchés) 2·50 *in.* or 5·9 per cent.

September 21st.

A local rainfall in Aberdeenshire.

XVII. (*Scotland, N.E.*). Brucklay Castle 2·73 *in.* or 5·9 per cent.

September 23rd—29th.

A succession of wet weather in the West Highlands, where winds from between N.W. and S.W. blew with little intermission.

September 23rd.

XVIII. (*Scotland, N.W.*). Loch Quoich (Kinlochquoich) 2·50 *in.* or 2·2 per cent.

September 24th.

XV. (<i>Scot., W. Mid.</i>). <i>in.</i> or %	XVIII. (<i>Scot., N.W.</i>) <i>in.</i> or %
Glen Etive 2.50 2.9	Lock Quoich (Kinloch- quoich) 2.70 2.4
	Glenleven (Kinlochmore) 2.79 3.6

September 25th.

XVIII. (<i>Scot., N.W.</i>). <i>in.</i> or %	XVIII. (<i>Scot., N.W.</i>). <i>in.</i> or %
Loch Quoich (Glenquoich) 2.65 2.9	Loch Arkaig (Glen Dessary)..... 2.60 2.7

September 29th.

XV. (*Scot., W. Mid.*). Mull (Glencannel) 2.85 *in.* or 2.5 per cent.

October 29th.

A depression, taking an unusual course from Holland through the Straits of Dover, and southward over France, was accompanied by considerable rain in England, falling with a N.E. wind. More than 2 inches was measured in the Pennines and part of the North Yorkshire Wolds.

IX. (<i>Yorks.</i>). <i>in.</i> or %	X. (<i>Eng., N.</i>). <i>in.</i> or %
Greenfield (Chew Mount) 2.93 5.2	Alston (Nenthead) 2.60 4.3

November 17th—18th.

Orographical rains in the north.

November 17th.

X. (<i>Eng., N.</i>). <i>in.</i> or %	XVII. (<i>Scot., N.E.</i>). <i>in.</i> or %
Dungeon Ghyll 3.03 3.1	Keith Station..... 2.50 5.8

November 18th.

XVIII. (*Scot., N.W.*). Loch Quoich (Kinlochquoich) 2.90 *in.* or 2.6 per cent.

December 10th.

Orographical rains of the common winter type occurred, with pressure conditions favourable for steady south-westerly winds. The area principally affected was the north-west of England and the south-west of Scotland, with the Isle of Man.

X. (<i>Eng., N.</i>). <i>in.</i> or %	XIV. (<i>Scot., S.W.</i>). <i>in.</i> or %
Dungeon Ghyll 2.70 2.8	Ballantrae (Lagafata Lo.) 2.95 5.1
XI. (<i>Islands</i>)	XV. (<i>Scot., W. Mid.</i>).
Ramsey (Nth Promenade) 2.58 6.5	Pladda 2.80 6.9

December 22nd.

A small secondary depression superimposed on barometric conditions of a strong north-westerly type, caused exceptional falls in North Wales. More than 2 inches also fell in Co. Mayo.

XI. (<i>Wales</i>).			XI. (<i>Wales</i>).		
	<i>in.</i>	<i>or %</i>		<i>in.</i>	<i>or %</i>
Strata Florida (Hafod) ..	2·50	4·0	Blaenau Festiniog		
Devil's Bridge	3·45	5·3	(Llechwedd Q.)	4·34	4·3
Birmingham W.W.			Dolgelly (Bryntirion) ..	3·25	4·9
(Abergwngu)	3·05	4·8	Trawsfynydd Camp ...	2·60	3·8
Tan-y-bwlch (Dol-y-Moch)	3·25	5·0	Pennal (Talgarth Hall) ..	2·65	4·1
Festiniog (Hafod Fawr) .	6·34	6·0	Bethesda (Penrhyn Q.) .	2·10	3·2
Bl. Festiniog (Oakley Q.)	4·04	4·6			

Part II.—Abstract of Heavy Daily Falls.

Table I. on p. 77 brings together for comparison with similar data in previous years the twenty largest daily rainfalls recorded during the year, including, however, only one fall from any individual station. The days represented by most entries are: 10th April, in the West Highlands, providing three individual falls of more than 4 inches; 12th June, with eight records from central Wales and Ayrshire; 26th August, in the extreme north; and 22nd December, in North Wales. The largest fall, 4·50 inches, on 10th April, at Corran Lighthouse, near Ballachulish, is well supported by neighbouring records. It will be seen by Table III that this fall is the smallest maximum daily rainfall recorded in any year since 1889. It is only ·45 inch in excess of the smallest annual maximum fall ever reported, *viz.*, 4·05 inches, in 1879, a period at which the number of rainfall stations, and in consequence the chance of recording any exceptional fall, was very greatly inferior to that at the present day.

In Table II. are given, in a similar way to Table I., the twenty largest values of percentage of the annual total recorded on any rainfall day in 1919. The snowfall of 27th April claims three entries, none of notable magnitude; the cyclonic rainfalls of the 19th July and 26th August are represented also, but the bulk of the entries are due to the rainfall of 12th June, including the two largest values for the year, *viz.*, 11·1 per cent. at Ayr, and 11·0 per cent. at Drogheda. Turning again to Table III., it will be seen that the maximum percentage value, like the maximum daily fall, was unusually low in comparison with previous years, not having been lower since 1885, though several times equalled.

In Table IV. the number of daily rainfalls, reaching respectively 7·5 per cent. of the annual fall at the station, 2·00 inch, 3·00 inch, and 4·00 inch, are given, and these numbers bring out very strikingly the great rarity of heavy daily rainfalls during the year, being in nearly every case by far the smallest during the years for which records are available, and conspicuously smaller than in 1918, itself a year of notable scarcity of heavy rains.

TABLE I.—*The largest Daily Rainfalls in 1919.*

Date.	Div.	Station.	Depth.	Per cent.	Total.
			in.		in.
April 10	XV.	Corran Lighthouse	4.50	5.9	76.12
Dec. 22	XI.	Festiniog (Hafod Fawr)	4.34	6.0	72.20
Dec. 22	XI.	Blaenau Festiniog (Llechwedd Q.)..	4.34	4.3	100.23
April 10	XV.	Ardgour House	4.20	4.8	87.04
April 10	XVIII.	Loch Quoich (Kinlochquoich)	4.18	3.7	112.16
June 12	XI.	Devil's Bridge	4.10	6.3	65.21
Sept. 1	XI.	Beddgelert (Council School)	4.06	4.3	94.95
Dec. 22	XI.	Blaenau Festiniog (Oakley Quarries)	4.04	4.6	88.67
August 26	XIX.	Pomona (Kirkwall)	3.85	9.1	42.29
August 26	XIX.	Tongue Manse	3.80	8.5	44.52
August 26	XIX.	Loch More (Achfary)	3.76	4.1	91.58
June 12	XI.	Pant-y-fynnon (Elerch)	3.75?	6.7?	56.34
Sept. 1	VIII.	Coniston (Holywath)	3.61	4.5	79.84
June 12	XI.	Strata Florida (Hafod)	3.59	5.7	62.89
June 12	XI.	Pennal (Talgarth Hall)	3.58	5.5	65.41
June 12	XIV.	Ayr Cemetery	3.57	11.1	32.36
June 15	XVIII.	Skye (Duisdale House)	3.53	4.4	80.24
Sept. 1	XI.	Nebo Council School	3.67	6.3	58.70
August 26	XIX.	Pomona (Deerness)	3.62	8.7	41.48
Sept. 1	XI.	Snowdon (Cwm Dyli)	3.61	3.5	104.31

TABLE II.—*The largest Daily Percentages in 1919.*

Date.	Div.	Station.	Per cent.	Depth.	Total.
				in.	in.
June 12	XIV.	Ayr Cemetery	11.1	3.57	32.36
June 12	XXI.	Drogheda, Mullacroghan	11.0	3.23	29.44
August 26	XIX.	Auskerry	10.4	3.10	29.72
June 12	XIV.	Ayr, Collier Row, St. Quinox	10.1	3.13	31.08
June 12	XXI.	Tullamore, St. Catherine's Rectory .	10.1	2.76	27.31
July 19	VI.	Gloucester, Llanthony Lock	9.9	2.80	28.24
June 12	XXI.	Kells, Headfort	9.8	3.31	33.75
June 12	XXI.	Castlepollard, Pakenham Hall	9.6	3.21	33.48
June 12	XXI.	Donnybrook, Belmont Avenue	9.3	2.57	27.76
June 12	XXI.	Castlepollard, Gillardstown House..	9.2	3.00	32.71
August 26	XIX.	Pomona, Kirkwall	9.1	3.85	42.29
June 12	XIV.	Irvine, Gailes	9.0	3.40	37.79
August 26	XIX.	Westray, Noup Head	9.0	3.11	34.48
August 26	XIX.	Pomona, Deerness	8.7	3.62	41.48
June 12	XIV.	Patna, Kerse Filters	8.7	3.43	39.60
July 19	VI.	Gloucester, Denmark Road	8.7	2.38	27.52
June 12	XII.	Loch Ryan Lighthouse	8.7	2.26	26.03
April 27	IV.	Great Leighs, Lyons Hall	8.7	2.16	24.92
April 27	IV.	Writtle, Melbourne	8.6	2.18	25.24
April 27	IV.	Witham, Faulkbourne Hall	8.6	2.03	23.74

TABLE III.—*Comparison of Maximum Fall and Maximum Percentage with those in previous Years.*

Year.	ABSOLUTE HIGHEST RAINFALL.				ABSOLUTE HIGHEST PERCENTAGE.				Year.
	Depth.	Per cent.	Station.	Div.	Per cent.	Depth.	Station.	Div.	
	in.					in.			
1865 ..	3·67	6·4	Seathwaite	10	9·9	2·62	Fleckney	7	1865
1866 ..	3·40	4·4	„	10	10·0	2·48	Burton	6	1866
1867 ..	4·71	17·7	Hartlip	2	17·7	4·78	Hartlip	2	1867
1868 ..	3·32	6·1	Camusinas	15	8·6	2·55	Tongue	19	1868
1869 ..	6·07	4·5	Seathwaite	10	10·0	3·40	Tillydesk	17	1869
1870 ..	6·00	17·1	Tongue	19	17·1	6·00	Tongue	19	1870
1871 ..	4·24	9·6	Melbury	5	11·5	3·62	Warter	9	1871
1872 ..	5·82	3·2	Seathwaite	10	10·0	3·70	Hillington Hall	4	1872
1873 ..	4·20	2·9	„	„	11·8	2·77	Oscott	6	1873
1874 ..	5·32	4·4	Bryn Gwynant	11	11·9	2·50	Welwyn	3	1874
1875 ..	5·33	9·7	Newport W.W.	„	13·2	3·95	Letheringsett	4	1875
1876 ..	4·50	5·5	Foffany	23	8·5	3·70	Crag-side	10	1876
1877 ..	4·98	5·3	Skye, Portree	18	9·3	3·09	Wellington	6	1877
1878 ..	4·24	8·6	Springfield	11	11·8	3·90	Haverstock Hill	1	1878
1879 ..	4·05	4·1	Little Langdale	10	12·3	3·80	Cambridge, Merton V..	3	1879
1880 ..	4·75	3·9	Seathwaite	„	11·7	3·34	Marmont Priory Lock ..	„	1880
1881 ..	5·42	4·7	Sligachan	18	10·6	3·20	Aboyne Castle	17	1881
1882 ..	4·51	3·0	Seathwaite	10	9·1	2·80	Bothalhaugh	10	1882
1883 ..	5·27	9·0	Glen-na-Smoel	21	12·3	4·31	Skegness	7	1883
1884 ..	6·78	5·0	Seathwaite	10	13·8	2·66	Diss, Thelveton	4	1884
1885 ..	4·62	3·2	„	„	9·6	2·62	Beccles, Ellough	4	1885
1886 ..	4·20	9·9	Little Bredy	5	11·5	4·10	Leeds, Methley Park ..	9	1886
1887 ..	4·93	13·0	Galway, Queen's Coll.	22	13·0	4·93	Galway, Queen's Coll..	22	1887
1888 ..	5·20	5·4	Wythburn Vicarage ..	10	11·8	3·24	Rothamstead	3	1888
1889 ..	4·45	16·5	North Ockendon	4	16·5	4·45	North Ockendon	4	1889
1890 ..	7·29	3·7	Ben Nevis Obsy.	18	17·2	3·68	Slough, Langley	3	1890
1891 ..	6·14	4·2	Seathwaite	10	14·4	4·00	Montrose, Sunnyside...	16	1891
1892 ..	5·80	4·5	„	„	15·0	4·27	Flax Bourton	5	1892
1893 ..	4·96	3·5	„	„	16·2	4·48	Cranmer Hall	4	1893
1894 ..	7·74	5·1	Ben Nevis Obsy.	18	11·1	3·56	Sidcup	2	1894
1895 ..	4·83	16·1	Mellington Hall	11	16·1	4·83	Mellington Hall	11	1895
1896 ..	4·59	3·7	Seathwaite	10	11·1	2·78	Barkby	7	1896
1897 ..	8·03	5·6	„	„	14·1	2·40	Chatteris, Horseway L.	3	1897
1898 ..	6·70	18·1	Angerton Hall	„	18·1	6·70	Angerton Hall	10	1898
1899 ..	5·21	5·6	Grange	„	14·6	3·10	Wallingford	2	1899
1900 ..	5·40	11·9	Ilkley, Cherry Bank ..	9	13·1	4·50	Gilstead Filters	9	1900
1901 ..	5·66	5·7	Dungeon Ghyll	10	17·9	4·24	Maidenhead, The Firs..	2	1901
1902 ..	5·92	3·8	Ben Nevis Obsy.	18	15·5	3·51	Esher Sewage Works ..	„	1902
1903 ..	4·78	2·2	„	„	12·8	4·41	Dartford, West Hill H.	„	1903
1904 ..	5·62	6·0	Skelwith Bridge	10	15·8	3·48	Leamington, Binswd A.	6	1904
1905 ..	5·71	14·0	Glen-na-Smoel	21	14·9	3·98	Cotton Vicarage	5	1905
1906 ..	6·15	4·7	Seathwaite	10	11·9	2·50	C'mbridge, Herschell H.	3	1906
1907 ..	4·86	9·4	Kingsbridge	5	12·5	3·40	Lincoln, St. Botolph's	7	1907
1908 ..	4·80	9·9	Treharris	11	16·0	3·45	Great Glemham	6	1908
1909 ..	6·46	5·7	Kinlochquoich	18	11·1	3·30	Tidworth House	2	1909
1910 ..	4·51	3·4	Seathwaite	10	13·0	3·93	Wheatley, Waterstock	3	1910
1911 ..	7·00	4·7	„	„	14·2	3·25	Haxby, Moorlands	9	1911
1912 ..	7·31	21·3	Brundall	4	22·2	6·67	Norwich, Carrow Ho...	4	1912
1913 ..	6·06?	26·0?	Doncaster W.W.	9	26·0?	6·06?	Doncaster Pump'g Stn.	9	1913
1914 ..	6·35	4·1	Pen-y-Gwryd	11	14·8	3·35	Upminster	4	1914
1915 ..	7·06	19·7	Dalcross	18	19·7	7·06	Dalcross	18	1915
1916 ..	8·20	5·7	Kinlochquoich	18	13·1	3·91	Portland Bill	5	1916
1917 ..	9·56	„	Bruton	5	21·8	8·39	Aisholt	5	1917
1918 ..	4·95	9·2	Douglas	11	12·3	3·36	Woodsetts Grange	9	1918
1919 ..	4·50	5·9	Corran	15	11·1	3·57	Ayr Cemetery	15	1919

The largest entry in each column is shown in heavy type and the smallest in italic type.

TABLE IV.—*Comparison of Heavy Daily Rainfalls.*

		No. of Records.	Falls of 7·5 per cent. or more.		Falls of 2·00 in. or more.		Falls of 3·00 in. or more.		Falls of 4·00 in. or more.
			No.	Per cent. of total.	No.	Per cent. of total.	No.	Per cent. of total.	No.
<i>England & Wales.</i>	1915	3745	112	3·0	748	20·0	41	1·1	1
	1916	3626	62	1·7	646	17·8	88	2·4	10
	1917	3426	311	9·1	621	18·1	155	4·5	59
	1918	3353	54	1·6	469	14·0	60	1·8	7
	1919	3222	25	0·8	234	7·3	26	0·8	5
<i>Scotland.</i>	1915	550	26	4·7	212	38·5	33	6·0	1
	1916	533	17	3·2	353	66·3	60	11·2	12
	1917	558	5	0·9	209	37·5	36	6·5	9
	1918	541	4	0·7	136	25·1	10	1·8	2
	1919	538	21	3·9	142	26·4	19	3·5	3
<i>Ireland.</i>	1915	256	0	0	71	27·7	8	3·1	0
	1916	243	3	1·2	118	48·6	21	8·7	7
	1917	239	15	6·3	62	25·9	4	1·7	0
	1918	241	0	0	25	10·4	1	0·4	0
	1919	261	17	6·5	46	17·6	5	1·9	0
<i>British Isles.</i>	1915	4551	138	3·0	1031	22·6	82	1·8	2
	1916	4402	82	1·9	1117	25·4	169	3·8	29
	1917	4223	331	7·8	892	21·2	195	4·6	68
	1918	4135	58	1·4	630	15·2	71	1·7	9
	1919	4021	63	1·6	422	10·5	50	1·2	8

MONTHLY RAINFALL IN 1919.

It is possible to print in a tabular form* only a selection of the available material bearing on the distribution of monthly rainfall in the year, but the bulk is presented graphically in the form of maps which give effect to the whole. These maps, reproduced on the left-hand side of each opening from pp. 94 to pp. 117 carry on the series commenced in 1908. They are of value not only as setting out in detail the approximate amount of rainfall observed in all parts of the country during each successive month, but taken in conjunction with those of preceding years they exemplify the prevalence of certain recurring types of distribution, more particularly at some seasons; the extraordinary reversals of type which occasionally occur; and, though possibly less readily, the quantitative fluctuations to which monthly rainfall is subject. The maps should be studied in comparison with those on each opposite page showing the relation of the rainfall of the month in question to the average, and if possible with the maps of monthly barometric pressure distribution published in the *Monthly Weather Reports* of the Meteorological Office.

The text accompanying the monthly maps is intended less to give an adequate description of the rainfall distribution, information which can be drawn more readily from the maps themselves, than to call attention to the outstanding features and to emphasize any marked departure from normal conditions.

A selection of the data upon which the twenty-four maps are based is given in Tables II. and III., containing respectively 348 and 106 records. In both tables the stations chosen are as far as possible equably distributed over the whole country so that the arithmetical means of the whole number of records or of any particular portion may be accepted as yielding a close approximation to the true general values for the British Isles and the constituent countries, without giving undue weight to any particular district.

In Table I. the stations are taken from among those for which thirty-five year averages are available, and the monthly rainfall, instead of being given in full, is expressed in the form of a percentage of that average. The mean values summarize the rainfall of each month and enable the following notes to be drawn up.

Taking the **British Isles** as a single unit eight months of the year had less than the average rainfall, and of these, seven, May to November inclusive, were consecutive. Table I. on p. 81 shows that since comparable data for the determination of the general rainfall percentage first became available in 1903 there has been no previous instance of so protracted a spell of dry months over the country as a whole, the longest being of six months' duration from September, 1904, to February, 1905, inclusive. In no case was any month in 1919 the driest of the same name during the seventeen years included in

the table, but the three months, May, June and July together, differed but little from May, June and July, 1905, the driest consecutive months at that season. October, 1919, was also a notably dry month, though October, 1904, was drier by 10 per cent, and October, 1914, by 2 per cent. Of the wet months in 1919, December alone exceeded the average by as much as 50 per cent., March being the next wettest with 41 per cent. above the average, neither an abnormally large excess.

Taking **England** alone, five months were wet and seven dry, the incidence being the same as in the case of the British Isles as a whole, except that in England February had a slight excess. The wettest months, January, March and December, showed excesses of respectively

TABLE I.—*Variations of General Monthly Rainfall, the Average being taken as 100. British Isles, 1903-1919.*

Year.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1903*	138	119	196	95	124	105	131	145	111	185	76	81
1904*	117	158	89	116	123	67	92	109	81	48	68	92
1905*	59	71	176	126	56	101	50	122	67	69	119	49
1906*	156	117	94	68	158	77	60	86	43	140	114	92
1907*	57	86	89	133	152	153	78	96	32	140	86	119
1908*	82	96	156	122	104	70	96	106	118	48	64	96
1909*	74	52	154	141	90	106	117	77	81	141	47	138
1910†	119	170	69	131	103	109	109	141	30	76	119	126
1911†	62	123	77	108	83	107	58	70	79	87	133	175
1912†	118	107	167	47	80	182	112	161	57	101	94	145
1913†	143	70	164	165	130	94	36	43	92	94	120	78
1914†	79	160	162	81	85	68	107	88	67	56	132	180
1915†	124	185	60	96	79	60	144	76	58	75	80	167
1916†	107	169	102	117	143	102	82	91	65	162	130	97
1917†	72	47	92	94	105	100	73	173	87	146	108	58
1918†	112	138	57	72	95	60	140	84	211	101	93	128
1919†	128	77	141	112	60	92	55	87	95	58	90	153

* From 1903 to 1909 the Average used was for 1870-1899.

† " 1910 to 1919 " " 1875-1909.

For a comparison of these two averages see *British Rainfall*, 1910, p. [142.]

67, 87 and 60 per cent., March having a fall almost exactly equal to that in 1914 and 1912, the most recent very wet Marches in England. The distribution of rain relatively to the average in England in March, 1919, showed some similarity to that in 1916, but the general fall was greater. Of the seven dry months, May to November, inclusive, May and June were by far the driest, having respectively deficiencies of 55 and 49 per cent.

In **Wales**, March, with an excess of 106 per cent., was even wetter than in England, but February had slightly less than the average fall. May to November, inclusive, were, as in England, all months of defective fall, and April with an excess of only 6 per cent. almost added one more month to the dry run. June was considerably wetter than in England, having a deficiency of only 13 per cent., but May

with a deficiency of 56 per cent. was as dry as, and July with a deficiency of 54 per cent. much drier than, in England. The small rainfall of October and November, although not in itself showing any very remarkable deficiency, coming as it did at the end of so long a period of deficient fall, caused a serious shortage in water supply, particularly in South Wales.

In **Scotland** April, June, September and November, although in no case notably wet, were all wetter than elsewhere, and, taking the country as a whole, there was no protracted spell of extremely dry months as in England and Wales. There was, however, no month in the year in which the general rainfall exceeded the average by as much as 50 per cent., and, contrary to the conditions in the south, the first three months of the year all had less than their average fall, February being extremely dry with a 60 per cent. deficiency. In addition to this May and July were drier in Scotland than elsewhere, with 59 and 63 per cent. below their respective averages, whilst October with a deficiency of 45 per cent. carried the effects of an unusually dry summer far into the autumn. In parts of central Perthshire the lack of rain was acutely felt and farmers in the Pitlochry district were carting water even in early November on account of the dryness of springs.

In **Ireland** the sequence of monthly rainfall resembled that of England and Wales rather than that of Scotland, though February was dry. May, though dry elsewhere, had slightly above its average fall, and June also showed a trifling excess. Only one month in the year, however, December, with 61 per cent. above the average, had more than 24 per cent. excess, Ireland, on the balance of the year, being as dry as Scotland. The months of least rainfall were July with a deficiency of 61 per cent., and October with a deficiency of 57 per cent., Ireland being relatively drier than any other part of the British Isles during the latter months.

An unusual feature of the monthly rainfall in 1919 was the large range observed. In as many as six months parts of the British Isles experienced more than twice their average rainfall, whilst in no fewer than nine months some part of the country had less than half its average. Three times, *viz.*, in February, April and June, both these extremes occurred in the same month. The persistence of large dry areas was certainly more notable than the occurrence of large wet areas during the year, and in five months, February, April, May, July and October, less than a quarter of the average fall was recorded over some portion of the country. Scotland suffered more in this respect than other parts of the British Isles, having repeated intervals of exceptionally dry weather in some part or another both in the spring and autumn.

TABLE II.—MONTHLY RAINFALL AT 348 STATIONS IN THE BRITISH ISLES DURING 1919.

ENGLAND.

Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
I.	London	2	3.22	2.65	3.62	3.93	.33	1.51	1.75	2.37	1.29	.69	1.38	3.47	26.21
II.	Surrey	6	6.68	3.61	5.96	3.48	.48	.93	2.03	3.77	1.54	.62	2.57	6.51	38.18
"	"	6	4.25	2.22	3.34	2.25	.15	1.11	2.40	2.08	1.72	.80	1.66	4.54	26.52
"	Kent	1	4.93	3.51	3.33	3.46	.46	.47	1.71	3.52	1.35	1.17	2.23	3.38	28.36
"	"	1	4.00	2.54	3.86	3.15	.24	.68	2.03	1.66	1.09	1.22	4.12	3.58	28.17
"	"	2	2.50	1.86	2.96	2.82	.22	.73	3.69	1.95	.78	1.89	3.74	3.01	26.15
"	"	3	4.09	2.40	3.71	4.25	.15	.93	2.53	2.61	1.29	1.62	2.00	3.51	29.09
"	"	5	3.17	2.27	3.12	3.24	.38	1.32	1.91	2.11	1.06	.72	1.57	3.10	23.97
"	Sussex	2	6.13	2.77	5.36	2.29	.30	.79	1.87	3.59	1.55	.48	2.00	6.08	33.21
"	"	4	5.97	2.86	4.24	2.40	.58	.94	2.17	3.30	1.57	.72	2.55	6.36	33.66
"	"	5	4.81	2.70	4.88	2.68	.50	.43	1.08	2.41	.80	1.32	4.92	4.99	31.52
"	"	7	6.40	2.62	5.28	2.65	.53	1.03	2.17	4.42	1.74	.66	3.30	6.39	37.19
"	Hampshire	1	4.79	2.84	4.84	1.38	.47	.98	1.47	2.95	1.45	.92	2.11	5.59	29.79
"	"	4	4.82	2.61	5.85	2.12	.47	.93	1.73	3.15	2.45	.97	2.00	6.26	33.36
"	"	5	6.64	4.00	6.90	2.59	.66	.94	1.34	3.91	1.57	.80	2.95	7.39	39.69
"	"	8	3.56	2.58	4.90	2.14	.32	1.00	1.29	2.69	2.83	1.00	1.67	5.60	29.58
"	Berkshire	5	3.25	2.09	4.72	2.11	.42	1.28	1.90	2.72	1.29	1.43	1.71	4.52	27.44
III.	Hertfordshire	2	3.89	3.11	4.01	3.85	.62	1.22	2.23	3.06	.59	.91	1.95	4.29	29.73
"	"	3	3.76	3.59	2.43	4.47	.30	1.67	3.52	2.73	1.12	.65	1.88	4.25	30.37
"	Buckinghamshire	3	3.90	2.47	3.94	2.64	.31	1.27	2.83	2.68	1.42	.72	1.57	4.50	28.25
"	"	3	4.56	2.88	4.63	3.27	.30	1.17	2.32	3.35	2.04	1.33	2.01	5.23	33.09
"	Oxfordshire	5	3.40	2.46	4.01	2.19	.14	.97	2.78	2.30	1.73	1.77	1.33	4.39	27.47
"	Northamptonshire	3	2.85	2.10	3.76	2.21	.40	.89	2.15	2.90	1.23	1.37	1.16	3.82	24.84
"	"	1	4.56	2.64	3.99	2.19	1.22	1.02	3.49	2.51	1.94	2.02	2.11	4.38	32.07
"	Huntingdonshire	4	3.76	2.43	3.91	1.82	1.22	.74	2.23	2.30	1.44	1.52	1.32	3.33	26.02
"	Bedfordshire	1	3.53	2.39	2.56	2.48	.32	.88	2.48	2.30	1.38	.84	1.36	3.63	24.15
"	Cambridgeshire	3	4.09	2.55	3.00	3.09	.49	1.45	2.74	1.88	1.61	.76	1.81	4.12	27.59
"	"	2	2.58	2.22	1.89	1.77	.40	1.17	2.71	.97	1.07	1.05	1.22	3.48	20.53
"	"	3	3.29	2.45	2.07	1.77	.45	1.02	3.12	2.25	1.53	1.22	1.75	4.10	25.02
VI.	Essex	2	4.12	3.28	3.28	4.18	.28	2.08	3.35	3.12	1.37	.69	2.37	3.42	31.54
"	"	3	3.13	2.56	2.80	3.39	.36	1.23	1.93	1.92	.55	.68	1.55	2.28	22.38
"	"	3	2.79	2.92	2.10	3.52	.18	1.24	2.40	2.14	.61	.94	1.99	3.08	23.91

TABLE II.—*con.* ENGLAND—*con.*

Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
IV.	Essex.....	4 Shalford (Littles).....	2.34	2.76	2.45	3.25	.42	1.51	2.43	1.96	1.00	.78	1.86	3.31	24.07
"	Suffolk.....	1 Hawkedon Rectory.....	2.64	2.90	2.57	3.40	.40	1.22	3.16	2.65	.97	1.34	2.28	4.21	27.74
"	".....	2 Haughley (Haughley House)...	2.31	2.44	2.10	2.82	.84	1.36	2.88	2.27	.47	1.45	1.90	3.07	23.91
"	".....	3 Orford (The Gables).....	3.28	2.60	2.10	3.44	.47	1.32	3.46	2.83	.45	1.87	2.32	3.88	28.02
"	".....	4 Yarmouth (Burgh Hall).....	3.21	2.26	1.77	1.43	.87	1.55	2.71	2.23	1.32	3.13	1.83	3.58	25.89
"	Norfolk.....	1 Diss (The Cedars).....	2.62	2.96	1.58	2.13	.53	1.64	3.41	2.27	.54	2.25	2.04	3.59	25.56
"	".....	2 Aylsham (Rippon Hall).....	2.88	2.75	2.04	2.19	.81	1.51	3.31	2.13	.95	3.71	3.09	4.61	29.98
"	".....	3 Sandringham House.....	2.69	2.51	2.12	1.85	.45	1.45	3.53	2.49	1.58	2.39	2.23	4.38	27.67
"	".....	3 Blakeney.....	3.14	2.65	1.73	1.79	.78	1.05	2.49	2.52	.68	2.94	2.07	3.47	25.31
"	".....	4 Thetford Waterworks.....	2.47	2.68	2.31	2.31	.42	1.46	3.07	2.47	.97	1.64	1.90	4.23	25.93
V.	Wiltshire.....	1 Calne (High Street).....	4.87	2.39	4.09	1.91	.76	1.20	2.25	2.51	1.37	1.64	1.78	4.77	29.54
"	".....	2 Mere (Charnage).....	4.31	2.71	4.80	2.53	.59	.71	1.86	3.07	1.90	1.69	2.41	6.84	33.42
"	".....	3 Salisbury Plain (Shrewton)...	5.07	2.62	5.28	2.40	.71	.82	1.63	2.95	1.58	.95	1.92	5.41	31.34
"	".....	5 Marlborough (Mildenhall)....	4.30	2.33	4.99	2.39	.98	1.21	2.13	2.89	1.53	1.09	1.78	5.42	31.04
"	Dorsetshire.....	3 Weymouth (Springfield).....	5.39	3.90	4.59	1.20	.76	.79	2.04	2.67	1.26	1.92	2.92	4.64	32.08
"	".....	3 Beaminster (Hamilton Lodge)	7.80	3.83	5.43	2.90	.93	.67	2.67	3.61	2.28	2.17	2.87	6.66	41.82
"	".....	4 Winterbourne Whitchurch Vic.	7.14	4.01	5.36	1.97	.90	.79	2.52	3.39	1.75	1.88	2.98	6.22	38.91
"	".....	4 Wimborne (Codford House)...	7.31	3.76	5.14	1.80	.68	.84	1.65	3.03	1.77	1.32	2.71	5.86	35.87
"	South Devonshire.....	3 Salcombe (Sandhills).....	5.77	4.77	4.84	2.34	1.47	1.00	1.73	3.05	1.55	.96	3.59	5.64	36.71
"	".....	4 Princetown (H.M. Prison).....	13.59	7.57	14.12	5.38	2.63	1.77	3.18	6.02	6.16	3.91	7.27	15.63	87.23
"	".....	5 Teignmouth (Den Gardens)...	6.01	7.36	4.63	1.84	1.10	.90	1.46	3.08	2.04	1.08	3.63	5.31	38.44
"	".....	5 Moretonhampstead Rectory..	7.32	6.13	5.38	2.55	1.32	.73	1.72	3.27	1.92	1.94	4.00	7.13	43.41
"	".....	7 Ottery St. Mary (West Hill)...	5.77	5.07	4.61	2.45	.88	1.01	1.92	3.78	2.24	2.03	2.36	5.52	37.64
"	North.....	1 Morthoe (Twitichen House)...	4.65	3.79	4.62	2.01	1.03	1.57	1.15	2.72	1.61	1.68	3.82	7.98	36.63
"	".....	3 Dorton (Hilliers).....	4.78	2.34	5.09	2.73	.87	1.35	1.24	3.17	1.52	2.33	4.11	7.22	36.75
"	Cornwall.....	1 Redruth (Trewirgie).....	6.17	6.41	4.94	2.35	1.83	1.43	1.05	3.26	2.35	1.74	3.61	7.36	42.50
"	".....	1 Newquay (Tresillian House)...	6.32	6.30	3.70	3.03	1.50	.88	1.03	2.64	2.10	1.68	3.70	6.30	39.18
"	".....	1 Morwenstow Vicarage.....	5.64	3.80	4.45	2.26	1.93	1.14	.95	2.75	1.70	2.05	4.62	6.60	37.87
"	".....	2 Penzance (Morrah Garden)...	6.06	6.32	5.81	2.53	1.59	1.18	.98	2.86	1.66	2.05	3.87	6.48	41.39
"	".....	2 St. Austell (Trevarna).....	6.83	7.51	5.90	4.10	2.05	.98	.78	3.55	2.84	1.98	4.86	8.02	49.40
"	".....	2 Liskeard (Trevillis).....	8.20	6.37	5.78	3.33	2.16	.85	1.56	3.74	2.76	1.61	5.66	8.25	50.27
"	".....	3 Altarnon Sanctuary.....	8.71	4.79	6.95	3.79	2.18	1.37	1.33	4.14	3.20	2.71	6.09	10.68	55.94
"	".....	4 Tresco Abbey.....	5.07	5.66	4.30	1.72	2.68	1.12	.48	2.51	1.38	1.11	3.04	5.13	34.20
"	Somersetshire.....	2 Street (Hind Hayes).....	4.21	2.87	4.48	2.16	.60	1.35	2.99	3.66	1.43	2.45	1.79	5.12	33.11
"	".....	2 Burnham (Chalbury).....	3.85	2.91	3.97	1.84	.48	1.03	3.16	2.84	1.62	2.66	2.10	5.40	31.86

TABLE II.—*con.* ENGLAND—*con.*

Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
V.	Somersetshire...	Winsford School	9.10	5.24	7.69	4.08	1.72	1.73	1.36	4.37	2.62	4.35	5.70	12.86	60.82
VI.	Gloucestershire..	Mickleton (Bank House)	3.85	2.80	4.22	2.14	.62	.73	3.20	2.10	1.28	1.89	1.13	3.24	27.20
"	"	Clifton (Harley Place)	4.80	3.35	5.68	2.43	.42	1.73	2.71	2.49	1.76	2.76	2.20	6.44	36.77
"	"	Lechlade (Claydon House)	3.65	2.57	4.45	2.31	.90	1.69	2.41	2.42	1.81	1.47	1.27	3.96	28.91
"	Herefordshire ..	Ross (Birchlea)	3.20	2.92	5.00	1.60	.33	1.08	2.69	2.03	1.42	2.39	1.36	3.28	27.30
"	Shropshire	Ashford House	3.38	3.02	6.30	2.05	.68	.68	2.68	3.53	1.87	2.16	1.27	3.82	31.44
"	"	Clun Forest (Cwm Frydd) ..	4.63	2.75	5.72	2.43	.63	1.55	2.30	3.10	2.32	2.50	1.90	6.53	36.36
"	"	Much Wenlock (Willey Park) .	2.30	2.79	5.03	2.26	.94	1.04	2.93	2.78	2.12	3.42	1.19	3.12	29.92
"	"	Ellesmere (The Grange)	2.41	2.21	4.97	1.67	.66	1.01	1.02	2.65	2.01	2.82	.96	3.58	25.97
"	Staffordshire ...	Market Drayton (Old Springs)	2.29	1.95	5.24	1.73	.65	1.43	1.86	2.64	2.85	3.61	1.30	4.12	29.67
"	"	Ashbourne (Mayfield House) ..	4.64	2.15	5.63	1.81	1.38	1.20	2.14	2.78	2.46	2.95	2.87	6.02	36.03
"	"	Kempsey (The Lodge)	3.12	2.78	4.28	1.74	.90	.99	2.50	2.01	1.34	2.22	.87	3.09	25.84
"	Worcestershire..	Dudley (Borough Cemetery) ..	3.07	2.57	4.05	1.85	1.04	1.25	3.44	2.48	1.77	2.96	1.18	3.31	28.97
"	"	Coventry (Keresley Grange) ..	4.26	2.96	4.22	2.03	.90	1.28	2.96	2.46	2.58	2.49	1.68	4.12	31.94
"	Warwickshire ..	Farnborough	3.50	2.89	4.72	2.70	.87	.97	2.94	2.58	2.44	2.16	1.77	4.26	31.80
VII.	"	Loughboro' (Nan Pantton Res.)	4.54	2.58	4.63	1.77	1.38	.98	3.83	3.24	1.74	1.76	2.34	4.56	33.35
"	"	Belvoir Castle	3.54	2.23	3.70	1.61	1.66	.79	4.42	2.64	2.62	1.61	1.65	3.63	30.10
"	Rutland	Uppingham (Ridlington)	4.82	2.64	3.80	2.00	1.35	.84	2.95	2.47	1.88	1.62	2.01	4.11	30.49
"	Lincolnshire ...	Market Deeping (Wilsthorpe) .	3.04	2.41	2.44	1.78	.88	.72	2.94	2.63	1.35	1.30	1.70	3.46	24.65
"	"	Boston (Black Sluice, Skirbeck)	2.94	2.40	2.47	2.20	.67	.91	2.50	2.58	1.52	1.86	2.09	3.75	25.89
"	"	Sleaford (Kesteven Co. Asylum)	2.94	2.61	2.85	1.90	.91	.83	3.01	2.55	2.02	1.75	1.93	3.12	26.42
"	"	Willingham-by-Stow	2.80	2.36	2.82	2.01	.77	1.26	2.46	2.42	1.65	2.41	1.95	3.30	26.21
"	"	Louth (Westgate)	3.43	2.90	3.22	1.91	.57	.64	2.76	3.23	1.93	3.00	2.56	3.21	29.36
"	"	Horkstow	3.19	1.86	3.01	1.78	.53	.92	2.29	2.41	1.81	3.15	2.40	2.69	26.04
"	Nottinghamshire	Mansfield (West Bank)	3.72	2.91	4.65	1.79	1.49	.77	2.56	2.62	1.88	2.38	2.21	4.19	31.17
"	Derbyshire	Littleover (The Knoll)	3.48	2.38	4.82	1.42	1.21	.89	2.31	2.00	1.68	2.42	1.97	3.95	28.53
"	"	Buxton (Devonshire Hospital)	5.03	1.53	6.49	2.83	1.50	2.88	3.18	4.59	4.10	3.03	3.64	9.31	48.11
VIII.	Cheshire	Northenden (Wythenshwe Hall)	3.51	.57	4.92	1.62	1.54	1.33	1.81	3.30	1.70	2.33	2.13	5.36	30.12
"	"	Middlewich (Bostock Hall) ...	2.37	.82	5.95	1.23	.93	2.01	1.32	3.64	2.15	2.81	2.21	5.37	30.81
"	"	Eccleston	2.06	1.66	5.24	1.62	.28	1.47	1.26	2.62	2.06	3.53	1.70	4.23	27.73
"	South Lancashire	Liverpool (Knotty Ash)	3.53	1.27	5.97	1.36	1.08	1.62	1.55	4.50	2.26	2.56	2.56	5.48	32.98
"	"	Bolton (Smithills Hall)	5.24	1.13	7.96	3.37	1.74	2.21	2.03	5.05	2.33	3.28	4.24	8.38	46.96
"	Central "	Burnley (Swinden)	6.12	1.90	6.75	2.57	2.00	1.77	2.57	3.78	2.08	3.13	4.32	7.18	44.17

TABLE II.—*con.* ENGLAND—*con.*

Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
VIII.	Cent. Lancashire	Southport (Hesketh Park) ...	4.17	1.10	5.31	1.37	1.10	1.35	1.48	3.27	2.35	2.87	2.20	4.39	30.96
"	North	Lancaster (Strathspey)	4.99	1.67	4.91	1.74	1.63	1.97	1.21	3.83	2.59	2.73	2.43	5.89	35.59
"	"	Broughton (Newsham House)	5.04	1.31	5.24	1.63	1.84	1.74	1.61	4.06	2.93	3.02	2.33	5.93	36.68
IX.	Yorkshire, W.R.	Settle (Gas Works)	6.56	1.36	5.27	2.53	2.02	1.45	1.84	4.16	2.31	3.58	3.47	7.59	42.14
"	"	Sheffield (Weston Park)	4.44	2.22	4.54	1.72	1.63	.52	4.60	3.00	2.49	3.07	2.27	5.37	35.87
"	"	Doncaster (Avenue Road)	3.34	2.55	3.95	1.64	1.44	.93	3.34	3.04	1.88	3.00	1.91	3.62	30.64
"	"	Meltham (Harewood Lodge) ..	6.42	2.01	7.41	2.23	1.97	1.34	3.18	3.59	2.00	3.30	4.06	7.47	44.98
"	"	Garforth (Manor Farm)	3.46	1.76	3.62	1.55	.90	1.00	3.53	2.19	.77	3.11	1.78	1.18	24.85
"	"	Ilkley (Spence's Garden)	4.62	2.09	4.67	1.99	1.98	.91	2.00	2.19	.94	2.42	2.50	4.96	31.27
"	"	York (Mount Villas)	3.21	1.43	3.89	1.53	1.19	1.01	4.45	2.62	1.09	4.31	2.02	4.11	30.86
"	"	Birdsall Gardens	3.22	1.72	4.23	1.88	1.09	1.11	2.63	2.79	1.25	4.76	2.63	4.61	31.92
"	"	Pattingham	3.06	2.31	2.05	2.19	.53	.94	2.02	2.47	1.36	2.99	2.88	2.93	25.73
"	"	Holme-on-Spalding Moor	3.08	1.44	2.78	1.49	.79	.69	3.41	2.48	2.07	4.30	2.32	3.89	28.74
"	"	Bridlington	3.07	1.15	3.73	1.85	1.06	1.15	2.04	2.48	1.74	5.02	2.51	3.41	29.21
"	"	Masham Moor (Roundhill Res.)	5.29	2.68	4.64	2.36	1.81	1.25	2.80	3.02	1.51	5.14	4.48	5.55	40.53
"	"	Felixkirk (Mount St. John) ...	3.36	1.06	2.77	1.85	.86	1.38	2.73	2.19	1.26	5.49	2.76	2.79	28.50
"	"	Reeth (Arkengarthdale)	6.75	3.22	5.23	2.17	1.53	1.62	2.69	3.46	2.14	6.16	5.61	6.28	46.86
"	"	Whitby (Mulgrave Castle)	2.74	1.64	4.78	2.35	1.04	1.37	2.51	2.43	1.24	5.58	2.69	2.75	31.12
"	"	Middlesbrough (Albert Park)...	2.57	1.46	2.51	1.39	.72	.74	1.64	2.50	.68	5.83	3.19	1.79	25.02
X.	Durham	Wearhead (Waskerley)	4.08	1.96	2.98	2.04	1.41	1.00	2.14	3.25	1.35	6.16	5.04	3.27	34.68
"	"	Sunderland (W. Hendon Ho.)	2.85	1.80	2.61	1.78	.92	1.10	1.48	2.08	1.10	5.44	4.41	2.66	28.23
"	"	Corbridge (Howden Dene) ...	3.08	1.68	2.82	1.87	1.25	1.00	2.02	2.51	1.15	4.34	3.58	2.34	27.64
"	"	Bellingham (High Green Manor)	3.98	2.02	2.87	2.22	1.61	1.70	1.41	3.06	2.22	3.87	6.11	4.87	35.94
"	"	Morpeth (Bothalough Lawn)	3.52	1.70	2.24	1.35	.64	.69	1.34	2.04	1.28	4.25	3.94	2.88	25.87
"	"	Alnwick Castle	4.86	2.31	2.38	1.96	.54	.78	1.06	2.76	1.60	5.09	5.24	4.48	33.06
"	"	Ilderton (Lilburn Cottage) ...	3.64	1.98	2.47	1.85	.52	1.06	1.01	2.03	1.30	4.09	5.57	4.35	29.87
"	"	Penrith (Benson House)	3.28	.63	2.83	1.81	1.38	1.58	.64	3.27	1.54	2.01	2.78	5.51	27.26
"	"	Mealsgate (Quarry Hill)	2.96	.73	2.85	1.88	1.10	2.69	1.06	3.46	2.94	2.34	2.50	4.16	28.67
"	"	Carlisle (Scaleby Hall)	2.89	.78	1.54	1.43	1.20	2.31	1.02	3.15	2.24	3.07	2.58	4.01	26.22
"	"	Whitehaven (Irish Street)	5.86	.62	4.81	3.19	1.16	3.11	1.00	2.97	4.41	2.41	2.87	6.57	38.98
"	"	Silecroft (Old Chappels)	8.00	1.72	6.10	4.42	1.95	1.45	.78	4.69	5.47	3.14	4.68	8.76	51.16
"	"	Alston (Nenthead)	6.92	2.01	5.32	3.22	2.17	3.54	4.10	5.54	3.95	7.65	6.00	10.27	60.69
"	"	Kirkby Stephen (Redman Ho.)	5.44	1.15	4.74	2.35	1.55	.93	1.61	3.49	2.78	1.70	4.24	4.88	34.86

TABLE II.—*con.* ENGLAND—*con.*

Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
X.	Westmorland	2 Mickleden	18.48	2.06	13.12	9.30	4.25	8.05	3.40	10.43	17.55	3.24	10.05	22.80	122.73
"	"	3 Kendal (Crosthwaite Vic)	7.18	1.69	5.23	2.68	1.62	2.04	1.37	4.34	4.39	.87	3.72	9.64	44.77
England. Mean of 135 Stations			4.50	2.70	4.33	2.40	.99	1.27	2.26	2.98	1.93	2.39	2.77	5.14	33.66
MONMOUTH, WALES, AND THE ISLANDS.															
XI.	Monmouth	3 Newport W.W. (Newchurch)	5.63	4.21	7.11	1.95	.53	1.24	3.49	4.51	2.82	2.73	2.69	6.35	43.26
"	"	3 Abergavenny (The Chain)	4.78	4.87	5.17	1.37	.41	.96	1.92	2.30	1.31	2.31	2.51	5.86	33.77
"	Glamorgan	3 Swansea (The Knoll)	6.79	4.26	6.21	2.01	1.27	2.19	.68	3.04	2.64	2.31	2.90	7.80	42.10
"	"	6 Treherbert (Tyn-y-waun)	11.71	7.21	10.90	4.57	2.34	3.73	1.60	5.67	4.90	2.62	6.04	18.73	80.02
"	"	7 Cardiff (Roath Park)	5.70	4.88	6.06	2.10	.71	1.39	2.22	3.08	2.42	2.82	3.99	8.13	43.50
"	Carmarthen	2 Carmarthen (The Friary)	6.68	3.90	6.42	2.05	1.49	2.45	1.41	3.00	2.53	1.93	3.24	7.54	42.64
"	"	2 Llanwrda (Dolauciothy)	6.85	4.02	8.42	3.92	1.84	3.19	2.31	4.40	3.88	3.02	3.89	8.77	54.51
"	Pembroke	2 Fishguard (Goodwich Station)	5.53	2.29	4.12	1.71	1.36	2.72	.91	2.46	2.43	2.01	3.03	6.64	35.21
"	"	3 St. David's	5.13	4.07	4.62	1.86	1.11	1.98	.84	3.69	1.92	1.74	2.56	5.94	35.46
"	"	4 Tenby	5.93	4.46	5.16	2.62	1.49	1.64	1.11	3.75	1.69	1.11	3.11	6.41	38.48
"	"	4 Haverfordwest (Portfield)	6.36	3.86	5.36	2.41	1.55	2.65	.81	3.11	2.59	2.02	3.00	7.80	41.52
"	"	2 Aberystwyth (North Parade)	3.89	1.73	6.25	2.23	1.12	3.35	1.69	3.66	2.92	2.67	1.79	6.07	37.37
"	"	3 Cardigan (County School)	4.64	3.41	5.85	2.82	1.31	2.86	1.18	3.26	2.26	2.22	2.68	5.70	38.19
"	"	3 Lampeter (Falcondale)	5.88	2.63	7.09	3.84	1.32	3.65	2.04	3.39	3.06	2.58	2.67	8.53	46.68
"	"	5 Birmingham W.W. (Claerddu)	6.80	4.85	9.60	6.95	1.50	7.20	3.70	5.75	5.25	4.10	6.25	16.22	78.17
"	"	7 Swansea W.W. (Cray Res.) No.1	10.11	5.38	9.98	3.74	1.83	3.34	1.40	4.68	4.18	3.10	5.42	14.03	67.19
"	"	8 Glasbury (Gwernyfed)	3.27	2.70	4.83	1.20	.31	1.21	1.00	2.44	1.63	1.93	1.69	4.34	26.55
"	"	1 Llandrindod Wells (Kimberley)	4.68	3.22	7.02	2.39	.71	2.08	1.62	3.13	2.06	2.15	2.44	6.65	38.15
"	Montgomery	4 Newtown (Penarth Weir)	4.00	1.82	5.66	1.89	.43	1.60	1.44	2.38	1.71	2.58	1.85	5.25	30.61
"	"	5 Carno (Council School)	5.98	2.83	7.20	3.45	.87	2.68	1.10	3.25	3.17	3.28	4.18	8.83	46.82
"	"	5 Landysilio Rectory	3.02	2.52	5.35	1.50	1.48	.75	.62	2.84	1.66	2.55	1.07	3.10	26.46
"	"	5 Lake Vyrnwy (Bk Cynon Isaf)	6.48	3.04	7.37	3.35	1.33	2.12	1.15	3.63	3.84	3.04	4.18	10.58	50.11
"	Flint	1 Mostyn Vicarage	3.05	1.31	5.85	1.84	.92	1.93	1.64	5.07	2.58	3.19	2.30	5.82	35.50
"	Denbigh	1 Pentre Voelas (Nant Heilyn)	5.58	2.76	8.07	4.03	1.38	2.78	2.56	4.64	4.65	5.48	4.08	8.91	54.92
"	Merioneth	3 Festiniog (Hafod Fawr)	7.89	2.57	9.55	4.57	1.94	4.41	2.96	5.95	7.25	4.45	5.41	15.25	72.20
"	"	4 Dolgelly (Bryntirion)	5.68	2.81	8.70	4.92	1.56	5.37	2.79	4.94	6.94	4.22	4.59	13.50	66.02
"	"	2 Llandudno	2.76	1.19	5.75	1.97	1.09	1.52	1.35	3.32	1.91	2.98	1.86	5.73	31.43
"	"	3 Bethesda (Penrhyn Quarries)	7.49	2.57	9.57	5.48	1.32	3.70	4.33	6.25	6.03	4.12	4.58	11.28	66.72

TABLE II.—*con.* MONMOUTH, WALES, AND THE ISLANDS—*con.*

Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
XI.	Carnarvon	Abersoch	4.78	1.99	7.18	2.46	1.74	3.18	1.70	3.30	3.97	2.99	2.91	7.90	44.10
"	"	Snowdon (Teyrn)	14.17	4.49	16.76	9.50	4.75	9.75	6.50	19.40	9.90	10.70	6.30	26.20	138.42
"	Anglesey	Llanerchymdd (Llwydrth Esgb)	5.05	1.58	5.46	1.93	1.33	1.93	1.69	3.25	4.53	3.28	2.52	5.25	37.80
Wales. Mean of 31 Stations			5.67	3.04	6.79	3.01	1.34	2.82	1.75	4.09	3.37	2.94	3.24	8.61	46.67
XI.	Isle of Man	Douglas (Borough Cemetery)	5.26	1.59	4.71	2.30	2.27	3.01	.79	3.63	3.77	3.43	2.90	7.25	40.91
"	Jersey	St. Saviour's (Clifton)	6.08	5.24	4.91	2.05	1.17	.79	1.96	2.64	2.57	1.77	5.46	4.98	39.62
"	Guernsey	St. Martin's (Les Blanchés)	6.19	5.13	5.24	1.76	1.05	.76	1.89	3.37	3.56	2.17	6.18	5.12	42.42
SCOTLAND.															
XII.	Wigtown	Stoneykirk (Ardwell House)	4.53	.93	3.49	2.08	1.46	3.00	.52	2.87	2.84	2.10	3.47	6.89	34.18
"	"	Whithorn (Cutroach)	4.00	.88	3.78	1.68	.92	2.87	.60	3.69	2.56	2.44	2.61	6.66	32.69
"	Kirkcudbright	Dalry (Glendarroch)	5.42	.97	5.19	2.56	.97	4.40	.78	3.69	3.77	2.05	4.55	11.39	45.74
"	"	Dalbeattie (Kirkennan)	4.67	1.01	5.33	2.50	1.10	2.39	.93	3.83	4.13	1.76	2.98	6.79	37.42
"	Dumfries	Dalton (Kirkwood)	4.07	1.36	3.38	3.09	1.23	2.14	1.24	3.79	4.46	2.22	3.35	7.84	38.17
"	"	Moffat (Auchen Castle)	4.89	.95	3.69	3.21	1.65	3.13	1.25	3.92	4.43	2.39	4.67	10.04	44.22
"	"	Langholm (Ewes)	4.80	.90	4.11	2.63	1.45	2.09	1.02	3.83	5.62	2.53	4.82	9.30	43.10
"	"	Hawick (Wolfelee)	3.03	1.57	3.73	2.46	1.38	1.21	.90	2.82	1.93	3.51	5.54	6.19	34.27
XIII.	Selkirk	Selkirk (The Hangingshaw)	3.67	1.55	3.00	3.01	1.59	1.53	.57	2.27	1.97	3.01	4.63	4.90	31.70
"	Peebles	Stobo Castle	3.54	.68	3.21	4.25	1.35	2.78	.61	2.81	2.73	2.67	4.84	7.82	37.29
"	Berwick	Marchmont House	4.06	3.04	2.78	1.45	1.53	1.54	.62	2.55	1.53	3.32	6.27	4.24	32.93
"	Haddington	Garvald (Donolly Reservoir)	4.35	2.36	3.36	4.85	.70	2.26	.76	2.00	2.38	2.47	7.80	3.90	37.19
"	Midlothian	Balerno (Cockburn Hill)	3.58	1.86	2.86	3.51	.69	2.25	1.23	2.07	3.27	2.91	5.71	5.93	35.87
"	"	Edinburgh (Royal Observatory)	2.06	1.75	1.34	3.04	.66	1.70	.62	1.53	2.23	2.37	4.99	3.15	25.44
XIV.	Lanark	Leadhills	7.51	1.78	5.87	6.23	1.71	4.12	1.69	4.63	6.10	2.27	5.99	11.79	59.69
"	"	Strathaven (East Overton Ho.)	3.25	.93	2.72	2.35	.38	3.38	1.05	3.45	6.03	1.03	4.47	7.44	36.48
"	Ayr	Dalry (Blair)	3.86	.93	3.79	2.46	1.03	5.38	1.37	3.17	3.68	1.43	4.09	6.70	37.89
"	"	Maybole (Knockdon Farm)	3.72	.12	2.45	2.01	.34	5.92	.76	3.74	4.42	.61	3.37	7.52	34.98
"	"	Colmonell (Knockdolian)	4.22	.99	4.15	1.71	1.15	4.91	1.34	2.88	4.32	1.46	2.99	9.89	40.01
"	"	New Cumnock (Ayr Sanator'm)	5.98	.66	4.01	3.05	.80	4.30	.90	3.31	4.92	1.29	5.27	11.45	45.94
XV.	Dumbarton	Cardross (Kilmahew)	3.96	.93	4.59	1.51	.97	3.65	.83	2.81	2.58	.75	4.00	9.22	35.80
"	Stirling	Falkirk (Westbank Garden)	3.41	1.40	2.77	1.75	.66	1.91	1.16	2.32	2.22	.81	5.22	5.00	28.63

TABLE II.—*con.* IRELAND—*con.*

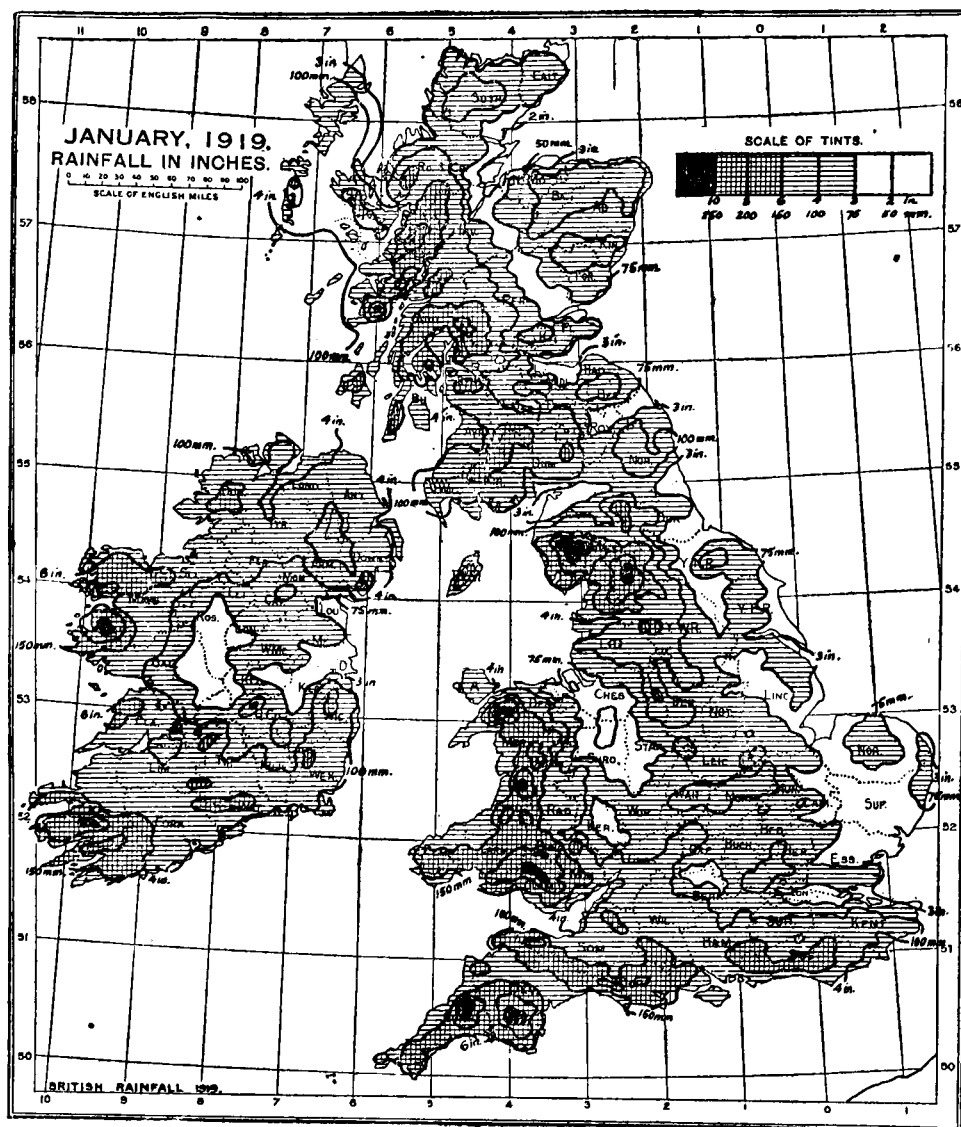
Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
XX.	Cork.....	Clonakilty (Shannon Vale Ho.)	4.62	3.94	2.82	1.74	3.14	.67	1.19	4.62	2.55	.93	1.85	6.50	34.57
"	"	Dunmanway (The Rectory) ..	6.44	5.76	4.65	3.02	4.60	1.01	1.36	3.88	3.63	1.18	3.22	10.10	48.85
"	"	Ballinageary (Inchibeg)	9.39	7.13	6.59	4.10	5.30	2.42	2.09	5.23	5.96	1.94	4.63	10.74	65.52
"	"	Midleton (Ballinacurra)	4.39	3.62	2.76	1.52	3.61	.53	1.55	3.52	1.93	.53	1.69	4.27	29.92
"	"	Dripsey (Woolen Mills)	4.63	3.50	2.86	1.67	4.27	.68	1.52	2.65	2.71	.88	2.90	5.10	33.37
"	"	Mallow (Summer Hill)	5.04	2.62	2.97	1.72	4.82	.91	.78	1.99	2.47	.69	2.35	5.37	31.73
"	"	Kanturk (Castlecro)	4.32	2.88	2.77	1.63	3.48	.74	1.57	2.52	2.61	.68	2.27	5.46	30.93
"	"	Mitchelstown Castle	5.74	2.92	2.92	1.67	4.70	1.42	1.76	2.49	2.57	.89	2.32	5.64	35.04
"	Kerry	Killarney (District Asylum) ..	5.95	2.36	3.71	2.98	3.54	1.38	2.42	2.77	3.13	1.69	3.97	7.16	41.06
"	"	Darrynane Abbey.....	8.16	4.64	4.54	2.60	3.66	1.53	1.74	3.90	3.20	2.75	3.56	7.34	47.62
"	"	Kenmare (Dromore)	6.60	5.52	5.32	3.96	5.13	1.49	2.77	4.08	4.69	1.90	4.67	10.21	56.34
"	"	Valentia (Glanleam)	8.10	3.02	4.65	2.40	5.27	2.25	1.90	2.36	3.65	2.02	3.82	7.22	46.66
"	Waterford.....	Lismore Castle	5.73	4.94	2.57	2.17	4.56	1.38	1.70	3.75	.97	.38	1.83	4.72	34.70
"	"	Waterford (Brook Lodge).....	4.02	4.01	2.96	1.13	3.82	1.82	1.51	4.41	2.14	.39	1.63	5.95	33.79
"	"	Portlaw (Mayfield)	4.99	5.21	3.43	1.47	4.80	2.38	1.17	3.67	1.58	.56	1.63	6.08	36.97
"	Tipperary	Nenagh (Traverston)	4.49	1.82	3.19	1.85	4.35	2.86	1.69	2.79	3.57	.87	2.77	7.69	37.94
"	"	Clonmel (Bruce Villa)	4.63	2.22	2.90	1.63	4.04	2.65	1.36	2.65	2.03	.46	1.85	4.00	30.42
"	"	Cashel (Ballinamona)	4.36	2.30	2.68	1.66	4.76	2.29	1.82	2.46	1.36	.98	2.20	5.42	32.29
"	"	Kilcooley Abbey.....	3.91	2.68	2.39	1.50	3.96	2.72	1.13	2.02	1.68	.75	1.61	5.03	29.38
"	"	Roscrea (Timoney Park)	3.40	2.14	2.48	1.61	3.50	3.97	1.56	2.17	2.00	1.16	1.55	5.54	31.08
"	Limerick	Knocklong (Kilfrush).....	3.83	1.80	3.17	2.04	3.60	2.37	1.51	2.53	1.81	.64	2.19	5.13	30.62
"	"	Limerick (Mungret College) ..	3.02	1.70	2.24	1.16	3.13	1.81	1.20	2.17	1.97	.54	1.99	4.42	25.35
"	"	Abbeyfeale (Springmount) ..	5.10	1.67	2.95	1.73	1.99	1.80	2.42	2.22	2.52	.75	2.29	3.71	29.15
"	Clare	Inagh (Mount Callan)	7.52	2.72	4.28	2.98	4.54	3.67	3.57	4.92	7.23	1.52	5.57	11.34	59.86
"	"	Ennistymon House	6.66	2.56	3.11	1.78	3.32	2.81	2.14	3.34	5.75	1.07	3.49	7.52	43.55
"	"	Killadysert (Paradise Hill) ..	5.42	2.03	2.68	1.87	3.31	1.71	1.74	3.03	2.76	.76	2.59	7.51	35.41
"	"	Newmarket-on-Fergus	4.25	1.58	2.78	1.40	3.62	2.06	2.05	2.97	3.84	.81	2.68	6.54	34.58
"	"	Mountshannon (Woodpark) ..	3.20	1.85	2.69	2.22	3.62	2.35	1.70	2.90	3.05	.50	3.16	7.14	34.38
XXI.	Wexford	Foulkesmill (Longraigue)	4.71	3.85	3.08	1.18	3.16	1.96	1.11	3.89	2.33	.80	2.32	6.29	34.68
"	"	Enniscorthy (Woodbrook)	6.39	5.69	3.87	2.59	3.36	3.39	1.73	3.16	3.09	1.10	2.02	7.84	44.23
"	"	Gorey (Courtown House)	4.52	3.53	2.48	1.43	1.82	1.58	1.08	2.91	2.68	1.51	3.33	5.13	32.00
"	Kilkenny	Kilkenny (Lavistown House) ..	3.35	1.98	2.53	1.27	2.53	2.88	1.16	2.39	1.31	.46	.93	4.16	24.95
"	Wicklow	Rathdrum (Avondale)	4.93	4.23	2.87	1.71	2.25	1.18	.67	3.15	2.79	1.94	4.20	6.42	36.34

TABLE II.—*con.* IRELAND—*con.*

Div.	County.	Station.	Jan.	Feb.	March	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
XXI.	Wicklow	Greystones (Rathdown)	4.49	3.92	2.45	1.38	2.35	1.91	.99	2.73	2.62	2.15	4.52	5.30	34.86
"	Carlow	Carlow (Browne's Hill)	3.45	2.49	1.93	1.18	2.10	3.23	1.02	2.79	2.39	.54	1.35	5.83	28.30
"	"	Hacketstown Rectory	4.49	2.45	2.76	2.45	2.54	2.83	1.49	3.16	3.17	.89	2.12	7.06	35.41
"	Queen's County	Abbey Leix (Blandsfort)	3.81	1.96	2.94	1.45	2.88	4.48	1.78	2.29	2.22	1.11	1.79	5.84	32.55
"	"	Mountmellick	4.48	1.82	2.68	1.36	2.39	4.93	1.89	2.88	1.84	1.29	2.30	7.02	34.88
"	King's County ..	Birr Castle	2.75	1.12	1.86	1.51	2.52	3.76	1.77	2.35	2.56	.92	2.07	5.22	28.41
"	" ..	Ballycumber (Moorock Lodge) ..	3.11	1.53	1.61	1.19	2.83	3.36	1.25	2.24	2.21	1.00	1.64	5.78	27.75
"	Kildare	Straffan House	3.20	1.89	3.10	1.62	2.61	3.66	1.62	2.73	2.66	2.37	2.06	5.78	33.30
"	Dublin	Howth Castle	2.90	1.64	1.99	1.21	1.49	2.21	1.06	2.44	1.89	2.22	2.17	4.09	25.31
"	"	Balbriggan (Ardgillan)	2.89	1.65	2.18	1.25	1.51	2.55	.66	2.33	1.99	2.29	2.12	5.21	26.63
"	Meath	Dunboyne (Stirling, Clonee) ..	4.25	1.82	2.96	1.38	1.95	2.34	.94	2.43	2.61	2.45	2.68	5.17	30.98
"	"	Drogheda (Mullacroghan)	3.00	1.77	2.12	1.43	2.01	4.62	.62	2.43	1.68	1.71	2.92	5.13	29.44
"	"	Summerhill House	3.20	1.89	2.33	1.56	2.19	2.90	1.06	2.62	1.73	2.32	2.09	5.38	29.27
"	"	Athboy (Frankville)	3.29	1.95	2.81	2.00	3.04	3.72	1.00	2.76	2.10	1.74	2.75	6.70	33.86
"	Westmeath	Mullingar (Belvedere)	3.71	1.87	1.83	1.77	2.23	3.88	1.26	2.35	2.68	1.16	2.04	5.90	30.68
"	"	Castlepollard (Pakenham Hall) ..	3.08	1.66	2.15	1.87	2.91	4.97	1.13	2.72	2.79	1.41	2.28	6.51	33.48
"	Louth	Dundalk (Mount Pleasant) ...	3.66	1.79	2.78	1.25	2.33	2.51	.65	3.07	2.16	1.98	1.89	7.05	31.12
"	"	Greenore	4.39	1.36	3.04	1.20	2.16	1.96	.45	2.65	2.47	2.33	1.86	7.54	31.41
"	"	Ballymahon (New Castle)	3.36	1.92	1.93	1.84	2.32	2.75	1.24	2.36	2.92	1.39	2.13	6.38	30.54
"	"	Castle Forbes Gardens	3.79	1.58	2.26	1.78	3.47	2.63	1.13	3.48	3.49	1.81	2.14	6.08	33.64
XXII.	Galway	Ballynahinch Castle	7.37	3.02	3.93	3.14	3.84	5.47	1.78	5.61	5.96	2.36	4.55	9.05	56.08
"	"	Tuam (Gardenfield)	4.02	2.51	1.95	2.18	3.46	2.99	.37	2.60	4.19	1.90	3.41	6.50	36.08
"	"	Woodlawn	2.17	1.60	1.11	.60	3.54	2.67	2.20	2.92	4.43	1.31	2.75	5.08	30.38
"	Roscommon ...	Strokestown (Castlenode) ...	2.80	2.10	2.38	1.78	4.05	2.18	.87	2.13	3.21	1.53	2.23	6.19	31.45
"	Mayo	Crossmolina (Enniscoe)	6.80	2.14	5.39	3.68	3.50	4.95	1.46	4.66	4.45	2.46	5.62	10.26	55.37
"	"	Blacksod Point	4.18	1.58	3.79	2.38	3.54	4.93	1.76	3.64	4.55	2.55	4.30	9.54	46.74
"	"	Westport House	5.59	1.70	3.77	2.74	3.29	2.80	1.28	4.19	3.94	.90	5.18	7.81	43.19
"	"	Mallarany	7.03	2.12	5.34	3.63	3.64	5.77	2.16	4.04	9.45	2.45	6.54	12.07	64.24
"	"	Aasleagh House	11.56	2.53	5.33	5.10	8.08	6.23	2.59	7.41	9.59	5.59	9.28	16.37	89.66
"	"	Headfort (Ballycurrin)	4.40	2.51	2.03	1.44	3.10	3.26	2.59	3.44	4.85	1.32	4.96	7.41	41.31
"	"	Ballinrobe (Cranmore)	5.32	2.24	3.38	2.15	3.33	3.76	1.42	3.89	4.03	2.57	4.12	7.67	43.88
"	Sligo	Collooney (Markree Obs.)	5.31	1.23	4.07	3.10	4.01	4.07	1.99	3.87	3.95	1.83	4.21	7.78	45.42
"	"	Sligo (Ord-na-veagh)	5.32	1.09	3.35	2.65	3.14	3.62	1.85	4.33	3.95	1.87	4.30	7.78	43.25

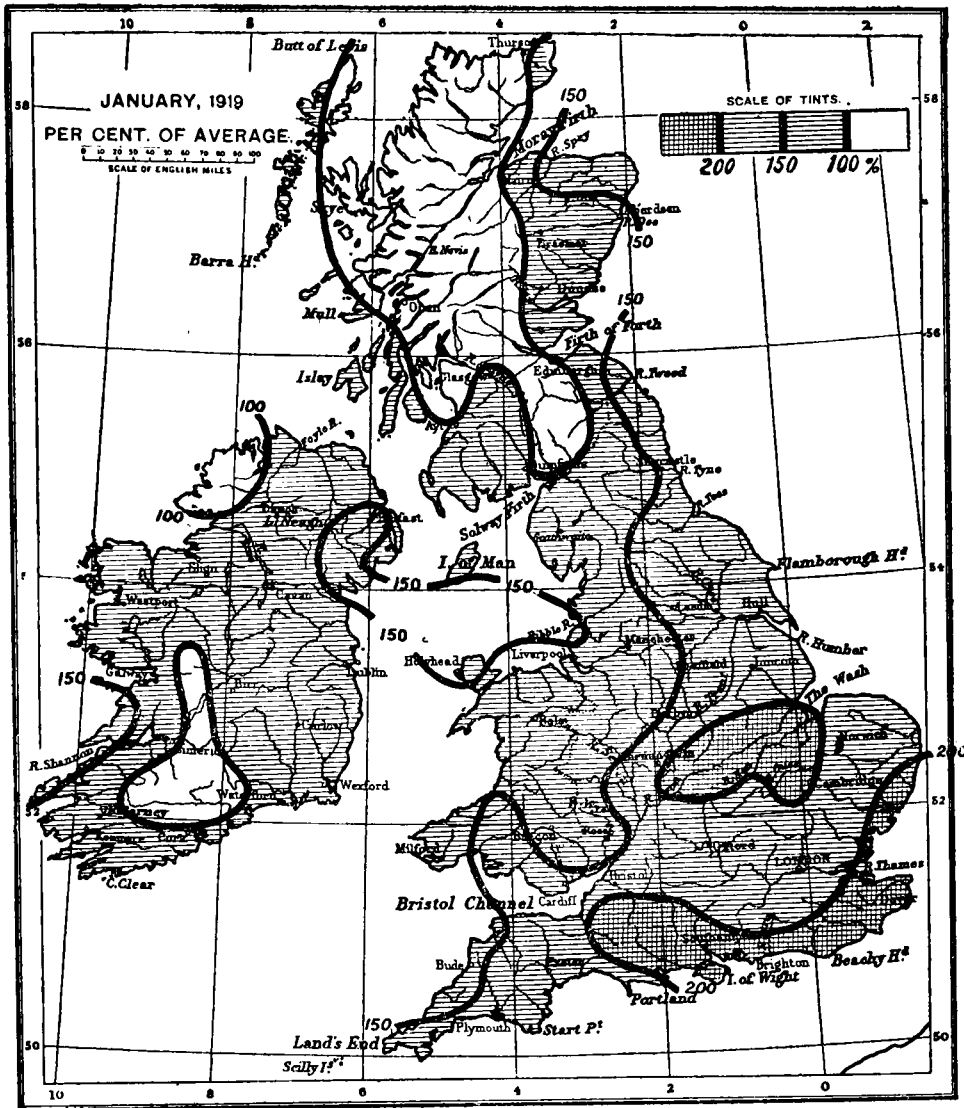
TABLE II.—*con.* IRELAND—*con.*

Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
XXII.	Leitrim	Lough Allen Sluices.....	3.17	.97	2.61	1.62	2.18	1.27	.53	1.17	1.95	.76	2.26	7.99	26.48
"	Cavan	Killesandra (Drom Mullac) ..	3.23	1.39	2.40	1.65	3.26	3.50	.73	3.10	4.03	1.67	2.32	5.35	32.63
"	"	Belturbet (Cloverhill)	3.45	1.36	2.49	1.51	2.93	2.85	.68	2.89	3.17	1.44	1.71	5.86	30.34
"	"	Bailieborough	3.38	1.98	3.17	2.13	2.53	5.23	.95	3.14	3.32	1.55	2.42	7.59	37.39
"	Fermanagh	Enniskillen (Portora)	5.45	.97	2.67	1.89	3.26	3.16	.71	3.12	3.01	1.52	3.45	7.54	37.75
"	"	Belleek (Heronshaw)	5.00	.74	3.52	2.86	2.14	3.89	1.57	4.43	3.40	1.82	4.40	7.43	41.20
"	Monaghan	Cootehill (Dartrey)	3.98	1.18	2.76	1.68	3.16	4.43	.61	2.58	3.42	1.51	2.05	7.25	34.61
"	"	Monaghan (Workhouse)	3.19	.82	1.98	1.03	2.09	2.89	.21	2.56	2.64	1.21	1.39	6.19	26.20
"	Armagh	Lurgan (Belle Vue).....	3.36	.70	2.52	1.18	1.83	1.77	.29	3.18	2.42	1.44	1.64	5.37	25.70
"	"	Armagh Observatory	4.12	.93	2.43	1.22	1.79	2.05	.63	3.24	3.17	1.49	1.92	6.14	29.13
"	Down	Newry (Bridge Street House) .	4.37	1.39	2.61	1.32	1.64	2.59	.40	2.27	2.95	1.26	2.08	8.28	31.16
"	"	Seaford	4.49	1.99	3.86	1.46	4.27	3.03	.40	2.98	2.92	1.99	2.48	8.21	38.08
"	"	Donaghadee (Orlock Hill)	3.74	1.75	3.41	1.27	1.44	3.40	.33	2.69	2.55	2.27	2.42	6.78	32.05
"	Antrim	Belfast (Queen's University) ..	4.80	1.44	3.53	1.33	1.22	2.69	.34	3.28	3.11	2.02	3.12	7.76	34.64
"	"	Larne (Sallagh Springs)	6.78	2.65	4.97	2.44	1.65	2.71	.67	4.06	4.41	2.98	4.51	10.42	48.25
"	"	Glenarm Castle	4.82	3.19	3.36	2.02	1.21	2.94	.48	2.74	3.18	2.21	4.12	6.66	36.93
"	"	Antrim (Ardnaveigh)	3.47	.67	3.34	1.00	2.25	1.83	.26	3.20	2.86	2.33	2.85	5.12	29.18
"	"	Ballymena (Harryville)	4.87	.66	4.70	2.32	2.19	3.15	1.05	3.67	3.44	3.41	3.93	6.60	39.99
"	Londonderry	Londonderry (Dunruadh)	3.98	.97	4.27	2.56	.93	3.83	1.14	3.63	3.53	1.70	4.51	6.53	37.58
"	"	Garvagh (Woodbank House) ..	4.16	1.41	4.28	2.91	1.61	3.94	.86	4.28	4.20	2.49	4.72	8.58	43.44
"	"	Glenedra Lodge	5.71	1.87	5.15	3.81	1.44	5.33	1.47	4.63	5.19	2.43	5.64	9.94	52.61
"	"	Limavady (Drenagh)	3.63	.81	3.81	2.24	.95	4.44	1.03	2.86	2.35	1.83	3.76	6.27	33.98
"	Tyrone	Dungannon (Killyman Rectry) ..	3.87	1.17	3.41	1.18	1.63	2.49	.52	3.72	3.01	1.38	2.48	7.24	32.10
"	"	Omagh (Edenfel)	4.13	.86	3.99	2.10	1.84	3.70	.82	4.11	4.19	2.25	4.42	9.14	41.55
"	"	Sion Mills (Sion House)	3.82	.50	4.18	2.81	1.95	3.66	.79	3.62	3.15	1.83	3.78	7.10	37.19
"	Donegal	Malin Head	3.58	.70	2.79	1.85	1.01	2.73	.94	3.13	2.10	1.44	4.16	5.13	29.56
"	"	Letterkenny (District Asylum) ..	4.49	1.05	4.40	2.90	1.60	3.35	1.08	3.60	3.52	2.59	5.47	9.12	43.17
"	"	Milford (The Manse)	4.09	1.15	4.06	2.87	1.67	3.66	1.30	3.47	3.38	2.53	5.25	8.03	41.46
"	"	Dunfanaghy (St. Helens)	4.00	1.25	4.12	2.87	1.42	3.82	1.40	4.59	3.87	2.45	5.55	7.25	42.59
"	"	Killybegs (Rockmount)	5.61	1.50	6.54	4.49	3.34	4.27	1.77	5.17	6.49	2.79	7.09	10.93	59.99
Ireland. Mean of 98 Stations			4.64	2.25	3.25	2.02	2.98	2.89	1.30	3.25	3.25	1.61	3.13	7.00	37.57
British Isles. Mean of 348 Stations			5.30	2.55	4.65	3.03	2.00	3.01	1.88	3.89	3.59	2.59	4.04	7.52	44.05



January.—The month was dull, rather stormy and wet, particularly in England. Numerous barometric depressions passed across the British Isles, some following unusual tracks. Snow was general in the Midlands and north of England during the early days of the month, and was again widespread at the end.

Areas with more than 4 in. of rain in the month occupied practically the whole of the west of the British Isles except the Cheshire plain. In Ireland they extended eastward to the coasts of Antrim, Down and Wexford, and in the south of England to the coast of Kent. More than 6 in. was widespread in all elevated regions, except in the north-west and centre of Scotland, and patches with this amount occurred at intervals in the south of England as far eastward as



Tunbridge Wells. The areas with more than 10 in. were, however, not large. The least rainy districts were round the Moray Firth and in the north-east of Shropshire, where less than 2 in. fell.

Less than the average rainfall was observed over the north and centre of Scotland and very slightly less in the south of Scotland and parts of Ireland. Practically all the east of Great Britain south of Aberdeenshire had more than 50 per cent. of excess, the area widening in the south till it extended to South Wales and Cornwall. The east Midlands and south-east coast of England were relatively the wettest districts, more than twice the average being recorded over considerable areas.

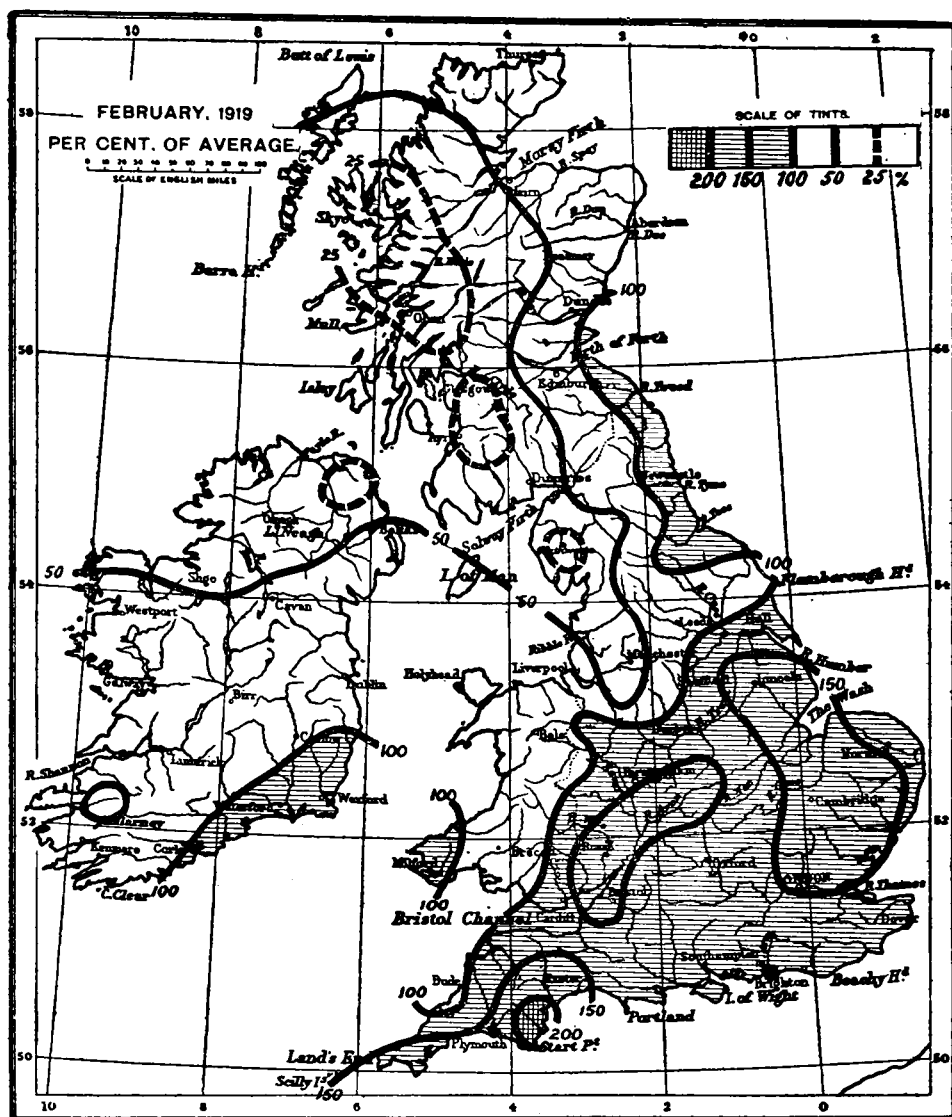
In Scotland there was a general deficiency of 7 per cent., but



elsewhere an excess, amounting to 24 per cent. in Ireland, 35 per cent. in Wales, and 67 per cent. in England. For the British Isles as a whole there was an excess of 28 per cent.

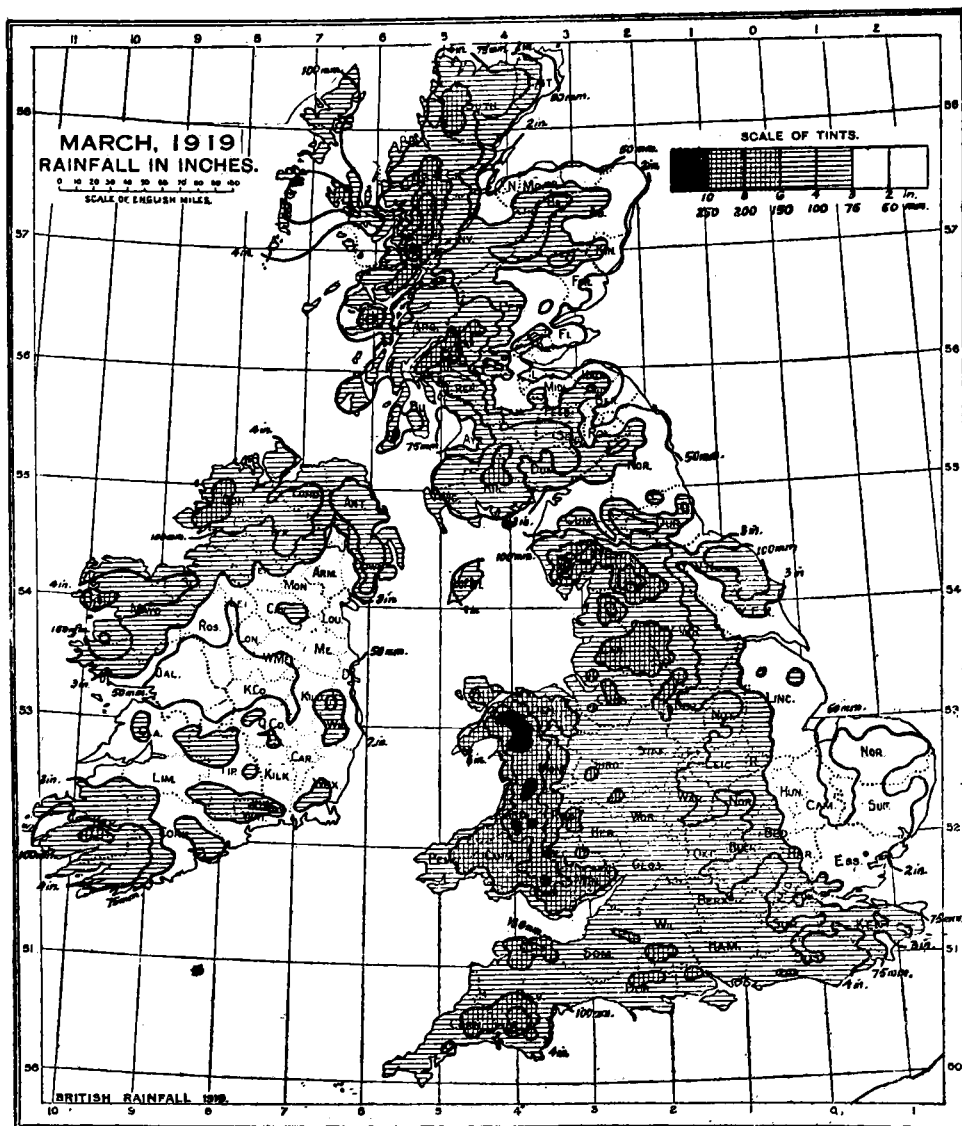
February.—During the first half, cold anti-cyclonic conditions prevailed with notable prevalence of easterly winds. In the second half numerous depressions passed in an easterly direction across the southern half of the British Isles, bringing rainy conditions, whilst in the north easterly winds and lack of rain and a continuance of frost, were the predominant features.

The distribution of total rainfall reflected the barometric conditions in a remarkable manner. Save in extremely small patches the amount reached 3 in. nowhere north of the 53rd parallel of latitude, and,



except in Ireland, falls of even 2 in. were confined almost entirely to the east coast. Large areas in the centre and west of Scotland, where February is normally exceedingly wet, had less than 1 in. of rain during the month, and the same occurred over a considerable part of the north of Ireland. In the south of Ireland and of England from Cornwall to Dorset, as well as in South Wales, more than 4 in. fell, and in many places more than 6 in.

More than the average fell over the south-eastern half of England and Wales, in the south-east of Ireland, and on the east coast of Great Britain as far north as Fifeshire. The fall rose to twice the average in part of South Devon. In the western half of Scotland and the north of Ireland there was a deficiency of more than half the average, whilst

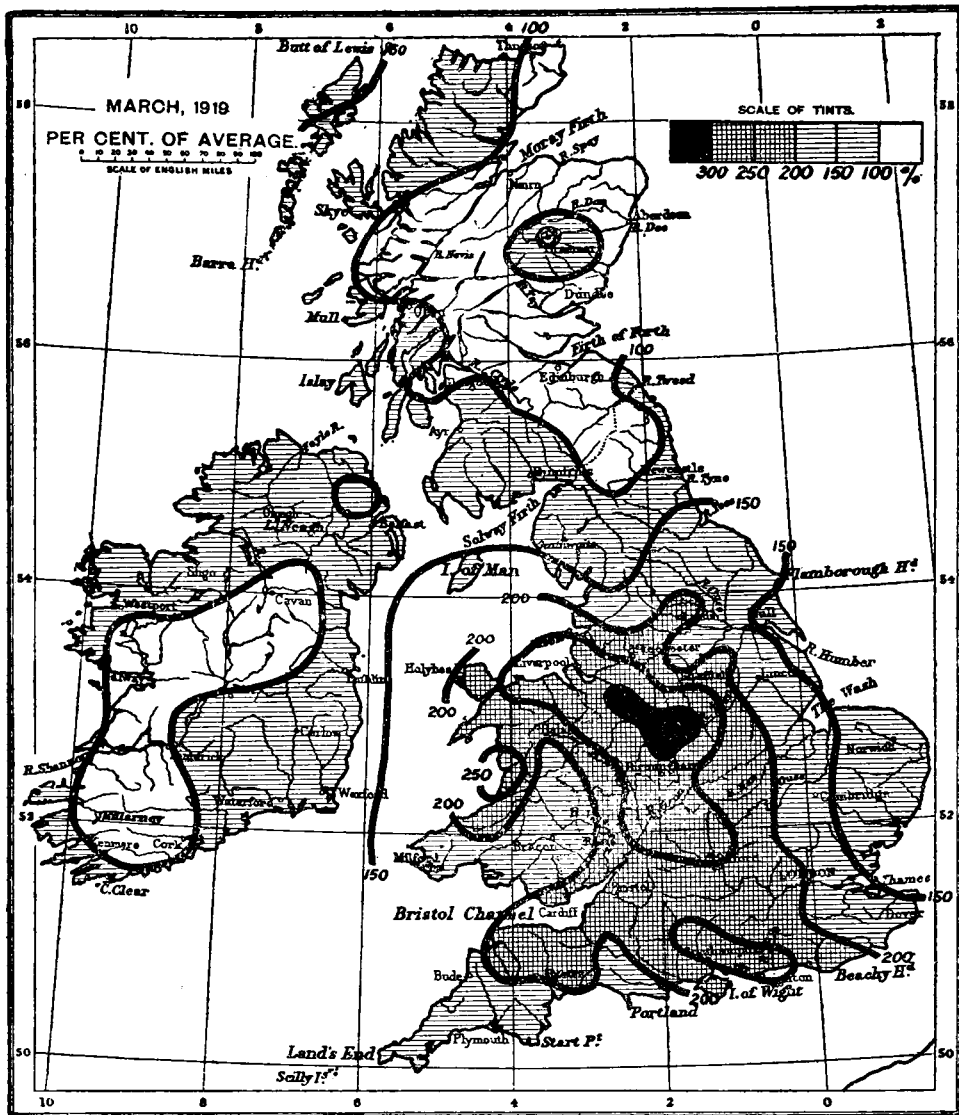


less than a quarter of the average fell over a great part of the normally rainy West Highlands and in the English Lake District. At Fort William only 9 per cent. of the average fell.

There was a general excess of 18 per cent. in England, but a deficiency of 6 per cent. in Wales, of 35 per cent. in Ireland, 60 per cent. in Scotland, and of 23 per cent. for the British Isles as a whole.

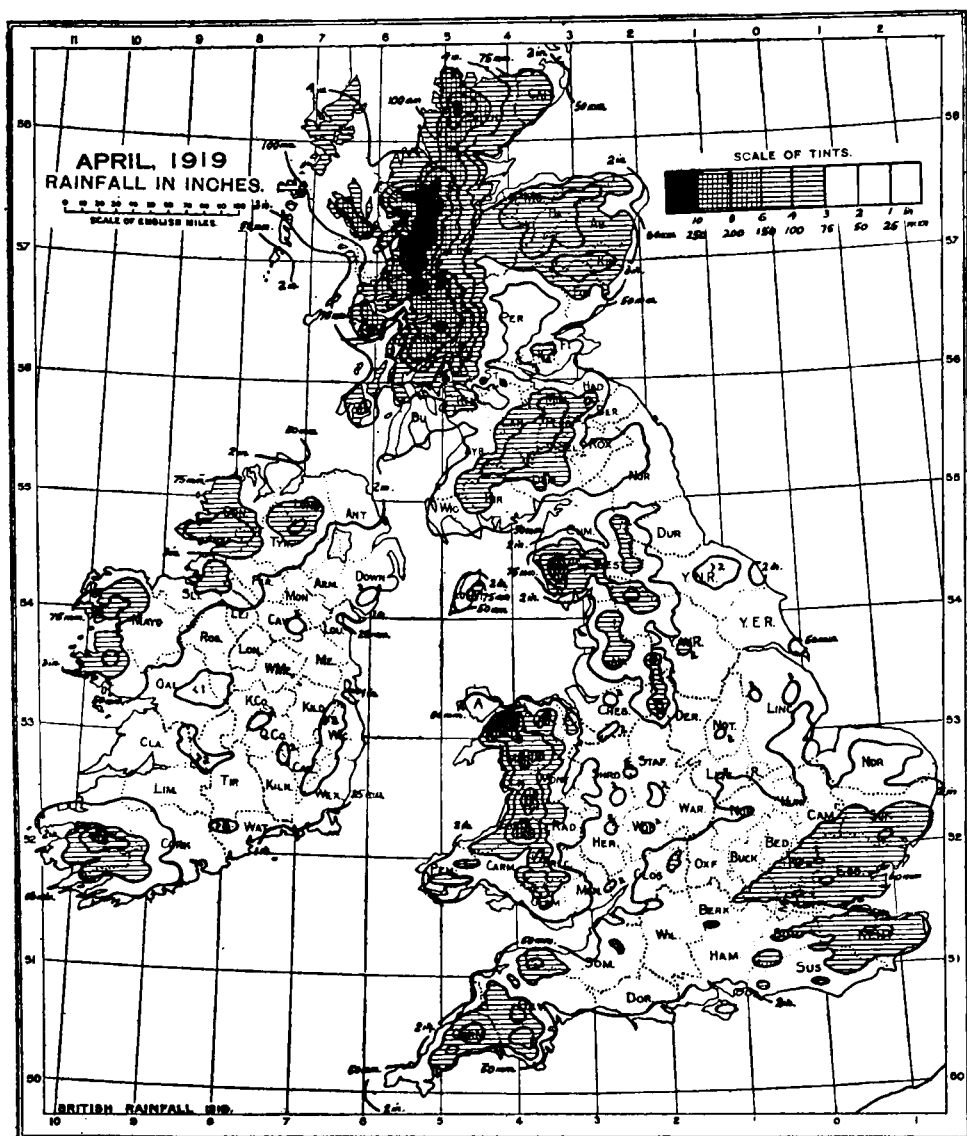
March was for the most part extremely wintry, especially in the north, and wet more particularly in England and Wales. Barometric depressions were numerous, many being secondaries, and rain, snow and sleet were frequent.

Narrow coastal strips in the east of Great Britain and part of the centre of Ireland had less than 2 in. of rain during the month, but



more than 4 in. occurred over practically the whole of the western half of Great Britain, as well as in the north and south-west of Ireland. In England and Wales the 6-in. areas were exceptionally widespread, but elsewhere they were less so than usual. More than 10 in. fell in many places in Wales.

The distribution of rainfall in relation to the average was somewhat involved. Less than the average fell over a great part of the interior of Ireland and over most of the east of Scotland, though there was an isolated wet patch in Aberdeenshire. Over the remainder of these countries there was a slight excess. In England less than the average fell in the extreme north, and the excess was less than 50 per cent. in the east generally. Over a large area extending from Morecambe

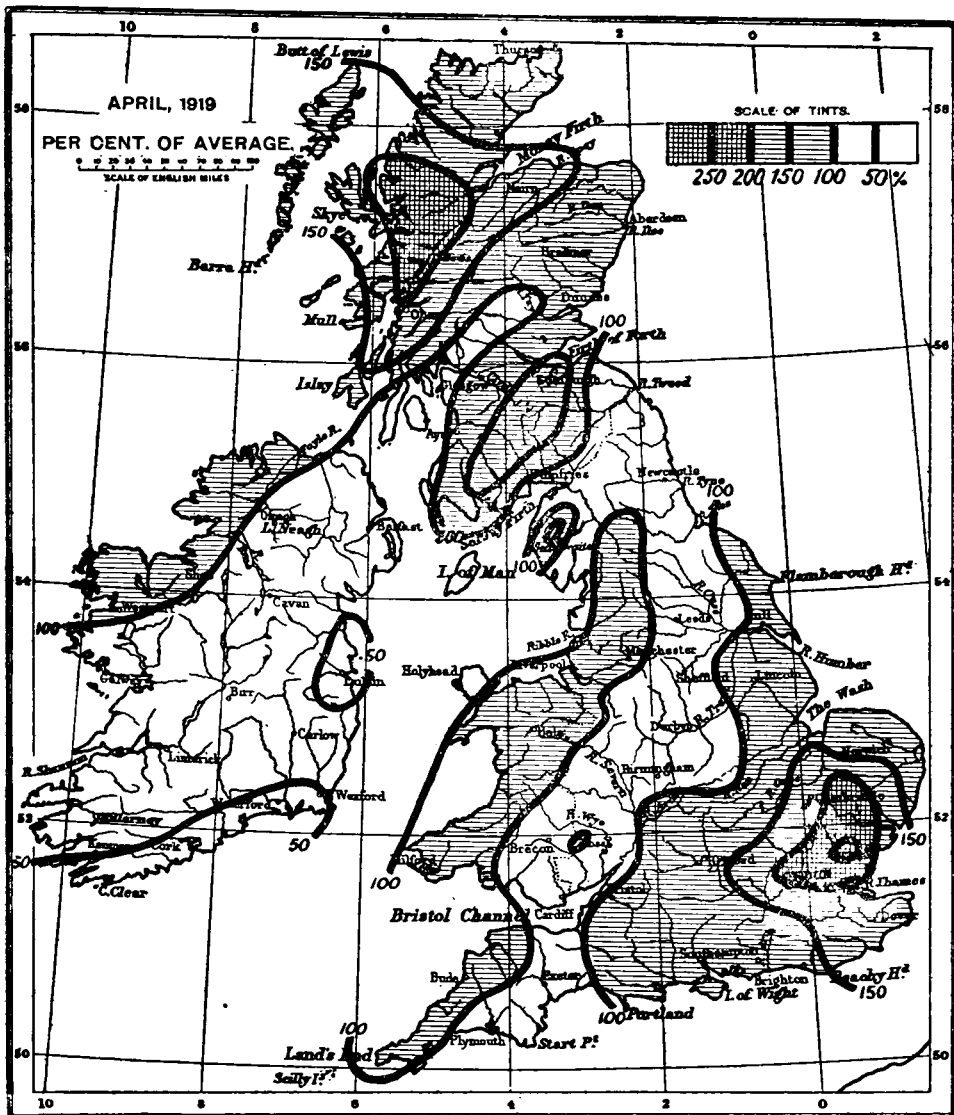


Bay to Beachy Head more than twice the average fell, culminating in a fall of three times the average in the north-west Midlands.

In Scotland the general fall was 4 per cent. below the average, but there was an excess of 12 per cent. in Ireland, of 87 per cent. in England, and of 106 per cent. in Wales. For the British Isles there was an excess of 41 per cent.

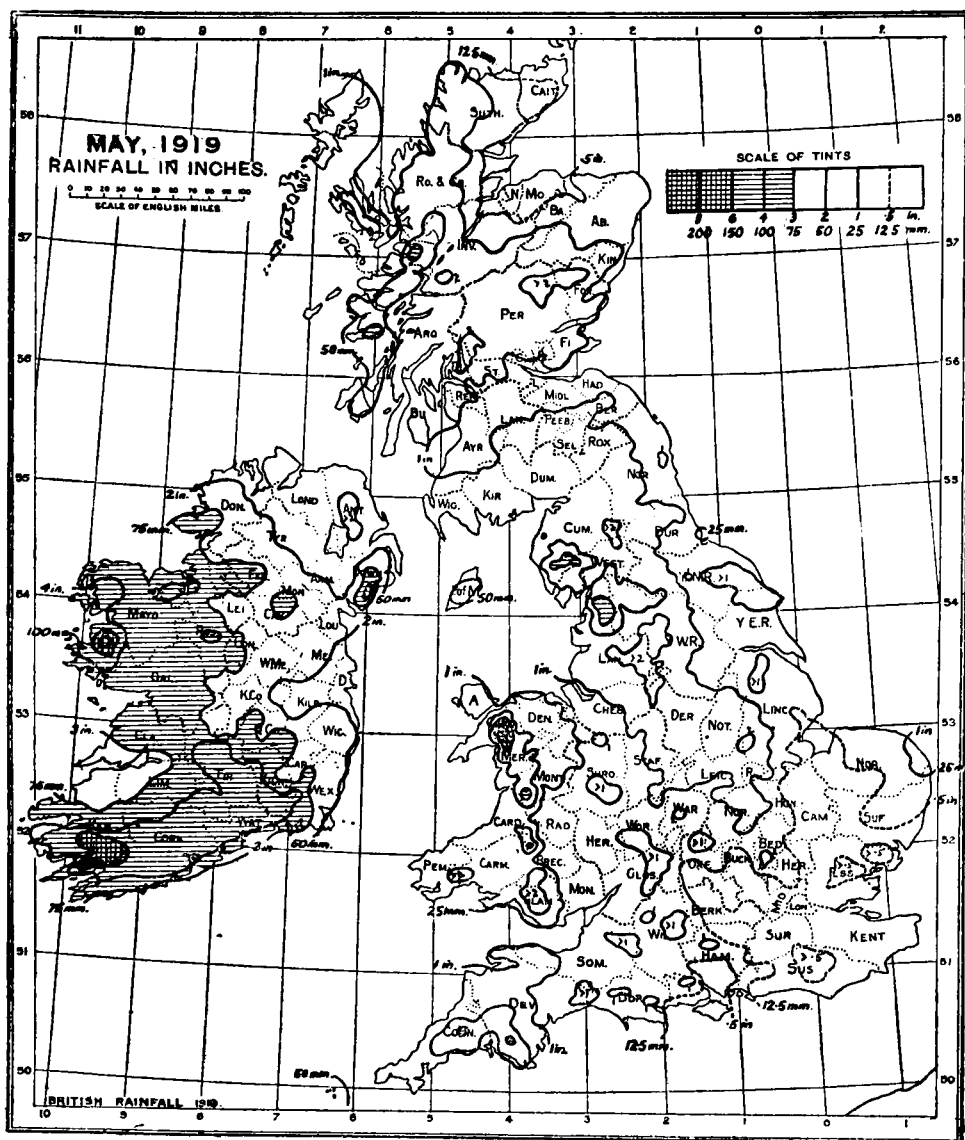
April.—The pressure distribution was of the north-westerly type, with an unusually steep gradient. The weather was remarkably changeable, with extreme variations of pressure and temperature, and the distribution of rainfall was irregular. On the 27th a snowstorm of considerable severity occurred in the south of England.

Extensive districts in Ireland and the north and west of England,



as well as small areas in the south and east of Scotland, had a total rainfall of less than 2 in., but more than 3 in. occurred over numerous small patches widely scattered over the remainder of the British Isles. The only 4-in. areas of any size, however, lay in Wales and the West Highlands. In the last-mentioned, where the normal winter rains seemed to have been unduly postponed, more than 10 in. fell widely.

The map of rainfall in relation to the average shows that excessive falls occurred in a number of parallel strips stretching from south-west to north-east, separated by strips with a deficiency. In the most westerly strip more than twice the average fell in Ross-shire and Inverness-shire; in the next strip this occurred in Peebles-shire, and in the most easterly strip between London and Bury St. Edmunds. In the dry belts less than half the average was recorded in places.



The general fall was 48 per cent. above the average in Scotland, 11 per cent. in England, and 6 per cent. in Wales. In Ireland there was a deficiency of 26 per cent. For the British Isles the fall was 12 per cent. in excess.

May.—With the highest barometric pressure in the east and a remarkable infrequency of cyclonic disturbance, the month was abnormally dry in Great Britain, more especially in the north-east and south-east. In Ireland rain was more frequent

More than 2 in. fell everywhere in Ireland except in the north-east and east, but in England, Wales and Scotland the areas with this moderate amount were extremely local. Less than 1 in. fell in all easterly districts of Great Britain extending to the west coasts in places,



and in the south-east of England very large areas had less than $\cdot 50$ in., falling to $\cdot 10$ in. in north-west Kent. The 4-in. areas in the west and south-west of Ireland were, however, rather more extensive than usual and as much as 8 in. fell in Connemara.

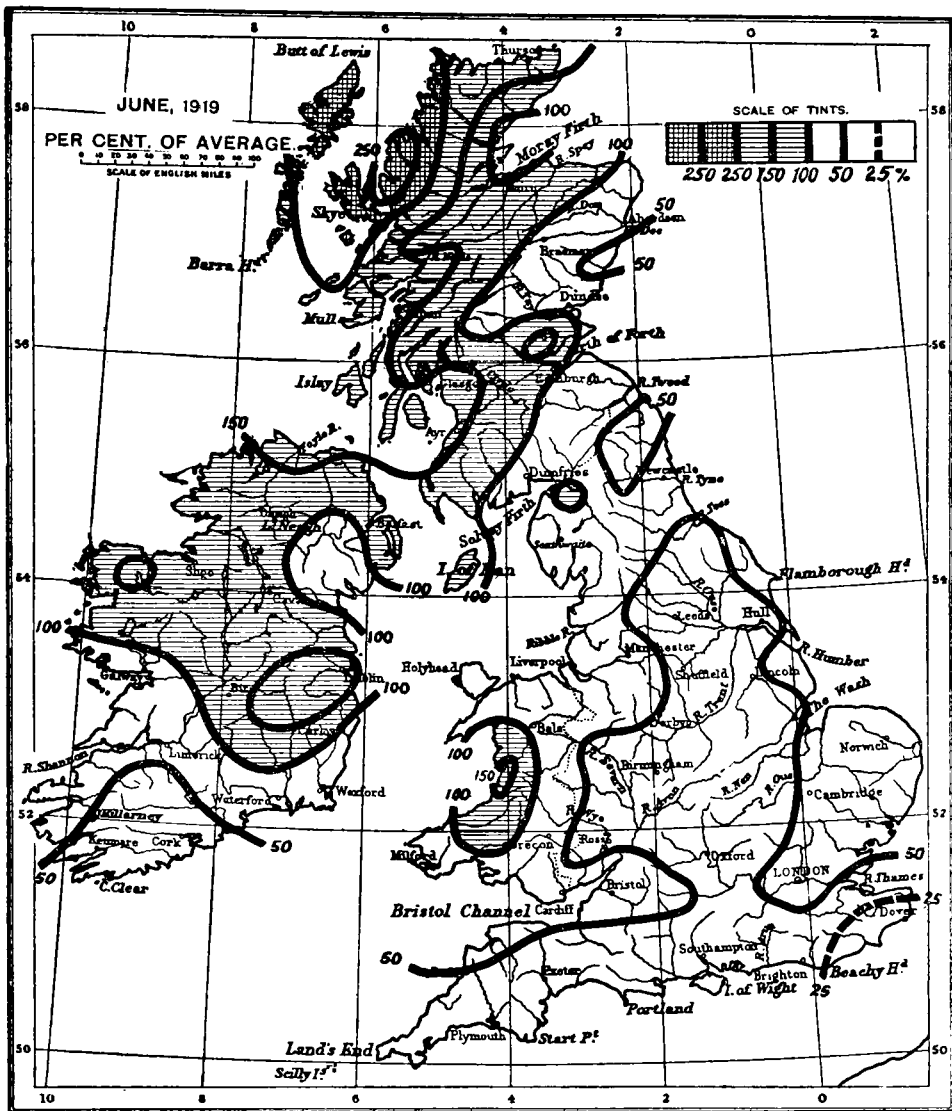
Less than half the average fell over an irregularly shaped tract extending throughout the whole length of Great Britain from Sutherlandshire in the north to Devon and Kent in the south, and including the greater part of Wales. In the counties bordering the Moray Firth, along part of the Welsh border, and in the south-east of England generally, less than a quarter of the average fell. In Ireland the total exceeded the average except in the north and east, and in the southern counties the excess reached 50 per cent.



Ireland showed a general excess of 12 per cent., but in Scotland, Wales and England the fall was below the average by respectively 59, 56 and 55 per cent., and for the British Isles by 40 per cent.

June over England generally continued warm and fine, but in the west thunderstorms and irregularly distributed rains brought the month's fall well above the average. On the 12th widespread very heavy rains of the thunderstorm type occurred, especially in central Wales, the east of Ireland and the south-west of Scotland.

Most of the south coasts and much of the east coasts of the British Isles had a total rainfall of less than 1 in., but the amount increased to the west and especially to the north-west, and more than 3 in.



occurred over the mountains of Wales and Cumberland, over most of the north of Ireland and the whole of the western half of Scotland. Apart from Scotland only scattered stations in very rainy districts had as much as 6 in., but this amount fell over an almost unbroken area stretching from Ayrshire to Cape Wrath, with more than 10 in. at numerous stations.

