

The erosion problems are discussed and remedial measures suggested in the way of protection of remaining natural cover, pasture improvement, better grazing practices and counter-erosion planting. What can be done by well planned planting has already been demonstrated by a few far-sighted station owners in the district.

It is regrettable that a widely read bulletin of this kind should contain such misleading statements as: "Experts estimate that between 20 and 30 per cent of the land must grow timber to make the district self-supporting in its timber resources"; that a million acres of the Gisborne Land District (of about $3\frac{1}{2}$ million acres) should be devoted to forestry, and that "within the Poverty Bay Catchment District of 1,250,000 acres 20 per cent, or 250,000 acres, should be the target for farm and State forestry *in addition to* (reviewer's italics) spaced protective planting." The failure to appreciate the close interdependence of the population and industries of a region and its requirements of productive, as distinct from purely protective, forest could lead to enormous economic waste. Admittedly the provision of future timber supplies in this region has been neglected in the past, but assuming a reasonable increase in the Land District's present population of about 50,000, its requirements could be satisfied by a fraction of the area of productive forest advocated. It is unlikely that the district could ever support economically a forest industry dependent on markets beyond its boundaries.

These bulletins are very valuable in directing public attention to the extent and nature of the soil erosion problem in New Zealand and pointing the way towards soil conservation by better land use practices. It is a pity that a few misleading statements have been perpetuated in print.

G.H.H.

(1) **Maps of Average Rainfall in New Zealand.**

(2) **Maps of Extreme Monthly Rainfall in New Zealand.**

By C. J. Seelye, M.Sc., Ph.D. Published by the Meteorological Office, Air Department, Wellington, New Zealand, 1945. (Available from the Director of Meteorological Services, Meteorological Office, on request).

Dr. Seelye's rainfall maps are a very welcome addition to the literature on the general climate of New Zealand. They should prove to be of immense practical value and assistance to all persons with interests in the land—to agriculturists, forest and soil conservators, engineers, geographers and many others.

The first publication consists of sixteen black and white line drawn maps of New Zealand showing the average annual rainfall, the average monthly rainfall and the average number of rain-days per year. Dr. Seelye points out that the maps were prepared originally for the projected Centennial Atlas, the publication of which has been

suspended meanwhile. Hence the maps are not as elaborate as the previous standard work by Dr. E. Kidson (Average Annual Rainfall in New Zealand) published in 1930. The latter maps were drawn up for the 35 year period from 1891 to 1925, while Dr. Seelye has taken an average over the 30 year period, 1901 to 1930. The actual epoch taken is immaterial for most practical purposes when the results are considered as the "long period average." Small variations in detail of the annual isohyets constitutes the only changes made from the increased information available states the author in his introduction.

Average monthly rainfall maps are now published for the first time although average rainfall maps for odd months were included in Dr. Kidson's article entitled "Climatology of New Zealand" and published in Kuppen, W. und R. Geiger's "Handbuch der Klimatologie," Band IV, Teil S (Berlin, 1932). Again these maps will be extremely valuable, as also the maps showing the average number of rain-days per annum in New Zealand.

When compared with most publications of this type, the maps are clear, concise, well drawn and free from any form of confusion to the reader.

This second publication of sixteen maps by Dr. Seelye has been constructed for the purpose of giving an indication of the extreme monthly rainfalls and the frequencies of the monthly totals that have fallen below 1 inch or have exceeded 6 inches. He has analysed the 30 year period extending from 1911 to 1940. Again, this volume should be of immense practical value to all those whose interests are in the land of New Zealand.

Each map, drawn in black and white, represents one season of the year. Map 1 for the summer season shows the frequency of months, taken over the 30 year period, having rainfall totals under 1 inch. Maps 2, 3 and 4 are for the autumn, winter and spring seasons respectively. Maps 5 to 8 illustrate the number of times in the 30 year period that there have been months with rainfalls of more than 6 inches. Maps 9 to 12 give for each season the average rainfall for the 3 driest months (minimum rainfall) and the last 4 maps treat the maximum monthly rainfall or wettest months in a similar manner.

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