

THIRD ANNUAL REPORT
OF THE
METEOROLOGICAL COMMITTEE

TO THE
LORDS COMMISSIONERS OF HIS MAJESTY'S
TREASURY,

For the Year ended 31st March, 1908.

Presented to both Houses of Parliament by Command of His Majesty.



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1908.

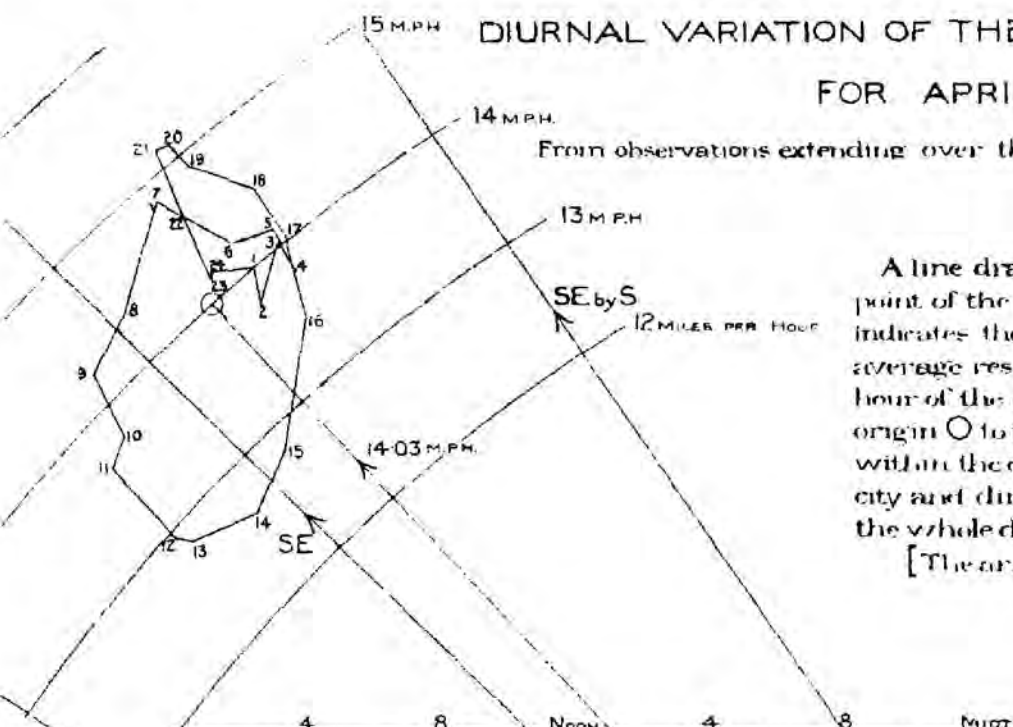
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DIURNAL VARIATION OF THE WIND AT ST HELEN
FOR APRIL

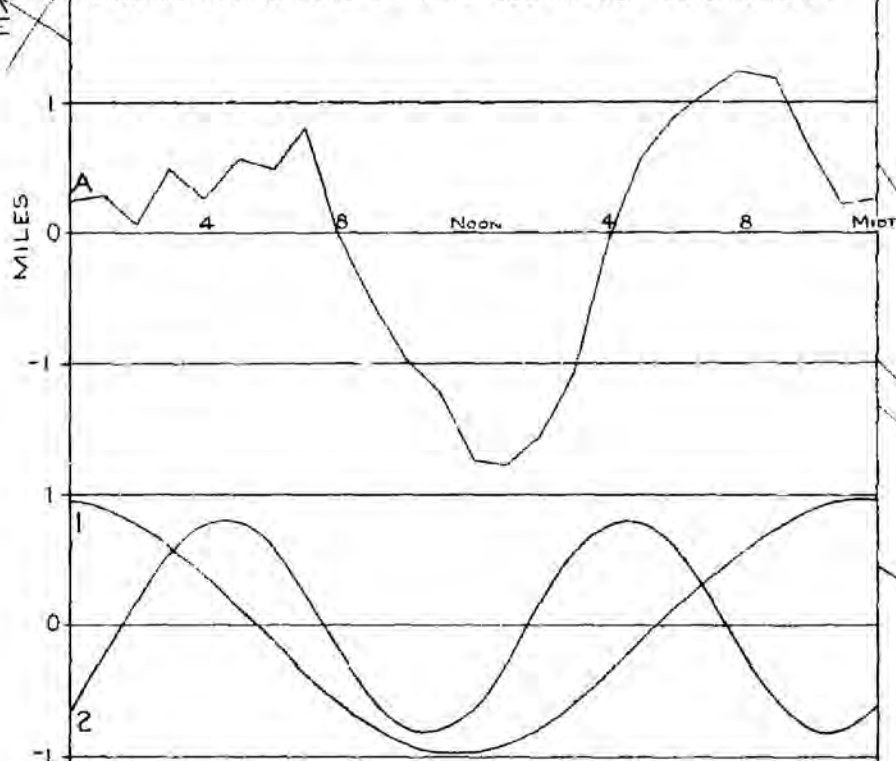
From observations extending over the period 1892 — 1907.

A line drawn from the origin O to a point of the closed figure, marked 1, 2, ... indicates the velocity and direction of the average resultant wind at the corresponding hour of the day. The line drawn from origin O to the centre of the small circle within the closed figure indicates the city and direction of the resultant wind the whole day.

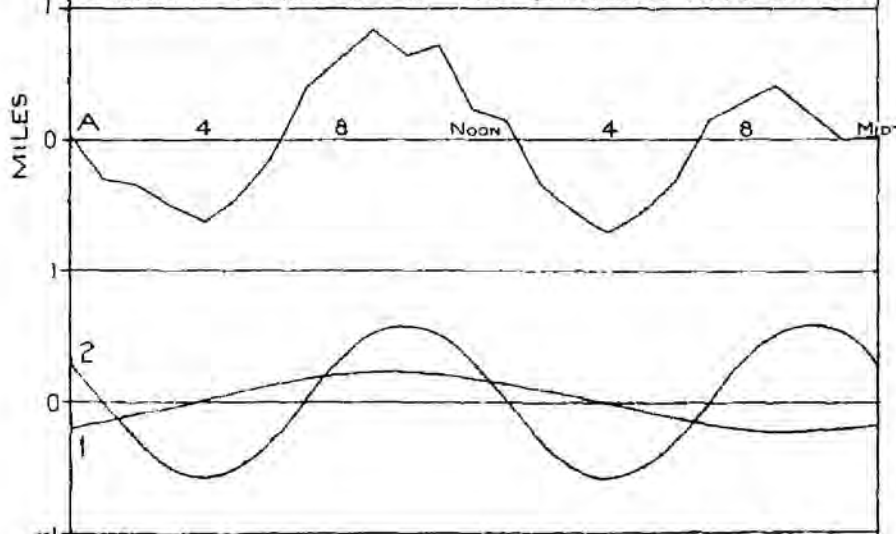
[The arrows fly with the wind.]



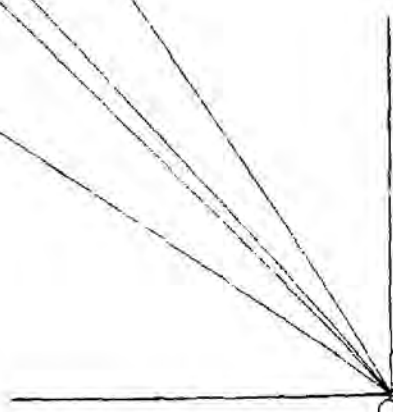
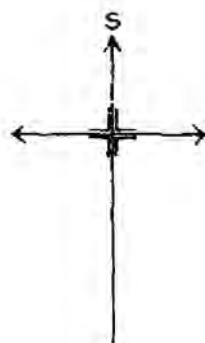
DIURNAL VARIATION OF THE SOUTHERLY COMPONENT



DIURNAL VARIATION OF THE EASTERLY COMPONENT



A Curve drawn from observations.
1. The component variation of 24 hour period.
2. " " " " 12 "

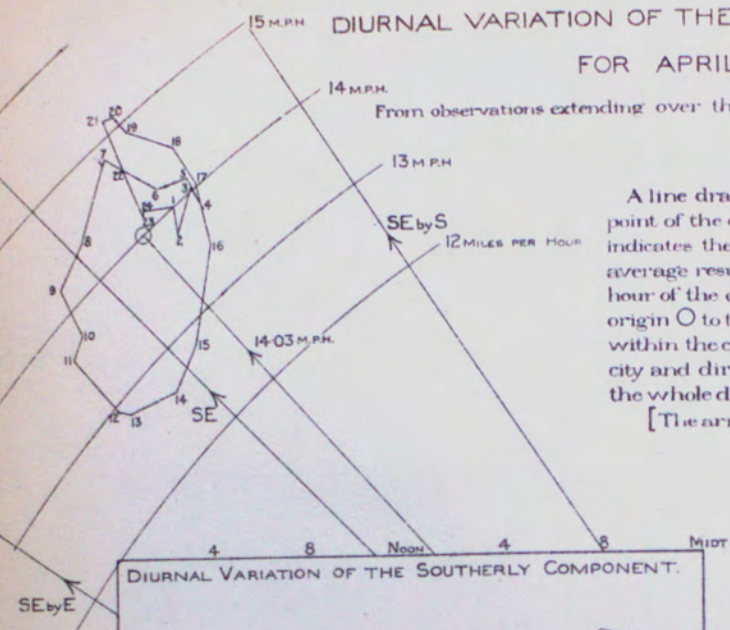


DIURNAL VARIATION OF THE WIND AT ST HELENA
FOR APRIL

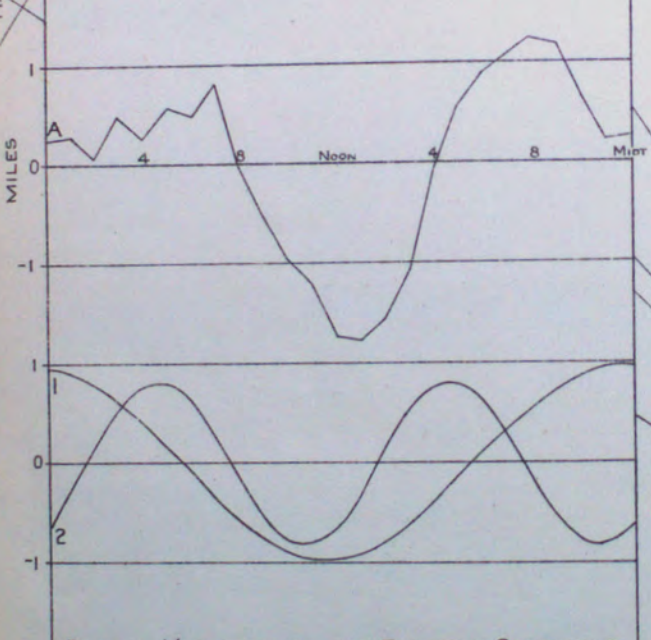
From observations extending over the period 1892 — 1907.

A line drawn from the origin O to each point of the closed figure, marked 1, 2, ..., 24, indicates the velocity and direction of the average resultant wind at the corresponding hour of the day. The line drawn from the origin O to the centre of the small circle within the closed figure indicates the velocity and direction of the resultant wind for the whole day.

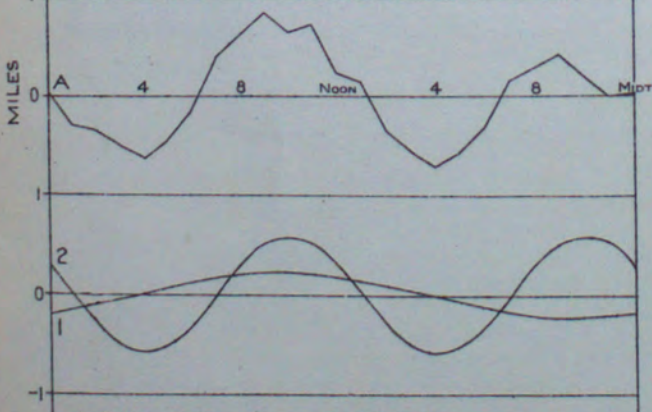
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THE METEOROLOGICAL COMMITTEE, 1907-8

*Constituted by Minute of the Lords Commissioners of H.M.
Treasury, dated 20th May, 1905.*

Date of
Appointment.

April 1, 1905 ...	Mr. W. N. SHAW	Sc.D., F.R.S., Director, <i>Chairman.</i>
" "	...	Rear-Admiral ARTHUR MOSTYN FIELD, R.N., F.R.S., Hydrographer to the Navy.
" "	...	Captain A. J. G. CHALMERS, Professional Member of the Marine Department, Board of Trade, Nominated by the Board of Trade.
" "	...	Sir GEORGE H. DARWIN, K.C.B., F.R.S., Uni- versity of Cambridge. Nominated by the Royal Society.
" "	...	Professor ARTHUR SCHUSTER, F.R.S., University of Manchester. Nominated by the Royal Society.
" "	...	Mr. G. L. BARSTOW, nominated by the Treasury.
Dec. 3, 1906 ...	Professor T. H. MIDDLETON, M.A., M.Sc., Assist- ant Secretary of the Board of Agriculture and Fisheries. Nominated by the Board of Agri- culture.	

Subject to the discretion of the authorities by which they were
respectively nominated, the members of the Committee hold
office for a period not exceeding five years, but are eligible for
reappointment.

METEOROLOGICAL OFFICE STAFF.

1907-8.

DIRECTOR.

William Napier Shaw, LL.D., Sc.D., F.R.S.

MARINE BRANCH.

Marine Superintendent... M. W. Campbell Hepworth, C.B., Com-
mander R.N.R.

Principal Assistant ... C. Harding.

Nautical Assistant ... W. Allingham.

FORECAST BRANCH.

Principal Assistant ... F. J. Brodie.

Forecast Assistants ... H. Harries, R. Sargeant.

STATISTICS AND LIBRARY BRANCH.

Superintendent ... R. G. K. Lempfert, M.A.

Principal Assistant ... T. Duncan Bell.

INSTRUMENTS BRANCH.

Superintendent ... R. H. Curtis.

Assistants ... J. Sheerman, R. F. Wallace.

CORRESPONDENCE AND ACCOUNTS.

Chief Clerk and Cashier... John A. Curtis.

Staff Clerks T. E. Allen, W. G. James, A. J. Rigby,
and C. H. Thompson; A. H. Bell,
C. A. Bracey, E. J. Hood, A. R.
Simpkins, F. W. Snell, and J. T.
Williams; E. L. Ardley, A. T. Bench,
W. Hayes, C. W. Heinemann,
H. Keeton, L. H. Powers, and H. L. B.
Tarrant.

Lady Clerks Misses E. D. Anderson, D. Buckeridge,
E. C. Humphreys, R. E. Smith, and
A. Turney.

Office Keeper, 1 Unclassified Clerk, 6 Boy Clerks and Probationers,
3 Messengers, 2 Boy Messengers.

Special Assistant to the Director ... R. Corless, B.A.

Student Assistant J. S. Dines, B.A.

Director of Experiments in connexion } W. H. Dines, B.A., F.R.S.,
with the Investigation of the Upper }
Air } Pyrton Hill, Oxon.

Valencia Observatory: Superintendent J. E. Cullum.

Assistant ... J. Sugrue.

Additional Inspectors A. Watt, M.A., Secretary
Scottish Meteorological
Society; T. W. Baker,
Kew Observatory;
E. G. Constable, Kew
Observatory.

THIRD ANNUAL REPORT
OF THE
METEOROLOGICAL COMMITTEE
TO
THE LORDS COMMISSIONERS OF HIS
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For the Year ended 31st of March, 1908.

MAY IT PLEASE YOUR LORDSHIPS,

During the past year meetings of the Committee have been Meetings.
held on 25th April, 3rd July, 6th November, 4th December, 1907,
and on 5th February and 4th March, 1908.

There has been no change in the membership of the Committee during the year.

The final stage in the proceedings for winding up the Meteorological Council, incorporated under the Companies Acts in 1891, was completed on 22nd August, 1907, by the filing with the Registrar of Joint Stock Companies of the report of a meeting of the Council held upon 3rd July, 1907, in accordance with notice in the "London Gazette" of 31st May, 1907, to receive the report of the liquidator. Meteorological Council.

By statute, the corporate existence of the Meteorological Council ceased upon the termination of three months from the filing of the report with the Registrar of Joint Stock Companies.

The report of the liquidator is printed in Appendix I.

Three distinguished members of the Meteorological Council have Obituary.
passed away during the year.

In a previous report of the Committee reference has already been made to the death on 13th May, 1907, of Alexander Buchan, M.A., LL.D., F.R.S., who was a member of the Council for 18 years.

Lieutenant-General Sir Richard Strachey, G.C.S.I., LL.D., F.R.S., late chairman of the Council, died on 12th February, 1908, in his ninety-first year. Sir Richard was appointed a member of the

Meteorological Committee of the Royal Society in 1873, member of Sir William Stirling Maxwell's Committee to report upon the work of the office in 1875, member of the Meteorological Council in 1877, and Chairman of the Council, in succession to Professor Henry J. S. Smith, in 1883. His official position, his experience in administration, his achievements in meteorology and the allied sciences, and his personal interest in the details of the work of the office, combined to give him exceptional influence in directing its operations. Many of the most important and most valuable elements in the organisation of the office, both upon the scientific and administrative sides, embody his ideas. He was in control at a critical time for such an institution as the office, when the period of novelty and expansion had passed, and lines of distinction had to be drawn between work of a permanent and a temporary character. The success of the office is largely owing to the principles of management which Sir Richard Strachey laid down.

Sir John Eliot, K.C.I.E., F.R.S., late Meteorological Reporter to the Government of India, who, in 1903, was appointed by the Royal Society a member of the Council as enlarged by the last revision of the Articles of Association, died suddenly on 12th March, 1908, at his residence near Cavalaire, in the South of France. Up to the time of his death he was Secretary of the Solar Commission of the International Meteorological Committee, for the study of the correlation of solar and terrestrial changes. In that connexion he was in constant communication with the office concerning the collection and combination of observations from all parts of the globe. His death is felt as a great loss by meteorologists generally, and especially by those who were interested with him in promoting the study of meteorology on the wider geographical scale.

Office Staff.

An unusual number of changes in the office staff have taken place during the year. Mr. E. Gold, Superintendent of Instruments, was appointed to the Readership in Dynamical Meteorology, established for three years from 1st October, 1907, by Dr. Arthur Schuster, and left the office for Cambridge.

Upon his retirement a single *Instruments Branch* was formed by the consolidation of the two branches of the office staff for Observatories and Instruments, hitherto separate. Mr. R. H. Curtis, Principal Assistant in the Observatories Branch, was appointed Superintendent.

From the same date Mr. R. Corless, B.A., of Sidney Sussex College, Cambridge, was appointed Special Assistant to the Director, and Mr. J. S. Dines, B.A., of Emmanuel College, was appointed Student Assistant for the year ending 30th September, 1908.

One member of the clerical staff has been placed on pension at the age of 62 years on account of ill-health. The total number now on pension is five. Four boy-clerks have been promoted to the permanent clerical staff, three of them to fill vacancies, and the fourth as supernumerary. Three of the staff of women clerks resigned their appointments, one on her marriage and another on account of the serious illness of her mother.

The official publications, issued or signed for press during the year, by the authority of the Committee, are as follows :—

Publications

PERIODICAL.—Daily Weather Report.

Weekly Weather Report, with a Monthly Report as supplement; Quarterly, and Annual Appendices.

Monthly Meteorological Charts of the North Atlantic Ocean and Mediterranean.

Monthly Meteorological Charts of the Indian Ocean and Red Sea.

Observations at Stations of the Second Order, Annual Volume for 1903.

Observations at Stations of the Second Order, and at the Anemograph Stations, Monthly Instalment for January, 1908.

Hourly Readings of Pressure, Temperature of the Wet Bulb and Dry Bulb, Direction and Velocity of the Wind, Rainfall and Sunshine, at the four Observatories (Aberdeen, Falmouth, Kew, and Valencia) in connexion with the Meteorological Office. Annual Volume for 1906; Monthly Instalments for 1907 up to July.

OCCASIONAL.—The Observer's Handbook. A New and Revised Edition of Dr. Scott's Instructions in the Use of Meteorological Instruments.

Hints for Observers in Tropical Africa. (New and Revised Edition.)

Barometric Gradient and Wind Force. A Report to the Director, by Ernest Gold, M.A., Superintendent of Instruments.

The other publications for which authority has been given, but which have not been completed, are :—

Further Report of Investigations of Forecast Districts.

Gales on the British Coasts. A revised edition of the Fishery Barometer Manual.

Meteorological Results for the western portion of the Atlantic Anticyclone from observations of the Army Medical Department at Bermuda, Barbados, St. Lucia, Up Park Camp, and Newcastle, Jamaica, 1894-1900, prepared by Dr. R. H. Scott, F.R.S.

Seasons in the British Isles since 1878. (Nearly ready.)

Cyclone Tracks in the Indian Ocean. New edition. (The Charts have been reproduced month by month on the Monthly Meteorological Charts of the Indian Ocean).

Report of the Conference of Directors at Innsbruck in 1905 (English edition) with the Codex of Resolutions adopted at International Congresses, Conferences, and Committees, 1873-1905, drawn up by MM. Hellmann and Hildebrandsson, at the request of the Conference. (Now in the Press.)

Report of the Paris Meeting of the International Meteorological Committee, 1907 (English edition).

Summary of Hourly Values (1879-1908) at the four Observatories in connexion with the Office.

At the close of the year the Committee were informed by the Stationery Office that the edition of 5,000 copies of the "Barometer Manual for the Use of Seamen," issued in July, 1905, is already exhausted, and a new edition is in course of preparation.

Monthly
Weather
Report and
Annual
Volume of
Observations
at Stations of
the Second
Order.

The most important point to be noticed in connexion with the periodical publications is the revision of the form of the Monthly Weather Report, issued as a supplement to the weekly report, and the new arrangements, associated therewith, for the publication of the observations at normal climatological stations (stations of the second order), and anemograph stations.

In lieu of the publication of monthly summaries for the telegraphic reporting stations some months after date, and of monthly summaries in similar form, for the Second Order stations some years after date, the Committee have now succeeded in arranging for the issue of a Monthly Report, giving complete monthly summaries of the information received from all the stations in connexion with the Office. Details are given for about 200 stations in all. They comprise telegraphic reporting stations of the Office, the observatories in connexion with the Office, together with such other observatories and stations belonging to local or central Government authorities as are willing to supply the necessary information, as well as stations in charge of private observers in connexion with the Office, either directly or through the Meteorological Societies.

With the co-operation of the Societies the observations at the stations are examined, checked and tabulated, on a uniform plan, and sent to the printer on the 20th of the month succeeding that to which the observations refer. The report contains also a page of remarks summarising the weather for the month, and four small maps illustrating the distribution of pressure and wind, the paths of centres of depressions, the mean temperature of the air and sea and the distribution of sunshine. A full-page map illustrating the distribution of rainfall, based on the results of about 500 stations, including those which report to the Office, is contributed by Dr. H. R. Mill, Director of the British Rainfall Organisation.

The report for each month is issued about the 28th of the succeeding month. It now presents a fairly complete representation of the various districts of the British Isles. There is, however, a noticeable lack of stations in Ireland, except in the immediate neighbourhood of Dublin, and representation has been made to the Department of Agriculture and Technical Instruction for Ireland, with the object of obtaining observations from those parts of Ireland which are not sufficiently represented. The matter is attended with some difficulty because the practice, which may be said to have become general in England, for local authorities to initiate meteorological observations for their own purposes has not yet extended to Ireland. It is still under consideration.

As the report includes the monthly summaries at stations of the Second Order which have been published for the past 30 years in compliance with an understanding agreed upon at the International Congress of Vienna in 1873, the repetition of the information in the form hitherto adopted for the annual volume, that is to say, regrouped in tables including the twelve series of monthly values for each station, is not considered necessary. Provision has been made for continuing the publication of the daily values for 20 stations of the Second Order, which represents another item of the international agreement, by a monthly issue

of the values in the customary forms instead of an annual issue. The data contributed by the Societies are received not later than the 30th of the month, and the printing is completed by about six weeks after the close of the month to which the issue refers.

Room has been found in the monthly issues for daily values at fixed hours, and extremes, from the tabulations of twelve of the anemometer stations in connexion with the Office. Hourly wind values for the four observatories appear regularly in the volume of hourly readings.

Tabulations
of Anemo-
grams.

These changes are all based upon the general principle that the value of observations collected by the office is largely enhanced, and the greatest practical economy is secured, by prompt publication in sufficient detail to serve at least as a full index of all the available material. This principle is equally applicable as regards the immediate practical use of the observations and as regards meteorological research. It leads to the organisation of the office on such lines that all observations reported to it are forthwith examined, tabulated, and made ready for use, and not simply stored for possible use in the future. The principle is now generally applied to all branches of the work of the office. In the Marine Branch, meteorological registers for the Atlantic and Indian Oceans and the sea temperature observations at light ships and coastguard stations; in the telegraphic branch, the daily observations at telegraphic reporting stations; in the Statistical branch the returns from all climatological stations, observations of sea temperature at a selection of the available stations, of grass minimum temperatures and earth temperatures at certain land stations and the observations of the upper air; in the Instruments Branch the tabulations from the observatories, the anemograms and the sunshine records, are examined and dealt with day by day, week by week or month by month as the case may be.

With the extension of this principle to the climatological stations the organisation of the office work in that respect is nearly complete. As regards the publication of the results from the observatories, the arrears have been rapidly overtaken and publication is now only six months after date instead of four years. As regards the climatological stations the new issue commences up to date, but the annual volumes for 1904-7 have yet to appear. The observations coming into the office which are not now represented by immediate publication, of a preliminary character at least, are, in the first place, those contained in the four hourly meteorological registers from ships; they are examined and reported upon immediately after being received, and they are dealt with in detail from time to time according to the localities to which they refer; in the second place there are a number of Colonial observations for which so far no provision has been made. The subject has been referred to repeatedly in correspondence between your Lordships, the Colonial Office and the Meteorological Office. The approaching completion of the designs for the new building for the Office at South Kensington offers an opportunity for arriving at a conclusion with regard to the future of this work which has not been overlooked.

Colonial
Observations.

Conference at
Ottawa.

The arrangements for a meeting of representative Meteorologists at Ottawa referred to in last year's report have undergone some modification. In October, 1907, an invitation was received from the Royal Society of Canada for the Director to attend a meeting at Ottawa in May, to which representatives of a large number of Colonies had been invited through the Canadian Government and the Colonial Office. The time of meeting has now been postponed until July, immediately after the tercentenary celebrations at Quebec. It is understood that the Royal Society of Canada has invited representatives of a number of Scientific and Educational institutions interested in Meteorological research. The object of the conference is to consider the best means of obtaining co-operation between the various meteorological organisations of the Empire with regard to matters of common interest. The Director has been authorised to attend the conference.

It is much to be regretted that the death of Sir John Eliot, deprives the proposed conference of his advice and assistance. The proposal for a meeting depended to a considerable extent upon his initiative and upon the interest which, from his long and successful experience as Meteorological Reporter to the Government of India, he was impelled to take in the combination of meteorological results for very extensive regions, in order to draw inferences with regard to coming seasons.

Questions concerning the organisation of Colonial observations arise also in connexion with a resolution of the International Association of Academies to which reference is made on p. 15.

Occasional
Publications.

Of the occasional publications the Observers' Handbook is noteworthy as an attempt to bring the practical instructions to observers into agreement with the most recent results of international deliberations. The publication has been delayed owing to the repeated necessity for revision to meet new conclusions. The Committee hope to make arrangements for issuing this publication annually in order that the natural development of the practice of observing upon a common plan may find timely expression.

Mr. Gold's Report deals with the practical determination of wind velocity from the barometrical gradient, and with the variation of the meteorological elements with elevation in the lower strata of the atmosphere. It is noteworthy as giving some results of the first year's work of the office in the investigation of the upper air, and as being, accordingly, the first official publication based upon the observations required by that investigation.

Presentation
copies of
publications.

In connexion with the presentation of official copies of publications to observers and others, the Committee have taken note that the accumulations of such copies are occasionally offered for sale at the dispersal of the library of their original owner. The Committee recognise that fragmentary collections of meteorological reports are of little value, but they are informed that the need of files of the statistical reports for reference in local libraries or other institutions is becoming more and more apparent in replying to the numerous questions about past weather conditions which are received in the office. Not infrequently, correspondents

prefer that some member of the staff of the office should look out and extract the information for them, but, in the view of the Committee, there are definite advantages, direct and indirect, in the practice of obtaining such information from the published reports instead of writing to the office for it.

A circular has therefore been addressed to the observers who receive official copies of the reports asking them to make provision for the numbers to be filed in a library or some other institution, where they would be available for the use of the public, when they have no further personal use for them. The request has met with a very satisfactory response.

The Committee have received with satisfaction the information that Your Lordships have taken steps to comply with their request that they may receive timely warning of the date at which the new building in Exhibition Road will be ready for occupation.

New premises
for the office.

The Committee desire to place on record their appreciation of your Lordships' action in authorising the Postmaster General to open a paying postage account for the correspondence of the Meteorological Office. The relief from the trouble hitherto involved in buying and attaching postage stamps for the distribution of the daily and weekly reports is considerable, and the facilities which are afforded for correspondents of the office to post without prepayment, thus avoiding the necessity of sending a large number of small sums in repayment of postage, lighten the work of correspondence.

Postal
arrange-
ments.

The new arrangement whereby the Post Office renders a daily account of the charges incurred for postage came into operation on 10th February, 1908.

The Committee desire also to express their acknowledgments to the Postmaster General for his assistance in revising the arrangements for the despatch of mails from the office and thus securing the earliest possible delivery of the Daily and Weekly Reports in London and the provinces.

Opportunity has been taken to enclose the reports in envelopes instead of wrappers, as complaints were made that the reports were occasionally defaced in the course of manipulation. Envelopes of special form have been supplied, designed to economise time in folding, making up and sorting.

Through the courtesy of the Lords Commissioners of the Admiralty, the arrangement for the transmission of reports by wireless telegraphy from H.M. Ships, described in last year's report, p. 10, has been in operation throughout the year. Some details are given in the report of the Telegraphic Branch, p. 24. Messages have been received chiefly from ships crossing the Bay of Biscay, and, on many occasions, the information has formed a useful supplement to the usual reports from the land stations. In plotting upon the working charts the values received from the ships, it was frequently noted that the barometer readings were not accordant with the pressure distribution inferred from the land observations even in those parts of the map for which inferences could be drawn with ample confidence. The question of the comparison of barometric observations on land and sea also arose incidentally with regard to daily charts of the Indian Ocean,

Reports by
wireless
telegraphy
from H.M.
Ships.

and the differences to be accounted for were clearly beyond the proper range of errors of observation. An investigation of the matter was undertaken by Mr Gold, who was working at the office in connexion with the duties of his readership at the close of 1907. The barometric readings extracted from the meteorological logs of ships belonging to the Mercantile Marine for the voyage up the Channel were compared with the pressure values computed from simultaneous readings at Falmouth on the English side and Brest on the French side. The result of the comparison is interesting. It appears that there is a clear tendency for the barometric reading on board ship to be too low in strong winds, the amount of difference on the average depending, roughly speaking, upon the square of the velocity of the wind. It is possible therefore that the readings of a barometer at sea are affected by the wind in a manner similar to that in which the pressure observations were affected at the Ben Nevis observatory, where barometer readings were not considered to be trustworthy for direct application in meteorological researches when the wind force exceeded three on the local scale. Mr. Gold's report upon the subject has been communicated as a paper to the Royal Meteorological Society and was discussed on February 19th.

In compliance with a request from the International Conference at Innsbruck a report was prepared for presentation to the International Meteorological Committee at Paris upon the terms upon which reports by wireless telegraphy are available from Ships of the Mercantile Marine. After consultation with the Marconi Company it was estimated that the cost for an adequate number of wireless telegrams to be of practical service in supplementing the land observations for purposes of forecasting and storm warnings would amount to about £1,000 per annum. The figure is regarded by the company as too high since they are willing to accept payment of 6½d. per word, and waive the claim for a minimum charge of 6s. 6d. for each message. They consider that the number of words in a message could be materially reduced by means of a code. It is however doubtful how far it is possible to effect any considerable reduction, having regard to the imperative necessity for providing some means of detecting the possible errors in the messages and to the fact that the established principles of forecasting cannot be regarded as fully developed. With a view to their further development it is desirable in the case of observations from the sea to take into account the humidity of the air, the sea temperature, and sea disturbance, in addition to pressure, wind and air temperature, which are the most important elements in the observations from land stations.

The desirability of including in the Daily Weather Service observations from liners crossing the Atlantic has been urged recently upon the Committee by Mr. Niel MacLean of Glasgow, and there is a movement on the part of one of the continental offices to push the matter forward. The Committee have hesitated about moving in the matter until they can be assured that the arrangements are such that the representation of the conditions off our western shores shall be really effective from the meteorological point of view. The experience of the office with the wireless telegrams from H.M. Ships places them in a position of advantage for the consideration of that question.

Wireless
telegrams
from the
Mercantile
Marine.

For help in bringing about the improvement in the Monthly Report and the monthly issue of Observations at Stations of the Second Order, to which reference has been made already, the Committee are indebted to the Councils of the Royal Meteorological Society and the Scottish Meteorological Society.

Co-operation
with the
Meteoro-
logical
Societies.

Last year the Committee in their Report (p. 13) expressed their regret that so little progress had been made with the arrangements for co-operation in a joint publication of monthly summaries from all the Climatological stations in connexion with any one of the three institutions which collect and publish meteorological statistics. They pointed out the difficulty in which they were placed with regard to making payments for summaries of observations which had already been published. A provisional arrangement has been arrived at whereby payment is made to the Societies at the rate of £4 per annum for each set of monthly schedules for stations included in the *Monthly Report* instead of the volume of *Observations at Stations of the Second Order*, and at the rate of £7 10s. per annum for the twelve monthly schedules of daily observations for the stations represented in the new monthly issue. These payments, together with an allowance of £25 to each Society for securing additional observations necessary for the Weekly Weather Report and provision for the inspection of stations, brings up the total sum payable to the Societies to the customary figure of about £120 per annum or its equivalent.

This arrangement does not entirely meet the objects which the Committee have in view, inasmuch as it does not deal in a sufficiently comprehensive manner with the question of the systematic publication of the results of stations, official or voluntary, in all parts of the Kingdom irrespective of the institution with which the observer elects to be associated. It is evident that unless the results for these stations which are not included in the Report are to remain unpublished, there must be some further provision for separate publication, and thus the question of the continued existence of a number of overlapping, but incomplete, publications has yet to be settled. The Committee, however, welcome the new arrangement as an important step in the direction of adequate co-operation between the Office and the two Societies and are glad that the British Rainfall Organisation also co-operates in the production of the Report, in its revised form.

Various questions in connexion with international co-operation have engaged the attention of the Committee during the year. Meetings of the International Meteorological Committee were held at Paris, September 10-12, 1907, to which the Director contributed notes, for discussion, upon the scale and projection of charts for meteorological purposes, on mean values for land stations, and on the terms upon which wireless telegrams from the ships of the Mercantile Marine are available. The paper of agenda numbered 21 questions, and included the formation of a *règlement* defining the constitution of the international organisations which had been gradually evolved in practice from the time of the International Meteorological Congress at Rome, in 1879, but had not hitherto been formulated. The draft *règlement* was prepared by M. Mascart, President, and M. Hildebrandsson, Secretary of

International
Co-operation.

the Committee. Upon the adoption of the regulations by the Committee M. Mascart, who had been absent from the other meetings on account of ill-health, resigned his office as President of the Committee, and the Director who had presided over the meetings in his absence was unanimously elected to succeed him.

As the result of the deliberations at Paris a number of new Commissions for the solution of specific questions were appointed, of two of which the Director was requested to act as President; they are concerned with weather signals to mariners and other questions of marine meteorology, and with weather telegraphy, including reports by wireless telegraphy, respectively.

7 a.m. Inter-
national
Service of
Reports.

In view of the increasing complexity of the international exchange of daily weather messages and the importance and ultimate convenience of a homogeneous system for Western Europe, the Committee have included in their estimate of expenses for the coming year a provision for the change of the hours of observing at the telegraphic reporting stations in the British Isles from 8 a.m. to 7 a.m. in the morning and from 2 p.m. to 1 p.m. in the afternoon, although, on account of the probable increase of cost, they risk thereby the sacrifice of part of the sum which it has been usual to assign for accumulation towards the provision of superannuation annuities for the clerical staff. The proposal has been under consideration for many years, and action in the matter has been postponed simply on account of the cost. Fortunately the cost, which is represented chiefly by payments to Post Office officials at stations where there is no existing arrangement for telegraphic facilities, tends to become less as the early opening of telegraph offices is sometimes required for other purposes.

The establishment of a 7 a.m. service was the subject of correspondence between Sir H. Maxwell's Committee and the International Meteorological Committee in 1903. The special circumstances which make it urgent to take action at the present time are the new development of activity in the daily weather services of Europe in consequence of the receipt of the telegraphic reports from Iceland and the consequent gradual extension to a large number of European services of the reports of 7 a.m. observations at a number of stations in the British Isles initiated tentatively in 1899, at the request and at the cost of the German and Dutch Government offices. It has now become necessary to place these arrangements upon a permanent basis. To these circumstances must be added the changes taking place from various causes in the reporting stations, among which must be mentioned the resignation of Mr. G. T. Watson, of Great Yarmouth, upon his retirement from the office of Secretary of the Sailors' Home in that seaport. Mr. Watson had been associated with the office as telegraphic reporter and curator of the anemometer at Great Yarmouth since 1872, and has throughout that time been keenly interested in the work of the office. The duty of observing and reporting at Yarmouth is now transferred to the Coastguard, the Corporation providing a site for the out-door instruments. The work at Malin Head has also been transferred to the Coastguard upon their taking over from Lloyds the signal station at that point. A new station has been established at Castlebay, Barra Island, in

the Western Hebrides in charge of Mr. J. Smith, schoolmaster. In making fresh arrangements at the stations a decision as to the hours of observation is evidently called for. It is unnecessary here to enter into the details of the reasons for the adoption of 7 a.m. and 1 p.m. instead of 8 a.m. and 2 p.m. for the morning and afternoon hours of observation. It will be sufficient to enumerate the advantages which it is intended to secure for the British meteorological service by the changes, viz. :—

1. The advantage of an improved international organisation and employment of really synchronous operations for the daily weather service in place of observations with an hour's difference on the two sides of the Channel.

2. The use of the telegraph wires and cables at times when they are not occupied by ordinary traffic, and the consequent acceleration of the messages.

3. The issue of the morning reports and forecasts at an earlier hour in the morning.

4. The extension of the time available for the issue of storm warnings on Sundays.

In connexion with these changes, the scale of payments to the telegraphic reporters has been revised and systematized, and Your Lordships have been requested to move the Postmaster-General to make the necessary arrangements for opening the telegraph offices at the observing stations in time to transmit the early messages to London and the Continental offices. Steps have been taken to ascertain whether facilities can be obtained for the observations at the earlier hour at the 28 existing stations, of which four are in charge of the Coastguard, three of Post Office officials, four belong to the Corporation of Trinity House, four to Municipal Corporations, three are at Astronomical Observatories, three under the direct control of the Office, and the remaining seven are in the charge of private observers. In nearly all cases favourable replies have been received, and the change will accordingly take effect from 1st July next, although it may not be possible to complete the arrangements at all the stations by that date. The difficulties of the early service seem especially great at the Astronomical Observatories and in London, and they are possibly insuperable at some of the Astronomical Observatories.

Another question in connexion with international co-operation was brought to the notice of the Committee by a despatch from the Austro-Hungarian Ambassador, communicated by the Foreign Secretary, forwarding a Memorandum by the Vienna Academy, the "leading academy" for the assembly of the International Association at Vienna in May, 1907. The Memorandum refers to a resolution of the assembly passed on the initiative of the Academy of Sciences of Paris, and calling attention to the "distribution of meteorological stations and to methods of securing " a survey, on a uniform plan of the meteorological conditions " prevailing over the whole surface of the globe. It appeared " that this object was not attainable without Government support, " and the hope was expressed that steps would be taken by the " different Governments to secure the continuity of existing

International
Association of
Academies.

“ stations, and to extend the system of observations, when necessary, in order to bring it into harmony with the requirements of modern meteorology, and so secure uniformity of method. The hope was also expressed that Governments might feel themselves called upon to organise stations in regions in which, at the present time, there are none, and to render the results generally available for scientific research by publishing them in suitable form.” The Memorandum continues: “ The places to which the Association begs leave to draw the attention of His Britannic Majesty’s Government in this connexion are:—

“ Ascension Island, St. Helena, the Falkland Islands, the West Indian Islands, Bermuda. Also Christmas Island, the Fiji Islands, and Borneo in the Pacific Ocean; the Seychelles, Mauritius, Zanzibar, Socotra, the Chagos Archipelago, and Christmas Island in the Indian Ocean.

“ It is also regarded as very important that two or three stations should be established in the extreme north of North America.

“ We have the honour to inform His Britannic Majesty’s Government of this resolution, and beg leave to ask for its favourable consideration and for active support for these researches so highly important to our knowledge of the sequence of weather changes over the globe, which can only be brought to a successful issue by the co-operation of all civilised states.”

The Committee have taken this memorandum into consideration. They are in full sympathy with the desires expressed by the Academies. The circumstances of the different British possessions mentioned, in respect of their relations with meteorological organisation, are very diverse. Mauritius, for example, has maintained the Royal Alfred Observatory since 1870—one of the most important scientific establishments of the southern hemisphere. The meteorological stations at the Seychelles and Zanzibar are part of the Indian meteorological system, and at some of the other stations meteorological observations are already well organised, and the only requirement is some systematic means of publication. The Chagos Archipelago is also within the region covered by the operations of the Indian Meteorological Service. On the other hand, nothing is known about meteorological stations in Socotra or Christmas Island (Pacific), or in the extreme north of North America.

The Committee have accordingly sent a reply to the Foreign Office for communication to the International Association of Academies expressing their sympathy with the desire of the Association that the meteorological work in certain islands belonging to the British Empire should be organised and maintained with a view to international co-operation as well as for colonial use, pointing out the differences of circumstances of the different stations referred to in the memorandum, and promising that the Committee will use their best endeavours to promote the organisation of meteorological observations in the British colonies mentioned, on the lines suggested by the memorandum of the International Association of Academies. In furtherance of this object the Committee have made a representation upon the matter to the Colonial Office and to the Royal Society.

At the request of the Liverpool Cotton Association, and through the courtesy of Professor Willis Moore, Chief of the United States Weather Bureau, arrangements were made for daily telegrams to be sent from Washington and other centres in the United States to the Office, giving information as to the weather in the cotton districts. Official telegraphic reports are sent by the Weather Bureau only to corresponding institutions by way of exchange, and the information was accordingly addressed to the Office. After prolonged negotiations a code was arranged and the service was initiated, but experience showed that the re-transmission of the messages from London to Liverpool could not be carried through rapidly enough for the information to reach the Cotton Exchange in time. After a trial of some weeks the scheme was abandoned.

Reports
from the
United States.

As reported last year (Report, p. 7), a meteorological exhibit was prepared at the request of a Joint Committee of the Colonial Office and the Board of Trade for the International Exhibition at Christchurch, New Zealand, 1906-7. The exhibit included a number of instruments lent by the makers of instruments for the Office, together with some instruments of historical interest and a number of forms, records, charts, and diagrams illustrating the methods and results of the work of the Office. The Committee have reason to be gratified with the reports that have reached them of the success of the exhibit. Upon the closing of the exhibition at Christchurch the exhibit was transferred to Melbourne, and arrangement was made by the British Commissioner for the purchase by the Commonwealth of such of the instruments as could be sold. Subsequently the Commonwealth Meteorologist, Mr. H. A. Hunt, wrote :—"I recognise that, amongst the instruments kindly lent us, one at least, and possibly all of them, are wanted by you for sentimental or historical reasons, and much as we would like to have them, realise that they must return to you, but with regard to the diagrams and charts these would be invaluable to us for reference and guidance in your methods and work in which we wish to co-operate. Would it not be possible to grant us the use of them, if not permanently, then for a year or two, in the interest of British meteorology? They would be of educational value here to our staff, the public, and myself."

New Zealand
Exhibition.

The Committee have accordingly placed at the disposal of the Commonwealth Government the remainder of the exhibit, with the exception of original instruments and traces, which have been returned.

At the request of the Science Committee of the Franco-British Exhibition, which is to be held at Shepherd's Bush from May to October of the current year, the Director undertook the duties of Convener of the Sub-committee for the Meteorological Exhibit. A representative exhibit has been arranged for the office and a number of charts, diagrams, maps, &c. specially constructed for the purpose.

Franco-
British
Exhibition.

Very interesting records have been obtained from a Dines anemograph supplied by the office and erected at Gibraltar by the Admiralty for comparison with the readings of a Robinson

Anemograph
at Gibraltar.

anemometer belonging to the Army Medical Department at the Signal station. There are also available for comparison the estimates of wind direction and force on the Beaufort scale made by the signalman. The object in view in sending out the anemograph was to obtain information about the effect of the cliff upon the wind velocity as recorded by the instruments. For the records hitherto obtained the head of the Dines instrument has been at the same level as the Robinson. They show quite clearly that when the wind is in certain directions the current misses the anemograph, probably going upward past the opening instead of blowing directly upon it. The head is now to be raised to 40 feet in order to ascertain whether the eddy due to the cliff extends to that level for winds of all velocities.

Anemometer
at Gorleston.

A Dines anemograph has been placed on the pier at Gorleston in charge of the coastguard in order to test the exposure of the anemometer that has been in use at Yarmouth for many years. The readings obtained hitherto show apparently that a Dines tube at 40 feet above the pier experiences much stronger winds than the Robinson instrument a few feet above the roof of the Sailors' Home at Yarmouth.

Observations
of the Upper
Air.

The allotment of £500 a year for the prosecution of experiments upon the upper air has been continued on the same lines as in previous years, and the experiments have remained under the direction of Mr. W. H. Dines, F.R.S., at Pyrton Hill. The past year has been one of great activity in the investigation in which Mr. J. E. Petavel and others on behalf of the University of Manchester, Mr. C. J. P. Cave, of Ditcham Park, and Mr. S. H. R. Salmon, of Brighton, Captain C. H. Ley and others have co-operated. A separate section of this report (p. 43) is devoted to an account of the proceedings in connexion with the investigation during the year.

Supply of
Observations
to Local
Authorities,¹
&c.

Requests have been received from time to time from local authorities for permission to use for local purposes the observations or records at stations maintained by the office. The Committee are desirous of affording all possible facilities for the use of the observations necessary for the work of the office; at the same time it is always desirable for observations to be examined and compared with those of neighbouring stations and for traces of self-recording instruments to pass scrutiny and to be subject to certain rules of tabulation before the results are accepted as final. They have therefore approved a scheme of regulations under which the wishes of local authorities as regards the use of observations can be complied with, while the right of modification after investigation is reserved. The regulations are printed in Appendix II., p. 72.

National
Antarctic
Expedition.

The first volume of the meteorological results of the National Antarctic Expedition has been completed and will be issued immediately by the Royal Society. It includes the journal of meteorological observations at winter quarters and on the sledge journeys, together with papers by various authors which together constitute a primary discussion of the observations of pressure and wind, temperature, humidity, cloud and sunshine, and a general discussion of the relation of the meteorological conditions at

winter quarters (lat. $77^{\circ} 50' 50''$ S., long. $166^{\circ} 44' 45''$ E.) to those experienced at other stations in the Antarctic or on ships in the neighbouring seas. A paper on the observations of electrical potential is contributed by Mr. C. T. R. Wilson, F.R.S.

It appears from the discussion that the climate of the position selected for the winter quarters of the "Discovery" at the S.W. extremity of Ross Island during the period February, 1902, to February, 1904, was characterised by relatively high pressure, frequent calms, gusty winds, chiefly from some easterly point, with a practical absence of westerly ones; remarkably sudden and violent fluctuations of temperature at all seasons, remarkably high temperature as compared with places visited in the immediate locality, but low average summer temperatures; abundant sunshine reaching an average of 16 hours per day in one December, little fog, large evaporation, very dry and transparent atmosphere and, connected therewith, intense heat in the sun's rays and intense terrestrial radiation.

One of the most interesting points in connexion with the observations arises from the fact that the explorers were within sight of Mount Erebus, and could determine by observing the smoke of that volcano, the direction of the currents in the upper air at a fixed level. These observations, combined with those of the motion of the lower and higher clouds, tend to show that the general westward drift of air at the surface, corresponding with the prevailing easterly winds, is replaced by a drift in the opposite direction at the level of the upper clouds passing through an intervening stratum of the lower clouds in which motion may take place from any direction but in which there is a slight preponderance of movement from the south, while at the level of the top of Mount Erebus the prevailing direction is from south of west. These results of the observations are consistent with the existence of a large cold surface cap of air over the south polar regions with an anticyclonic circulation from east to west, and, up above, an opposite circulation in the upper air above the top of Erebus. The transition between the two circulations with its resultant motion from the south might be accounted for by a gradual diminution of temperature produced throughout the whole intervening stratum, with an inclination of the line of steepest temperature gradient towards the east in lower layers and towards the west in the upper layers of the stratum.

The objections to this dynamical explanation of the conditions are, first, that the explorers regarded the easterly wind observed at winter quarters and in its immediate neighbourhood as a "local wind" due to orographical conditions, and considered that, on the really open barrier, winds from south or west were normal winds; and, secondly, the evidence for an anticyclonic gradient for easterly winds is not very clear. Two results follow from this discussion: one is the desirability of taking up the question of "local winds" as experienced on ships, a question which has already been under the consideration of the Committee; the second is a suggestion that arises from the fact that the various Antarctic expeditions, whatever latitude they may reach, seem to pass the minimum of pressure and find easterly

winds, although they get little evidence of anticyclonic conditions. It would appear probable that the region of easterly winds to the south of the pressure minimum practically marks the boundary which can be reached by ships, or, in other words, that the existence of open water in the Antarctic regions is synonymous with the prevalence of equatorial winds.

In order to complete the work undertaken by the Office in connexion with the Antarctic expeditions, there still remains the publication of the results of the circumpolar observations derived from ships and land stations south of 30° S. The observations are now tabulated and plotted on daily charts, which number about 1,000, and isobars have been drawn upon about 300. It is proposed to assign a sum from the remaining funds of the expedition to provide for the publication of the charts on a reduced scale.

St. Helena
Wind
Records.

Mr. J. S. Dines, Student Assistant, has been engaged upon the discussion of anemographic records from St. Helena extending over 15 years, and has completed a series of monthly Vector diagrams showing the diurnal variation of the wind in direction and force. The results are of great interest, as they show with remarkable clearness a regular 12-hourly oscillation, particularly in the East to West Component, which suggests remarkable analogies with the semi-diurnal variations of pressure, and of horizontal magnetic force. The investigation is being extended, and promises to be of great importance. Diagrams representing the variations for the month of April, in which the change seems to be most regular, are reproduced as a frontispiece to this Report.

Educational.

As Reader in the University of London, the Director gave a course of ten lectures on "Meteorological Organisation and Methods of dealing with Meteorological Observations," in the Astrophysical Lecture Room of the Imperial College of Science and Technology, South Kensington. It is proposed to publish the substance of the lectures forming the second part of the course under the title of "The Computer's Handbook," as it is felt that many persons interested in meteorology may be deterred from pursuing the discussion of their observations, beyond the point of obtaining mean values for a month or year, by the difficulty of obtaining practical information about the use of such methods as those of vector diagrams, harmonic analysis, residuation, or correlation.

Meetings for the Discussion of important contributions to meteorological literature, principally by Colonial or foreign meteorologists, were held at the Office on alternate Mondays from October to March, inclusive. The Discussions have again been well attended.

The demand for copies of the Daily Weather Report for educational use in schools continues to increase. A demand has also arisen for lantern slides for school use and for lectures. The collection of lantern slides now in the possession of the Office includes a large number of typical illustrations, which are very suitable for educational purposes. A selection has been lent from time to time during the year, and facilities have been given for the borrowers to obtain duplicate copies.

A paper on "Some recent developments of the methods of forecasting by means of weather charts" was prepared for the meeting of the British Association at Leicester, and was illustrated by a number of charts of barometric distribution, adapted to "the degree of pressure" as the unit interval. The interval represents 2,000 C.G.S. absolute units, and was suggested as a suitable alternative to the inch, or the millimetre, for practical purposes, in a memorandum approved by the Meteorological Council, and by the Council of the British Association in 1904. The memorandum is reprinted as an appendix to the Observer's Handbook.