The average rainfall was exceeded over the northern half of Ireland, the whole of Scotland except parts of the east, and over central Wales. The only large area with an excess of 50 per cent. was the west and north coastal strip of Scotland and in the Hebrides. In Skye and over the mainland northward more than double the average fell. Over central and southern England there was a deficiency of more than

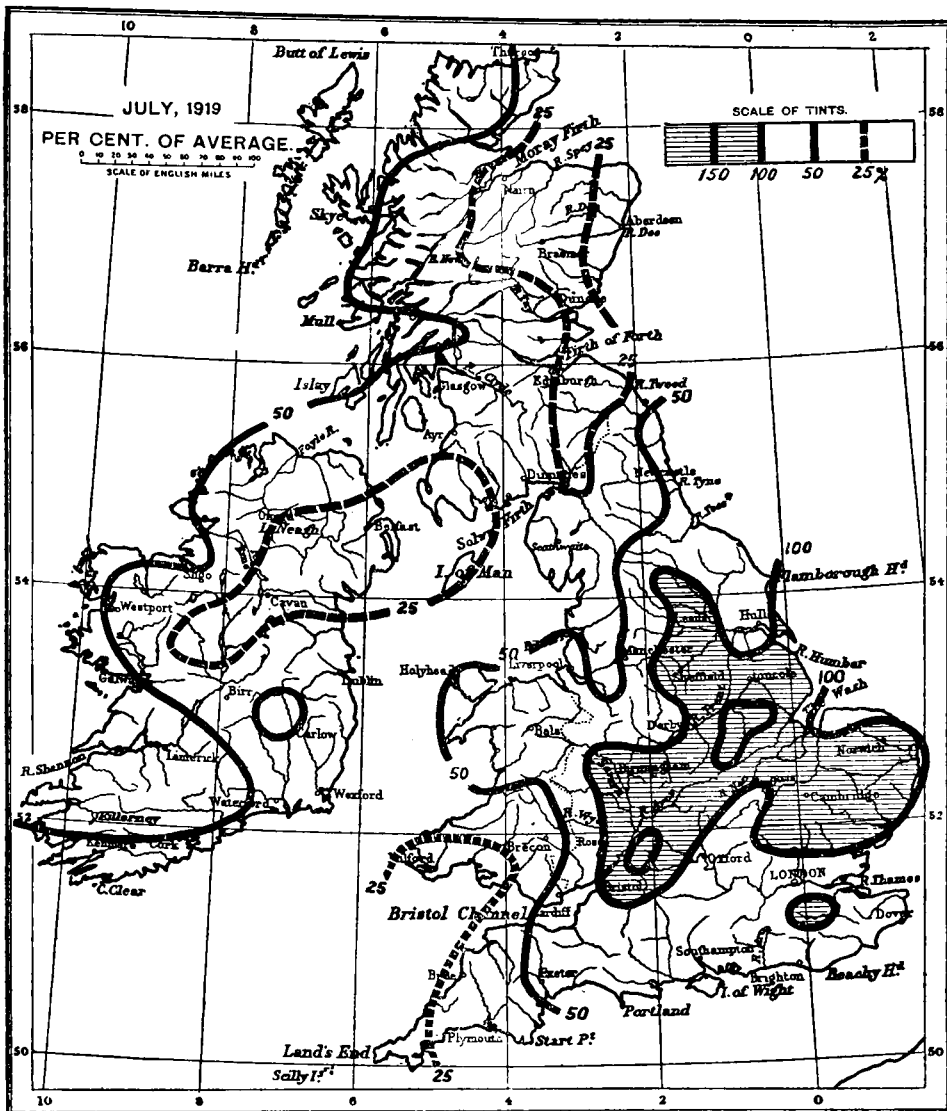


50 per cent., and in the extreme south-east only a quarter of the average fell.

In England the general fall was 49 per cent. in defect, and in Wales 13 per cent. There was an excess of 4 per cent. in Ireland and of 39 per cent. in Scotland, whilst for the British Isles the fall was 8 per cent. below the average.

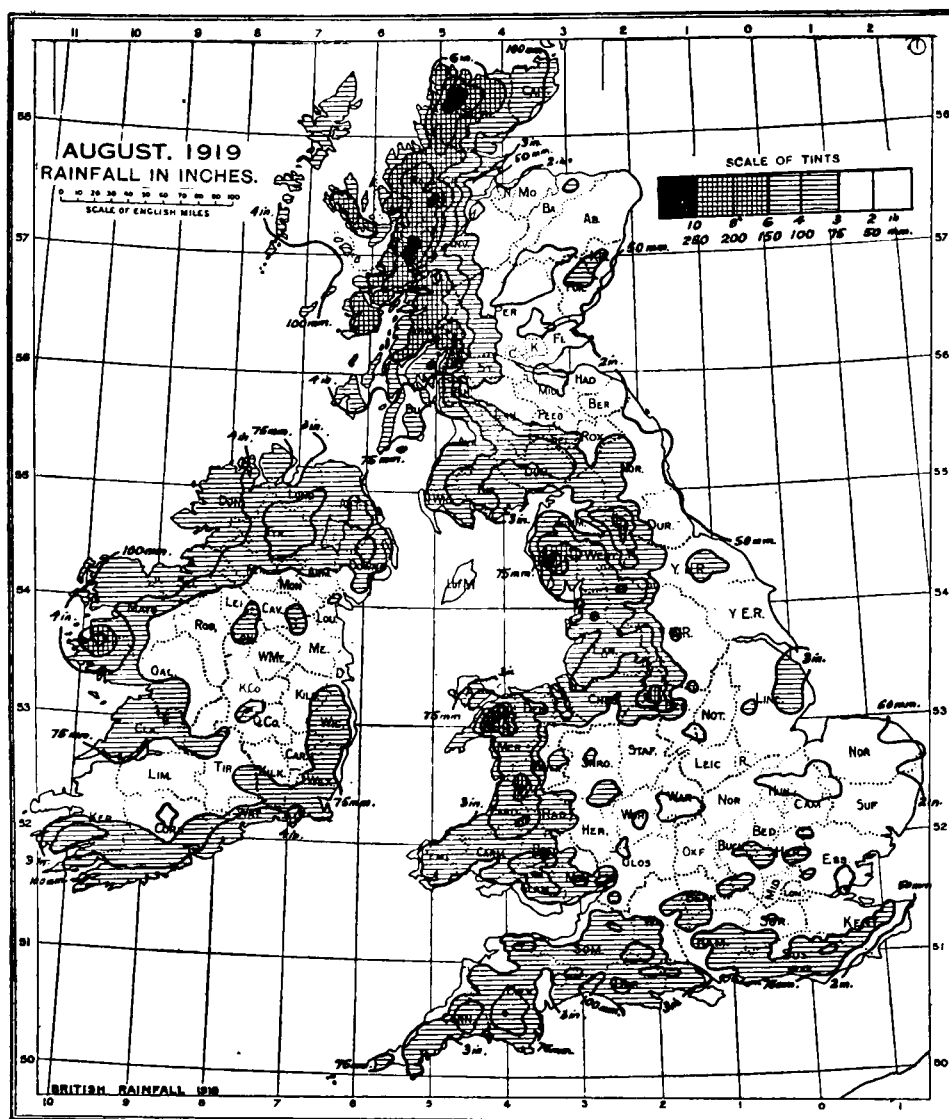
July.—The pressure distribution was again abnormal, the type being much more northerly than usual. Few thunderstorms occurred and the month was dry save for the occurrence of a heavy cyclonic rain in the English Midlands on the 19th.

Less than 1 in. of rain fell during the month over the eastern half of Scotland and in north-eastern Ireland, culminating in areas with less than .50 in. in northern Perthshire and in Cos. Down and Armagh,



where the absence of rain was seriously felt. In Scotland, Wales and Ireland as much as 2 in. was confined to the uplands of the west and as much as 4 in. to very restricted areas in the normally rainy districts. In England more than 2 in. was general east of a line drawn from Sidmouth to Middlesbrough, and there were numerous large areas with more than 3 in., reaching 4 in. in parts of the north Midlands.

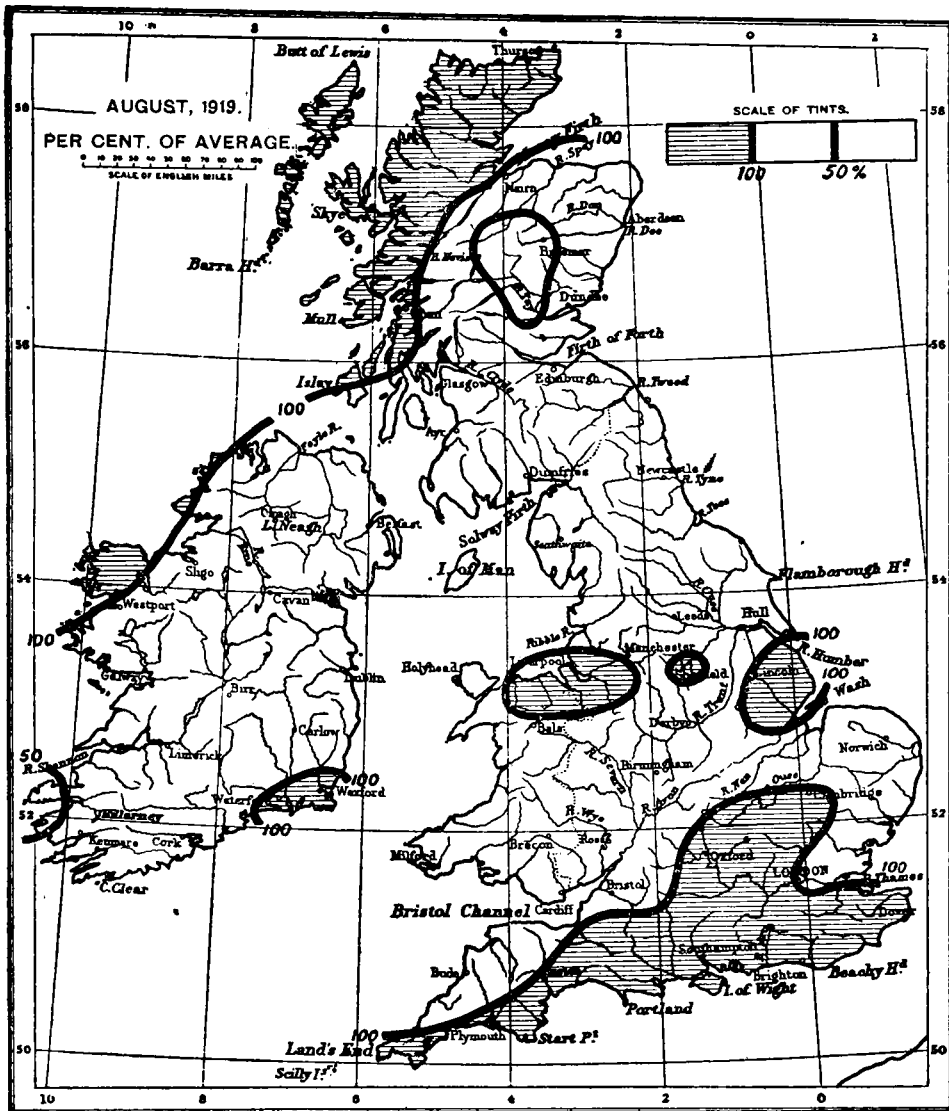
Throughout the whole of Scotland and Ireland, except a strip of the west coast, less than half the average fell, and over a broad tract stretching with one interruption from Co. Galway to Banff less than a quarter of the average. The west of England and Wales was also very dry, less than a quarter of the average falling in the south-west. More than the average was observed in the centre and east of England, and more than 50 per cent. excess in places.



The general rainfalls were in defect in all countries : by 18 per cent. in England, 54 per cent. in Wales, 61 per cent. in Ireland, 63 per cent. in Scotland, and 45 per cent. for the whole British Isles.

August.—The first half of the month was generally fine and warm, the latter cool and rainy ; as in July, there was a conspicuous absence of thunderstorms.

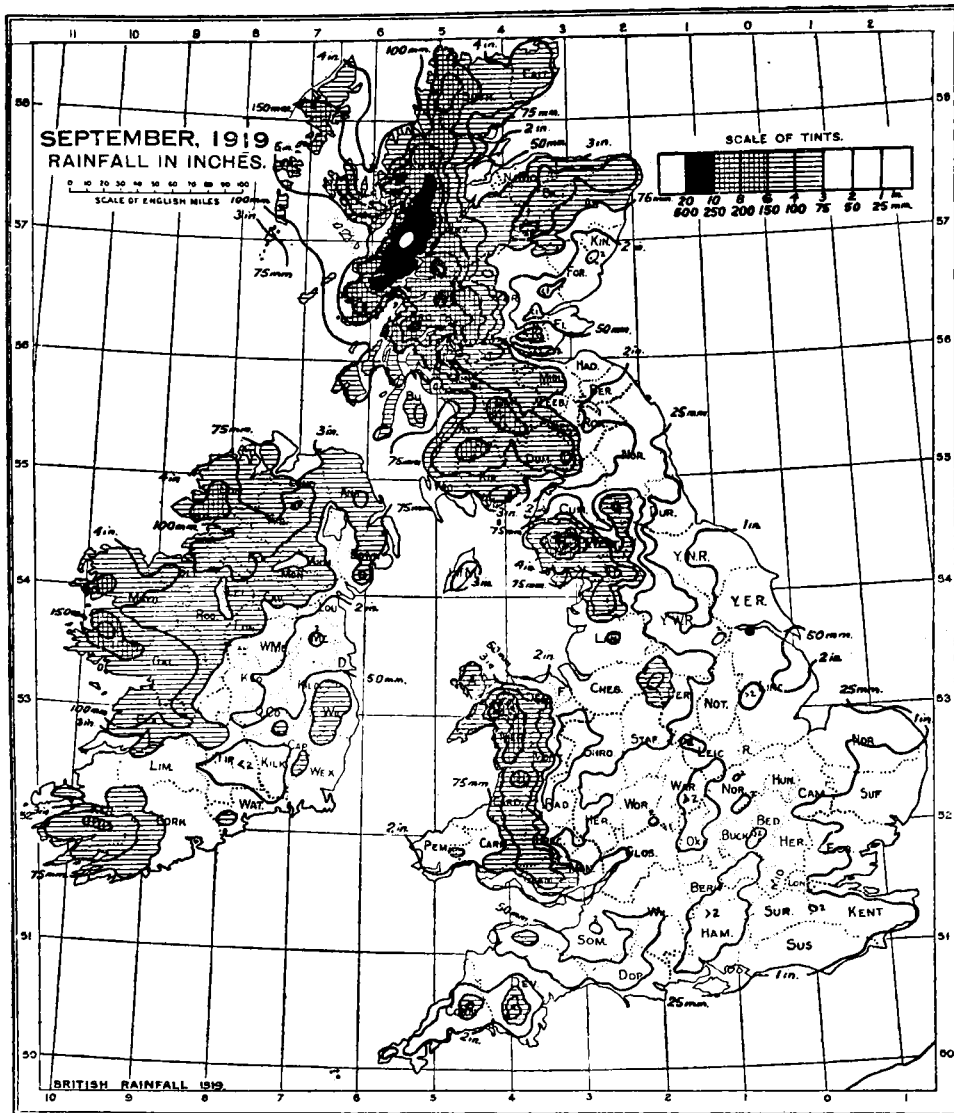
Only very small inland areas and narrow east coast strips had less than 2 in. of rain, but except in a few places most easterly districts had less than 3 in. The greater part of the south of both Ireland and England, however, had rather more than this amount, and in many places as much as 4 in. A strip of the north-west coast from Galway Bay t



the Orkneys experienced somewhat rainier conditions, and a considerable area in the western Highlands had more than 8 in., rising to 10 in. in places. Small areas with more than 6 in. occurred in the mountains of Wales, in the Pennines, and in Co. Mayo.

The distribution in relation to the average was simple. Slight excesses, in no case reaching 50 per cent. above the average, occurred in three belts of country extending respectively from Co. Mayo to Caithness, from Waterford with interruptions to Lincolnshire, and from Cornwall to Kent. The whole of the remainder of the British Isles had a moderate deficiency and slightly less than half the average fell in parts of the south-west of Ireland and of the east Midlands of Scotland.

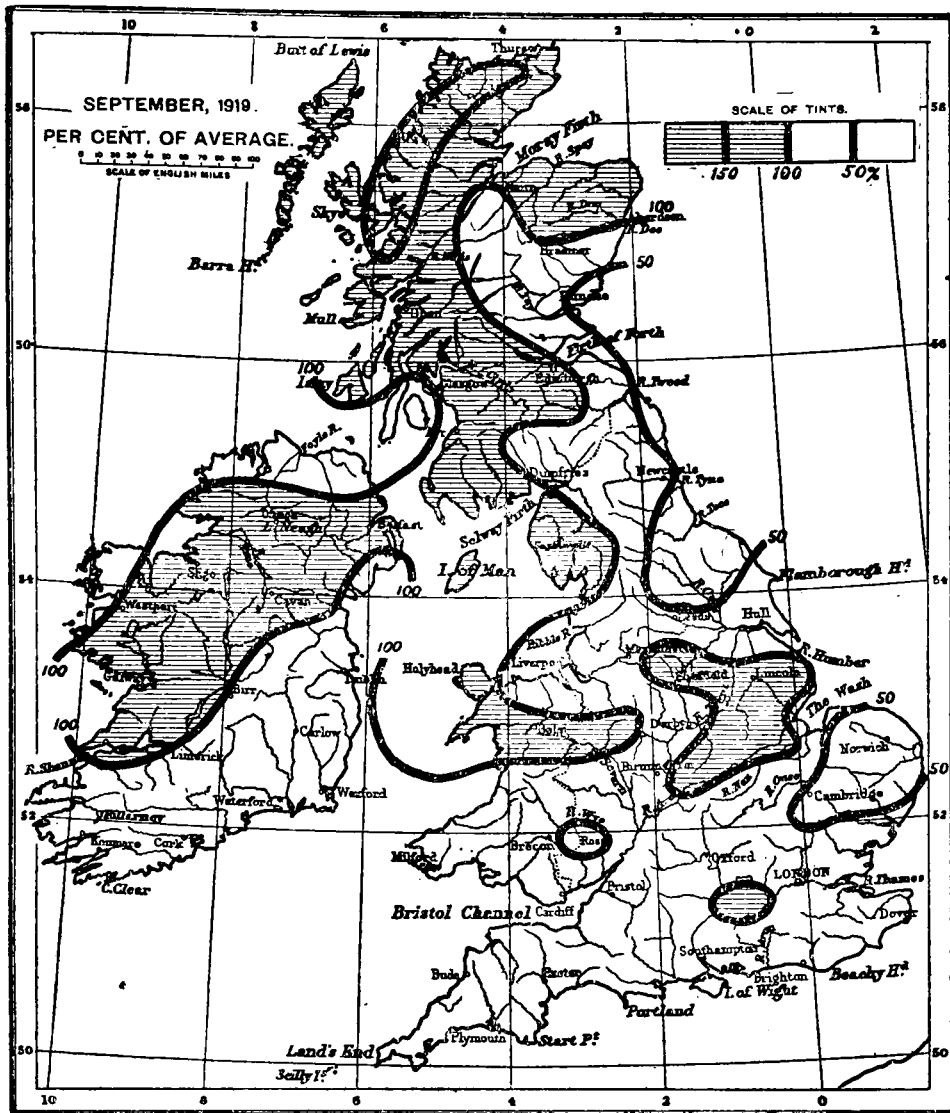
As in July, each country had a general deficiency, amounting to



7 per cent. in England, 10 per cent. in Scotland, 18 per cent. in Wales, 21 per cent. in Ireland, and 13 per cent. for the whole country.

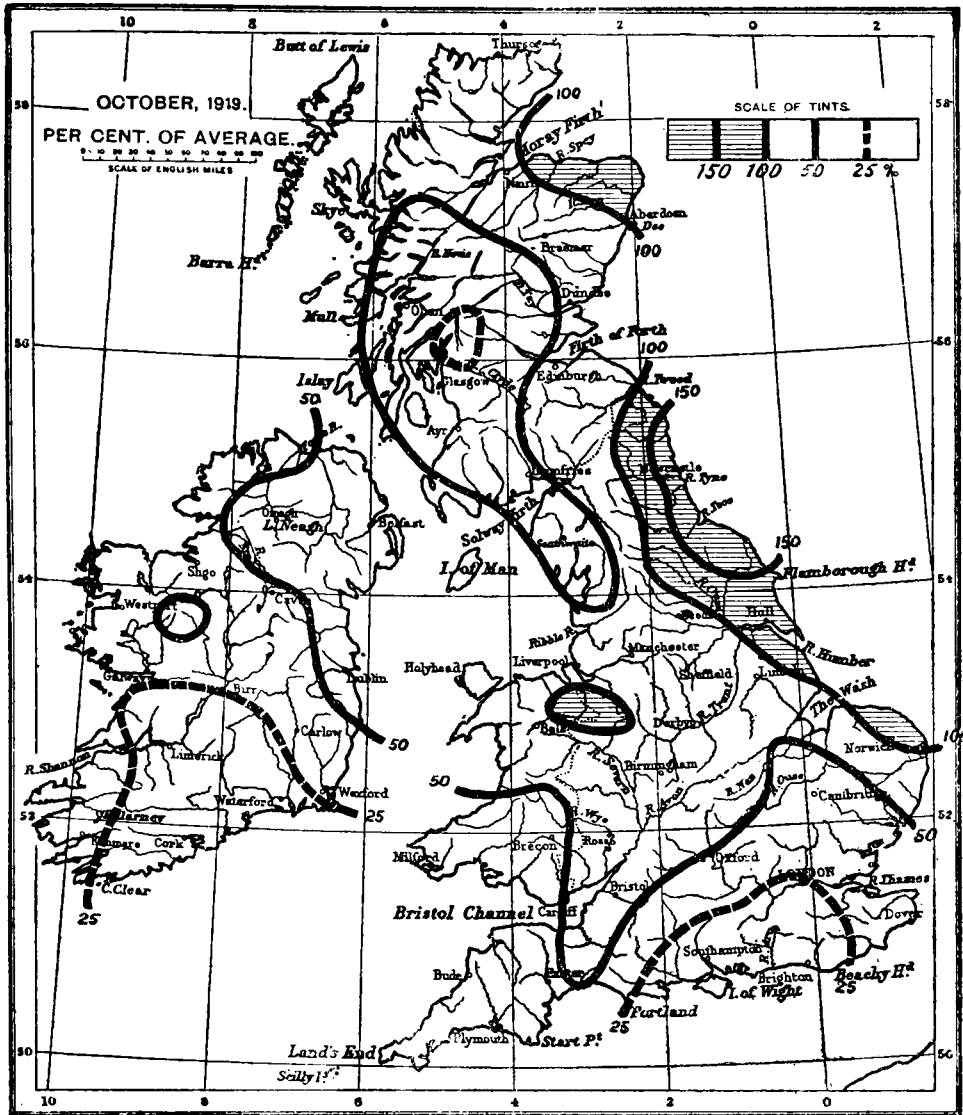
September.—The barometric distribution was normal except for an intensified gradient, and fairly numerous cyclonic depressions took very northerly tracks. After an unusually hot spell during the second week the temperature became much lower than is common at the season, and about the 19th and 20th snow fell fairly widely.

Part of the east of England again experienced less than 1 in. of rain, and less than 2 in. was general in the east of England, though much less so in Scotland and Ireland. Areas with 4 in. or more occurred in all normally rainy districts, being least conspicuous in the south-west of England, but very widespread in the west of Scotland. More



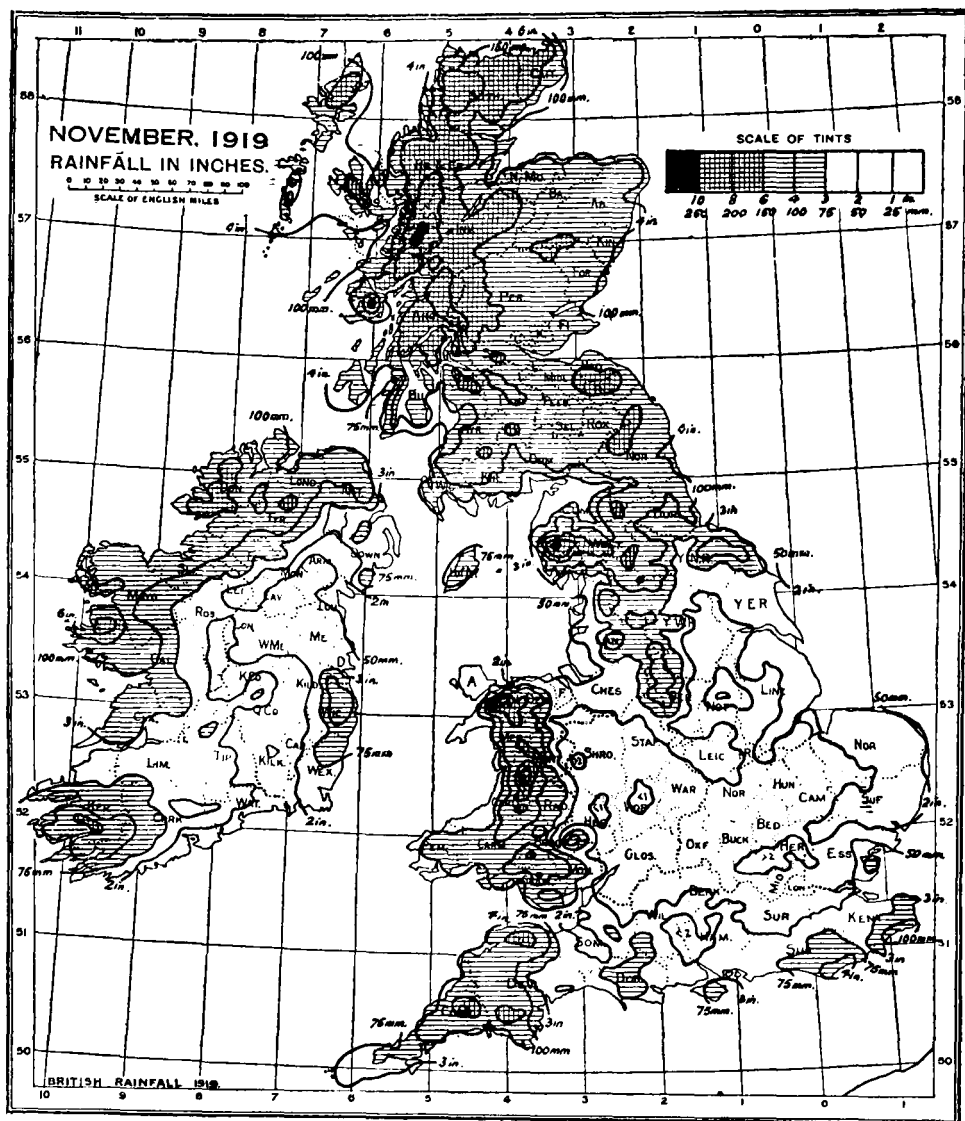
than 6 in. was also widespread in the north-west, but local elsewhere. In part of western Inverness-shire more than 20 in. fell.

Except in the north-west and part of the eastern Midlands, England and Wales had generally a deficient fall, but less than half the average occurred only on the north-east coast and in East Anglia. The east of Scotland south of Inverness was also dry, the rainfall falling to half the average in a narrow coastal strip. In Ireland the whole of the south and south-east as well as part of the north-west had less than the average fall, but a belt of slightly excessive rainfall stretched from the mouth of the Shannon to the North Channel whence it extended northward embracing the whole of the western half and the north of Scotland.



this amount. Well-marked wet patches with more than 4 in. however, occurred in the north-east of England and Scotland rising to about 8 in. or the North Yorkshire Wolds. In the south-east of England and of Ireland and in part of the Midlands of Scotland less than 1 in. of rain fell.

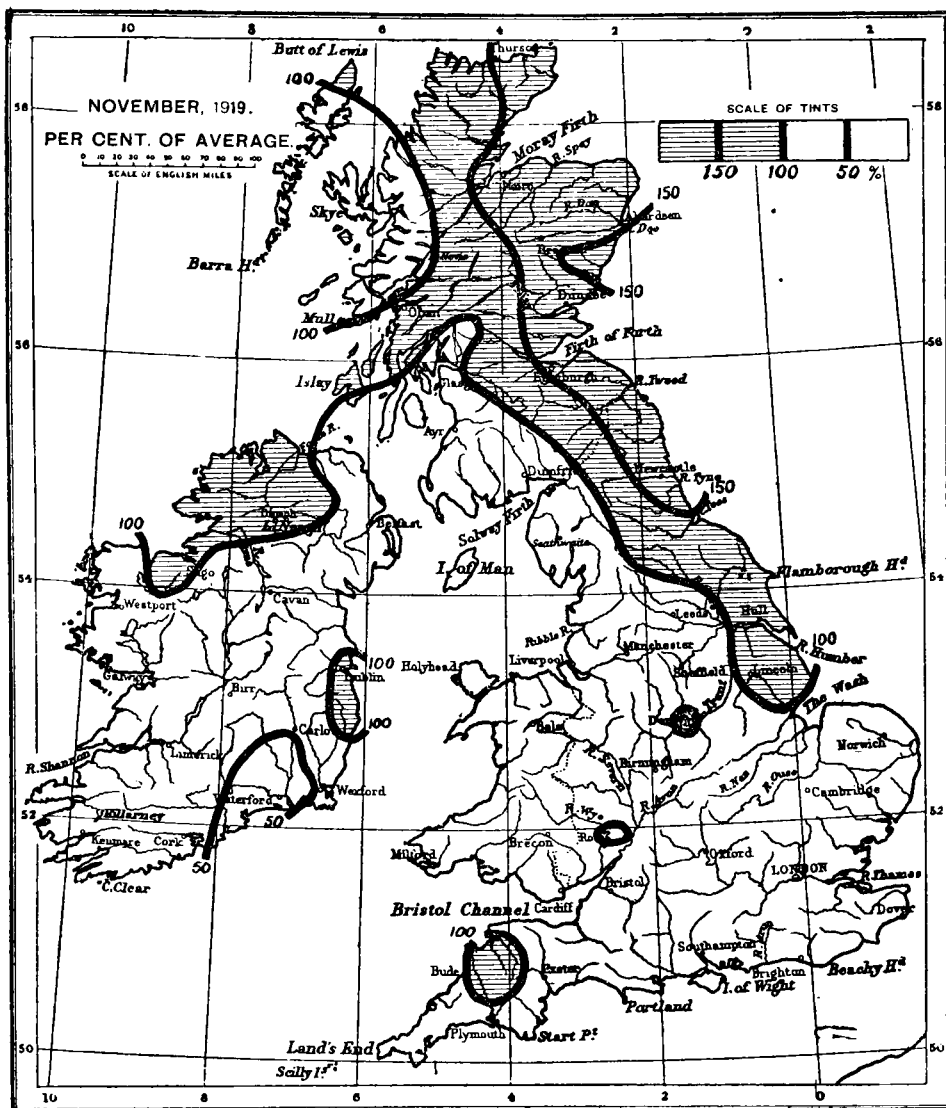
The only area with more than the average rainfall was along the east coast of Great Britain from Forres to Aberdeen and from Berwick to Yarmouth. Nearly twice the average fell at Middlesbrough. The south-western half of Scotland, the south of England and Wales and almost the whole of Ireland except Ulster had less than half the average for the month, and large areas in the south of England and Ireland less than a quarter of the average.



The general fall was below the average, for England by 33 per cent., for Wales by 41 per cent., for Scotland by 45 per cent., for Ireland by 57 per cent., and for the British Isles by 42 per cent.

November.—The general pressure conditions were not dissimilar to those of October and the month was abnormally cold, but it differed from that month in the occurrence of fairly frequent depressions and frequent rain and snow, especially in the north.

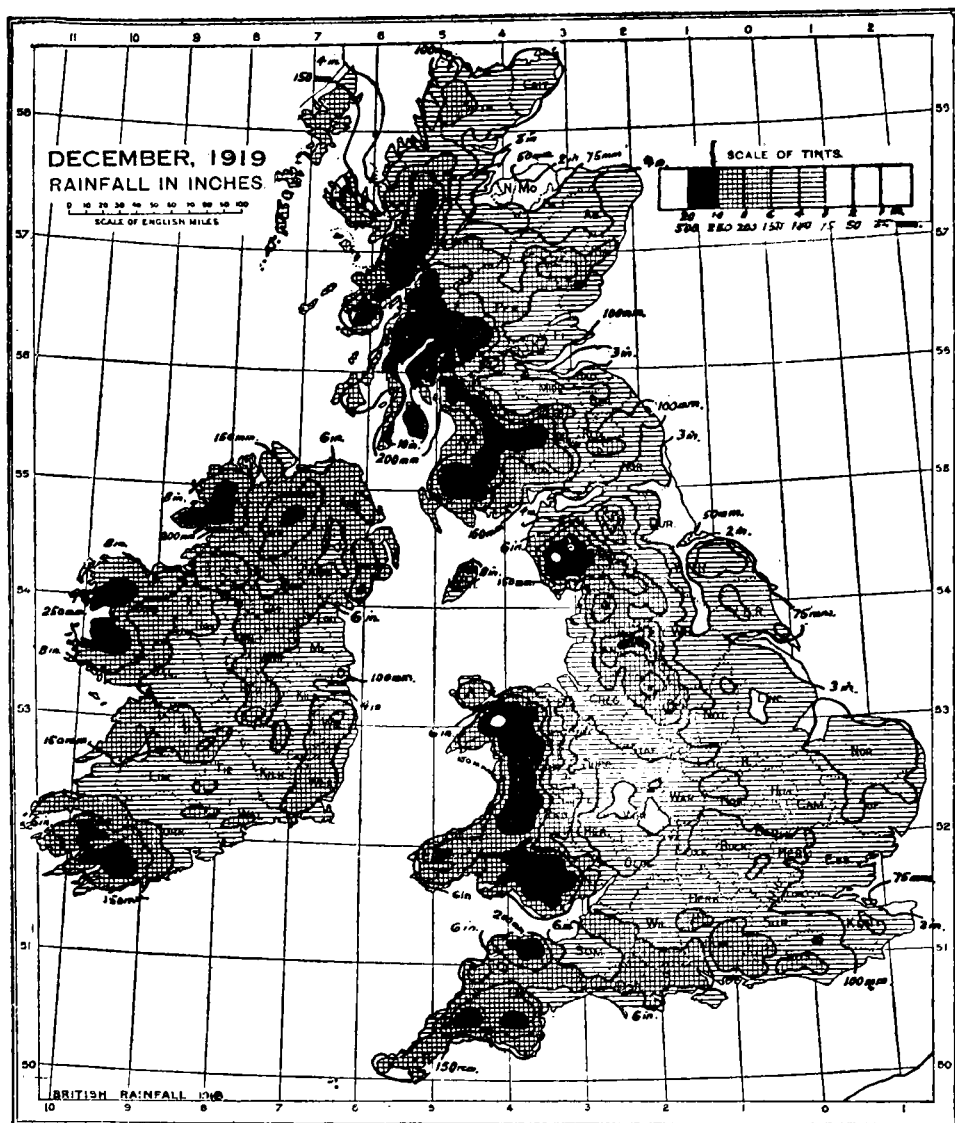
The total rainfall exceeded 4 in. over practically the whole of Scotland and this amount occurred fairly widely in the west of England, Wales and Ireland, reaching the east coast in places in Antrim, Wicklow, Durham and Kent. More than 6 in. fell in all the normally rainy districts, except the Pennines, but as much as 10 in. only very locally



in the English Lakes and Inverness-shire. An inland strip in the north-east of Ireland, and the greater part of the English Midlands, had less than 2 in. of rain during the month.

Except over part of the west of Scotland, where the average rainfall of the month is very great, the whole of the north-west and north-east coasts of the British Isles from Donegal Bay and the Wash northward, had more than the average rainfall. An excess of as much as 50 per cent. was, however, confined to the east of Scotland and southward as far as the coast of Co. Durham. Nearly the whole of the remainder of the country had a moderate deficiency, just reaching 50 per cent. in Co. Waterford and Herefordshire.

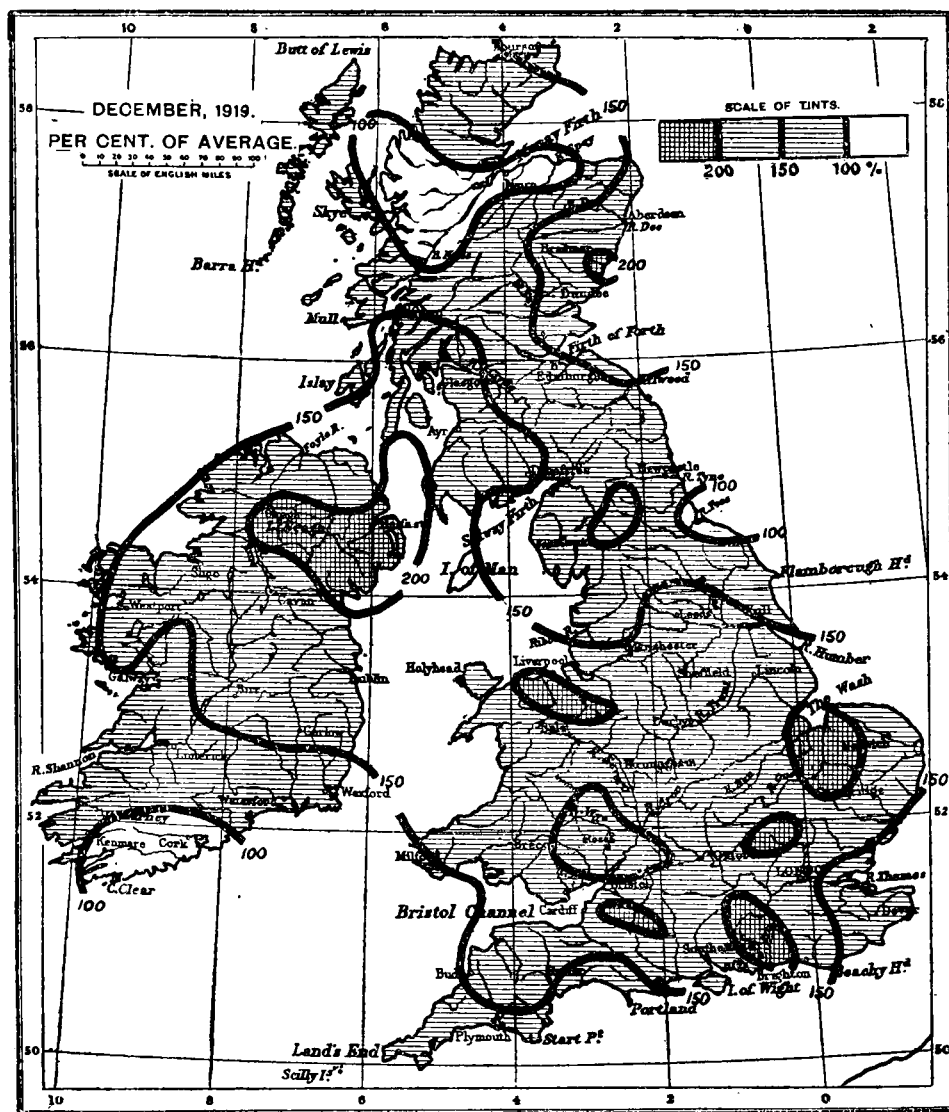
All countries showed deficiencies except Scotland with an excess



of 9 per cent. ; England had 14 per cent. below the average, Wales 30 per cent., Ireland 20 per cent., and the British Isles 10 per cent.

December.—Westerly conditions with an unusually steep barometric gradient and numerous depressions brought mild wet weather throughout. Snow fell occasionally but was not of great importance.

The large area over which more than 6 in. of rain fell was extremely striking. It included all westerly and upland districts and reached the east coast in Antrim, Down, Wicklow, and Forfarshire. More than 10 in. was very widespread in the west including the whole of the elevated regions of Wales and extensive areas in the west of Scotland and Ireland. The only large areas with less than 4 in. were the centre and part of the east of England and of the north-east of Scotland, and less than 3 in. fell in some of the estuaries on the east coast.



Co. Cork in Ireland, and parts of Ross-shire, Inverness-shire, Nairn and Elgin, in Scotland, had slightly less than their average rainfall, but a very broad belt extending from Galway Bay and the Isle of Mull on the west, to the estuaries of the Humber, Thames and Exe on the east and south had an excess of more than 50 per cent. This excess was observed also along the east coast of Scotland. At numerous parts of these wide wet areas more than twice the average fell, the largest area with this amount embracing the greater part of Ulster.

This was the wettest month of the year with excesses of 71 per cent. in Wales, 61 per cent. in Ireland, 60 per cent. in England, 34 per cent. in Scotland, and 53 per cent. for the whole British Isles.

TABLE III.—*Monthly Rainfall in 1919; the Average, 1875-1909, being taken as 100.*

	Station.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
I.	St. Pancras, Camden Square	176	160	213	226	19	66	68	99	65	25	5	163	104
II.	Tenterden, View Tower	230	121	180	188	28	23	77	146	60	34	73	122	103
"	Edenbridge, Falconhurst	181	123	177	152	16	49	107	108	65	20	63	157	99
"	Patching Farm	236	128	275	126	17	37	76	142	60	12	56	209	109
"	Fordingbridge, Oaklands	224	138	262	122	33	48	78	105	67	18	67	183	109
"	Sherborne St. John	153	116	235	112	17	44	53	105	127	29	56	201	101
III.	Hemel Hempstead, Apsley Mills	198	157	200	175	40	55	101	111	62	36	67	225	114
"	Oxford, Magdalen College	160	130	259	132	22	39	88	119	62	49	52	186	101
"	Wellingborough	198	143	227	102	62	35	88	97	68	58	59	156	103
"	March	224	185	161	151	12	52	122	86	98	43	78	214	110
IV.	Chelmsford, High Street	194	178	149	262	40	71	100	87	70	35	70	158	109
"	Bury St. Edmunds, Westley	157	187	140	220	19	57	148	99	27	43	92	201	110
"	Geldeston	195	147	113	116	39	71	111	73	48	97	83	169	102
"	Swaffham	174	153	135	113	24	65	102	92	42	72	73	209	100
V.	Bishops Cannings	179	111	231	112	40	53	88	94	72	43	82	180	104
"	Evershot, Melbury House	202	125	188	104	31	30	88	121	73	38	56	141	100
"	Ashburton, Druid House	170	203	172	81	58	35	44	111	86	34	94	156	110
"	Barnstaple	149	135	227	117	36	57	39	74	82	46	100	163	102
"	Falmouth Observatory	166	181	181	108	88	40	24	114	52	33	75	145	103
"	Altarnon Sanctuary	145	97	159	101	70	44	33	87	72	39	100	144	95
"	East Harptree, Sherborne Res.	211	150	207	113	41	51	81	100	69	54	91	218	117
VI.	Quedgeley House	150	152	240	90	25	65	156	77	85	89	57	118	106
"	Church Stretton, Wolstaston	138	95	241	79	49	40	107	77	102	86	51	157	99
"	Market Drayton, Old Springs	101	110	274	97	27	57	70	81	123	108	50	161	101
"	Malvern, Church Street	177	177	278	104	58	38	136	86	91	78	62	156	114
"	Ryton-on-Dunsmore	233	170	250	98	54	32	136	87	117	70	72	165	117
VII.	Belvoir Castle	204	131	220	88	76	39	173	98	118	55	74	158	116
"	Revesby	177	179	166	128	27	48	141	126	106	78	100	174	118

TABLE III.—*Monthly Rainfall in 1919, the Average, 1875-1909, being taken as 100—(con.)*

Div.	Station.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
VII.	Lincoln, Skellingthorpe Hall	178	158	162	112	48	48	116	96	108	76	103	157	109
"	Mickleover Manor	185	130	310	79	58	39	91	73	84	88	102	175	111
VIII.	Middlewich, Bostock Hall	107	45	313	72	43	79	45	110	81	86	85	191	103
"	Stonyhurst College	129	40	159	123	74	56	46	78	81	52	83	142	88
"	Southport, Hesketh Park	163	53	252	74	52	60	51	88	76	77	70	142	95
IX.	Sheffield W.W., Redmires Res.	143	88	179	88	61	30	140	106	125	81	85	197	112
"	Wetherby, Ribston Hall	178	91	202	64	52	40	108	76	48	103	84	170	100
"	Hull, Pearson Park	177	107	145	104	42	33	81	82	68	135	127	151	104
"	Leyburn, Bolton Hall	184	107	162	82	65	51	97	86	36	127	126	129	109
"	Scarborough, Osgodby	158	92	174	118	59	60	94	88	51	156	133	113	111
"	Middlesbrough, Albert Park	176	114	166	92	36	40	64	87	37	196	140	90	104
X.	Newcastle-on-Tyne, Town Moor	152	136	131	97	45	73	55	74	52	176	170	122	108
"	Rothbury, Cragside	188	105	88	63	32	40	56	79	50	147	182	145	104
"	Carlisle, Spital Cemetery	118	53	109	78	51	110	26	75	64	71	84	116	78
"	Appleby, Castle Bank	138	38	107	109	68	67	38	93	55	69	104	152	88
"	Rydal, High Close	122	25	122	87	49	68	37	66	140	32	80	151	85
XI.	Abergavenny, Larchfield	133	155	170	48	13	34	56	94	42	54	54	134	84
"	Ystalyfera, Wern House	161	78	175	94	49	90	24	68	93	27	67	170	93
"	Cardiff, Ely	157	147	207	85	35	56	54	59	73	51	95	184	101
"	Haverfordwest	133	116	176	113	56	92	23	74	61	35	64	164	92
"	Aberystwyth, Gogerdan	145	85	282	152	49	169	65	93	93	71	67	172	116
"	Birmingham W.W., Tyrmynydd	105	77	165	106	20	98	40	73	60	45	76	164	89
"	Wrexham, Pack Saddle Res.	115	118	271	136	47	66	63	105	97	119	66	215	117
"	Bala, Eryl Aran	124	62	213	128	61	86	46	96	122	81	86	183	110
"	Llandudno	110	56	270	110	59	77	53	105	76	79	58	202	104
"	Holyhead	161	63	205	91	59	79	55	74	118	59	57	142	96
"	Douglas	146	52	165	95	92	120	25	92	105	73	65	154	98
XII.	Auchencraig, Torr House	113	40	133	105	42	79	27	79	117	45	63	140	83
"	Drumlanrig Castle	104	26	123	171	43	100	32	80	79	51	74	161	86
"	Hawick, Branhholme	88	58	79	106	44	58	21	75	89	79	114	125	79

TABLE III.—*Monthly Rainfall in 1919; the Average, 1875-1909, being taken as 100—(con.).*

Div.	Station.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
XIII.	North Esk Reservoir	85	66	64	246	28	100	32	60	146	73	145	140	96
"	Marchmont House	169	141	105	64	60	65	19	72	57	87	195	150	98
XIV.	Airdrie, Hillend Reservoir	100	42	71	110	34	110	40	66	119	33	128	137	83
"	Girvan, Pinnmore	105	27	121	92	32	153	29	71	107	32	86	191	89
"	Loch Thom	90	42	90	94	29	169	31	73	110	27	84	163	85
XV.	Lochgilphhead, Poltalloch	101	33	121	183	61	148	53	129	119	42	118	194	109
"	Skipness Castle	104	39	93	79	48	144	42	79	85	32	96	184	88
"	Islay, Eallabus	144	31	142	141	59	193	66	103	111	53	103	137	106
"	Mull, Quinish	98	24	99	132	74	194	45	124	144	66	76	117	98
XVI.	Loch Leven Sluice	104	68	77	116	40	171	29	54	91	43	153	162	86
"	Loch Dhu	71	27	95	96	44	96	53	70	111	21	84	151	79
"	Dundee, Eastern Necropolis	129	97	80	105	49	76	24	73	50	58	182	157	89
XVII.	Fettercairn, The Burn	147	87	96	143	69	40	32	98	54	67	123	204	99
"	Braemar	109	43	157	137	71	89	18	42	100	68	166	168	99
"	Aberdeen, Cranford House	139	83	82	142	22	57	34	89	97	97	162	172	101
"	Gordon Castle	199	80	89	177	13	127	18	68	127	111	158	84	100
XVIII.	Glenquoich	50	10	59	218	32	134	45	114	146	42	82	95	84
"	Drumnadrochit	75	37	88	215	23	138	27	59	88	56	130	93	81
"	Inverness, High School	74	42	72	173	14	104	10	97	98	57	156	97	80
"	Fort William, Atholl Bank	57	9	62	213	35	175	32	91	119	44	89	85	77
"	Loch Torridon, Bendamph	71	19	110	230	33	290	46	138	154	56	73	82	99
"	Stornoway	96	53	152	160	63	223	83	117	128	72	104	109	108
XIX.	Dunrobin Castle	72	74	105	134	23	85	48	133	114	95	150	125	98
"	Wick	129	67	83	107	31	157	28	125	148	88	165	156	109
XX.	Glanmire, Lota Lodge	101	105	99	39	197	27	50	85	63	15	51	94	76
"	Killarney, District Asylum	100	47	82	86	116	47	69	61	83	30	72	103	75
"	Valentia, Glanleam	144	62	113	61	168	64	52	46	80	37	69	111	83

TABLE III.—*Monthly Rainfall in 1919; the Average, 1875-1909, being taken as 100—(con.).*

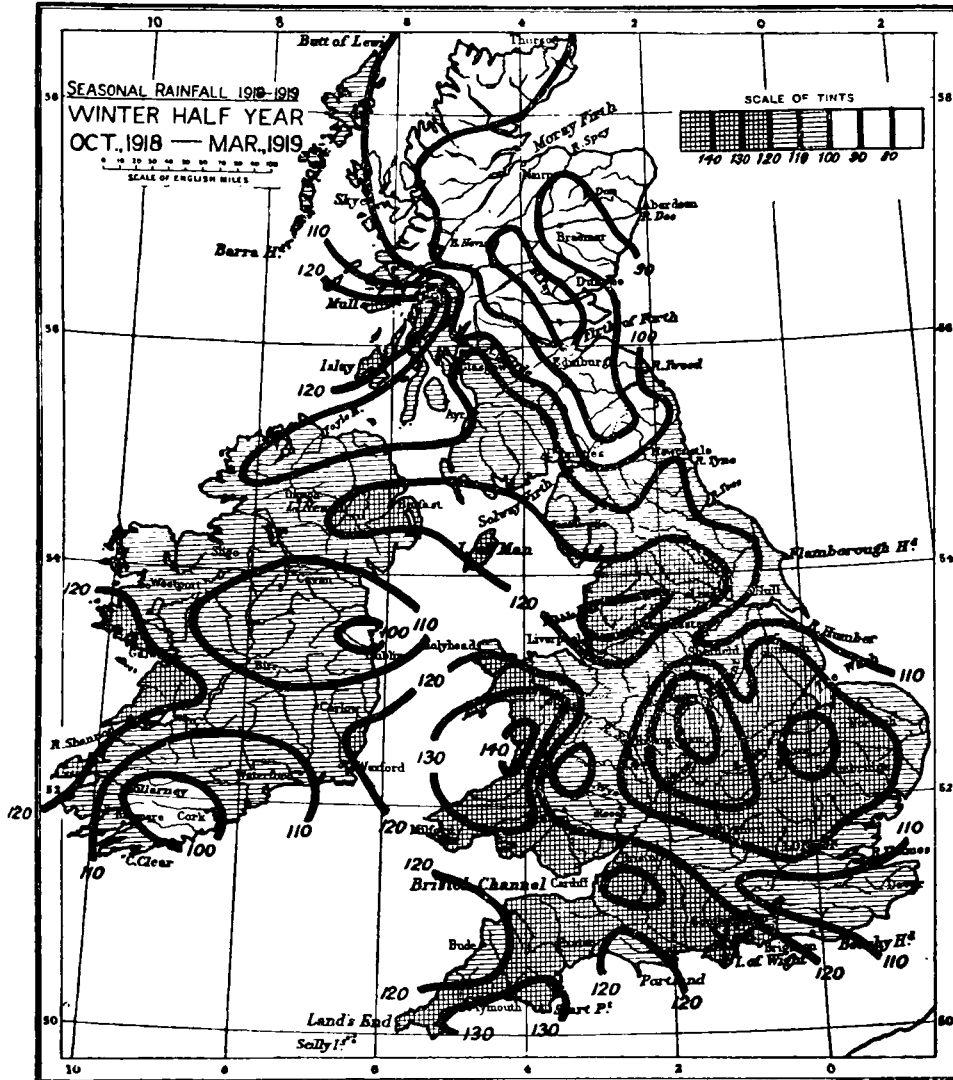
Div.	Station.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
XX.	Waterford, Brook Lodge.....	106	126	112	42	164	65	48	118	67	10	43	138	85
"	Nenagh, Castle Lough.....	97	70	110	65	156	86	54	77	103	18	65	149	88
"	Ennistymon House.....	155	74	96	63	123	88	60	67	136	24	76	149	94
XXI.	Gorey, Courtown House	142	128	109	60	81	61	37	88	96	40	98	150	91
"	Kilkenny Castle.....	130	94	122	62	118	121	42	68	59	18	41	156	85
"	Abbey Leix, Blandsfort.....	121	77	114	57	118	174	60	58	76	31	55	171	91
"	Dublin, FitzWilliam Square.....	123	73	111	44	80	156	43	74	97	82	114	153	95
"	Mulligan, Belvedere.....	120	70	69	75	89	143	40	59	89	36	60	174	85
"	Greenore	161	60	136	54	92	77	16	77	91	81	60	246	97
XXII.	Tuam, Gardenfield.....	101	79	61	85	123	103	12	59	118	48	80	139	84
"	Crossmolina, Enniscoe.....	127	51	124	118	110	156	45	100	101	47	98	168	105
"	Cong. The Glebe.....	115	65	84	74	109	105	46	83	123	42	89	157	93
"	Markree Observatory	137	38	122	123	143	131	59	90	108	43	105	179	106
XXIII.	Belturbet, Cloverhill.....	119	57	97	70	121	115	22	80	117	48	57	174	90
"	Armagh Observatory.....	160	44	106	59	74	80	21	92	116	52	67	218	91
"	Seaforde.....	132	71	136	53	157	105	12	82	90	55	64	218	98
"	Belfast, Queen's University.....	171	63	144	61	52	108	11	94	109	50	98	234	102
"	Ballymena, Harryville.	131	22	153	90	77	109	31	88	100	90	99	166	98
"	Limavady, Drenagh.....	112	30	130	102	40	170	31	73	74	49	101	174	91
"	Omagh, Edenfel.....	119	32	134	84	69	131	25	97	124	60	121	234	106
"	Killybegs	98	34	132	128	90	107	40	89	126	46	116	162	99
	England (Mean of 44 Stations) ..	167	118	187	111	45	51	82	93	78	67	86	160	103
	Wales (" 10 ") ..	135	94	206	106	44	87	46	82	83	59	70	171	99
	Scotland (" 27 ") ..	93	40	96	148	41	139	37	90	114	55	109	134	91
	Ireland (" 24 ") ..	124	65	112	74	112	104	39	79	99	43	80	161	92
	British Isles (" 106 ") ..	128	77	141	112	60	92	55	87	95	58	90	153	96

SEASONAL RAINFALL, 1918-1919.

The 106 records appearing in Table III. of the preceding Section, together with those in the corresponding table in *British Rainfall*, 1918, provide a means of studying the distribution of rainfall relative to the average during the two six-monthly periods October, 1918, to March, 1919, and April to September, 1919. This forms a supplement to the discussion of the individual months and often throws light on the variations of annual rainfall by making it clear whether they are due to summer or to winter excess or defect. In addition to the two six-monthly periods, we are able to examine the conditions during the twelve-monthly period from October, 1918, to September, 1919, a variant from the civil year having the advantage of embodying the whole of a single winter as well as of a single summer, instead of including only halves of two separate winters as does the civil year.

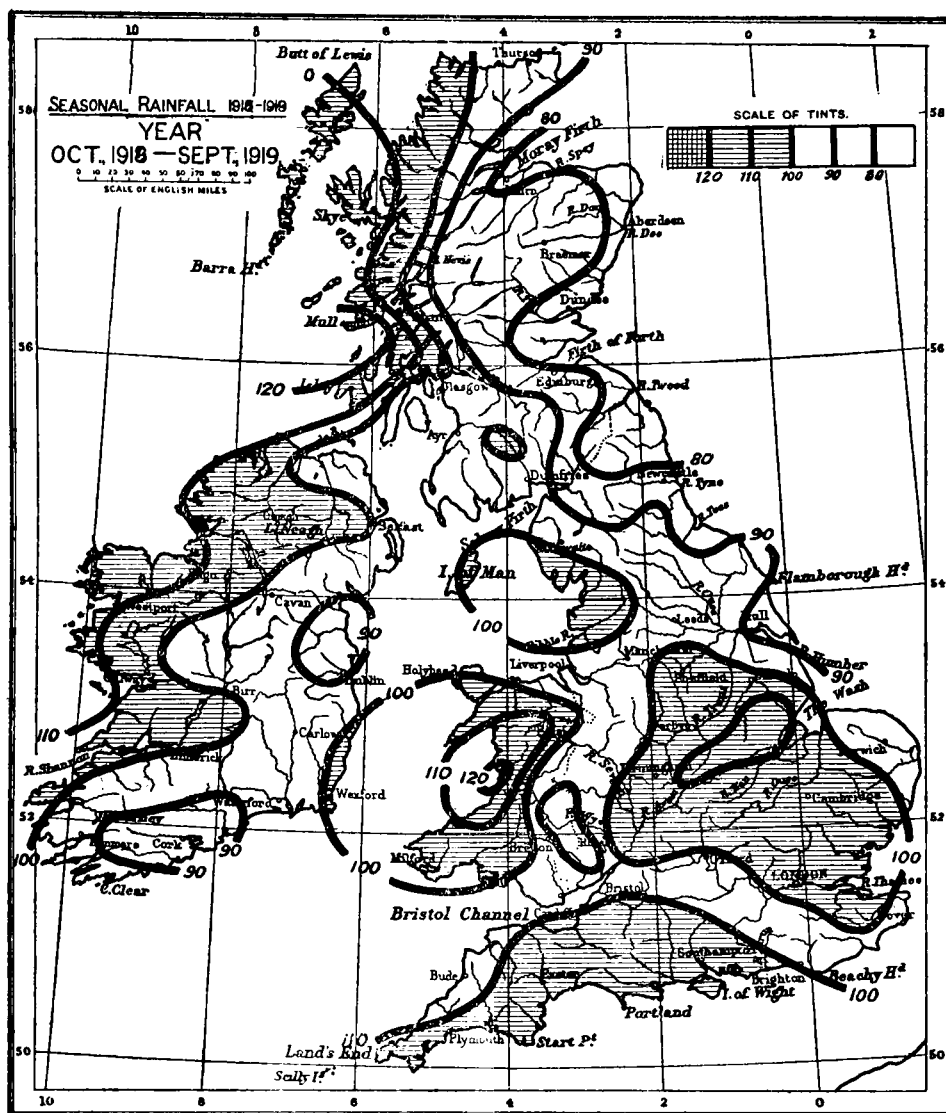
The winter six months, October, 1918, to March, 1919, were generally wet, the only conspicuous exception being in the centre and east of Scotland, where the dry character of the whole winter was a conspicuous feature. The deficiency of rainfall during the whole six months in this district was generally about 10 per cent. of the average, but in central Perthshire it exceeded 20 per cent. The south-west of Scotland had a moderate excess of rainfall in the winter, this part of the country having been uniformly wetter, relative to the average, than the east, except in February, when it was extremely dry. In Ireland there were small areas around Dublin and Cork in which rather less than the average fell, but the country generally was wet, the excess being more than 20 per cent. in parts of Clare, Wexford, Armagh, Down, and Antrim. The most notable excess, however, occurred in England and Wales, where large areas showed a fall more than 20 per cent. above the average. The most extensive of these occupied the greater part of Wales and of the south-western counties of England. In the centre and west of Wales and also in parts of Somerset, South Devon, and Cornwall, more than 30 per cent. above the average fell, the vicinity of Aberystwyth having an excess of more than 40 per cent. Another large wet district occupied the East Midlands, there being two areas with more than 30 per cent. excess in the centre and one with more than 40 per cent. excess to the east of Birmingham. There was a third area in the north-west with an excess of more than 20 per cent., including most of Lancashire and the West Riding of Yorkshire. In Central Lancashire more than 30 per cent. excess was observed. Over the remainder of the country the rainfall was above the average by approximately 10 per cent., the only district with a deficient fall being in the extreme north, which formed an extension southward of the dry area of eastern Scotland.

In Scotland the general rainfall was only 2 per cent. below the average. In Ireland there was an excess of 13 per cent., in England of 19 per cent., and in Wales of 23 per cent. For the British Isles as a whole the fall was 12 per cent. above the average.



The succeeding six months, comprising the dry summer of 1919, exhibited a totally different set of conditions. One station in England had a fall just in excess of the average, indicating a small technically wet patch in southern Lincolnshire, but with this exception the British Isles were everywhere dry save in a narrow strip of country extending along the north-west coasts from co. Mayo to Caithness. In this strip all stations showed an excessive fall, with more than 20 per cent. above the average in the west of Inverness-shire and Ross-shire, culminating in an excess of more than 40 per cent. near

south-eastern counties the deficiency did not reach 20 per cent., the heavy local rains of April and July being largely responsible. In the north and the south-west, however, there was a conspicuous deficiency, the fall in the extreme north-east, as has already been



mentioned, being more than 40 per cent. below the average. In South Wales and the borders of the Bristol Channel the fall was more than 30 per cent. below the average and there was a deficiency of more than 40 per cent. in parts of Brecon and Monmouthshire.

Each of the great divisions showed a deficient general fall, that of Scotland being least so with 7 per cent. below the average. In Ireland there was a deficiency of 17 per cent., in England of 23 per cent., in Wales of 25 per cent., and in the British Isles of 17 per cent.

The seasonal year, October, 1918, to September, 1919, whilst

reproducing the main features of the two six-monthly periods just described naturally showed less marked divergences from the average. In Scotland, where both half years had excessive falls in the west and defective falls in the east, there was a marked wet belt, extending from Cape Wrath to Islay. This belt was continued southward, embracing the whole of the West of Ireland. In an outer strip more than 10 per cent above the average fell, rising in one place to more than 20 per cent. Large wet areas occurred also in England and Wales, more than the average falling over most of the counties lying on the west and south coasts and also in the East Midlands. The excess was not generally as much as 10 per cent., but reached this amount in Merioneth and western Cardiganshire and also in parts of Warwickshire, Rutland, Leicestershire, and Lincolnshire. The fall was most deficient in the north-east, the area with more than 10 per cent. deficiency, extending to Yorkshire, and more than 20 per cent. less than the average falling in the north of Northumberland.

Looking at the maps very broadly, it may be said that during the seasonal year the north-western coasts of the British Isles contributed a heavy summer rainfall, and the south-west and Midlands an excessive winter fall. The only region conspicuously dry in both half years was the east of Scotland and north-east of England, culminating in the district lying round the estuaries of the Forth and Tay, where the total rainfall of the seasonal year was little short of 30 per cent. in defect.

The general rainfall of the countries was in every case close to the average, there being a deficiency of 5 per cent. in Scotland and an excess of 2 per cent. in Wales, whilst both England and Ireland showed exactly the average and the whole British Isles a deficiency of 1 per cent.

The year still further increases the preponderance of wet winters and of dry summers since 1906 mentioned in *British Rainfall, 1918*, (p. [104]). Taking the British Isles as a whole, the following table

General Seasonal Rainfall as a percentage of the Average.

Winter, Oct. to Mar.			Summer, Apr. to Sept.			Seasonal Year, Oct. to Sept.			Winter, Oct. to Mar.			Summer, Apr. to Sept.			Seasonal Year, Oct. to Sept.		
1906-07	..	97	..	102	..	99	1913-14	..	111	..	83	..	99	..	99		
1907-08	..	113	..	103	..	108	1914-15	..	123	..	86	..	106	..	106		
1908-09	..	78	..	97	..	87	1915-16	..	116	..	97	..	107	..	107		
1909-10	..	114	..	104	..	109	1916-17	..	104	..	108	..	106 ⁴	..	106 ⁴		
1910-11	..	97	..	82	..	90	1917-18	..	103	..	113	..	108	..	108		
1911-12	..	131	..	110	..	121	1918-19	..	112	..	83	..	99	..	99		
1912-13	..	120	..	87	..	105											

compares the general percentage values for the winter, summer and seasonal year for the past thirteen years for which such data are available. It will be seen that the summer of 1919 was only equalled in dryness in two years and was within 1 per cent. of being as dry as the famous summer of 1911.

Seasonal Rainfall, 1918-1919, in relation to the Average, 1875-1909.

Div.	Station.	Winter Six Months, October, 1918—March, 1919.				Summer Six Months, April—September, 1919.				Twelve Months, Oct. 1918— Sept. 1919.	
		Rainfall. in.	Average. in.	Difference from Average.	Per cent. of Aver.	Rainfall. in.	Average. in.	Difference from Average.	Per cent. of Aver.		Per cent. of Average.
I.	St. Pancras, Camden Square	15.26	12.38	+2.88	123	11.18	12.73	-1.55	88		105
II.	Tenterden, View Tower	17.56	15.31	+2.25	115	10.84	12.33	-1.49	88		103
"	Edenbridge, Falconhurst	17.85	16.75	+1.10	107	11.39	13.51	-2.12	84		97
"	Patching Farm	20.56	17.17	+3.39	120	10.39	13.31	-2.92	78		102
"	Fordingbridge, Oaklands	22.84	17.83	+5.01	128	10.12	13.23	-3.11	77		106
"	Sherborne St. John	17.33	15.86	+1.47	109	10.27	13.31	-3.04	77		95
III.	Hemel Hempstead, Aspley Mills...	18.69	14.83	+3.86	126	12.33	13.69	-1.36	90		109
"	Oxford, Magdalen College	14.44	11.98	+2.46	120	9.78	12.60	-2.82	78		99
"	Wellingborough	15.68	12.27	+3.41	128	9.75	12.93	-3.18	75		101
IV.	March	14.10	10.71	+3.39	132	10.71	12.32	-1.61	87		108
"	Chelmsford, High Street	13.74	11.51	+2.23	119	11.40	11.51	- .11	99		109
"	Bury St. Edmunds, Westley	15.43	12.26	+3.17	126	12.25	13.14	- .89	93		109
"	Geldeston	14.04	11.91	+2.13	118	9.02	11.82	-2.80	76		97
"	Swaffham	15.52	12.86	+2.66	121	10.35	13.88	-3.53	75		97
V.	Bishops Cannings	19.61	15.70	+3.91	125	11.78	15.17	-3.39	78		102
"	Evershot, Melbury House	25.88	22.27	+3.61	116	12.43	15.93	-3.50	78		100
"	Ashburton, Druid House	42.23	32.16	+10.07	131	13.92	19.45	-5.53	72		109
"	Barnstaple	26.51	21.30	+5.21	124	10.74	15.84	-5.10	68		100
"	Falmouth Observatory	34.30	26.14	+8.16	131	11.80	16.55	-4.75	71		108
"	Altarnon Sanctuary	41.20	35.83	+5.37	115	16.01	23.14	-7.13	69		97
"	East Harptree, Sherborne Res....	28.93	21.38	+7.55	135	14.13	18.25	-4.12	77		109
VI.	Quedgeley House	16.70	14.22	+2.48	117	11.64	13.82	-2.18	84		101
"	Church Stretton, Wolstaston	18.61	16.57	+2.04	112	(11.92)	15.84	-3.92	75		94
"	Market Drayton, Old Springs	16.84	14.45	+2.39	117	11.16	14.96	-3.80	75		95
"	Malvern, Church Street	17.91	14.14	+3.77	127	12.33	14.43	-2.10	85		106
"	Ryton-on-Dunsmore	18.12	12.93	+5.19	140	11.96	13.63	-1.67	88		113
VII.	Belvoir Castle	14.86	12.54	+2.32	118	13.74	13.51	+ .23	102		110
"	Revesby	15.33	12.59	+2.74	122	12.45	12.56	- .11	99		110
"	Lincoln, Skellingthorpe Hall	14.37	11.34	+3.03	127	10.89	12.36	-1.47	88		107
"	Mickleover Manor	17.90	12.75	+5.15	140	9.77	13.90	-4.13	70		104

Seasonal Rainfall, 1918-1919, in relation to the Average, 1875-1909—(con.)

Div.	Station.	Winter Six Months, October, 1918—March, 1919.				Summer Six Months, April—September, 1919.				Twelve Months, Oct. 1918— Sept. 1919.	
		Rainfall.	Average.	Difference from Average.	Per cent. of Aver.	Rainfall.	Average.	Difference from Average.	Per cent. of Aver.	Per cent. of Average.	
		in.	in.	in.		in.	in.	in.			
VIII.	Middlewich, Bostock Hall	17.37	14.63	+ 2.74	119	11.28	15.33	- 4.05	74		99
"	Stonyhurst College	31.50	24.66	+ 6.84	128	16.31	22.13	- 5.82	74		102
IX.	Southport, Hesketh Park	22.51	16.73	+ 5.78	134	10.92	15.97	- 5.05	68		102
"	Sheffield W.W., Redmires Res.	24.46	22.20	+ 2.26	110	17.93	19.11	- 1.18	94		103
"	Wetherby, Ribston Hall	16.93	13.31	+ 3.62	127	9.05	13.56	- 4.51	67		97
"	Hull, Pearson Park	13.38	13.17	+ .21	102	9.11	13.25	- 4.14	69		85
"	Leyburn, Bolton Hall	21.93	18.61	+ 3.32	118	10.12	14.18	- 4.06	71		98
"	Scarborough, Osgodby	15.45	14.17	+ 1.28	109	9.65	12.23	- 2.58	79		95
"	Middlesbrough, Albert Park	11.92	11.50	+ .42	104	7.67	12.65	- 4.98	61		81
X.	Newcastle-on-Tyne, Town Moor ..	15.34	13.92	+ 1.42	110	9.22	14.02	- 4.80	66		88
"	Rothbury, Cragside	17.37	18.60	- 1.23	93	8.61	15.64	- 7.03	55		76
"	Carlisle, Spital Cemetery	15.73	15.62	+ .11	101	10.89	16.55	- 5.66	66		83
"	Appleby, Castle Bank	19.98	18.62	+ 1.36	107	10.95	15.79	- 4.84	69		90
"	Rydal, High Close	55.52	49.15	+ 6.37	113	25.29	32.82	- 7.53	77		99
XI.	Abergavenny, Larchfield	23.70	20.77	+ 2.93	114	7.99	16.34	- 8.35	49		85
"	Ystalyfera, Wern House	47.45	36.79	+ 10.66	129	18.76	27.25	- 8.49	69		103
"	Cardiff, Ely	29.20	23.26	+ 5.94	126	11.53	19.02	- 7.49	61		96
"	Haverfordwest	34.84	27.12	+ 7.72	128	13.44	19.69	- 6.25	68		103
"	Aberystwyth, Gogerddan	34.86	24.58	+ 10.28	142	20.86	20.88	- .02	100		123
"	Birmingham, W.W., Tyrmynydd ..	38.79	37.20	+ 1.59	104	16.30	24.86	- 8.56	66		89
"	Wrexham, Pack Saddle Res.	20.34	17.24	+ 3.10	118	13.11	15.45	- 2.34	85		102
"	Bala, Eryl Aran	42.32	31.10	+ 11.22	136	18.98	21.08	- 2.10	90		117
"	Llandudno	17.38	16.56	+ .82	105	11.16	13.80	- 2.64	81		94
"	Holyhead	24.12	19.96	+ 4.16	121	12.05	15.06	- 3.01	80		103
"	Douglas	29.26	23.40	+ 5.86	125	15.77	18.15	- 2.38	87		108
XII.	Auchencarn, Torr House	30.01	25.53	+ 4.48	118	16.00	21.27	- 5.27	75		98
"	Drumlanrig Castle	30.00	25.17	+ 4.83	119	14.88	18.54	- 3.66	80		103
"	Hawick, Branxholme	15.53	18.49	- 2.96	84	9.61	15.31	- 5.70	63		74

Seasonal Rainfall, 1918-1919, in Relation to the Average, 1875-1909—(con.)

Div.	Station.	Winter Six Months, October, 1918—March, 1919.				Summer Six Months, April—September, 1919.				Twelve Months, Oct. 1918— Sept. 1919. Per cent. of Average.
		Rainfall. in.	Average. in.	Difference from Average. in.	Per cent. of Aver.	Rainfall. in.	Average. in.	Difference from Average. in.	Per cent. of Aver.	
XIII.	North Esk Reservoir	18.90	21.46	—2.56	88	17.05	18.29	—1.24	93	90
"	Marchmont House	17.05	17.06	— .01	100	9.22	16.70	—7.48	55	78
XIV.	Airdrie, Hillend Reservoir	18.52	19.99	—1.47	93	13.80	17.73	—3.93	78	86
"	Girvan, Pinmore	30.30	28.37	+1.93	107	17.10	21.40	—4.30	80	95
XV.	Loch Thom	41.37	36.37	+5.00	114	23.59	28.10	—4.51	84	101
"	Lochgilphed, Poltalloch	39.08	28.71	+10.37	136	25.59	22.55	+3.04	113	126
"	Skipness Castle	28.65	28.07	+ .58	102	16.73	21.37	—4.64	78	92
"	Islay, Eallabus	35.15	28.38	+6.77	124	22.53	20.41	+2.12	110	118
"	Mull, Quinish	34.87	32.98	+1.89	106	28.13	23.59	+4.54	119	111
XVI.	Loch Leven Sluice	15.40	19.86	—4.46	78	10.66	16.68	—6.02	64	71
"	Loch Dhu	45.05	47.55	—2.50	95	24.55	31.03	—6.48	79	89
"	Dundee, Eastern Necropolis	12.13	14.08	—1.95	86	8.90	14.56	—5.66	61	73
XVII.	Fettercairn, The Burn	16.69	18.36	—1.67	91	11.96	16.39	—4.43	73	82
"	Braemar	18.52	19.11	— .59	97	11.50	15.82	—4.32	73	86
"	Aberdeen, Cranford House	14.36	17.32	—2.96	83	11.22	15.41	—4.19	73	78
"	Gordon Castle	13.51	15.25	—1.74	89	12.17	15.09	—2.92	81	85
XVIII.	Glenquoich	61.79	68.75	—6.96	90	51.77	40.59	+11.18	128	104
"	Drumnadrochit	17.57	20.27	—2.70	87	12.99	15.86	—2.87	82	85
"	Inverness High School	11.46	14.18	—2.72	81	9.80	12.96	—3.16	76	78
"	Fort William, Atholl Bank	37.81	46.72	—8.91	81	30.79	29.08	+1.71	106	90
"	Loch Torridon, Bendamph	45.82	51.09	—5.27	90	46.89	32.55	+14.34	144	111
"	Stornoway	29.68	30.03	— .35	99	23.27	18.37	+4.90	127	109
XIX.	Dunrobin Castle	15.65	17.46	—1.81	90	12.83	14.44	—1.61	89	89
"	Wick	14.41	16.15	—1.74	89	13.49	13.73	— .24	98	93
XX.	Glanmire, Lota Lodge	25.26	25.64	— .38	99	13.70	18.44	—4.74	74	88
"	Killarney, District Asylum	33.51	33.49	+ .02	100	16.22	21.32	—5.10	76	91
"	Valentia, Glanleam	38.88	32.09	+6.79	121	17.83	23.90	—6.07	75	101
"	Waterford, Brook Lodge	23.96	21.72	+2.24	110	14.83	17.85	—3.02	83	98

Seasonal Rainfall, 1918-1919, in Relation to the Average, 1875-1909—(con.).

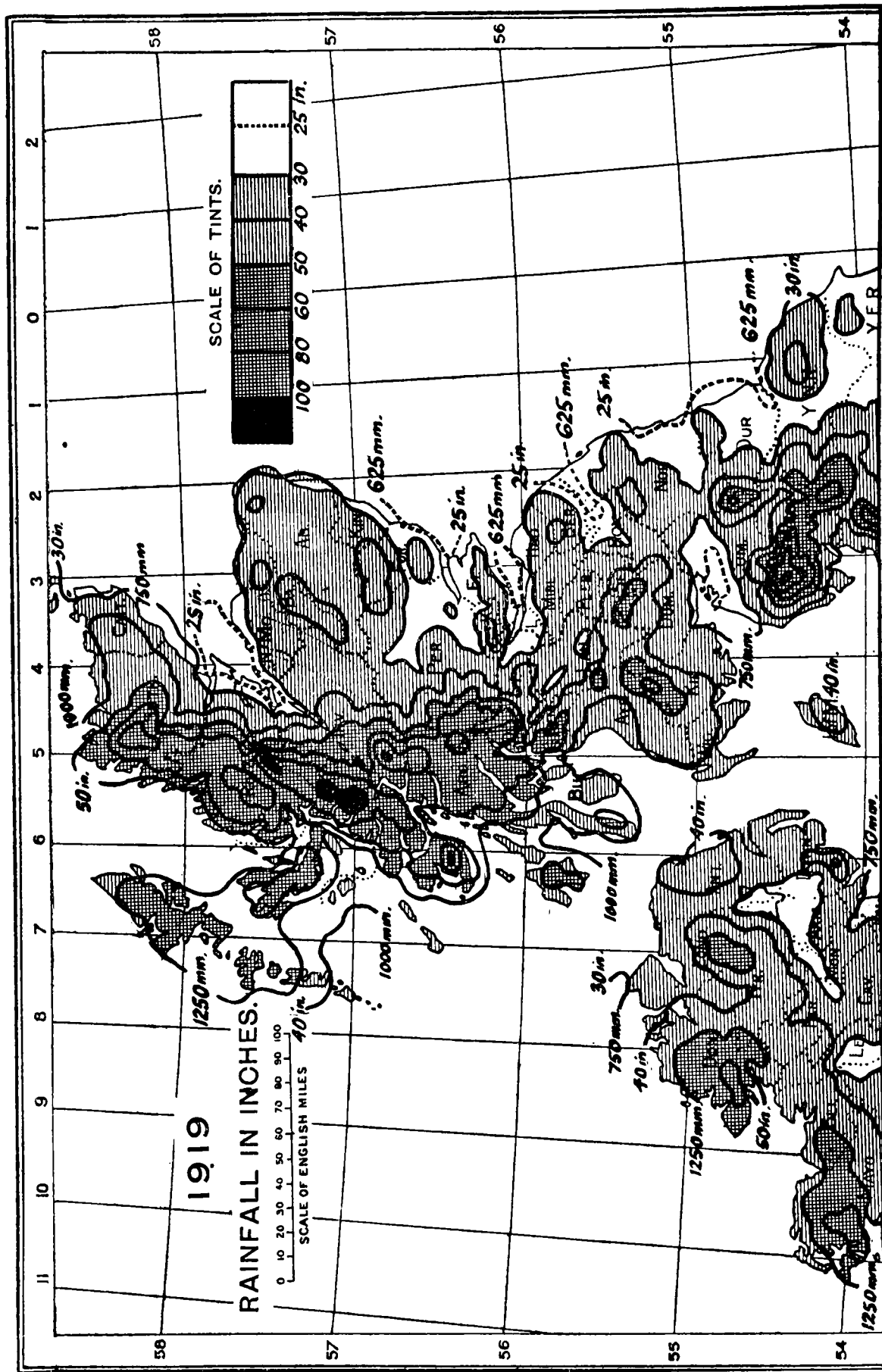
Div.	Station.	Winter Six Months. October, 1918—March, 1919.				Summer Six Months. April—September, 1919.				Twelve Months, Oct. 1918— Sept. 1919. Per cent. of Average.
		Rainfall.	Average.	Difference from Average.	Per cent. of Aver.	Rainfall.	Average.	Difference from Average.	Per cent. of Aver.	
XX.	Nenagh, Castle Lough	in. 25.44	in. 21.46	in. + 3.98	119	in. 15.88	in. 17.97	- 2.09	88	105
"	Ennistymon House	31.71	25.03	+ 6.68	127	19.14	21.49	- 2.35	89	109
XXI.	Gorey, Courtown House.....	24.24	18.80	+ 5.44	129	11.50	16.19	- 4.69	71	102
"	Kilkenny Castle.....	18.36	16.34	+ 2.02	112	11.75	15.28	- 3.53	77	95
"	Abbey Leix, Blandsfort	20.32	18.51	+ 1.81	110	15.10	17.41	- 2.31	87	99
"	Dublin, Fitz William Square	13.63	13.84	- .21	98	11.08	13.84	- 2.76	80	89
"	Mullingar, Belvedere	19.34	18.37	+ .97	105	14.17	17.78	- 3.61	80	93
"	Greenore	18.02	16.23	+ 1.79	111	10.89	16.10	- 5.21	68	89
XXII.	Tuam, Gardenfield	24.81	23.27	+ 1.54	107	15.79	19.42	- 3.63	81	95
"	Crossmolina, Enniscroe	36.40	31.04	+ 5.36	117	22.70	21.83	+ .87	104	112
"	Cong, The Glebe	31.17	27.33	+ 3.84	114	19.28	21.57	- 2.29	89	103
"	Markree Observatory	27.46	22.97	+ 4.49	120	20.99	19.74	+ 1.25	106	113
XXIII.	Belturbet, Cloverhill	18.79	17.24	+ 1.55	109	14.03	16.50	- 2.47	85	97
"	Armagh Observatory	19.06	15.52	+ 3.54	123	12.10	16.36	- 4.26	74	98
"	Seaforde	23.43	20.34	+ 3.09	115	15.06	18.57	- 3.51	81	99
"	Belfast, Queen's University	21.72	17.40	+ 4.32	125	11.98	16.41	- 4.43	73	100
"	Ballymena, Harryville	25.26	21.49	+ 3.77	118	15.82	19.35	- 3.53	82	101
"	Limavady, Drenagh	20.84	19.93	+ .91	105	13.87	17.53	- 3.66	79	93
"	Omagh, Edentel	23.65	20.45	+ 3.20	116	16.76	18.93	- 2.17	89	103
"	Killybegs	38.11	34.00	+ 4.11	112	25.53	26.60	- 1.07	96	105
{ Means.	England (mean of 44 stations) ..	20.49	17.15	+ 3.34	119	11.67	15.07	- 3.40	77	100
	Wales (" 10 ") ..	31.30	25.46	+ 5.84	123	14.42	19.34	- 4.92	75	102
	Scotland (" 27 ") ..	26.27	26.92	- .65	98	18.78	20.29	- 1.51	93	95
	Ireland (" 24 ") ..	25.14	22.19	+ 2.95	113	15.67	18.77	- 3.10	83	100
	British Isles (" 106 ") ..	24.12	21.62	+ 2.50	112	14.68	17.67	- 2.99	83	99

THE TOTAL FALL OF RAIN IN 1919 AND ITS RELATION TO THE AVERAGE.

In the present volume it has been found possible for the first time, we believe, to prepare and reproduce in time for publication in the annual volume of *British Rainfall*, a map showing the distribution of total annual rainfall. This forms a companion map to that of the year's rainfall in relation to the average, the pair supplementing one another in precisely the same way as the twelve pairs of monthly maps given on pp. 94 to 117. In order to avoid reduction to the size of one page it is reproduced in two parts, including respectively the north and the south of the British Isles. The coloured map showing the relation of the year's rainfall to the average appears as a frontispiece.

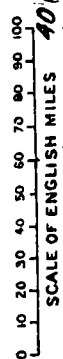
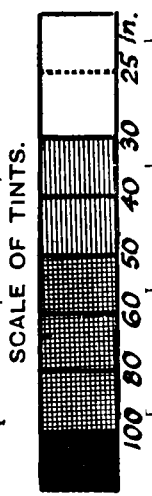
In studying any map of the annual rainfall of the British Isles, it should be borne in mind that the broader features of the distribution do not exhibit the same degree of variability as is shown in monthly maps. In any individual month the distribution may, and occasionally does, differ from the average to the extent of practically complete reversal, the normally rainy areas having least rain and the normally dry areas most. In the case of a whole year's rainfall this never occurs. The normal distribution of annual rainfall is highly orographical, that is to say, it is determined largely by the configuration of the land in relation to the prevailing winds. The variations to which this distribution is subject in individual years, although considerable, are never, so far as our experience goes, sufficient to mask the predominance of orographical rainfall, merely giving rise to certain modifications of it, even in the most extreme cases.

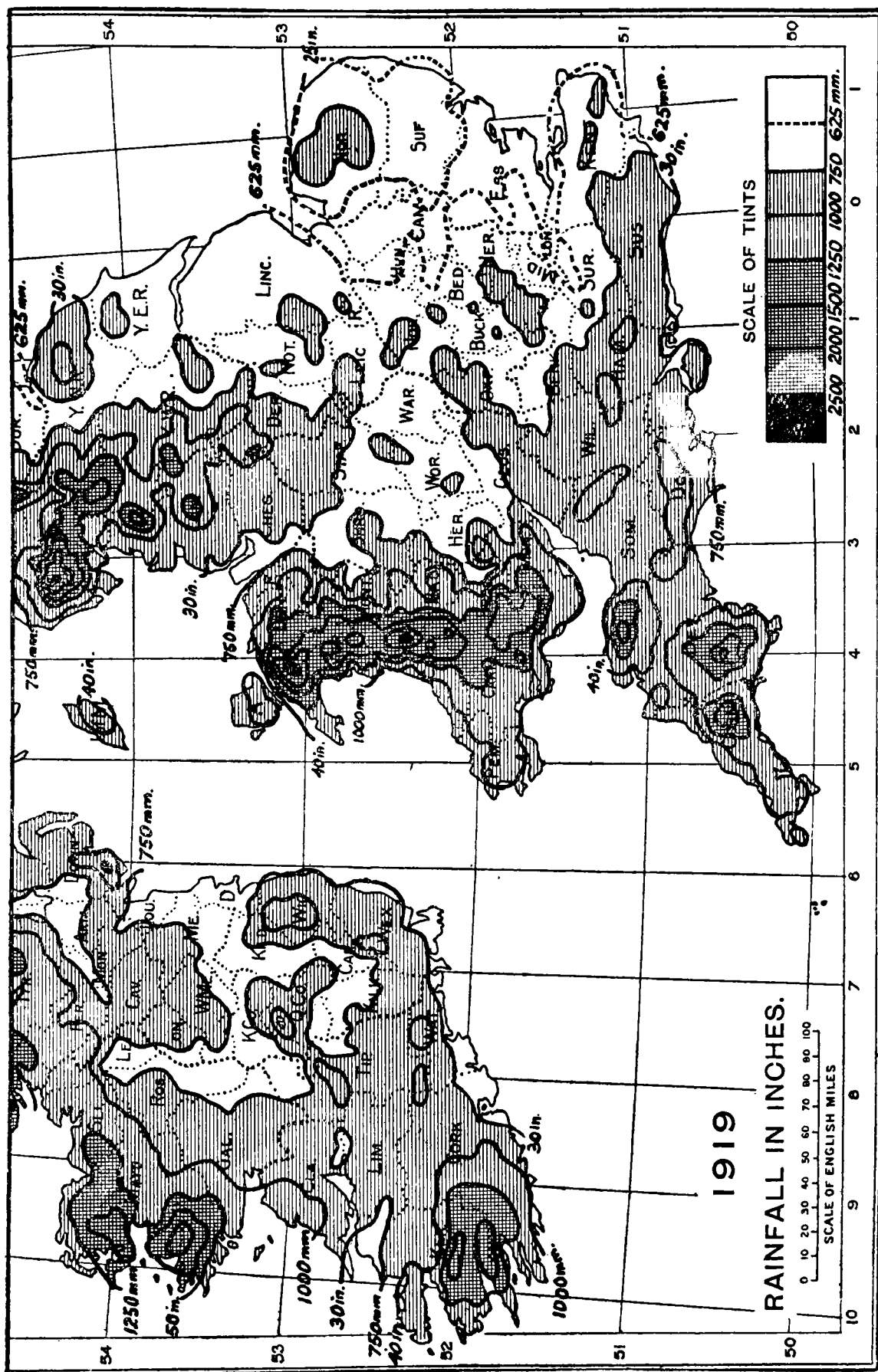
The maps on pp. 132 and 133 show that the line of 30 in. (760 mm.) of rainfall in 1919 divided England and Wales practically into two halves, the wetter occupying the west and most of the south, and the drier the east of the country. Less than 30 in., however, occurred on the west in the sheltered estuaries of the Solway and Dee, whilst more than 30 in. extended to the east coast at South Shields, Scarborough, and Dover, and occurred in frequent isolated patches inland in the east of the country, with more than 40 in. over part of the North York Moors. In England the total fell below 25 in. (635 mm.) only over narrow coastal strips along part of the east coast and on the low and sheltered plains of Essex and the Fen country. The smallest falls probably occurred in the immediate neighbourhood of Southend-on-Sea and of Ely, where about 21 in. (530 mm.) fell. In the west of England and Wales more than 40 in. (1,000 mm.) of rain fell in all upland districts; the line indicating the limits of this amount passed round the coast of Cornwall and Wales and outlined Dartmoor and Exmoor, the Welsh Hills, and the Pennines. On the



1919

RAINFALL IN INCHES.





eastern sides of all these hilly districts an abrupt diminution in the fall occurred, only 40 in. falling at an elevation of 1,400 ft. on the borders of Shropshire and less than 30 in. in the low-cut valleys of the Wye between Hay and Talgarth, and of the Severn between Montgomery and Welshpool. In these areas the smallest total falls for Wales, rather below 27 in. (685 mm.), occurred.

Except on Dartmoor, where a maximum of 87·23 in. (2,216 mm.) occurred at Princetown, and in part of North Wales, the increase of the amount towards the summits of the hill ridges in the west was less pronounced than usual. In Wales as much as 80 in. (2,000 mm.) fell only in a string of detached areas occurring at intervals along the main watershed line between Glamorganshire and Carnarvonshire, the fall reaching 100 in. so far as it is possible to ascertain, only on Plynlimon and the district between Snowdon and Festiniog. The highest amounts recorded in these areas were 119·30 in. (3,030 mm.) on Plynlimon, 100·23 in. (2,546 mm.) at Llechwedd Quarry, near Blaenau Festiniog, and 151·19 in. (3,840 mm.) and 148·95 in. (3,783 mm.), respectively at Crib Goch and Llyn Llydaw Copper Mill, on the immediate east of Snowdon. On the Pennines as much as 50 in. (1,270 mm.) fell only very locally to the south of Settle, but north of this a continuous tract of country, extending from Pateley Bridge to within a few miles of the coast of Cumberland, appears to have received more than this amount. The rainfall in this area rose to 80 in. only in the Lake District and exceeded 100 in. (2,500 mm.) in Upper Borrowdale and Langdale, the largest individual falls recorded being 136·90 in. (3,477 mm.) at the Styne and 122·73 in. (3,117 mm.) at Mickleden, in upper Langdale.

In Scotland the line of 30 in. passed along most of the east coast only a few miles inland and penetrated to the westward to any appreciable distance only in the districts round the low-lying estuaries of the Moray, Tay, Forth and Tweed. The most unusual feature was the low fall in the lower Tay Valley, less than 30 in. being observed as far up the river as Kenmore, about five miles above Aberfeldy, whilst so low a fall penetrated up the Garry to Blair Atholl, and up the Earn to near Crieff. On the coast less than 25 in. fell in places, the smallest amounts being in the Moray Firth, where only 21·75 in. (552 mm.) fell at Inverness and 19·71 in. (501 mm.) at Invergordon.

Along the south coast from the Solway Firth to the Mull of Galloway the year's fall failed to reach 40 in., and less than this amount was observed in some low coastal districts as far west as Castlebay in the Hebrides, whilst less than 50 in. fell over a narrow coast strip nearly everywhere in the west. The areas with as much as 50 in. to the south of the Forth and Clyde were unusually restricted in size; the largest fall recorded in this district was 63·73 in. (1,619 mm.)

at Shiel, near Carsphairn. North of the Clyde, however, an almost uninterrupted area with more than 50 in. occupied the whole of the Western Highlands, the bounding line running nearly due north and south from Cape Wrath to Helensburgh. No large area with 50 in. was apparent either in the Grampians or the Cairngorm Mountains, but for the most lofty parts of these ranges we have no records. As was observed in England and Wales, the areas with rainfall exceeding 80 in. in the West Highlands were smaller than is usually the case, but areas with this amount occurred in parts of Sutherlandshire, Ross-shire, Inverness-shire, and Argyll. Four small areas with more than 100 in. are indicated, respectively in the centre of Mull, round Ben Nevis, Loch Quoich, and to the south of Achnasheen. In the absence of numerous records it is impossible to outline these areas with any precision. The largest annual falls recorded were, as is usually the case, in the Loch Quoich district, where 162·40 in. (4,125 mm.) was measured at Loan, and 112·16 in. (2,849 mm.) at Kinlochquoich. At Glencannel, in Mull, 113·25 in. (2,876 mm.) fell, and at Glenuaig, near Achnasheen, 104·20 in. (2,647 mm.)

In Ireland less than 30 in. fell during the year over part of the Middle Shannon basin and eastward to the coast at Dundalk and Dublin. The district to the south of Lough Neagh, a narrow strip of the south coast east of Cork, and part of the Shannon estuary also had slightly less than this amount. The fall reached a minimum to the north of Dublin, where numerous stations had less than 25 in., and about 23 in. (585 mm.) fell at Malahide and Lambay Island. The whole of the north-west of Ireland from Horn Head to the coast of Clare and north-eastward to the mountains of Antrim had more than 40 in., but in the south, apart from the rainy districts in the counties of Kerry and Cork, as much as 40 in. appeared only in isolated patches on the hills, the largest occupying the centre of the Wicklow Mountains. A few, but apparently quite small, areas in the west had more than 60 in., the best defined maxima being on the Macgillicuddy Reeks in co. Clare, where 79·90 in. (2,030 mm.) fell at Gearahamean near the Gap of Dunloe, and in Connemara, where 89·66 in. (2,277 mm.) was measured at Aasleagh House and 98·73 in. (2,508 mm.) at Delphi Lodge. It is by no means impossible that larger falls occurred in parts of the west of Ireland, but the absence of rainfall stations over large areas makes it impossible to be certain.

Turning from the map of actual rainfall to that showing the relation of the fall to the average (see *Frontispiece*) it becomes possible to look at the year's fall from a different point of view. The data from which the map is compiled are about 300 records, taken in as many widely scattered districts as possible, for which average values for the period 1875-1909 are available. In a few instances, where no representative record was otherwise available the average was computed

from a shorter period and corrected to its equivalent for the thirty-five years by means of existing longer records. The total rainfall for 1919 at each of the stations in question is expressed as a percentage of the average and the map represents the distribution of the percentage values. The portion of the map over which the percentage was less than 100, or in other words over which the rainfall of the year was below the average, are tinted red, those in which the percentage was more than 100, or the rainfall above the average, are tinted blue, and at each successive departure of 10 per cent. from the average the tint is made darker. By this means the districts of pronounced deficiency and those of pronounced excess of rainfall during the year are clearly distinguishable.

Looking at the map broadly, it will be seen that with certain minor exceptions the east, and more particularly the south-east, of the British Isles was wet during 1919, whilst the west, and more particularly the south-west, was dry. In Great Britain the line of 100 separating the areas with more than the average fall from those with less ran in an irregular manner from Land's End to Banffshire, making excursions westward to include in the wet area most of North Wales, the Lammermuir Hills, and the Spey Valley. North of the Moray Firth the line turned definitely westward and passed across Scotland to the Hebrides. To the east of this line the year was practically everywhere wet, the only exception being a string of patches appearing at intervals between Dorset and Kent, in which a slight deficiency occurred. As is very commonly the case, the areas with greatest excess were arranged in parallel belts running from south-west to north-east. These are marked out by the patches with an excess of more than 10 per cent., stretching from Portland to Cromer, from Plymouth to Scarborough, and from Aberystwyth to Chester. The largest falls relative to the average seem to have occurred at the points where these belts cross a transverse line drawn approximately from the mouth of the Thames to the mouth of the Dee, near Liverpool. On this line numerous percentage values approached 20 per cent. excess, although it was only near Leicester that any definite area exceeded that figure. Further to the north the small wet area in Haddingtonshire may possibly be associated with those appearing in the north of Ireland, and if so the whole may be regarded as another belt of comparatively high rainfall extending from co. Mayo in the south-west to North Berwick in the north-east, but interrupted by the very low rainfall in Ayrshire. The wet district in Aberdeenshire and Banffshire is similarly situated in regard to that which occupies part of western Argyll. In both these belts the greatest fall relatively to the average occurred near the north-eastern extremity. Another wet belt appears to have stretched across the north of Scotland, but owing to insufficiency of data it is impossible

to outline it with precision. It is fairly clear, however, that an excess of more than 10 per cent. occurred in the extreme north.

The dry areas during 1919 occupied nearly the whole of Ireland, the centre and most of the west of Scotland, the north-west of England, and the south of Wales. In all these districts large tracts of country had a rainfall more than 10 per cent. below the average, the most extensive being in the south of Ireland and the midlands of Scotland. The dry area of 1919 culminated in the south of Ireland, where there was more than 20 per cent. less than the average fell over a large part of co. Cork and the neighbouring district; in eastern Galway; in the neighbourhood of Carlisle; and in the centre of Scotland. The last-mentioned dry area included most of the county of Perthshire and a large part of eastern Inverness-shire.

In respect of the extremely small rainfall in the south of Ireland and central Scotland, it is of interest to compare the map for 1919 with that for 1917,* when closely similar conditions occurred. A small part of the Scottish area in question was also dry in 1918, but in 1916 this district was exceptionally wet.

In the table on pp. 139 to 142 is given a selection of the records used in the preparation of the percentage map, the stations included being chosen so as to represent all parts of the country as far as possible equally. The data given are the total rainfall for 1919, the average for the thirty-five years 1875-1919, the difference of the 1919 total from this average, and the percentage which this difference represents. Thus, at St. Pancras (Camden Square) the total fall in 1919 was 26·21 in., being 1·10 in., or 4 per cent., above the average, 25·11 in., given in the previous column. In another column is added the average value for the last complete decade 1900-1909 for convenience

ABSTRACT.

COUNTRIES.	No. of Records utilized.	Average. 10 years 1900-09.	Average. 35 years 1875-1909.	1919.	Diff. from Average 1875-1909.	
					Amount.	Per cent.
		in.	in.	in.	in.	
England	88	32·47	33·24	34·13	·89	+ 3
Wales	20	45·66	46·08	45·11	·97	— 2
England and Wales	108	34·91	35·62	36·16	·54	+ 2
Isle of Man	1	41·35	41·55	40·91	·64	— 2
Scotland	58	47·16	45·95	42·53	3·42	— 7
Ireland	42	40·34	40·20	36·24	3·96	— 10
British Isles	209	39·23	39·24	37·78	1·46	— 4

* See *British Rainfall*, 1917, face p. [107].

of comparison by those Observers whose records do not extend back over any longer period. The mean values of all the records in the table approximate closely to the general rainfall for the larger divisions of the Kingdom and for the whole British Isles. These are given in the foregoing abstract.

It will be seen that the general departure from the normal was small in England and Wales, where there was an excess of 2 per cent. England alone had a general excess of 3 per cent. and Wales a deficiency of 2 per cent. In Scotland and Ireland the large dry areas brought the general deficiency to 7 and 10 per cent. respectively, whilst for the British Isles as a whole there was a general deficiency of 4 per cent.

The general rainfall of each of the great divisions of the country has been worked out annually for many years, but until comparatively recently the small number of rainfall records used and their irregular distribution made the values less accurate than they probably now are. The change in the period available for computing the average values has also resulted in making the latter vary somewhat from those used in earlier years, so that it is extremely difficult to speak with confidence as to the general rainfall of individual years for more than about a

Comparison of the Total Rainfall 1910-1919 with the average 1875-1909.

Year.	England.	Wales.	Eng. and Wales.	Scotland.	Ireland.	British Isles.
1910	111	116	112	103	108	109
1911	94	101	96	101	99	98
1912	123	119	122	111	108	115
1913	96	109	98	96	107	99
1914	109	110	109	103	108	107
1915	110	105	109	92	102	102
1916	113	107	112	116	114	114
1917	97	96	96	97	98	97
1918	107	114	108	108	112	109
1919	103	98	102	93	90	96

decade. Taking the period 1910-1919, for which years the averages used for comparison were identical, viz., for the thirty-five years 1875-1909, we find that 1919 was the driest year of the ten for the whole of the British Isles and for Ireland, and, with one exception, each for Scotland and Wales also. For England three years were drier. Extending the list backwards with less satisfactory data, it appears probable that for the British Isles as a whole no year was so dry as 1919 since 1908, though 1911 and 1917 were very nearly as dry. Whether we may regard the relatively small rainfall of the year over the country as a whole as putting a definite end to the run of wet years which has predominated since 1910 remains to be seen. It is interesting to note that before that date the general rainfall had been deficient for six consecutive years.

COMPARISON OF THE RAINFALL OF THE YEAR 1919 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 1919.	Difference from Average 1875-1909. Per Amount.cent.
			in.	in.	in.	in.
I.	London	2 St. Pancrās (Camden Square)	24·57	25·11	26·21	1·10 + 4
II.	Surrey	6 Haslemere (Hazelhurst)	35·84	36·15	38·18	2·03 + 6
"	Kent	1 Tenterden (View Tower)	26·34	27·64	28·36	·72 + 3
"	"	2 Margate (Cliftonville)	21·02	23·33	22·31	1·02 - 4
"	"	4 Edenbridge (Falconhurst)	31·06	30·26	29·87	·39 - 1
"	Sussex	2 Patching Farm	29·61	30·48	33·21	2·73 + 9
"	"	5 Hailsham Vicarage	30·02	30·48	33·26	2·78 + 9
"	Hampshire	1 Ventnor (Flint Cottage)	27·95	28·97	31·33	2·36 + 8
"	"	5 Ovington Rectory	33·49	32·25	37·50	5·25 + 16
"	Berkshire	5 Reading (Englefield)	27·06	27·86	31·04	3·18 + 11
III.	Hertfordshire	2 Tring (Cowroast Lock)	28·73	28·89	33·79	4·90 + 17
"	"	3 Royston (Therfield Rectory)	24·64	25·56	30·37	4·81 + 19
"	Oxfordshire	3 Oxford (Magdalen College) ..	23·31	24·58	24·84	·26 + 1
"	Northampton	4 Wellingborough	24·41	25·20	26·02	·82 + 3
"	Cambridgeshire	2 March	22·37	23·03	25·36	2·33 + 10
IV.	Essex	3 Shoeburyness	18·69	19·28	22·43	3·15 + 16
"	"	4 Chelmsford (High Street)	22·66	23·02	25·12	2·10 + 9
"	"	5 Earls Colne (Chalkney Ho.) ..	22·83	23·43	25·55	2·12 + 9
"	Suffolk	3 Rendlesham Hall	22·20	23·68	24·94	1·26 + 5
"	"	5 Bury St. Edmunds (Westley) ..	24·11	25·40	27·98	2·58 + 10
"	Norfolk	1 Beccles (Geldeston)	22·74	23·73	24·16	·43 + 2
"	"	2 Worstead (Dilham)	25·67	26·37	29·80	3·43 + 13
"	"	3 Blakeney	22·64	23·83	25·31	1·48 + 6
"	"	4 Swaffham	24·61	26·74	26·85	·11 + 0
V.	Wiltshire	3 Warminster (Rye Hill)	35·21	36·75	38·68	1·93 + 5
"	"	4 Landford (Northlands)	30·04	30·11	34·35	4·24 + 14
"	"	6 New Swindon	26·37	28·05	28·09	·04 + 0
"	Dorset	1 Evershot (Melbury House) ..	37·70	38·20	38·34	·14 + 0
"	"	3 Wareham (South Street)	32·10	31·39	36·06	4·67 + 15
"	South Devon	2 Launceston (Polapit Tamar) ..	38·62	38·27	41·81	3·54 + 9
"	"	4 Ashburton (Druid House)	48·68	51·61	56·66	5·05 + 10
"	"	6 Cullompton	33·22	35·18	37·80	2·62 + 7
"	North Devon	1 Lynton (Lee Abbey)	37·90	37·92	35·13	2·79 - 7
"	"	2 Barnstaple (N. Devon Ath.) ..	35·64	37·14	37·81	·67 + 2
"	Cornwall	2 Falmouth (New Observatory) ..	41·95	42·69	44·09	1·40 + 3
"	"	2 St. Austell (Trevarna)	43·87	46·21	49·40	3·19 + 7
"	"	3 Devonport (Empacombe)	35·87	36·69	40·81	4·12 + 11
"	"	4 Scilly (St. Mary's)	30·44	32·36	33·33	·97 + 3
"	Somerset	1 Chewton Mendip (The Priory) ..	43·23	45·31	48·77	3·46 + 8
VI.	Gloucestershire	7 Northleach (Sherborne House) ..	30·29	31·21	33·25	2·04 + 7
"	Herefordshire	1 Ross (Birchlea)	26·65	28·78	27·30	1·48 - 5
"	Shropshire	3 Bishop's Castle (Castle St.) ..	29·76	31·69	30·32	1·37 - 4
"	"	3 Church Stretton (Wolstaston) ..	31·74	32·41	32·17	·24 - 1
"	Staffordshire	2 Market Drayton (Old Springs) ..	29·47	29·41	29·67	·26 + 1
"	"	5 Tean (The Heath House)	32·10	32·65	35·55	2·90 + 9
"	Worcestershire	1 Malvern (Church Street)	28·12	28·57	32·48	3·91 + 14
"	"	2 Stourport (Lincombe Lock) ..	25·09	26·17	29·53	3·36 + 13
"	Warwickshire	1 Ryton-on-Dunsmore	26·20	26·56	31·18	4·62 + 17
VII.	Leicestershire	4 Thornton Reservoir	25·73	26·44	32·14	5·70 + 22
"	"	4 Belvoir Castle Gardens	24·80	26·05	30·10	4·05 + 16
"	Lincolnshire	2 Spalding (Pode Hole)	24·08	24·42	26·49	2·07 + 8
"	"	3 Boston (Black Sluice)	23·21	23·35	25·89	2·54 + 11
"	"	3 Lincoln (Skellingthorpe Hall) ..	22·72	23·70	25·84	2·14 + 9
"	"	4 Louth (Westgate)	27·30	28·74	29·36	·62 + 2
"	"	5 Brigg	25·83	26·21	28·20	1·99 + 8
"	Nottinghamshire ..	5 Worksop (Hodsock Priory) ..	23·15	24·46	26·69	2·23 + 9
"	Derbyshire	5 Mickleover Manor	25·93	26·65	29·70	3·05 + 11
"	"	6 Matlock Bath	34·49	34·57	36·12	1·55 + 4
"	"	6 Buxton (Devonshire Hosp.) ..	48·09	49·85	48·11	1·74 - 3

ENGLAND—(con.).

DIV.	COUNTY. and river-division.	STATION.	Average 1900-09.	Average 1875- 1909.	Depth in 1919.	Difference from Average 1875-1909. Per Amount.cent.
			in.	in.	in.	in.
VIII.	Cheshire	Middlewich (Bostock Hall) ..	29.15	29.96	30.81	.85 + 3
"	South Lancashire ..	Bolton (Smithills Hall)	46.80	46.29	46.96	.67 + 1
"	Central " ..	Stonyhurst College	45.88	46.79	41.21	5.58 - 12
"	" " ..	Southport (Hesketh Park) ..	31.13	32.70	30.96	1.74 - 5
"	North " ..	Cartmel (Holker Hall)	46.93	44.31	44.22	.09 - 0
"	" " ..	Wray Vicarage	43.74	44.34	39.71	4.63 - 10
IX.	Yorks, West Riding	Sedbergh (Akay)	52.52	52.12	50.69	1.43 - 3
"	" " " "	Sheffield WW. (Redmires Res.)	40.25	41.31	46.13	4.82 + 12
"	" " " "	Wath-upon-Deane (Chapel St)	24.61	25.92	27.92	2.00 + 8
"	" " " "	Silsden Reservoir	26.93	29.91	26.89	3.02 - 10
"	" " " "	Malham Tarn	57.13	58.02	52.98	5.04 - 9
"	" " " "	York (Cherry Hill)	23.50	24.78	28.20	3.42 + 14
"	" " " "	Wetherby (Ribston Hall)	28.10	26.87	26.95	.08 + 0
"	" East " "	Patrinton	22.40	24.05	25.73	1.68 + 7
"	" " " "	Hull (Pearson Park)	24.84	26.42	27.50	1.08 + 4
"	" " " "	Lowthorpe (The Elms)	25.09	27.35	28.23	.88 + 3
"	" North " "	Leyburn (Bolton Hall)	31.72	32.79	35.82	3.03 + 9
"	" " " "	Rounton Grange	25.56	25.82	26.91	1.09 + 4
"	" " " "	Scarborough (Osgodby)	24.09	26.40	29.27	2.87 + 11
"	" " " "	Guisborough (Lockwood Res.)	31.89	33.13	34.43	1.30 + 4
X.	Durham	Weardale WW. (Waskerley) ..	32.19	32.04	34.68	2.64 + 8
"	" " " "	Sunderland (W. Hendon Ho.)	25.29	26.07	28.23	2.16 + 8
"	Northumberland ..	Hallington (Fawcett)	28.11	28.95	29.63	.68 + 2
"	" " " "	Rothbury (Craggside)	33.66	34.24	35.49	1.25 + 4
"	Cumberland	Carlisle (Spital Cemetery) ..	33.21	32.17	25.21	6.96 - 22
"	" " " "	Borrowdale (Seathwaite)	126.16	129.48	104.69	24.79 - 19
"	" " " "	Whitehaven (Irish Street) ..	43.57	41.70	38.98	2.72 - 7
"	Westmorland	Appleby (Castle Bank)	35.15	34.41	30.20	4.21 - 12
"	" " " "	Rydal (High Close)	85.73	81.97	69.91	12.06 - 15

MONMOUTH AND WALES.

XI.	Monmouth	Llanfrechfa Grange	41.23	43.64	41.56	2.08 - 5
"	" " " "	Abergavenny (Larchfield) ..	34.83	37.11	31.04	6.07 - 16
"	Glamorgan	Ystalyfera (Wern School) ..	63.91	64.04	59.85	4.19 - 7
"	" " " "	Cardiff (Ely Pumping Station)	41.02	42.28	42.76	.48 + 1
"	Carmarthen	Carmarthen (The Friary) ..	47.85	48.80	42.64	6.16 - 13
"	" " " "	Llanwrda (Dolaucothy)	55.89	56.60	54.51	2.09 - 4
"	Pembroke	St. David's	37.72	36.75	35.46	1.29 - 4
"	" " " "	Pembroke (Stackpole Court) ..	37.83	40.26	34.63	5.63 - 14
"	" " " "	Haverfordwest	45.54	46.81	42.99	3.82 - 8
"	Cardigan	Aberystwyth (Gogerddan) ..	45.81	45.46	52.54	7.08 + 16
"	Brecon	Aberdare (Nanthir Reservoir)	57.23	59.39	52.68	6.71 - 11
"	Radnor	Birmingham WW (Nantgwillt)	59.70	61.56	61.10	.46 - 1
"	Montgomery	L. Vyrnwy (B. Cynon Isaf) ..	54.83	55.33	50.11	5.22 - 9
"	Flint	Northop (Soughton Hall)	32.29	32.55	37.79	5.24 + 16
"	Denbigh	Wrexham (Pack Saddle Res.)	33.43	32.69	38.25	5.56 + 17
"	Merioneth	Bala (Eryl Aran)	54.94	52.18	57.51	5.33 + 10
"	" " " "	Tan-y-bwlch (The Gardens) ..	62.93	62.25	63.85	1.60 + 3
"	Carnarvon	Llandudno	29.76	30.36	31.43	1.07 + 4
"	Anglesey	Holyhead (Sailors' Home) ..	36.74	35.02	33.70	1.32 - 4
"	" " " "	Llanerchymedd	39.66	38.57	37.80	.77 - 2

ISLE OF MAN.

XI.	Isle of Man	Douglas (Borough Cemetery) .	41.35	41.55	40.91	.64 - 2
-----	-------------------	------------------------------	-------	-------	-------	---------

SCOTLAND.

XII.	Wigtown	Stoneykirk (Ardwell House) .	38.52	36.40	34.18	2.22 - 6
"	Kirkcudbright	Gatehouse (Cally)	50.04	49.15	46.23	2.92 - 6
"	" " " "	Dalry (Glendaroch)	55.17	52.60	45.74	6.86 - 13
"	" " " "	Auchencairn (Torr House) ..	48.94	46.80	38.79	8.01 - 17
"	" " " "	Dumfries (Cargen)	46.10	43.47	36.45	7.02 - 16

SCOTLAND—(con.).

