

at this stage of the investigation to give any conclusive figures, as the seed is to be stored for ten years with annual or biennial testing as results indicate; but preliminary examination suggests that, while indigenous species lose a certain amount of viability even when stored for short periods, cool storage is more satisfactory for these species than storage at room temperatures. This is borne out by the fact that kauri seed stored at room temperatures (33-78° F.) had completely lost its germinative capacity in two years, while that kept in cool storage at 35-40° F. for the same period still had a germinative capacity of 64 per cent. of the original test. In the case of exotic conifers, seed kept in cool storage had a higher germinative capacity than that stored at room temperatures, though insignis pine apparently shows no appreciable difference in power of germination whether stored at room temperatures or in cool storage.

Reports on seed crops of both indigenous and exotic species indicate that with few exceptions the 1945-46 season has been a poor one (see also paragraph 51).

CHAPTER VI.—FOREST PROTECTION

43. *Fire Damage.*—A period of unprecedented fire hazard during December, 1945, and January, February, and March, 1946, coupled with severe drought conditions, culminated in extensive fire outbreaks in the Hawke's Bay, Rotorua-Taupo, and North Auckland districts. Fires reported from Forest Service lookouts were 606, a number considerably lower than in previous years, as under a new system of reporting fires only outbreaks occurring within ten miles of a State forest boundary are now recorded.

The number of recorded fires occurring in State forests during the fire season totalled 62, involving an area of 16,330 acres of all classes of forest, both indigenous and exotic. From the 8,000 acres of indigenous forests swept by fire, virtually the whole of the scorched merchantable timber, totalling 28,000,000 board feet—on 390 acres at Mangapeehi and 580 acres at Oruanui—will be salvaged over the next two or three years without significant loss. Exotic forests burned totalled only 161 acres, this being at Tairua, Coromandel. The balance was made up of protection and worked-over forest and tussock and scrub lands. Due to the high efficiency of the departmental fire-fighting organization, not one acre of exotic forest was lost in the Taupo conflagration, though the fires actually reached the Kaingaroa State Forest boundary before being brought under control. Similarly, in the Te Whaiti district the Forest Service logging operations were entirely free of fire damage, while many adjacent cut-over areas on Maori and privately owned land were badly swept by fire.

Recorded fires outside of State forests numbered 311, 200 of which were "spot" fires on the North Island Main Trunk Railway caused by locomotives. Although little damage was done by these locomotive fires owing to their being extinguished promptly, they constitute a grave menace, and a considerable amount of time is spent by Forest Service patrolmen and others in keeping check of train movements. The total area involved in these 311 fires was 574,000 acres, made up of 32,676 acres of privately owned exotic forests (mainly in the Rotorua-Taupo district), 10,929 acres of indigenous forest with a loss of 525,000 board feet of merchantable timber, and 530,500 acres of mainly scrub, fern, and tussock.

Hopes of salvaging the scorched exotic timber have been slight from the outset. The main blocks swept by fire were some of the youngest and poorest, capable of yielding only relatively small-diameter and therefore costly saw-logs, and situated at considerable distances from both mill and rail facilities. Another factor militating against salvage operations is the shortage of bushmen, combined with the practical difficulties of providing special accommodation and the very real problem of persuading men to transfer to an uncongenial and dirty type of logging. It is an inescapable conclusion that only by a sacrifice of overall timber production can salvage be undertaken—and uneconomically at that—by transferring bushmen already more productively engaged elsewhere. This appears to be confirmed by the fact that the