would be exceedingly valuable for the study of climatic relationships and seasonal variations. On investigation, however, it is found that out of sixty-eight years of records only twenty have been made with satisfactory instruments. The remainder are practically valueless, and must have led numerous investigators to erroneous conclusions. It has been necessary, therefore, to make a critical investigation of old records in order to sift out data that was homogeneous and reliable. This is a long process, and very much still remains to be done.

The second of the articles referred to was the New Zealand portion of a "Handbook of Climatology" which is being published in numerous parts by a German organization. This handbook will cover general climatology and separate accounts of the climates of all regions of the world. I had been asked to write the New Zealand portion. Again very complete data based on a uniform scheme were called for, and once more it was found with great regret that much of the New Zealand data did not meet the standard required.

The only way to ensure that records such as those of climate shall be reliable is to see that the making of the records is supervised by qualified persons, and that when made they are published and thoroughly intercompared and discussed. In the case of meteorological work periodical inspections are necessary. And it will not be possible to secure satisfactory results unless local authorities realize the value of the data, and the need for long series of observations on permanent and satisfactory sites. Much money has been wasted in the past on inadequately controlled observations. Good observations, if they are properly published and the information they give expounded, pay for themselves many times over. Enormous sums are, for instance, wasted in municipalities through lack of complete meteorological data. For the efficient and economical design of drainage schemes, especially, precise information is wanted. The importance of adequate climatological observations is urged with particular emphasis here, because it is a matter which it is difficult for the general public to appreciate. Nor is it realized what sacrifices are made by the voluntary observers who, out of public-spirited interest, give their time on Sundays, week-days, and holidays to the making of these observations.

During the preparation of the more general articles on climate, much information was extracted regarding particular aspects. Some of this has been published in the following papers, which have appeared in the *New Zealand Journal of Science and Technology* :—

"Hourly Sunshine at Wellington, July–December, 1929," by D. C. Meldrum.

"Thunderstorms in New Zealand," by E. Kidson and A. Thomson.

"The Annual Variation of Rainfall in New Zealand," by E. Kidson.

In addition, the material is now ready for the preparation of monthly rainfall maps as soon as funds are available for their publication. Notes will shortly be ready, also, on the annual and diurnal variation of pressure and temperature at Wellington; on the winds at Auckland, Wellington, and Sockburn; and on the frequency of hail, snow, and fog in various parts of New Zealand.

Mr. Andrew Thomson has been absent during the year, first, at the Apia Observatory, Samoa, of which he again took charge for a short period, and, later, in Europe. He has taken leave without pay in order to study the latest methods of research in the upper air, of forecasting, and of providing meteorological information for aviators.

Mr. R. G. Simmers was once more seconded for work with Sir Douglas Mawson's Antarctic expedition in the "Discovery." Mr. Simmers was successful in completing a valuable programme of meteorological work.

In connection with the International Load-line Convention for Merchant Ships, information was supplied from this Office, which was of assistance in enabling the New Zealand representatives to secure exemption of the greater part of the New Zealand coast from winter load-line restrictions.

In conclusion, I wish to acknowledge the cordial co-operation of my staff throughout the year's work. Our thanks are due also to the Post and Telegraph Department for their ready assistance.

Brief Summary of the Weather for 1930.

The principal characteristics of the weather in 1930 were low rainfall and low temperatures. There have been few colder years experienced in New Zealand since 1864. The year 1902 was colder, and 1884 and 1912 were about equally cold. It was the eastern districts that felt the cold of 1930 most severely. At Wellington and Christchurch, and probably also at Napier, the temperatures were the lowest ever experienced. Even at these places the departure from the average was only about 2° F., and it will probably be a surprise to most people to find that so small a change should produce so much discomfort as was actually experienced.

The cold years mentioned have all been dry years, and it is the general, though not invariable, rule in New Zealand that low temperatures are associated with low rainfall, and *vice versa*. 1930 was one of the driest years on record; indeed, in the western half of the South Island it was by far the driest. In the North Island, both 1919 and 1914 were rather drier. 1915 was another very dry year, especially in eastern districts, Canterbury, particularly, having its lowest recorded rainfall in 1915.

The unprecedented shortage of water in Westland and the area surrounding Lake Coleridge led to a serious reduction of the power available from the Lake Coleridge hydro-electric scheme during winter and spring.

As regards the individual months, January was a very wet one, and good rains were experienced in most districts in August, November, and, to a less extent, September. In the remainder rainfall was generally below average, the deficiencies being especially large in February, March, and April.

Snow and hail were of unusually frequent occurrence during the year, though the depth of snow accumulated on the ranges was not excessive. The three months September, October, and November were the coldest of those names ever experienced in the Dominion.

Though both the 1929–30 and the 1930–31 seasons were retarded, stock and crops, on the whole, did quite well. In Hawke's Bay and Poverty Bay, however, there were considerable losses of sheep.