DIV.	COUNTY and river-division.	STATION.	Average 1900-09.	Average 1875- 1909.	Depth in 1919.	Difference from Average 1875-1909. Per Amount.cent.
			in.	in.	in.	in.
XII.	Dumfries..... 3	Durrisdeer (Drumlanrig Gdns)	46.22	43.71	37.80	5.91 -13
"	"..... 4	Moffat (Craigielands)	53.06	53.20	43.03	10.17 -19
"	"..... 5	Canonbie (Byreburnfoot) ...	42.74	42.56	36.00	6.56 -15
"	Roxburgh..... 3	Hawick (Branxholme)	32.27	33.80	26.78	7.02 -21
XIII.	Selkirk..... 5	Galashiels (Stantling Craigs) .	33.63	34.75	32.88	1.87 - 5
"	Peebles..... 3	Penicuik (N. Esk Reservoir) .	39.94	39.75	38.00	1.75 - 4
"	Berwick..... 4	Marchmont House	32.52	33.76	32.93	.83 - 2
"	Haddington ?..... 4	Prestonkirk (Smeaton)	26.00	25.47	29.48	4.01 +16
XIV.	Lanark..... 1	Biggar (Cambus Wallace) ...	30.23	30.47	31.71	1.24 + 4
"	"..... 4	Airdrie (Hillend Reservoir) ..	38.13	37.72	31.31	6.41 -17
"	Ayr..... 3	Kilmarnock (North Craig Res.)	45.21	40.92	36.20	4.72 -12
"	"..... 8	Girvan (Pinmore)	53.19	49.77	44.22	5.55 -11
XV.	Dumbarton..... 2	Helensburgh (Ferniegair) ...	48.86	49.14	42.54	6.60 -13
"	Stirling..... 5	Strathblane (Mugdock Res.) .	43.34	46.44	37.60	8.84 -19
"	Bute..... 1	Rothsay (Ardencraig)	54.65	52.10	48.84	3.26 - 6
"	Argyll..... 2	Loch Sunart (Glenborrodale) .	69.47	66.99	63.24	3.75 - 6
"	"..... 7	Kilmelfort (Arduaine)	59.13	57.60	58.53	.93 + 2
"	"..... 9	Mull of Kintyre	46.02	41.42	39.58	1.84 - 4
"	"..... 10	Campbeltown (Devaar)	47.33	44.23	45.06	.83 + 2
"	"..... 10	Skipness Castle	49.95	49.44	43.37	6.07 -12
"	"..... 14	Islay (Eallabus)	51.26	48.79	51.82	3.03 + 6
"	"..... 14	Mull (Quinish)	57.55	56.57	55.26	1.31 - 2
XVI.	Kinross..... 2	Loch Leven Sluices	36.70	36.54	31.27	5.27 -14
"	Fife..... 2	Colinsburgh (Balcarres)	32.78	33.37	32.03	1.34 - 4
"	Perth..... 2	Loch Dhu	81.21	78.58	61.85	16.73 -21
"	"..... 3	Balquhiddy (Stronvar)	74.43	73.77	55.20	18.57 -25
"	"..... 4	Dunblane (Kippendavie)	45.48	39.37	33.06	6.31 -16
"	"..... 15	Kirkmichael (Ballintuin Ho.)	28.58	37.68	29.61	8.07 -21
"	Forfar..... 2	Dundee (Eastern Necropolis) .	27.72	28.64	25.57	3.07 -11
XVII.	Kincardine..... 1	Fettercairn (The Burn)	35.13	34.75	34.32	.43 - 1
"	Aberdeen..... 1	Braemar (Bank)	34.11	34.93	34.41	.52 - 1
"	"..... 1	Logie Coldstone (Loanhead) ..	32.72	30.67	29.80	.87 - 3
"	"..... 1	Aberdeen (Cranford House) ..	32.70	32.73	33.00	.27 + 1
"	"..... 4	New Deer Schoolhouse	32.89	34.74	37.75	3.01 + 9
"	Moray..... 2	Gordon Castle	30.64	30.34	30.30	.04 - 0
"	"..... 3	Grantown-on-Spey	32.65	31.23	35.26	4.03 +13
XVIII.	Inverness..... 3	Kingussie	29.66	29.62	32.75	3.13 +11
"	"..... 7	Glenquoich	115.15	109.34	92.20	17.14 -16
"	"..... 9	Drumnadrochit	35.08	36.13	29.42	6.71 -19
"	"..... 9	Inverness (High School)	28.12	27.14	21.75	5.39 -20
"	"..... 13	Arisaig House	62.88	61.75	60.52	1.23 - 2
"	"..... 17	Fort William	77.59	75.80	58.47	17.33 -23
"	"..... 18	Skye (Scalpay Island)	77.22	74.40	66.77	7.63 -10
"	"..... 19	North Uist (Monach)	42.13	46.55	40.56	5.99 -13
"	Ross and Cromarty 4	Alness (Ardross Castle)	41.86	38.55	39.49	.94 + 2
"	"..... 8	Loch Torridon (Bendaunph) .	89.50	83.64	82.96	.68 - 1
"	"..... 9	Applecross Gardens	60.41	56.08	61.26	5.18 + 9
"	"..... 9	Glencarron Lodge	87.59	86.50	76.90	9.60 -11
"	"..... 10	Stornoway	50.48	48.40	52.38	3.98 + 8
XIX.	Sutherland..... 2	Dunrobin Castle	33.07	31.90	31.24	.66 - 2
"	Caithness..... 2	Wick	31.35	29.88	32.55	2.67 + 9
"	"..... 3	Thurso (Holborn Head)	35.41	32.71	39.14	5.43 +20
"	Orkney.....	Shapinsay (Balfour Castle) ..	30.57	32.13	37.30	5.17 +16

IRELAND.

XX.	Cork..... 7	Glanmire (Lota Lodge)	41.90	44.08	33.31	10.77 -24
"	"..... 9	Mallow (Summer Hill)	38.20	38.90	31.73	7.17 -18
"	Kerry..... 3	Killarney (District Asylum) .	50.48	54.81	41.06	13.75 -25
"	"..... 4	Darrynane Abbey	47.76	49.95	47.62	2.33 - 5
"	"..... 4	Kenmare (Dromore)	70.26	64.92	56.34	8.58 -13
"	"..... 6	Valentia (Glanleam)	56.04	55.99	46.66	9.33 -17
"	Waterford..... 3	Waterford (Brook Lodge) ...	40.12	39.57	33.79	5.78 -15

IRELAND—(con.).

DIV.	COUNTY. and river-division.	STATION.	Average 1900-09.	Average 1875- 1909.	Depth in 1919.	Difference from Average 1875-1909.	
						Per Amount.	cent.
			in.	in.	in.	in.	
XX.	Tipperary	1 Nenagh (Castle Lough)	38.55	39.43	34.60	4.83	-12
"	"	3 Clonmel (Bruce Villa)	35.90	37.10	30.42	6.68	-18
"	"	4 Roscrea (Timoney Park) . . .	36.50	36.00	31.08	4.92	-14
"	Limerick	2 Foynes	39.23	39.60	32.10	7.50	-19
"	Clare	2 Ennistymon House	47.77	40.52	43.55	2.97	-6
"	"	3 Newmarket-on-Fergus	41.99	42.00	34.58	7.42	-18
XXI.	Wexford	4 Gorey (Courtown House) . . .	33.34	34.99	32.00	2.99	-9
"	Kilkenny	2 Kilkenny Castle	32.57	31.62	26.70	4.92	-16
"	Carlow	2 Carlow (Browne's Hill) . . .	34.30	34.36	28.30	6.06	-18
"	Queen's County	2 Abbey Leix (Blandsfort) . . .	37.70	35.92	32.55	3.37	-9
"	King's County	1 Birr Castle	32.77	32.86	28.41	4.45	-14
"	Kildare	2 Straffan House	30.56	31.61	33.30	1.69	+5
"	Dublin	2 Dublin (FitzWilliam Square) .	26.93	27.68	26.16	1.52	-5
"	"	3 Balbriggan (Ardgillan)	28.62	29.58	26.63	2.95	-10
"	Meath	4 Kells (Headfort)	34.25	37.25	33.75	3.50	-9
"	Westmeath	1 Athlone (Twyford)	34.99	37.35	31.60	5.75	-15
"	"	1 Mullingar (Belvedere)	35.89	36.15	30.68	5.47	-15
"	Louth	3 Greenore	32.95	32.33	31.41	.92	-3
XXII.	Galway	3 Tuam (Gardenfield)	44.06	42.69	36.08	6.61	-15
"	"	4 Woodlawn	42.19	41.57	30.38	11.19	-27
"	Mayo	2 Crossmolina (Enniscoe)	54.37	52.87	55.37	2.50	+5
"	"	6 Cong (The Glebe)	49.78	48.90	45.32	3.58	-7
"	"	6 Ballinrobe (Cranmore)	48.42	47.75	43.88	3.87	-8
"	Sligo	2 Collooney (Markree Obs.) . . .	44.40	42.71	45.42	2.71	+6
XXIII.	Cavan	1 Belturbet (Cloverhill)	35.52	33.74	30.34	3.40	-10
"	Armagh	5 Armagh Observatory	32.09	31.88	29.13	2.75	-9
"	Down	2 Seaford	39.47	38.91	38.08	.83	-2
"	"	4 Donaghadee (Orlock Hill) . . .	31.71	31.70	32.05	.35	+1
"	"	7 Banbridge (Milltown)	31.51	31.40	27.58	3.82	-12
"	Antrim	1 Belfast (Queen's University) .	35.89	33.81	34.64	.83	+2
"	"	5 Ballymena (Harryville)	42.52	40.84	39.99	.85	-2
"	Londonderry	5 Londonderry (Creggan Res.) . .	42.94	41.78	40.16	1.62	-4
"	"	5 Limavady (Drenagh)	37.88	37.46	33.98	3.48	-9
"	Tyrone	3 Omagh (Edenfel)	42.30	39.38	41.55	2.17	+6
"	Donegal	5 Killybegs (Rockmont)	60.95	60.60	59.99	.61	-1

METEOROLOGICAL OFFICE, AIR MINISTRY.

BRITISH RAINFALL ORGANIZATION.

BRITISH RAINFALL, 1919.
PART III.

GENERAL TABLE
OF
TOTAL RAINFALL IN 1919
AT
4893 STATIONS
IN
GREAT BRITAIN AND IRELAND,
WITH THE NAMES OF
THE OBSERVERS
OR OTHER AUTHORITIES FOR THE OBSERVATIONS.

ISSUED BY THE AUTHORITY OF THE METEOROLOGICAL COMMITTEE.

62, CAMDEN SQUARE, LONDON, N.W.1.

EXPLANATORY NOTE.

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 appeared in Part I. of *British Rainfall, 1911* (pp. 49—72), with detailed maps showing all the river-divisions in each Division.

The Divisions in the General Table 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 that of a place which can be easily found on any large scale map ; occasionally it is in an adjoining county. The second name is added to fix the site of observation more closely, *e.g.*, " Haslemere (Courts Hill) " means Courts Hill, near Haslemere.

In the column headed " diameter," figures in old style type indicate the length of the sides of rectangular gauges.

The letter D signifies that daily observations have been received and are complete for the year ; d that less complete daily records have been received ; w indicates that weekly readings have been received, and M that the gauge is read only once a 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.

When the words *per* S.M.S. follow the name of the Observer the record is printed on the authority of the Scottish Meteorological Society.

The total rainfall is printed in ordinary roman type under the heading of the unit in which the readings were made, *i.e.*, in inches or millimetres. The total as converted from inches to millimetres, or from millimetres to inches, is printed in old style type. If the record was taken during part of the year in inches and part in millimetres, the figures in both columns are printed in old style type, and in the few instances in which the readings have been made in *both* units throughout both columns are printed in roman type.

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 a short distance during the year. A record is not as a rule 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 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 ..

COUNTY INDEX TO GENERAL TABLE.

ENGLAND.

Bedfordshire	165	Herefordshire	181	Oxfordshire	162
Berkshire	158	Hertfordshire	160	Rutland	186
Buckinghamshire ...	162	Huntingdonshire ..	165	Shropshire	181
Cambridgeshire	165	Kent	151	Somerset	177
Cheshire	190	Lancashire	191	Staffordshire	182
Cornwall and Scilly..	176	Leicestershire	185	Suffolk	168
Cumberland	205	Lincolnshire	186	Surrey	148
Derbyshire	188	London	146	Sussex	153
Devonshire	173	Middlesex	159	Warwickshire	184
Dorsetshire.....	171	Monmouth	208	Westmorland	207
Durham	204	Norfolk	169	Wiltshire.....	170
Essex	166	Northamptonshire..	163	Worcestershire ...	183
Gloucestershire	179	Northumberland ...	205	Yorkshire	196
Hampshire	156	Nottinghamshire ..	187		

WALES.

Anglesey	216	Carnarvon	215	Merioneth	214
Brecon	211	Denbigh	214	Montgomery.....	213
Cardigan	211	Flint	214	Pembroke	210
Carmarthen	210	Glamorgan	209	Radnor	213

ISLANDS.

Isle of Man	216	Channel Islands	216
-------------------	-----	-----------------------	-----

SCOTLAND.

Aberdeen	230	Fife	227	Orkney	235
Argyll	225	Forfar	229	Peebles	219
Ayr	222	Haddington	220	Perth	228
Banff	231	Inverness	232	Renfrew	223
Berwick	219	Kincardine	230	Ross and Cromarty	233
Bute	225	Kinross	227	Roxburgh	218
Caithness	234	Kirkcudbright	217	Selkirk	219
Clackmannan	227	Lanark	221	Shetland	235
Cromarty and Ross..	233	Linlithgow	221	Stirling	225
Dumbarton	224	Midlothian	220	Sutherland	234
Dumfries	218	Moray or Elgin	231	Wigtown	217
Elgin or Moray	231	Nairn.....	232		

IRELAND.

Antrim	243	Kerry	237	Monaghan.....	243
Armagh	243	Kildare	240	Queen's County ..	239
Carlow	239	Kilkenny	238	Roscommon	241
Cavan	242	King's County	239	Sligo	242
Clare	238	Leitrim	242	Tipperary	237
Cork	236	Limerick	238	Tyrone	244
Donegal	244	Londonderry	244	Waterford.....	237
Down	243	Longford.....	241	Westmeath	241
Dublin	240	Louth	241	Wexford	238
Fermanagh.....	243	Mayo	242	Wicklow	239
Galway	241	Meath	240		

ENGLAND AND WALES.

DIVISION I.—LONDON. (Area, 117 sq. mi.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.	1919		
1.—THAMES.—Right Bank Tributaries. 67 sq. mi.							
		<i>in.</i>	<i>ft. in.</i>	<i>ft.</i>	<i>mm.</i>	<i>in.</i>	
BERMONDSEY.							
d Southwark Park	London County Council ..	5	9 11	19	547	21·55	156
LAMBETH.							
d Brockwell Park	London County Council ..	8	1 3	140	524	20·61	..
d Brixton Hill Reservoir	Met. Water Board.....	5	1 8	121	527	20·74	157
BATTERSEA.							
d Battersea Park	London County Council ..	5	9 8	13	531	20·89	..
d Battersea Water Works.....	Mr. F. J. Goldsworthy ...	5	3 6	26	604	23·79	..
Nine Elms (Heathwall)	London County Council ..	8	39 4	54	512	20·17	163
WANDSWORTH.							
d Streatham (Conyers Road) ...	Met. Water Board.....	5	2 6	119	550	21·66	165
d Streatham Hill Reservoir	Met. Water Board.....	5	3 1	205	570	22·45	156
d Putney Heath Reservoir	Met. Water Board.....	5	1 0	180	597	23·52	175
d Balham High Road,	(R) P. Dodd, Esq., C.E.	6	1 6	89	647	25·47	183
d Wandsworth C. (Loxley Rd.) ..	F. J. Brodie, Esq.,	8	1 0	105	654	25·75	198
d Southfields	(R) P. Dodd, Esq., C.E.	6	1 6	37	599	23·57	176
d Clapham Com. (Bromfelde Rd.)	H. N. Prentice, Esq.....	5	1 5	70	572	22·53	..
CAMBERWELL.							
d Nunhead (Southwark W.W.)...	Met. Water Board.....	5	1 0	173	547	21·54	162
DEPTFORD.							
d Telegraph Hill	London County Council ..	5	7 0	135	509	20·04	..
d Water Works	Met. Water Board.....	5	1 0	20	561	22·09	161
GREENWICH.							
d Deptford Pumping Station ..	London County Council ..	8	4 0	18	565	22·25	168
d Royal Observatory	Sir F. W. Dyson, F.R.S. ...	8	1 0	150	582	22·93	179
d Royal Observatory	Sir F. W. Dyson, F.R.S. ...	8	0 5	149	585	23·04	178
d Westcombe Park Road	Rev. T. R. Price	8	1 3	154	587	23·12	168
LEWISHAM.							
d Forest Hill (Barr Beacon)....	Met. Water Board.....	5	3 3	340	632	24·88	171
d Clarendon Road	G. E. Dacey, Esq.	5	1 0	98	628	24·71	186
WOOLWICH.							
d Eltham (High Street)	Met. Water Board.....	5	1 0	245	607	23·89	167
2.—THAMES—Left Bank Tributaries. 50 sq. mi.							
KENSINGTON.							
d V. & A. Museum.....	E. Hart, Esq.....	8	0 6	27	625	24·61	185
d Holland House.....	Mr. P. B. Rintoul	5	4 0	69	646	25·42	155
d Cam House.....	Lord Phillimore	5	3 0	100	685	26·97	149
d Campden Hill.....	Met. Water Board.....	8	1 0	142	719	28·31	158
HAMMERSMITH.							
d The Creek	London County Council ..	8	15 5	35	567	22·70	174
FULHAM.							
d Aclfold Road	Mrs. H. W. Carter	5	1 0	13	614	24·16	152
d Hammersmith Cemetery	Mr. R. J. Brown	5	1 0	16	606	23·84	174

DIVISION I.—LONDON—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.	
		Diam.	Height Ground	above Sea Level.		1919			
2.—THAMES—Left Bank Tributaries—(con.).		in.	ft.	in.	ft.	mm.	in.		
CHELSEA.									
D	Lots Road Pumping Station..London County Council ..	8	32	0	48	534	21·04	157	
	Western Pumping Station...London County Council ...	8	1	0	19	544	21·41	171	
D	Physic Garden.....W. Hales, Esq.	5	1	0	20	551	21·69	167	
D	Oakley Street	A. Hampton Brown, Esq..	5	1	0	25	593	23·35	178
D	St. Luke's Gardens	T. W. E. Higgens, Esq., C.E.	5	1	0	25	636	25·05	172
WESTMINSTER.									
	King's Scholars Pond.....London County Council ..	8	11	6	31	565	22·23	166	
D	Buckingham Palace.....Mr. W. Osborne.....	5	8	6	35	597	23·50	171	
	Kensington Gardens.....Mr. W. Beecher	8	1	0	80	645	25·38	165	
D	Kensington Palace	Meteorological Office.....	8	1	0	80	668	26·28	177
D	St. James's Park.....H.M. Office of Works ...	8	1	0	27	590	23·21	167	
D	Hyde Park	Royal Humane Society ...	8	1	3	..	504	19·84	177
	Spring Gardens.....(1) London County Council ..	8	66	4	95	595	23·44	170	
	Spring Gardens.....(2) London County Council ..	12	65	11	95	593	23·35	170	
	Spring Gardens.....(3) London County Council ..	8	6	0	35	596	23·46	170	
D	Charing Cross (Admiralty Arch)The Admiralty..	8	3	0	101	530	20·89	153	
	Strand	J. J. Steward, Esq.	5	40	0	80	574	22·61	160
ST. MARYLEBONE.									
D	Royal Botanic Gardens.....Mr. J. L. North	8	1	0	130	674	26·52	178	
w	Hamilton Terrace	E. Heron Allen, Esq., F.R.S.	5	0	6	..	644	25·37	..
HAMPSTEAD.									
D	Barrow Hill Reservoir	Met. Water Board.....	5	1	0	197	665	26·19	180
	Kemplay Road	C. Clarke, Esq.	5	2	0	..	599	23·59	..
d	New End Square.....Mr. W. Pikesley	5	1	0	..	743	29·24	..	
D	Observatory	E. L. Hawke, Esq.	8	1	0	451	689	27·12	186
d	Golder's Hill	London County Council ..	5	9	8	350	663	26·09	..
ST. PANCRAS.									
D	Camden Square	British Rainfall Organization	8	0	9	111	666	26·21	182
D	Camden Square <i>Snowdon</i> ...	British Rainfall Organization	5	1	0	111	652	25·65	175
	Camden Square <i>weekly</i> ...	British Rainfall Organization	5	1	2	111	657	25·87	..
M	Camden Square <i>float g.</i> ...	British Rainfall Organization	8	0	11	111	654	25·73	..
STOKE NEWINGTON.									
D	New River Filter Beds.....Met. Water Board.....	5	1	0	101	623	24·54	170	
D	New River Reservoirs	Met. Water Board.....	5	1	0	105	629	24·78	177
HACKNEY.									
	Clapton Pond	Norman Scorgie, Esq., C.E.	5	1	0	69	597	23·50	161
D	Clapton Pond	(R) Norman Scorgie, Esq., C.E.	8	2	6	70	592	23·32	161
HOLBORN.									
d	Stone Yard	E. F. Spurrell, Esq.	5	12	0	89	556	21·87	..
FINSBURY.									
D	New River Head.....Met. Water Board	5	1	0	95	583	22·95	178	
CITY OF LONDON.									
d	Guildhall	E. E. Finch, Esq., C.E. ...	8	2	6	46	560	22·05	..
D	Guildhall.....(R) E. E. Finch, Esq., C.E. ...	8	51	0	99	593	23·33	166	
BETHNAL GREEN.									
D	Victoria Park	London County Council ..	5	9	3	43	517	20·35	167
POPLAR.									
D	Isle of Dogs (Stewart Road)..London County Council ..	8	1	0	16	607	23·91	165	
d	Island Gardens	London County Council ..	5	4	6	..	611	24·05	..
D	Old Ford Pumping Station...Met. Water Board.....	8	0	9	19	612	24·10	174	
	Old Ford (Penstock House)...London County Council ..	8	1	0	43	587	23·10	168	
WOOLWICH.									
D	N. Woolwich Pumping Station London County Council ..	8	0	9	12	660	25·97	157	
D	Barking Outfall	London County Council ..	8	0	9	9	549	21·60	177

DIVISION II.—SOUTH-EASTERN COUNTIES.

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with ·01 in. or more.
		Diam. in.	Height ft.	Above Sea Level. in.	1919 mm.	in.	
SURREY. (Area, 725 sq. mi.)							
1.—ARUN. 45 sq. mi.							
d Haslemere (Beech Side Cottage)	J. Jackson, Esq.	5	0	9 570	964	37·95	186
Haslemere (Clammer Hill)	Col. Farquhar Glennie	5	1	0 400	896	35·28	170
Godalming (Rockwoods, Brook)	"Surrey Advertiser"			450	859	33·81	..
d Holmbury St. Mary (Joldwynds)	F. C. Bayard, Esq.	5	1	0 550	869	34·20	169
d Holmbury St. Mary (Linholme)	F. C. Bayard, Esq.	5	1	6 520	733	28·87	..
2.—MEDWAY. 50 ¹ sq. mi.							
d Felbridge (Chartham Park)	Lieut. I. D. Margary	5	1	0 270	766	30·16	189
d Dormans Park (Hill Crest)	Mrs. H. R. Mill	5	1	0 320	778	30·64	185
d Oxted (Stone Hall)	W. P. Metcalfe, Esq.	5	1	2 320	733	28·87	186
d Limpsfield (Ballards Shaw)	F. C. Bayard, Esq.	5	1	1 500	667	26·27	187
3.—THAMES—Darent. 22 sq. mi.							
d Farleigh (Croydon Ment. Hosp.)	Croydon Corporation	8	1	0 600	759	29·89	183
Chelsham (Fairchildes)	A. S. Daniell, Esq.	8	1	0 600	812	31·99	..
d Chelsham (Fairchildes)	Mr. G. Mansfield	5	0	8 600	736	28·98	..
d Addington (Hares Bnk Pmp Sta)	Croydon Corporation	8	1	0 331	719	28·29	210
d Addington Hills Reservoir	Croydon Corporation	8	0	9 473	717	28·24	221
d S. Norwood (Holmesdale Road)	E. A. Martin, Esq.	5	1	0 200	645	25·39	159
d Norwood (Auckland Road)	Miss J. Cooper	5	1	5 230	550	21·67	153
d Anerley (Town Hall)	F. C. Bayard, Esq.	8	40	0 191	588	23·13	162
4.—THAMES—Wandle. 71 sq. mi.							
d Kingswood (Margery Hall Res.)	W. Vaux Graham, Esq., C.E.	5	1	0 691	711	28·00	169
d Woldingham Reservoir	W. Vaux Graham, Esq., C.E.	5	1	6 851	679	26·74	..
d Caterham Reservoir	A. E. Cornewall-Walker, Esq.	5	1	0 717	785	30·90	197
d Chipstead (Eyhurst)	D. Morphew, Esq.	5	0	11 538	766	30·17	186
d Chipstead (Walpole Avenue)	F. C. Bayard, Esq.	5	1	0 530	825	32·49	..
d Caterham Asylum	F. C. Bayard, Esq.	5	1	0 607	757	29·81	205
d Netherne (Surrey Co. Asylum)	F. C. Bayard, Esq.	5	1	0 560	680	26·78	..
d Chelsham & Woldington W.W.	W. Vaux Graham, Esq., C.E.	5	1	0 479	767	30·21	173
d Caterham Valley (Mt. Vernon)	M. Ll. Evans, Esq.	5	0	10 500	842	33·14	171
d Caterham Valley Depot	A. E. Cornewall-Walker, Esq.	5	1	6 431	807	31·77	194
d Banstead (Burgh Heath)	Capt. E. R. Taylor	5	1	0 571	781	30·74	175
d Banstead (Burgh Heath Res.)	W. Vaux Graham, Esq., C.E.	5	1	0 570	780	30·71	157
d Chipstead (The Lodge)	F. E. Goad, Esq.	5	0	9 525	746	29·39	180
d Chipstead (How Green Res.)	W. Vaux Graham, Esq., C.E.	5	1	0 528	753	29·68	169
d Kenley Pumping Station	A. E. Cornewall-Walker, Esq.	5	1	6 275	720	28·36	192
d Banstead (The Asylum)	W. C. Clifford Smith, Esq.	5	4	6 420	688	27·07	163
d Purley (Oakwood Avenue)	E. W. Finch, Esq.	5	0	10 380	716	28·17	192
d Purley (Riddlesdown Rd.) No. 1	J. Edmund Clark, Esq.	5	1	0 360	744	29·29	198
d Purley (Riddlesdown Rd.) No. 2	J. Edmund Clark, Esq.	5	1	0 360	731	28·78	196
d Purley (Pumping Station)	A. E. Cornewall-Walker, Esq.	5	1	0 225	709	27·93	190
d Sanderstead (Beechwood Road)	E. Alexander, Esq.	5	1	0 370	701	27·61	188
d South Croydon (Avondale Rd.)	Dr. A. D. Williams	5	2	3 225	697	27·44	187
d South Croydon (Newark Road)	A. H. Jukes, Esq.	5	1	1 177	681	26·82	203
d Wallington (Alcester Road)	F. C. Bayard, Esq.	5	4	1 140	677	26·64	186
d Wallington (Alcester Road)	F. C. Bayard, Esq.	8	1	0 140	639	25·14	186
d Carshalton (Sewage Works)	F. C. Bayard, Esq.	5	1	0 118	613	24·13	170
d Beddington (Sewage Farm)	Croydon Corporation	5	1	0 129	523	20·60	168
d Croydon (Waddon New Road)	F. C. Bayard, Esq.	5	1	0 146	664	26·16	175
d Beddington Cor. (Millgreen Rd.)	F. C. Bayard, Esq.	5	5	0 77	641	25·25	160
d Mitcham (Brook Cottage)	F. C. Bayard, Esq.	5	1	0 100	576	22·67	..
d Wimbledon (Kingston Road)	H. A. Marshall, Esq.	5	1	0 54	632	24·88	173
d Wimbledon (Trinity Road)	P. J. Bevan, Esq., C.E.	5	1	0 53	608	23·92	163
d Wimbledon (Sewage Works)	J. Bowen, Esq., C.E.	5	1	0 55	582	22·90	158
d Wimbledon Park (Dora Road)	H. B. Ransom, Esq.	5	1	1 136	587	23·10	180
5.—THAMES—Mole & c. 229 sq. mi.							
Lowfield Heath (Hunts Gn. Ho.)	A. E. Robinson, Esq.	5	0	7 200	851	33·50	174
d Horley (Smallfield)	F. C. Bayard, Esq.	5	1	0 215	605	23·83	195
d Outwood (The Orchards)	F. C. Bayard, Esq.	5	1	0 280	711	28·00	191
d Dorking (Stone House, Rose Hill)	Lt.-Col. J. R. Greenhill	5	1	0 240	818	32·19	183
d Dorking (Denbies)	Mr. J. Ansell	5	0	9 610	852	33·54	193

DIVISION II.—SOUTH-EASTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height above Ground		Sea Level.	1919		
SURREY—(con.).		in.	ft.	in.	ft.	mm.	in.	
5.—THAMES—Mole & c.—(con.).								
D Dorking (Pixham Firs).....	J. Croft Deverell, Esq.	8	0	6	150	828	32·61	187
D Brockham (North Lodge).....	H. R. Kempe, Esq., C.E....	8	0	9	160	728	28·65	165
D Reigate (Hartswood).....	R. C. Clutton, Esq.	5	1	0	174	678	26·70	169
D South Nutfield (Hale Edge)....	R. C. Grant, Esq.	5	1	0	270	659	25·96	172
D Earlswood (Sewage Farm).....	F. T. Clayton, Esq., C.E....	5	1	6	196	661	26·02	170
D Redhill (Station Road).....	W. H. Fowler, Esq.	5	18	0	270	694	27·31	173
D Redhill (Wigmore).....	W. A. Gunner, Esq.	5	1	0	250	706	27·79	171
D Redhill (Warwick Road).....	A.E.Cornewall-Walker, Esq.	5	1	6	284	727	28·62	185
D Reigate (The Knowle).....	G. Weston, Esq.	5	1	0	390	661	26·01	166
D Reigate (Undercroft).....	Paul Crosfield, Esq.	5	0	4	242	718	28·28	176
D Reigate (Wray Lodge).....	A. Rosling, Esq.	5	1	0	316	740	29·14	167
D Reigate (Wray Park Road).....	Mr. F. W. Hedges.....	5	1	0	281	753	29·65	175
D Reigate (Castle Grounds).....	F. T. Clayton, Esq., C.E....	5	1	6	350	702	27·65	193
D Reigate (Gas Works).....	F. S. Smith, Esq.	8	1	0	290	683	26·90	160
D Reigate (Laglands).....	J. Welch, Esq.	5	1	2	375	760	29·94	179
D Nutfield Priory.....	Mrs. Fielden.....	8	1	2	468	657	25·85	196
D Nutfield Priory.....	Mr. J. Moffatt.....	8	1	2	331	712	28·01	194
D Bletchingley (South Park Fm.)	W. Lambert, Esq.	5	0	4	340	753	29·63	175
D Betchworth (Snower Hill).....	T. Du Buisson, Esq.	8	0	9	250	718	28·28	188
D Betchworth (Sandhills).....	C. J. Whittington, Esq.	5	2	0	250	741	29·17	180
D Buckland (The White House)....	J. Herbert Scrutton, Esq....	8	1	6	260	793	31·23	185
D Mickleham (Juniper Hall).....	G. MacAndrew, Esq.	5	1	0	183	833	32·80	...
D Headley Rectory.....	Rev. T. E. R. Phillips.....	5	1	0	575	776	30·53	188
D Headley (The Hurst).....	Mrs. Lyall.....	5	1	3	420	762	30·02	160
D Walton (Walton Manor).....	Mr. J. Millichamp.....	5	1	0	600	764	30·07	188
D Ashtead (Oakfield Road).....	H. F. Acocks, Esq.	5	1	6	180	691	27·21	154
D Ashtead (Oakfield Road).....	H. F. Acocks, Esq.	5	1	0	180	682	26·85	154
D Ashtead (The Hut).....	F. C. Bayard, Esq.	5	0	5	200	698	27·47	166
D Cobham (Hatchford Park).....	Sir H. B. Samuelson, Bart.	8	1	0	150	888	34·97	159
D Oxshott (Bevendean).....	Mr. J. W. Harris.....	...	...	...	200	748	29·43	...
D Banstead (The Hall).....	F. C. Bayard, Esq.	8	1	0	480	706	27·78	177
D Epsom (The Durdans).....	J. Barclay, Esq.	8	0	11	272	728	28·65	180
D Epsom (Hylands Road).....	F. Holroyd, Esq.	5	1	0	225	699	27·53	179
D Epsom (Sewage Farm).....	E. R. Capon, Esq.	8	1	0	125	608	23·93	163
D Cobham (Fairmile Hatch).....	"Surrey Advertiser".....	...	...	...	...	755	29·71	...
D Weybridge (Gower Road).....	Mrs. C. Sanger.....	5	0	7	117	684	26·91	178
D Sutton (Camborne Road).....	F. E. Wright, Esq.	5	1	0	250	684	26·92	184
D Claygate (Hertslets).....	N. C. Armitage, Esq.	5	1	0	106	635	25·00	187
D Esher (Sewage Works).....	F. C. Bayard, Esq.	5	1	0	42	572	22·50	159
D Sutton (High Sch., Cheam Rd.)	Miss A. Marsden.....	5	1	0	197	608	23·93	166
D Sutton (Water Works).....	W. Vaux Graham, Esq. C.E.	5	1	6	166	604	23·78	167
D Sutton (Sewage Works).....	Capt. W. H. Grieves, C.E.	8	1	6	94	671	26·41	148
D Surbiton (Seething Wells).....	Met. Water Board.....	5	0	10	34	616	24·24	165
D West Molesey (Walton Works)....	Met. Water Board.....	5	0	6	35	542	21·32	156
D New Malden (Sewage Works)....	F. C. Bayard, Esq.	5	1	3	48	572	22·53	...
D New Malden (Edenfield).....	W. J. Carter, Esq.	5	1	0	40	608	23·95	170
D Kingston (Palace Road).....	No. 1 Charles Price, Esq.	5	0	10	30	598	23·55	160
D Kingston (Palace Road).....	No. 2 Charles Price, Esq.	5	0	10	30	593	23·34	160
D Kingston (County Hall).....	E. Underwood, Esq.	5	0	9	31	587	23·12	153
D Kingston Sewage Works.....	F. C. Bayard, Esq.	5	1	0	25	659	25·95	172
D Raynes Pk (Cottenham Pk P.S.)	J. Bowen Esq., C.E.	5	1	0	50	602	23·72	174
D Raynes Park (W. Barnes P.S.)	G. Jerram, Esq., C.E.	5	1	2	47	546	21·48	165
D Wimbledon (Merton Hall Rd.)	Rev. J. A. Barrow-Clough.....	5	1	0	70	578	22·77	...
D Wimbledon (The Downs).....	F. C. Bayard, Esq.	5	1	1	162	607	23·90	183
D Richmond (The Terrace).....	F. C. Bayard, Esq.	8	1	6	109	645	25·39	181
D Richmond (Kew Observatory)R)	Meteorological Office.....	11	1	9	18	617	24·31	160
6.—THAMES—Wey. 236 sq. mi.								
D Haslemere (Courts Hill).....	Mr. E. Biles.....	8	4	8	481	925	36·41	173
D Haslemere (U.D.C. Depôt).....	A. G. Whitcher, Esq.	5	1	0	475	952	37·49	178
D Haslemere (Hangerfield).....	J. P. Trew, Esq.	5	1	1	680	874	34·39	167
D Haslemere (Frensham Hall) No. 1	H. Windibank, Esq.	5	1	0	450	914	36·00	157
D Haslemere (Frensham Hall) No. 2	H. Windibank, Esq.	5	2	3	625	947	37·29	159
D Haslemere (Hazelhurst).....	Mrs. T. P. Newman.....	5	1	0	550	970	38·18	176

DIVISION II.—SOUTH-EASTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with .01 in. or more.	
		Diam.	Height Ground	above Sea Level.	1919			
SURREY—(con.).		in.	ft.	in.	ft.	mm.	in.	
6.—THAMES—Wey—(con.).								
Witley (Sandhills)	L. W. Lodge, Esq.	8	1	0	450	883	34.77	177
Witley (King Edward's School)	J. Wood, Esq.	5	1	3	330	778	30.64	164
Witley (Great Roke)	C. W. Dixon, Esq.	5	5	6	300	844	33.22	197
Witley (The Mount)	Mrs. J. H. Foster	5	1	0	375	904	35.58	210
Hascombe Place	C. T. Musgrave, Esq.	5	1	0	390	828	32.61	151
Cranleigh (Stonewall)	W. Welch, Esq.	5	1	0	182	792	31.16	163
Bramley (Grafham Grange)	S. A. Shepherd, Esq.	8	0	6	180	803	31.61	156
Ewhurst (Downhurst Lodge)	Mr. C. W. Bradfield	5	1	0	350	817	32.15	175
Ewhurst (Garlands)	Sir G. Johnston, Bart.	5	2	6	360	812	31.98	213
Ewhurst (Coneyhurst)	Mr. J. Russell	8	1	0	581	820	32.27	187
Ewhurst (Woolpit)	Mr. W. Harrison	5	1	6	600	717	28.22	..
Godalming (Milford House)	Capt. F. D. Webb	5	1	0	304	796	31.36	..
Godalming (Peperharow Road)	F. R. Rushton, Esq.	5	0	8	190	781	30.74	183
Godalming (Charterhouse)	O. H. Latter, Esq.	5	1	0	290	732	28.81	181
Peper Harow (Glebe House)	George Marsh, Esq.	5	1	0	200	815	32.09	151
Shackleford (Hall Place)	W. E. Horne, Esq., M.P.	8	1	6	200	762	30.01	..
Peaslake (Dewdney)	Sir F. G. Ogilvie, C.B.	5	1	0	532	821	32.34	..
Bramley (The Limes)	Rev. C. J. Ety	5	1	0	136	808	31.79	164
Womersley (Little Tangley)	Mr. S. Pankhurst	5	1	0	200	724	28.50	..
Shere (Manor House)	Sir R. M. Bray	6x8	1	0	330	777	30.58	175
Albury (Dalton Hill Gardens)	"Surrey Advertiser"	..	..	..	..	735	28.92	..
Abinger Hall	F. C. Bayard, Esq.	8	2	0	320	893	35.14	184
Farnham (Crooksbury Ridges)	F. R. Walters, Esq., M.D.	5	1	4	440	797	31.38	194
Farnham (Short Heath Lodge)	Col. G. Chrystie	5	1	0	365	738	29.07	182
Wanborough (The Schools)	E. E. Marriott, Esq.	..	..	3	215	624	24.55	..
Gomshall (The Croft)	C. Waithman, Esq.	5	1	0	..	784	30.86	..
Guildford (Piccard's Rough)	H. A. Powell, Esq., M.D.	5	2	0	330	660	26.00	162
Guildford (Briarfield)	Miss M. E. Swaine	5	2	6	300	753	29.66	167
Guildford (Roy. Gram. School)	H. N. Weller, Esq.	5	1	2	200	731	28.79	..
Guildford (Newlands Corner)	Mr. H. Tann	5	1	6	550	757	29.79	185
Guildford (Cross Lanes)	F. F. Smallpeice, Esq.	5	0	8	200	737	29.02	173
Guildford (Sewage Farm)	W. J. Cross, Esq., C.E.	5	1	0	116	855	33.66	158
Merrow (Craigie)	Miss Lomer	5	0	9	250	664	26.15	159
Merrow (Craigie)	Paddock Miss Lomer	5	0	9	250	708	27.88	159
Normandy (The Manor House)	Rt. Rev. Bishop Hose, D.D.	5	1	1	149	784	30.88	198
East Horsley (Rowbarn Grange)	"Surrey Advertiser"	..	..	..	..	820	32.28	..
Worplesdon (Perry Hill School)	"Surrey Advertiser"	..	..	..	..	700	27.56	..
Worplesdon Hill (Pinewood)	G. W. Hayes, Esq.	5	1	4	180	659	25.95	163
Ripley (Ripley Court)	"Surrey Advertiser"	..	..	..	..	688	27.09	..
Woking (Hook Heath)	W. S. Patterson, Esq.	5	1	0	160	670	26.37	157
Woking (The Green)	Mrs. Howlett	5	0	9	130	674	26.52	156
Pyrford (Wintergreen Wood)	Lady Davy	6	1	0	150	648	25.52	158
Pyrford (Kelmars)	H. D. Richardson, Esq.	5	1	0	100	638	25.12	155
Horsell (The Vicarage)	Rev. Norman Pares	5	1	9	140	666	26.20	168
Wisley (R.H.S. Gardens)	W. D. Cartwright, Esq.	8	1	0	150	674	26.53	178
Wisley (West Hall Gardens)	Mr. G. Carpenter	5	1	0	61	699	27.51	154
West Byfleet (Kilmeena)	F. Littleboy, Esq.	5	1	0	100	680	26.78	174
West Byfleet (Hollywood)	F. C. Bayard, Esq.	5	1	1	100	683	26.88	183
Byfleet (Woodbine Cottage)	J. E. Dowell, Esq.	5	1	1	59	657	25.85	180
Weybridge (St. George's Hill)	H. J. Bond, Esq.	5	0	8	115	583	22.94	180
Weybridge (Heath Field)	Miss A. T. Gardiner	5	1	0	100	664	26.13	163
Weybridge (West Oaks)	A. Whittet, Esq.	5	1	0	36	627	24.69	189
Weybridge (Station Road)	H. K. G. Rogers, Esq.	5	1	0	85	652	25.69	190
7.—THAMES—Bourne. 55 sq. mi.								
Knapp Hill (Ulundi)	Mr. G. C. H. Simmonds	5	1	0	181	712	28.01	186
Knapp Hill (Lynbrook)	Charles Wigan, Esq.	5	1	8	200	642	25.29	178
Knapp Hill (High Street)	W. H. Cullis, Esq.	5	1	0	210	713	28.06	180
Chobham (Sandpit Hall)	K. A. H. Power, Esq.	5	1	0	100	738	29.05	184
Chobham (The Manor House)	F. A. Walter, Esq.	5	1	0	150	745	29.32	175
Bagshot (Pennyhill Park)	"Surrey Advertiser"	..	..	..	..	790	31.12	..
Chertsey (Ottershaw)	Mrs. R. H. Otter	5	1	0	200	747	29.40	192
Chertsey (Ottershaw Park)	F. Eckstein, Esq.	8	1	10	123	835	32.89	181
Chertsey (Long Cross)	F. Arnold Baker, Esq.	5	2	6	205	686	27.00	..

DIVISION II.—SOUTH-EASTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with .01 in. or more.
		Diam.	Height Ground	above Sea Level.	1919			
SURREY—(con.).		in.	ft.	in.	ft.	mm.	in.	
7.—THAMES—Bourne—(con.).								
d Chertsey (Botleys Pk Gardns)	H. Gosling, Esq.	5	1	5	111	702	27·65	169
d Virginia Water (S. Ann'sHeath)	Rev. J. Peck	8	1	1	120	680	26·77	186
d Egham Park	J. R. Fitzgerald, Esq.	4	0	10	150	694	27·31	153
d Englefield Green (Queenswood)	S. J. Rigden, Esq.	8	2	0	200	805	31·69	172
8.—THAMES—Loddon. 17 sq. mi.								
d Frimley Green Waterworks	F. J. Garland, Esq.	5	2	6	220	623	24·53	149
d Frimley Green (Brompton San.)	A. L. Bartlett, Esq.	5	0	4	380	724	28·51	171
d Frimley Green (Ridgemount)	C. C. Haviland, Esq.	5	0	9	350	751	29·57	209
d Frimley (Tomlinscote)	Mr. T. Dawson	5	1	9	200	732	28·80	195
d Camberley (Way's End)	E. Ernest Green, Esq.	5	0	11	300	696	27·42	186
KENT. (Area, 1532 sq. mi.)								
1.—ROTHER & C. 217 sq. mi.								
d Hawkhurst (Hensill)	F. Ross Thomson, Esq.	5	3	0	200	729	28·69	154
d Tenterden (Summerhill)	Mrs. Wilkin	8	1	0	150	700	27·57	186
d Tenterden (Summerhill)	Mrs. Wilkin	5	1	0	150	708	27·88	186
d Tenterden (Ashenden)	Major Herbert Neve	5	1	0	190	696	27·39	173
d Tenterden (View Tower)	J. Ellis Mace, Esq.	8	1	5	190	738	29·05	193
d Tenterden (View Tow.)	Snowdn J. Ellis Mace, Esq.	8	1	5	190	720	28·36	178
d Cranbrook (Hartley)	Mrs. Pile	5	2	0	403	713	28·07	..
d Benenden (National Sanat'm)	Dr. Niven Robertson	5	1	0	180	590	23·25	155
d Biddenden (Sandpit Wood)	J. Ellis Mace, Esq.	5	1	0	218	739	29·09	..
d Dungeness	Meteorological Office	8	1	3	22	583	22·93	174
d Snave (Poplar House)	T. K. Tickner, Esq.	8	2	3	10	580	22·85	151
d Hythe	J. Singleton Green, Esq. CE	5	1	0	0	720	28·35	184
d Hythe (Sandling Park)	Rt. Hon. L. Hardy, M.P.	8	1	0	220	760	29·91	166
d Sandgate	H. Evans, Esq., C.E.	5	4	0	176	708	27·87	175
d Folkestone (Borough Sanat'm)	A. E. Nichols, Esq., C.E.	5	1	0	102	621	24·46	163
d Folkestone (Cheriton Road)	J. Duncan Walker, Esq.	5	1	0	160	716	28·17	173
d Folkestone (Cherry Gardens)	H. T. Turner, Esq.	5	1	6	230	751	29·55	..
d Capel (Lower Standen)	H. T. Turner, Esq.	5	1	0	250	772	30·39	..
d Dover	W. C. Hawke, Esq.	8	1	0	20	766	30·14	179
d Dover (Water Works)	W. C. Hawke, Esq.	5	1	6	200	770	30·31	65
d Kearsney (Chilton Farm)	W. C. Hawke, Esq.	5	1	6	127	767	30·19	165
2.—STOUR & C. 386 sq. mi.								
d Lyminge (Elham Valley W.W.)	H. E. Stilgoe, Esq., C.E.	5	1	6	450	764	30·09	176
d Dover (Martin Mill Pump. Stat.)	F. L. Ball, Esq.	5	11	0	298	674	26·52	172
d Kennington (Coombe Cottage)	Late J. C. Dell, Esq.	5	1	0	190	822	32·37	153
d Ashford (Eastwell Park) (r.)	Mr. J. C. Weston	9	3	6	410	758	29·83	164
d Crundale (Winchcombe Farm)	W. Higgs, Esq.	5	5	0	350	759	29·87	181
d Charing Pumping Station	F. L. Ball, Esq.	5	1	0	593	760	29·92	169
d Deal and Walmer W.W.	A. Mantle, Esq.	12	1	0	110	702	27·65	..
d Deal and Walmer W.W.	A. Mantle, Esq.	5	1	0	110	706	27·81	178
d Great Mongeham Rectory	Rev. W. H. Rammell	5	1	8	100	664	26·13	163
d Sandwich (Upton House, Word)	Capt. W. Elwin Napier ..	5	1	0	32	707	27·84	164
d Molash (Wytherling Court)	H. Murton, Esq.	5	1	3	376	797	31·38	..
d Chilham (Lower Ensden)	F. Ivo Neame, Esq.	5	4	10	223	747	29·40	..
d Wingham (Margate W.W.)	Mr. W. R. Hosking	5	1	0	138	770	30·33	..
d Canterbury (Oaten Hill Ho.)	Miss Carr	5	1	3	50	707	27·83	..
d Canterbury (Medical Hall)	A. Lander, Esq.	5	0	11	39	700	27·54	172
d Canterbury (Irrigation Works)	C. Terry, Esq., C.E.	5	2	6	15	753	29·66	163
d Canterbury (St. Thomas's Hill)	P. J. Spillett, Esq.	5	0	6	66	717	28·24	174
d Wickhambreux (The Willows)	A. Baird, Esq.	5	0	8	22	760	29·91	193
d Minster (Gas Works)	W. Thomson, Esq., C.E.	5	1	0	60	608	23·94	..
d Ramsgate (Southwood W. W.)	W. Thomson, Esq., C.E.	8	1	0	169	612	24·11	166
d Ramsgate (Archer House)	Miss L. M. Wainwright ..	5	0	11	75	618	24·32	146
d Reculver	Allington Collard, Esq.	5	5	2	27	618	24·32	161
d St. Peter's	Rev. H. C. V. Snowden ..	5	0	9	140	654	25·76	174
d St. Peter's Court	A. J. Richardson, Esq.	5	1	0	135	664	26·15	177
d Birchington (Hollydene)	W. Tomlin, Esq., Junr.	6	6	0	75	673	26·48	150
d Birchington (Rose Bank)	Mr. G. Hoare	5	5	0	45	684	26·93	154
d Margate (Cliftonville)	G. W. Gunnis, Esq.	9	1	0	130	629	24·76	175
d Margate (Cliftonville)	C. J. Pemble, Esq.	5	1	0	51	567	22·31	157

DIVISION II.—SOUTH-EASTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
KENT—(con.).		in.	ft.	in.	ft.	mm.	in.	
3.—SWALE & C. 167 sq. mi.								
d Selling (Luton)	F. Ivo Neame, Esq.	5	4	9	263	832	32·74	172
d Bicknor Rectory	Rev. E. W. Edwards	5	1	6	517	764	30·07	164
d Ospringe (Lorenden)	Walter C. Stunt, Esq.	5	1	6	180	739	29·09	157
d Teynham (New Gardens)	Col. J. F. Honeyball	5	1	5	30	684	26·91	140
d Faversham (Uples Marshes)	W. J. Wright, Esq.	5	4	4	9	547	21·52	..
d Whitstable (Western Ho.) No. 1J. W. Hayward, Esq.	1J. W. Hayward, Esq.	5	0	10	17	663	26·09	149
d Whitstable (Western Ho.) No. 2J. W. Hayward, Esq.	2J. W. Hayward, Esq.	5	0	11	17	673	26·50	149
d Herne Bay (Water Works)	J. Roberts, Esq.	5	1	0	130	632	24·89	..
d Sheppey (Eastch'ch, Old Rides)H.C. Warren, Esq.	H.C. Warren, Esq.	5	2	0	40	636	25·05	..
4.—MEDWAY. 506 sq. mi.								
d Woodchurch (Hengherst)	W. Mitchell, Esq.	5	1	0	152	656	25·83	172
d Kilndown School	J. A. Ager, Esq.	5	1	3	365	804	31·64	..
d Scotney Castle	E. W. Hussey, Esq.	5	3	9	203	780	30·72	..
d Goudhurst (Maypole)	G. Parker Hinds, Esq.	8	1	8	412	794	31·27	..
d Goudhurst (Lidwells)	Rev. H. P. FitzGerald	5	1	0	260	762	30·02	188
d Goudhurst (Brandfold)	Mr. C. Markwell	5	2	0	238	812	31·96	166
d Horsmonden (BroadFordHouse)Mrs. L. E. Maude	Mrs. L. E. Maude	5	1	0	96	755	29·71	174
d Biddenden (Augustus Villa)	E. Donne, Esq.	5	0	8	175	718	28·27	157
d Tunbridge Wells (Hawkenbury)	D. W. Horner, Esq.	5	1	6	435	812	31·96	157
d Tunbridge Wells (CalverleyPark)Dr. F. C. Linton	Dr. F. C. Linton	5	1	0	356	743	29·24	175
d Tunbridge Wells (Courtlands) (r)E. Weldon, Esq.	E. Weldon, Esq.	8	5	6	470	757	29·79	150
d Tun. Wells (The White House)	Miss Monica Robins	5	1	6	350	830	32·69	163
d Speldhurst (Little Court)	P. L. Rooper, Esq.	8	1	3	..	776	30·55	188
d Pembury (The Spring)	Miss L. M. Fowler	5	1	2	416	773	30·45	183
d Pembury Waterworks	W. H. Maxwell, Esq., C.E.	8	1	8	197	737	29·03	170
d Paddock Wood (MatfieldGrange)C. A. Perkin, Esq.	C. A. Perkin, Esq.	5	1	0	370	796	31·33	176
d Paddock Wood (Matfield)	D'Arcy W. Reeve, Esq.	5	1	0	321	800	31·48	..
d Edenbridge (Falconhurst)	Hon. Mrs. John Talbot	5	1	6	375	759	29·87	168
d Markbeech (Edells)	Miss M. F. Pearse	5	1	0	320	599	23·57	194
d Markbeech (High Buckhurst)	Edmund Dean, Esq.	5	1	0	400	685	26·96	181
d Chiddingstone Hoath (Truggers)	Alsager Vian, Esq.	5	0	8	380	803	31·60	179
d Staplehurst (Coppwilliam Farm)	J. Norris, Esq.	5	1	4	100	701	27·61	188
d Penshurst (Parkholt)	Mr. J. M. Sturgess	5	0	9	265	640	25·21	161
d Penshurst Place	Lord De L'Isle & Dudley	5	1	6	115	805	31·71	191
d Tonbridge (Mabledon Park)	J. F. W. Deacon, Esq.	5	1	2	190	754	29·67	170
d Tonbridge (Brooklands)	G. J. Kimmins, Esq.	5	0	10	120	731	28·79	168
d Tonbridge (Lyons)	Dr. E. S. Cardell .....	..	..	..	75	685	26·96	..
d Hadlow Place	C. J. G. Hulkes, Esq.	5	1	0	50	707	27·84	200
d Hildenborough (Hollanden Ho.)	C. H. Scott, Esq.	8	1	0	99	675	26·56	182
d Ulcombe Place	A. O. Walker, Esq.	5	1	0	350	680	26·78	169
d Linton Park	Mr. C. Pratt	5	0	8	..	706	27·79	166
d Langley (Rumwood Court)	Mr. W. J. Gould	5	1	9	354	737	29·00	189
d Otham (Synyards)	Ambrose Boyson, Esq.	5	1	0	315	779	30·66	208
d Wateringbury (The Limes)	Alan Lambert, Esq.	5	1	0	130	712	28·01	194
d Wateringbury (Manor Farm)	W. Pye English, Esq.	5	3	0	152	691	27·21	192
d Sevenoaks (River Hill)	Lt.-Col. J. M. Rogers, D.S.O.	8	3	0	535	694	27·34	180
d Sevenoaks (Soar Farm, Plaxtol)	H. Stonham, Esq.	5	3	0	300	728	28·64	170
d Maidstone (Lower Tovil)	Laurence Green, Esq.	5	1	0	30	697	27·45	179
d Maidstone (W. W., Barming)	W. J. Ware, Esq., C.E.	5	1	6	250	715	28·15	168
d Maidstone (Brenchley Gardens)	T. F. Bunting, Esq., C.E.	5	0	9	50	736	28·97	173
d Maidstone (Mill Street)	T. F. Bunting, Esq., C.E.	8	6	0	38	716	28·17	171
d East Malling (Broadwater)	C. B. Mercer, Esq.	5	1	6	166	687	27·03	179
d Maidstone (Allington Lock)	Mr. W. Smith	5	1	0	45	680	26·77	160
d Detling (The Croft)	R. Cooke, Esq.	5	1	2	330	761	29·97	202
d Detling (The Croft)	R. Cooke, Esq.	5	1	0	330	776	30·14	202
d Detling (Pollhill Fields)	R. Cooke, Esq.	5	1	0	..	739	29·10	..
d Halling Pumping Station	F. L. Ball, Esq.	5	1	0	75	633	24·91	156
d Rainham (Mardale House)	Dr. F. W. H. Penfold	5	1	0	85	702	27·63	174
d Chatham (Luton W.W.)	W. Coles Finch, Esq.	5	3	0	88	632	24·87	152
d Rochester (Knights Place)	Miss F. H. Pye	5	3	0	320	677	26·66	155
d Strood Water Works	W. Banks, Esq., C.E.	5	3	0	112	626	24·65	166
d Frindsbury (The Shrubbery)	Warwick Stunt, Esq.	5	2	0	150	574	22·61	156
d Frindsbury (Stonehouse Farm)	E. W. Wood, Esq.	5	5	0	20	627	24·70	143
d Hoo St. Mary (St. Mary's Hall)	H. Pye, Esq.	5	5	6	146	600	23·64	165

DIVISION II.—SOUTH-EASTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
KENT—(con.).		in.	ft.	in.	ft.	mm.	in.	
5.—THAMES—Darent. 256 sq. mi.								
D Westerham (Quebec Square) ..	Met. Water Board	5	1	0	380	808	31·79	167
D Westerham Hill Pumping Stat.	Met. Water Board	5	1	0	539	726	28·57	182
D Sevenoaks (Kippington Grnge)	Sir Douglas Fox, C.E.	5	0	10	530	811	31·93	158
M Sevenoaks (Tonbdge Rd. Res.)	A. Grainger, Esq.	5	1	6	556	745	29·33	..
D Sevenoaks (The Old House) ..	W. Tattersall, Esq.	8	1	0	510	783	30·82	186
D Sevenoaks (Speldhurst Close) ..	Rev. D. D. Mackinnon ...	5	1	0	470	744	29·27	183
D Tatsfield (Betsom Hill)	Met. Water Board	5	0	7	820	820	32·30	173
Seal (St. Lawrence Reservoir) ..	A. Grainger, Esq.	8	1	0	665	735	28·94	..
Seal (Oak Bank Reservoir)	A. Grainger, Esq.	8	1	0	550	751	29·58	..
D Seal (Wilderness Gardens) ..	Mr. J. Shelton	5	1	0	300	720	28·35	165
Seal (Kemsing Pumping Stat.) ..	A. Grainger, Esq.	5	1	0	292	726	28·59	..
D Sevenoaks (Chevening Gardens)	Mr. J. C. Sutton	5	1	0	360	819	32·25	182
D Knockholt (Kent Waterworks)	Met. Water Board	5	1	0	785	719	28·29	165
D Otford (Beechy Lees)	Mr. R. Edwards	5	0	10	480	762	29·99	190
Downe (Petleys)	G. N. Murton, Esq.	5	1	0	..	737	29·03	..
D Downe (Council School)	A. J. Ridge, Esq.	5	0	8	500	738	29·07	200
D Chelsfield (Woodlands)	A. T. Waring, Esq.	5	4	4	400	664	26·14	181
D Keston (Forest Lodge)	F. C. Bayard, Esq.	5	1	0	300	737	29·01	161
D West Wickham (Wickham Court)	F. C. Bayard, Esq.	5	1	2	300	684	26·93	149
D Hayes (Hayes Place)	F. C. Bayard, Esq.	8	1	0	350	696	27·38	182
D Orpington (Kent Waterworks)	Met. Water Board	5	1	0	220	682	26·84	163
Orpington (Lynwood)	W. Jones, Esq.	5	1	4	272	636	25·04	..
Meopham (The Chestnuts)	Jesse Garratt, Esq.	5	1	6	290	648	25·52	160
d Cobham (Sole Street House) ..	J. Scrutton, Esq.	5	1	8	311	707	27·84	..
D Cobham (Scaler's Hill)	A. W. Booth, Esq.	5	1	9	250	707	27·85	148
D Bromley Common (Elmfield) ..	Rev. J. P. Faunthorpe ...	5	0	9	240	605	23·81	178
D Bickley (Sunnydene)	Sir J. Wrench Towse	5	1	0	227	663	26·11	153
D Bickley (St. Luke's Vicarage) ..	Rev. C. C. Gosselin	5	2	0	..	630	24·82	160
D Bickley (Farrants)	L. E. Chalmers, Esq.	8	0	9	300	638	25·12	180
D Bromley (Hazelcroft)	Rev. H. A. Soames	5	1	0	180	646	25·44	158
D Bromley (King's Avenue)	A. Malden, Esq.	5	1	6	180	623	24·51	174
d Bromley (The Palace)	F. C. Bayard, Esq.	5	1	0	187	643	25·31	..
Bromley (Gilbert Road)	Edward Kinder, Esq.	5	1	4	200	613	24·13	..
D Bromley (Hammilton Road) ..	Rev. F. N. Style	5	1	0	231	626	24·65	144
D Beckenham (Croydon Road) ..	J. A. Angell, Esq., C.E. ...	8	1	0	110	755	29·71	184
D Chislehurst (Hawkwood)	F. C. Bayard, Esq.	5	1	0	300	631	24·84	144
D Southfleet (Kent Waterworks)	Met. Water Board	5	1	0	82	609	23·97	163
D Wilmington (Kent Waterworks)	Met. Water Board	5	1	0	25	548	21·57	145
D Dartford (West Hill House) ..	F. C. Bayard, Esq.	5	1	3	100	707	27·82	160
Gravesend (Park House)	W. T. Rea, Esq.	5	38	4	78	540	21·26	149
D Higham Waterworks	C. H. Clark, Esq.	8	1	0	141	711	27·98	186
D Bexley Heath (Rookwood)	G. Berry Hamlin, Esq.	5	1	0	161	621	24·44	182
D Erith (Crossness)	London County Council ..	14	0	6	16	563	22·18	159
SUSSEX. (Area, 1458 sq. mi.)								
1.—LAVANT & C. 175 sq. mi.								
D Selsey (Large Acres) ..	Field g. E. Heron Allen, Esq., F.R.S. ...	5	1	0	25	712	28·02	168
D Selsey (Large Acres) ..	Snowdon E. Heron Allen, Esq., F.R.S. ...	5	1	0	25	745	29·33	168
D Bognor (Waterloo Square)	A. G. Thompson, Esq., C.E. ...	8	1	0	21	704	27·73	159
D Bognor (Albert Road)	H. L. F. Guernonprez, Esq. ...	8	1	0	21	712	28·03	155
Felpham (Outerwyke)	F. J. Neale, Esq.	8	1	8	8	699	27·51	151
Bognor (Shripney)	R. A. Briggs, Esq., C.E. ...	5	1	0	25	757	29·80	..
Bognor (Lidsey Lodge)	H. Neale, Esq.	8	1	2	25	748	29·44	150
D Merston (Abelands)	Miss V. Kennard	5	0	6	24	777	30·58	162
D Chichester (Westgate)	G. Ashley Tyacke, Esq. ...	8	0	6	40	779	30·67	165
D Chichester (Summersdale) ..	Rev. H. J. Peckham	5	1	0	100	845	33·27	179
D Chichester (West Broyle Gdns.)	T. Weller-Poley, Esq.	5	1	4	107	834	32·82	153
D Emsworth (West Bourne)	Rev. L. B. Birkett	5	1	0	30	815	32·10	177
D Funtington	J. A. Greenwood, Esq.	5	1	0	95	844	33·21	163
West Stoke Rectory	Rev. Preb. W. F. Shaw	5	1	0	176	833	32·81	..
D Chichester (Goodwood Gardens)	Mr. F. Brock	5	1	3	133	912	35·92	181
D Emsworth (Watergate House) ..	W. M. Christy, Esq.	5	1	0	236	913	35·93	158
West Dean Park	Mr. W. H. Smith	10	1	6	190	999	39·34	..
Chilgrove House	Miss Woods	5	0	6	266	974	38·36	..
D Petersfield (Compton House) ..	Miss K. B. Langdale	5	1	0	263	1021	40·20	176

DIVISION II.—SOUTH-EASTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with .01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
SUSSEX—(con.).		in.	ft.	in.	ft.	mm.	in.	
2.—ARUN. 285 sq. mi.								
d Littlehampton (Met. Station) ..	P. Perry, Esq.	5	1	0	10	683	26·89	145
d Tortington House	Mrs. Travers	5	0	8	25	791	31·14	..
d Patching Farm	Michael Drewitt, Esq.	5	1	0	180	844	33·21	151
d West Chiltington (Gaywood) ..	E. Burney-Young, Esq.	5	0	8	134	806	31·75	..
d Cocking Rectory	Mrs. Randall	5	1	0	350	992	39·07	157
d Elsted (Telegraph House)	The Earl Russell	5	1	0	625	954	37·57	..
d Bepton (Fairfield)	Major W. A. Chauncy	5	0	8	158	827	32·57	..
d Selham (Selham House)	C. C. Lacaita, Esq.	5	1	0	115	882	34·72	..
d Stedham (Rotherhill)	Dr. W. A. Wills	8	1	0	170	960	37·78	146
d Rogate (Durford Abbey Farm) ..	J. Harmsworth, Esq.	5	4	0	156	958	37·71	157
d Petworth Park Gardens	Mr. E. W. Pull	5	1	0	182	864	34·01	144
d Tillington (River House)	Hon. Lady Cunliffe	5	1	0	230	730	28·74	..
d Lodsworth	Lt.-Col. E. O. Hollist, R.A. 8	8	1	6	160	723	28·46	..
d Midhurst (K. Edward VII. San.)	S. L. Baker, Esq.	5	1	0	481	813	32·02	153
d Wisbough Green (Lowfold) ..	B. de F. Osmaston, Esq. .	5	1	6	150	716	28·20	..
d Linchmere (Borden Wood)	Edmund Lamb, Esq.	8	1	0	260	896	35·26	..
d Linchmore (Hollycombe)	J. C. Hawkshaw, Esq.	8	6	6	550	936	36·87	..
d Fernhurst (Blackdown House) .	Lady Philipson Stow	5	1	0	550	866	34·11	149
d Lower Beeding (The Warren) .	Leicester M. Reed, Esq. ...	5	0	10	430	841	33·11	..
d Horsham (Christ's Hospital) .	A. E. Johnson, Esq.	8	1	3	184	736	28·97	168
d Horsham (Wimblehurst)	Miss E. M. Allcard	5	1	0	195	748	29·45	186
3.—ADUR & C. 237 sq. mi.								
d Rottingdean School	G. Mason, Esq.	5	1	0	120	755	29·72	..
d Worthing (Victoria Park)	Dr. R. H. Wilshaw	8	1	0	36	725	28·54	153
d East Preston (Bay Trees)	Rev. J. B. Orme	5	0	9	25	782	30·77	175
d Worthing (Broadwater)	Edwin Apted, Esq.	5	5	6	30	767	30·19	159
d Brighton (Old Steyne)	F. W. Braybon, Esq.	5	1	0	32	794	31·27	169
d Hove (Marine Park)	Dr. A. Griffith	8	1	0	40	775	30·51	165
d Brighton W.W. (Goldstone Bot.)	J. Johnston, Esq., C.E.	8	0	7	140	769	30·26	164
d Brighton W.W. (Lewes Road) .	J. Johnston, Esq., C.E.	8	4	9	140	864	34·03	172
d Brighton W.W. (Shoreham)	J. Johnston, Esq., C.E.	8	1	9	12	759	29·89	156
d Brighton W.W. (Upper Portslade)	J. Johnston, Esq., C.E.	8	1	3	167	820	32·27	175
d Brighton W.W. (Race Hill Res.)	J. Johnston, Esq., C.E.	8	1	0	466	883	34·75	173
d Preston (The Knowle, Withdeane)	P. J. Trouncer, Esq.	8	1	3	100	857	33·75	..
d Falmer (Brighton W. W.)	J. Johnston, Esq., C.E.	8	1	8	209	912	35·91	191
d Patcham (Brighton W. W.)	J. Johnston, Esq., C.E.	5	1	6	207	938	36·94	184
d Bramber (Burletts)	Hatton G. Sugden, Esq. ...	5	3	6	75	940	36·99	164
d Steyning (The Crescent)	Mr. E. Hide	5	1	0	80	903	35·55	..
d Washington Vicarage	Rev. A. H. S. Patrick ...	5	1	0	251	826	32·53	174
d Hurstpierpoint (Danny Park) .	Mr. J. J. Bunney	8	1	3	280	1035	40·74	150
d Ditchling (Sillwood House) ...	E. A. Martin, Esq.	5	2	0	220	939	36·98	..
d Wykehurst Park Gardens	Mr. T. Tyson	5	1	6	360	831	32·72	146
d Cuckfield (Henmead Hall)	Mrs. Maxwell Campbell ...	5	3	5	365	845	33·28	179
d Billingshurst (Duncan's Farm) .	Miss Edith Beck	5	1	0	130	751	29·55	160
d Lower Beeding (Leonardslee) ..	Late Sir E. G. Loder, Bart. 8	8	1	6	250	808	31·82	185
4.—OUSE. 224 sq. mi.								
d Seaford College	Col. F. W. Savage	5	1	6	39	708	28·52	147
d Seaford (Bowden House School)	J. F. Thomas, Esq.	5	1	0	190	735	28·92	164
d Newhaven (Poverty Bottom WW)	J. T. Bickford, Esq.	8	1	1	51	771	30·37	153
d Lewes (Cobbe Place)	Sir F. A. Bosanquet, K.C. .	5	0	10	30	906	35·66	148
d Lewes W. W. (Kingston)	A. Wells, Esq.	8	1	3	13	968	38·09	195
d Framfield (High Cross)	Maj. R. Lawrence Thornton	5	0	9	195	826	32·53	..
d Uckfield (Pilt Down)	Messrs. J. Dennett & Sons. ..	..	..	..	150	822	32·37	150
d Haywards Heath (Gower Road)	Mr. J. F. Shirley	5	3	4	242	712	28·03	177
d Buxted Park	Viscount Portman	8	1	0	94	947	37·29	186
d Buxted (Strawberry Hall)	C. Rintoul, Esq.	5	1	0	180	845	33·28	170
d Buxted (Hadlow Down)	C. H. Scriven, Esq.	5	1	6	350	845	33·27	183
d Mayfield (Five Ashes)	Miss Emily Aston	5	1	5	300	843	33·19	191
d Lindfield (The Bungalow)	Mrs. M. Weedon	5	0	11	177	805	31·68	198
d Ardingly (Lywood House)	G. Forrester Scott, Esq. ...	5	0	9	240	837	32·94	192
d Ardingly (Wakehurst Place) ...	G. W. E. Loder, Esq.	8	1	3	437	874	34·40	194
d Horsted Keynes (Birchgrove) .	Miss G. C. Price-Davies ..	5	0	9	400	749	29·49	190
d Balcombe (The Gables)	Mr. G. J. Warren	8	1	3	358	855	33·66	193

DIVISION II.—SOUTH-EASTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
		in.	ft.	in.	ft.	mm.	in.	
SUSSEX—(con.).								
4.—OUSE—(con.).								
d Balcombe (Stockcroft)	R. Newton, Esq.	5	1	1	341	868	34·16	189
d Balcombe (Waterworks)	F. Martin, Esq., C.E.	8	1	0	471	881	34·70	..
Balcombe (Highley Manor)	Mr. B. T. Brooks.	8	1	6	420	1025	40·37	190
5.—GUCKMERE & C. 189 sq. mi.								
d Beachy Head	The Air Ministry	8	1	0	506	715	28·13	164
d Eastbourne (Wilmington Sq.)	Dr. W. G. Willoughby	5	1	0	36	800	31·52	171
Eastbourne (Staveley Cross)	J. Weston, Esq.	5	1	6	40	805	31·70	168
d Eastbourne (Arundel Road)	Miss Woodd	8	1	6	87	826	32·54	..
Eastbourne (Arundel Road)	J. C. Wright, Esq.	5	1	0	70	835	32·86	..
d West Dean	A. J. Howard, Esq.	8	1	0	112	716	28·17	176
d Litlington (Plough & Harrow Inn)	A. J. Howard, Esq.	8	1	0	19	927	36·49	147
d Willingdon Sewage Farm	T. E. Varley Kirtlan, Esq.	5	1	0	24	815	32·10	146
d Pevensey Pumping Station	T. E. Varley Kirtlan, Esq.	5	1	0	12	735	28·92	145
d Pevensey Bay Pumping Station	T. E. Varley Kirtlan, Esq.	5	1	0	7	705	27·77	145
d St. Leonards (W. Marina Gdns)	W. Ruskin Butterfield, Esq.	8	1	0	22	682	26·83	174
d St. Leonards (Gensing Gardens)	W. Ruskin Butterfield, Esq.	8	1	0	179	681	26·81	192
d Hailsham Vicarage	Rev. F. Clyde Harvey	5	1	0	105	845	33·26	145
d Hailsham (Magham Down)	E. M. Bear, Esq.	5	1	0	90	757	29·82	148
d Hastings (Newgates)	(R) P. H. Palmer, Esq., C.E.	8	5	6	240	736	28·97	155
d Hastings (Halton Reservoir)	P. H. Palmer, Esq., C.E.	8	0	10	301	756	29·75	159
d Hastings (Fairlight Reservoir)	P. H. Palmer, Esq., C.E.	8	0	10	517	702	27·65	147
d Hastings (Cemetery)	Walter Field, Esq.	5	0	8	478	683	26·89	175
d Ninfield (Hazard's Grn Pmp. St.)	C. P. King, Esq.	8	0	10	74	709	27·91	179
d Westfield Vicarage	Rev. E. J. Morgan	5	5	6	101	770	30·31	191
d Horeham Road (Coxlow)	Miss P. C. Harrison	5	1	0	260	782	30·80	180
d Horeham Grange	W. F. Beauford, Esq.	5	1	2	260	836	32·90	175
d Horeham Rd. (Hollycroft Cott.)	J. Hamlin, Esq.	5	1	0	300	836	32·90	171
d Heathfield (The White Cottage)	J. F. Leigh Clare, Esq.	5	1	0	500	832	32·77	174
Heathfield (South Ridge)	P. Lennox Wright, Esq.	8	1	3	560	909	35·80	177
6.—ROTHER. 194 sq. mi.								
Icklesham Vicarage	Rev. Philip Houghton	5	0	6	110	574	22·61	..
d Winchelsea (Mariteau House)	C. W. Campion, Esq.	5	1	0	120	721	28·39	175
Brede Pumping Station	P. H. Palmer, Esq., C.E.	8	0	10	50	842	33·15	170
Udimore (The Hammonds)	J. G. Mair-Rumley, Esq.	8	1	0	144	638	25·11	156
d Beckley (Little Harmers)	B. E. de N. Ramus, Esq.	5	1	0	150	809	31·85	173
d Heathfield (Tottingworth Park)	Mr. J. Masson	5	1	0	500	898	35·36	177
d Northiam (Great Dixter)	Nathaniel Lloyd, Esq., OBE	8	1	0	210	774	30·47	162
d Wadhurst (The Olives)	Miss Edith P. Luck	5	1	0	380	848	33·40	182
d Hurst Green (Boarzell)	Sir F. W. Fison, Bart.	8	1	0	270	774	30·48	174
7.—MEDWAY. 117 sq. mi.								
d Crowborough (Jarvis Brook)	Crowborough Water Co.	5	1	0	325	910	35·84	177
d Crowborough (Uckfield Lodge)	Late J. J. S. Driberg, Esq.	8	1	0	796	945	37·19	188
d Crowborough (Te Whare)	Miss Hames	5	1	0	796	1002	39·43	205
d Wadhurst (Lower Cousley Wd)	F. Wilkin, Esq.	5	1	0	416	768	30·23	178
d Forest Row (Wych Cross Place)	D. W. Freshfield, Esq., D.C.L.	5	1	0	600	879	34·60	..
d Forest Row (Hindleap Lodge)	Viscount Bryce, F.R.S.	5	1	6	620	892	35·13	169
Forest Row (Charwood Farm)	A. Hoare, Esq.	5	1	0	350	799	31·46	..
d Coleman's Hatch (Holly Hill)	J. MacAndrew, Esq.	5	1	0	355	919	36·18	172
d Eridge Green (Danegate)	Sir Horace Walpole, K.C.B.	5	0	10	410	877	34·51	170
d Frant (Henley House)	Rev. E. Malden	5	1	6	440	856	33·69	189
d Frant (Eridge Castle)	Mr. A. Wilson	5	2	0	400	808	35·37	180
Frant (Highfield)	C. M. R. Cleeve, Esq.	5	2	3	413	803	31·60	..
d Crawley Down (The Grange)	T. H. W. Buckley, Esq.	5	1	0	430	859	33·82	185
d East Grinstead (Highfields)	G. Mason, Esq.	5	1	0	400	732	28·81	169
d E. Grinstead (Brockhurst Obsy)	J. F. Hanbury, Esq.	8	1	0	435	819	32·26	191
8.—THAMES—Mole. 27 sq. mi.								
d Worth (South Hill)	Miss R. M. Ravenshaw	8	1	6	558	911	35·85	189
d Worth (Worth Lodge)	C. W. Nix, Esq.	5	3	0	340	885	34·84	201

DIVISION II.—SOUTH-EASTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with .01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
SUSSEX—(con.).		in.	ft.	in.	ft.	mm.	in.	
9.—THAMES—Wey. 10 sq. mi.								
d Liphook (Ripsley)	W. D. Bosanquet, Esq. ...	5	1	0	400	908	35.73	169
HAMPSHIRE. (Area, 1622 sq. mi.)								
1.—ISLE OF WIGHT. 150 sq. mi.								
d Chale (Blackgang)	James Gibb, Esq.	5	2	0	350	658	25.90 ?	..
d Ventnor (Flint Cottage)	J. S. Ineson, Esq.	5	1	0	99	796	31.33	163
d Ventnor (Royal National Hos.)	Miss M. Gibson	5	1	0	60	782	30.81	176
d Shanklin (Pomona Road)	E. C. Cooper, Esq., C.E. ...	8	1	0	184	904	35.57	158
d Sandown (Free Library)	C. E. Gilchrist, Esq.	8	1	0	30	860	33.86	183
d Brighstone Rectory	Rev. E. W. Silver	5	1	0	100	782	30.80	..
d Brighstone (Pitt Place)	A. A. H. Wykeham, Esq. ...	8	1	0	200	1013	39.88	..
Totland Vicarage	Mrs. Hall	5	0	11	150	734	28.90	168
d Totland Bay (Aston House)	J. Dover, Esq.	8	1	3	145	757	29.79	165
d Bembridge (The Grange)	Major F. A. Edwards ...	5	0	9	100	801	31.54	149
d Ryde (New Lodge, S. John's Pk)	Mrs. Dobie	5	1	1	147	899	35.39	190
Ryde (Perivale)	Major E. C. Murray	5	1	3	193	858	33.77	149
d Ryde (Pier Street)	G. Nicholson, Esq.	12	10	8	35	802	31.57	..
d Ryde (Esplanade Gardens)	F. B. Goodman, Esq.	8	1	3	6	792	31.19	154
d Wootton (Fernhill)	Major C. G. Brodie	8	0	6	118	829	32.64	144
d Binstead (Quarr Hill)	Dr. J. Winthrop Woodruff	5	0	10	100	811	31.92	148
d East Cowes (Spring Hill)	G. Shedden, Esq.	5	1	0	121	792	31.17	160
d Cowes W. W. (Broadfields)	J. W. Webster, Esq., C.E. ...	5	1	0	161	797	31.39	150
d Cowes (Upper Moor Green)	J. G. K. Day, Esq.	5	4	0	160	806	31.75	161
2.—STOUR. 32 sq. mi.								
Bournemouth (Pleasure Gdns)	C. Dales, Esq.	5	1	0	41	892	35.12	180
d Bournemouth (West Cliff)	Rev. G. A. Rideout	5	1	0	145	898	35.37	184
d Bournemouth (Rodney House)	S. Hyla Greves, Esq.	5	1	0	145	850	33.45	165
m Bournemouth (Rodney House)	S. Hyla Greves, Esq.	5	1	0	145	847	33.36	..
d Bournemouth (Vale View)	C. Dales, Esq.	5	1	0	145	872	35.34	194
d Christchurch (Heron Court)	The Earl of Malmesbury ...	5	1	2	25	979	38.56	170
3.—EAST AVON & G. 114 sq. mi.								
Ringwood (West Mount)	R. F. Williams, Esq.	5	1	0	100	950	37.39	181
d Fordingbridge (Cuckoo Hill)	Heywood Sumner, Esq. ...	5	1	0	150	922	36.31	155
Fordingbridge (Dockens)	E. W. Poore, Esq.	8	0	8	140	875	34.46	168
d Fordingbridge (Oaklands)	S. B. Rake, Esq.	8	1	0	135	862	33.92	176
4.—TEST & SOLENT. 551 sq. mi.								
d Milford-on-Sea (Salt Grass)	A. C. G. Heygate, Esq. ...	5	1	0	6	790	31.11	150
Milford-on-Sea (Milford House)	E. L. Agar, Esq.	5	0	8	23	738	29.04	163
d Lymington (The Salterns)	P. A. Ouvry, Esq.	5	1	0	4	827	32.55	174
d Milton (Wootton Hill)	J. A. Harman, Esq.	5	2	0	198	941	37.06	144
d Calshot	The Air Ministry	8	3	0	12	656	25.82	150
Burley (Manor House)	Col. F. Willan	5	1	4	210	922	36.28	..
d Hythe (Heathfield, Dibden)	Mr. Jesse Reeves	5	1	3	129	934	36.77	183
Lyndhurst (Cuffnells)	R. G. Hargreaves, Esq. ...	5	1	0	195	993	39.08	..
d Lyndhurst (Allum Green)	Miss S. R. Fenwick	6	0	8	..	945	37.22	148
d Fritham (Fritham House)	H. H. S. Northcote, Esq. ...	5	1	0	399	994	39.13	157
d Southampton (East Park)	Col. Sir C. F. Close, K.B.E.	8	1	0	66	850	33.48	171
Southampton (Shirley)	J. A. Crowther, Esq., C.E. ...	5	8	0	70	785	30.90	156
m Southampton Common Res.	E. C. Rodda, Esq., C.E. ...	5	1	0	193	813	32.02	..
d Cadnam (Copythorne House)	N. M. Lawrence, Esq.	5	3	0	130	943	37.12	174
Melchet Park	Mr. F. Clipstone	5	3	3	200	921	36.26	..
d Romsey (Timsbury)	(R) D. Kitchingman, Esq., C.E.	8	1	8	96	800	31.50	170
d Braishfield Manor	Alfred C. King, Esq.	5	1	2	206	858	33.79	165
West Tytherley (Buckholt)	R. J. Townshend, Esq. ...	5	1	0	410	822	32.36	172
Horsebridge (Bossington House)	W. H. Deverell, Esq.	8	0	9	92	811	31.94	159
d Ashley Old Manor House	Legh S. Powell, Esq.	5	1	3	235	847	33.36	158
d Ashley (Upper Somborne)	Mr. Charles Alleway	5	1	0	250	849	33.41	165
d Ashley (Upper Somborne)	Mr. Charles Alleway	8	1	0	250	849	33.43	165
d Broughton	W. Steele Tomkins, Esq. ...	5	3	0	125	801	31.52	..
Stockbridge (Houghton Lodge)	Mr. G. Morris	5	1	0	190	703	27.66	..
d Barton Stacey (Moody's Down)	H. J. Gardiner, Esq.	5	1	3	230	797	31.39	167

DIVISION II.—SOUTH-EASTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with .01 in. or more.	
		Diam.	Height Ground	above Sea Level.	1919			
HAMPSHIRE—(con.).		in.	ft. in.	ft.	mm.	in.		
4.—TEST & SOLENT—(con.).								
d Micheldever (Stoke Charity)	Rev. C. B. Lloyd	5	1 0	221	841	33·11	149	
Andover (Anna Valley)	H. H. Goddard, Esq.	5	1 8	200	720	28·34	..	
d Andover Sewage Works	C. Jerome, Esq.	8	1 0	..	720	28·35	144	
d Fyfield Rectory	Rev. E. K. R. Reynolds	5	1 4	260	750	29·52	173	
d St. Marybourne (Bournside)	Prof. C. V. Boys, F.R.S.	5	1 0	300	791	31·13	166	
Oakley (Malshanger)	Major Godfrey Walter	5	1 1	400	823	32·39	155	
d Oakley (Manydown Park)	(R) S. E. Bates, Esq. . . . .	..	1 8	415	780	30·69	..
Hurstbourne Tarrant (Rookery)	R. E. C. Burder, Esq.	5	1 0	331	839	33·04	..	
d Litchfield (Dunley Manor)	Sir Alfred Herbert . . . . .	..	..	..	837	32·97	175
d Vernham Dean (Rowe House)	Adm. E. H. Gamble, C.B.	5	0 7	620	925	36·42	..	
5.—ITCHEN & SPITHEAD. 417 sq. mi.								
d Alverstoke (Monckton House)	J. Blake, Esq.	5	1 3	15	756	29·76	150	
d Portsmouth (Eastney)	A. W. Ward, Esq., C.E.	8	0 6	16	695	27·35	..	
d Portsmouth (Victoria Park)	Dr. A. Mearns Fraser	5	1 0	15	734	28·89	154	
d Hayling Island (Richmond Ho.)	E. S. McEuen, Esq.	5	1 2	16	771	30·36	141	
d Porchester (Noel Cottage)	Miss R. M. Frost	5	1 9	..	707	27·85	..	
d Fareham (Burpham House)	W. S. Stevenson, Esq., M.D.	5	1 6	30	762	29·99	140	
d Fareham (The Mount)	Sir H. R. Pink	5	1 0	250	747	29·40	144	
d Fareham (Roche Court)	Mrs. H. F. Rawstorne	5	1 0	104	852	33·56	157	
d Havant (Farlington)	H. Ashley, Esq., C.E.	5	1 0	77	722	28·43	154	
d Havant (Farlington)	H. Ashley, Esq., C.E.	5	1 0	77	726	28·58	..	
d Havant	H. Ashley, Esq., C.E.	5	1 0	25	748	29·43	161	
d Havant	H. Ashley, Esq., C.E.	5	1 0	25	754	29·67	..	
d Cosham (Purbrook Grange)	Miss F. A. Deverell	8	0 9	100	1059	41·69	147	
d Netley (Lake House)	Miss Pennington	8	1 0	54	861	33·89	172	
d Cowplain (Forest View)	H. C. Pearson, Esq.	5	5 0	222	926	36·44	176	
d Wickham (The Lower House)	Mj.-Gen. Sir CH Powell, KCB	5	1 0	100	825	32·47	..	
Wickham (Park Place)	Lt.-Col. H. R. Farquhar	5	1 0	150	877	34·54	153	
d Southampton (Chapel)	J. A. Crowther, Esq., C.E.	5	6 0	10	821	32·31	155	
d Southampton (Portwood)	J. A. Crowther, Esq., C.E.	5	2 6	10	812	31·95	148	
d Botley (Fairthorne Manor)	Mr. D. F. Lailey	8	1 0	70	895	35·22	165	
Botley (Brook House)	Beckett Powell, Esq.	5	3 2	45	904	35·57	..	
d Botley (Botley Hill)	Lady Jenkyns	5	1 6	36	876	34·47	162	
d Curdridge (Beechcroft)	Miss L. M. S. Pasley	5	1 0	96	856	33·68	163	
d Curdridge (Kitnocks House)	Major C. F. Randolph	5	0 6	185	837	32·96	153	
d Catherington (St. Catherines)	Capt. R. H. Archer, R.N.	5	1 3	370	942	37·10	172	
Catherington House	Mrs. Long	5	1 0	380	976	38·43	159	
d Soberton (Mislingford)	E. T. Hildred, Esq., C.E.	5	1 0	136	848	33·39	162	
d Soberton (Mislingford)	E. T. Hildred, Esq., C.E.	5	1 0	136	845	33·26	..	
d Chalton (Woodcroft)	C. J. P. Cave, Esq.	5	1 0	230	976	38·44	..	
d Bishops Waltham (Palace Ho.)	A. F. Hardy, Esq.	5	1 3	116	862	33·92	158	
Bishops Waltham (Swanmere Ho)	W. H. Myers, Esq.	8	1 0	390	1008	39·69	..	
d Droxford (Uplands)	Miss Bridge	5	1 0	279	933	36·72	188	
d Droxford (Fairfield House)	H. Hamilton Bridge, Esq.	5	1 0	254	892	35·10	175	
d Droxford (Fir Hill)	Cpt. Mackenzie-Grieve, R.N.	5	3 6	212	857	33·74	144	
d Petersfield (Ditcham Park)	C. J. P. Cave, Esq.	8	1 0	555	1009	39·74	177	
d Petersfield (Downley)	C. J. P. Cave, Esq.	5	1 2	374	1049	41·31	..	
d Fair Oak (Fisher's Pond)	G. M. Mathews, Esq.	5	1 0	91	798	31·42	144	
d Otterbourne House	E. Christian, Esq.	5	1 6	111	858	33·77	162	
d Otterbourne (W. W., Shawford)	E. C. Rodda, Esq., C.E.	5	1 0	113	852	33·55	162	
Westbury House Gardens	Cl. H. LeRoy, Lewis, C.B., DSO	5	2 10	296	998	39·29	..	
Winchester (Owslebury House)	W. Welsh, Esq.	5	1 0	365	850	33·46	154	
d Twyford (Pumping Station)	(R) D. Kitchingman, Esq., C.E.	8	1 9	139	812	31·99	153	
d Twyford (Mallards Close)	G. R. Marsh, Esq.	5	1 0	153	810	31·89	148	
d Hursley Park	(R) Sir G. A. Cooper, Bart.	10	1 6	250	802	31·57	162	
Kilmeston Manor	Mrs. Heathcote	5	4 6	323	801	31·53	..	
Petersfield (Broadhanger)	Mrs. R. M. Caulfield	5	1 0	730	1032	40·63	155	
d Winchester (St. Giles' Hill)	Mrs. Wilde	5	1 0	250	785	30·91	155	
d Winchester (St. Giles' Hill)	Mrs. Wilde	5	1 0	215	749	29·48	..	
d Ovington Rectory	Rev. H. F. LaM. Stowell	5	1 0	221	952	37·50	153	
Ovington (Barley Down)	J. Stevens, Esq.	12	3 6	300	925	36·41	170	
Itchenstoke Rectory	Rev. V. E. Skrine	5	1 0	200	841	33·10	153	
d Itchen Abbas (Chilland)	W. J. Arnold, Esq.	5	1 3	200	830	32·69	148	

DIVISION II.—SOUTH-EASTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with .01 in. or more.
		Diam.	Height Ground	above Sea Level.	1919		
HAMPSHIRE—(con.).		in.	ft. in.	ft.	mm.	in.	
6.—ARUN. 32 sq. mi.							
M Petersfield (Sunwood)	C. J. P. Cave, Esq.	5	0	10 479	1034	40.72	..
M Petersfield (The Miscoombe)	C. J. P. Cave, Esq.	5	1	1 262	1032	40.62	..
M Petersfield (Buriton House)	L. G. Bonham Carter, Esq.	5	1	9 293	974	38.36	..
M Petersfield (Nursted)	C. J. P. Cave, Esq.	5	1	0 270	1004	39.51	..
D Petersfield (Weston)	Capt. P. W. Seward	5	1	0 330	1037	40.81	151
Petersfield (Mount, Ramshill)	F. G. Padwick, Esq.	8	1	0 250	1044	41.11	179
D Liss (Overcombe)	Miss Jebb	5	1	0 500	808	31.79	180
D Liss (Highfield)	J. S. Gamble, Esq., CIE, FRS	5	0	9 325	1013	39.87	190
D Liss (The Lodge)	Ernest Latter, Esq.	5	1	3 240	938	36.91	171
D Liss (Berry Grove House)	Col. A. de B. V. Paget	5	1	6 235	921	36.26	165
d Liss (Kippences)	Rev. W. A. H. Thorold	5	0	9 250	931	36.64	..
Greatham (Manor House)	F. Coryton, Esq.	5	0	7 250	909	35.78	..
D Greatham (Le Court)	Sir Heath Harrison, Bart.	5	0	9 350	976	38.42	165
7.—THAMES—Wey. 97 sq. mi.							
D Liphook (Fowley)	E. A. Lee, Esq.	5	1	0 295	945	37.19	167
d Colmer Rectory	Rev. A. C. Hervey	5	1	1 560	920	36.23	..
East Tisted (Rotherfield Park)	Mr. W. H. Yates	5	1	0 550	1085	42.73	182
d East Tisted Rectory	Rev. Roland Errington	5	1	0 437	964	37.94	..
D Newton Valence Vicarage	Rev. A. C. Maclachlan	5	1	0 586	935	36.80	178
D Selborne (The Wakes)	Late Col. A. Bibby	5	1	0 400	1014	39.92	173
D Grayshott	Mrs. Lyndon	5	1	0 661	901	35.48	185
Liphook (Bordon Camp)	The Division Officer, R.E.	8	1	0 265	676	26.62	..
D Alton (Shalden Manor)	J. Gathorne Wood, Esq.	8	3	0 594	937	36.89	173
D Alice Holt Forest	Office of Woods	8	1	0 264	761	29.97	178
8.—THAMES—Loddon. 164 sq. mi.							
D Farnham (Warren Corner)	F. Wilkin, Esq.	5	1	0 560	756	29.76	176
D Upton Grey (Hoddington Ho.)	F. Anderson, Esq.	8	1	0 378	907	35.71	159
D Aldershot (Sewage Works)	Dr. G. W. Routley	5	1	0 231	810	31.90	199
D Greywell	F. J. Garland, Esq.	5	2	6 266	594	23.40	146
d Basingstoke (Pumping Station)	F. R. Phipps, Esq., C.E.	5	0	6 320	721	28.39	147
D Sherborne St. John Rectory	Rev. D. W. Chute	5	1	3 267	751	29.58	169
D South Farnborough	Meteorological Office	8	1	0 234	698	27.48	185
D Winchfield (Elvetham Park)	Mr. G. B. Mitchison	8	1	0 217	732	28.83	180
D Hartley Grange	F. Walkinshaw, Esq.	8	1	0 219	686	27.01	173
D Strathfieldsaye Rectory	Rev. F. Page-Roberts	5	1	0 164	744	29.30	190
D Heckfield (Park Corner)	Miss Martineau	5	1	2 257	713	28.07	172
9.—THAMES—Kennet. 65 sq. mi.							
D Kingsclere (The Rookery)	Dr. R. Maples	5	3	0 327	852	33.94	150
BERKSHIRE. (Area, 722 sq. mi.)							
1.—TEST. 2 sq. mi.							
2.—THAMES—Bourne. 15 sq. mi.							
3.—THAMES—Loddon & C. 162 sq. mi.							
D Wellington College	E. O. Tancock, Esq.	5	1	0 283	810	31.87	184
D Ascot (Winkfield Manor)	C. A. Ferard, Esq.	5	1	0 240	757	29.80	184
D Wokingham (Fieldhouse)	Miss E. Mylne	5	1	0 220	704	27.70	177
D Wokingham (Pinewood)	Medical Superintendent	8	1	0 215	674	26.54	165
D Winkfield (Ryemead)	Mrs. Aubrey Elliott	5	0	10 220	784	30.87	188
D Windsor (Royal Gardens)	Mr. A. MacKellar	5	1	0 88	693	27.28	197
D Windsor (Osborne Road)	Miss M. G. Cookson	8	1	0 88	700	27.56	188
D Maidenhead (Hall Place)	Sir G. A. C. East, Bart.	8	1	2 275	739	29.10	171
Remenham Hill (Wedmore)	Lt.-Col. C. D. Burnell D.S.O.	5	1	6 300	826	32.52	172
D Hambleden Lock	Mr. S. J. Bourner	5	2	0 120	815	32.08	175
D Bisham Vicarage	Rev. W. Farrer	5	1	0 100	712	28.04	164
D Marlow (Temple House)	Mrs. Owen Williams	5	1	0 106	790	31.09	200
4.—THAMES—Kennet & C. 224 sq. mi.							
d Hampstead Marshall (Redhill)	Mrs. Lewis	5	1	0 400	865	34.04	..
Mortimer (Wokefield Park)	A. Palmer, Esq.	5	4	0 220	727	28.62	156
D Brimpton (Stonehouse)	F. Hadden, Esq.	5	0	7 350	767	30.19	162

DIVISION II.—SOUTH-EASTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with .01 in. or more.	
		Diam.	Height Ground	above Sea Level.	1919			
BERKSHIRE—(con.).		in.	ft.	in.	ft.	mm.	in.	
4.—THAMES—Kennet & c.—(con.).								
D Newbury (Greenham Common)	H. L. Bowman, Esq., D.Sc.	5	1	0	328	854	33·61	171
Newbury (Grammar School)	H. Liggins, Esq.	5	0	9	279	804	31·64	153
D Newbury (Andover Road)	J. H. Spackman, Esq.	5	1	0	329	836	32·92	182
D Upton Nervet Rectory	Rev. A. E. Brisco Owen	8	1	0	308	789	31·08	183
D Shinfield (University Col. Farm)	Prof. W. G. Duffield	5	1	0	201	710	27·96	151
D Bucklebury Place	Dr. Carl Langer	5	1	0	409	799	31·47	152
D Beenham House	Capt. W. Waring	8	2	3	315	780	30·72	158
D Reading (Leighton Pk. School)	C. I. Evans, Esq.	5	1	0	265	626	24·65	155
D Reading (Northcourt Avenue)	R. Osmond, Esq.	5	1	0	213	728	28·65	178
D Reading W. W. (Bath Road)	L. C. Walker, Esq., C.E.	5	1	8	218	718	28·27	163
D Reading (Forbury Gardens)	J. Bowen, Esq., C.E.	5	1	5	145	750	29·54	178
D Reading (University College)	Prof. W. G. Duffield	5	1	0	153	722	28·44	170
Reading (Victoria Square)	W. Haynes, Esq.	5	1	0	145	741	29·17	167
d Reading (Caversham Lock)	R. A. Swarbrick, Esq.	5	3	5	124	591	23·28?	..
Lambourn (Clarionville)	F. Gullett, Esq.	5	1	6	500	779	30·66	147
5.—THAMES—Ock & c. 319 sq. mi.								
D Reading (Englefield)	J. H. Benyon, Esq.	5	1	1	175	788	31·04	158
D Frilsham House	Mr. W. E. Austen	5	1	0	370	810	31·88	164
d Yattendon Court	Mr. F. Pitman	5	1	0	450	752	29·60	..
Hampstead Norris	John Brown, Esq.	5	1	0	300	766	30·14	174
Farnborough Rectory	Rev. J. B. H. Whitehurst	5	1	0	713	784	30·88	174
D Upton	Miss Fry	5	1	0	240	697	27·44	177
D Upton (Prospect House)	C. S. Grant, Esq.	5	1	0	250	743	29·24	176
D Wantage (King Alfred School)	The Head Master	5	1	0	314	681	26·81	145
Steventon (Milton Hill)	R. H. Betteridge, Esq.	5	1	6	300	720	28·33	..
D Wallingford (Woodlea)	G. F. Slade, Esq.	5	0	6	200	690	27·15	145
Wallingford Castle	Miss Hedges	5	1	0	175	751	29·58	165
D Wallingford (Shillingford Hill)	Lt.-Col. G. Hart Dyke	5	1	4	218	700	27·57	168
D Little Wittenham	J. Latham, Esq.	5	2	0	189	610	24·03	156
D Abbots Wittenham Rectory	Rev. W. F. B. Ward	5	1	0	190	629	24·76	174
d Long Wittenham (Manor Ho.)	Adm. W. R. Clutterbuck	12	1	0	170	703	27·69	..
D Long Wittenham (Willington)	H. J. Hewett, Esq.	5	1	0	167	716	28·17	170
D Faringdon (Bleak House)	Miss Turner	5	1	0	363	673	26·49	173
d Abingdon (Twickenham House)	Mr. G. Saxby	5	10	0	210	583	22·97	..
d Abingdon (Sewage Works)	Raphael V. Hall, Esq., C.E.	5	0	6	169	643	25·30	..
D Abingdon (Union)	Mr. C. Howard	5	1	0	196	601	23·66	168
d Abingdon (Fitzharris)	Mrs. Blakeney	8	0	10	185	556	21·88	..
Abingdon (Donnington)	R. W. Langford, Esq.	5	1	6	196	624	24·58	148
Abingdon (Northcourt House)	M. T. Tatham, Esq.	5	1	0	190	600	23·61	..

DIVISION III.—SOUTH MIDLAND COUNTIES.

MIDDLESEX. (Area, 232 sq. mi.)

1.—THAMES—Colne & Brent. 185 sq. mi.

D Weybridge (Shepperton Lock)	R. A. Swarbrick, Esq.	5	1	0	41	648	25·50	153
D Sunbury (Sunbury Lodge)	F. A. Wallroth, Esq.	5	3	9	38	646	25·44	160
D Shepperton (Charlton Court)	Met. Water Board	8	1	0	42	692	27·26	184
D Hampton	Met. Water Board	8	1	0	50	595	23·42	180
D Hampton (The Manor House)	J. Hughes, Esq.	5	2	3	43	566	22·27	156
D Staines (Belle Vue)	J. Gundry, Esq.	5	1	0	51	701	27·59	186
D Staines Reservoir	Met. Water Board	5	1	0	50	662	26·05	183
D Twickenham (Sewage Works)	F. W. Pearce, Esq., C.E.	5	1	7	37	639	25·17	170
D Hounslow (S. Stephen's Vicarage)	Rev. R. Dixon Box	5	1	0	67	663	26·10	177
d Sipson (Hollycroft)	Mr. W. J. Mitchell	5	1	0	94	602	23·69	..
D Kew Bridge (Waterworks)	Met. Water Board	8	1	0	36	654	25·74	162
D Chiswick (Grove Park)	A. E. Brounger, Esq.	5	1	1	18	610	24·03	170
D Ealing (Webster Gardens)	H. M. Baker, Esq.	5	1	6	97	665	26·17	168
Ealing (Longfield Avenue)	W. R. Hicks, Esq., C.E.	5	0	9	114	643	25·30	162
D Ealing (St. Stephen's Road)	H. W. Peal, Esq.	5	0	10	156	686	26·99	187
D Ealing (Hanger Hill Reservoir)	Met. Water Board	5	1	0	206	696	27·42	152

DIVISION III.—SOUTH MIDLAND COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
MIDDLESEX—(con.).		in.	ft.	in.	ft.	mm.	in.	
1.—THAMES—Colne & Brent—(con.).								
d Perivale(NorthernSewageFarm) W. R. Hicks, Esq., C.E. . .		5	0	5	56	704	27·70	193
d Uxbridge (Frays Lodge) J. C. Hibbert, Esq.		8	1	6	125	744	29·31	187
d Willesden Reservoir Met. Water Board.		5	2	6	199	668	26·31	170
d Willesden Green (Strode Road) Miss Lamport		5	1	0	150	720	28·35	175
d Willesden (Richmond Avenue) W. Godden, Esq.		5	6	0	176	666	26·23	161
d Willesden (Stonebridge Fm.) (R) F. Wilkinson, Esq., C.E. . .		10	5	9	100	652	25·67	166
d Highgate (North Hill) L. J. Tatham, Esq.		5	1	0	400	671	26·42	179
d Highgate (North Hill Depôt) . . E. J. Lovegrove, Esq., C.E. . .		5	5	4	309	683	26·90	166
d Harrow(Bessborough Rd.Depôt)J. P. Bennetts, Esq., C.E. . .		5	1	0	215	722	28·44	181
d Golders Green (Highfield Av.) . A. E. Payne, Esq.		5	1	0	175	747	29·42	174
d Hendon (Sewage Works) . . (R)S. S. Grimley, Esq.		6	1	6	153	650	25·59	157
d Hendon (Central School) J. W. Butler, Esq.		5	1	4	200	744	29·28	177
d Wealdstone House Miss H. O. E. Cobb		5	1	0	236	602	23·72 ?	159
d Hatch End (Royston Park) . . . W. J. Hill, Esq.		5	2	2	286	703	27·66	173
d Harefield (Harefield House) . . Walter J. B. Byles, Esq. . .		5	0	8	290	784	30·85	153
d Northwood (Haslemere) Miss McBean		5	1	0	240	717	28·22	145
d Harrow Weald (Hill House) . . A. Crossman, Esq.		5	3	6	284	715	28·16	185
d North Finchley (Rowsley) . . . Miss M. Shoults		5	0	8	295	732	28·82	165
d Mill Hill (Mylesdown) Master Willoughby Salter . .		5	1	0	330	632	24·88	..
d Mill Hill (Cleveland) Mrs. Stewart King		5	1	0	400	723	28·48	184
d Barnet (Dyrham Park) Mr. H. Juniper		5	1	0	310	714	28·10	..
d Potters Bar (Mount Grace) . . . J. Forbes, Esq.		5	1	3	375	762	29·98	171
d Potters Bar (Little Heath) . . . Henry Ellis, Esq.		5	1	0	375	806	31·74	176
2.—THAMES—Lea. 47 sq. mi.								
d Stroud Green (Oakfield Road) . E. A. W. Madge, Esq. . . .		5	0	11	206	634	24·94	176
d Crouch End (Barrington Road) . E. J. Lovegrove, Esq., C.E. . .		8	3	10	122	700	27·57	191
d Harringay(WightmanRdDepôt) E. J. Lovegrove, Esq., C.E. . .		8	23	3	113	572	22·50	174
d Harringay (Wightman Road) . . L. R. Bennett, Esq.		5	1	0	140	612	24·10	175
d Highgate (Avenue Road) Miss M. Nicholson		5	1	0	212	685	26·96	168
d Tottenham (Drayton Road) . . . Medical Officer of Health . .		5	1	3	51	635	24·99	159
d Hornsey (High Street) Met. Water Board.		5	1	0	109	677	26·64	191
d Muswell Hill (Grand Avenue) . G. Michael Williams, Esq. . .		5	1	0	317	706	27·79	186
d Muswell Hill (Page's Lane)* . . Miss Abethell		5	0	8	310	761	29·96	190
d Muswell Hill (Sewage Farm) . . E. J. Lovegrove, Esq., C.E. . .		8	4	5	214	700	27·55	186
d Alexandra Pk. (Grove Avenue) Ernest A. Lee, Esq.		5	1	0	235	714	28·10	175
d Wood Green (Maryland Road) . Mr. F. C. Hornsey		6	1	0	110	670	26·39	184
d Wood Green (Town Hall) . . . (R)C. H. Croxford, Esq. . . .		8	5	6	126	536	21·11	155
d Finchley (Victoria Park) H. Catchpole, Esq., C.E. . .		5	1	0	272	718	28·28	176
d Palmers Green(Broomfield Pk.) R. Phillips, Esq., C.E.		8	1	0	138	684	26·95	157
d Ponders End (Bylock Hall) . . . H. E. Freir, Esq.		5	1	0	50	665	26·17	178
d Ponders End Pumping Station. Met. Water Board.		8	1	0	45	653	25·71	160
d Enfield (Southbury Road) . . . Met. Water Board.		5	1	0	223	677	26·65	169
d Enfield (Public Offices) Dr. W. P. Warren		8	43	0	148	662	26·07	177
d Enfield(CarisbrookeCullodenRd)J. McEwan, Esq.		5	1	0	204	715	28·15	168
d Enfield (Roselands, Turkey St.) E. S. Rashleigh, Esq. . . .		5	0	7	80	641	25·24	171
d Waltham (Sewage Works) J. E. Sharpe, Esq.		5	1	0	61	650	25·58	157
HERTFORDSHIRE. (Area, 635 sq. mi.)								
1.—THAMES—Thame. 10 sq. mi.								
Tring (Pendley Manor) Mrs. Williams		5	2	0	420	774	30·49	187
2.—THAMES—Colne. 199 sq. mi.								
d Northwood (Gate House) O. S. Holt, Esq.		8	4	6	448	793	31·22	189
d Bushey Heath (California L.) . . K. Cooper, Esq.	669	26·34	..
d Rickmansworth(CroxleyGreen). S. Ingleby Oddie, Esq. . . .		5	0	9	262	732	28·80	151
d Totteridge (West Lodge) W. H. Newman, Esq.		5	1	0	390	732	28·83	179
d Watford (Oxhey Grange) J. Doyle Penrose, Esq. . . .		5	1	0	295	718	28·28	171
d Watford (Bushey Hall Road) . . J. Durst, Esq.		5	1	2	230	780	30·73	188
d Bushey (Colne Valley W. W.) . . C. P. Sinclair, Esq.		5	1	2	200	686	26·99	162
d Elstree (Aldenham House) . . . Mr. Edwin Beckett		10	4	9	305	678	26·70	153

* Formerly called Grand Avenue.

