

Another reason is that the presence of these records is not generally known, even among research workers (e.g., Wardle and Mark, 1956, p. 34). The cyclo-styled booklet, *The Mapping of Otago*, (Otago Branch, New Zealand Geographical Society, 1947), makes no mention of these early survey plans and topographical sketches, so that a record of the basic sources may be of value. For reasons mainly connected with the nature of the manuscript map sources, the dates of the earliest surveys and the distinctive regional character of coastal Otago, no attempt has been made to extend the scope of the present paper to the rest of Otago.

A GENERAL VEGETATION MAP

The general distribution of vegetation in early European times is shown in Figs. 1 and 2. Both these maps were prepared by photographic reduction and redrawing from the data plotted from the original surveys. The outline of the coasts, lakes and rivers is thus the position as it was about 1847. However, apart from the reclamations at the head of Otago Harbour, the shifting of the mouth of the Clutha River after the flood of 1878, and several adjustments along the course of the Taieri River, there is not a great deal of difference from the modern situation. Since then, also, about half the area of Lakes Tuakitoto and Kaitangata has become swamp.

Comparison with Holloway's "pre-European Vegetation" map in *A Descriptive Atlas of New Zealand* (McLintock, 1959), dated "immediately prior to European settlement", and with Cumberland's map of indigenous forest cover in 1840 (1961), indicates considerable disagreement, even allowing for the generalization and small scale employed. South of Dunedin, along the coastal hills, there was but a small part of the bush indicated by Holloway and Cumberland, and that, far from being in a solid belt, consisted of comparatively small, and widely scattered patches. There was practically no bush round the northern and north-western margins of the Taieri Plain. To the north of Dunedin, in the Waikouaiti-Palmerston-Hampden districts, there was rather more bush than to the south, but again it occurred not as a wide, continuous belt, but in patches, some small, others large, and in aggregate considerably less than the total indicated by Holloway and Cumberland.

The greater part of the evidence for this distribution is based on manuscript survey maps compiled about 1860, and the possibility cannot be overlooked that a large amount of bush had been burnt off in the preceding twelve years of settlement. However, comparison of these later maps with the original survey plans of the Otago Block compiled under the direction of C. H. Kettle as chief surveyor for the New Zealand Company, in 1846-47, indicates sufficient agreement in detail to allow this possibility to be set aside. If any extent of bush had been cleared by 1860, it would surely have been in these earliest settled areas. In fact, it was not until after 1860 that Otago really began to expand as a province, and there is every indication that the bush lines about 1860 were very similar to those immediately prior to the arrival of the first settlers.

At the same time, it does seem likely, from the very nature of the pattern of distribution of bush on Fig. 1, from soil indicators and other evidence, that a much larger area of bush had existed in coastal Otago at some previous time (Buchanan, 1868; Holloway, 1954; Wardle and Mark, 1956). One early report, for example, comments on a native tradition that a great fire at the close of an exceedingly hot and dry season had at once denuded the country, especially round the northern margins of the Taieri district, where sun and drought had told with greatest effect (*Otago Journal*, 1851, p. 98).

THE ONE INCH TO ONE MILE VEGETATION MAPS

The one inch to one mile scale was chosen for coastal Otago, as for Canterbury, because the published New Zealand Cadastral Map—Survey District series (N.Z. Mapping Service No. 13) and County series (N.Z.M.S. No. 15) show the boundaries