The magnetic observations at Valencia, in co-operation with the magnetic work of the National Physical Laboratory, have been continued as in former years. Magnetic observations at Valencia.

The Committee have again to acknowledge the courtesy of the Portuguese Government, Major Chaves, and the Commercial Cable Company, in connexion with the daily telegrams from the Azores; the Eastern Telegraph Company and the Great Northern Telegraph Company, in connexion with telegrams from the Azores, the Iberian peninsula, and the Scandinavian kingdoms. Acknowledgments.

On this occasion they desire also specially to refer to the courtesy of Professor Willis Moore in connexion with the endeavour to supply telegraphic information concerning the weather in the cotton districts of the United States.

Acknowledgments are also due to many public departments, local authorities, and private observers in all parts of the kingdom.

The reports of the work of the several branches of the office are as follows :— Collection of Information.

I.—MARINE BRANCH.

The arrangements for the systematic collection of data, for the purposes of marine meteorology, from officers of the Royal Navy and the Mercantile Marine, have been continued as in previous years. Meteorological four-hourly log books, registers, and other documents to the number of 2,559 were received during the year, and a list of these is given in Appendix IV. Of the meteorological log books which contain four-hourly observations, 127 have been classed as "excellent," or "very good," as compared with 158 for the year 1906-7.

The arrangements for obtaining meteorological registers from the captains and officers of ocean-going ships who use their own instruments, have been continued, and a large amount of information has thereby been collected, which is immediately utilised in the Monthly Meteorological Charts of the North Atlantic and Mediterranean, and of the Indian Ocean and Red Sea. Supplementary Information.

The following list shows the number of contributions relevant to the different lines of route :—

Four-hourly Logs.

North Atlantic	77	Eastern, viâ Suez Canal...	64
Baltic	1	Far Eastern, viâ Cape of	
Mediterranean	16	Good Hope	36
South America (East Coast)	27	Far Eastern, viâ Suez	
" " (West ")	9	Canal	57
South Africa	27	Pacific	41
Eastern, viâ Cape of Good		North Polar	4
Hope	14		

"Short" Logs.

North Atlantic	1	Pacific	1
Far Eastern, viâ Cape of			
Good Hope	2		

North Atlantic Registers (Form No. 121), and Indian Ocean Registers (Form No. 122) :—

North Atlantic	1,738	Eastern, viâ Cape of	
Mediterranean... ..	209	Good Hope	8
South America (East		Eastern, viâ Suez Canal	185
Coast)	10	Far Eastern, viâ Cape of	
South America (West		Good Hope	6
Coast)	2	Far Eastern, viâ Suez	
South Africa	22	Canal	13
		Pacific	16

Appendix III. (p. 107), contains a list of the captains who, during the past year, have contributed logs classed as "excellent." Several of these observers have co-operated with the Office for many years. The names which appear in the list for the first time are as follows :—

Captain's Name.	Steamship.
Carnon, J. R., Lieut. R.N.R. ...	Caledonian.
Ellery, W.	Mahratta.
Kempson, O. H., Lieut. R.N.R. ...	Athenic.
Pritchard, B. W. S.	Ben Nevis.
Robertson, T., F.R.G.S.	Scotia.
Watt, J. B.	Lusitania.

Recognition
of "excellent"
observers.

As a mark of recognition of valuable co-operation, the Director has presented various publications of the Office to observers who have returned well-kept logs.

Obituary.

The Committee note with regret the deaths of nineteen of their old observers, during 1907 :—Captain J. C. Bartlett, S.S. "Indian," April ; Captain R. J. English, S.S. "Lord Antrim," April ; Commander H. G. Thomas, R.N.R., S.S. Yarrowonga," May ; Captain C. E. Shacklock, S.S. "Nicaraguan," June ; Captain T. Glazebrook,

Barque "Alastor," June ; Captain E. C. W. Heggum, Ship "Blythwood," July ; Admiral J. F. L. P. Maclear, F.R. Met. Soc., H.M.S. "Flying Fish," July ; Captain S. M. Orr, S.S. "Port Chalmers," August ; Captain W. B. Renwick, S.S. "Koranna," August ; Captain A. McLean Wait, S.S. "Tartar," Marine Superintendent, Union-Castle Line, September ; Captain W. Philip, Ship "Salamis," October ; Captain S. K. Clear, S.S. "Amatonga," November ; Captain G. N. Cowlan, S.S. "Cordillera," Marine Superintendent, P. S. N. Co., November ; Admiral Sir F. L. McClintock, K.C.B., F.R.S., H.M.S. "Fox," November ; Captain G. Pirie, R.N., H.M.S. "Flying Fish," Conservator to Humber Conservancy, December ; during 1908 :—Captain A. Fry, Barque "Avonside," January ; Captain F. S. Blight, S.S. "Castalia," January ; Captain T. Kidwell, Lieut. R.N.R., S.S. "Bovic," January ; and Captain Angus McNicol, S.S. "Victorian," March.

Charts of the distribution of the temperature of the surface water of the Atlantic for successive months have been compiled for insertion in the Meteorological Charts for the North Atlantic and Mediterranean as in the previous year. The maps thus prepared are issued within six weeks of the close of the month in which the observations are taken. For each of the months recently dealt with the number of observations tabulated extends to some 4,300.

Use of
Information
received.

For the discussion of the weather over the ocean south of 30° S. lat., in connexion with recent Antarctic exploration, the monthly means of barometer and temperature were obtained and charted from the values given on the daily synchronous charts ; and mean isobars and mean isotherms, collected from various sources, were drawn on separate charts.

Antarctic
Observations

The work of tabulating and charting the observations received from British ships was completed last year. Additional observations, from the German ship "Gauss," recently obtained through the courtesy of Dr. W. Meinardus, of Berlin, were dealt with in a similar manner.

Besides continuing the issue of the Monthly Meteorological Charts and the examination of all logs and documents received, the Marine Branch of the Office has been engaged upon the discussion of the meteorological data for the Indian Ocean, extending to 30° S.

Discussion
of Marine
Data.

Climatological tables have been compiled for various places on the West Coast of Hindustan, Mediterranean, Persian Gulf, South Africa, Pacific Islands (Central Group), and Black Sea, at the request of the Admiralty.

Information
supplied
for the
Admiralty.

Hydrographic notices have been extracted from the meteorological logs and forwarded to the Admiralty. Among those sent during the year were, a report of shoal in the Pacific Ocean, by Captain F. J. Bayldon, Lieut. R.N.R., S.S. "Moresby" ; position of Felix Point Lighthouse and Valparaiso Time Signal by Captain A. T. D. Pearson, S.S. "Potosi."

II.—FORECAST AND STORM WARNING BRANCH.

Daily
Weather
Reports.

The arrangements for the issue of the Daily Weather Report and Forecasts, and for the preparation of information for publication in the newspapers have remained the same as in previous years.

Telegraphic
reporting
stations.

The stations from which telegraphic reports are received are shown in the lists given on pp. 76-97 and on Map (Plate III.).

The corps of observers at the telegraphic reporting stations has undergone considerable change. At the lighthouse stations, Spurn Head, Dungeness and Portland Bill, and at the coastguard station at Donaghadee the duties are in the charge of new officers. At Malin Head the responsibilities have been transferred from Lloyd's Agent to the Coastguard. At Stornoway the instruments have been removed from the care of Mrs. Mackenzie, and placed in charge of Mr. W. Grant, who is assisted in the work by Mr. H. Miller. At Yarmouth the charge of the station has been transferred from the manager of the Sailors' Home to the Coastguard authorities, with Mr. F. Bridges, chief officer, as observer. A new site for the outdoor instruments has been provided by the Corporation, and the equipment at the station has been increased by the addition of earth thermometers and a sunshine recorder. A gap in the meteorological representation hitherto existing in the west of Scotland has been filled by the establishment of a new station at Castlebay, Barra Island. The station has been fully equipped, and is in the charge of Mr. J. Smith. By the courtesy of the Corporation complete telegraphic reports for 8 a.m. and 6 p.m. are now received from a new station recently established at Dover. The station is under the control of the Borough engineer, Mr. W. C. Hawke.

Inspection of
the Stations.

The stations indicated in the list in Appendix VI., p. 133, have been inspected during the year. The Reports of the inspectors show that efficiency has been maintained.

Iceland and
Færøe
reports.

Owing to an interruption in telegraphic communication between Shetland and the mainland, the reports from Iceland and the Færøe from December 27th to January 20th were forwarded each day by boat from Shetland to Scrabster or Thurso, and did not reach the Office in time for use in connexion with the preparation of the forecasts. The reports for the whole of the missing period (25 days) were afterwards published in the form of a special supplement to the Daily Weather Report. Interruptions of a less serious nature occurred between September 25th and 29th, between October 5th and 8th, and between December 11th and 14th. The inconvenience arising in each case from the absence of information from these distant regions afforded striking testimony to the general value of the reports.

Wireless
Telegrams.

During the year ended March 31st, 146 wireless telegrams were received from the ships of His Majesty's Navy. The greatest number received on any one day was nine on April 30th, and next to this seven on May 17th. Occasionally no messages were received for several days, the longest breaks occurring between May 31st and July 1st (32 days) and between July 20th and August 6th (18 days).

The information as to the weather in the British Islands has been supplemented by postal and telegraphic reports sent daily from stations belonging to various local authorities. The number of such stations is constantly increasing, and the details supplied form a useful addition to the official telegraphic reports.

Reports from
Auxiliary
Stations.

A detailed account of the manner in which the meteorological information received by telegraph is utilised for the preparation of the Daily Weather Report is given in Appendix II.

Discussion of
Information.

The means adopted for the distribution of the forecasts drawn up in the Office have been continued during the past year. They are detailed in Appendix II., pp. 59-61.

Weather
Forecasts.

Copies of the 11 a.m. forecasts, based on the 8 a.m. observations, have been regularly called for by messengers from newspapers or news agencies, and printed or typed copies have been delivered, either by hand or through the post, to subscribers, and distributed for exhibition as follows: in the City, at the Mansion House, Lloyd's Rooms, Messrs. R. & J. Beck's, Cornhill, Messrs. Hawes, 79, Leadenhall Street, and Messrs. Watson, 313, High Holborn; in the West End, in the Libraries of the House of Lords and the House of Commons; at Messrs. Elliott's, Leicester Square; Messrs. Stanford's, Long Acre; Messrs. Negretti & Zambra's, Regent Street; Messrs. Hawes, 49, New Cavendish Street; Messrs. Webster Bros., 4, Porchester Road, W.; and at various Clubs.

Forecasts have been supplied occasionally to His Majesty's Yacht as desired by the Commodore. At the request of the Admiralty, forecasts for the S.W. of England and the Bay of Biscay have been regularly supplied to the Commander-in-Chief, Devonport. Arrangement has also been made with the Admiralty for the supply of forecasts to a number of H.M. ships as occasion requires.

Forecasts for
H.M. Ships.

During the summer months the special service of afternoon forecasts for the benefit of agriculturists and others was arranged as in previous years, and special telegraphic reports of observations at 2 p.m. were obtained for this purpose. These forecasts are sent by telegraph at 3.30 p.m. to those who express a wish to receive them regularly, and who defray the cost of the telegrams.

Harvest
Forecasts.

During the four months, June to September, the forecasts were sent for varying periods of time to 71 persons residing in various parts of the United Kingdom. Owing, doubtless, in a large measure to the extremely changeable state of the weather the number of recipients was considerably larger than in either of the three preceding years. In 1906 and 1904 applications for forecasts were received from only 39 persons, and in 1905 from 43.

Of the 71 individuals to whom the forecasts were sent in 1907,—

8 received forecasts for District 2 (England, N.E.), 4 for District 3 (England, E.), 19 for District 4 (Midland Counties), 20 for District 5

(England, S.), 4 for District 7 (England, N.W.), 12 for District 8 (England, S.W.), 1 for District 9 (Ireland, N.), 2 for District 10 (Ireland S.), and 1 for District 11 (English Channel).

No application was received from any of the Scottish districts (Districts 0, 1 or 6), but for the first time in the history of the service, the forecasts were sent for a limited time to a resident in the Channel Islands.

In 10 cases out of the 71 the forecasts were required for periods not exceeding one week. In 21 cases they were required for periods of more than four weeks, while in four cases they were required for the whole, or practically the whole, of the four months during which the service lasted. In two cases an application for the forecasts at the time of the hay harvest was followed by an application for their renewal at the time of the wheat harvest.

The special Saturday evening forecasts, indicating, in general terms, the probable weather for the whole of the ensuing 48 hours were sent to 32 individuals. Of these 22 requested that the special forecasts should be sent in lieu of the ordinary Saturday afternoon forecasts, while 10 requested that they should be sent in addition to the ordinary forecasts.

Returns giving a daily record of the weather actually experienced during the period for which the forecasts were sent were received from 27 persons. The number of such returns, though actually larger, was not proportionately larger than in the three preceding years.

The results of a comparison made in the Office between the forecasts issued and the weather subsequently experienced, as entered on these returns show that for the country generally 49·5 per cent. of the forecasts were entirely successful and 42·5 per cent. partially so, giving a total of 92 per cent. of forecasts which may be regarded as sufficiently correct to have been of practical value to the agriculturist. Of the partially successful forecasts a large number were incorrect only as regards wind force and direction, a point of minor interest to the farmer. 7 per cent. of the forecasts were classed as partial failures, but less than 1 per cent. as total failures. The general result of the checking compares favourably with that attained in recent years, but owing to the difficulty experienced in forecasting during a season of exceptionally broken weather the percentage of completely successful forecasts was lower than in the more settled summers of 1905 and 1904.

Omitting the results for Ireland, N. and the English Channel district, which are in each case based upon returns supplied by only one station and cover a very limited period of time, the highest percentage of complete success, 59 per cent., was attained in the Midland Counties. The highest general percentage of success complete and partial, 97 per cent., was attained in England, E., the next highest percentage (93) being attained respectively in England, N.E. and in England, S.W. The lowest percentage both of complete and of general success was recorded in Ireland, S. It may be remarked that the single return from which this result

was derived was supplied by Dublin, a city occupying a somewhat unique position on the borders of forecasting Districts, Nos. 9 and 10. The forecast for District 10 was in all cases supplied, but it may be that in some instances the Dublin weather approximated more nearly to that experienced in District 9 (Ireland, N.).

In the course of the season applications were received on two occasions from a Cornish firm for advice as to the probability of a spell of fine weather of sufficient length to enable them to secure a portion of their crops. The applications were responded to by the Office, and in each case with complete success. The opinions of the recipients with regard to the value of the forecasts may be judged by the following extracts from letters to the Office :—On July 21 they wrote “ We have now cut and secured over 60 acres of prime clover hay, and our success is due to you in a great measure. You have always been right in your forecasts.”

On September 22 they again wrote : “ Thank you very much for the forecasts. You have saved us a very large amount of money by them and anxiety also. You were never once incorrect in any forecast, and this last spell of fine weather we have secured over 70 tons of hay.”

The arrangements for forecasts for Sea districts and for exceptionally high tides referred to in last year's report have been continued.

Other
Forecasts.

The number of inquiries for forecasts by telegraph was 212.

Telegraphic
inquiries for
forecasts.

Special charts, transcripts of observations, or summaries, have been supplied to various newspapers, as in previous years.

Transcripts of
observations.

A comparison for the year of the Forecasts for the United Kingdom issued at 8.30 p.m., with the subsequent weather actually experienced, is given below. The complete success, partial success, partial failure, and complete failure of the forecast as regards both wind and weather, are estimated according to definite rules which are designed to eliminate bias as far as possible.

Results of
Forecasts.

The term “ partial success ” is applied to cases in which more than half the details included in the forecast are justified by subsequent events. With regard to *wind* the details comprise direction and force, and anticipated changes in either particular. With regard to *weather* they comprise temperature, the state of the sky (clear, cloudy, or overcast), and the probability of rain, snow, fog, thunder, &c., with occasional indications as to the duration or intensity of any or all of the phenomena mentioned. The term “ partial failure ” is applied in a similar way to a forecast in which more than half the details given are incorrect.

The detailed comparison of the forecasts with actuality for the year 1907 has been summarised to give results, (1) for the various months, and for the United Kingdom as a whole, and (2) for the various districts, and for the year as a whole.

SUMMARY of RESULTS of 8.30 p.m. FORECASTS in 1907.

(a.) Results for the various Months.

Months.		Percentages.												Sum of Successes, Complete and Partial
		Complete Success.			Partial Success.			Partial Failure.			Complete Failure.			
		Wind.	Weather.	Average.	Wind.	Weather.	Average.	Wind.	Weather.	Average.	Wind.	Weather.	Average.	
January	...	56	46	51	38	48	43	4	6	5	2	—	1	94
February	...	65	47	56	25	38	32	5	13	9	5	2	3	88
March	...	51	64	58	38	24	31	6	10	8	3	2	3	89
April	...	58	58	58	29	37	33	10	5	8	3	—	1	91
May	...	55	46	51	32	38	35	7	10	8	6	6	6	86
June	...	56	58	57	32	39	36	7	3	5	5	—	2	93
July	...	65	51	58	29	43	36	3	5	4	3	1	2	94
August	...	54	45	50	36	43	39	8	11	10	2	1	1	89
September	...	63	50	57	27	37	32	4	10	7	6	3	4	89
October	...	39	45	42	45	53	49	14	2	8	2	—	1	91
November	...	55	51	53	35	43	39	8	5	7	2	1	1	92
December	...	60	59	60	32	32	32	5	9	7	3	—	1	92
The entire Year		56	52	54	33	40	37	7	7	7	4	1	2	91

(b.) Results for the various Districts.

Districts.	Percentages.												Sum of Successes, Complete and Partial.
	Complete Success.			Partial Success.			Partial Failure.			Complete Failure.			
	Wind.	Weather.	Average.	Wind.	Weather.	Average.	Wind.	Weather.	Average.	Wind.	Weather.	Average.	
Scotland, N. ...	64	52	58	25	39	32	8	8	8	3	1	2	90
" E. ...	55	48	51	33	43	38	8	8	8	4	1	3	89
England, N.E.	57	47	52	33	46	40	8	7	7	2	—	1	92
" E. ...	58	48	54	32	42	37	6	9	7	4	1	2	91
Midland Coun- ties.	62	49	56	29	41	35	6	8	7	3	2	2	91
England, S. ...	64	47	56	29	44	36	5	8	7	2	1	1	92
Scotland, W. ...	48	69	59	37	23	30	8	4	6	7	4	5	89
England, N.W.	52	46	50	40	43	41	4	10	7	4	1	2	91
" S.W.	58	52	55	33	39	36	6	8	7	3	1	2	91
Ireland, N. ...	54	56	55	35	36	36	7	6	6	4	2	3	91
" S. ...	47	55	51	40	38	39	8	6	7	5	1	3	90
Summary ...	56	52	54	33	39	37	7	7	7	4	1	2	91

The following table shows the success of the Forecasts of the year in comparison with those of previous years. It gives for each year of the decade 1898-1907 the percentages of complete and

partial successes of the Forecasts issued at 8.30 p.m. Until the year 1905 the annual period included was that for the 12 months ending with March. The results for 1905 to 1907, given below, are for the calendar year. The sum of successes (complete and partial) in 1907 was as high as in 1906, but the percentage of complete success was lower, the difference being most marked in the summer months, when the type of weather was often extremely complex, and forecasting unusually difficult.

PERCENTAGES of SUCCESS in the FORECASTS for the whole of the BRITISH ISLES.

Year.				Complete Success.	Partial Success.	Sum of Successes, Complete and Partial.
1898-99	...	...	...	55	28	83
1899-1900	...	...	...	55	27	82
1900-01	...	...	...	57	27	84
1901-02	...	...	...	58	26	84
1902-03	...	...	...	53	35	88
1903-04	...	...	...	56	30	86
1904-05	...	...	...	57	31	88
1905	...	...	...	56	32	88
1906	...	...	...	61	30	91
1907	...	...	...	54	37	91
Average	...	...	...	56.2	30.3	86.5

STORM WARNINGS FOR THE COASTS OF THE UNITED KINGDOM.

Warnings of coming storms have been dispatched by telegraph to stations on the coast supplied with signals to be hoisted as warnings to mariners. The signals are defined in Circular 717 of the Board of Trade, issued in February, 1874. Storm Warnings.

A list of the stations at which the signals are exhibited is given in Appendix II., pp. 61-63. At the end of March, 1907, there were 237, of which 127 were in England and Wales, 71 in Scotland, 34 in Ireland, 3 in the Isle of Man, and 2 in the Channel Islands.

A comparison between the warnings issued during the year and the subsequent weather, in accordance with the method indicated in the Report for 1888-9, p. 64, is given in the following table.

Appended to the table are notes respecting the gales for which no warnings were issued, with brief statements as to the circumstances in which they occurred.

STORM WARNING CHECKING.

Comparison between the Warnings and the subsequent Weather in 1907.

Coasts.	Total No. of Warnings.	Warnings justified by subsequent Gales. Force 8 and upwards.	Warnings justified by subsequent strong Winds. Forces 6 & 7.	Warnings not justified by subsequent Weather.	Warnings late. Force 9 reached at two Stations before issue.	Warnings partially late. Force 9 reached at one Station before issue.	Warnings issued in consequence of telegraphic errors.	Storms for which no Warning was issued.
Scotland, N.E. ...	18	9	7	1	—	1	—	Aug. 13-14.
" E. ...	23	11	9	2	—	1	—	Mar. 18.
" N.W. ...	11	6	3	2	—	—	—	Aug. 13-14.
" W. ...	15	5	7	3	—	—	—	Oct. 18-19.
Ireland, S. ...	19	10	6	3	—	—	—	Aug. 13-14.
" N. ...	18	12	5	1	—	—	—	Oct. 18-19.
Irish Sea ...	18	10	6	2	—	—	—	Aug. 13-14.
St. George's Channel ...	16	9	4	3	—	—	—	June 24-25.
Bristol Channel ...	25	12	11	1	—	1	—	Jan. 22-23.
England, S.W. ...	29	14	14	—	—	1	—	June 24-25.
" S. ...	28	17	10	—	—	1	—	Jan. 22-23.
" S.E. ...	30	23	6	1	—	—	—	June 24-25 ;
" E. ...	25	18	6	—	—	1	—	Oct. 10 ;
" N.E. ...	29	14	14	1	—	—	—	Nov. 13.
Totals	23	13	9	—	—	1	—	Jan. 22-23 ;
Percentages	27	11	13	3	—	—	—	Jan. 30.
For the whole year	22	14	5	1	—	2	—	June 24-25 ;
	26	19	6	1	—	—	—	Nov. 13.
	20	14	6	—	—	—	—	Jan. 30.
	23	17	6	—	—	—	—	
	18	11	5	2	—	—	—	
	20	11	7	1	—	1	—	
	16	10	4	2	—	—	—	
	21	8	11	2	—	—	—	
	12	6	5	1	—	—	—	
	16	6	10	—	—	—	—	
	13	5	6	1	—	1	—	
	12	1	11	—	—	—	—	
Totals	268	155	89	16	—	8	—	
Percentages	305	161	123	18	—	3	—	
For the whole year	—	57·8	33·2	6·0	—	3·0	—	
	—	52·8	40·3	5·9	—	1·0	—	
Totals...	573	316	212	34	—	11	—	
Per-centages	—	55·2	37·0	5·9	—	1·9	—	

NOTE.—In order to facilitate comparison with the statistical tables of the Board of Trade which are made up for the year ending June 30, the figures for the two halves of the year 1907—January 1 to June 30, and July 1 to December 31—are given separately for each district. The upper line of figures in each case gives the particulars for the first half of the year.

GALES EXPERIENCED in 1907 for which no WARNINGS were issued.

- (1.) *January 22nd-23rd. An Easterly to North-Easterly Gale on all the South-West, South, and South-East Coasts of England.*—Due to a rapid increase of pressure which took place in the rear of a remarkable depression in which the minimum readings of the barometer were not much below 30·3 ins. The depression passed southwards across our western districts on the night of the 21st, and afterwards travelled in a south-westerly direction to Portugal. At no time was the appearance regarded as sufficiently threatening to justify the issue of warnings.
- (2.) *January 30th. A Northerly Gale in England, North-East, and England, South-East.*—Due to the southerly movement of a depression right across Western Europe from the Arctic Sea to the Adriatic. Warnings were issued on January 28th for the commencement of the gale, but were allowed to expire on the evening of the 29th. The gale continued longer than was expected. On the morning of the 30th the depression was over the Baltic, and appeared to be passing away to the eastward.
- (3.) *March 18th. A Westerly Gale occurring sporadically in the East of Scotland.*—Caused by a depression which advanced over Scotland on the night of the 17th. The report from Blacksod Point for 6 p.m. on the 17th showed the appearance to be rather threatening, but owing to telegraphic delay it did not arrive until too late for the issue of warnings.
- (4.) *June 24th-25th. A Westerly Gale on many parts of our Western and Southern Coasts.*—Caused by a depression which passed across Scotland on the night of June 24th. The disturbance was of no great depth, and the changes in pressure were small. The wind force on this occasion was in excess of what might have been expected with the barometric gradients existing at the time.
- (5.) *August 13th-14th. A Southerly to Westerly Gale, in portions only of Scotland, North-East, Scotland, North-West, and Ireland, North.*—Caused by a rather deep depression which travelled north-eastwards across the west and north of Scotland on the night of August 13th. The gale, which had commenced in the north of Ireland on the evening of the 13th, became more general than was anticipated.
- (6.) *October 10th. A Southerly Gale in England, South.*—On the evening of the 9th a depression which had been developed very gradually over our south-west coasts appeared to be moving southwards towards the

Bay of Biscay. In the course of the ensuing night it changed its course, and, travelling northwards, produced a gale in the eastern parts of the Channel.

(7.) *October 18th–19th. A Southerly Gale in exposed portions of Scotland, West.*—Warnings for a southerly gale were issued with success on the morning of the 18th to nearly all the English and Irish coasts. The gale extended a little further north than was anticipated.

(8.) *November 13th. A Westerly to North-Westerly Gale occurring, but only sporadically, in England, South, South-East, and East.*—The western and northern coasts were all warned on the 12th, when a rather deep depression began to approach Scotland from the westward. During the following night the disturbance passed on to the North Sea, but spread laterally in a southerly direction and caused an extension of the gale to our southern and eastern districts.

Comparison
of results for
1907 with
previous
years.

The following table contains a statement of the amount of success of storm warnings in each year and the average for the decade 1898–1907 :—

Years.	Total No. of Warnings issued.	Warnings justified by subsequent Gales.	Warnings justified by subsequent strong Winds.	Warnings justified.	Warnings not followed by increase of Wind.
		p.c.	p.c.	p.c.	p.c.
1898 ...	581	59.8	27.5	87.3	8.2
1899 ...	504	59.3	31.9	91.2	4.8
1900 ...	512	66.2	25.8	92.0	6.3
1901 ...	498	62.3	26.1	88.4	7.4
1902 ...	535	55.5	32.0	87.5	9.0
1903 ...	757	62.6	27.3	89.9	7.3
1904 ...	539	59.4	30.4	89.8	6.7
1905 ...	632	52.5	35.9	88.4	9.5
1906 ...	739	54.7	33.3	88.0	8.5
1907 ...	573	55.2	37.0	92.2	5.9
1898–1907	587	58.8	30.7	89.5	7.4

Averages.

The corresponding figures giving the average results for the last seven years, and for the three preceding decades are as follows :—

Period.	Total No. of Warnings issued.	Warnings justified by subsequent Gales.	Warnings justified by subsequent strong Winds.	Total Warnings justified.	Warnings not followed by increase of Wind.
		p.c.	p.c.	p.c.	p.c.
1871–80...	362	51.9	25.7	77.6	16.8
1881–90...	507	57.3	25.1	82.4	15.5
1891–1900	518	62.7	27.5	90.2	5.8
1901–07...	610	57.5	31.7	89.2	7.8

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1901-07...	610	57.5	31.7	89.2	7.8

III.—STATISTICS AND LIBRARY BRANCH.

Climatology of the British Isles.

A list of stations in connexion with the Office, in which particulars are given of the orders of the stations and of the official publications for which the returns have been prepared, will be found in Appendix II. on pp. 76 to 95. Distribution of Stations.

Clarendon type has been used for the names of stations which have been added to the list in the course of the year, and *italic* type for those which have been discontinued.

The distribution of these stations in the various districts may be summarised as follows :—

	Observa- tories.	Normal Cli- matological.	Auxiliary Climatologi- cal.	Telegraphic Reporting.	Sunshine (in- cluding Ob- servatories).	Additional Rainfall.	Additional Anemograph.
0. Scotland, N.	0	9	1	4	6	3	1
1. " E.	1	6	3	3	7	1	0
2. England, N.E.	0	11	7	2	12	10	2
3. " E.	0	9	6	2	12	4	2
4. " Midlands	0	10	20	2	18	15	1
5. " S.E.	0	6	21	2	24	17	2
London District	1	3	4	1	7	7	0
6. Scotland, W.	1	6	3	0	4	1	0
7. England, N.W. and N. Wales	1	10	10	2	18	5	3
8. " S.W. and S. Wales	1	4	13	3	16	16	1
9. Ireland, N.	0	3	1	3	2	5	1
10. " S.	1	6	9	3	7	12	3
11. Western Channel	0	1	1	2	4	0	1
Total	6	84	99	29	137	96	17

Records have also been received from 32 additional barograph stations, 5 additional thermograph stations, 8 additional anto-graphic raingauge stations, 1 hygrograph station, 61 sea temperature stations. Daily reports are received by telegraph from 44 foreign stations (*see* p. 96).

Observatories are also maintained at Greenwich (The Royal Observatory), Oxford (Radcliffe Observatory), Bidston (Mersey Docks and Harbour Board), Southport (the Corporation), and Berkhamsted (E. Mawley, Esq.), and from these, records for occasions of special interest have been courteously supplied when asked for.

The most important climatological stations which have dropped out of the list in the course of the year are the following :— Changes in Stations.

Clathick, Colly Weston, Dunmow, Edenfel (Omagh), Lednathie, Wolfelee.

At Clathick observations have been discontinued. In the Weekly Weather Report, data from Crieff take the place of those from this station, which itself succeeded Ochertyre in

1905. At Colly Weston the observations have been discontinued owing to the removal of the observer, Miss Amy Tasker. The station has been replaced in the Weekly Weather Report by Raunds, a station in connexion with the Royal Meteorological Society.

Returns from Edenfel have been included in the Weekly Weather Report since July, 1892, and their discontinuance, in consequence of the failing health of the Observer, Colonel Buchanan, C.B., is much regretted, particularly as the data available from the North of Ireland are very scanty.

At Dunmow observations have been discontinued.

Lednathie and Wolfelee are stations in connexion with the Scottish Meteorological Society. In consequence of the revision of the arrangement for the supply of data by the Society, described on p. 13, returns in manuscript are no longer received from these stations. The observations are being continued and a summary of them is printed in the Journal of the Scottish Meteorological Society and in the Quarterly Reports of the Registrar-General for Scotland.

The additions to the list include the following stations which contribute returns to the Weekly and Monthly Weather Reports :—

West Linton, Raunds, Colmonell, Kilmarnock, Cahir, Crieff, Raunds.

Climatological stations have been started by the local authorities at Bradford, Burnley, Dover, and Swansea and summaries of the data are printed in the Monthly Weather Report. The station at Dover also contributes full observations to the Daily Weather Report. The municipal authorities at Penzance and Weymouth have applied to have their stations recognised by the Office and data supplied from them are now included in official publications.

Stations have been started by private observers at Tynemouth and at Sparkhill near Birmingham.

Summaries for the telegraphic reporting station on Barra Island are included in the various climatological reports.

Returns have been received from 9 new rainfall stations; 5 stations of this type have been discontinued.

Obituary.

The Committee record with regret the death of the following observers :—

Mr. J. C. Philips, of Cheadle (Staffs.).

Mr. Studholme Cartmell of Carlisle.

Dr. J. Byrne Power, of Kingstown.

Colonel Buchanan, C.B., of Edenfel (Omagh).

The observations are being continued at Cheadle, Carlisle and Kingstown.

Inspections.

A list of stations inspected in the course of the year by representatives of the Office is given in Appendix VI., pp. 132, 133.

Publications.

In the course of the year the question whether the selection of stations included in the Weekly Weather Report at different periods of its history has been such as to give constant values of the averages for districts has been carefully examined. The investigation, which has been a laborious one, has shown that continuity has been maintained satisfactorily on the whole. In a number of cases in which it was found that there had been a sensible change in the district average, the figures for previous years have been revised in order to make them comparable with those now being published. Adjustment has been found to be necessary in the following cases:—

Temperature,	Districts 0, 1 and 6.
Rainfall,	Districts 0, 1, 3 and 6.
Sunshine,	Districts 0, 1, 2, 5, 7 and 8.

A Report in which particulars of all changes will be given is in course of preparation and will appear shortly. It will also contain an account of the principles which should guide the selection of stations and the computation of district values.

The investigation has given rise to several changes in the selection of stations included in the Report from the commencement of 1908. The most important alteration has been an increase in the number of stations included in Districts 1 (Scotland East) and 6 (Scotland West). The representation of stations in district 9 (Ireland North) is still rather unsatisfactory owing to lack of returns from inland regions. Data which are not used for the computation of district values are now distinguished in the Report by printing them in italic type.

The only change which has been made in the form of the statistical tables published in the Report is the inclusion of the date of occurrence of the highest and lowest temperatures of each week in the table of data for stations.

The Quarterly issues of Appendix I. (Quarterly Summary, for districts, of rainfall temperature and sunshine for the current and previous quarters since 1866) have been published as in previous years. The investigation referred to above has led to a change in the form of the corresponding values for the whole year. The appendix now gives, for each of the twelve districts into which the British Islands are divided, values of rainfall, mean temperature and bright sunshine for each year since 1878, the year of commencement of the Weekly Weather Report. The revised figures have been given where revision was found to be necessary. The data for the years 1866-1877 have been omitted as the investigation has shown that in a great many cases they are not comparable with those published in later numbers of the Report.

Appendices to
the Weekly
Report.

Appendix II. (summary of the Weekly values for districts) has been published as heretofore.

The special wind force supplement, issued in connexion with the Report since 1904 has been printed as Appendix III.

Monthly
Weather
Report.

The monthly Report has been issued regularly (*see pp. 8, 65*). Since November, 1907, the data supplied by the Meteorological Societies under the arrangement described on p. 13. have been included in it. At the commencement of 1908 an additional lithograph page was added. This has been occupied by the map showing the distribution of the month's rainfall prepared by the British Rainfall Organisation. The space hitherto assigned to the rainfall map has been used for plotting the distribution of bright sunshine during the month. The regular plotting of the results from sunshine recorders by directing attention to apparently exceptional values, has already proved itself of great assistance in securing uniformity in the method of estimation adopted by different observers.

Observations
at Stations of
the Second
Order.

The issue of daily values at 20 stations of the second order for the year 1908 in monthly instalments has been started as described on pp. 8, 66. Some delay occurred on the issue of the first two numbers in consequence of difficulties connected with the new type adopted, but the issue for March appeared within six weeks of the end of the month.

Of the arrears of this publication which remain to be made up the volume for 1903 was issued before the end of 1907. The preparation of that for 1904 is well advanced.

Returns for
the Regis-
trars-General.

Weekly and Quarterly summaries have been prepared for the Registrar-General of Births, Deaths and Marriages for England and Wales and for Ireland. At the beginning of 1908 the form of publication of the data in the Quarterly Reports was altered. The printing of the results for each station for three consecutive months in three consecutive lines has been abandoned, and in its place the complete results for all stations for each month are given. This arrangement has the advantage of exhibiting the data for different parts of the country for a particular month in close juxtaposition. Its adoption has also effected a great saving of time in the preparation of the Reports.

Climatology. Foreign and Colonial Stations.

Foreign and
Colonial
Stations.

A list of Foreign and Colonial Stations from which documents have been received in the course of the year is given in Appendix II., p. 98.

The Committee regret to record the death of Reverend S. Osborne Kempton, who contributed observations from Yakusu, Upper Congo, since 1905.

Among the additions to the list during the year under review may be mentioned :—

- (1.) Regular observations at 16 stations of the third order in Northern Nigeria.
- (2.) Returns from a station of the second order at Suva in Fiji.
- (3.) Returns from a station of the third order at Smyrna in Turkey, contributed by the Principal of the International College.

- (4.) Returns from a station of the second order in South Georgia (South Atlantic), which is to be maintained for the period 1906 to 1926 by the Argentine Fishery Company of Buenos Aires.

Inquiries.

The inquiries dealt with in the Statistics and Library Branch during the year were 893, of which 305 were by letter and the rest personal inquiries. The following table gives a classification of the inquiries with the corresponding figures for previous years :—

		For Scientific or Commercial Purposes.	For Evidence in Legal Proceedings.	For Forecasts of Weather.	From Newspaper Correspondents for Special In- formation.	Miscellaneous.	Answered by Letter.	Answered Personally.
1903-4	...	258	94	158	217	65	166	626
1904-5	...	259	116	89	221	70	136	619
1905-6	...	293	99	77	206	84	160	599
1906-7	...	427	73	79	166	24	247	522
1907-8	...	503	83	108	175	24	305	588

Among the inquiries classed as "for scientific purposes" may be mentioned :—

- (1.) The preparation for the Admiralty of statistics regarding the relation between the occurrence of fog and the force of the wind at stations in the English Channel for incorporation in the revised edition of the "Channel Pilot." The results of this investigation have also been printed on the "Monthly Meteorological Charts of the North Atlantic and Mediterranean" for January, 1908.
- (2.) The preparation for the Admiralty of meteorological averages, for use in connexion with the "North Sea" and "Channel" Pilots.
- (3.) The preparation for Professor H. H. Hildebrandsson of a summary of the observations at St. Helena.
- (4.) The preparation of data regarding the humidity at Stonyhurst Observatory for the use of the Home Office Committee on the Humidity prevailing in cotton factories.

Some of the inquiries "for evidence in legal proceedings" have involved much work.

The inquiries included in the table under the heading "for forecasts of weather" are personal inquiries for information supplementary to that contained in the official forecasts and exhibited at the entrance to the Office and in St. James's Park.

Exchange of Publications.

Exchanges of publications have been arranged with the following bodies :—

The Meteorological Bureau of the Commonwealth of Australia.

The Government Meteorologist, Jamaica.

Institute for the Investigation of the Sea, the Helder.

The Observatory of Tortosa, Spain.

*Library.**The Library.*

The task of preparing a subject card catalogue for the additions which have been made to the library since the last list of additions was printed *in extenso*, as an appendix to the Report of the Meteorological Council for the year 1904-5, has been taken in hand.

The classification adopted is that of the International Catalogue of Scientific Literature. The additions to the library received during the past year, which have numbered upwards of 600 books and pamphlets, have been catalogued on this system. The total number of books in the library is now about 20,000.

In Appendix VII., p. 134, will be found (1) a list of persons and institutions from whom publications containing meteorological data have been received during the last five years with a brief indication of the nature of the information given; (2) a list of periodicals containing memoirs on meteorological subjects, which are received by the Office.

Among the most important additions to the library during the past year may be mentioned :—

Ziegler Polar Expedition, 1903-1905; Missions scientifiques pour la mesure d'un arc de méridien au Spitzberg; Atlas météorologique pour l'année 1906 par G. Eiffel; Experiments at the Eiffel Tower on wind force by G. Eiffel; Davos as Health Resort and a Handbook of Climatic Treatment including balneology, by Dr. W. R. Huggard; Annales de l'Observatoire Astronomique et Météorologique de Toulouse, Tome 7 by Professor E. Mathias.

Among those acquired by purchase have been :—

Müller-Pouillet's Lehrbuch der Physik und Meteorologie, Bd. 3; Tägliche Synoptische Wetterkarten, Dec. 1900-Nov., 1901; Antarctica, by Otto G. Nordenskiöld and J. G. Andersson; Handbuch der Ozeanographie Bd. 1, by Otto Krummel; On the "Polar Star" in the Arctic Sea, by the Duke of the Abruzzi; Das Werden der Welten, by Svante Arrhenius; Our heritage the sea, by F. T. Bullen; Frequency curves and correlation, by W. P. Elderton; von Danckelmann's Mitteilungen von Forschungsreisenden und Gelehrten aus den Deutschen Schutzgebieten; and a selection of the volumes of the International Catalogue of Scientific Literature.

The Library is available for the use of students and others between the hours of 10 a.m. and 4 p.m. A number of persons have availed themselves of this accommodation.

IV.—INSTRUMENTS BRANCH.

During the year 662 instruments of various kinds have been supplied for the use of H.M. ships as compared with 728 in the previous year. Supply of Instruments to the Navy.

The total number of instruments issued to the mercantile marine in the past year was 710, as compared with 654 in the previous year. Details are given in Appendix V. The approximate number of ships employing instruments belonging to the Office for observations during the year was 206, as compared with 217. Seven mercury barometers, 44 thermometers, 27 hydrometers, and 7 screens have been written off as lost or irrecoverable. Mercantile Marine.

The following "instruments, &c.," have been supplied on repayment for the Crown Agents for the Colonies :— Crown Colonies.

10 Mercurial Barometers.	1 Lander's Sunshine Recorder.
1 Barograph.	1 Dawson's Hygrometer.
74 Ordinary Thermometers.	1 Lander's Anemometer.
55 Max. do.	20 copies "Hints to Observers."
76 Min. do.	12 copies Indian Hygrometric Tables.
31 Solar do.	Electric Sunshine Receiver, repaired.
27 Grass Min. do.	2 Standard Thermometers.
25 Screens and Cages.	3 Six's Thermometers.
152 Raingauges and Glasses.	7,980 Charts for Recording Instruments.
214 Additional Glasses.	50 Pocket Registers.
6 sets apparatus for Solar Actinometer.	
1 Dines' Anemometer repaired.	

Instruments have also been supplied upon repayment to the following :— Colonial Governments, Local Authorities, and Private Observers.

Commonwealth of Australia.
 Transvaal Government.
 British South Africa Company.
 H. B. M. Vice-Consul, Mogador.
 J. P. Hornung, for Zambesi.
 Captain Tamplin, Chin-Kiang.
 Royal Observatory, Greenwich.
 Bradford Corporation.
 Burnley Corporation.
 Cardiff Corporation.
 Clacton District Council.
 Coventry, Medical Officer.
 Dover Borough Council.

East Ham Corporation.
 Folkestone Borough Council.
 Swansea District Council.
 Great Yarmouth Corporation.
 Plymouth Yacht Club.
 Bridlington Grammar School.
 Clongowes Wood College.
 University College School, Hampstead.
 J. Ridges, M.A., Reading.
 T. G. Benn, Esq., Fleetwood.
 Bigods Hall, Dunmow.
 D. H. Owen Esq., Birmingham.

**Telegraphic
Reporting
Stations.**

Instruments have been supplied for the new station at Castlebay, and the equipment at Yarmouth has been entirely renewed. At the other stations the instruments have been maintained in proper order and replaced where necessary.

**Storm
Warning
Cones.**

Cones have been issued to 22 stations to replace others worn out.

**Fishery
Barometers.**

The arrangements made with the Fisheries Board for Scotland, the Department of Agriculture and Technical Instruction in Ireland, and the Board of Agriculture and Fisheries in England and Wales, whereby the Inspectors of those departments examine and report upon the fishery barometers belonging to this Office, situated in their respective districts, have been continued.

The instrument at Newlyn, Penzance, has been repaired and new barometers sent to Union Hall, and Castletownsend Coast Guard Stations to replace those returned defective.

A large recording barograph has been lent temporarily to Loch Boisdale, Hebrides, in place of the mercurial barometer usually supplied to fishing villages.

There are now 225 stations on the coasts of the British Isles supplied by the Committee with barometers or barographs for the benefit of sailors and fishermen. Of these, 64 stations are in England, 6 in Wales, 61 in Ireland, 89 in Scotland, 4 in the Isle of Man, and 1 in Jersey. A list of the stations is given in Appendix II.

**Observa-
tories.**

No addition has been made to the instruments belonging to the Office at the observatories, viz., Kew, Falmouth, Aberdeen, Valencia, Oxford, Glasgow, Armagh, and Stonyhurst.

The supplementary observations with the Dines' pressure tube at Aberdeen are being continued.

The barograph and thermograph returned in 1905 from Fort William have been transferred to the National Physical Laboratory for use at the new Magnetic Observatory at Eskdale Muir, and a sunshine recorder has been added to replace the one used at Fort William and now lent to Dr. Saxby, of Balta Sound. It is understood that these instruments shall be charged against the account of the Laboratory in the Office books, and that the Laboratory undertakes their maintenance.

The erection of an anemograph at Gorleston near Yarmouth and the continuance of the experimental work at Gibraltar have been already referred to, pp. 17, 18. Anemograph Station.

The number of anemograph stations in connexion with the Office in the British Isles is now 24.

The experimental work at Holyhead is still continued, but it has been decided that the comparison of anemometers at that station need not be continued, and that steps may now be taken as occasion offers to move some of the instruments elsewhere. Experimental work.

Arrangements have been made for testing by experiments at Kew Observatory the accuracy of the constant used for the reduction of the records from the Dines' pressure tube. Dr. Stanton's experiments upon wind pressure at the National Physical Laboratory make it appear that a change in detail of the form of the head of the anemometer may have introduced an appreciable change in the constant, and it is intended to settle the matter by direct experiments with old and new forms of head.

Experiments are also in progress for the construction of a simple instrument to record the direction of the wind to supplement the record of velocity now obtained from the pressure tube.

The tabulation of the autographic records at the four Observatories, Kew, Falmouth, Aberdeen, and Valencia has been carried out satisfactorily, as heretofore, at the observatories themselves.

Examination and tabulation of the autographic records, observatories.

Further progress has been made in overtaking the arrears in the publication *in extenso* of the observations from the observatories. The first volume of the present series contained the data for 1900. Seven volumes of this series have now been published, the volume for 1906 having been completed in the course of the year under review, whilst more than half of the volume for 1907 is through the press, and the greater part of the remainder is in the hands of the printer. The volumes, up to that for 1906, contain readings of barometric pressure, dry and wet bulb temperature, direction and velocity of the wind, sunshine, and rainfall for every hour, together with mean results; and for purposes of comparison corresponding normal mean values are added. In the volume for 1907 the readings of the wet bulb thermometer have been omitted and hourly values of the relative humidity of the air have been substituted. In order to supply data for comparative purposes corresponding mean values have been calculated for the twenty years 1886-1905.

The tabulation of all the anemograms sent to the Office is now completed week by week either at the Office or at the Observatories, so that the results are immediately available for reference and for publication. Anemograms

In last year's report a diagram was given showing the frequencies of winds of various strengths at the anemograph stations. Figures for comparison between this year and last year as regards strong winds and gales are shown in the accompanying table :—

COMPARISON BETWEEN THE FREQUENCIES OF STRONG WINDS
AND GALES AT THE VARIOUS ANEMOMOGRAPH STATIONS
IN 1906 AND 1907.

Stations.	STRONG WINDS. Mean Hourly velocity 24-37 miles.			GALES. Mean Hourly velocity 38-55 miles.		
	Total Number of Hours in		Difference 1907-1906.	Total Number of Hours in		Difference 1907-1906.
	1906.	1907.		1906.	1907.	
Aberdeen	127	97	-30	—	—	—
Armagh	17	3	-14	—	—	—
Deerness	1,315	1,294	-21	250	111	-139
Dublin	50	15	-35	—	—	—
Falmouth... ..	121	120	-1	1	—	-1
Fleetwood	1,120	861	-259	211	159	-52
Glasgow... ..	37	29	-8	—	—	—
Holyhead	1,152	995	-157	160	106	-54
Kew	32	65	+33	—	—	—
Kingstown	1,230	1,200	-30	82	120	+38
Scilly	1,441	1,209	-232	234	187	-47
Shields	189	233	+44	3	—	-3
Stonyhurst	55	72	+17	—	—	—
Valencia	706	551	-155	35	28	-7
Yarmouth	308	391	+83	1	25	+24

It is clear that at most of the stations strong winds and gales were decidedly fewer, and this conclusion is borne out by the drop of the expenditure on storm warnings. But at the same time it is shown that gales were more frequent than last year at the stations on the east coasts of England and Ireland.

Sunshine
records.

The total number of stations from which returns of bright sunshine were being received at the close of the year was 140, of which one is in the West Indies, one in the Falkland Isles, and one in China. From 115 of these the original cards are received to be retained in the Office for reference. Most of these have been already tabulated by the observers and the tabulations are examined in the Office from time to time in order to secure

uniformity of practice. Of the remaining 25 stations from which reports of daily amounts are received many send the cards to the Office month by month for examination.

The work upon the records and observations from the winter quarters of the S.S. "Discovery" has been completed.

Antarctic
observations
from S.S.
"Discovery."

V.—INVESTIGATION OF THE UPPER AIR.

Report by W. H. DINES, F.R.S.

The Station at Pyrton Hill.

The Meteorological Office has not at the present time any definite station of its own for pursuing this investigation, but observations are made by means of kites and balloons at Pyrton Hill, and, as far as time permits, instruments are made for the use of observers at other stations.

Position and
equipment
of station.

The station (*see figure 1*) lies on the North-West slope of the Chiltern Hills, $1\frac{1}{4}$ miles East of Watlington, and a little over 14 miles S.E. by E. of Oxford. Its altitude is 500 ft. above mean sea level. The hills to the South-East rise to about 850 ft. within half a mile, and the ground to the West and North-West slopes gently down to the valley of the Thames, which at its nearest point is six miles distant.

The position, notwithstanding the proximity of the hills, has been found quite suitable for kite-flying, since the immediate neighbourhood is almost bare of trees, and the nearest dwelling of any kind is about half a mile distant. The absence of any proper workshop is decidedly inconvenient, but the station consists of a private house only, with stables and out-buildings, which have been utilised as a workshop. The kites are flown from a field, four acres in extent, adjoining the house, and as a rule no difficulty is experienced in starting them. The staff consists of myself and Mr. H. N. Baker, a skilled mechanic, who has been with me since the investigation was started by the Meteorological Office in October, 1905, and who is now thoroughly conversant with all parts of the work. The additional assistance of a skilled observer is also provided by the office on the days appointed by the International Commission for the sending up of registering balloons.

The work carried on may be classified under five heads:—

- (1.) Observations by means of kites.
- (2.) Observations by means of registering balloons.
- (3.) Observations by means of pilot balloons followed by one or more theodolites.
- (4.) The making of apparatus and instruments for use at Pyrton Hill and other stations.
- (5.) Calibration of the instruments and working up the records obtained.

1. Kites.

The kites are flown from a shed 11 ft. square erected in the South-West corner of the field already mentioned (*see figure 2*). This shed contains a suitable winding gear, a six-horse power steam engine and boiler, and opens towards the East. With westerly winds the kites are flown direct from the winding gear, but with easterly winds it is necessary first to pass the wire over a specially designed pulley secured to a strong post in the field.

Operations
with kites.

The time that can be devoted to kite-flying, owing to the small staff, is very limited, and in consequence no attempt is made to reach more than a moderate height; also, for the same reason the attempt to fly a kite is not made unless it is fairly certain that there is ample wind. On the other hand one or two days only have been omitted on account of too strong a wind, because in England the strong winds that often prevail when a height of two or more thousand feet is reached present a serious hindrance to routine work, and it is hoped that by constant trial and modification of the kites an improved form can be evolved.

During the year April 1st, 1907, to March 31st, 1908, 113 kite ascents have been obtained and the average height has been 3,500 ft. On five of these occasions the kite has failed to come back to the starting point, twice because the kite dived and landed away from the field, and three times because the wire gave way under the strain. The loss of material has been four kites, of which two broke and two were discarded. It has been found that the general length of life of a kite is from 20 to 30 ascents. Also about one mile of wire has been lost, chiefly on the three occasions when the kite broke away, but partly from losses of a few feet at a time from the end. The winding gear has two strain pulleys, and stores the wire on a reel holding six miles under a light tension. It has given no trouble of any kind during the year. The same meteorograph has been in use throughout the year, and it may be of interest to state it has now (May 12, 1908) made 186 consecutive ascents and is still in good order.