DIVISION III.—SOUTH MIDLAND COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with ·01 in. or more.	
		Diam.	Height Ground	above Sea Level.	1919			
HERTFORDSHIRE—(con.).		in.	ft.	in.	ft.	mm.	in.	
2.—THAMES—Colne—(con.).								
D Watford (London Orphan Sch.)	Rev. E. Hartley-Parker	5	1	0	230	825	32·49	187
D Watford (Park Road)	E. J. Shinn, Esq.	5	1	6	263	755	29·74	193
D Watford (Weetwood)	Mrs. J. Hopkinson	5	1	0	269	778	30·61	190
D Shenley (Kitwells)	T. H. Riches, Esq.	5	1	0	420	766	30·14	157
M Shenley (Kitwells)	T. H. Riches, Esq.	5	1	0	420	739	29·10	...
Sarratt (Goldingtons)	(R) P. Clutterbuck, Esq.	8	4	0	380	812	31·97	160
Chipperfield (Little Callipers)	A. W. Rivington, Esq.	5	1	0	407	764	30·09	...
D King's Langley (Langley Rise)	T. Goldring, Esq.	5	1	0	360	785	30·89	170
King's Langley (Barnes Lodge)	J. C. Shorrocks, Esq.	5	1	0	475	849	33·44	185
D London Colney (Bowmans)	C. Barwell Field, Esq.	5	1	0	235	767	30·20	188
D Hemel Hempstead (Apsley Mills)	Messrs. J. Dickinson & Co.	24	1	4	268	827	32·57	199
D St. Albans (Hill End Asylum)	G. Goodchild, Esq.	5	1	0	295	741	29·17	147
D St. Albans (Holmhurst)	Mrs. Jay Jones	5	0	8	310	831	32·72	195
D St. Albans (County Museum)	G. E. Bullen, Esq.	5	1	0	389	755	29·73	172
D St. Albans (Jennings Road)	M. L. Nicholas, Esq.	5	1	6	380	804	31·65	191
D Gorehambury	Mr. J. Ison	5	1	0	423	814	32·04	179
D Berkhamsted (Anglefield)	E. T. Browne, Esq.	5	1	0	450	867	34·15	189
D Berkhamsted Golf Club	T. S. Wheeler, Esq.	8	1	0	550	852	33·56	184
d Tring (Cowroast Lock)	W. Yates, Esq.	5	3	6	394	858	33·79	...
D Childwickbury Gardens	Mr. T. Nutting	8	1	0	400	905	35·64	171
D Gt. Gaddesden (Golden Pars' nage)	Elliott Kitchener, Esq.	8	1	0	536	887	34·92	191
Harpenden (Rothamsted)	Lawes Agricultural Trust	5	0	9	424	765	30·12	176
D Harpenden (Rothamsted)	Lawes Agricultural Trust	8	0	9	424	766	30·14	189
Harpenden (Rothamsted)	Lawes Agricultrl. Trust 72 x 87	0	9	424		840	33·05	181
3.—THAMES Lea. 340 sq. mi.								
D New Barnet (Gas Works)	F. J. Bancroft, Esq., C.E.	8	1	0	217	771	30·34	158
D New Barnet (Green Hill Park)	Mr. W. Lockyer	5	1	10	289	762	30·00	167
D Barnet (Summerhill)	F. A. Milne, Esq.	5	1	0	400	717	28·23	183
D Barnet (Bedford Avenue)	Miss Haines	5	1	4	350	764	30·08	194
D Hadley (Hadley Bourne)	"The Barnet Press"	5	1	0	428	780	30·70	181
D Cheshunt (Manor House)	J. E. Sharpe, Esq.	5	1	0	83	663	26·09	171
D Cheshunt (Goff's Oak House)	W. M. Cuningham, Esq.	5	1	0	310	691	27·21	176
D Cheshunt Yard	Met. Water Board	5	1	0	100	635	25·00	175
D Cheshunt Park	Mr. W. Standerwick	5	0	9	209	610	24·03	187
D Cheshunt (Darnicle Hill P. Stn.)	J. E. Sharpe, Esq.	5	1	0	250	678	26·68	170
D Northaw (Vernon's House)	Mrs. James Paterson	5	1	0	400	800	31·48	179
D Broxbourne (Stafford House)	A. F. Newbery, Esq.	5	1	0	118	685	26·97	189
D Hoddesden (Feilde's Weir)	Met. Water Board	8	3	8	95	603	23·74	178
D Haileybury (Hailey House)	P. H. Latham, Esq.	5	1	0	260	669	26·34	171
D Haileybury College	P. H. Latham, Esq.	8	1	0	270	679	26·73	176
D Gilston Park	Mr. E. Leach	8	1	0	175	696	27·42	170
D Hatfield (Surveyor's Office)	J. S. Killick, Esq., C.E.	5	1	0	270	683	26·89	177
D Hertford (Bayfordbury)	H. W. Clinton Baker, Esq.	8	1	2	250	683	26·89	179
D Stanstead Abbots (Warrax)	E. H. Barlow, Esq.	5	1	2	110	680	26·78	172
D Hertford (Sewage Works)	Met. Water Board	5	1	0	117	691	27·20	176
D Ware (Red House)	Met. Water Board	5	1	0	115	679	26·74	183
D Ware (Chadwell Spring)	Met. Water Board	5	1	0	140	688	27·09	171
d Widford (Wanns Cottage)	Ralph Abbott, Esq.	8	0	9	...	574	22·59 ?	...
D Welwyn (Codicote Lodge)	Mr. F. A. Akers	5	1	0	340	774	30·49	196
D Much Hadham	T. Woodham Mott, Esq.	5	1	0	212	757	29·80	170
D Bishop Stortford (Thorley)	Laurie Frere, Esq.	5	0	8	181	631	24·85	195
d Bishop Stortford (Hadham Rd.)	H. Sheppard, Esq.	5	7	0	175	690	27·18	...
D Standon	F. H. Wace, Esq.	5	1	0	375	668	26·30	166
D Bennington House	Miss E. A. Parker	5	1	0	407	732	28·81	196
D Little Hadham (Hadham Hall)	W. Minet, Esq.	5	0	10	338	688	27·09	163
D Buntingford (Westmill, Coles Pk)	T. Greg, Esq.	5	1	0	375	686	27·00	176
D Hitchin (Preston)	R. de V. Pryor, Esq.	8	2	6	480	732	28·82	188
D Weston Park	Late M. R. Pryor, Esq.	5	0	10	470	749	29·49	180
D Furneaux Pelham (The Brewery)	G. Warren Bindloss, Esq.	5	1	0	300	720	28·34	177
D Royston (Therfield Rectory)	Rev. H. R. Humphreys	5	1	0	513	771	30·37	176
4.—OUSE. 86 sq. mi.								
D Offley (School House)	C. W. Mears, Esq.	5	1	0	526	778	30·65	174
D Offley Vicarage	Rev. E. P. Gatty	5	1	6	525	795	31·29	181

DIVISION III.—SOUTH MIDLAND COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with .01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
HERTFORDSHIRE—(con.).		in.	ft.	in.	ft.	mm.	in.	
4.—OUSE—(con.).								
D Graveley Rectory	Rev. R. E. C. Walker.	5	0	10	325	793	31·22	169
D Hitchin (The Chilterns)	F. Ransom, Esq.	5	1	0	300	729	28·71	187
D Hitchin (Chiltern Road)	A. Latchmore, Esq.	5	1	0	297	735	28·93	181
D Hitchin (High Down)	Miss E. Pollard	5	1	1	421	781	30·75	232
D Hitchin (Roxley House, William)	Mrs. H. Bendixson	5	1	6	375	673	26·51	159
D Letchworth (Sewage Farm)	A. W. E. Bullmore, Esq., C.E.	5	1	0	214	715	28·14	169
D Letchworth (Gernon Road)	A. W. Brunt, Esq.	5	1	0	290	729	28·69	171
D Letchworth (Broadway)	W. C. Steen, Esq., M.D.	5	1	0	310	682	26·85	..
Barley (Dalnyveed)	W. W. Cook, Esq.	5	1	0	300	710	27·94	186
d Ashwell	Dr. R. E. H. Woodforde.	5	1	0	175	641	25·22	..
D Royston (Earlshill House)	J. Phillips, Esq.	8	1	3	225	718	28·25	185
BUCKINGHAMSHIRE. Area, 743 sq. mi.								
1.—THAMES—Cherwell. 30 sq. mi.								
2.—THAMES—Thame. 158 sq. mi.								
D Weston Turville	G. Eland, Esq.	5	1	0	320	607	23·90 ?	156
D Tring (Bulbourne)	W. Yates, Esq.	5	2	3	401	819	32·23	179
Mentmore Gardens	Mr. J. MacGregor	5	1	3	400	719	28·32	..
3.—THAMES—Wye & c. 129 sq. mi.								
D Datchet Vicarage	Rev. James H. Harvey	5	1	0	60	667	26·27	173
D Eton (Tangier Island)	E. A. Stickland, Esq.	5	1	0	68	724	28·49	168
M Slough (Upton)	R. Bentley, Esq.	8	2	0	80	681	26·80	..
D Slough (Upton)	R. Bentley, Esq.	5	2	0	78	718	28·25	196
d Taplow (Hitcham Grange)	Hon. C. S. Irby	5	0	9	200	708	27·88	..
D Stoke Poges (Stoke Court)	H. Allhusen, Esq.	8	1	3	196	720	28·35	145
D Henley-on-Thames (Greenlands)	Lord Hambleden	5	1	0	116	812	31·96	156
D Hedsor	Lord Boston	8	1	0	170	855	33·67	170
D Bourne End (The Bourne)	A. Morse, Esq.	5	1	0	240	794	31·27	155
D Marlow (Thames Bank)	S. H. Wright, Esq.	8	2	0	105	888	34·98	184
D High Wycombe	H. S. Wheeler, Esq.	5	0	11	253	880	34·65	183
d High Wycombe (R. Gram. Sch.)	Capt. F. H. Robinson	8	1	0	545	841	33·10	187
D Penn (Rayners)	Late Sir P. F. Rose, Bart.	5	1	10	547	884	34·80	182
D Hampden House	Earl of Buckinghamshire	5	1	0	695	840	33·09	181
4.—THAMES—Colne. 133 sq. mi.								
D Slough (Langley)	R. H. Major, Esq.	8	0	10	85	675	26·58	169
D Chalfont St. Peter (Chalfont Pk.)	Mr. G. Barrell	5	1	0	201	810	31·89	182
D Chalfont St. Giles (The Stone)	Col. R. W. Phipps.	5	1	0	270	808	31·82	172
D Amersham (St. Mary's Sch.) No. 1	W. Garton, Esq.	5	1	8	340	862	33·94	186
D Amersham (St. Mary's Sch.) No. 2	W. Garton, Esq.	5	1	0	340	865	34·04	192
D Amersham (The Plantation)	G. Weller, Esq.	8	1	0	464	860	33·86	193
D Chesham Bois Rectory	Rev. T. H. Fitzpatrick	5	0	11	530	751	29·55	171
5.—OUSE. 293 sq. mi.								
D Oving House	H. Yates Thompson, Esq.	5	1	0	515	778	30·62	182
M Oving House	H. Yates Thompson, Esq.	5	1	6	515	772	30·38	..
D Swanbourne House	Col. Lord Cottesloe	5	1	0	411	801	31·54	156
D Addington (C. of E. School)	J. H. Webster, Esq.	5	0	7	320	684	26·92	165
Leighton Buz. (Stockgrove Pk.)	Mr. J. Clues	5	1	2	500	681	26·81	149
Stony Strat. (Calverton Limes)	Mrs. Hawkins	5	1	8	230	733	28·86	163
D Wolverton (St. George's Vic.)	Rev. Canon W. L. Harnett	5	1	0	270	698	27·47	181
D Wolverton (The School House)	H. J. Hipsley, Esq.	5	1	0	264	692	27·24	184
d Wolverton (Council School)	H. J. Hipsley, Esq.	5	5	0	263	667	26·25	..
D Newport Pagnell (The Croft)	F. Littleboy, Esq.	5	1	9	191	713	28·06	184
OXFORDSHIRE. Area, 756 sq. mi.								
1.—SEVERN—Upper Avon. 10 sq. mi.								
d Sibford Ferris (Woolman Cottage)	Joshua Lamb, Esq.	5	1	0	570	745	29·33	..
2.—THAMES—Windrush & c. 261 sq. mi.								
D Kenot Rectory	Rev. H. E. Cooper	5	1	0	290	720	28·34	183
d Charlbury (Cornbury Park)	Mr. B. Campbell	5	1	0	435	786	30·96	..
D Charlbury (Wychwood House)	Mrs. J. H. Glen	5	0	8	450	684	26·95	178

DIVISION III.—SOUTH MIDLAND COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.	1919		
OXFORDSHIRE—(con.).		in.	ft. in.	ft.	mm.	in.	
2.—THAMES—Windrush & c.—(con.)							
d Wootton Rectory	Rev. F. R. Marriott	5	1 0	370	764	30·07	160
d Lyneham	R. de M. Pratt, Esq.	5	1 7	351	820	32·27	168
d Glympton Park	Lt.-Col. Barnett	5	2 6	..	724	28·52	..
d Chadlington (Langston House)	Lt.-Col. F. W. Schofield, CMG.	5	1 0	420	751	29·55	155
d Sarsden Gardens	Mr. J. E. Vine	5	0 10	538	691	27·20	..
d Chipping Norton (Bungalow) ..	T. H. Burbidge, Esq.	5	1 0	700	772	30·40	152
d Chipping Norton (Heythrop) ..	Mr. G. A. Kay	12	4 6	600	675	26·58	162
3.—THAMES—Cherwell. 250 sq. mi.							
n Abingdon (Burcote House)	Mr. W. C. Foote	5	1 0	200	662	26·05	145
d Nuneham Park Gardens	Mr. C. E. Munday	8	3 0	280	642	25·26	..
d Oxford (Hincksey Pumping Sta.)	F. C. Cook, Esq., C.E.	8	1 0	187	625	24·60	172
d Oxford (Osney Lock)	Thames Conservancy	5	2 11	191	655	25·80	162
d Oxford (Magdalen College)	J. J. Manley, Esq.	5	1 0	186	631	24·84	180
m Oxford (Magdalen College)	J. J. Manley, Esq.	5	33 11	194	583	22·97	..
d Oxford (Radcliffe Observatory)	Dr. A. A. Rambaut, F.R.S.	8	1 8	210	668	26·30	169
d Oxford (Radcliffe Observy.) (R)	Dr. A. A. Rambaut, F.R.S.	11	2 4	210	666	26·20	167
d Oxford (Northmore Road)	Miss E. M. Tawney	5	1 0	215	645	25·38	164
d Headington (Warneford Asy.) ..	Dr. A. W. Neill	5	1 0	300	630	24·79	162
d Headington (Charlton Lea)	Mr. L. Dawes	5	1 0	300	691	27·19	167
d Elsfield Manor House	Miss M. J. Parsons	5	1 0	355	703	27·66	182
d Islip	Col. G. E. Eliot	5	4 0	200	602	23·68	..
d Charlton-on-Otmoor School	E. Cartwright, Esq.	6	1 3	220	724	28·52	..
d Middleton Park	The Earl of Jersey	5	2 6	326	766	30·16	158
d Steeple Aston (The Grange)	Late Miss E. L. Bradshaw ..	8	1 0	400	767	30·18	170
d Steeple Aston (Hill House)	B. S. Ogle, Esq.	5	0 5	400	749	29·49	181
d West Adderbury (St. Amand's)	Miss M. M. Bradford	8	1 0	320	747	29·40	..
d Adderbury (Cross Hill)	G. H. Norris, Esq.	5	1 1	338	715	28·16	172
d Adderbury (The Rookery)	C. C. Bradford, Esq.	8	1 0	323	723	28·47	167
d Bodicote House	J. F. Starkey, Esq.	8	1 3	388	718	28·27	158
d Bodicote (Draycott House)	F. B. Judge Baldwin, Esq.	5	1 8	391	748	29·46	164
d Bodicote Vicarage	Rev. H. N. Fowler	5	1 0	390	734	28·90	176
d Broughton Rectory	Rev. B. W. Bradford	5	0 6	370	741	29·18	177
d Shenington School Gardens	Rev. A. Blythman	5	1 3	540	886	34·89	179
4.—THAMES—Thame & c. 210 sq. mi.							
d Caversham (Eastfield)	C. M. Powell, Esq.	5	1 0	180	742	29·23	168
d Caversham (Kidmore End Sch.)	T. F. Higgins, Esq.	5	0 11	330	786	30·94	167
d Harpsden (Cray)	B. E. Dunbar Kilburn, Esq.	5	0 9	230	769	30·28	162
d Henley-on-Thames (Peppard)	Rev. Hubert Shears	5	1 0	336	768	30·25	173
d Henley-on-Thames (Hart St.)	A. Edward Hobbs, Esq.	5	1 6	110	778	30·61	172
d Henley-on-Thames (Hart St.)	A. Edward Hobbs, Esq.	5	7 6	116	753	29·64	172
d Henley-on-Thames (Greys Lane)	G. Potter, Esq.	5	0 9	123	742	29·22	151
d Henley-on-Thames (Greys Gr.) ..	Mrs. Wolferston	5	2 0	350	796	31·36	168
d Benson Observatory	W. H. Dines, Esq., F.R.S.	5	1 0	186	664	26·14	169
d Benson Observatory	W. H. Dines, Esq., F.R.S.	8	1 0	186	693	27·30	182
d Dorchester (Bishops Court)	T. Latham, Esq.	5	2 0	168	698	27·49	185
d Culham School House	F. Mitchell, Esq.	5	0 10	180	619	24·36	160
d Clifton Hampden (Manor House)	Lord Aldenham	5	1 0	190	647	25·46	158
d Watlington (Pyrton Manor)	Major H. Ducat Hamersley ..	5	1 0	325	742	29·20	161
d Lewknor (Manor House)	Miss Spencer	5	1 3	360	762	29·99	180
d Wheatfield	A. J. Spencer, Esq.	5	0 8	275	641	25·22	..
d Toot Baldon (Potlands)	D. Clinkard, Esq.	5	1 0	288	635	25·00	153
d Great Haseley (Manor House) ..	F. Gelderd-Somervell, Esq.	5	1 0	280	653	25·70	..
d Thame (Tythrop House)	A. W. Smith, Esq.	6	..	230	700	27·58	147
d Stanton St. John (Woodperry) ..	J. Thomson, Esq.	6	1 0	399	773	30·42	..

5.—OUSE. 25 sq. mi.

NORTHAMPTONSHIRE. Area, 1003 sq. mi.

1.—SEVERN—Upper Avon. 60 sq. mi.

d Winwick Warren	Col. R. H. Ainsworth	8	1 5	648	784	30·86	187
d Naseby Reservoir	T. W. Millner, Esq.	5	1 6	519	815	32·07	197

DIVISION III.—SOUTH MIDLAND COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with .01 in. or more.
		Diam.	Height Ground	above Sea Level.	1919			
NORTHAMPTONSHIRE—(con.).		in.	ft.	in.	ft.	mm.	in.	
2.—THAMES—Cherwell. 77 sq. mi.								
d King's Sutton (Manor House) ..	Sir A. Selby-Bigge	5	1	0	338	739	29.09	150
d King's Sutton School	A. H. Tilbury, Esq.	5	1	0	300	779	30.67	..
d Grimsbury (Banbury W.W.) ..	W. E. Wood, Esq.	5	1	3	320	643	25.31	182
3.—OUSE. 148 sq. mi.								
d Brackley House	Major J. Allen	5	1	0	425	763	30.04	189
Towcester (Easton Neston) ...	J. P. Maitland, Esq.	8	1	0	325	742	29.21	161
d Hartwell Vicarage	Rev. C. Ryder-Macnally ..	5	2	6	405	832	32.75	183
w Hargrave Hall	C. K. Murchison, Esq.	5	1	0	273	680	26.79	..
4.—NENE. 622 sq. mi.								
d Salcey Forest	Office of Woods	8	1	3	370	730	28.76	164
d Blisworth (Crieff House)	A. Westley, Esq.	5	1	0	330	743	29.25	184
d Blisworth	T. W. Millner, Esq.	5	1	6	300	683	26.89	189
d Castle Ashby	R. G. Scriven, Esq.	5	1	0	263	766	30.14	192
d Little Houghton House	Christopher Smyth, Esq. .	5	2	0	270	736	28.98	176
d Northampton (Dallington Av.)	Major C. A. Markham	5	1	0	265	679	26.74	183
d Northampton (General Hosptl.)	Major C. A. Markham ....	..	..	..	..	696	27.42	168
d Northampton (Mental Hosptl.)	Major C. A. Markham ....	..	..	..	..	688	27.07	..
d Northampton (Stimpson Avnue)	F. Tomlinson, Esq., C.E. .	..	..	..	..	659	25.96	..
d Northampton (Cheyne Walk) ..	Major C. A. Markham ....	..	..	..	..	696	27.39	181
d Hazelborough Woods	Office of Woods	8	1	0	241	724	28.53	194
d Daventry (Tunnel End)	T. W. Millner, Esq.	5	1	6	394	724	28.49	196
d Great Brington	Major C. A. Markham	5	2	9	448	646	25.44	..
d Althorp Park	Mr. C. F. Crump	5	1	3	414	721	28.39	166
d Sywell Hall	T. A. Dickson, Esq.	5	1	0	371	737	29.01	179
d Pitsford (Sedgebrook)	Major C. A. Markham	5	1	0	311	700	27.55	170
d Pitsford (Sedgebrook)	Major C. A. Markham	5	1	0	311	698	27.50	..
d Rushden (Alfred Street School)	S. Saddler, Esq.	5	1	3	200	664	26.14	173
d Wellingborough (Brooklands) ..	Dr. H. Hollis	5	..	..	..	661	26.02	169
d Wellingborough (Castle Street)	J. E. Ekins, Esq.	5	4	6	160	687	27.06	182
d Wellingborough (Sewage Works)	R. S. Henshaw, Esq., C.E. .	5	1	0	139	681	26.81	184
d Wellingboro' (Bushfield W.W.)	R. S. Henshaw, Esq., C.E. .	8	0	11	286	684	26.94	187
d Watford Court	Major C. A. Markham	9	1	2	380	745	29.34	175
d Ravensthorpe Reservoir	F. Tomlinson, Esq., C.E. .	..	..	..	339	745	29.33	183
d Ravensthorpe (Coton Mill)	Lt.-Col. G. S. Eunson	5	1	0	355	744	29.29	184
Scaldwell	Capt. R. Soames	5	1	0	404	687	27.04	..
d Lamport Hall Gardens	Mr. F. Howard	8	1	0	440	738	29.04	159
d Lamport Hall	Mr. James Sutherland	8	0	8	440	776	30.57	166
d Raunds (Day School)	L. G. H. Lee, Esq.	8	1	0	204	670	26.39	181
d Kettering W.W. (Cransley)	T. R. Smith, Esq., C.E. .	8	0	6	275	703	27.67	172
d Kettering (Sewage Works)	T. R. Smith, Esq., C.E. .	8	0	11	199	710	27.96	187
d Kettering W.W. (Thorpe Malsor)	T. R. Smith, Esq., C.E. .	5	0	11	352	728	28.65	179
d Kettering W.W. (Clover Hill) ..	T. R. Smith, Esq., C.E. .	5	0	7	344	752	29.59	171
d Kettering (Warkton)	Mr. R. H. Brett	5	1	3	275	694	27.34	147
Rothwell (Loddington)	Mr. J. Olin	5	1	0	400	776	30.54	150
d Thrapston (Drayton House) ..	Mr. G. Medcraft	5	1	6	220	763	30.04	175
d Aldwinkle St. Peter Rectory ..	Major C. A. Markham	5	0	11	175	674	26.55	156
d Rushton Manor	R. A. Willows, Esq.	5	1	0	400	814	32.03	172
d Rothwell (Shotwell Mill)	W. T. Lynam, Esq.	5	1	6	340	730	28.73	176
d Barnwell (Lilford Hall)	Mr. F. W. Gallop	5	1	0	..	740	29.15	168
d Oundle (Milton Road)	J. M. Siddons, Esq.	5	3	6	131	614	24.19	..
d Oundle School	F. W. Sanderson, Esq.	8	1	0	147	642	25.30	192
d Deene Rectory	Rev. T. Catton	5	1	0	230	714	28.09	192
d Peterborough (Westbourne Ho.)	E. H. Colman, Esq.	8	1	0	38	612	24.08	170
d Peterborough (Ashfield)	J. A. Percival, Esq.	5	0	7	30	599	23.57	170
d Peterborough (Abbeyfields) ..	Major J. Shipley Ellis ..	5	0	9	49	656	25.82	177
d Peterborough (Milton House) ..	Major C. A. Markham ....	..	..	..	..	791	31.15	154
d Wittering Rectory	Rev. S. B. Warde	5	1	0	180	720	28.35	172
d Eye (Northolm)	S. M. Egar, Esq.	5	1	0	17	622	24.49	176
d Eye (Newborough)	R. Williams, Esq.	5	1	0	8	615	24.22	163
5.—WELLAND. 96 sq. mi.								
d Marston Trussell Rectory ..(R)	Rev. J. Knight Law	10	2	9	314	751	29.56	169
d Market Harboro' (Dingley Hall)	Maj.-Gen. Lord Downe ...	5	1	6	400	746	29.37	156

DIVISION III.—SOUTH MIDLAND COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with ·01 in. or more.	
		Diam.	Height Ground	above Sea Level.	1919			
NORTHAMPTONSHIRE—(con.).		in.	ft.	in.	ft.	mm.	in.	
5.—WELLAND—(con.).								
d Carlton Park Gardens	Mr. R. W. Thatcher	5	1	1	400	698	27·47	..
d Ashley	Major N. H. Matthews	5	1	3	240	731	28·78	180
d Rockingham Castle Gardens	Mr. A. E. Higgott	5	4	0	300	849	33·42	169
d Gretton (Gretton House)	Mr. J. Rogers	9	1	0	354	740	29·14	170
d Gretton School	W. Leeson, Esq.	5	1	0	365	667	26·27	188
d Wittering (Whitewater)	W. J. Richards, Esq.	8	3	0	241	712	28·02	..
d Market Deeping (Etton)	W. H. A. Court, Esq., C.E.	8	1	0	25	617	24·29	151
HUNTINGDONSHIRE. (Area, 366 sq. mi.)								
1.—OUSE. 327 sq. mi.								
d St. Neots (Waresley Park)	Miss Duncombe	5	0	11	190	597	23·51	153
d Hemingford Grey (Millview)	G. F. Wilson, Esq.	5	1	6	20	581	22·89	155
d Huntingdon (Hinchingsbrke.) (R)	Mr. W. Prowling	8	6	0	74	656	25·83	177
d St. Ives (Slepe House)	Dr. W. R. Grove	5	1	0	25	613	24·15	160
d Catworth	J. H. Annet, Esq.	5	0	9	210	632	24·90	159
d Whittlesea Mere	Capt. G. E. Mathews, C.E.	8	1	6	10	518	20·38	..
2.—NENE. 39 sq. mi.								
BEDFORDSHIRE. (Area, 467 sq. mi.)								
1.—THAMES—Colne. 20 sq. mi.								
d Dunstable (Kensworth Vicarage)	Mrs. Little	5	1	3	585	847	33·36	..
d Luton (Stockwood)	Mrs. E. R. Crawley	5	3	0	539	721	28·40	177
2.—THAMES—Lea. 32 sq. mi.								
d Luton (Pumping Station)	J. W. Tomlinson, Esq., C.E.	5	1	0	343	750	29·53	175
d Luton (Tennyson Road)	Harold F. Smith, Esq.	5	1	1	530	764	30·08	186
d Luton (The Downs)	G. W. Pryer, Esq.	5	1	0	479	820	32·27	171
d Dunstable (Grammar School)	W. D. Coales, Esq.	5	0	8	480	814	32·04	..
3.—OUSE. 408 sq. mi.								
d Woburn (Milton Bryant)	Mr. C. J. Kilby	5	1	0	510	806	31·75	151
d Shillington	Dr. Kilham Roberts	8	1	0	182	701	27·59	161
d Ampthill (Higham Bury)	E. J. Jekyll, Esq.	5	1	0	310	728	28·65	184
d Shefford (Upper Stondon)	R. Long, Esq.	5	1	0	241	632	24·87	..
d Woburn (Crawley Mill Farm)	J. Crabtree, Esq.	8	1	0	292	723	28·46	201
d Woburn (Fruit Farm, Ridgmont)	W. H. Neild, Esq.	5	1	0	270	713	28·08	180
d Stotfold (Three Counties Asylum)	Dr. P. D. Hunter	5	1	0	220	680	26·76	176
d Lidlington (White Lodge)	H. J. Wright, Esq.	5	0	8	200	643	25·33	..
d Shefford (Clifton Bury)	A. Inskip, Esq.	5	2	1	150	656	25·83	..
d Shefford Council School	G. F. Alldritt, Esq.	5	1	0	134	643	25·30	186
d Shefford (Stanford)	H. Inskip, Esq.	5	1	0	60	641	25·22	..
d Cardington	Air Ministry	8	1	0	..	606	23·87	162
d Sandy (The Lodge)	Mrs. Farley	5	1	3	200	561	22·10	..
d Sandy (Beeston Grange)	Lt.-Col. Maunsell Bowers	5	1	0	80	636	25·05	184
d Bedford (The Park)	(R) N. Greenshields, Esq.	8	5	8	123	589	23·20	178
d Bedford (Warwick Avenue)	L. A. Fawcett, Esq.	5	4	6	120	639	25·17	175
d Bedford (Castle Road)	Miss M. E. Newbery	5	7	0	108	639	25·17	169
d Goldington (Castle Mills)	W. H. Rogers, Esq.	5	1	4	90	602	23·70	..
d Great Barford House	J. Arnold Whitechurch, Esq.	5	1	0	120	626	24·65	159
d Sharnbrook (Castle Close)	L. Stileman-Gibbard, Esq.	5	0	8	210	682	26·84	183
d Sharnbrook (Colworth Gardens)	Mr. J. Hoad	5	2	0	250	686	26·99	..
4.—NENE. 7 sq. mi.								
CAMBRIDGESHIRE. (Area, 859 sq. mi.)								
1.—STOUR. 17 sq. mi.								
2.—OUSE. 740 sq. mi.								
d Ashwell (Odsey)	Sir H. G. Fordham	5	1	0	256	647	25·46	185
d Abington Pigotts	Mrs. de Courcy-Ireland	8	0	10	86	634	24·96	..
d Melbourne Vicarage	Mrs. de Courcy-Ireland	5	1	0	78	589	23·20	..
d Meldreth (Chiswick Farm)	A. Howard, Esq.	5	1	1	70	584	22·99	158
d Fowlmere (Fruit Farm)	H. F. Smith, Esq.	5	1	0	61	559	22·01	159
d Bartlow House Gardens	Mr. F. M. Folkard	5	0	9	184	660	26·00	..
d Linton	E. F. Suckling, Esq.	5	1	0	141	636	25·02	174

DIVISION III.—SOUTH MIDLAND COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain. 1919	Days with ·01 in. or more.
		Diam	Height Ground	above Sea Level.			
CAMBRIDGESHIRE—(con.).							
2.—OUSE—(con.).		in.	ft.	in.	ft.	mm.	in.
d Foxton (The Bury)	J. Gifford, Esq.	5	1	0	60	613	24·13
d Whittlesford (Sawston Hall)	D. L. Huddleston, Esq.	5	1	1	86	625	24·59
d Harston Vicarage	Mrs. C. M. Baldwin	5	0	9	47	597	23·49
Wimpole Hall	Mr. W. J. Snell	5	1	0	141	572	22·54
Gamlingay (Old Woodbury)	Hon. C. Hill Trevor	5	0	10	200	655	25·79
Stapleford House	J. H. H. Linton, Esq.	5	2	3	64	623	24·52
d Balsham Rectory	Rev. H. J. E. Burrell	5	1	6	399	617	24·28
d Grantchester Mill	J. Nutter, Esq.	5	5	0	31	575	22·63
d Fulbourne (Fleam Dyke)	W. W. Gray, Esq., C.E.	5	1	0	99	613	24·13
d Fulbourne Pumping Station	W. W. Gray, Esq., C.E.	5	1	0	37	598	23·54
Fulbourne (Cambs. Ment. Hos.)	Dr. M. A. Archdale	5	0	6	72	770	30·32
d Cambridge W.W. (Cherryhinton)	W. W. Gray, Esq., C.E.	5	1	0	35	628	24·74
d Cambridge (Hills Road, South)	Smith Nutter, Esq.	8	0	10	45	659	25·96
d Cambridge (Herschel House)	C. N. H. Lock, Esq.	5	1	0	36	602	23·70
d Cambridge (Sidney Street)	Messrs. W. E. Pain & Sons	8	53	0	83	572	22·54
d Cambridge (Corporation Store Yd)	Julian Julian, Esq., C.E.	5	1	0	52	590	23·21
d Cambridge (Tenison Avenue)	W. B. Parsons, Esq.	8	1	2	40	596	23·45
d Cambridge (Pinehurst)	C. F. Foster, Esq.	5	0	10	36	633	24·91
d Cambridge (Botanic Gardens)	F. G. Preston, Esq.	5	1	1	41	606	23·88
d Cambridge (Corporation Ppg. St.)	Julian Julian, Esq., C.E.	5	1	0	28	625	24·61
d St. Ives (Boxworth)	E. H. Thornhill, Esq.	5	1	0	76	677	26·66
d Swaffham Prior Vicarage	Rev. L. Fisher	5	1	4	44	631	24·86
d Burwell	R. Stephenson, Esq.	5	2	0	58	630	24·80
St. Ives (Conington Hall)	Philip T. Gardner, Esq.	8	0	5	50	713	28·07
d Cottenham (Bernard House)	Miss Bull	5	1	6	20	648	25·52
d Stretham Engine	Mr. J. Housley	9	4	9	13	566	22·30
d Chatteris (Holwood Farm)	Mr. J. W. Watson	5	1	0	12	562	22·12
Littleport (Highfield House)	H. G. Martin, Esq.	8	2	7	67	522	20·53
d Chatteris (Aylesby House)	A. H. Ruston, Esq.	8	1	0	31	652	25·67
d Chatteris (The Priory)	H. F. Fryer, Esq.	5	1	0	32	589	23·20
d March	Capt. G. E. Mathews, C.E.	9	2	0	10	644	25·36
d Upwell (Marmont Priory Lock)	Capt. G. E. Mathews, C.E.	8	1	1	..	586	23·05
d Wisbech (Queen's Road)	H. Dann, Esq.	5	7	6	10	704	27·72
3.—NENE. 102 sq. mi.							
d Stanground Sluice	Capt. G. E. Mathews, C.E.	8	1	6	15	618	24·31
d Parson Drove (Clows Cross)	W. Kingston, Esq.	8	3	0	13	617	24·28
Wisbech (Bank House)	Hon. Anna J. Peckover	8	0	8	6	636	25·02

DIVISION IV.—EASTERN COUNTIES.

ESSEX. (Area, 1532 sq. mi.)

1.—THAMES—Lea. 132 sq. mi.

d West Ham (Abbey Mills)	London County Council ..	8	0	10	15	620 24·41	159
d Leytonstone (High Road)	Miss G. Lister	5	1	8	100	681 26·81	163
d Lea Bridge (Waterworks)	Met. Water Board	8	0	6	23	618 24·35	164
d Walthamstow (Ferry Lane)	Met. Water Board	5	0	10	30	611 24·04	166
d Woodford (Haggar Lane)	Met. Water Board	8	0	8	176	639 25·15	166
d Buckhurst Hill Reservoir	Met. Water Board	8	1	7	275	647 25·46	173
d Buckhurst Hill (Ardmore)	Miss E. F. Howard	8	1	0	270	724 28·50	..
d Chingford (Crescent Road)	Miss M. L. Mathieson	5	2	9	200	619 24·39	172
d Chingford Mill	Met. Water Board	8	0	6	40	627 24·67	162
d Loughton (High Beech Res.) ..	Met. Water Board	8	1	0	378	740 29·12	172
d Waltham Abbey (Rammey Marsh) ..	Met. Water Board	8	1	0	60	623 24·54	176
d Waltham Abbey (Pumping Stn.) ..	Met. Water Board	8	1	3	66	715 28·16	163
d Waltham Abbey (Gunpr. Fact.) ..	The Superintendent	5	2	0	64	494 19·47	..
d Hatfield Broad Oak (Barrington) ..	A. H. Gosling, Esq.	5	0	10	300	648 25·53	164
d Bishop Stortford (Hassobury) ..	L. D. Gosling, Esq.	5	0	10	290	764 30·06	184
d Elsenham (Gaunts End)	H. Cotterell, Esq.	5	1	0	363	694 27·34	184

DIVISION IV.—EASTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
ESSEX—(con.)		in.	ft.	in.	ft.	mm.	in.	
2.—THAMES—Roding & c. 316 sq. mi.								
D Tilbury (Park View Obsrvatry)	S. A. Hill-Willis, Esq.	5	1	0	10	618	24·31	159
D Grays (Stanley Road)	A. C. James, Esq., C.E.	5	3	3	21	650	25·57	176
D Grays Sewage Works	L. D. Holgate, Esq.	8	2	3	9	506	19·92?	151
D East Ham (Central Park)	F. J. Kendall, Esq.	12	1	0	15	611	24·05	160
D East Ham Well	Met. Water Board.	8	0	11	17	623	24·51	172
d Ilford Sewage Works	Urban District Council	5	1	1	31	512	20·15	..
Leigh (Herschell Road)	Mrs. Elliot	5	1	0	150	607	23·89	..
D Vange Pumping Station	Southend Water Works Co.	5	1	0	43	555	21·85	152
D Pitsea Pumping Station	Southend Water Works Co.	5	1	0	28	570	22·45	149
D Hornchurch	W. J. Grant, Esq.	8	1	8	46	568	22·37	164
Wanstead (Red Bridge)	Met. Water Board.	5	2	2	27	572	22·54	154
D Manor Park (Albany Road)	A. J. Wilmshurst, Esq.	5	2	11	40	667	26·25	183
D Romford (Harold Wood)	Sir J. G. Broodbank	5	4	0	120	628	24·74	192
D Havering Grange	G. P. Hope, Esq.	5	1	0	255	658	25·92	208
D Havering-atte-Bower (Fernside)	Benjamin Smith, Esq.	5	1	0	341	744	29·31	208
Epping (The Hemnalls)	Miss A. Nicholl	8	0	8	345	801	31·54	151
D Ongar (Marden Ash)	W. E. Calver, Esq.	5	1	6	190	611	24·04	153
Ongar (Folyats *)	J. M. Newall, Esq.	5	0	10	210	634	24·94	..
D North Weald (Canes)	H. W. Hart, Esq.	5	1	11	250	623	24·51	152
3.—CROUCH. 186 sq. mi.								
D Shoburyness	Superintendent of Expts.	8	1	0	13	570	22·43	157
D Southend (Corporation Obsy.)	The Corporation	8	1	0	90	531	20·91	163
Southend (Broadway)	H. J. G. Ralph, Esq.	5	1	0	78	533	20·98	..
D Southend (Water Works)	Southend Water Works Co.	8	1	0	112	535	21·05	148
D Leigh Reservoirs	Southend Water Works Co.	5	1	0	177	595	23·44	154
D Eastwood Pumping Station	Southend Water Works Co.	8	1	0	50	581	22·88	176
d Thundersley Reservoir	Southend Water Works Co.	5	1	0	277	562	22·13	..
d Rayleigh (Wheatley's Lane)	A. H. Goodall, Esq.	5	1	0	255	568	22·38	169
d Nevendon Pumping Station	Southend Water Works Co.	5	1	0	43	576	22·66	..
D Billericay (Service Tank)	Southend Water Works Co.	5	1	0	310	649	25·55	179
D Billericay (Ramsden Hall)	T. W. Bacon, Esq.	5	0	9	260	688	27·10	171
D Wickford (Runwell Hall)	Lt.-Col. H. Kemble	5	1	0	75	636	25·04	155
Rettendon Rectory	Rev. G. Evans-Gwynne	5	1	2	120	589	23·19	..
d Southminster (The New Moor)	E. J. Attenborough, Esq.	..	..	..	..	732	28·80	..
D Bradwell-on-Sea (Bradwell H.)	J. C. Chillingworth, Esq.	5	1	1	27	607	23·91	163
4.—BLACKWATER. 425 sq. mi.								
D Shenfield Gardens	Mr. F. Copeman	5	0	11	..	732	28·81	145
Shenfield (The Lodge)	H. P. Landon, Esq.	5	0	7	303	716	28·21	..
d South Hanningfield (Peadowns)	W. Hill, Esq.	..	..	..	134	649	25·55	..
D Ingatestone (Fryerning)	A. E. Christy, Esq.	5	1	0	290	639	25·17	155
D Maldon (Hazeleigh Rectory)	Rev. G. H. Raynor	5	1	1	161	536	21·11	157
D Danbury Rectory	Rev. J. Bridges Plumtre	5	1	0	365	618	24·33	162
D Writtle (Melbourne)	J. A. Rosling, Esq.	5	0	9	140	641	25·24	170
D Chelmsford (County Laboratories)	R. M. Wilson, Esq.	5	1	0	140	619	24·37	147
Chelmsford (High Street)	Miss F. J. Chancellor	8	1	0	98	638	25·12	181
Malden (Ulting Hall)	G. D. French, Esq.	..	..	..	..	574	22·59	..
Roxwell	R. W. Christy, Esq.	5	1	0	180	593	23·36	..
Great Leighs (Lyons Hall)	J. H. Tritton, Esq.	5	3	0	130	633	24·92	147
Witham (Faulkbourne Hall)	Miss C. L. Parker	5	0	8	100	603	23·74	181
D Hartford End (Leez Priory)	M. E. Hughes-Hughes, Esq.	5	1	0	170	654	25·75	178
D Kelvedon (Lawn House)	F. Randolph-Symmons, Esq.	5	1	0	96	661	26·03	164
D Kelvedon (White Barn)	W. & H. J. Sheldrake, Esqs.	5	1	5	135	611	24·04	180
D Kelvedon (Feering Vicarage)	Rev. A. F. Curtis	5	1	0	100	692	27·23	179
D Felsted School	J. H. Owen, Esq.	5	1	2	248	628	24·71	149
d Little Dunmow Council School	Miss M. G. Archer	5	1	0	258	619	24·37	..
D Great Dunmow	Messrs. Hasler & Co., Ltd.	5	0	6	215	658	25·92	185
d Little Dunmow (Throws)	Miss Webb	5	1	4	283	606	23·87	..
d Pattiswick Hall	Joseph Smith, Esq.	5	0	10	200	547	21·53	..
d Great Saling (Woolpits)	Joseph Smith, Esq.	5	0	9	284	578	22·75	..
D Shalford (Littles)	W. F. Hart, Esq.	5	1	8	260	611	24·07	159
D Gt. Bardfield (South Lodge)	A. W. Brunwin, Esq.	5	2	0	250	611	24·00	153

* Formerly called Forest Hall.

DIVISION IV.—EASTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
ESSEX—(con.).		in.	ft.	in.	ft.	mm.	in.	
5.—COLNE & C. 283 sq. mi.								
D Clacton-on-Sea.....	Mr. A. W. Shadick	8	1	0	55	559	22·00	168
Great Clacton (Clay Hall)	Philip Smith, Esq.	5	2	0	45	561	22·10	162
d Colchester (Berechurch)	R. P. Blyth, Esq.	5	0	10	120	628	24·72	..
Colchester (King's Ford)	Hon. Lady Digby	5	0	10	103	630	24·79	185
D Colchester (Boro'Surveyor's Off.) ..	H. Collins, Esq., C.E.	8	17	0	82	572	22·52	153
D Lexden (Hill House)	S. F. Hurnard, Esq.	5	1	0	90	606	23·87	159
M Lexden (Hill House)	S. F. Hurnard, Esq.	5	1	0	90	600	23·64	..
Lexden Rectory	Rev. T. S. Raffles	5	1	4	100	646	25·43	144
D Great Bromley (Broughton) ..	W. Arnold Roberts, Esq. ..	5	1	0	115	674	26·54	149
Earls Colne (Chalkney House) ..	H. F. Hills, Esq.	5	1	0	188	649	25·55	148
D Manningtree (Bradfield Lodge) ..	G. Hempson, Esq.	5	1	0	113	612	24·11	146
D Halstead (The Brewery)	Lt. E. T. Adams, R.N.V.R. ..	5	1	0	140	643	25·30	160
Gt. Maplestead (Monk's Lodge) ..	T. F. Miller, Esq.	5	0	9	230	581	22·87	..
D Great Yeldham (The Oak House) ..	G. A. Goodchild, Esq.	5	2	4	200	626	24·66	155
D Ridgewell (Ridgewell Hill)	Miss E. E. W. Gurney	5	1	0	269	634	24·95	185
6.—STOUR. 110 sq. mi.								
d Lawford (Dale Hall)	W. H. Richardson, Esq. ..	5	1	0	110	625	24·59	..
D Bulmer Lodge (Sudbury)	Miss Burke	5	1	3	200	624	24·58	149
7.—OUSE. 80 sq. mi.								
d Widdington Rectory	Rev. J. W. Court	5	1	6	340	665	26·18	..
Arkesden (Wood Hall)	Charles Beadle, Esq.	5	0	9	380	756	29·77	..
d Great Chesterford Mills	Ernest H. King, Esq.	5	1	0	130	656	25·82	..
SUFFOLK. (Area, 1489 sq. mi.)								
1.—STOUR. 271 sq. mi.								
D Capel St. Mary School	B. B. Taylor, Esq.	5	1	6	156	672	26·47	172
D Sudbury (Great Cornard)	A. B. Legard, Esq.	5	1	0	100	641	25·25	154
d Sudbury (Lunt Fall Reservoir) ..	G. H. Rampling, Esq.	5	1	3	90	523	20·60 ?	..
D Sudbury (Friars Street)	E. Ransom, Esq.	5	1	7	93	640	25·19	214
D Hitcham Rectory	Rev. R. R. Cobbold	5	1	5	255	622	24·48	187
D Hitcham (Loose Hall)	T. A. Harwood, Esq.	5	1	0	275	616	24·26	162
D Hawkedon Rectory	Rev. B. P. Oakes	5	3	4	303	705	27·74	187
D Cockfield Rectory	Rev. Canon Edwin Hill ..	5	1	0	305	691	27·20	171
2.—ORWELL. 166 sq. mi.								
D Ipswich (Rookwood, Copdock) ..	F. L. Bland, Esq.	8	1	0	164	623	24·53	170
Ipswich (Museum)	" E. Anglian Daily Times "	8	0	10	72	677	26·64	164
D Ipswich (Dale Hall)	Percy Turner, Esq.	8	1	0	135	635	25·00	163
Elmsett (Laurel Cottage)	A. E. Ladbroke, Esq.	5	3	0	210	682	26·85	..
D Haughley (Haughley House) ..	Major S. H. Creagh	5	1	0	188	607	23·91	167
3.—DEBEN & C. 466 sq. mi.								
D Felixstowe (Wireless Tel. Stat.) ..	M. Humphrey, Esq.	8	1	6	15	608	23·92	164
d Bawdsey	W. C. Bennett, Esq.	8	2	0	10	574	22·60	..
D Woodbridge Abbey	Col. R. J. Carthew	8	1	2	46	748	29·46	186
D Orford (The Gables)	A. E. Rope, Esq.	5	0	9	30	712	28·02	181
D Melton (St. Audrey's Hospital) ..	A. F. Philpott, Esq.	8	1	2	74	675	26·58	166
Melton (Bromeswell Rectory) ..	Rev. F. Shadwell	5	1	5	30	714	28·13	166
D Rendlesham Hall	Lord Rendlesham	5	1	0	88	634	24·94	171
Charsfield (Red House)	Hugh P. Youngman, Esq. ..	5	1	9	150	671	26·43	..
Helmingham (Bocking Hall) ..	W. B. Damant, Esq.	5	1	6	180	711	27·98	167
D Snape	G. H. Garrett, Esq.	5	1	6	50	718	28·26	185
Campsea Ashe (High House) ..	Rt. Hon. The Speaker, M.P. ..	8	2	6	60	705	27·75	152
D Leiston (Lower Abbey)	M. K. Rope, Esq.	5	0	7	30	649	25·56	155
D Halesworth (Estate Office) ..	H. S. R. Stanford, Esq. ..	5	2	0	25	698	27·48	177
D Halesworth Rectory	Rev. H. C. Newbery	5	1	0	50	700	27·58	191
D Wangford (Reydon Grove)	C. P. Runnacles, Esq.	5	1	5	20	577	22·72	179
D Wangford (Ford House)	Hon. Agnes Eden	5	0	10	25	683	26·88	170
4.—YARE & C. 208 sq. mi.								
Horham Rectory	Rev. J. E. Soden	5	1	4	180	792	31·16	181
Rumburgh Vicarage	Rev. W. Linton Wilson ..	5	1	0	148	618	24·35	184

DIVISION IV.—EASTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.	1919		
SUFFOLK—(con.).		in.	ft. in.	ft.	mm.	in.	
4.—YARE & C.—(con.).							
D Lowestoft (Mill Road).....	Mark Bean, Esq.....	8	1 1	18	641	25·25	200
D Herringfleet (The Gables).....	G. H. Wyllys, Esq.	5	0 8	55	684	26·93	199
D Lound Rectory	Mrs. Howes	5	1 0	63	608	23·92	198
D Lound Pumping Station	Lowestoft Water & Gas. Co. 8	1 0	34	621	24·46	167	
Fritton Warren	Major-Gen. R. Upcher, D.S.O. 5	0 6	42	707	27·85	189	
D Yarmouth (Burgh Hall)	H. P. Frederick, Esq.	8	0 6	45	658	25·89	193
5.—OUSE. 378 sq. mi.							
Bradfield St. George School ...	R. W. Thompson, Esq.	5	0 10	300	606	23·87	...
Drinkstone	J. E. Townsend, Esq.	5	3 0	220	713	28·06	150
D Nowton (Breckley Ley).....	R. H. Wilson, Esq.....	5	..	226	697	27·44	166
D Little Saxham Rectory	Rev. H. I. Kilner	8	0 10	220	688	27·08	184
D Bury St. Edmunds (Westley) ..	R. Burrell, Esq.....	5	1 0	226	711	27·98	177
D Bury St. Edmunds (Northgate St.)	Rev. J. S. Pratt.....	5	1 0	100	663	26·09	176
Herringswell Rectory	Rev. E. H. Wright	5	1 0	..	567	22·31	...
D Mildenhall	H. R. W. Forster, Esq.	5	1 3	50	587	23·11	158
M Barningham (The Beeches) ..	Miss A. K. Lingwood	8	0 9	136	594	23·37	...
D Elveden Hall	The Earl of Iveagh, K.P....	5	1 0	130	677	26·66	198
NORFOLK. (Area, 2044 sq. mi.)							
1.—YARE. 658 sq. mi.							
D Brockdish Rectory	Rev. Wilson W. White....	8	1 3	115	660	26·00	177
D Diss (The Cedars)	Dr. H. M. Speirs	5	1 8	108	649	25·56	...
D Pulham St. Mary (Hill House) ..	W. G. Rutter, Esq.....	5	1 0	120	706	27·80	207
D Denton Rectory	Rev. Canon T. H. Bindley. 5	0 10	20	676	26·60	199	
D Beccles (Geldeston)	Miss E. Dowson.....	5	1 0	38	614	24·16	190
D Long Stratton (Gt. Moulton Rec.)	Rev. T. D. Chute	5	1 3	150	722	28·41	172
D Ditchingham	W. G. Rutter, Esq.	5	1 0	..	693	27·29	193
D Beccles (Raveningham Hall) ..	N. H. Bacon, Esq.	8	1 3	60	641	25·23	189
D Wymondham (Morley School) ..	T. E. Ormond, Esq.....	8	1 8	100	698	27·47	183
D Wymondham	J. B. Pomeroy, Esq.	8	1 3	118	799	31·44	182
D Hingham Rectory.....	Rev. Canon A. C. W. Upcher 5	..	195	693	27·28	160	
D Dunston Hall	A. W. Preston, Esq.	5	4 0	100	753	29·63	187
D Keswick Old Hall	E. Knight, Esq.....	5	1 0	90	724	28·50	195
D Gorleston Coastguard Station..	Meteorological Office.....	8	1 0	5	611	24·05	183
D Yarmouth (Northgate Street) ..	A. W. Preston, Esq.	5	1 0	7	693	27·29	191
D Norwich (Christ Church Rd Eaton)	A. W. Preston, Esq.	5	1 0	98	762	29·99	209
D Norwich (Carrow House)	Miss Colman.....	5	1 3	35	764	30·06	164
D Brundall (Blofeld Road)	W. H. Meire, Esq.....	5	1 0	55	709	27·90	198
D Norwich (Ipswich Road)	J. H. Willis, Esq.	5	1 0	110	702	27·63	196
D Norwich (Heigham Cemetery) ..	A. W. Preston, Esq.	5	3 2	37	696	27·41	193
D Thorpe St. Andrew (Thorpehurst)	Capt. J. H. Mander	5	1 6	45	767	30·19	198
D Drayton Rectory	A. W. Preston, Esq.	5	..	..	768	30·24	205
D Drayton Hall	J. H. F. Walter, Esq.	5	0 8	..	733	28·86	...
D Swanton Morley Rectory	A. W. Preston, Esq.	5	..	105	708	27·88	...
D Bylaugh Park Gardens.....	Mr. G. Beeton	5	1 0	130	744	29·29	168
D Swanington (Heath House) ..	P. Norgate, Esq.	5	1 3	91	721	28·37	209
D Great Massingham	Dr. Walter Dick	5	1 0	269	755	29·74	188
D Reepham (Old Brewery House) ..	A. W. Preston, Esq.	5	..	150	801	31·53	222
D Cawston Rectory.....	A. W. Preston, Esq.	5	1 0	120	785	30·89	176
D East Rudham	Miss F. E. Mays	5	2 0	140	838	33·00	199
2.—YARE—Bure & c. 368 sq. mi.							
D Moulton	A. W. Preston, Esq.	4	..	..	677	26·64	156
D Acle	A. W. Preston, Esq.	5	0 6	51	693	27·28	219
D Sprowston (Oak Lodge)	A. W. Preston, Esq.	5	1 0	100	732	28·83	214
D Sprowston Hall	Sir Eustace Gurney	5	1 0	90	732	28·82	184
D Yarmouth (Ormesby St. Michael)	Gt. Yarmouth W. W. Co. 8	1 0	22	744	29·28	275	
D Aylsham (Rippon Hall)	Major H. S. Marsham	5	0 8	90	762	29·98	146
D Aylsham (Bank House)	W. C. P. Cooper, Esq.	5	0 7	120	739	29·08	174
D Worstead (Frankfort Manor) ..	J. R. W. Pigott, Esq.	5	5 4	50	712	28·03	166
D Worstead (Dilham)	A. W. Preston, Esq.	5	0 8	..	757	29·80	223
D Worstead (The Rookery, Dilham)	H. Morse Taylor, Esq.	5	31 0	56	743	29·24	176
D Worstead (Lyngate Cottage) ..	R. J. Cross, Esq.....	8	1 0	55	727	28·61	179

DIVISION IV.—EASTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.	1919		
NORFOLK—(con.).		in.	ft. in.	ft.	mm.	in.	
2.—YARE—Bure & C.—(con.).							
D Worstead (The Grange)	Rev. F. W. Walter	5	1 0	40	696	27·39	167
D Hindolveston (Church Farm)	R. G. Lee, Esq.	5	1 0	..	741	29·19	149
D North Walsham (Empson House)	W. S. Horn, Esq.	5	1 0	102	693	27·27	187
D North Walsham (Gunton Park)	A. W. Preston, Esq. . . . .	..	..	..	755	29·73	175
D Mundesley (Raxawa House)	C. S. Morris, Esq.	3	..	..	625	24·62	..
D Baconsthorpe Rectory	Rev. H. Milnes Walker	5	1 6	280	742	29·22	177
D Cromer (Northrepps Hall)	Mrs. R. Gurney	5	1 2	225	758	29·85	200
3.—STIFFKEYS & C. 288 sq. mi.							
D Little Massingham	Rev. P. H. L. Brereton	5	1 2	278	795	31·29	206
D Sandringham House Gardens	Mr. T. H. Cook	5	0 9	121	703	27·67	189
D Cromer	Urban District Council	8	1 0	196	516	20·30	223
D Cromer (The Warren)	F. H. Barclay, Esq.	8	1 8	101	691	27·20	171
D Langham Episcopi	A. W. Preston, Esq.	5	0 6	139	679	26·75	217
D Blakeney	Mr. R. Lee	5	1 3	29	643	25·31	156
d Wells (Holkham Hall)	Earl of Leicester, G.C.V.O. 12	12	3 0	39	706	27·81	..
4.—OUSE & C. 683 sq. mi.							
D Garboldisham	T. P. Godfrey, Esq.	5	1 0	100	616	24·26	186
D Thetford (Ford Street Gdns.)	Mr. A. Pipe	5	1 0	44	648	25·53	146
D Thetford (Waterworks)	Mr. E. S. Greenwood	8	1 0	165	659	25·93	190
Quidenham Hall	Earl of Albemarle, K.C.V.O. 5	5	1 0	100	663	26·09	171
Hargham	Sir H. R. Beevor, Bart.	8	0 6	120	700	27·55	149
D Caston Rectory	A. W. Preston, Esq.	5	1 0	148	775	30·52	199
D Watton	A. A. Gompertz, Esq.	5	1 0	166	769	30·27	175
D Stoke Ferry (Wereham)	G. Read, Esq.	5	2 3	66	778	30·61	205
D Downham (Dial House)	T. H. Wenn, Esq.	5	1 6	..	652	25·69	170
D Outwell (Wellbreck Sluice)	Capt. G. E. Mathews	9	2 6	16	532	20·94	152
D Emneth	F. M. Bland, Esq.	5	1 0	6	631	24·83	163
D Swaffham	W. H. Plowright, Esq.	5	5 0	250	682	26·85	179
D Swaffham (The Paddock)	H. Lee Warner, Esq.	5	0 8	245	772	30·38	181
Swaffham (Homewood)	Messrs. Vynne & Everett	5	2 7	210	837	32·97	152
D Sporle	T. S. Matthews, Esq.	5	4 0	230	727	28·62	207
d Swaffham (Little Dunham)	A. W. Preston, Esq.	5	1 1	320	750	29·51	198
D Wigganham (St. Germans Sluice)	Capt. G. E. Mathews	8	1 6	..	632	24·89	170
d King's Lynn (Manure Works)	J. Brown, Esq.	5	3 10	10	662	26·07	174
d King's Lynn (Gaywood Road)	S. S. Burlingham, Esq.	5	6 6	20	558	21·99	185
5.—NENE. 47 sq. mi.							

DIVISION V.—SOUTH-WESTERN COUNTIES.

WILTSHIRE. (Area, 1375 sq. mi.)

1.—LOWER AVON. 386 sq. mi.									
	Corsley (Sturford Mead).....	H. Theodore Cookson, Esq.	5	1	0	459	985	38·77	176
D	Edington Vicarage	Rev. E. C. Alexander	5	0	8	334	828	32·58	172
	Market Lavington (Old House)	Miss A. P. Bouverie	5	0	9	290	766	30·14	163
D	Trowbridge W.W. (Biss Bottom)	W. W. Gray, Esq., C.E. ...	5	1	0	311	897	35·31	154
D	Trowbridge (Rood Ashton)	Mr. W. Strugnell	8	1	6	250	956	37·64	188
D	Bradford (Woodleigh)	A. Scratton, Esq.	5	2	4	223	860	33·84	176
D	Bradford (Winsley Manor)	E. W. Knatchbull, Esq. ...	5	0	6	400	781	30·76	172
D	Bradford (Manvers House)	Dr. C. E. S. Flemming	5	1	0	130	822	32·35	168
D	Seend (Cleeve House)	(R) W. Heward Bell, Esq. ....	..	1	0	160	756	29·77	175
D	Seend (Manor Cottage)	Rev. E. S. Awdry	5	1	0	305	675	26·57	181
D	Seend (Ferrum Towers)	H. W. Langley Haigh, Esq. 8	1	3	250	809	31·84	177	
D	Holt (The Retreat)	A. V. H. Beaven, Esq.	5	2	6	145	782	30·80	147
d	Devizes (Wilts Co. Asylum)	Dr. S. J. Cole	8	2	3	385	709	27·92	..
d	Devizes (Highclere)	H. W. Green, Esq.	5	1	6	480	788	31·03	169
D	Corsham (Pickwick)	Miss Swayne Farebrother. 5	1	0	338	840	33·09	..	
d	Calne (High Street)	E. W. Brown, Esq.	4	1	0	242	750	29·54	..
	Calne (Compton Bassett Gdns.)	J. H. Jones, Esq.	5	2	0	500	807	31·77	179
	Chippenham (Rowden Hill)	Miss A. M. Collen	5	1	4	223	822	32·36	164

DIVISION V.—SOUTH-WESTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with .01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
WILTSHIRE—(con.).		in.	ft.	in.	ft.	mm.	in.	
1.—LOWER AVON—(con.).								
Chippenham (Kington Langley)	Charles Garnett, Esq.	8	1	0	270	830	32·68	..
d Wroughton (Basset Down Ho.)	Mrs. Story Maskelyne	5	1	0	500	813	32·00	165
d Malmesbury (Cowbridge Ho.)	C. E. de Bertodano, Esq. . .	5	1	0	236	846	33·32	164
d Malmesbury (Charlton Cottage)	The Countess of Suffolk ..	6	0	9	400	856	33·72	166
2.—STOUR. 33 sq. mi.								
d Mere (Charnage)	A. R. White, Esq.	5	1	0	426	849	33·42	186
d Stourhead	Sir H. H. A. Hoare, Bart. .	5	1	0	583	1008	39·68	150
d Kilminster Rectory	Rev. H. G. Fox Strangways	5	1	6	710	1114	43·86	220
3.—EAST AVON. 554 sq. mi.								
d Longford Castle	The Earl of Radnor	5	1	2	141	845	33·26	192
d Tisbury (The Academy)	J. Bristol, Esq.	5	0	9	380	1113	43·80	163
d East Knoyle (Slades)	E. H. Miles, Esq.	5	1	0	590	942	37·08	169
d Fonthill House Gardens	Hugh Morrison, Esq., M.P. .	5	1	0	400	1012	39·84	174
d Salisbury (Sewage Works)	W. J. Goodwin, Esq. C.E. .	5	2	2	153	770	30·31	156
d Salisbury (Fowlers Hill)	Mrs. T. Awdry	5	1	0	225	784	30·88	..
d Salisbury (Brown Street)	Mrs. T. H. Baker	5	1	0	155	845	33·26	219
d Salisbury (Atherton House)	Wilfrid Fletcher, Esq.	5	0	11	250	779	30·68	194
d Salisbury (Wilton House)	The Earl of Pembroke	8	1	0	180	947	37·29	161
d Stratford-sub-Castle(Manor Ho.)	Miss F. Carpenter	5	0	9	165	716	28·20	159
d Woodford (Court House)	Mrs. Chetwynd Stapylton..	5	0	10	200	781	30·76	183
d Porton	Superintendent of Expts... .	5	1	0	340	720	28·37	156
d Wylve Rectory	Rev. E. M. Parken	5	1	8	246	827	32·56	..
d Codford St. Mary (Stockton Ho.)	G. Knowles, Esq.	5	1	0	260	906	35·66	180
d Maiden Bradley	The Duke of Somerset	5	1	6	626	1094	43·05	160
d Sutton Veny (Greenhill)	R. W. Pretor-Pinney, Esq. .	5	1	0	390	992	39·07	..
d Warminster (Rye Hill)	A. E. Jefferys, Esq.	8	2	6	466	982	38·68	173
d Salisbury Plain (Chitterne Ho.)	Joseph Hayward, Esq.	11	4	0	319	736	28·96	151
d Salisbury Plain (Shrewton)	F. J. Wardale, Esq.	5	0	9	322	796	31·34	183
d Chirton Old Manor Farm	Mr. T. Selfe	5	3	0	374	803	31·62	173
d Bishops Cannings	Mr. H. H. Mogg	5	1	0	446	818	32·19	176
4.—TEST. 77 sq. mi.								
Landford (Northlands)	Mrs. Wigram	5	1	10	167	872	34·35	164
d Ludgershall (Conholt Park) . (R)	E. A. Wigan, Esq.	8	1	0	800	853	33·58	..
5.—THAMES—Kennet. 169 sq. mi.								
d Burbage (Wolfhall Manor)	Major T. G. C. Reynolds . .	5	3	0	520	870	34·26	182
d Marlborough College	Meddows Taylor, Esq.	5	1	6	425	832	32·74	221
d Marlborough (Mildenhall)	Rev. Gordon Soames	5	1	0	456	788	31·04	149
d Aldbourne (Upham House)	Mrs. Currie	5	1	6	875	862	33·92	..
6.—THAMES—Cole & c. 156 sq. mi.								
d Wroughton (Burderop Park) ..	A. Ashford, Esq.	5	0	9	650	792	31·17	160
d Wanborough Vicarage	Rev. C. F. Burgess	5	1	0	450	736	28·99	..
d New Swindon	H. J. Southwell, Esq.	8	0	11	378	714	28·09	..
d Highworth (Hannington Hall)	Mrs. Hussey-Freke	5	1	0	375	742	29·22	..
DORSETSHIRE. (Area, 988 sq. mi.)								
1.—PARRETT. 61 sq. mi.								
d Evershot (Melbury House)	Mr. R. Rintoul	5	1	6	500	974	38·34	154
d Chedington Court	Sir Henry Peto, Bart.	5	1	0	605	1055	41·52	153
d Leigh (Totnel House)	F. Trott, Esq.	5	0	7	..	1002	39·45	180
d Sherborne Castle	Mr. T. Turton	5	1	0	195	899	35·39	193
d Sherborne (Castleton)	Reading T. Grantham, Esq. .	5	1	0	200	844	33·24	..
d Nether Compton Rectory	Rev. Canon E. W. Goodden	5	0	8	160	823	32·40	170
2.—AXE. 25 sq. mi.								
d Broadwindsor (Blackdown Ho.)	C. E. M. Pinney, Esq.	5	0	9	515	1168	45·97	174
d Forde Abbey	Freeman Roper, Esq.	5	0	11	226	1071	42·16	176

DIVISION V.—SOUTH-WESTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.		Depth of Rain.		Days with .01 in. or more.
		Diam.	Height' above Sea Level.	1919		
		in.	ft. in.	mm.	in.	
SOUTH DEVON. (Area, 1707 sq. mi.)						
1.—PARRETT. 7 sq. mi.						
d Culmstock (Nicholashayne) ...	Rev. H. F. Ramsay	5	1 0 477	908	35.73	194
2.—TAMAR & C. 395 sq. mi.						
d Plymouth (Boveysand Lodge) .	H. Case, Esq.	5	1 6 75	976	38.41	167
d Plymouth (The Hoe)	J. Paton, Esq., C.E.	8	1 0 117.	1063	41.86	204
d Plymouth (Drake's Reservoir) .	F. Howarth, Esq., C.E.	5	1 0 149	1091	42.97	188
d Plymouth (Hartley Reservoir) .	F. Howarth, Esq., C.E.	5	1 0 321	1132	44.56	189
d Plymouth (Freedom Fields) ...	J. Paton, Esq., C.E.	8	1 0 208	1142	44.95	191
d Devonport (Rowdens Res.) ...	F. Howarth, Esq., C.E.	5	1 0 201	981	38.62	198
d Bickley (Roborough Reservoir) .	F. Howarth, Esq., C.E.	5	1 0 548	1332	52.46	221
d Lee Moor Clay Works	R. Martin, Esq.	8	1 0 900	1962	77.23	202
d Bere Alston (Mount Tamar) ...	T. Ching, Esq.	5	1 0 350	1196	47.09	187
d Bere Alston (Rumleigh)	Sir A. W. Croft, K.C.I.E.	5	1 6 125	1236	48.65	216
d Sheepstor Vicarage	Rev. H. H. Breton	8	1 0 710	1833	72.18	228
m Sheepstor	F. Howarth, Esq., C.E.	5	1 0 1024	1589	62.57	...
d Sheepstor (Red Stone)	F. Howarth, Esq., C.E.	5	1 0 763	1570	61.80	218
d Sheepstor (Burrator)	F. Howarth, Esq., C.E.	5	1 0 755	1727	67.99	218
d Sheepstor (Head Weir)	F. Howarth, Esq., C.E.	5	1 0 720	1629	64.13	219
d Dousland Reservoir	F. Howarth, Esq., C.E.	5	1 0 721	1406	55.37	221
d Dartmoor (Deancombe Farm) .	F. Howarth, Esq., C.E.	5	1 0 830	1667	65.62	224
d Dartmoor (Lowery)	F. Howarth, Esq., C.E.	5	1 0 899	1662	65.42	211
d Dartmoor (Leather Tor Farm) .	F. Howarth, Esq., C.E.	5	1 0 910	1614	63.55	233
m Dartmoor (Siwards Cross) ...	F. Howarth, Esq., C.E.	5	1 0 1200	1578	62.11	...
m Dartmoor (Cramber Tor)	F. Howarth, Esq., C.E.	5	1 0 1435	1390	54.72	...
d Whitchurch (Ashbrook)	Rev. H. B. Grylls	5	1 0 400	1340	52.76	218
d Tavistock	W. J. Monk, Esq.	5	1 0 457	1353	53.25	218
d Dartmoor (Leeden Tor)	F. Howarth, Esq., C.E.	5	1 0 1270	1432	56.37	...
m Dartmoor (N. Hessary Tor) No. 1F.	Howarth, Esq., C.E.	5	1 0 1625	1568	61.75	...
m Dartmoor (N. Hessary Tor) No. 2F.	Howarth, Esq., C.E.	5	1 0 1502	1620	63.76	...
d Lifton (Kelly House)	Rev. Maitland Kelly	8	2 6 462	1202	47.34	204
d Coryton Manor	R. L. Newman, Esq.	5	1 2 445	1178	46.37	179
d Launceston (Polapit Tamar) ...	R. C. Coode, Esq.	5	1 0 315	1062	41.81	208
3.—ERM & C. 217 sq. mi.						
d Salcombe (Sandhills)	W. H. Pike, Esq.	5	1 0 118	932	36.71	176
d Salcombe	Rev. E. P. Thorpe	5	1 0 38	1003	39.50	...
South Huish	W. Balkwill, Esq.	5	5 6 68	1135	44.68	...
d Kingsbridge (Bank House) ...	W. H. Skinner, Esq.	5	5 0 65	1135	44.67	178
d Kingsbridge (Bank House) ...	W. H. Skinner, Esq.	40	0 100	930	36.61	145
d East Allington (Fallapit Gdns.)	W. R. Tucker, Esq.	5	1 0 327	1345	52.95	170
d Ermington (Strode)	Capt. H. Gore Hawker ...	5	1 0 75	1168	45.99	165
d Ivybridge (Filliam House) ...	H. Alger, Esq.	5	1 0 162	1266	49.85	197
d South Brent (Blackadon Aslm.)	H. Victor Prigg, Esq., C.E.	5	1 0 608	1168	45.98	211
d South Brent (Glazebrook) ...	Vere Cholmondeley, Esq.	5	1 0 450	1642	64.65	168
d South Brent (Somerswood) ...	H. F. W. Prince, Esq.	5	1 0 450	1488	58.57	...
d South Brent (Great Aish)	Miss Kingwell	5	1 0 500	1673	65.85	200
d South Brent (Badworthy) ...	T. W. Latham, Esq.	5	1 6 550	1872	73.71	...
4.—DART. 197 sq. mi.						
d Paignton (Queen's Park)	A. J. Holman, Esq.	8	1 0 11	955	37.60	178
d Paignton (Torquay Road) ...	H. Le B. Gunner, Esq.	5	1 0 10	977	38.45	185
d Paignton (Preston)	G. M. Rosling, Esq.	8	1 2 130	965	37.99	172
d Totnes (Berry Pomeroy)	C. Barran, Esq.	5	1 0 185	1117	43.97	173
d Totnes (Staverton)	J. A. Devenish, Esq.	5	0 11 50	1080	42.51	158
d Totnes (Broadhempston)	Charles Mole, Esq.	5	1 0 135	996	39.23	177
d Ipplepen Vicarage	D. W. Horner, Esq.	5	1 0 273	1027	40.43	173
d Holne (Church Park Cottage) ...	L. W. Frost, Esq.	5	1 6 620	1765	69.50	198
d Ashburton (Dolbear)	Mrs. W. W. Battiscombe ..	5	1 0 300	1247	49.11	158
d Ashburton (Druid House)	J. S. Amery, Esq.	5	1 0 584	1439	56.66	190
d Ashburton (Leusdon Vicarage) ...	Rev. A. Woolcombe	5	1 0 900	1645	64.77	177
d Ashburton (Leusdon)	J. Bancroft, Esq. ....	...	...	1733	68.23	...
d Princetown (Huccaby House) ...	Mrs. L. Wilson	5	1 0 900	1289	50.76	171
d Princetown (H.M. Prison) ...	H. W. Shrimpton, Esq.	5	1 0 1335	2216	87.23	217
d Princetown (Two Bridges) ...	T. C. Bridges, Esq.	5	0 9 1170	2014	79.30	219

DIVISION V.—SOUTH-WESTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with .01 in. or more.
		Diam.	Height above Ground	ft.	in.	1919		
SOUTH DEVON—(con.).		in.	ft.	in.	ft.	mm.	in.	
4.—DART—(con.).								
w Dartmoor (Cowsic Valley)	F. Howarth, Esq., C.E.	8	1	6	1352	1737	68.40 ?	..
m Dartmoor (Black Dumphill) No.5F. Howarth, Esq., C.E.		8	1	0	1590	1325	52.15	..
m Dartmoor (Beardown Tor) No.3 F. Howarth, Esq., C.E.		8	1	0	1550	1228	48.35	..
m Dartmoor (White Tor)	No. 1 F. Howarth, Esq., C.E.	8	1	0	1640	1196	47.10	..
m Dartmoor (Devil's Tor) No. 2 F. Howarth, Esq., C.E.		8	1	0	1785	1276	50.25	..
m Dartmoor (Cowsic Head) No. 4 F. Howarth, Esq., C.E.		8	1	0	1580	1656	65.20	..
5.—TEIGN. 209 sq. mi.								
d Torquay (Cary Green)	F. March, Esq.	5	1	0	12	865	34.04	178
Torquay (Merton Lodge)	Miss Brown	5	1	0	250	843	33.19	176
d Torquay (Stoodley Knowle)	Col. C. R. Burn, M.P.	5	1	6	150	854	33.62	163
d Newton Abbot (The Chestnuts)	E. D. Wylie, Esq.	5	0	6	100	947	37.30	197
d Teignmouth (Den Gardens)	G. Rossiter, Esq.	5	1	0	20	976	38.44	177
d Teignmouth (Landscape Res)	G. Rossiter, Esq.	8	1	0	133	934	36.79	171
d Teignmouth (Hazledown Res.)	G. Rossiter, Esq.	8	2	0	425	947	37.27	175
d Teignmouth (Shaldon Res.)	G. Rossiter, Esq.	5	1	0	213	982	38.65	166
d Teignmouth (The Shrubbery)	E. A. Norton, Esq.	8	1	0	275	925	36.42	171
Teignmouth (Benton)	Late W. C. Lake, Esq., M.D.	5	1	0	320	855	33.66	188
d Ilsington School House	W. J. J. H. Burnett, Esq.	5	1	0	650	1282	50.48	197
d Chudleigh Knighton Vicarage	Rev. A. H. Skipper	5	1	0	110	1020	40.16	168
d Bovey Tracey (Blenheim Ho.)	Mr. E. E. Underdown	5	1	0	300	1184	46.63	167
d Lustleigh (Rockmead)	Rev. W. A. Jones	5	1	0	300	1247	49.11	189
d Manaton School	D. W. Horner, Esq.	5	4	6	900	1240	48.82	206
d Moretonhampstead (Bullaton)	S. C. Chapman, Esq., C.E.	8	1	0	928	920	36.22	191
d Moretonhampstead (Mardon)	S. C. Chapman, Esq., C.E.	8	1	0	835	977	38.47	195
North Bovey (Manor House)	Mr. J. T. Laurence	5	1	0	700	1247	49.08	174
d Christow (Kennick)	S. C. Chapman, Esq., C.E.	8	1	0	836	1101	43.35	198
d Christow (Smithacott)	S. C. Chapman, Esq., C.E.	5	1	6	861	1110	43.70	196
d Moretonhampstead (Bickngstne) S. C. Chapman, Esq., C.E.		8	1	0	1158	1116	43.95	198
d Christow (Laployd)	S. C. Chapman, Esq., C.E.	5	1	6	1041	1201	47.30	194
d Moretonhampstead Rectory	Rev. S. D. Dewey	5	1	5	600	1103	43.41	193
d Moretonhampstead (Tower Pk.) D. W. Horner, Esq.		5	1	6	642	1026	40.40	203
Chagford (Thornworthy)	H. B. Varwell, Esq.	5	1	0	1150	1795	70.68	200
6.—EXE. 445 sq. mi.								
Exmouth (Douglas Avenue)	Mrs. Gillum	5	0	10	80	798	31.42	187
d Exmouth (Nidderdale)	Mrs. Herbert Stewart	5	1	0	51	786	30.95	173
d Exmouth (Manor Grounds)	S. Hutton, Esq., C.E.	5	1	0	13	748	29.44	158
Exmouth (Filters, Salterton Rd.) S. Hutton, Esq., C.E.		5	8	6	195	873	34.37	174
Exmouth (Filters, Capel Lane) S. Hutton, Esq., C.E.		5	8	0	240	854	33.61	177
d Kenton	E. J. Pitt, Esq.	5	1	0	85	960	37.80	166
Lympstone (Newlands)	A. G. Mullins	5	0	5	250	621	24.45	..
d Aylesbeare (Rosamondford)	A. T. Loram, Esq.	5	0	8	220	815	32.10	168
d Exeter (Devon & Exeter Inst.) J. E. Coombes, Esq.		5	13	7	155	837	32.94	171
d Exeter (The Close)	Rev. Canon D. McLaren	5	1	1	140	847	33.35	176
d Exeter (Elmfield House)	W. B. Heberden, Esq., C.B.	5	1	0	100	833	32.78	166
d Exeter (Hele's School)	W. Littler, Esq.	8	7	0	160	810	31.87	167
Whimble (Ousley)	A. A. Sanders, Esq.	6	1	0	200	826	32.51	..
d Broad Clyst (Brockhill)	Mrs. Bayne	5	1	0	80	795	31.31	184
d Brampford Speke Station	Late Mr. A. Tucker	5	1	0	79	833	32.79	155
d Crediton (Hookway)	A. F. Parbury, Esq.	5	1	0	151	901	35.47	183
d Silverton (Killerton)	Mr. J. Wilson	5	1	0	161	884	34.80	..
d Crediton (Okefield)	Capt. Seymour F. Pope	5	0	9	325	883	34.78	192
d Copplestone (Copplestone Ho)	Miss Pope	5	0	11	315	928	36.55	204
d Cullompton	Murray T. Foster, Esq.	5	1	0	202	960	37.80	196
d Tiverton (St. Peter Street)	Miss Gill	5	6	0	270	980	38.57	190
d Tiverton (Hartnolls)	Maj.-Gen. F. A. Bowles, C.B.	5	1	4	226	1000	39.37	191
d Hemyock (Windlehurst)	Miss M. E. Tedder	5	1	0	750	1006	39.62	193
d Bampton (Oakford Rectory)	Rev. F. G. Buller	5	1	0	840	1085	42.72	..
7.—AXE & C. 237 sq. mi.								
d Budleigh Salterton (Lindenwd) Lt.-Col. J. H. Hamersley		5	1	0	130	853	33.57	170
d Budleigh Salterton (Squabmr) S. Hutton, Esq., C.E.		5	1	0	267	909	35.80	..
d East Budleigh (Bicton Gardns) Mr. E. H. High		5	1	0	90	872	34.33	166

DIVISION V.—SOUTH-WESTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with .01 in. or more.
		Diam.	Height above Ground	Sea Level.	1919		
SOUTH DEVON—(con.).		in.	ft. in.	ft.	mm.	in.	
7.—AXE & C.—(con.).							
East Budleigh (Bicton Com.)*	S. Hutton, Esq., C.E.	5	1 0	300	891	35.08	..
D Sidmouth (Sidmount)	Miss C. M. Radford	5	1 0	149	888	34.97	176
D Sidmouth (Sidmount)	Miss C. M. Radford	5	1 0	186	911	35.85	176
Sidmouth (Winslade Cottage)	Miss G. Collins	5	1 0	145	867	34.15	..
D Sidmouth (Salcombe Regis)	J. W. B. Unwin, Esq.	5	0 7	340	941	37.04	155
D Lyme Regis (Rousdon)	Mr. C. Grover	5	1 0	516	928	36.54	175
D Lyme Regis (Pinhay)	Mr. J. F. Stobo	5	1 11	465	947	37.28	175
D Lyme Regis (Ware)	A. J. Woodroffe, Esq.	5	0 10	318	974	38.34	178
D Ottery St. Mary (West Hill)	B. Stanbury, Esq.	5	1 6	340	956	37.64	189
D Ottery St. Mary (Broad Street)	H. D. Badcock, Esq.	5	4 0	170	1006	39.60	179
D Kilminster (Haddon Corner)	A. Hitchcock, Esq.	5	1 0	400	1052	41.41	180
M Kilminster (Haddon Corner)	A. Hitchcock, Esq.	5	1 0	400	1043	41.08	..
M Kilminster (Summerleaze)	A. Hitchcock, Esq.	5	1 0	82	990	38.99	..
D Axminster (Lea Combe House)	Major A. H. F. Luttrell	..	1 0	..	1066	41.98	156
D Membury (Green Down)	James Lee, Esq.	5	1 0	400	1036	40.77	159
NORTH DEVON. (Area, 898 sq. mi.)							
1.—NORTH COAST STREAMS. 77 sq. mi.							
D Woolacombe (Hotel Grounds)	Miss Chichester	5	1 0	60	842	33.16	179
D Morthoe (Twitchen House)	Lt.-Col. G. B. Longstaff	8	1 0	430	930	36.63	198
D Ilfracombe (Reservoir)	O. M. Prouse, Esq., C.E.	5	1 0	395	1119	44.07	195
D Ilfracombe (Bickleighscombe)	Mrs. Slade King	5	1 0	300	1033	40.68	205
D Ilfracombe (Langleigh)	H. B. Holland, Esq.	5	0 11	127	1018	40.10	201
D Ilfracombe (Meteorological Stn.)	O. M. Prouse, Esq., C.E.	5	1 0	25	879	34.59	197
D Martinhoe Rectory	Rev. R. W. Oldham	5	2 3	808	1084	42.69	195
Lynton (Lee Abbey)	Mr. J. Delbridge	5	0 6	320	892	35.13	..
D Lynmouth (Gwynallt)	A. L. Ford, Esq.	8	0 8	284	1081	42.56	185
D Lynmouth (Rock House)	T. H. Mead-Briggs, Esq.	5	0 11	22	1012	39.85	176
2.—TAW. 442 sq. mi.							
D Chumleigh (Leigh House)	Mr. W. Gillies	5	1 0	350	963	37.90	189
D Witheridge	H. J. Mansfield, Esq.	5	1 2	600	1081	42.57	170
D Rackenford Manor	Major R. C. Coldwell	5	1 0	780	1142	44.98	157
D Warkleigh Rectory	Rev. J. H. Thompson	5	1 0	439	958	37.73	205
D South Molton	F. Day, Esq.	5	1 0	430	1224	48.21	179
D Filleigh (Castle Hill Gardens)	The Countess Fortescue	12	4 0	317	1161	45.72	202
D Molland	S. J. Case, Esq.	5	1 9	674	1349	53.12	216
D East Anstey (Rhyll Manor)	Mrs. Hancock	5	1 0	850	1190	46.84	178
D Tawstock Court	(R) Basil E. Peto, Esq.	8	1 9	150	1062	41.82	..
D Barnstaple (N. Dev. Athenæum)	F. W. Chanter, Esq.	8	1 0	25	960	37.81	206
D Barnstaple (Ebberley Lawn)	Mrs. Hibbert	5	..	9	1006	39.60	201
D Braunton (Tyspane)	F. W. Chanter, Esq.	5	1 0	95	965	37.99	197
D Arlington Court	Miss Chichester	5	1 0	613	1320	51.95	198
D Challacombe	O. M. Prouse, Esq., C.E.	5	1 0	815	1510	59.43	182
3.—TORRIDGE. 342 sq. mi.							
D Okehampton (Grammar School)	W. Hunter, Esq.	5	1 0	500	1319	51.93	192
D Dolton (Hilliers)	A. Smythies, Esq.	5	1 3	380	933	36.75	155
D Beaford (Abbots Hill)	J. Stuckey, Esq.	5	4 0	380	942	37.07	164
D Torrington (Enfield)	G. M. Doe, Esq.	5	1 0	336	1012	39.86	201
D Parkham (Melbury Moor)	F. Harding, Esq.	5	1 0	633	1249	49.19	200
D Parkham (Melbury Reservoir)	F. Harding, Esq.	5	1 0	517	1345	52.97	200
D Littleham (Orleigh Court)	W. H. Rogers, Esq.	5	1 0	260	1176	46.30	212
D Landcross (South Close)	C. R. J. Hibbert, Esq.	5	1 0	100	891	35.09	207
D Bideford (Webbery)	Mrs. C. E. Boyd	5	1 10	355	906	35.65	187
D Bideford Rectory	Rev. Preb. Newton Leeke	5	1 2	150	957	37.66	191
D Bideford (Slade Park)	J. C. T. Heriz-Smith, Esq.	5	1 0	198	878	34.56	182
D Bideford (Horwood House)	Rev. J. Dene	5	1 0	288	850	33.48	198
D Northam (Fairlea)	Col. F. W. Bennet	5	2 6	190	818	32.21	183
D Westward Ho! (Bellevue)	A. Boyd, Esq.	8	1 0	200	810	31.87	209
D Westward Ho! (Royal Golf Clb)	Major A. Newton-King	5	1 6	10	760	29.91	163
D Instow	Col. F. W. Evatt	5	1 0	105	872	34.33	169

* Formerly called Yettington.

DIVISION V.—SOUTH-WESTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with -01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
NORTH DEVON—(con.).		in.	ft.	in.	ft.	mm.	in.	
4.—WEST COAST STREAMS. 32 sq. mi.								
D Hartland Abbey	Mr. G. Sleep	5	1	6	222	874	34.40	169
D Clovelly Court	Mr. H. Tuke	5	1	0	360	1198	47.16	192
5.—EXE. 5 sq. mi.								
CORNWALL. (Area, 1357 sq. mi.)								
1.—CAMEL & N.W. COAST STREAMS. 458 sq. mi.								
Phillack Rectory	Rev. Canon A. P. Hockin	5	1	0	70	820	32.30	209
D Redruth (Trewirgie)	A. P. Jenkin, Esq.	5	1	0	399	1080	42.50	222
Redruth (Green Lane Nurseries)	F. Sanders, Esq.	5	0	6	..	1002	39.45	..
St. Agnes	W. C. Whitworth, Esq.	5	5	0	318	812	31.95	198
D Newquay (Tresillian House)	Lt.-Col. E. Gully-Bennet	5	2	0	290	995	39.18	181
D Newquay (Mount Wise) No. 1	Capt. C. C. Vigurs, R.A.M.C.	5	1	0	190	844	33.21	197
d St. Wenn Vicarage	Lt. B. H. Davies	8	1	0	431	1469	57.84	..
D Bodmin (Polgwin)	H. D. Foster, Esq.	5	1	0	400	1190	46.84	157
D Bodmin (Castle Hill House)	W. G. Wales, Esq., C.E.	5	1	0	484	1188	46.79	202
Helland (Tredethy)	Mrs. Hext	5	1	6	..	1151	45.31	195
Wadebridge (Bryn)	A. P. Jenkin, Esq.	..	..	..	60	1015	39.95	204
D St. Kew (Skisdon)	Mrs. Braddon	5	1	0	100	1072	42.20	183
St. Minver (Trebetherick)	A. P. Jenkin, Esq.	9	..	..	140	805	31.69	..
Camelford (Stannon Clay Wks.)	R. M. Richards, Esq.	8	1	5	800	1381	54.37	197
d Bude	Karl Durston, Esq.	5	1	0	50	798	31.40	..
D Bude (Bramble Hill)	J. E. Barclay Bevan, Esq.	5	0	8	100	882	34.71	212
D Morwenstow Vicarage	Rev. H. Lynne Jones	5	0	10	331	962	37.87	225
D Morwenstow (Torracombe Man.)	W. W. Martyn, Esq.	5	1	0	450	973	38.32	192
2.—FOWEY & S.E. COAST STREAMS. 620 sq. mi.								
Lizard	A. P. Jenkin, Esq.	5	1	0	244	890	35.02	..
D Cadgwith (Coastguard Houses)	Miss H. F. Shepherd	5	1	0	180	900	35.44	203
d Mullion (Dry Tree)	The Air Ministry	8	1	0	375	1106	43.55	202
St. Keverne (Lanarth)	P. D. Williams, Esq.	5	1	10	290	1137	44.77	222
D St. Keverne (Rosuick Cottage)	G. W. Jevons, Esq.	5	1	0	250	1153	45.39	230
Bosahan	Cornwall County Council	..	..	..	240	792	31.17	171
Helston (Tenderah)	J. Walker Tyacke, Esq.	5	1	2	220	1052	41.40	204
Penzance (Trewidden)	Mr. J. H. Murley	5	0	5	..	1159	45.63	198
Penzance (Lower Larrigan)	E. T. Gregory, Esq.	5	0	9	70	1058	41.67	212
D Penzance (Morrab Garden)	C. H. Benn, Esq.	5	1	0	55	1051	41.39	217
D Penzance (Taroveor Terrace)	A. W. Penrose, Esq.	4	7	0	100	1054	41.48	218
Penzance (Rosehill)	(R) David Howell, Esq.	10	3	0	212	807	31.76?	209
Penzance (Tregwainton House)	T. Robins Bolitho, Esq.	10	1	0	400	1216	47.89	208
D Penzance (County School)	Lance Webb, Esq.	5	0	6	155	1034	40.73	215
Marazion	T. Field Michell, Esq.	5	2	0	30	947	37.27	189
Mawnan	A. P. Jenkin, Esq.	..	..	..	160	1115	43.88	..
D Falmouth (New Observatory)	Meteorological Office	5	1	0	168	1121	44.09	216
D Penryn (Ashfield)	J. G. Stephens, Esq.	5	1	0	95	1062	41.80	193
D Redruth (Trevince)	E. B. Beauchamp, Esq.	8	1	0	240	1198	47.18	213
Truro (Killiow)	Miss Daubuz	5	1	0	230	1154	45.43	203
D Truro (Tregolls)	Miss C. L. Rashleigh	5	1	0	65	1082	42.61	206
Truro (Penair)	H. H. Williams, Esq.	5	..	..	250	1006	39.61	..
D Truro W.W. (Lower Tregurrow)	W. J. Lean, Esq.	5	1	0	71	1144	45.03	198
D Fowey	C. I. Wellington, Esq.	5	1	0	52	901	35.48	164
D St. Austell (Trevarna)	W. M. Coode, Esq.	5	1	0	300	1255	49.40	194
D Looe (Morval)	Capt. A. H. Tremayne, R.N.	5	1	0	150	1308	51.48	167
Looe (Bray)	Mrs. G. Sneyd	5	1	0	450	1168	46.00	206
D Lostwithiel (Lanwithan)	Miss Foster	5	1	0	80	1194	46.99	192
Menheniot (Coldrenick)	Rev. F. E. Treiawny	5	1	0	301	1251	49.26	..
D Liskeard (St. Pannock Rectory)	Rev. S. H. Farwell Roe	5	0	3	400	1574	61.96	215
D Liskeard (Trevillis)	Col. L. C. Foster	5	1	0	320	1277	50.27	211
D Bolventor Vicarage	Rev. J. W. Timson	5	2	0	845	1833	72.18	188
3.—TAMAR & C. 279 sq. mi.								
D Devonport (Empacombe)	J. Sandercock, Esq.	5	1	0	20	1037	40.81	191
Devonport (Cremyll)	Cornwall County Council	5	10	0	25	953	37.53	210
Saltash (Pentillie Castle)	Cornwall County Council	5	2	4	150	1351	53.20	204
D St. Mellion Rectory	Rev. F. T. Wintle	5	1	0	400	1257	49.49	211

DIVISION V.—SOUTH-WESTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
CORNWALL—(con.).		in.	ft.	in.	ft.	mm.	in.	
3.—TAMAR & C.—(con.).								
d Callington (Pencrebar)	Miss Horndon	5	1	9	450	1234	48·60	206
d Albaston	N. R. Rosekilly, Esq.	5	4	0	600	1098	43·22	174
d Launceston (Landue)	Miss S. E. Tregoning	5	0	11	225	1075	42·32	207
d Launceston (Hexworthy)	R. B. Rogers, Esq.	5	1	0	270	1103	43·41	200
d Altarnon Sanctuary	Rev. A. H. Thorold	5	1	0	620	1421	55·94	201
d Egloskerry (Tregeare)	E. G. B. Lethbridge, Esq.	5	1	0	613	1164	45·84	..
d North Tamerton (Davies)	Mrs. Bray	5	4	0	390	942	37·10	178
4.—INSULAR—Isles of Scilly.								
d St. Mary's	Meteorological Office	8	1	6	131	846	33·33	228
d Tresco Abbey	Maj. A. A. Dorrien Smith	8	3	0	40	869	34·20	221
SOMERSETSHIRE. (Area, 1630 sq. mi.)								
1.—LOWER AVON. 300 sq. mi.								
d Wanstrow (The Manor Cottage)	P. E. B. Warburton, Esq.	5	1	0	465	1094	43·05	..
d Shepton Mallet (Pondsmead)	Mr. J. Fletcher	8	1	0	710	1290	50·79	172
d Frome W.W. (Egford)	L. Slaughter, Esq.	8	2	0	270	996	39·20	195
d Frome (Selwood School)	Miss A. K. Coombs	5	1	7	320	884	34·82	170
d Mells (Selwood)	Miss E. G. Horner	5	1	0	344	952	37·50	180
d Binegar (Gurneyslade)	Rev. G. B. Hicks	5	1	0	588	1139	44·85	178
d Stratton-on-Fosse(DownsideAb)	Rev. G. B. Hicks	8	1	0	600	1131	44·51	175
d Beckington	E. M. Nelson, Esq.	8	1	3	270	851	33·49	162
d Beckington (The Cedars)	F. E. Rogers, Esq.	5	1	6	260	858	33·77	165
d Chewton Mendip (The Priory)	The Earl Waldegrave	5	1	0	550	1239	48·77	195
d Chewton Mendip(WaldegraveH)	late J. Hollis, Esq.	5	1	1	440	1187	46·73	189
d Midsomer Norton (Dymboro)	Dr. A. Bulleid	5	1	0	357	954	37·54	172
d Radstock	G. H. Gibson, Esq.	8	8	0	330	1004	39·53	..
d E. Harptree (Sherborne Res.)	J. A. McPherson, Esq., C.E.	5	1	0	338	1174	46·20	179
d Harptree Hill	J. A. McPherson, Esq., C.E.	8	1	0	784	1096	43·17	..
d Temple Cloud	Dr. Theodore Martin	5	1	0	340	958	37·71	174
d Clutton (Council School)	J. Pullen, Esq.	5	1	6	420	922	36·29	170
d Pensford (Sutton Court)	Lord Strachie	8	1	0	280	932	36·69	182
d Monkton Combe (Crossways)	M. J. Lipscomb, Esq.	5	1	0	180	879	34·59	..
d Pensford (Houndstreet House)	H. Leyborne Popham, Esq.	5	0	9	400	890	35·02	190
d Chew Magna	J. A. McPherson, Esq., C.E.	5	1	4	180	995	39·16	170
d Pensford (Publow School Ho.)	A. Hayes, Esq.	5	1	0	230	869	34·22	159
d Bath (Royal Institution)	E. C. Davey, Esq.	6	8	0	74	808	31·79	..
d Bath (Henrietta Park)	Bath Corporation	5	1	0	67	808	31·81	175
d Bath (Statutory Hospital)	Bath Corporation	5	1	0	520	853	33·60	..
d Bath (Lansdown Place)	Sir Percy K. Stothert, K.B.E.	5	1	2	410	834	32·82	163
d Bath (Charlcombe)	J. Dent Young, Esq., C.E.	8	2	0	325	833	32·79	170
d Saltford House	Col. W. V. Rolleston	8	0	8	100	862	33·95	178
d Batheaston Reservoir	J. Dent Young, Esq., C.E.	6	2	0	248	817	32·16	176
d Barrow Gurney Reservoir	J. A. McPherson, Esq., C.E.	5	1	6	300	933	36·74	187
d Long Ashton (Estate Office)	H. B. Napier, Esq.	8	1	0	134	1116	43·94	165
d Failand House	Miss Agnes Fry	5	1	0	385	928	36·55	190
2.—YEO, AXE & BRUE. 405 sq. mi.								
d Castle Cary (Alford House)	Admiral P. F. Tiliard	5	1	0	98	830	32·69	172
d Somerton (Butleigh Court)	R. Neville Grenville, Esq.	8	1	2	95	892	35·12	165
d Bruton (Pitcombe Vicarage)	Rev. F. P. Syngé	5	2	4	295	898	35·36	203
d Bruton (Redlynch Park)	W. F. Pepper, Esq.	5	0	7	390	923	36·34	172
d Ditchat Rectory	Rev. H. H. Tripp	5	1	0	200	870	34·26	179
d Street (Overleigh House)	J. B. Clark, Esq.	5	0	8	100	855	33·66	172
d Street (Hind Hayes)	Joseph Clark, Esq.	5	1	5	78	841	33·11	165
d Street (Millfield)	W. S. Clark, Esq.	8	1	0	100	846	33·30	165
d Glastonbury (Wyrall)	J. Morland, Esq.	5	0	8	110	788	31·04	159
d Edington	Major A. C. F. Luttrell	5	2	0	90	1005	39·58 ?	..
d Shepton Mallet (Pilton)	Rev. H. A. Boys	5	1	3	354	956	37·62	206
d Shepton Mallet (Charlton)	C. E. Burnell, Esq.	5	1	0	481	1055	41·52	177
d Shepton Mallet (Field House)	F. H. Berryman, Esq.	5	1	0	500	1055	41·53	181
d Shepton Mallet (Sewage Farm)	Mr. W. Reader	5	0	8	310	1050	41·32	174
d Wells (Somerset & Bath Asym.)	J. E. P. Shera, Esq., M.D.	5	1	0	300	975	38·39	183
d Wells (Wookey Hole Paper Mills)	W. S. Hodgkinson & Co., Ltd.	5	1	4	180	936	36·87	..

DIVISION V.—SOUTH-WESTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with ·01 in. or more.	
		Diam.	Height Ground	above Sea Level.	1919			
SOMERSETSHIRE—(con.).		in.	ft.	in.	ft.	mm.	in.	
—YEO, AXE & BRUE—(con.).								
d Burnham (Chalbury)	H. A. Smith Spark, Esq.	5	1	0	20	809	31·86	169
Burnham (Berrow Road)	Rev. C. E. P. Fripp	5	1	0	0	815	32·08	151
d Burnham (Brent Knoll)	Miss FitzGerald	5	2	0	26	774	30·49	175
Compton Martin	J. A. McPherson, Esq., C.E.	8	1	0	276	1056	41·59	..
Ubley (Rookery Farm)	J. A. McPherson, Esq., C.E.	8	1	0	525	1113	43·83	..
Blagdon (Nordrach-on-Mendip) ..	W. R. Thurnam, Esq., M.D.	5	0	5	862	1253	49·33	190
d Winscombe (Barton)	A. E. Stephens, Esq.	8	1	6	124	878	34·56	170
d Winscombe (The Down)	J. Grubb, Esq.	5	1	0	295	978	38·49	197
d Banwell (Eversley)	Kenneth Anderson, Esq.	5	1	0	50	892	35·10	182
Blagdon Hill	J. A. McPherson, Esq., C.E.	8	1	0	550	1030	40·57	..
Blagdon (Pumping Station) ..	J. A. McPherson, Esq., C.E.	8	0	8	112	922	36·30	186
Blagdon (Coombe Lodge)	J. A. McPherson, Esq., C.E.	8	1	0	388	982	38·65	..
Ubley (Pixey Hole)	J. A. McPherson, Esq., C.E.	8	1	0	300	861	33·90	..
Nempnett (West Town)	J. A. McPherson, Esq., C.E.	8	1	0	263	927	36·50	..
Burrington (Burrington Link) ..	J. A. McPherson, Esq., C.E.	8	1	0	335	980	38·57	..
d Burrington (Langford)	Miss M. B. Smith	5	1	8	40	953	37·52	179
d Weston-spr-Mare (Clarence Pk.) ..	W. H. Allen, Esq.	5	1	2	29	797	31·39	163
Butcombe (Cholwell)	J. A. McPherson, Esq., C.E.	8	1	0	370	953	37·52	..
d Wrington (The Cottage)	H. C. Bristowe, Esq., M.D.	5	6	0	100	886	34·90	163
d Wrington (The Rectory)	Rev. G. M. Ashdown	5	5	0	69	906	35·69	171
d Wrington (West Hay)	Miss M. C. Meade-King	5	1	8	98	871	34·30	177
Yatton (Chelvey)	J. A. McPherson, Esq., C.E.	8	0	8	60	842	33·16	162
d Flax Bourton (Backwell Hill Ho) ..	W. Garnett, Esq.	8	1	10	520	1142	44·96	167
Flax Bourton (West Town) ..	Theodore Robinson, Esq. ....	..	..	..	100	970	38·20	..
d Flax Bourton (The Grange)	C. Onslow Master, Esq.	5	1	0	180	840	33·09	..
d Clevedon W. W. (Old Street) ..	J. Harger Pye, Esq.	5	1	10	28	822	32·38	159
d Clevedon W. W. (Tickenhm Rd) ..	J. Harger Pye, Esq.	5	1	6	70	805	31·68	175
d Clevedon (Bowling Green) ..	Major A. B. Trestrail	5	0	11	126	848	33·40	150
Wraxall (Boys' School)	Ebenezer Brown, Esq.	5	1	0	80	880	34·63	194
Wraxall Rectory	Mrs. Vaughan	8	3	0	100	872	34·31	176
3.—PARRETT. 568 sq. mi.								
d Crewkerne (The Reservoir)	E. H. Munford, Esq.	8	1	0	426	902	35·53	177
d Crewkerne (Bincombe House) ..	Miss Sparks	5	1	3	293	963	37·93	184
d Crewkerne (Merefield House) ..	J. Tompsett, Esq.	8	1	1	231	971	38·22	180
d Crewkerne (Mark's Barn)	Miss V. Blake	8	0	9	260	894	35·19	196
Coker Court Gardens	Mr. T. H. Gilham	8	1	6	250	919	36·17	..
d West Coker	G. F. Deedes, Esq.	5	1	6	265	828	32·58	167
d Ilminster (Laurel Bank)	W. Beckwith, Esq.	5	1	0	180	870	34·25	175
d Ilminster (Whitelackington Ho) ..	S. Creed, Esq.	5	3	0	200	961	37·84	178
d Ilminster (Dillington Park) (r) ..	Mr. W. Goldthorpe	8	3	6	161	929	36·59	161
d Yeovil (Gas Works)	G. Fenwick, Esq.	5	22	0	122	824	32·43	151
d Yeovil (Pen Mill Sewage Wrks) ..	Dr. H. W. Barnes	5	1	0	102	853	33·58	187
d Wellington (Old Way House) ..	T. Fox, Esq.	5	1	1	300	941	37·04	189
d Stoke-under-Ham	Miss Gillett	8	1	0	80	860	33·84	152
d Tintinhull (Manor House)	Rev. Dr. S. J. M. Price	5	0	10	145	823	32·39	150
d Angersleigh (Blagdon Res.) ..	H. T. Coles, Esq.	8	1	6	590	969	38·14	..
d Angersleigh (Leigh Hill Res.) ..	H. T. Coles, Esq.	8	1	6	525	967	38·07	..
d Angersleigh (Leigh Court)	A. Eastwood, Esq.	8	1	0	360	1006	39·60	186
d Taunton (The Park)	Dr. H. J. Alford	5	1	0	70	775	30·52	183
d Wiveliscombe (Culverhead) ..	T. R. Marsh, Esq., C.M.G.	5	1	0	450	1096	43·13	171
d Langport (The Grange)	Rev. H. A. Boys	5	1	0	50	792	31·20	183
d Langport (Huish Episcopi) ..	Miss A. M. Kelway	8	1	1	30	806	31·72	182
d Milverton (The Mount, Halse) ..	Miss M. Cecil-Smith	5	1	2	254	931	36·66	186
d Wincanton (Maperton House) ..	Mr. L. G. Read	5	1	3	..	988	38·91	201
d North Cadbury Rectory	Rev. H. A. Boys	8	1	3	256	872	34·31	185
Cothelstone House	C. E. J. Esdaile, Esq.	5	1	0	430	1042	41·02	164
d Bridgwater (Blake Gardens) ..	F. Parr, Esq., C.E.	5	3	1	27	861	33·89	171
d Bridgwater (Ashford)	F. Parr, Esq., C.E.	5	1	1	102	882	34·72	167
d Cannington (Brymore)	H. H. P. Bouverie, Esq.	5	2	0	65	816	32·14	174
d Fiddington (Keenthorne)	T. W. Cuffe, Esq.	6	1	0	220	925	36·43	166
4.—NORTH COAST STREAMS. 158 sq. mi.								
Williton (Aller Farm)	R. G. Hosegood, Esq.	5	2	6	175	862	33·95	163
d Bicknoller (Weacombe House) ..	Lord St. Audries	5	1	0	400	851	33·51	163

DIVISION V.—SOUTH-WESTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.	1919		
SOMERSETSHIRE—(con.).		in.	ft. in.	ft.	mm.	in.	
4—NORTH COAST STREAMS—(con.).							
Bicknoller (Willett).....	H. C. Venning, Esq.	5	1 0	450	941	37·03	..
D Williton (The White House)...	S. L. Rogers, Esq.....	5	0 9	72	814	32·04	174
D Quantockshead (St. Audries)...	Mr. F. S. Hayne	8	1 0	260	825	32·49	169
D Carhampton Vicarage	Rev. A. G. Locke	5	1 3	70	820	32·29	162
D Kilve	A. E. C. Woodhouse, Esq....	5	1 0	50	821	32·33	173
D Dunster (The Schools)	E. S. Cantle, Esq.	5	1 0	100	937	36·88	172
Minehead (The Poplars)	T. Hosegood, Esq.....	5	1 6	100	912	35·89	186
D Minehead	W. Y. Tamlyn, Esq.	5	1 0	95	868	34·18	183
Porlock (Lynch Mead, Allerfrd)	J. Dyke Acland, Esq.	5	1 0	100	943	37·14	197
5.—EXE. 122 sq. mi.							
D Dulverton (Exebridge Fishery).	T. F. Tracy, Esq.	5	1 0	410	1210	47·63	186
D Brushford Rectory	Rev. B. J. du Boe.....	5	1 0	450	1259	49·58	190
D Brushford Nurseries	Mr. G. Ruff	5	1 2	400	1204	47·39	202
D Hawkridge (Liscombe)	Mr. E. W. Darby	5	3 6	980	1581	62·26	220
d Winsford School	W. Dicker, Esq.	5	1 2	685	1545	60·82	185
D Cutcombe (Wheddon Cross) ...	H. H. P. Bouverie, Esq....	5	1 2	945	1405	55·32	200
D Exford (North Ley)	F. G. Heal, Esq.	5	5 0	1000	1544	60·79	..
D Simonsbath	G. Molland, Esq.....	6	0 7	1080	1768	69·62	208
6.—AXE. 42 sq. mi.							
D Cricket St. Thomas (Cricket Ho.)	Mr. G. F. Richardson	5	1 0	444	1156	45·50	180
D Chard (High Street Council Sch.)	F. Barnard, Esq.....	5	1 2	425	1105	43·51	177
7.—STOUR. 35 sq. mi.							
D Temple Combe Rectory	Rev. J. C. Fox.....	5	0 6	215	953	37·53	177
D Temple Combe (Cheriton Ho.) ..	Rev. H. A. Boys .....	..	..	..	916	36·07	162
D Wincanton (Roundhill Grange)	Maj.-Gen. C. H. P. Ducat	5	1 11	375	916	36·06	180

DIVISION VI.—WEST MIDLAND COUNTIES.

GLOUCESTERSHIRE. (Area, 1243 sq. mi.).

1.—WYE. 50 sq. mi.								
D Chepstow (Castleford)	Mrs. W. R. Lysaght	5	0 8	146		935	36·82	174
D Chepstow (Pen Moel)	W. R. Price, Esq.	5	1 0	240		1000	39·39	189
D Forest of Dean (Mailscof Ldge).	Office of Woods	8	1 0	630		835	32·89	156
D Forest of Dean (Ruardean H. Lo)	Office of Woods	8	1 0	932		846	33·30	155
D Lydbrook (Viaduct House)	G. S. Damsell, Esq.	5	1 0	95		774	30·48	196
2.—SEVERN—Right Bank Tributaries. 176 sq. mi.								
D Chepstow (Sedbury Park)	Col. P. S. Marling, V.C., C.B.	8	1 0	175		952	37·48	156
D Forest of Dean (Whitemead Pk)	Office of Woods	8	1 0	200		838	33·00	154
D Forest of Dean (Blakeney Hill)	Office of Woods	8	1 0	500		867	34·15	172
d Forest of Dean (Worcester Lo.)	Office of Woods	8	0 11	712		890	35·04	..
D Forest of Dean (Edgehills Lo.)	Office of Woods	8	1 0	914		781	30·76	172
D Cinderford (Belle Vue Road)...	Dr. J. N. Beadles	5	1 1	780		963	37·92	161
D Westbury-on-Severn (Chaxhill)	Mrs. Grant	5	3 0	122		776	30·53	158
D Oxenhall (Dymock Woods) ..	Office of Woods	8	1 0	232		693	27·27	163
D Bromsberrow Heath Pump.	Stat. Capt. W. Osborne Thorp..	5	1 0	181		642	25·29	167
Tewkesbury (Forthampton Ct.)	Mr. B. Webster	5	1 0	48		801	31·53	187
D Tewkesbury (Upper Lode)	E. J. Bradley, Esq.....	5	1 0	41		728	28·64	169
3.—SEVERN—Left Bank Tributaries. 372 sq. mi.								
d Wickwar	F. G. Ansell, Esq.	5	1 0	260		771	30·36	..
d Thornbury (Thornbury House)	H. V. Gillett, Esq.	5	2 1	110		811	31·93	..
Tortworth Court	The Earl of Ducie	8	1 0	264		821	32·32	165
Tortworth School	E. A. Smith, Esq.	5	2 6	264		824	32·44	..
D Dursley (Woodmancote)	E. Fryer Smith, Esq.	5	1 0	257		856	33·68	157
D Avening House	Lady Eleanor Byng	8	1 3	350		862	33·93	165
Berkeley Castle Gardens	Mr. T. Ashbee	5	1 6	62		833	32·78	..

