

practicable to either dip them against sap-stain attack or kiln dry them and afterwards treat appropriately with some suitable preservative according to their final use. Water-soluble preservatives are inherently suitable for the treatment of timbers which are either to be painted or used under continuously dry conditions, and should therefore dominate the building field, in which they have only one disadvantage. The immature softwoods absorb moisture so readily that although treated house-framing may have been extremely well dried prior to erection it may be seriously distorted if subjected to continuous rain during erection. This is a disadvantage in high-class construction which suggests the necessity for developing a water-repellant treatment. In turn, oil-soluble treatments cause no swelling or shrinkage and have some water-repellant properties but are more costly. They are therefore better suited for pre-cut buildings, joinery, and furniture, &c. Creosote of course is the only preservative well suited to most New Zealand exterior conditions where the timber is unprotected by paint or is in contact with the ground. Long continued exposure to the leaching effects of the alternating wet and dry conditions so characteristic of New Zealand's high and well-distributed rainfall does not favour the use of water-soluble treatments except in conjunction with creosote, &c.

46. *Growing of Heartwood Will Obviate Preservation Treatment.*—It is appropriate to stress, however, that the ultimate objective of Forest Service management policy is to manage its exotic forests on a sufficiently long rotation so as to yield sawlogs with a very high percentage of heartwood so that the necessity for wood-preservation will be obviated. Even the most economical of treatments are an unnecessary expense if heart grades of timber can be produced seeing that they possess not only inherent resistance to both insect and fungal attack—particularly in buildings—but greater resistance to moisture absorption and therefore greater dimensional stability.

CHAPTER III—MANAGEMENT DIVISION.

Acting-Inspector in Charge : Mr. W. P. POLLOCK

INTRODUCTION

1. Forestry in New Zealand was founded on the experience and teachings of European countries, but although there is no doubt that the principles of silviculture and forest-management are applicable the whole world over, experience in the practice of forestry in New Zealand is now leading to the development of forestry technique adapted to the special conditions ruling in this country. To quote an example, the management of exotic forests in New Zealand is influenced by the fact that insignis pine, plantings of which make up about 50 per cent. of the total area planted, grows extremely rapidly here—at twenty years of age some stands reach a height of 100 ft. and an average diameter at breast height of 13 in., yielding 7,000 cubic feet an acre (to a 6 in. top i.b.). Maturity for marketing is therefore reached by this species at a very early age, and financial returns and the freeing of capital are correspondingly early. In the tending and management not only of these forests but of all our exotic and indigenous forests adaptations of foreign practice are called for; and to this end the prescriptions in working plans are being based on local experience and statistical information.

2. As New Zealand's prosperity depends on the agricultural and pastoral industries, questions of land use are of paramount importance, and farming must have the first priority in land use. No land regarded as permanently suitable for farming is taken for State Forest, and proposals to acquire new land are therefore critically examined by a committee consisting of officers of the Lands and Survey Department and the Forest Service. Even though land has already been proclaimed as State forest land, if under to-days' improved methods of agriculture it is found more suitable for permanently economic farming, then some or all of the unplanted areas may be released for farming by the revocation of its setting apart for forestry.