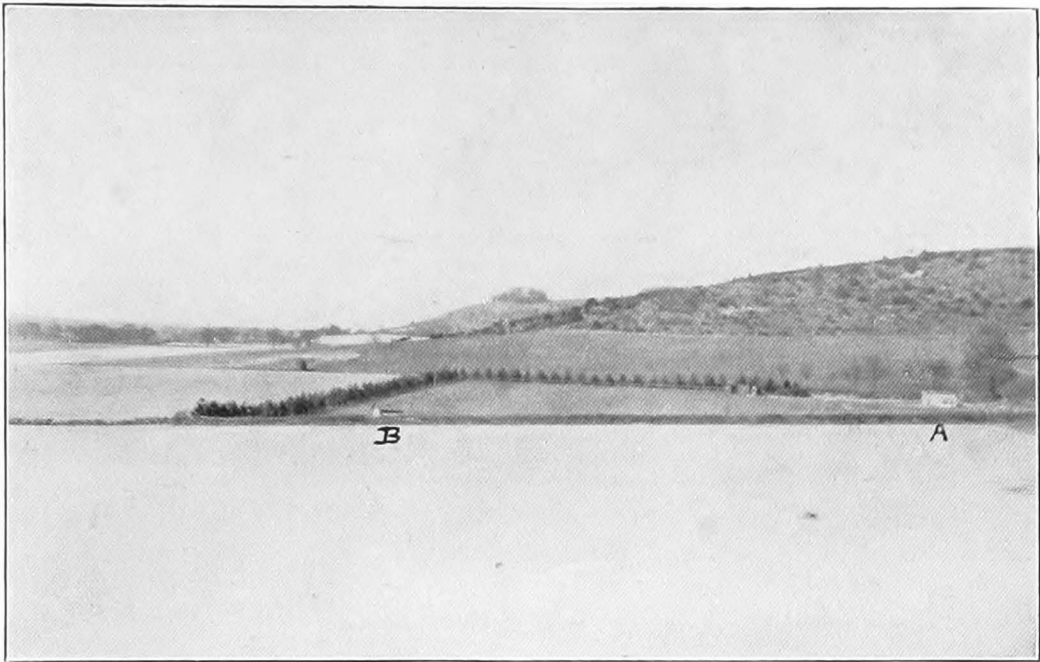
2. Registering Balloons.

Balloons with
recording
instruments.

The first registering balloon was sent up from Pyrton Hill on June 5th, 1907. Up to March 31st, 1908, 20 have been despatched in all. Of these 15 have been found, but only 14 records have been obtained, because in one case the finder abstracted the meteorograph and returned only the empty case. Several times the instrument has been damaged by the finder, but fortunately the record once made is almost indelible, and the 14 traces recovered have all yielded more or less satisfactory pressure-temperature diagrams.

In general, rubber balloons weighing 8 oz. (227 grammes) are used singly; they are filled with hydrogen, and at starting have a radius of about 19 to 20 in. ($\frac{1}{2}$ metre). They carry a meteorograph, which, with a bright metal cylindrical case, weighs just 2 oz. The parachute is made out of very thin red silk,

FIGURE 1.



GENERAL VIEW OF THE STATION FOR THE INVESTIGATION OF THE UPPER AIR AT PYRTON HILL, OXFORDSHIRE.

A. Store-room for kites.

B. Gear-shed with winch, shown in Figure 2.

The workshop which forms part of the out-buildings of the house is not shown.

FIGURE 2.

VIEW OF THE GEAR-SHED, WITH BOILER, WINCH AND 7 FT. 6 IN. KITE.



On the left of the shed is a small *camera obscura* for observing the motion of clouds. The workshop is at A on the left-hand side of the house.

10 in. square, with a $1\frac{1}{2}$ in. hole, and threads running from the four corners to a thin wire cross. Apart from the balloon the total weight to be carried is $2\frac{1}{2}$ oz., and a free lift of about 10 oz. is generally given. This affords an ascensional velocity of from 600 to 700 feet per minute. The average height attained has been 48,500 ft. (14·8 kilometres), and in most cases the isothermal layer has been reached. In addition to those sent from Pyrton Hill, five balloons were sent up from Crinan, Argyllshire, during the last week of July, 1907, and of these three were recovered.

The balloons are sent up a short time before sunset. Notwithstanding the protection provided against solar radiation by a bright metal cylindrical case, and the fact that the thermograph itself acts through the contraction of a thin strip of polished metal, the first few ascents, which were made in the daytime, show signs of insolation, and, to avoid this, ascents are now made so that the sun may have little or no power by the time the highest point is reached. I consider it impossible to protect the recording instrument entirely against the sun, for even if the thermograph be protected it still ascends in air which may have been warmed by contact with the heated balloon.

The traces are obtained by the scratching of a metal stile on electro-plated sheet metal, and for magnification a microscope is used, in order to interpret them. Up to April 2 of this year forty-five records have been obtained from these instruments by balloons sent up either from Pyrton Hill in Oxfordshire, from Manchester, from Ditcham Park in Hants, from Sellack in Herefordshire, or from Crinan in Argyllshire.

Figure 3 shows the geographical positions from which the instruments were returned by the finders. Figure 4 shows the relation between temperature and height obtained from the results. The diagram on the small scale of the reproduction is too confused for the individual curves to be traced, but three points may be made out: (1) a notable complication within the first two miles above the surface; (2) remarkable parallelism in the slope of the curves, showing nearly identical temperature gradient up to 10 or 12 kilometres; (3) the "isothermal" layer above 12 kilometres.

3. Pilot Balloons.

Comparatively little has been done at Pyrton Hill by this method of investigation. The rate of ascent of a balloon relatively to the air can no doubt be determined when its ascensional force (free lift) and radius are known, and the following formula has been found to apply to the average conditions,

$$f = \frac{r^2 v^2}{250},$$

where f is the free lift in grains, r the radius in feet, and v the velocity in feet per minute or $f = 108 r^2 v^2$ in grammes, metres and seconds. But observations made here have shown clearly that the actual ascensional velocity is by no means uniform, and that convection currents may alter it either way by 50 per cent., or even more. Two observers at least are required for each

Pilot
balloons.

FIGURE 3.

Investigation of the Upper Air, 1907-8.

Pyrton Hill, Ditcham Park, Manchester University, Sellack, and Crinan.

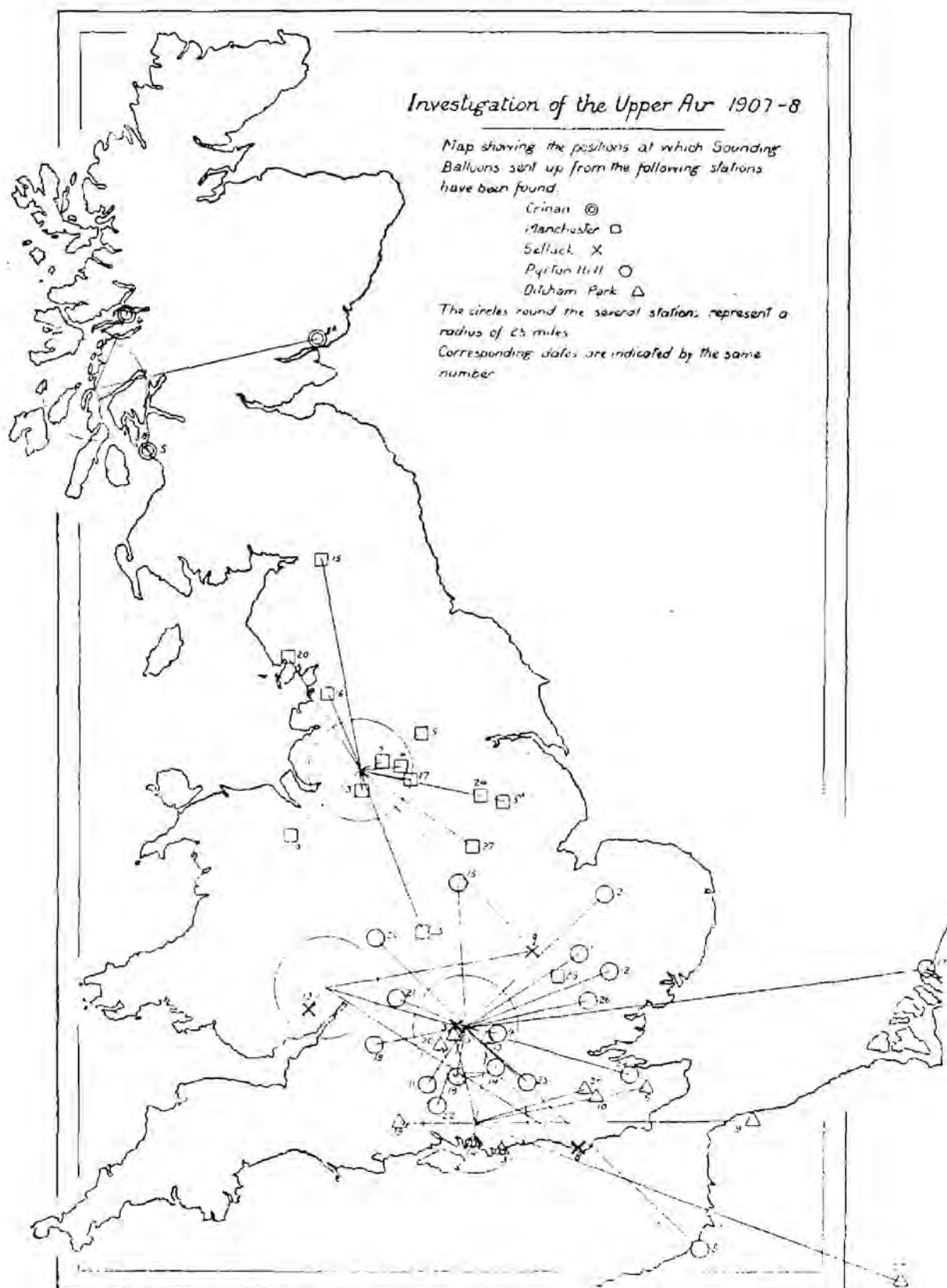


FIGURE 3.

Investigation of the Upper Air, 1907-8.

Pyrton Hill, Ditcham Park, Manchester University, Sellack, and Crinan.

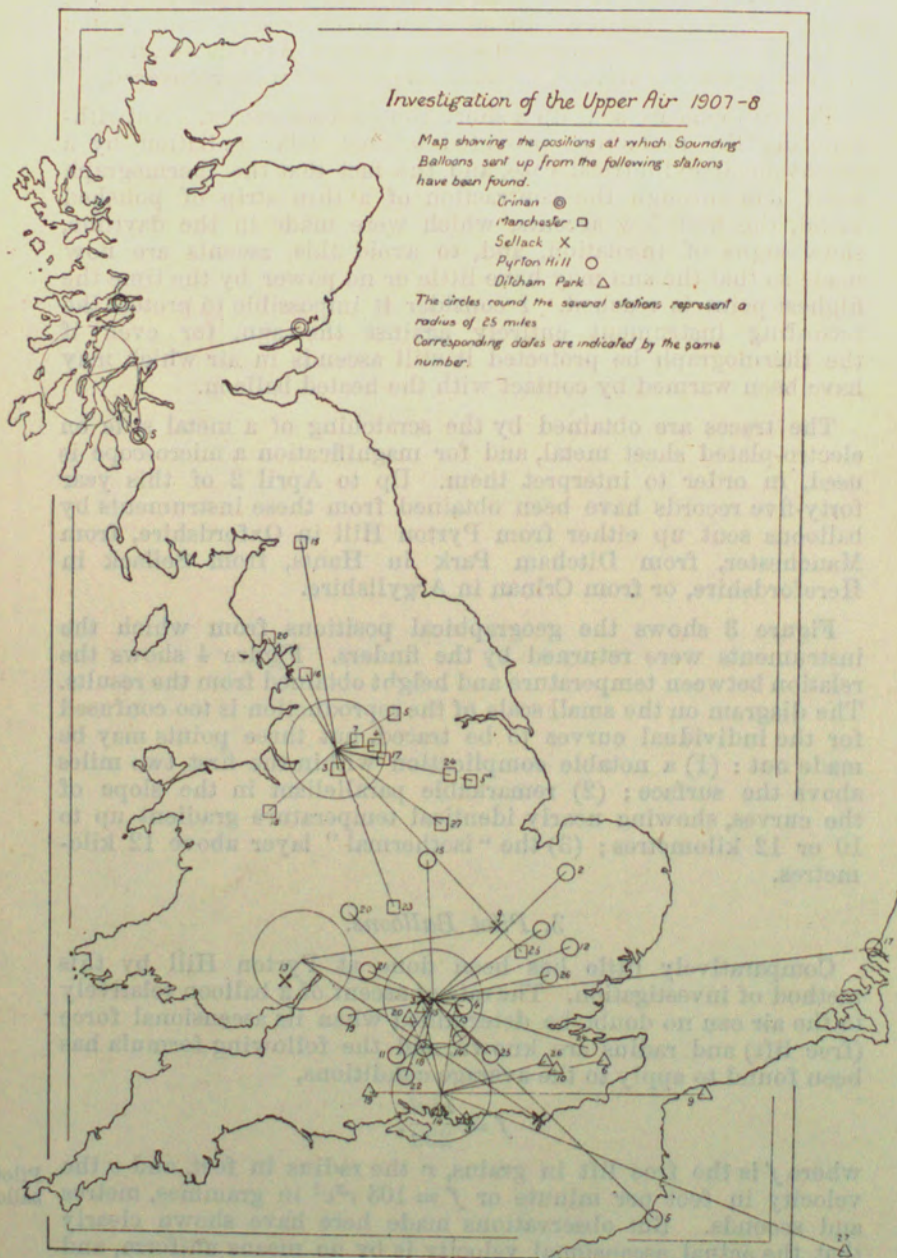
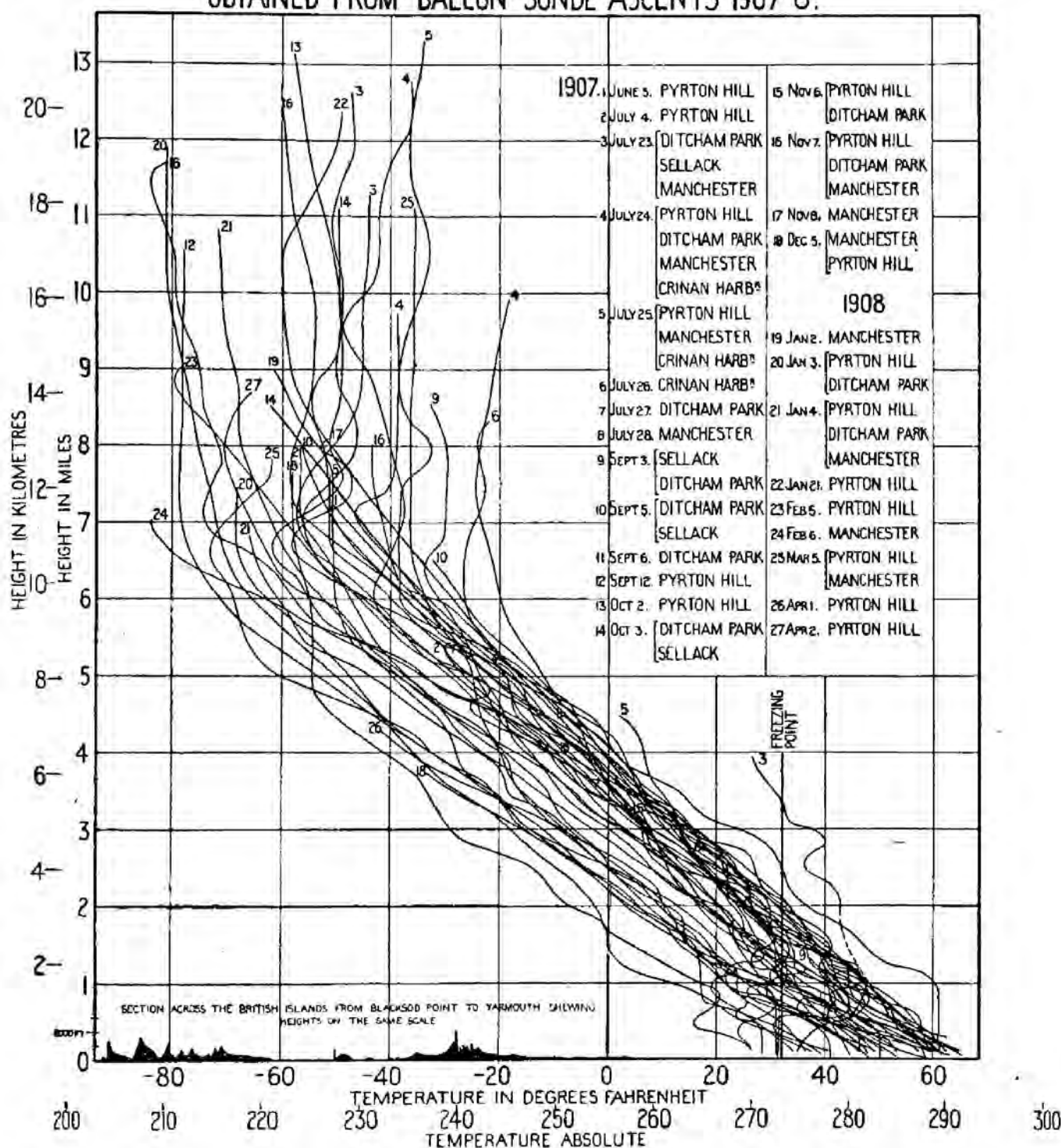


FIGURE 4.

CURVES SHOWING CHANGE OF TEMPERATURE WITH HEIGHT ABOVE SEA-LEVEL
OBTAINED FROM BALLON-SONDE ASCENTS 1907-8.



The separate curves represent the relation between temperature, in degrees Fahrenheit or on the absolute Centigrade scale, and height in miles or kilometres in the atmosphere. The numbers marking the separate curves indicate the date of ascent at the various stations as shown in the tabular columns. The general aspect of the curves shows the great complexity of the temperature variations within the first two miles from the surface, and a very nearly uniform rate of fall of temperature above the two-mile limit until the isothermal layer is reached, at from six to eight miles. The difference of height at which the isothermal layer is reached, and the difference of its temperature for different days or for different localities, is also shown on the diagram by the courses of the lines.

theodolite, and it is only on occasions when extra assistance can be obtained that two theodolites can be employed. These occasions since October last have been confined to the international days, and most of the registering balloons have been kept in view by two theodolites for a shorter or longer time.

4. *Making of Apparatus.*

Apparatus for
co-operating
observers.

During the year a considerable amount of apparatus has been made. Some has been sold and some lent to the voluntary observers at Ditcham Park and Brighton. All the meteorographs for balloons used in England, with, I think, one exception, have been made at Pyrton Hill, also the kites, excepting those used at Aldershot and Brighton, and a few of those at Glossop Moor. Kites and meteorographs are supplied at cost price to the Howard Estate station at Glossop Moor, and a few have been sold to the Egyptian Survey Department and to the Indian Government. But for the receipts from these sources it would hardly be possible to carry on the balloon work.

The approximate amount of apparatus made during the year is shown in the following table :—

Kites	...	...	...	...	...	35
Balloon meteorographs	...	...	...	...	...	50
Kite meteorographs	...	...	...	...	...	4

The total numbers made since October, 1905 are—

Kites	...	...	...	...	...	61
Balloon meteorographs	...	...	...	...	...	56
Kite meteorographs	...	...	...	...	...	26

A certain number of meteorographs have been repaired.

5. *Calibration of Instruments.*

Work upon
the records
obtained.

A very considerable amount of time is occupied with the calibration of the instruments which are carried by the registering balloons. Those which are sent up at Manchester are calibrated in the laboratory of Manchester University, but up to the present time all other instruments have been returned to Pyrton Hill, where the trace obtained has been worked up. Each new instrument is tested before it is used, and, subsequently, after each ascent. The process consists of placing it in a bath of petrol or spirit cooled by solid carbonic acid, and then altering the pressure by means of an air-pump. The temperature of the bath is measured by a thermometer immersed in it before and after each observation. By this means curves showing the deflexion of the aneroid box over the whole range of possible pressures, for temperatures running down in steps of 20° C. are obtained, and the records are interpreted by means of these curves. The temperature scale is linear, but unfortunately the pressure scale is not, and when it is remembered that to obtain each point on each curve a separate immersion in the bath and an inspection of the marks so made under a microscope is required, it will be seen that the process is extremely tedious. A refrigerating apparatus to be worked by the same engine that draws in the kites is being fitted up, and it is hoped

that the instruments may be somewhat modified so as to render the pressure scale linear, and also free from any correction for temperature. There is in my opinion very little doubt about the substantial accuracy of the temperatures of the isothermal layer which have been obtained by these balloon ascents, but great accuracy cannot be claimed for the heights. This is largely due to the fact that as the air pressure decreases small changes of pressure correspond to large changes of height, and hence when a height of 15 kilometres has been reached an error of some two to three per cent. in the length of the ordinate that shows the pressure may make an error of one kilometre in the height.

I take this opportunity of expressing my thanks to our two voluntary observers, Mr. C. J. P. Cave and Mr. S. H. R. Salmon, for the many valuable observations which they have sent in so regularly.

The instruments used and the methods of tabulating have been exhibited at the Physical Society of London, the Royal Institution and at the *Conversazione* of the Royal Society. For the occasion last named a joint exhibit was prepared to which all the co-operating observers contributed. The diagram of which figure 4 is a reproduction formed part of the office exhibit on that occasion.

All the observations are reported to the Office for publication in the current numbers of the *Weekly Weather Report*, and those made on the international days, that is to say, on the first Thursday of each month and on the days preceding and following and on such other occasions as may be arranged by international agreement, are regularly sent to Professor Hergesell, at Strasburg, to be incorporated with observations from other countries. With them are associated the observations of direction and velocity of cloud, made for the purpose, in compliance with a request of the international organisation, at the observatories of Greenwich, Kew, Valencia and Aberdeen in this country.

Publication
of results
obtained.

As a contribution towards providing for the collective publication of the results of this international enterprise a payment of £50 a year is made out of the office grant for the investigation of the upper air and, in return, 50 copies of the monthly issues are placed at the disposal of the office. A few of these copies are presented to contributors, libraries, and institutions, others are sold at cost price to institutions in this country or the colonies. Those not so disposed of are retained for the present so that complete sets may be available for some years to come. Libraries wishing to obtain copies should communicate directly with the Meteorological Office.

International
publication.

VI.—CORRESPONDENCE AND ACCOUNTS BRANCH.

Appendix IX., p. 159, shows the receipts and payments during the year ending 31st March, 1908. The amount voted by Parliament was £15,500, and the miscellaneous receipts amounted to £4,295 12s. 5d.

The following abstract shows approximately the net payments of this and the preceding year, together with the increase or decrease in 1907-8, as compared with the previous year :—

NET EXPENDITURE.	1906-7.	1907-8.	Increase.	Decrease.
GENERAL ADMINISTRATION :	£	£	£	£
Director	1,000	1,000	—	—
Office Salaries	6,728	6,884	156	—
Rent, Fuel, and Lighting	717	724	7	—
Alterations to premises and contingencies ...	153	69	—	84
Postage	410	427	17	—
TELEGRAMS, &C.	1,317	1,284	—	35
TRAVELLING EXPENSES ...	302	361	59	—
INSTRUMENTS	237	340	103	—
ALLOWANCES TO OBSERVA- TORIES, &C.	3,139	2,901	—	238
SUPERANNUATION ACCOUNT	1,988	1,281	—	707
Total £	15,991	15,271	342	1,062

The following notes explain the chief causes of variation in the year 1907-8.

The decrease in allowances to observers and the increase in Office salaries is principally due to the re-arrangement following the decease of Dr. Buchan whose salary of £150 was charged to the former head.

The decrease under telegrams is noteworthy as the charge for the year includes a payment of a full year for the Iceland telegrams at £240 instead of about a quarter of a year only. It includes also the charge for a new British reporting station. There is an actual decrease of £69 on account of storm warnings and a contingent decrease in "specials." The outstanding decrease works out at £115 which is accounted for by an increase as compared with last year in the telegraphic charges repaid.

The increase in the Office charge for instruments is accounted for by the expenses incidental to the new arrangements at Yarmouth and Barra and the new instrument at Gibraltar.

The decrease under superannuation is partly due to the fact that in 1907-8 a sum of £750 was invested in $2\frac{1}{2}$ per cent. annuities instead of £1,336 11s. paid in 1906-7 for the purchase of a life annuity, and partly to delay in receipts from investments actually due in the year 1906-7.

£1,493 17s. 1d. was paid to the Post Office for telegrams and £427 8s. 11d. for postage. The net charge for telegrams shown in the table includes payments to cable companies and foreign meteorological institutes for telegraphic services, and repayments for home and foreign telegrams are deducted.

That the net charge upon the Office grant should have amounted to £229 less than the grant is due to the gratifying circumstance that the contingent receipts for departmental and incidental expenses repaid for work done by the Office have exceeded the

estimate. The precise figures require some adjustment in view of the outstanding liabilities and credits, but the readjustment maintains the balance on the year's working.

The increased demands of the public upon the Office for information of various kinds is evident from the large increase in the work of the correspondence branch. The number of letters registered in 1907-8 was 4,173 as compared with 2,213 ten years ago, and the letters despatched numbered 5,064 as against 2,376 for the corresponding period. This large increase in correspondence has necessitated some change in the arrangement for filing letters.

W. N. SHAW,
Chairman.

1st July, 1908.

APPENDIX.

APPENDIX I.

REPORT BY THE LIQUIDATOR OF THE METEOROLOGICAL COUNCIL.

The property of the Meteorological Council on the 1st April, 1905, was as follows :—

1. £2,156 4s. 1d. two pounds ten shillings per cent. annuities.
2. £1,010 4s. 9d. cash.
3. The furniture, fittings, books, and other effects at No. 63, Victoria Street, London, S.W.
4. Furniture, fittings, books, and other effects at Westwood House, Cahirciveen, in the County of Kerry, Ireland.
5. The meteorological and other instruments at No. 63, Victoria Street, aforesaid, and at the observatories and stations in connection with the Office (eight observatories, nine anemograph stations, 24 telegraphic reporting stations and a number of other stations in the British Isles and abroad).
6. Meteorological and other instruments lent to ships of the Mercantile Marine (Report of the Council, 1905, Appendix VI.).
7. Meteorological and other instruments supplied to the Royal Navy (Report of the Council, 1904, Appendix V.).
8. The beneficial interest in the lease of Westwood House, Cahirciveen (Valencia), vested in the President of the Council and Fellows of the Royal Society.
9. An annuity of £150 (No. 6,423) granted by the Commissioners for the reduction of the National Debt during the life of Richard Strachan.
10. An annuity of £150 (No 7,533) granted by the Commissioners for the reduction of the National Debt during the life of Frederic Gaster.

A Trust Deed has been prepared and executed under which the above properties have been transferred to trustees for the Meteorological Committee, viz., the Permanent Administrative Secretary of the Treasury, and the Director of the Meteorological Office for the time being; and the necessary transfers of the annuities have been executed.

The cash sum of £1,010 4s. 9d. has been transferred to the account of the Meteorological Committee at the Bank of England.

The quarterly instalments on the £2 10s. per cent. annuities and of the annuities granted by the Commissioners for the Reduction of the National Debt during the lives of R. Strachan and F. Gaster respectively, which have accrued between the 1st April, 1905, and the transfer of the annuities, have been paid over to the account of the Meteorological Committee at the Bank of England.

The lease of Westwood House, Valencia, has been assigned by the Royal Society to the trustees for the Meteorological Committee.

G. L. BARSTOW,
Liquidator.

3rd July, 1907.

APPENDIX II.

STATEMENT OF PROVISIONS FOR THE SUPPLY OF INFORMATION
TO THE PUBLIC, 1908-9.

THE METEOROLOGICAL OFFICE.

Established in 1854 as a department of the Board of Trade. From 1866 to 1877, with a Parliamentary Grant in aid, under the management of a Committee, and from 1877 to 1905 under a Council appointed by the Royal Society, and now under the control of a Director and Committee appointed by H.M. Treasury.

Director :

WILLIAM NAPIER SHAW, LL.D., Sc.D., F.R.S.

Marine Superintendent :

Commander M. W. CAMPBELL HEPWORTH, C.B., R.N.R.

Superintendent of Statistics :

R. G. K. LEMPFERT, M.A.

Superintendent of Instruments :

R. H. CURTIS.

Chief Clerk and Cashier :

JOHN A. CURTIS.

OFFICE PREMISES.

63, Victoria Street, S.W.

Telegraphic address—"Weather, London."

The Office is open for general inquiries between the hours of 10 a.m. and 4 p.m. on week days (Saturdays, 1 p.m.), and for inquiries for forecasts and for information concerning the present weather conditions (*see* Section B, Telegraphic Information) from 8.30 a.m. to 8 p.m. on week days, and from 6 p.m. to 8 p.m. on Sundays.

Office hours
and general
arrange-
ments.

The books and documents in the Office library, and the manuscript returns in the possession of the Office, may be consulted or copied at the Office, free of charge, between 10 a.m. and 4 p.m., by any person, by permission of the Director. Extracts from them are supplied to any person making written application to the

Supply of
information
and charges

Director specifying precisely the details of the information required. For these extracts a charge is made to cover the cost of the time required for selecting and making them. The usual minimum charge is 5s. There are certain special exceptions with a smaller charge; a schedule of these will be sent on application.

The extracts will, if required, be attested by a sworn declaration before a Commissioner for Oaths, at a fee of £1 1s. (in addition to the charge of 1s. 6d. made by the Commissioner for Oaths). A special fee of from £2 2s. for each day's attendance is charged if a representative is required to attend in court in London with reference to the statements contained in the extracts supplied.

The facilities for the supply of information have been classified under the following heads:—

A. Marine Information.

B. Telegraphic Information.

Daily Weather Reports, Forecasts and Storm Warnings.

C. Statistical Information.

Weekly Weather Report, Monthly Weather Report, Observations at Stations of the Second Order and at Anemograph Stations, Hourly Readings from the Self-Recording Instruments at Four Observatories, Unpublished Observations.

D. Information from land stations outside the British Isles.

E. The Library.

F. Supply of Instruments and Forms to Observers.

Fishery Barometers.

G. Publication of Observations contributed by Volunteer Observers or by the Representatives of Local Authorities.

H. Regulations for the Supply of Information from Instruments belonging to the Meteorological Office by the Custodians of the Instruments.

I. List of Stations in connexion with the Meteorological Office.

K. List of Publications.

A.—MARINE INFORMATION.

Observations in connexion with marine meteorology have been forwarded to the Office, in special log books and registers, since 1855, by officers of the Royal Navy and the Mercantile Marine, and this valuable co-operation continues. In addition a large number of logs and remark books kept on board H.M. ships have been lent to the Office by the Admiralty, and by the large shipping firms, from time to time, for the purpose of extracting meteorological data. The information thus received is dealt with in various ways, and the results, which are published for the benefit of seamen and others, are indicated on pp. 104 to 106.

Meteorological Charts of the North Atlantic and Mediterranean have appeared regularly about the 15th of each month since 1901, and a similar monthly series for the Indian Ocean and Red Sea since May, 1906. On the face of these charts there are graphically represented, for the respective ocean areas, the normal winds, currents, distribution of atmospheric pressure, and temperature of air and sea surface, the magnetic variation, and the best routes for sailing vessels and steamships, according to the season. On the North Atlantic charts, in addition, there are given the average limits of trade winds, gales, fog, and ice, mean paths of centres of cyclones, storm signals, and wireless telegraphy stations; time of high water at Dover; the mean temperature of the sea surface 10 weeks anterior to the date of going to press, together with recent reports of ice, including, in the months of April, May, June, November and December, the latest intelligence, by cablegram, from the Signal Service of Canada, in regard to the state of the ice in the Gulf of St. Lawrence and its approaches. Similarly, on the Indian Ocean charts there are given the limits of trade winds and monsoons, surface temperature and currents near Cape Guardafui; information relative to the meteorology of the Red Sea, and tracks of cyclones in the North Indian Ocean and the Arabian Sea. During the south-west monsoon season, important cable notices from the Director General of Indian Observatories, with respect to the state of the weather conditions in the Arabian Sea and Bay of Bengal are also given.

The recent special features on the backs of the North Atlantic charts include Sea Surface Temperature of the North Atlantic and of the Mediterranean; an Alternative Specification for Admiral Beaufort's Wind Force Scale; South Atlantic ice of 1908; Channel fog and mist; Gale frequency on the English coasts; Rennell's current; Fog intensity scale; West India hurricanes; Fog and mist, Gulf of St. Lawrence and approaches; Gulf Stream; Relation between fog and wind forces in English Channel; Ice in the North-East and West Atlantic. Similarly, on the backs of the Indian Ocean charts there were given Cyclone Tracks of the South Indian Ocean, details relating to an alternative route for steamers during the south-west monsoon, between Colombo and Aden; Co-tidal Lines of the Indian Ocean, Storm and Weather Signals; Alternative Specification for Admiral Beaufort's Wind Force Scale; Cyclones in Arabian Sea, October to November, 1906; Recent severe gales in Southern Ocean; Meteorology of Persian Gulf, Gulf of Oman, Arabian Sea, and West Coast of Hindustan; Distribution and limits of Southern Ocean ice; Currents near Tasmania; Typical cyclones of Arabian

Sea and Bay of Bengal; Route recommended in S.W. monsoon from Calcutta to the southward.

Copies of both series of charts may be obtained from the Superintendents of the Mercantile Marine Offices at the principal ports of the United Kingdom, by captains and officers of merchant ships, price 6*d.* each. They may also be purchased from the Admiralty agents for the sale of charts, and from the agents for His Majesty's Stationery Office at Edinburgh, and at Dublin, at the rate of 5*s.* for an annual series of 12 charts, or 6*d.* for each chart, in addition to the cost of transmission. The Indian Ocean charts are also obtainable on similar or equivalent terms from Messrs. James Murray and Company, at Calcutta, and at the shipping offices at Bombay and Madras.

The marine observations which are recorded in the special meteorological log books, registers and other documents, forwarded to the Office at frequent intervals, are all made by voluntary observers. Captains and officers who co-operate in this way with the Meteorological Office receive copies of the Monthly Meteorological Charts free, and, in addition, those contributing four-hourly observations from time to time are presented with copies of the other marine publications issued by the Office.

Information is given to seamen, upon application to the Meteorological Office, either in person or by letter, with respect to the meteorological conditions likely to prevail along a proposed route, either for sailing vessels or for steamships.

Subject to certain regulations the instruments necessary for the keeping of a Meteorological Log Book will be lent by the Office to the captains of British ships who undertake to make regular four-hourly records during their voyages to and from foreign ports, enter them in the specially arranged log book provided for the purpose, and return the latter, on completion, to the Marine Superintendent. A rough book for entering up the observations when taken, is also supplied, and this becomes the property of the captain for future reference. The set of instruments lent to captains by the Meteorological Office comprises one mercury barometer, six thermometers, with screen, for registering the shade temperature of the external air and the temperature of the sea surface, and four hydrometers. The expenses incurred by the co-operating captains with respect to postage of log books and the transit of instruments, are borne by the Meteorological Office.

The ships are supplied either directly from the Meteorological Office or through the following agents:—

Cardiff—Mr. T. L. Ainsley, Bute Dock.

Dundee—Mr. C. H. Brown, 33, Dock Street.

Glasgow—Messrs. D. McGregor & Co., Ltd., 37 & 38, Clyde Place.

Greenock—Messrs. D. McGregor & Co., Ltd., 32, Brymner Street.

Hull—Messrs. Castle & Co., English Street.

Liverpool—Messrs. Dobbie, McInnes, Ltd., 39, South Castle Street.

Southampton—Captain D. Forbes, 169, High Street.

Sunderland—Messrs. J. J. Wilson & Son, 18, Hudson Road.

Sets of instruments are kept in working order at the Office in London, and at each agency, for the purpose of instructing observers in the method of observation.

B.—TELEGRAPHIC INFORMATION.

DAILY WEATHER REPORTS. FORECASTS AND STORM WARNINGS.

Between 8 a.m. and 10 a.m. telegraphic messages are received daily, reporting meteorological observations at 29 stations (marked T in list of stations, pp. 76 to 95) in the British Isles, chiefly on the coast, at 38 stations (p. 96) on the Continent of Europe and at the Azores, and at five stations in Iceland and one in the Faroe Islands. The observations in the British Isles are made at 8 a.m., and on the Continent and Iceland partly at 7 a.m. and partly at 8 a.m. Arrangements are in progress for the change of the morning hour of observation in the British Isles to 7 a.m. from 1st July, 1908, and it is anticipated that the issue of the storm warning forecasts and reports will be accelerated thereby. A certain number of stations report evening observations (6 p.m.), also by telegram, and those that do not report in the evening include the evening observations with the following morning reports, so that a complete schedule of morning and evening observations is drawn up daily. The information refers to the readings of the barometer, dry and wet bulb thermometers, maximum and minimum thermometers, rainfall, and in some cases, sunshine, with estimates of the direction and force of the wind, and reports of the weather and state of the sea. The observations received from Iceland give only the readings of the barometer and the dry bulb thermometer, the direction and force of the wind, and the state of the weather.

Daily information received.

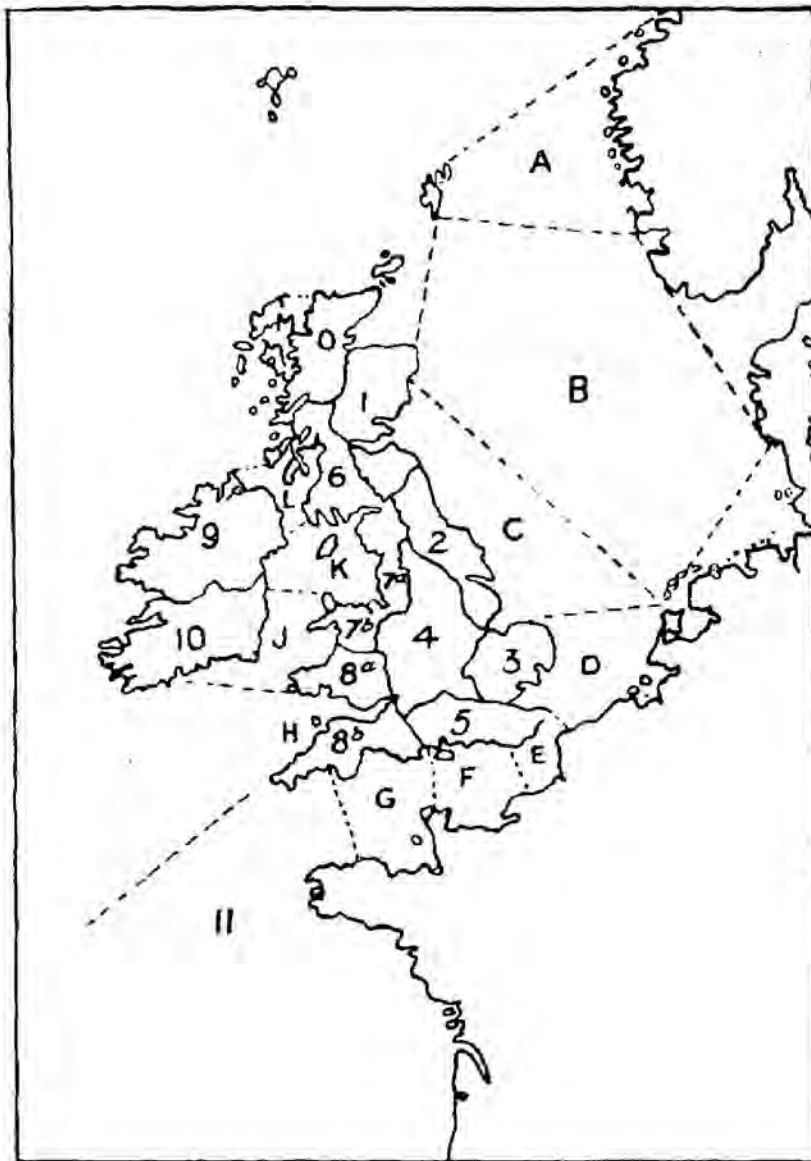
These reports are supplemented by telegraphic reports from the Azores, through the courtesy of the Portuguese Government and the Eastern Telegraph Company and the Commercial Cable Company, and by a number of additional observations made at various stations in the United Kingdom, and sent either by telegram or by post by private persons or local officials. Moreover, the "Bulletin International" published in Paris, reproducing meteorological telegrams from the whole of Europe, is received by post on the morning of the day after publication, and supplements the information previously received in the Office by telegram.

Through the courtesy of the Lords Commissioners of the Admiralty occasional reports of observations at sea off our southern and western coasts are transmitted by wireless telegraphy from the ships of H.M. Navy.

The telegraphic information is tabulated and charted by about 10 a.m. for the morning observations, and 7 p.m. for the evening ones. A general report is then drawn up, and forecasts of the weather for the twenty-four hours following the next noon, or midnight, as the case may be, are formulated.

At a selection of stations additional observations are taken and telegraphed to the Office at 1 p.m., and occasionally modifications are made in the morning forecasts as a result of these observations. This information is usually available by 3.30 p.m.

For the purposes of forecasts of weather the region of the British Isles is divided into land districts and sea districts, as indicated in the accompanying map.



FORECAST DISTRICTS.

LAND.*	SEA.
0. SCOTLAND, NORTH.	A. SHETLAND AND THE NAZE.
1. SCOTLAND, EAST.	B. GREAT FISHERY AND DOGGER BANKS.
2. ENGLAND, NORTH-EAST.	C. NORTH SEA, North of the Wash.
3. ENGLAND, EAST.	D. NORTH SEA, South of the Wash.
4. MIDLAND COUNTIES.	E. STRAITS OF DOVER.
5. ENGLAND, SOUTH-EAST.	F. ENGLISH CHANNEL, East of the Isle of Wight.
6. SCOTLAND, WEST, and Isle of Man.	G. ENGLISH CHANNEL, West of the Isle of Wight.
7. ENGLAND, N.W., and North Wales.	H. BRISTOL CHANNEL.
8. ENGLAND, S.W., and South Wales.	J. ST. GEORGE'S CHANNEL.
9. IRELAND, NORTH.	K. IRISH SEA.
10. IRELAND, SOUTH.	L. NORTH CHANNEL.
11. MOUTH OF CHANNEL and Bay of Biscay.	M. THE MINCH.

* For the grouping of the counties to represent approximately the forecast districts, see Lists of Stations, pp. 76 to 95.

The following arrangements have been made for the distribution of forecasts and telegraphic intelligence :—

The latest reports and forecasts for the land districts and for the Western Channel and Bay of Biscay, with a map, are exhibited as early as possible, for the information of the public, at the entrance to the Office, and, by the courtesy of His Majesty's Office of Works, in St. James's Park, opposite the Horse Guards. Abbreviated reports for a few coast stations are displayed in the street, on the balcony of the Office. Forecasts for the sea districts with notes on the probable tides are exhibited on the Office screen.

Exhibition in
Victoria
Street and St.
James's Park

A Daily Weather Report, which includes a transcript of the observations for the day, with some of those for the previous day, illustrative charts, descriptive remarks on the state of the weather, and forecasts for the several districts of the British Isles and for the Bay of Biscay, is prepared for press and sent to the lithographers at 12 noon daily, except on Sundays and Bank Holidays. It is ready for issue by 2 p.m., and is then delivered by hand or posted by book post at 2.30 p.m. to those addresses which can be reached in the regular course of post on the same day. Copies for those who are outside this limit are posted by the evening mails.

Daily
Weather
Report.

The Daily Weather Report may be obtained on payment in advance at the Meteorological Office of the cost of transmission (postage and wrappers). The subscription for this service (which must be for not less than a quarter of a year ending at the official quarter days, *e.g.*, March 31, June 30, &c.) is at the rate of £1 per annum for delivery by book post, £2 for delivery, where feasible, by hand. Single copies, price 1*d.* each, can be obtained after 3 p.m. on the day of issue at the Office, and at the railway book-stalls at the following terminus stations :—Victoria (L. B. S. C., and S. E. and C. Railways), Charing Cross, King's Cross, St. Pancras, Euston. Copies for other periods than the official quarters of a year are charged at the rate of 1*d.* per copy ; postage is in that case additional.

Subscrip-
tions.

By arrangement with H.M. Stationery Office, upon giving the necessary notice, additional copies of the Daily Weather Report for one day, or a succession of days, will be printed off and supplied for class use at the rate of 7*d.* for 10 copies, exclusive of postage.

Weather
Reports for
Educational
Purposes.

Surplus copies of charts prepared for exhibition, or of back numbers of the Daily Report, are generally available for educational purposes upon application to the Director. No charge is made for this service, but the cost of postage must be defrayed.

Special advance copies of the descriptive remarks on the state of the weather and forecasts, based upon the morning or evening observations, are prepared at 11 a.m. and 8 p.m. respectively, and supplied gratis to the representative of any newspaper or press agency calling for them at the Office at the hours named.

Special
Reports for
the Press.

As far as practicable the Director will make arrangements for daily or weekly reports of the state of the weather, in special form, upon terms which may be had upon application at the Office personally or by letter.

Typewritten
copies.

Typewritten copies of the morning forecasts for all districts are ready at 10.30 a.m., and are distributed by hand to clubs and societies situated in or near Pall Mall at a charge of 10s. per annum. They are sent by post at a charge of 2s. 6d. per official quarter or any part thereof, in addition to the cost of transmission. Copies of the evening forecasts are sent by post for a similar charge.

Written
forecasts for
separate
districts, and
other extracts
from the
daily Reports.

A written copy of the latest forecast for a single district can be obtained at the Office between 9.30 a.m. and 8 p.m. upon payment of 6d. A written copy of the latest information in possession of the Office as to the state of the weather in any district of the British Isles, and for the neighbouring parts of the continent of Europe, can be obtained in like manner.

Inquiries by
telegraph.

By arrangement with H.M. Postmaster-General the latest information as to the state of the weather in various parts of the United Kingdom, or the Continent, and forecasts for one day in advance, can be obtained from the Meteorological Office, upon payment at any Postal Telegraph Office of a fee of 6d. in addition to the cost of a telegram of inquiry addressed "Weather, London," and of the reply. Ten words, in addition to the address, must be allowed for the reply.

Telegrams of inquiry should state the nature of the information required, and the name and address to which the information is to be sent, as in the following examples :—

To "Weather, London."

Latest Information from [Straits of Dover].

or,

Latest Forecast for [Forfarshire].

or,

Next Forecast for [Dublin].

From

(Name),

(Address).

Inquiries by
telephone.

Forecasts will be sent in reply to inquiries by telephone if a sum has been previously deposited with the Office to cover the authorised charges for departmental expenses. Further information as to the service by telephone can be obtained on application at the Office.

Inquiries by
post.

The latest information for any district, or the latest forecast, will be sent by telegraph to any address if a request be received by post stating when the information or forecast is to be sent, and enclosing 6d. *in addition to the cost of a telegram*, allowing ten words in addition to the address. It should be noted that forecasts are prepared for issue at 11 a.m. and 7.30 p.m. To avoid delay, letters of request for telegraphic information or forecasts should be marked on the outside "Forecast Branch."

Forecasts for a single district will be sent regularly to public bodies for exhibition without any charge beyond the cost of the telegrams, and to private persons at an additional charge of 3d. per telegram for a forecast for a single district, and 6d. for two or more districts.

Harvest
forecasts.

Arrangements have been made for a special service of afternoon reports during the season of the Hay and Corn Harvests

(June 1st to September 30th), with a view to a special series of forecasts daily (Sundays excepted) at 2.30 p.m. The forecasts for any district are supplied by telegraph to agriculturists and others upon prepayment of the cost of the telegrams (twelve words daily, in addition to the address) for the period during which the forecasts are required. Forms of application for these forecasts can be obtained at the Office.

The Postmaster-General has sanctioned the exhibition of Forecasts at Local Post Offices, provided space is available, if the persons to whom they are addressed desire them to be so exhibited.

As far as practicable the Director, upon application, will make arrangements for the transcription of the whole or a selection of the morning or evening telegraphic reports, to be sent by telegraph, in code form, to newspapers or public associations desiring to make use of this means of accelerating the distribution of the latest information about the weather. The special terms for this service can be obtained on application to the Office.

Transcripts
of the
observations.

STORM WARNINGS.

The Office issues notices of threatening atmospherical disturbances on or near the coasts of the British Islands (free of charge) to ports and fishing stations recommended by responsible local authorities.

The fact that one of these notices has been received at any station is made known by hoisting a black canvas cone, 3 feet high, and 3 feet wide at base, which has the appearance of a triangle when hoisted. The telegram directing the cone to be hoisted is exhibited near the signal staff.

Storm
Signals.

At dusk, whenever a signal ought to be flying if it were daylight, a night signal, consisting of three lanterns hung on a triangular frame, should be hoisted in place of the cone.

The Meteorological Office supplies the canvas cone and a card providing space for the exhibition of the telegrams and giving information as to the meaning of the warnings, but it does not supply the lanterns for night signals. In all cases the local authorities must undertake the charges incidental to the hoisting of the signal, such as flagstaff and gear, oil, &c., and also as to the keeping of the apparatus in repair.

The following is a LIST of STATIONS to which STORM-WARNING telegrams are sent :—

NORTHERN.

Scotland, N.E.—Lerwick, Scalloway, *Dunrossness, Sumburgh Head L.H., Fair Isle L.H., Noup Head L.H., Stromness, Kirkwall, Cantick Head L.H., Thurso, Dunnet Head, Wick, Tarbet Ness L.H., Cromarty, Avoch, Inverness, Nairn, Burghead, Lossiemouth, Buckie, †Port Knockie, Cullen, Portsoy, Banff, Fraserburgh, Peterhead, †Aberdeen, Girdleness L.H.

Storm
Signal
Stations.

* Telegrams only exhibited.

† Arrangements made for showing signals or illuminating the cone at night.

Scotland, E.—Stonehaven, Montrose, Scurdy Ness L.H., Broughty Ferry, Dundee, St. Andrews, Anstruther, Pittenweem, Buckhaven, Methil, Wemyss West, Burntisland, *Grangemouth, Bo'ness, Granton, *Newhaven, †Leith, Fisherrow, *Dunbar, Cockburnspath, St. Abb's Head, Eyemouth.

Scotland, N.W.—Cape Wrath L.H., Stourhead L.H., Port of Ness, Stornoway, Island Glass L.H., Portnaguran.

Scotland, W.—*Glasgow, Greenock, Rothesay, Lamlash, Carradale, Campbeltown, Mull of Cantire L.H., Rhuvaal L.H., Rhinns of Islay L.H., Ardrossan, Girvan, Ballantrae, Cairn Ryan, Corsewall Point L.H., Mull of Galloway L.H.

WESTERN.

Ireland, S.—Tuskar L.H., New Ross, Dunmore East, Dungarvan, Helvick Head, Minehead L.H., Youghal, Queenstown, Cork, Passage, Kinsale, Kinsale (Old Head), Galley Head L.H., Castletownshend, Fastnet Rock L.H., Brow Head, Dingle, Tralee, †Limerick, Loophead L.H., Galway.

Ireland, N.—Killybegs L.H., Tory Island L.H., Lough Swilly L.H., Rathmullen, Malin Head, Portrush, Port Ballintrae, Ballycastle.

Irish Sea.—Belfast, Donaghadee, Burr Point, Howth, Kingstown, Point of Ayre, Ramsey, Douglas, Silloth, Maryport, Workington, Whitehaven, Barrow, Walney Island L.H., Morecambe, Fleetwood, Blackpool, Lytham, Preston, †Southport, Formby, Liverpool, Runcorn, New Brighton, Hoylelake, New Ferry, Penmaenmawr, Port Penrhyn, Point Lynas L.H., Holyhead, South Stack L.H., Carnarvon, Port Dinorwic.

St. George's Channel.—Aberystwyth, Smalls L.H., *Milford.

Bristol Channel.—Caldy L.H., †Tenby, Pembrey, Llanelly, Swansea, Briton Ferry, Porthcawl, Nash L.H., Penarth, Cardiff (Bute Dock and Barry Dock), Newport, Weston-super-Mare, Burnham, *Bridgwater, Ilfracombe, Bull Point L.H., *Barnstaple, Appledore, Hartland Point L.H., Lundy Island, Port Isaac, Newquay, Godrevy L.H., Hayle, St. Ives, St. Sennen, Newlyn West, Penzance.

SOUTHERN.

England, S.W.—Scilly, The Lizard, Falmouth, Pendennis Castle, Mevagissey, Plymouth (*Millbay Docks), Devonport (Mount Wise and the †Dockyard), Prawle Point, Salcombe, Teignmouth, Exmouth.

England, S.—Guernsey, Jersey (St. Helier's), Portland L.H., Weymouth, Anvil Point L.H., Poole, Hurst Castle L.H., Southampton, Yarmouth (I. of W.), Cowes, Ryde, St. Catherine's Point, Portsmouth (Dockyard and Noman's Fort), Littlehampton, Brighton, †Newhaven.

England, S.E.—Beachy Head, Eastbourne, †Hastings, Rye, Sandgate, Dover, Deal, Ramsgate, Margate, Faversham, Sheerness, Chatham, Greenhithe.

* Telegrams only exhibited.

† Arrangements made for showing signals or illuminating the cone at night.

