

The working-plan revision is now under way, and during the next decade it should be possible, by reducing the allowable log production from the State forests, to offset to some extent the 500,000 cubic feet which was cut for abnormal war requirements, thus restoring the kauri "forest capital" to its sound pre-war position. Working plans for Herekino, Omahuta, and Puketū Kauri Forests are in course of preparation.

On the State exotic forests, the field work of assessment surveys was completed over 38,300 acres as against 12,600 acres in the previous year. The forests surveyed are: Puhipuhi, 300 acres; Maramarua, 4,300 acres; Kaingaroa, 23,700 acres; Golden Downs, 900 acres; Balmoral, 4,000 acres; Dusky, 4,500 acres; and Conical Hill, 600 acres. In all, 150 forest compartments were assessed. The strip-plot method was used in all cases, but on Maramarua Forest the area was also surveyed by the line-plot method for the purpose of comparing the accuracy of the two methods. Maramarua Forest was resubdivided into smaller compartments of a mean area of approximately 250 acres. Following the resubdivision of Eyrewell Forest in the previous year, the compartment register is being rewritten and is almost completed.

In the Southland Conservancy, silvicultural treatment and management of silver-beech stands on Longwood Forest were commenced after ten years' work on an experimental basis.

CHAPTER V.—SILVICULTURE

33. *General*.—As in the previous year, silvicultural treatments accorded to the State forests were limited mainly to small areas which could be covered by maintenance and caretaker personnel. Additional workers who became available were employed on silvicultural work as far as possible. The areas treated by way of pruning and thinning rose slightly, to $1\frac{1}{2}$ per cent. of the total planted area. New planting fell from 1,748 acres to 553 acres. Statistics appear in Appendix II.

34. *Natural Regeneration*.—On kauri compartments under working plan, very heavy mortality in kauri seedlings was caused by the exceptionally dry summer and autumn. It has been reported that the same phenomenon led to an unusually prolific seed-fall in insignis pine in Rotorua Conservancy and elsewhere (see paragraph 51). Natural regeneration of insignis pine is generally secured in clear-felled compartments without any firing measures, and to a very large extent such regeneration must spring from seed shed by old cones, which on standing trees commonly remain closed and retain viable seed for up to ten years and more. Loss of such a reservoir of seed might prevent adequate restocking by natural regeneration of compartments to be felled in the next few years, and the problem is therefore being investigated.

35. *Interplanting Indigenous Forests*.—Worked podocarp forest to the extent of 110 acres was interplanted, 30 acres with kahikatea and 80 acres with Douglas fir. The kahikatea plants were raised from seed in a nursery and the Douglas fir were advance-growth wildlings from an exotic forest.

36. *Afforestation*.—New planting on open land amounted to 443 acres, 452 acres were blanked up, and 137 acres were replanted.

Tree seeds collected totalled 1,463 lb., which includes 4 lb. of indigenous tree seeds.

37. *Nursery Operations*.—From 1,682 lb. of tree seed sown, 8,503,000 seedlings were obtained. Trees lifted for planting totalled 1,203,000, and 1,601,000 trees were lined out. At the close of the year there were 11,985,000 trees in the nurseries. These figures are low. Had it not been for the climatic vicissitudes detailed in paragraph 51, the nursery stocks would have stood at 20,000,000 trees.

One new departure in local nursery practice is worthy of record. The removal of larch and of Douglas fir thinnings from certain older compartments in Whakarewarewa State Forest, where the original stand was a larch - Douglas fir mixture, resulted in a dense advanced growth of Douglas fir seedlings in recent years. As these wildlings could have no place in or under the pure stand of Douglas fir, which will be left for