DIVISION VI.—WEST MIDLAND COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
		in.	ft.	in.	ft.	mm.	in.	
GLOUCESTERSHIRE—(con.).								
3.—SEVERN—Left Bank Tributaries—(con.).								
d Berkeley (Sharpness Docks) . . . F. G. Marling, Esq.		5	3	6	50	810	31·87	171
d Minchinhampton (Rowan Cott) E. Metcalfe Day, Esq.		5	1	0	630	769	30·27	176
d Minchinhampton (Camp Field) Piers F. Legh, Esq.		5	1	6	650	866	34·08	166
d Stroud (Stanley Park) Late Sir W. H. Marling, Bt.		8	1	0	365	908	35·75	155
d Stroud (Field Place) A. W. Stanton, Esq.		5	1	0	226	653	25·72 ?	..
d Stonehouse (Wycliffe College) . . . W. A. Sibly, Esq.		5	1	0	120	789	31·08	162
Stonehouse (Parklands) No. 1 (R) W. Grey Robinson, Esq.		8	2	6	103	755	29·71	186
Stonehouse (Parklands) No. 2 . . . W. Grey Robinson, Esq.		5	2	6	103	750	29·54	179
d Whitminster (The Junction) . . . F. A. Jones, Esq., C.E.		5	1	0	33	836	32·91	193
Haresfield Court R. I. Tidswell, Esq.		5	1	0	100	912	35·92	214
d Harescombe Grange Stamford Hutton, Esq.		5	1	0	557	805	31·71	191
Quedgelley House Col. T. F. Curtis Hayward		5	1	0	65	752	29·62	170
d Witcombe Reservoir E. W. A. Carter, Esq.		8	3	0	297	747	29·40	157
d Gloucester (The Park) G. Embrey, Esq.		8	1	3	56	721	28·38	192
d Gloucester (Denmark Road) . . . Harley Butt, Esq.		5	1	5	79	699	27·52	187
d Gloucester (Barnwood Vicarage) Rev. F. H. Fowler		5	1	0	80	790	31·09	194
d Gloucester (Lanthony Lock) . . . E. J. Bradley, Esq.		5	1	2	39	717	28·24	155
d Gloucester (Maise more Lock) . . . E. J. Bradley, Esq.		5	1	1	39	709	27·90	181
d Churchdown (Barrow Hill) . . . Mrs. J. H. Jones		5	1	0	225	731	28·77	180
d Dowdeswell Reservoir J. S. Pickering, Esq., C.E.		5	1	3	357	785	30·91	158
Cheltenham (Thirlestane Hill) (R) J. Player, Esq.		8	2	0	240	731	28·78	173
d Charlton Kings (The Grange) . . . Miss E. M. Hebrden		5	0	9	300	770	30·30	189
d Cheltenham (Hewletts Res.) . . . J. S. Pickering, Esq., C.E.		8	1	6	419	734	28·90	180
d Cheltenham (Sandford Mead) . . . J. S. Pickering, Esq., C.E.		5	2	6	210	731	28·77	163
Cheltenham (Kemerton Lodge) . . . Rev. Percy Burd		5	1	0	211	778	30·61	189
d Cheltenham (Old Bath Road) . . . F. A. Jones, Esq., C.E.		5	1	0	290	699	27·53	175
Cheltenham (Suffolk Square) . . . Rev. Preb. E. T. Williamson		5	1	0	227	716	28·18	181
d Cheltenham (High Street) A. C. Saxby, Esq.		5	1	0	214	697	27·43	..
d Cheltenham (Oxford Lawn) . . . Miss Grace Jones		5	1	4	230	684	26·95	174
d Cheltenham (Swindon) J. C. M. Stanton, Esq.		8	1	2	136	720	28·35	182
d Tewkesbury Pumping Station . . . J. S. Pickering, Esq., C.E.		5	0	9	47	759	29·88	171
d Alderton Rectory Rev. A. D. Pennington	2	2	185	561	22·09 ?	154
Beckford Hall Capt. H. A. Case	1	0	130	725	28·55	..
4.—SEVERN—Upper Avon. 99 sq. mi.								
d Chipping Campden (Hidcote) . . . Major W. Wright		5	1	0	325	710	27·95	170
d Mickleton (Bank House) M. J. Salter, Esq.		5	1	0	233	691	27·20	183
5.—LOWER AVON & C. 198 sq. mi.								
d Bath (Monkswood Reservoir) . . . J. Dent Young, Esq. C.E.		5	2	0	365	825	32·48	191
d Bristol Docks (Underfall Yard) T. A. Peace, Esq.		8	19	6	45	734	28·90	165
Bristol (Telephone Avenue) J. A. McPherson, Esq., C.E.		5	50	0	80	856	33·71	182
Clifton (Oakfield Road) J. A. McPherson, Esq., C.E.		5	1	0	200	907	35·70	178
d Clifton (Harley Place) Miss Hooper		5	1	5	260	934	36·77	196
d Clifton College J. A. O. Muirhead, Esq.		8	1	2	230	887	34·94	180
d Clifton (Stoke Bishop) H. L. P. Lowe, Esq.		8	1	3	243	912	35·90	172
d Filton F. W. Gayner, Esq.		5	2	0	202	779	30·66	152
d Winterbourne (Kendleshire) . . . J. Marsh, Esq.		5	1	0	170	748	29·45	151
d Winterbourne Down (Elm Croft) Hugh T. Coles, Esq.		5	1	0	250	803	31·61	200
d Frampton Cotterell (Park Ho) . . . H. H. Harding, Esq.		5	1	0	158	760	29·90	174
d Chipping Sodbury (The Ridge) . . . Lt.-Col. P. Burges		5	1	0	375	750	29·52	161
d Almondsbury (Over Court Park) Mr. F. Delbridge		5	1	0	147	886	34·87	185
Badminton Gardens Mr. J. Pearce		5	1	0	407	877	34·52	159
6.—THAMES—Right Bank Tributaries. 15 sq. mi.								
7.—THAMES—Windrush & c. 333 sq. mi.								
d Fairford (Dunfield, Kempsford) A. T. Iles, Esq.		5	1	0	260	736	28·98	178
d Fairford Vicarage Rev. Canon R. C. S. Jones		5	0	9	280	767	30·19	156
d Fairford (Draycott) C. W. Edmonds, Esq.		5	2	0	200	812	31·99	158
d Lechlade (St. John's Lock) R. A. Swarbrick, Esq.		5	3	2	239	659	25·93	164
d Lechdale (Claydon House) T. T. S. Metcalfe, Esq.		5	1	0	250	734	28·91	176
Lechlade (Southrop) Thomas Arkell, Esq.	1	0	..	720	28·33	..
d Cirencester (Cripps Mead) Mrs. Wilfred Cripps		5	0	8	366	832	32·74	195
d Cirencester (Dollarward House) C. P. Hooker, Esq.		5	1	6	366	903	35·56	195
d Cirencester (Dollarward House) C. P. Hooker, Esq.		8	1	6	366	875	34·44	195

DIVISION VI.—WEST MIDLAND COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with .01 in. or more.
		Diam.	Height above Ground	above Sea Level.	1919		
GLOUCESTERSHIRE—(con.).		in.	ft. in.	ft.	mm.	in.	
7.—THAMES—Windrush & c.—(con.).							
Colesborne Park	H. J. Elwes, Esq., F.R.S....	5	0 9	538	872	34.35	..
d Great Barrington	H. J. Barrett, Esq.	5	1 6	430	822	32.35	163
d Northleach (Sherborne House) ..	Mr. A. Mitchell	5	1 0	420	844	33.25	..
d Northleach (Leygore Manor) ..	Arthur E. Moss, Esq.	5	1 0	650	854	33.64	201
d Bourton-on-Water (Eastfield) ..	E.W. Kendall, Esq.	5	1 6	434	804	31.66	169
d Bourton-on-Water (Chardwar) ..	G. F. Moore, Esq.	5	0 10	430	768	30.23	169
Bourton-on-Water Rectory ..	Rev. Canon W. E. White...	5	0 10	433	796	31.32	153
Stow-on-the-Wold (Icomb Place) ..	Capt. G. H. Simpson Hayward	8	1 6	500	814	32.06	161
d Stow-on-the-Wold (Duncombe) ..	W. T. Arkell, Esq.	5	1 0	670	771	30.36	..
HEREFORDSHIRE. (Area, 840 sq. mi.)							
1.—WYE. 685 sq. mi.							
d Ross (Hill Court)	G. R. Trafford, Esq.	5	1 1	161	674	26.54	151
d Weston-under-Penyard	Dr. G. W. Prevost	5	0 11	290	650	25.58	151
d Ross (Chasedale Observatory) ..	F. J. Parsons, Esq.	5	1 0	203	640	25.21	171
d Ross (Birchlea)	Miss M. L. Southall	5	1 0	210	693	27.30	196
d Kentchurch Rectory	Rev. R. P. Dansey	5	1 0	215	817	32.18	174
Perrystone Court	Brig.-Gen. G. S. Clive, D.S.O.	5	1 3	450	564	22.19?	..
Brockhampton Court	Col. A. W. Foster	8	4 0	500	704	27.70	..
d Fownhope (Lower House)	Miss F. Cresswell	5	1 0	200	680	26.78	191
d Fownhope (Morney Cross)	A. P. Maudslay, Esq., D.Sc.	5	0 10	195	631	24.84	167
d Woolhope (The Hyde)	J. A. Thompson, Esq.	5	1 0	440	670	26.36	181
Vowchurch (Whitehouse)	A. S. Wood, Esq.	5	5 6	450	787	30.98	170
d Hereford (Barton House)	Rev. A. G. Jones	8	1 0	187	620	24.41	180
d Hereford (Breinton Court)	H. A. Wadworth, Esq.	5	3 0	238	571	22.47	166
d Hereford (Broomy Hill)	W. Cooke, Esq.	8	0 10	201	543	21.38	154
d Hereford (Holmer Hall)	Rev. Preb. M. Hopton	8	1 3	244	589	23.19	178
d Credenhill (Stretton Sugwas) ..	Capt. S. H. Armitage	5	1 0	226	588	23.17	192
d Credenhill	F. E. Whiting, Esq.	5	1 5	275	642	25.28	158
d Burghill Court	Miss E. D. Woodhouse	5	1 0	293	579	22.80	180
d Ocle Pychard (Ocle Court)	G. Cresswell, Esq.	8	1 2	298	677	26.67	198
d Whitney-on-Wye	Mr. W. Burgess	8	1 0	428	859	33.82	210
d Brilley Vicarage	Rev. W. Head	5	1 0	590	878	34.58	202
Sarnesfield Rectory	Rev. W. Marshall	5	0 11	400	663	26.10	157
d Almeley (The Bungalow)	B. G. Ronalds, Esq.	5	1 0	396	731	28.78	176
d Weobley School	A. J. Dean, Esq.	5	1 0	320	651	25.64	178
d Pencombe Rectory	Rev. J. Seymour St. John	5	1 6	520	739	29.11	185
d Pembridge (Dilwyn)	Dr. T. Lambert Hall	5	0 8	290	668	26.32	161
Pembridge (Burton Court)	Lt.-Col. P. L. Clowes, C.B.	5	1 6	400	690	27.18	209
d Bromyard (Dumbleton Cottage) ..	T. V. Philpott, Esq.	5	1 0	393	688	27.10	184
d Bromyard (Rowden Abbey)	H. J. Bailey, Esq.	5	1 0	450	723	28.47	194
d Bromyard (Buckenhill)	Mrs. Phipps	8	1 6	410	703	27.67	159
Kington (Sunset)	H. Langston, Esq.	5	1 0	495	805	31.69	..
d Kington (Gravel Hill)	Col. G. F. Pearson	5	0 8	535	712	28.04	188
d Pembridge (Marston)	J. C. Morgan, Esq.	5	1 5	347	735	28.92	..
d Pembridge (Byletts)	Gen. Sir E. Wood K.C.B. ...	5	1 5	350	704	27.73	167
d Kimbolton (Grantsfield)	Miss E. Hutchinson	5	1 0	424	633	24.92	185
d Eyton	Rev. B. G. Way	5	1 1	200	581	22.86	160
d Eyton Hall	R. H. Evans, Esq.	5	0 9	300	648	25.53	170
2.—SEVERN—Right Bank Tributaries. 155 sq. mi.							
d Much Marcle (The Mount)	Miss A. M. Charles	5	0 9	240	629	24.75	168
d Ledbury (Orchardleigh)	Dr. Miles A. Wood	5	3 6	180	673	26.49	175
d Ledbury (Underdown)	S. H. Bickham, Esq.	5	1 0	307	713	28.07	178
d Ledbury (Underdown)	S. H. Bickham, Esq.	5	1 0	306	698	27.50	..
Ledbury (Putley Court)	J. Riley, Esq.	5	1 0	290	752	29.61	174
d Ledbury (Wellington Heath Vic) ..	Rev. F. S. Stooke-Vaughan	5	1 0	505	688	27.07	204
Cradley (Mill Bank)	Lt.-Col. E. H. Thurlow	5	1 0	320	726	28.60	..
d Leintwardine	E. Charnock, Esq.	5	1 6	430	807	31.78	192
SHROPSHIRE. (Area, 1343 sq. mi.)							
1.—MERSEY—Weaver. 27 sq. mi.							
2.—DEE. 30 sq. mi.							
d Whitchurch (Fenns Bank)	M. W. Sowden, Esq., C.E. ...	8	1 0	271	761	29.96	170
Sodylt Hall	W. H. Horsfall, Esq.	5	1 0	267	756	29.76	150

DIVISION VI.—WEST MIDLAND COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with 01 in. or more.
		Diam.	Height Ground	above Sea Level.	1919		
SHROPSHIRE—(con.).		in.	ft. in.	ft.	mm.	in.	
3.—SEVERN—Right Bank Tributaries. 722 sq. mi.							
D Ashford House.....	W. Downes Hall, Esq.	5	0	5 315	799	31.44	147
D Bromfield (Oakley Park)	Mr. J. R. Francis	5	1	0 300	732	28.81	176
D Bromfield (Warwick House) ...	F. Brayshaw, Esq.	5	1	0 320	738	29.04	198
D Bitterley Rectory	Rev. Preb. J. R. Burton...	5	1	6 509	703	27.68	177
D Clun Forest (Bettws-y-crwyn) ..	Irving Watson, Esq.	5	2	6 1400	1017	40.03	192
D Craven Arms (Newington Ho.) ..	R. E. Serjeantson, Esq. ..	8	1	6 406	646	25.42	178
D Wistanstow Rectory	Rev. W. M. D. La Touche.	8	1	2 482	679	26.75	174
M Clun Forest (Cwm Ffrydd)	Sydney Wilson, Esq.	5	1	0 1155	924	36.36	..
Lydbury North (Totterton H.) ..	Major W. H. B. Whitaker	5	1	3 800	706	27.80	..
D Bishops Castle (Castle Street) ..	E. Griffiths, Esq.	5	2	0 720	770	30.32	182
D Bishops Castle Vicarage	Rev. C. E. Warner	5	1	6 596	818	32.19	214
Bishops Castle (More Rectory) ..	Rev. Ridley Relton	6	0	11 600	686	27.00	..
D Church Stretton (Sewage Works) ..	E. J. Marsh, Esq.	5	1	0 582	777	30.59	164
D Church Stretton (Watling St.) ..	Mr. W. Bowden	5	1	0 ..	918	36.16	192
D Church Stretton (West Leigh) ..	H. Constantine, Esq.	5	0	8 700	861	33.88	198
D Bridgnorth (Cantreyn)	W. Bayliss, Esq.	5	3	0 290	696	27.39	170
D Bridgnorth (Cantreyn)	W. Bayliss, Esq.	5	0	3 288	728	28.64	170
D Bridgnorth (Aldenharn Park) ..	Mr. T. Canning	5	3	9 430	692	27.23	151
D Church Preen (Preen Manor) ..	Mr. J. Hopkins	5	1	0 700	776	30.53	165
D Church Stretton (Wolstaston) ..	Rev. Alan Clover	5	1	5 795	817	32.17	..
D Much Wenlock (Wiley Park)	Col. Lord Forester	5	3	0 492	760	29.92	175
Dorrington (Netley Hall)	Miss Hope-Edwardes	5	1	6 351	838	33.01	211
D Shrewsbury (The Abbey House) ..	Miss F. H. Rouse Boughton	8	1	2 181	700	27.55	181
D Shrewsbury (Highfield)	T. M. Howells, Esq.	5	4	6 250	712	28.03	176
D Shrewsbury (Radbrook Hall) ..	D. D. Macpherson, Esq.	5	0	8 235	674	26.55	184
4.—SEVERN—Left Bank Tributaries. 564 sq. mi.							
Bridgnorth (Coton Hall)	Lt.-Col. E. M. Wakeman ..	5	1	6 460	748	29.47	162
D Worfield (School House)	Frank Turner, Esq.	5	1	0 140	653	25.71	191
D Shifnal (Hatton Grange)	Mr. G. Risebrow	5	4	4 262	727	28.62	188
D Shifnal (National Schools)	late F. W. Haswell, Esq.	5	1	5 283	727	28.63	180
w Wellington W.W. (Wrekin Res.) ..	G. Riley, Esq., C.E.	8	1	6 490	786	30.95	..
D Shrewsbury (Sedgeford House) ..	R. C. Sikes, Esq., C.E.	5	1	0 169	668	26.30	193
w Shrewsbury (St. Michael's Sch.) ..	W. H. Barclay, Esq.	5	30	9 229	631	24.84	..
D Shrewsbury (Roden)	J. W. Nowell, Esq.	8	1	2 207	657	25.86	157
D Shrewsbury (Fitz Rectory)	Rev. W. Brewster	5	1	2 238	692	27.23	185
D Newport (Aston Hall)	Col. R. Leeke	5	0	11 280	788	31.01	190
D Newport (Edgmond)	W. Bevan, Esq.	5	1	0 225	687	27.06	157
D Newport (Agricultural College) ..	P. Hedworth Foulkes, Esq.	5	1	0 220	664	26.16	158
D Newport (Chetwynd Park)	Mrs. Burton Borough	5	1	0 240	732	28.83	189
D Newport (Chetwynd Gardens) ..	Mr. N. Sherwood	5	1	0 250	735	28.93	192
D Cheswardine (Knighton Res.) ..	H. C. Jones, Esq.	5	1	0 351	769	30.27	160
D Oswestry (The Mount Res.)	G. W. Lacey, Esq., C.E.	5	1	0 698	751	29.57	206
D Oswestry (Council School)	E. Compton, Esq.	5	1	0 450	784	30.85	181
D Ellesmere	H. C. Jones, Esq.	8	1	0 368	723	28.45	169
D Ellesmere (The Grange)	Mrs. Ashton	5	0	10 340	660	25.97	151
STAFFORDSHIRE. (Area, 1165 sq. mi.)							
1.—MERSEY—Weaver. 50 sq. mi.							
D Biddulph Grange.....	Robert Heath, Esq.	5	0	7 525	989	38.94	205
2.—SEVERN—Left Bank Tributaries. 160 sq. mi.							
D Kingswinford (Ashwood P.S.) ..	F. J. Dixon, Esq., C.E.	5	1	0 207	677	26.66	168
D Dudley (Shavers End)	F. J. Dixon, Esq., C.E.	5	1	0 745	699	27.51	174
D Wolverhampton (Town Hall) ..	G. Green, Esq., C.E.	5	15	6 482	702	27.63	150
D Wolverhampton (West Park)	G. Green, Esq., C.E.	5	1	6 432	744	29.29	184
D Patshull Park	The Earl of Dartmouth, K.C.B.	8	1	3 273	692	27.25	..
D Shifnal (Weston Park)	The Earl of Bradford	5	1	6 400	742	29.20	215
D Norbury Junction	H. C. Jones, Esq.	8	1	0 332	762	29.99	180
Loynston Hall	Miss M. Burne	5	0	10 390	775	30.51	..
D Market Drayton (Old Springs) ..	F. E. Harding, Esq.	5	1	3 422	754	29.67	179
Maer Hall Gardens	Mrs. F. J. Harrison, O.B.E.	8	1	6 390	909	35.78	152

DIVISION VI.—WEST MIDLAND COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
STAFFORDSHIRE—(con.).		in.	ft.	in.	ft.	mm.	in.	
3.—TRENT—Right Bank Tributaries. 512 sq. mi.								
D West Bromwich.....	(R) A.D.Greatorex, Esq., C.E..	8	1	7	543	730	28·75	178
D Wednesbury (Ocker Hill).....	A. W. Willet, Esq., C.E. . . .	5	1	0	476	762	30·01	179
D Walsall (Bescot Sewage Farm) .	J. Taylor, Esq.	8	0	11	376	750	29·53	171
D Walsall (Wednesbury Sew. Wrks)	T. Wicks, Esq.	5	2	8	381	723	28·45	190
D Bilston (The Lunt Outfall) . . .	Edgar Willow, Esq., C.E. . . .	8	1	0	423	792	31·19	174
D Wolverhampton (Graiseley) . . .	K. C. Berrington, Esq.	6	0	9	506	767	30·19	169
D Aldridge (Bourne Vale)	F. J. Dixon, Esq., C.E.	5	1	0	419	744	29·31	177
D Bloxwich (Sneyd Reservoir) . . .	A. W. Willet, Esq., C.E.	5	1	0	507	754	29·70	193
D Brewwood (Slade Heath P.S.) . . .	F. J. Dixon, Esq., C.E.	5	1	0	340	731	28·77	170
D Hammerwich (Cannock Chase Rs)	A. W. Willet, Esq., C.E.	5	1	0	475	759	29·87	213
D Brewwood (Belvide Reservoir) . .	H. C. Jones, Esq.	5	1	0	367	696	27·40	181
D Lichfield (St. John Street)	Dr. F. M. Rowland	5	0	10	269	743	29·24	195
D Hednesford (Scout House)	F. J. Dixon, Esq., C.E.	5	1	0	750	647	25·48	186
D Lichfield (Hanch Reservoir) . . .	F. J. Dixon, Esq., C.E.	5	1	0	259	789	31·07	181
D Milford Waterworks	W. Plant, Esq., C.E.	5	1	0	246	787	31·00	172
D Shugborough	The Earl of Lichfield	5	1	0	260	710	27·94	..
D Stafford (Rising Brook)	W. Fred. Wright, Esq.	5	1	0	273	772	30·41	176
D Stafford (Corporation Dépôt) . . .	W. Plant, Esq., C.E.	5	1	6	249	771	30·34	176
D Stafford (West Bank, Doxey) . . .	Leslie Wilson, Esq.	5	2	0	280	766	30·15	..
D Little Ingestre	Major H. Cecil Gardner	8	1	6	..	733	28·85	153
D Eccleshall (Johnson Hall)	Major W. Moat	5	1	1	400	766	30·17	179
D Stone (Meece House)	E. J. W. Wood, Esq.	5	1	6	331	753	29·63	156
D Standon (Hatton W.W.)	R. C. Frain, Esq., C.E.	5	1	8	355	788	31·04	164
4.—TRENT—Left Bank Tributaries. 193 sq. mi.								
D Burton (Hoar Cross)	F. W. Lycett, Esq.	8	1	0	400	891	35·07	165
D Burton (Rangemore)	Mr. H. Barson	5	5	6	424	698	27·49	..
D Burton Reservoir	F. J. Dixon, Esq., C.E.	5	1	0	309	713	28·08	147
D Burton (Borough Hospital)	Dr. J. M. Cowie	8	1	6	220	868	34·16	230
D Burton (Shobnall)	Messrs. Bass & Co. Ltd.	5	5	6	156	702	27·62	184
D Stone (Alleyne's Grammar Sch.) .	H. Malcolm Fraser, Esq.	5	1	6	415	779	30·66	212
D Stone (Idlerocks)	Mrs. Wedgwood	5	1	2	700	900	35·44	201
D Longton (The Meir)	R. C. Frain, Esq., C.E.	5	1	0	618	803	31·60	175
5.—TRENT—Dove. 250 sq. mi.								
D Uttoxeter (Greenfields)	W. Ellaway Smith, Esq.	5	1	0	387	874	34·43	178
D Tean (Oak Hill)	Vincent H. Jackson, Esq.	5	2	0	590	829	32·65	175
D Tean (The Heath House)	Lt.-Col. B. H. Philips	5	0	6	647	903	35·55	173
D Oakamoor (Woodbank)	(R) M. A. Bolton, Esq.	8	4	9	600	867	34·13	202
D Ashbourne (Mayfield House) . . .	Graham C. Lawson, Esq.	8	1	0	374	915	36·03	184
D Ashbourne (Mayfield House) . . .	Graham C. Lawson, Esq.	8	1	0	374	932	36·69	190
D Mayfield (Doveside)	Mr. T. Bridge	8	1	0	421	916	36·06	183
D Leek (Wall Grange)	R. C. Frain, Esq., C.E.	5	1	0	458	970	38·19	221
D Leek (Haregate)	Mr. G. Sweetmore	5	0	9	680	1010	39·75	203
WORCESTERSHIRE. (Area, 717 sq. mi.)								
1.—SEVERN—Right Bank Tributaries. 231 sq. mi.								
D Redmarley (Haselden)	Miss F. L. Newbury	5	0	5	280	693	27·27	178
D Pendock (Littleridge)	Lady Hooker	5	1	0	85	732	28·83	164
D Upton-on-Severn (Willow Bank) . .	J. Selwyn Cowley, Esq.	5	1	2	42	758	29·86	167
D Upton-on-Severn (The Eades) . . .	Lt.-Col. E. W. Tennant	5	0	9	100	753	29·66	179
D Malvern (British Camp Res.) . . .	Capt. W. Osborne Thorp, Esq. . .	5	1	0	677	762	29·99	173
D Malvern (Church Street)	Capt. W. Osborne Thorp.	5	1	0	350	825	32·48	179
D Malvern (Belle Vue House)	A. Mander, Esq.	5	4	0	520	843	33·19	190
D Malvern (Free Library)	E. W. Harris, Esq.	5	1	0	377	798	31·43	197
D Malvern (Clarence Road)	S. Bottomley, Esq.	5	1	0	300	789	31·08	..
D Malvern (Hornbold Road)	Rev. T. Wolseley Lewis	5	1	0	498	765	30·12	170
D Knightwick Sanatorium	H. Gordon-Smith, Esq.	5	1	0	300	684	26·91	168
D Worcester (Diglis Lock)	E. J. Bradley, Esq.	5	1	0	49	674	26·55	190
D Worcester (Bromwich House) . . .	Rev. Manley Power	5	0	10	200	692	27·23	167
D Worcester (St. John's School) . . .	E. R. Bowen, Esq.	5	1	0	82	685	26·96	165
D Martley Rectory	Rev. J. F. Hastings	5	1	0	220	701	27·60	177
D Ombersley (Holt Lock)	E. J. Bradley, Esq.	5	1	1	55	647	25·46	163
D Shelsley Grange	Lady Hughes	5	1	0	270	700	27·57	145

DIVISION VI.—WEST MIDLAND COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with .01 in. or more.
		Diam.	Height above Ground	Sea Level.	1919		
WORCESTERSHIRE—(con.).							
1.—SEVERN—Right Bank Tributaries—(con.).							
Tenbury (St. Michael's)	Miss Hewitt	5	1 0	329	67r	26.40	165
D Tenbury (St. Michael's Obsy.)	Frederick Lowe, Esq.	5	1 0	314	66r	26.03	178
D Tenbury (Teme Street)	Frederick Lowe, Esq.	5	1 0	180	650	25.58	163
D Stockton-on-Teme (Eardiston)	Miss M. Wallace	5	0 8	200	695	27.36	172
D Stourport (Areley Hall)	F. Z. Lloyd, Esq.	5	1 0	73	710	27.96	..
D Bewdley (Winterdyne)	Miss K. M. Sturt	5	1 0	190	66r	26.04	165
M Bewdley (Winterdyne)	Miss K. M. Sturt	..	..	140	753	29.66	..
2.—SEVERN—Left Bank Tributaries. 194 sq. mi.							
D Kempsey (The Lodge)	Mrs. Isaac	5	0 9	80	656	25.84	162
D Worcester (Water Works)	T. Caink, Esq., C.E.	5	0 9	56	63r	24.84	171
D Worcester (Barbourne)	B. Brotherton, Esq.	5	1 0	92	674	26.52	181
D Worcester (Hindlip Hall)	Hon. C. S. K. Ailsopp	8	1 0	201	67r	26.43	..
D Worcester (Bever Lock)	E. J. Bradley, Esq.	5	1 1	52	662	26.06	163
D Droitwich (Friar Street Depôt)	H. Hulse, Esq., C.E.	12	2 9	98	67r	26.43	175
D Bromsgrove (Tardebigge Res.)	F. A. Jones, Esq., C.E.	5	4 6	455	789	31.06	168
D Barnet Green (Upwood)	Miss M. Gibbins	5	0 11	650	70r	27.61	188
D Stourport (Lincombe Lock)	E. J. Bradley, Esq.	5	1 0	62	750	29.53	159
D Kidderminster (Brinton Park)	Mr. J. T. Cowderoy	5	1 0	160	638	25.13	179
D Kidderminster (Park Hall)	G. E. Wilson, Esq.	5	1 6	200	716	28.17	..
D Pedmore (The Dene)	T. Grazebrook, Esq.	5	0 6	340	695	27.37	170
D Stourbridge	W. Fiddian, Esq.	8	1 0	215	738	29.06	189
D Halesowen (Hasbury Cottage)	Rev. A. S. Rashleigh	5	1 1	532	776	30.55	200
D Netherton (Lodge Farm Res.)	A. W. Willett, Esq., C.E.	5	1 0	445	703	27.66	182
D Dudley (Borough Cemetery)	Vincent Turner, Esq., C.E.	5	1 3	591	736	28.97	181
D Dudley (Trindle House)	S. Staffs Drainage Comm.	8	1 0	575	903	35.55	..
3.—SEVERN—Upper Avon. 260 sq. mi.							
D Blockley (Upton Wold)	E. W. Arkell, Esq.	5	1 0	800	870	34.24	186
D Bredon (The Croft)	Jasper Lambert, Esq.	5	1 1	120	692	27.24	163
D Shipston (Tidmington House)	Miss Staunton	5	1 1	233	80r	31.54	..
D Evesham (Bengeworth)	Messrs. Ross Bros., Ltd.	5	1 0	128	677	26.64	164
D Evesham (Lansdowne)	R. Burlingham, Esq.	5	5 0	108	734	28.90	..
D Evesham (Rossyvera House)	R. Burlingham, Esq.	5	1 0	163	634	24.95	..
D Evesham (Sewage Works)	Evesham U.D.C.	8	3 0	86	673	26.48	172
D Evesham (Great Hampton)	H. C. Boutflower, Esq.	5	1 0	130	670	26.38	164
D Shipston (Armscote)	W. L. Stanton, Esq.	5	1 1	241	703	27.68	190
D Shipston (Talton)	Capt. G. Lainson Field	8	1 0	160	712	28.03	170
D Shipston (Cookhill Co. School)	T. Barber, Esq.	5	1 0	400	740	29.13	172
D Redditch (Hewell Gardens)	Mr. J. J. Graham	5	1 0	469	797	31.38	198
D Alvechurch (Bordesley Hall)	A. H. Wiggin, Esq.	..	4 0	490	802	31.56	174
D Alvechurch (High Croft)	D. B. Grubb, Esq.	5	1 0	580	833	32.78	181
D Alvechurch (Fairfield)	D. McMichael, Esq.	5	1 0	400	83r	32.72	155
D Bromsgrove (Lower Bittal Res.)	F. A. Jones, Esq., C.E.	5	3 0	457	815	32.07	166
4.—THAMES—Windrush & c. 10 sq. mi.							
5.—TRENT—Right Bank Tributaries. 22 sq. mi.							
D Halesowen (Frankley)	E. Antony Lees, Esq.	5	0 10	570	88r	34.67	185
WARWICKSHIRE. (Area, 942 sq. m.)							
1.—SEVERN—Upper Avon. 603 sq. mi.							
D Long Compton (Weston Park)	H. A. Warriner, Esq.	8	3 0	510	705	27.75	152
D Shipston (Honington Vicarage)	Rev. Can. E. H. Boddington	5	0 10	215	670	26.36	171
D Bidford (Moor Hall)	E. H. Cubberley, Esq.	5	1 0	125	686	27.02	176
D Kineton (Lodge Farm)	L. G. Slade, Esq.	8	1 2	403	750	29.53	162
D Stratford-on-Avon (Milcote)	F. W. Jones, Esq.	..	..	130	602	23.71	156
D Stratford-on-Avon (Avonfield)	G. W. Everard, Esq.	5	0 10	120	653	25.72	..
D Stratford-on-Avon (Shottery H.)	R. C. Carter, Esq.	5	0 8	140	669	26.33	150
D Alcester (Ragley Hall)	Mr. C. Harding	5	1 0	270	752	29.61	..
D Ashorne	Mr. G. T. Osborn	5	1 0	160	735	28.92	..
D Snitterfield Reservoir	F. W. Jones, Esq., C.E.	8	1 6	274	739	29.10	..
D Southam (Stockton House)	G. B. Blyth, Esq.	6	1 4	394	687	27.05	180
D Studley College	Miss E. H. Ekins	5	0 9	235	666	26.22	162
D Leamington (Pump Room Gdns.)	H. Gibbins Ward, Esq.	8	0 9	50	734	28.88	162

DIVISION VI.—WEST MIDLAND COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with -01 in. or more.	
		Diam.	Height Ground	above Sea Level.	1919			
WARWICKSHIRE—(con.).		in.	ft.	in.	ft.	mm.	in.	
1.—SEVERN—Upper Avon—(con.)								
Hatton House	(R) Mrs. J. P. Arkwright	10	4	11	320	758	29.86	179
Willoughby Vicarage	Rev. H. Trethewy	5	1	0	300	696	27.38	182
Lapworth Croft	T. Birkett Barker, Esq.	5	1	6	410	736	28.99	149
d Rugby (Bilton Grange)	W. H. G. Southcomb, Esq.	5	1	0	400	634	24.96	160
d Rugby (Caldecott)	W. A. D. Rudge, Esq.	5	1	0	379	704	27.72	156
d Stretton-on-Dunsmore	Mrs. Lister-Kaye	5	0	8	295	770	30.33	149
d Ryton-on-Dunsmore (Ryton Ho)	Charles Browett, Esq.	5	1	2	260	792	31.18	158
d Coventry (Radcliffe Road)	J. B. Morris, Esq.	5	1	0	339	789	31.06	191
d Coventry (City Hospital)	E. G. Snell, Esq., M.D.	8	1	0	269	760	30.04	185
d Coventry (Keresley Grange)	Miss H. Rotherham	5	0	10	413	811	31.94	214
2.—THAMES—Windrush & c. 2 sq. mi.								
3.—THAMES—Cherwell. 15 sq. mi.								
d Farnborough	Miss C. A. Prater	5	1	0	515	808	31.80	190
4.—TRENT—Right Bank Tributaries. 322 sq. mi.								
d Solihull (Marsh Cottage)	Capt. E. P. Currall	5	1	0	420	697	27.44	170
d Selly Oak (Bourneville)	Messrs. Cadbury Bros., Ltd.	5	1	0	432	817	32.18	193
d Selly Oak (Lodge Hill Cemtry.)	Mr. W. Garden	5	1	2	540	815	32.08	157
d Selly Oak (South Hill)	W. Littleboy, Esq.	5	0	9	460	797	31.37	176
d Moseley (Prospect Road)	Rev. F. Oscar Lane	5	1	0	550	783	30.83	..
d Moseley (Highfield Road)	J. Newland Brown, Esq.	8	1	9	550	879	34.59	181
d Moseley (Oxford Road)	G. F. Lyndon, Esq.	5	1	0	506	837	32.96	194
d Birmingham (Sparkhill)	D. H. Owen, Esq.	5	1	0	426	819	32.26	196
d Birmingham (Edgbaston)	A. J. Kelley, Esq.	8	1	6	515	776	30.67	182
d Birmingham (Edgbaston, Highfield Rd)	R. Priestman, Esq.	5	0	6	512	861	33.89	186
d Birmingham (The Crescent)	J. J. Gilbert, Esq.	5	7	0	480	806	31.74	..
d Birmingham (Gravelly Hill)	W. Ll. Mold, Esq.	5	3	0	470	792	31.19	181
d Birmingham (Erdington)	E. Antony Lees, Esq.	5	1	2	472	686	26.99	191
d Minworth Greaves	Birmingham Drainage Bd.	8	0	6	258	692	27.23	175
d Whitacre (Birmingham W.W.)	E. Antony Lees, Esq.	5	1	0	269	697	27.44	193
d Sutton Coldfield (The Park)	Mr. H. Harlond	5	1	0	370	764	30.08	164

DIVISION VII.—NORTH MIDLAND COUNTIES.

LEICESTERSHIRE. (Area, 824 sq. mi.)

1.—SEVERN—Upper Avon. 41 sq. mi.									
d	Welford (The Reservoir)	.....T. W. Millner, Esq.	5	1	6	430	799	31.47	194
d	Bitteswell School Gardens	....M. Smith, Esq.	5	1	0	401	824	32.42	185
2.—WELLAND. 96 sq. mi.									
d	Market Harborough (Rose Hill)	G. O. Nicholson, Esq.	5	1	0	350	753	29.63	173
d	East Langton Grange	.....J. W. Logan, Esq., M.P.	5	1	0	300	684	26.94	..
d	Kibworth Beauchamp	.....E. V. Phillips, Esq.	9	2	6	390	734	28.88	164
d	Hallaton Hall	.....S. N. Bankart, Esq.	8	1	3	366	698	27.49	..
m	Horninghold House	<i>Snowdon g.</i> Mr. B. Inchley	5	1	6	380	685	26.97	..
d	Knossington Rectory	.....Rev. G. G. Wilkinson	5	0	11	575	834	32.84	189
3.—WITHAM. 7 sq. mi.									
4.—TRENT—Right Bank Tributaries. 680 sq. mi.									
d	Wistow Hall Gardens	.....Col. Lord Cottesloe	5	1	0	309	726	28.60	156
d	Countesthorpe (Wigston Sew.Fm.)	W. G. J. Clark, Esq., C.E.	8	0	9	257	715	28.16	193
d	Blaby (Whetstone Road) No. 1	G. F. Shoults, Esq.	5	0	6	239	731	28.79	195
d	Blaby (Whetstone Road) No. 2	Alan F. Shoults, Esq.	5	0	6	239	726	28.58	196
d	Leicester (Stoughton Drive)	...Theodore B. Ellis, Esq.	5	0	6	315	719	28.30	161
d	Leicester (Town Hall Square)	..E. G. Mawbey, Esq., C.E.	5	0	6	211	709	27.92	193
d	Leicester (Town Hall Sq.) (R)	..E. G. Mawbey, Esq., C.E.	7	1	8	212	708	27.86	193
d	Market Bosworth (Osbaston Hall)	Sir Thomas Cope, Bart.	8	1	0	393	768	30.25	206
d	Desford (Industrial School)	...W. O. Braid, Esq.	5	1	0	370	836	32.91	172
d	Humberstone Asylum	.....S. C. Leak, Esq.	8	1	0	266	787	30.98	191
d	Leicester (Gilroes Cemetery)	..E. G. Mawbey, Esq., C.E.	5	1	0	285	794	31.25	185

DIVISION VII.—NORTH MIDLAND COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with .01 in. or more.	
		Diam.	Height Ground	above Sea Level.	1919			
LEICESTERSHIRE—(con.).		in.	ft.	in.	ft.	mm.	in.	
4.—TRENT—Right Bank Tributaries—(con.)								
d Thornton Reservoir	G. T. Edwards, Esq., C.E.	8	1	2	371	816	32.14	161
d Cropstone (Bradgate Res.)	G. T. Edwards, Esq., C.E.	8	1	0	246	818	32.20	181
d Barkby Hall	Victor R. Pochin, Esq.	5	0	6	217	784	30.87	179
d Swithland (The Brand)	G. T. Edwards, Esq., C.E.	8	1	0	172	790	31.12	165
d Ratcliffe-on-Wreake College	Rev. A. Emery	5	1	0	288	1033	40.67	182
d Ashby-de-la-Zouch (Cole Orton)	Mr. H. T. Wilson	5	2	0	540	869	34.20	188
d Barrow-upon-Soar (Strangcliffe)	G. Fellows, Esq.	5	1	4	220	715	28.16	162
d Barrow-upon-Soar (The Mount)	Mrs. C. Stuart Thomson	5	1	6	..	718	28.27	155
d Melton Mowbray	Hon. Gerald Walsh	5	3	0	345	693	27.29	172
d Charnwood For. (Blackbrk. Res)	A. H. Walker, Esq., C.E.	8	1	0	367	766	30.15	185
d Loughborough (NanPantanRes)	A. H. Walker, Esq., C.E.	8	1	0	269	847	33.35	191
d Loughborough (The Widenings)	Adrian Young, Esq.	5	0	7	197	745	29.32	189
d Loughborough (Sewage Farm)	A. H. Walker, Esq., C.E.	8	1	0	134	714	28.11	..
d Burton-on-theWolds (Burtn H.)	Lord Ernest St. Maur.	5	1	0	270	816	32.12	182
d Prestwold Hall	E. H. Packe, Esq.	8	1	0	209	818	32.20	185
d Croxton Kerrial	C. J. Prowse, Esq.	5	1	0	480	880	34.65	190
d Belvoir Castle Gardens	The Duke of Rutland	8	1	0	260	765	30.10	180
RUTLAND. (Area, 152 sq. mi.)								
1.—WELLAND. 125 sq. mi.								
d Uppingham (Ridlington)	N. W. Wortley, Esq.	5	4	7	527	774	30.49	174
d Great Casterton (Walk Farm)	H. Goodyear, Esq.	5	1	6	330	693	27.30	..
2.—WITHAM. 5 sq. mi.								
3.—TRENT—Right Bank Tributaries. 22 sq. mi.								
LINCOLNSHIRE. (Area, 2646 sq. mi.)								
1.—NENE. 100 sq. mi.								
d Tydd (North Level Sluice)	Mr. S. Fovargne	5	3	6	10	590	23.24	149
2.—WELLAND. 341 sq. mi.								
d Stamford	W. J. Richards, Esq.	5	4	0	129	703	27.66	148
d Crowland (Bank House)	J. Goodacre, Esq.	5	6	0	10	606	23.86	..
d Market Deeping (Wilsthorpe)	W. H. A. Court, Esq.	8	3	10	55	626	24.65	155
d Holywell Hall	Lt.-Col. A. Acland-Hood	5	0	6	190	828	32.62	173
d Bourne (Council School)	J. Langsford, Esq.	5	1	0	23	677	26.65	..
d Bourne (Guthram)	F. S. Robins, Esq., C.E.	8	1	6	19	539	21.21	160
d Spalding (Pode Hole)	H. Bain, Esq.	8	1	3	12	673	26.49	200
d Dowsby (The Cottage)	Miss Burt	5	1	5	14	660	25.97	171
3.—WITHAM & C. 1085 sq. mi.								
d Stainby Rectory	Rev. W. L. de B. Thorold	4	0	9	496	725	28.53	..
d Stroxtun Rectory	Rev. S. C. Wood	5	0	10	350	797	31.37	..
d Little Ponton Rectory	Rev. P. R. Worsley	5	1	0	250	888	34.95	205
d Denton Manor	Sir C. G. E. Welby, Bt., C.B.	5	3	0	310	810	31.87	211
d Grantham (Saltersford)	H. Preston, Esq.	5	0	6	188	784	30.86	179
d Grantham (Guildhall)	J. H. Drew, Esq., C.E.	5	17	0	206	750	29.52	165
d Boston (Black Sluice, Skirbeck)	F. S. Robins, Esq., C.E.	8	1	3	11	658	25.89	199
d Boston (Sleaford Road)	J. Shaw, Esq.	5	1	2	9	639	25.15	179
d Boston (Grand Sluice)	J. H. Johnson, Esq., C.E.	8	8	0	18	622	24.48	180
d Boston (Bargate End)	A. O. Scrivener, Esq.	8	1	0	9	631	24.86	170
d Sleaford (Kesteven CountyAsy.)	Dr. J. A. Bwan	5	0	9	100	671	26.42	181
d Fulbeck Hall	Lt.-Col. W. V. R. Fane	5	0	8	180	732	28.80	224
d Cranwell	The Air Ministry	8	1	0	236	647	25.46	178
d New Leake (Lade Bank Eng.)	J. H. Johnson, Esq., C.E.	8	1	0	10	595	23.44	..
d Carrington Grange	Mr. T. J. Ward	5	6	0	15	716	28.20	163
d Wellingore	Miss A. S. Morley	5	1	0	..	662	26.07	184
d Navenby Rectory	Mr. J. Thompson	5	1	0	218	728	28.66	173
d Carlton-le-Moorland	J. Brocklebank, Esq.	5	1	2	49	691	27.20	154
d Mareham-le-Fen	Mrs. G. L. Kime	5	3	0	11	714	28.09	186
d Revesby Reservoir	J. Shaw, Esq.	5	2	0	124	753	29.63	..
d Woodhall Spa (Galm House)	J. Collins Esq.	5	1	6	72	664	26.14	187

DIVISION VII.—NORTH MIDLAND COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
LINCOLNSHIRE—(con.).		in.	ft.	in.	ft.	mm.	in.	
3.—WITHAM & C.—(con.).								
d Bardney Railway Station	A. Burrige, Esq., C.E.	8	7	6	25	655	25·80	157
d Horncastle	H. R. Maynard, Esq.	5	1	6	110	779	30·66	189
Lincoln (Boultham Pump Stn.)	C. Horobin, Esq., C.E.	5	1	0	19	648	25·52	...
Lincoln (Skellingthorpe Hall)	A.H. Bergne-Coupland, Esq.	5	1	0	40	656	25·84	146
Lincoln (Station)	Great Central Rly. Co.*	9	3	6	26	638	25·12	180
d Lincoln (Sessions House)	Arthur Smith, Esq.	5	1	0	59	634	24·96	181
d Lincoln (D'Isney Place)	A. H. Leslie Melville, Esq.	4	1	0	215	670	26·37	186
d Lincoln (Cottesford Place)	F. A. Peacock, Esq.	6	0	9	224	684	26·92	183
d Hackthorn Hall	E. W. Cracroft, Esq.	5	4	6	105	673	26·49	185
Willingham-by-Stow	R. C. Bacon, Esq.	8	2	0	65	666	26·21	190
Springthorpe Rectory	Rev. B. Davies	5	1	0	75	667	26·26	155
4.—GREAT EAU & C. 443 sq. mi.								
d Wainfleet (Bridge House)	G. Booth Walker, Esq.	5	1	0	17	654	25·75	184
d Skegness (Estate Offices)	Mrs. R. H. Jenkins	8	1	0	13	645	25·40	180
d East Keal Rectory	Rev. R. H. Simpson	5	0	7	180	688	27·08	184
d Spilsby (Ashby Road)	J. Jarvis Rainey	5	1	0	160	706	27·81	163
d Hagworthingham	Mr. R. Wright	5	1	8	252	778	30·65	179
Alford (Finsbery Street)	Mr. E. Hodgson	5	1	0	35	619	24·37	179
d Mablethorpe (Trusthorpe Hall)	I. N. Woodiwiss, Esq.	8	1	3	10	805	31·69	190
d Louth (Westgate)	Rev. W. E. Yates	5	0	9	120	746	29·36	205
S. Elkington (Elkington Hall)	Countess of Wilton	5	1	9	234	772	30·39	175
d Kirmond	C. Fieldsend, Esq.	5	1	2	309	819	32·23	200
d Grainsby Hall	Mr. J. Butters	5	1	0	75	769	30·28	206
5.—HUMBER—Right Bank Tributaries. 428 sq. mi.								
Market Rasen	Great Central Rly. Co.	9	3	6	100	586	23·08	164
Brigg Station	Great Central Rly. Co.	9	3	6	16	550	21·66	165
d Brigg (Grammar School)	H. E. Bryant, Esq.	5	1	0	32	657	25·87	...
d Brigg	A. Atkinson, Esq., C.E.	8	1	2	11	716	28·20	193
Riby (Riby Grove)	Rev. Watson Stratton	5	1	11	117	740	29·13	...
d Grimsby (Abbey Road)	W. J. Wood, Esq., C.E.	5	3	0	23	680	26·77	152
Grimsby	Great Central Rly. Co.	9	15	0	42	618	24·31	153
Barnetby	Great Central Rly. Co.	9	3	6	52	780	30·73	159
d Brocklesby Park	Mr. F. C. Stainsby	5	2	0	108	758	29·85	174
d Burton-on-Stather (Normanby)	A. G. Wilkes, Esq.	5	0	10	185	692	27·25	182
d Horkstow	E. J. Turton, Esq.	5	0	10	75	661	26·04	159
Ferriby Sluice	A. Atkinson, Esq. C.E.	5	1	0	18	604	23·80	190
New Holland	Great Central Rly. Co.	9	3	6	18	663	26·10	166
6.—TRENT—Right Bank Tributaries. 172 sq. mi.								
d Swinderby (Ling Moor)	Capt. Cecil H. Wray	5	0	9	50	723	28·47	160
d Gate Burton Hall	J. D. Sandars, Esq.	5	2	0	97	653	25·73	...
Gainsborough	Great Central Rly. Co.	9	...	...	76	600	23·62	140
d Burton-on-Stather Vicarage	Rev. Canon F. A. Jarvis	5	1	6	212	669	26·33	186
7.—Trent—Left Bank Tributaries. 77 sq. mi.								
d Wroot (S. Level Pump Station)	Mr. F. S. Trafford	10	4	0	13	588	23·15	...
d Crowle (N. Level Pump Station)	Mr. H. G. Trafford	5	2	6	10	646	25·42	...
Keadby	Great Central Rly. Co.	9	3	6	17	576	22·67	147
NOTTINGHAMSHIRE. (Area, 843 sq. mi.)								
1.—WITHAM. 10 sq. mi.								
2.—TRENT—Right Bank Tributaries. 218 sq. mi.								
d Kingston (Midland Agric.Coll.)	P. W. Bailey, Esq.	5	1	0	125	508	20·02	...
d Plumtree (Normanton-on-Wolds)	T.A. Hill, Esq.	8	1	0	170	798	31·40	193
d Nottingham (Wilford Hill Res.)	F. W. Davies, Esq.	8	0	10	296	708	27·89	190
d NorthCollingham (Markham Ho.)	The Misses Turton	5	1	0	38	745	29·33	184

* Kept for the Canal Department of the Great Central Railway Company.
F. T. Chappell, Esq.

Returns supplied by

DIVISION VII.—NORTH MIDLAND COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain. 1919		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.				
		in.	ft.	in.	ft.	mm.	in.	
NOTTINGHAMSHIRE—(con.).								
3.—TRENT—Derwent. 2 sq. mi.								
4.—TRENT—Erewash. 42 sq. mi.								
D Nottingham (Strelley)	T. L. K. Edge, Esq.	8	1	0	396	787	31·00	205
D Nottingham (Strelley Hall) ..	T. L. K. Edge, Esq.	5	1	0	378	748	29·44	180
M Nottingham (Strelley Hall) ..	T. L. K. Edge, Esq.	5	1	0	379	756	29·78	..
D Bulwell (Watnall Reservoir) ..	F. W. Davies, Esq.	8	0	11	472	815	32·08	220
D Eastwood Waterworks	F. W. Davies, Esq.	8	1	2	244	704	27·70	155
D Eastwood Hall	Messrs. Barber Walker & Co.	5	1	0	218	838	32·98	147
D Eastwood (Moorgreen Res.) ..	Great Northern Rly Co. ...	5	6	0	301	709	27·92	183
D Annesley (Selston W.W.)	S. Maylan, Esq.	5	1	0	475	679	26·73	156
5.—TRENT—Left Bank Tributaries. 569 sq. mi.								
Beeston (Chilwell Road)	A. Brown, Esq., C.E.	5	1	0	110	732	28·80	179
D Nottingham (Trent Lane) ..(R.)	A. Brown, Esq., C.E.	8	1	0	85	715	28·14	177
D Nottingham (The Castle)	A. Brown, Esq., C.E.	8	1	0	192	713	28·07	194
Nottingham (The Castle)	A. Brown, Esq., C.E.	8	76	0	268	663	26·12	165
D Nottingham (Carisbrooke House)	W. Bradshaw, Esq.	5	2	0	247	730	28·76	169
Nottingham (Stoke Bardolph) ..	A. Brown, Esq., C.E.	8	1	0	66	728	28·65	170
D Nottingham (Mapperley Hill) ..	E. Powell, Esq.	8	1	0	400	718	28·27	165
Bagthorpe (Isolation Hospital) ..	P. Boobbyer, Esq., M.D. ...	8	2	0	189	707	27·82	185
D Nottingham (Basford W.W.) ..	F. W. Davies, Esq.	8	1	0	169	736	28·96	164
D Burton Joyce Water Works	F. W. Davies, Esq.	8	0	9	65	780	30·70	177
Bulcote (Corporation Farm)	A. Brown, Esq., C.E.	10	1	3	65	792	31·20	203
Lowdham (Chilwell Nurseries) ..	Mr. J. D. Pearson	5	1	7	90	685	26·96	..
D Bulwell (Bestwood W. W.)	F. W. Davies, Esq.	8	1	2	317	716	28·18	173
D Daybrook (Red Hill Reservoir) ..	F. W. Davies, Esq.	8	0	11	407	784	30·88	212
D Daybrook (Ramsdale Hill Res.) ..	F. W. Davies, Esq.	8	0	11	495	792	31·20	206
Bulwell Hall Park	A. Brown, Esq., C.E.	8	1	0	252	782	30·77	184
d Hucknall (Forge Mills)	Messrs. J. & T. Walker, Ltd.	5	4	3	200	736	28·97	..
D Papplewick (Water Works)	F. W. Davies, Esq.	8	0	10	317	820	32·29	193
D Southwell (Elmfield)	Dr. H. Handford	5	1	0	133	735	28·93	178
M Southwell (Elmfield)	Dr. H. Handford	5	1	0	133	718	28·27	..
d Sutton-in-Ashfield (Rushley P.S.)	Messrs. G. & F. W. Hodson	5	1	1	462	741	29·19	..
D Sutton-in-Ashfield (Sew. Wks.) ..	F. J. Grierson, Esq.	5	1	0	453	792	31·17	183
D Mansfield (Rainworth W.W.) ..	Messrs. G. & F. W. Hodson	5	1	0	360	819	32·24	171
D Mansfield (High Oakham)	P. J. Shacklock, Esq.	5	1	6	425	887	34·93	200
D Mansfield (West Bank)	W. Pickard, Esq.	8	1	0	405	792	31·17	190
Mansfield (Debdale Hall)	Francis N. Ellis, Esq.	5	0	7	400	678	26·70	..
d Clipstone Water Works	Messrs. G. & F. W. Hodson	5	1	0	236	745	29·34	..
D Ollerton (Boughton W.W.)	F. W. Davies, Esq.	8	0	7	141	751	29·56	173
D Ollerton (Thoresby Gardens) ..	Mr. A. Simmons	8	0	9	125	920	36·22	159
Elkesley Pumping Station	C. Horobin, Esq., C.E.	5	1	0	118	683	26·90	175
D Rampton Manor	Sir C. E. Ellis, K.C.B.	6	1	3	26	721	28·40	192
D Worksop (Carlton Road)	J. Edeson, Esq.	5	1	1	154	702	27·63	176
Worksop	Great Central Rly. Co. ...	9	3	6	127	643	25·32	162
D Worksop (Osberton Gardens) ..	Mr. E. Hill	5	3	6	70	676	26·61	193
Retford	Great Central Rly. Co. ...	9	3	6	52	654	25·75	161
D Retford (Grammar School)	G. R. Davies, Esq.	8	1	2	53	698	27·47	184
D Retford (Morton Hall)	W. H. Mason, Esq.	5	1	0	140	670	26·36	172
D Retford (Sewage Disposal Works)	J. D. Kennedy, Esq.	5	1	0	74	773	30·45	226
D Sturton-le-Steeple	S. Ingham, Esq.	5	1	6	40	626	24·65	139
D Worksop (Wigthorpe Hill)	R. C. Ramsden, Esq.	5	1	0	100	673	26·48	164
D Worksop (Hodsock Priory)	Lt.-Col. H. Mellish, C.B. ...	8	1	0	56	678	26·69	188
M Worksop (Hodsock Priory)	Lt.-Col. H. Mellish, C.B. ...	5	1	0	56	673	26·49	..
Worksop (Hodsock Priory) (R.) ..	Lt.-Col. H. Mellish, C.B. ...	11	1	6	56	669	26·35	188
D Scrooby	Mr. J. Mallender	5	1	0	44	666	26·21	191
D Bawtry Hall (The Gardens)	Mr. F. E. Hogbin	5	1	0	31	637	25·07	160
Stockwith	Great Central Rly. Co. ...	9	3	6	21	644	25·36	184
6.—OUSE—Don. 2 sq. mi.								
DERBYSHIRE. (Area, 1029 sq. mi.)								
1.—MERSEY, UPPER. 93 sq. mi.								
Comb's Reservoir	Great Central Rly. Co. ...	9	3	6	710	1050	41·36	200
Chapel-en-le-Frith	Great Central Rly. Co. ...	9	3	6	965	905	35·64	194

DIVISION VII.—NORTH MIDLAND COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
DERBYSHIRE—(con.).		in.	ft.	in.	ft.	mm.	in.	
1.—MERSEY, UPPER—(con.).								
d Whaley Bridge (Mosley Hall)	S. Arrowsmith, Esq.	5	1	0	760	1143	45·00	215
Mellor (Manor House)	W. Jowett, Esq.	5	1	0	544	829	32·65	..
d Glossop W. W. (Swineshaw)	Mr. J. Garner	12	3	0	733	1168	45·99	198
Woodhead Station	Great Central Rly. Co.	9	3	6	878	1334	52·51	205
2.—MERSEY—Weaver. 2 sq. mi.								
3.—TRENT. Right Bank Tributaries. 68 sq. mi.								
d Repton (The Croft)	H. C. Hayward, Esq.	5	1	4	170	758	29·83	192
d Stanton-by-Bridge W.W.	F. Worrall, Esq., C.E.	8	1	2	144	698	27·48	150
4.—TRENT—Dove. 156 sq. mi.								
Snelston Hall	H. Stanton, Esq.	5	1	0	490	833	33·96	169
Ashbourne Water Works	E. Wright Esq.,	5	1	0	582	835	32·80	174
d Ashbourne (The Mansion)	R. E. Sadler, Esq.	5	1	0	396	955	37·60	183
5.—TRENT—Left Bank Tributaries. 84 sq. mi.								
Findern (The Longlands)	Mrs. B. W. Spilsbury	5	0	9	186	670	26·38	164
d Etwall (Blakeley Lodge)	Mr. R. Giles	5	1	0	190	681	26·80	..
d Etwall (Sewage Farm)	Mr. B. Hydes	5	13	0	201	639	25·17	157
d Mickleover (County Asylum)	M. L. Rowan, Esq., M. D.	5	3	0	300	679	26·74	156
d Mickleover Manor	Mr. J. Campbell	5	2	0	280	754	29·70	175
Littleover (The Knoll)	W. B. Robotham, Esq.	5	1	0	315	725	28·53	183
Littleover (Old Hall)	E. McInnes, Esq.	5	2	6	346	724	28·52	183
6.—TRENT—Derwent. 428 sq. mi.								
d Spondon (Derby Sewage Wks.)	J. Ward, Esq., C.E.	5	1	3	135	708	27·89	188
d Derby (Wild Street)	Messrs. J. Davis & Son ...	5	0	1	174	713	28·08	183
d Derby (Midland Railway)	J. Sayers, Esq.	5	1	5	156	696	27·42	170
d Derby (Royal Infirmary)	W. Banks, Esq.	5	1	0	195	722	28·43	162
d Derby (The Arboretum)	J. Ward, Esq., C.E.	8	1	0	196	742	29·22	174
Kirk Langley (Langley Hall)	G. W. Peach, Esq.	5	1	10	396	797	31·39	178
d Duffield (Castle Hill House)	Messrs. J. Davis & Son ...	5	...	...	...	777	30·58	176
d Duffield (Kirkstyles)	W. B. Worthington, Esq., C.E.	5	1	0	235	776	30·53	179
d Belper (Fernslope)	F. J. Jackson, Esq.	5	1	10	356	832	32·76	176
d Belper (Herbert Strutt School)	W. W. Tunnicliffe, Esq.	8	1	0	223	841	33·11	182
d Belper (Quarry Bank)	J. Hunter, Esq., C.E.	5	0	10	281	816	32·14	173
Ambergate Reservoir	No. 61 S. B. Winser, Esq., C.E.	5	1	0	700	838	32·98	..
d Wirksworth (Manor House)	T. Atkinson, Esq.	5	1	0	498	975	38·40	182
d Alderwasley Parsonage	Rev. C. E. B. Deacon	5	1	0	540	951	37·45	196
Matlock Bath (Lower Tower)	Miss E. Chadwick	5	1	1	500	917	36·12	..
d Darley Dale (Whitworth Inst.)	E. Evans, Esq.	5	1	8	361	1036	40·79	174
d Darley Hall	A. Clay, Esq.	5	1	0	400	1004	39·52	208
d Clay Cross (Press Reservoirs)	Gilbert Frith, Esq., C.E.	8	1	0	810	896	35·26	164
d Chatsworth Gardens	Mr. F. Jennings	5	1	0	436	749	29·50	177
d Buxton (Portobello Bar)	F. Langley, Esq., C.E.	8	1	0	1600	1436	56·52	234
d Buxton (Stanley Moor)	F. Langley, Esq., C.E.	8	1	0	1340	1351	53·19	229
d Buxton (Burbage Edge)	F. Langley, Esq., C.E.	8	1	0	1400	1401	55·17	235
d Buxton (Devonshire Hospital)	W. Pilkington, Esq.	5	1	0	988	1222	48·11	205
d Holmesfield (Barbrook Res.)	Gilbert Frith Esq., C.E.	8	1	0	1080	743	29·26	184
w Froggatt Edge (Stoke Flat Filters)	J. Gratton Brown, Esq.	5	1	0	960	1070	42·11	..
d Hope (Killhill Bridge)	No. 56 S. B. Winser, Esq., C.E.	5	1	0	555	1155	45·47	174
d Bamford (Engineer's Office)	No. 60 S. B. Winser, Esq., C.E.	8	2	0	510	1096	43·14	244
d Bamford (Yorkshire Br. Weir)	No. 59 S. B. Winser, Esq., C.E.	5	1	0	540	1118	44·00	214
Bamford Filters	No. 70 S. B. Winser, Esq., C.E.	8	1	0	656	1066	41·99	225
Derwent Vicarage	No. 67 S. B. Winser, Esq., C.E.	8	1	0	675	1286	50·65	212
Derwent Dam	No. 26 S. B. Winser, Esq., C.E.	8	1	0	790	1217	47·93	214
Derwent (Lockerbrook Plant.)	No. 68 S. B. Winser, Esq., C.E.	5	1	0	755	1363	53·65	..
Woodland Dale (Woodlands, S.)	No. 48 S. B. Winser, Esq., C.E.	5	1	0	1044	1089	42·89	..
Woodland Dale (Woodlands, N.)	No. 47 S. B. Winser, Esq., C.E.	5	1	0	1063	1096	43·15	..
Hayfield (Ashop Head)	No. 43 S. B. Winser, Esq., C.E.	5	1	0	1650	1171	46·10	..
Derwent Dale (Shire Owlers)	No. 69 S. B. Winser, Esq., C.E.	5	1	0	825	1158	45·59	..
Derwent Dale (Birchinlee)	No. 23 S. B. Winser, Esq., C.E.	8	1	0	870	1341	52·81	222
Westend Bridge	No. 66 S. B. Winser, Esq., C.E.	5	1	0	878	1332	52·42	..

DIVISION VII.—NORTH MIDLAND COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.		Depth of Rain.		Days with 0.1 in. or more.		
		Diam.	Height above Ground Sea Level.	1919				
DERBYSHIRE—(con.).		in.	ft.	in.	ft.	mm.	in.	
6.—TRENT—Derwent—(con.).								
Lady Clough Moor	No. 41S. B. Winser, Esq., C.E. . .	5	1	0	1720	1161	45.70	..
Coldharbour Moor (Summit)	39S. B. Winser, Esq., C.E. . .	5	1	0	1670	1138	44.80	..
Derwent Dale (Howden Dam)	17S. B. Winser, Esq., C.E. . .	8	1	0	829	1309	51.52	222
Derwent Dale (Ridge Farm)	13S. B. Winser, Esq., C.E. . .	8	1	0	1175	1256	49.45	..
Alport Moor (Glethering Cl.)	40S. B. Winser, Esq., C.E. . .	5	1	0	1640	1059	41.70	..
Westend Moor (Blacklow Cote)	15S. B. Winser, Esq., C.E. . .	5	1	0	970	1377	54.23	..
Westend Moor	No. 10S. B. Winser, Esq., C.E. . .	5	1	0	1560	1140	44.90	..
Alport Moor	No. 38S. B. Winser, Esq., C.E. . .	5	1	0	1790	1146	45.10	..
Broadhead Clough	No. 63S. B. Winser, Esq., C.E. . .	5	1	0	1005	1334	52.52	..
Derwent Dale (Slippery Stones)	62S. B. Winser, Esq., C.E. . .	5	1	0	908	1311	51.63	..
Ridgewalk Moor	No. 9S. B. Winser, Esq., C.E. . .	5	1	0	1650	1242	48.90	..
7.—TRENT—Erewash. 50 sq. mi.								
d Trowell (Ilkeston Sew. Wks.) (r)	H. J. Kilford, Esq., C.E. . .	6	1	11	134	624	24.57	148
d Codnor (Cross Hill)	A. F. Pine, Esq.	5	1	0	372	750	29.52	173
d Codnor Park	Midland Railway Co.	5	1	0	243	822	32.36	204
8.—OUBE—Don. 148 sq. mi.								
Hardwick Hall	Mr. E. Wilson	8	2	6	594	937	36.90	162
d Grassmoor Colliery	Mr. J. Norman	5	19	10	370	593	23.36	..
Chesterfield	Great Central Rly. Co.	9	3	6	250	772	30.40	156
d Chesterfield (Sewage Works)	Mr. W. Tomlinson	5	5	0	222	712	28.02	..
d Chesterfield (Linacre Res.)	Chesterfield Water Board	8	1	0	460	920	36.22	173
d Chesterfield (Linacre Res.)	Chesterfield Water Board	5	1	0	490	864	34.00	173
d Chesterfield (Tapton Grove)	Mr. W. R. Bloxham	5	4	3	400	782	30.78	..
d Totley Hall	W. A. Milner, Esq.	5	1	0	700	1076	42.35	205
d Eckington (Mosbrough C.E. Sch.)	W. H. Holmes, Esq.	5	1	0	330	871	34.29	171
Killamarsh (Norwood)	Great Central Rly. Co.	9	3	6	226	744	29.28	184

DIVISION VIII.—NORTH-WESTERN COUNTIES.

CHESHIRE. (Area, 1027 sq. mi.)

1.—MERSEY, UPPER. 269 sq. mi.

d Macclesfield (West Park)	Mr. S. H. Moss	5	1 0	501	922	36.29	179
Macclesfield	Great Central Rly. Co.	9	3 6	539	744	29.29	206
d Macclesfield (Swanscoe Park)	T. C. Horsfall, Esq.	5	1 0	676	1019	40.12	220
d Bollington Cross (Turner Heath)	Mrs. Murton	5	1 8	500	918	36.13	158
d Wilmslow (Parkside)	J. H. Neave, Esq.	8	1 0	255	846	33.30	198
d Wilmslow (Dean Row)	J. H. Cooke, Esq.	5	1 0	292	873	34.38	213
d Kettleshulme (Glebe House)	A. Y. Barker, Esq.	5	1 6	850	1090	42.92	192
Whaley Bridge	Great Central Rly. Co.	9	3 6	602	1101	43.35	203
d Poynton (Waterloo)	C. F. Butterworth, Esq.	5	1 0	397	860	33.86	185
d Disley (Lyme Park)	T. Molyneux, Esq., C.E.	5	1 0	674	819	32.28	192
d Disley (Lyme Park)	T. Molyneux, Esq., C.E.	5	1 0	720	752	29.60	192
d Bramhall (Bramhall Lane)	S. O'Dwyer, Esq.	5	1 0	250	774	30.47	..
d Runcorn (Weston Point)	Col. J. A. Saner, C.E.	8	1 4	17	770	30.30	191
d Thelwall (The Clough)	E. W. Reynolds, Esq.	5	1 0	95	805	31.68	182
d Thelwall (The Clough)	E. W. Reynolds, Esq.	5	1 0	95	794	31.24	..
w Altrincham (Norman's Place)	Miss G. A. Griffiths	5	8 0	150	891	35.10	..
d Altrincham (Barrington House)	C.E. Newton, Esq., C.E.	8	2 6	103	808	31.81	..
Cheadle (Adswood)	R. W. Wright, Esq.	5	0 6	186	813	32.01	..
d Northenden (Wythenshawe Hall)	T. E. Tatton, Esq.	5	1 0	114	765	30.12	193
d Northenden (Wythenshawe Hall)	T. E. Tatton, Esq.	8	1 6	114	759	29.88	..
Marple Top Lock	Great Central Rly. Co.	9	3 6	523	858	33.77	179
Godley Reservoir	Messrs. G. H. Hill & Sons C.E.	12	2 0	500	936	36.84	..
Newton	Great Central Rly. Co.	9	3 6	396	915	36.03	205
Mottram Station	Great Central Rly. Co.	9	3 6	452	1014	39.92	183
d Broadbottom (Harewood Lodge)	Col Sidebottom	5	1 0	440	977	38.48	172
d Dukinfield (Higher Reservoir)	G. H. Raddin, Esq., C.E.	8	1 6	495	726	28.59	204
d Dukinfield (Lower Reservoir)	G. H. Raddin, Esq., C.E.	5	1 0	435	829	32.64	204
Arnfield Reservoir	Messrs. G. H. Hill & Sons C.E.	12	2 6	550	1055	41.53	..

DIVISION VIII.—NORTH-WESTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with .01 in. or more.
		Diam.	Height Ground	above Sea Level.	1919		
CHESHIRE—(con.).		in.	ft. in.	ft.	mm.	in.	
1.—MERSEY, UPPER—(con.).							
Rhodes Wood Reservoir	Messrs. G. H. Hill & Sons	CE 12	1 0	520	1172	46·14	..
Torrside Reservoir	Messrs. G. H. Hill & Sons	CE 12	1 6	680	1262	49·67	..
Stalybridge (Market Ground Yd.)	G. H. Raddin, Esq., C.E.	5	1 0	373	997	39·25	190
Stalybridge (Brushes Filter Ho.)	G. H. Raddin, Esq., C.E.	8	1 0	616	1027	40·45	200
Stalybridge (Brushes Filter Ho.)	G. H. Raddin, Esq., C.E.	6	3 0	615	972	38·26	200
Swineshaw Moor (Lees Hill)	G. H. Raddin, Esq., C.E.	5	1 0	1168	980	38·59	..
Woodhead Reservoir	Messrs. G. H. Hill & Sons	C.E. 12	0 10	660	1278	50·33	..
2.—MERSEY—Weaver. 489 sq. mi.							
Nantwich (Dorfold Hall)	Col. J. A. Saner, C.E.	8	1 0	190	806	31·72	199
Nantwich (Reaseheath Hall)	Col. J. A. Saner, C.E.	8	1 0	130	765	30·11	192
Crewe	W. Dawson, Esq.	12	4 0	186	739	29·11	163
Sandbach (Malkins Bank)	Messrs. Brunner, Mond & Co.	5	3 8	138	635	24·99	185
Congleton (Sewerage Works)	J. H. Walters, Esq., C.E.	5	1 0	248	834	32·83	183
Congleton (Buglawton Vicarage)	Col. J. A. Saner, C.E.	8	5 0	347	802	31·56	218
Bosley Reservoir	Great Central Rly. Co.	9	3 6	590	866	34·08	189
Bosley Minns	Great Central Rly. Co.	9	3 6	1210	679	26·75?	195
Tarporley (Tirley Garth Gdns.)	Mr. J. B. Allan	5	3 6	450	806	31·74	204
Middlewich	Messrs. Brunner, Mond & Co.	5	3 10	138	694	27·31	177
Middlewich (Bostock Hall)	Capt. W. H. France-Hayhurst	5	2 0	157	783	30·81	..
Delamere Forest (Kingswood)	Office of Woods	..	..	355	826	32·50	..
Chelford (Astle Hall)	Sir G. Dixon, Bart.	5	1 0	250	800	31·49	162
Chelford (Astle Hall)	Sir G. Dixon, Bart.	8	1 0	250	789	31·05	..
Northwich	Great Central Rly. Co.	9	3 6	76	677	26·66	173
Northwich (Hunts Lock)	Col. J. A. Saner, C.E.	8	1 0	47	800	31·49	203
Northwich (Winnington)	Messrs. Brunner, Mond & Co.	5	1 0	64	830	32·66	196
Northwich (Lostock Gralam)	Messrs. Brunner, Mond & Co.	5	3 6	75	755	29·72	179
3.—MERSEY, LOWER & C. 142 sq. mi.							
Ince Hall	Mrs. Park-Yates	5	1 0	110	856	33·69	192
Hooton Water Works	A. J. Robinson, Esq.	5	1 0	97	803	31·60	175
Eastham (Mill Hey)	Roger P. Sing, Esq.	5	1 7	125	957	37·68	189
Eastham House	Sir J. Herbert Vernon, Bart.	5	1 0	100	879	34·59	210
Wirral W. W. (Prenton)	A. J. Robinson, Esq.	5	1 0	91	775	30·50	179
Rock Ferry (Elmhurst)	Miss Shepherd	8	6 0	110	877	34·52	168
Birkenhead (Bidston Observatory)	W. E. Plummer, Esq.	8	1 0	189	740	29·12	180
Hoylake (District Council Office)	R. W. Fraser, Esq.	5	1 0	33	739	29·08	175
New Brighton (Marine Park)	Dr. F. W. N. Barlow	5	1 0	35	792	31·16	180
4.—DEE. 127 sq. mi.							
Malpas (Chorlton Hall)	E. Radclyffe Crump, Esq.	5	1 0	210	730	28·76	194
Eaton Hall Gardens	Mr. N. F. Barnes	5	3 0	72	656	25·82	153
Eccleston	E. Wells, Esq.	5	1 1	94	704	27·73	158
Rowton (Holly Bank)	R. J. Salmon, Esq.	5	1 5	123	870	34·25	175
Chester (Woodville)	J. H. Howell, Esq.	5	1 1	63	735	28·92	176
Chester (Water Works)	C. Wilfrid Bennett, Esq.	5	0 10	85	750	29·52	192
Chester (Water Works)	C. Wilfrid Bennett, Esq.	8	2 3	85	743	29·26	191
Chester (Northgate Station)	Great Central Rly. Co.	9	3 6	84	650	25·59	..
Puddington (Remote)	Frank S. Smith, Esq.	5	1 0	100	752	29·60	153
Capenhurst Hall	R. T. Richardson, Esq.	5	5 10	125	850	33·48	185
Neston (Vine House)	H. F. Russell, Esq.	5	1 0	111	735	28·94	177
Heswall (Gayton Cottage)	J. A. Dockray, Esq.	5	1 0	30	753	29·64	177
West Kirby (Hilbre House)	Egerton Macdona, Esq.	5	0 9	25	796	31·36	..
West Kirby (The Abbey Manor)	Cedric R. Boulton, Esq.	5	0 10	200	728	28·64	166
West Kirby (St Andrew's Ho.)	Rev. E. F. Robson	5	0 9	50	758	29·84	183
SOUTH LANCASHIRE. (Area, 687 sq. mi.).							
1.—ALT & C. 103 sq. mi.							
Liverpool (Knotty Ash)	W. M. Reade, Esq.	5	1 0	100	838	32·98	223
Great Crosby (Carnegie Library)	S. Wilson, Esq.	5	1 0	35	790	31·11	188
Blundellsands (Myra)	H. Montgomery, Esq.	5	1 0	35	788	31·01	197
Ormskirk (Bickerstaffe P. Stn.)	G. H. Abbott, Esq.	5	1 2	128	818	32·22	198
Ormskirk (Springfield P. Stn.)	G. H. Abbott, Esq.	5	0 11	70	808	31·83	192

DIVISION VIII.—NORTH-WESTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with .01 in. or more.
		Diam.	Height Ground	above Sea Level.	1919			
SOUTH LANCASHIRE—(con.).		in.	ft.	in.	ft.	mm.	in.	
2.—MERSEY, LOWER. 240 sq. mi.								
Garston	H. Owens, Esq., C.E.	10	1	10	84	1044	41.12	201
d Garston (Grassendale Park)	Miss E. C. Abraham	5	1	0	35	852	33.55	192
d Aigburth (Holmfild)	Miss Maxwell	5	1	0	100	884	34.80	212
d Aigburth (Beech Lawn)	T. H. Edwards, Esq.	8	1	0	150	827	32.57	196
d Woolton (Roseleigh Gardens)	Mr. J. Stoney	8	1	0	180	949	37.37	195
d Warrington (Howley Yard)	A. M. Ker, Esq.	10	0	9	26	816	32.14	175
Warrington (Central Station)	Great Central Rly. Co.	9	3	6	59	778	30.63	153
Liverpool (Monument Place)	H. Owens, Esq., C.E.	5	1	3	126	798	31.42	183
d Liverpool (Monument Place)(R)	H. Owens, Esq., C.E.	10	4	6	129	763	30.05	182
Liverpool (Smithdown Road)	H. Owens, Esq., C.E.	10	0	9	135	884	34.82	204
Liverpool (Rathbone Road)	H. Owens, Esq., C.E.	10	1	0	199	944	37.16	174
Liverpool (Lark Lane)	H. Owens, Esq., C.E.	10	10	8	101	952	37.49	204
Liverpool (Newsham Park)	H. Owens, Esq., C.E.	10	1	0	140	861	33.88	189
Liverpool (Huskisson Station)	Great Central Rly. Co.	9	3	6	42	842	33.15	177
Liverpool (Breeze Lane)	H. Owens, Esq., C.E.	5	0	9	135	887	34.93	216
d St. Helen's (Eccleston)	A. W. Bradley, Esq.	8	2	9	268	871	34.29	188
d Earlestown (Newton Cemetery)	T. E. Clough, Esq.	5	1	0	75	808	31.83	...
d Leigh (Leesrigg)	Maj. T. Hunter, V.D., C.E.	5	1	0	71	663	26.09	187
3.—MERSEY—Irwell. 299 sq. mi.								
d Urmston (Sew. Wks., Davyhulme)	G. F. Walter, Esq.	8	2	2	72	830	32.68	178
d Manchester (Godlee Observ'y)	W. C. Jenkins, Esq.	8	1	3	140	835	32.88	195
Manchester (Piccadilly)	Great Central Rly. Co.	9	40	0	194	776	30.54	191
Manchester (Fairfield)	Great Central Rly. Co.	9	6	0	312	847	33.33	200
d Manchester (Oldham Road)	Dr. J. Niven	5	1	0	191	866	34.11	196
d Manchester (Whitworth Park)	Manchester University	8	1	5	126	831	32.72	189
d Ashton-und.-Lyne (Knott H. Res.)	G. H. Raddin, Esq., C.E.	8	1	0	605	1046	41.20	200
Prestwich Reservoir	Messrs. G. H. Hill & Sons	CE 12	2	0	357	847	33.36	...
d Prestwich (Heaton Park)	Manchester Corporation	8	1	0	312	946	37.25	182
Oldham Gas Works	Ernest Parry, Esq., C.E.	5	3	8	621	1058	41.64	195
d Oldham (Alexandra Park)	Dr. J. B. Wilkinson	5	1	0	600	1091	42.94	234
Oldham (Honeywell Lane)	Great Central Rly. Co.	8	3	6	553	988	38.88	197
Oldham (Brushes Clough) old g.	C. J. Batley, Esq., C.E.	5	4	0	930	1090	42.91	211
Oldham (Brushes Clough) new g.	C. J. Batley, Esq., C.E.	5	5	0	955	1090	42.91	210
d Bolton (Queen's Park)	T. Midgley, Esq.	5	1	0	342	1125	44.27	209
d Bolton (Heaton Reservoir)	J. K. Swales, Esq., C.E.	5	1	0	500	1115	43.90	223
d Bolton (Bloomfield, Heaton)	Mrs. F. Taylor	5	1	0	530	1118	44.02	248
d Bolton (Smithills Hall)	Col. R. H. Ainsworth	8	1	2	510	1193	46.96	156
Bolton (Smithills Moor)	Col. R. H. Ainsworth	8	1	2	1375	1303	51.31	...
d Bury (Parsons Lane)	R. B. Rigby, Esq.	8	9	8	316	1050	41.33	199
Bury (Bridge Hall)	Miss Wrigley	8	1	0	...	1059	41.69	184
d New Hey (Sewage Works)	Mr. J. B. Ogden	5	1	0	514	1049	41.29	181
Milnrow (Butterworth Hall)	C. J. Batley, Esq., C.E.	5	1	0	512	1133	44.59	186
d Milnrow (Piethorne, Kitcliffe)	C. J. Batley, Esq., C.E.	5	4	6	769	1013	39.88	201
Milnrow (Piethorne, Coldgreave)	C. J. Batley, Esq., C.E.	5	4	6	894	969	38.15	204
Milnrow (Piethorne, Norman Hill)	C. J. Batley, Esq., C.E.	5	4	6	1076	901	35.48	205
Milnrow (Piethorne, Rooden Res)	C. J. Batley, Esq., C.E.	5	4	6	1131	852	33.55	205
d Rochdale (Roch Mills Sew. Wks.)	H. Yarwood, Esq., C.E.	8	1	1	363	1100	43.32	215
d Rochdale (Broadfield Pk. Obsy.)	Dr. A. G. Anderson	8	0	6	472	1124	44.25	222
d Rochdale (Fieldhead Yard)	H. Yarwood, Esq., C.E.	8	12	0	484	1028	40.49	205
d Rochdale (Ashworth Moor Res.)	J. S. Diggle, Esq., C.E.	5	1	2	956	1028	40.49	201
d Bury (Gin Hall)	No. 1 J. Woodhead Smith Eq. C.E.	8	1	0	475	1128	44.43	206
d Bury (Gin Hall)	No. 2 J. Woodhead Smith Eq. C.E.	8	1	0	475	1167	45.94	206
d Bolton (Belmont Reservoir)	J. K. Swales, Esq., C.E.	5	1	0	800	1354	53.30	226
d Rochdale (Hamer Pasture Res.)	F. H. Brunt, Esq.	5	1	0	760	1160	45.69	198
d Rochdale (Naden Filters)	J. S. Diggle, Esq., C.E.	5	1	8	761	1110	43.72	197
m Norden (Higher Red Lumb)	J. S. Diggle, Esq., C.E.	5	1	2	1125	1090	42.92	...
w Norden (Far Knowl)	J. S. Diggle, Esq., C.E.	5	0	10	...	1141	44.93	...
w Rochdale (Naden Dean) old g.	J. S. Diggle, Esq., C.E.	5	1	4	948	911	35.88	...
w Rochdale (Naden Dean) new g.	J. S. Diggle, Esq., C.E.	5	1	4	948	1015	39.98	...
m Ramsbottom (Killgate Brook)	J. S. Diggle, Esq., C.E.	5	1	0	978	1121	44.13	...
m Ramsbottom (Cheesden Barn)	J. S. Diggle, Esq., C.E.	5	1	0	997	1036	40.78	...
d Edenfield (Scout Moor Res. No. 1)	J. Woodhead Smith, Eq. C.E.	8	1	0	1275	948	37.34	215
d Edenfield (Scout Moor Res. No. 2)	J. Woodhead Smith, Eq. C.E.	8	1	0	1275	981	38.62	215
d Rochdale (Spring Mill Whitworth)	F. H. Brunt, Esq.	5	1	7	720	1237	48.71	198

DIVISION VIII.—NORTH-WESTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with ·01 in. or more.	
		Diam.	Height above Ground Sea Level.		1919			
		in.	ft.	in.	ft.	mm.	in.	
SOUTH LANCASHIRE—(con.):								
3.—MERSEY—Irwell—(con.):								
D Rochdale (Cowm, Whitworth)	F. H. Brunt, Esq.	5	1	7	762	1260	49·61	197
D Entwistle Reservoir	J. K. Swales, Esq., C.E.	5	1	0	700	1262	49·68	213
Littleborough (Hollingworth L.) Rochdale Canal Co.*		8	1	0	600	901	35·46	..
Littleborough (Windy Bank)	Rochdale Canal Co.	8	2	0	605	983	38·70	..
Littleborough (Blackstoned)	Rochdale Canal Co.	8	2	0	1225	783	30·83	..
Littleborough (Canal Summit)	Rochdale Canal Co.	8	2	0	700	862	33·93	..
Littleborough (Chelburn)	Rochdale Canal Co.	8	2	0	800	870	34·27	..
Littleborough (Byron Edge Drain)	Rochdale Canal Co.	8	1	5	1250	892	35·13	..
Littleborough (Lanches)	Rochdale Canal Co.	8	2	0	806	916	36·08	..
Walsden (Calf Lee)	Rochdale Canal Co.	10	1	6	960	872	34·33	..
Walsden (Warland Drain)	Rochdale Canal Co.	8	1	5	1250	802	31·58	..
Walsden (Whiteholme Drain)	Rochdale Canal Co.	8	1	5	1250	956	37·63	..
Walsden (Rishworth Drain)	Rochdale Canal Co.	8	1	5	1200	799	31·44	..
D Haslingden (Holden Wood) No.1 J. Woodhead Smith, Esq., CE		8	1	0	670	1324	52·14	203
D Haslingden (Holden Wood) No.2 J. Woodhead Smith, Esq., CE		8	1	0	670	1307	51·44	203
D Haslingden (Calf Hey)	No.1 J. Woodhead Smith, Esq., CE	8	1	0	800	1325	52·15	203
D Haslingden (Calf Hey)	No.2 J. Woodhead Smith, Esq., CE	8	1	0	800	1218	47·95	204
Rawtenstall Cemetery	J. Johnson, Esq.	8	1	0	572	1158	45·58	159
D Rawtenstall (Cloughbottom) No1 J. Woodhead Smith, Esq., CE		8	1	0	1025	1122	44·17	204
D Rawtenstall (Cloughbottom) No2 J. Woodhead Smith, Esq., CE		8	1	0	1025	1054	41·50	204
D Rawtenstall (Hapton Res.) No.1 J. Woodhead Smith, Esq., CE		8	1	0	930	1156	45·50	215
D Rawtenstall (Hapton Res.) No.2 J. Woodhead Smith, Esq., CE		8	1	0	930	1222	48·10	215
4.—MERSEY, UPPER. 45 sq. mi.								
D Didsbury (Linden Road)	L. G. King, Esq.	8	1	6	110	798	31·41	180
D Stockport (Heaton Mersey)	W. B. Leigh, Esq.	5	1	0	218	782	30·80	194
D Withington (Town Hall)	(R) O. Hellawell, Esq., C.E.	8	4	0	121	766	30·16	165
D Chorlton-cum-Hardy Sew. Works G. F. Walter, Esq.		8	4	0	78	803	31·62	174
D Chorlton-cum-Hardy	J. H. Casartelli, Esq.	5	2	0	75	807	31·78	173
D Fallowfield (Platt Field Park)	Manchester Corporation	8	3	3	124	766	30·16	168
D Denton Reservoir	Messrs. G. H. Hill & Sons, C.E.	12	2	0	324	745	29·33	..
D Gorton Reservoir	Messrs. G. H. Hill & Sons, C.E.	12	2	0	263	780	30·70	..
D Ashton-u-Lyne (Henrietta St Yd) G. H. Raddin, Esq., C.E.		7	1	0	394	991	39·01	201
D Ashton-u-Lyne (Waterhouse)	Great Central Rly. Co.	9	3	6	345	892	35·12	195
D Lower Swineshaw Reservoir	G. H. Raddin, Esq., C.E.	8	1	6	886	1052	41·42	203
D Swineshaw Moor	G. H. Raddin, Esq., C.E.	5	1	0	1340	1035	40·74	..
D Mossley (Manor House Yard)	G. H. Raddin, Esq., C.E.	5	1	0	636	1127	44·38	197
CENTRAL LANCASHIRE. (Area, 536 sq. mi.)								
1.—RIBBLE & C. 326 sq. mi.								
D Rivington (Higher Hill)	J. R. Davidson, Esq., C.E.	8	1	4	733	935	36·80	..
D Haslingden (Mitchells Ho. Res.)	A. J. Harrison, Esq.	5	1	6	990	1114	43·86	161
D Darwen (Sunnyhurst Hey Res.)	E. Marsden, Esq., C.E.	8	1	8	915	1081	42·57	209
D Darwen (Earnsdale Reservoir)	E. Marsden, Esq., C.E.	8	1	8	705	1094	43·07	209
D Darwen (Bold Venture Park)	Dr. F. G. Haworth	8	1	1	722	1307	51·46	218
Darwen (Hoddlesden)	No. 1 A. T. Gooseman, Esq., C.E.	8	1	6	680	994	39·12	188
Darwen (Hoddlesden)	No. 2 A. T. Gooseman, Esq., C.E.	8	1	0	675	1013	39·89	188
Darwen (Daisy Green)	No. 1 A. T. Gooseman, Esq., C.E.	8	1	6	969	1062	41·80	189
Darwen (Daisy Green)	No. 2 A. T. Gooseman, Esq., C.E.	8	1	0	969	1079	42·47	189
Darwen (Pickup Bank)	No. 1 A. T. Gooseman, Esq., C.E.	8	1	6	720	975	38·40	189
Darwen (Pickup Bank)	No. 2 A. T. Gooseman, Esq., C.E.	8	1	0	720	1016	39·98	189
D Brindle (Whiteholme)	Victor H. Gatty, Esq.	5	1	8	315	883	34·76	192
D Blackburn (Guide Reservoir)	A. T. Gooseman, Esq., C.E.	8	1	6	610	996	39·22	185
D Blackburn (Witton)	A. T. Gooseman, Esq., C.E.	8	1	6	315	1144	45·04	192
D Blackburn Fever Hospital	A. T. Gooseman, Esq., C.E.	6	1	6	570	1014	39·94	222
D Blackburn (Pumping Station)	A. T. Gooseman, Esq., C.E.	8	1	6	600	1016	40·01	184
D Accrington (Milnshaw Park)	Mr. J. W. Terry	5	1	6	464	1047	41·21	186
D Hutton (Lancs. C.C. Hortie. Stat.) J. Gillett, Esq.		5	1	0	83	856	33·73	176
D Higher Walton (Bannister Hall) A. A. Gatty, Esq.		5	0	7	75	908	35·76	..
D Preston (Corporation Offices)	J. H. Smethurst, Esq., C.E.	8	18	7	148	919	36·18	196

* Returns supplied by W. A. M'Grath, Esq.

DIVISION VIII.—NORTH-WESTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain		Days with ·01 in. or more.	
		Diam.	Height Ground	above Sea Level.	1919			
CENTRAL LANCASHIRE—(con.).		in.	ft.	in.	ft.	mm.	in.	
1.—RIBBLE & C.—(con.).								
Samlesbury Sewage Works	A. T. Gooseman, Esq., C.E.	8	1	6	240	984	38·73	175
Rishton Reservoir	Leeds & Liverpool Canal Co.	..	..	..	467	750	29·51	..
Causeway Side (Burnley W.W.)	S. Rawlinson, Esq.	8	2	0	1116	1083	42·64	..
Sheddin (Burnley W. W.)	S. Rawlinson, Esq.	8	2	0	960	1023	40·28	..
CantCloughS.Side(BurnleyWW)	S. Rawlinson, Esq.	8	2	0	900	1026	40·41	218
CantCloughN.Side(BurnleyWW)	S. Rawlinson, Esq.	8	2	0	900	937	36·89	219
RamsCloughHead(BurnleyWW)	S. Rawlinson, Esq.	8	2	0	1260	1023	40·27	..
d Huncoat (Burnley Road Res.)	A. J. Harrison, Esq.	9	1	6	620	1141	44·91	208
Great Harwood (Parsonage Res.)	A. T. Gooseman, Esq., C.E.	8	1	0	631	931	36·64	161
d Great Harwood (Dean Clough)	A. J. Harrison, Esq.	12	1	6	540	1332	52·42	208
d Burnley (Queen's Park)	Dr. T. Holt	8	1	0	459	914	36·01	189
Burnley (Yorkshire Street)	S. Rawlinson, Esq.	8	30	0	420	814	32·06	197
Burnley (Swinden) <i>Upper g.</i>	S. Rawlinson, Esq.	8	12	0	820	1093	43·02	225
Burnley (Swinden) <i>Lower g.</i>	S. Rawlinson, Esq.	8	2	0	745	1122	44·17	225
Burnley (Extwistle Moor Top)	S. Rawlinson, Esq.	8	2	0	1310	1121	44·15	..
d Burnley (Gawthorpe Hall)	Lord Shuttleworth	8	0	9	316	1026	40·40	190
d Burnley (Huntroyde)	N. G. Howsin, Esq.	5	1	0	423	998	39·30	..
Alston Reservoir	J. H. Smethurst, Esq., C.E.	8	1	2	320	897	35·30	..
d Nelson (Coldwell Res.) . No. 1	Smith Whitehead, Esq., C.E.	8	2	0	950	888	34·94?	192
d Nelson (Coldwell Res.) . No. 2	Smith Whitehead, Esq., C.E.	5	1	0	960	1150	45·26	192
d Nelson (Victoria Park)	Smith Whitehead, Esq., C.E.	5	1	0	360	1064	41·87	211
w Sabden (Churn Clough Res.)	R. Radcliffe, Esq., C.E.	5	0	8	840	1007	39·65	..
w Sabden (Spence Moor)	R. Radcliffe, Esq., C.E.	8	1	0	1200	877	34·54	..
d Stonyhurst College	Rev. A. L. Cortie, S.J.	8	1	10	377	1047	41·21	191
d Stonyhurst College	Rev. A. L. Cortie, S.J.	11	1	0	376	1038	40·85	..
d Knowle Green (Preston W. W.)	J. H. Smethurst, Esq., C.E.	8	1	2	400	897	35·32	..
d Loud Scales (Preston W. W.)	J. H. Smethurst, Esq., C.E.	8	1	2	400	950	37·41	..
d Spade Mill (Preston W. W.)	J. H. Smethurst, Esq., C.E.	8	1	2	400	924	36·38	..
d Jeffrey Hill (Preston W. W.)	J. H. Smethurst, Esq., C.E.	8	1	2	900	964	37·94	..
d Colne (The Rectory)	Rev. Dr. S. P. Duval	5	1	4	538	1064	41·88	213
d Colne (Cemetery Grounds) . . (R)	T. H. Hartley, Esq.	8	2	11	619	779	30·68?	164
d Pendle Hill (Ogden Reservoir)	Smith Whitehead, Esq., C.E.	8	1	6	950	1023	40·28	167
Barrowford Reservoir	Leeds & Liverpool Canal Co.	8	1	0	473	956	37·64	..
Foulridge (Upper Reservoir)	Leeds & Liverpool Canal Co.	8	1	0	582	1005	39·57	..
Clitheroe (Downham Hall)	R. C. Assheton, Esq.	10	1	6	464	985	38·78	..
2.—RIBBLE—Douglas. 156 sq. mi.								
d WiganWW(BillingeHigherEnd)	R. B. Donald, Esq., C.E.	12	3	6	374	869	34·21	180
d Upholland Grammar School	C. H. Cox, Esq.	5	1	0	320	940	37·02	197
d Wigan W. W. (Worthington)	R. B. Donald, Esq., C.E.	8	1	6	225	956	37·65	198
d Horwich (Lower Rivington)	J. R. Davidson, Esq., C.E.	8	1	0	440	1011	39·81	204
d Horwich (Lower Knoll)	J. R. Davidson, Esq., C.E.	8	1	4	742	1081	42·55	..
d Rufford Park	J. P. Maitland, Esq.	5	1	0	41	699	27·53	..
d Rivington (Brown Hill)	J. R. Davidson, Esq., C.E.	8	1	4	843	984	38·76	..
d Rivington (Stoneshouse). No. 1	J. R. Davidson, Esq., C.E.	8	1	4	843	990	38·98	214
d Rivington (Stoneshouse). No. 2	J. R. Davidson, Esq., C.E.	8	1	4	623	964	37·96	..
d Rivington (Hurst Hill)	J. R. Davidson, Esq., C.E.	8	1	10	1029	1010	39·77	..
d Rivington (Great Hill)	J. R. Davidson, Esq., C.E.	8	1	8	1240	1066	41·98	..
d Rivington (Coppice Stile)	J. R. Davidson, Esq., C.E.	8	1	8	879	900	35·44	..
d Rivington (Gamekeeper's)	J. R. Davidson, Esq., C.E.	8	0	8	850	1079	42·48	..
d Leyland (Worden Hall)	H. Nowell Harrington, Esq.	5	1	0	125	886	34·63	201
d Leyland (Worden Hall)	H. Nowell Harrington, Esq.	5	1	0	125	857	33·75	..
d Bamber Bridge (Cuerden Hall)	R. A. Tatton, Esq.	5	1	0	230	863	33·96	..
3.—COAST STREAMS. 52 sq. mi.								
d Scarisbrick (Pinfold Cottage)	Mrs. Johnson	5	1	0	69	740	29·15	185
d Birkdale (Westcliffe Road)	Percy W. Hoyle, Esq.	5	0	6	30	771	30·36	187
d Birkdale	J. Baxendell, Esq.	5	1	0	27	774	30·49	..
d Southport (Hesketh Park)	J. Baxendell, Esq.	5	1	0	38	780	30·72	186
d Southport (Hesketh Park)	J. Baxendell, Esq.	8	1	0	38	786	30·96	184
d Southport (Hesketh Park) . . (R)	J. Baxendell, Esq.	11	1	6	39	780	30·72	185
d Southport (Lord Street Station)	Great Central Rly. Co.	9	3	6	21	722	28·42	171
d Southport (Forest Road)	J. H. Bonny, Esq.	5	1	6	25	735	28·93	183

DIVISION VIII.—NORTH-WESTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
CENTRAL LANCASHIRE—(con.).		in.	ft.	in.	ft.	mm.	in.	
4.—OUSE—Aire. 2 sq. mi.								
Worthdale (Watersheddles Res.)	M. R. Barnett, Esq., C.E.	5	1	0	1115	1143	45·00	205
Foulridge (Canal Office)	Leeds & Liverpool Canal Co.	8	1	0	497	1088	42·85	..
Foulridge (Cragg Nook Hill)	Leeds & Liverpool Canal Co.	8	1	0	690	1044	41·10	..
NORTH LANCASHIRE. (Area, 609 sq. mi.)								
1.—DUDDON & C. 77 sq. mi.								
Barrow-in-Furness (Gas Works)	F. Chadderton, Esq.	11	1	6	36	744	29·28	156
Barrow-in-Furness (Sewage Wks)	W. C. Persey, Esq., C.E.	5	1	0	21	943	37·14	189
Urswick School House	J. Dobson, Esq.	5	1	3	140	999	39·34	187
Bardsea School	Arthur Fox, Esq.	5	1	0	84	1042	41·02	185
Ulpha	F. Chadderton, Esq.	11	1	6	251	1726	67·95	221
Duddon Valley (Seathwaite Vic)	Rev. C. W. Wakefield	5	1	6	348	1719	67·68	198
Duddon Val. (Seathwaite Tarn)	F. Chadderton, Esq.	11	1	6	1221	2057	80·99	..
2.—LEVEN & C. 135 sq. mi.								
Cartmel (Capke)	R. Heathcote, Esq.	5	1	0	76	1012	39·83	..
Cartmel (Holker Hall)	Lord Richard Cavendish	5	0	9	85	1123	44·22	212
Ulverston (Poaka Beck)	F. Chadderton, Esq.	11	1	6	512	1204	47·42	190
Cartmel (Aynsome)	J. Stewart Remington, Esq.	8	1	8	132	1117	43·96	196
Cartmel W. W. (Newton Res.)	T. Huddleston, Esq., C.E., R.	10	1	0	586	1270	49·98	220
Rusland Hall	Mrs. Archibald	5	14	0	45	1116	43·95	197
Greenodd (Pennybridge School)	W. White, Esq.	5	1	9	118	1394	54·90	182
Coniston (Water Park)	A. P. Brydson, Esq.	5	1	0	165	1421	55·93	200
Coniston (Holywath)	Mrs. Barratt	8	0	9	200	2028	79·84	186
Coniston Park	Miss C. Marshall	5	1	2	305	1843	72·57	165
Hawkshead (Tower Bank Sawrey)	Miss Alcock-Beck	5	2	0	342	1454	57·24	201
Hawkshead School	J. Lowe Handley, Esq.	5	0	7	214	1518	59·76	..
Hawkshead (Esthwaite Lodge)	Late Miss C. Brown	5	0	6	224	1625	63·96	215
Hawkshead (Black Fell)	Miss C. Marshall	5	1	6	1055	1473	57·99	..
Ambleside (Skelwith Fold)	Miss C. Marshall	5	1	0	333	1707	67·20	199
Ambleside (Skelwith Fold)	Miss C. Marshall	5	1	0	333	1704	67·09	..
3.—KENT & C. 45 sq. mi.								
Heysham Harbour	Midland Railway Co.	5	1	6	27	856	33·68	172
Morecambe	Mr. T. B. Lamb	8	1	0	24	833	32·80	186
Carnforth (Over Kellet)	W. Farrer, Esq.	8	1	6	175	938	36·92	206
Yealand Conyers (Beechfield)	Mrs. Roper	5	1	0	250	776	30·55	171
Yealand Conyers (Morecambe Lo.)	J. Rawlinson Ford, Esq.	5	1	0	278	1046	41·16	206
Silverdale (Bleasdale House)	Robert S. Rainbeck, Esq.	8	1	0	160	1090	42·91	173
Grange-over-Sands (Eden Mount)	Miss K. F. Brothers	5	1	6	280	1016	39·98	203
Grange-over-Sands (Nutwood)	Miss S. M. Arkwright	5	1	0	..	1021	40·19	172
Cartmel Fell (The Schoolhouse)	R. J. Cragghill, Esq.	5	5	0	220	1276	50·25	198
4.—LUNE. 135 sq. mi.								
Hampson-in-Ellel	W. G. Welch, Esq.	5	1	0	145	904	35·59	190
Lancaster (Bailrigg)	H. L. Storey, Esq.	5	1	3	200	956	37·62	198
Quernmore (Brow Top)	A. G. Bradshaw, Esq., C.E.	8	1	0	552	1066	41·96	184
Bowland Forest (Higher Salter)	J. T. Sanderson, Esq.	5	1	0	1014	1026	40·41	..
Bowland Forest (Whiteray)	J. T. Sanderson, Esq.	5	1	0	1139	1300	51·20	..
Bowland Forest (Lower Salter)	J. T. Sanderson, Esq.	5	1	0	575	1305	51·38	..
Lancaster (Strathspey)	A. B. S. Welch, Esq.	5	1	0	87	904	35·59	198
Lancaster (Greg Observatory)	Neville Holden, Esq.	8	1	0	312	990	38·99	205
Lancaster (Robert Street)	A. G. Bradshaw, Esq., C.E.	8	1	0	62	976	38·41	206
Caton (School House)	W. Shaw, Esq.	5	1	0	170	1096	43·15	179
Halton Park	J. G. Wright, Esq.	5	1	1	434	1010	39·75	165
Wray Vicarage	Rev. C. L. Reynolds	5	1	0	165	1009	39·71	199
Leck Vicarage	Rev. J. Turner	5	1	1	400	933	36·75	217
5.—WYRE & C. 213 sq. mi.								
St. Anne's-on-Sea	Mr. W. E. Procter	5	1	0	25	773	30·42	154
St. Anne's-on-Sea (Lawrence Ho.)	C. G. D. Hoare, Esq.	5	1	0	30	790	31·09	171
Weeton Reservoir	No. 1 J. Cook, Esq., C.E.	5	1	0	133	932	36·68	175
Weeton Reservoir	No. 2 J. Cook, Esq., C.E.	5	1	0	150	802	31·56	166
Weeton Reservoir	No. 3 J. Cook, Esq., C.E.	5	1	0	102	926	36·45	174

DIVISION VIII.—NORTH-WESTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with .01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
NORTH LANCASHIRE—(con.).		in.	ft.	in.	ft.	mm.	in.	
5.—WYRE & C.—(con.).								
D Blackpool (Met. Observatory) . .	E. W. Rees Jones, Esq., M.D.	5	1	0	67	847	33.34	200
D Broughton (Newsham House) . .	W. B. S. Smith, Esq.	5	1	0	101	932	36.68	184
D Kirkham (Elswick Lodge)	L. G. King, Esq.	5	1	4	52	891	35.08	203
D Poulton-le-Fylde (Singleton Pk.) .	Mrs. Miller	8	1	6	50	1072	42.20	209
D St. Michael's-on-Wyre (Rose Cot.) .	J. Moss, Esq.	5	1	0	27	844	33.22	185
D St. Michael's-on-Wyre Vicarage . .	Ven. Archdeacon Hornby . .	5	1	0	26	863	33.98	182
d Fleetwood	(R) E. Frobisher, Esq.	8	1	8	29	774	30.46	..
D Garstang (Calder Br. Cottages) . .	E. Curwen, Esq.	5	1	0	52	911	35.87	198
M Garstang (Holme Ho., Bleasdale) .	A. Wilson, Esq.	5	1	0	650	1293	50.92	..
M Garstang (Fair Snape Fell)	A. Wilson, Esq.	5	1	0	1630	1603	63.10	..
D Garstang (Barnacre Reservoir) . .	J. Cook, Esq., C.E.	5	1	0	616	1138	44.79	205
D Garstang (Grizedale Reservoir) . .	J. Cook, Esq., C.E.	5	1	0	517	1079	42.49	203
Garstang (Calder Intake)	J. Cook, Esq., C.E.	5	1	0	632	1072	42.20	..
Garstang (Grizedale Intake)	J. Cook, Esq., C.E.	5	1	0	644	1043	41.03	..
D Forton (Low Abbey)	Stephen Simpson, Esq. . . .	5	1	6	80	957	37.67	201
Wyresdale (Abbeystead Res.) . . .	A. G. Bradshaw, Esq., C.E. .	8	1	0	366	1212	47.72	192
M Quernmore (Old Gauge Basin) . .	A. G. Bradshaw, Esq., C.E. .	8	1	0	963	1074	42.29	..
M Wyresdale (Wardstone)	A. G. Bradshaw, Esq., C.F. .	8	1	0	1440	1450	57.07	..
6.—INSULAR. 4 sq. mi.								

DIVISION IX.—YORKSHIRE.

WEST RIDING. (Area, 2791 sq. mi.)