EASTERN.

England, N.E.—Berwick-on-Tweed, Tynemouth, South Shields, Souther Point L.H., Sunderland, Hartlepool, †Middlesbrough, Redcar, Whitby, Filey, Flamborough, Bridlington, Hull, *Goole, Grimsby, Boston.

England, E.—*Sutton Bridge, Lynn, Sheringham, Cromer, Great Yarmouth, Gorleston, Southwold, Orford Ness L.H., Ipswich, Harwich, Gunfleet L.H., West Mersea.

C.—STATISTICAL INFORMATION.

WEEKLY AND MONTHLY WEATHER REPORTS, WITH APPENDICES.

The Weekly Weather Report gives a summary of the weather of the week ending with Saturday, intended principally for agricultural and sanitary purposes. A division of the country into twelve districts, which are identical with the forecast districts of the Daily Weather Report, is adopted. The districts are further grouped into extreme north, eastern, and western districts, and extreme south (islands in the English Channel).

Weekly
Weather
Report.

In its present form the Report contains :—

- I.—General remarks on the meteorological conditions of the week, with a table describing in words the divergence of the warmth, rainfall, and sunshine experienced in each district from the average for the district for the time of the year.
- II.—A table summarising in numerical form the conditions of temperature, rainfall, and sunshine for each district for the week, the current season, and the calendar year.
- III.—A table containing the data from stations from which the values for districts are calculated.
- IV.—A table containing information for selected stations concerning the minimum temperature on the grass and the temperature in the ground.
- V.—A table giving information of the temperature of the seawater at a selection of stations on the coast of the British Isles.
- VI.—A series of maps showing the distribution of pressure and wind over Europe and Iceland at 8 a.m. and 6 p.m. on each day, and the temperature, weather, and sea disturbances at 8 a.m. each day. The maps for each day are accompanied by a brief account of the distribution of weather for that day, and the changes which have taken place.
- VII.—A table giving the results of observations of the upper air taken by means of kites and balloons. These results include particulars as to temperature, humidity, and wind (direction and force) at various levels.

* Telegrams only exhibited.

† Arrangements made for showing signals or illuminating the cone at night.

The weekly statistical tables of values for districts have been prepared in their present form since the commencement of the year 1878.

For the maps and descriptive account, the daily telegraphic reports are used, and are supplemented by the information contained in the "Bulletin International" already referred to (p. 57), so that the area represented is much larger than that covered by the Daily Weather Report.

For the statistical summaries, the information from the telegraphic reporting stations in the British Isles is supplemented by returns of daily observations supplied by volunteer observers from about 110 other stations. Of these 27 supply only the daily amounts of bright sunshine.

Tables of
Accumulated
Temperature.

In the data for temperature are included not only statistics of mean and extreme temperatures for the week, but also weekly and progressive figures for *Accumulated Temperature*, of which the following brief explanation may be given.

The tables of Accumulated Temperature are designed to give persons engaged in agriculture better means for estimating the manner in which vegetation is affected by temperature than that afforded by the more usual methods of treating the readings of the thermometer. They show for each week, and for the whole period from the beginning of the year, the weekly and progressive values respectively of the combined amount and duration of the excess or defect of the air temperature, above or below a suitably fixed standard, or *base temperature*. The base value adopted is 42° Fahr.

Accumulated Temperature is expressed in *Day-degrees*, a Day-degree signifying 1° F. of excess or defect of temperature above or below the base (42° F.) continued for 24 hours, or any other number of degrees for an inversely proportional number of hours.*

Subscribers for the Weekly Weather Report receive the following appendices:—

(a.) An *Appendix*, issued quarterly and annually, containing *quarterly and annual summaries of the rainfall, mean temperatures and bright sunshine* of each district for each year since 1878.

(b.) An *Appendix*, issued annually, giving *weekly and progressive totals* of rain-days, rainfall, accumulated temperature, and duration of sunshine with percentage of its possible amount, for the several districts.

(c.) An *Appendix*, issued annually, giving the readings of anemometers amounting to, or exceeding, a velocity of 44 statute miles per hour, as recorded on the "Dines" pressure tube anemometer, or upon the "Robinson" anemometer with the factor adjusted to give the corresponding result.

(d.) An *Appendix* computed every fifth year, giving the *weekly and progressive values* of the different elements in the *five years*, and for the whole period, since 1881.

* A full explanation of the principles on which the rules for computing accumulated temperature are based will be found in Appendix II. to the Quarterly Weather Report for 1878. See also Journal Royal Statistical Society, Vol. LXVIII., Part II.

(e.) An *Appendix* appearing every fifth year, giving for each district a comparison of the mean of the *average temperature of successive weeks for the preceding five years* with the corresponding value for the whole period defined above.

(f.) An *Appendix*, which is also prepared every fifth year, giving the *monthly averages* of rainfall, rain-days, maximum temperature, minimum temperature, mean temperature, duration of bright sunshine and percentage of possible bright sunshine, for as many as possible of the stations included in the Weekly Weather Report.

MONTHLY WEATHER REPORT AND ANNUAL SUMMARY.

The Monthly Weather Report is issued as a supplement to the Weekly Weather Report. Each number contains (1) a general account of the weather for the month; (2) a complete summary of the observations at the Telegraphic Reporting Stations, and at Normal Climatological Stations; (3) a summary of maximum and minimum temperature, temperature in the ground and on the grass, rainfall, and sunshine at auxiliary Climatological Stations; (4) the differences, where possible, from the average pressure, temperature, rainfall and sunshine; (5) four maps showing the monthly distribution of barometer and wind, the movements of barometric depressions, the distribution of mean temperature, and the distribution of bright sunshine; (6) a full-page map prepared by the Director of the British Rainfall Organisation from data from about 500 stations showing the distribution of Precipitation.

The number for March, 1908, contains tables of results for 195 stations, namely:—29 telegraphic stations and 86 normal climatological stations, together with a summary of temperature, rainfall, and sunshine, or one or more of these elements, at 80 other stations.

An Annual Summary on similar lines has been added since the year 1904.

The Weekly Report is published every Thursday afternoon, and the Monthly Report on the 28th day of the month following that to which the observations refer, by the Publishers to H.M. Stationery Office, Messrs. Wyman & Sons, Fetter Lane, E.C., Oliver & Boyd, Edinburgh, and E. Ponsonby, 116, Grafton Street, Dublin. The annual subscription which includes copies of the Weekly and Monthly Reports and of the Appendices is £1 10s., post paid. Single copies of the Weekly or the Monthly Report are sold at 6d. each, exclusive of postage, and the separate appendices are priced at from 4d. each.

Terms of
Subscription

Copies of the Reports are sent to the following public libraries and private institutions in London, viz.:—

The British Museum; Guildhall Library; Imperial Institute; Royal Botanic Gardens; Royal Society; Royal Astronomical Society; Royal Meteorological Society; The Society of Arts; Lloyd's; Royal United Service Institution; London Institution; Solar Physics Observatory; Royal Institution; General Register Office; Royal Observatory, Greenwich; Royal Naval College, Greenwich; Board of Education (Secondary Branch); Institution of Civil Engineers; Local Government Board; Board of Trade; Board

of Agriculture and Fisheries; The Admiralty; British Balneological and Climatological Society; The Metropolitan Water Board; British Rainfall Organisation;

and also to a number of provincial libraries.

An advance copy of the MS. of the Weekly Report is prepared on Tuesday in each week, and is supplied free of charge to newspapers.

Advance
copy for the
use of
newspapers.

METEOROLOGICAL OBSERVATIONS AT STATIONS OF THE SECOND ORDER AND AT ANEMOGRAPH STATIONS.

This publication contains daily values for 20 stations in the British Islands of observations made at stations of the second order at 9 a.m. and 9 p.m. Particulars of the headings under which observations are taken are given on p. 73. The publication also contains daily summaries of the records from 12 stations equipped with autographic anemometers.

From the beginning of 1908 arrangements were made for the issue of the publication in monthly instalments, priced at 2s. each, which appear about six weeks after the completion of the month to which the data refer. At the end of the year the twelve monthly issues, with an introduction, will be on sale as a single volume.

A similar publication, but containing no data from anemograph stations, has been issued in annual volumes since 1876. These annual volumes contain, in addition, monthly and annual summaries for a large number of stations which are now included in the Monthly Weather Report. The volumes for the years 1904-7 inclusive have not yet been published. The prices of the volumes vary from 20s. to 35s.

HOURLY READINGS OBTAINED FROM THE SELF-RECORDING INSTRUMENTS AT FOUR OBSERVATORIES IN CONNEXION WITH THE METEOROLOGICAL OFFICE.

This publication contains hourly values of pressure, dry bulb temperature, humidity, wind direction and force, rainfall and bright sunshine for each of the four observatories—Valencia, Aberdeen, Falmouth, Kew. It appears in monthly instalments, price 6d. per month, each station, and is now nearly up to date. Particulars of the corresponding publications for previous years are given on p. 103.

UNPUBLISHED OBSERVATIONS.

The Office also receives, in return for an annual grant, duplicates of the curves from the autographic instruments at Glasgow* and Stonylhurst* observatories, and the tabulations of these curves are available if required.

Anemographic records are received from Alnwick Castle, Armagh, Deerness,* Dover,* Dublin, Falmouth (Pendennis Castle), Fleetwood, Holyhead,* Kingstown,* North Shields,* Plymouth,* Roche's Point,* Scilly,* Shoburyness, Southport* and Yarmouth.*

* Results from anemographs at these stations are now published in "Observations at Stations of the Second Order and at Anemograph Stations."

The names of all stations in the British Isles from which information of any kind is received, and a statement of the order of the stations and of the publication for which the returns are prepared are given in the lists on pp. 76-95. All the records are available for the use of the public on the conditions set forth on pp. 53, 54.

D.—INFORMATION FROM LAND STATIONS OUTSIDE THE BRITISH ISLES.

Periodical returns are received from certain stations in different British Colonies and dependencies, or in foreign countries. Foreign and Colonial stations.

A list of the stations, stating the character of the observations taken, is given on pp. 98 to 101.

The information contained in these returns is available upon the same conditions as that contained in the returns of British Stations.

E.—THE LIBRARY.

In return for copies of publications the Office receives the weather reports and other publications of the official meteorological organisations of the world, and of many private organisations. A list arranged geographically of the institutions sending periodical publications containing meteorological data is given in Appendix VII. to the Annual Report of the Meteorological Committee. Library.

The library has also gradually acquired a large collection of pamphlets and books bearing upon meteorological subjects.

F.—SUPPLY OF INSTRUMENTS AND FORMS TO OBSERVERS.

In accordance with the terms of the Parliamentary grant the Office does not lend instruments for the use of observers except in the following cases :— Loan of Instruments.

- (1.) To the Captains of vessels who undertake to keep a Meteorological log during their voyage and forward it to the Office.
- (2.) To the Telegraphic Reporting Stations in the British Isles.
- (3.) To the First Order Stations in connexion with the Office.
- (4.) To selected Stations in less frequented parts of the world where observations are deemed to be specially desirable.
- (5.) To a limited number (230) of fishing communities. *(See below, Fishery Barometers.)*

The Director is authorised to supply, at a cost of 5 per cent. in addition to the contract prices and the cost of carriage, trustworthy instruments for standard meteorological observations to those who are willing to send copies of their observations to the Office. The risk of breakage in transit must be undertaken by the consignee. The Director will also, if desired, give advice about the site and exposure of the instruments. Supply of instruments for observers at Land Stations.

Supply of
forms.

Forms for recording the observations, and tables for reducing them, are supplied to observers for the Office free of charge. The postage of returns, addressed to the Director of the Meteorological Office, need not be prepaid.

Supply of
sunshine
cards.

Blank sunshine cards are supplied without charge to a number of stations, not exceeding 10 in each district (including official stations), on condition that the cards are returned to the Office for filing. In other cases, cards are supplied, at a special price, to observers contributing returns. Forms for other self-recording instruments are supplied to observers free of cost, provided that the records are deposited with the Office and that the forms required are of a type used at Official Stations.

For further information as to the supply of instruments, forms, &c., application should be made to the Office.

FISHERY BAROMETERS.

The Office possesses a number of Barometers which it lends for the use of fishing communities, where it is shown that the instrument will be of material service. As a condition of the loan the community is required to provide for the housing of the instrument and to keep and forward to the Office a record of daily readings. A copy of a manual specially compiled for the purpose accompanies the instrument, and is intended to point out in simple language the practical use of the Barometer, with a view to anticipating important changes in the weather in the neighbourhood of the fishing stations. The following is a list of stations that have been supplied with Fishery Barometers:—

LIST of STATIONS supplied with FISHERY BAROMETERS.

Shetland Isles.—Uya Sound, Burravoe, Nesting, Lerwick, Sandwick, Scalloway, Symbister, Hamnavoe, Walls.

Orkney Isles.—*Westray, Papa Westray, *Burray, *Kirkwall.

Scotland, East coast.—*Duncansbay, *Freswick, *Auchengill, *Keiss, *Ackergill, *Staxigoe, *Wick, *Lybster, *Dunbeath, Hilton, *Inver, *Portmahomack, *Ballintore, *Cromarty, *Avoch, *Nairn, *Burghead, *Portessie, *Port Knockie, *Portsoy, *Whitehills, *Gardenstown, *Roseheart, Pitullie, *Fraserburgh, *Inverallochy, Pointlaw, Portlethen, *Skateraw, *Stonehaven, *Arbroath, *Broughty Ferry, *St. Andrews, *Crail, *Cellardyke, *St. Monance, *Burntisland, Newhaven.

England, East coast.—*Berwick, *North Shields, *South Shields, *Sunderland (Roker), *West Hartlepool, *Staithes, *Scarborough, *Filey, *Flamborough, *Bridlington Quay, *Withernsea, *Hull, *Lynn (2), *Wells, *Gorleston, *Lowestoft, *Wilberswick, *Harwich, *Brightlingsea, *West Mersea, *Maldon, *Leigh, *Margate, *Deal, *Kingsdown, *Dover.

* The Director has been in correspondence with the Fishery Boards concerning these stations.

England, South coast.—*Bognor, *Ryde, *Bembridge, *Brixton, *Atherfield, *Ventnor, *Yarmouth (Isle of Wight), Gorey (Jersey), *Poole, *Weymouth, *Portland.

England, South-West coast.—*Budleigh Salterton, *Exmouth, *Cawsand, *Mevagissey, *Gorranhaven, *Devoran, *Portscatho, *Penryn, *Durgan, *Porthallow, *Falmouth, *Coverack, *Newlyn (2), *Mousehole, *Penberth Cove, *Porth Guarra, *St. Ives, *Hayle, *Port Isaac, *Bideford, Burnham, Highbridge, Weston-super-Mare.

Wales.—*Briton Ferry, *Swansea, *Angle, *Milford, *Aberystwyth, *Carnarvon.

England, North - West coast.—*Fleetwood, *Morecambe, *Maryport.

Isle of Man.—Douglas, Port St. Mary, Peel (2).

Scotland, South-West coast.—*Port Patrick, *Cairn Ryan, *Port William.

Ireland, East coast.—Belfast, Bangor, Groomsport, Donaghadee, Ardglass, Carlingford, Glenarm, Greenore, Dundalk, Malahide, Howth, Kingstown (2), Bray, Wicklow.

Ireland, South coast.—Dunmore East, Dungarvan, Kinsale, Union Hall, Castletownshend, Baltimore, Schull (2), Crookhaven, Castletown (Berehaven), Lawrence Cove, Ballydonegan, Ballycrovane.

Ireland, West coast.—Valencia, Dingle, Tralee, Kilronan, Galway, Spiddal, Oleggan, Elly Bay, Ballyglass, Ballycastle (Co. Mayo), Mullaghmore, Donegal, Tribane, Killybegs, Teelin, Malinmore, Port Noo, Rosbeg, Burton Port, Kincashla, Bunbeg, Inniscow Island.

Ireland, North coast.—Dunfanaghy, Rathmullen, Buncrana, Malin Head, Moville, Greencastle, *Port Stewart, *Portrush, *Port Ballintrae, Ballintoy, *Ballycastle (Co. Antrim).

Scotland, West coast.—*Lamlash, *Tarbert (Loch Fyne), *Loch Ranza, *Campbeltown, *Carradale; *Portnahaven, *Port Wemyss, Gruinard, and *Bowmore (Islay); *Mallaig; *Portree and *Armadale (Isle of Skye); *Isle of Soay, *Kyle of Lochalsh, *Plockton, *Ardneaskan, Shieldaig, Badachro, Ullapool, *East Mey, *Gills, *Stroma (2).

Hebrides.—Ness, Carloway, Marvaig, Crosshost, Stornoway, Portnaguran, Valtos, Obb, Bernera, *Boreray, Lemreway, Loch Boisdale.

* The Director has been in correspondence with the Fishery Boards concerning these stations.

G.—PUBLICATION OF OBSERVATIONS CONTRIBUTED BY VOLUNTEER OBSERVERS OR BY THE REPRESENTATIVES OF LOCAL AUTHORITIES.

I.—GENERAL REGULATIONS.

(a.) The observations must in all cases be taken by a competent observer, from approved instruments, satisfactorily exposed. Approval of the instruments and exposure is subject to periodical inspection by the Office.

Regularity in taking the observations and dispatching the reports is essential.

(b.) The sunshine cards upon which returns have been based must be sent to the Meteorological Office for examination at the close of each month. Cards supplied to observers at the special price referred to on p. 68 will be returned after examination.

(c.) The Director reserves the right to discontinue at any time, temporarily or permanently, the incorporation of information received from any station in the Official reports.

(d.) Observers contributing returns to one of the publications of the Office receive an official copy of the publication. It is requested that these copies may be filed in a public library or similar institution, or be returned to the Office when the observer has no further personal use for them.

II.—PUBLICATION IN THE DAILY WEATHER REPORT.

For publication in the Daily Weather Report, the information must be in accordance with one of the forms here specified:—

Full
Telegraphic
Report
at 8 a.m.

(a.) A complete record of barometer, temperature, wind, &c., based upon observations made at 8 a.m., and at 6 p.m. of the previous day, and telegraphed each morning in time to reach the Office not later than 9 a.m. This information must be sent in code, a copy of which, with other necessary instructions, will be supplied by the Office. A manuscript copy of the observations on a form provided for the purpose must be sent at the end of each month.

Short
Telegraphic
Report
at 6 p.m.

(b.) A report, telegraphed in the evening, and containing observations of the barometer, wind, temperature and weather at 6 p.m., the maximum temperature and the amount of bright sunshine for the day, and the minimum temperature and the amount of rainfall for the previous 24 hours. These observations must be sent in code form in time to reach the Office not later than 7 p.m., the statistical information being supplemented by brief notes respecting any exceptional phenomena which may have occurred, such as thunderstorms, unusually heavy rain, &c.

When the sun is above the horizon after 6 p.m., *i.e.*, from about March 20th to September 23rd. the amount of sunshine given must be that recorded up to 6 p.m. *only*, but in such cases a post card must be dispatched to the Office later in the evening, giving the amount *for the whole day*.

In exceptional circumstances a telegraphic report of sunshine only may be accepted, provided that it is supplemented by information by post.

Information derived from the 6 p.m. telegraphic reports is included in the evening remarks and summaries prepared in the Office for communication to Newspapers and Press Agencies. It must be supplemented wherever possible by the postal report at 9 p.m. described under (c).

- (c.) A record similar to that indicated under (b), but reporting observations by post card. If the postal arrangements are such that a letter posted at the station after 9 p.m. can be delivered at the Meteorological Office by 9 a.m. on the following day, the reports should be made up for the 24 hours ending 9 p.m. and posted immediately after that hour. Postal Report, 9 p.m.
- (d.) In places where the postal arrangements do not admit of the service indicated under (c), a report in similar form may be made up for the 24 hours ending 6 p.m. and posted as soon as possible after that hour. Postal Report, 6 p.m.

NOTE.—At auxiliary climatological stations, for which extremes of temperature for the 24 hours ending at 8 a.m. or 9 a.m. are required, as well as the extremes referred to in the messages dispatched at 6 p.m., separate minimum thermometers should be provided for the two sets of observations. A single maximum thermometer will suffice, if the instrument be read, but not *set*, at 6 p.m. At normal climatological stations, when the extremes used for climatological purposes should be for the 24 hours ending 9 p.m., a double set of instruments is not required if both thermometers are *set* only once a day, viz., at 9 p.m.

III.—PUBLICATION IN THE WEEKLY WEATHER REPORT.

Observations are accepted from a limited number of stations for publication in the Weekly Weather Report. The information should consist of observations taken once daily of the maximum and minimum temperature and of the rainfall, together with the duration of bright sunshine, and brief notes on the weather of each day.

Observations of the minimum temperature on the grass, and of underground temperature at the depths of 1 foot and 4 feet are also desired. Each return should be posted as soon as possible after the Sunday morning reading, in order that it may reach London by Monday.

IV.—PUBLICATION IN THE MONTHLY SUMMARY OF THE WEEKLY WEATHER REPORT, AND IN THE MONTHLY ISSUE OF OBSERVATIONS AT STATIONS OF THE SECOND ORDER.

For this purpose a monthly return must be sent so as to reach the Office *not later than the 10th* of the following month. Three forms of return are at present in use. In Form 355, provision is made for the complete set of observations made at a Normal Climatological Station at which observations are recorded three times a day. In Form 319, the headings of the columns are similar, but they are arranged in different order and provision is made for the entry of only two observations each day. Form 312 is similar to Form 319, but less extended.

H.—REGULATIONS FOR THE SUPPLY OF INFORMATION FROM INSTRUMENTS BELONGING TO THE METEOROLOGICAL OFFICE BY THE CUSTODIANS OF THE INSTRUMENTS.

The custodians of instruments maintained by the Meteorological Office are not allowed to supply information derived from the instruments in their charge without previous permission obtained from the Director.

Permission is not given when the information required can be obtained directly from the Office in the course of post. Applicants for information should in that case be referred to the Office.

In special circumstances the Director will give permission for information to be extracted by the custodian for the use of Local Authorities, provided—

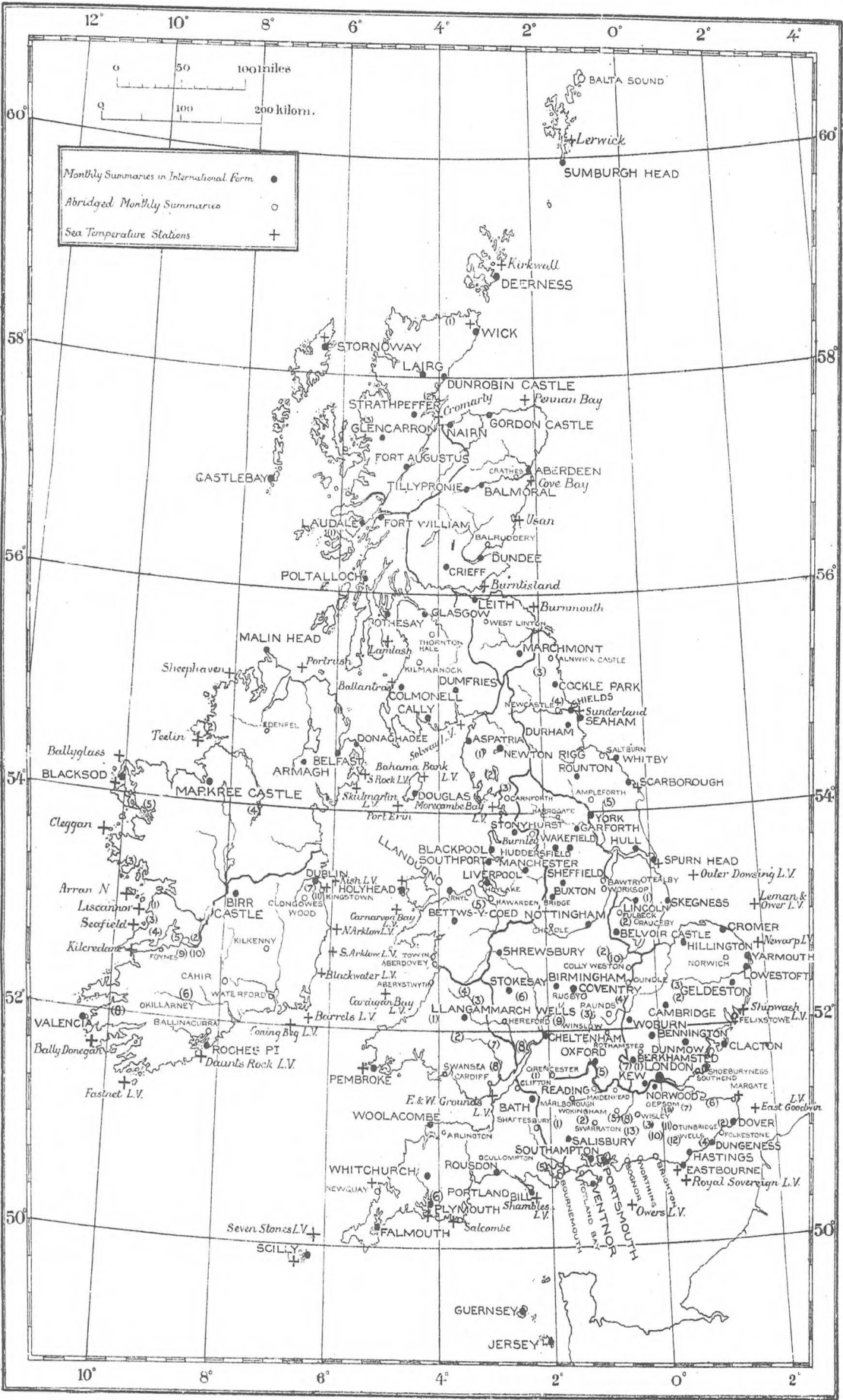
- (1) That a note shall be appended to the information thus supplied to the effect that “The information is derived from instruments belonging to the Meteorological Office, and is subject to correction or modification” ;
- (2) That if the information be published, the note shall also be published ;
- (3) That a copy be kept of the information supplied, to be forwarded to the Meteorological Office if required.

If arrangement is made for the payment of the custodian for this service the Director must be informed.

In cases in which the extraction of provisional information is permitted, instructions for observing or tabulating will be given to the custodian, which must be strictly followed.

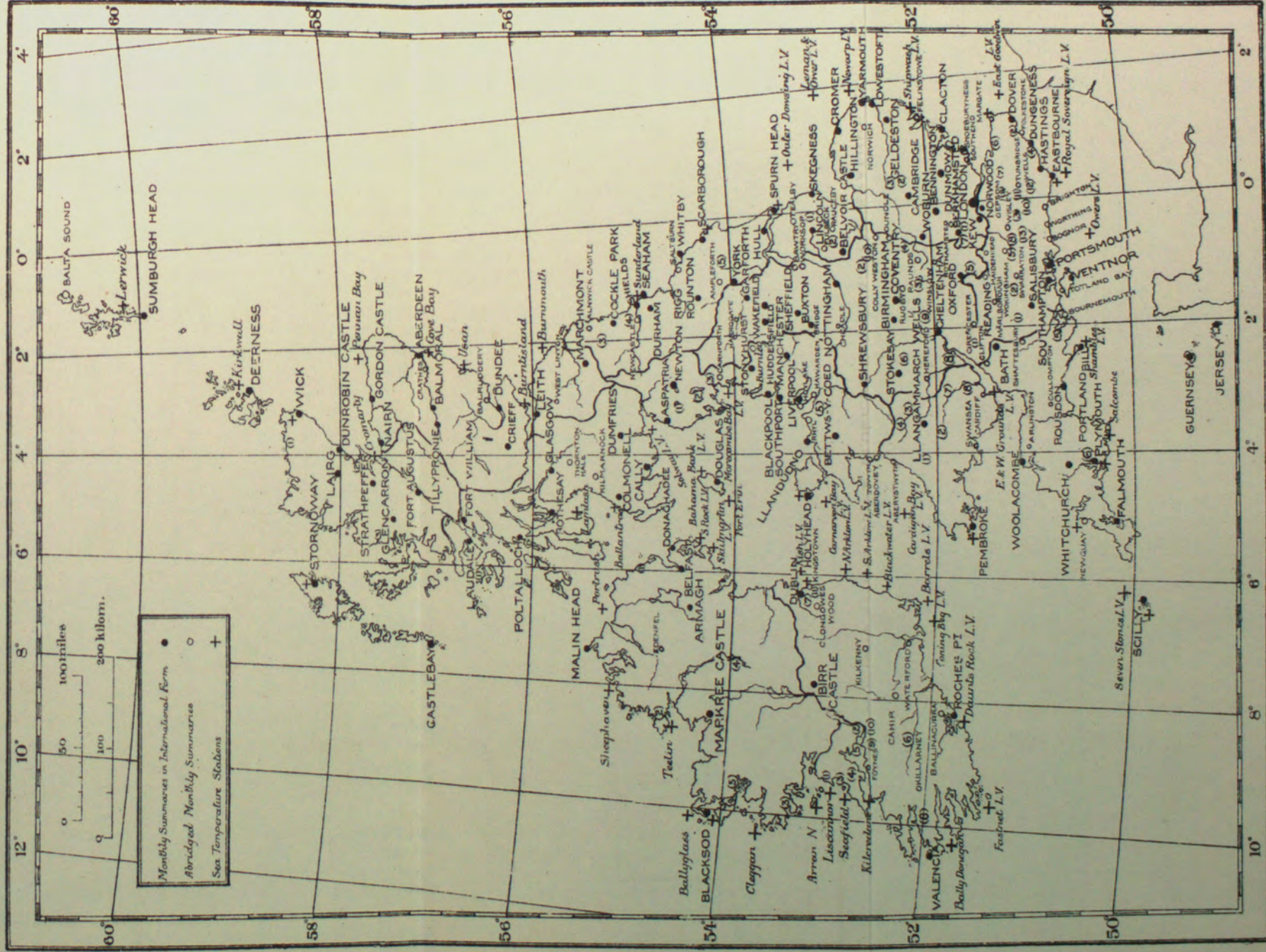
REPORT OF METEOROLOGICAL COMMITTEE 1907-1908

MAP SHOWING THE POSITIONS OF THE CLIMATOLOGICAL AND SEA TEMPERATURE STATIONS.



The positions of additional rainfall stations are indicated by numbers enclosed in round brackets. The numbers in each district correspond with the numbers assigned to the stations in the List of Stations included in Appendix II to the Annual Report of the Meteorological Committee for the year ending March 31st, 1908. If several stations exist in one town, they are not shown individually.

MAP SHOWING THE POSITIONS OF THE CLIMATOLOGICAL AND SEA TEMPERATURE STATIONS.



The positions of additional rainfall stations are indicated by numbers enclosed in round brackets. The numbers in each district correspond with the numbers assigned to the stations in the List of Stations included in Appendix II to the Annual Report of the Meteorological Committee for the year ending March 31st, 1908. If several stations exist in one town, they are not shown individually.

Wells & Graham, Ltd. Litho. London.

I.—LIST OF STATIONS IN CONNEXION WITH THE METEOROLOGICAL OFFICE.

The returns from stations marked "S" are supplied by the Scottish Meteorological Society, those marked "M" by the Royal Meteorological Society. Stations marked respectively "M" or "S" are in connexion with the Societies as well as with the Office.

The list shows the order of classification of the stations and also the publication for which the returns are prepared in the Office. In specifying the order of the station a distinction has been drawn between eye observations and the records of autographic instruments. In general the returns received have formed the basis for the classification, but in cases in which more extensive observations are taken, but not forwarded to the Office, the corresponding symbol has been enclosed in brackets. The list makes no pretence to completeness in respect of these. The symbols used may be explained as follows :—

- I. Observatory : Station of the First Order.—Continuous records or hourly readings of pressure, temperature, wind, sunshine, and rain, with eye observations of the amount, form, and motion of the clouds, and notes on the weather. The autographic records are checked by frequent eye observations, and hence the symbol "I" has been entered in the table under both "Eye observations" and "Self-recording."
- II. Normal Climatological Station : Station of the Second Order.—Daily observations at 9 a.m. and 9 p.m. local time (or other accepted combinations of hours), of pressure, temperature (wet and dry-bulb), wind, amount of cloud, and weather, with the daily maximum and minimum of temperature, the daily rainfall, and remarks on the weather.
- III. Auxiliary Climatological Station : Station of the Third Order.—Observations similar in kind to those at the Normal Stations, but either (a) less full, (b) taken only once daily, (c) taken at hours other than 9 a.m. and 9 p.m.
- T. Telegraphic Reporting Station.—Daily observations at 8 a.m. and 6 p.m. G.M.T. (and in some cases also at 2 p.m.), similar in general character to those taken at Normal Climatological Stations, reported to the Office each day by telegraph.
- . (Eye Observations.) Additional Rainfall Station.—Daily observations, generally at 9 a.m., of the amount of rainfall.

- . Additional Anemograph Station.—Continuous records of wind velocity (force) and, in most cases, also of wind direction.
- B. Additional Barograph Station.—Continuous record of atmospheric pressure.
- O. Additional Thermograph Station.—Continuous record of atmospheric temperature.
- . (Self-recording.) Additional Autographic Raingauge Station.—Continuous record of rainfall.
- H. Hygograph Station.—Continuous record of the relative humidity of the air.
- ⊙. Sunshine Station.—Continuous record of bright sunshine taken with a Campbell-Stokes recorder.
- K. Kite or Balloon Station.—Records of Temperature, Humidity and Wind in the upper air.

The publications for which the returns are prepared are indicated by the following letters :—

- D. Published *in extenso* in the "Daily Weather Report."
- d. Published in abridged form in the "Daily Weather Report."
- W. Weekly summary of temperature and rainfall and, if available, of sunshine, published in the "Weekly Weather Report."
- w. Weekly summary of bright sunshine only, or of grass minimum, or earth temperatures, or of observations in the upper air, published in the "Weekly Weather Report."
- M. Full monthly summary in the international form published in the "Monthly Weather Report."
- m. Abridged monthly summary published in the "Monthly Weather Report."
- (m.) Monthly totals of bright sunshine only, published in the "Monthly Weather Report."
- S. Daily values published in "Observations at Stations of the Second Order" (1908).
- R. Monthly summary published in the Reports of the Registrar General of Births, Deaths, and Marriages, for England and Wales, or for Ireland.
- r. Weekly summary published in the Reports of the Registrar General for England and Wales, or for Ireland.

REPORT OF METEOROLOGICAL COMMITTEE 1907-1908.
MAP SHOWING THE POSITIONS OF THE STATIONS HAVING SELF-RECORDING INSTRUMENTS.



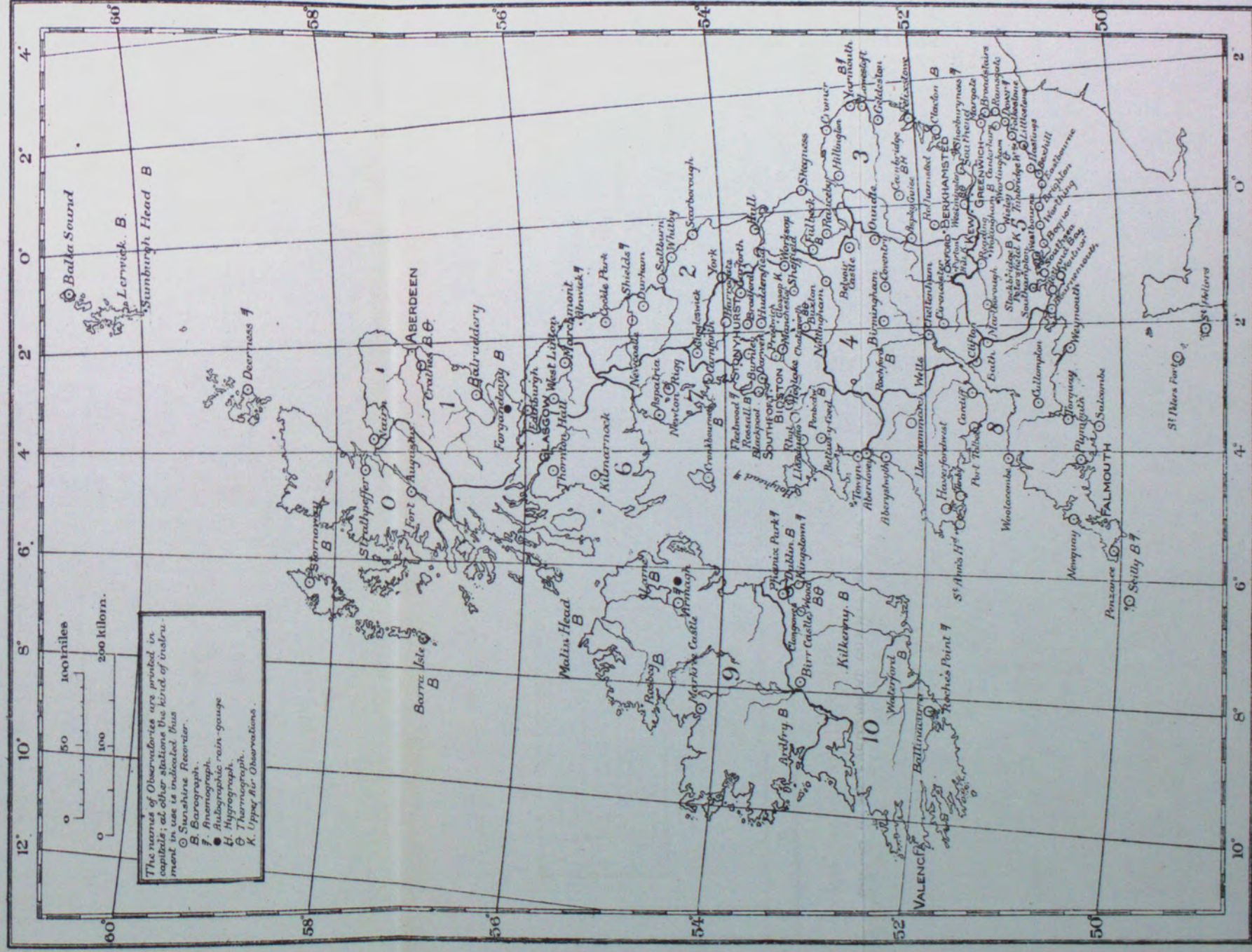
FIG. 7. 08.

The Stations in the London District are not all shown.

Wells & Graham, Ltd. Litho, London.

REPORT OF METEOROLOGICAL COMMITTEE 1907-1908.

MAP SHOWING THE POSITIONS OF THE STATIONS HAVING SELF-RECORDING INSTRUMENTS.



The Stations in the London District are not all shown.

Wells & Graham, Ltd. Litho. London.

- ☞. Daily summary of anemometer results published in "Observations at Stations of the Second Order and at Anemograph Stations."
-

Height above Mean Sea Level.—The figures given in this column refer in general to the height of the ground on which the rain gauge stands. At those stations which do not possess a rain gauge, the figures refer to the height of the particular instrument in use.

The numbers assigned to the additional rainfall stations give references to their positions as shown on the map, plate I., p. 72.

* * From a number of stations in the British Isles printed summaries of observations are received. These have been included in the Geographical list of Institutions, &c., which issue publications (Appendix VII.).

The following make monthly returns in a form similar to that in which observations are received from the normal or auxiliary climatological stations:—

Bolton.—The Museums and Meteorological Observatory.

Croydon.—Natural History Society.

Northampton.—Natural History Society.

Southport.—Fernley Observatory.

Truro.—Cornwall County Council Sanitary Committee.

1. SCOTLAND, EAST.									
Aberdeen :—	Aberdeen Obser- vatory.	57 10	2 6 W.	46	I, T	I, B	D.W.M.	07	Professor C. Niven, F.R.S., and G. A. Clarke, for M.O.
Balmoral	...	57 2	3 12 W.	920	III	—	W.M.	07	J. Michie, M.V.O., and John M. Troup.
Billypronie	...	57 10	2 56 W.	1,116	II	—	M.S.	—	Robert Littlejohn, for Sir John F. Clark, Bart.
Banff :—	§Gordon Castle ...	57 37	3 5 W.	101	II	—	W.M.	C3	C. Webster, for the Duke of Richmond and Gordon, K.G.
Berwick :—	§Marchmont ...	55 44	2 25 W.	498	II	⊙	W.M.	07	J. A. Wood, for Sir H. P. Camp- bell, Bart.
Blackman- nan :—	No station.	55 57	3 12 W.	253	—	⊙	w.(m.)	—	The Regius Keeper, Royal Botanic Garden.
Edinburgh :—	Edinburgh ...	55 58	3 10 W.	18	T	—	D.W.M.	07	D. Drummond, Post Office, for M.O.
Elgin :—	Leith ...	56 28	2 56 W.	160	II	—	M.S.	05	J. Carnochan.
Fife :—	No station.	57 3	2 25 W.	140	II	⊙ ⊕ B	w.m.	07	J. Smith.
Forfar :—	§Dundee ...	57 36	3 52 W.	82	T	⊙	D.W.M.	07	Miss Penny, for M.O. and Dr. Sclanders.
Haddington :—	No station.	55 45	3 4 W.	900	III	⊙	W.m.	—	Rev. J. S. Begg.
Kinross :—	No station.	56 22	3 50 W.	440	II	—	W.M.	—	George Reid, for Dr. Meikle.
Linlithgow :—	No station.	56 21	3 29 W.	175	—	B ⊙	—	—	Miss M. Wood.
Nairn :—	Nairn ...	56 29	3 8 W.	275	III	⊙	w. m.	07	G. Davie, for J. Martin White.
Peebles :—	S. West Linton ...								
Perth :—	§Crieff ...								
Roxburgh :—	Forgandenny ...								
Selkirk :—	S. Balruldery ...								
	No station.								
	No station.								

The names of Stations added to the list since April, 1907, are printed in clarendon type; those of Stations now discontinued are printed in italic type. The numbers assigned to additional rainfall Stations refer to their positions on the map, Pl. I., p. 72.

LIST OF STATIONS ARRANGED ACCORDING TO DISTRICTS AND COUNTIES—continued.

LIST OF STATIONS ARRANGED ALPHABETICALLY

County and Station.	Lat.	Long.	Height in feet above M.S.L.	Order of Station.		Publication.	Year of last Inspection.	Observer.
				Eye Obs.	Self-recording.			
2. ENGLAND, NORTH EAST.								
Durham :—	54 46	1 35 W.	336	II	☉	W.M.R.	06	Prof. R. A. Sampson, M.A., F.R.S.
Seaham Harbour.	54 50	1 19 W.	139	II	—	M.	07	G. H. Aird.
Lincolnshire :—	53 3	0 37 W.	180	III	B ☉	W.m.	07	Rev. Vere F. Willson, M.A.
Fulbeck	53 14	0 33 W.	58	II	—	W.M.R.	07	S. R. Moss, for the Corporation.
Lincoln...	53 14	0 33 W.	58	II	—	—	01	Mrs. G. L. Kime.
Mareham - le - Fen (1).	53 8	0 5 W.	10	●	—	—	—	—
Rauceby Hall...	53 0	0 29 W.	124	III	☉	w.m.	06	J. Hope, for General Sir M. Willson, K.C.B.
Skegness	53 9	0 21 E.	12	III, (T.)	☉	d.w.M.	06	S. Coetmore Jones, for the District Council.
Tealby ...	53 24	0 16 W.	251	II	—	m.	06	Rev. S. Lewin, B.A.
Temple Bruer (2)	53 4	0 30 W.	—	●	—	—	03	Miss Alice S. Morley.
Northumber-	55 25	1 43 W.	210	III	☉	W.m.	07	Robert Kyle, for the Duke of Northumberland, K.G.
land :—	55 13	1 41 W.	324	II	☉	W.M.S.R.	06	T. B. Hewetson, for the Northumberland County Council.
Cockle Park, Morpeth.	55 16	2 0 W.	1,000	●	—	—	—	H. G. Coventry, for the Corporation of Tynemouth.
Font Water shed (3) —	55 14	1 54 W.	620	●	—	—	—	
Chertners ...	55 15	1 57 W.	850	●	—	—	—	
Dam Site ...	55 13	2 0 W.	850	●	—	—	—	
Fallowlees...	55 15	2 1 W.	1,000	●	—	—	—	Rev. W. G. Pringle.
Red Path ...	55 0	1 47 W.	400	●	—	—	—	
Tod Crag ...								
Heddon-on-the-Wall (4)								

Newcastle - on - Tyne.	54 59	1 36 W.	152	III	☉	w.m.	07	N. H. Martin, F.R.S.E., F.C.S.
North Shields	55 0	1 27 W.	96	T	—	D.W.M.R.r.	07	R. Moat, Post Office, for M.O.
North Shields	55 0	1 27 W.	—	—	☉	☉	07	Capt. T. Robson, for M.O.
High Light-house.								
Tynemouth ...	55 1	1 26 W.	90	III	—	—	—	J. Edward Burnett.
Ampleforth ...	54 12	1 6 W.	349	II	—	m.	06	Rev. J. B. McLaughlin, B.A., O.S.B.
Hovingham Hall (5).	54 10	0 59 W.	120	●	—	—	—	Bingley Day, for Sir W. H. A. Worsley, Bart.
Rounton ...	54 24	1 18 W.	249	II	—	W.M.	05	J. Hanagan, for Sir Hugh Bell, Bart.
Saltburn - by - the-Sea.	54 35	0 58 W.	116	III	☉	w.m.	07	R. Allan Bennett, M.D.
M. Scarborough ...	54 18	0 24 W.	100	II	☉	d.W.M.	05	T. G. and E. Pearson, for District Council.
Whitby ...	54 29	0 37 W.	88	II	☉	M.	07	W. W. Larkin, for the Corporation.
York, Deighton Grove.	53 54	1 3 W.	38	●	—	—	05	Thos. Newbitt, for the Literary and Philosophical Society.
" The Museum.	53 57	1 5 W.	56	II	—	W.M.R.r.	07	Miss M. L. Whitehead.
" Bootham	53 57	1 5 W.	105	—	☉	w.(m.)R.r.	07	Oxley Grabham, M.A., for the Yorkshire Philosophical Society.
" The Mount	53 56	1 5 W.	—	—	☉	—	—	Hugh Richardson, M.A.
Yorkshire, E. Riding:—								R. Thompson.
Hall ...	53 45	0 16 W.	0	II	☉	M.R.r.w.	06	H. B. Witty, for the Corporation.
Spurn Head ...	53 34	0 7 E.	26	T	—	D.W.M.R.	06	J. E. Ayers, for M.O.
3. ENGLAND, EAST.								
Bedford:—								
Aspley Guise ...	52 1	0 38 W.	410	—	☉	—	—	Mrs. Dymond.
Woburn, Ridgmont.	52 1	0 36 W.	291	II	—	M.	05	H. M. Frear, F.C.S., for the Royal Agricultural Society.

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LIST OF STATIONS ARRANGED ACCORDING TO DISTRICTS AND COUNTIES—continued.

County and Station.	Lat.	Long.	Height in feet above M.S.L.	Order of Station.		Publication.	Year of last Inspection.	Observer
				Eye Obs.	Self-recording			
3. ENGLAND, EAST—cont.								
Cambridge :—	52° 12'	0° 8' E.	41	II	⊙	W.M.S.R.	07	R. Irwin Lynch, M.A.
Cambridge Bot. Garden.	52° 13'	0° 6' E.	83	—	B	—	05	A. R. Hinks, M.A., for Sir Robert Ball, F.R.S.
" The Ob- servatory.	52° 13'	0° 5' E.	—	III	H	—	05	Miss Stephen.
" Newn- ham Coll.	51° 47'	1° 9' E.	54	T, II	⊙ B	D.W.M.R.	06	A. W. Shadick, for Urban Dis- trict Council.
Essex :—	51° 53'	0° 23' E.	297	II	⊙	w.M.R.	06	Thos. Hacking, for the Countess of Warwick's Agricultural School.
Dunmow	51° 32'	0° 47' E.	13*	III	☞	W.m.	07	The Superintendent of Experi- ments.
Shoeburyness	51° 32'	0° 43' E.	100	III	⊙	w.m.	06	E. J. Elford, for the Corporation.
Southend-on-Sea	51° 32'	0° 43' E.	110	●	—	—	06	C. S. Bilham.
" Waterworks	51° 54'	0° 5' W.	406	II	—	M.R.	06	Rev. J. Dunne Parker, LL.D.
Hertford :—	51° 46'	0° 34' W.	400	II	⊙ (I)	M.R.	06	E. Mawley.
Berkhamstead	51° 48'	0° 22' W.	424	III	⊙	W.m.	02	A. D. Hall, M.A., for the Lawes Agricultural Trust.
Rothamsted	51° 36'	0° 29' W.	337	●	—	—	—	G. Eland.
Huntingdon :—	52° 56'	1° 17' E.	196	II	⊙	W.M.R.	06	W. H. Archer, for Urban District Council.
Middlesex :—	52° 28'	1° 31' E.	37	II	⊙ (B &)	W.M.	04	E. T. Dowson.
Harefield (1)	52° 48'	0° 33' E.	88	II	⊙	W.M.S.R.	05	Rev. H. E. B. Ffolkes, M.A.
Norfolk :—	52° 37'	1° 17' E.	93	III	—	W.R.r.m.	03	A. W. Preston.
Gedleston	52° 25'	0° 45' E.	169	●	—	—	—	E. S. Greenwood, for Town Council.
Hillingdon	52° 37'	1° 43' E.	9	T	☞	D.W.M.	08	Coastguard, for M.O. and for Corporation.
M. Norwich	52° 37'	1° 43' E.	9	T	☞	D.W.M.	08	Coastguard, for M.O. and for Corporation.
Thetford (2)	52° 37'	1° 43' E.	9	T	☞	D.W.M.	08	Coastguard, for M.O. and for Corporation.
Yarmouth	52° 37'	1° 43' E.	9	T	☞	D.W.M.	08	Coastguard, for M.O. and for Corporation.

Suffolk :—	Brandon (3) Felixstowe Lowestoft	... ... ...	52 27 51 58 52 29	0 37 E. 1 22 E. 1 45 E.	48' 10 83	● III II	— ⊙ ⊙	— W.m. w.d.M.	— 07 05	Lt.-Col. B. Spragge, D.S.O. Coastguard, for the District Council. C. W. Edwards, for the Corporation.
4. MIDLAND COUNTIES.										
Buckingham :—	Beaconsfield (7)	...	51 36	0 38 W.	360	●	—	—	—	C. T. Marcon, M.A.
	Winslow	...	51 57	0 53 W.	379	III	—	m.	06	R. A. Easton.
Derby :—	Buxton ...	...	53 14	1 54 W.	987	II	⊙	W.M.R.	06	W. Pilkington and F. T. Kielsen,
	Chatsworth	...	53 14	1 37 W.	—	III	B ⊕	—	02	The Duke of Devonshire, K.G.
	Howard Estate, Glossop.	...	53 27	1 57 W.	1,100	K	—	w.	—	J. E. Petavel, F.R.S., and T. Rimmer, for the University of Manchester.
Gloucester :—	Bristol, Over Court Park.	...	51 32	2 35 W.	147	III	—	r.	07	R. C. Cann Lippincott.
	" Clifton Col- lege.	...	51 27	2 37 W.	229	III	⊙	W.R.m.	05	D. Rintoul, M.A.
	Cheltenham	...	51 54	2 3 W.	214	II	⊙	S.M.R.	07	A. C. Saxby, for the Corporation.
	Cirencester	...	51 43	1 57 W.	446	III	⊙	W.m.	08	Prof. P. G. Gundry, Ph.D., for the Royal Agricultural College.
	Dursley (1)	...	51 41	2 21 W.	256	●	—	—	96	J. Richards.
Forest of Dean :—(8)	Blakeney Hill	...	51 46	2 30 W.	500?	●	—	—	—	J. Tyler
	Braceland	...	51 49	2 38 W.	500	●	—	—	—	E. A. Popert
	Edgehills Lodge	...	51 51	2 29 W.	700	●	—	—	—	Campbell Anderson } for V. F. Leese.
	Ruardean Hill	...	51 50	2 32 W.	900	●	—	m.	05	John Morris
	Whitenead Park	...	51 46	2 34 W.	200	●	—	m.	05	Kate Roberts
	Worcester Lodge	...	51 48	2 35 W.	550	●	—	—	—	Fred Morris
	Hidcote (9)	...	52 5	1 46 W.	524	●	—	—	97	Major W. Wright, R.A.
Hereford :—	Hereford (Bel- mont).	...	52 5	2 45 W.	291	III	—	W.m.	07	Canon T. B. Harrington, O.S.B.

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*

LIST OF STATIONS ARRANGED ACCORDING TO DISTRICTS AND COUNTIES—continued.

