as to ensure that the readings at different places will be comparable, are necessary if we are to get a reliable indication of climate and its variations. In this respect, therefore, the Meteorological Office has to provide the public memory of the weather. Were the Meteorological Office to cease to perform this function, many private individuals and companies would try to collect the information for themselves. There would be a lack of continuity in policy, and few long records would be obtained. Instruments would be of various types, of varying degrees of reliability, and exposed in different ways. The results would, consequently, not be directly comparable. The work would, indeed, be done inefficiently and uneconomically. There is, then, need for a Government Department which will concern itself with the collection of weather records. Rainfall is perhaps the weather factor with which all are most concerned, and the first thing we wish to know is how much rain can be expected in the course of a year, and on how many days it falls. The Meteorological Office has tried to provide this information by means of maps showing the average rainfall and the average number of rain days per annum in New Zealand. All the available information has been made use of in the preparation of these maps, but much more is needed. All want to know to what extent the rainfall is liable to exceed or fall short of the average in any one year. Then, again, from the point of view of the productivity of the soil, winter rains are of comparatively little importance. The character of the harvesting season, the yield from crops, and the abundance of pasture may depend mainly on the rainfall in two or three months. Similarly, a period of three months in summer with little rain is sufficient to cause serious deficiencies in the power derived from hydro-electric schemes. Our worst dry spells seldom last more than about three months. Therefore it is hoped that it will be possible before long to give the same information regarding monthly rainfalls as for the annual totals.

In connection with water-storage, drainage, and river-control problems it is required to know what is the heaviest rainfall which may be expected to fall in short periods of from a few minutes to a few days. The publication in convenient form of this information would be a very valuable work. And so on for other factors, such as temperature, humidity, sunshine, &c. The aim of the Meteorological Office is to publish data at frequent intervals as they come in, and then to collate, summarize, and discuss them so as best to bring out their significance, and to present them in the form in which they will be most useful to those requiring them.

The other principal function of the Meteorological Office is to issue predictions of the nature of the coming weather for as long a period ahead as conditions and existing knowledge seem to warrant. Since the efforts of the meteorologist in this direction are continually before the public, it is apt to be considered his sole duty, but the collection of statistics is really the more important. Any request for a forecast is always answered to the best of our ability, and a list of the purposes for which, in the course of a year, inquirers need forecasts would be both varied and extensive. Naturally, however, there is always a tendency to seek from the meteorologist a prediction for a longer period than it is safe for him to venture.

In tropical and subtropical countries, there has been some success in devising methods by which seasonal forecasts may be prepared—that is, of anticipating, for example, by what amount and in what direction the rainfall in the critical period of the year may differ from the average. Even in tropical countries, however, comparatively little practical advantage has been derived from these forecasts, while in temperate regions there has been practically no material gain. There is nothing yet known which would lead to the expectation that seasonal forecasts of any high degree of accuracy are likely to be possible in New Zealand in the near future. The present financial year has given a good illustration of the complexity of the problem. There have certainly been persistently low temperatures since June last, but in the more important factor of precipitation there have been rapid variations from one extreme to the other. In October, and, in some districts, as late as November, the dry conditions were causing serious alarm. There were numerous prognostications of a dry summer, with its consequences of low milk-yield, poor crops, &c. Next followed a very wet spell, lasting into the middle of January. The forecasts were now all for wet weather and great difficulties in harvesting. Yet in February another very dry spell commenced, and harvesting-conditions became almost ideal. The dry weather continued rather long, and again there were fears of drought and dearth of feed for stock. To have forecasted the season accurately would have required extraordinary precision. Conditions passed back and forth from one extreme to the other, yet, on the whole, the season was a remarkably good one, and the rainfall not far from the average. Had a difference of two months occurred in the incidence of the wet and dry spells, there would have been a different story to tell. But many people are extremely uncritical of seasonal forecasts, and any straw is grasped at. It is scarcely ever possible to give in a few words a description of the characteristics of a season which will satisfactorily cover so large an area, for instance, as that embracing Australia and New Zealand, owing to the great variation from place to place. Yet one frequently finds a seasonal forecast issued in the most general terms and without specifying any particular district, being regarded as confirmed if its predictions appear to be borne out in any particular locality. The field, therefore, is one which it is very easy to exploit. But, although we wish to emphasize that seasonal forecasting is not yet possible, it is clear that the meteorologist must give earnest attention to so important a problem. In this connection, the first need is for the long and accurate statistics which have been referred to earlier. In New Zealand these are, to a large extent, lacking. Observations have been made at some places for long periods, but they have been vitiated through changes of observation-site, periods of broken or careless records, or the use of unsatisfactory or unsatisfactorily exposed instruments. It is only through public interest that this state of affairs can be remedied. The next need is for an understanding of the meteorological processes of the world as a whole. For this reason it is desirable to support world organizations, and especially expeditions devoted to research in the Antarctic regions, where there is so large and important an area which must exercise a potent influence on the weather of the world, but of which our knowledge is slight.