1.—LUNE. 178 sq. mi.								
High Bentham (Inglefield) . . .	Mr. Bryan Holmes	5	1	0	412	921	36.25	203
Ingletton (Kingsdale Head) . . .	Mr. L. Pye	5	0	10	994	1676	65.98	..
Sedbergh (Akay)	C. E. Taylor, Esq.	5	1	0	400	1288	50.69	203
Sedbergh (Cemetery)	Mr. J. Anderson	5	1	0	374	1281	50.43	212
Sedbergh (Bynac)	Mrs. B. Wilson	5	1	0	480	1281	50.44	206
Sedbergh (Havera Bank)	Albert Wilson, Esq.	5	1	0	485	1284	50.54	224
Sedbergh (Howgill School)	W. Woodhead, Esq.	5	1	0	550	1227	48.32	184
2.—RIBBLE. 225 sq. mi.								
Colne (Laneshaw Reservoir) . . .	J. F. Bedford, Esq., C.E.	5	1	0	842	834	32.84	181
Barnoldswick (Rainhall Road) . .	Asa Burniston, Esq.	5	1	2	549	878	34.56	183
Barnoldswick (Greenberfield L.) .	Leeds & L'pool Canal Co.	8	1	0	488	1011	39.81	..
Slaidburn (Knowlmore Manor) . . .	W. Peel, Esq.	5	1	0	417	1336	52.61	..
Slaidburn (Thornayholme)	R. A. Tatton, Esq.	5	1	6	380	1496	58.89	..
Slaidburn (Hareden Brook) . . .	J. H. Smethurst, Esq., C.E.	8	1	2	540	1723	67.85	..
Slaidburn (Langden Brook) . . .	J. H. Smethurst, Esq., C.E.	8	1	2	556	1708	67.25	..
Slaidburn (Dunsop House)	A. T. Gooseman, Esq., C.E.	8	1	6	450	1567	61.71	178
Slaidburn (Middle Knoll)	A. T. Gooseman, Esq., C.E.	8	2	6	1298	1495	58.87	..
Slaidburn (Brennand)	A. T. Gooseman, Esq., C.E.	8	1	0	820	1592	62.68	178
Slaidburn (Whitendale)	A. T. Gooseman, Esq., C.E.	8	1	0	830	1662	65.45	175
Slaidburn (Cabin Hill)	A. T. Gooseman, Esq., C.E.	8	3	1	1559	1476	58.13	..
Slaidburn (Baxton Fell)	A. T. Gooseman, Esq., C.E.	8	2	6	1540	1526	60.09	..
Settle (Gas Works)	J. W. Shepherd, Esq.	8	1	2	450	1070	42.14	210
Settle (Giggleswick School) . . .	A. Russell, Esq.	8	1	0	500	883	34.77	..
Horton-in-Ribblesdale	Nathaniel Hunt, Esq.	5	1	0	800	1402	55.18	..
3.—MERSEY—Irwell. 2 sq. mi.								
4.—MERSEY, UPPER. 35 sq. mi.								
Greenfield (Upperwood Moor) . . .	G. H. Raddin, Esq., C.E.	5	1	0	1518	1187	46.75	..
Greenfield (Chew Mount)	G. H. Raddin, Esq., C.E.	5	1	0	1578	1424	56.07	218
Greenfield (Chew Reservoir) . . .	G. H. Raddin, Esq., C.E.	5	1	0	1648	1320	51.97	..
Greenfield (Yeoman Hey)	G. H. Raddin, Esq., C.E.	5	1	0	784	1296	51.04	208
Greenfield (Ashway Moss)	G. H. Raddin, Esq., C.E.	5	1	0	1581	982	38.66	..
Greenfield (Birchen Clough) . . .	G. H. Raddin, Esq., C.E.	5	1	0	1018	1311	51.61	..
Saddleworth Station	E. Prebble, Esq., C.E.	5	4	2	630	1022	40.25	..
Oldham (Strinesdale)	C. J. Batley, Esq., C.E.	5	4	0	815	988	38.88	214

DIVISION IX.—YORKSHIRE—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with ·01 in. or more.	
		Diam.	Height Ground	above Sea Level.	1919			
WEST RIDING—(con.).		in.	ft.	in.	ft.	mm.	in.	
4.—MERSEY, UPPER—(con.).								
D Standedge (Cas Shaw Broadh'd)	C. J. Batley, Esq., C.E.	8	4	6	876	1079	42·49	215
Standedge (Cas Shaw Cudworth)	C. J. Batley, Esq., C.E.	5	4	6	1410	815	32·08	215
M Standedge (Redbrook Res.)	E. Prebble, Esq., C.E.	8	1	6	1150	1095	43·10	..
Denshaw (Ox Hey)	C. J. Batley, Esq., C.E.	8	4	6	1030	1069	42·09	215
D Denshaw (New Year's Bridge)	C. J. Batley, Esq., C.E.	8	4	0	1012	1030	40·53	215
Denshaw (Ready Con Dean)	C. J. Batley, Esq., C.E.	8	4	0	1414	1025	40·36	215
5.—TRENT—Derwent. 7 sq. mi.								
Derwent Dale (Abbey Brook)	65 S. B. Winser, Esq., C.E.	5	1	0	825	1185	46·66	..
Derwent Dale (Howden Cl'gh)	64 S. B. Winser, Esq., C.E.	5	1	0	1030	1142	44·96	..
Derwent Dale (Howden Ho.)	19 S. B. Winser, Esq., C.E.	8	1	0	890	1228	48·35	..
Derwent Dale (Sandy Lee)	No. 7 S. B. Winser, Esq., C.E.	5	1	0	1340	1226	48·27	..
6.—TRENT—Left Bank Tributaries. 143 sq. mi.								
D Woodsetts Grange (Old Vic'ge)	H. P. Marsh, Esq.	5	1	0	245	705	27·75	185
7.—OUSE—Don. 564 sq. mi.								
D Sheffield (Stumperlow Hall)	J. Dixon, Esq.	5	1	0	730	1074	42·30	195
D Sheffield (Stumperlow Hall)	J. Dixon, Esq.	5	1	0	770	1085	42·72	196
D Sheffield W.W. (Redmires Res.)	L.S.M. Marsh, Esq., C.E.	10	5	0	1110	1172	46·13	209
Sheffield W.W. (Redmires Res.)	L.S.M. Marsh, Esq., C.E.	8	4	0	1110	1164	45·84	..
D Sheffield W.W. (Rivelin)	(R) L. S. M. Marsh, Esq., C.E.	10	4	0	564	979	38·55	200
Sheffield W.W. (Rivelin)	L. S. M. Marsh, Esq., C.E.	8	4	0	564	982	38·65	..
D Sheffield W.W. (Crookes)	(R) L. S. M. Marsh, Esq., C.E.	10	2	0	629	892	35·11	187
Sheffield W.W. (Crookes)	L. S. M. Marsh, Esq., C.E.	8	2	0	629	890	35·04	..
D Sheffield (Weston Park)	E. Howarth, Esq.	8	1	0	430	911	35·87	185
D Darnall (High Hazels Museum)	E. Howarth, Esq.	8	1	0	285	793	31·21	186
Sheffield (Victoria Station)	Great Central Rly Co.	9	3	6	188	779	30·68	166
Loxley Valley (Broadcar) No. 1	L. S. M. Marsh, Esq., C.E.	5	1	0	1004	1247	49·08	..
Loxley V. (Oaks Fm. Damflask)	L.S.M. Marsh, Esq., C.E.	5	1	0	650	1047	41·22	..
Loxley V. (Loftshaw, Strines)	L. S. M. Marsh, Esq., C.E.	5	1	0	1011	1206	47·48	..
D Loxley V. (Dale Dike Res.)	(R) L. S. M. Marsh, Esq., C.E.	10	3	0	715	1112	43·76	216
Loxley V. (Dale Dike Res.)	L. S. M. Marsh, Esq., C.E.	8	3	0	715	1110	43·70	..
Loxley V. (Thornseat)	L. S. M. Marsh, Esq., C.E.	5	1	0	1326	1158	45·60	..
Loxley V. (Rocher Flat)	L. S. M. Marsh, Esq., C.E.	5	1	0	1106	1101	43·36	..
Loxley V. (Mortimer House)	L. S. M. Marsh, Esq., C.E.	5	1	0	1036	1103	43·41	..
d Rotherham (Ulley Reservoir)	T. P. Collinge, Esq., C.E.	5	1	0	184	646	25·44	..
Sheffield (Tinsley Locks)	Great Central Rly. Co.	9	..	..	117	729	28·69	164
D Wincobank (Sewage Works)	(R) J. Haworth, Esq.	8	2	0	99	689	27·12	153
D Rotherham (Sitwell Vale)	Mr. G. Howard	5	1	0	300	778	30·65	160
D Rotherham (Moorgate Grange)	F. M. Watson, Esq.	5	1	0	262	724	28·51	166
d Rotherham (Aldwarke Sew. Wk.)	James H. Kershaw, Esq.	5	1	4	71	856	33·71	..
D Rotherham (Thrybergh)	F. O. Kirby, Esq., C.E.	8	1	0	184	730	28·75	172
D Chapelton (Potter Hill)	Mr. C. W. Frost	5	5	0	583	802	31·57	165
D Conisborough (Firsby Res.)	F. O. Kirby, Esq., C.E.	8	1	4	189	741	29·18	165
d Wentworth Woodhouse	Mr. A. Third	5	0	10	360	861	33·91	..
D Mexborough	G. Fenwick Carter, Esq. C.E.	5	1	6	77	766	30·17	205
Wortley	Great Central Rly. Co.	9	3	6	548	876	34·48	175
Wortley (Service Reservoir)	J. H. Taylor, Esq., C.E.	5	1	0	700	875	34·46	187
Elsecar	Great Central Rly. Co.	9	3	6	181	741	29·19	172
D Little Don Val. (Underbank Rs.)	L. S. M. Marsh, Esq., C.E.	8	1	6	604	1085	42·71	226
Little Don Val. (Brookholes)	L. S. M. Marsh, Esq., C.E.	5	1	6	934	956	37·62	..
Little Don Val. (Sheep House)	L. S. M. Marsh, Esq., C.E.	5	1	6	974	951	37·43	..
D Little Don Val. (Bridge Lane)	L. S. M. Marsh, Esq., C.E.	8	4	9	761	1076	42·36	206
Langsett Moor (Catcleugh)	L. S. M. Marsh, Esq., C.E.	8	1	6	1516	1184	46·63	..
Langsett Moor (Micklelen)	L. S. M. Marsh, Esq., C.E.	5	1	6	1217	1180	46·47	..
D Langsett Moor (Up. Midhope)	L. S. M. Marsh, Esq., C.E.	8	1	6	925	1059	41·68	203
D Langsett Moor (Midhope)	J. H. Taylor, Esq., C.E.	8	1	0	830	967	38·07	194
D Langsett Moor (Flouch Road)	L. S. M. Marsh, Esq., C.E.	8	4	3	960	1172	46·13	208
Langsett Moor (Fiddlers Green)	L. S. M. Marsh, Esq., C.E.	8	1	6	1493	1253	49·33	..
Langsett Moor (Border Hill)	L. S. M. Marsh, Esq., C.E.	5	1	6	1148	1177	46·34	..
D Langsett Moor (Swinden Lodge)	L. S. M. Marsh, Esq., C.E.	8	1	6	1037	1106	43·55	203
D Wath-upon-Deane (Chapel St.)	Dr. F. J. Burman	8	2	2	188	709	27·92	180
Bolton-upon-Deane	T. Washington, Esq.	5	1	0	130	746	29·35	159

DIVISION IX.—YORKSHIRE—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
WEST RIDING—(con.).		in.	ft.	in.	ft.	mm.	in.	
7.—OUSE—Don—(con.).								
Worsborough	Great Central Rly. Co.	9	3	6	225	823	32·39	200
d Doncaster (Littlemoor Terrace)	A. C. Smith, Esq.,	5	1	6	50	704	27·71	150
Doncaster	Great Central Rly. Co.	9	3	6	32	590	23·24	..
d Doncaster (Pumping Station)	F. O. Kirby, Esq., C.E.	5	1	6	30	647	25·48	165
d Doncaster (Avenue Road)	M. H. Stiles, Esq.	5	4	0	62	778	30·64	188
Dunford Bridge (Windleden)	H. Dearden, Esq., C.E.	12	2	2	1100	1201	47·30	..
Dunford Bridge (Dearden Res.)	H. Dearden, Esq., C.E.	12	1	6	1244	1211	47·66	..
Dunford Bridge Station	Great Central Rly. Co.	9	3	6	954	1176	46·32	191
d Dunford Bridge Reservoir	H. Dearden, Esq., C.E.	12	2	0	1111	1309	51·52	207
Penistone	Great Central Rly. Co.	9	3	6	717	876	34·49	179
Penistone (Hazlehead)	Great Central Rly. Co.	9	3	9	868	1123	44·23	196
Penistone (Ingbirchworth Res.)	J. H. Taylor, Esq., C.E.	8	1	0	853	892	35·12	181
Barnsley (Jordan Hill)	J. H. Taylor, Esq., C.E.	8	1	3	460	751	29·55	..
Barnsley	Great Central Rly. Co.	9	3	6	317	669	26·35	164
d Cawthorne (Cannon Hall)	Capt. J. H. Pardoe	5	0	11	418	799	31·46	158
d Brodsworth Hall Gardens	Mr. F. W. Larnar	5	1	0	175	631	24·86	161
d Burntwood Hall	J. Dymond, Esq.	5	1	0	378	752	29·62	183
d Kirk Bramwith	H. A. Brundell, Esq., C.E.	5	1	0	17	771	30·36	..
Hemsworth Hall	Miss Leatham	5	1	0	250	759	29·89	175
d Hemsworth Collieries	C. P. Finn, Esq.	5	1	3	246	736	28·96	176
d Badsworth (Rogerthorpe Man.)	Lt.-Col. W. J. F. Ramsden	8	1	2	150	751	29·55	193
d Ackworth School	E. Priestman, Esq.	8	1	0	125	762	30·00	180
d Ackworth (Hillthorpe)	Mrs. F. Hatchard	5	1	3	175	744	29·30	164
Womersley Park	Mr. G. Hearn	8	0	8	50	655	25·78	..
d Swinefleet	Mr. G. Harrison	5	5	6	10	792	31·18	..
d Goole	F. Hinchcliffe, Esq.	5	2	0	18	815	32·08	162
8.—OUSE—Aire—Calder. 361 sq. mi.								
Holmbridge (Yateholme Res.)	J. C. Barrowclough, Esq., C.E.	5	1	0	1009	1566	61·65	213
Holmbridge (Yateholme Farm)	J. C. Barrowclough, Esq., C.E.	5	1	0	861	1533	60·36	212
Holmbridge (Holme Styes Res.)	Messrs. Mallinson & Son, CE	7	2	0	830	1158	45·60	..
Holmbridge (Boshaw Whams R.)	Messrs. Mallinson & Son, CE	5	1	0	930	1242	48·90	..
Holmbridge (Bilberry Res.)	Messrs. Mallinson & Son, CE	5	1	0	970	1369	53·90	..
Meltham (Harden Moss)	J. W. Armitage, Esq., C.E.	8	1	2	1212	1181	46·49	..
Meltham (Harden Moss) <i>new g.</i>	J. W. Armitage, Esq., C.E.	8	1	0	1212	1184	46·60	..
Wessenden Head	J. W. Armitage, Esq., C.E.	8	1	0	1270	1199	47·20	..
Wessenden Head <i>new g.</i>	J. W. Armitage, Esq., C.E.	8	1	0	1200	1217	47·92	..
Wessenden (Hollin Bank Moss)	J. W. Armitage, Esq., C.E.	8	1	0	1280	1077	42·40	..
Wessenden (Old Reservoir)	J. W. Armitage, Esq., C.E.	8	1	0	940	1181	46·51	..
Wessenden (Butterley Moss)	J. W. Armitage, Esq., C.E.	8	1	0	1110	1187	46·75	..
Wessenden (Bobus)	J. W. Armitage, Esq., C.E.	8	1	0	1200	1235	48·61	..
Meltham (Brow Grains)	J. W. Armitage, Esq., C.E.	8	1	0	900	1132	44·58	..
Meltham (Royd Edge)	C. L. Brook, Esq.	8	1	0	585	1273	50·11	..
d Meltham (Harewood Lodge)	C. L. Brook, Esq.	8	1	0	514	1142	44·98	214
Meltham Grange	J. W. Armitage, Esq., C.E.	8	1	0	850	1103	43·41	..
Marsden	E. Prebble, Esq., C.E.	8	2	4	692	1328	52·27	..
Marsden (Deer Hill)	J. W. Armitage, Esq., C.E.	8	1	0	1149	986	38·83	..
Marsden (Deer Hill) <i>new g.</i>	J. W. Armitage, Esq., C.E.	8	1	0	1149	1034	40·69	..
d Slaithwaite (Blackmoorfoot)	J. W. Armitage, Esq., C.E.	8	1	0	800	1037	40·82	234
d Slaithwaite (Inglewood)	J. Woodhead, Esq.	5	1	0	546	1162	45·74	233
d Huddersfield (Carr End, Dalton)	Mr. T. Hey	8	1	0	350	810	31·87	184
Huddersfield (Bankfield, Golcar)	J. R. Sykes, Esq.	5	1	0	400	978	38·51	167
d Huddersfield (Cemetery)	Mr. J. Firth	8	1	0	410	851	33·63	197
d Huddersfield (Oakes)	S. Morris Bower, Esq.	5	1	0	772	857	33·73	190
d Kirkheaton (Kirk Vale)	Miss A. Robson	8	1	0	220	786	30·94	177
d Rishworth Mr (G. Walden Edge)	C. Clemesha Smith, Esq., C.E.	5	0	10	1135	1186	46·71	205
w Rishworth (Stott Hall)	C. Clemesha Smith, Esq., C.E.	5	1	0	935	1032	40·64	..
d Rishworth (Ringstone Res.)	C. Clemesha Smith, Esq., C.E.	5	1	0	990	1063	41·84	206
w Rishworth Moor (Greystones)	C. Clemesha Smith, Esq., C.E.	5	1	0	1175	1181	46·50	..
w Soyland Moor (Summit)	C. Clemesha Smith, Esq., C.E.	5	1	0	1290	1015	39·97	..
d Soyland Moor (Baitings Gate)	C. Clemesha Smith, Esq., C.E.	5	1	0	935	1245	49·02	212
w Soyland Moor (Manshead)	C. Clemesha Smith, Esq., C.E.	5	1	0	1240	1059	41·69	..
Horbury (Highfields)	J. H. Green, Esq.	5	1	0	226	722	28·43	..
d Mirfield (Cote Wall)	F. P. Mitchell, Esq.	8	1	2	200	897	35·30	175

DIVISION IX.—YORKSHIRE—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.	1919			
WEST RIDING—(con.).		in.	ft. in.	ft.	mm.	in.		
8.—OUSE—Aire—Calder—(con.).								
D Wakefield	Dr. H. Maclean Wilson ..	8	1	0	174	685	26·97	171
D Wakefield (Clarence Park)	C. Clemesha Smith, Esq., C.E.	5	1	0	124	736	28·99	155
D Wakefield (Fieldhead Res.)	C. Clemesha Smith, Esq., C.E.	5	1	0	250	536	21·09	159
Elland	P. H. Whitwam, Esq.	8	1	0	307	936	36·85	..
D Sowerby Bridge (Millhouse)	F. P. S. Rawson, Esq.	5	0	9	340	1055	41·54	205
D Sowerby Br. (Haugh End) No. 4 ..	J. Selwyn Rawson, Esq.	5	0	8	450	1030	40·55	212
D Walsden (Ramsden Reservoir) ..	F. H. Brunt, Esq., C.E.	8	1	0	993	1249	49·18	195
D Walsden (Ramsden Hill)	F. H. Brunt, Esq., C.E.	5	1	0	1326	1138	44·80	..
d Walsden (Birks House)	L. Cockcroft, Esq.	5	1	0	550	1377	54·23	207
D Todmorden (Fielden Hospital) ..	Mr. F. Rogers	5	1	0	650	1020	40·15	179
D Todmorden (Sourhall Hospital) ..	Mr. F. Rogers	5	1	0	1020	1277	50·26	209
D Halifax (Hall Ings, S. Ofram) ..	Rev. G. E. Aspinall	5	0	7	750	692	27·23	210
D Halifax (Public Library)	E. Green, Esq.	8	1	0	625	898	35·35	188
D Batley (Staincliffe Reservoir)	J. C. Barrowclough, Esq., C.E.	5	1	0	492	684	26·93	171
D Ardsley Reservoir No. 1 ..	C. Clemesha Smith, Esq., C.E.	5	1	2	395	694	27·32	178
D Ardsley Reservoir No. 2 ..	C. Clemesha Smith, Esq., C.E.	5	1	2	326	700	27·56	178
D Ardsley (Jaw Hill Filters)	C. Clemesha Smith, Esq., C.E.	5	1	0	315	679	26·72	175
D Cleckheaton (Whitcliffe Mt. Sch) ..	Walton Cliffe, Esq.	5	1	0	430	727	28·61	180
M Halifax W.W. (Albert)	R. J. Hartley, Esq., C.E.	5	1	0	795	889	35·00	..
M Halifax W.W. (Gibbet)	R. J. Hartley, Esq., C.E.	5	3	9	568	937	36·89	..
M Halifax W.W. (Ramsden Wd) ..	R. J. Hartley, Esq., C.E.	8	1	2	816	805	31·71	..
Hebden Bridge (Falling Royd) A. R.	Crossley, Esq.	4	1	0	479	1178	46·36	190
D Hebden Bridge (Burnside)	J. Hoyle, Esq.	5	1	0	825	1085	42·70	200
M Halifax W.W. (Castle Carr Ldg.) ..	R. J. Hartley, Esq., C.E.	5	0	6	1060	905	35·63	..
M Halifax W.W. (Midgley Moor) ..	R. J. Hartley, Esq., C.E.	8	0	9	1350	963	37·92	..
M Halifax W.W. (Warley Moor) ..	R. J. Hartley, Esq., C.E.	8	1	2	1325	888	34·98	..
M Halifax W.W. (Ogden)	R. J. Hartley, Esq., C.E.	5	0	10	990	963	37·91	..
M Halifax W.W. (Ovenden Moor) ..	R. J. Hartley, Esq., C.E.	8	1	9	1375	1071	42·16	..
M Halifax W.W. (Widdop)	R. J. Hartley, Esq., C.E.	5	1	3	1050	1097	43·18	..
M Halifax W.W. (W'ish'w D'n Lo.) ..	R. J. Hartley, Esq., C.E.	5	1	0	1040	1137	44·76	..
M Halifax W.W. (Walshaw Dean) ..	R. J. Hartley, Esq., C.E.	8	1	0	1380	1047	41·22	..
9.—OUSE—Aire. 504 sq. mi.								
D Pontefract (Tanshelf Drive)	T. K. Heseltine, Esq.	5	1	0	180	736	28·98	150
Pudsey (Fulneck)	Miss E. C. Lawford	5	1	0	490	802	31·57	..
D Garforth (Manor Farm)	Prof. R. S. Seton	8	1	2	194	632	24·85	154
Bradford (Grange Rd., Horton) ..	Mr. A. E. Chilton	5	3	0	450	877	34·51	195
Bradford (Queensbury)	R. J. Foster, Esq.	8	2	2	1050	932	36·71	171
Bradford (Brayshaw Reservoir)	L. Mitchell, Esq., C.E.	5	1	0	982	875	34·44	..
D Bradford (Lister Park)	H. Lander, Esq.	8	1	0	439	910	35·84	192
Bradford (Thornton Moor Filters) ..	L. Mitchell, Esq., C.E.	5	1	0	1218	916	36·07	..
Bradford (Stubden Res.) No. 8A. ..	L. Mitchell, Esq., C.E.	8	1	0	1075	1156	45·50	..
Bradford (Stubden Res.) No. 8B. ..	L. Mitchell, Esq., C.E.	8	1	0	1075	1112	43·77	..
Bradford (Stubden Res.) No. 8 ..	L. Mitchell, Esq., C.E.	5	1	0	1071	1051	41·39	..
M Bradford (Nan Scar, Oxenhope) ..	L. Mitchell, Esq., C.E.	5	1	0	1101	1124	44·27	..
M Bradford (Stairs Top, Oxenh'pe) ..	L. Mitchell, Esq., C.E.	5	1	0	1401	1090	42·90	..
Bradford (Leeming Reservoir) ..	L. Mitchell, Esq., C.E.	5	1	0	850	802	31·56	..
Bradford (Doe Park Reservoir) ..	L. Mitchell, Esq., C.E.	8	1	0	810	1035	40·75	..
Bradford (Doe Park Reservoir) ..	L. Mitchell, Esq., C.E.	5	1	0	811	1033	40·67	..
M Bradford (Leeshaw Res.)	L. Mitchell, Esq., C.E.	5	1	0	875	1128	44·41	..
Bradford (Chellow Dean Res.) ..	L. Mitchell, Esq., C.E.	5	1	0	645	928	36·55	..
Bradford (Chellow Heights Res.) ..	L. Mitchell, Esq., C.E.	5	1	0	848	877	34·54	..
Bradford (Hewenden Res.) old g. ..	L. Mitchell, Esq., C.E.	5	1	0	700	1059	41·69	..
Bradford (Hewenden Res.) new g. ..	L. Mitchell, Esq., C.E.	5	1	0	701	1036	40·77	..
Bradford (Heaton Reservoir) ..	L. Mitchell, Esq., C.E.	8	1	0	530	876	34·47	..
Bradford (Heaton Reservoir) ..	L. Mitchell, Esq., C.E.	5	1	3	531	852	33·56	..
Leeds (Wortley Reservoir)	C. G. Henzell, Esq., C.E.	8	0	9	307	724	28·52	185
Leeds (Knostrop)	C. G. Henzell, Esq., C.E.	8	0	9	72	634	24·96	161
Leeds (Holbeck W.W. Depôt) ..	C. G. Henzell, Esq., C.E.	8	0	9	93	672	26·44	191
Leeds (Great George Street)	C. G. Henzell, Esq., C.E.	5	0	9	180	632	24·90	165
D Leeds (Museum)	H. Crowther, Esq.	8	46	0	177	676	26·63	176
Leeds (Woodhouse Moor)	C. G. Henzell, Esq., C.E.	8	0	9	307	645	25·40	166
Leeds (Weetwood Res.) No. 1. C. G.	Henzell, Esq., C.E.	8	0	9	328	692	27·26	176
Leeds (Weetwood Res. No. 2. C. G.	Henzell, Esq., C.E.	8	0	9	328	752	29·60	178

DIVISION IX.—YORKSHIRE—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more
		Diam.	Height Ground	above Sea Level.		1919		
WEST RIDING—(con.).		in.	ft.	in.	ft.	mm.	in.	
9.—OUSE—Aire—(con.).								
Leeds (Gledhow Grove)	F. J. Kitson, Esq.	5	2	6	285	704	27·72	..
Leeds (Allerton Hill)	T. Harding Churton, Esq.	5	0	7	418	688	27·08	..
Shipley (Cragg End)	Leeds & Liv'pool Canal Co. 8	1	0		304	832	32·75	..
d Shipley (Glenholme)	M. B. Burton, Esq.	5	0	9	370	863	33·99	188
d Haworth (Harbour Lodge)	M. R. Barnett, Esq., C.E.	8	1	0	1187	1277	50·29	212
d Haworth (Lower Laithe Res.)	M. R. Barnett, Esq., C.E.	5	0	10	772	1138	44·81	215
d Haworth (Lwr Laithe Res.) (r)	M. R. Barnett, Esq., C.E.	6	1	6	772	1132	44·55	214
d Oakworth (Oldfield Filters)	M. R. Barnett, Esq., C.E.	5	1	0	1008	1041	41·00	200
Bingley (Gilstead Filters)	L. Mitchell, Esq., C.E.	5	1	0	572	770	30·33	..
d Adel (Lawns Wood Cemetery)	Mr. S. R. Dyson	5	1	0	475	905	35·64	227
d Keighley (The Knowle)	P. Clough, Esq.	5	1	0	385	870	34·25	188
Keighley (Victoria Park)	Mr. R. Butterfield	5	1	0	304	856	33·72	194
Bingley (Sunnydale Reservoir)	L. Mitchell, Esq., C.E.	5	1	0	825	793	31·21	..
d Salterforth (Barnoldswick W.W.)	J. W. Thompson, Esq.	8	1	4	832	1044	41·10	171
d Kelbrook (Higher Burnt Hill Fm.)	J. E. Aldersley, Esq.	8	1	0	1050	810	31·88	182
d Earby (Sewage Works)	J. E. Aldersley, Esq.	5	1	0	425	909	35·79	192
Earby (Sewage Works)	(r) J. E. Aldersley, Esq.	6	1	9	426	860	33·85	..
d Silsden (Bolton Road)	Mr. A. Elder	5	1	0	432	682	26·84	166
Silsden (Gill Grange)	L. Mitchell, Esq., C.E.	5	1	0	883	670	26·39	..
Silsden Reservoir	L. Mitchell, Esq., C.E.	5	1	0	560	683	26·89	..
Silsden (Cringles Res. Site)	L. Mitchell, Esq., C.E.	5	1	0	760	708	27·88	..
d Elslack (Moorside Farm)	J. W. Thompson, Esq.	5	0	7	835	966	38·03	202
Carleton (Beech Hill)	W. Cyril Empson, Esq.	8	5	3	425	865	34·06	..
d Skipton (Sewage Works)	A. E. W. Aldridge, Esq.	8	1	0	318	845	33·28	178
d Skipton (Town Hall)	(r) A. E. W. Aldridge, Esq.	6	1	6	367	763	30·03	187
Skipton (Hawthorne Cottage)	Leeds & Liv'pool Canal Co. 8	1	0		380	742	29·20	..
Gargrave (Banks Hill Bank Nwtn)	Leeds & Liv'pool Canal Co. 8	1	0		545	898	35·35	..
Gargrave (Ray Bridge Hill)	Leeds & Liv'pool Canal Co. 8	0	10		459	766	30·17	..
Skipton (Embsay Moor Res.)	A. E. W. Aldridge, Esq.	8	1	3	670	779	30·66	..
Rylstone Rectory	Rev. C. H. Lowe	5	0	7	708	938	36·93	210
Winterburn (Long Hill)	Leeds & Liv'pool Canal Co. 8	0	9		705	880	34·65	..
Winterburn (Brown Hill)	Leeds & Liv'pool Canal Co. 8	1	0		961	946	37·23	..
d Malham Tarn	Mr. John Winskill	8	1	0	1296	1325	52·16	234
d Malham Tarn	Mr. John Winskill	5	1	0	1296	1346	52·98	234
10.—OUSE—Wharfe. 408 sq. mi.								
d Aberford (Lotherton Hall)	(r) Mrs. Trench Gascoigne ...	8	1	0	200	667	26·25	186
d Saxton Vicarage	Rev. C. D. Ash	5	1	6	95	705	27·75	183
Adel (Eccup, South)	C. G. Henzell, Esq., C.E.	8	0	9	390	860	33·84	184
Adel (Eccup, East)	C. G. Henzell, Esq., C.E.	8	0	9	375	790	31·11	187
d Bardsey Pumping Station	M. C. Wood, Esq.	5	1	0	250	787	31·00	179
Harewood (Arthington)	C. G. Henzell, Esq., C.E.	8	0	9	139	1008	39·69	159
d Harewood House	Countess of Harewood	5	0	10	300	856	33·68	162
d Otley (Sewage Works)	C. F. Hodgson, Esq., C.E.	5	1	0	172	703	27·69	..
d Ilkley (Silverwell Cottage)	G. A. Waite, Esq.	5	1	0	900	940	37·02	195
Ilkley (Beechwood Grove)	P. G. Marshall, Esq.	5	11	0	400	760	29·90	..
d Ilkley (Spence's Garden)	G. A. Waite, Esq.	5	1	0	314	794	31·27	201
Leathley (Lindley Wood, S.)	C. G. Henzell, Esq., C.E.	8	0	9	312	844	33·23	216
Leathley (Lindley Wood, N.)	C. G. Henzell, Esq., C.E.	8	0	9	320	843	33·18	216
d Ilkley (March Gill Reservoir)	C. F. Hodgson, Esq., C.E.	5	1	0	655	824	32·45	181
d York (Mount Villas)	Miss S. E. Rowntree	5	1	0	70	784	30·86	216
d York (Cherry Hill)	Messrs H. Richardson & Co. 5	1	6		50	716	28·20	157
d York (Museum Gardens)	The Curator	9	1	0	57	603	23·75	186
d York (The Retreat)	Dr. H. J. Mackenzie	5	1	0	73	687	27·04	188
York (Acomb Landing)	W. H. Humphreys, Esq.	5	1	0	40	656	25·84	192
d Skipton (Counter Hill)	L. Mitchell, Esq., C.E.	5	1	0	951	700	27·55	..
d Skipton (Chelker Reservoir)	L. Mitchell, Esq., C.E.	5	1	0	730	755	29·73	..
Fewston (Timble Ings)	C. G. Henzell, Esq., C.E.	8	0	9	912	808	31·83	210
Fewston (Timble)	C. G. Henzell, Esq., C.E.	8	0	9	720	795	31·29	190
Fewston (Swinsty, East)	C. G. Henzell, Esq., C.E.	8	0	9	460	834	32·85	197
Fewston (Swinsty, West)	C. G. Henzell, Esq., C.E.	8	0	9	425	849	33·44	197
Fewston, South	C. G. Henzell, Esq., C.E.	8	0	9	525	858	33·76	204
Fewston, North	C. G. Henzell, Esq., C.E.	8	0	9	525	817	32·16	203
Fewston (Blubberhouses)	C. G. Henzell, Esq., C.E.	8	0	9	575	927	36·48	204
Bolton Abbey Estate Office	A. Downs Esq.	5	1	2	368	928	36·52	209

DIVISION IX.—YORKSHIRE—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain		Days with ·01 in. or more.
		Diam.	Height Ground.	above Sea Level.		1919		
WEST RIDING—(con.).		in.	ft.	in.	ft.	mm.	in.	
10.—OUSE—Wharfe—(con.).								
Barden Reservoir	L. Mitchell, Esq., C.E.	8	1	0	746	930	36·61	..
Barden Reservoir	L. Mitchell, Esq., C.E.	5	1	0	746	914	35·98	..
Upper Barden Reservoir	L. Mitchell, Esq., C.E.	5	1	0	1250	893	35·15	..
Thruscross (Lane Head)	C. G. Henzell, Esq., C.E.	8	0	9	950	760	29·92	204
M Burnsall (Thorpe Fell)	L. Mitchell, Esq., C.E.	5	1	0	1661	923	36·34	..
M Burnsall (Sandbed Beck)	L. Mitchell, Esq., C.E.	5	1	0	676	973	38·31	..
D Burnsall Rectory	Rev. W. J. Stavert	8	4	8	503	1087	42·81	214
Grimwith Reservoir	L. Mitchell, Esq., C.E.	8	1	0	890	1185	46·64	..
Grimwith Reservoir	L. Mitchell, Esq., C.E.	5	1	0	893	1165	45·87	..
Grimwith (Trunla Hill)	L. Mitchell, Esq., C.E.	5	1	0	1201	1076	42·36	..
d Buckden	G. E. Clayton, Esq.	5	3	0	800	1432	56·38	..
D Oughtershaw Hall	Miss Woodd	8	1	6	1175	1450	57·07	178
11.—OUSE—Nidd. 254 sq. mi.								
Spofforth (Sewage Works)	C. E. Rivers, Esq., C.E.	5	1	0	184	704	27·70	200
d Wetherby (Ribston Hall)	Mr. W. Simpson	5	1	2	130	684	26·95	..
M Harrogate W.W. (Ling Cottage)	A. S. West, Esq., C.E.	5	1	0	740	756	29·76	..
M Harrogate W.W. (Broad Dubb)	A. S. West, Esq., C.E.	5	1	0	725	766	30·14	..
M Harrogate W.W. (Cobblers Cott.)	A. S. West, Esq., C.E.	5	1	0	730	757	29·81	..
Harrogate W.W. (Ten Acres Res.)	A. S. West, Esq., C.E.	8	1	6	620	769	30·28	200
D Harrogate W.W. (Scargill Res.)	A. S. West, Esq., C.E.	8	1	0	646	877	34·52	197
Harrogate W.W. (Beaver Dyke R)	A. S. West, Esq., C.E.	8	0	11	575	869	34·23	196
M Harrogate W.W. (John o' Gaunts)	A. S. West, Esq., C.E.	5	1	0	600	776	30·55	..
M Harrogate W.W. (Long Stoop)	A. S. West, Esq., C.E.	5	1	0	700	783	30·82	..
M Harrogate W.W. (Knab's Moor)	A. S. West, Esq., C.E.	5	1	0	700	754	29·69	..
D Harrogate (Harlow Moor Obsy.)	C. E. Rivers, Esq., C.E.	5	1	0	480	772	30·39	202
Harrogate (Harlow Hill Res.)	A. S. West, Esq., C.E.	8	1	0	589	685	26·96	183
Harrogate (Irongate Bridge Res.)	A. S. West, Esq., C.E.	8	1	6	455	773	30·42	186
D Harrogate (The Stray)	Mr. G. W. Gledhill	5	1	0	380	742	29·20	185
D Harrogate (Park Parade)	Mr. G. W. Gledhill	5	1	0	380	760	29·92	191
D Knaresborough (Water Tower)	A. S. West, Esq., C.E.	8	1	0	240	657	25·88	199
D Knaresborough (Grammar Sch.)	C. W. H. Greaves, Esq.	5	1	0	230	660	25·97	196
Harrogate (Bilton Sewage Works)	C. E. Rivers, Esq., C.E.	5	1	0	208	758	29·86	186
D Birstwith (Swarcliffe)	Capt. C. S. Greenwood	5	1	0	510	895	35·24	188
D Greenhow Hill (Keld House)	Harold Bruff, Esq., C.E.	5	1	0	1302	1005	39·56	200
d Pateley Bridge (Bewerley Hall)	T. E. Yorke, Esq.	5	0	8	420	996	39·23	..
Ramskill (Holme Ho. Gouthwaite)	L. Mitchell, Esq., C.E.	5	1	0	464	1137	44·76	..
Ramskill (Raygill House)	L. Mitchell, Esq., C.E.	5	1	0	925	1209	47·60	..
Ramskill	L. Mitchell, Esq., C.E.	5	1	0	450	952	37·48	..
Nidderdale (High Riggs)	L. Mitchell, Esq., C.E.	5	1	0	1010	1143	44·99	..
M Nidderdale (East Gill Head)	L. Mitchell, Esq., C.E.	5	1	0	1710	1475	58·08	..
M Nidderdale (Rain Stang)	L. Mitchell, Esq., C.E.	5	1	0	1470	1165	45·88	..
Nidderdale (New Houses)	L. Mitchell, Esq., C.E.	5	1	0	755	944	37·17	..
Nidderdale (West Houses)	L. Mitchell, Esq., C.E.	5	1	0	1150	1344	52·90	..
12.—OUSE—Ure. 110 sq. mi.								
Dallow Moor (Harper Hill)	C. G. Henzell, Esq., C.E.	5	0	9	858	794	31·25	201
D Ripon (Studley Royal Gardens)	Marquis of Ripon	5	1	6	250	745	29·32	190
D Ripon (The Red House)	F. D. Wise, Esq., C.E.	5	1	0	120	696	27·41	166
Kirkby Malzeard (Drovers' Inn)	C. G. Henzell, Esq., C.E.	8	0	9	576	990	38·98	217
Kirkby Malzeard (Hawsett)	C. G. Henzell, Esq., C.E.	8	0	9	820	931	36·66	210
Kirkby Malzeard (Hambleton H.)	C. G. Henzell, Esq., C.E.	8	0	9	1106	943	37·11	..
Kirkby Malzeard (Bagwith Brae)	C. G. Henzell, Esq., C.E.	5	0	9	703	895	35·25	188
Kirkby M. (Stone & Ears Wham)	C. G. Henzell, Esq., C.E.	8	0	9	1118	1038	40·87	..
EAST RIDING. (Area, 1176 sq. mi.)								
1.—OUSE—Left Bank Tributaries. 82 sq. mi.								
D York (Deighton Grove)	Miss M. L. Whitehead	5	2	0	47	677	26·66	166
D York (Heslington)	Hn. L. de Yarbrough-Bateson	8	0	10	35	713	28·08	176
D York (Dunnington Hall)	Miss Hildyard	8	1	2	110	693	27·29	214
2.—OUSE—Derwent. 248 sq. mi.								
D Warter	Mrs. J. Coxon	5	1	10	230	783	30·83	186
D Burythorpe Rectory	Rev. William Robinson	5	1	0	240	745	29·33	209

DIVISION IX.—YORKSHIRE—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
EAST RIDING—(con.).		in.	ft.	in.	ft.	mm.	in.	
2.—OUSE—Derwent—(con.).								
d Birdsall Gardens	Mr. J. Anderson	5	1	0	303	811	31·92	200
d Malton (The Leat House)	W. R. Innes Hopkins, Esq.	5	0	10	60	721	28·40	180
d Rillington (Scampston Hall)	Mr. F. C. Puddle	5	1	6	152	718	28·25	200
Hunmanby (Holly Bank)	Miss Ackland	5	1	2	..	747	29·40	..
3.—HUMBER—Left Bank Tributaries. 675 sq. mi.								
d Patrington (Spurn Head)	Meteorological Office	8	1	0	27	693	27·29	198
d Patrington	Miss H. Kirman	5	2	6	46	654	25·73	..
d Hull (Pearson Park)	H. B. Witty, Esq.	5	0	10	12	698	27·50	195
d Hull (Springhead)	C. B. Newton, Esq., C.E.	5	1	0	16	682	26·83	215
d Cottingham (Water Works)	C. B. Newton, Esq., C.E.	5	1	1	26	664	26·14	181
North Cave (The Croft)	Major W. H. Carver	5	1	0	30	774	30·48	..
d Holme-on-Spalding-Moor	C. J. Pybus, Esq.	8	1	0	32	730	28·74	165
Beverley (East Riding Asylum)	Dr. E. S. Simpson	5	1	0	175	732	28·80	198
Beverley (New Walk)	W. Evans, Esq., C.E.	5	3	0	38	698	27·46	211
Beverley (Hull Bridge)	W. Evans, Esq., C.E.	5	2	6	11	660	25·98	192
d MarketWeighton (Dalton Holme)	Mr. J. P. Jobling	8	6	0	150	754	29·68	191
d Watton Abbey	J. A. Coulson, Esq.	5	1	0	40	657	25·87	185
Brandesburton (Hempholm Lk.)	W. Evans, Esq., C.E.	5	2	6	11	652	25·66	194
d Lowthorpe (The Elms)	F. K. Hawes, Esq.	5	1	0	63	717	28·23	188
4.—EAST COAST STREAMS. 171 sq. mi.								
d Hornsea (Public Gardens)	Hornsea U.D.C.	8	1	0	40	648	25·52	179
d Bridlington	S. R. Crofts, Esq.	5	1	0	59	742	29·21	213
d Bridlington (Grammar School)	G. T. Reeve, Esq.	8	1	0	57	675	26·58	186
d Filey Vicarage	Rev. Canon A. N. Cooper	5	0	9	95	672	26·47	197
NORTH RIDING. (Area, 2155 sq. mi.)								
1.—OUSE—Ure. 273 sq. mi.								
Masham Moor (Somerside)	C. G. Henzell, Esq., C.E.	5	0	9	928	1013	39·89	193
Masham Moor (High Sour Mire)	C. G. Henzell, Esq., C.E.	5	0	9	884	843	33·20	..
Masham Moor (Leighton Res.)	C. G. Henzell, Esq., C.E.	5	0	9	634	952	37·49	201
Masham Moor (Towler Hill)	C. G. Henzell, Esq., C.E.	8	0	9	820	977	38·46	202
Masham Moor (Breary Bank)	C. G. Henzell, Esq., C.E.	5	0	9	600	971	38·22	198
Masham Moor (Healey)	C. G. Henzell, Esq., C.E.	5	0	9	542	929	36·56	198
Masham Moor (Healey Pasture)	C. G. Henzell, Esq., C.E.	5	0	9	615	963	37·91	200
Masham Moor (Low Houses)	C. G. Henzell, Esq., C.E.	5	0	9	693	1002	39·43	214
d Masham Moor (Roundhill Res.)	A. S. West, Esq., C.E.	8	1	0	743	1030	40·53	203
d Clifton Castle Gardens	Lady Cowell	5	1	0	360	780	30·71	168
d Middleham (Castle Hill)	Col. P. H. Hammond, C.B.	5	1	0	470	831	32·70	188
d Middleham (The Deanery)	Rev. H. G. Topham	5	1	0	450	819	32·26	184
d West Witton (Ivy House)	J. B. Espiner, Esq.	5	1	0	606	881	34·68	202
d Leyburn (Bolton Hall)	Mr. F. Scrivener	8	1	0	420	910	35·82	213
Hawes (The Stone House)	H. Arden Crallan, Esq.	5	1	6	845	1217	47·93	184
2.—OUSE—Swale. 569 sq. mi.								
Husthwaite Vicarage	Rev. G. Gill	5	1	0	282	625	24·60	..
d Dalton Parsonage	Rev. G. H. Chilman	5	1	0	79	614	24·16	161
d Carlton Husthwaite	W. R. Bagley, Esq.	5	1	0	190	660	25·97	203
d Coxwold (The Old Hall)	H. Geipel, Esq.	5	1	6	260	690	27·17	..
d Baldersby (Baldersby Park)	Mr. J. E. Hathaway	10	2	0	100	611	24·04	204
d Thirsk (Spital Hill)	C. H. Gill, Esq.	5	1	0	117	650	25·60	214
d Thirsk (Sowerby)	William Brown, Esq.	5	1	0	110	667	26·26	..
d Thirsk (Carlton Miniott School)	L. P. Knowles, Esq.	5	1	6	96	672	26·47	..
d Thirsk (Brynkellhow)	A. B. Hall, Esq.	8	1	0	115	674	26·55	194
Thirsk (The Hall)	"York Gazette"	5	1	10	121	610	24·01	..
d Thirsk (Stoneybrough)	T. J. Foggitt, Esq.	5	1	2	122	672	26·46	187
d Felixkirk (Thirlby)	A. J. Walker, Esq.	5	1	0	339	775	30·51	..
d Felixkirk (Mount St. John)	A. J. Walker, Esq.	5	1	0	523	724	28·50	207
d Felixkirk (Mount St. John)	A. J. Walker, Esq.	5	1	10	542	734	28·89	199
d Felixkirk (Mount St. John)	A. J. Walker, Esq.	5	1	10	542	709	27·92	..
d Felixkirk (Mount St. John)	A. J. Walker, Esq.	5	1	0	541	723	28·45	..
d Boltby (Ravensthorpe Manor)	F. E. Walker, Esq.	5	1	7	661	778	30·61	204
d Boltby, East	A. J. Walker, Esq.	5	1	0	460	835	32·87	..

DIVISION IX.—YORKSHIRE—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.	
		Diam.	Height Ground	above Sea Level.	1919				
					in.	ft.	mm.		in.
NORTH RIDING—(con.).									
2.—OUSE—Swale—(con.).									
M Boltby (Cliff Head)	No. 2 A. J. Walker, Esq.	5	1	4	772	786	30·96	..	
M Boltby (High Paradise)	A. J. Walker, Esq.	5	1	3	1144	888	34·97	..	
D Kirkby Knowle Rectory	Rev. C. H. Murray	5	1	0	436	763	30·04	192	
Kirkby Knowle (Newbuilding)	Brig.-Gen. J. Hotham, C.B.	5	0	10	575	697	27·43	..	
Bedale (Thorp Perrow)	Mr. W. Pattison	5	1	6	140	679	26·75	..	
d Maunby Hall	Major A. Hill-Walker, V.C.	5	1	0	90	671	26·41	..	
Bedale (Park House)	Miss M. Greenwood	5	1	1	180	642	25·28	178	
Newby Wiske	H. Rutson, Esq.	5	0	10	105	664	26·13	155	
D Thornton-le-Moor	Lt.-Col. R. W. Peckitt	5	1	0	136	679	26·72	177	
D Thornton-le-Moor (Pasture Ho.)	G. H. Croft, Esq.	5	1	0	225	655	25·78	190	
Newby Wiske (Sowbergate)	J. Hutton, Esq.	5	1	0	100	627	24·70	195	
Kepwick Vicarage	Rev. T. E. Parkinson	5	1	0	530	676	26·63	152	
Scruton Hall	Rev. A. T. Coore	5	1	3	110	637	25·08	187	
Swaledale (Gunnarside Lodge)	W. M. Christy, Esq.	5	1	0	950	1240	48·84	..	
Muker Vicarage	Rev. J. E. Gaskill	5	1	0	800	1301	51·22	174	
Reeth	T. R. Blumer, Esq.	5	1	0	700	961	37·85	..	
D Osmotherley	T. Yeoman, Esq.	8	0	8	660	860	33·85	208	
D East Harlsey (Harlsey Hall)	J. Constantine, Esq.	5	1	0	370	701	27·60	178	
D Rounton Grange	Mr. J. Hanagan	8	1	0	249	684	26·91	223	
D West Rounton Rectory	Rev. G. Bird	5	0	11	200	620	24·39	163	
d Reeth (Arkengarthdale)	Samuel Gott, Esq.	5	1	0	940	1190	46·86	..	
Richmond (Gilling West)	Late G. Roper, Esq.	5	1	3	303	941	37·03	165	
Middleton Tyas	J. F. B. Baker, Esq.	5	0	10	380	718	28·28	..	
3.—OUSE—Left Bank Tributaries. 153 sq. mi.									
Haxby (Moorlands)	E. G. Tew, Esq.	8	1	6	58	671	26·43	152	
Sutton-on-Forest (Sutton Hall)	Mrs. Grey	5	1	0	125	595	23·41	..	
4.—OUSE—Derwent. 509 sq. mi.									
Huttons Ambo (Minster Hill)	J. W. Procter, Esq.	5	1	3	75	612	24·10	..	
Welburn	John D. Atkin, Esq.	5	1	0	300	725	28·53	..	
D Malton (Broughton Rise)	C. C. Laverack, Esq.	5	1	0	164	696	27·41	188	
D Hovingham Hall	Sir W. H. A. Worsley, Bt.	5	0	9	119	670	26·39	185	
D Ampleforth College	Rev. H. deNormanville, OSB	8	1	0	367	674	26·52	198	
d Helmsley (DuncombePk.Gdns.)	Mr. D. Williams	5	3	0	176	740	29·13	..	
D Pickering (Hungate Hall)	Dr. J. L. Kirk	5	1	0	90	785	30·90	230	
D Seamer (Irtton Pump. Station)	H. Richardson, Esq., C.E.	8	1	0	94	790	31·12	195	
D Scarborough (Osgodby)	H. Richardson, Esq., C.E.	8	1	0	166	744	29·27	165	
D East Ayton (Derwent House)	A. H. Robinson, Esq.	5	1	0	110	790	31·10	200	
D East Ayton Lodge	Rev. R. Walker	5	1	0	175	817	32·15	195	
D Scawton Rectory	Rev. C. H. Rowntree	5	1	0	606	801	31·55	188	
D Cold Kirby (The School)	John Sanders, Esq.	5	1	0	763	789	31·08	225	
D Old Byland Grange	J. L. Cossins, Esq.	5	1	0	650	876	34·47	209	
d KirkbyMoorside (Ravenswyke)	Harrison Holt, Esq.	5	1	0	220	757	29·79	..	
d KirkbyMoorside (Hutton-le-Hole)	F. M. Curtis, Esq.	5	1	0	350	764	30·06	..	
D Hawaby Rectory	Rev. W. Hughes	5	1	0	497	980	38·59	181	
D Rosedale Abbey Vicarage	Rev. W. Wainman	5	1	0	550	1086	42·77	224	
D Farndale Vicarage	Rev. H. W. Smith	5	1	0	476	1183	46·57	..	
D Bilsdale Priory	Rev. J. Powell Parry	5	1	0	638	1040	40·93	214	
5.—ESK & C. 278 sq. mi.									
d Scarborough	Late W. W. Larkin, Esq.	5	1	0	105	620	24·41	188	
D Scarborough (Scalby)	Mrs. J. W. Rowntree	5	0	11	300	901	35·87	196	
D Scarborough (ScalbySt.Philips)	Rev. W. E. Stewart	5	1	0	130	673	26·48	210	
Goathland (Thwaitefield)	Lewis G. Rowland, Esq.	5	0	6	485	794	31·27	..	
D Glaisdale (The Gables Gardens)	Mr. H. Hope	5	0	9	400	1018	40·07	183	
D Sleights	E. Isle Hubbard, Esq.	5	1	0	100	792	31·16	203	
D Danby (The School House)	J. W. Lynas, Esq.	5	1	0	500	1033	40·68	166	
D Whitby (Park Hall, Aislaby)	Rev. J. H. Richardson	5	1	0	500	833	32·81	209	
D Whitby (Ocean Road)	T. W. Parkinson, Esq.	8	1	0	125	691	27·19	198	
D Whitby (Mulgrave Castle)	Mr. J. Corbett	5	1	0	410	790	31·12	223	
D Guisborough (Lockwood Res.)	W. M. I'Anson, Esq., C.E.	8	1	0	632	874	34·43	191	
M Guisborough (Lockwood Res.)	W. M. I'Anson, Esq., C.E.	8	1	0	632	843	33·20	..	
D Skelton-in-Cleveland Rectory	Rev. H. Mackworth Drake	5	1	0	300	689	27·13	190	
D Saltburn (Skelton Castle)	Lt.-Col. W. H. A. Wharton	5	0	9	272	753	29·66	193	

DIVISION IX.—YORKSHIRE—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with .01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
NORTH RIDING—(con.).		in.	ft.	in.	ft.	mm.	in.	
6.—TEES. 373 sq. ml.								
D Ingleby Manor	Lord De L'Isle & Dudley..	5	0	11	460	1007	39·63	197
D Ingleby Greenhow Vicarage ...	Rev. M. A. Horsfall	5	1	6	420	977	38·46	200
D Ingleby Greenhow (School Ho.) ..	P. Huntington, Esq.	5	1	0	430	938	36·95	201
D Croft (Dalton-on-Tees)	Mr. W. Wrather	8	2	0	170	632	24·87	180
D Hutton Magna Vicarage	Rev. A. W. M. Close.....	5	0	6	450	761	29·96	176
D Kildale Hall	Major R. B. Turton	5	1	2	600	1119	44·06	221
D Marton-in-Cleveland(Southcroft)	R. Theodore Wilson, Esq... 7	0	9	150	670	26·39	..	
D Middlesbrough (Albert Park) ..	J. M. Parnaby, Esq.	8	1	0	30	636	25·02	183
M Baldersdale (Blackton Res.) ...	Hugh Wilson, Esq.	5	1	0	937	950	37·40	..
M Baldersdale (Balderhead).....	Hugh Wilson, Esq.	5	1	0	1360	983	38·70	..
D Baldersdale (Hury Reservoir) ..	Hugh Wilson, Esq.	5	1	0	866	784	30·85	191
M Lunedale (Lunehead)	Hugh Wilson, Esq.	5	1	0	1450	1234	48·60	..
M Lunedale (Selset).....	Hugh Wilson, Esq.	5	1	0	924	935	36·80	..
D Lunedale (Grassholme Res.) ...	Hugh Wilson, Esq.	5	1	0	936	963	37·92	188
M Mickleton (Lime Kiln Pasture) ..	Mr. J. Harvey	8	1	0	1175	732	28·82	..

DIVISION X.—NORTHERN COUNTIES.

DURHAM. (Area, 1011 sq. mi.)

1.—TEES & C. 396 sq. mi.

d Piercebridge (Carlbury Hall) ..	J. H. Pease, Esq.	5	1	0	222	631	24·86	201
d Barnard Castle (County School) ..	C. W. Watson, Esq.	5	1	6	540	622	24·50	184
d Stockton (Ropner Park)	W. A. Jenkins, Esq.	5	1	9	61	624	24·56	154
d Sedgfield (Hardwick Hall) ..	Viscountess Boyne	5	0	3	400	738	29·05	183
d Hurworth Burn (Crookfoot Res.) ..	A. W. Branson, Esq., C.E. ...	10	1	6	293	697	27·43	197
d West Hartlepool (Lynn Street) ..	H. Lamb, Esq.	5	63	0	84	547	21·55	175
d West Hartlepool (Water Works) ..	A. W. Branson, Esq., C.E. ...	10	1	0	35	727	28·62	170
d Hurworth Burn Reservoir	A. W. Branson, Esq., C.E. ...	10	1	0	357	716	28·19	203
d Hartlepool (Hart Reservoir) ..	A. W. Branson, Esq., C.E. ...	10	1	0	172	587	23·12	177
d Seaham (Dalton Pumping Sta.) ..	A. B. E. Blackburn, Esq. ...	8	1	0	345	746	29·38	209

2.—WEAR. 464 sq. mi.

d Wolsingham (Dryderdale)	Mr. G. Cranston	5	1	0	700	839	33·04	..
d Willington Rectory	Rev. Canon T. Urmsen ...	5	1	0	285	704	27·70	171
d Brancepeth Castle	Mr. J. Bracegirdle	5	0	5	341	732	28·83	188
d Stanhope (Parson Byers Quarry) ..	Messrs. Bell, Bros., Ltd. ...	5	6	8	846	787	31·00	152
d Durham Observatory	A. Robinson, Esq., D.C.L. ...	8	0	10	352	662	26·05	211
d Ushaw (St. Cuthbert's College) ..	Rev. A. Forkin	5	0	9	594	935	36·81	208
d Pitlington (Elemore Hall)	Miss Baker Baker	8	0	6	323	1007	39·64	..
d Weardale W.W. (Tunstall Res.) ..	H. Robinson, Esq., C.E. ...	8	1	2	724	811	31·92	160
d Weardale W.W. (Waskerley 6) ..	H. Robinson, Esq., C.E. ...	8	4	2	1229	678	26·69	..
d Weardale W.W. (Waskerley 3) ..	H. Robinson, Esq., C.E. ...	8	4	6	1433	810	31·91	..
d Weardale W.W. (Waskerley 4) ..	H. Robinson, Esq., C.E. ...	8	4	7	1321	691	27·19	..
d Weardale W.W. (Waskerley 5) ..	H. Robinson, Esq., C.E. ...	8	4	2	1244	741	29·18	..
d Weardale W.W. (Waskerley) ..	H. Robinson, Esq., C.E. ...	8	0	11	1179	881	34·68	213
d Weardale W.W. (Waskerley 2) ..	H. Robinson, Esq., C.E. ...	8	4	5	1367	755	29·73	..
d Weardale W.W. (Waskerley 1) ..	H. Robinson, Esq., C.E. ...	8	4	4	1317	772	30·41	..
d Fence Houses (Chilton Moor) ..	V. W. Corbett, Esq.	5	1	4	186	679	26·75	..
d Chester-le-Street (Biddick Hall) ..	Mr. A. Bentley	5	1	0	150	768	30·22	180
d Ryhope Pumping Station	A. B. E. Blackburn, Esq. ...	8	1	1	228	637	25·08	197
d Sunderland (W. Hendon H.) No. 5 ..	late T. W. Backhouse, Esq. ...	5	1	0	130	717	28·23	209
d Sunderland (W. Hendon H.) No. 6 ..	late T. W. Backhouse, Esq. ...	5	1	0	130	719	28·29	209
d Sunderland (Mowbray Park) ..	H. Renney, Esq., M.D. ...	5	2	0	105	801	31·54	175
d Sunderland (Claxheugh Grove) ..	Ford Paper Works, Ltd. ...	5	2	6	90	651	25·62	163
d Sunderland (Cedars End)	W. F. Vint, Esq.	5	1	0	115	695	27·35	191
d Sunderland (Southwick Cem't'y) ..	Mr. J. R. Hodgson	8	1	0	171	791	31·13	190

3.—TYNE, LOWER. 151 sq. mi.

d Weardale W.W. (Smiddy Shaw) ..	H. Robinson, Esq., C.E. ...	8	1	3	1128	923	36·35	229
d Consett Park Farm	J. D. Brown, Esq.	5	4	3	641	723	28·48	172
d Rowlands Gill (Armstrong Coll.) ..	R. W. Hunter, Esq.	8	1	0	446	785	30·90	226
d Sunderland (Cleadow Pump Stn.) ..	A. B. E. Blackburn, Esq. ...	8	1	0	216	663	26·10	202
d Ryton-on-Tyne (Balgonie Ho.) ..	J. W. Smith, Esq., M.D. ...	5	1	3	258	686	27·01	189
d South Shields (Bent's Park) ..	Dr. W. Campbell Lyons ..	5	1	0	36	767	30·21	216

DIVISION X.—NORTHERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with ·01 in. or more.	
		Diam.	Height Ground	above Sea Level.	1919			
NORTHUMBERLAND. (Area, 2015 sq. mi.)		in.	ft.	in.	ft.	mm.	in.	
1.—EDEN. 20 sq. mi.								
2.—SOUTH TYNE. 232 sq. mi.								
D Bardon Mill (Allans Green) ...	J. B. Lowe, Esq.	5	5	0	1000	544	21·42?	183
3.—TYNE, LOWER. 227 sq. mi.								
Corbridge (Howden Dene)	Late J. H. Straker, Esq. ...	5	1	0	200	702	27·64	213
D Hexham (Beaufront Castle) ...	Mrs. J. H. Cuthbert	8	1	0	400	686	27·00	177
d Newcastle (Lit. and Phil. Soc.)	H. Richardson, Esq.	8	55	0	160	713	28·07	..
Newcastle (Westgate Street) ..	"Newcastle Chronicle" ..	8	30	0	148	658	25·92	..
d Newcastle (Leazes Park)	W. J. Steele, Esq.	5	1	0	255	652	25·66	..
D Newcastle (Town Moor)	D. C. Baldie, Esq.	5	2	0	201	767	30·21	197
Newcastle (Wellburn, Jesmond)	J. H. Holmes, Esq., C.E....	5	1	6	163	726	28·59	190
D Tynemouth (Tyne Pier Works)	R. F. Hindmarsh, Esq. ...	5	1	8	65	624	24·56	168
D Tynemouth (Coastguard Stat.)	Meteorological Office.....	8	1	0	71	586	23·06	173
Whittle Dean (Newcastle W.W.)	A. L. Forster, Esq., C.E....	5	0	6	380	693	27·29	223
Whittle Dean Filters (N'stle W.W.)	A. L. Forster, Esq., C.E....	5	1	1	353	746	29·39	215
4.—NORTH TYNE. 433 sq. mi.								
N. Tyne (G. Crag) (N'castle W.W.)	A. L. Forster, Esq., C.E....	5	1	6	896	696	27·40	..
Hallington Vill. (N'castle W.W.)	A. L. Forster, Esq., C.E....	5	1	0	467	790	31·12	..
Hallington Res. (N'castle W.W.)	A. L. Forster, Esq., C.E....	5	1	0	470	783	30·82	202
Hallington (Fawcett) (Newc. W.W.)	A. L. Forster, Esq., C.E....	5	1	2	537	753	29·63	..
Hallington (Cheviot) (Newc. W.W.)	A. L. Forster, Esq., C.E....	5	1	2	576	751	29·55	..
Camphill (Newcastle W.W.) ...	A. L. Forster, Esq., C.E....	5	1	1	650	758	29·83	..
Colt Crag (Newcastle W.W.) ...	A. L. Forster, Esq., C.E....	5	1	0	654	739	29·11	..
D Falstone Rectory.....	Rev. A. J. Dexter.....	5	1	0	485	940	37·02	216
D Bellingham (High Green Man.)	Sir C. Morrison-Bell, Bt. ...	5	1	0	849	913	35·94	243
Redewater (Catcleugh)	A. L. Forster, Esq., C.E....	5	1	0	819	1091	42·96	218
5.—COQUET & C. 840 sq. mi.								
Whittington (Newcastle W.W.)	A. L. Forster, Esq., C.E....	8	0	9	528	742	29·20	..
Burnside (Newcastle W.W.) ...	A. L. Forster, Esq., C.E....	5	0	9	419	735	28·93	..
Ryal Cottage (Newcastle W.W.)	A. L. Forster, Esq., C.E....	10	0	9	463	772	30·41	..
D Morpeth (Bothalhaugh Garden)	Hon. Rev. W. C. Ellis	5	1	10	130	661	26·04	205
M Morpeth (Bothalhaugh Garden)	Hon. Rev. W. C. Ellis	5	1	10	130	661	26·01	..
D Morpeth (Bothalhaugh Lawn)	Hon. Rev. W. C. Ellis	5	1	10	137	657	25·87	207
M Morpeth (Bothalhaugh Lawn)	Hon. Rev. W. C. Ellis	5	1	10	137	670	26·38	..
D Morpeth (Ashington)	W. Wilson, Esq.	5	1	0	110	623	24·52	183
D Morpeth (Cockle Park)	J. Procter, Esq.	8	1	0	325	660	25·98	200
D Font Res. (Tynemouth W. W.)	J. W. McKerrow, Esq. ...	10	1	0	614	813	32·01	230
Rothbury (Brinkburn Priory) ..	Mrs. Hugh Fenwick	8	1	2	257	705	27·77	..
d Felton R.C. School.....	J. Brown, Esq.	5	1	0	280	506	19·92	..
d Rothbury (Cragside)	Mr. H. Hudson	8	1	3	405	901	35·49	..
Felton (Newton-on-the-Moor) ..	W. A. Ord, Esq.	5	1	6	500	604	23·77	152
D Alnwick Castle.....	Mr. R. Kyle	8	1	0	181	840	33·06	208
D Howick Hall Gardens.....	Mr. John Wright.....	8	0	10	120	726	28·60	166
d Beal (Lowlynn)	H. L. Pattinson, Esq.....	5	1	10	200	644	25·37	..
6.—TWEEN. 262 sq. mi.								
D Glanton (Glanton Pyke Gdns.)	Mr. J. Henderson	8	4	2	521	819	32·25	200
D Ilderton (Lilburn Tower)	A. B. Collingwood, Esq....	10	6	0	300	733	28·85	188
D Ilderton (Lilburn Cottage)	N. D. Cowans, Esq.	5	1	0	340	759	29·87	194
Wooler (St. Ninians)	Dr. R. Walker	8	0	10	176	873	34·37	..
Wooler (Victoria House)	Miss E. M. Dodds	5	1	0	176	1155	45·48	..
D Doddington Vicarage	Rev. J. G. Shotton	8	1	6	140	764	30·07	164
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	1003	39·50	173
Watermillock (Mell Fell House)	Mrs. Spring-Rice	5	1	0	920	982	38·67	193
Penrith (Briar Cottage)	H. Lester, Esq.	5	1	0	575	672	26·46	172
D Penrith (Sandath)	Major G. Varty-Smith	5	1	0	570	720	28·36	191

DIVISION X.—NORTHERN COUNTIES—(con.).

STATIONS	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
		in.	ft. in.	ft.		mm.	in.	
CUMBERLAND—(con.).								
1.—EDEN & SOLWAY—(con.).								
d Penrith (Benson House)	A. B. Sinclair, Esq.	5	2 4	480		692	27·26	184
d Penrith (Newton Rigg)	W. T. Lawrence, Esq.	8	1 0	559		686	26·99	189
d Penrith (Greystoke Castle)	J. Smith Hill, Esq.	5	1 3	650		816	32·11	..
d Penrith (Ennim)	Mrs. Hamlet Riley	8	0 6	660		811	31·94	178
d Flimby	Wilfrid Irwin, Esq.	5	3 0	50		785	30·90	..
d Uldale (Chapel House Res.)	J. Strong, Esq.	8	1 0	620		908	35·74	167
d Penrith (Nunwick Hall)	Mrs. Heywood Thompson	5	1 0	298		660	26·00	174
d Mealsgate (Quarry Hill)	J. Ferguson, Esq. . . . .	..	1 0	487		728	28·67	202
d Renwick (Ravenwood)	W. Salkeld, Esq.	5	4 0	650		1010	39·77	201
d Wigton (Brookfield)	J. Ransom Marsh, Esq.	5	6 0	124		548	21·58	179
d Wigton (Dacre House)	J. H. Walker, Esq.	5	4 6	134		626	24·65	186
d Wreay Vicarage	Rev. Canon A. R. Hall	5	2 0	310		764	30·06	190
d Geltsdale	H. C. Marks, Esq., C.E.	5	1 2	778		857	33·75	240
d Carlisle (Spital Cemetery)	J. T. Charlton, Esq.	8	1 6	114		640	25·21	191
d Carlisle (Denton Holme)	W. Eggleston, Esq.	5	2 0	57		595	23·44	..
d Carlisle (Scaley Hall)	Sir R. A. Allison	5	1 0	112		666	26·22	183
d Penton (Warwickland School)	W. Roden, Esq.	5	1 0	360		708	27·88	169
2.—DERWENT. 257 sq. mi.								
m Sprinkling Tarn	British Rainfall Organization	5	1 6	1985		3002	118·20	..
m Styhead Tarn	British Rainfall Organization	4	0 6	1472		1775	69·90?	..
m The Sty B.	British Rainfall Organization	4	0 6	1077		3310	130·30	..
m The Sty B.	Seathwaite g. British Rainfall Organization	5	1 6	1070		3477	136·90	..
m The Sty C.	British Rainfall Organization	4	1 0	1077		3402	133·95	..
m The Sty D.	British Rainfall Organization	4	1 0	1077		2582	101·65	..
m Borrowdale (Seathwaite)	British Rainfall Organization	4	0 6	422		2635	103·75	..
w Borrowdale (Seathwaite)	British Rainfall Organization	5	1 0	423		2659	104·69	..
w Borrowdale (Seathwaite Field)	Miss C. Marshall	5	1 0	423		2695	106·12	..
m Ullscarf	Messrs. G. H. Hill & Sons, C.E.	7	1 8	2100		2350	92·50	..
m Helvellyn (Birkside)	Messrs. G. H. Hill & Sons, C.E.	7	1 3	1900		1661	65·40	..
m Wythburn	Messrs. G. H. Hill & Sons, C.E.	7	1 4	610		2009	79·10	..
d Buttermere (Hassness)	W. H. Marshall, Esq.	5	1 0	355		1982	78·02	..
d Armboth Fells (The Pewitts)	Messrs. G. H. Hill & Sons, C.E.	7	1 6	1650		1466	57·70	..
d Helvellyn (Whiteside)	Messrs. G. H. Hill & Sons, C.E.	7	1 6	2100		1580	62·20	..
d Thirlmere (Dale Head Hall)	Messrs. G. H. Hill & Sons, C.E.	7	1 5	620		1590	62·60	..
d Keswick (Derwent Island) old g.	John Marshall, Esq.	5	0 7	280		1165	45·88	235
d Keswick (Derwent Island) new g.	John Marshall, Esq.	5	0 6	290		1152	45·37	235
d Keswick (The Bank)	Mr. A. Campbell	5	1 3	265		1169	46·03	207
d Keswick (Meteorological Station)	H. Swinburn, Esq.	5	1 0	254		1116	43·94	214
d Keswick (Croshtwaite School)	H. Swinburn, Esq.	5	1 0	254		1098	43·25	215
d Lorton (Whinfell Hall)	W. Peile, Esq.	5	0 1	255		1071	42·18	..
d Lorton Vicarage	Andrew W. Lewis, Esq.	5	1 3	271		1040	40·95	162
d Cockermouth (Elmhurst)	Josiah Hall, Esq.	5	0 10	300		842	33·17	..
d Cockermouth (Brigham Road)	R. M. Liddbetter, Esq.	5	6 0	250		849	33·43	180
d Cockermouth (Derwent Lodge)	Wilfrid Irwin, Esq.	5	4 0	220		777	30·59	205
d Threlkeld (Blencathra Sanat.)	Dr. W. Goodchild	5	1 0	885		1312	51·64	200
d Camerton Vicarage	Rev. E. C. Bennett	5	1 0	200		703	27·67	..
d Bassenthwaite Vicarage	Rev. M. H. Banister	5	1 0	350		891	35·08	170
d Bassenthwaite (Higham)	Joseph Fisher, Esq.	5	0 9	500		849	33·43	202
3.—WEST COAST STREAMS. 235 sq. mi.								
d Ravenglass (Newtown)	G. L. McKelvie, Esq.	5	1 6	130		1016	40·02	..
d Ravenglass (The Grove)	Miss C. Marshall	5	2 8	77		982	38·65	159
d Eskdale Green (Gatehouse)	Mrs. J. H. Rea	5	1 0	215		1327	52·25	212
d Beckfoot	Miss C. Marshall	5	1 0	180		1417	55·79	165
d Seascale (Whinthwaite)	Dr. R. Hellon	5	1 0	52		868	34·16	155
d Netherwasdale Vicarage	Rev. J. Hodgson	5	1 0	182		1257	49·48	..
d Braystones	H. H. Watson, Esq.	10	3 6	36		815	32·07	..
d Whitehaven (Scragill Reservoir)	E. E. Stiven, Esq., C.E.	8	1 0	188		936	36·83	197
d Whitehaven (Irish Street)	Dr. Eldon Pratt	5	1 1	21		990	38·98	178
d Distington (Gilgarran)	Mr. A. Kydd	5	4 9	470		903	35·56	160
d Workington (Winscales House)	J. A. Trench, Esq.	5	1 6	440		757	29·79	180
4.—DUDDON & C. 50 sq. mi.								
d Silecroft (Old Chappels)	G. H. Holt, Esq.	5	1 0	200		1300	51·16	182

DIVISION X.—NORTHERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with .01 in. or more.
		Diam.	Height Ground	above Sea Level.	1919			
CUMBERLAND—(con.).		in.	ft.	in.	ft.	mm.	in.	
5.—SOUTH TYNE. 87 sq. mi.								
d Alston (Nenthead)	Caldwell Harpur, Esq.	8	2	6	1463	1541	60·69	203
WESTMORLAND. (Area, 783 sq. mi.).								
1.—EDEN 373 sq. mi.								
d Ravenstonedale (The Chantry)	Miss D. V. Highmoor	5	1	10	900	1087	42·79	..
d Kirkby Stephen (Redman Ho.)	Mrs. T. Mason	5	1	0	574	885	34·86	164
Mosedale (Mosedale Cottage)	Messrs. G. H. Hill & Sons, C.E.	5	1	0	1442	1909	75·17	..
Wet Sleddale (Mirethwaite)	Messrs. G. H. Hill & Sons, C.E.	5	1	0	989	1381	54·38	..
Blea Water	Messrs. G. H. Hill & Sons, C.E.	5	1	0	1477	1883	74·15	..
Mardale (Grove Brae)	Messrs. G. H. Hill & Sons, C.E.	5	1	0	800	1827	71·92	..
Swindale Head	Messrs. G. H. Hill & Sons, C.E.	5	1	0	1029	1325	52·17	..
Grizedale (Ruthwaite Lodge)	Miss C. Marshall	8	1	6	1750	2127	83·74	..
Shap (Force Beck)	Messrs. G. H. Hill & Sons, C.E.	5	1	0	1062	924	36·39	..
Shap (Thornship Gill)	Messrs. G. H. Hill & Sons, C.E.	5	1	0	865	1078	42·42	..
Shap (Tailbert Head)	Messrs. G. H. Hill & Sons, C.E.	5	1	0	1103	1139	44·85	..
Shap (Kirk Bank)	Messrs. G. H. Hill & Sons, C.E.	5	1	0	911	959	37·76	..
Hawes Water (Naddle House)	Messrs. G. H. Hill & Sons, C.E.	5	1	0	830	1224	48·17	..
Hawes Water (Measand)	Messrs. G. H. Hill & Sons, C.E.	5	1	0	831	1644	64·71	..
Measand Beck (Keasgill)	Messrs. G. H. Hill & Sons, C.E.	5	1	0	1877	1116	43·95	..
Patterdale Hall	Miss C. Marshall	5	1	3	490	1847	72·72	194
Cawdale Beck (Howe Grain)	Messrs. G. H. Hill & Sons, C.E.	5	1	0	1638	1197	47·13	..
Heltondale (Kidmoor)	Messrs. G. H. Hill & Sons, C.E.	5	1	0	988	1004	39·53	..
Patterdale (Greenside Mine)	W. H. Borlase, Esq.	7	1	0	1000	1710	67·34	169
d Appleby (Castle Bank)	C. R. Rivington, Esq.	5	1	0	440	767	30·20	209
Ullswater (Sharrow Bay)	Mr. G. Robinson	5	0	7	600	833	32·79	..
d Penrith (Morland)	Miss M. F. Markham	5	1	0	456	750	29·53	216
Penrith (Brougham Gardens)	Mr. J. H. Lane	5	0	5	470	610	24·03	..
2.—LEVEN. 60 sq. mi.								
Bowness (Lindeth Howe)	Captain F. G. Senior	5	1	0	250	1486	58·51	198
d Bowness (Dawstone)	A. M. Sing, Esq.	5	1	2	550	1280	50·41	215
Bowness (Fallbarrow)	Miss C. Marshall	8	1	0	155	1414	55·69	171
d Windermere (Hammar Bank)	H. Coultts, Esq.	5	1	0	295	1389	54·69	204
d Bowness (Fellside)	T. D. Lingard, Esq.	5	0	6	310	1463	57·59	187
d Windermere (Holehird)	W. G. Groves, Esq.	5	1	0	483	1533	60·34	220
d Windermere (Brockhole)	W. Gaddum, Esq.	5	1	6	175	1459	57·44	202
d Ambleside (Wansfell)	Miss Wrigley	8	1	0	150	1493	58·78	197
Ambleside (Skelwith Bridge)	Miss C. Marshall	5	1	9	190	2038	80·22	187
d Little Langdale (Fell Foot)	Miss C. Marshall	5	2	2	380	2334	91·90	..
d Ambleside (White Craggs)	C. H. Hough, Esq.	5	1	7	200	1541	60·67	191
d Ambleside (Market Square)	G. A. Johnston, Esq., M.D.	5	1	0	180	1654	65·12	214
Ambleside (Lesketh How)	Miss Benson	5	2	6	175	1742	68·58	228
Elterwater Hall	Miss C. Marshall	5	1	1	200	1979	77·91	..
Rydal (The Stepping Stones)	Gordon Wordsworth, Esq.	5	1	0	190	1759	69·26	224
d Rydal (The Stepping Stones)	Gordon Wordsworth, Esq.	5	1	3	190	1663	65·46	..
d Rydal	Miss M. Yates	5	0	7	390	1775	69·87	236
d Rydal (High Close)	F. E. T. Jones Balme, Esq.	8	0	9	553	1776	69·91	203
d Dungeon Ghyll	Miss C. Marshall	5	1	0	310	2453	96·59	217
d Dungeon Ghyll	Miss C. Marshall	5	1	0	311	2433	95·79	..
d Mickleden	Miss C. Marshall	5	1	6	490	3117	122·73	..
d Grasmere (The Wray)	Miss G. M. Simpson	5	1	0	221	1991	78·40	218
3.—KENT. 188 sq. mi.								
d Heversham (Plumtree Hall)	Miss M. C. Watson	5	0	8	115	1069	42·09	208
d Heversham (Leasgill)	Major T. A. Argles	5	0	8	130	1006	39·61	191
d Kendal (Crosthwaite Vicarage)	Rev. T. Heelis	5	1	0	160	1137	44·77	177
d Kendal (Vicarage Terrace)	G. F. Braithwaite, Esq.	8	3	3	160	1054	41·48	183
d Kendal (Holmcroft)	R. Rhodes, Esq.	5	1	3	176	1104	43·47	210
Kendal (Hylands)	H. W. Baron, Esq.	5	1	6	375	1189	46·81	180
d Kendal (Low Slack)	A. W. Wilson, Esq.	5	1	0	350	1107	43·59	163
Kendal (Ellergreen)	C. J. Cropper, Esq.	5	1	6	270	1258	49·54	204
d Kendal (Potter Tarn Res.)	Messrs. J. Cropper & Co., Ltd.	5	2	0	850	1887	74·29	..
d Long Sleddale (Low House)	A. Wilson, Esq.	5	1	0	550	1586	62·42	..
d Kentmere (Longhouses)	Miss G. M. Barker	5	1	0	500	1648	64·89	..

DIVISION X.—NORTHERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with ·01 in. or more.	
		Diam.	Height Ground	above Sea Level.	1919			
WESTMORLAND—(con.).		in.	ft.	in.	ft.	mm.	in.	
4.—LUNE. 122 sq. mi.								
Kirkby Lonsdale	J. R. Picard, Esq.	7	0	8	215	1036	40·78	..
d Kirkby Lonsdale (Casterton)	Miss Williams	8	1	6	320	1020	40·14	188
d Barbon Manor	Lord Shuttleworth	5	1	3	650	1019	40·11	166
d Barbon	W. Wilkinson, Esq.	5	1	0	310	1060	41·74	158
d Orton	Michael Scott, Esq.	5	1	0	770	1244	48·99	223

5.—TEES. 40 sq. mi.

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

MONMOUTH. (Area, 534 sq. mi.).

1.—RHYMNEY. 39 sq. mi.							
d Rumney (Witla Court)	Mr. J. F. Matthyssens	5	1	0	177	992	39·06
2.—EBBW. 88 sq. mi.							
Rogerstone (Brynhedydd)	C. E. Forestier-Walker, Esq.	5	0	8	333	989	38·94
d Rogerstone (Rhiwderin)	L. Forestier-Walker, Esq., MP	5	1	3	259	972	38·27
d Abercarn (Cwmarn)	J. Williams, Esq.	12	3	2	428	1204	47·42
d Abertillery (The Park)	S. E. Thomas, Esq.	5	1	0	700	1252	49·28
d Abertillery (Cwmtillery)	W. Y. Hobkirk, Esq.	5	1	0	970	1258	49·52
d Tredegar Laboratory	W. Morgan, Esq.	5	2	6	950	1400	55·11
d Tredegar (Redesdale)	D. W. Davies, Esq.	5	1	6	963	1036	40·80
d Ebbw Vale (Iron Works)	J. H. Williams, Esq., V.C.	8	1	0	902	1222	48·11
d Nant-y-bwch (ShonSheffrey's W)	D. W. Davies, Esq.	5	1	5	1204	1236	48·65
3.—USK & C. 290 sq. mi.							
Goldcliff (Porton)	Blethyn T. Rees, Esq., C.E.	5	1	3	27	784	30·86
d Portskewett (Sudbrook)	H. V. Woodward, Esq., C.E.	8	0	10	22	824	32·43
d Newport W.W. (Friar St. Yard)	Newport Corporation	5	6	0	32	1018	40·09
d Newport WW (Ynis-y-froR) old	Newport Corporation	5	1	0	136	939	36·97
d Newport WW (Ynis-y-froR) new	Newport Corporation	5	1	0	136	1082	42·62
d Newportww (Pant-y-reosR) new	Newport Corporation	5	1	0	435	1030	40·55
d Newportww (Pant-y-reosR) old	Newport Corporation	5	1	0	435	1270	50·02
d Newport W.W. (Llanvaches)	Newport Corporation	5	0	10	456	1045	41·14
d Newport W.W. (Nantpyridd)	Newport Corporation	5	1	0	500	1045	41·15
d Chepstow (Itton Court)	Col. E. Curre	5	1	0	390	970	38·18
d Llanfrechfa Grange	Maj.-Gen. W. F. Cleeve, C.B.	5	4	0	328	1056	41·56
d Newport W.W. (Newchurch)	Newport Corporation	5	1	0	550	1099	43·26
d Usk (Castle Parade House)	J. Maitland Watkins, Esq.	5	1	0	75	920	36·23
d Abersychan (Glansychan)	G. W. James, Esq.	5	1	0	699	1331	52·39
d Little Mill (Monmouth Reform.)	F. E. Craven Jones, Esq.	5	1	0	300	1140	44·90
d Goytre (Goytre Hall)	Mrs. Lionel Whitehead	9	1	2	300	1050	41·34
d Blaenavon (Estate Office)	E. J. John, Esq.	8	4	6	1150	1135	44·68
d Abergavenny	F. Mansfield, Esq.	5	1	0	194	872	34·32
d Abergavenny (Mansel Place)	C. Webb, Esq.	8	7	2	207	900	35·43
d Abergavenny (Larchfield)	Dr. N. R. Phillips	5	1	0	240	788	31·04
d Abergavenny (The Chain)	W. Baker Gabb, Esq.	5	1	0	310	858	33·77
d Grwyne Fawr (Coed Dias)	W. Baker Gabb, Esq.	5	1	0	900	1091	42·95
4.—WYE. 117 sq. mi.							
Chepstow (The Cedars)	J. E. G. Lawrence, Esq.	5	2	0	150	954	37·54
d Chepstow (Piercefield Park)	H. Clay, Esq.	5	1	6	315	980	38·58
d Tintern	Office of Woods	8	1	0	100	1046	41·18
d Monmouth (The Elms)	Mrs. Hall	5	1	1	91	604	23·77
d Monmouth (Pentwyn)	Rev. Canon J. Harding	9	1	0	191	723	28·46
d Llanvihangel Crucorney Depôt.	J. F. Jupp, Esq., C.E.	5	1	0	501	870	34·24
d Llanthony (New House Farm)	Mr. J. Pritchard	5	1	0	824	1090	42·93

DIVISION XI.—MONMOUTH, WALES, AND THE ISLANDS—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with ·01 in. or more.	
		Diam.	Height Ground	above Sea Level.	1919			
GLAMORGAN. (Area, 808 sq. mi.)		in.	ft.	in.	ft.	mm.	in.	
1.—LOUGHOR. 55 sq. mi.								
d Gorseinon (Penllergaer)	Sir J. T. D. Llewelyn, Bt.	5	3	0	240	1108	43·64	190
Felindre (Blaenant Dhu)	Lt. G. R. Collinson, R.E.	8	1	3	348	1296	51·03	..
d Felindre (Lower Lliw Res.)	Lt. G. R. Collinson, R.E.	8	1	3	427	1190	46·87	197
d Felindre (Upper Lliw Res.)	Lt. G. R. Collinson, R.E.	8	1	3	600	1443	56·82	220
2.—GOWER PENINSULA. 62 sq. mi.								
Penmaen (Cefn Mor)	Mrs. Bostock	5	1	5	300	1000	39·38	178
Mumbles (Bristol Ch. Yacht Club)	A. E. Whitman, Esq.	5	1	0	20	865	34·07	158
d Swansea (Killay House)	Mrs. M. B. Williams	5	0	6	265	1086	42·76	187
3.—TAFE. 47 sq. mi.								
d Swansea (Victoria Park)	Mr. D. Bliss	8	1	0	26	1113	43·81	203
d Swansea (The Knoll)	E. H. Perkins, Esq.	5	1	0	150	1069	42·10	202
Morriston (Pentrepeth House)	M. W. Williams, Esq.	5	1	0	236	1169	46·04	..
Pontardawe (Plas Cilybebyll)	J. H. B. Lloyd, Esq.	5	3	0	510	1400	55·13	..
d Ystalyfera (Wern House)	J. Williams, Esq.	5	1	3	240	1520	59·85	214
4.—NEATH. 82 sq. mi.								
d Briton Ferry (Brynsiriol)	H. A. Clarke, Esq., C.E.	5	1	0	33	1076	42·37	172
Briton Ferry (Cefn Court)	H. A. Clarke, Esq., C.E.	5	1	0	503	1132	44·58	181
Neath (Cimla Res.)	D. M. Jenkins, Esq., C.E.	5	1	0	349	1281	50·42	191
d Neath (Gnoll Reservoir)	D. M. Jenkins, Esq., C.E.	5	1	0	204	1296	51·02	181
d Neath (Maesmelyn)	Major E. Ll. Green	5	1	6	115	1130	44·49	193
Neath (Glynfeln)	T. Gibbins, Esq.	5	1	4	180	1261	49·63	..
5.—OGMORE & C. 350 sq. mi.								
d Cowbridge (Fonmon Castle)	Mrs. Oliver Jones	8	1	2	130	864	34·00	..
d Barry W.W. (Biglis)	T. E. Franklin, Esq., C.E.	5	1	0	20	917	36·11	167
Barry W.W. (Merthyr Dyfan R.)	T. E. Franklin, Esq., C.E.	5	1	0	300	877	34·52	..
Barry W.W. (Pencoedtre Res.)	T. E. Franklin, Esq., C.E.	5	1	0	200	885	34·85	..
Barry W.W. (Dinas Powis Res.)	T. E. Franklin, Esq., C.E.	5	1	0	165	899	35·41	..
d Lower Penarth	E. I. Evans, Esq., C.E.	5	1	0	67	898	35·36	160
d Penarth	E. I. Evans, Esq., C.E.	5	5	0	160	1007	39·63	169
d Cardiff (Cogan Pumping Statn.)	C. H. Priestley, Esq., C.E.	5	1	0	121	785	30·91	165
d Cardiff (Ely Pumping Station)	C. H. Priestley, Esq., C.E.	5	1	0	53	1086	42·76	212
d Cardiff (St. Fagans)	Capt. H. A. Pettigrew	5	0	..	100	1313	51·69	168
Cowbridge (Ash Hall)	E. Tudor Owen, Esq.	8	3	0	315	1180	46·45	169
d Merthyr Mawr	Lt.-Col. J. D. Nicholl . . . . .	..	..	..	74	1071	42·17	174
d Bridgend (Highmead)	H. J. Randall, Esq.	5	1	0	70	1103	43·41	169
d Llantrisant (Talygarn)	W. D. Clark, Esq.	5	4	3	250	1475	58·07	170
d Port Talbot (Twyn-yr-hydd)	G. Lipscomb, Esq.	5	1	0	180	980	38·58	183
d Ogmore Vale	T. J. Jones, Esq.	5	0	7	600	2026	79·75	180
6.—TAFF. 157 sq. mi.								
d Cardiff (Trade Street Depot)	C. H. Priestley, Esq., C.E.	5	1	0	45	1108	43·62	171
d Llandaff (West Hill)	J. E. Gladstone, Esq.	5	1	0	110	1110	43·68	191
d Pontypridd (Maesderwen)	T. Bowen, Esq.	5	6	0	425	1224	48·21	168
d Pontypridd (Lan Wood Res.)	T. W. Coates, Esq., C.E.	5	1	0	300	1328	52·30	181
d Ystradyfodwg (Tyntyla Hos.)	J. D. Jenkins, Esq., M.D.	5	1	0	590	1018	40·08	165
d Treharris Service Reservoir	T. F. Harvey, Esq., C.E.	5	1	0	865	1204	47·40	184
d Mountain Ash (Maesydderwen)	Lt.-Col. M. Morgan	5	1	0	483	1206	47·48	167
d Mountain Ash (Darranlas Res.)	W. G. Thomas, Esq., C.E.	5	0	11	540	1416	55·73	214
d Treherbert (Bute Merthyr Col.)	W. Jenkins, Esq.	5	1	0	670	1925	75·80	211
d Treherbert (Tyn-y-waun)	O. Thomas, Esq.	5	1	0	801	2032	80·02	211
d Treherbert (Tyn-y-waun)	O. Thomas, Esq.	5	1	0	801	2034	80·06	..
d Cwmaman Collieries	R. R. Davies, Esq.	5	2	2	930	1524	59·98	172
d Rhondda (Pont Lluest Wen R.)	3 T. W. Coates, Esq., C.E.	5	1	6	1200	1896	74·65	186
d Rhondda (Pont Lluest Wen R.)	2 T. W. Coates, Esq., C.E.	5	1	6	1225	1418	55·84	186
d Rhondda (Pont Lluest Wen R.)	1 T. W. Coates, Esq., C.E.	5	1	6	1250	2014	79·27	186
d Rhondda W.W. (Llyn Fawr Res.)	Mr. J. B. Hughes	8	1	0	1220	1878	73·93	208
d Merthyr Tydfil (Penybryn Filt.)	T. F. Harvey, Esq., C.E.	5	1	0	936	1280	50·41	217
d Merthyr Tydfil (Penybryn Filt.)	T. F. Harvey, Esq., C.E.	5	1	0	936	1265	49·80	..
d Dowlais (Gwernllwyn)	R. C. Harrison, Esq.	5	1	6	1071	1210	47·63	191

DIVISION XI.—MONMOUTH, WALES, AND THE ISLANDS—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
GLAMORGAN—(con.).		in.	ft.	in.	ft.	mm.	in.	
7.—RHYMNEY. 55 sq. mi.								
d Cardiff (Roath Park)	Mr. A. A. Pettigrew	5	0	9	49	1105	43·50	196
d Cardiff (Penylan)	E. Walford, Esq., M.D.	5	1	0	203	1038	40·88	165
d Cardiff (Heath Filters)	C. H. Priestley, Esq., C.E.	5	1	0	132	1068	42·06	180
d Llanishen Reservoir	C. H. Priestley, Esq., C.E.	5	1	0	155	979	38·56	164
d Lisvane Reservoir	C. H. Priestley, Esq., C.E.	5	1	0	150	891	35·08	162
d Caerphilly (Deneholme)	J. Prosser-Jones, Esq., C.E.	5	1	0	400	1252	49·31	..
d Bargoed H.E. School.	The Headmaster	5	0	9	800	1096	43·14	..
d Rhymney Bridge Reservoir	J. Prosser-Jones, Esq., C.E.	8	1	0	1099	1293	50·92	170
CARMARTHEN. (Area, 918 sq. mi.)								
1.—TEIFI. 87 sq. mi.								
2.—TOWY & C. 715 sq. mi.								
d Laugharne (Broadway)	H. Eccles, Esq.	5	2	0	174	1088	42·83	160
d Llanddarog (Lletherllestry)	H. L. Puxley, Esq.	4	1	0	242	1211	47·69	201
d Carmarthen (The Friary)	L. M. Bowen-Jones, Esq.	5	1	5	62	1083	42·64	221
d Llandilo (Golden Grove Gdns.)	Mr. F. Surman	6	1	6	125	1237	48·69	171
d Llandilo (Dynevor Castle)	Lord Dynevov	8	1	0	202	1091	42·95	226
d Llandilo (Cwmifor School)	T. I. Griffiths, Esq.	5	1	0	210	1058	41·67	198
d Llanddeusant (Pontcrynfe)	J. Thomas, Esq.	5	1	0	323	1276	50·23	197
d Llandovery (Nantyalwygfaen)	D. T. M. Jones, Esq.	5	1	0	249	1244	48·98	207
d Llanwrda (Dolaucothy)	Lady Hills-Johnes	5	2	6	498	1385	54·51	243
3.—LOUGHOR & C. 104 sq. mi.								
d Llanelly (Old Market Yard)	G. Watkeys, Esq., C.E.	5	12	0	35	1207	47·51	190
d Llanelly (Cwmlledi W.W.)	G. Watkeys, Esq., C.E.	5	2	3	240	1197	47·14	231
d Ammanford (Wernoleu)	E. Hewlett, Esq.	5	0	8	185	1216	47·88	200
4.—TAWE. 7 sq. mi.								
5.—USK. 5 sq. mi.								
6.—WYE.								
PEMBROKE. (Area, 617 sq. mi.)								
1.—TEIFI. 37 sq. mi.								
2.—NEVERN & C. 91 sq. mi.								
d Fishguard (Goodwick Station)	G. Lambert Gibson, Esq.	5	7	4	57	894	35·21	202
3.—WEST COAST STREAMS. 82 sq. mi.								
d St. Davids	J. Morgan Williams, Esq.	5	1	0	216	901	35·46	179
4.—CLEDDAU & C. 407 sq. mi.								
Pembroke (Stackpole Court)	Mr. C. McInroy	6	1	6	60	880	34·63	198
d Tenby (Lexden House)	Dr. E. M. R. Bryant	5	on roof		76	1023	40·27	181
d Tenby	Miss D. Truscott				67	977	38·48	180
d St. Ann's Head	Meteorological Office	8	0	10	150	769	30·29	207
d Pembroke (Bangeston House)	Com. P. C. Pearson, R.N.	5	1	0	40	979	38·53	195
d Pembroke Dock (Admiralty R.)	W. J. Smith, Esq.	8	1	0	90	813	32·00	167
d Pembroke Dock (County Sch.)	J. H. Garnett, Esq.	5	1	0	85	983	38·69	191
d Saundersfoot (Hean Castle)	Lord Merthyr.	5	1	0	206	934	36·79	176
d Johnston Council School	W. A. Evans, Esq.	5	0	5	..	1042	41·02	..
d Templeton (Hill)	Mrs. E. L. B. Allen	5	1	0	545	1245	49·03	219
d Haverfordwest (Picton Castle)	Sir C. E. G. Philipps, Bt.	5	0	10	138	1156	45·51	214
d Haverfordwest (Portfield)	J. W. Phillips, Esq.	5	1	0	220	1055	41·52	206
d Haverfordwest	J. W. Phillips, Esq.	5	1	0	95	1092	42·99	204
d Penffordd Council School	Thomas H. Davies, Esq.	5	1	0	317	999	39·34	..
d Treffgarne Hall	Col. R. O. Lloyd, C.B., R.E.	5	1	1	286	1100	43·30	212
d Mynachlogddu Council School	W. Phillips, Esq.	5	1	3	620	1446	56·92	180
d Fishguard (Langton, Dwrbach)	J. C. Yorke, Esq.	5	1	0	320	1177	46·34	233

DIVISION XI.—MONMOUTH, WALES, AND THE ISLANDS—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with ·01 in. or more.	
		Diam.	Height Ground	above Sea Level.	1919			
CARDIGAN. (Area, 688 sq. mi.).		in.	ft.	in.	ft.	mm.	in.	
1.—DOVEY. 20 sq. mi.								
2.—YSTWYTH & C. 347 sq. mi.								
D Lampeter (Llanleear).....	Miss Lewes	5	1	1	232	1256	49·44	188
D Strata Florida (Hafod).....	T. J. Waddingham, Esq. . .	5	1	0	580	1597	62·89	241
Devil's Bridge.....	W. E. Whitehouse, Esq....	5	1	0	825	1656	65·21	219
Capel Bangor (Penllwyn).....	W. E. Whitehouse, Esq....	5	1	0	145	1066	41·96	..
Ponterwyd	W. E. Whitehouse, Esq....	5	1	0	767	1977	77·85	..
D Aberystwyth (Castle Grounds) ..	Dr. A. Thomas.....	8	2	6	59	835	32·87	188
Aberystwyth (North Parade) ..	Dr. A. Thomas	8	2	6	18	949	37·37	188
d Aberystwyth (Gogerddan)	Mr. R. Winstanley	5	1	1	83	1334	52·54	..
Elerch (Pantyffynon).....	W. E. Whitehouse, Esq....	5	1	0	718	1431	56·34	..
Talybont.....	W. E. Whitehouse, Esq....	5	1	0	199	1326	52·21	..
3.—TEIFI. 260 sq. mi.								
D Cardigan (County School).....	Dr. D. Rees.....	5	1	6	72	970	38·19	190
D Lampeter (Falcondale).....	Mr. W. Taylor	5	1	0	498	1186	46·68	191
4.—TOWY. 46 sq. mi.								
D Abergwesyn (Nantneuadd)	Mr. W. Roberts	5	1	0	1290	1682	66·22	160
M Tregaron (Maes-y-bettws)	British Rainfall Organization	5	1	0	910	1755	69·10	..
M Strata Florida (Towy-fechan) ..	British Rainfall Organization	5	1	0	1330	1872	73·70	..
5.—WYE. 15 sq. mi.								
M Birmingham W.W. (Llyn Gynon) ..	E. Antony Lees, Esq.	5	1	0	1500	1707	67·21	..
M Birmng'm W.W. (Bwlchyrrndre) ..	E. Antony Lees, Esq.	5	1	0	1585	1532	60·31	..
M Birmingham W.W. (Claerddu) ..	E. Antony Lees, Esq.	5	1	0	1500	1986	78·17	..
M Birmingham W.W. (Gwngu) ..	E. Antony Lees, Esq.	5	1	0	1650	1776	69·90	..
d Birmingham W.W. (Abergwngu) ..	E. Antony Lees, Esq.	5	1	0	1200	1628	64·10	..
M Plynlimon	British Rainfall Organization	5	1	0	1740	3030	119·30	..
BRECON. (Area, 733 sq. mi.)								
1.—TOWY. 17 sq. mi.								
2.—TAWE. 41 sq. mi.								
D Swansea W.W. (Nantyrwydd) ..	Lt. G. R. Collinson, R.E... 5	1	0	916	1755	69·10	213	
3.—NEATH. 48 sq. mi.								
Glyn Neath (P. Neath Vaughan) ..	Messrs. Curtis & Harvey, Ltd. 5	1	5	297	1148	45·21	213	
Ystradfellte Reservoir	D. M. Davies, Esq.	5	1	0	1147	1881	74·04	206
4.—TAFF. 48 sq. mi.								
D Aberdare (Nanthir Reservoir) ..	O. Williams, Esq., C.E. ... 5	1	0	860	1338	52·68	209	
M Aberdare (Nanthir Reservoir) ..	O. Williams, Esq., C.E. ... 5	1	0	860	1340	52·74	..	
Penderyn	F.W. LaT. Bateman, Esq. C.E. 5	1	0	1003	983	38·71	..	
D Taff Fechan (Pontsticill) No. 12 ..	T. F. Harvey, Esq., C.E.... 5	1	0	1031	1267	49·87	218	
M Taff Fechan (Pontsticill) No. 12 ..	T. F. Harvey, Esq., C.E.... 5	1	0	1031	1249	49·18	..	
M Taff Fechan (Pontsticill West) 14 ..	T. F. Harvey, Esq., C.E.... 5	1	0	1254	1253	49·34	..	
D Cardiff W.W. (Llwynon Res.) ..	C. H. Priestley, Esq., C.E. 5	1	0	860	1386	54·55	206	
Cardiff W.W. (Troedyrhiw) ..	C. H. Priestley, Esq., C.E. 5	1	0	860	1411	55·57	..	
D Cardiff W.W. (Pont-ar-daf) ..	C. H. Priestley, Esq., C.E. 5	1	0	850	1510	59·43	206	
Cardiff W.W. (Garw-nant) ..	C. H. Priestley, Esq., C.E. 5	1	0	1100	1575	62·02	..	
Cardiff W.W. (Nant-Gwineu) ..	C. H. Priestley, Esq., C.E. 5	1	0	1275	1260	49·62	..	
Cardiff W.W. (Nant-y-gou-garn) ..	C. H. Priestley, Esq., C.E. 5	1	0	..	1603	63·12	..	
D Taff Fechan (Pentwyn Res.) ..	T. F. Harvey, Esq., C.E.... 5	1	0	1120	1549	60·99	234	
M Taff Fechan (Pentwyn Res.) ..	T. F. Harvey, Esq., C.E.... 5	1	0	1120	1529	60·19	..	
Cardiff W.W. (Nant Goch)	C. H. Priestley, Esq., C.E. 5	1	0	..	1172	46·15	..	
Cardiff W.W. (Nant Ddu) ..	C. H. Priestley, Esq., C.E. 5	1	0	1560	1664	65·53	..	
Cardiff W.W. (Storey Arms) No. 4C ..	H. Priestley, Esq., C.E. 5	1	0	1430	1492	58·72	..	
Cardiff W.W. (Tyle Brith) No. 1 ..	C. H. Priestley, Esq., C.E. 5	1	0	2350	1542	60·71	..	
D Cardiff W.W. (Cantref R.) No. 2 ..	C. H. Priestley, Esq., C.E. 5	1	0	1120	1587	62·49	215	
D Torpantau Station	Newport Corporation..... 5	1	0	1316	1575	62·01	209	
D Cardiff W.W. (Beacons Res.) No. 6 ..	C. H. Priestley, Esq., C.E. 5	1	0	1340	1781	70·13	220	
D Cardiff W.W. (Nant Penig) No. 3 ..	C. H. Priestley, Esq., C.E. 5	1	0	2000	2062	81·19	..	
D Taff Fechan (Neuadd Rs.) No. 1 ..	T. F. Harvey, Esq., C.E.... 5	1	0	1462	1711	67·36	228	
M Taff Fechan (Neuadd Rs.) No. 1 ..	T. F. Harvey, Esq., C.E.... 5	1	0	1462	1622	63·84	..	
D Taff Fechan (Neuadd Rs.) No. 4 ..	T. F. Harvey, Esq., C.E.... 5	1	0	1487	1908	75·11	228	

DIVISION XI.—MONMOUTH, WALES, AND THE ISLANDS—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Day with ·01 in. or more.	
		Diam.	Height Ground	above Sea Level.	1919			
BRECON—(con.).		in.	ft.	in.	ft.	mm.	in.	
4.—TAFF—(con.).								
D TaffFechan(NeuaddRs.)	No. 4A T. F. Harvey, Esq., C.E...	5	1	0	1487	1923	75·71	228
M TaffFechan(NeuaddRs.)	No. 2 T. F. Harvey, Esq., C.E...	5	1	0	1993	1424	56·05	
M TaffFechan(NeuaddRs.)	No. 5 T. F. Harvey, Esq., C.E...	5	1	0	1515	1821	71·70	
M TaffFechan(NeuaddRs.)	No.10 T. F. Harvey, Esq., C.E...	5	1	0	1700	1574	61·98	
D TaffFechan(NeuaddRs.)	No.11 T. F. Harvey, Esq., C.E...	5	1	0	1524	1508	59·38	228
M TaffFechan(NeuaddRs.)	No. 7 T. F. Harvey, Esq., C.E...	5	1	0	2017	1780	70·07	
M TaffFechan(NeuaddRs.)	No. 8 T. F. Harvey, Esq., C.E...	5	1	0	1723	1883	74·12	
M TaffFechan(NeuaddRs.)	No. 3 T. F. Harvey, Esq., C.E...	5	1	0	1843	1559	61·37	
M TaffFechan(NeuaddRs.)	No. 3A T. F. Harvey, Esq., C.E...	5	1	0	1843	1552	61·11	
M TaffFechan(NeuaddRs.)	No. 9 T. F. Harvey, Esq., C.E...	5	1	0	1997	1301	51·22	
M TaffFechan(NeuaddRs.)	No. 6 T. F. Harvey, Esq., C.E...	5	1	0	2099	2019	79·49	
5.—RHYMNEY. 2 sq. mi.								
6.—EBBW. 7 sq. mi.								
D Ebbw Vale W.W.(Llangunider) 1	T. J. Thomas, Esq., C.E...	5	1	0	1413	1243	48·94	204
Ebbw V.W.W.(Llangunider) W3	T. J. Thomas, Esq., C.E...	5	1	0	1468	1415	55·71	203
Ebbw V. W.W.(Llang'nd'r) NW2	T. J. Thomas, Esq., C.E...	5	1	0	1471	1356	53·40	203
Ebbw Vale W.W. (Carno, S.)	T. J. Thomas, Esq., C.E...	5	1	0	1236	1554	61·20	192
Ebbw Vale W.W. (Carno, E.)	T. J. Thomas, Esq., C.E...	5	1	0	1391	1483	58·38	192
Ebbw Vale W.W. (Carno, W.)	T. J. Thomas, Esq., C.E...	5	1	0	1412	1584	62·36	192
Ebbw Vale W.W. (Carno, N.)	T. J. Thomas, Esq., C.E...	5	1	0	1533	1506	59·27	192
7.—USK. 299 sq. mi.								
Torpantau (Darenfawr).....	Newport Corporation.....	5	1	0	1172	1555	61·22	..
Torpantau (Inysposte).....	Newport Corporation.....	5	1	0	741	1510	59·44	..
Torpantau (Blaen-caer-fanell) ..	Newport Corporat on.....	5	1	0	1584	1721	67·77	..
D Talybont (Pentir-rhiw).....	Newport Corporation.....	5	1	0	587	1322	52·05	209
Talybont (Pwll Ifor).....	Newport Corporation.....	5	1	0	1224	1525	60·04	..
D Crickhowell (Glanusk Park)....	Col. Lord Glanusk, C.B....	5	1	0	290	943	37·14	174
D Crickhowell (Gwernvale).....	E. Pirie Gordon, Esq.....	5	1	0	393	899	35·39	189
M Swansea W.W.(Cray Rs.) No. 2	Lt. G. R. Collinson, R.E....	5	1	0	1020	1915	75·38	..
D Swansea W.W.(Cray Rs.) No. 1	Lt. G. R. Collinson, R.E....	5	1	0	1044	1707	67·19	227
d Brecon (New Inn).....	Mr. W. Williams.....	5	1	0	810	1056	41·59	..
M Cray Station.....	Mr. J. Jones.....	5	1	0	930	1504	59·20	..
M Crickhowell (Cwmdu Rectory) ..	Rev. W. A. Davies.....	5	1	0	430	785	30·90	..
M Crickhowell (Tal-y-maes).....	British Rainfall Organization	5	1	0	1250	1115	43·90	..
d Treacastle (Blaenau-hydyfyr) ..	British Rainfall Organization	5	1	0	1070	1561	61·46	..
Sennybridge (Llwynycyntefn) ..	Mrs. Garnons-Williams....	5	1	4	640	1069	42·09	168
Brecon (Ffirwdgrech).....	Capt. J. D. D. Evans.....	8	1	1	570	1052	41·43	196
D Black Mountains(Blaen-y-cwm)	J. F. Jupp, Esq., C.E....	5	1	0	1423	1306	51·43	202
D Black Mountains(Blaen-y-cwm)	J. F. Jupp, Esq., C.E....	5	1	0	...	1215	47·83	190
Black Mountains (Waun Fach) ..	J. F. Jupp, Esq., C.E....	5	1	0	2650	1253	49·32	..
Black Mts. (Cwm Grigus Uchaf) ..	J. F. Jupp, Esq., C.E....	5	1	0	1980	1298	51·12	..
D Black M.(Dam Site Grwyne Fawr)	J. F. Jupp, Esq., C.E....	5	1	0	1620	1316	51·83	201
D Black Mountains (AberClyd) ..	J. F. Jupp, Esq., C.E....	5	1	0	1880	1102	43·40	201
Black Mts. (Pen-y-Manllwyn) ..	J. F. Jupp, Esq., C.E....	5	1	0	2512	1059	41·70	..
Black Mts. (Taren-yr-Esgob) ..	J. F. Jupp, Esq., C.E....	5	1	0	2039	1017	40·03	..
Black Mts. (Twyn Tal-y-Cefn) ..	J. F. Jupp, Esq., C.E....	5	1	0	2130	1064	41·88	..
Black Mts.(Blaen Grwyne Fawr) ..	J. F. Jupp, Esq., C.E....	5	1	0	2150	1016	40·02	..
Upper Chapel (Tymawr).....	Mrs. Probert.....	5	1	0	945	897	35·30	..
8.—WYE. 271 sq. mi.								
D Cathedine Rectory.....	Rev. D. H. Picton.....	5	1	0	660	670	26·36	169
D Talgarth (Dan-y-garth).....	F. Morgan, Esq.....	5	4	0	404	680	26·78	155
D Glasbury (Gwernfyed).....	Mr. James Slade.....	5	1	0	375	674	26·55	191
D Llanwrtyd Wells (Brynonen) ..	Rhys D. Jones, Esq.....	5	1	0	702	1256	49·46	212
D Builth Wells (Tyn-y-berllan) ..	Dr. W. Black Jones.....	5	1	0	425	928	36·54	199
M Abergwesyn (Trallwn).....	British Rainfall Organization	5	1	0	1000	1946	76·60	..
D Newbridge (Pengraig).....	British Rainfall Organization	5	1	0	960	1400	55·10	..
D Newbridge (Llysddinam).....	Col. C. Venables Llewelyn..	5	1	3	646	1034	40·71	215
M Birm'gh'm W.W.(Cors-yr-hwch) E.	Antony Lees, Esq.....	5	1	0	1775	2309	90·90	..
M Birm'gh'm W.W.(Esgair Ceiliog) E.	Antony Lees, Esq.....	5	1	0	1525	1697	66·80	..
M Birm'gh'm W.W.(Llyn-Carw) ..	E. Antony Lees, Esq.....	5	1	0	1775	1949	76·74	..
M Birm'gh'm W.W.(Nant-y-car) ..	E. Antony Lees, Esq.....	5	1	0	1545	1837	72·71	..
M Birm'gh'm W.W.(Esgair G'rth'n) E.	Antony Lees, Esq.....	5	1	0	1600	1662	65·43	..
D Birm'gh'm W.W.(Elan Village) ..	E. Antony Lees, Esq.....	5	1	0	700	1346	53·00	199

DIVISION XI.—MONMOUTH, WALES, AND THE ISLANDS—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with ·01 in. or more.	
		Diam.	Height Ground	above Sea Level.	1919			
RADNOR. (Area, 474 sq. mi.)		in.	ft.	in.	ft.	mm.	in.	
1.—WYE. 424 sq. mi.								
D Boughrood Castle	(R) Hon. F. G. Morgan	8	1	0	400	861	33·89	179
D Glasbury-on-Wye (Hampton Sc.)	Rev. D. C. Lloyd	5	1	0	274	716	28·17	174
D Builth (Cefndyrys)	Capt. E. A. Thomas	5	2	0	730	912	35·90	..
Builth Rd. (St. John's Vicarage)	Rev. J. L. Bryans	5	0	11	550	1035	40·75	170
New Radnor	John Langston, Esq.	5	1	4	720	1013	39·88	200
D Llandrindod Wells (Kimberley)	W.B. deWinton, Esq. C.I.E.	5	1	0	699	969	38·15	222
D Presteign (St. Davids)	Dr. N. Y. Lower	5	1	0	500	849	33·42	197
D Birmingham WW (Tyrmynydd)	E. Antony Lees, Esq.	5	1	0	832	1406	55·36	189
D Birmingham W W (Nantgwillt)	E. Antony Lees, Esq.	5	1	0	845	1552	61·10	193
M Birmingham W. W. (Dwfnant)	E. Antony Lees, Esq.	5	1	0	1050	1626	64·01	..
M Birm'gham W W (Esgair Gader)	1 E. Antony Lees, Esq.	5	1	0	1500	1610	63·40	..
M Birm'gham WW (Esgair Gader)	2 E. Antony Lees, Esq.	5	1	0	1500	1656	65·21	..
D Birmingham W.W. (Claerwen)	E. Antony Lees, Esq.	5	1	0	1250	1706	67·15	..
D Birmingham W.W. (Tynant)	E. Antony Lees, Esq.	5	1	0	1250	1542	60·69	191
Rhayader	E. Antony Lees, Esq.	5	1	0	700	1165	45·87	..
D Rhayader	E. D. Prothero, Esq.	..	1	0	758	1128	44·41	232
Rhayader (Vicarage)	Rev. George Roberts	5	1	0	740	1348	53·09	163
M Bir'gham WW (Cerrigllwydion)	E. Antony Lees, Esq.	5	1	0	1700	1857	73·12	..
M Birm'gham WW (Pen-y-gareg)	E. Antony Lees, Esq.	5	1	0	1500	1341	52·80	..
M Birmingham W.W. (Calettwr)	E. Antony Lees, Esq.	5	1	0	1500	1769	69·64	..
M Birmingham W.W. (Figin) No. 1	E. Antony Lees, Esq.	5	1	0	1700	1886	74·27	..
M Birmingham W.W. (Figin) No. 2	E. Antony Lees, Esq.	5	1	0	1700	1959	77·12	..
M Birmingham WW (Aberhenllan)	E. Antony Lees, Esq.	5	1	0	1250	1375	54·12	..
M Llanbister (Llananno)	British Rainfall Organization	5	1	0	900	1110	43·70	..
2.—SEVERN—Right Bank Tributaries. 50 sq. mi.								
Knighton (Upper Woodhouse)	S. Wilson, Esq.	5	1	0	850	842	33·15	..
MONTGOMERY. (Area, 797 sq. mi.)								
1.—DOVEY. 120 sq. mi.								
D Machynlleth (The Plas)	Mr. A. Gribble	5	1	0	41	1488	58·59	188
2.—YSTWYTH. 7 sq. mi.								
3.—WYE. 37 sq. mi.								
D Llangurig (Dernol)	British Rainfall Organization	5	1	0	870	1398	55·02?	192
4.—SEVERN—Right Bank Tributaries. 154 sq. mi.								
D Llandinam (Plas Dinam)	Mr. D. Bowen	5	3	0	503	859	33·83	171
D Dolfor (Old Court)	S. Wilson, Esq.	5	1	0	1050	828	32·62	..
Bishops Castle (Bishops Moat)	S. Wilson, Esq.	5	1	0	1130	836	32·91	..
D Newtown (Penarth Weir)	H. C. Jones, Esq., C.E.	8	1	0	321	777	30·61	198
D Welshpool (Edderton Hall)	Miss A. M. Howell Evans	5	1	0	500	608	23·95	181
5.—SEVERN—Left Bank Tributaries. 479 sq. mi.								
Carno (Council School)	S. Wilson, Esq.	5	1	0	600	1189	46·82	..
Berriew (Brithdir Hall)	F. E. Marston, Esq.	5	2	0	350	722	28·44	175
D Welshpool (County School)	H. M. Williams, Esq.	5	1	0	252	670	26·39	170
D Welshpool (Fron Llwyd)	G. B. D. Harrison, Esq.	5	1	0	500	796	31·35	158
M Garthbibio (Bwlch Tomlyd)	British Rainfall Organization	5	1	0	1370	1428	56·20	..
Llandysilio Rectory	Rev. H. G. Dickinson	5	1	0	225	672	26·46	157
D Lake Vyrnwy	E. J. Bradley, Esq.	5	0	7	770	1385	54·53	182
Lake Vyrnwy (Bryn Gwyn)	J. R. Davidson, Esq., C.E.	8	1	0	1311	1305	51·39	..
D Lake Vyrnwy (Bank Cynon Isaf)	J. R. Davidson, Esq., C.E.	8	1	0	750	1273	50·11	198
Lake Vyrnwy (Ty Uchar)	J. R. Davidson, Esq., C.E.	8	1	0	860	1403	55·25	..
Lake Vyrnwy (Heol-y-ffridd) 1	J. R. Davidson, Esq., C.E.	8	1	0	912	1717	67·60	..
Lake Vyrnwy (Heol-y-ffridd) 2	J. R. Davidson, Esq., C.E.	8	1	0	912	1690	66·54	..
Lake Vyrnwy (Tyn-y-ffridd)	J. R. Davidson, Esq., C.E.	8	1	0	1010	1203	47·36	..
Lake Vrynwy (Lluestwen)	J. R. Davidson, Esq., C.E.	8	1	0	1667	1580	62·19	..
Lake Vrynwy (Llwynrhiw)	J. R. Davidson, Esq., C.E.	8	1	0	1428	1861	73·28	..
Lake Vyrnwy (Craig-y-Gribbin)	J. R. Davidson, Esq., C.E.	8	1	0	1100	1490	58·64	..
Lake Vyrnwy (Eunant Bridge)	J. R. Davidson, Esq., C.E.	8	1	0	830	1848	72·74	..
Lake Vyrnwy (Carreg Goch)	J. R. Davidson, Esq., C.E.	8	1	0	1750	1759	69·25	..
Lake Vyrnwy (Fawnog)	J. R. Davidson, Esq., C.E.	8	1	0	1315	1259	49·56	..