County and Station.	Lat.	Long.	Height in feet above M.S.L.	Order of Station.		Publication.	Year of last Inspection.	Observer.
				Eye Obs.	Self-recording.			
4. MIDLAND COUNTIES—cont.								
Leicester:—								
Belvoir Castle ...	52° 54'	0° 47' W.	259	II	☉	R.M.	06	W. H. Divers, for the Duke of Rutland, K.G.
Syston (2) ...	52° 43'	1° 5' W.	178	●	—	—	96	S. K. Daniels.
Chipping War- den (3).	52° 9'	1° 16' W.	—	●	—	—	—	Rev. S. F. Cartwright.
Northampton:—								
Colly Weston ...	52° 37'	0° 31' W.	281	III	—	W.m.	06	Miss A. Tasker.
Great Billing (4)	52° 16'	0° 50' W.	273	●	—	—	—	Rev. G. H. Mullins, M.A.
Grundee (The School).	52° 29'	0° 28' W.	144	III	☉	—	04	S. G. Platts, for F. W. Sanderson, M.A., Headmaster.
Nottingham:—								
Raunds ...	52° 29'	0° 28' W.	146	●	—	—	04	N. E. Dixon, C.E.
Bawtry, Hesley Hall.	52° 22'	0° 33' W.	205	III	—	W.m.	—	Leon G. H. Lee.
Kingston-on-Soar	53° 27'	1° 4' W.	65	III	—	W.m.	06	B. I. Whitaker, J.P.
Nottingham, The Castle.	52° 51'	1° 14' W.	125	III	—	—	—	Fred Wakerly.
	52° 57'	1° 9' W.	192	III	—	—	05	Arthur Brown, M.Inst.C.E., and Philip Boobyer, M.D., for the Corporation.
	52° 56'	1° 9' W.	82	T	☉ (B ●)	D.W.M.R.R. }	05	" "
Oxford:—								
The Pumping Sta- tion.	53° 22'	1° 5' W.	56	—	☉ (B ●)	W.m.	96	H. Mellish, J.P.
Workson (Hod- sock).	51° 46'	1° 16' W.	208	[L] T	☉ [L]	D.W.M.R.	07	Dr. A. A. Rambant, M.A., F.R.S.; W. Wickham, for M.O.
Pyrton Hill ...	51° 38'	1° 1' W.	500	—	K	W.	—	W. H. Dines, F.R.S., for M.O.
Watlington Park (5).	51° 38'	1° 1' W.	749	●	—	—	—	G. H. Bonner.

Rutland :—	Ridlington (10)	52 37	0 45 W.	522	●	—	—	—	W.M.R.S.	—	N. W. Wortley.
Shropshire :—	Shrewsbury	52 43	2 45 W.	191	II	—	—	—	M.R.	07	Capt. W. E. Manser, R.E.
	Stokesay	52 26	2 52 W.	370	II	—	—	—	W.m.	06	Rev. W. M. D. La Touche, B.A.
Stafford :—	Stokehead (Tean)	52 58	1 57 W.	646	III	—	—	—	R.m.	05	Col. B. H. Philips.
Warwick :—	Coventry	52 25	1 30 W.	270	III	—	—	—	—	07	E. Hugh Snell, M.D., for the Corporation.
	Rugby School	52 22	1 15 W.	379	III	—	—	—	m.	04	Rev. O. M. Samson, M.A.
	Birmingham, Edgbaston.	52 28	1 56 W.	535	II	—	—	—	d.W.M.R.r.	07	Alfred Cresswell, for the Midland Institute.
Worcester :—	Birmingham, Sparkhill.	52 27	1 52 W.	429	III	—	—	—	—	—	D. H. Owen.
	Rochford (6)	52 18	2 36 W.	315	●	B	—	—	—	01	Rev. John Tomson.
Yorkshire, W. Riding :—	Aekworth	53 39	1 20 W.	131	III	—	—	—	—	06	E. B. Ludlam, M.Sc.
	Bradford	53 49	1 46 W.	439	III	—	—	—	m.r.	07	H. Lander for the Corporation.
	Garforth	53 48	1 22 W.	195	II	—	—	—	M.	06	Prof. Seton, B.Sc., for the University of Leeds.
	Giggleswick	54 4	2 17 W.	500?	III	(B) ⊙	—	—	—	05	C. F. Mott, M.A.
	M. Harrogate	54 0	1 33 W.	476	III	—	—	—	d.W.m.	07	Fred Dixon, A.M. Inst. C.E., for the Corporation.
	Huddersfield	53 39	1 47 W.	409	II	—	—	—	M.R.r.	07	J. Firth, Registrar, for the Corporation.
	Leeds	53 48	1 33 W.	132	III	(B)	—	—	r.	04	H. Crowther, for the Leeds Philosophical Society.
	Sheffield...	53 23	1 29 W.	429	II	—	—	—	w.M.R.	06	E. Howarth, F.R.A.S.
	Attercliffe.	53 24	1 25 W.	—	—	—	—	—	—	06	Medical Officer of Health.
	Wakefield	53 41	1 30 W.	96	II	—	—	—	M.R.	07	Alex. French, M.R.C.S., L.R.C.P.
5. ENGLAND, SOUTH-EAST.											
Berkshire :—	Buckebury Place	51 26	1 24 W.	409	III	—	—	—	—	05	J. W. Harris, for A. W. Sutton.
	Maidenhead	51 30	0 43 W.	99	III	—	—	—	m.	06	G. H. Palmer.
	Reading	51 26	0 57 W.	264	II	B ⊙	—	—	M.	07	J. Ridges, M.A., Headmaster.
	Wokingham	51 23	0 48 W.	216	III	B	—	—	m.	06	Medical Superintendent of Sanatorium.

The names of Stations added to the list since April, 1907, are printed in clarendon type; those of Stations now discontinued are printed in italic type. The numbers assigned to additional rainfall stations refer to their positions on the map, Plate L, p. 72.

Folkestone ...	51 5	1 11 E.	121	III	☉ (●)	d.m.	06	A. E. Nichols, M.Inst.C.E., for the Corporation.
Hildenborough (3). Littlestone-on-Sea.	51 13	0 15 E.	160	●	—	—	—	Charles H. Scott.
M. Margate	50 59	0 59 E.	—	—	☉	d.w.(m.)	05	H. T. Tubbs.
Ramsgate	51 24	1 24 E.	35	III	☉	d.W.m.	06	J. Stokes, J.P., for the Corporation.
Sandgate (4) ...	51 20	1 25 E.	—	—	☉	w.(m.)	04	T. G. Taylor, C.E., for the Corporation.
Sandwich (5) ...	51 4	1 9 E.	50	●	—	—	99	A. Robert Bowles, C.E., and R. A. Skelton.
Tankerton (6) ...	51 17	1 20 E.	6	●	—	—	03	Royal St. George's Golf Club.
Tonbridge (7)	51 22	1 2 E.	72	●	—	—	—	F. Gaster.
Tunbridge Wells	51 12	0 17 E.	319	●	—	—	—	J. Waley Cohen.
Byfleet (8) ...	51 8	0 16 E.	421	III	☉	W.m.	06	F. G. Smart, M.B.
Caterham	51 20	0 29 W.	65	●	—	—	—	R. W. Pretor-Pinney.
Epsom ...	51 17	0 5 W.	606	III	—	—	03	P. E. Campbell, M.B.
Warlingham (9)	51 20	0 17 W.	160	III	—	m.	—	S. C. Russell.
Wisley ...	51 18	0 3 W.	609	●	☉	—	—	R. H. Curtis.
Witley ...	51 17	0 26 W.	150	III	☉	W.m.	07	The Superintendent, for the Royal Horticultural Society.
Bexhill-on-Sea	50 50	0 33 E.	27	II	☉	d.	06	G. Brisley, M.P.S., for Rural District Council.
M. Bognor ...	50 47	0 40 W.	20	III	☉	w.m.	06	H. C. L. Morris, M.B., and J. L. Worsell
M. Brighton	50 49	0 8 W.	31	III	☉	d.w.m.R.r.	06	A. Newholme, M.D., and J. F. Skinner, for the Corporation.
Brighton	50 49	0 8 W.	380	—	☉	w.	—	S. H. R. Salmon.
Cuckfield (10) ...	51 1	0 9 W.	389	●	K	—	97	John Howe.
Eastbourne	50 46	0 17 E.	39	II	☉	d.w.M.R.	06	S. R. Henderson, for the Medical Officer of Health.
Forest Row (11)	51 7	0 2 E.	619	●	—	—	—	Rt. Hon. J. Bryce, D.C.L.

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LIST OF STATIONS ARRANGED ACCORDING TO DISTRICTS AND COUNTIES—*continued*.

County and Station.	Lat.	Long.	Height in feet above M.S.L.	Order of Station.		Publication.	Year of last Inspection.	Observer.
				Eye Obs.	Self-recording.			
5. ENGLAND, SOUTH-EAST								
Sussex—cont.								
Hastings ...	50° 51'	0° 34' E.	99	●	—	—	00	Rev. H. H. Breton, M.A.
" Cemetery ...	50° 52'	0° 34' E.	499	●	—	—	—	Walter Field.
" Water-works.	50° 51'	0° 34' E.	270	—	○	d.w.(m.)	06	J. Farnham, for the Corporation.
Heathfield (12)	50° 58'	0° 16' E.	499	●	—	—	—	J. F. Leigh Clare.
Lewes ...	50° 52'	0° 1' E.	57	III	—	—	—	Hon. C. Brand.
St. Leonards ...	50° 51'	0° 33' E.	178	II	—	W.M.	06	H. Colborne, M.R.C.S., for the Corporation.
" West Marina.	50° 51'	0° 32' E.	207	III	—	—	06	T. Eldridge, for the Corporation.
Watergate Park (13).	50° 56'	0° 55' W.	239	●	—	—	99	W. M. Christy.
Westbourne ...	50° 52'	0° 55' W.	30	—	○	(m.)	07	Rev. L. P. Birkett.
M. Worthing ...	50° 49'	0° 22' W.	36	III	○	d.w.m.	06	A. G. R. Cameron, M.D., for the Corporation.
Wiltshire:—								
M. Marlborough ...	51° 25'	1° 44' W.	424	III	○	W.m.	08	C. F. C. Padel, M.A.
Salisbury ...	51° 4'	1° 51' W.	180	II	—	M.R.	07	Thos. Challis, for the Earl of Pembroke, G.C.V.O.
London County:—								
Barnet ...	51° 39'	0° 10' W.	211	III	—	M.R.	06	T. H. Martin, A.M.I.C.E.
Camberwell—								
The Green ...	51° 28'	0° 5' W.	17	—	●	—	03	W. Oxtoby, M.I.C.E., for the Camberwell Borough Council.
Dulwich ...	51° 27'	0° 5' W.	58	—	●	—	—	
Forest Hill ..	51° 26'	0° 4' W.	160	—	●	—	03	
Leyton Square	51° 29'	0° 4' W.	14	—	●	—	03	
Peckham Rd.	51° 28'	0° 5' W.	21	—	●	—	03	H. Robert Mill, D.Sc., LL.D.
Camden Square	51° 33'	0° 8' W.	110	II	○ (B ●)	M.R.	—	

Chelsea...	...	51 29	0 10 W.	24	●	—	—	—	T. W. E. Higgins, C.E., for the Chelsea Borough Council Messrs. De la Rue.
City (Bunhill Row)	...	51 31	0 5 W.	80	—	⊙	—	w.(m.)	—
East Ham	...	51 32	0 3 E.	12	III	—	—	—	J. Banks, for the Corporation.
Greenwich	...	51 28	0 0	155	I	(I)	—	W.M.R.r.	The Astronomer Royal.
Hampstead	...	51 33	0 11 W.	290	III	—	—	—	University College School.
Isleworth	...	51 29	0 20 W.	24	III	—	—	—	A. Worsley.
Kensal Green	...	51 32	0 13 W.	100	●	—	—	—	C. W. Heinemann.
Kew	...	51 28	0 19 W.	18	I	I	—	W.M.R.	C. Chree, Sc.D., F.R.S., Superintendent of the Observatory Department, National Physical Laboratory, for the Meteorological Office.
Pall Mall	...	51 30	0 7 W.	—	—	B	—	—	Athenaeum Club.
St. Norwood	...	51 26	0 6 W.	220	II	—	—	M.R.	W. Marriott.
Plumstead	...	51 29	0 6 E.	300	—	⊙	—	—	J. G. Waller.
Tottenham	...	51 36	0 5 W.	51	II	⊙	—	W.M.R.	J. F. Butler-Hogan, M.D., LL.D., for Urban District Council.
Westminster	...	51 30	0 8 W.	27	T	● Bθ	—	—	The Staff of the Meteorological Office.
" Training Coll.	...	51 30	0 8 W.	107	—	⊙	—	D.W.M.R.	J. H. Cowham.
6. SCOTLAND, WEST, AND ISLE OF MAN.									
Argyleshire:—	Grueline, Isle of Mull (1).	56 30	6 0 W.	100	●	—	—	—	J. W. Melles.
	Laudale	56 41	5 41 W.	14	II	—	—	W.M.S.	J. A. Fletcher.
	Oban	56 24	5 27 W.	—	—	⊙	—	w.m.	Rev. John S. Begg.
	Portalloch	56 8	5 30 W.	132	II	—	—	W.M.	D. S. Melville, for Lord Malcolme.
Ayr:—	Colmonell	55 8	4 53 W.	139	III	(B)	—	W.	A. Beattie.

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LIST OF STATIONS ARRANGED ACCORDING TO DISTRICTS AND COUNTIES—continued.

County and Station.	Lat.	Long.	Height in feet above M.S.L.	Order of Station.		Publication.	Year of last Inspection.	Observer.
				Eye Obs.	Self-recording.			
6. SCOTLAND, WEST, AND ISLE OF MAN— <i>cont.</i>								
Ayr— <i>cont.</i> Kilmarnock	55 37	5 36 W.	907	III	☉	W.m.	—	W. Johnston, for the West of Scotland Agric. Coll. Robert Henderson.
Bute :— §Rothesay ...	55 50	5 4 W.	115	II	—	W.M.	07	Rev. W. Anderson.
Dumbarton :— No station.	55 4	3 36 W.	70	II	—	W.M.	07	W. Thomson, for H. G. Murray Stewart.
Dumfries :— §Dumfries ...	54 52	4 12 W.	120	II	—	W.M.	07	Prof. L. Becker, Ph.D., for M.O.
Kirkcudbright :— §Cally ...	55 53	4 18 W.	180	I	☉	W.M.S. <i>ms.</i>	06	John Wilson, for A. Henderson Bishop.
Lanark :— Glasgow ...	55 46	4 15 W.	440	III	—	—	—	—
Renfrew :— Thornton Hall.	54 10	4 29 W.	137	II	☉	W.M.S.	07	A. W. Moore, M.A., J.P., C.V.O.
Stirling :— No station.								
Wigton :— No station.								
Isle of Man :— Douglas (Cronk- bourne).								
7. ENGLAND, NORTH WEST, AND NORTH WALES.								
Cheshire :— Bidston ...	53 24	3 4 W.	188	(I) T	(I) ☉	D.W.M.R.r.	04	W. E. Plummer, M.A., F.R.A.S., for the Mersey Docks and Har- bour Board.
Cheshire :— Chester ...	53 12	2 54 W.	59	III	—	—	—	Rev. J. Cairns Mitchell, B.D.
Hawarden Bridge.	53 12	3 1 W.	22	III	—	W.m.	06	F. B. Summers.
M. Hoylake ...	53 23	3 12 W.	307	III	☉	W.m.	02	Tom Robinson, for Urban Dis- trict Council.

LIST OF STATIONS ARRANGED ACCORDING TO DISTRICTS AND COUNTIES—continued.

County and Station.	Lat.	Long.	Height in feet above M.S.L.	Order of Station.		Publication.	Year of last Inspection.	Observer.
				Eye Obs.	Self-recording.			
6. SCOTLAND, WEST, AND ISLE OF MAN—cont.								
Ayr—cont. Kilmarnock	55° 37'	5° 4' 36" W.	90?	III	☉	W.m.	—	W. Johnston, for the West of Scotland Agric. Coll. Robert Henderson.
Bute :—	55° 50'	5° 4' W.	115	II	—	W.M.	07	
Dumbarton :—	55° 4'	3° 36' W.	70	II	—	W.M.	07	Rev. W. Anderson.
Dumfries :—	54° 52'	4° 12' W.	120	II	—	W.M.	07	W. Thomson, for H. G. Murray Stewart.
Kirkcudbright :—	55° 53'	4° 18' W.	180	I	I	W.M.S.	07	Prof. L. Becker, Ph.D., for M.O.
Lanark :—	55° 46'	4° 15' W.	440	III	☉ B	m.	06	John Wilson, for A. Henderson Bishop.
Renfrew :—								
Stirling :—								
Wigton :—								
Isle of Man :—	54° 10'	4° 29' W.	137	II	☉ B	W.M.S.	07	A. W. Moore, M.A., J.P., C.V.O.
7. ENGLAND, NORTH WEST, AND NORTH WALES.								
Cheshire :—	53° 24'	3° 4' W.	188	(I) T	(I) ☉	D.W.M.R.	04	W. E. Plummer, M.A., F.R.A.S., for the Mersey Docks and Har- bour Board.
Bidston	53° 12'	2° 54' W.	59	III	—	—	—	Rev. J. Cairns Mitchell, B.D.
Chester	53° 12'	3° 1' W.	22	III	—	W.m.	06	F. B. Summers.
Hawarden Bridge.	53° 23'	3° 12' W.	30?	III	☉	w.m.	02	Tom Robinson, for Urban Dis- trict Council.
M. Hoyle								

Cumberland:—	Aspatia ...	54 46	3 21 W.	250	II	⊙ (☞)	W.M.R.	07	J. Smith Hill, B.A., B.Sc., Agri- cultural College.
	Carlisle ...	54 53	2 57 W.	111	II	—	—	04	H.S. Cartmell, for the Corporation.
	Newton Rigg	54 40	2 49 W.	559	II	⊙	W.M.	05	W. T. Laurence, for the Cumber- land County Council.
	Uldale(Chapel House Re- servoir)(I).	54 43	3 9 W.	599	●	—	—	—	T. Strong, for Aspatia and Silloth Water Board.
Lancashire:—	M. Blackpool ...	53 49	3 3 W.	66	II	⊙ (B ☞ ●)	d.W.M.	07	F. J. H. Countts, M.D., for the Corporation.
	Burnley ...	53 48	2 15 W.	459	III	⊙	m.r.	07	Thos. Holt, M.D., for the Cor- poration.
	Carnforth (Over Kel- let).	54 8	2 44 W.	174	III	⊙	m.	05	W. Farrer.
	Darwen ...	53 41	2 28 W.	710	III	⊙	d.m.	05	F. G. Haworth, M.B., for the Corporation.
	Fleetwood ...	53 56	3 1 W.	—	—	☞	—	07	The Urban District Council, for the Meteorological Office.
	Grayth- waite (2).	54 19	3 0 W.	180	●	—	—	—	H. I. Grosspelius.
	Rossall Beach	53 55	3 2 W.	0	III	B	d.	—	T. G. Benn.
	Manchester (Oldham Road).	53 29	2 13 W.	190	II	⊙	M.R.w.	04	J. Niven, M.A., M.B., for the Corporation.
	" (Whit- worth Park).	53 28	2 14 W.	125	II	⊙ (B ☞)	d.M.	04	The University of Manchester.
	Manchester (Prestwich).	53 32	2 17 W.	320	II	⊙	W.M.r.	04	F. Gore, for Medical Superinten- dent of the Asylum.
	Preston ...	53 46	2 42 W.	148	III	—	r.	04	H. O. Pilkington, M.R.C.S., for the Corporation.
	M. Southport ...	53 39	2 59 W.	37	II	(I) ☞ ☞	d.w M.R. ☞	07	J. Baxendell, for the Corporation.
	Stonyhurst...	53 51	2 28 W.	375	I	I	W.M.S.R. ☞	07	Rev. W. Sidgreaves, S.J., for M.O.

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LIST OF STATIONS ARRANGED ACCORDING TO DISTRICTS AND COUNTIES—continued.

County and Station.	Lat.	Long.	Height in feet above M.S.L.	Order of Station.		Publication.	Year of last Inspection.	Observer.
				Eye Obs.	Self-recording.			
7. ENGLAND, NORTH WEST, AND NORTH WALES—cont..								
Westmorland:— Kirkby Lonsdale (3).	51 12	2 36 W.	304	●	—	—	—	R. A. Clarke.
Anglesey:— Holyhead (Salt Island).	53 18	4 39 W.	57	—	—	—	07	F. M. Cotton, C.E., for M.O.
Carnarvon:— M. Llandudno ...	53 18	4 39 W.	48	T	—	D.W.M.	07	T. Chope, for M.O.
	53 20	3 50 W.	71	II	⊙	d.W.M.R.	07	William Little, for the Town Council.
P e n r h y n Quarry (4).	53 10	4 6 W.	527	●	—	—	01	W. G. Griffith, for E. A. Young.
Denbigh:— Bettws-y-Coed	53 7	3 53 W.	101	II	⊙	d.W.M.R.	06	Dr. H. W. Fox, for District Council.
Llanbedr Hall (Ruthin) (5).	53 8	3 17 W.	449	●	—	—	—	George A. Grace-Calvert, M.B.
	53 12	3 11 W.	650	—	B	—	—	H. W. Buddicom.
Penbedw ...	53 19	3 29 W.	30	III	⊙	d.w.m.	06	A. A. Goodall, for District Council.
Rhyl ...	53 19	3 29 W.	30	III	⊙	w.m.	07	W. J. Eves.
Merioneth:— Aberdovey ...	52 33	4 4 W.	—	III	⊙	d.m.	07	E. Lewys Lloyd, M.D., for Urban District Council.
M. Towyn ...	52 35	4 5 W.	10	III	⊙	d.m.	07	E. Lewys Lloyd, M.D., for Urban District Council.
Montgomery:— No station.								
8. SOUTH WALES AND ENGLAND, SOUTH WEST.								
Brecknock:— Llangammarch Wells.	52 7	3 32 W.	550	III	⊙	W.m.R.	06	W. Black Jones, M.D., B.S., D.P.H.

LIST OF STATIONS ARRANGED ACCORDING TO DISTRICTS AND COUNTIES—*continued*.

County and Station.	Lat.	Long.	Height in feet above M.S.L.	Order of Station.		Publication.	Year of last Inspection.	Observer.
				Eye Obs.	Self-recording.			
7. ENGLAND, NORTH WEST, AND NORTH WALES—cont..								
Westmorland:—Kirkby Lonsdale (3).	54 12	2° 36' W.	304	●	—	—	—	R. A. Clarke.
Anglesey:—Holyhead (Salt Island).	53 18	4 39 W.	57	—	—	—	07	F. M. Cotton, C.E., for M.O.
Carnarvon:—M. Llandudno ...	53 18	4 39 W.	48	T	—	D.W.M.	07	T. Chope, for M.O.
	53 20	3 50 W.	71	II	⊙	d.W.M.R.	07	William Little, for the Town Council.
P e n r h y n Quarry (4).	53 10	4 6 W.	527	●	—	—	01	W. G. Griffith, for E. A. Young.
Denbigh:—Bettws-y-Coed	53 7	3 53 W.	101	II	⊙	d.W.M.R.	06	Dr. H. W. Fox, for District Council.
Llanbedr Hall (Ruthin) (5).	53 8	3 17 W.	449	●	—	—	—	George A. Grace-Calvert, M.B.
Flint:—Penbedw ...	53 12	3 11 W.	650	—	B	—	—	H. W. Baddicom.
Merioneth:—Rhyl ...	53 19	3 29 W.	30	III	⊙	d.w.m.	06	A. A. Goodall, for District Council.
	52 33	4 4 W.	—	III	⊙	w.m.	07	W. J. Eves.
Montgomery:—M. Towyn	52 35	4 5 W.	10	III	⊙	d.m.	07	E. Lewys Lloyd, M.D., for Urban District Council.
Montgomery:—No station.								
8. SOUTH WALES AND ENGLAND, SOUTH WEST.								
Brecknock:—Llangammarch Wells.	52 7	3 32 W.	550	III	⊙	W.m.R.	06	W. Black Jones, M.D., B.S., D.P.H.

Cardigan :—	M. Aberystwyth ...	52 25	4 4 W.	59	III	⊙	d.w.m.	07	A. Thomas, M.D., for the Urban Council.
	Lampeter (1)	52 7	4 5 W.	498	●	—	—	—	John C. Harford.
Cardmarthen :—	Llandovery (2)	51 59	3 48 W.	218	●	—	—	—	Douglas T. M. Jones.
Glamorgan :—	Cardiff ...	51 28	3 10 W.	50	III	⊙	W.m.r.	07	E. Walford, M.D., for the Corporation.
	Port Talbot ...	51 34	3 45 W.	179	●	⊙	(m)	03	Miss Talbot; G. Lipscomb.
	Swansea ...	51 37	3 55 W.	24	III	—	m.	07	D. Bliss, for the Corporation.
Pembroke :—	Haverfordwest.	51 48	4 58 W.	93	(II)	⊙ (B)	(m)	01	J. W. Phillips.
	St. Ann's Head	51 41	5 11 W.	149	T	⊙	D.W.M.R.	07	G. H. Dunstond, Lightkeeper, for M.O.
	Tenby ...	51 41	4 42 W.	79	—	⊙	w.(m)	03	H. L. Truscott, for the Corporation.
Radnor :—	Llandrindod Wells (3).	52 14	3 23 W.	699	●	—	—	—	W. B. de Winton.
	Rhayader Watershed; (4)	52 18	3 29 W.						
	Abergwngy ...	—	—	1,199	●	—	—	—	
	Bwlch yrhendre.	—	—	1,584	●	—	—	—	
	Claerwen ...	—	—	1,249	●	—	—	—	
	Nant-y-car ...	—	—	1,544	●	—	—	—	
	Pryddellau ...	—	—	1,709	●	—	—	—	
	Tyrmynydd..	—	—	831	●	—	—	—	
Cornwall :—	Falmouth ...	50 9	5 4 W.	167	I	I	W.M.R.	07	Royal Cornwall Polytechnic Society, for M.O.
	Pen-dennis Castle.	50 8	5 3 W.	—	—	—	—	07	Coastguard, for M.O.
	M. Newquay ...	50 25	5 4 W.	100	III	⊙	w.(m.)	04	C. C. Vigurs, B.A., M.D., for Urban District Council.
	M. Penzance ...	50 7	5 32 W.	54	III	⊙	m.	—	Chas. H. Benn, for District Council.

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LIST OF STATIONS ARRANGED ACCORDING TO DISTRICTS AND COUNTIES—continued.

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				Eye Obs.	Self-recording.			
8. SOUTH WALES AND ENGLAND, SOUTH WEST—cont.								
Devonshire:—	Arlington Court	3 58 W.	613	III	—	W.m.	06	Lady Chichester.
	Barnstaple ...	4 3 W.	24	III	—	—	06	Thos. Wainwright, for the North Devon Athenæum.
	St Cullompton ...	3 23 W.	202	III	☉	W.m.	07	M. T. Foster.
	Plymouth ...	4 8 W.	116	II	☉ (B)	d.W.M.S.R.r.	07	H. Victor Prigg, A.M.I.C.E., for the Corporation.
	St Rousdon ...	3 0 W.	515	II	(B)	M.	07	C. Grover, for The Hon. Lady Peel.
Dorset:—	M. Salcombe	3 46 W.	300	—	☉	(m.)	04	V. W. Twining, M.D.
	Sheepstor (6)	4 1 W.	749	●	—	—	—	Rev. H. H. Breton, M.A.
	M. Torquay	3 31 W.	12	III	☉	d.w.(m.)	00	F. March, for the Corporation.
	St Whitechurch ...	4 6 W.	593	II	—	M.	07	E. E. Glyde.
	St Woolacombe ...	4 12 W.	59	II	☉	S.M.R.	07	B. Fanshawe.
	Parkstone (5)	1 56 W.	197	●	—	—	00	C. Mabey.
	Portland Bill...	2 27 W.	19	T	—	D.W.M.R.	07	G. Carpenter, Lightkeeper, for M.O.
	St Shaftesbury ...	2 12 W.	722	III	—	W.m.	06	Rev. F. Ehlers.
	M. Weymouth...	2 27 W.	21	III	☉	d.m.	—	J. J. Brown.
	Abersychan ...	3 5 W.	698	●	—	—	—	W. P. James.
Monmouth:—	Newchurch ...	2 48 W.	525	●	—	—	—	—
	Newport (7) ...	3 0 W.	32	III	—	—	04	C. Cullum, for the Corporation of Newport.
	Pant-yr-eos ...	3 4 W.	449	●	—	—	00	—
	Ynys-y-fro ...	3 3 W.	151	●	—	—	00	—
Somerset:—	M. Bath ...	2 21 W.	66	T, III	(B) ☉	D.W.M.R.	06	W. H. Symons, M.D., for the Corporation.

9. IRELAND, NORTH.

9. IRELAND, NORTH.										
Antrim :—	Belfast	...	54 35	5 56 W.	61	II	—	M.R.	06	John Wylie, B.A., and G. Robinson, for Prof. Morton.
	Glenarm (1) ...	...	54 58	5 56 W.	41	●	—	—	—	The Earl of Antrim.
	Larne Harbour	...	54 51	5 49 W.	—	—	B	—	—	E. W. L. Holt, for Department of Agriculture for Ireland.
Armagh :—	Armagh	...	54 21	6 39 W.	196	II	☉	W.M.S.R.	07	J. L. E. Dreyer, Ph.D., for M.O.
Cavan :—	No station.	...	55 11	7 58 W.	54	III	—	—	—	J. J. MacGrath, L.R.C.P.
Donegal :—	Dunfanaghy ...	...	54 40	8 27 W.	221	●	—	—	—	John C. Ward.
	Killybegs (2) ...	...	55 23	7 24 W.	230	T	B	D.W.M.R.r.	07	Chief Officer, Coastguard, for M.O.
	Malin Head ...	...	54 50	8 30 W.	—	—	B	—	05	J. McLoone, Postmaster.
Down :—	Rosbeg (Narin)	...	54 38	5 32 W.	40	T	—	D.W.M.R.r.	07	J. W. Hughson and D. E. Shawe, Coastguard, for M.O.
Fermanagh :—	Donaghadee ...	...	53 19	9 0 W.	—	—	B	—	—	W. M. Tattersall, for the Department of Agriculture for Ireland.
Galway :—	No station.	...	53 28	9 44 W.	89	●	—	—	—	M. Macarthy.
	Ardfrý	...	53 58	7 38 W.	350?	●	—	—	—	Miss Morrow.
Leitrim :—	Recess (3)	...	54 6	10 4 W.	37	T	—	D.W.M.R.r.	07	Chas. Exeter, Coastguard, for M.O.
Londonderry :—	Carrigallen (4)	...	53 55	9 40 W.	119	●	—	—	02	Miss M. Kilsby and M. Macarthy.
Longford :—	No station.	...	54 11	8 27 W.	122	II	☉	W.M.S.R.	06	J. R. Armstrong, for Bryan Cooper.
Louth :—	No station.	...	54 36	7 19 W.	300	III	—	W.m.	07	The late Col. Buchanan, C.B.
Mayo :—	Blacksod Point	...								
	Mallaranny (5)	...								
Meath :—	No station.	...								
Monaghan :—	No station.	...								
Roscommon :—	No station.	...								
Sligo :—	Markree Castle	...								
Tyrone :—	Edenfel, Omagh	...								
Westmeath :—	No station.	...								

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LIST OF STATIONS ARRANGED ACCORDING TO DISTRICTS AND COUNTIES—continued.

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				Eye Obs.	Self-recording.			
10. IRELAND, SOUTH.								
Carlow:—	° ' "	° ' "						
Clare:—	° ' "	° ' "						
No station.	52 57	9 17 W.	130	●	—	—	—	Rev. C. W. McDowell, M.A.
Ennistymon (1)...	52 48	8 38 W.	157	●	—	—	—	Lt.-Col. W. O. Bentley, R.A.
Hurdlestown (2)	52 55	9 21 W.	52	●	—	—	99	Miss I. F. K. Bowes.
Lahinch (3)	52 53	9 16 W.	479	●	—	—	98	Lt.-Col. Tottenham.
Mount Callan (4)	52 46	8 53 W.	85	●	—	—	98	Alfred Barker, for W. W. A. Fitzgerald.
Newmarket-on-Fergus (5)	51 52	8 10 W.	24	III	⊙	w.m.	07	John H. Bennett.
Ballinacurra	52 13	8 34 W.	266	●	—	—	—	Capt. J. W. Evans, J.P.
Doneraile (6)	51 47	8 15 W.	32	T	—	D.W.M.R.r.	07	M. FitzMahony, Post Office, for M.O.
Roche's Point	51 47	8 15 W.	—	—	—	—	07	Captain G. Usborne, for Cork Harbour Commissioners.
"	53 20	6 15 W.	47	II	B	W.M.R.	07	Sir John W. Moore, M.D., D.Sc.
Dublin:—	53 22	6 21 W.	155	II	⊙	w.M.S.	07	Major R. W. H. Buckland, R.E., Ordnance Survey Office.
M. Dublin City	53 23	6 16 W.	67	II	—	m.	07	F. W. Moore, M.R.I.A.
" Phoenix Park.	53 21	6 16 W.	12	II	⊙	M.(R.)w.	07	W. J. Good and J. E. W. Flood, for Prof. Thrift.
" Botanic Gardens.	53 16	6 14 W.	200	III	—	—	—	Dr. Arthur S. Goff.
" Trinity College.	53 16	6 7 W.	249	●	—	—	—	R. O'Brien Furlong, C.B.
Dundrum	53 17	6 8 W.	42	III	⊙	m.	07	The late Dr. J. B. Power and R. A. O'Donovan, M.D., for the Corporation.
Killiney (7)	53 17	6 8 W.	—	—	—	—	07	Robert Gray, C.E., for H.M. Office of Works.
M. Kingstown	52 3	9 53 W.	—	●	—	—	—	Admiral E. F. Jeffreys, C.V.O.
" Harbour	52 4	9 30 W.	174	III	—	W.m.R.	06	E. W. Griffin, M.D.
Caragh Lake (8)								
Killarney								

Valencia...	...	51 56	10 15 W.	30	I, T	I, B	D.W.M.R.r.	07	J. E. Cullum, for M.O.
" Glanleam	...	51 56	10 20 W.	—	●	—	—	01	A. O'Donoghue.
Kildare :— Clongowes Wood College.	...	53 19	6 41 W.	237 ?	III	B ⊕ ⊙	m.	06	Rev. W. P. Hackett, S.J., and A. E. Coulthard, B.Sc.
Kilkenny :— Kilkenny	...	52 39	7 14 W.	212	III	B	W.m.	06	E. Sutton, for the Marquis of Ormonde, K.P.
King's Co. :— Birr Castle	...	53 6	7 55 W.	175	II, T	⊙	D.W.M.S.R.r.	06	Dr. Boeddicker, for the Earl of Rosse, K.P.
Limerick :— Foynes	...	52 37	9 7 W.	108	III	—	W.m.	06	J. J. Alcorn, for Lord Monteagle, K.P.
Limerick (Der-ravoher (9). Roxborough 10)	...	52 38	8 40 W.	40	●	—	—	—	Sir A. W. Shaw.
Queen's Co. :—No station.	...	52 35	8 36 W.	107	●	—	—	02	Sir A. W. Shaw.
Tipperary :—aCahir (Bengurragh).	...	52 22	7 56 W.	199	III	—	W.m.	—	R. W. Smith, Jun.
Waterford :— Waterford	...	52 16	7 7 W.	—	—	B	—	02	Harbour Authorities.
Wexford :— No station.	...	52 16	7 7 W.	20 ?	III	—	W.m.R.	07	J. N. White.
Wicklow :— Bray (11)	...	53 12	6 6 W.	153	●	—	—	—	Miss A. L. Scott.
Newcastle	...	53 5	6 6 W.	256	II	—	—	02	T. H. Peyton, M.D.
11. ENGLISH CHANNEL (WESTERN SECTION).									
Guernsey :—M. St. Peter Port, Villa Carey.	...	49 27	2 32 W.	180	III	⊙	W.m.	04	F. E. Carey, M.D.
St. Peter Port, Brooklyn.	...	49 27	2 31 W.	297	II	⊙ (B ⊕)	w.M.R.	04	Adolphus Collenette.
Jersey :— St. Aubin's	...	49 12	2 11 W.	25	T	—	D.W.M.R.	06	J. Fisher, for M.O.
St. Helier's	...	49 11	2 6 W.	—	—	⊙	d.w.(m.)R.	06	Signal Officer, Fort Regent, for M.O.
Scilly :— St. Mary's	...	49 56	6 18 W.	131	T	B ⊕ ⊙	D.W.M.R.	07	A. Hicks, for M.O.

The names of Stations added to the list since April, 1907, are printed in clarendon type; those of Stations now discontinued are printed in italic type. The numbers assigned to additional rainfall stations refer to their positions on the map, Plate I., p. 72.

Valencia...	...	51 56	10 15 W.	30	I, T	I, B	D.W.M.R.r.	07	J. E. Cullum, for M.O.
" Glanleam	...	51 56	10 20 W.	—	●	—	—	01	A. O'Donoghue.
Kildare :—	Clongowes Wood	53 19	6 41 W.	237 ?	III	B ⊕ ⊙	m.	06	Rev. W. P. Hackett, S.J., and
Kilkenny :—	College.	...	...	...	III	B	W.m.	06	A. E. Coulthard, B.Sc.
King's Co. :—	Birr Castle	52 39	7 14 W.	212	III	⊙	D.W.M.S.R.r.	06	E. Sutton, for the Marquis of
Limerick :—	Foynes ...	53 6	7 55 W.	175	II, T	⊙	W.m.	06	Ormonde, K.P.
	Limerick (Der-	52 37	9 7 W.	108	III	—	—	06	Dr. Boeddicker, for the Earl of
	ravoher (9).	52 38	8 40 W.	40	●	—	—	—	Rosse, K.P.
	Roxborough 10)	52 35	8 36 W.	107	●	—	—	—	J. J. Alcorn, for Lord Monteagle,
Queen's Co. :—	No station.	52 22	7 56 W.	199	III	—	W.m.	02	K.P.
Tipperary :—	#Cahir (Bengur-	52 16	7 7 W.	—	—	—	—	—	Sir A. W. Shaw.
	ragh).	52 16	7 7 W.	20 ?	III	B	W.m.R.	02	Sir A. W. Shaw.
Waterford :—	Waterford	53 12	6 6 W.	153	●	—	—	—	R. W. Smith, Jun.
Wexford :—	"	53 5	6 6 W.	256	II	—	—	02	Harbour Authorities.
Wicklow :—	Bray (11)	...	...	...	...	...	...	07	J. N. White.
	Newcastle	...	...	...	...	...	...	—	Miss A. L. Scott.
		...	...	...	...	...	...	02	T. H. Peyton, M.D.
11. ENGLISH CHANNEL (WESTERN SECTION).									
Guernsey :—	M. St. Peter Port,	49 27	2 32 W.	180	III	⊙	W.m.	04	F. E. Carey, M.D.
	Villa Carey.	...	...	...	...	...	...	...	...
	St. Peter Port,	49 27	2 31 W.	297	II	⊙ (B ⊕)	w.M.R.	04	Adolphus Collette.
	Brooklyn.	...	...	...	...	...	...	...	...
Jersey :—	St. Aubin's	49 12	2 11 W.	25	T	—	D.W.M.R.	06	J. Fisher, for M.O.
	St. Helier's	49 11	2 6 W.	—	—	⊙	d.w.(m.)R.	06	Signal Officer, Fort Regent, for
		...	...	...	...	...	...	...	M.O.
Scilly :—	St. Mary's	49 56	6 18 W.	131	T	B ⊕ ⊙	D.W.M.R.	67	A. Hicks, for M.O.

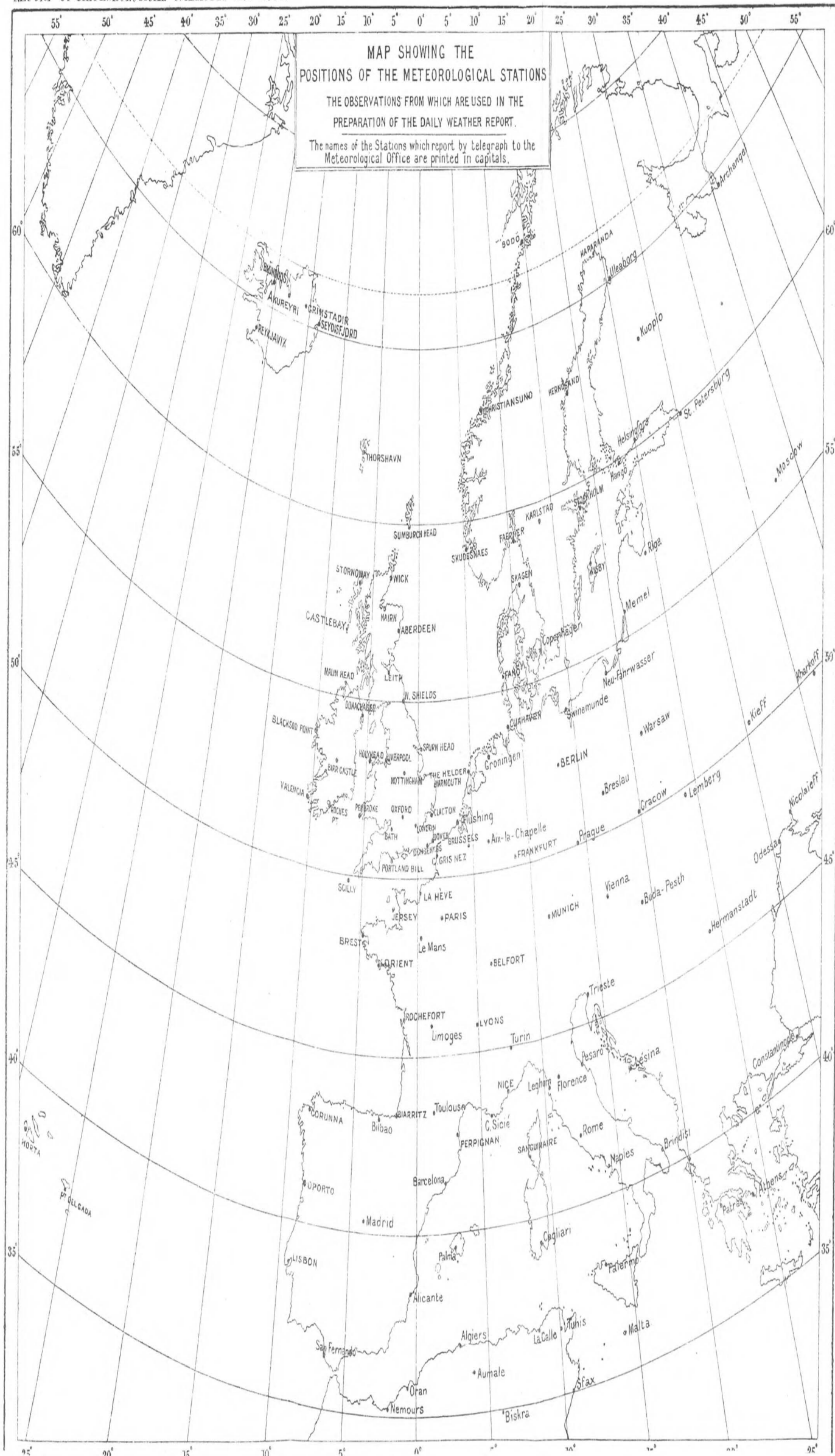
The names of Stations added to the list since April, 1907, are printed in clarendon type; those of Stations now discontinued are printed in italic type. The numbers assigned to additional rainfall stations refer to their positions on the map, Plate I., p. 72.

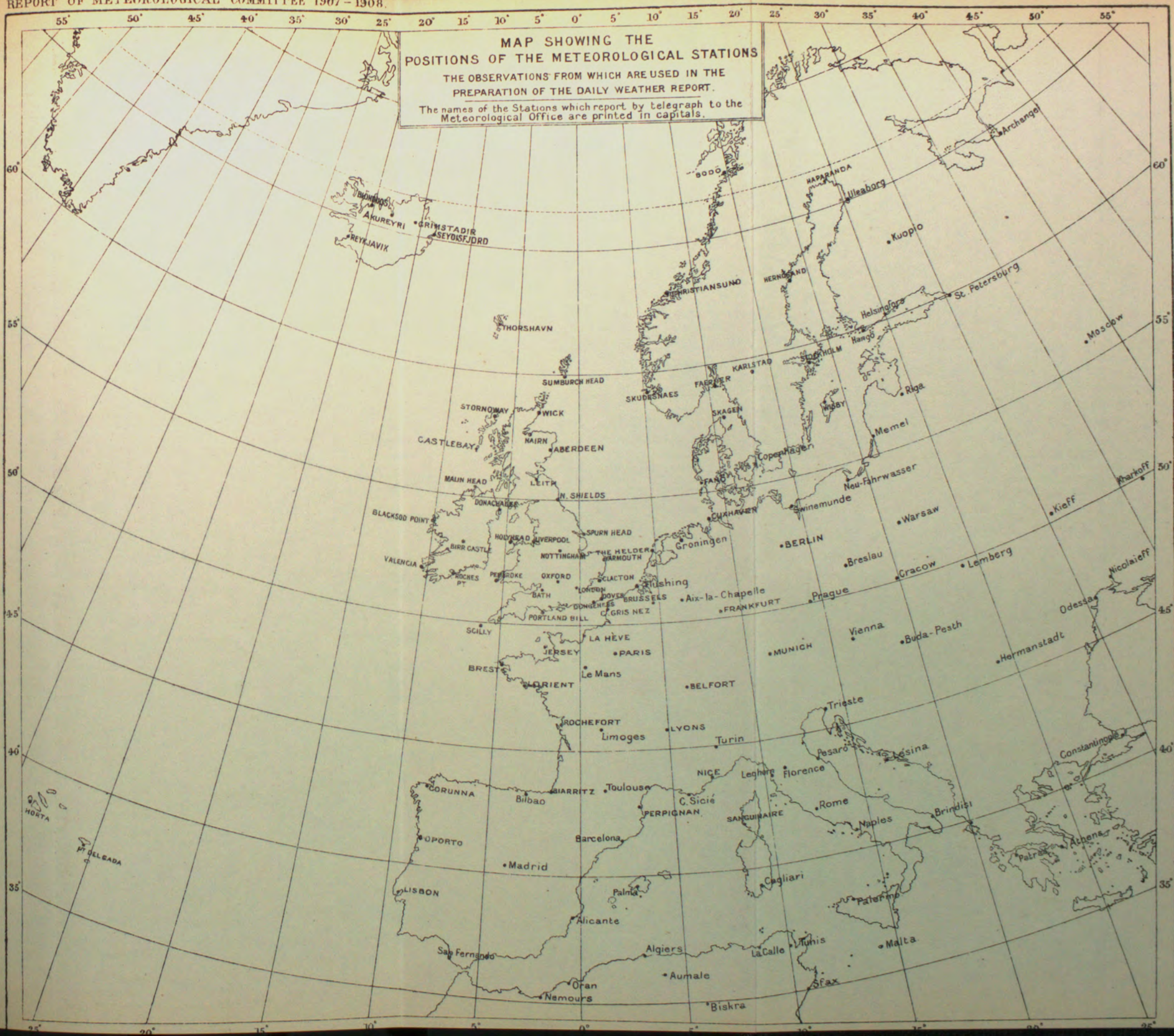
LIST OF FOREIGN STATIONS FROM WHICH REPORTS ARE
RECEIVED DAILY BY TELEGRAPH. See PAGE 57.

Name of Station.				Authority.
² Reykjavik	(Iceland)	...	}	Meteorological Institute, Copenhagen.
² Blönduós				
² Ákureyri				
² Grimstadir				
² Seydisfjörð				
² Thorshavn, Faeröe Islands	}	Meteorological Office, Stockholm.
Haparanda	...	...
Hernösand	...	...
² Stockholm	...	...
Wisby	...	...
Karlstad	}	Meteorological Institute, Christiania.
Bodö	...	...
² Christiansund	...	...
¹ Skudesnaes	...	...
Færder	...	...
² The Scaw	}	Meteorological Institute, Copenhagen.
Fanö	...	...
Cuxhaven	...	...
Berlin	...	...
Frankfurt	...	...
Munich	}	Deutsche Seewarte, Hamburg.
² The Helder	...	...
Brussels	...	...
Cape Gris Nez	...	...
La Hève	...	...
*Ushant	}	Meteorological Institute (Utrecht).
² Brest (St. Mathieu)	...	...
Lorient (Ile de Groix)	...	...
*Er-Hastellie	...	...
¹ Rochefort (Ile d'Aix)	...	...
*Chassiron	}	Service, Brussels.
*La Coubre	...	...
² Biarritz	...	...
² Paris	...	...
Belfort	...	...
Lyons	}	Bureau Central Météorologique, Paris.
Nice	...	...
Perpignan	...	...
*Cape Béarn	...	...
Sanguinaire (Corsica)	...	...
Corunna	}	Observatory, Lisbon.
Lisbon	...	...
² Azores (Ponta Delgada)	...	...
" (Horta)	...	...

Note.—The stations marked (¹) report also at 2h. p.m., and those marked (²) at 6h. p.m. Lisbon reports at 4h. p.m. instead of 6h. p.m., and Ponta Delgada at 3h. p.m.

* The reports from these stations are not published in the Daily Weather Report





LIST OF ADDITIONAL STATIONS FROM WHICH REPORTS ARE RECEIVED FOR THE DAILY WEATHER REPORT. (See p. 57.)

Station.	Hour of Observation.	Station.	Hour of Observation.
Strathpeffer ..	6 p.m. By wire.	Southsea ..	6 p.m. By wire.
Dublin ..	4 p.m. By post.	Worthing ..	6 p.m. By wire and post.
Rossall Beach ..	6 p.m. By post.	Brighton ..	6 p.m. By wire and post.
Blackpool ..	6 p.m. By wire; and 9 p.m. by post.	Eastbourne ..	6 p.m. By wire and post.
Southport ..	6 p.m. By wire; and 9 p.m. by post.	Bexhill-on-Sea ..	9 p.m. By post.
Rhyl ..	8 a.m. By wire; and 6 p.m. by wire and post.	Hastings ..	6 p.m. By wire and post.
Llandudno ..	6 p.m. By wire; and 9 p.m. by post.	Folkestone ..	6 p.m. By wire and post.
Bettws-y-Coed ..	6 p.m. By wire.	Ramsgate ..	6 p.m. By wire and post.
Towyn ..	6 p.m. By wire and post.	Margate ..	6 p.m. By wire and post.
Aberystwyth ..	6 p.m. By wire.	Lowestoft ..	6 p.m. By wire and post.
Plymouth ..	9 p.m. By post.	Skegness ..	6 p.m. By wire and post.
Torquay ..	6 p.m. By wire and post.	Scarborough ..	6 p.m. By wire; and 9 p.m. by post.
Weymouth ..	6 p.m. By wire and post.	Harrogate ..	6 p.m. By wire and post.
Bournemouth ..	6 p.m. By wire and post.	Darwen ..	9 p.m. By post.
		Manchester ..	9 p.m. By post.
		Birmingham ..	9 p.m. By post.

LIST OF SEA TEMPERATURE STATIONS.

§*Aberdeen, Cove Bay.	†Newarp Lightship.
*Arran, North, Galway.	§*Newquay, Cornwall.
†Bahama Bank Lightship.	†North Arklow Lightship.
§*Ballantrae, Ayrshire.	North Arran (<i>see</i> Arran).
*Ballydonegan, Co. Cork.	†North-West Lightship.
§*Ballyglass, Co. Mayo.	†Outer Dowsing Lightship.
†Barrels Rock Lightship.	†Owers Lightship.
*Blacksod Point, Co. Mayo.	§*Pennan Bay (Aberdour).
†Blackwater Bank Lightship.	§ ⁴ Plymouth.
§*Burnmouth, Ayton, Berwick.	§ ⁵ Port Erin.
*Burntisland.	*Portrush.
†Carnarvon Bay Lightship.	†Royal Sovereign Lightship.
†Cardigan Bay Lightship.	St. Ann's Head, Pembroke.
§*Cleggan, Co. Galway.	§*Salcombe, Devon.
†Coningbeg Lightship.	§*Scarborough.
§*Cromarty.	⁶ Scilly Islands (St. Mary's).
†Daunts Rock Lightship.	§*Seafeld, Co. Clare.
§ ¹ Eastbourne.	†Seven Stones Lightship.
†East Goodwin Lightship.	†Shambles Lightship.
†English and Welsh Grounds Lightship.	§*Sheephaven (Dunfanaghy).
†Fastnet Rock Lighthouse.	†Shipwash Lightship.
² Holyhead Harbour Office.	†Skulmartin Lightship.
*Kilcredane, Co. Clare.	†Solway Lightship.
§*Kirkwall.	†South Arklow Lightship.
†Kish Bank Lightship.	†South Rock Lightship.
§*Lamlash, Isle of Arran.	†Spurn Lightship.
†Leman and Ower Lightship.	*Stornoway.
§*Lerwick.	*Sunderland.
*Liscannor, Co. Clare.	*Teelin, Co. Donegal.
§ ³ Margate.	*Uson (Montrose).
†Morecambe Bay Lightship.	§*Wick.

