The forecasting service arose out of the requirements of shipping. The importance to mariners of a knowledge of the nature of the weather to be expected on an inhospitable coast is obvious. It was relatively still more important when lighthouses and other aids to navigation were not so plentiful as now. Much of the activity of small shipping and of the work in partially protected or bar harbours is still conditioned by the weather. For mail-boats the value of the forecast lies in the increased speed with which a port can be approached if it is known that weather conditions are favourable, in enabling the proper precautions to be taken if the contrary is the case, in allowing the probable coal-consumption to be calculated, and occasionally in enabling a storm-centre to be avoided. During the year an attempt has been made to improve the forecasting service both from the point of view of increasing its accuracy and by obtaining more and better information on which to base it.

During the past year the evening forecast as broadcasted in Morse from the Wellington Radio Station has been amplified by the inclusion of reports from sixteen stations well distributed over the region extending from the Dominion to Chatham and Norfolk Islands and to Sydney and Hobart. The forecast includes an ocean forecast for the eastern half of the Tasman Sea, the western half being covered by Australian issues. The reports are sufficient to enable any one with an elementary knowledge of meteorology to draw his own weather chart. This is being done on an increasing number of ships.

Nowadays, however, the interest of the general community in the forecast is increasing rapidly. The principles of meteorology are being increasingly taught in the schools, and many people whose activities are affected by the weather are realizing the value of keeping a watch on its changes and taking advantage of the information conveyed in the official report.

It is probably persons engaged in agricultural pursuits who are most interested in the weather forecasts. There are many occasions on which large sums of money can be saved by proper provision for future weather in farming operations. Many sheep are lost, for instance, through being turned out after shearing in wet and cold weather. Many precautions can be taken during lambing against the effects of severe weather. Harvesting, fruit-picking, spraying, and other operations can be adjusted to weather conditions, with consequent saving of time and money. The same report as is issued in Morse from Wellington for the benefit of shipping is broadcasted nightly from the Radio Broadcasting Co.'s stations in each of the four main centres, and has proved a boon to farmers and the general public. During the Canterbury harvesting season, also, a special report was issued at midday giving the outlook for as far ahead as possible, and proved to be a success. There is, however, undoubtedly still much that can be done to improve the service to the farmer. For instance, the weather situation as defined by the Meteorologist could be analysed in a talk over the wireless by an officer with a knowledge of agriculture. The implications of the weather report could be explained in simple language, and practical advice given to farmers in various districts as to the best course to follow in their work. It is hoped that before long staff will be provided which would enable this service to be undertaken.

Aviation is still in the early stages of its development in New Zealand, but it is unnecessary to enlarge on the importance for any one undertaking a long journey by air of a knowledge of the wind, weather, and visibility he will meet with along his route. More frequent and more detailed information is required for aviation purposes than for the ordinary forecasting, and in the Dominion the supply will have, to a large extent, to follow the demand. At present forecasts are frequently supplied to aviators in response to telephoned or telegraphed requests, but arrangements are in hand, in co-operation with the Department of Civil Aviation, for a more complete organization, at least as regards inter-Island traffic. Before making the frequently somewhat hazardous crossing of Cook Strait a pilot will be given information regarding the wind at various heights, the nature and height of clouds, the weather, and the visibility.

The uses to which climatological information can be put are too numerous to mention in detail. Every person who makes his living from the soil wishes to know the average weather conditions he may expect and the extremes through which they vary. The purposes for which land should be employed and the fertilizer programme are determined very largely by rainfall and temperature. In this connection the whole of past rainfall data has been carefully sifted and analysed, and more accurate rainfall maps for both Islands are in course of publication. To a smaller extent the liability to gales, floods, frost, snow, hail, &c., is important. As an instance of the importance of climatic considerations, it may be mentioned that there are numbers of pests which are unable to pass through certain phases of their life-history unless the temperature rises above a certain value. Again, attempts have been made to grow fruit in districts where the frequency of frosts rendered it unprofitable. To engineers the most important climatic element is rainfall. They need to know not only the average yearly rainfall, but the intensity to be expected over various intervals. For a city drainage scheme, for instance, the provision to be made may depend on the amount of rain liable to occur within half an hour. In the case of rivers the height of a flood may depend on the accumulated rainfall of several days. There are many industrial avenues in which climatic data are of importance. Cold storage and certain manufactures, for example, require the humidity of the air to be controlled.

It should be the aim of the meteorological services to accumulate and classify data enabling all the above-mentioned requirements to be met. For the collection of this data the services are dependent mainly on the efforts of voluntary observers, to whom grateful acknowledgement is made. There are many investigations of a local nature, however, especially in connection with agriculture, which must of necessity be carried out by local organizations. In these cases the Meteorological Office is prepared to assist with advice and, so far as permissible, with the supply of equipment.