DIVISION XI.—MONMOUTH, WALES, AND THE ISLANDS—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.
		Diam. in.	Height Ground ft.	above Sea Level. in.	ft.	1919 mm. in.		
FLINT. (Area, 256 sq. mi.)								
1.—DEE. 198 sq. mi.								
D Hanmer (Gredington)	Lord Kenyon, K.C.V.O.	5	0	10	300	792	31·16	167
D Overton (Fairleigh)	B. J. E. Wright, Esq.	5	1	8	220	759	29·87	188
Buckley	W. Simmons, Esq.	5	1	0	555	856	33·71	..
Cilcain	W. Simmons, Esq.	5	1	0	790	729	28·69	205
Hawarden	Great Central Rly Co.	9	3	6	35	746	29·37	164
Northop (Soughton Hall)	Lord Justice Bankes	5	1	0	418	960	37·79	167
D Hawarden Bridge	T. T. Sill, Esq.	8	1	3	22	746	29·35	168
D Mostyn Vicarage	Rev. W. Vaughan-Jones ..	5	1	0	100	902	35·50	213
2.—CLWYD. 51 sq. mi.								
Bodfari (Nantlys)	D. F. Pennant, Esq.	5	1	4	178	920	36·20	191
D Bodfari (Cae Gwyn)	Mrs. Morgan	5	0	6	542	892	35·13	182
D St. Asaph (St. Beuno's College) ..	Rev. R. S. Corish, S.J.	8	1	0	480	959	37·74	205
Dyserth Castle	J. B. Price, Esq.	5	0	6	350	749	29·48	..
D Rhyl (Sewage Works)	A. A. Goodall, Esq.	8	1	0	31	797	31·36	195
3.—SEVERN—Left Bank Tributaries. 7 sq. mi.								
DENBIGH. (Area, 668 sq. mi.)								
1.—DEE. 270 sq. mi.								
D Chirk Castle Gardens	Mr. James Vert	5	1	2	625	908	35·75	163
D Ruabon (Whitehurst)	Mr. James Vert	5	1	1	327	825	32·49	180
Wrexham (Ty Mawr Reservoir) ..	F. Storr, Esq., C.E.	5	0	9	805	1126	44·31	181
Wrexham (Pack Saddle Res.) ..	F. Storr, Esq., C.E.	5	0	9	370	972	38·25	206
Wrexham (Cae Llwyd Res.) ..	F. Storr, Esq., C.E.	8	0	9	918	1152	45·37	181
Wrexham (Cae Llwyd Res.) ..	F. Storr, Esq., C.E.	5	0	9	918	1159	45·63	181
D Wrexham (Broughton Colliery) ..	J. Hall, Esq.	5	1	0	500	968	38·10	200
D R. Alwen (Hafod-llan-isaf) No. 1 ..	J. H. Parkin, Esq.	5	1	0	1200	1016	39·99	197
D R. Alwen (Hafod-llan-isaf) No. 2 ..	J. H. Parkin, Esq.	5	1	2	1200	1105	43·50	197
D R. Alwen (Hafod-llan-isaf) No. 3 ..	J. H. Parkin, Esq.	5	1	0	1200	1038	40·85	197
D Pentre Voelas (Nant Heilyn) ..	J. H. Parkin, Esq.	5	1	0	1225	1395	54·92	207
D R. Brenig (Hafod-yr-Onen) ..	J. H. Parkin, Esq.	5	1	0	1175	1239	48·77	214
M Nantglyn (Pant-y-maen)	J. H. Parkin, Esq.	8	1	0	1320	1494	58·81	..
M Llyn Bran	J. H. Parkin, Esq.	8	1	0	1428	1463	57·59	..
2.—CLWYD & C. 267 sq. mi.								
D Gyffylliog (Fachlwyd Hall) ..	Elliott S. Currey, Esq.	5	1	0	640	1093	43·02	223
D Ruthin (Tymawr)	Maj.-Gen. C. L. Cary	5	1	0	400	949	37·37	206
D Ruthin (Plas Llangwyfan)	J. R. Lloyd, Esq.	5	1	0	470	824	32·43	177
d Llangerniew (Hafodunos)	Lt.-Col. T. Gee	5	2	6	512	1285	50·60	..
M Llanefydd (Rhyl W.W. S.)	L. G. Hall, Esq., C.E.	5	1	0	600	1005	39·57	..
M Llanefydd (Rhyl W.W. W.)	L. G. Hall, Esq., C.E.	5	1	0	580	950	37·38	..
D Llanefydd (Plas Uchaf Res.) ..	L. G. Hall, Esq., C.E.	5	1	0	485	894	35·19	168
D Llanefydd (Glascoed Res.) ..	L. G. Hall, Esq., C.E.	5	1	0	360	1085	42·71	194
D Llangynhafal (Plâs Drâw)	Col. C. J. Bromhead, C.B. ..	5	1	0	419	1024	40·30	215
D Denbigh (Asylum)	W. Barker, Esq.	5	1	0	316	988	38·91	185
D Denbigh (Garn)	W. D. W. Griffith, Esq.	5	1	0	447	1040	40·95	181
Trefnant (Maes Elwy)	Mrs. R. F. Birch	5	1	0	195	895	35·23	..
St. Asaph (Wygfair)	(R) Col. H. R. L. Howard, C.B.	8	2	6	250	943	37·14	..
d Colwyn Bay (Council Offices) ..	W. Jones, Esq., C.E.	5	1	0	83	815	32·09	..
3.—CONWAY. 84 sq. mi.								
D Pentre Foelas (Voelas Hall) ..	Mr. T. Dickie	5	1	3	640	1350	53·15	173
D Llanrwst (County School)	Rev. J. I. Farr	5	1	4	55	1338	52·66	212
4.—SEVERN—Left Bank Tributaries. 47 sq. mi.								
D Llansilin (Penygwely Res.)	G. W. Lacey, Esq., C.E.	5	1	0	1094	802	31·57	194
MERIONETH. (Area, 661 sq. mi.)								
1.—DEE. 218 sq. mi.								
Bala (Eryl Aran)	Mrs. Burton	8	1	0	600	1461	57·51	202
Llanderfel (Palé Gardens)	Mr. E. J. Edwards	8	1	0	606	1205	47·44	209
Corwen (Rûg Gardens)	Mr. F. Hopwood	8	1	2	500	780	30·73	..

DIVISION XI.—MONMOUTH, WALES, AND THE ISLANDS—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with ·01 in. or more.	
		Diam.	Height Ground	above Sea Level.	1919			
MERIONETH—(con.).		in.	ft.	in.	ft.	mm.	in.	
2.—CLWYD. 7 sq. mi.								
3.—GLASLYN. 92 sq. mi.								
D Trawsfynydd Camp.....	E. Jones, Esq.....	5	1	0	800	1752	68·96	191
D Tan-y-bwlch (The Gardens) ...	Mr. J. Roberts	5	1	0	50	1622	63·85	206
Tan-y-bwlch (Dol-y-Moch)	Mrs. Howland Jackson ...	5	0	6	55	1656	65·19	221
D Festiniog (Hafod Fawr).....	Office of Woods.....	8	1	0	900	1834	72·20	222
d Blaenau Festiniog (Oakley Q.)..	R. H. Jones, Esq.....	5	10	0	1100	2252	88·67	..
D Blaenau Festiniog (LlechweiddQ.)	Messrs. J. W. Greaves & Sons	5	1	0	770	2546	100·23	240
4.—MAWDDACH & C. 262 sq. mi.								
D Towyn (Ynys-y-Maengwyn) ...	Roger Corbett, Esq.	5	1	0	14	1101	43·36	183
D Towyn (Peniarth)	Mrs. Wynne	8	1	0	25	1304	51·32	174
D Dolgelly (Bryntirion)	E. P. Beale, Esq.	5	0	10	50	1677	66·02	180
5.—DOVEY. 82 sq. mi.								
D Aberdovey (Plas Penhelig)	J. M. Howell, Esq.	5	1	0	130	1203	47·37	196
Pennal (Talgarth Hall)	Frank Gott, Esq.	5	0	5	125	1661	65·41	..
6.—SEVERN—Left Bank Tributaries.								
CARNARVON. (Area, 572 sq. mi.)								
1.—[BARDSEY ISLAND.]								
2.—CONWAY & C. 146 sq. mi.								
M Lake Cowlyd (Llethyr Gwyn) cC. F. Farrington, Esq., C.E.		5	1	0	1700	1904	74·98	..
M Lake Colwyd (Gors-y-Llithrig) dC. F. Farrington, Esq., C.E.		5	1	0	1900	2197	86·51	..
M L. Cowlyd (Ffrith Carreg Wen) AC. F. Farrington, Esq., C.E.		5	1	0	1168	2166	85·27	..
D Trefriw Wells.....	J. C. P. Adamson, Esq.....	5	1	0	25	1243	48·95	157
D Lake Eigiau (Dam Site)	H. J. Jack, Esq.	5	1	5	1245	2214	87·18	218
w Llanbedr-y-Cennin (Plasduelyn) W. T. Ward, Esq.		8	1	0	509	1629	64·12	..
w Llanbedr-y-Cennin (Llyndulyn) W. T. Ward, Esq.		8	1	6	1632	1994	78·51	..
Deganwy (Y Berlifa)	(R) Willoughby Gardner, Esq..	5	1	0	35	918	36·16	..
d Llandudno (Glanwydden School) Thomas Roberts, Esq.		5	1	0	28	837	32·94	..
D Llandudno	W. Little, Esq.	5	1	0	20	798	31·43	204
3.—MENAI STRAITS, &c. 221 sq. mi.								
Madryn Castle (Farm School) ..	J. Johnson, Esq.	5	1	0	285	827	32·57	..
d Llanllyfni (Bryn Aerau School) Llewelyn Parry, Esq.		5	1	0	50	1191	46·90	..
M Nantlle (Dorothea Quarries) ..	W. J. Griffith, Esq.....	8	60	0	460	1494	58·82	..
D Nantlle (Nebo Council School) ..	Elias Thomas, Esq.	5	1	1	700	1491	58·70	222
Llandwrog (Glynllivon Park) ..	Hon. F. G. Wynn	5	1	0	100	1144	45·03	..
Llandwrog (Glynllivon Nursery) ..	Hon. F. G. Wynn	5	1	0	180	1133	44·59	187
Llandwrog (Glynllivon Garden) ..	Hon. F. G. Wynn	5	1	0	100	1153	45·39	155
Carnarvon (Belan Fort)	Hon. F. G. Wynn	5	1	0	12	932	36·70	..
D Llanberis (Bryntirion)	Mr. Emrys Jones	5	1	9	365	1967	77·45	203
D Llanberis (Brynrefail School) ..	J. Rees Foster, Esq.	5	1	0	356	1319	51·93	189
d Llanberis (Llandinorwig School) ..	John Roberts, Esq.	5	1	0	850	1448	57·00	..
D Llanrug (Llys Eiddon)	J. Rees Foster, Esq.	5	1	0	400	1041	40·99	184
D Bethesda (St. Ann's Vicarage) ..	Rev. W. Morgan	5	2	6	450	1516	59·70	225
D Bethesda (Penrhyn Quarries) ..	W. D. Hobson, Esq.	8	1	0	528	1695	66·72	212
D Bangor (Penryhn Castle Gdns.) ..	Mr. W. Speed	5	1	0	150	927	36·48	172
D Llanfairfechan	Mr. W. Timmins	5	1	0	144	1025	40·37	174
M Penmaenmawr (Mountain Res.) ..	R. J. Hughes, Esq.	5	1	6	1200	1316	51·81	..
D Penmaenmawr (Council Offices) ..	R. J. Hughes, Esq.....	5	1	6	100	931	36·67	209
4.—ERCH & C. 155 sq. mi.								
D Abersoch	Sir W. H. Winterbotham..	8	1	0	100	1120	44·10	182
D Bryn croes (Schoolhouse)	E. R. Williams, Esq.	5	0	11	320	1122	44·17	186
Pwllheli (Bodfean Hall)	Hon. F. G. Wynn	5	1	0	200	1089	42·87	..
Pwllheli (Bodfean Hall Gdns.) ..	Hon. F. C. Wynn	5	1	0	200	1043	41·07	182
5.—GLASLYN. 50 sq. mi.								
Beddgelert (Council School) ...	David Jones, Esq.....	5	1	0	133	2412	94·95	161
Snowdon (Wenallt)	No. 6 H. J. Jack, Esq.	5	1	2	1050	3468	136·55	..
d Snowdon (Cwm Dyli)	No. 11 H. J. Jack, Esq.	5	1	0	310	2650	104·31	..
Snowdon (Old Road)	No. 14 H. J. Jack, Esq.	5	0	10	325	2638	103·85	..
M Snowdon (Lliwedd)	No. 2 H. J. Jack, Esq.	5	1	3	1485	3565	140·37	..

DIVISION XI.—MONMOUTH, WALES, AND THE ISLANDS—(con.).

STATIONS	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with .01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
CARNARVON—(con.).		in.	ft.	in.	ft.	mm.	in.	
5.—GLASLYN—(con.).								
M Snowdon (Glaslyn)	No. 3 H. J. Jack, Esq.	5	0	8	2050	3385	133.27	..
M Snowdon (Teyrn)	No. 1 H. J. Jack, Esq.	5	1	0	1080	3516	138.42	..
d Snowdon (Llydaw Intake)	10 H. J. Jack, Esq.	5	1	0	1480	3228	127.08	..
d Snowdon (L. Llydaw Copper M.)	9 H. J. Jack, Esq.	5	1	5	1480	3783	148.95	..
M Snowdon (Crib Goch)	No. 8 H. J. Jack, Esq.	5	1	3	2340	3840	151.19	..
M Snowdon (Llyn Llydaw, N.) . . . . .	.5 H. J. Jack, Esq.	5	1	0	1470	3221	126.82	..
ANGLESEY. (Area, 275 sq. mi.)								
Llandwyn Island	Hon. F. G. Wynn	5	1	0	20	705	27.77?	..
d Plas Newydd Gardens	Mr. W. Owen	5	1	0	100	1091	42.96	197
d Llangadwaladr (Bódorgan)	Mr. W. Pilgrim	5	1	0	100	978	38.52	189
d Llangefni (Penrhos)	Miss M. Nicholls-Jones	8	0	9	132	1078	42.42	185
Beaumaris (Fryars)	Mrs. Burton	10	2	0	20	1048	41.27	..
d Llangwilog (Trescawen)	J. H. Pritchard-Rayner, Esq.	5	1	0	239	1064	41.91	202
d Bodedern (Presaddfed)	Lt.-Col. W. A. Fox-Pitt	5	1	0	155	954	37.57	176
d Holyhead (Sailors' Home)	Meteorological Office	5	1	0	15	856	33.70	194
d Llanerchymedd Llywydiarth Esq.	T. Prichard, Esq.	5	1	6	175	960	37.80	227
d Penrhoslligwy School	T. Rowlands, Esq.	5	1	0	140	991	39.00	183
d Lligwy	Lord Boston	5	1	0	170	884	34.82	185
Amlwch (Dyffryn Adda)	Major T. Fanning Evans	5	1	2	178	921	36.27	214
ISLE OF MAN. (Area, 227 sq. mi.)								
Castletown (Langness)	Board of Northern Lights	8	1	0	75	683	26.88	198
Santon Vicarage	Rev. R. Jones	5	0	10	245	904	35.57	202
Douglashead	Board of Northern Lights . . . . .	..	..	..	..	532	20.96?	..
d Douglas (Borough Cemetery)	H. A. Bridge, Esq.	8	1	0	284	1040	40.91	212
d Douglas (Clype Res., Onchan)	Mr. W. Crebbin	8	1	0	420	1087	42.81	213
Maughold Head	Board of Northern Lights . . . . .	..	..	..	..	757	29.80	166
d Kirkmichael (Bishop's Court)	Mr. W. Brew	5	0	10	80	819	32.26	164
d Ramsey (Town Hall)	G. W. Kewin, Esq.	8	15	0	18	989	38.94	181
d Ramsey (North Promenade)	G. W. Kewin, Esq.	5	2	0	5	1007	39.64	190
Point of Ayre	Board of Northern Lights	3	4	6	116	611	24.06	..
CHANNEL ISLANDS. (Area, 76 sq. mi.)								
JERSEY. 45 sq. mi.								
d Pontac	Dr. E. G. Barnes	5	1	6	30	918	36.13	197
d Samares (Les Silleries)	V. J. Bailhache, Esq.	5	2	6	166	944	37.18	203
d St. Saviour's (Clifton)	C. V. Hawksford, Esq.	12	3	1	218	1006	39.62	199
St. Helier (St. Louis Obsrvy.)	Rev. M. Dechevrens, S. J.	8	5	9	180	900	35.42	205
d St. Brelades (La Sergenté)	J. E. Le Boutillier, Esq.	5	2	6	188	919	36.17	178
d St. Aubins (Railway Station)	Meteorological Office	8	1	9	36	972	38.26	186
d St. Aubins (Belle Vue)	C. J. Sumner, Esq.	5	1	4	220	1022	40.23	193
d Millbrook (St. Helier W.W.)	A. J. Jenkins, Esq., C.E.	5	0	11	53	955	37.59	182
d St. Lawrence (Fontenelle)	P. A. Gore, Esq.	5	1	0	200	1012	39.83	199
d St. Ouen's Manor	R. Malet de Carteret, Esq.	5	2	6	270	1046	41.19	185
d St. Martins	Dr. Paul Chappius	5	2	0	412	901	35.49	189
GUERNSEY. 25 sq. mi.								
d St. Martins (Les Blanchés)	B. T. Rowswell, Esq.	5	1	0	310	1078	42.42	188
d St. Martin's Rectory	Rev. R. Coulthard	5	1	0	310	1085	42.71	187
St. Martins (Hautnez)	A. A. Allain, Esq.	5	0	8	336	1098	43.25	211
Villiaze	A. A. Allain, Esq.	5	0	6	302	1160	45.67	209
d St. Saviours (Le Mont Saint)	S. Carey Curtis, Esq.	5	1	0	105	1002	39.44	185
d St. Peter Port (St. Martin's Rd.)	A. Collenette, Esq.	5	1	0	295	1158	45.57	191
d St. Peter Port (Queens Road)	A. A. Allain, Esq. . . . .	..	..	..	220	1202	47.31	194
d St. Peter Port (Market Street)	B. T. Rowswell, Esq.	5	52	8	100	1154	45.44	180
d St. Peter Port (Villa Carey)	Dr. F. E. Carey	8	1	2	180	1143	45.11	199
d Castel (St. George)	Rev. H. G. de C. S. Guille	5	0	10	120	1039	40.89	193
SARK. 2 sq. mi.								
d Pointe Robert	B. T. Rowswell, Esq.	5	1	0	215	960	37.80	200
HERM. 1 sq. mi.								
ALDERNEY. 3 sq. mi.								
d St. Anne's Rectory	B. T. Rowswell, Esq.	5	1	0	205	796	31.36	182

SCOTLAND.

DIVISION XII.—SOUTHERN COUNTIES.

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with .01 in. or more.
		Diam.	Height above Ground	ft.	Sea Level.	1919		
WIGTOWN. (Area, 488 sq. mi.)		in.	ft.	in.	ft.	mm.	in.	
1.—LOCH RYAN. 46 sq. mi.								
Loch Ryan Lighthouse	Board of Northern Lights	..	..	..	46	661	26.03	..
2.—WESTERN GALLOWAY. 44 sq. mi.								
Mull of Galloway	Board of Northern Lights	..	..	..	327	574	22.60 ?	..
D Logan House	K. McDouall, Esq.	8	1	0	80	917	36.12	227
Corsewall	Board of Northern Lights	.	3	4	112	990	38.98	..
3.—LUCE BAY. 186 sq. mi.								
D Stoneykirk (Ardwell House)	Sir M. McT. Stewart, Bt...	8	2	4	65	868	34.18	206
D Glenluce (Crews)	Peter Taylor, Esq.	5	1	9	218	894	35.18	181
4.—CREE & WIGTOWN BAY. 212 sq. mi.								
D Whithorn (Cutroach)	J. G. Martin, Esq.	5	0	6	120	830	32.69	168
D Whithorn (Glasserton)	Adm. R. H. J. Stewart, C.B.	4	0	6	225	1173	46.17	187
Garliestown (Galloway House)	Mr. James R. Crosbie	5	3	9	20	656	25.84	..
KIRKCUDBRIGHT. (Area, 902 sq. mi.)								
1.—DOON. 16 sq. mi.								
2.—CREE & WIGTOWN BAY. 222 sq. mi.								
Gatehouse (Cally)	Col. F. M. Baillie	5	1	0	120	1174	46.23	189
Creetown (Cassencary)	J. A. Henryson-Caird, Esq.	5	0	8	50	893	35.14	158
Palnure (Bargaly)	Mrs. Colvin Stewart	8	3	5	50	1161	45.72	170
3.—DEE. 377 sq. mi.								
Little Ross Lighthouse	Board of Northern Lights	..	3	3	175	613	24.12 ?	..
Kirkcudbright (Balmae)	The late Countess of Selkirk	5	0	8	150	801	31.55	..
New Galloway (Glenlee Park)	Mr. C. Jamieson	5	0	6	234	1196	47.09	..
D Dalry (Glendaroch)	Miss M. Barbour	5	0	11	192	1162	45.74	198
D Dalry (Garroch)	Arthur Young, Esq.	8	1	3	250	1387	54.59	168
D Carsphairn (Shiel)	Mr. S. Wilson	5	1	0	850	1619	63.73	207
D Carsphairn (Knockgray)	Miss Clark Kennedy	8	0	11	641	1086	42.74	180
4.—URR & C. 196 sq. mi.								
Auchencairn (Torr House)	W. Owens, Esq.	5	0	8	50	985	38.79	..
D Dalbeattie (Kirkennan)	Wellwood Maxwell, Esq.	5	0	9	30	950	37.42	182
D Dalbeattie (Richorn Wood)	Mrs. McNae	5	1	0	54	852	33.55	180
Dalbeattie (Southwick)	Sir M. McT. Stewart, Bart.	..	..	..	150	889	34.99	..
Kirkpatrick Durham (Glenlair)	Capt. Wedderburn-Maxwell	5	0	6	250	975	38.40	..

DIVISION XII.—SOUTHERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with .01 in or more.
		Diam.	Height Ground	above Sea Level.	1919			
KIRKCUDBRIGHT—(con.)		in.	ft.	in.	ft.	mm.	in.	
5.—NITH & C. 91 sq. mi.								
D	Dumfries (Cargen)..... Col. R. F. Dudgeon	5	0	10	80	926	36·45	187
	Dumfries (Carruchan)..... Lt.-Gen. J. M. Stewart.....				100	850	33·46	..
	Lochrutton (Dumfries W.W.) .. J. Smellie, Esq.	5	1	0	273	912	35·92	190
D	Dumfries (Lincluden House) .. Miss Young, M.B.E.....	5	1	0	60	832	32·75	175
D	Dumfries (Jardington) J. Rutherford, Esq.	5	1	0	50	794	31·27	189
DUMFRIES. (Area, 1074 sq. mi.)								
1.—CLYDE—Right Bank Tributaries. 5 sq. mi.								
2.—URR. 6 sq. mi.								
3.—NITH & C. 421 sq. mi.								
	Ruthwell (Comlongan Castle) .. Mr. W. Brown, <i>per</i> S.M.S....	5	1	0	74	701	27·60	164
	Dumfries (Crichton Roy. Inst.) .. Mr. E. Joss, <i>per</i> S.M.S.	5	1	0	140	708	27·88	172
	Moniaive (Glencrosh) Miss Macmillan	5	1	2	350	1073	42·25	177
D	Moniaive (Maxwelton House) .. Sir Claude V. E. Laurie, Bt. ..	5	1	6	400	809	31·86	..
D	Thornhill (Waulkmill)..... John S. Rankin, Esq.....	5	0	7	232	886	34·87	166
	Durrisdeer (Drumlanrig Gdns.) .. Mr. D. Inglis, <i>per</i> S.M.S. ...	5	0	9	191	960	37·80	166
4.—ANNAN. 367 sq. mi.								
	Dalton (Whitecroft) W. Maitland-Heriot, Esq.	5	0	6	240	844	33·22	..
D	Hoddam Castle G. J. Brook, Esq., <i>per</i> S.M.S. ..	5	1	4	150	849	33·43	179
	Ecclefechan (Burnfoot) Major H.C. Irving, <i>per</i> S.M.S. ..	5	0	10	160	865	34·06	..
D	Dalton (School House) P. C. Copland, Esq.	5	1	0	175	830	32·67	195
D	Dalton (Kirkwood) Arthur J. Steel, Esq.....	5	0	8	245	970	38·17	205
D	Lockerbie (Castle Milk) Mr. J. T. Jeffrey	5	1	6	199	872	34·32	163
D	Lochmaben (Esthwaite) W. J. Halliday, Esq.	5	1	0	166	887	34·91	180
	Amisfield (Glenae) H. Sharpe Gordon, Esq.	5	0	11	300	812	31·96	155
	Moffat (Craigielands) Mr. Luke Fraser	5	1	0	334	1093	43·03	..
D	Moffat (Auchen Castle) Mr. J. Macgregor.....	5	0	6	506	1123	44·22	201
5.—ESK. 275 sq. mi.								
M	Canonbie (Byreburnfoot) Mr. David Crabbe	3	0	9	160	914	36·00	..
D	Canonbie (Irvine House) J. H. Milne Home, Esq....	5	0	9	200	1073	42·24	177
D	Langholm (Drove Road) Mrs. Jackson	5	0	9	270	1165	45·85	159
D	Langholm (Craig) J. Little, Esq.	5	1	0	450	1105	43·52	178
	Langholm (Ewes) Mrs. Lyall	5	1	0	445	1095	43·10	..
	Eskdalemuir Observatory Meteorological Office	11	2	0	794	1215	47·84	228
ROXBURGH. (Area, 666 sq. mi.)								
1.—NORTH TYNE. 6 sq. mi.								
2.—TWEED, LOWER—Right Bank Tributaries. 57 sq. mi.								
	Kelso (Springwood SeedGround) Messrs. Laing & Mather ...	5	1	0	200	664	26·15	208
3.—TWEED—Teviot & c. 431 sq. mi.								
	Hawick (Wolfelee)..... W. Steedman, Esq.	5	0	10	537	870	34·27	210
D	Hawick (Bransholme) J. G. Winning, Esq.	5	0	6	457	680	26·78	198
D	Denholm (Spital Tower)..... T. Greenshields Leadbetter ..	5	0	9	410	670	26·39	188
D	Ancrum (Monteviot) Bertram Talbot, Esq.	5	3	0	250	673	26·49	183
D	St. Boswells (The Fens) J. J. Fairbairn, Esq.....	5	1	6	260	613	24·12	166
D	Kelso (Springwood Park)..... Mr. W. Chaplin	5	1	0	130	606	23·86	178
4.—TWEED—Ettrick & c. 10 sq. mi.								
D	Melrose (Asylum) .. <i>gauge</i> A .. Mr. A. C. Pattman	5	0	6	480	768	30·25	224
D	Melrose (Asylum) .. <i>gauge</i> B .. Mr. A. C. Pattman	5	1	0	480	744	29·31	224
	Old Melrose Gardens Mr. S. Brookes	5	1	2	400	743	29·26	179
5.—TWEED—Gala. 6 sq. mi.								
6.—TWEED—Leader & c. 25 sq. mi.								
D	Melrose (Drygrange) T. J. S. Roberts, Esq.	5	1	0	360	636	25·06	183
7.—TWEED, LOWER—Left Bank Tributaries. 25 sq. mi.								
D	Kelso (Broomlands) J. C. Scott, Esq.	5	1	0	193	596	23·46	185
M	Smalholm (Sandyknowe) Mr. J. E. Templeton.....	5	1	2	500	569	22·39	..
8.—ESK. 106 sq. mi.								

DIVISION XIII.—SOUTH-EASTERN COUNTIES.

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with ·01 in. or more.	
		Dia.	Height Ground	above Sea Level.	1919			
SELKIRK. (Area, 268 sq. mi.)		in.	ft.	in.	ft.	mm.	in.	
1.—TWEED—Teviot & c. 34 sq. mi.								
D Selkirk (Whitmuir Hall)	C. W. Dunlop, Esq.	5	1	0	800	745	29·33	170
2.—TWEED—Ettrick & c. 192 sq. mi.								
D Ettrick Manse	Rev. A. Horn, <i>per</i> S.M.S.	..	..	..	796	1209	47·60	226
M Edinburgh W.W. (Meggat Hd.)	1 Messrs. Leslie & Reid, C.E.	5	1	3	1496	1150	45·26	..
D Selkirk (The Hangingshaw)	Miss Johnstone of Alva	5	0	6	670	805	31·70	..
Selkirk (Lindean Reservoir)	S. Pittillo, Esq.	5	1	0	900	698	27·50	..
3.—TWEED, UPPER—Right Bank Tributaries. 17 sq. mi.								
4.—TWEED, UPPER—Left Bank Tributaries. 19 sq. mi.								
D Caddonfoot (Fairnilee)	Alex. F. Roberts, Esq.	5	1	0	450	774	30·49	169
Galashiels (The Peel Clovenfords)	W. R. Ovens, Esq.	6	1	6	500	841	33·12	..
5.—TWEED—Gala. 6 sq. mi.								
D Galashiels (Abbotsford Road)	Dr. J. W. Somerville	5	0	8	416	741	29·18	185
Galashiels (Stantling Craigs)	Mr. J. Murray	12	1	3	800	835	32·88	..
PEEBLES. (Area, 348 sq. mi.)								
1.—TWEED, UPPER—Right Bank Tributaries. 127 sq. mi.								
Edin. W.W. (Ravenscraig)	3 Messrs. Leslie & Reid, C.E.	5	1	3	2258	1522	59·93	..
M Edin. W.W. (Gameshope Loch)	4 Messrs. Leslie & Reid, C.E.	5	1	3	1860	1481	58·30	..
M Edin. W.W. (Loch Craig Head)	2 Messrs. Leslie & Reid, C.E.	5	1	0	2627	1421	55·93	..
D Edin. W.W. (Gameshope Farm)	5a Messrs. Leslie & Reid, C.E.	5	1	3	1538	1447	56·97	215
M Edin. W.W. (Gameshope Farm)	5 Messrs. Leslie & Reid, C.E.	8	1	3	1538	1364	53·72	..
D Edin. W.W. (Talla Linns Foot)	6a Messrs. Leslie & Reid, C.E.	5	1	3	966	1343	52·89	246
M Edin. W.W. (Talla Linns Foot)	6 Messrs. Leslie & Reid, C.E.	8	1	3	966	1297	51·06	..
D Edin. W.W. (Quarter Hill) No.	7a Messrs. Leslie & Reid, C.E.	5	1	3	1196	1075	42·31	230
M Edin. W.W. (Quarter Hill) No.	7 Messrs. Leslie & Reid, C.E.	8	1	3	1196	1005	39·55	..
D Edin. W.W. (Victoria Lodge)	8 Messrs. Leslie & Reid, C.D.	5	1	3	904	1070	42·12	222
M Edin. W.W. (Victoria Lodge)	8a Messrs. Leslie & Reid, C.E.	8	1	3	904	1036	40·80	..
2.—TWEED, UPPER—Left Bank Tributaries. 192 sq. mi.								
Stobo Castle	J. Ainslie, Esq.	5	1	0	590	947	37·29	208
Innerleithen (Glen)	Mr. A. Black	..	..	..	754	928	36·52	235
D Dolphinton (Castlecraig)	James Mann, Esq., <i>per</i> S.M.S.	..	..	..	820	858	33·77	199
D West Linton (Woodlea Cottage)	Messrs. Leslie & Reid, C.E.	5	1	0	801	827	32·55	227
D West Linton (Dalziel House)	Dr. J. R. Jeffrey	5	1	0	770	942	37·08	205
3.—ESK. 23 sq. mi.								
D Eddlestone (Portmore Res.)	.. Messrs. Leslie & Reid, C.E.	11	1	0	1000	850	33·46	203
M Eddlestone (Portmore Res.)	.. Messrs. Leslie & Reid, C.E.	11	1	0	1007	844	33·22	..
M Penicuik (N. Esk Reservoir)	Mr. W. Tod	11	0	6	1150	965	38·00	..
4.—CLYDE—Right Bank Tributaries. 6 sq. mi.								
BERWICK. (Area, 457 sq. mi.)								
1.—TWEED—Gala. 6 sq. mi.								
2.—TWEED—Leader. 92 sq. mi.								
Earlston (Cowdenknowes)	Mr. J. Smith, <i>per</i> S.M.S.	5	0	10	360	687	27·03	..
Lauder (Burncastle)	J. S. S. Turnbull, Esq.	5	1	0	900	941	37·04	..
M Earnsclough Burn (Blythe Rig)	J. S. S. Turnbull, Esq.	5	1	0	1200	1160	45·65	..
3.—TWEED, LOWER—Left Bank Tributaries. 115 sq. mi.								
Coldstream (Lochton)	J. Aitchison, Esq.	5	1	0	151	652	25·68	..
Coldstream (The Hirsell)	Mr. D. Black, <i>per</i> S.M.S.	5	1	0	94	659	25·93	..
D Swinton House	Snowdon A. E. Swinton, Esq.	5	1	2	200	638	25·10	198
D Swinton House	A. E. Swinton, Esq.	5	0	10	200	646	25·43	203
4.—TWEED—Whiteadder. 164 sq. mi.								
D Marchmont House	Mr. J. A. Wood	5	1	0	498	836	32·93	177
D Duns Castle	Mr. P. Smith	5	3	0	500	804	31·65	180
D Duns (Manderston)	Mr. F. J. Marshall	5	1	6	356	749	29·50	..
West Foulden	J. Hewat Craw, Esq.	5	1	0	240	626	24·64	..
5.—EAST COAST STREAMS. 80 sq. mi.								

DIVISION XIII.—SOUTH-EASTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
HADDINGTON. (Area, 267 sq. mi.)		in.	ft.	in.	ft.	mm.	in.	
1.—TWEED—Leader. 1 sq. mi.								
2.—TWEED—Whiteadder. 35 sq. mi.								
3.—EAST COAST STREAMS. 69 sq. mi.								
Garvald (Donolly Reservoir) ..	J. C. Miller, Esq., C.E.	5	1	6	600	945	37·19	..
Garvald (Thorner Reservoir) ...	J. C. Miller, Esq., C.E.	5	1	6	700	690	27·18	..
Prestonkirk (Ninewar)	W. S. Curr, Esq., <i>per</i> S.M.S.	5	1	0	120	689	27·11	..
Barnsness Lighthouse	Board of Northern Lights ..	..	..	..	120	556	21·88	..
4.—TYNE & C. 114 sq. mi.								
LammermuirH.(StobshielRes.)A	J. Ross, Esq., C.E.	5	1	0	998	762	30·01	..
LammermuirH.(StobshielRes.)B	J. Ross, Esq., C.E.	5	1	0	950	956	37·64	..
d Prestonkirk (Knowes)	Mr. J. Rattray	5	1	0	78	744	29·31	174
Prestonkirk (Smeaton)	Sir A. Buchan-Hepburn ..	7	7	10	100	749	29·48	165
5.—FIRTH OF FORTH. 48 sq. mi.								
d Gullane (The Warren)	Late H. E. Meek, Esq.	8	1	0	115	716	28·20	206
d North Berwick Reservoir	J. C. Miller, Esq., C.E. ...	5	1	6	150	713	28·06	177
6.—INSULAR.								
MIDLOTHIAN. (Area, 369 sq. mi.)								
1.—TWEED—Gala. 68 sq. mi.								
Stow (Cragdale)	A. L. Pringle, Esq.	5	0	6	642	888	34·98	..
2.—TYNE. 28 sq. mi.								
3.—FIRTH OF FORTH. 3 sq. mi.								
d Oxenfoord Castle Gardens	Mr. A. C. Scott	5	1	2	452	817	32·16	180
d Musselburgh (Levenhall)	Miss C. Husband	5	1	0	15	639	25·15	201
4.—ESK. 116 sq. mi.								
m Moorfoot Hills (Bowbate)	Messrs. Leslie & Reid, C.E.	11	0	6	1260	1232	48·51	..
d Moorfoot Hills (Gladhouse Res.)	Messrs. Leslie & Reid, C.E.	5	0	8	915	968	38·09	232
m Moorfoot Hills (Gladhouse Res.)	Messrs. Leslie & Reid, C.E.	8	1	0	915	926	36·45	..
d Moorfoot Hills (Rosebery)	Messrs. Leslie & Reid, C.E.	4	0	9	750	880	34·64	221
m Moorfoot Hills (Rosebery)	Messrs. Leslie & Reid, C.E.	11	0	9	750	823	32·40	..
d Moorfoot Hills (Edgelaw)	Messrs. Leslie & Reid, C.E.	4	0	10	654	871	34·29	220
m Moorfoot Hills (Edgelaw)	Messrs. Leslie & Reid, C.E.	11	0	10	654	833	32·80	..
d Penicuik (Brunstane Cottage)	Messrs. Leslie & Reid, C.E.	5	1	0	800	1009	39·73	229
d Gorebridge (Deanbank)	A. Wilson Spalding, Esq. ...	5	1	0	500	798	31·42	262
Pentland Hills (Harehill)	Messrs. Leslie & Reid, C.E.	11	1	7	1297	977	38·47	..
d Pentland Hills (Martyrs Cross)	Messrs. Leslie & Reid, C.E.	5	1	0	750	951	37·45	221
d Pentland Hills (Loganlea)	Messrs. Leslie & Reid, C.E.	5	1	0	811	892	35·10	195
m Pentland Hills (Loganlea)	Messrs. Leslie & Reid, C.E.	8	1	4	813	841	33·10	..
d Pentland Hills (Glencorse Fil.)	Messrs. Leslie & Reid, C.E.	5	1	0	638	907	35·72	203
m Pentland Hills (Glencorse Fil.)	Messrs. Leslie & Reid, C.E.	11	1	0	638	1000	39·35	..
d Pentland Hills (Glen Cottage)	Messrs. Leslie & Reid, C.E.	5	1	2	739	958	37·70	202
m Pentland Hills (Glen Cottage)	Messrs. Leslie & Reid, C.E.	8	1	2	738	979	38·55	..
d Milton Bridge (Bush)	J. S. Abernethy, Esq.	5	1	0	600	909	35·79	199
d Newbattle (Public School)	W. Fowler, Esq.	5	4	3	300	720	28·33	..
d Dalkeith Gardens	Mr. J. Whytock	5	1	0	144	682	26·83	172
Musselburgh (Pinkieburn)	Mr. G. Wright, <i>per</i> S.M.S. ...	..	..	..	50	643	25·33	..
5.—ALMOND & C. 153 sq. mi.								
d Pentland Hills (Crosswood)	Messrs. Leslie & Reid, C.E.	5	1	0	950	955	37·59	173
m Pentland Hills (Crosswood)	Messrs. Leslie & Reid, C.E.	8	1	0	950	939	36·96	..
d Pentland Hills (Harperrig)	Messrs. Leslie & Reid, C.E.	5	1	0	900	996	39·21	237
m Pentland Hills (Harperrig)	Messrs. Leslie & Reid, C.E.	8	1	0	900	988	38·90	..
d Pentland Hills (Morton)	Messrs. Leslie & Reid, C.E.	5	1	0	749	922	36·28	241
d West Calder (Addiewell)	Young's Oil Co., Ltd.	12	24	3	620	776	30·54	158
d Balerno (Cockburn Hill)	R. Cross, Esq.	5	1	0	767	911	35·87	172
d Mid-Calder (Calder Hall)	T. A. F. Hog, Esq.	5	1	2	400	647	25·49	194
d Pentland Hills (Harlaw Res.)	Messrs. Leslie & Reid, C.E.	5	1	0	800	825	32·47	207
m Pentland Hills (Harlaw Res.)	Messrs. Leslie & Reid, C.E.	11	0	9	800	808	31·82	..
Pentland Hills (Bonally Res.)	Messrs. Leslie & Reid, C.E.	11	0	6	1112	853	33·58	..

DIVISION XIII.—SOUTH-EASTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.	1919			
MIDLOTHIAN—(con.).		in.	ft.	in.	ft.	mm.	in.	
5.—ALMOND & C.—(con.)								
d Pentland Hills(ClubbiudeanRs.)	Messrs. Leslie & Reid, C.E.	4	0	6	773	703	27·69	..
m Pentland Hills(ClubbiudeanRs.)	Messrs. Leslie & Reid, C.E.	11	0	9	733	738	29·07	..
d Pentland Hills (Swanston)	Messrs. Leslie & Reid, C.E.	5	0	6	550	681	26·81	186
m Pentland Hills (Swanston)	Messrs. Leslie & Reid, C.E.	11	0	6	550	743	29·24	..
d Pentland Hills (Fairmilehead)	Messrs. Leslie & Reid, C.E.	5	1	0	590	739	29·08	163
d Colinton (Northfield)	Mr. J. C. Wright <i>per</i> S.M.S.	..	..	..	403	701	27·61	181
d Pentland Hills (Firhill Tank)	Messrs. Leslie & Reid, C.E.	5	0	6	412	719	28·30	192
d Liberton (Alnwick Hill)	Messrs. Leslie & Reid, C.E.	5	1	0	407	705	27·76	181
m Liberton (Alnwick Hill)	Messrs. Leslie & Reid, C.E.	8	1	0	407	696	27·41	..
Liberton (College Garden)	A. McCallum, Esq. <i>per</i> S.M.S.	5	1	0	190	677	26·67	168
d Liberton (The Inch)	(R) Gen. R. Gordon Gilmour, C.B.	8	2	9	60	641	25·25	177
d Edinburgh (Royal Observatory)	Prof. R. A. Sampson, F.R.S.	8	1	0	442	646	25·44	189
Edinburgh (Napier Road)	John Harrison, Esq., C.B.E.	5	1	2	230	643	25·30	175
d Edinburgh (The Academy)	M. McC. Fairgrieve, Esq.	5	1	0	68	613	24·14	..
d Edinburgh (Univ. Engin. Lab.)	Prof. T. Hudson Beare	5	1	0	227	652	25·68	195
m Edinburgh (Univ. Engin. Lab.)	Prof. T. Hudson Beare	5	1	0	227	648	25·52	..
d Edinburgh (St. Roque)	H. B. Waugh, Esq. <i>per</i> S.M.S.	..	..	..	270	691	27·22	188
d Edinburgh (City Observatory)	Sir W. Peck	8	1	0	348	529	20·81	175
Edinburgh (Charlotte Square)	Messrs. Leslie & Reid, C.E.	11	1	6	190	524	20·64	..
Edinburgh (Charlotte Square)	Messrs. Leslie & Reid, C.E.	12	63	0	300	483	19·00	..
d Leith (Starbank Park)	Meteorological Office	8	1	0	30	651	25·61	184
Leith (Navigation School)	J. Bolam, Esq., <i>per</i> S.M.S.	5	0	5	76	616	24·24	..
d Davidson's Mains (Broomfield)	Mr. C. Comfort	5	0	10	42	588	23·17	151

6.—CLYDE—Right Bank Tributaries. 1 sq. mi.

LINLITHGOW. (Area, 120 sq. mi.)

1.—ALMOND & C. 60 sq. mi.

m Uphall	No. 7. Messrs. Leslie & Reid, C.E.	8	1 4	790	737	29·03
m Uphall	No. 8. Messrs. Leslie & Reid, C.E.	8	1 4	577	744	29·28
m Uphall	No. 6. Messrs. Leslie & Reid, C.E.	8	1 4	680	709	27·91
m Uphall	No. 3. Messrs. Leslie & Reid, C.E.	8	1 2	711	738	29·05
d Uphall (Bangour Asylum)	Col. J. Keay	5	1 0	587	692	27·24
d Uphall	Young's Oil Co., Ltd.	8	0 10	380	745	29·34
d Dalmeny House	Mr. D. T. Johnston	5	0 8	55	618	24·31
d Bathgate (Filters)	No. 1. A. L. Reid, Esq.	5	0 9	640	734	28·89
Bathgate (Petershill R.)	No. 2. A. L. Reid, Esq.	5	0 9	710	709	27·92
Bathgate (Bellencriff R.)	No. 3. A. L. Reid, Esq.	5	0 9	730	680	26·78

2.—FORTH—Right Bank Tributaries. 59 sq. mi.

m Torphichen (Lochcote)	John Louden, Esq.	5	0 4	550	739	29·08
m Carribber Reservoir	John Louden, Esq.	5	0 4	400	712	28·03
d Linlithgow (Grange)	H. M. Cadell, Esq.	5	0 6	430	675	26·58
d Linlithgow (Preston House)	Mr. C. Blair	5	1 0	380	719	28·30
d Linlithgow Academy	J. Beveridge, Esq.	5	1 0	170	766	30·17
m Linlithgow Academy	J. Beveridge, Esq.	5	1 0	170	774	30·48
Queensferry (Hopetoun)	Young's Oil Co., Ltd.	8	7 10	327	615	24·21
Bo'ness (Neidpath Cottage)	Mr. J. Grant	5	3 0	200	602	23·71

3.—CLYDE—Right Bank Tributaries. 1 sq. mi.

DIVISION XIV.—SOUTH-WESTERN COUNTIES.

LANARK. (Area, 881 sq. mi.)

1.—TWEED, UPPER—Left Bank Tributaries. 20 sq. mi.

d Biggar	J. Eunson, Esq.	8	1 0	691	811	31·93
d Biggar (Cambus Wallace)	T. W. M. Watson, Esq.	6	0 6	748	805	31·71

2.—ALMOND. 14 sq. mi.**3.—FORTH—Right Bank Tributaries. 9 sq. mi.**

m Airdrie (Forrestburn Reservoir)	J. Frew, Esq.	8	1 6	722	853	33·60
-----------------------------------	---------------	---	-----	-----	-----	-------

DIVISION XIV.—SOUTH-WESTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with .01 in. or more.	
		Diam.	Height Ground	above Sea Level.	1919			
LANARK—(con.).		in.	ft.	in.	ft.	mm.	in.	
4.—GLYDE—Right Bank Tributaries. 378 sq. mi.								
M Coulter Reservoir No. 2. W. Ross, Esq., C.E.		11	1	0	..	1092	43·01	..
M Coulter Reservoir No. 1. W. Ross, Esq., C.E.		11	1	0	..	1098	43·25	..
Lamington (Cowgill Reservoir) J. Chisholm, Esq., C.E.		5	1	0	970	1047	41·23	..
M Biggar (Shieldhill) Miss Dunlop		5	1	2	850	784	30·87	..
D Biggar (Shieldhill) Miss Dunlop		5	on roof	850	..	700	27·55	215
Lanark (Rhyber Lodge) R. Swann, Esq.		6	3	0	650	721	28·40	..
d Cleghorn Gardens Mrs. Elliott Lockhart		5	0	6	720	829	32·64	..
Carlukie (Coldstream Reservoir) W. Ross, Esq., C.E.		11	1	0	800	824	32·45	..
Wishaw (Orchardlea) T. Swinnerton, Esq.		6	1	6	450	760	29·90	..
Glasgow (Tollcross Park) J. Whitton, Esq.		5	0	6	85	827	32·56	185
Glasgow Green J. Whitton, Esq.		5	0	6	35	739	29·08	163
Glasgow (Alexandra Park) J. Whitton, Esq.		5	0	6	141	797	31·38	210
D Glasgow Observatory (R) J. Connell, Esq.		11	2	0	182	786	30·95	191
Glasgow (Botanic Gardens) J. Whitton, Esq.		5	0	6	110	732	28·82	169
Glasgow (Kelvingrove Park) J. Whitton, Esq.		5	0	6	48	723	28·47	156
Glasgow (Victoria Park) J. Whitton, Esq.		5	0	6	30	762	30·02	195
Glasgow (Ruchill Park) J. Whitton, Esq.		5	0	6	222	742	29·23	174
Glasgow (Springburn Park) J. Whitton, Esq.		5	0	6	352	799	31·46	217
D Glasgow (Springburn Park) Meteorological Office		8	1	0	351	796	31·32	216
D Airdrie (Broomknoll Street) J. Chisholm, Esq., C.E.		5	1	0	402	778	30·63	175
D Airdrie (Hillend Reservoir) Mr. W. A. Ritchie		5	3	8	620	795	31·31	187
Clarkston (Roughrigg Res.) J. Chisholm, Esq., C.E.		5	1	0	661	803	31·60	..
D Gartcosh (Gartloch Hospital) Mr. James McEwen		5	1	1	291	824	32·43	208
5.—GLYDE—Left Bank Tributaries. 448 sq. mi.								
Leadhills J. McFarlane Esq.		5	1	1	1310	1516	59·69	..
Strathaven (Glengavel Res.) J. McMillan, Esq., C.E.		5	1	0	880	1117	43·99	189
Strathaven (Dungavel) J. D. Wallace, Esq.		5	1	0	789	1307	51·46	187
Strathaven (Kype Reservoir) W. H. Purdie, Esq.		11	3	0	941	1057	41·60	170
Strathaven (Dunside Res.) J. McMillan, Esq., C.E.		5	..	..	1010	1087	42·79	178
D Strathaven (East Overton Ho.) H. Lee Dykes, Esq.		5	1	0	700	927	36·48	190
D Stonehouse Sanatorium James Watson, Esq.		5	1	0	526	856	33·72	203
Stonehouse (Glassford Filters) J. McMillan, Esq., C.E.		5	..	..	775	865	34·05	201
d Hamilton W. W. (Townhill) W. H. Purdie, Esq.		7	1	0	436	768	30·25	..
D Hamilton (Laghstone Hall) Rev. T. M. B. Paterson		5	1	9	260	748	29·46	162
Busby (Thornton Hall) A. H. Bishop, Esq.		5	1	0	441	817	32·18	..
D Carmunnock (Carnbooth) R. Robertson, Esq., C.E.		5	1	0	365	850	33·48	203
Cambusland (Greenlees Filters) J. McMillan, Esq., C.E.		5	..	..	322	851	33·50	174
Glasgow (Bellahouston Park) J. Whitton, Esq.		5	0	6	160	725	28·53	182
Glasgow (Elder Park) J. Whitton, Esq.		5	0	6	40	814	32·06	158
6.—IRVINE. 2 sq. mi.								
7.—AYR. 1 sq. mi.								
8.—NITH. 2 sq. mi.								
9.—ANNAN. 7 sq. mi.								
AYR. (Area, 1135 sq. mi.)								
1.—GLYDE—Left Bank Tributaries. 20 sq. mi.								
D Glengarnock (Chemical Works) A. Shanks, Esq.		8	1	6	115	1253	49·33	200
2.—FIRTH OF GLYDE. 60 sq. mi.								
Largs (Curling Hall) Mrs. J. Clark-Neill	871	34·30	..
D Skelmorlie (West Park) J. Wilkinson, Esq.		5	1	6	150	1279	50·36	184
Shaws W.W. (Kelly Dam) J. Macalister, Esq., C.E.		6	1	0	640	1349	53·10	..
Shaws W.W. (Knockencorsan) J. Macalister, Esq., C.E.		6	1	0	1040	1382	54·40	..
3.—IRVINE & C. 283 sq. mi.								
D Ayr (Collier Row, St. Quinox) Allan Stevenson, Esq.		5	1	6	93	789	31·08	160
Troon (Collenan Res.) Adam Simpson, Esq.		11	0	10	203	569	22·40?	..
D Irvine (Gables) H. W. Aitken, Esq.		5	1	0	12	960	37·79	169
D Kilmarnock (Agricultural Coll.) Prof. R. A. Berry		8	1	2	80	895	35·25	185
Kilmarnock (North Craig Res.) R. Blackwood, Esq.		12	1	0	319	920	36·20	..
D Kilwinning (Eglington Castle) Mr. W. Priest		5	1	0	50	954	37·57	153

DIVISION XIV.—SOUTH-WESTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with ·01 in or more.
		Diam.	Height Ground	above Sea Level.	1919		
		in.	ft. in.	ft.	mm.	in.	
AYR.—(con.).							
3.—IRVINE & C.—(con.).							
D Stevenston (Greenhead Filters)	Gilbert Christie, Esq., C.E.	5	1 0	186	931	36·66	194
D Dairy (Blair Gardens)	Mr. J. Fairley	5	1 0	155	962	37·89	177
D Dalry (Munnoch Reservoir)	Gilbert Christie, Esq., C.E.	5	1 0	325	1140	44·87	189
D Dalry (Caaf Reservoir)	Gilbert Christie, Esq., C.E.	5	1 3	515	1200	47·23	189
D Dalry W. W. (Filters)	Mr. W. Wightman	5	1 0	320	1118	44·02	198
M Dalry W. W. (Thirdpart)	Mr. W. Wightman	5	1 0	560	1187	46·74	..
D Dalry (Camphill Reservoir)	James Lee, Esq., C.E.	12	1 6	611	1382	54·40	..
Beith (Filter Station)	W. C. Dale, Esq.	5	6 0	384	977	38·46	152
4.—AYR. 222 sq. mi.							
Ayr (Glendrishgaig)	Miss Jean Murdoch	10	3 0	42	912	35·91	..
D Ayr Cemetery	J. Young, Esq., C.E.	5	1 0	40	822	32·36	153
d Muirkirk (Kannshill)	Dugald Baird, Esq.	5	2 0	750	810	31·89	..
5.—DOON. 119 sq. mi.							
Loch Finlas	J. Young, Esq., C.E.	5	1 0	849	1126	44·34	..
D Dalmellington (Benwhat)	A. Gillespie, Esq.	5	.. ..	1177	1144	45·05	181
M Maybole (Knockdon Farm)	A. Cross, Esq.	5	1 6	352	888	34·98	..
D Patna (Kerse Filters)	W. Gray, Esq., C.E.	11	1 0	743	1006	39·60	213
D Ayr (Doonholm)	J. Kennedy, Esq.	5	1 0	90	944	37·17	174
6.—GULZEAN BAY & C. 32 sq. mi.							
Turnberry (Lighthouse)	Board of Northern Lights	..	.. ..	..	553	21·78	165
Turnberry (Hotel)	J.H.Thomas, Esq., per S.M.S.	5	1 0	97	702	27·64	155
7.—GIRVAN. 105 sq. mi.							
Girvan (Glendoune Gardens)	Mr. J. Simons	5	1 0	100	1006	39·61	..
Girvan (Sunnyside, Golf Course)	D. Macdonald, Esq.	5	1 0	27	901	35·47	..
Loch Bradan	Adam Simpson, Esq.	11	1 0	991	1137	44·78	..
8.—STINCHAR & C. 155 sq. mi.							
Colmonell (Knockdolian)	Mr. A. Ogg	5	1 0	170	1016	40·01	190
D Girvan (Pinmore)	Miss Hamilton	5	0 5	207	1123	44·22	200
Barr Manse	Rev. G. Dods	5	1 0	330	1022	40·22	..
9.—LOCH RYAN. 12 sq. mi.							
10.—LUCE BAY. 15 sq. mi.							
Ballantrae (Lagafater Lodge)	C. R. Boulton, Esq.	5	0 11	792	1468	57·81	164
11.—GREE. 40 sq. mi.							
12.—DEE. 9 sq. mi.							
13.—NITH. 62 sq. mi.							
D New Cumnock (Ayr Sanator'm)	Dr. E. E. Prest	5	1 0	850	1167	45·94	218
D New Cumnock (Power Station)	James Jack, Esq.	5	1 0	764	1236	48·68	169
14.—INSULAR. 1 sq. mi.							
Ailsa Craig	Board of Northern Lights	3	5 0	..	688	27·09	..
RENFREW (Area, 241 sq. mi.)							
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	1488	58·58	..
GorbalsDistWW(NetherCairn)	J. R. Sutherland, Esq., C.E.	12	0 5	700	1185	46·65	..
GorbalsDistW.W.(Middleton)	J. R. Sutherland, Esq., C.E.	12	0 5	550	1112	43·80	..
GorbalsDist.W.W.(Ryat Lynn)	J. R. Sutherland, Esq., C.E.	8	0 5	310	1000	39·35	..
GorbalsDist.WW(Waulk Glen)	J. R. Sutherland, Esq., C.E.	12	0 5	280	970	38·20	..
Paisley W.W. (Muirhead)	James Lee, Esq., C.E.	12	1 0	482	1238	48·76	..
Paisley W.W. (Springside)	James Lee, Esq., C.E.	12	1 0	532	1419	55·87	..
PaisleyWW(BackThornleymuir)	James Lee, Esq., C.E.	12	1 0	646	996	39·23	..
Paisley W.W. (Staneley)	James Lee, Esq., C.E.	12	1 0	190	845	33·26	..
Howwood (Midton House)	Andrew McNab, Esq.	5	1 6	231	1360	53·54	189
Pollokshaws (Rouken Glen)	J. Whitton, Esq.	5	0 6	156	946	37·24	205

DIVISION XIV.—SOUTH-WESTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES,	Rain Gauge.			Depth of Rain.		Days with ·01 in or more	
		Diam.	Height Ground	above Sea Level.	1919			
RENFREW—(con.).		in.	ft.	in.	ft.	mm.	in.	
2.—CLYDE—Left Bank Tributaries.—(con.)								
D Pollokshaws (Pollok House) . . .	Sir J. Stirling Maxwell, Bt.	5	1	0	45	784	30·85	174
D Glasgow (Queen's Park)	J. Whitton Esq.	8	0	9	114	729	28·70	160
D Glasgow (Maxwell Park)	J. Whitton, Esq.	5	0	6	69	800	31·51	182
D Kilbarchan (Milliken Park) . . .	M. Douglas Anderson, Esq. .	5	1	0	85	1072	42·20	184
D Kilbarchan (Glentyan) . . . (R.)	R. H. Hunter, Esq.	8	3	9	285	1203	47·37	204
D Paisley (The Coats Observatory) .	Observatory Committee . .	8	1	0	107	871	34·28	190
D Houston Manse	Rev. Geo. Muir, <i>per</i> S.M.S. .	5	1	0	103	1056	41·57	191
Shaws W.W. (Duchall Moor)	J. Macalister, Esq., C.E. . .	6	1	0	1150	1341	52·80	..
Shaws W.W. (Creuch Hill)	J. Macalister, Esq., C.E. . .	6	1	0	1350	1372	54·00	..
Shaws W.W. (Green Water)	J. Macalister, Esq., C.E. . .	6	1	0	788	1405	55·30	..
Kilmalcolm	Mr. R. Blackwood	5	1	0	300	1182	46·53	..
D Shaws W.W. (Gryfe Reservoir) .	J. Macalister, Esq., C.E. . .	6	1	0	640	1334	52·50	229
D Shaws W.W. (Mansfield)	J. Macalister, Esq., C.E. . .	5	1	0	573	1318	51·91	229
Shaws W.W. (Darndaff Moor) . . .	J. Macalister, Esq., C.E. . .	5	1	0	850	1241	48·85	..
Bishopton (Ingliston)	D. Cross, Esq.	5	1	0	195	934	36·79	..
3.—FIRTH OF CLYDE. 34 sq. mi.								
Shaws W.W. (Largs Road)	J. Macalister, Esq.	5	1	0	910	1160	45·68	..
w Dougliehill Filters (Pt. Glas. W.W.)	James Murray, Esq.	8	1	6	540	1103	43·44	..
w Parkhill Filters (Pt. Glas. W.W.) .	James Murray, Esq.	8	1	6	275	1035	40·76	..
D Shaws W.W. (Compens. Res.) . . .	J. Macalister Esq., C.E. . .	5	1	0	600	1398	55·03	212
D Shaws W.W. (Loch Thom)	J. Macalister, Esq., C.E. . .	5	1	0	643	1391	54·76	212
Shaws W.W. (Shielhill)	J. Macalister, Esq., C.E. . .	6	1	0	962	1494	58·80	..
Shaws W.W. (Spango Burn)	J. Macalister, Esq., C.E. . .	6	1	0	757	1641	64·60	..
D Shaws W.W. (Hole Glen)	J. Macalister, Esq., C.E. . .	5	1	0	603	1338	52·69	247
D Shaws W.W. (New Yett's Dam) . .	J. Macalister, Esq., C.E. . .	5	1	0	800	1312	51·66	247
D Greenock (Prospect Hill)	J. Macalister, Esq., C.E. . .	5	1	0	200	1338	52·67	216
M Langbank (East Bank Gardens) .	A. Cross, Esq.	5	2	6	150	982	38·64	..

4.—IRVINE. 10 sq. mi.

DIVISION XV.—WEST MIDLAND COUNTIES.

DUMBARTON. (Area, 270 sq. mi.).

1.—FORTH—Right Bank Tributaries. 10 sq. mi.**2.—FIRTH OF CLYDE & COWAL. 52 sq. mi.**

D Cardross (Kilmahew)	Capt. Claud A. Allan	5	1	0	130	909	35·80	188
Helensburgh (Ferniegair)	H. M. Ross, Esq., C.E. . . .	8	1	0	22	1080	42·54	204
D Helensburgh (Valve House) . . .	H. M. Ross, Esq., C.E. . . .	5	1	0	293	1119	44·05	204
Garlochhead (Aikenshaw)	Mr. W. S. Turnbull	6	1	0	32	1245	49·00	..
D Arrochar (Glen Loin)	Mrs. Little	5	1	0	50	1598	62·91	244

3.—CLYDE—Leven. 149 sq. mi.

Dumbarton (Leven Shipyard) . . .	Messrs. W. Denny & Bros. .	5	1	0	9	940	36·99	167
D Renton (Carman Filters)	Mr. Chas. Brown	8	4	0	292	959	37·75	180
D Glen Finlas Reservoir	No. 7 George Beaton, Esq. . .	12	0	9	820	1667	65·63	210
M Glen Finlas Reservoir	No. 1 George Beaton, Esq. . .	5	0	9	820	1502	59·12	..
M Glen Finlas Reservoir	No. 2 George Beaton, Esq. . .	5	0	9	1200	1430	56·32	..
M Glen Finlas Reservoir	No. 3 George Beaton, Esq. . .	5	0	9	1600	1610	63·39	..
M Glen Finlas Reservoir	No. 4 George Beaton, Esq. . .	5	0	9	2000	1456	57·33	..
M Glen Finlas Reservoir	No. 5 George Beaton, Esq. . .	5	0	9	1600	1329	52·34	..
M Glen Finlas Reservoir	No. 6 George Beaton, Esq. . .	5	0	9	1200	1281	50·45	..

4.—CLYDE—Right Bank Tributaries. 59 sq. mi.

D Drumchapel (Wasdale)	F. C. Thomson, Esq.	5	1	0	49	748	29·43	200
Milngavie (Douglaston)	Major R. M. Ker	5	1	0	157	898	35·36	191
D Duntocher (Cochno Filters) . . .	T. L. Rae, Esq., C.E.	5	1	0	400	871	34·30	186
Kilpatrick Hills (Greenside Res.) .	T. L. Rae, Esq., C.E.	5	1	0	876	1126	44·32	..
Kilpatrick Hills (Loch Cochno) . .	T. L. Rae, Esq., C.E.	5	1	0	909	1099	43·27	..
Kilpatrick Hills (Jaw Reservoir) .	T. L. Rae, Esq., C.E.	5	1	0	912	1030	40·53	..

DIVISION XV.—WEST MIDLAND COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with .01 in. or more
		Diam.	Height Ground	above Sea Level.		1919		
STIRLING. (Area, 463 sq. mi.)		in.	ft.	in.	ft.	mm.	in.	
1.—FORTH—Right Bank Tributaries. 263 sq. mi.								
d Linlithgow (Muiravonside Ho)	Mr. C. Leeder.	5	4	8	175	748	29·47	..
d Polmont (Vellore) (R) W. Brown, Esq.		8	0	8	320	715	28·14	186
d Bonnybridge (Road Exper. Stat.) W. Ballantine, Esq.		5	1	3	150	815	32·09	148
d Falkirk (Inglewood, Laurieston) W. Ballantine, Esq.		5	1	3	133	750	29·52	150
d Falkirk (Westbank) Garden. A. Nimmo, Esq.		5	0	9	75	727	28·63	181
M Falkirk (Westbank) Lawn. A. Nimmo, Esq.		5	0	9	105	698	27·50	..
Falkirk (Kerse) C. Brown, Esq.		8	1	0	18	643	25·30	..
Little Denny Reservoir C. Massie, Esq.		8	1	0	326	882	34·73	..
Little Denny Filters C. Massie, Esq.		8	1	0	268	872	34·34	..
Kilsyth (Faughlin Res.) C. Massie, Esq.		8	1	0	707	1182	46·55	..
Earlsburn Reservoir C. Massie, Esq.		8	1	0	1202	1031	40·59	..
d Stirling (Touch W.W.) No. 3 A. H. Goudie, Esq.		8	1	9	759	985	38·78	184
d Stirling (Touch W.W.) No. 2 A. H. Goudie, Esq.		8	1	4	707	948	37·34	184
d Stirling (Touch Res.) No. 1A. H. Goudie, Esq.		8	1	0	455	983	38·71	184
Stirling (Touch House) Sir D. A. S. Steuart, Bart.		5	1	0	35	965	38·00	..
Stirling (Meteorological Station) J. Fyfe, Esq., C.S.I.		5	1	0	74	740	29·13	165
Stirling (Victoria Place) R. Kidston, Esq., F.R.S.		5	2	10	100	740	29·13	..
Gargunock House C. Stirling, Esq.		5	1	6	85	780	30·73	..
d Kippen (Arngomery) Mr. P. McCowan		5	4	6	150	862	33·94	..
w Duchray Valley (Ben Lomond) J. R. Sutherland, Esq., C.E.		8	0	6	1800	1268	49·90	..
d Duchray Valley (Glen Dhu) J. R. Sutherland, Esq., C.E.		8	1	0	500	1731	68·15	175
d Duchray Valley (Comer) J. R. Sutherland, Esq., C.E.		8	1	0	600	1777	69·95	173
w Duchray Valley (Achaidd Burn) J. R. Sutherland, Esq., C.E.		8	1	0	1200	1820	71·65	..
w Duchray Val. (Hd. of Main Stream) J. R. Sutherland, Esq., C.E.		8	1	0	950	1780	70·10	..
2.—FORTH—Teith. 5 sq. mi.								
d Stronachlachlar (Invergyle) J. R. Sutherland, Esq., C.E.		8	1	0	376	1675	65·95	187
3.—FORTH—Left Bank Tributaries. 15 sq. mi.								
d Bridge of Allan (The Lea) Laurence Pullar, Esq.		5	1	0	80	728	28·68	190
4.—CLYDE—Leven. 128 sq. mi.								
Strathblane (Blane field) J. R. Sutherland, Esq., C.E.		8	1	0	250	1083	42·65	..
d Killearn (Achnagowan) Miss A. L. Guthrie-Smith		5	0	10	332	1136	44·71	..
w Loch Arklet (Corrie hichon) J. R. Sutherland, Esq., C.E.		8	0	6	870	1700	66·95	..
w Loch Arklet (Corrie arklet) J. R. Sutherland, Esq., C.E.		8	0	6	950	1735	68·30	..
5.—CLYDE—Right Bank Tributaries. 52 sq. mi.								
d Torrance (Glenorchard) Miss E. Bartholomew		5	1	6	200	822	32·37	..
Strathblane (Mugdock Res.) J. R. Sutherland, Esq., C.E.		8	0	6	320	955	37·60	..
M Strathblane (Craigbarnet) Capt. Miller Stirling, R.N.		5	0	6	300	1087	42·80	..
d Kilsyth (Innsbridge) J. I. Little, Esq.		5	11	0	202	1161	45·72	177
Kilsyth (Corrie Reservoir) J. I. Little, Esq., per S.M.S. . . . .		..	..	..	..	1074	42·30	..
BUTE. (Area, 218 sq. mi.)								
1.—ISLE OF BUTE. 50 sq. mi.								
d Rothesay (Ardencraig) J. Davidson, Esq.		5	1	0	201	1241	48·84	254
Port Bannatyne (Ettrickdale) Col. M. R. Gray Buchanan		5	1	0	190	1151	45·32	235
2.—CUMBRAES. 4 sq. mi.								
d Great Cumbrae (Millport) R. Elmhurst, Esq.		5	1	0	12	974	38·34	221
3.—ARRAN. 164 sq. mi.								
Pladda Board of Northern Lights . . . . .		..	..	..	130	1024	40·30	179
Holy Island (Pillar Rock) Board of Northern Lights		3	0	3	46	906	35·65	..
d Shiskine Schoolhouse R. T. Irvine, Esq.		5	1	0	107	1174	46·20	208
d Dougarie Lodge David Reside, Esq.		5	1	0	10	1187	46·74	208
ARGYLL. (Area, 3181 sq. mi.)								
1.—TAY—Tummel. 36 sq. mi.								
2.—SOUND OF ARISAIG, SOUND OF MULL & C. 317 sq. mi.								
Morvern (Ardtornish) G. Craig Sellar, Esq.		5	1	0	48	1813	71·39	246
Morvern (Drimnin) Mrs. Gordon		5	1	0	225	1371	53·97	251
d Loch Sunart (Glenborrodale) T. J. A. Armstrong, Esq.		5	0	2	60	1606	63·24	232
Ardnamurchan Board of Northern Lights		8	4	3	180	1120	44·08	..

DIVISION XV.—WEST MIDLAND COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with .01 in. or more.
		Diam.	Height above Ground	above Sea Level.		1919		
ARGYLL—(con.).		in.	ft.	in.	ft.	mm.	in.	
3.—LOCH LINNHE—Right Bank Tributaries. 139 sq. mi.								
D Morvern (Kingairloch)	G. Herbert Strutt, Esq.	5	1	0	40	2225	87·61	207
D Ardgour House	Capt. Maclean of Ardgour	5	0	10	60	2211	87·04	248
4.—LOCH LINNHE—Left Bank Tributaries. 165 sq. mi.								
Loch Crean (Barcaldine)	G. Haig, Esq.	5	0	8	50	1603	63·12	180
Duror (The Rectory)	Rev. E. J. Benwell	5	1	0	120	1630	64·19	206
D Duror (Achara)	Mr. W. D. Stewart	5	1	2	45	1541	60·66	212
Glenleven(BlackwaterHouse)	4 British Aluminium Co. Ltd.	8	1	0	1069	1504	59·23	..
D Glenleven(BlackwaterDam,S.)	2 British Aluminium Co. Ltd.	8	1	0	1072	1641	64·62	251
D Glenleven (Kinlochleven)	No. 1 British Aluminium Co. Ltd.	8	1	0	140	1420	55·89	241
Corran Lighthouse	Board of Northern Lights .	3	1	6	38	1933	76·12	220
5.—LOCH ETIVE. 197 sq. mi.								
D Connel Ferry (Ach-na-cloich)	W.D.Fordyce,Esq., <i>pr</i> S.M.S. . .	..	..	..	..	1368	53·85	199
D Glen Etive	W.D.Fordyce,Esq., <i>pr</i> S.M.S. . .	..	..	..	50	2210	87·01	185
6.—LOCH ETIVE—Loch Awe. 319 sq. mi.								
D Loch Awe (Ford)	J. Boyd, Esq.	8	1	0	148	1744	68·65	241
D Loch Awe (Dalavich)	J. Boyd, Esq.	8	1	0	260	1942	76·46	240
D Dalmally (Manse of Glenorchy)	Rev. Farquhar MacRae . .	5	1	0	150	1817	71·55	214
7.—FIRTH OF LORNE. 112 sq. mi.								
D Kilmelfort (Arduaine)	J. A. Campbell, Esq.	5	0	10	23	1487	58·53	214
D Oban	Dr. E. Baily	8	1	0	17	1170	46·07	217
Oban Reservoir	"Oban Times"	..	..	..	..	1326	52·21	..
8.—SOUND OF JURA. 163 sq. mi.								
D Lochgilphead (Poltalloch)	Mr. D.S. Melville, <i>per</i> S.M.S. .	5	1	2	135	1423	56·02	238
D Ardfern (Innisaeg)	Mr. John Strang	5	3	7	100	1222	48·09	181
9.—KINTYRE, WEST. 146 sq. mi.								
Mull of Kintyre	Board of Northern Lights. . .	..	..	..	279	1005	39·58	175
D Muasdale (Killeen Manse)	Rev. D. J. Macdonald	5	1	0	10	913	35·96	229
D Carse	J. Birkmyre, Esq., jun.	6	1	6	20	995	39·16	232
10.—KINTYRE, EAST. 177 sq. mi.								
D Campbeltown (South Park)	J. A. Gardiner, Esq.	8	0	10	20	1409	55·46	220
Campbeltown (Devaar)	Board of Northern Lights. . .	..	3	4	120	1144	45·06	..
D Skipness Castle	R. F. Graham, Esq.	5	1	1	14	1102	43·37	229
11.—LOCH FYNE. 264 sq. mi.								
D Ardrishaig (Canal Office)	L. J. Groves, Esq., C.E....	5	1	6	48	1441	56·74	202
D Loch Fyne (Castle Lachlan)	M. Park, Esq., <i>per</i> S.M.S....	5	1	0	42	1362	53·64	213
Crarae (Kennels)	Mr. W. T. Rae.	5	1	0	20	1814	71·41	..
D Loch Fyne (Brenchoillie)	A. E. Lewis, Esq.	5	1	0	240	1713	67·43	..
D Inveraray Castle Gardens	A. E. Lewis, Esq.	5	1	0	40	1559	61·38	206
D Inveraray (Stronshira)	Rev. Gillespie Campbell. . .	5	1	5	10	1934	76·14	..
D Ardkinglas	Mr. J. Payne	8	1	6	37	1462	57·55	..
Glen Shira (Drimlie)	Mr. Dugald McIntyre	5	1	6	400	1857	73·12	..
12.—FIRTH OF CLYDE & COWAL. 242 sq. mi.								
Tighnabruaich (Wellpark)	R. Paton, Esq.	12	7	0	50	1419	55·85	189
D Dunoon (Reservoir)	W. Rodger, Esq., C.E.	12	3	6	245	1534	60·39	162
D Dunoon (Redhurst)	Dr. J. Banks	5	1	0	60	1623	63·90	183
D Holy Loch (Ardnadam)	Rev. J. Cairns Mitchell	5	1	0	66	1560	61·40	198
D Loch Eck (Benmore)	Mr. R. Greenlaw	5	1	3	40	1948	76·71	173
D Lochgoilhead (Nuthill)	Late G. Murray Knox, Esq.	5	1	0	15	1477	58·14	188
Lochgoilhead (Ardgoil)	J. Whitton, Esq.	5	0	6	20	1916	75·45	201
13.—CLYDE—Leven. 4 sq. mi.								
14.—INSULAR. 900 sq. mi.								
D Islay (Ardbeg)	Colin E. Hay, Esq.	5	7	0	46	1168	45·99	238
Islay (Rhinn)	Board of Northern Lights	7	3	6	150	977	38·45	192
Islay (Lochindaul)	Board of Northern Lights. .	3	0	6	52	1220	48·02	182
Islay (McArthur's Head)	Board of Northern Lights. .	3	0	4	128	1346	52·98	203
D Islay (Eallabus)	James MacKillop, Esq.	5	1	0	68	1316	51·82	230

DIVISION XV.—WEST MIDLAND COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with ·01 in. or more.	
		Diam.	Height Ground	above Sea Level.	1919			
ARGYLL—(con.).		in.	ft.	in.	ft.	mm.	in.	
14.—INSULAR—(con.).								
Islay (Rhuvaal)	Board of Northern Lights..	3	1	3	147	807	31·78	160
D Jura (Ardfin)	Colin Campbell, Esq.	5	1	0	160	1362	53·61	230
Fladda Lighthouse	Board of Northern Lights..	3	1	0	42	1350	53·14	182
Lismore (Mousedale)	Board of Northern Lights..	7	3	10	105	1020	40·17	179
D Eriska (Ledaig)	Mr. J. B. Trotter <i>per</i> S.M.S.	5	1	6	30	1256	49·47	192
D Mull (Iona Manse)	Rev. A. Macmillan	5	1	2	45	1150	45·28	222
D Mull (Bunessan)	Duncan Cameron, Esq.	5	1	2	50	1263	49·71	236
D Mull (Ulva)	F. W. Clark, Esq.	5	1	0	30	1584	62·37	259
D Mull (Knock)	Duncan Cameron, Esq.	5	1	2	50	2051	80·74	185
D Mull (Glencannel)	Duncan Cameron, Esq.	5	1	2	140	2876	113·25	236
D Mull (Gruline)	J. W. Melles, Esq.	8	1	0	101	1885	74·20	252
D Mull (Quinish)	J. N. Forsyth, Esq.	5	1	3	35	1404	55·26	258
Mull (Glengorm Castle)	Miss M. Lithgow	6	1	0	360	1549	61·00	..
Mull, Sound of	Board of Northern Lights..	3	1	4	55	1447	56·96	203

DIVISION XVI.—EAST MIDLAND COUNTIES.

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	666	26·24	..
w Alloa W.W. (Gartmorn Res.) ..	Andrew Mackie, Esq., C.E.	11	1	0	172	729	28·69	..
d Dollar (Wellhall, Dollarbeg) ...	James Bleloch, Esq.	5	0	9	265	900	35·43	235

KINROSS. (Area, 87 sq. mi.)

1.—FORTH, LOWER—Left Bank Tributaries. 15 sq. mi.								
Dollar (Blairingone Manse) ...	Rev. J. F. Cameron	5	1	6	296	936	36·85	189
2.—LEVEN & C. 67 sq. mi.								
d Loch Leven Sluice	Mr. David Hay	8	0	9	306	794	31·27	159
d Milnathort (Ledlanet)	H. Young, Esq., <i>per</i> S.M.S.	5	1	0	750	1037	40·81	147

3.—EDEN. 2 sq. mi.**4.—TAY—Earn. 8 sq. mi.**

FIFE. (Area, 505 sq. mi.)

1.—FORTH, LOWER—Left Bank Tributaries. 66 sq. mi.								
d Rosyth (H. M. Dockyard)	The Supt. Engineer	8	1	0	53	648	25·53	175
Kinross (Tulliallan)	J. C. Wilson, Esq.	5	1	0	80	721	28·39	..
d Dunfermline (Victoria Place) ...	J. Blyth, Esq.	5	1	2	365	824	32·46	178
d Culross (Westgrange)	J. J. Dalgleish, Esq.	5	0	2	116	699	27·52	178
d Culross (Luscar House) ...	No.1 Lt.-Col. A. Mitchell	5	0	10	430	708	27·87	..
d Culross (Luscar House) ...	No.2 Lt.-Col. A. Mitchell	5	0	10	430	708	27·87	..
Carnock (Craigluscar)	P. C. Smith, Esq., <i>per</i> S.M.S.	12	0	4	280	907	35·70	..
2.—LEVEN & C. 208 sq. mi.								
Dunfermline (Fordell House) ...	Earl of Buckinghamshire..	5	1	0	250	784	30·86	..
d Kirkcaldy	F. Braid, Esq.	5	1	0	67	759	29·89	178
Kirkcaldy (Muttonhall Farm) ...	G. Donaldson, Esq.	5	1	0	267	756	29·75	..
d Cowdenbeath (Stenhouse St.) ...	D. H. Shaw, Esq.	5	1	0	474	886	34·87	162
d Cleish Hills (Deanhead Farm) ...	D. H. Shaw, Esq.	5	1	0	725	814	32·04	151
d Cleish Hills (Craigaverral) ...	D. H. Shaw, Esq.	5	1	0	660	946	37·25	..
d Cleish Hills (Roscombe Res.) ...	D. H. Shaw, Esq.	5	1	0	660	891	35·07	..
d Leslie (Lothrie Reservoir)	Mr. R. Ritchie	5	0	6	702	907	35·70	213
d Elie (The Castle)	Miss E. E. Scott Moncrieff	5	0	5	9	681	26·80	189
d Colinsburgh (Balcarres)	Mr. J. M. Paul	5	1	0	300	814	32·03	180
Colinsburgh (Lathallan House) ...	Dr. W. H. Bryce <i>per</i> S.M.S.	5	1	0	505	776	30·53	..
d Carnbee (Ovenstone W.W.) ...	A. P. Watson, Esq.	5	1	0	168	679	26·74	..
3.—EDEN & C. 205 sq. mi.								
Ceres (Woodburne)	Ralph Richardson, Esq.	5	0	9	300	792	31·19	..
d Ceres (Castlebank)	Mr. Alex. Smith	5	2	0	280	828	32·59	202
d Ceres (St. Helen's)	Rev. Robert Dick	5	1	6	265	840	33·09	201

DIVISION XVI.—EAST MIDLAND COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with ·01 in. or more.	
		Diam.	Height above Ground	Sea Level.	1919			
FIFE—(con.).		in.	ft.	in.	ft.	mm.	in.	
3.—EDEN & C.—(con.)								
d Cameron Water Works	W. Watson, Esq., C.E.	5	1	0	478	766	30·16	155
d Cupar (Rankeillour)	Mr. J. McLaren, <i>per</i> S.M.S.	..	..	..	240	747	29·42	..
d Cupar (Rankeillour)	Major J. Kerr	5	1	0	240	774	30·49	158
Cupar (Fife & Kinross Asylum)	Dr. J. H. Skeen, <i>per</i> S.M.S.	5	1	0	210	746	29·37	179
d St. Andrews (Water Works)	W. Watson, Esq., C.E.	5	1	0	217	674	26·52	172
d St. Andrews (Queen's Gardens)	Miss I. J. R. Macadam	5	1	0	55	690	27·17	173
St. Andrews	W. Watson, Esq., C.E.	..	..	..	20	703	27·66	..
Kilmany (Lochmalony)	W. Marshall, Esq.	5	0	6	260	690	27·17	..
4.—FIRTH OF TAY. 25 sq. mi.								
d Newport (Tayfield)	W. Berry, Esq.	5	0	7	100	640	25·20	..
d Tayport (Lighthouse)	J. H. Thompson, Esq., C.E.	5	1	0	27	655	25·78	174
5.—TAY—Earn. 1 sq. mi.								
6.—INSULAR.								
Inchkeith	Board of Northern Lights	..	..	..	160	522	20·54	..
Isle of May	Board of Northern Lights	6	3	0	..	644	25·35	..
PERTH. (Area, 2535 sq. mi.)								
1.—FORTH—Right Bank Tributaries. 17 sq. mi.								
2.—FORTH, UPPER—Left Bank Tributaries. 64 sq. mi.								
d Aberfoyle (The Inn)	J. R. Sutherland, Esq., C.E.	8	0	6	60	1137	44·75	151
d Loch Dhu	J. R. Sutherland, Esq., C.E.	8	0	6	325	1571	61·85	185
w Ledard	J. R. Sutherland, Esq., C.E.	8	0	6	1500	1511	59·50	..
3.—FORTH—Teith. 221 sq. mi.								
w Loch Drunkie	J. R. Sutherland, Esq., C.E.	8	0	6	420	1271	50·05	..
w Ben Venue (Glasahille)	J. R. Sutherland, Esq., C.E.	8	1	0	1150	1661	65·40	..
d Loch Venachar	J. R. Sutherland, Esq., C.E.	8	0	6	275	1153	45·40	160
d Bridge of Turk	J. R. Sutherland, Esq., C.E.	8	0	6	275	1236	48·65	154
w Loch Katrine (Tunnel Hill Top)	J. R. Sutherland, Esq., C.E.	8	0	6	830	1575	62·00	..
w Ben Ledi	No. 2 J. R. Sutherland, Esq., C.E.	8	0	6	1400	1297	51·05	..
d Achnahard	J. R. Sutherland, Esq., C.E.	8	1	0	474	1352	53·25	155
Callander (Leny House)	Capt. M. Murray Buchanan	5	0	6	340	1156	45·50	..
w Strone Bridge	J. R. Sutherland, Esq., C.E.	8	1	0	380	1492	58·74	..
w Glen Meann	J. R. Sutherland, Esq., C.E.	8	1	0	800	1575	62·00	..
w Glen Finglas	J. R. Sutherland, Esq., C.E.	8	1	0	1200	1603	63·10	..
d Glengyle	J. R. Sutherland, Esq., C.E.	8	0	6	380	1850	72·85	200
w Upper Glengyle	J. R. Sutherland, Esq., C.E.	8	1	0	750	1953	76·90	..
w Allt a' Choin	J. R. Sutherland, Esq., C.E.	8	1	0	1250	1815	71·45	..
w Balquhiddie (Blaircreach)	J. Carnegie, Esq.	5	1	0	460	1901	74·85	..
Balquhiddie (Stronvar)	J. Carnegie, Esq.	5	1	0	422	1402	55·20	163
4.—FORTH, LOWER—Left Bank Tributaries. 107 sq. mi.								
d Dunblane (Kippenross)	A. H. Anderson, Esq.	8	1	0	237	770	30·30	198
d Dunblane	A. Reid, Esq.	5	1	0	250	775	30·50	..
Dunblane (Kippendavie)	A. H. Anderson, Esq.	8	2	9	300	840	33·06	..
d Glendevon (Glenquey Res.)	D. Mackenzie, Esq., C.E.	11	0	11	945	1123	44·20	..
d Glendevon (Tormaukin)	Mr. W. Phillips	5	1	6	770	1116	43·92	164
Glendevon (Glensherup)	P. C. Smith, Esq., <i>per</i> S.M.S.	12	0	4	945	1310	51·57	..
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	888	34·96	..
Slateford Burn (Whitehill)	Messrs. Leslie & Reid, C.E.	8	..	..	810	858	33·80	..
Upper Farg (Plains)	Messrs. Leslie & Reid, C.E.	8	..	..	900	794	31·24	..
Upper Farg (Heatherieleys Q'ry)	Messrs. Leslie & Reid, C.E.	8	..	..	715	827	32·57	..
Upper Farg (Main Bank)	Messrs. Leslie & Reid, C.E.	5	..	..	..	663	26·12	..
Dunning (Kippen House)	Lady Wilson, <i>per</i> S.M.S.	..	..	..	..	889	34·99	..
Auchterarder (Belhie)	Miss D. Cairns	5	0	10	100	604	23·77	..
Bridge of Earn (Ballendrick)	Capt. O. A. Taylor	5	1	2	30	687	27·04	160
d Lochearnhead (Edenchip)	Sir Malcolm Macgregor, Bt.	5	1	0	513	1346	52·99	210
d Crieff (Drummond Terrace)	Col. J. Dinwoodie	5	1	0	330	772	30·41	164
Crieff (Strathearn Hydro.)	Dr. G. Meikle, <i>per</i> S.M.S.	5	1	0	478	731	28·78	179

DIVISION XVI.—EAST MIDLAND COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
		in.	ft.	in.	ft.	mm.	in.	
PERTH—(con.).								
8.—TAY—Almond & C. 149 sq. mi.								
d Perth (Wellshill Cemetery)	J. Ritchie, Esq., jun.	5	1	0	77	618	24·32	..
Logiealmond Lodge	Earl of Mansfield	5	0	11	1020	919	36·17	..
9.—TAY—Strathday below Dunkeld. 33 sq. mi.								
Murthly (Douglasfield)	W. A. Rae, Esq.	5	0	6	237	741	29·18	..
Murthly (Glendelvine)	A. P. Lyle, Esq., <i>per</i> S.M.S.	5	0	9	240	528	20·80	..
d Dunkeld (Snaigow)	W. H. Cox, Esq.	5	1	0	370	644	25·36	154
10.—TAY—Bran. 81 sq. mi.								
d Dunkeld (Inver)	Charles McIntosh, Esq.	5	1	0	183	772	30·41	190
11. TAY—Strathday above Dunkeld. 95 sq. mi.								
d Aberfeldy (Dall Avon)	Dr. N. D. Mackay	5	1	0	320	680	26·79	185
d Grandtully (Dunros)	H. W. Johnston, Esq.	5	1	0	400	662	26·06	195
12.—TAY—Loch Tay. 241 sq. mi.								
d Killin (The Manse)	Rev. G. W. Mackay	5	1	0	400	1170	46·07	..
Killin (Morenish Lodge)	Mr. J. Stewart	5	1	0	530	986	38·82	..
d Kenmore (The Manse)	Rev. W. A. Gillies	5	1	0	450	764	30·09	160
13.—TAY—Lyon. 142 sq. mi.								
Fortingall (Glenlyon House)	Mr. J. W. Ford	5	1	0	425	767	30·20	..
14.—TAY—Tummel. 587 sq. mi.								
d Loch Rannoch (The Barracks)	Mr. D. Macdonald	5	1	0	690	830	32·69	170
d Loch Rannoch (Dall)	Mr. D. Robertson, jun.	5	1	0	772	832	32·74	175
d Pitlochry (Bonskeid)	Dr. G. F. Barbour	5	1	0	540	659	25·93	183
d Fincastle House	Mrs. R. W. Barbour	5	1	0	980	603	23·73	164
d Trinafour (Druimchruidh)	A. D. Cameron, Esq.	5	1	0	850	926	36·44	203
15.—TAY—Isia. 282 sq. mi.								
d Coupar Angus (Public School)	A. Reid, Esq.	5	2	2	183	619	24·38	..
d Blairgowrie (Kinloch Manse)	Ian Milne, Esq.	5	1	0	280	629	24·76	..
d Kirkmichael (Ballintuim Ho.)	Miss M. A. Macdonald	5	1	4	700	752	29·61	192
16.—TAY—Left Bank Tributaries. 51 sq. mi.								
Kinfauns (Balthayock)	R. Wylie Hill, Esq.	5	1	6	323	571	22·48	..
Scone Palace	Earl of Mansfield	5	0	11	62	635	26·98	163
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. 36 sq. mi.								
FORFAR. (Area, 875 sq. mi.)								
1.—TAY—Isia. 211 sq. mi.								
Kettins School	W. Andrew, Esq.	5	1	0	218	661	26·01	163
Glamis Castle	Mr. T. Wilson, <i>per</i> S.M.S.	5	0	9	250	687	27·05	..
d Forfar (Lilyfield)	D. M. Mackie, Esq.	5	0	5	225	784	30·85	169
Forfar (Orchardbank Sew. Farm)	A. Watterston, Esq. <i>per</i> SMS	4	0	9	214	637	25·10	..
d Kirriemuir (Lintrathen)	G. Baxter, Esq., C.E.	8	1	0	700	675	26·58	167
M Kirriemuir (Lintrathen)	G. Baxter, Esq., C.E.	8	1	0	700	666	26·20	..
M Kirriemuir (Balnakeilly)	G. Baxter, Esq., C.E.	8	1	0	700	681	26·80	..
M Kirriemuir (Creich Hill, S.)	G. Baxter, Esq., C.E.	8	1	0	1482	526	20·70	..
M Kirriemuir (Creich Hill, Top)	G. Baxter, Esq., C.E.	8	1	0	1500	475	18·70?	..
M Kirriemuir (Creich Hill, N.)	G. Baxter, Esq., C.E.	8	1	0	1491	566	22·30	..
2.—FIRTH OF TAY. 80 sq. mi.								
d Buddonness (Low Light)	J. H. Thompson, Esq., C.E.	5	1	0	27	753	29·64	177
d Dundee (Harbour)	J. H. Thompson, Esq., C.E.	5	0	11	14	620	24·43	176
d Dundee (Eastern Necropolis)	Mr. A. Macrae	3	1	0	199	643	25·30	..
d Dundee (Eastern Necropolis)	Mr. A. Macrae	5	1	0	199	650	25·57	192
Dundee (Dens Works)	Messrs. Baxter Bros., Ltd.	5	on roof		119	626	24·65	220

DIVISION XVI.—EAST MIDLAND COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with .01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
FORFAR—(con.).		in.	ft.	in.	ft.	mm.	in.	
2.—FIRTH OF TAY—(con.).								
d Dundee (Camperdown Works)	Messrs. Cox, Bros., Ltd. . .	5	1	2	290	682	26·84	..
Dundee (Inniscarra)	H. G. Walker, Esq.	5	1	0	130	575	22·63	..
d Dundee (Balruddery)	J. Martin White, Esq.	5	1	0	266	629	24·78	..
Dundee (Kirkton of Mains)	James Aimer, Esq.	8	1	0	244	644	25·35	169
Murroes (Craig Mills)	John Grant, Esq.	5	1	6	310	779	30·67	..
3.—SOUTH ESK & C. 371 sq. mi.								
Carnoustie	D. Maxwell, Esq., C.E.	8	1	0	39	645	25·40	190
d Craigton	G. Baxter, Esq., C.E.	8	1	0	484	764	30·07	170
M Craigton	G. Baxter, Esq., C.E.	8	3	0	484	754	29·69	..
M Craigton (Hillhead)	G. Baxter, Esq., C.E.	8	3	0	570	777	30·58	..
M Crombie Reservoir	G. Baxter, Esq., C.E.	8	3	0	522	806	31·74	..
M Monikie (Fallows)	G. Baxter, Esq., C.E.	8	3	0	585	795	31·31	..
d Arbroath (Dishland Hill)	Mr. J. Campbell	5	1	0	69	573	22·57	164
Arbroath (Muirheads Res.)	S. L. Christie, Esq.	5	1	0	251	661	26·04	..
Forfar (Pitscandly)	W. T. Farquhar, Esq.	5	1	9	300	674	26·53	..
Montroseness	Board of Northern Lights . .	3	1	0	124	545	21·45	..
Montrose	S. L. Christie, Esq., per S.M.S. .	..	..	..	16	646	25·45	163
d Montrose (Melville Gardens)	S. L. Christie, Esq.	5	8	0	20	626	24·64	..
d Forfar W.W. (Den of Ogil)	A. Watterston, Esq.	12 x 4	0	3	633	860	33·86	164
d Glenogil Waterworks	S. L. Christie, Esq.	5	1	0	700	928	36·54	166
d Glen Prosen (Pearsie House)	J. Scott, Esq., per S.M.S. . .	5	1	0	600	825	32·49	174
Glen Prosen (Lednathie)	Mr. W. G. Lindsay	5	1	0	720	951	37·44	..
d Glen Prosen (Balnaboth Gdns.)	Mrs. Ogilvie	5	1	0	975	977	38·46	..
4.—NORTH ESK & C. 213 sq. mi.								
d Montrose (Sunnyside Asylum)	Dr. C. J. Shaw	5	1	0	200	689	27·13	154
d Montrose (Kinnaber W.W.)	S. L. Christie, Esq.	5	1	0	38	697	27·43	176
Brechin (Stracathro Gardens)	Mr. A. Dunlop	5	1	0	250	700	27·54	..

DIVISION XVII.—NORTH-EASTERN COUNTIES.

KINCARDINE. (Area, 382 sq. mi.)

1.—NORTH ESK & C. 99 sq. mi.								
d Fettercairn (The Burn) C. A. McInroy, Esq.		5	0	11	250	872	34·32	..
d Fettercairn (Police Station) . . . Mr. J. F. Brown		5	1	0	230	880	34·63	156
Fettercairn (Fasque) Sir J. R. Gladstone, per S.M.S. . .		5	1	0	320	980	38·60	..
2.—BERVIE, COWIE & C. 139 sq. mi.								
Todhead Board of Northern Lights		3	4	0	135	722	28·43	..
d Stonehaven (Mains of Cowie) . . John Hart, Esq.		5	1	0	93	654	25·73	192
Girdleness Board of Northern Lights		7	4	0	185	482	18·98?	..
3.—DEE. 14 sq. mi.								
Strachan (Bridge of Dye) Sir J. R. Gladstone, per SMS . .		5	1	0	515	1048	41·25	..
Crathes (Spyhill) Mr. J. Cunningham		5	1	0	510	902	35·52	..
d Crathes (Crossroad, Durris) . . . A. Macdonald, Esq.		5	1	0	420	874	34·41	228
Drum oak (Durris House) . . (R) Mr. A. Reid		5	3	6	200	874	34·43	..
d Banchory (Invercannie) George Mitchell, Esq., C.E. . . .		5	1	0	205	793	31·23	179
Crathes (Pinewood) James Smith, Esq.		5	1	0	145	841	33·12	206
Crathes Castle Mr. J. Petrie		5	1	0	240	807	31·77	..
Banchory (Hirn) Mr. W. Caird		5	1	0	287	813	32·01	..
ABERDEEN. (Area, 1974 sq. mi.)								
1.—DEE. 672 sq. mi.								
d Glen Clunie George Mitchell, Esq., C.E. . . .		5	1	0	1350	890	35·05	..
d Glen Muick George Mitchell, Esq., C.E. . . .		5	1	0	1370	1063	41·84	199
d Glen Tanner (Aitnach) George Mitchell, Esq., C.E. . . .		5	1	0	1260	959	37·75	167
d Braemar (Bank) A. M. Shirran, Esq.		5	1	0	1114	874	34·41	163
d Braemar (Derry Lodge) George Mitchell, Esq., C.E. . . .		5	1	0	1400	892	35·13	221
d Balmoral Castle Gardens Mr. R. F. Chalmers		5	1	0	927	824	32·46	210

DIVISION XVII.—NORTH-EASTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with ·01 in. or more.	
		Diam.	Height Ground	above Sea Level.	1919			
ABERDEEN—(con.).		in.	ft.	in.	ft.	mm.	in.	
1.—DEE—(con.).								
Abergeldie Castle	Mr. R. F. Chalmers, <i>per</i> S. M. S.	5	1	0	..	846	33·30	..
d Ballater (Irrigation Farm)	George Mitchell, Esq., C.E.	5	1	0	637	832	32·77	175
m Bienn Bhreac	George Mitchell, Esq., C.E.	5	1	0	2700	1269	49·95	..
d Glen Gairn (Gairn Shiell Lodge)	George Mitchell, Esq., C.E.	5	1	0	1100	876	34·49	197
Dinnet	"Aberdeen Journal"	..	..	..	..	682	26·84	..
d Aboyne	George Mitchell, Esq., C.E.	5	1	0	412	736	28·99	164
d Torphins (School House)	Dr. George Davidson	5	1	6	480	796	31·33	167
Lumphanan	George Mitchell, Esq., C.E.	5	1	0	490	780	30·73	..
d Drumoak (Drum Castle)	A. F. Irvine, Esq.	5	0	8	320	779	30·67	192
d Logie Coldstone School	J. B. Anderson, Esq.	5	1	0	608	819	32·23	205
d Logie Coldstone (Loanhead)	Mr. A. Farquharson	5	1	0	743	757	29·80	218
d Aberdeen (Mannofield Res.)	George Mitchell, Esq., C.E.	5	1	0	171	795	31·31	226
d Aberdeen (Cranford House)	Mr. W. C. Smith	5	1	0	120	838	33·00	205
Aberdeen (Cornhill Road)	J. B. Innes, Esq.	5	1	0	150	780	30·71	..
2.—DON. 512 sq. mi.								
Aberdeen (King's College)	Meteorological Office	11	2	0	44	779	30·66	..
d Aberdeen (King's College)	Meteorological Office	8	1	0	43	778	30·63	204
d Cockbridge (Deinadamph)	George Mitchell, Esq., C.E.	5	1	0	1850	1029	40·52	193
Strathdon (Estates Office)	C. Christie, Esq.	5	1	2	990	803	31·61	..
d Dyce (Parkhill House)	J. E. Crombie, Esq.	8	0	11	170	931	36·67	218
New Machar (Straloch)	Mrs. Irvine	..	4	0	320	938	36·91	..
d Inverurie (Westfield)	James Skinner, Esq.	5	1	0	..	672	26·47	214
3.—YTHAN & C. 285 sq. mi.								
d Ellon (Essleimont House)	Col. J. Wolrige-Gordon, CMG	5	1	6	100	811	31·94	222
d House of Schivas	Earl of Haddo	5	0	9	200	846	33·31	202
d Fyvie Castle	Col. C. R. Burn, M.P.	5	0	6	200	941	37·06	165
4.—UGIE & C. 257 sq. mi.								
Buchanness	Board of Northern Lights	3	3	0	130	695	27·37	192
d New Deer School	H. Cowie, Esq.	5	1	0	397	959	37·75	233
d Peterhead (Stock Bridge)	J. T. Robertson, Esq.	5	1	6	..	708	27·86	206
d Peterhead (Mains of Buthlaw)	W. Johnston, Esq.	5	1	6	120	841	33·11	226
Peterhead (Forehill Works)	W. West, Esq., C.E., <i>per</i> S. M. S.	5	0	7	133	863	33·97	..
d Brucklay Castle	A. Dingwall Fordyce, Esq. MP	8	1	0	300	1175	46·25	195
Kinnairdhead	Board of Northern Lights	3	2	6	120	685	26·96	186
5.—DEVERON & C. 248 sq. mi.								
d Drumblade Public School	G. Harper, Esq.	5	1	0	485	940	37·02	228
Huntly (Union Bank)	Alex. Smith, Esq.	5	1	0	405	918	36·16	..
Huntly (Cruchie)	Miss A. Joss	5	3	6	400	933	36·72	200
BANFF. (Area, 630 sq. mi.)								
1.—YTHAN. 1 sq. mi.								
2.—DEVERON & C. 344 sq. mi.								
d Drummuir Castle	T. Gordon Duff, Esq.	5	1	0	605	1056	41·57	222
d Keith Station	Mr. A. Kennedy	5	1	0	364	1099	43·28	165
Buckie (Roughonnie)	No. 2 W. Hendry, Esq.	5	1	4	392	740	29·15	..
Buckie (Roughonnie)	No. 1 W. Hendry, Esq.	5	1	4	334	775	30·50	..
Buckie (West Church Street)	W. Hendry, Esq.	5	1	4	76	766	30·17	..
Banff (Duff House)	A. J. Leigh, Esq.	5	1	0	7	684	26·92	229
Cullen House Gardens	Mr. F. Low	5	0	11	100	729	28·69	..
3.—SPEY—Right Bank Tributaries. 285 sq. mi.								
d Duftown (Fife Street)	Miss B. Walker	5	1	0	579	994	39·14	236
d Aberlour Orphanage	J. G. White, Esq.	5	1	0	350	973	38·29	172
MORAY. (Area, 477 sq. mi.)								
1.—DEVERON & C. 7 sq. mi.								
2.—SPEY—Right Bank Tributaries. 35 sq. mi.								
Gordon Castle	Mr. C. Webster, <i>per</i> S. M. S.	5	1	0	107	770	30·30	208

DIVISION XVII.—NORTH-EASTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with .01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
		in.	ft.	in.	ft.	mm.	in.	
MORAY—(con.).								
3.—SPEY—Left Bank Tributaries. 133 sq. mi.								
D Grantown-on-Spey	W. Duncan, Esq.	5	1	1	700	896	35.26	189
D Knockando (Schoolhouse)	Charles Watt, Esq.	5	1	0	600	955	37.60	229
4.—LOSSIE & C. 154 sq. mi.								
D Lhanbryde (Blackhills House)	M. Christie, Esq., <i>per</i> S.M.S.	..	..	..	300	794	31.25	221
D Elgin (The Manse)	Rev. Dr. R. Macpherson	6	1	3	38	676	26.63	..
D Duffus House	Mr. W. Ogg	5	1	0	55	664	26.14	163
D Covesea Skerries	Board of Northern Lights	7	3	6	52	511	20.13	..
5.—FINDHORN & C. 148 sq. mi.								
Darnaway Castle Gardens	Earl of Moray, <i>per</i> S.M.S.	5	1	3	200	690	27.15	..
D Brodie (Earlsmill House)	James Fenwick, Esq.	5	0	10	135	664	26.14	173
D Forbes (Knockonnie)	W. Fraser, Esq., <i>per</i> S.M.S.	6	0	10	100	655	25.77	..
D Kinloss House	Mrs. Mackessack	5	1	3	23	649	25.54	154
NAIRN. (Area, 163 sq. mi.)								
1.—FINDHORN & C. 102 sq. mi.								
D Ardcloch (Glenferness)	Mr. A. McKenzie	8	1	6	750	902	35.50	173
2.—NAIRN & C. 61 sq. mi.								
Cawdor Castle	(R) Mr. D. Chapman	8	4	3	225	682	26.87	..
D Nairn (Achareidh)	H. A. Clarke, Esq.	8	1	0	59	620	24.39	226
D Nairn (Delnies)	Meteorological Office	8	1	9	84	585	23.03	228

DIVISION XVIII.—NORTH-WESTERN COUNTIES.

INVERNESS. (Area, 4146 sq. mi.)

1.—TAY—Tummel. 28 sq. mi.								
2.—SPEY—Right Bank Tributaries. 437 sq. mi.								
D Nethy Bridge (U.F. Manse)	Rev. A. Sutherland	5	1	0	750	715	28.14	160
3.—SPEY—Left Bank Tributaries. 257 sq. mi.								
D Cluny Castle	Mr. A. Macdonald	5	1	1	900	940	37.02	234
D Kingussie	No. 1 Mrs. de Watteville	5	1	0	840	832	32.75	186
D Alvie Gardens	Mr. J. G. Fraser	5	1	3	800	973	38.31	204
D Alvie Manse	Rev. Dugald Maclean	5	1	0	760	911	35.88	226
D Aviemore (Rothiemurchus)	W. Dempster, Esq., <i>per</i> S.M.S.	5	1	0	706	811	31.92	..
D Grantown (Muckerach Lodge)	Mr. J. Fraser	5	1	3	760	683	26.88	203
4.—FINDHORN. 164 sq. mi.								
5.—NAIRN & C. 131 sq. mi.								
Gollanfield House	The MacKinnon of Mackinnon	5	0	8	100	613	24.12	161
6.—NESS—Right Bank Tributaries. 252 sq. mi.								
Loch Ness (Killin, Whitebridge)	British Aluminium Co. Ltd.	8	1	0	1200	963	37.92	..
D Loch Ness (Garthbeg)	British Aluminium Co. Ltd.	8	1	0	645	842	33.17	202
Loch Ness (Foyers)	British Aluminium Co. Ltd.	8	1	0	52	834	32.85	181
Loch Ness (Aberchalder)	British Aluminium Co. Ltd.	8	1	0	700	794	31.24	..
7.—NESS—Garry & C. 185 sq. mi.								
M Loch Quoich (Loan)	Col. D. W. Cameron	5	1	0	650	4125	162.40	..
D Loch Quoich (Kinlochquoich)	Col. D. W. Cameron	5	1	0	560	2849	112.16	185
D Loch Quoich (Glenquoich)	T. MacKenzie, Esq., <i>per</i> S.M.S.	5	1	2	569	2342	92.20	206
Glen Garry (Inchlaggan)	Mr. M. Matheson	5	1	0	370	1335	52.56 ?	264
Invergarry Gardens	Mr. G. Robertson, <i>per</i> S.M.S.	5	1	0	130	1321	52.01	..
8.—NESS—Moriston. 120 sq. mi.								
9.—NESS—Enrick. 131 sq. mi.								
D Drumadrochit	Late Mr. Angus Grant	5	1	0	138	747	29.42	210
D Inverness (District Asylum)	Dr. T. C. Mackenzie, <i>per</i> S.M.S.	..	..	..	..	640	25.18	207
Inverness (High School)	K. MacLean, Esq.	5	1	0	98	552	21.75	193

DIVISION XVIII.—NORTH-WESTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with .01 in. or more.	
		Diam.	Height Ground	above Sea Level.	1919			
INVERNESS—(con.)		in.	ft.	in.	ft.	mm.	in.	
10.—BEAULY. 341 sq. mi.								
Kirkhill (Moniack)	R. Robertson, Esq., C.E...	5	1	0	65	564	22·20	197
11.—CROMARTY FIRTH. 13 sq. mi								
12.—SOUND OF SLEAT. 259 sq. mi.								
D Loch Nevis (Inverie Gardens)	Mr. J. Huggins	5	0	6	15	2048	80·65	246
D Glenelg Manse	Rev. A. Mactaggart	5	1	0	85	1298	51·10	220
13.—SOUND OF ARISAIG. 126 sq. mi.								
Moidart (Kinlochmoidart)	M. J. C. Stewart, Esq.	5	1	0	13	1638	64·48	221
D Moidart (Roshven)	Mrs. Blackburn	5	1	0	40	1613	63·50	259
M Loch Ailort (Inverailort)	Mrs. Cameron-Head	5	1	6	6	1833	72·15	..
D Arisaig (Faire-na-Sguir)	Miss C. C. Astley	5	1	0	130	1318	51·90	245
D Arisaig House	Mr. W. Grant	5	1	0	30	1537	60·52	226
14.—LOCH LINNHE—Right Bank Tributaries. 48 sq. mi.								
D Loch Eil (Achdalen)	Col. D. W. Cameron	5	1	0	100	1316	51·79	169
15.—LOCHY—Right Bank Tributaries. 143 sq. mi.								
D Loch Arkaig (Achnacarry)	Col. D. W. Cameron	5	1	0	120	1656	65·18	223
D Loch Arkaig (Glen Dessary)	Col. D. W. Cameron	5	1	0	300	2469	97·22	212
D Clunes	Col. D. W. Cameron	5	1	0	128	1461	57·52	219
16.—LOCHY—Left Bank Tributaries. 362 sq. mi.								
M Loch Pattaig	Sir J. F. Ramsden, Bt.	5	0	6	1442	824	32·45?	..
D Loch Lochy (Invergloyle)	Mr. J. Mackay	5	1	0	202	1215	47·84	229
M Loch Laggan (Ardverikie)	Sir J. F. Ramsden, Bt.	5	0	6	860	961	37·83?	..
17.—LOCH LINNHE—Left Bank Tributaries. 120 sq. mi.								
D NorthBallachulish(Alltshellach)	B. Chinnery-Haldane, Esq.	5	2	1	80	1572	61·88	231
D Glenleven(BlackwaterDam,N)7	British Aluminium Co. Ltd.	8	1	0	1072	1598	62·90	252
D Glenleven (Kinlochmore Gdns.)	Brian Bibby, Esq.	5	1	0	115	1970	77·58	248
Glenleven (Invercam)	No. 6 British Aluminium Co. Ltd.	8	1	0	1070	1438	56·62	..
Glenleven (Chiaron Ho.)	No. 3 British Aluminium Co. Ltd.	8	1	0	1200	1708	67·25	..
Glenleven (Loch Eilde Mòr)	British Aluminium Co. Ltd.	8	1	1	1130	1575	62·00	..
Glenleven (Loch Eilde Beg)	British Aluminium Co. Ltd.	8	1	1	1125	1534	60·39	..
Glenleven (Cam Bridge)	No. 5 British Aluminium Co. Ltd.	8	1	0	1260	1368	53·84	..
D Fort William (Atholl Bank)	W. T. Kilgour, Esq.	5	1	0	171	1485	58·47	234
18.—INSULAR, INNER HEBRIDES. 786 sq. mi.								
Hyskier	Board of Northern Lights	..	..	..	..	933	36·73	231
Skye (Oronsay)	Board of Northern Lights	..	0	6	58	1179	46·42	242
D Skye (Duisdale House)	R. Noël Paton Esq., pr SMS.	..	..	..	60	2038	80·24	210
D Skye (Kyleakin, Dunringell)	Maj. A.D. Mackinnon, C.M.G.	5	2	1	100	1488	58·57	242
Skye (Kyleakin Lighthouse)	Board of Northern Lights	5	4	6	53	1075	42·33	233
D Skye (Scalpay Island)	Mr. D. Gunn	5	1	0	4	1696	66·77	238
D Skye (Portree)	D. Dewar, Esq.	5	1	0	65	1306	51·43	255
D Skye (Dunvegan)	Mrs. Mackenzie	5	3	0	47	1808	71·20	249
Rona	Board of Northern Lights	3	1	3	212	702	27·63	233
19.—INSULAR, OUTER HEBRIDES. 243 sq. mi.								
Barra (Barrahead)	Board of Northern Lights	7	3	0	683	764	30·06	202
D Barra (Castle Bay)	Meteorological Office	8	1	0	38	876	34·47	264
South Uist (Ushenish)	Board of Northern Lights	3	1	0	178	1490	58·66	261
North Uist (Monach)	Board of Northern Lights	8	5	6	20	1030	40·56	186
Harris (Island Glass)	Board of Northern Lights	7	4	2	130	909	35·77	229
ROSS & CROMARTY. (Area 3237 sq. mi.)								
1.—NESS—Moriston. 35 sq. mi.								
2.—BEAULY. 109 sq. mi.								
3.—MORAY FIRTH COAST STREAMS. 64 sq. mi.								
D Fortrose	A. Thom, Esq.	5	1	0	69	584	23 00	184

DIVISION XVIII.—NORTH-WESTERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.	1919			
ROSS & CROMARTY—(con.).		in.	ft.	in.	ft.	mm.	in.	
4.—CROMARTY FIRTH. 714 sq. mi.								
M Achnashellach (Glenauig)	W. M. Christy, Esq.	5	1	0	1150	2647	104·20	..
D Achnasheen (Ledgowan)	Mr. J. W. Macrae	5	1	0	500	1855	73·03	252
Strathpeffer	W. Macrae, Esq., <i>per</i> S.M.S.	8	1	0	125	705	27·76	163
Cromarty House	Brig.-Gen. W. C. Ross, C.B.	5	1	0	60	615	24·23	221
Cromarty	Board of Northern Lights	3	1	0	28	533	20·98	178
Invergordon (The Ord)	W. G. Paterson, Esq.	5	1	1	50	501	19·71	175
D Alness (Ardross Castle)	Mr. W. L. Minty	5	1	0	450	1003	39·49	216
5.—DORNOCH FIRTH. 355 sq. mi.								
Tain (Castle Brae House)	G. D. Schofield, Esq.	5	1	0	..	654	25·74	201
Tarbatness	Board of Northern Lights	8	4	0	175	484	19·04	..
Ardgay (Gledfield House)	Capt. Warre	8	1	0	130	846	33·30	..
6.—ENARD BAY. 78 sq. mi.								
7.—LOCH BROOM & C. 367 sq. mi.								
8.—LOCH EWE, LOCH TORRIDON & C. 423 sq. mi.								
D Loch Torridon (Bendamph)	The Earl of Lovelace	5	0	5	20	2107	82·96	225
D Poolewe (Inverewe Gardens)	Mr. R. B. Campbell	5	0	6	20	1471	57·92	202
Rudh Ré Lighthouse	Board of Northern Lights . . . . .	..	..	..	..	922	36·30	238
9.—LOCH CARRON, LOCH ALSH & C. 401 sq. mi.								
M Glen Shiel (Shiel House)	Mr. Colin Campbell	5	..	..	..	1944	76·52	..
D Loch Carron (Plockton)	Mrs. Anstruther Mackay	5	1	0	4	1218	47·96	230
Applecross Gardens	Mr. D. McCowan	5	1	0	70	1556	61·26	..
D Glencarron Lodge	Mr. D. D. Munro	5	1	0	504	1878	73·93	251
M Glencarron Lodge	Mr. D. D. Munro	5	1	0	504	1953	76·90	..
10.—INSULAR, OUTER HEBRIDES. 691 sq. mi.								
Stornoway Lighthouse	Board of Northern Lights	8	4	9	20	930	36·61 ?	190
D Stornoway	Meteorological Office	8	1	0	52	1331	52·38	273
Triumpanhead	Board of Northern Lights . . . . .	..	..	..	170	822	32·36 ?	226
Stornoway (Butt of Lewis)	Board of Northern Lights	8	4	6	170	731	28·77 ?	276

DIVISION XIX.—NORTHERN COUNTIES.