The observers are indicated thus:—* Coastguard, † Lightkeepers, ¹ S. R. Henderson, ² F. M. Cotton, C.E., ³ W. J. Woodruff, ⁴ H. Victor Prigg, ⁵ Marine Biological Station, ⁶ A. Hicks.

§ Stations marked thus send weekly returns for publication in the Weekly Weather Report.

LIST OF STATIONS in the COLONIES and DEPENDENCIES and in FOREIGN COUNTRIES from which RETURNS are received in MANUSCRIPT.

NOTE.—Returns received in printed form are not included in this list.

Station.	Latitude.	Longitude.	Height in Feet above M.S.L.	Order of Station.	Year of Commencement of Observations.	Observer.
MEDITERRANEAN.						
Cyprus, *†Famagusta	35 7 N.	33 57 E.	34	II	1881	L. Bérard,
" *†Kyrenia	35 21 N.	33 19 E.	54	II	1881	P. Michaelide,
" *†Larnaca	34 55 N.	33 37 E.	19	II	1881	P. Nicopoulos,
" *†Limassol	34 40 N.	33 1 E.	26	II	1881	J. Josif,
" *†Nicosia	35 11 N.	33 22 E.	493	II	1881	J. Samaras and T. G. Farhat,
" *†Papho	34 46 N.	32 25 E.	202	II	1881	Y. V. Zachariades.
Gibraltar	30 6 N.	5 21 W.	48	II	1883	Col. R. W. Ford, M.D., C.M.O., Army Medical Department.
Morocco, †Cape Spartel	35 47 N.	5 55 W.	191	II	1893	Edwin C. Hathaway, for Lloyds.
" *†Casablanca	33 37 N.	7 34 W.	4	●	1896	G. H. Ferman.
" *†Mogador	31 30 N.	9 42 W.	19	●	1903	P. W. Wilkinson, II.B.M. Vice-Consul.
" *†Safi	32 17 N.	9 8 W.	40	●	1905	N. A. de Silva.
Syria. Beyrout	33 54 N.	35 28 E.	172	II	1883	A. S. Kheiri for Alfred H. Joy.
Turkey, Smyrna	38 26 N.	17 9 E.	50	III	1908	H. Echiboukdjlar for Rev. Alex. MacLachlan, President, International College.
AFRICA.						
Central :—						
Eastern Soudan, Wadelai	+2 40 N.	31 35 E.	2,200	III	1901	Siri Ram Neb and } for E. Brown, and R. K. Mitter, } W. H. Dawe, T. C. de Silva, } Botanical and T. Remedios, and J. C. } Scientific Lobo. } Department.
Uganda, Entiaba	—	—	—	●	1904	
" Entebbe	0 4 N.	32 27 E.	3,906	III	1896	

[illegible]

• By arrangement with the Colonial Office and the Survey Department of Egypt the returns for these stations are sent in the first instance to the Survey Department, Cairo, and then to the Office for ultimate filing.

* By arrangement with the Consul General and the party responsible for the Department for use in connexion with its Monthly Weather Report. They are sent to the Office for ultimate filing.

† The positions and heights of the stations are those given by the observers, except in cases marked †, for which the information given has been obtained from other sources.

* The Meteorological instruments in use at this Station are lent by the Meteorological Committee.

Barbados ...	...	...	...	...	...	181	II	1895	John R. Bovill.
†*Sombbrero	...	...	...	...	...	30	II	1867	Lightkeepers, for the Board of Trade.
AMERICA.									
Central :—	...	...	...	...	...	—	II	1897	The Ven. Archdeacon S. P. Hendrick.
‡Panama, Colon	...	...	...	...	...	—	II	1887	A. W. Bartlett, Government Botanist.
South :—	...	...	...	...	...	0	⊙	1887	
British Guiana, Georgetown...	...	...	...	...	...	—	II	1859	J. Pearce, for the Board of Trade.
ATLANTIC.									
South :—	...	...	...	...	...	70	II ⊙	—	His Excellency the Governor.
Falkland Islands :—	...	...	...	...	...	—	⊙ R	1885	A. L. C. Hands.
*Cape Pembroke	...	...	...	...	...	1,887	II	1902	J. Homagee.
†Stanley	...	...	...	...	...	—	●	1905	Alfred Porter.
‡St. Helena; St. Matthew's Vicar-	...	...	...	...	...	10	●	1906	R. MacDougall, for the Argentine Fishery
age.	...	...	...	...	...	—	II	—	Company, transmitted by the Governor of
Central, Oak Bank	...	...	...	...	...	—	II	—	the Falkland Islands and the Board of Trade.
St. Paul's Vicarage	...	...	...	...	...	—	II	—	
South Georgia, Grytviken ...	...	...	...	...	...	36	II ⊙	1905	Capt. Lewis H. Tamplin, F.R.A.S.
INDIAN AND PACIFIC OCEANS, &c.									
China :—	...	...	...	...	...	44	II	1906	C. H. Knowles, for Department of Agriculture.
Chinkiang	...	...	...	...	...	—	●	1903	T. P. Porter, H.B.M. Consul.
Fiji :—	...	...	...	...	...	—	II	—	Geo. H. Crocker.
Suva	...	...	...	...	...	181	(I)	1901	T. F. Claxton, Director.
Madagascar :—	...	...	...	...	...	—	II B.	1905	J. G. Talbot, for the Pacific Phosphate
Antananarivo	...	...	...	...	...	—	—	—	Company.
Malden Island	...	...	...	...	...	—	—	—
Manritius, Royal Alfred Observa-	...	...	...	...	...	—	—	—
tory.	...	...	...	...	...	—	—	—
† Ocean Island	...	...	...	...	...	—	—	—

* Lighthouse; contributes register containing observations every 4 hours.

† The positions and heights of the stations are those given by the observers, except in cases marked ‡, for which the information given has been obtained from other sources.

‡ The Meteorological instruments in use at this Station are lent by the Meteorological Committee.

K.—LIST OF PUBLICATIONS ISSUED UNDER THE AUTHORITY OF THE METEOROLOGICAL COMMITTEE OF THE ROYAL SOCIETY (1867 TO 1876), THE METEOROLOGICAL COUNCIL (1877 TO 1905), OR THE METEOROLOGICAL COMMITTEE APPOINTED BY TREASURY MINUTE, MAY 20TH, 1905.*

The list is arranged under the following headings :—

1. Periodical Publications.†
2. Occasional Publications and Reports.
3. Instructions in the use of Instruments, &c.
4. Marine Meteorology.
5. Miscellaneous Publications.

1. Periodical Publications.

Daily Weather Report. Subscription, 5s. per quarter.

Weekly Weather Report. With Appendices and Monthly Supplements priced separately :—

‡1888. Vol. V. (No. 85.) 4d. per week. Annual Volume, including Supplements and Appendices, 21s. 2d.

1889-1907. Vols. VI.-XXIV. 6d. per week. Annual subscription, including Supplements and Appendices, 30s.

1908. In the Press.

Monthly Meteorological Charts of the North Atlantic and Mediterranean and of the Indian Ocean. See Marine Meteorology.

Monthly Weather Report :—

§1884-1887. In Monthly Parts, 1s. 6d. to 2s. 6d. each, except May to December, 1887, which is in wrapper, price 12s.

Monthly and Annual Supplements to the Weekly Weather Report, containing summaries of observations from about 200 stations in the British Isles. 6d. each.

Monthly issue of daily observations at stations of the Second Order and Anemograph Stations, in parts at 2s. each.

Quarterly Weather Report :—

1869-1880. At prices varying from 4s. to 10s. each Quarterly Part.

1877-1880 :—Appendices and Plates are published for these years at 27s. or 28s. per Yearly set.

Annual Volumes :—

Reports of the *Meteorological Committee* of the Royal Society :—

1867-1877. At prices varying from 4d. to 1s. per Report, except 1876-1877, 3s. 5d.

Reports of the *Meteorological Council* :—

1878-1905. At prices varying from 5d. to 1s. 5d., except 1881-5, 4s. 4d.

Reports of the *Meteorological Committee* :—

1905-06. Price 1s. 4d.

1906-07. „ 1s. 7d.

* The publications are sold by Messrs. Wyman and Sons and other agents for the sale of the publications of H.M. Stationery Office; Annual Reports by Parliamentary Booksellers; Pilot Charts and Charts published by the Admiralty, by Messrs. J. D. Potter & Co.

† These have from time to time contained Tables of Mean Values and papers on various Meteorological Investigations. A List of the more important of these contributions to Meteorological knowledge will be found in Appendix XL of the Report for 1903-04.

‡ The publication of the Weekly Weather Report began in February 1878. Annual subscription, including Supplements and Appendices, post paid, 1878-1883, 12s. 6d.; 1884-1887, 21s. 2d.

§ The publication of the Monthly Weather Report was continued after 1887 as a Supplement to the Weekly Weather Report.

1. Periodical Publications—continued.

Observatories and Stations.

*Hourly Readings from the Self-Recording Instruments at the . . .
Observatories :—

1881-1886. In Parts, varying in price from 10s. to 30s. each.

1900 to 1907. 25s. each, or 6d. per month each station. 1908 in the Press.

Hourly Means (*for Five-days and Calendar Months*) of the Readings obtained from the Self-Recording Instruments at the . . . Observatories under the Meteorological Council :—

1887-1899. In Annual Volumes, at prices varying from 15s. to 38s.

Meteorological Observations at Stations of the Second Order :—

†1876-1903. At prices varying from 20s. to 35s.

1904. In the Press.

1908. (See *Monthly issue*.)

Averages :—

Quinquennial table of averages of Temperature, Rainfall, and Sunshine at Stations in the British Isles. Latest issue, for the period ended 1905 (about 150 Stations). 1s.

2. Occasional Publications and Reports.

ATLAS :—

Meteorological Atlas of the British Isles. (No. 53. 1883.) 5s 6d.

CONGRESSES, CONFERENCES, &c., Reports of Proceedings :—

Leipzig. 1872. (Non-Official, No. 6.) 1s.

Vienna. 1873. (No. 21.) 1s.

Vienna and Utrecht. 1873 and 1874. (Non-Official, No. 9.) 1s. 6d.

London. 1874. Maritime Meteorology. (No. 23.) 2s.

London. 1876. With Supplement. (Non-Official, No. 11.) 2s.

Utrecht. 1878. (Non-Official, No. 13.) 6d.

Rome. 1879. (No. 36.) 1s. 6d.

Berne. 1880. (Non-Official, No. 14.) 1s.

Copenhagen. 1882. (Non-Official, No. 15.) 2s. 6d.

Paris. 1885. (Non-Official, No. 16.) 1s. 1896. (No. 127.) 1s. 1907. (In the Press.)

Zürich. 1888. (Non-Official, No. 17.) 4d.

Munich. 1891. (No. 102.) 1s. 6d.

Upsala. 1894. (No. 115.) 1s.

St. Petersburg. 1899. (No. 148.) 2s.

Southport. 1903. (No. 164.) 2s.

Innsbruck. 1905. (No. 195.) (In the Press.)

Report on Weather Telegraphy and Storm Warnings. 1873. (Non-Official, No. 8.) 6d.

Reports . . . on Atmospheric Electricity, Maritime Meteorology, and Weather Telegraphy. 1878. (Non-Official, No. 12.) 2s.

Fog :—

London Fog Inquiry, 1901-03. (No. 160. 1904) :—

Report of the Council, with Report by R. G. K. Lempfert, M.A. (1904). 2s. 6d.

Report by Captain Alfred Carpenter, R.N., D.S.O. (1903). 2s.

FOREIGN AND COLONIAL STATIONS :—

Contribution to the Meteorology of Japan.—By Staff-Com. Thomas H. Tizard, H.M.S. "Challenger." (No. 28. 1876.) [Out of Print.]

* For the years 1874-1880 the Hourly Readings were issued in lithographed form. Price 20s. per annum. The Hourly Readings for Kew and Valencia are for the years 1895-1900.

† The Observations at Stations of the Second Order for 1873-75 will be found in the Quarterly Weather Report for the respective years.

2. Occasional Publications and Reports—continued.**FOREIGN AND COLONIAL STATIONS—continued.**

Report on the Meteorology of Kerguelen Island.—By Rev. S. J. Perry, S. J., F.R.S. (No. 37. 1879.) 3s.

Meteorological Observations at the Foreign and Colonial Stations of the Royal Engineers, and the Army Medical Department, 1852–1886. (No. 83. 1890.) 23s.

Meteorological Observations made at Sanchez, Samaná Bay, St. Domingo, 1886–1888.—By the late W. Reid, M.D. (No. 89. 1890.) 8s. 6d.

Climatological Observations at Colonial and Foreign Stations:—

I.:—Tropical Africa, 1900–1902, with Summaries and Map.—By E. G. Ravenstein, F.R.G.S. (No. 165. 1904.) 6s.

RAINFALL:—

Rainfall Tables of the British Isles for 1866–80. Compiled by G. J. Symons, F.R.S. (No. 47. 1883.) 7s. 6d.

Rainfall Tables of the British Islands, 1866–90. (No. 114. 1897.) 6s.

Diurnal Range of Rain at the Seven Observatories in connection with the Meteorological Office, 1871–1890. (No. 143. 1900.) 2s. 6d.

SUNSHINE:—

Sunshine Records of the United Kingdom for 1881. (No. 56. 1883.) 4s.

Ten Years' Sunshine in the British Isles, 1881–90. (No. 98. 1891.) 2s.

TEMPERATURE:—

Temperature Tables for the British Islands. (No. 154. 1902.) 10s. 6d.
Supplement:—Difference Tables for each Five Years for the Extrapolation of Mean Values. 3s.

WIND.

The Beaufort Scale of Wind-force. Report of the Director of the Meteorological Office upon an Inquiry, with a Paper by G. C. Simpson, M.Sc., and Notes by Sir G. H. Darwin, K.C.B., F.R.S., W. H. Dines, F.R.S., and Commander Campbell Hepworth, C.B., R.N.R., Marine Superintendent. (No. 180. 1906.) 1s. 6d.

3. Instructions in the use of Instruments, &c.

Barometer Manual. (No. 8. 1871.) [Out of Print.]

Barometer Manual for the Use of Seamen. With an Appendix on the Thermometer, Hygrometer, and Hydrometer. Fifth Edition, extensively Revised. 1905. (No. 61.) 3d.

Fishery Barometer Manual. New Edition, 1887. (No. 3.) 6d.

Instructions for Meteorological Telegraphy. New Edition, 1906. (No. 2.) Prepared for the use of Observers exclusively.

The Observer's Handbook. A new Edition of Dr. Scott's Instructions in the use of Meteorological Instruments. (No. 191.) 3s.

Hints to Meteorological Observers in Tropical Africa, with Instructions for taking Observations, and Notes on Methods of recording Lake Levels. Second Edition, revised 1907. (No. 162.) 9d.

FORECASTING:—

Aids to the Study and Forecast of Weather.—By W. Clement Ley, M.A. (No. 40. 1880.) 1s.

Principles of Forecasting by means of Weather Charts.—By the Hon. Ralph Abercromby, F.R.Met.Soc. Second Edition, Revised, 1885. (No. 60.) [Out of Print.]

4. Marine Meteorology.**CHARTS:—***Arabian Sea:—*

Daily Weather Charts for the period of six weeks ending June 25, 1883, to illustrate the tracks of two cyclones in the Arabian Sea. (No. 80. 1891.) 10s.

4. Marine Meteorology—continued.

CHARTS—continued.

Atlantic :—

Charts of Meteorological Data for the Nine 10° Squares of the Atlantic, which lie between 20° N. and 10° S., and extend from 10° to 40° W., with accompanying Remarks, ending with the Best Routes across the Equator. (No. 27. 1876.) 24s.

Monthly Current Charts for the Atlantic Ocean. From information collated and prepared in the Meteorological Office. Published by the Admiralty. (No. 132. 1897.) 10s.

Atlantic (North) :—

Charts of Meteorological Data for Square 3, Lat. 0° – 10° N., Long. 20° – 30° W., and Remarks to accompany the Monthly Charts, which show the Best Routes across the Equator for each Month, &c. (No. 20. 1874.) 20s.

Charts illustrating the Weather of the North Atlantic Ocean in the Winter of 1898–99. (No. 142. 1901.) 6s. 6d. [Out of Print.]

Currents and Surface Temperature of the North Atlantic Ocean, from the Equator to Latitude 40° N., for each Month of the Year. With a General Current Chart. (No. 12. 1872.) 2s. 6d.

Discussion of the Meteorology of that Part of the Atlantic lying North of 30° N., for the eleven days ending 8th February, 1870. With Charts. (No. 13. 1872.) 5s.

Meteorology of the North Atlantic during August, 1873, with 31 Synoptic Charts. (No. 32. 1878.) With book of Charts, 15s.

Synchronous Weather Charts of the North Atlantic and the adjacent Continents, 1st August, 1882, to 3rd September, 1883. Parts I. to IV. (33 sheets each). (No. 71. 1886.) 17s. each Part.

Atlantic (South) :—

Charts showing the Surface Temperature of the South Atlantic Ocean in each month of the Year. (No. 4. 1869.) 2s. 6d.

Wind Charts for the Coastal Regions of South America, from information collated and prepared in the Meteorological Office. Published by the Admiralty. (No. 159. 1902.) 7s.

Monthly Wind Charts of the South Atlantic. Published by the Admiralty. (No. 168. 1903.) 6d. each.

The relation between Pressure, Temperature, and Air Circulation over the South Atlantic Ocean. (No. 177. 1905.) 9d.

Atlantic, Indian, and Pacific Oceans :—

Charts showing the Surface Temperature of the Atlantic, Indian, and Pacific Oceans. (No. 59. Second Edition, 1903.) 4s. 6d.

Charts showing the Mean Barometric Pressure over the Atlantic, Indian, and Pacific Oceans. (No. 76. 1887.) 10s. 6d. Supplementary Chart, 6d.

Atlantic (North) and Mediterranean :—

Monthly Meteorological Charts, commencing April, 1901. (No. 149.) 6d. each. Subscription for one year, 5s. (exclusive of postage).

Indian Ocean :—

Monthly Current Charts for the Indian Ocean, from information collated and prepared in the Meteorological Office. Published by the Admiralty. (No. 124. 1896.) 7s.

Monthly Meteorological Charts of the Indian Ocean and Red Sea. Commencing May, 1906. (No. 181.) 6d. each. Subscription for one year 5s. (exclusive of postage.)

Indian Ocean (North) :—

Meteorological Charts of the portion of the Indian Ocean adjacent to Cape Guardafui and Ras-Hafún. (No. 92. 1891.) 6s.

Indian Ocean (South) :—

Cyclone Tracks in the South Indian Ocean, from information compiled by Dr. Meldrum, C.M.G., F.R.S. (No. 90. 1891.) [Out of print.]

Meteorological Charts for the Ocean District adjacent to the Cape of Good Hope, with accompanying Remarks. (No. 43. 1882.) Charts, 25s.; Remarks, 7s.

4. Marine Meteorology—continued.**CHARTS—continued.***Pacific Ocean :—*

Quarterly Current Charts for the Pacific Ocean, from information collated and prepared in the Meteorological Office. Published by the Admiralty. (No. 134. 1897.) 5s.

Wind Charts for the Coastal Regions of South America, from information collated and prepared in the Meteorological Office. Published by the Admiralty. (No. 159. 1902.) 7s.

Red Sea :—

Meteorological Charts of the Red Sea. (No. 106. 1895.) 21s.

Southern Ocean :—

Meteorological Charts of the Southern Ocean between the Cape of Good Hope and New Zealand. (No. 123. 1907.) [Second Edition. 6s.]

OTHER PUBLICATIONS ON MARINE METEOROLOGY :—

Report to the Committee of the Meteorological Office on the Meteorology of the North Atlantic.—By Capt. H. Toynbee, F.R.A.S. (Non-Official, No. 2. 1869.) 1s.

Contributions to our Knowledge of the Meteorology of Cape Horn and the West Coast of South America. (No. 11. 1871.) 2s. 6d.

Routes for Steamers from Aden to the Straits of Sunda and back. Translated from a Paper issued by the R. Meteor. Inst. of the Netherlands. (Non-Official, No. 4. 1872.) [Out of print.]

On the Winds, &c. of the North Atlantic along the Tracks of Steamers from the Channel to New York. Translated from a Paper issued by the Deutsche Seewarte, Hamburg. (Non-Official, No. 5. 1872.) 6d.

Notes on the Form of Cyclones in the Southern Indian Ocean.—By C. Meldrum, M.A., F.R.S. (Non-Official, No. 7. 1873.) [Out of print.]

Contributions to our Knowledge of the Meteorology of the Antarctic Regions. (No. 18. 1873.) 2s.

On the Physical Geography of the part of the Atlantic which lies between 20° N. and 10° S. and extends from 10° to 40° W. A Paper read before the British Association at Bristol, in August, 1875.—By Capt. H. Toynbee, F.R.A.S. (Non-Official, No. 10. 1876.) [Out of print.]

Contributions to our Knowledge of the Meteorology of the Arctic Regions. (Official, No. 34. 1885.) Vol. I.: Part I., 2s.; II., 10s.; III., 6s.; IV., 5s.; V., 6s.

Report on the Gales experienced in the Ocean District adjacent to the Cape of Good Hope between Lat. 30° and 50° S. and Long. 10° and 40° E.—By Capt. H. Toynbee, F.R.A.S. (No. 44. 1882.) 7s. 6d.

5. Miscellaneous Publications.

Report of an Inquiry into the Connexion between Strong Winds and Barometrical Differences.—By Robert H. Scott. (Non-Official, No. 1. 1868.) 6d.

Report to the Committee of the Meteorological Office on the use of Isobaric Curves.—By Capt. H. Toynbee, F.R.A.S. (Non-Official, No. 3. 1869.) [Out of print.]

Report on the Storm of October 13-14, 1881.—By Robert H. Scott, F.R.S. (No. 46. 1882.) 1s. 6d. [Out of print.]

Harmonic Analysis of Hourly Observations of Air Temperature and of Pressure at British Observatories. (No. 93. 1891.) 12s.

Life History of Surface Air Currents. A Study of the Surface Trajectories of Moving Air.—By W. N. Shaw, Sc.D., F.R.S. (Director of the Meteorological Office) and R. G. K. Lempfert, M.A. (No. 174. 1906.) 7s. 6d.

Barometric Gradient and Wind-Force. Report to the Director of the Meteorological Office by E. Gold, M.A., Fellow of St. John's College, Cambridge, Superintendent of Instruments. (No. 190.) Price 2s. 6d.

APPENDIX III.

LIST of CAPTAINS who have sent in Logs classed as "Excellent" during the year ended March 31, 1908. Figures are attached to the name of each observer to show the number of "Excellent" logs which he has supplied during the whole time of his co-operation with the Office.

Name of Captain.	Number of "Ex- cellent" Logs.	Ship.
Bayldon, F. J., Lieut., R.N.R.	5	S.S. "Moresby."
Bennett, C. D., Commr., R.N.R.	9	S.S. "Macedonia."
Carnon, J. R., Lieut., R.N.R...	2	S.S. "Caledonian."
Decent, S. W.	2	S.S. "Druidstone."
East, H. Rayner, Lieut., R.N.R.	2	S.S. "Clan Macfadyen."
Ellery, W.	2	S.S. "Maharatta."
Gates-James, E., Lieut., R.N.R.	3	Ship "Lynton."
Harris, G. H.	5	S.S. "Worcestershire."
Hemming, H. C.	2	S.S. "Den of Ogil."
Heron, A.	4	S.S. "Amberton."
Hurford, R.	6	S.S. "Ribera."
Kempson, C. H., Lieut., R.N.R.	3	S.S. "Athenic."
Lennox, W. J.	3	S.S. "Clan Macintosh."
Millican, J. W.	30	S.S. "Greta Holme."
Montford, G. M., Commr., R.N.R.	4	S.S. "Sunda."
Mullan, F. C., F.R.G.S. ...	23	S.S. "Ramsay."
Notley, F. B. Stuart, Lieut., R.N.R.	2	S.S. "Japan."
Pattman, R.	5	Barque "Loch Torridon."
Pritchard, B. W. S.	1	S.S. "Ben Nevis."
Robertson, T., F.R.S.G.S. ...	1	S.S. "Scotia" (whaler).
Ruthven, J. F.	3	S.S. "Orontes."
Simpson, Alexander, F.R.Met. Soc.	47	S.S. "Moravian."
Tait, T. A.	6	S.S. "Wellington."
Watt, J. F.	1	S.S. "Lusitania."
White-Parsons, V. C.	2	S.S. "Wakanui."

APPENDIX IV.

METEOROLOGICAL REGISTERS received during the Year 1907-08.

(1.)—From the ROYAL NAVY.—*Meteorological Logs* (17).

H.M. Ship.	Commanding Officer.	Officers Observing.	No. of Registers received.	Duration of Observations.	Voyage.
"Bramble" ...	?	Lieut. Harry L. L. Pennell ...	1	Mths. Days. 6 1 20	Cape of Good Hope and Australia. China Station.
"Cadmus" ...	B. L. Majendie (Com- mander).	...	*2	7 1	
"Egeria" ...	F. C. Learmonth (Captain).	Lieut. J. R. Harvey, and Lieut. O. T. Hodgson.	2	9 12	Surveying in the vicinity of Esquimaux, British Columbia.
"Implacable" ...	Geo. E. Patey, M.V.O. (Captain).	Commander O. W. C. Strickland	*2	7 6	Mediterranean Station.
"Fantome" ...	Mark E. F. Kerr, M.V.O. (Captain).	...	1	3 28	
"Hermione" ...	E. C. Hardy (Comman- der).	Lieut. F. N. Stagg ...	2	8 0	Aden to Torres Straits; and sur- veying near Cairns, North Queensland.
"Merlin" ...	Cecil F. Dampier (Cap- tain).	...	†	8 22	Cape of Good Hope Station.
"Mutine" ...	J. F. Parry (Captain) ...	...	1	1 5	
"Venerable" ...	V. R. Brandon (Acting Commander).	Lieut. A. F. Powell ...	3	1 2	Surveying, Red Sea and China Sea.
"Waterwitch" ...	F. H. Walter (Comman- der).	...	1	9 18	
	C. E. Monro (Captain)...	Lieut. C. I. Greer ...	1	4 1	Surveying, West Coast of Africa.
	H. W. Savory, M.V.O. (Captain).	Commander C. W. C. Strickland ...	1	0 24	Mediterranean Station.
	R. W. Glennie (Com- mander).	Lieut. C. H. Fforde ...	1	6 23	Surveying, China Station.

(2.)—SPECIAL SERVICE.—Uncommissioned Ships (4).

"Conway," H.M.S. ...	H. W. Broadbent, Lieut., R.N.R.	Cadets ...	...	...	...	1	3	10	Off Birkenhead.
"Monarch," H.M.T.S.	J. Wrake ...	E. R. Hutchons, Sub-Lieut., R.N.R.; F. G. Ramsay, Sub-Lieut., R.N.R.; G. H. Flavel, Sub-Lieut., R.N.R.	...	...	...	2	3	21	Cable repairing, United Kingdom Coasts.
"Worcester," H.M.S.	D. Wilson Barker, Commr. R.N.R., F.R.Met. Soc., F.R.S.E.	Cadets ...	...	...	...	1	4	2	Off Greenhithe.

(3.)—From the MERCANTILE MARINE.—Meteorological Logs (260).

Ship.	Captain.	Officers Observing.	No. of Registers received.	Duration of Observations.	Voyage.
"Afric," S.S. ...	F. B. Howarth, Lieut., R.N.R.	...	† 1	Mths. Days. 1 4	Cape of Good Hope to Albany.
"African Prince," S.S.	C. B. Andersson ...	E. Purdy ...	2	6 10	Monte Video, New York, Cape Town, Calcutta, Boston, U.S.A., via Suez.
"Amberton," S.S. ...	Andrew Heron ...	J. Colvin; J. Donnelly; Percy F. Judd.	1	4 21	China, Java, via Cape; United States, via Suez.
"Assyria," S.S. ...	J. Hamilton ...	F. Lake; G. McNeil; S. Rowe	3	9 28	Calcutta via Suez.
"Asuncion de Larrinaga," S.S.	H. C. Krauer ...	J. Duncan; R. A. Ferns ...	1	3 17	River Plate, U.S.A.
"Athenic," R.M.S. ...	C. H. Kempson, Lieut., R.N.R.	G. A. Alcock, Lieut., R.N.R.; V. W. Hickson, Lieut., R.N.R.; J. L. Jones; J. M. Morrow; E. H. Irvine; J. A. Alcock.	3	8 23	New Zealand via Capes.

* And Aneroidograms.

† Aneroidograms.

‡ In MS., with self-recorded curves of Temperature, Pressure and Hygrometry.

METEOROLOGICAL REGISTERS received during the Year 1907-08—continued.

(3.)—From the MERCANTILE MARINE.—*Meteorological Logs*—continued.

Ship.	Captain.	Officers Observing.	No. of Registers received.	Duration of Observations.	Voyage.
"Aorangi," R.M.S. ...	J. D. S. Phillips	— Mason ; — Grierson ; — Jarvis ; — Carter ; — Cooper ; — Hudson.	2	Mths. Days. 8 20	Trans-Pacific, Brisbane and British Columbia.
"Active," S.S. ...	Alexr. Murray	W. Kinnes ...	1	1 10	Hudson Strait, Whaling.
"Atrato," R.M.S. ...	F. W. Watson	A. E. Hernandez ...	1	3 24	West Indies, Gulf of Mexico, and New York.
"Baron Ardrossan," S.S. ...	S. L. Kennedy	... ..	1	2 0	China, Japan, <i>via</i> Suez.
"Barranca," S.S. ...	W. Long	R. B. Drake ; A. E. Johnson ; G. E. Martin ; S. Pitts ; R. H. Smith.	3	10 8	Port Limon.
"Barton," S.S. ...	F. W. Thompson	I. J. Lewis ; R. R. Elliott ...	1	2 18	Rio Janeiro, Mobile.
"Beira," S.S. ...	F. O. Potts	D. Scott ; L. Lewis ; W. Earp ...	1	3 16	Bombay <i>via</i> Cape and Suez.
"Bellagio," S.S. ...	P. McLachlan	J. Kerr ; J. McMurdo ; W. Lusk ; W. McGhie ; T. Tynan.	2	5 25	W. C. S. A. <i>via</i> Magellan.
"Bencleuch," S.S. ...	A. L. Reid	W. Gifford ; E. Walters ; C. K. Brown	1	3 23	Japan, Akyab, <i>via</i> Suez.
"Benlarig," S.S. ...	A. Wallace	D. T. Calley ; P. Scott ; J. C. Sinclair	2	7 7	China, Japan, Bassein, <i>via</i> Suez.
"Ben Nevis," S.S. ...	B. W. S. Pritchard	N. Gray ; A. S. Mackay ; J. R. Jones ; S. O'Brien.	1	11 0	Australia, China, Manila, W.C.S.A., U.S.A., <i>via</i> Cape.
"Breconshire," S.S. ...	J. M. Tomlinson	W. Sandeman ...	2	7 10	China, Japan, East Indies, <i>via</i> Suez.
"Britannia," S.S. ...	Sidney Barcham	F. H. Ayres, Sub-Lieut., R.N.R. ; W. R. Calder, Sub-Lieut., R.N.R. ; G. Lake ; W. G. W. Cherry ; H. R. Rhodes, Sub-Lieut., R.N.R. ; W. F. Budgen, Sub-Lieut., R.N.R. ; H. de Denne, Sub-Lieut., R.N.R.	3	8 14	Australia <i>via</i> Suez.
"Bombay," S.S. ...	H. A. Vicary	T. J. Fletcher ; A. Topp ; C. D. Symons	1	4 7	Calcutta <i>via</i> Cape and Suez.

"Buceros," S.S.	...	J. Hutcheon	...	A. C. Taylor	...	1	3	0	India, U.S.A. <i>viâ</i> Cape and Suez.
"Caledonian," S.S.	...	J. R. Carnon, Lieut., R.N.R.	...	J. C. Hayes; R. D. Allinson; A. N. Griffiths.	...	2	6	11	Boston, U.S.A.
"Castalia," S.S.	{	F. S. Blight	...	G. K. Wilson; T. W. Leslie; J. C. Jackson.	{	2	3	5	Bombay <i>viâ</i> Suez.
"Cayo Soto," S.S.		R. H. Browne, Sub-Lieut., R.N.R.	...		{	1	1	19	
"Cevic," S.S.	...	E. C. Radder	...	R. Newlands; J. Anderson; T. Beer; A. Gibbons; A. Bentley.	2	2	6	16	Central America.
"Cevic," S.S.	...	W. H. Clarke	...	M. Owen; J. H. Jones; J. Evans; R. Swan; A. Tyrer; O. E. Watling; A. Wandless; C. Alexander; A. L. Owens.	2	2	6	9	New York.
"Cheshire," S.S.	...	H. P. Langston	...	W. Fynn; R. L. Tocque; F. T. White.	1	1	2	2	Rangoon <i>viâ</i> Suez.
"China," S.S.	...	E. Street	...	F. H. W. Higgins, Sub-Lieut., R.N.R.; A. Martell; F. W. Hodges, Sub-Lieut., R.N.R.; F. W. J. Carpendale; E. F. Hannan.	2	2	6	20	Bombay; Shanghai, Sydney, N.S.W., <i>viâ</i> Suez.
"Chairipo," S.S.	...	E. F. Jones	...	E. West; A. W. Hartley; G. B. Telfer	1	1	3	24	Port Limon.
"City of Corinth," S.S.	...	James R. Rae	...	C. H. Boyd-Bell; Jas. McArthur	2	2	4	1	Calcutta <i>viâ</i> Suez.
"Clan Colquhoun," S.S.	...	H. Sumner	...	G. Scott; E. Haworth; P. Walker	1	1	3	17	India <i>viâ</i> Cape and Suez.
"Clan Lindsay," S.S.	...	C. MacMahon	...	C. Laird; F. Temple; P. G. de Gruchy; J. Belfrage; J. Lawson; W. Shearer.	2	2	5	13	East Indies <i>viâ</i> Cape and Suez.
"Clan Macfadyen," S.S.	{	H. Rayner East, Lieut., R.N.R.	{	F. W. Last, Sub-Lieut., R.N.R.; R. Wardrop; J. T. Wooldridge; J. J. Harley; G. Russell.	1	3	3	1	India <i>viâ</i> Cape and Suez.
"Clan Macintosh," S.S.		F. W. Barber		W. MacDonald; W. Wright; H. Giles; R. Horn; F. Fells; J. Middleton; J. Goodacre; E. Briard.	3	2	8	15	
"Clan Macintyre," S.S.	...	Alex. R. Weir	...	J. B. Gourlay; H. M. Rodger; J. Mackenzie; C. Geen; F. E. Hamilton.	2	2	5	20	Batavia, Chittagong, <i>viâ</i> Cape and Suez.
"Clan Macpherson," S.S.	...	S. Beer	...	J. G. McLean; C. Geen; G. F. Breese; J. Butcher; D. Davenport Jones.	2	2	4	6	Bombay, Chittagong, <i>viâ</i> Suez.

METEOROLOGICAL REGISTERS received during the Year 1907-08—continued.

(3.)—From the MERCANTILE MARINE.—*Meteorological Logs*—continued.

Ship.	Captain.	Officers Observing.	No. of Registers received.	Duration of Obser- vations.	Voyage.
"Clan Ogilvy," S.S. ...	R. C. Jones ...	F. H. Malpas; A. Edgar; W. Smith; W. Thomson; F. D. Matthews; P. A. Watson.	3	Mths. Days. 7 7	East Indies <i>via</i> Cape and Suez.
"Clan Sutherland," S.S.	J. W. Taylor, Lieut., R.N.R.	P. M. MacFarlane; L. S. George; D. E. Gillibrand; A. Mackinley; C. L. Matthews.	3	7 18	India <i>via</i> Cape and Suez.
"Clan Urquhart," S.S.	J. A. McPherson ...	C. W. Henderson; D. McKinnon; R. Logan; H. K. Guttridge; B. Moss; J. Newell; E. Sheppard; F. Beard.	2	5 5	East Indies <i>via</i> Cape and Suez.
"Corinthian," R.M.S. ...	H. F. David, Lieut., R.N.R.	A. Pawley	2	6 0	New Zealand <i>via</i> Capes.
"Danube," R.M.S. ...	W. J. Dagnall ...	R. E. L. Treeweeks; J. Bigsworth; G. H. Lloyd; C. Delahay; G. Hill.	3	8 22	River Plate.
"Den of Ogil," S.S. ...	H. C. Hemming ...	E. Twiddle; A. J. MacLure; T. D. Edwards.	1	5 13	China, Japan, Ocean Island, <i>via</i> Suez.
"Dominic," S.S. ...	W. Smale ...	J. B. Pearce; J. A. Burns; J. Fair- weather; F. E. Willis; R. Venning	3	5 13	U.S.A. and Brazil.
"Druidstone," S.S. ...	S. W. Decent ...	H. Haines; J. Wood; P. O. Hughes	3	8 2	Black Sea.
"Drumeldrie," S.S. ...	E. A. Woodward ...	V. Bowthwaite; T. M. Day; W. McClay.	1	2 2	Buenos Aires.
"Dunbar Moor," S.S. ...	W. B. Barton ...	G. Knott; G. A. Whitfield ...	2	6 12	Karachi, <i>via</i> Suez; Genoa, Monte Video, Karachi, <i>via</i> Cape and Suez.
"Durham Castle," S.S.	G. K. Gandy, Lieut., R.N.R.	N. Aplin	1	1 15	Cape Town.
	F. J. Moseley, Commr., R.N.R.	... ..	1	3 1	

"Empress of India," R.M.S.	E. Beetham, R.N.R.	Lieut.,	W. F. Boaden, Sub-Lieut., R.N.R.; T. J. Harrison; J. W. Harrison.	2	7	12	Trans-Pacific, B. Columbia and China, <i>via</i> Japan.
"Empress of Japan," R.M.S.	H. Pybus, R.N.R.	Commr.,	?	2	8	4	Trans-Pacific, B. Columbia and China, <i>via</i> Japan.
"Egypt," S.S.	{ J. R. London F. R. Summers	...	R. T. Gallon; D. Asbury; S. Richard- son; R. Holland, Sub-Lieut. R.N.R.; R. M. Gardner; F. E. French, Sub- Lieut., R.N.R.; S. C. Patterson, Lieut., R.N.R.	2	6	25	Bombay <i>via</i> Suez.
"East Point," S.S.	L. R. W. Beavis	...	H. J. Young; T. M. Moore; H. Simms	1	1	4	Philadelphia.
"Glamorganshire," S.S.	H. C. Norris	...	G. Houlgrave, Lieut., R.N.R.; T. A. Tyson; A. W. Day; — Hanna.	2	7	9	China, Japan, <i>via</i> Suez.
"Glenelg," S.S.	Alex. Hart	...	W. F. Cowrie; J. Miller; J. H. Short; D. L. Muirhead.	1	3	20	Zanzibar, Bombay, <i>via</i> Suez.
"Glenlee," S.S.	{ J. T. Norrie T. R. Sloane	...	D. M. Culloden; J. Gilmore; A. W. Forbes; R. McDowall; G. Rougnie.	1	4	8	Australia, India, <i>via</i> Cape and Suez.
"Greta Holme," S.S.	J. W. Millican	...	T. Stark; W. E. Parkes	2	7	18	Newport News, Sabang, Batavia, <i>via</i> Cape and Suez.
"Hostilins," S.S.	H. R. C. Lockyer	...	...	1	1	26	Buenos Aires, Mauritius, <i>via</i> Cape.
"India," S.S.	F. W. Vibert, Commr., R.N.R.	Commr.,	H. C. Davis, Sub-Lieut., R.N.R.; H. J. Smith; H. P. Comyn, Sub- Lieut., R.N.R.; W. G. Searle; C. L. Soady; F. U. Archer.	3	8	11	Monte Video. Sydney, N.S.W., <i>via</i> Suez.
"Ionic," R.M.S.	J. O. Carter, Commr., R.N.R.	Commr.,	S. Crosthwaite; W. Paul; A. E. Harbord; R. O. Jones.	2	5	27	New Zealand <i>via</i> Capes.
"Japan," S.S.	{ F. B. Stuart Notley, Lieut., R.N.R. C. J. Denny, Lieut., R.N.R.	...	D. Asbury; R. M. C. Nicholl; E. Robinson, Sub-Lieut., R.N.R.; J. Plumpton; A. F. Chaplin, Sub- Lieut., R.N.R.; J. Harvey.	2	5	29	Calcutta, Japan, <i>via</i> Suez.
"Jason," S.S.	T. G. Steeves	...	H. Shackleton; G. W. Allan; J. R. Scott.	2	5	18	China, Japan, <i>via</i> Suez.
"Kaikoura," S.S.	A. W. McKellar, Lieut., R.N.R.	Lieut.,	R. P. Bassett; E. E. Kettle; G. Graham.	1	3	3	New Zealand <i>via</i> Capes.
"Kaipara," S.S.	N. R. de la Cour Corn- wall, Lieut., R.N.R.	...	— Vine; W. B. Holdstock; — Harris.	1	3	1	New Zealand <i>via</i> Capes.

METEOROLOGICAL REGISTERS received during the Year 1907-08—continued.

(3.)—From the MERCANTILE MARINE.—*Meteorological Logs*—continued.

Ship.	Captain.	Officers Observing.	No. of Registers received.	Duration of Observations.	Voyage.
"Kilbride," S.S. ...	A. J. Gibson ...	B. McCallum ; J. Mackenzie ; Wm. Lane.	1	Mths. 3 Days. 2	Calcutta <i>via</i> Cape and Suez.
"Kildonan Castle," S.S.	J. Tyson ...	R. W. Goodacre ; N. Aplin ; H. P. Basden Smith, Lieut., R.N.R. ; —, Linggard.	2	6 29	Cape Town.
"Kilkerran," S.S. ...	Thos. Smith ...	J. MacMillan ; H. Horn ; F. Fife ...	1	8 3	China, Japan, New York, India, <i>via</i> Cape and Suez.
"Kumara," S.S. ...	A. Morton ...	G. B. Davidson ; A. Hyde ; F. Sales ; ?	1	3 3	New Zealand <i>via</i> Capes.
"Lake Michigan," S.S.	H. Parry ...	...	1	3 20	Canada.
"La Plata," S.S. ...	W. H. Bennett Trigge, Lieut., R.N.R.	Chas. M. Hadow ...	1	4 3	West Indies, Colon, New York.
"Loch Katrine," Barque.	Wm. Anderson ...	J. H. Bull ...	1	6 25	Melbourne <i>via</i> Capes.
"Loch Tay," S.S. ...	James Stephen ...	H. T. Hay ; G. G. Paterson ; W. Bayne	1	3 2	Singapore, Rangoon, <i>via</i> Suez.
"Loch Torridon," Barque.	R. Pattman ...	I. D. Llewellyn ...	1	6 29	Melbourne <i>via</i> Capes.
"Lord Roberts," S.S.	J. B. Boal ...	W. A. Johnstone ; J. C. Watson ...	1	3 26	Coquimbo <i>via</i> Magellan.
"Lusitania," R.M.S. ...	J. B. Watt ...	Guy R. Dolphin, Lieut., R.N.R. ; Herbert C. Mayo, Lieut., R.N.R. ; Walter C. Battle, Sub-Lieut., R.N.R.	1	0 15	New York.
"Lynton," Ship ...	E. Gates-James, Lieut., R.N.R.	W. F. Stevens ; F. R. Bishop ...	1	17 10	San Francisco, Cal., Puget Sound, Australia, W.C.S.A., Puget Sound.

"Macedonia," S.S. ...	C. D. Bennett, Commr., R.N.R.	Sidney Finch, Lieut., R.N.R.; B. J. Ohlson, Sub-Lieut., R.N.R.; A. H. Ayres, Sub-Lieut., R.N.R.; G. W. Taylor, Sub-Lieut., R.N.R.; L. Unicum; R. C. D. Isgar, Sub-Lieut., R.N.R.; J. Hartley.	4	9	11	Bombay, Shanghai, Australia, via Suez.
"Magdalena," R.M.S.	F. H. M. Custance, Lieut., R.N.R.	C. Rymer-Jones; A. Thomson; J. Spink; C. Gordon-Canning; S. L. Smith.	1	3	2	Buenos Ayres, West Indies, New York, Gulf of Mexico.
"Mahratta," S.S. ...	W. Ellery	W. Gregory; J. Follett; W. Grundy	2	7	20	Calcutta via Suez.
"Manchester Corporation," S.S.	P. J. Heath	H. Wilkinson; R. Smith; T. A. Brooks.	1	3	21	Philadelphia.
"Manistee," S.S. ...	D. Reside	R. S. Osbon; J. Johnston; H. Deane;	1	3	27	Port Limon.
"Maori," S.S. ...	G. Nicole	M. J. Swords; G. Ernst.	2	6	25	New Zealand via Capes.
"Matina," S.S. ...	E. W. Castle	H. Roberts; G. M. Andrews; C. L. Nott.	3	10	2	Port Limon.
"Meinwen," Barque...	R. H. Potter, F.R. Met. Soc.	H. Spencer; W. G. Brimecombe; A. Johnson.	1	7	8	Melbourne via Capes.
"Merionethshire," S.S. ...	C. H. Burch	—, Peake; —, James; —, Letts ...	1	4	4	China, Japan via Suez.
"Miami," S.S. ...	J. H. H. Scudamore, Sub-Lieut., R.N.R.	F. Downes; L. Sinclair; C. Pratt ...	1	3	15	Port Limon.
"Minia," S.S. ...	W. G. Squares de Carteret	J. Adams; R. Wylie; M. J. Comyn;	1	9	8	Cable work near Nova Scotia.
"Monmouthshire," S.S.	G. E. Warner, Lieut., R.N.R.	R. A. Rayner.	2	7	15	China, Japan, Rangoon, East Indies, via Suez.
"Monomoy," S.S. ...	A. J. A. Mann	A. Williams; E. J. Luce; I. C. Hancock; J. Day.	1	3	2	Galveston.
"Mooltan," S.S. ...	G. C. Henning, Commr., R.N.R.	T. P. Smardon ...	3	8	3	Sydney, N.S.W., via Suez.
"Moravian," S.S. ...	Alex. Simpson, F.R. Met. Soc.	H. J. Feakes, Sub-Lieut., R.N.R.; E. J. Thornton, Sub-Lieut., R.N.R.; W. H. F. Warren, Sub-Lieut., R.N.R.; L. D. Browne Clayton; A. C. Brooke Webb, Sub-Lieut., R.N.R.; R. G. Oxford.	3	9	10	Melbourne via Cape.

METEOROLOGICAL REGISTERS received during the Year 1907-08—continued.

(3.)—From the MERCANTILE MARINE.—*Meteorological Logs*—continued.

Ship.	Captain.	Officers Observing.	No. of Registers received.	Duration of Observations.	Voyage.
"Morning," S.S.	Wm. Adams	Sandon Perkins	1	Mths. Days. 6 24	Davis Strait, Whaling.
"Neapolitan Prince"	{ A. B. W. Sheppard, Lieut., R.N.R. W. H. Astley	{ — Melliker; S. Williams.	2	5 17	New York and Naples.
"Nicaraguan," S.S.	C. E. Shacklock	F. Smith; L. W. Potts; A. G. Carter; A. P. Percival.	1	0 13	Gulf of Mexico.
"Nicoya," S.S.	S. H. Simmons	W. G. Brimecombe; A. Riseley; A. Belyea; H. Deane; R. D. Clinch.	2	4 12	Port Limon.
"Nonsuch," S.S.	A. G. Alston, Lieut., R.N.	R. H. Graves; R. K. McLean; T. F. Gibson; — Burton; E. D. W. Lawford; J. G. B. Harrison.	3	7 6	Buenos Aires, Bahia Blanca, Gulf of Mexico, Calcutta, <i>via</i> Suez.
"Norseman," S. Yacht	A. S. Gibb	S. Burnett	1	9 27	East Indies, China, Japan, Baltic, <i>via</i> Suez.
"Nubia," S.S.	F. J. Fox	R. Johnes Smith	2	5 20	Japan, Calcutta, <i>via</i> Suez.
"Numidian," S.S.	W. S. Main	J. Chambers; J. M. Smith; R. Going	2	3 25	Canada, U.S.A.
"Oceana," S.S.	John Gray	J. Worthington; A. Muir	1	3 26	Norfolk (U.S.A.), Java, <i>via</i> Cape and Suez.
"Omrah," R.M.S.	{ F. S. Symons D. R. W. Parsons, Lieut., R.N.R.	{ H. S. Seale; H. V. Hart, Lieut., R.N.R.; A. Fielding, Lieut., R.N.R.; R. S. Gillander; W. F. Cox. F. E. B. Owen; A. H. Bird, Lieut., R.N.R.; A. H. Fraser, Sub-Lieut., R.N.R.; H. G. Staunton, Lieut., R.N.R.; D. Dowdy, Lieut., R.N.R.; R. W. I. Marshall, Sub-Lieut., R.N.R.; G. L. Simner, Sub-Lieut., R.N.R.	3	8 15	Sydney, N.S.W., <i>via</i> Suez.
"Ophir," R.M.S.	{ D. R. W. Parsons, Lieut., R.N.R. A. J. Coad, Lieut., R.N.R.		3	5 17	Adelaide, <i>via</i> Suez.

"Orari," S.S. ...	...	J. P. Forsdick ...	...	C. Clement; F. Revis; J. S. Cairnes; A. Willis.	1	3	5	New Zealand <i>viâ</i> Capes.
"Orcadian," S.S. ...	...	Geo. Caie ...	...	...	1	1	25	Monte Video.
"Orient," R.M.S. ...	{	Colin Nicholson, Lieut., R.N.R. T. Taylor J. F. H. Healey, Lieut., R.N.R. W. S. Shelford, Lieut., R.N.R.	{	L. A. Brooke Smith, Lieut., R.N.R.; V. Seymour; G. Scott.	1 1 1	2 2 2	18 15 13	Adelaide <i>viâ</i> Suez.
"Ormuz," R.M.S. ...	...	...	...	P. N. Layton, Lieut., R.N.R.; J. Avern; A. H. Fraser, Sub-Lieut., R.N.R.; G. R. Renshaw, Sub- Lieut., R.N.R.; A. C. Bertie, Sub- Lieut., R.N.R.; A. Glazebrook.	3	8	14	Adelaide <i>viâ</i> Suez.
"Orontes," R.M.S. ...	...	J. F. Ruthven ...	...	T. Taylor; F. E. B. Owen; L. A. Brooke-Smith, Lieut., R.N.R.; A. H. Bird, Lieut., R.N.R.; H. C. Brewster, Lieut., R.N.R.; J. F. H. Healey, Lieut., R.N.R.; W. G. Adams.	3	7	18	Adelaide <i>viâ</i> Suez.
"Pacuare," S.S. ...	...	B. G. Drake, Lieut., R.N.R.	...	W. A. Smith; H. Woodright; L. Ansten; J. M. Isaacson; E. D. Davies; F. W. Downes.	2	7	3	Port Limon.
"Palma," S.S. ...	...	G. W. Cockman, Commr., R.N.R.	...	D. Scrutton, Lieut., R.N.R.; P. L. Sandberg; A. G. H. Valon, Sub- Lieut., R.N.R.; A. O. Trefusis, Mid., R.N.R.	1	3	25	Japan, Sydney, N.S.W., <i>viâ</i> Suez.
"Peerless," S.S. ...	...	Henry Cook ...	...	C. Vickers ...	2	5	4	Mediterranean, Philadelphia, Galveston, Vera Cruz.
"Persia," S.S. ...	...	G. Mitchell ...	...	—, McNeil; —, Caldwell; —, Cowan; —, Cowling.	3	7	27	Calcutta <i>viâ</i> Suez.
"Philae," S.S. ...	...	J. H. Jackson ...	...	F. C. Cross; E. Archbold; H. Bostock	2	5	3	Quebec, Alexandria.
"Port Henderson," S.S. ...	...	W. R. Rowe ...	...	J. B. Fleet, Mid., R.N.R.; G. A. Griffin; J. H. Parsons; E. K. Evans; R. H. Jeffreys.	2	7	4	Jamaica.

