

## METEOROLOGICAL BRANCH.

### REPORT BY THE DIRECTOR, 1935-36.

#### GENERAL.

Early in the year a number of additions were made to the staff in view of the imminent necessity of providing a Meteorological Service for Aviation. Dr. M. A. F. Barnett, Ph.D. (Cantab.), M.Sc. (N.Z.), was appointed to take charge of this section of the work. Another appointment was that of Dr. W. A. Macky, Ph.D. (Cantab.), M.Sc., who had received training in the British Meteorological Office. The Director attended a Conference of Empire Meteorologists at London in August and subsequently the International Conference of Directors of Meteorological Services (Organisation Météorologique Internationale) at Warsaw, Poland. At the time of his appointment Dr. Barnett was in London, and was able to be present at the Empire Conference. Through the courtesy of the Director of the London Meteorological Office, Sir George Simpson, he was able to visit the various branches of the Meteorological Office, and particularly to study the organization and working of the service for Aviation. He also made a brief visit to Bergen, Norway, in order to gain some insight into the methods of synoptic meteorology being developed there. At the European conferences many matters regarding routine procedure, particularly in connection with aviation and maritime meteorology, were dealt with, and much co-ordinating work was done. Mr. B. V. Pemberton was appointed Acting-Director during the Director's absence.

The first commercial air services commenced at Christmas-time, and the necessary meteorological advice to pilots has been provided.

An increasing interest is being taken in the relation between meteorology and public health. This is apparently being stimulated by the Otago Medical School, and special information has been supplied to numbers of students who were preparing theses for various medical degrees.

Mr. R. G. Simmers, M.Sc., of the Meteorological Office staff, has been awarded a Commonwealth Service Fellowship, and will shortly be proceeding to America to undertake advanced studies in Meteorology.

Routine publications have been maintained and a few short studies on special questions printed.

The cordial co-operation of members of the staff throughout the year is gratefully acknowledged.

#### OBSERVING-STATIONS.

A new climatological station was established at Morrinsville in connection with Dairy Research. The station at Cambridge is shortly to be discontinued. Co-operation has been maintained with the Public Works Department in the collection of rainfall data in Canterbury, where an intensive study of irrigation problems is being pursued. Twenty-two new rainfall stations have been established and six abandoned. All the principal lighthouses now have rain gauges.

A considerable amount of inspection has been carried out, particularly along the regular air routes. A number of new reporting stations were provided. A large number of old Fortin barometers have been reconditioned by Mr. R. G. Simmers and used at airways and other stations.

Two soil-moisture meters, of the type devised by Mr. W. S. Rogers at the Apple Research Station at East Malling, Kent, and a number of earth thermometers of a new type were purchased in London, and should prove useful at the various agricultural research stations.

#### FORECASTING.

The development of aviation is calling for frequent and detailed reports and forecasts from the early hours of the morning onwards. As the services extend, and particularly with the inauguration of trans-ocean services, these demands will increase greatly. One of the most pressing problems of the Meteorological Office, therefore, is to produce a number of additional forecasters within a short period. Unfortunately, at the time forecasts are made they have to be got out promptly, and there is little time for discussion. Again, long experience is one of the principal assets of a forecaster. It will, therefore, be some years before full efficiency can be expected. In the meantime members of the staff are getting practice in plotting charts, drawing fronts and isobars, &c. Daily discussions on the charts are held, and special types of weather are described in detail, occasionally in printed memoranda. In the scale and type of charts used, the methods of plotting data, and drawing isobars and fronts, international practice is being followed. In the collection of data, also, international conventions are being adopted wherever possible. It is not yet possible to introduce international codes in their entirety, since, at present, there is little opportunity of instructing the reporting observers. The latter have, in general, done very well with the brief written instruction which it has been possible to give them, and we take pleasure in acknowledging the care and keenness with which the great majority do their work, in nearly every case without any prospect of personal gain therefrom.

The advantages of using international methods are that they are in the long run likely to be the most efficient, that by so doing the service is prevented from stagnating and becoming out of date, and, finally and most important, our charts will be intelligible immediately to other services and to pilots on international airways.

As soon as the various aviation services are in smooth running order it should be possible for the Meteorological Office to publish its daily weather charts. These will certainly be of much