SUTHERLAND. (Area, 2080 sq. mi.)

1.—DORNOCH FIRTH. 413 sq. mi.**2.—FLEET, BRORA & C. 309 sq. mi.**

D Dornoch (St. Gilbert's)	G. J. Campbell, Esq.	5	1	0	35	621	24·44	177
D Golspie (Technical School)	E. W. Read, Esq.	6	1	9	105	887	34·93	207
d Dunrobin Castle	The Duke of Sutherland	5	1	6	14	794	31·24	..
M Dunrobin Castle	The Duke of Sutherland	5	1	0	14	808	31·83	..

3.—HELMSDALE & C. 226 sq. mi.**4.—NORTH COAST STREAMS. 736 sq. mi.**

D Tongue Manse	Rev. David Lundie	5	1	0	180	1131	44·52	262
d Melvich Schoolhouse	Mr. A. MacIntosh	5	1	0	..	871	34·30	..
Cape Wrath	Board of Northern Lights	7	4	8	400	1444	56·83	284

5.—LOCH LAXFORD & C. 256 sq. mi.

D Loch More (Achfary)	Mr. J. Munro	5	1	0	167	2326	91·58	274
---------------------------------	------------------------	---	---	---	-----	------	-------	-----

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 Gardens)	Mr. J. Murray	5	1	6	150	848	33·37	189
Clythness	Board of Northern Lights . . . . .	..	..	..	..	864	34·01	169

DIVISION XIX.—NORTHERN COUNTIES—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with .01 in. or more.	
		Diam.	Height Ground	above Sea Level.	1919			
CAITHNESS—(con.).		in.	ft.	in.	ft.	mm.	in.	
2.—WICK & C. 184 sq. mi.								
D Wick	Meteorological Office	8	1	2	82	827	32.55	255
Nosshead	Board of Northern Lights	7	4	7	175	688	27.10	..
3.—THURSO & C. 238 sq. mi.								
D Thurso (Buckies)	J. H. M. Davidson, Esq.	5	0	11	240	1112	43.76	260
Thurso (Holburn Head)	Board of Northern Lights	3	0	8	75	994	39.44	208
Dunnet Head	Board of Northern Lights	3	1	0	246	978	38.51	..
4.—FORSS & C. 104 sq. mi.								
D Reay (The Manse)	Rev. Dugald Carmichael	8	1	0	49	994	39.15	253
5.—INSULAR. 1 sq. mi.								
Stroma	Board of Northern Lights	..	..	..	104	555	21.85	182
Pentland Skerries	Board of Northern Lights	7	3	9	170	1410	55.53	209
ORKNEY. (Area, 389 sq. mi.)								
Hoy (Cantickhead)	Board of Northern Lights	3	1	0	115	778	30.62	..
Hoy (Graemsay Sound, High)	Board of Northern Lights	5	0	4	115	860	33.84	200
Hoy (Graemsay Sound, Low)	Board of Northern Lights	8	4	3	55	1082	42.60	253
Copinsay	Board of Northern Lights	..	..	..	..	572	22.51	160
Pomona (Deerness)	Late Magnus Spence, Esq.	5	4	0	161	1054	41.48	265
D Pomona (Kirkwall)	A. G. Spence, Esq.	5	1	0	75	1074	42.29	224
Hellyar Holm	Board of Northern Lights	3	1	0	60	952	37.47	..
Shapinsay (Balfour Castle)	Mr. W. Liddell	5	0	6	50	947	37.30	..
Auskerry	Board of Northern Lights	3	2	6	10	755	29.72	166
Sanday (Start Point)	Board of Northern Lights	3	1	0	80	905	35.62	201
Westray (Noup Head)	Board of Northern Lights	3	1	0	260	876	34.48	175
North Ronaldshay	Board of Northern Lights	3	0	4	140	968	38.10	228
Sule Skerry	Board of Northern Lights	3	0	6	113	941	37.03	236
SHETLAND. (Area, 558 sq. mi.)								
Fair Isle, South	Board of Northern Lights	..	..	..	..	462	18.21 ?	216
Fair Isle, North	Board of Northern Lights	..	..	..	262	654	25.76	183
Sumburgh Head	Board of Northern Lights	..	..	..	..	593	23.33	154
Bressay	Board of Northern Lights	3	1	0	105	664	26.15	..
D Lerwick	Meteorological Office	8	1	0	59	979	38.53	258
D Fetlar (The Manse)	Rev. J. A. Campbell	5	1	0	30	864	34.02	230
Unst (Balta Sound, Halligarth)	Dr. T. E. Saxby	5	1	0	31	1197	47.12	290

IRELAND.

DIVISION XX.—MUNSTER.

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.	1919			
		in.	ft.	in.	ft.	mm.	in.	
CORK. (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.								
Bantry House	E. W. M. Murphy, Esq. ....	..	..	..	..	1228	48·36	..
Garinish Island	Mr. J. P. O'Dwyer.....	5	0	6	15	1387	54·62	..
5.—DUNMANUS BAY. 57 sq. mi.								
6.—BANDON & C. 694 sq. mi.								
d Castletownshend (Glenbarrabane) ..	Sir E. B. Coghill, Bart.	5	1	3	100	878	34·57	158
d Castletownshend (Seafield)	Major H. Chavasse	5	0	8	40	986	38·82	184
d Union Hall (Moyross Glebe)	Rev. H. Hadden.....	..	..	..	..	946	37·24	190
Skibbereen (Hollybrook)	Col. A. H. Morgan, D.S.O.	8	1	2	60	1089	42·87	188
d Caheragh (The Rectory)	Rev. A. W. Whitley	5	0	11	98	1220	48·03	197
d Clonakilty (Shannon Vale Ho.) ..	T. J. Bennett, Esq.....	5	1	3	135	878	34·57	188
d Balineen (Kilmeen Rectory) ..	F. W. Dobbin, Esq., M.D.	5	1	6	350	1131	44·51	204
d Dunmanway (The Rectory) ..	Rev. Canon A. Wilson	5	1	6	205	1241	48·85	204
d Dunmanway (Carbery)	Dr. W. H. Fitzmaurice	5	1	6	204	1271	50·05	206
d Enniskean (Kilcoleman)	Miss E. F. B. Longfield	5	2	6	180	1000	39·38	158
Innishannon (Downdaniel)	E. W. M. Murphy, Esq. ....	..	..	..	..	902	35·51	190
7.—CORK HARBOUR. 726 sq. mi.								
d Roches Point	Meteorological Office	8	1	0	33	762	30·01	227
d Ballinageary (Inchibeg)	H. N. Walsh, Esq.....	8	1	0	..	1664	65·52	197
d Middleton (Ballinacurra)	J. H. Bennett, Esq.	8	1	0	25	760	29·92	187
d Ballintemple (Blackrock Road) ..	Michael Murphy, Esq.....	12	1	0	96	812	31·95	191
d Cork (Corn Market)	D. J. O'Mahony, Esq.	5	1	0	19	774	30·49	169
Cork (Magazine Road)	Samuel R. Hosford, Esq... ..	5	1	3	95	792	31·18	..
Cork (University College)	H. N. Walsh, Esq.	8	1	0	65	803	31·63	189
d Cork (University College) ..	(R) H. N. Walsh, Esq.	6	2	0	66	788	31·04	180
d Cork (Wellington Road)	R. C. Sikes, Esq., C.E.	5	2	6	120	818	32·22	167
d Queenstown (Fota Island)	Mr. E. Beckett	5	1	6	35	831	32·70	191
d Glanmire (Lota Lodge) ..	No. 1. A. F. Sharman-Crawford Esq	5	1	0	200	846	33·31	189
d Glanmire (Lota Lodge) ..	No. 2. A. F. Sharman-Crawford Esq	5	1	0	100	828	32·61	196
d Dripsey Woollen Mills.....	H. N. Walsh, Esq.....	5	1	0	..	848	33·37	..
8.—WOMANAGH & C. 118 sq. mi.								
d Shanagarry (Kinoith)	Miss L. P. Strangman.....	5	1	0	75	682	26·83	150
9.—BLACKWATER. 922 sq. mi.								
d Mallow (Summer Hill)	J. F. Williamson, Esq.	5	1	10	261	806	31·73	204
d Mallow (Longueville)	R. E. Longfield, Esq.	5	1	0	315	764	30·06	199
Ballyhooley	H. Beddington, Esq.	5	0	9	..	859	33·82	..
Kanturk (Castlecarr)	Mrs. Norton Barry .....	..	..	..	..	786	30·93	222
d Mitchelstown Castle	W. D. Webber, Esq.	8	3	6	345	890	35·04	200
10.—SUIR. 3 sq. mi.								
11.—INSULAR. 26 sq. mi.								
d Bere Island (Lawrence Cove) ..	Capt. H. Coleman	5	0	7	40	1183	46·68	204

DIVISION XX.—MUNSTER—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.		Days with ·01 in. or more.	
		Diam.	Height Ground	above Sea Level.	1919			
KERRY. (Area, 1851 sq. mi.)		in.	ft.	in.	ft.	mm.	in.	
1.—SHANNON—Left Bank Tributaries. 372 sq. mi.								
2.—TRALEE BAY & C. 221 sq. mi.								
3.—DINGLE BAY. 789 sq. mi.								
D Cabirciveen (Valentia Observty)	Meteorological Office	11	2	8	30	1162	45·74	237
M Gap of Dunloe (Gearahameen)	British Rainfall Organization	8	3	0	75	2030	79·90	..
D Killarney (Flesk Mills)	D. E. McDonnell, Esq., C.E.	8	2	6	95	1006	39·60	191
D Killarney (District Asylum)	E. W. Griffin, Esq., M.D.	5	0	10	178	1043	41·06	240
4.—KENMARE & C. 426 sq. mi.								
D Darrynane Abbey	Miss M. O'Connell	5	1	0	13	1210	47·62	254
D Kenmare (Derreen)	Mr. W. H. Arrowsmith	5	1	0	74	1581	62·24	222
Kenmare (Sheen Falls)	Earl of Kerry	5	0	5	25	1351	53·18	212
Kenmare (Dunkerron Castle)	Miss L. Palmer	5	1	6	70	1274	50·16	234
Kenmare (Dromquinna)	Mr. Robert Reid	5	1	0	65	1409	55·48	204
D Kenmare (Dromore Castle)	Major E. Hood	5	1	2	90	1431	56·34	238
5.—BLACKWATER. 30 sq. mi.								
6.—INSULAR. 13 sq. mi.								
D Valentia (Glanleam)	Miss A. F. Payne	8	1	0	75	1185	46·66	190
WATERFORD. (Area, 715 sq. mi.)								
1.—BLACKWATER. 243 sq. mi.								
d Lismore Castle	Duke of Devonshire	5	2	9	115	881	34·70	..
d Cappoquin House	Sir J. Keane, Bart.	5	2	6	..	920	36·22	..
2.—COLLIGAN & C. 259 sq. mi.								
D Tramore (Midvale)	E. B. Jacob, Esq.	5	1	0	115	782	30·78	179
D Tramore (Midvale)	E. B. Jacob, Esq.	11	6	0	120	708	27·87	179
3.—SUIR. 213 sq. mi.								
D Knockaderry Reservoir. No. 1	J. J. Fleming, Esq., C.E.	5	7	7	247	850	33·46	165
D Knockaderry Reservoir. No. 2	J. J. Fleming, Esq., C.E.	5	7	7	248	784	30·88	165
D Waterford (Brook Lodge)	C. P. Bolton, Esq., C.E.	5	1	0	104	858	33·79	179
d Waterford (Tycor Waterworks)	J. J. Fleming, Esq., C.E.	5	0	7	171	814	32·05	145
D Waterford (De La Salle Coll.)	Prof. M. J. Healy	8	1	0	20	867	34·14	200
D Waterford (Gortmore)	Mrs. N. H. White	5	1	2	137	807	31·78	166
D Portlaw (Mayfield)	J. Anderson, Esq.	5	3	0	70	939	36·97	195
Portlaw (Curraghmore Gdns.)	Mr. D. Crombie	5	1	0	95	940	37·02	152
D Carrick-on-Suir (Seskin)	J. Ernest Grubb, Esq.	8	1	4	542	923	36·35	205
TIPPERARY. (Area, 1660 sq. mi.)								
1.—SHANNON—Left Bank Tributaries. 582 sq. mi.								
Cappaghwhite (Greenfields)	E. W. M. Murphy, Esq.	5	1	0	..	773	30·42	..
D Killaloe (Ballina)	Office of Public Works	5	2	0	127	1043	41·08	207
D Nenagh (Traverston)	Miss A. H. Norris	5	1	0	333	964	37·94	257
Nenagh (Kilboy)	Lady Dunalley	8	2	0	326	920	36·21	200
D Nenagh (St. Mary's Rectory)	Rev. C. W. McDowell	5	1	0	..	724	28·51	222
D Nenagh (Castle Lough)	S. Parker-Hutchinson, Esq.	5	1	3	120	879	34·60	212
Terryglass (Old Court)	M. D. Hickie, Esq.	5	1	0	150	684	26·91	196
Terryglass (Slevoyre)	E. W. M. Murphy, Esq.	8	2	3	141	675	26·59	204
2.—BLACKWATER. 21 sq. mi.								
3.—SUIR. 965 sq. mi.								
D Clonmel (Bruce Villa)	J. H. Grubb, Esq.	8	1	3	110	773	30·42	199
D Cahir (Bengurragh)	R. W. Smith, Esq., Jun.	5	1	0	199	846	33·31	196
Cahir (Abbey)	Mrs. W. Rochfort	5	1	0	160	854	33·64	209
D Fethard (Coolmore)	E. W. M. Murphy, Esq.	5	1	0	347	833	32·81	211
D Cashel (Ballinamona)	E. W. M. Murphy, Esq.	5	1	0	257	820	32·29	214
D Ardmayle	L. H. Grubb, Esq.	5	1	6	260	772	30·40	165
d Thurles (Brittas Castle)	Mrs. Knox	6	1	0	..	745	29·34	..
4.—BARROW—Nore. 92 sq. mi.								
Kilcooley Abbey	T. B. Ponsonby, Esq.	5	1	3	500	746	29·38	..
D Roscrea (Timoney Park)	S. Parker-Hutchinson, Esq.	5	1	0	475	789	31·08	183

DIVISION XX.—MUNSTER—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with .01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
LIMERICK. (Area, 1040 sq. mi.)								
1.—SHANNON—Right Bank Tributaries. 7 sq. mi.		in.	ft.	in.	ft.	mm.	in.	
2.—SHANNON—Left Bank Tributaries. 944 sq. mi.								
D Knocklong (Kilfrush)	F. J. B. Gubbins, Esq.	5	0	9	314	778	30.62	222
Glin (Shannon Lawn)	C. V. Hickie, Esq.	4	1	0	12	835	32.89	..
D Foynes (Coolnanes)	Lord Monteagle	5	1	0	51	815	32.10	224
d Foynes (National School)	W. Purtill, Esq.	5	2	0	15	799	31.46	203
D Limerick (Mungret College)	Rev. R. W. Gallagher	5	1	0	49	644	25.35	174
Limerick (O'Connell Street)	R. Davison, Esq.	5	1	0	51	761	29.97	206
Limerick (Strand)	W. J. C. Horne, Esq.	5	1	0	50	716	28.20	206
M Limerick (St. Michael's School)	J. G. Boyd, Esq.	5	1	3	43	734	28.90	..
D Glenstal Castle	Sir Charles Barrington, Bt.	8	1	0	400	896	35.28	199
D Castleconnell Rectory	Mrs. Davis	5	1	0	88	889	35.00	163
Abbeyfeale (Springmount)	J. F. O'Kelly, Esq.	8	1	0	358	740	29.15	178
3.—BLACKWATER. 64 sq. mi.								
4.—BUIR. 25 sq. mi.								
CLARE. (Area, 1270 sq. mi.)								
1.—GALWAY BAY, SOUTH. 100 sq. mi.								
2.—MAL BAY & C. 294 sq. mi.								
D Inagh (Mount Callan)	Lt.-Col. F. Tottenham	5	1	0	479	1520	59.86	236
D Ennistymon House	H. V. Macnamara, Esq.	5	1	0	37	1106	43.55	216
3.—SHANNON—Right Bank Tributaries. 854 sq. mi.								
D Limerick (Derravober)	Sir A. W. Shaw	5	1	0	40	746	29.36	207
D Killadysert (Paradise Hill)	Mrs. F. B. Henn	5	0	11	125	899	35.41	199
D Newmarket-on-Fergus	Mr. A. Barker	5	1	0	86	878	34.58	209
D Broadford (Hurdlestown)	Col. W. A. Bentley	5	1	0	167	941	37.03	231
D Mountshannon (Woodpark)	R. F. Hibbert, Esq.	5	1	0	170	873	34.38	214
4.—INSULAR. 22 sq. mi.								

DIVISION XXI.—LEINSTER.

WEXFORD. (Area, 902 sq. mi.)								
1.—BARROW. 43 sq. mi.								
2.—OWENDUFF & C. 240 sq. mi.								
D Foulkesmill (Longraigue)	Miss J. Deane	5	1	1	220	881	34.68	175
3.—SLANEY & C. 467 sq. mi.								
D Templeudigan (Ballindoney Ho.)	Janssen Budgen, Esq.	5	1	0	434	928	36.54	215
d Enniscorthy (Ballyhyland)	C. B. Moffat, Esq.	5	1	0	365	973	38.29	..
D Enniscorthy (Summerville)	W. Waring, Esq.	5	6	0	106	709	27.92	183
Enniscorthy (Monksgrange)	Goddard H. Orpen, Esq.	5	1	0	565	1057	41.60	196
Enniscorthy (Woodbrook)	E. C. Blacker, Esq.	5	1	0	370	1123	44.23	192
4.—OWENAVORRAGH & C. 146 sq. mi.								
D Oulart (Wells)	C. M. Doyne, Esq.	5	1	0	220	866	34.08	209
D Gorey (Courtown House)	Earl of Courtown	5	3	0	60	813	32.00	173
5.—OVOCA & C. 6 sq. mi.								
KILKENNY. (Area 798 sq. mi.)								
1.—SUIR. 162 sq. mi.								
D Piltown (Bessborough)	Mr. T. E. Tomalin	8	3	7	60	807	31.77	202
2.—BARROW—Nore. 527 sq. mi.								
D Inistioge (Woodstock, Mt. Alto)	Mrs. Tighe	8	1	0	860	776	30.53	..
D Inistioge (Woodstock Gardens)	Mrs. Tighe	5	1	0	400	680	26.76	155
D Kilkenny Castle	Mr. E. Sutton	8	1	6	212	678	26.70	209
Kilkenny (Lavistown House)	Miss F. E. Butler	5	2	5	170	634	24.95	169
D Castlecomer House	R. H. Prior-Wandesforde, Esq.	5	1	6	392	876	34.48	212

DIVISION XXI.—LEINSTER—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with .01 in. or more.
		Diam.	Height Ground	above Sea Level.	1919			
KILKENNY—(con.).		in.	ft.	in.	ft.	mm.	in.	
3.—BARROW. 109 sq. mi.								
d Goresbridge (Barraghscore House)	H. de M. Fleming, Esq. . . .	5	1	0	130	700	27.56	206
WICKLOW. (Area, 781 sq. mi.)								
1.—BARROW. 12 sq. mi.								
2.—SLANEY. 200 sq. mi.								
d Shillelagh (Coollattin Gardens)	Duncan Brough, Esq.	5	0	9	383	908	35.75	213
3.—OVOCA & C. 241 sq. mi.								
Arklow Rectory	Press Cutting . . . . .	..	..	..	..	732	28.81	196
d Rathdrum (Avondale)	A. C. Forbes, Esq.	5	0	6	420	923	36.34	..
4.—VARTRY & C. 193 sq. mi.								
d Wicklow (Wentworth House)	E. N. Wynne, Esq., C.E. . .	5	1	1	23	791	31.15	192
d Rathnew (Clonmannon)	Rev. W. H. A. Truell . . .	5	1	6	27	760	29.90	191
d Roundwood (Vartry Filters)	M. A. Moynihan, Esq., C.E. .	8	1	8	630	956	37.64	205
d Roundwood (Vartry Lodge)	M. A. Moynihan, Esq., C.E. .	5	1	8	720	988	38.91	214
d Roundwood	M. A. Moynihan, Esq., C.E. .	5	1	8	800	1033	40.67	225
d Roundwood (Knockatemple)	M. A. Moynihan, Esq., C.E. .	5	1	8	760	1000	39.39	223
d Newcastle Killadreenan)	Dr. Denys Hanan	8	1	2	270	846	33.29	188
d Tithewer	M. A. Moynihan, Esq., C.E. .	5	1	6	1000	1004	39.54	..
d Annacarter Schoolhouse	M. A. Moynihan, Esq., C.E. .	5	1	6	750	995	39.18	..
Greystones	Sir J. W. Moore, M.D. . . .	5	1	4	30	725	28.54	174
d Greystones (Rathdown)	Miss L. Armstrong	5	0	6	150	885	34.86	205
5.—LIFFEY & C. 135 sq. mi.								
CARLOW. (Area, 346 sq. mi.)								
1.—BARROW—Nore. 9 sq. mi.								
2.—BARROW. 216 sq. mi.								
Bagnalstown (Fenagh House)	D. R. P. Beresford, Esq. . .	5	1	0	340	706	27.78	184
M Bagnalstown (Fenagh House)	D. R. P. Beresford, Esq. . .	5	1	0	340	681	26.80	..
Carlow (Browne's Hill)	Col. Browne Clayton	5	1	0	291	719	28.30	117
3.—SLANEY. 121 sq. mi.								
d Hacketstown Rectory	Rev. C. S. S. Ellison	5	1	2	659	899	35.41	230
QUEEN'S COUNTY. (Area, 664 sq. mi.)								
1.—SHANNON—Left Bank Tributaries. 25 sq. mi.								
2.—BARROW—Nore. 339 sq. mi.								
d Abbey Leix (Blandsfort)	H. Bland, Esq.	5	2	6	532	827	32.55	202
d Mountrath (Baunreagh)	D. Stewart, Esq.	5	1	0	810	1307	51.46	222
3.—BARROW. 300 sq. mi.								
Carlow (Sunnyside)	E. Shackleton, Esq.	5	1	0	178	728	28.67	..
d Mountmellick	W. A. Robinson, Esq. . . .	5	1	0	252	886	34.88	189
KING'S COUNTY. (Area, 772 sq. mi.)								
1.—SHANNON—Left Bank Tributaries. 560 sq. mi.								
d Birr Castle	Earl of Rosse	8	1	0	175	721	28.41	202
d Birr (Moneyguynen)	Miss N. B. Biddulph. . . .	5	1	6	400	724	28.51	204
d Meelick (Victoria Lock)	Office of Public Works . . .	5	2	0	121	648	25.50	184
d Tullamore (Rathrobin)	Lt.-Col. M. W. Biddulph . .	5	1	0	400	768	30.25	207
d Tullamore (St. Catherine's Rect.) . .	Rev. R. S. Craig	5	1	6	201	694	27.31	205
d Tullamore (Union Workhouse)	Dr. G. A. Moorhead	5	1	0	225	723	28.45	248
d Ferbane (Turraun Peat Works) A . . .	Leinster Carbonizing Co. Ltd.	8	1	2	170	722	28.44	194
d Ferbane (Turraun Peat Works) B . . .	Leinster Carbonizing Co. Ltd.	8	1	2	170	724	28.50	193
d Ballycumber (Moorock Lodge)	H. P. Mulock, Esq.	5	1	0	218	705	27.75	161
2.—BARROW—Nore. 5 sq. mi.								
3.—BARROW. 156 sq. mi.								
4.—BOYNE. 51 sq. mi.								

DIVISION XXI.—LEINSTER—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with .01 in. or more.
		Diam.	Height Ground	above Sea Level.	1919			
KILDARE. (Area, 654 sq. mi.)		in.	ft.	in.	ft.	mm.	in.	
1.—BARROW. 332 sq. mi.								
D Castledermot (Millbrook)	T. Westland Greene, Esq. .	8	1	4	225	661	26.02	186
2.—LIFFEY. 246 sq. mi.								
Sallins (Palmerstown).....	The Countess of Mayo	5	1	0	321	780	30.70	212
D Straffan House	Mr. F. Streeter	5	0	10	256	846	33.30	181
3.—BOYNE. 76 sq. mi.								
DUBLIN. (Area, 354 sq. mi.)								
1.—VARTRY & C. 23 sq. mi.								
Carrickmines (Claremont)	John Read, Esq.	5	0	11	300	725	28.56	..
D Ballybrack (Marino)	Rt. Hon. L. A. Waldron ..	5	3	6	..	623	24.54	156
2.—LIFFEY & C. 188 sq. mi.								
D Glen-na-Smoel(RathminesWW) W. R. Stephens, Esq., C.E.		5	1	0	510	1127	44.38	244
D Ballyboden (Rathmines W.W.) W. R. Stephens, Esq., C.E.		5	1	0	344	848	33.37	208
D Stillorgan (Farmleigh)	T. Jackson, Esq.	5	1	2	220	949	37.36	234
D Stillorgan (Tipperstown)	T. D. Lochtie, Esq.	5	1	4	278	682	26.87	159
D Dundrum (The Castle).....	Sir J. W. Moore, M.D.	5	..	..	..	725	28.53	223
D Blackrock (Charleville).....	J. Harold Pim, Esq.	5	1	0	260	758	29.83	175
D Kingstown (Harbour Yard)....	Office of Public Works ...	8	1	0	44	682	26.87	180
D Belgard Castle	Capt. A. F. Maude	5	1	0	400	654	25.73	182
D Rathmines (Terenure)	F. P. Dixon, Esq., C.E. ...	5	0	9	125	628	24.74	198
D Rathmines (Harold's Cross) ..	E. H. Cannon, Esq.	5	0	11	155	607	23.91	203
D Rathmines (Ormond Road) ...	W. R. Stephens, Esq., C.E.	5	1	0	99	687	27.04	223
D Rathmines (Dartrey Road) ...	T. Mason, Esq.	5	6	0	100	720	28.34	172
D Ranelagh (Sandford Lodge) ...	H. Fayle, Esq.	5	0	11	61	669	26.33	198
D Donnybrook (Belmont Avenue) Douglas Waring, Esq.		5	0	9	100	705	27.76	196
D Donnybrook (Anglesea Road) ..	F. C. D. Joynt, Esq.	5	1	0	30	626	24.66	189
D Dublin (FitzWilliam Square) ..	Sir J. W. Moore, M.D.	8	1	6	54	664	26.16	210
D Dublin (Trinity College).....	C. E. Gibson, Esq.	8	1	0	13	635	25.00	202
D Dublin (Phoenix Park).....	Ordnance Survey Office ..	8	1	0	156	665	26.17	202
D Dublin (Ringsand Pumpg.Stn.) Vincent Crosby, Esq.		10	1	1	25	622	24.48	192
D Clontarf (Pumping Station)....	E. FitzGerald, Esq.	5	4	9	22	577	22.70	197
D Glasnevin (Roy.Botanic Gdns.) Sir F. W. Moore		8	1	0	55	686	26.99	245
D Howth Castle	Com. J. G. St. Lawrence, R.N.	5	1	9	35	643	25.31	214
3.—NANNY, DELVIN & C. 142 sq. mi.								
D Malahide (Seamount)	J. G. Jameson, Esq.	5	1	0	150	641	25.23	202
D Malahide (The Green).....	T. Bateman, Esq.	5	1	7	25	574	22.60	160
D Skerries (Milverton Hall)	Capt. E. G. Woods	5	1	6	190	622	24.49	189
D Balbriggan (Ardgillan) .. No. 1	Capt. E. R. Taylor	5	1	0	211	676	26.63	213
D Balbriggan (Ardgillan) .. No. 3	Capt. E. R. Taylor	5	1	0	211	670	26.36	..
4.—INSULAR. 1 sq. mi.								
D Lambay Island	Hon. Cecil Baring	5	1	0	20	579	22.81	166
MEATH. (Area 909 sq. mi.)								
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	787	30.98	219
3.—NANNY, DELVIN & C. 150 sq. mi.								
D Drogheda (Mullacroghan)	W. Brydon Hill, Esq.	5	1	6	300	748	29.44	192
4.—BOYNE. 560 sq. mi.								
D Summerhill House	Late Lord Langford	5	1	0	372	743	29.27	178
D Athboy (Mitchelston)	W. J. Hopkins, Esq.	5	1	0	260	776	30.54	214
D Athboy (Frankville)	C. P. Coghill, Esq.	8	1	3	227	860	33.86	203
D Navan (Staffordstown)	R. J. Butler, Esq.	5	1	0	250	742	29.21	193
D Kells (Headfort)	The Marquis of Headfort ..	8	0	6	227	857	33.75	210
5.—DUNDALK BAY. 95 sq. mi.								

DIVISION XXI.—LEINSTER—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height above Ground	above Sea Level.	1919			
WESTMEATH. (Area, 712 sq. mi.)		in.	ft.	in.	ft.	mm.	in.	
1.—SHANNON—Left Bank Tributaries. 517 sq. mi.								
D Athlone	Office of Public Works	5	2	0	132	569	22·41	187
D Athlone (Twyford)	J. P. Hodson, Esq.	5	1	0	187	803	31·60	196
D Moate (Coolatore)	H. A. S. Upton, Esq.	5	1	6	369	776	30·55	230
D Mullingar (Belvedere)	Mr. J. Bayliss	5	1	0	367	779	30·68	179
D Mullingar (Ballynegall Gardens)	Mr. C. G. Elson	5	2	0	500	916	36·08	198
D Rathowen (Cromlyn)	(R) Major-Gen. J. P. Battersby	8	1	6	250	788	31·01	221
d Castlepollard (Gillardstown Ho.)	W. Hardy, Esq.	5	1	0	290	831	32·71	..
D Castlepollard (Pakenham Hall)	Mr. W. Allan	5	1	6	300	850	33·48	201
2.—BOYNE. 195 sq. mi.								
D Athboy (Lisclogher)	Lt.-Col. J. E. Knott, C.M.G.	5	1	0	271	730	28·74	197
LOUTH. (Area, 316 sq. mi.)								
1.—BOYNE. 32 sq. mi.								
2.—DUNDALK BAY & C. 264 sq. mi.								
D Dundalk (Town Hall)	M. Sellars, Esq., C.E.	8	55	0	82	663	26·11	193
D Dundalk (Mount Pleasant)	Telford Macneill, Esq.	5	1	0	60	790	31·12	210
D Dundalk (Aughneska Res.)	M. Sellars, Esq., C.E.	5	1	3	207	883	34·76	188
D Dundalk (Ballymacallet)	M. Sellars, Esq., C.E.	5	2	3	670	817	32·18	..
3.—CARLINGFORD LOUGH. 20 sq. mi.								
D Greenore	T. Chambers, Esq., C.E.	5	1	0	20	798	31·41	211
LONGFORD. (Area, 424 sq. mi.)								
1.—ERNE. 61 sq. mi.								
2.—SHANNON—Left Bank Tributaries. 363 sq. mi.								
D Ballymahon (New Castle)	Lt.-Col. W. A. King-Harman	5	2	5	250	776	30·54	192
D Longford (The Rectory)	Rev. H. Justice	5	1	0	185	840	33·09	211
D Cloondraha	Office of Public Works	5	2	0	130	623	24·53	224
D Castle Forbes Gardens	The Earl of Granard	8	1	0	168	854	33·64	226

DIVISION XXII.—CONNAUGHT.

GALWAY. (Area 2377 sq. mi.)								
1.—ERIFF & C. 141 sq. mi.								
2.—GALWAY BAY, NORTH. 277 sq. mi.								
3.—CORRIB. 846 sq. mi.								
D Ballynahinch Castle	R. Berridge, Esq.	5	1	9	41	1424	56·08	253
D Headfort (Ower House)	Col. C. Beddington	5	1	0	200	1224	48·17	199
D Tuam (Gardenfield)	R. J. Kirwan, Esq., C.E.	5	1	0	155	916	36·08	..
4.—GALWAY BAY, SOUTH. 281 sq. mi.								
D Woodlawn	Mr. C. Farmer	5		6	300	772	30·38	173
5.—SHANNON—Right Bank Tributaries. 803 sq. mi.								
6.—INSULAR. 29 sq. mi.								
ROSCOMMON. (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	1	0	160	799	31·45	163
D Jamestown (Albert Lock)	Office of Public Works	5	2	0	146	607	23·89	185

DIVISION XXII.—CONNAUGHT—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with .01 in. or more.
		Diam.	Height above Ground	above Sea Level.	1919			
MAYO. (Area, 2149 sq. mi.)								
1.—SLIGO BAY. 10 sq. mi.		<i>in.</i>	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>mm.</i>	<i>in.</i>	
D Crossmolina (Enniscoe)	J. Pratt, Esq.	5	0	11	74	1406	55·37	262
3.—BLACKSOD BAY & C. 411 sq. mi.								
D Blacksod Point	Meteorological Office	8	0	10	327	1187	46·74	267
4.—CLEW BAY. 254 sq. mi.								
D Westport House	The Marquis of Sligo	5	1	0	35	1097	43·19	230
D Westport (St. Helen's)	Miss Kelly	6	0	11	35	1069	42·10	271
D Newport (Burrishoole House)	H. M. Anketell Jones, Esq.	5	1	4	30	1266	49·84	252
D Mallarany	M. C. Forbes, Esq. . . . .	..	..	..	120	1632	64·24	241
5.—ERIFF & C. 121 sq. mi.								
D Aasleagh House	The Marquis of Sligo	5	1	0	30	2277	89·66	240
D Delphi Lodge	The Marquis of Sligo	5	1	0	110	2508	98·73	258
6.—CORRIB. 432 sq. mi.								
D Headfort (Ballycurrin)	Col. C. Beddington	5	1	0	50	1049	41·31	192
D Cong (The Glebe)	Rev. Canon R. Y. Lynn	5	1	11	112	1151	45·32	230
D Ballinrobe (Cranmore)	H. H. C. Knox, Esq.	5	1	0	112	1115	43·88	..
7.—SHANNON—Right Bank Tributaries. 35 sq. mi.								
8.—INSULAR. 89 sq. mi.								
SLIGO. (Area, 716 sq. mi.)								
1.—DROWES & C. 49 sq. mi.								
2.—SLIGO BAY. 444 sq. mi.								
D Collooney (Markree Obsy)	J. R. Armstrong, Esq.	5	1	0	122	1154	45·42	241
D Collooney (Markree Obsy)	J. R. Armstrong, Esq.	5	16	6	138	1174	46·20	241
D Sligo (Hazlewood)	Mrs. Perceval	5	2	6	..	1072	42·21	227
D Sligo (Ard-na-veagh)	R. J. Kirwan, Esq., C.E.	5	1	0	90	1098	43·25	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.								
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.								
D Ruskey	Office of Public Works	5	2	0	141	662	26·05	196
D Drumshanbo (Lough Allen Sluice)	Office of Public Works	5	2	0	169	673	26·48	162

DIVISION XXIII—ULSTER.

CAVAN. (Area, 753 sq. mi.)

1.—ERNE. 489 sq. mi.								
D Killeshandra (Castle Hamilton)	Major W. J. Hamilton	5	1	0	251	827	32·56	169
D Killeshandra (Drom Mullac)	Miss Prudence M. Lough	5	1	0	280	829	32·63	174
D Belturbet (Cloverhill)	Mrs. Sanderson	5	1	0	202	771	30·34	196
2.—SHANNON—Right Bank Tributaries. 34 sq. mi.								
3.—SHANNON—Left Bank Tributaries. 91 sq. mi.								
4.—BOYNE. 122 sq. mi.								
Bailieborough	Rev. D. O'Reilly	5	1	6	511	950	37·39	189
5.—DUNDALK BAY. 17 sq. mi.								

DIVISION XXIII.—ULSTER—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain. 1919		Days with ·01 in. or more.
		Diam.	Height above Ground		Sea Level.			
		in.	ft.	in.	ft.	mm.	in.	
FERMANAGH. (Area, 713 sq. mi.)								
1.—ERNE. 667 sq. mi.								
Enniskillen (Florence Court) ..	F. Crowley, Esq.	5	1	5	169	1074	42·29	249
d Enniskillen (Portora)	W. N. Tetley, Esq.	5	1	0	251	959	37·75	..
Belleek (Heronshaw)	Late J. Beacom, Esq.	5	1	5	150	1046	41·20	214
2.—DROWES & C. 46 sq. mi.								
MONAGHAN. (Area, 498 sq. mi.)								
1.—ERNE. 208 sq. mi.								
d Cootehill (Dartrey)	Late Earl of Dartrey	5	2	6	265	879	34·61	190
2.—DUNDALK BAY. 132 sq. mi.								
3.—BANN—Lough Neagh, West. 158 sq. mi.								
d Monaghan (Workhouse)	Dr. J. Campbell Hall	5	5	6	240	666	26·20	169
ARMAGH. (Area, 514 sq. mi.)								
1.—DUNDALK BAY. 118 sq. mi.								
2.—CARLINGFORD LOUGH. 23 sq. mi.								
3.—BANN—Lough Neagh, East. 37 sq. mi.								
d Lurgan (Belle Vue)	S. A. Bell, Esq.	5	0	5	200	653	25·70	182
4.—BANN, UPPER. 144 sq. mi.								
d Tanderagee	Dr. J. Taylor	5	1	6	198	756	29·78	213
5.—BANN—Lough Neagh, West. 192 sq. mi.								
d Armagh Observatory	Meteorological Office	8	1	0	210	740	29·13	225
Loughgall (Manor House)	Mrs. Sowter	5	1	0	210	674	26·53	195
DOWN. (Area, 961 sq. mi.)								
1.—CARLINGFORD LOUGH. 104 sq. mi.								
d Warrenpoint (Clonallon)	Lt.-Col. A. W. Mansergh ..	5	1	3	15	781	30·74	191
d Newry (Bridge Street Ho.)	C. Blaney, Esq.	5	1	0	23	792	31·16	175
2.—DUNDRUM BAY & C. 173 sq. mi.								
d Mourne Mount's (Fofanny Res.)	J. H. H. Swiney, Esq., C.E.	5	1	0	938	1408	55·42	220
d Seaford	Major W. G. Forde	8	0	5	180	967	38·08	187
3.—STRANGFORD LOUGH. 260 sq. mi.								
d Newtownards (Scrabo Hill) ...	Newtownards U.D.C. ....	..	1	6	540	819	32·24	181
4.—COAST STREAMS. 47 sq. mi.								
d Donaghadee (Orlock Hill) ...	Meteorological Office	8	1	0	35	814	32·05	195
5.—BELFAST LOUGH. 206 sq. mi.								
6.—BANN—Lough Neagh, East. 7 sq. mi.								
7.—BANN, UPPER. 162 sq. mi.								
d Rathfryland (Muddock Bridge)	Mr. W. Henning	5	3	0	300	695	27·35	..
Banbridge (Observatory)	Mr. H. D. Fleming	5	1	6	210	706	27·78	199
d Banbridge (Milltown)	J. E. Kennedy, Esq.	5	1	0	200	700	27·58	203
Banbridge (Millbank)	Mrs. J. W. Mulligan	5	1	0	257	682	26·85	202
Portadown (Moyallon House) ..	Mr. J. Lynas	5	0	5	130	703	27·68	197
8.—INSULAR. 2 sq. mi.								
ANTRIM. (Area, 1193 sq. mi.)								
1.—BELFAST LOUGH. 107 sq. mi.								
d Lisburn (Ulster Provincial Sch.)	J. Ridges, Esq.	5	1	6	208	1201	47·30	202
d Belfast (Queen's University) ..	Mr. G. Robinson	5	1	0	62	880	34·64	202
d Belfast (Cave Hill Road)	Miss C. Firth	5	1	0	200	969	38·14	251
d Belfast (Sewage Outfall Wks.) (r)	H. A. Cutler, Esq.	8	2	11	26	813	32·01	204
Belfast (Oldpark Filters)	F. W. McCullough, Esq., C.E.	5	3	6	203	842	33·14	193
Carrickfergus (Dorisland)	F. W. McCullough, Esq., C.E.	5	3	0	250	854	33·64	204
Carrickfergus (South Woodburn)	F. W. McCullough, Esq., C.E.	5	3	0	640	961	37·83	217
Carrickfergus (North Woodburn)	F. W. McCullough, Esq., C.E.	5	3	0	735	983	38·69	218
Carrickfergus (Copeland)	F. W. McCullough, Esq., C.E.	5	3	0	424	878	34·56	210
Carrickfergus (Lough Mourne) ..	F. W. McCullough, Esq., C.E.	5	3	0	596	984	38·73	211

DIVISION XXIII.—ULSTER—(con.).

STATIONS.	AUTHORITIES.	Rain Gauge.				Depth of Rain.		Days with ·01 in. or more.
		Diam.	Height Ground	above Sea Level.		1919		
ANTRIM—(con.).		<i>in.</i>	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>mm.</i>	<i>in.</i>	
2.—GLENARM & C. 186 sq. mi.								
D Larne (Sallagh Springs)	J. H. H. Swiney, Esq., C.E.	5	1	0	566	1226	48·25	213
D Glenarm Castle	Mr. J. Smith	5	1	0	70	938	36·93	167
3.—BUSH & C. 193 sq. mi.								
4.—BANN, LOWER. 112 sq. mi.								
5.—BANN—Lough Neagh, East. 590 sq. mi.								
Stonyford (Belfast W.W.)	F.W. McCullough, Esq., C.E.	5	1	6	437	843	33·19	186
D Antrim (Ardnaveigh)	H. B. Murray, Esq.	5	1	6	210	741	29·18	192
D Ballymena (Harryville)	J. R. Williams, Esq.	5	1	5	150	1016	39·99	229
D Broughshane (Quolie)	H. O'Hara, Esq., C.E.	5	1	4	864	1144	45·04	228
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	954	37·58	234
2.—BUSH & C. 9 sq. mi.								
3.—BANN, LOWER. 240 sq. mi.								
D Garvagh (Woodbank House)	Lt.-Col. R. C. S. Macausland	5	1	0	350	1103	43·44	232
4.—BANN—Lough Neagh, West. 196 sq. mi.								
5.—FOYLE & C. 365 sq. mi.								
M Glenedra (Spelhoagh Mount)	M. A. Robinson, Esq., C.E.	5	1	0	1333	1396	54·98	..
D Glenedra Hill	M. A. Robinson, Esq., C.E.	5	1	0	1333	1535	60·45	225
D Glenedra Lodge	M. A. Robinson, Esq., C.E.	5	1	0	950	1336	52·61	224
D Londonderry (Creggan Res.)	Mr. W. Hutchison	8	1	0	320	1020	40·16	265
Limavady (Drenagh)	M. M. McCausland, Esq.	5	1	6	80	863	33·98	224
Bellarena	Sir F. G. Heygate, Bart.	5	1	3	7	887	34·92	228
TYRONE. (Area, 1257 sq. mi.)								
1.—ERNE. 46 sq. mi.								
2.—BANN—Lough Neagh, West. 442 sq. mi.								
d Dungannon (Killyman Rectory) Rev. E. F. Campbell		5	0	11	150	815	32·10	253
3.—FOYLE. 769 sq. mi.								
D Omagh (Edenfel)	Lt.-Col. J. B. Buchanan	8	1	0	280	1055	41·55	225
D Newtown Stewart (Baron's Court) Mr. R. Bell		5	1	0	250	934	36·77	233
D Sion Mills (Sion House)	Capt. J. C. Herdman	5	3	0	100	945	37·19	232
DONEGAL. (Area, 1875 sq. mi.)								
1.—DONAGH & C. 146 sq. mi.								
D Malin Head	Meteorological Office	8	1	0	208	751	29·56	234
2.—LOUGH SWILLY. 273 sq. mi.								
D Letterkenny (District Asylum) E. E. Moore, Esq.		5	1	0	183	1096	43·17	238
3.—SHEEPHAVEN & C. 307 sq. mi.								
D Milford (The Manse)	Rev. W. J. Young	5	1	6	150	1053	41·46	245
D Dunfanaghy (St. Helen's)	J. J. MacGrath, Esq., M.D.	8	0	9	50	1082	42·59	256
4.—GWEEBARRA & C. 341 sq. mi.								
5.—DONEGAL BAY. 322 sq. mi.								
D Killybegs (Rockmount)	Com. G. G. Phillipps, R.N.	5	1	0	65	1524	59·99	242
6.—ERNE. 68 sq. mi.								
D Belleek (The Island)	Mr. J. McBrien	5	1	0	154	966	38·01	217
7.—DROWES & C. 10 sq. mi.								
8.—FOYLE. 396 sq. mi.								
9.—INSULAR. 12 sq. mi.								

BRITISH RAINFALL

1919.

PART IV.

THE EFFECT OF RAINFALL ON THE SATURATION-LEVEL IN THE CHALK AT CHILGROVE, WEST SUSSEX, FROM 1836 TO 1919.

BY D. HALTON THOMSON, M.A., ASSOC.M.INST.C.E.

As in other high-level chalk districts, one of the outstanding features of the West Sussex Downs is the almost entire absence of water-courses. The few perennial streams that exist are confined to the deeper valleys; elsewhere, flowing surface-water is unknown or only intermittent. The prevalence of "dry valleys" is, of course, due to the extreme porosity of the chalk, which readily absorbs the available rainfall. The percolating water collects in its interstices and fissures, forming a vast underground reservoir, which, in turn, drains away to lower levels in all directions, but principally southwards, following the dip of the strata towards the sea; part of the water reappears as springs, many of those near the boundary of the chalk outcrop being perennial. The "saturation-level" of this subterranean reservoir is in a state of continual fluctuation, being dependent upon the relative effect of replenishment by rainfall and depletion by underground drainage. During the winter rainfall is normally heavier and practically the whole passes into the ground; the fissures are filled more quickly than they are drained and the saturation-level rises, often with remarkable rapidity. A secondary result is the appearance of intermittent streams, locally known as "lavants," due to the breaking-out of springs at higher levels as the saturation-line creeps up the valleys. In the summer, evaporation and the demands of vegetation take heavy toll of the rainfall, so that as a rule little or none percolates into the sub-soil; usually, therefore, underground storage is depleted, the "lavants" cease to flow and the saturation-level falls. As will be seen later, some noteworthy deviations from this normal seasonal rise and fall may occur from time to time.

Although the reasons for these fluctuations are understood in a general way and can be stated in general terms, the information available for investigating them quantitatively is meagre. No doubt many well-records have long been kept at pumping stations, but these are vitiated by the artificial lowering of the saturation-level in the vicinity due to the abstraction of water by the pumps. It is, therefore, the present intention to make available for study an exceptionally long record of monthly saturation-levels, as measured

in a well at Chilgrove, West Sussex, and to compare it with the well-known rainfall record at this place. Water from the well is drawn only by the bucketful and there is no pumping station in the vicinity, so that the natural water-level is unaffected. The earlier well-measurements have been published at infrequent intervals, but not in recent years; by the courtesy of the present owner and observer, Miss L. K. Woods, the writer is enabled to bring the observations to date, and to discuss other relevant information. Both records were commenced by her father, the late Mr. Leyland Woods, that of rainfall in 1834 and of water-levels in 1836; since 1866 they were continued by her brother, the late Mr. J. W. Woods, until his health failed in 1916. The rainfall record is practically complete; in the earlier years of the well-measurements, however, there are some omissions and the observations were not always taken at strictly regular intervals, but these discontinuities detract in a very small degree from the value of the record. Advantage is taken of the present opportunity to place the whole record as far as possible on a uniform basis and to reconcile or explain some discrepancies which appear by a comparison of the earlier published tables.

Chilgrove, which is the name both of the country-seat in question and the neighbouring hamlet, is situated near the head of a "dry-valley" about two miles south of the main escarpment of the South Downs and six miles N.N.W. of Chichester. The general ground-level is about 260 ft. above mean sea-level (Ordnance Datum) and the chalk hills in the vicinity rise to about 500 ft.

The monthly rainfall observations are given in Table I. As already stated, they were commenced two years before those of the water-levels, and for the sake of completing the available record the figures for the first two years (1834 and 1835) are given in the table, but they are not used in this discussion nor are they included in any averages or other calculations. The rain gauge is situated a short distance from the S.W. side of the house; the level of the lip is 266 ft.* above O.D. (determined by actual levelling from a bench mark) and 1 ft. above ground-level. In 1852 the gauge was moved a few yards from a rather lower elevation, but the change was not sufficient to cause a break in the record.

The water-levels require more detailed discussion. The well, where they are measured is about 100 yds. to the south-east of the house, the ground-level at its head being 253 ft.† O.D. (also determined by actual levelling from a bench-mark). It is an old well, and since there is a record of its having been cleaned out about 1750, it must have been excavated many years before that date. No record exists of the well-section, but there is no doubt that it is constructed entirely in the chalk.

* This level has previously been recorded at 284 ft.

† This level has previously been recorded at 266 ft.

The depth of water in the well is measured by the "wet-line" method, *i.e.*, a weighted line is let down until it just touches the bottom; it is then drawn up and the wetted line measured in short lengths between a pair of fixed points exactly 2 ft. apart (at one time 5-ft. lengths were measured) in the same way that a draper uses a yard measure on his counter.

The full depth of the well below ground-level is 145 ft. It is found, however, that silt slowly accumulates at the bottom, bringing about in the course of years a material decrease in the depth, and it is necessary to take this change into account when referring the observations to a fixed datum. An old account of Chilgrove states that the well was cleaned out before 1750, probably in one of the thirteen successive dry years ending in that year. (See *British Rainfall*, 1870, p. 53.) It was cleaned out again in February, 1855, a very dry winter, when 10 ft. of silt were removed. Previous to this date, therefore, the well had apparently silted up at an average rate of 1 ft. in ten or eleven years. When measured recently (February, 1920) the depth by steel tape was 141·3 ft. below ground-level. The bottom was found to be very soft, and by jerking a sharp pointed rod on the end of a line, it was possible to work it down about 2 ft. into the accumulated silt without touching hard rock. Since 1855, therefore, the well has silted up at an average rate of 1 ft. in seventeen years, a marked decrease from the earlier rate. The change in rate is not readily explicable; it may be due to natural causes, such as an alteration in the average rate of ground-water movement. On the other hand the change may be only apparent; for instance, the work of cleaning out in 1750 (or thereabouts) might have been interrupted by a sudden rise of water in the well; if this were so, the actual silting between that date and 1855 would be less than 10 ft. by the amount not removed in 1750, and the rate would more nearly approximate to the later measurement. There is, however, no direct evidence in support of either supposition.

Assuming an average rate of silting of 1 ft. in seventeen years since the commencement of the well-record, and allowing for the cleaning out in 1855, the level of the bottom and depth of the well (to the nearest foot) for different periods would be as follows:—

Period.	Level of Bottom of Well. (Above O.D.) Ft.		Depth of Well. (From Ground-level.) Ft.
1836-46	117	..	136
1847-54	118	..	135
1855-63	108	..	145
1864-80	109	..	144
1881-97	110	..	143
1898-1914	111	..	142
1915 to date	112	..	141

It is to be noted that all the depths given above are measured from ground-level (253 ft. O.D.). At the commencement of the

record in 1836, this practically coincided with the lip of the well. At some unknown date, however, but almost certainly since 1855, a dwarf wall, 2 ft. high, carrying a lid, has been constructed at the head of the well, raising the lip to 255 ft. O.D. The depth, therefore, from present lip to bottom, when cleaned out, is 147 ft.

The sources of information with regard to the Chilgrove well-levels, known to the writer, are as follows:—

(a) *Symons's Meteorological Magazine*, 1866, vol. 1, p. 29. Contains monthly observations from 1853 to 1865 inclusive.

(b) Joseph Lucas, "The Chalk Water System," Appendix. *Proc. Inst. Civil Eng.*, 1877, vol. 47, pp. 87—90. Contains all available observations and the dates on which they were taken (where known) from 1836 to 1876 inclusive.

(c) *Symons's Meteorological Magazine*, 1898, Vol. 33, p. 71. Contains monthly observations from 1836 to 1898.

(d) MS. Table in possession of the present observer. Contains monthly observations from 1836 to the present day.

Although a comparison of these tables evinces several differences in the earlier years, many of which are important, a close study indicates that the figures can be reconciled and that a consistent table can be constructed. Notes on the differences between the various tables are given in the appendix, but it may be briefly stated here that the table published herewith (Table II.) is based on Lucas' figures up to 1876, and on the MS. figures after that year.

In Table II. all the observations are referred to Ordnance Datum by adding the recorded depths of water in the well to the O.D. Levels of the bottom, as given above. Since all the later, and the bulk of the earlier, observations were taken on the *last* day of the month to which they are entered in the original tables, the remainder have been adjusted, where possible, to represent the probable reading on that day. Those taken on the *first* of the month are regarded as referring to the *last* day of the previous month. When the dates of the mid-month readings are known, the probable readings on the nearest last day of the month have been determined by interpolation; this procedure can be adopted with some degree of confidence, because, as a rule, the water-level changes regularly, especially during periods of falling water. When only the month and not the date, is recorded, the figures are unadjusted. In a few cases, when depth of water is indicated only by some general note, such as "almost over-flowing," "nearly dry," "dry," the level is estimated. For months in which no observations were taken, the levels have been estimated with the aid of the rainfall table and a knowledge of the character of the fluctuations in other complete years. In the whole record there are only five periods where the break is longer than six months and none longer than ten months. With the exception of some missing observa-

tions between 1869 and 1874, the record is practically complete and on a uniform basis from 1853 onwards.

The rainfall and saturation-levels are shown graphically in the diagram on pp. 252-253. One of the most striking features shown by the diagram is the wide range through which the water-level fluctuates. The extreme recorded levels are a maximum of 253 ft. on 6th January, 1853, and a minimum of 115 ft. on 21st February, 1855, the difference being no less than 138 ft. As a rule the amount of fluctuation in permeable strata increases with the distance from the edges of the outcrop, and since Chilgrove is centrally situated with reference to the boundaries of the Chalk, the above range may be very nearly the greatest in the district. The average water-level for the whole eighty-four years is 159 ft., and the average annual variation from 185 ft to 134 ft., a range of 51 ft. The extreme range, therefore, is about 2·7 times the average range.

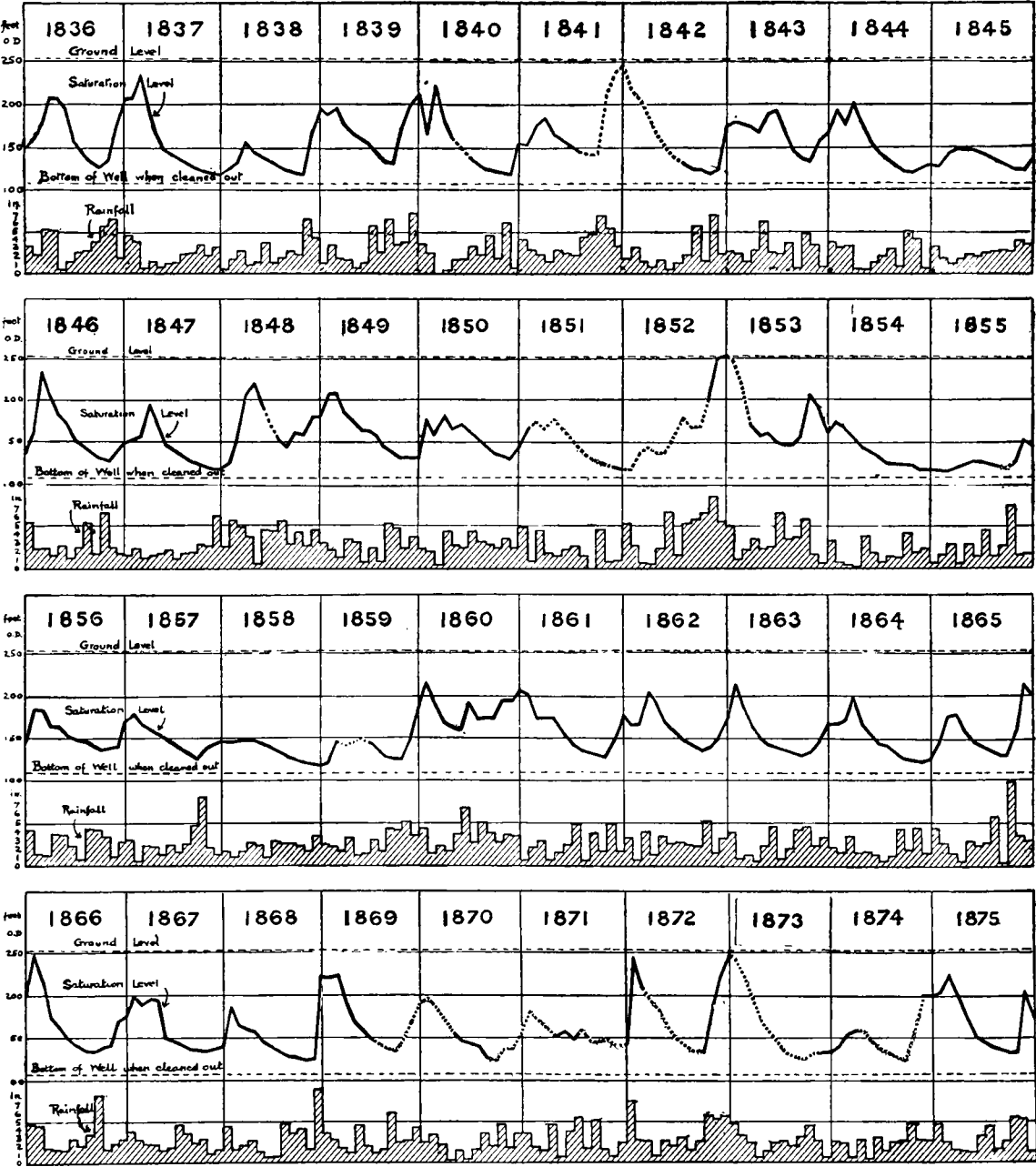
At the maximum level of 253 ft. the well overflowed. This level occurs only once in the table; since, however, the water often fluctuates rapidly at high levels, it is likely that the well has overflowed in other years, but that the occurrence did not coincide with the date of measurement. In four other years, levels within 5 ft. of ground-level have been recorded, namely:—

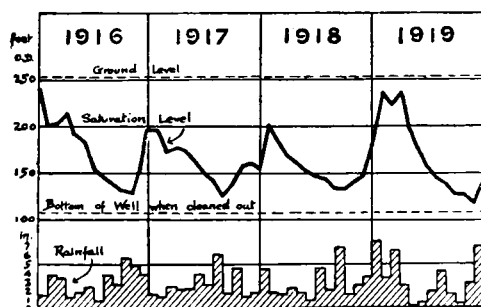
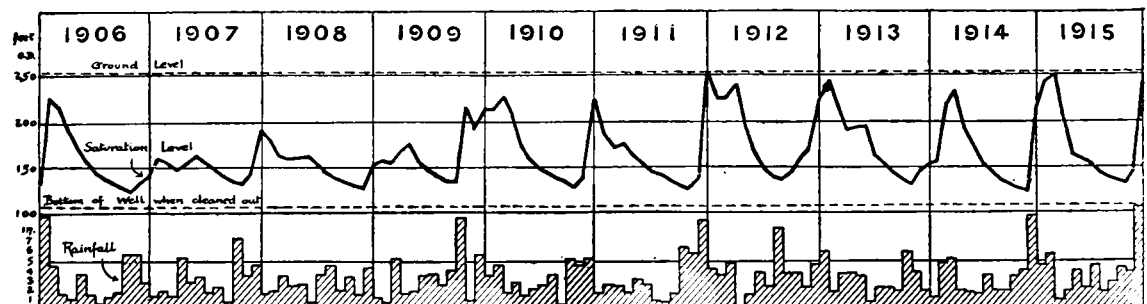
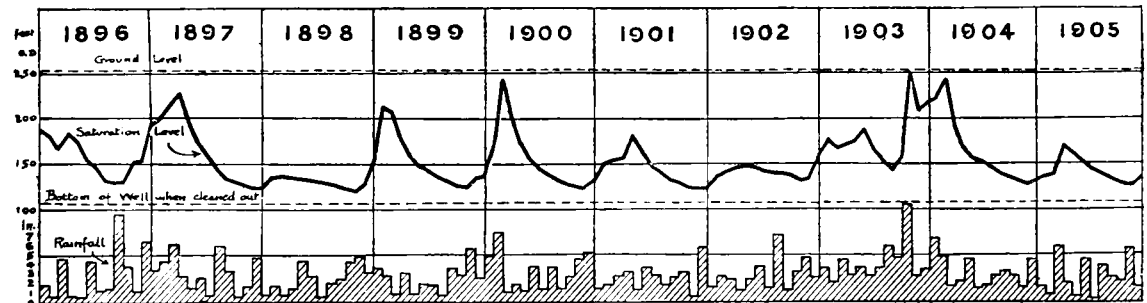
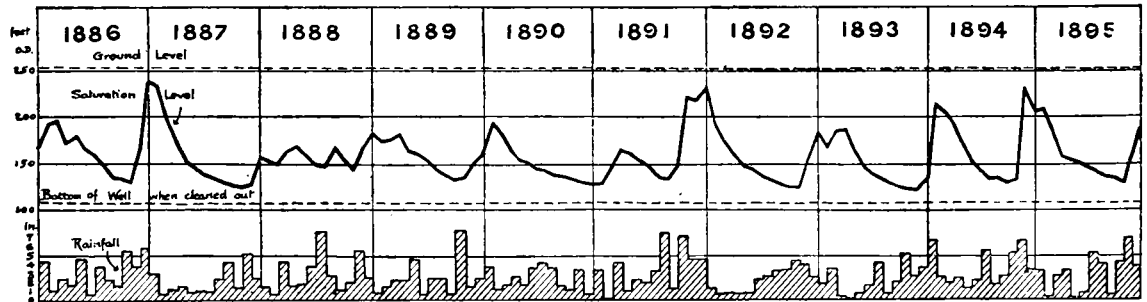
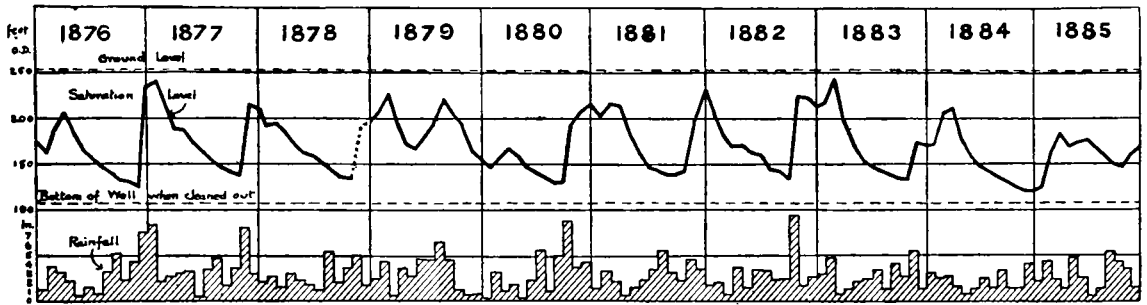
January, 1866.....	water-level	248 ft.
October, 1903.....	„	249 „
December, 1911.....	„	251 „
February, 1915.....	„	250 „

Previous to February, 1855, there were three periods, where, owing to the accumulated silt, the well ran dry, *viz.*, November and December, 1847, December 1851, and November 1854 to February 1855, so that the minimum levels could not be measured. It is, however, improbable that the level dropped far below the top of the silt, since the rate of fall is very slow when the water is low, and but little percolation is required to check the fall. It is on record that when the well was cleaned out in February, 1855, a “spring” was found about 9 ft from the bottom of the well, or only 1 ft. below the top of the silt; this corresponds to a level of 117 ft. The extreme minimum of 115 ft. was measured shortly afterwards.

Another leading feature is the varied character, both in form and degree, of the fluctuations in individual years. In most years the seasonal fluctuation is well marked, whereas, now and again, the range of variation, as in 1855 and 1898, is almost negligible. The average maximum occurs normally at the end of February and the average minimum at the end of September; the normal period of rising water, is, therefore, five months, and of falling water, seven months. But in many years the rise is much more rapid than indicated by the average figures, *e.g.*, a rise during the last two months of 1886 is followed by an unbroken fall during the first ten months

MONTHLY OBSERVATIONS OF RAINFALL AND SATURATION
LEVEL IN THE CHALK AT CHILGROVE, W. SUSSEX.





FOR NOTES ON THE WELL-LEVEL OBSERVATIONS

SEE END OF TABLE II AND THE APPENDIX

in 1887. Sometimes nearly the whole rise takes place in a single month; there are three monthly rises greater than 100 ft., *viz.* :—

January, 1872	rise during month	104 ft.
December, 1876	" " "	109 "
December, 1911	" " "	114 "

and many more approaching that rate. If the peak of the rise had occurred during the month so that the water-level was falling at the end of the month, the actual rate of rise would exceed even the above figures

The rate of fall is, as a rule, markedly slower than the rate of rise. If the ground-water is not being replenished by percolation, there is a maximum rate at which it can be depleted, dependent upon the water-level at the moment. When the water-level is high, the rate of depletion is high, because not only do the perennial springs discharge at a high rate, but the "lavants" come into action. As the water-level falls, the rate of depletion slows down and the "lavants" run dry. In consequence, the saturation-level falls at a steadily decreasing rate. An ideal depletion curve, uncomplicated by summer percolation, is shewn on the diagram, for the year 1900. The maximum monthly fall (51 ft.) occurred in March, 1904.

The rainfall of a wet winter followed by a dry summer merely serves to accentuate the normal seasonal rise and fall. Abnormal fluctuations are due to dry winters or wet summers. If the winter be dry, the underground storage is not replenished, and the water level during the following year is low. On the other hand during a wet summer, not only does the excess rainfall tend to keep the sub-soil moist and thus facilitate percolation, but, in addition, owing to the greater frequency of cloudy weather, evaporation is retarded. Even moderate summer rainfall may penetrate to some extent and prevent the water-level from falling faster than it would do were percolation entirely absent; but should the rainfall be heavy and continuous, the fall of the water level may be completely checked, and a rise take place to a level as high as in the preceding winter, as in 1879. The dictum that summer rainfall is never of importance in replenishing underground storage appears to require some qualification.

Since time is required for the percolating rainfall to reach the general mass of underground water there is a distinct "lag" between the incidence of the rainfall and fluctuations of the saturation-level. The monthly measurements at Chilgrove are not sufficiently frequent to determine the amount of this lag, but from weekly observations taken elsewhere in the locality it is found that the full effect on the saturation-level is felt from two or three weeks after the rain has fallen. The lag often appears to be prolonged at the end of a dry summer, because the autumn rains have first to soak the sun-baked ground before percolation can re-commence. In a similar way, percolation may be temporarily retarded by frost-bound ground.

As it is not possible without undue protraction to indicate all the interesting features in so long a record, the following years and periods have been selected to illustrate the above considerations :—

1837-38.—The rainfall for almost the whole of the two years was well below the average. The water-level was exceptionally low (118 ft.) towards the end of 1837, and owing to the dry winter did not rise materially until March of the following year; even so the maximum level (156 ft.) did not attain the general mean (159 ft.). The water was also very low (119 ft.) in the autumn of 1838.

1843.—The excessive rainfall of May (6·17 in.) caused the water-level to cease its normal fall and to rise to a summer maximum (192 ft.) at the end of June.

1844-45.—Although the rainfall of October and November, 1844, was above the average, it had very little effect on the water-level, probably because the previous summer was dry and the ground sun-baked. The four months rainfall ended March, 1845, was 39 per cent. in defect, so that the subsequent water-level rose only to 149 ft.

1848.—The rainfall for the three months ended August was 78 per cent. above the average, causing an early check in the fall of the water-level.

1851-55.—This is the most noteworthy period in the whole record; it not only includes the wettest and driest years, but in addition shows the abnormal effect on the water-level of unusually dry winters and wet summers. It is unfortunate that many of the water-level observations in the first two years are missing, but sufficient are available to indicate their general trend. The rainfall of the last nine months of 1851 was 40 per cent. below the average; no rain fell in September, and in November and December less than 2 in. was recorded. In consequence, the water-level at the end of the year dropped below the top of the silt at the bottom of the well, *i.e.*, it fell below 118 ft. and did not re-appear until the following February. This year, 1852, was the wettest in the whole record, the rainfall being 50·87 in. or 48 per cent. above the average. A wet spell commenced in June and continued until January, 1853. During these eight months no less than 44·94 in. fell or 76 per cent. above the average, and owing to this incessant rainfall the well overflowed at the end of 1852. The summer of 1853 was also wet, so that the water-level during the year did not fall below 148 ft. and rose again to a maximum (206 ft.) at the end of October. Thereupon a dry period set in and lasted almost without a break until the end of September, 1855, a period of 23 months. The year 1854 was the driest in the record, the rainfall being only 21·81 in. or 36 per cent. in defect of the average. From October, 1853, the water-level fell almost continuously until February, 1855, during the last four months of which period it again disappeared below the silt. Water was found when the silt was cleaned out at that date, and shortly after, the extreme minimum level (115 ft.) was recorded.

Owing to the continued low rainfall the water-level during the spring of 1855 did not rise more than 11 ft. above the extreme minimum, this being the smallest annual fluctuation in the whole record. No marked rise in water-level took place until the advent of heavy rainfall in the following October.

1860-61.—The normal fall was checked at the end of May, 1860, by heavy rainfall, and a general rise was maintained for the remainder of the year by a wet summer and autumn. As, however, the earlier part of the following year was dry, an unusually high winter water-level was not attained.

1868.—The heavy December rainfall (8·96 in.) was accompanied by a rise in water-level of 97 ft. during the month.

1872.—The heavy January rainfall (7·42 in.) was accompanied by a rise in water-level of 104 ft. during the month. The rainfall of the last three months of the year was 53 per cent. above the average, so that the water-level (247 ft.) rose nearly to ground level (253 ft.).

1875-76.—The marked drop in water-level during mid-winter was due to the dryness of December, 1875, and January, 1876. On the return of normal rainfall in late winter the water-level rose to a second maximum (207 ft.) at the end of March. The heavy rainfall at the end of the year caused a rise of 109 ft. during December.

1879.—This year is a striking example of the effect of heavy summer rainfall, this being 77 per cent. above the average. The water commenced to rise at the end of May and reached a maximum (220 ft.), at the end of August, the highest level recorded for that month, and much higher than many of the normal winter maxima. The average level for the year (189 ft.) was the highest in the record.

1888.—The heavy July rainfall (7·74 in.) caused a marked temporary rise in water-level during the following month.

1890-91.—Owing to the dry winter the water-level did not commence to rise until the end of January, 1891. The different effect of heavy rainfall in August (7·58 in.) and that in October (7·16 in.) is to be noted. Although the rainfall in these cases was almost identical, the former caused only a small rise of 6 ft. in the following month, whereas the latter was accompanied by a rise of 74 ft.

1898.—Owing to the low rainfall of the previous winter the water-level did not rise more than 13 ft. above the preceding minimum. The average water-level for the year was 132 ft.; there is only one instance of a lower average level, viz., in 1855, when it was 126 ft.

1900.—The drop in water-level after the cessation of the heavy winter rainfall was very marked.

1902.—This was another year of low water. The heavy rainfall of August (7·04 in.) no more than checked the slowly falling water-level.

1903.—A wet year throughout. The fall in water-level did not commence until the end of May and was checked at the end of August. The exceptionally heavy October rainfall caused the water to rise very rapidly, the highest recorded level being only 4 ft. below ground level.

1905, 1907, 1909.—In each of these years the low maxima were due to deficient rainfall in the previous winter.

1909-16.—This period includes a series of seven successive wet winters in none of which the water rose to levels less than 220 ft. The "lag" of the water-level behind the autumn rains was in some cases noteworthy; in 1911, although heavy rainfall occurred in October and November, the greater part of the rise in water-level did not take place until December, no doubt because the previous summer was dry and time was required to soak the ground before percolation could begin. The rise of 114 ft. during December, 1911, was the largest in the record, the water at the end of the month being only 2 ft. below ground-level. In 1912 the heavy August rainfall (8.04 in.) was followed by an early rise in water-level.

APPENDIX.

Notes on Tables of Chilgrove Well-levels.

(a) "*Symons's Meteorological Magazine*," 1866, Vol. i., p. 29.—Contains monthly observations from 1853 to 1865, inclusive. A comparison with the next table (b) shows that nearly all the observations were taken on the *last* day of the month to which they are entered. As the well was cleaned out and deepened by 10 ft. in February, 1855, 10 ft. was added to the actual readings before that date, in order to make all the figures comparable.

(b) Joseph Lucas, "*The Chalk Water System*," *Appendix, Proc Inst. Civil Eng.*, 1877, Vol. xlvii., pp. 87-90.—Contains all available observations and the dates on which they were taken (where known) from 1836 to 1876, inclusive. It is the most complete table extant of the earlier records. Prior to 1853 the observations were taken at rather irregular intervals. In a footnote the date of the deepening of the well is given as January, 1853; actually the deepening did not take place until February, 1855. In the table, however, 10 ft. was added to the actual readings between these dates, so that the figures as given and the footnote *taken together* are consistent. The reading for 31st May, 1854, is given as 20 ft.; this is no doubt a misprint, and should read 30 ft., as given in the MS. Table (d) below.

(c) "*Symons's Meteorological Magazine*," 1898, Vol. xxxiii., p. 71.—Contains monthly figures from 1836 to 1898, inclusive, the

levels being referred to Ordnance Datum. The table appears to be incorrect in several important respects, and should be set aside. The principal reasons for doing so are: (i) The level used for the top of the well, referred to O.D., is incorrect, and no allowance is made for the alteration in the depth due to silting; (ii) in 1853 and 1854 the necessary adjustment due to deepening the well is made twice instead of once; (iii) no indication is given of the fact that between 1866 and 1878, inclusive, the readings were taken on the *first* day of the month to which they are entered, whereas the bulk of the readings refer to the *last* day of each month.

(d) *MS. Table in possession of the present Observer.*—The latter part of this table is the original record, but a comparison with Lucas' table indicates that the figures prior to 1866 were compiled from some earlier source, the irregularities of certain dates of the earlier observations as recorded by him being ignored. It is also important to note a change in practice which has occurred since 1866. Lucas states explicitly that the observations from that date up to 1876 (the end of his table) were all taken on the *first* day of the month to which they are entered, and this is confirmed by a comparison with the rainfall record. The present practice, maintained for many years past, is to take them on the *last* day of each month. The date of the change in practice is not recorded, but a close comparison with the rainfall record indicates that it took place almost certainly at the end of November, 1878, and this has been assumed in compiling Table II.

NOTES ON TABLE II.

Unless otherwise indicated below, all observations were taken on the last day of the month to which they are entered in the table. A few observations made on the immediately preceding day are also regarded as having been taken on the last day of the month. Those taken on the first day of the month are regarded as having been taken on the last day of the previous month.

Figures in round brackets () refer to observations which were taken on some other day of the month, the date of which is known; they have been adjusted by interpolation to represent the probable value on the nearest last day of the month.

Figures in old-style type refer to observations, the date of the month on which they were taken not being known; the recorded levels have not been adjusted.

Figures in square brackets [] are estimated from general notes, such as "well dry," "very low," "nearly overflowing," &c.

Figures in italics are estimated levels for months in which no actual observations or notes were recorded; they are based on the rainfall for the month, and the character of the water-level fluctuations experienced in other years.

TABLE I.

Monthly Rainfall at Chilgrove, West Sussex.

5 in. Gauge ; lip 1 ft. above ground and 266 ft. above Ordnance Datum.

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
1834	3.42	3.31	1.70	1.08	1.18	2.97	8.55	2.35	.75	1.75	3.79	2.00	32.85
1835	1.20	4.15	2.80	.76	1.58	2.11	.30	.80	6.01	5.68	5.16	.42	30.97
1836	3.06	2.20	5.25	5.10	.40	1.43	2.61	2.75	3.90	5.85	6.55	1.90	41.00
1837	4.62	3.93	.55	1.42	.70	1.05	1.25	2.34	2.40	3.54	2.05	3.16	27.01
1838	.53	1.75	2.83	1.00	1.33	3.85	1.29	1.93	2.80	2.25	6.74	4.30	30.60
1839	1.20	3.50	1.93	1.79	.70	1.25	5.98	2.68	6.70	3.50	3.92	7.35	40.50
1840	3.66	2.46	nil.	.40	1.75	1.80	3.39	2.15	4.67	1.88	6.09	.65	28.90
1841	4.09	2.97	2.22	1.50	2.96	2.50	2.10	4.40	4.85	7.03	5.51	3.22	43.35
1842	1.97	3.08	1.50	.85	1.55	.51	1.23	2.21	5.90	1.55	7.10	2.35	29.80
1843	2.60	2.37	1.53	2.90	6.17	2.62	2.31	3.85	.67	4.98	3.68	.93	34.61
1844	3.89	3.05	3.20	.50	.44	1.32	2.08	2.98	.96	5.05	4.12	.67	28.26
1845	3.36	1.87	1.12	1.85	2.34	2.07	2.43	2.59	2.89	2.72	3.97	3.47	30.68
Average, 1836-45	2.90	2.72	2.01	1.73	1.83	1.84	2.47	2.79	3.57	3.84	4.97	2.80	33.47
1846	5.36	2.15	2.15	1.55	2.43	1.03	2.36	5.23	1.72	6.56	2.34	1.67	34.55
1847	1.50	2.15	1.07	1.39	1.70	2.01	1.05	1.72	1.80	2.88	2.70	6.06	26.03
1848	2.39	5.68	4.84	3.60	.45	4.41	4.27	5.51	2.88	4.07	2.59	4.35	45.04
1849	3.00	2.10	1.33	3.40	3.01	.90	2.37	.97	5.16	4.67	2.23	3.76	32.90
1850	2.15	2.00	.43	4.24	2.72	2.50	4.17	3.01	2.90	2.35	3.40	2.39	32.26
1851	4.89	.94	4.40	1.82	1.50	2.12	2.38	1.52	nil.	4.47	.95	1.00	25.99
1852	5.09	2.60	.54	.50	2.20	6.60	1.65	5.20	5.90	6.49	8.62	5.48	50.87
1853	5.00	1.10	2.07	3.45	2.25	2.49	6.47	3.46	3.61	5.97	1.60	.65	38.12
1854	3.17	.80	.42	.16	3.92	1.90	.85	1.35	1.20	4.02	1.85	2.17	21.81
1855	.70	1.50	2.95	.45	2.95	1.30	4.50	1.32	2.70	7.20	1.70	1.69	28.96
Average, 1846-55	3.32	2.10	2.02	2.05	2.31	2.53	3.01	2.93	2.79	4.87	2.80	2.92	33.65
1856	4.05	1.35	1.25	3.86	3.83	2.21	.79	4.29	4.20	3.22	1.04	2.88	32.97
1857	2.98	.43	2.20	2.11	1.35	2.30	1.51	2.42	4.72	7.83	2.08	1.31	31.24
1858	1.65	1.03	1.66	2.67	2.40	.99	2.95	2.57	2.56	2.20	1.75	3.43	25.86
1859	2.44	2.21	1.88	3.27	1.23	1.30	3.08	1.74	4.35	4.15	5.04	3.57	34.26
1860	4.34	1.50	2.18	1.75	3.85	6.72	2.88	5.05	3.86	2.86	3.60	3.41	42.00
1861	.78	2.08	2.96	.76	1.55	2.34	4.81	.73	3.94	1.81	4.99	1.92	28.67
1862	3.21	.75	3.99	1.13	3.55	2.60	2.74	2.39	2.24	5.17	1.45	3.13	32.35
1863	3.95	.94	1.21	.57	2.35	4.52	.89	1.99	4.20	4.33	2.24	3.26	30.45
1864	2.06	1.48	3.39	1.48	1.60	1.33	.38	1.04	4.26	1.88	4.35	1.42	24.67
1865	4.35	2.60	1.26	.43	2.89	2.27	2.44	5.49	.30	9.95	3.50	2.97	38.45
Average, 1856-65	2.98	1.44	2.20	1.80	2.46	2.66	2.25	2.77	3.46	4.34	3.00	2.73	32.09
1866	4.78	4.49	1.79	1.58	1.43	2.94	1.99	3.24	8.08	1.50	2.10	2.74	36.66
1867	3.65	2.66	2.05	2.06	1.40	1.85	4.76	3.41	2.24	2.82	1.03	1.55	29.48
1868	4.34	1.53	2.06	2.61	1.20	.61	.93	4.81	3.43	4.01	1.64	8.96	36.13
1869	3.51	2.91	1.80	1.10	4.42	1.95	1.15	1.55	6.00	2.31	2.47	4.21	33.38
1870	2.40	3.38	2.08	.21	1.44	.44	1.62	3.65	2.01	4.81	1.96	3.57	27.57
1871	3.53	1.94	1.47	4.78	.61	3.84	5.31	1.76	5.08	1.76	.85	2.26	33.19
1872	7.42	2.83	2.77	.96	2.82	2.03	3.02	1.60	2.54	5.97	5.39	5.86	43.21
1873	4.91	3.20	2.44	.74	1.46	2.52	2.60	2.03	3.16	4.49	2.90	.72	31.17
1874	2.56	2.33	.61	2.80	.40	3.09	1.43	2.51	2.74	4.93	2.82	2.79	29.01
1875	4.75	2.41	1.50	1.39	1.22	3.23	4.39	1.66	2.61	5.59	5.28	1.35	35.38
Average, 1866-75	4.19	2.77	1.86	1.82	1.64	2.25	2.72	2.62	3.79	3.82	2.64	3.40	33.52

TABLE I.—*con.*

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.	
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	
1876	1.15	3.70	3.05	2.15	.55	1.59	.90	3.10	5.13	2.26	4.29	7.44	35.31	
1877	8.28	2.06	2.80	3.01	3.36	.61	3.51	4.83	1.93	3.72	7.99	3.01	45.11	
1878	2.11	2.93	1.67	3.03	2.26	1.98	1.14	5.56	2.04	3.73	5.01	1.88	33.34	
1879	2.48	4.30	.67	3.72	2.75	4.65	4.60	6.38	4.67	1.31	.69	.76	36.98	
1880	.32	3.14	1.06	1.94	.21	2.33	5.57	1.02	5.01	8.78	3.86	4.28	37.52	
1881	1.53	3.34	2.10	.53	1.53	2.34	3.53	5.56	3.09	2.24	4.77	3.46	34.02	
1882	1.87	2.00	.92	3.84	1.40	3.54	3.46	2.31	2.39	9.34	1.81	2.83	35.71	
1883	2.99	4.95	.82	1.28	2.09	2.42	3.44	1.16	4.08	2.81	5.41	1.32	32.77	
1884	3.06	2.61	2.88	1.56	.91	1.42	2.56	1.32	3.32	1.39	1.33	4.06	26.42	
1885	2.15	4.28	2.30	1.19	4.85	2.54	.57	1.13	5.27	4.19	3.56	1.44	33.47	
Average, 1876-85	2.59	3.33	1.83	2.22	1.99	2.34	2.93	3.24	3.69	3.98	3.87	3.05	35.06	
1886	4.35	1.03	2.23	1.77	4.67	.65	3.86	2.27	1.75	5.59	3.89	5.98	38.04	
1887	2.96	.82	1.13	1.51	1.03	1.09	1.00	2.50	4.19	1.38	5.22	2.48	25.31	
1888	1.49	.83	4.24	1.68	1.88	3.64	7.74	2.87	1.15	2.01	5.53	2.27	35.33	
1889	.95	1.47	2.13	2.12	4.82	.77	2.45	2.45	.83	7.80	1.52	2.39	29.70	
1890	3.86	1.14	1.69	2.83	1.80	3.49	4.10	3.60	1.70	1.15	3.35	.62	29.33	
1891	3.39	.05	4.17	1.02	2.35	2.00	3.10	7.58	1.33	7.16	4.73	4.71	41.59	
1892	1.25	.85	.97	.91	.95	2.20	2.65	3.29	3.37	4.57	3.95	2.66	27.62	
1893	1.96	3.57	.24	.05	.87	1.67	4.10	.82	2.01	5.19	2.83	3.63	26.94	
1894	6.84	2.65	1.90	2.58	1.33	2.23	5.67	1.85	2.83	5.39	6.72	3.28	43.27	
1895	3.12	.14	2.80	3.16	.25	.75	5.33	4.08	.66	4.16	6.91	3.83	35.19	
Average, 1886-95	3.02	1.26	2.15	1.76	1.99	1.85	4.00	3.13	1.98	4.44	4.47	3.18	33.23	
1896	1.95	.58	4.69	.67	.55	4.24	1.11	1.35	9.50	3.86	1.13	6.41	36.04	
1897	3.31	4.24	6.03	2.85	1.38	2.68	.74	6.04	3.23	.49	1.66	4.83	37.48	
1898	.96	1.73	.88	1.31	4.28	2.84	.38	1.96	2.20	4.14	4.92	3.03	28.63	
1899	3.53	2.70	.81	2.97	.90	1.89	1.84	.76	3.46	2.86	5.81	2.39	29.92	
1900	4.91	7.42	1.01	1.88	1.13	3.80	1.25	3.81	1.35	2.77	4.50	5.07	38.90	
1901	1.40	1.86	2.80	3.08	1.25	3.62	2.86	1.86	2.51	3.07	.61	5.80	30.72	
1902	1.46	2.73	2.35	1.11	2.32	3.82	1.34	7.04	1.18	3.09	4.84	2.53	33.81	
1903	3.45	1.98	4.24	2.74	3.60	2.74	3.55	5.96	4.75	10.53	2.63	3.36	49.53	
1904	6.82	4.88	1.49	2.03	4.50	1.28	1.57	2.58	3.05	2.82	1.46	4.39	36.87	
1905	1.45	.84	5.91	1.95	.50	4.38	.35	3.73	2.43	2.03	5.53	1.41	30.51	
Average, 1896-05	29.2	2.90	3.02	2.06	2.04	3.13	1.50	3.51	3.36	3.57	3.31	3.92	35.24	
1906	9.77	4.52	1.50	.99	3.62	1.32	.46	1.13	1.66	5.76	5.74	2.77	39.24	
1907	1.44	1.90	1.19	5.20	2.97	3.24	1.80	2.26	.65	7.35	3.44	4.71	36.15	
1908	1.63	1.88	3.47	2.40	2.54	.74	3.71	4.46	1.96	3.24	1.49	4.34	31.86	
1909	1.13	.46	5.18	1.56	1.79	3.34	3.47	2.33	4.00	9.34	.74	5.56	38.90	
1910	3.43	4.57	1.65	2.64	1.15	1.98	2.24	3.54	.12	5.18	4.45	5.15	36.10	
1911	1.59	2.36	2.15	1.56	2.95	2.39	.79	.54	1.29	6.19	5.61	9.00	36.42	
1912	4.04	3.21	4.94	nil.	1.17	3.72	2.12	8.04	3.33	3.55	2.04	4.77	40.93	
1913	5.93	1.57	3.48	3.57	3.26	.52	2.00	2.00	1.74	5.88	3.66	1.92	35.53	
1914	1.00	4.98	5.14	1.78	1.55	1.39	3.35	1.84	1.80	3.16	3.81	9.66	39.46	
1915	4.42	5.44	.93	1.46	3.85	1.94	4.39	1.56	2.57	4.03	3.72	10.44	44.75	
Average, 1906-15	3.44	3.09	2.96	2.12	2.48	2.06	2.43	2.77	1.91	5.37	3.47	5.83	37.93	
1916	1.60	3.79	3.44	1.16	1.92	2.30	1.04	3.71	2.75	5.74	4.96	3.97	36.38	
1917	1.70	1.31	2.33	2.09	2.16	3.93	2.60	6.03	1.83	4.57	1.38	1.81	31.74	
1918	4.40	1.80	1.60	2.10	1.77	.95	4.45	2.03	6.91	1.45	2.50	3.46	33.42	
1919	7.59	3.25	6.63	2.51	.22	.58	1.91	4.01	1.55	.35	2.78	6.98	38.36	
1836-1919.	Avg.	3.20	2.45	2.32	1.95	2.07	2.31	2.65	3.02	3.08	4.22	3.53	3.51	34.31
	Max. Year	9.77	7.42	6.63	5.20	6.17	6.72	7.74	8.04	9.50	10.53	8.62	10.44	50.87
		1906	1900	1919	1907	1843	1860	1888	1912	1896	1903	1852	1915	1852
	Min. Year	.32	.05	nil.	nil.	.21	.44	.35	.54	nil.	.35	.61	.62	21.81
	1880	1891	1840	1912	1880	1870	1905	1911	1851	1919	1901	1890	1854	

Figures in *italics* are estimated.

TABLE II.

*Monthly Observations of the Saturation-Level in the Chalk at
Chilgrove, West Sussex.*

The water-levels are referred to Ordnance Datum. The ground level at the point of observation is 253 ft. above Ordnance Datum. Unless otherwise indicated in the Notes at the end of the Table the observations refer to the last day of the month to which they are entered.

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.
1836	155	(177)	(208)	(208)	(194)	(155)	(141)	(132)	(126)	(133)	(175)	(204)	167
1837	207	(233)	(196)	(163)	148	140	135	(129)	(123)	121	(118)	(118)	153
1838	124	(133)	(156)	(148)	(140)	(134)	(129)	(125)	121	(119)	166	(193)	141
1839	(189)	(196)	(177)	165	(159)	154	145	137	132	169	198	212	169
1840	165	222	180	160	150	140	132	124	121	120	118	154	149
1841	153	173	184	167	159	152	147	142	142	210	236	[247]	176
1842	217	205	184	162	149	139	(132)	(127)	(124)	(120)	(124)	(174)	155
1843	179	(175)	(172)	(166)	187	(192)	(166)	(147)	(138)	(133)	(156)	(168)	165
1844	191	(176)	202	(174)	(153)	145	(135)	(127)	(121)	120	125	129	150
1845	129	142	149	148	148	143	139	134	129	125	123	136	138
Average, 1836-45	171	183	181	166	159	149	140	132	128	137	154	174	156
1846	160	233	205	182	173	153	145	136	130	126	138	149	161
1847	151	156	191	176	148	142	136	129	125	121	[117]	[117]	142
1848	124	154	205	220	202	175	155	144	161	159	180	180	172
1849	208	207	184	175	162	162	157	146	136	130	130	130	161
1850	172	158	177	164	170	163	153	146	138	135	130	142	154
1851	166	175	165	175	168	154	142	132	128	123	[120]	[117]	147
1852	177	[136]	142	136	136	156	176	168	170	(206)	(251)	(253)	171
1853	248	218	168	158	160	151	148	148	157	206	192	162	176
1854	173	168	156	146	138	132	125	123	122	121	[117]	[117]	136
1855	[116]	(116)	119	123	126	126	123	121	119	127	152	147	126
Average, 1846-55	164	172	171	166	158	151	146	139	139	145	153	151	155
1856	184	183	164	162	152	149	147	139	134	138	139	170	155
1857	179	167	159	155	148	140	134	129	125	133	141	146	146
1858	146	147	148	148	143	139	133	129	125	121	119	117	135
1859	119	144	140	143	148	144	133	128	123	122	146	184	140
1860	215	(191)	168	161	158	191	172	173	173	192	193	208	175
1861	201	173	174	174	158	145	137	132	129	126	148	178	156
1862	(167)	169	204	190	168	156	146	139	133	138	150	173	161
1863	(213)	189	167	151	141	138	135	131	127	131	145	167	153
1864	168	171	199	168	155	144	139	(131)	125	123	121	125	147
1865	141	176	178	159	147	140	134	129	128	(154)	214	200	158
Average, 1856-65	173	171	170	161	152	149	141	136	132	138	152	167	153
1866	248	216	176	162	149	139	133	132	138	140	168	175	165
1867	197	189	195	193	149	145	140	135	133	133	134	137	157
1868	180	165	160	157	146	138	132	126	125	122	124	221	150
1869	220	222	189	170	160	148	141	136	133	148	168	190	169
1870	195	185	170	156	144	140	139	125	121	135	135	155	150
1871	180	170	160	150	158	149	160	145	148	148	141	141	154
1872	245	210	195	182	165	149	140	134	132	182	217	247	183
1873	240	220	195	168	152	140	132	128	125	130	131	131	158
1874	139	154	159	159	146	138	132	126	123	160	201	201	153
1875	202	223	201	174	151	145	138	135	132	132	202	173	167
Average, 1866-75	205	195	180	167	152	143	139	132	131	143	162	177	161

TABLE II.—*con.*

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.,	Nov.	Dec.	Ave.	
	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	
1876	163	188	207	179	165	156	147	140	131	130	125	234	164	
1877	240	213	187	186	174	164	152	146	140	136	214	208	180	
1878	191	194	187	170	162	158	151	142	137	133	190	199	168	
1879	206	227	193	172	167	181	193	220	205	193	161	155	189	
1880	147	158	166	159	147	140	134	129	129	191	207	215	160	
1881	202	215	212	182	162	147	144	138	138	142	195	230	176	
1882	205	180	169	170	161	159	145	141	135	224	222	213	177	
1883	216	243	198	170	155	148	142	138	134	133	172	170	168	
1884	171	205	210	177	158	148	141	135	131	123	120	120	153	
1885	123	162	181	167	172	174	167	158	150	146	160	168	161	
Average, 1876-85	186	198	191	173	162	158	152	149	143	155	177	191	170	
1886	192	194	170	178	163	157	148	135	134	130	163	239	167	
1887	234	196	172	152	146	138	134	130	126	124	127	156	153	
1888	153	150	161	169	159	150	149	168	154	144	164	181	158	
1889	173	174	181	164	159	155	146	138	133	135	151	160	156	
1890	193	181	163	153	151	146	141	138	136	132	129	128	149	
1891	128	148	164	160	151	148	136	133	147	221	217	231	165	
1892	190	172	158	146	143	137	132	128	125	124	154	181	149	
1893	168	184	186	163	147	138	132	129	123	122	121	134	146	
1894	214	205	191	170	153	143	132	133	129	134	232	205	170	
1895	208	185	156	153	151	148	140	134	131	128	155	188	156	
Average, 1886-95	185	179	170	161	152	146	139	137	134	139	161	180	157	
1896	179	167	184	175	153	144	131	130	131	151	152	193	158	
1897	200	214	227	194	173	160	147	135	131	127	124	124	163	
1898	133	137	135	133	131	131	129	126	122	120	128	155	132	
1899	211	207	177	157	149	143	136	131	126	124	133	134	152	
1900	168	242	199	170	155	145	138	131	128	125	122	131	154	
1901	150	153	156	180	163	149	140	131	129	124	122	122	143	
1902	136	139	147	148	147	141	139	139	137	129	131	159	141	
1903	175	167	170	174	188	165	151	144	158	249	208	216	180	
1904	220	242	191	166	155	153	147	139	134	129	126	129	161	
1905	134	136	168	161	152	145	139	134	129	125	125	132	140	
Average, 1896- 1905	171	180	175	166	157	148	140	134	132	140	137	150	152	
1906	224	217	193	173	155	144	138	132	128	124	134	141	159	
1907	159	153	149	153	164	157	149	141	135	131	142	191	152	
1908	180	165	161	161	163	156	145	138	133	130	128	151	151	
1909	159	156	169	177	158	147	140	135	134	216	192	214	166	
1910	212	226	208	176	159	149	142	136	132	128	137	221	169	
1911	186	171	175	162	155	144	141	134	129	125	137	251	159	
1912	224	224	240	194	166	149	139	136	142	161	169	221	180	
1913	244	215	191	194	196	161	154	141	134	130	144	152	171	
1914	154	216	231	193	172	154	144	135	130	126	123	215	166	
1915	242	250	202	162	158	153	143	137	134	131	142	240	175	
Average, 1906-15	198	199	192	174	165	151	144	137	133	140	145	200	166	
1916	200	204	214	190	181	153	143	137	131	129	152	197	169	
1917	196	172	177	174	162	150	141	124	139	158	160	153	159	
1918	200	182	167	160	152	148	142	131	131	138	147	180	156	
1919	235	223	235	198	173	157	143	136	126	126	118	138	167	
1836-1919.	Avg.	183	185	180	167	158	150	142	137	134	142	154	173	159
	Max.	248	250	240	220	202	(192)	193	220	205	249	(251)	(253)	189
	Year	{ 1853 1866	1915	1912	1848	1848	1843	1879	1879	1879	1903	1852	1852	1879
	Min.	118	118	119	123	126	126	123	121	119	(119)	118	118	126
	Year	1855	1855	1855	1855	1855	1855	1855	1855	1855	1838	{ 1847 1854	{ 1847 1854	1855

Notes on Table II. (see p. 258.)

THE EXPOSURE OF RAIN GAUGES.*

BY M. DE CARLE S. SALTER.

The measurement of rain is commonly described as the most simple of all meteorological observations, and from the point of view of the actual operation the statement is no doubt justified. It is fortunate that this is so, for the phenomenon of rain, in regard to its distribution in space and time, is in some respects so capricious and irregular that in order to study it successfully, observations are required from a far greater number of points than suffice for any other meteorological element. Moreover, the records which are of the greatest scientific value, are frequently those made in sparsely inhabited regions; it is therefore often necessary to depend upon the assistance of uneducated, and sometimes illiterate observers. The process of observing must thus be reduced to its simplest terms, and instruments must be devised as far as possible "fool-proof," and free from all complication.

The evolution of the standard rain gauge as we now know it† was a slow and laborious piece of work. The several long series of elaborate experiments conducted at the inspiration, and under the guidance, of the late Mr. G. J. Symons, F.R.S., and described in the earlier volumes of *British Rainfall*, bear eloquent testimony to the care and labour expended on the subject. The reasons for the rejection of non-standard types of rain gauge are cogently set forth by Dr. H. R. Mill in his paper, "The Best Form of Rain Gauge, with Notes on other forms,"‡ and it is not necessary to recapitulate them afresh.

Whilst by no means assuming that the last word has been said on the subject of improving the standard rain gauge, it is a matter of great interest to note that observations made by means of this gauge in nearly every instance satisfy the extremely severe tests imposed by Dr. Mill's cartographic methods of working with rainfall records in a far more satisfactory manner than do those derived from non-standard gauges. These tests have been so extremely numerous and so unmistakably conclusive that the question of the superiority of the standard gauge over other patterns up to the present devised may be regarded as settled.

* Read at the Conference of Delegates of Corresponding Societies of the British Association, Bournemouth, on September 12th, 1919.

† The standard rain gauge is at present made in three principal patterns—the Meteorological Office pattern, the "Snowdon," and the "Bradford"—differing essentially only in the size of the funnel and in capacity. A common feature is the vertical rim above the funnel.

‡ Q.J.R. Met. Soc., vol. xxxiii., 1907, p.p. 265-272.

The adoption of the standard rain gauge marked an important step in the solution of the problem of accurate rainfall recording, and its substitution for obsolete forms has steadily progressed during the last fifty years, but the fact that by far the majority of rainfall observers in this country are voluntary, and equip themselves, makes it impossible to ensure the entire suppression of inferior patterns. Unfortunately, the comparative simplicity of construction of a rain gauge induces certain makers, with no interests beyond the sale of their goods, to continue to put on the market gauges of undesirable patterns, sometimes inaccurately graduated, and these are often purchased in good faith by the uninstructed on the word of a salesman that they are of "the usual kind." It is necessary continually to counteract this tendency by the free issue of the pamphlet, "Rules for Rainfall Observers," describing the approved gauge, where it can be obtained, and the methods of using it. The issue of certificates of accuracy in respect of non-standard gauges has been discontinued.

The adoption of the standard hour (9 h. G.M.T.) for the observation of rainfall was another of the organizing triumphs of Mr. Symons. The difficulty lay less in the selection of a convenient hour than in the task of bringing about the nearly complete uniformity of practice which was secured, bearing in mind that it was, and still is, impossible to *insist* upon compliance in the vast majority of cases. The unquestioning acceptance of advice on this point has been of immense assistance in simplifying the study of daily rainfall, it being now possible to plot several thousand daily records on a map in complete confidence as to the identity of the period under observation in all but a small number of instances, which, as a rule, declare themselves at once. During the last few years this uniformity has been to some extent marred by the introduction of "summer-time."

The satisfactory outcome of the adoption of uniform instruments, methods, and hours by so large a proportion of the corps of 5,000 observers now at work in the British Isles removes some of the most serious difficulties which confronted those who first set themselves to study the subject, or rather reduces these difficulties to comparatively manageable proportions. It is still necessary continually to urge more complete uniformity, and every approximation towards this end improves the utility of the observations as a whole.

A more difficult problem, and one up to the present only partially solved, lies in the most suitable method of exposing a rain gauge so that it shall give as true as possible an account of the amount of rain falling. The earlier attempts to solve this problem suffered from an incomplete appreciation of the real nature of the difficulty. Numerous experiments, among the most elaborate of which were those carried out at Rotherham from 1868 to 1890,* confirmed the previously observed fact that with practically no exception rain gauges exposed

* See *British Rainfall*, 1868 to 1890.

at a considerable height above the ground caught an amount of rain diminishing with elevation. An extraordinary volume of discussion took place as to the reason of this, and it was many years before it was at all generally recognised that as a matter of fact the variations observed depended not upon the amount of rain falling in the vicinity of the gauge, but solely upon the proportion of that amount which the gauge was capable of intercepting. Much attention was devoted to quantitative observation of the variations, largely wasted labour, for subsequent experience has shown that different conditions of exposure to wind produce entirely different variations, the diminution of catch depending entirely upon wind and little, if at all, upon mere elevation.

The practical outcome was, however, eminently useful, the experiments leading directly to the adoption of one foot above ground as the standard height for the top of the funnel of a rain gauge. This rule, once decided upon, was rapidly brought into general use, and at the present day a very large percentage indeed of the rain gauges at use in the British Isles are placed at one foot above ground. It is to be observed that the British practice in this respect is at variance with the Continental, exposure at 1·5 metre being recommended in most countries of Europe. As far as I am aware, the only valid objection which has been urged to the exposure of gauges at one foot is that in case of deep snow the instrument may be completely buried. Whilst the risk of this occurring on rare occasions is no doubt obviated by elevating the gauge, it appears to have been overlooked that the loss of catch occasioned by elevating a gauge is, as a rule, far greater in snow than in rain, and except possibly in localities where deep snow frequently falls, or in which drifts are of common occurrence, the remedy is worse than the disease.

The advantage of placing gauges with the rim comparatively close to the ground lies entirely in the fact that when a gauge is freely exposed to the sweep of the wind eddies are apt to be set up round the funnel, which prevent raindrops from entering. Close to the ground wind movement is at a minimum, and the rain falls more nearly vertically than at greater elevations. In a sufficiently sheltered site, such as a walled garden, no diminution of catch will be observed, even if the gauge is raised to several feet above the ground, the requisite wind check being provided. The greater relative loss in elevated gauges during snow is due to the greater facility with which snow-flakes are carried by wind than are rain-drops. In confirmation of the fact that it is over-exposure and not mere elevation which causes the diminution of catch with height, it will be found that a gauge placed on a flat house-roof, provided with parapets to break the wind, will indicate as much as one on the ground, whereas if there are no parapets the catch will be reduced by from 20 to 40 per cent. The formation of wind-eddies is very much aggravated if a gauge, in

addition to being exposed to wind, is placed on a site sloping downwards in the direction of the prevailing wind. Land sloping to the windward is highly detrimental even if a considerable distance from the gauge whilst the latter stands upon level ground, unless some effective wind-screen intervenes. Thus a gauge should not be placed on a hillock or on a terrace. A sloping house-roof is an extremely bad position.

One frequently sees rain gauges placed on the ridges of high hills for the purpose of ascertaining the rainfall at the summit. Such gauges, owing to the sweep of wind, almost invariably indicate smaller falls than the valley gauges on both sides, although the actual rainfall at the top is, as a rule, greater. The frequency of snow in these exposed situations adds to the inaccuracy.

The defect in the catch of rain in the case of gauges exposed under conditions such as those described increases with increase in the average wind velocity, and thus sites which would, *ceteris paribus*, be tolerable in a sheltered valley may be extremely unsuitable near the sea or in a high, windy situation. At inland and not unduly windy stations a gauge may often be placed on level ground with no artificial shelter from wind at all, but with increasing wind velocity increasing shelter, especially on the side of the prevailing wind, is imperative. The diminution in catch observed in gauges placed at more than one foot above the ground becomes increasingly greater as the position is more exposed. Should the gauge used be of a non-standard pattern, with shallow funnel, all defects due to wind-eddies are aggravated, and in extreme cases the record becomes quite useless.

Except in very wind-swept localities the loss of catch due to wind-eddies is almost entirely confined to the winter months. In the paper on "Isomeric Rainfall Maps of the British Isles,"* it was established that on the average of a number of years the percentage of the annual total rainfall occurring in any month does not vary appreciably at adjacent stations, even though these are at greatly different altitudes (*e.g.*, Fort William and Ben Nevis Observatory), depending upon geographical and not upon orographical factors. It follows that the percentage of the summer rainfall to that of the winter in the same neighbourhood, on the average of several years, is a constant. Frequent examinations of the records from unsuitably exposed rain gauges have shown that the percentage of the summer rainfall observed during the winter is always smaller than that found at properly exposed stations. When computing annual average values it is often advisable to ignore the records for the winter months and to substitute for them values computed from the summer rainfall by applying a ratio derived from neighbouring sound records. By this means one is able to arrive at a reasonably accurate annual average for stations with defective

.J.R. Met. Soc., vol. xli., 1915, pp. 1-25; and *British Rainfall*, 1917, pp. 25-44.

exposures. This method has been utilised extensively in constructing annual average rainfall maps, and has been found to yield satisfactory results.

Over-exposure of rain gauges is probably the most fruitful source of error in rainfall observing, and far too little attention has hitherto been paid to it in selecting sites for rainfall stations. It is extremely difficult to lay down any simple instruction which will entirely meet the case. A system of inspection by officials thoroughly conversant with the varying requirements of each locality would do much to remedy the defect, but some time must elapse before any such scheme could be put into effective operation.

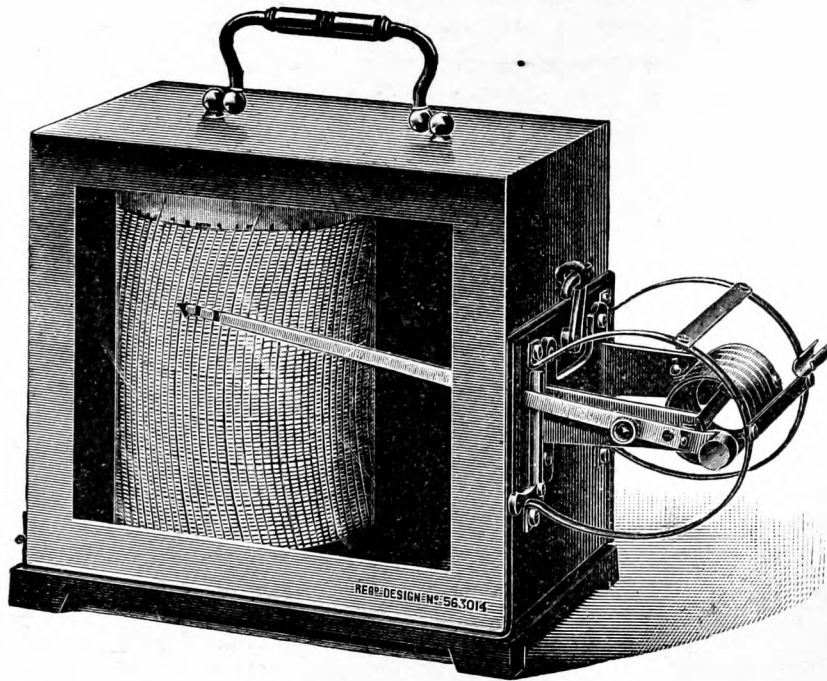
The opposite pole of danger in respect of faulty gauge exposure—viz., over-shelter—is much easier to avoid. Whilst it is true that a degree of shelter which would be harmful in one case would be much less so in another, broadly speaking, the conditions are similar everywhere. It is usually safe to suggest that the top of any object, such as a wall or other building, should never subtend an angle greater than 45° with the gauge. In windy positions, when the rain commonly falls at an acute angle, 30° is preferable to 45° . In the case of growing plants, shrubs, or trees, the angle should in no case be greater than 30° , that is to say, the distance of any such object should be at least twice its height. This allows for growth, which is apt to be overlooked as it takes place. It should be noted that whilst the error introduced by undue shelter by a wall or building is always caused by the interception of part of the rain, that caused by trees or shrubs may be either positive or negative, interception occurring under certain conditions, whilst at other times water-drops hanging on leaves may be blown into the gauge, or drip from overhanging branches. In at least one instance in which a gauge was placed by a careless observer actually under trees, the positive and negative errors practically balanced, and, until the gauge was inspected, no fault in exposure was suspected. This method of obtaining accurate records is not recommended !

One of the greatest difficulties in securing rainfall records free from the defects which I have described—and this applies with most force to errors due to over-exposure—lies in the fact that in any individual reading the amount of the error is usually smaller than the difference from the reading at a neighbouring station which may arise naturally. A systematic error becomes more apparent when the totals for a considerable period are compared, but, even then, it is apt to be mistaken for a geographical variation. The only method of which I am aware, which has given completely satisfactory results in detecting faulty records, is the cartographical method elaborated by Dr. Mill and used largely by the British Rainfall Organization. In the course of ordinary routine, maps have been constructed, mostly based upon several thousand records, for individual days, months, years, and for the average of a long period of years. As is shown in the paper on

“The Relation of Rainfall to Configuration,”* an individual day's rainfall may, or may not, according to its origin, show any conformation to the land configuration; a month's rainfall is nearly always more or less dependent on the configuration (a winter month's rainfall always); whilst the total for a year, or the average for a period of years, is always very intimately related. In drawing rainfall maps it is common to find certain records exhibiting a want of harmony with others in this respect. Sometimes one record will appear out of harmony month after month. The range of variation which can be safely overlooked as fortuitous diminishes with increase of period. Thus in a single month a variation of, say, 25 per cent. might be due to some local thunderstorm, and in a month when thunderstorms are known to have occurred it would not be safe to assume that an even larger variation was due to error. In a map of the rainfall of a year a variation of 10 per cent., not explained by the configuration, should give rise to suspicion, and in the case of a map of average rainfall for thirty or forty years, a 5 per cent. variation would almost certainly indicate error. In a very large number of cases records showing want of harmony in this way have been made the subject of special investigation. In practically every case the gauge has been found to be faulty, either in construction or exposure in one of the ways described. It is true that a very small number of cases of persistent variation remain unexplained, and that the subject is far from fully investigated, but a body of experience gained during about twenty years devoted to the subject gives confidence in putting forward the opinions expressed in this paper.

* Proc. Inst. Water Engineers, vol. xxiii., 1918, pp. 45-91; and *British Rainfall*, 1918, pp. 40-56.

METEOROLOGICAL :: INSTRUMENTS ::



"S. & M." OFFICIAL PATTERN THERMOGRAPH.

REGISTERED No. 563,014.

AS SUPPLIED TO THE METEOROLOGICAL OFFICE.

A Setting Thermometer accompanies each instrument.

DIRECT READING. HIGHLY SENSITIVE. SIMPLIFIED CONSTRUCTION.
MOUNTED IN COPPER HINGED LID CASE WITH CAST METAL BASE SPECIALLY ADAPTED
FOR OUTSIDE EXPOSURES.

PATENT CYLINDER CLOCK. CHARTS CAN BE ARRANGED FOR ANY TEMPERATURE.

ALSO

**RAIN GAUGES, ANEROID BAROMETERS, BAROGRAPHS,
THERMOMETERS, ANEMOMETERS, Etc.**

MANUFACTURED BY

**SHORT & MASON, LTD.
LONDON.**

Obtainable through all leading Opticians and Instrument Dealers throughout
the World.