METEOROLOGICAL REGISTERS received during the Year 1907-08—continued.

(3.)—From the MERCANTILE MARINE.—*Meteorological Logs*—continued.

Ship.	Captain.	Officers Observing.	No. of Registers received.	Duration of Observations.	Voyage.
"Port Kingston," R.M.S.	J. G. Little Owen Jones ...	J. G. Little; L. W. Lees; A. W. Creese C. D. Finch.	2	Mths. Days. { 0 26 5 20 }	West Indies.
"Port Royal," R.M.S.	Owen Jones ... J. G. Parsons ... A. C. Selfe, Lieut., R.N.R.	G. A. Griffin; E. A. Brown; H. Owens; K. R. S. Davis.	2	{ 0 27 0 59 3 8 }	Jamaica.
"Potosi," S.S.	A. T. D. Pearson ...	—, Mander; —, Simpson; —, Dobbie; —, Griffiths.	2	13 13	W.C.S.A., <i>via</i> Magellan.
"Pretorian," S.S.	W. S. Main ...	...	1	2 0	Montreal.
"Ramsay," S.S.	F. C. Mullan, F.R.G.S.	R. Bailey; W. J. Evans; E. M. Prosser; A. Griffiths; A. Davis.	3	5 28	India, Japan, Black Sea, <i>via</i> Suez.
"Ranza," S.S.	G. H. Arnot, Lieut., R.N.R., F.R.G.S.	S. H. Bland; C. P. Lenton; R. K. Harrison.	1	3 6	China, Samarang, U.S.A., <i>via</i> Suez.
"Rewa," S.S.	A. W. Mann ...	G. Bright; G. Bruce Cook; E. W. Barrington-Hucker.	1	4 14	Karachi <i>via</i> Suez.
"Ribera," S.S.	R. Hurford ...	M. A. Clifford; Jas. H. Evans; J. Rogers.	1	2 18	Black Sea.
"Rimutaka," R.M.S.	H. E. Greenstreet ...	J. H. Squires; S. J. Plummer; J. M. Scott, Sub-Lt., R.N.R.; P. H. Suisted; C. K. Paris, Sub-Lt., R.N.R.; B. Freeley; F. J. Olive; G. N. W. Boyes, Mid., R.N.R.	3	9 5	New Zealand <i>via</i> Capes.
"Ryde," S.S.	W. G. Dines ...	J. C. Turner; H. Swales ...	1	3 29	River Plate.
"Saba," S.S.	H. E. Holliday ...	A. E. Webster; H. W. Skellorn; R. Jackson; F. H. Lawrence.	1	6 3	West Indies, Central America.
"Scotia," S.S.	Thos. Robertson, F.R.S.G.S.	John Murray ...	1	6 26	Davis Strait. Whaling.

"Segura," Ship "Severn," R.M.S.	...	John Davies R. H. Hayes	...	...	F. G. L. Willan, Lieut., R.N.R.; F. G. Spriddell, Sub-Lt., R.N.R.; F. J. Caulton.	2 1	19 3	21 14	B. Columbia, W.C.S.A., Australia. West Indies, Gulf of Mexico.
"Shadwell," S.S.	...	J. T. Douglas	...	...	J. W. Bolam; J. McGreivy; M. A. Aitken; C. Thistleton; R. Mallett.	3	10	29	Calcutta <i>via</i> Suez.
"Shira," S.S.	...	John Cann	...	...	J. Galloway	2	8	26	U.S.A., W.C.S.A., <i>via</i> Magellan.
"Shropshire," S.S.	...	H. Richmond	...	...	S. Makepeace; B. W. Adamson; H. Lyon; W. E. Crumplin.	1	2	2	Rangoon <i>via</i> Suez.
"Singapore," S.S.	...	L. F. Taylor	...	...	B. Banks; H. D. Boulton	1	3	28	China, India, <i>via</i> Cape and Suez.
"South America," S.S.	...	J. Watson	...	...	?	1	7	13	U.S.A., China, Japan, <i>via</i> Cape and Suez.
"Sunda," S.S.	...	G. M. Montford, Commdr., R.N.R.	...	...	W. M. Bruce, Lieut., R.N.R.; W. F. Cossey, Sub-Lt., R.N.R.; F. W. Bowhill, Sub-Lt., R.N.R.; F. H. W. Higgins, Sub-Lt., R.N.R.; G. B. Say; C. R. Kettlewell; E. F. McLeod; J. Plumpton.	3	9	5	East Indies, China, Japan, <i>via</i> Suez.
"Tagus," R.M.S.	{	F. R. Corbould W. G. Mason	...	...	H. W. Turner; R. H. Kitson; A. H. Taylor; H. W. Edwards; R. S. Gillander.	1 1	3 3	10 18	Central America, U.S.A.
"Thames," R.M.S.	{	H. E. Rudge C. E. Down, Lieut., R.N.R.	...	...	F. E. Ayres; A. Paterson; J. E. Carrick; W. G. Halliley; Jas. Lecky, Mid., R.N.R.; C. V. White; L. F. Drake, Sub-Lt., R.N.R.; J. E. Longworth; D. R. Mason; J. D. Henderson.	2	2 4	18 2	River Plate, West Indies, U.S.A.
"Tintagel Castle," S.S.	{	G. K. Gandy, Lieut., R.N.R. W. Wyndham Verrall, Lieut., R.N.R.	...	...	G. R. Parker, Sub-Lt., R.N.R.; R. W. Cooper, Lieut., R.N.R.; E. Vincent; W. McClure Lunt, Sub-Lt., R.N.R.	3	5	27	Delagoa Bay.
"Tongariro," R.M.S.	{	I. A. Sutcliffe	...	...	C. Milner; H. Wynyard; A. F. Beaton; A. Rivers; M. M. Down- ton; R. P. Bassett; L. Penny; R. Jackson; L. Upton.	3	9	7	New Zealand <i>via</i> Capes.

METEOROLOGICAL REGISTERS received during the Year 1907-08—continued.

(3.)—From the MERCANTILE MARINE.—*Meteorological Logs*—continued.

Ship.	Captain.	Officers Observing.	No. of Registers received.	Duration of Observations.	Voyage.
"Valentia," S.S.	O. Richards	C. Watson; C. E. Trueman	2	Mths. Days. 7 4	Monte Video, Gulf of Mexico.
"Vectis," S.S.	A. Thompson	S. C. Warner; N. S. O. Watson; L. R. Gardner, Sub-Lt., R.N.R.; F. T. Groome, Sub-Lt., R.N.R.; W. Rollo; C. B. Roche; H. J. Norris, Sub-Lt., R.N.R.; S. S. Marsden.	5	5 14	Egypt, Norway, Spitzbergen.
"Waimate," S.S.	J. J. Cameron, Lieut., R.N.R.	...	1	3 11	New Zealand <i>via</i> Capes.
"Wakanni," R.M.S.	V. C. White-Parsons	— Crawford; W. L. Goddard; — Wilde.	2	6 24	New Zealand, Australia, <i>via</i> Cape and Suez.
"Wandsworth," S.S.	D. Thomas	...	1	7 26	China, Java, Japan, <i>via</i> Suez; Australia, River Plate, <i>via</i> Cape.
"Waverley," S.S.	H. R. Wheateley	G. Hunting; T. Jackson; S. Walton; M. Keane.	2	8 0	U.S.A., Central America.
"Weardale," S.S.	Thomas McDonald, Lieut., R.N.R.	R. J. Jaquet	1	4 3	Black Sea.
"Wellington," S.S.	T. A. Tait	D. Thomas; R. K. Watkins; J. Phillips; C. Berg; J. N. Shipton; F. Redgrove; P. Tatem.	2	9 18	East Indies, Black Sea, <i>via</i> Suez.
"Whakatane," S.S.	L. G. Silba	H. J. Bradshaw; A. L. Rose; — Coyle; — Willis.	2	6 28	New Zealand <i>via</i> Capes.
"Winkfield," S.S.	T. Atkinson	W. Stanley; C. Bullen; H. Bryce; T. Jones; G. English; E. Young.	1	3 5	W.C.S.A., U.S.A., <i>via</i> Magellan.
"Worcestershire," S.S.	G. H. Harris	H. Spencer; W. J. Geh; G. Petheram; H. Barnett.	4	8 10	Rangoon <i>via</i> Suez.
"Zent," S.S.	J. E. Clarke	...	2	6 23	Port Limon.

(4.)—ABBREVIATED METEOROLOGICAL REGISTERS.

(a.) *From the Royal Navy (—).*(b.) *From the Mercantile Marine (5).*

Ship.	Captain.	Officers Observing.		No. of Registers received.	Duration of Observations.	Voyage.
"Crown of Navarre," S.S.	Alex. McKillop	...	...	...	Mths. Days. 1 2	West Indies, Pensacola (U.S.A.).
"Gio Battista Beverino," Italian Barque.	G. B. Serra	...	?	1	2 6	S. America to Sydney, N.S.W.
"Gothic," R.M.S.	S. A. Anning, Lieut., R.N.R.	...	...	1	2 29	New Zealand <i>via</i> Capes.
"Moresby," S.S.	F. J. Bayldon, Lieut., R.N.R.	R. Perry...	...	2	3 8	Between Brisbane and Solomon Islds.

METEOROLOGICAL REGISTERS received during the year 1907-08
—continued.

(5.)—NORTH ATLANTIC REGISTERS—FORM NO. 121 (2,006).

INDIAN OCEAN REGISTERS—FORM NO. 122 (253).

Line.	Ship.	Captain.	No. of Registers
Allan ...	Carthaginian ...	J. Williams ...	15
		R. McKillop ...	
		T. Pickering ...	
	Corinthian ...	H. St. George Lindsay, Commr. R.N.R.	14
		W. Dunlop ...	
	Corsican ...	T. Pickering ...	15
	Grampian ...	E. Outram ...	8
	Hibernian ...	H. Imrie ...	13
	Hungarian ...	W. Wallace ...	5
	Ionian ...	J. W. Nunan ...	6
		J. M. Johnston ...	
	Laurentian ...	J. T. Gambell ...	12
		E. Pitts, Commr. R.N.R.	
		D. Tannock ...	
	Mongolian ...	B. Henry ...	11
		E. Pitts, Commr. R.N.R.	
	Numidian ...	J. T. Gambell ...	8
		W. S. Main ...	
	Ontarian ...	G. Hamilton ...	5
	Pomeranian ...	A. J. Peters ...	16
		A. Rennie ...	
	Pretorian ...	E. Outram ...	16
		W. S. Main ...	
	Sardinian ...	T. Moar ...	17
		B. Henry ...	
	Sarmatian ...	B. Henry ...	1
	Siberian ...	B. T. Eastaway ...	13
	Sicilian ...	J. A. Fairfull ...	8
	Tunisian ...	A. G. Braes ...	16
		J. W. Nunan ...	
	Victorian ...	A. Macnicol ...	14
	Virginian ...	A. H. Vipond ...	16
American ...	Friesland ...	C. J. Rogers ...	17
	Haverford ...	E. Maddox ...	17
	Merion ...	J. B. Hill ...	5
	New York ...	W. J. Roberts ...	13
	Noordland ...	T. Deans ...	17
	Philadelphia ...	A. R. Mills ...	13
	St. Louis ...	J. C. Jamison ...	9
	St. Paul ...	F. M. Passow ...	3
	Westernland ...	W. W. D. Turner ...	5
Anchor ...	Astoria ...	J. Lumsdane ...	14
	Circassia ...	A. Haig ...	7
	Furnessia ...	J. Lumsdane ...	5
"Arana" S.S. Co.	Arana ...	R. Walton ...	1
Atlantic Trans- port.	Mackinaw ...	O. P. Clarke ...	15
	Manhattan ...	G. L. Goudie ...	6
		W. Johnston ...	
	Manitou ...	W. F. Pollock ...	7
	Maryland ...	H. B. Pope ...	9
		J. McMath ...	
	Memphis ...	W. Johnston ...	10

METEOROLOGICAL REGISTERS received during the year 1907-08
—continued.

Line.	Ship.	Captain.	No. of Registers
Atlantic Trans- port—cont.	Menominee	C. H. Stapleton, Lieut. R.N.R.	1
	Mesaba	F. H. Claret, Sub-Lieut. R.N.R.	24
		E. G. Cannons	
		A. E. Tribe, Lieut. R.N.R.	
	Minneapolis	T. F. Gates	24
	Minnehaha	J. C. Robinson	22
	Minnesota	S. Layland	18
	Minnetonka	P. Laverock	22
	Mobile	S. Layland	14
	Montana... ..	E. G. Cannons	12
		J. T. J. Wylie	
		J. McMath	
"Bellailsa" S.S. Co.	Bellailsa... ..	F. H. Claret, Sub-Lieut. R.N.R.	2
		H. B. Pope	
"Bellona" S.S. Co.	Bellona	O. O. Aagaard	1
Bibby	Cheshire... ..	— Grund	12
	Derbyshire	H. P. Langston... ..	10
	Shropshire	E. Robin... ..	7
	Worcestershire	H. Richmond	6
Blue Anchor	Wilcannia	G. H. Harris	7
Booth	Boniface... ..	W. G. Lingham	8
Bowring, C. T. & Co.	Roda	G. C. Westray	9
Bristol "City"	Chicago City	W. R. Bennett	12
British and Bur- mese.	Arracan	W. M. Hunter	4
British India	Avoca	W. Duguid	2
	Canara	E. H. Garland	7
	Dilwara	T. Kerr, Lieut. R.N.R.	7
Brocklebank	Matheran	D. Macfadyen	6
		A. Sanders	
Bucknall	Amatonga	N. Bannatyne	3
	Baralong	R. Linklater	1
	Bechuana	S. K. Clear	2
	Buceros	W. Keasley	4
	Kalomo	J. A. Smith	1
	Kasama	J. Hutcheon	1
	Kasenga	R. Linklater	2
	Katuna	T. A. Purcell	4
	Koranna... ..	A. W. Dobbs	11
		A. Lee	
	Manica	W. B. Renwick	1
	Swazi	J. H. Beare	1

METEOROLOGICAL REGISTERS received during the year 1907-08
—continued.

Line.	Ship.	Captain.	No. of Registers
Canadian - Pacific Railway Co.	Empress of Britain ...	J. Murray ...	2
	Empress of Ireland ...	J. V. Forster, Lieut. R.N.R.	2
	Lake Champlain ...	G. T. Webster, Lieut. R.N.R.	2
	Lake Manitoba...	G. C. Evans ...	8
	Lake Michigan...	H. Parry...	6
	Milwaukee ...	H. G. Potter ...	11
		E. Griffiths, Lieut. R.N.R.	
	Monmouth ...	C. Troop ...	17
		R. Ward...	
	Montcalm ...	E. Griffiths, Lieut. R.N.R.	1
Century Shipping Co.	Montfort ...	C. Hodder ...	12
	Swanley...	A. E. Evans ...	1
		J. P. Dawson ...	
"Charente" S.S. Co.	Author ...	G. Kearne ...	3
	Mira ...	W. J. Simmons ...	4
China Navigation Co.	Kashing ...	T. W. Pickard ...	15
Clan ...	Clan Macfadyen ...	H. R. East, Lieut. R.N.R.	3
	Clan Macintosh ...	F. W. Barber ...	
		W. J. Lennox ...	17
Clydebank S.S. Co.	St. Gothard ...	E. Smith ...	3
"Crown" S.S. Co.	Crown of Navarre ...	A. McKillop ...	1
Cunard ...	Aleppo ...	J. B. Mackenzie...	6
		W. R. D. Taylor ...	
		A. G. Dunning, Lieut. R.N.R.	
	Brescia ...	A. H. Rostron, Lieut. R.N.R.	7
	Campania ...	R. C. Warr ...	18
		D. Dow, Commr. R.N.R.	
	Carmania ...	J. B. Watt ...	20
		R. C. Warr ...	
		J. T. W. Charles, Commr., R.N.R.	
	Caronia ...	J. Pritchard ...	15
		W. T. Turner ...	
	Carpathia ...	H. M. Benison, Lieut. R.N.R.	15
	Cherbourg ...	C. Morrison ...	1
	Cypria ...	H. N. Goulden ...	5
	Etruria ...	T. Potter...	11
	Ivernia ...	W. T. Turner ...	19
		A. G. Dunning, Lieut. R.N.R.	
		H. M. Benison, Lieut. R.N.R.	
	Lucania ...	J. C. Barr ...	9
	Lusitania ...	J. B. Watt ...	4
	Mauretania ...	J. Pritchard ...	5
	Pavia ...	G. F. Jeffries ...	6
	Pannonia ...	H. M. Benison, Lieut. R.N.R.	12
		W. R. D. Irvine, Lieut. R.N.R.	

METEOROLOGICAL REGISTERS received during the year 1907-08
—continued.

Line.	Ship.	Captain.	No. of Registers
Cunard—cont. ...	Saragossa ...	D. S. Miller, Lieut. R.N.R.	8
	Saxonia ...	J. T. W. Charles, Commr., R.N.R.	22
		E. H. Pentecost, Lieut. R.N.R.	
		W. F. D. Taylor ...	
	Slavonia ...	T. Potter ...	13
		A. G. Dunning, Lieut., R.N.R.	
	Sylvania ...	W. B. Cresser, Lieut., R.N.R.	22
	Tyria ...	A. H. Reade, Lieut., R.N.R.	12
	Ultonia ...	C. A. Smith, Lieut., R.N.R.	6
	Umbria ...	D. Dow, Commr., R.N.R.	13
		J. T. W. Charles, Commr., R.N.R.	
"Devona" S.S. Co.	Veria ...	W. R. D. Irvine, Lieut., R.N.R.	8
		D. P. Thomson, Commr. R.N.R.	
Dominion ...	Devona ...	D. R. Murray ...	12
	Canada ...	R. O. Jones ...	19
	Cornishman ...	J. H. Kay ...	16
		J. Evans ...	
	Dominion ...	W. L. Mendus ...	12
	Irishman ...	W. Roberts ...	1
	Kensington ...	W. Roberts ...	14
	Norseman ...	J. H. Kay ...	2
	Ottawa ...	J. Evans ...	12
	Roman ...	C. Merrick ...	2
Dunn, C. G. & Co.	Southwark ...	J. O. Williams ...	7
	Welshman ...	J. H. A. Thornton ...	15
	Newton Hall ...	A. C. Hostler ...	3
	Cairo ...	G. Gregory ...	1
	Bruxellesville ...	H. A. Yardley ...	1
	Karina ...	H. A. Yardley ...	7
	Port Antonio ...	W. R. Rowe ...	6
	Port Henderson ...	W. R. Rowe ...	12
	Port Kingston ...	O. Jones ...	18
	Port Royal ...	J. G. Parsons ...	11
		A. C. Selfe, Lieut., R.N.R.	
Elders & Fyffes...	Salaga ...	R. Roberts ...	1
	Bazranca ...	W. Long ...	14
	Manistee ...	J. H. H. Scudamore, Sub.-Lieut., R.N.R.	2
	Matina ...	E. W. Castle ...	6
		J. H. H. Scudamore, Sub.-Lieut., R.N.R.	
	Miami ...	S. H. Simmons ...	7
		S. H. Simmons ...	
	Nicoya ...	S. H. Simmons ...	18
		E. W. Castle ...	
	Nicoya ...	E. W. Castle ...	18

METEOROLOGICAL REGISTERS received during the year 1907-08
—continued.

Line.	Ship.	Captain	No. of Registers.
Elders & Fyffes— <i>cont.</i>	Pacuare	B. G. Drake, Lieut. R.N.R.	14
		J. H. H. Scudamore, Sub.-Lieut., R.N.R.	
	Zent	J. Clarke	13
Ellerman ...	City of Athens ...	J. Wilson	5
		J. Knaut	
	City of Benares ...	W. Greenhorn ...	5
		D. Morrison	
	City of Corinth ...	J. R. Rae	2
	City of Karachi ...	F. Snow	4
	City of Khios ...	D. Cruickshank ...	6
Elswick S.S. Co.	City of Vienna ...	D. Morrison	4
	Elswick Grange ...	G. Wilson	6
English & American Shipping Co.	Inca	G. Muir	2
	Mora	E. E. Cooper	1
European Petro- leum Co.	Broadmayne	H. A. Hayns	10
(Foreign) ...	Dania	P. Petersen	14
		A. V. Lindberg ...	
Glynn, J. ...	Albiana	E. Trinick	5
Gulf Transport...	Ikbal	M. Robertson ...	10
	Imani	— Penperthy ...	1
	Imaum	G. Wigdahl	2
		C. Mytton	12
	Indore	E. S. Pearce	
	Inkula	E. A. Alcide	5
	Irada	A. W. Roberts, Lieut. R.N.R.	7
	Irak	A. Delargy	5
	Iran	T. B. Peabody ...	5
	Istrar	C. M. M. Jacob ...	5
H.M.S. ...	Brilliant	R. H. Anstruther, C.M.G., R.N.	1
Harrison ...	Civilian	G. Goldman	10
	Colonial	F. C. Raby	2
	Counsellor	D. G. Cowrie	15
	Historian	J. Valiant	12
		H. Pyle	
	Huntsman	C. S. Rhodes	13
	Logician	P. Lord	1
	Musician	G. B. Woolfenden ...	10
	Tactician	R. Owen	10
	Traveller	G. N. Kearne	4
Hine, W. ...	Greta Holme	J. W. Millican ...	1
"Hurona" S.S. Co.	Hurona	J. Dorward	13

METEOROLOGICAL REGISTERS received during the year 1907-08
—continued.

Line.	Ship.	Captain.	No. of Registers.
"Jacona" S.S. Co.	Jacona	W. Lindsay	3
Johnston ...	Vedamore	J. Bickley W. Henry	17
Leyland	Almerian	E. Cook	6
	Antillian	W. Japha	7
	Asian	W. E. Wood	10
	Atlantian	A. H. Highton	9
	Bohemian	— McCullum	1
	Bostonian	J. Parry	18
	Caledonian	J. R. Carnon, Lieut. R.N.R.	3
	Californian	F. A. Parkin	10
	Cestrian	E. Thomas	1
	Colonian	T. Chadwick	6
	Cuban	T. W. Lofthouse	3
	Devonian	A. W. V. Trant	10
	Iberian	T. B. Jago	16
	Indian	J. E. Bartlett G. Bruce	3
	Jamaican	J. Robb	1
	Michigan	S. W. Watkins	9
	Nicaraguan	C. E. Shacklock	3
	Oxonian	W. Dickinson	8
	Planet Neptune	W. E. Price	3
	Tampican	J. W. Westcott	5
	Virginian	J. McDonald	7
	Winifredian	F. Shepherd	18
	Yucatan	P. T. Reid	2
Manchester Liners	Manchester Corporation	P. J. Heath	13
	Manchester Engineer ...	E. W. Biggs	3
Milburn	Port Chalmers	S. M. Orr	6
Monarch	English Monarch	C. E. Froggatt, Lieut. R.N.R.	2
Nederland	Koning Willem II.	J. Teensma	11
Norddeutscher } Lloyd	Prinz Ludwig	F. V. Binzer C. Walternas	4
Norfolk and North American S.S. Co.	Crown Point	J. Wall	14
	East Point	L. R. W. Beavis	1
Peninsular and Oriental.	Candia	O. Jones, Commr. R.N.R.	4
	Egypt	J. R. Lendon F. R. Summers	34
	Himalaya	W. L. Broun, Lieut. R.N.R.	10
	Java	S. Barcham	1
	Mongolia	C. F. Preston, Commr. R.N.R.	9
	Nile	E. P. Martin, Lieut. R.N.R.	15
	Nyanza	H. S. Bradshaw	3

METEOROLOGICAL REGISTERS received during the year 1907-08
—continued.

Line.	Ship.	Captain.	No. of Registers.
Peninsular and Oriental— <i>cont.</i>	Persia	W. H. Houghton, Commr. R.N.R.	10
	Sumatra... ..	H. Powell	5
	Sunda	E. W. Bruce	11
	Syria	G. M. Montford, Lieut. R.N.R.	4
Prince	African Prince... ..	D. C. Gregor, Commr. R.N.R.	2
	Black Prince	C. B. Andersson	2
	British Prince... ..	J. Thomas	1
	Moorish Prince... ..	P. A. Johnston	5
	Napolitan Prince	H. R. Oliver, Lieut. R.N.R.	10
	Norman Prince... ..	A. B. W. Sheppard, Lieut. R.N.R.	2
	Saxon Prince	W. Barrett	7
	Sicilian Prince	R. Kirkwood	12
	Spartan Prince	W. J. Fielding	7
Pyman S.S. Co. ..	Waverley	H. G. V. Smith... ..	8
Red Star... ..	Vaderland	H. Wheatley	13
Ropner	Kirkby	T. J. Barman	2
Royal Mail Steam Packet Co.	Thames	O. N. Pettersson	5
	Trent	C. E. Down, Lieut. R.N.R.	10
Shaw, Savill & Albion.	Kumara	T. R. Pearce, Lieut. R.N.R.	1
Shire	Denbighshire	F. R. Corbould	2
Thomson, W. ...	Benlarig	A. Morton	3
	Benvenue	W. A. Evans	5
Trechmann S.S. Co.	Wilster	A. Wallace	4
Ulster S.S. Co. ...	Carrigan Head	R. Kroble	4
		T. Martin	
Union-Castle ...	Briton	H. L. Butt	1
	Carisbrook Castle	S. Orr	8
	Dunottar Castle	R. E. H. Becher	9
	Galeka	G. K. Gandy, Lieut. R.N.R.	7
	Guelph	T. H. Wilford	1
	Kildonan Castle	L. W. Bayldon, Commr. R.N.R.	13

METEOROLOGICAL REGISTERS received during the year 1907-08
—continued.

Ship.	Ship.	Captain.	No. of Registers.
White Star ...	Adriatic ...	E. J. Smith, Commr. R.N.R.	18
	Afric ...	F. B. Howarth, Lieut. R.N.R.	5
	Arabic ...	T. P. Thompson ...	15
	Armenian ...	H. Smith, Lieut. R.N.R.	
		C. E. Starck, Lieut. R.N.R.	15
	Baltic ...	E. J. Smith, Commr. R.N.R.	13
		J. B. Ranson, Lieut. R.N.R.	
	Bovic ...	D. Kerr ...	15
		T. Kidwell, Lieut. R.N.R.	
	Canopic ...	I. Sealby, Lieut. R.N.R.	15
	Cedric ...	C. A. Bartlett, Lieut. R.N.R.	12
	Celtic ...	A. E. S. Hambelton, Lieut. R.N.R.	15
	Cevic ...	W. H. Clarke ...	21
	Cymric ...	D. Kerr ...	22
		W. Finch, Lieut. R.N.R.	
		S. A. Anning, Lieut. R.N.R.	14
	Georgic ...	E. C. Roberts ...	
		W. F. Morgan, Lieut. R.N.R.	4
	Ionic ...	F. S. Hickson ...	
		J. O. Carter, Commr. R.N.R.	24
	Majestic ...	B. F. Hayes, Commr. R.N.R.	
		J. Mathias, Lieut. R.N.R.	13
		J. Cameron, Commr. R.N.R.	
	Oceanic ...	H. J. Haddock, C.B., Commr. R.N.R.	8
	Republic ...	J. McAuley ...	
	Runic ...	S. A. Anning, Lieut. R.N.R.	4
	Teutonic...	T. P. Thompson ...	11
		H. Smith, Lieut. R.N.R.	
	Victorian ...	F. Hart, Lieut. R.N.R.	20
Wilson, T., Sons & Co.	Tokio ...	W. O. Tarn ...	1
Wilsons & Furness-Leyland.	Georgian ...	W. F. Wood ...	20

APPENDIX V.

INSTRUMENTS supplied, &c., to the MERCANTILE MARINE.

Particulars.	Baro- meters.	Ther- mometers.	Hydro- meters.	Screens.
April 1st, 1907, afloat	178	1,137	652	195
Issued since	59	425	177	55
Returned since	237 48	1,562 336	829 126	250 37
Written off as lost, &c.	189 7	1,226 44	703 27	213 7
April 1st, 1908, afloat	182	1,182	676	206

DISPOSITION of MERCANTILE MARINE INSTRUMENTS,
April 1st, 1908.

Particulars.	Baro- meters.	Ther- mometers.	Hydro- meters.	Screens.
In merchant ships	182	1,182	676	206
„ store at M.O.	4	13	18	2
At Liverpool Agency	5	22	8	4
„ Glasgow „	8	20	24	4
„ Dundee „	5	25	26	4
„ Hull „	1	18	5	5
„ Cardiff „	—	5	9	—
„ Southampton „	5	11	12	2
„ Sunderland „	3	20	12	3
Total April 1st, 1908	213	1,316	790	230
Under repair, April 1st, 1908	5	—	—	—

INSTRUMENTS at STATIONS, viz.: Telegraphic Reporting Stations,
Observatories, Fishing Villages, &c.

(a.) THERMOMETERS AND SCREENS.

—	Thermometers.					Screens.
	Ordin- ary.	Maxi- mum.	Mini- mum.	Solar.	Grass Mini- mum.	
April 1st, 1907, in use	354	70	67	12	10	119
Issued since	43	4	5	—	3	2
Returned since	397 20	74 2	72 4	12 1	13 —	121 2
Written off	15	—	—	1	2	—
April 1st, 1908, in use	362	72	68	10	11	119

(b.) OTHER INSTRUMENTS.

	Baro- meters.	Aneroids and Baro- graphs.	Sun- shine Re- corders.	Rain Gauges.	Anemo- meters.	Storm Signal Cones.
April 1st, 1907, in use ...	321	24	34	97	32	221
Issued since	6	5	3	3	4	14
Returned since ...	327	29	37	100	36	235
Written off	6	2	—	2	2	—
	—	—	—	—	—	12
April 1st, 1908, in use ...	*321	*27	37	98	34	223

* 223 barometers (mercurial) and 2 barographs are lent for use of seafaring communities at fishing villages and ports.

APPENDIX VI.

REPORT ON THE INSPECTION OF STATIONS IN CONNEXION
WITH THE OFFICE IN 1907.

The inspectors were as follows :—

Districts 0, 1 and 6	...	...	Mr. A. Watt, Mr. E. Gold.
District 2	...	...	Capt. Hepworth, Mr. R. H. Curtis.
" 3	...	...	Mr. R. G. K. Lempfert, Mr. R. H. Curtis.
" 4	...	...	Capt. Hepworth, Mr. E. Gold, Mr. H. Harries.
" 5	...	...	Mr. F. J. Brodie.
" 7	...	...	Mr. E. Gold, Mr. R. H. Curtis.
" 8	...	...	Mr. R. G. K. Lempfert, Mr. H. Harries.
Districts 9 and 10	...	...	Mr. R. G. K. Lempfert, Mr. R. H. Curtis.
Observatories and Anemograph Stations.	{ Mr. T. W. Baker and Mr. E. G. Constable, by arrangement with the Director of the National Physical Laboratory, Mr. R. H. Curtis.		

Under a provisional arrangement with the Scottish Meteorological Society, Mr. A. Watt was appointed inspector of Scottish stations in connexion with the Office for the year ending 31st March, 1908.

At the observatories and anemograph stations the instruments were dismantled and cleaned, and all necessary repairs were carried out. At those observatories which are also climatological or telegraphic reporting stations the arrangements for this work were examined.

The reports show that efficiency has been maintained on the whole; in a number of cases the inspectors were able to make suggestions for improving the observations by bringing them more into line with recognized conventions. Points requiring attention which could not be settled on the spot have been dealt with by correspondence.

The following is a list of the stations visited :—

OBSERVATORIES.

Aberdeen.	Oxford.
Armagh.	Stonyhurst.
Falmouth.	Valencia.
Glasgow.	

ADDITIONAL ANEMOGRAPH STATIONS.

Deerness.	Pendennis Castle (Falmouth).
Dublin (Phoenix Park).	Plymouth.
Fleetwood.	Roche's Point.
Holyhead.	Scilly.
Kingstown.	Shoeburyness.
North Shields.	Yarmouth.

NORMAL CLIMATOLOGICAL STATIONS.

Armagh.	Glencarron.
Aspatria.	Huddersfield.
Balmoral.	Lairg.
Birmingham.	Laudale.
Cally.	Lincoln.
Cambridge.	Marchmont.
Crieff.	Plymouth.
Deerness.	Poltalloch.
Douglas (Cronkbourne).	Reading.
Dublin (City).	Rothsay.
„ (Glasnevin).	Salisbury.
„ (Phoenix Park).	Seaham.
„ (Trinity College).	Shrewsbury.
Dumfries.	Southampton.
Dunrobin Castle.	Southport.
Fort Augustus.	Stonyhurst.
Fort William.	Whitby.
Glasgow.	York.

AUXILIARY CLIMATOLOGICAL STATIONS.

Aberdovey.	Harrogate.
Aberystwyth.	Kingstown.
Alnwick Castle.	Marlborough.
Ballinacurra.	Newcastle-on-Tyne.
Balruddery.	Port Erin (Sea temperature only).
Bradford.	Portsmouth.
Bristol (Overcourt Park).	Saltburn-by-the-Sea.
Burnley.	Shoeburyness.
Cardiff.	Swansea.
Cirencester.	Towyn.
Coventry.	Waterford.
Crathes.	Westbourne.
Edenfel (Omagh).	Wisley.
Felixstowe.	
Fulbeck.	

TELEGRAPHIC REPORTING STATIONS.

Aberdeen.	North Shields.
Barra Island.	Pembroke (St. Ann's Head).
Blacksod Point.	Portland Bill.
Dover.	Roche's Point.
Donaghadee.	Scilly.
Dungeness.	Stornoway.
Holyhead.	Valencia.
Leith.	Wick.
Malin Head.	Yarmouth.
Nairn.	

Mr. W. Marriott visited the following stations which are in connexion with the Royal Meteorological Society as well as with the Office :—

Aberystwyth, Bath, Belmont (Hereford), Blackpool, Cheltenham, Cullompton, Dublin (City and Trinity College), Haverfordwest, Hoylake, Kingstown, Llandudno, Newquay, Rousdon, Salcombe, Southport, Torquay, Towyn, Wakefield, Whitchurch, Woolacombe.

APPENDIX VII.

GEOGRAPHICAL LIST OF INSTITUTIONS AND PERSONS FROM WHOM PUBLICATIONS CONTAINING **Meteorological Data** HAVE BEEN RECEIVED DURING THE LAST FIVE YEARS.

The list is arranged in accordance with the revised topographical classification adopted in the International Catalogue of Scientific Literature. *In each section the names of institutions which collect observations from a network of stations, or which publish observations on an extended scale, have been placed first.* In a number of instances, particularly in the case of tropical countries, observations are published by authorities not domiciled in the country. In these instances the names of the places of observation have been given as far as space permits, and the names of the institutions issuing the publications have been printed in *italic* type. If no names of places are quoted, it may be assumed that returns from a number of stations are given.

The character of the information available has been indicated by quoting the numbers in the International Catalogue under which the publications have been classified.

The year quoted is the last complete year for which the information has been received.

The classification numbers employed are as follows:—

- 1710 and 1730. Climatology—Agricultural and Hygienic.
- 1180. Rainfall Tables.
- 1800. Meteorological Observations—General.
- 1810. Hourly Values.
- 1820. Daily Values.
- 1825. Monthly and Yearly Mean Values.
- 1830. Daily Weather Reports.
- 1840. Weather Reports—Weekly, Monthly, &c.

GEOGRAPHICAL LIST OF INSTITUTIONS AND PERSONS
SUPPLYING PUBLISHED METEOROLOGICAL DATA.

NAME OF INSTITUTION, &c.	Climatology—Agri- cultural and Hy- gienic. 1710 & 1730	Rainfall Tables. 1180.	Meteorological Observations —General. 1800.	Hourly Values, 1810.	Daily Values, 1820.	Monthly and Yearly Mean Values, 1825.	Daily Weather Re- ports and Charts, 1830.	Weekly or Monthly Weather Reports 1840.
GENERAL.								
International Committee for Scientific Aeronautics, Strassburg.	—	—	1906	—	—	—	—	—
Board of Trade, London—Commercial, Labour, and Statistical Department.	—	—	—	—	—	1904	—	—
Symons's Meteorological Magazine ..	—	—	—	—	—	1907	—	—
d. EUROPE AND MEDITER- RANEAN SEA AND ISLANDS.								
Deutsche Seewarte, Hamburg	—	—	—	—	—	—	—	1907
da. Scandinavia: Sweden, Norway, Denmark, Iceland, Faeroes:—								
— Dansk Meteorologisk Institut (Copenhagen).	—	—	1905	—	1907	1905	1907	1907
Norsk Meteorologisk Institut (Christiania).	—	1906	1906	1906	1906	1906	—	—
Svensk Meteorologisk Institut (Stockholm).	—	—	—	—	—	—	—	1907
K. Svenska Vetenskaps-Akademie (Stockholm).	—	—	—	—	1906	1906	—	—
Stockholm (H. E. Hamberg) ..	—	—	—	—	—	1756 to 1905	—	—
Upsala, Observatoire Météorolo- gique de l'Université.	—	—	1906	1906	1906	—	—	—
db. Russia in Europe:—								
Observatoire Physique Central Nicolas (St. Petersburg).	—	—	1904	1904	1904	1904	1907	1907
Finland, Institut Météorologique Central de la Société des Sciences (Helsingfors).	—	—	—	1900	1896	—	—	1907
Kaiserliche Livländische Ge- meinnützige u. Ökonomische Sozietät. Dorpat (Jurief).	—	1902	—	—	—	—	—	—
Dorpat, Meteorologisches Obser- vatorium.	—	—	1905	1905	1905	—	—	—
Dorpat, Station Météorologique de l'Ecole Reale.	—	—	—	—	1906	—	—	—
Kazan, Observatoire Météoro- logique.	—	—	—	—	1902	—	—	—
Kieff, Observatoire Météorol- ogique.	—	—	—	1905	1905	—	—	—
Moscow (E. Leyst)	—	—	1906	—	—	—	—	—
Moscow, Meteorologisches Ob- servatorium der K. Universität	—	—	—	1904	1904	—	—	—
Nijni-Oltchedaëff, Station Mé- téorologique.	—	—	—	—	1907	1907	—	—
Odessa, Observatoire Météoro- logique et Magnétique de l'Uni- versité Impériale.	—	1905	1905	—	1906	1906	—	—

GEOGRAPHICAL LIST—*continued.*

NAME OF INSTITUTION, &C.	Climatology—Agricultural and Hygienic. 1710 & 1730.	Rainfall Tables. 1180.	Meteorological Observations—General. 1800.	Hourly Values. 1810.	Daily Values. 1820.	Monthly and Yearly Mean Values. 1825.	Daily Weather Reports and Charts. 1830.	Weekly or Monthly Weather Reports. 1840.
d. EUROPE AND MEDITERRANEAN ISLANDS—<i>cont.</i>								
db. Russia in Europe—<i>cont.</i>								
St. Petersburg, Observatoire Météorologique de l'Institut Forestier Impérial.	—	—	—	—	1905	—	—	—
Tiflis, Physical Observatory ..	—	—	—	—	—	—	—	1906
Warsaw, Station Centrale Météorologique du Musée de l'Industrie et de l'Agriculture.	—	—	1900	—	1900	—	—	—
dc. German Empire:—								
— Deutsche Seewarte (Hamburg)	—	—	1906	1906	1906	1906	1907	1907
Prussia, K. Meteorologisches Institut (Berlin).	—	1904	1902	1902	1905	1902	—	1907
Alsace-Lorraine, Meteorologischer Landesdienst (Strassburg).	—	—	1902	1902	1902	1907	—	—
Baden, Central Bureau für Meteorologie und Hydrographie (Carlsruhe).	—	1907	1906	—	1906	1906	—	1907
Bavaria, K. Meteorologische Central Station (Munich).	—	—	1903	—	1903	1903	1907	—
Hessen, G. Hydrographisches Bureau (Darmstadt).	—	1907	1906	1906	1906	—	—	1907
Saxony, K. Meteorologisches Institut (Dresden).	—	—	1902	1902	1902	—	—	1905
Saxony, K. Sächs. Landes-Wetterwarte (Dresden).	—	—	—	—	—	—	1907	—
Württemberg, K. Statistisches Landesamt und Meteorologische Central Station (Stuttgart).	—	—	1906	1900	1906	1906	—	1907
Aachen, Meteorologisches Observatorium.	—	—	1905	1905	1905	1905	1907	—
Berlin, Wetter Bureau	—	—	—	—	—	—	1907	—
Bremen, Meteorologische Station	—	—	—	1906	—	—	—	—
Eberswalde, Meteorologische Station.	—	—	—	—	—	—	—	1903
Emden, Naturforschende Gesellschaft.	—	—	—	—	—	1905	—	—
Frankfurt am Main, Physikalischer Verein.	—	—	—	—	1906	—	—	—
Potsdam, K. Preuss. Met. Institut	—	—	1903	1903	1903	—	—	—
dd. Holland; Belgium; Luxembourg:—								
K. Nederlandsch Meteorologisch Institut (de Bilt).	—	1906	1906	1906	1906	1906	1907	1907
Observatoire Royal, Uccle, Brussels.	—	—	1902	1902	1902	1902	1907	—
Mons (A. Bracke)	—	—	—	—	1905	—	—	—
de. British Islands:—								
Meteorological Office (London)	—	—	—	1906	1903	1903	1907	1907
British Rainfall (H. R. Mill) ..	—	1906	—	—	—	—	—	—
R. Meteorological Society (London).	—	—	1906	—	1906	1906	—	—

GEOGRAPHICAL LIST—continued.

NAME OF INSTITUTION, &c.	Climatology—Agri- cultural and Hy- gienic. 1710 & 1730.	Rainfall Tables. 1180.	Meteorological Observations —General. 1800.	Hourly Values. 1810.	Daily Values. 1820.	Monthly and Yearly Mean Values. 1825.	Daily Weather Re- ports and Charts. 1830.	Weekly or Monthly Weather Reports. 1840.
d. EUROPE AND MEDITER- RANEAN ISLANDS—cont.								
de. British Islands—cont.								
Scottish Meteorological Society (Edinburgh).	—	1906	1906	—	—	1906	—	—
Board of Agriculture and Fisheries, London.	1906	—	—	—	—	—	—	—
General Register Office, Dublin	1907	—	—	—	1907	1907	—	1907
Royal Observatory, Greenwich	—	—	1905	1905	1905	—	—	—
General Register Office, London	1907	—	—	—	1907	1907	—	1907
Registrar General's Office, Edin- burgh.	1907	—	—	—	—	1907	—	1907
Royal Society of Edinburgh [Fort William and Ben Nevis].	—	—	—	1897	—	—	—	—
Bath, Medical Officer of Health	1906	—	—	—	—	—	—	—
Blackpool, Public Health Office	1906	—	—	—	—	—	—	—
Bognor, Climatological Society	—	—	—	—	—	1905	—	—
Bolton, The Museums and Meteorological Observatory.	—	—	—	—	—	1907	—	1907
Brighton, Medical Officer of Health.	1902	—	—	—	—	—	—	—
Canterbury (A. Lander)	—	—	1904	—	—	—	—	—
Cardiff, Naturalists' Society ..	—	1906	—	—	—	1906	—	—
Cardiff, Waterworks Engineer's Office.	—	1905	—	—	—	—	—	—
Chester (J. C. Mitchell)	—	—	—	—	—	1905	—	—
Cockle Park, Morpeth	—	—	—	—	—	1904	—	—
Coventry, Medical Officer of Health.	1906	—	—	—	—	1906	—	—
Croydon, Natural History and Scientific Society.	—	1906	—	—	1906	—	—	—
Devon, North (T. Wainwright) ..	—	—	—	—	—	1906	—	—
Dorset (H. S. Eaton)	—	1903	—	—	—	—	—	—
Eastbourne, Borough Meteorol- ogist.	—	—	—	—	—	1905	—	—
Falmouth, R. Cornwall Poly- technic Society.	—	—	—	—	—	1906	—	—
Great Central Railway	—	1907	—	—	—	—	—	—
Greenwich, North Shields, Scar- borough, Sheerness, Spurn, Yarmouth. <i>Hydrographic Office,</i> <i>London.</i>	—	—	—	—	—	—	—	—
Harrogate, Harlow Moor Ob- servatory.	—	—	—	—	—	1907	—	—
Hastings, Borough Meteorologist.	—	—	—	—	—	1906	—	—
Hertfordshire (J. Hopkinson) ..	—	1904	—	—	—	1904	—	—
Hoylake and West Kirby, Urban District Council.	—	—	—	—	—	1907	—	—
Isle of Man (A. W. Moore)	—	—	—	—	—	1904	—	—
Kew Observatory (National Physical Laboratory).	—	—	—	—	—	1906	—	—
Liverpool Observatory, Bidston.	—	—	—	—	1906	—	—	—
London, Royal Botanic Society	—	—	—	—	—	—	—	—
Lowestoft, Medical Officer of Health.	1906	—	—	—	—	—	—	—
Manchester, Godlee Observa- tory.	—	—	—	—	1906	—	—	—
Manchester, Public Health Office	1904	—	—	—	1904	—	—	—
Margate, Medical Officer of Health.	—	—	—	—	—	1906	—	—
[Netley.] <i>Army Medical Depart-</i> <i>ment, London.</i>	—	—	—	—	—	1906	—	—
Northampton, Natural History Society.	—	1907	—	—	—	—	—	1907

* Monthly averages for a series of years.

GEOGRAPHICAL LIST—continued.

NAME OF INSTITUTION, &c.	Climatology—Agricultural and Hygienic.	Rainfall Tables.	Meteorological Observations—General.	Hourly Values.	Daily Values.	Monthly and Yearly Mean Values.	Daily Weather Reports and Charts.	Weekly or Monthly Weather Reports.
	1710 & 1730.	1180.	1800.	1810.	1820.	1825.	1830.	1840.
d. EUROPE AND MEDITERRANEAN ISLANDS—cont.								
<i>de. British Islands—cont.</i>								
Norwich (A. W. Preston) ..	—	—	—	—	—	1906	—	—
Nottingham (A. Brown and P. Boobyer).	—	1907	1907	—	—	—	—	—
Nottingham, Rural District Council of Basford.	1903	—	—	—	—	1903	—	—
Paisley, Coats Observatory ..	—	—	—	—	—	1905	—	—
Pentland Skerries, <i>Hydrographic Office, London.</i>	—	—	—	—	—	*	—	—
Portsmouth, Medical Officer of Health.	1906	—	1906	—	—	—	—	—
Rousdon Observatory	—	—	—	—	—	1903	—	—
Rugby School Natural History Society.	—	—	—	—	—	1906	—	—
Scarborough, Borough Meteorologist.	—	—	—	—	—	1906	—	—
Sevenoaks (W. W. Wagstaffe) ..	—	—	—	—	—	1905	—	—
Southampton, Medical Officer of Health.	1906	—	—	—	—	1906	—	—
Southport, Fernley Observatory	—	—	1906	1906	1907	1906	—	—
Stonyhurst College Observatory	—	—	—	—	—	1908	—	—
Throcking (C. W. Harvey) ..	—	—	—	—	—	1904	—	—
Totland Bay, Isle of Wight (J. Dover).	—	—	—	—	—	1907	—	—
Truro, Cornwall County Council, Sanitary Committee.	1907	—	—	—	—	1906	—	1907
Truro (G. Penrose) ..	—	—	—	—	—	1900	—	—
Waterford (C. E. Perceval Bolton).	—	—	—	—	—	—	—	1906
Whitchurch (E. E. Glyde) ..	—	—	1907	—	—	—	—	—
Worksop (H. Mellish)	—	—	—	—	—	1907	—	—
York, Yorkshire Philosophical Society.	—	—	—	—	—	1906	—	—
df. France and Corsica:—								
— Bureau Central Météorologique de France (Paris).	—	1904	1904	1904	1904	1904	1907	1907
Avignon, Commission Météorologique du Département de Vaucluse.	—	—	1903	—	—	1903	—	—
Beaulieu, Sèvres et Vacquey (G. Eiffel).	—	—	1903	—	1905	—	—	—
Bordeaux, Commission Météorologique de la Gironde.	—	1907	—	—	1907	—	—	—
Chevreuse, Observatoire	—	—	—	—	1907	—	—	—
Lyons, Commission départementale de Météorologie du Rhône.	1906	1906	—	—	—	—	—	—
— Marseilles, Commission de Météorologie du Département des Bouches-du-Rhône.	—	—	1906	—	1906	—	—	—
Paris, Observatoire Municipal (Observatoire de Montsouris).	—	—	—	—	1905	—	—	—
Paris, Service Hydrométrique du Bassin de la Seine.	—	1905	—	—	—	—	—	—
Perpignan, Commission Météorologique.	—	—	—	—	1905	—	—	—
Puy-de-Dôme, Observatoire ..	—	—	—	—	1905	—	—	—

* Monthly averages for a series of years.

GEOGRAPHICAL LIST—continued.

NAME OF INSTITUTION, &c.	Climatology—Agri- cultural and Hy- gienic.	Rainfall Tables.	Meteorological Observations —General.	Hourly Values.	Daily Values.	Monthly and Yearly Mean Values.	Daily Weather Re- ports and Charts.	Weekly or Monthly Weather Reports.
	1710 & 1730.	1180.	1800.	1810.	1820.	1825.	1830.	1840.
d. EUROPE AND MEDITER- RANEAN ISLANDS—cont.								
dg. Iberian Peninsula (including Pyrenees): Spain (with Balearic Islands); Portugal:—								
Instituto Central Meteorológico (Madrid).	—	—	—	—	—	—	1907	—
Observatorio Do Infante D. Luiz (Lisbon).	—	—	—	—	1905	1905	1907	—
Observatorio, Madrid	—	—	—	—	1906	1900	—	—
Coimbra, Observatorio Meteor- ológico e Magnético da Uni- versidade.	—	—	—	1903	1903	—	—	—
Gibraltar. <i>Army Medical Dep., London.</i>	—	—	—	—	—	1906	—	—
Llinas, Observatorio Belloch ..	—	—	1904	—	—	—	—	—
Madrid, Chamartin de la Rosa, Observatorio Meteorológico.	—	—	—	—	1906	—	—	—
Mahon (Minorca). <i>Bureau Central Mét., Paris.</i>	—	—	—	—	—	1904	—	—
Oña, Observatorio	—	—	—	—	1907	—	—	—
Oporto, Observatorio Meteorol- ógico da Princesa D. Amelia.	—	—	—	—	—	1907	—	—
San Fernando, Instituto y Obser- vatorio de Marina.	—	—	—	1906	1906	—	—	—
dh. Italy: Sicily and Sardinia:—								
Ufficio Centrale Meteorologico e Geodinamico Italiano (Rome).	1907	—	1896	—	—	1896	1907	—
Bologna, Osservatorio della R. Università.	—	—	—	—	1905	—	—	—
Catania (A. Riccò e L. Mendola)	—	—	1905	—	—	—	—	—
Florence, R. Museo di Fisica e Storia Naturale.	—	—	—	—	1906	—	—	—
Messina, Osservatorio	—	—	—	—	1906	—	—	—
Milan, R. Osservatorio Astrono- mico di Brera.	—	—	—	—	1906	—	—	—
Naples, R. Osservatorio di Capo- dimonte.	—	—	—	—	1906	1906	—	—
Riposto, Osservatorio Meteorol- ogico del R. Istituto Nautico.	—	—	—	—	1907	—	—	—
Rome, Specola Vaticana	—	—	—	—	1905	—	—	—
Turin, Osservatorio della R. Uni- versità.	—	—	—	—	1906	—	—	—
Venice, Osservatorio Meteorol- ogico del Seminario Patri- arcale.	—	—	—	—	1906	—	—	—
di. Switzerland:—								
Schweizerische Meteorologische Central Anstalt (Zürich).	—	1906	1906	1906	1906	1906	1907	—
Berne, Eidgenössisches Ober- bauinspectorat, Hydromet- rische Abteilung.	—	1905	1904	1904	1905	—	—	—
Davos Traffic Association ..	—	—	—	—	1907	—	—	1907

GEOGRAPHICAL LIST—continued.

NAME OF INSTITUTION, &C.	Climatology—Agri- cultural and Hy- gienic.	Rainfall Tables.	Meteorological Observations —General.	Hourly Values.	Daily Values.	Monthly and Yearly Mean Values.	Daily Weather Re- ports and Charts.	Weekly or Monthly Weather Reports.
	1710 & 1730.	1180.	1800.	1810.	1820.	1825.	1830.	1840.
d. EUROPE AND MEDITER- RANEAN ISLANDS—cont.								
di. Switzerland—cont.								
Genève et le Grand St. Bernard (R. Gautier).	—	—	—	—	1906	—	—	—
Lausanne, Institut Agricole ..	—	—	—	—	1906	—	—	—
St. Moritz (R. Gautier et H. Duaime).	—	—	—	—	1906	—	—	—
dk. Austria-Hungary, with Bosnia and Herzegovina:—								
K. K. Central Anstalt für Meteor- ologie und Erdmagnetismus (Vienna).	—	—	1905	1905	1907	1905	1907	—
K. K. Hydrographischer Dienst in Oesterreich (Vienna).	—	1904	—	—	1904	—	—	1907
Hydrographisches Amt der K. K. Kriegs-Marine (Pola).	—	—	1906	1906	1906	1906	—	—
K. Ung. Reichs-Anstalt für Meteor. und Erdmagn. (Buda- pest).	—	1904	1904	1904	1904	1904	—	—
Bosnisch-Herzegovinische Lan- desregierung (Sarajevo).	—	—	1905	1905	1905	1905	—	—
Agram, Meteorologisches Obser- vatorium.	—	1906	1906	1906	1906	—	—	—
Budapest, Magyar Kir. Országos Meteor. Intézet.	—	—	—	—	1907	—	1907	—
Cracow, C. K. Akademii Umiejęt- ności u. Krakowie.	—	—	—	—	1902	—	—	—
Cracow, K. K. Sternwarte ..	—	—	—	—	1906	—	—	—
Cracow, Observatorium ..	—	—	—	—	—	1906	—	—
Fiume, K. K. Marine-Akademie	—	—	—	—	1906	—	—	—
Innsbruck, Meteorologisches Observatorium.	—	—	1902	1902	1902	—	—	—
Klagenfurt (F. Jäger) ..	—	—	—	—	1906	1906	—	—
Kremsmünster, Sternwarte ..	—	—	1904	1904	—	—	—	—
Prague, K. K. Sternwarte ..	—	—	—	—	1906	—	—	—
Trieste, [I.R.] Osservatorio Astro- nomico-Meteorologico.	—	—	1903	1903	1903	1902	—	—
Vienna, K. K. Sternwarte ..	—	—	—	—	1903	—	—	—
dl. Balkan Peninsula:—								
Institutul Meteorologic al Ro- maniei (Bucharest).	1906	1906	1902	1902	1902	1902	1905	1907
Observatoire National (Athens)	—	—	—	—	—	1903	—	—
Belgrade, Observatoire Central Monastir and Cavalla. Bureau Central Met., Paris.	—	1904	—	1903	—	1904	—	1903
Roumania (S.O. Hepites) ..	—	1903	—	—	—	—	—	—
Salonika, Gymnase Bulgare ..	—	—	—	—	—	1906	—	—
Salonika and Scutari. K. K. Central-Anstalt für Meteorologie, Vienna.	—	—	—	—	—	1905	—	—

GEOGRAPHICAL LIST—continued.

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	1710 & 1730.	1180.	1800.	1810.	1820.	1825.	1830.	1840.
d. EUROPE AND MEDITER- RANEAN ISLANDS—cont.								
dl. Balkan Peninsula—cont.								
Salonika. <i>Observatoire Physique Central Nicolas, St. Petersburg.</i>	—	—	—	—	—	1904	—	—
Sofia. <i>Institut Météorologique Central.</i>	—	—	1906	1906	1906	1906	—	—
Sofia. <i>Station Centrale Météorol- ogique de Bulgarie.</i>	—	1907	—	—	—	—	—	1907
dm. Mediterranean and Islands:—								
Cyprus Public Works Depart- ment (Nicosia).	—	1906	—	—	—	1905	—	1906
Malta and Cyprus. <i>Army Medical Dep., London.</i>	—	—	—	—	—	1906	—	—
Malta. <i>Bureau Central Mété., Paris</i>	—	—	—	—	—	1902	—	—
dq. English Channel, including Channel Islands:—								
Guernsey (A. Collenette).. ..	—	1906	—	—	—	1906	—	—
Jersey, <i>Observatoire St. Louis</i> ..	—	—	—	1907	1907	—	—	—
e. ASIA AND MALAY ARCHI- PELAGO.								
ea. Asiatic Russia:—								
<i>Observatoire Physique Central Nicolas (St. Petersburg).</i>	—	—	1904	1904	1904	1904	—	—
eac. Central Asiatic Russia:—								
Kerki, Termez (Bukhara) <i>Ob- servatoire Physique Central Nicolas, St. Petersburg.</i>	—	—	—	—	—	1904	—	—
eb. China and Dependences:—								
Tibet, Korea:—								
Hong-Kong, <i>Observatory</i> ..	—	—	1906	1906	1907	—	—	—
Chimulpo, Kaumi, Litsun, Tsing- tau (Shantung). <i>Deutsche See- warte, Hamburg.</i>	—	—	—	—	1901	1904	—	—
Chimulpo, Pekin, Urgar. <i>Ob- servatoire Physique Central Nicolas, St. Petersburg.</i>	—	—	—	—	—	1904	—	—
Hong-Kong and Wei-hai-wei. <i>Army Medical Dep., London.</i>	—	—	—	—	—	1906	—	—
Kashgar. <i>Meteorological Office, India (Simla).</i>	—	—	—	—	—	1905	—	—
Ou-tschang. <i>K. K. Central-Ans- talt für Meteorologie, Vienna.</i>	—	—	—	—	—	1904	—	—
Peking, <i>Inspectorate General of Customs.</i>	1904	—	—	—	—	—	—	—
Tokio, <i>Central Meteorological Ob- servatory.</i>	—	—	—	—	1905	—	—	—

GEOGRAPHICAL LIST—continued.

NAME OF INSTITUTION, &C.	Climatology—Agri- cultural and Hy- gienic. 1710 & 1730.	Rainfall Tables. 1180.	Meteorological Observations —General. 1800.	Hourly Values. 1810.	Daily Values. 1820.	Monthly and Yearly Mean Values. 1825.	Daily Weather Re- ports and Charts. 1830.	Weekly or Monthly Weather Reports. 1840.
<i>e. ASIA AND MALAY ARCHI- PELAGO—cont.</i>								
<i>eb. China and Dependencies : Tibet, Corea—cont.</i>								
Yunnan-Sen and other stations, <i>Bureau Central Mët., Paris.</i>	—	—	—	—	—	1904	—	—
Weihawei, Medical Officer ..	—	—	—	—	—	1906	—	—
Zikawei, Observatoire Mag- nétique et Météorologique.	—	—	1904	1904	1904	1904	1907	—
<i>ec. Japanese Islands, Formosa :—</i>								
Central Meteorological Observa- tory (Tokio).	—	—	1905	1905	1905	1905	1907	—
Mizusawa, International Lati- tude Observatory.	—	—	1906	—	1906	1906	—	—
Tsukubasan, Observatorium ..	—	—	1902	1902	1902	—	—	—
<i>ed. French Indo-China : Tonquin, Annam, &c. :—</i>								
<i>Bureau Central Mët., Paris</i> ..	—	1904	1904	—	1904	1904	—	—
Saigon, Hanoi. <i>Hydrographic Office, London.</i>	—	—	—	—	—	*	—	—
<i>ee. Siam :—</i>								
Bangkok. <i>Hydrographic Office, London.</i>	—	—	—	—	—	—	—	—
Cambodia and Vien-Taine (Laos), <i>Bureau Central Mët., Paris.</i>	—	—	—	—	—	1904	—	—
<i>ef. British India : Himalaya, Bur- mah, Ceylon :—</i>								
Meteorological Office, India, (Simla).	—	1905	1906	—	1907	1906	1907	1907
Agricultural Department, Cal- cutta.	—	1907	—	—	—	—	—	—
Meteorological Office, Bengal, Calcutta.	—	1906	1906	—	—	1907	1907	1907
Surveyor General's Office, Colombo.	—	—	1906	—	—	1907	—	—
Allahabad, Meteorological Office	—	1906	—	—	—	1906	—	—
Bangalore, Mysore Government Meteorological Department.	—	1906	1906	—	1906	1906	—	—
Ceylon, Royal Botanic Gardens	—	1903	—	—	—	—	—	—
Kodaikanal, Observatory ..	—	—	—	—	—	1906	—	—
Meteorological Reporter to Government, Punjab.	—	—	—	—	—	1907	—	1907
<i>eg. Malay Peninsula and Archi- pelago, Philippines, &c. :—</i>								
Royal Magnetical and Meteor- ological Observatory (Batavia).	—	1906	1905	1905	—	1905	—	—

* Monthly averages for a series of years.

GEOGRAPHICAL LIST—continued.

NAME OF INSTITUTION, &c.	Climatology—Agri- cultural and Hy- gienic.	Rainfall Tables.	Meteorological Observations —General.	Hourly Values.	Daily Values.	Monthly and Yearly Mean Values.	Daily Weather Re- ports and Charts.	Weekly or Monthly Weather Reports.
	1710 & 1730.	1180.	1800.	1810.	1820.	1825.	1830.	1840.
e. ASIA AND MALAY ARCHI- PELAGO—cont.								
<i>eq. Malay Peninsula and Archi- pelago, Philippines, &c.— cont.</i>								
Philippine Weather Bureau, Manila Central Observatory.	—	—	—	1905	1906	—	—	1906
Principal Civil Medical Officer, Straits Settlements (Singapore).	—	1904	1904	—	1904	1904	—	—
British North Borneo (British N. Borneo Herald).	—	—	—	—	1907	—	—	—
Buitenzorg, Institut Botanique de l'Etat.	—	—	—	—	1906	—	—	—
Manila. Hydrographic Office, London.	—	—	—	—	—	*	—	—
Penang, Singapore. Meteorolo- gical Office, India (Simla).	—	—	—	—	—	1905	—	—
Pnom-Penh (Cambodia), Bureau Central Mët., Paris.	—	—	—	—	—	1903	—	—
Singapore. Army Medical Dep., London.	—	—	—	—	—	1906	—	—
Taiping, State Surgeon's Office..	—	—	—	—	—	1906	—	—
eh. Persia, Afghanistan, Baluchi- stan, Pamirs:—								
Bushire, Ispahan, Jask, Kabul, Quetta. Meteorological Office, India (Simla).	—	—	—	—	—	1905	—	—
Bushire. Bureau Central Mët., Paris.	—	—	—	—	—	1904	—	—
Khousseinaband (Seistan). Obser- vatoire Physique Central Nicolas, St. Petersburg.	—	—	—	—	—	1904	—	—
ei. Asiatic Turkey, Arabia, Syria:—								
Aden, Baghdad, Bahrein, Busrah, Muscat. Meteorological Office, India (Simla).	—	—	—	—	—	1904	—	—
Beyrout, Jerusalem, Gaza, Haifa, Smyrna. K. K. Central-Anstalt für Meteorologie, Vienna.	—	—	1905	—	1905	1905	—	—
Hebron. Scottish Met. Soc., Edin- burgh.	—	—	—	—	—	1904	—	—
Le Krey (Syria) and other stations. Bureau Central Mët., Paris.	—	—	—	—	1904	1904	—	—
Scutari. Army Medical Dep., London.	—	—	—	—	—	1906	—	—
Sinope, Bouioug-Dere. Obser- vatoire Physique Central Nicolas, St. Petersburg.	—	—	—	—	—	1904	—	—
f. AFRICA AND MADAGASCAR.								
fa. Mediterranean States: Moroc- co, Algiers, Tunis, Tripoli:—								
Service Météorologique du Gouvernement Général de l'Algérie.	—	—	—	—	—	—	1907	—

* Monthly averages for a series of years.

GEOGRAPHICAL LIST—continued.

NAME OF INSTITUTION, &C.	Climatology—Agri- cultural and Hy- gienic.	Rainfall Tables.	Meteorological Observations —General.	Hourly Values.	Daily Values.	Monthly and Yearly Mean Values.	Daily Weather Re- ports and Charts.	Weekly or Monthly Weather Reports
	1710 & 1730.	1180.	1800.	1810.	1820.	1825.	1830.	1840
f. AFRICA AND MADAGASCAR —cont.								
a. Mediterranean States: Moroc- co, Algiers, Tunis, Tripoli— cont.								
Algeria and Tunis, Benghazi (Tripoli), Tangier. <i>Bureau Central Mët., Paris.</i>	—	—	1902	—	1902	1904	—	—
Cape Spartel. <i>Hydrographie Office, London.</i>	—	—	—	—	—	*	—	—
Casablanca, Mogador, Safi. <i>Deutsche Seewarte, Hamburg</i>	—	—	—	—	—	1904	—	—
fb. North-east Africa: Egypt, Nile Valley to 5° N., Abyssinia:—								
Survey Department, Cairo ..	—	1905	1905	1905	1905	1906	1907	1908
Sanitary Department, Cairo ..	1905	—	—	—	1905	—	—	—
Egyptian Sudan. <i>Meteorological Office, London.</i>	—	—	—	—	—	1902	—	—
Adis-Abebä (Abyssinia). <i>Obser- vatoire Physique Central Nicolas, St. Petersburg.</i>	—	—	—	—	—	1901	—	—
Khartoum. <i>Army Medical Dep., London.</i>	—	—	—	—	—	1904	—	—
Ismailia, Port Said, Suez, Harar (Abyssinia). <i>Bureau Central Mët., Paris.</i>	—	—	—	—	1904	1904	—	—
fc. Sahara and the Central Sudan:—								
Fort Lamy (Tchad), Timbuctoo, &c. <i>Bureau Central Mët., Paris.</i>	—	—	—	—	1902	1904	—	—
fd. West Africa, including French Sudan, from Morocco to the Congo:—								
<i>Hydrographic Office, London</i> ..	—	—	—	—	—	*	—	—
Lagos, Government Gazette ..	—	—	—	—	—	1905	—	—
Sierra Leone Observatory ..	—	1903	—	—	—	—	—	—
Sierra Leone, Accra, Cape Coast, Kumasi. <i>Army Medical Dep., London.</i>	—	—	—	—	—	1906	—	—
Dakar (Senegal), Ouaghadougou (French Sudan) Port Novo (Dahomey), and other stations. <i>Bureau Central Mët., Paris.</i>	—	—	—	—	1904	1904	—	—
Schwaben, near Cape Palmas. <i>Deutsche Seewarte, Hamburg.</i>	—	—	—	—	—	1900	—	—
fe. Congo State and Angola:—								
Akka (<i>Meteorological Office, Lon- don.</i>)	—	—	—	—	—	1902	—	—
Libreville and other stations. <i>Bureau Central Mët., Paris.</i>	—	—	—	—	1904	1904	—	—

* Monthly averages for a series of years.

GEOGRAPHICAL LIST—continued.

NAME OF INSTITUTION, &c.	Climatology—Agri- cultural and Hy- gienic.	Rainfall Tables.	Meteorological Observations —General.	Hourly Values.	Daily Values.	Monthly and Yearly Mean Values.	Daily Weather Re- ports and Charts.	Weekly or Monthly Weather Reports.
	1710 & 1730.	1180.	1800.	1810.	1820.	1835.	1830.	1840.
f. AFRICA AND MADAGASCAR —cont.								
ff. East Africa; British (with Uganda); German; Portu- guese (north of the Zam- besi); British Central Africa; Lake Region.								
British East Africa ..	Meteoro-	—	—	—	—	1902	—	—
British Central Africa ..	logical	—	—	—	—	1902	—	—
Rhodesia	Office,	—	—	—	—	1902	—	—
Uganda	London.	—	—	—	—	1902	—	—
German East Africa. <i>Deutsche Seezwarte, Hamburg.</i>	—	—	—	1904	1904	—	—	—
Mombassa. <i>Army Medical Dep., London.</i>	—	—	—	—	—	1903	—	—
British East Africa Agricultural Department (Nairobi).	—	—	—	—	—	1905	—	1905
Rhodesia. <i>Government Statist ..</i>	—	—	—	—	—	1906	—	—
Uganda. <i>Protectorate Scientific and Forestry Department (Entebbe).</i>	—	—	—	—	1905	1905	—	—
Zanzibar. <i>Meteorological Office, India (Stmla).</i>	—	—	—	—	—	1905	—	—
Zomba. <i>Scientific Department ..</i>	—	1903	1903	—	1907	—	—	—
<i>Hydrographic Office, London</i> ..	—	—	—	—	—	—	—	—
fg. South Africa—South of Angola and the Zambesi:—								
Meteorological Commission (Cape Town).	—	1905	1905	1902	—	1905	—	—
Transvaal Meteorological De- partment (Johannesburg).	—	1907	1906	1906	1906	—	1907	1907
Bulawayo (E. Goetz)	—	—	—	—	—	1904	—	—
Durban, Natal Observatory ..	—	1902	1906	—	1906	1906	—	—
Southern Rhodesia, &c. <i>Meteoro- logical Office, London.</i>	—	—	—	—	—	1902	—	—
Fort Napier (Natal), Pretoria. <i>Army Medical Dep., London.</i>	—	—	—	—	—	1906	—	—
German S.W. Africa (E. Ott- weiler).	—	1905	—	—	—	—	—	—
<i>Hydrographic Office, London</i> ..	—	—	—	—	—	—	—	—
fh. Madagascar and Comoro Group:—								
<i>Bureau Central Mët., Paris</i> ..	—	1904	—	—	1904	1904	—	—
fi. Red Sea and Islands:—								
<i>K. Akademie der Wissenschaften, Vienna.</i>	—	—	—	[1903]	[1903]	—	—	—
Perim. <i>Meteorological Office, India (Stmla).</i>	—	—	—	—	—	1905	—	—
g. NORTH AMERICA.								
gb. Canada as a whole:—								
Meteorological Service, Dominion of Canada (Toronto).	—	—	—	—	—	1906	1907	1907
Department of Marine and Fisheries (Ottawa).	—	—	1904	1904	—	1906	—	—
<i>U.S. Weather Bureau, Washington</i>	—	—	—	—	—	1906	—	—

* Monthly averages for a series of years.

GEOGRAPHICAL LIST—continued.

NAME OF INSTITUTION &c.	Climatology—Agri- cultural and Hy- gienic.	Rainfall Tables.	Meteorological Observations —General.	Hourly Values.	Daily Values.	Monthly and Yearly Mean Values.	Daily Weather Re- ports and Charts.	Weekly or Monthly Weather Reports.
	1710 & 1730.	1180.	1800.	1810.	1820.	1825.	1830.	1840.
<i>g. NORTH AMERICA—cont.</i>								
<i>gc. Canadian Dominion West.</i>								
Alberta, Official Handbook ..	—	—	—	—	—	1906	—	—
Edmonton, Department of Agri- culture.	—	—	—	—	—	1906	—	—
Regina, Department of Agri- culture.	—	—	—	—	—	1905	—	—
<i>gd. Canadian Dominion East: New- foundland, Labrador:—</i>								
Toronto, Bureau of Industries ..	—	—	1904	—	—	—	—	—
Hebron, Hoffenthal, Nain, Zoar, <i>Deutsche Seewarte, Hamburg.</i>	—	—	—	—	—	1904	—	—
St. Pierre and Miquelon, <i>Bureau Central M^t., Paris.</i>	—	1904	—	—	—	1902	—	—
<i>Hydrographic Office, London</i> ..	—	—	—	—	—	*	—	—
<i>gf. United States as a whole:—</i>								
U.S. Weather Bureau, Depart- ment of Agriculture, Wash- ington.	—	—	1906	1903	1906	1906	1907	1906
<i>gg. North-Eastern United States, East of Mississippi:—</i>								
Cambridge (Mass.), Astronomical Observatory of Harvard Col- lege.	—	—	—	—	1904	—	—	—
New York, Meteorological Ob- servatory.	—	—	—	1907	—	—	—	—
Washington, United States Naval Observatory.	—	—	—	—	1902	—	—	—
<i>gi. Western United States, West of Mississippi:—</i>								
Colorado Springs, Colorado Col- lege Observatory.	—	—	—	—	1906	1906	—	—
Astoria, Cape Flattery, Cape Mendocino, Portland, San Diego, San Francisco. <i>Hydro- graphic Office, London.</i>	—	—	—	—	—	*	—	—
<i>gl. Mexico:—</i>								
Dirección General de Telégrafos Federales (Mexico).	—	—	—	—	—	—	1903	—
Observatorio Meteorológico Central (Mexico).	—	—	1902	1902	1902	—	—	1902
Guadalajara, Observatorio del Seminario Conciliar.	—	—	—	—	1906	—	—	—
Leon, Observatorio Meteorol- ógico.	—	—	—	—	1907	—	—	1907
Mazatlan. <i>Hydrographic Office, London</i>	—	—	—	—	—	*	—	—
Oaxaca (A. M. Domínguez) ..	—	1903	—	—	—	—	—	—
Oaxaca, Observatorio Meteorol- ógico.	—	—	—	—	1907	—	—	190
Puebla, Boletín de Estadística..	1904	—	—	—	1904	—	—	—

* Monthly averages for a series of years.

GEOGRAPHICAL LIST—continued.

NAME OF INSTITUTION, &c.	Climatology—Agri- cultural and Hy- gienic.	Rainfall Tables.	Meteorological Observations —General.	Hourly Values.	Daily Values.	Monthly and Yearly Mean Values.	Daily Weather Re- ports and Charts.	Weekly or Monthly Weather Reports.
	1710 & 1730.	1180.	1800.	1810.	1820.	1835.	1830.	1840
g. NORTH AMERICA—cont.								
gi. Mexico—cont.								
Saltillo, Observatorio Meteorol- ógico del Colegio de San Juan Nepomucino.	—	—	—	—	1905	—	—	—
Tacubaya, Observatorio Astró- nomico Nacional.	—	—	—	—	1896	—	—	—
U.S. Weather Bureau, Washington.	—	—	—	—	—	1906	—	—
Zacatecas, Observatorio	—	—	1907	—	1907	1907	—	—
h. CENTRAL AND SOUTH AMER- ICA AND WEST INDIES.								
hb. Central America, &c.:—								
Belize, Public Hospital	—	—	—	—	1904	—	—	—
Costa Rica, U.S. Weather Bureau, Washington.	—	—	—	1906	—	—	—	—
San Salvador, Observatorio Meteorológico y Astronómico.	—	—	—	—	—	1902	—	—
Tegucigalpa, Estación Meteoro- lógica.	—	—	—	—	1905	—	—	—
hc. West Indian Islands, Carib- bean Sea, Gulf of Mexico:—								
Antigua, Government Labora- tory.	—	—	—	—	1907	—	—	—
Bahamas (Colonial Reports) ..	—	—	—	—	1902	1905	—	—
Barbados, St. Lucia, Jamaica, Bermuda. Army Medical Dep., London.	—	—	—	—	—	1906	—	—
Dominica, Botanic Station ..	—	1905	—	—	—	—	—	—
Grenada, Richmond Hill Ob- servatory.	—	1906	—	—	1906	—	—	—
Guadeloupe, Martinique and other stations. Bureau Cen- tral Mët., Paris.	—	—	—	—	1904	1904	—	—
Havana, Estación Central Me- teorológica, Climatológica y de Cosechas.	—	—	—	—	—	—	—	1906
Havana, Observatorio del Colegio de Belen.	—	—	—	—	1906	—	—	—
Havana, Secretaria de Agricul- tura, &c.	1907	—	—	—	1907	1907	—	—
Kingston, Government Labora- tory.	—	1907	—	—	—	—	—	1907
Port-au-Prince, Haiti. K. K. Central-Anstalt für Meteorologie, Vienna.	—	—	—	—	1904	1905	—	—
St. Lucia Botanic Gardens ..	—	1907	—	—	—	1907	—	—
St. Lucia, Harbour Master ..	—	—	—	—	1907	—	—	—
St. Vincent, Botanic Gardens ..	—	1905	1903	—	—	1906	—	—
U.S. Weather Bureau, Washington.	—	—	—	—	—	—	—	—
hd. Guiana—British, Dutch, and French; Venezuela; Trini- dad:—								
Cayenne, Paramaribo, &c. Bureau Central Mët., Paris.	—	—	—	—	1904	1904	—	—
Georgetown, Demerara, Botanic Gardens.	—	—	—	—	1907	1907	—	—
Paramaribo. K. Nederlandsch Meteorologisch Instituut, de Bilt.	—	—	—	—	1904	—	—	—
Trinidad, Royal Botanic Gardens	—	1906	—	—	—	1906	—	—

GEOGRAPHICAL LIST—continued.

NAME OF INSTITUTION, &C.	Climatology—Agri- cultural and Hy- gienic.	Rainfall Tables.	Meteorological Observations —General.	Hourly Values.	Daily Values.	Monthly and Yearly Mean Values.	Daily Weather Re- ports and Charts.	Weekly or Monthly Weather Reports.
	1710 & 1730.	1180.	1800.	1810.	1820.	1825.	1830.	1840.
h. CENTRAL AND SOUTH AMERICA AND WEST INDIES—cont.								
hf. Peru:—								
<i>Astronomical Observatory of Harvard College, Cambridge (Mass.).</i>	—	—	—	1895	1895	—	—	—
<i>Piura. Deutsche Seewarte, Hamburg.</i>	—	—	—	—	—	1904	—	—
hg. Bolivia:—								
<i>Madidi. Bureau Central Mët., Paris.</i>	—	—	—	—	—	1903	—	—
hh. Brazil:—								
<i>Ministerio de Marinha, Directoria de Meteorologia, Rio Janeiro.</i>	—	—	1904	1904	1906	—	—	—
<i>Cuyabá, Observatorio Meteorologico "D. Bosco."</i>	—	—	—	—	1906	—	—	—
<i>Cuyabá (Revista Matto Grosso)</i>	—	—	—	—	1906	—	—	—
<i>Para Prata. K. K. Central-Anstalt für Meteorologie, Vienna.</i>	—	—	—	—	1905	—	—	—
<i>Rio Janeiro, Observatorio ..</i>	—	—	1906	—	1906	1907	—	—
<i>Sao Paulo, Commissão Geographica e Geologica, Serviço Meteorologico.</i>	—	—	—	—	—	1902	—	—
<i>Usina de Arica. Deutsche Seewarte, Hamburg.</i>	—	—	—	—	—	1901	—	—
i. Argentina, Uruguay, and Paraguay:—								
<i>Oficina Meteorológica Argentina (Buenos Aires).</i>	—	—	—	—	—	—	1906	—
<i>Dirección General del Servicio Meteorológico Nacional, Monte Video.</i>	—	1905	—	—	—	1905	—	—
<i>Dirección General de Estadística del Uruguay, Monte Video.</i>	1906	—	—	—	—	1906	—	—
<i>Fray Bentos. Deutsche Seewarte, Hamburg.</i>	—	—	—	—	—	1893	—	—
<i>Monte Video, Observatorio Nacional Físico-Climatológico.</i>	—	—	—	1906	1906	—	—	1906
<i>Villa Colón, Observatorio Meteorológico.</i>	—	—	—	1902	1902	—	—	1902
hk. Chili —								
<i>Servicio Meteorológico de la Dirección del Territorio Marítimo (Valparaíso.)</i>	—	—	—	—	1905	1905	—	—
<i>Punta Arenas, Observatorio Meteorológico del Colegio Salesiano "S. José."</i>	—	1902	—	1902	—	—	—	—
<i>Santiago, Observatorio Astronómico.</i>	—	—	1904	—	—	1904	—	—

GEOGRAPHICAL LIST—continued.

NAME OF INSTITUTION, &c.	Climatology—Agri- cultural and Hy- gienic.	Rainfall Tables.	Meteorological Observations —General.	Hourly Values.	Daily Values.	Monthly and Yearly Mean Values.	Daily Weather Re- ports and Charts.	Weekly or Monthly Weather Reports.
	1710 & 1730.	1180.	1800.	1810.	1820.	1825.	1830.	1840.
i. AUSTRALASIA.								
Sydney Observatory	—	—	—	—	—	—	1907	—
ia. New Guinea:—								
British New Guinea (Govern- ment Gazette).	—	—	—	—	—	1907	—	—
Kissidougou, Labé and Siarrhéa. <i>Bureau Central Mët., Paris.</i>	—	—	—	—	—	1902	—	—
ib. Bismarck Archipelago:—								
Ralum. <i>Deutsche Seewarte, Ham- burg.</i>	—	—	—	—	—	1897	—	—
id. Queensland:—								
Brisbane, Government Statis- tician's Office.	1905	—	—	—	—	1905	—	—
Brisbane, Weather Bureau ..	—	—	—	—	—	1907	—	—
Brisbane, &c. <i>Hydrographic Office, London.</i>	—	—	—	—	—	*	—	—
Sweers Island. <i>Hydrographic Office, London.</i>	—	—	—	—	—	*	—	—
ic. New South Wales:—								
Sydney, Department of Public Instruction.	—	1902	—	—	1902	1902	—	—
Port Macquarie and Sydney. <i>Hydrographic Office, London.</i>	—	—	—	—	—	*	—	—
Windsor (John Tebbutt)	—	—	—	—	—	1903	—	—
ig. South Australia:—								
Adelaide Observatory	—	1905	1905	—	1905	1905	—	—
ih. West Australia:—								
Perth Observatory	—	1906	1905	—	1905	1905	—	1906
ik. New Zealand:—								
Wellington, Meteorological De- partment.	—	1903	—	—	—	1903	1905	—
Wellington, Government Obser- vatory.	—	—	—	—	1904	—	—	—
il. New Caledonia, New Hebrides, and Loyalty Islands:—								
Noumea (N. Cal.). <i>Bureau Central Mët., Paris.</i>	—	1904	—	—	—	1904	—	—

* Monthly averages for a series of years.

GEOGRAPHICAL LIST—continued.

NAME OF INSTITUTION, &C.	Climatology—Agri- cultural and Hy- gienic.	Rainfall Tables.	Meteorological Observations —General.	Hourly Values.	Daily Values.	Monthly and Yearly Mean Values.	Daily Weather Re- ports and Charts.	Weekly or Monthly Weather Reports.
	1710 & 1730.	1780.	1800.	1810.	1820.	1825.	1830.	1840.
k. ARCTIC.								
ka. Arctic Ocean:—								
Ziegler Polar Expedition, 1903-5	—	—	—	—	1905	—	—	—
kb. Greenland:—								
<i>Dansk Meteorologisk Institut (Co- penhagen).</i>	—	—	—	—	1904	1904	—	—
kc. Archipelago North of North America:—								
<i>Hydrographic Office, London</i> ..	—	—	—	—	—	—	—	—
kd. Islands north of Europe and Asia:—								
Norwegian North Polar Expedi- tion [H. Mohn].	—	—	1896	1896	1896	—	—	—
Spitzbergen (J. Westman) ..	—	—	—	1900	—	—	—	—
l. ATLANTIC.								
lb. Azores, Canaries, Madeira, Cape Verde:—								
<i>Service Météorologique des Açores, Ponta Delgada.</i>	—	—	1906	1906	—	1906	—	—
<i>Teneriffe, Las Palmas. Observa- torio Do Infante D. Luiz, Lisbon.</i>	—	—	—	—	—	1905	—	—
<i>Teneriffe, Las Palmas. Bureau Central Met., Paris.</i>	—	—	—	—	—	1904	—	—
<i>Hydrographic Office, London</i> ..	—	—	—	—	—	—	—	—
m. INDIAN OCEAN.								
ma. Ocean and Islands north of Equator:—								
<i>Amini Divi, Minicoy. Meteorolo- gical Office, India (Simla).</i>	—	—	—	—	—	1905	—	—
mb. Ocean and Islands south of Equator:—								
<i>Christmas Island. Scottish Met. Soc., Edinburgh.</i>	—	—	—	—	—	1904	—	—
<i>Christmas Island. Straits Settle- ments Gazette.</i>	—	—	—	—	1907	—	—	—
<i>Mauritius, Royal Alfred Obser- vatory.</i>	—	—	1906	1905	1905	—	—	—
<i>Mauritius, Army Medical Dep., London.</i>	—	—	—	—	—	1903	—	—
<i>Mauritius, Seychelles. Meteorolo- gical Office, India (Simla).</i>	—	—	—	—	—	1905	—	—
<i>Réunion. Bureau Central Met., Paris.</i>	—	1904	—	—	—	1902	—	—
<i>Tananarive, Observatoire</i> ..	—	—	1905	1905	1905	1905	—	—

* Monthly averages for a series of years.

GEOGRAPHICAL LIST—continued.

NAME OF INSTITUTION, &c.	Climatology—Agri- cultural and Hy- gienic.	Rainfall Tables.	Meteorological Observations —General.	Hourly Values.	Daily Values.	Monthly and Yearly Mean Values.	Daily Weather Re- ports and Charts.	Weekly or Monthly Weather Reports.
	1710 & 1730.	1180.	1800.	1810.	1820.	1825.	1830.	1840.
<i>n.</i> PACIFIC.								
<i>nd, ne.</i> Pacific Islands North of Equator:—								
Honolulu (R. C. Lydecker)	—	—	—	—	1903	—	—	—
Honolulu. U.S. Weather Bureau, Washington.	—	—	—	—	1906	—	—	—
Caroline, Gilbert and Marshall Islands. Deutsche Seewarte, Hamburg.	—	—	—	—	1904	—	—	—
<i>nf, nh.</i> Pacific Islands South of Equator:—								
Samoa and Cook Islands. Deutsche Seewarte, Hamburg.	—	—	—	—	1904	—	—	—
Tahiti, Rikitea (Mangareva). Bureau Central Mët., Paris.	—	—	—	—	1904	1904	—	—

LIST OF CURRENT METEOROLOGICAL PERIODICALS AND JOUR-
NALS CONTAINING OCCASIONAL ARTICLES ON METEORO-
LOGICAL SUBJECTS RECEIVED FOR THE OFFICE LIBRARY.

Annales de l'Observatoire Municipal, Paris.
 Annales du Bureau Central Météorologique de France.
 Annalen der Hydrographie und maritimen Meteorologie.
 Annali dell' Ufficio Centrale Meteorologico e Geodinamico Italiano.
 Annuaire de la Société Météorologique de France.
 Annuaire Météorologique de l'Observatoire Royal de Belgique.
 Aus dem Archiv der Deutschen Seewarte.
 Beiträge zur Physik der freien Atmosphäre.
 Boletín mensual del Observatorio meteorológico central de Mexico.
 Bollettino bimensuale della Società Meteorologica Italiana.
 Ciel et Terre.
 Comptes rendus hebdomadaires des séances de l'Académie des Sciences, Paris.
 Das Wetter.
 Geographical Journal.
 Globe (Le), Journal Géographique.
 Himmel und Erde.
 Indian Meteorological Memoirs.
 Jahrbuch der Astronomie und Geophysik (H. J. Klein).
 Journal of Balneology and Climatology.
 Journal of the Franklin Institute.
 Journal of the Meteorological Society of Japan.
 Journal of the Royal United Service Institution.
 Journal of the Scottish Meteorological Society.
 Journal of the Society of Arts.
 London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science.

Memoirs and Proceedings of the Manchester Literary and Philosophical Society.
Memorias de Sociedad Cientifica "Antonio Alzate," Mexico.
Meteorologische Zeitschrift.
Mitteilungen aus dem Gebiete des Seewesens, Pola.
Monthly Meteorological Bulletin of the Nicolas Central Physical Observatory.
Monthly Notices of the Royal Astronomical Society.
Monthly Weather Review of the U.S. Weather Bureau.
Nature.
Nature (La).
Nautical Magazine.
Oversigt over det Kongelige danske Videnskabernes Selskab Forhandlinger.
Petermann's (Dr. A.) Mitteilungen aus Justus Perthes' Geographischer Anstalt.
Proceedings of the American Philosophical Society.
Proceedings of the Cambridge Philosophical Society.
Proceedings of the Royal Institution.
Proceedings of the Royal Irish Academy.
Proceedings of the Royal Society of London.
Quarterly Journal of the Royal Meteorological Society.
Scientific Proceedings of the Royal Dublin Society.
Scottish Geographical Magazine.
Smithsonian Contributions to Knowledge.
Smithsonian Miscellaneous Collections.
Symons's Meteorological Magazine.
Tijdschrift van het Koninklijk Nederlandsch Aardrijkskundig Genootschap.

In addition to the works summarised in the above lists, a large number of books and pamphlets dealing with meteorological subjects have been received. Some of the more important are referred to on p. 38 of the Report.

The compilation of a complete bibliography of meteorological literature is included in the objects of the International Catalogue of Scientific Literature, and the necessity for the publication in full of the titles of all books and pamphlets received at the office is thereby obviated. It is intended to deal with the matter in due course in connexion with the catalogue of the Library.

APPENDIX VIII.

LIST of INSTITUTIONS and PERSONS receiving PUBLICATIONS issued by the COMMITTEE.

OBSERVERS contributing returns printed in one of the periodical publications receive a copy of the publication. The Committee request that the copies may be returned to the Office after the observer has no personal use for them, in cases where they are not filed in a public library or other institution where the public can consult them.

The *Daily Weather Report* is sent to seaports and to a few places in London for exhibition.

The *Annual Report* is sent to all observers at land stations in connexion with the Office who express a wish to receive it.

Periodical or occasional publications are sent to the institutions and persons named in the following list, generally speaking, in exchange for publications received.

UNITED KINGDOM.

Public Offices:		Public Offices —cont.	
Aberdeen ...	B.T., Supt. M.M.O.	London ...	Admiralty, Hydrographer.
Aldershot...	School of Ballooning.		— Librarian.
Avonmouth	B.T., Supt. M.M.O.		Army Medical Department.
Barry ...	B.T. Surveyor.		Board of Agriculture (Prof. Middleton).
Belfast ...	B.T., Supt. M.M.O.		*†Board of Education, Secondary Branch.
Blyth ...	B.T., Supt. M.M.O.		— Solar Physics Observatory.
Bristol ...	B.T., Supt. M.M.O.		Board of Trade, Consultative Branch.
Cardiff ...	B.T., Supt. M.M.O.		
Dartmouth	Admiralty, Royal Naval College.		— Fisheries and Harbour Department.
	B.T., Supt. M.M.O.		— Marine Department (Capt. Chalmers).
Dublin ...	Board of Agriculture and Technical Instruction.		— Standard Weights and Measures Department.
	General Register Office.		— Supt. M.M.O. Dock Street.
	Ordnance Survey Office.		— Supt. M.M.O. Poplar.
Dundee ...	B.T., Supt. M.M.O.		— Supt. M.M.O. Tilbury.
Edinburgh	Board of Fisheries.		— Supt. M.M.O. Victoria Docks.
	General Register Office.		British Museum, Dept. of Printed Books.
	Royal Observatory.		
	*†Royal Scottish Museum.		
Glasgow ...	B.T., Supt. M.M.O.		
Greenock...	B.T., Supt. M.M.O.		
Greenwich	*†Admiralty, Royal Naval College.		
	— Royal Observatory.		
Gloucester	B.T., Supt. M.M.O.		
Grimsby ...	B.T., Supt. M.M.O.		
Hartlepool	B.T., Supt. M.M.O.		
Hull ...	B.T., Supt. M.M.O.		
Leith ...	B.T., Supt. M.M.O.		
Liverpool.	B.T., Supt. M.M.O.		

* Receive all publications, including the *Daily Weather Report* in those cases which are also marked †.

LIST OF INSTITUTIONS, &c., receiving PUBLICATIONS—*cont.*

UNITED KINGDOM— <i>cont.</i>		UNITED KINGDOM— <i>cont.</i>	
Public Offices — <i>cont.</i>		Dublin ...	Moore, Sir J. W.
London ...	Chinese Maritime Customs.		Royal Dublin Society.
	General Post Office		Royal Irish Academy.
	General Register Office.	Dundee ...	Stoney, B.
	*Imperial Institute.		Trinity College.
	Local Government Board.		Brown, C. H. (Agent).
	Trinity House.		International Commission for Investigation of North Sea.
Manchester	B.T., Supt. M.M.O.	Durham ...	University College.
Middlesex-borough.	B.T., Supt. M.M.O.	Eastham ...	Observatory.
Newcastle-on-Tyne.	B.T., Supt. M.M.O.	Edinburgh ...	Babington, T. H.
Newport ...	B.T., Supt. M.M.O.		Royal Scottish Geographical Society.
Plymouth	B.T., Supt. M.M.O.		Royal Society.
Richmond	National Physical Laboratory (Bushy House).		*†Scottish Meteorological Society.
	National Physical Laboratory (Kew Obs.).	Falmouth ...	University Library.
Shields	B.T., Supt. M.M.O.		Observatory.
North.			Royal Cornwall Polytechnic Society.
Shields	B.T., Supt. M.M.O.	Fleetwood ...	Benn, T. G.
South.		Glasgow ...	"Nautical Magazine."
Southampton.	B.T. Supt. M.M.O.		Observatory.
Sunderland	Ordnance Survey Office.	Greenhithe ...	"Worcester" Training Ship.
Swansea ...	B.T., Supt. M.M.O.	Hull ...	Shipmasters' Association.
		Jersey ...	Fisher, J.
Aberdeen ...	Observatory.		St. Louis Observatory
Aberystwyth.	Dr. Morgan Lewis, M.A.	Leeds ...	University.
Alnwick ...	Duke of Northumberland.	Leith... ...	Nautical College.
Armagh ...	Observatory.	Liverpool ...	Free Public Library.
Aspatia ...	Royal Agricultural College.		Fry, Capt.
			Mercantile Marine Service Association.
Belfast ...	Queen's College.		Nautical College.
Bexley Heath	Kettle, W. R.		Richardson, Spence & Co.
Bidston ...	Liverpool Observatory.		Underwriters' Rooms.
Birkenhead ...	"Conway" Training Ship.	London ...	Archibald, E. D.
Birmingham .	Central Free Library.		Barstow, G. L.
	Midland Institute.		British Balneological and Climatological Society.
	University, Librarian, —The Principal.		Eastern Telegraph Co.
Birr ...	Earl of Rosse.		Galton, F.
Brighton ...	Salmon, S. H. R.		*Guildhall Library.
Cambridge ...	Cavendish Prof. of Physics.		Institution of Civil Engineers.
	Darwin, Sir C. H.		*†Lloyd's.
	Observatory.		London Institution.
	Philosophical Society.		Metropolitan Water Board.
	Schuster Reader in Meteorology.		*British Rainfall Organisation.
Cardiff ...	University College.		"Nature."
Cirencester ...	Royal Agricultural College.		Navigation School.
			Royal Astronomical Society.

* Receive all publications, including the Daily Weather Report in those cases which are also marked †.

LIST OF INSTITUTIONS, &c., receiving PUBLICATIONS—*cont.*

UNITED KINGDOM— <i>cont.</i>		BRITISH COLONIES AND DEPENDENCIES— <i>cont.</i>	
<i>London—cont.</i>		<i>Australasia—cont.</i>	
	Royal Botanic Society.	Melbourne— <i>cont.</i>	Commonwealth Statistical Bureau.
	Royal College of Science.		Department of Agriculture.
	Royal Geographical Society.		Observatory.
	Royal Institution of Great Britain.	Perth ...	Divisional Office. Commonwealth Meteorological Bureau.
	*†Royal Meteorological Society.		Observatory.
	Royal National Lifeboat Institution.	Sydney ...	Royal Society of New South Wales.
	Royal Society.		Colonial Museum.
	*Royal United Service Institution.	Wellington ...	Observatory.
	Sailors' Palace.	Windsor ...	
	Scott, R. H.		
	"Shipping Gazette."		
	Society of Arts.		
	Strachan, R.		
	Toynbee, Capt. H.		
	University College.		
Manchester ...	Philosophical Society.		
	Schuster, Prof. A.		
Markree ...	Observatory.		
Northampton.	Markham, C. A.		
Oxford ...	Clifton, Prof. R. B.		
	Radcliffe Observatory.		
	School of Geography.		
Petersfield ...	Cave, C. J. P.		
Plymouth ...	Incorporated Chamber of Commerce.		
	Marine Biological Laboratory.		
Portland ...	Seamen's Reading Room.		
Southampton.	Forbes, Capt. (Agent).		
Southport ...	Fernley Observatory.		
Southsea ...	Alexander, P. Y.		
South Shields	Marine Schools.		
Stamford ...	Free Library.		
Stonyhurst ...	Observatory.		
Torquay ...	Natural History Society.		
Valencia ...	Observatory.		
Watlington (Oxon.)	Dines, W. H.		
Wokingham...	Simmonds, G. H.		
Worcester ...	Wilson, Rev. Canon.		
York ...	Philosophical Society.		
BRITISH COLONIES AND DEPENDENCIES.			
<i>Australasia.</i>			
+ Adelaide ...	Government Astronomer.		
Brisbane ...	Government Meteorologist.		
	Public Library.		
Hobart ...	Royal Society of Tasmania.		
— Melbourne ...	*†Commonwealth Meteorological Bureau.		
		<i>Canada.</i>	
		Montreal ...	McGill University.
		Toronto ...	*†Meteorological Office.
		Victoria (B.C.)	Meteorological Office.
		<i>Falkland Islands.</i>	
		Cape Pembroke	Lighthouse Keeper.
		<i>India and Eastern Asia.</i>	
		Allahabad ...	Meteorological Reporter.
		Bangalore ...	Meteorological Department.
		Bombay ...	Observatory.
		Calcutta ...	Director General of Observatories.
			Surveyor General.
		Dehra Dun ...	Trigonometrical Survey.
		Hong Kong ...	Observatory.
		Kodaikanal ...	Observatory.
		Simla ...	Director General of Observatories.
		Singapore ...	Principal Civil Medical Officer.
		<i>Mediterranean.</i>	
		Malta ...	Observatory.
		<i>South Africa.</i>	
		Bloemfontein.	Grey College.
		Cape Town ...	Observatory.
			Meteorological Commission.
		Durban ...	Natal Observatory.
		Johannesburg	Transvaal Meteorological Department.
		<i>Indian Ocean.</i>	
		Mauritius ...	Meteorological Society.
		<i>West India Islands.</i>	
		Jamaica ...	Government Meteorologist.

* Receive all publications, including the Daily Weather Report in those cases which are also marked †.

LIST OF INSTITUTIONS, &c., receiving PUBLICATIONS—*cont.*

ITALY— <i>cont.</i>		SPAIN.	
+ Rome	Central Meteorological Office.	Barcelona	Experimental Farm.
— Turin	Observatory.	Guardia	Observatory.
Venice	Observatory.	Madrid	Central Meteorological Institute.
NETHERLANDS.			Observatory.
Amsterdam	Geographical Society. Meteorological Institute.		Observatory, Chamar-tin de la Rosa.
Helder	Rijksinstituut voor het Onderzoek der Zee.	Malaga	Society of Sciences.
— Utrecht, (De Bilt).	*† Royal Meteorological Institute.	San Fernando	Observatory.
NORWAY.		Tortosa	Ebro Observatory.
— Christiania	Meteorological Institute.	Vilafranca del Panades.	Observatory.
PORTUGAL.		SWEDEN.	
— Coimbra	Observatory.	Stockholm	Central Meteorological Institute.
— Lisbon	Observatory.		Nautical Meteorological Bureau.
Azores.			Royal Academy.
— Ponta Delgada	Observatory.	Upsala	Meteorological Observatory.
ROUMANIA.		SWITZERLAND.	
— Bucharest	Meteorological Institute.	Berne	Hydrometrical Bureau.
RUSSIA.		Geneva	Geographical Society.
— Dorpat	Observatory.	Mont Blanc	Observatory.
— Helsingfors	Society of Sciences.	Neuchâtel	Observatory.
Kazan	Observatory.	Zürich	Central Meteorological Office.
Kieff	Observatory.	AFRICA.	
Koutchino	Aerodynamical Institute.	Algiers	Meteorological Service.
Moscow	Observatory.	Cairo	Sanitary Department.
Nicolaieff	Hydrographic Office.		*† Survey Department.
Odessa	Observatory.	AMERICA.	
Pavlovsk	Observatory.	Baltimore	Maryland Weather Service.
+ St. Petersburg	*† Nicolas Central Physical Observatory. Hydrographic Department. Imperial Institute of Forestry. Woeikof, A.	Buenos Aires	Meteorological Office. Mons. Lasagna Observatory.
Tiflis	Observatory.	Cambridge, Mass.	Harvard College Observatory.
Warsaw	Meteorological Bureau	Cordoba	National Academy.
SERVIA.		Costa Rica	Meteorological Institute.
— Belgrade	Central Observatory.	Guatemala	Central Laboratory.
		Havana	Observatory.
			Central Meteorological Station.
		Mexico	"Antonio Alzate" Scientific Society.
			Central Meteorological Observatory.

* Receive all publications, including the Daily Weather Report in those cases which are also marked †.

LIST OF INSTITUTIONS, &c., receiving PUBLICATIONS—*cont.*

AMERICA— <i>cont.</i>		AMERICA— <i>cont.</i>		
Monte Video...	Meteorological Society.	San Salvador	Observatory.	+
	Observatory, Villa	Valparaiso ...	Meteorological Service.	+
	Colon.	Washington...	Chief Signal Officer.	+
New York ...	American Geographical		Department of Agri-	+
	Society.		culture.	—
	Central Park Obser-		Geological Survey.	—
	vatory.		Hydrographic Office.	—
	State Hydrographer.		Naval Observatory.	—
	State Library.		Smithsonian Institu-	—
Oaxaca ...	Observatory.		tion.	—
Philadelphia..	American Philoso-		Surgeon General's	—
	phical Society.		Office.	+
	Franklin Institute.		*†Weather Bureau.	+
Porto Alegre..	Azambuja, Sr. G. A. de			
Porto Rico ...	Engineer in Chief.		ASIA.	
Puebla ...	Boletin de Estadistica	Batavia ...	Observatory.	—
Quito... ..	Observatory.	Beyrout ...	Lee Observatory.	—
Rio Janeiro ...	Meteorological Depart-	Irkutsk ...	Observatory.	—
	ment, Ministry of	Manila ...	Meteorological Obser-	—
	Marine.		vatory.	—
	Observatory.	Tokio ...	Imperial Meteorolo-	—
Saltillo ...	Observatory.		gical Observatory.	—
San Luis	Observatory.	Zi-ka-wei ...	*Observatory.	—
Potosi.				

* Receive all publications, including the Daily Weather Report in those cases which are also marked †

APPENDIX IX.

ACCOUNT of RECEIPTS and PAYMENTS for the year ended 31st March, 1908 :—

RECEIPTS.			PAYMENTS.		
	£	s. d.		£	s. d.
Balance from year 1906-1907	—	1,844 12 5	Director	—	1,000 0 0
Parliamentary vote ..	—	15,500 0 0	OFFICE SALARIES:		
DEPARTMENTAL EXPENSES REPAID:			Monthly	6,466 12 10	
Forecasts, &c.	163 17 2		Weekly	728 13 9	7,195 6 7
Marine, Statistics, and Observatories	152 17 3		OFFICE EXPENSES:		
Instruments	132 5 7	449 0 0	Rent, Fuel, &c.	723 19 11	
INCIDENTAL EXPENSES REPAID:			Furniture, Fittings, &c. ..	114 13 0	
Forecasts, &c.	278 9 0		Incidental expenses ..	257 19 0	1,096 11 11
Other Branches	88 0 6		POSTAGE AND TELEGRAMS:		
Stationery Office Account	31 0 6	397 10 0	General Postage	197 0 5	
TELEGRAPH CHARGES REPAID:			Postage of Daily Weather Reports ..	230 8 6	
Home	132 13 7		Telegrams	2,086 9 0	2,513 17 11
Telegrams sent abroad ..	669 17 10	802 11 5	TRAVELLING EXPENSES AND INSPECTIONS ..	—	361 5 1
INSTRUMENTS:			SUPERANNUATION	—	1,805 11 5
Royal Navy	574 13 5		COSTS OF INSTRUMENTS:		
Mercantile Marine, Stations, &c.	929 6 4	1,503 19 9	Royal Navy	574 13 5	
SUPERANNUATION ACCOUNT:			Mercantile Marine, Stations, &c.	1,269 0 3	1,843 13 8
Annuities	427 10 0		ALLOWANCES FOR OBSERVATORIES, OBSERVERS, &c.	—	3,131 16 6
Interest on Investment ..	95 16 4		SPECIAL RESEARCHES ..	—	—
Income Tax returned ..	1 13 5	524 18 0	LECTURES AND EXPERIMENTS	—	180 16 0
ANTARCTIC METEOROLOGY	—	219 10 0	ANTARCTIC METEOROLOGY	—	99 2 11
LECTURES AND EXPERIMENTS	—	308 2 6	BALANCE:		
SPECIAL RESEARCHES ..	—	—	Cash at Bank	2,366 3 6	
Amounts refunded:	—	1 6 5	" at Office	47 5 9	2,413 9 3
		£21,641 11 3			£21,641 11 3

NOTE.—On the 31st March the amount of 2½ per cent. Annuities held for the provision of Superannuation Annuities was £1,128 16s. 5d.

* The amounts previously charged under Special Researches are now included with "Allowances for Observatories, Observers, &c."

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