literature or records of work done on similar species elsewhere—all intensify the difficulty that has to be solved by the New Zealand forester. It is hoped, however, as a result of fundamental research now in progress, combined with the practical management of demonstration forests to be commenced shortly, that success will ultimately be achieved.

6. *Exotic Forest Management and Resources.*—Technical staff has been concentrated, as far as practicable, upon the assessment of growing stock, using the method of strip sample plots. This investigation provides the fundamental basis of working plans for the exotic forests, indicating as it does the degree of thinning required, the best year for felling, and the volume of timber becoming available for utilization. The investigation indicates that considerable areas are under-stocked, chiefly owing to tree malformation caused by frost and fungus injury, combined with wide planting espacement. A thinning policy in such forest compartments would leave too small a stocking of final crop trees of good form, and indications are that a policy of clear felling and re-establishing at closer spacing will be the best one for the ultimate benefit of many stands.

7. *Exotic Silviculture.*—Although thinning treatment, heavily in arrear in most of the forest compartments, can be delayed up to a point, a stage is reached when further delay is liable to involve serious trouble which cannot easily be remedied. Sound silviculture is wrapped up in sound protection against fire, insect, and fungus damage, and unthinned forest stands inevitably deteriorate sooner or later into a condition in which, owing to tree suppression, mortality, and decay, felling amounts in effect to a salvage operation, as distinct from harvesting a normal heavy crop of high-quality timber. It is against this eventuality that labour is so desperately needed for essential silvicultural improvement works in many of the exotic stands. The strong contrast between insignis pine planted at 6 ft. by 6 ft. and that planted at 8 ft. by 8 ft. has been further confirmed during the year. Excepting on the best of soils, often more suited to agriculture than to forestry uses, 6 ft. by 6 ft. planting gives much better results in respect of both volume per acre and timber quality. As one forest officer aptly put it, insignis pine planted at 6 ft. by 6 ft. seems, in middle-aged to mature stands, like a different species from that planted at 8 ft. by 8 ft.

Natural regeneration of clear-felled areas of insignis pine near Rotorua now shows greater promise of reliability, but success in the past has doubtless sprung in large measure from the reserve of good seed stored on the parent trees in durable cones of up to ten years of age and older. With definite indications, however, that such cones opened during the abnormally hot, dry summer of 1946 and shed much of their seed, it is obvious that this may lead to abandonment of the natural regeneration policy for a few years and reversion to a policy of planting.

8. *Land Acquisition.*—Land areas under consideration for acquisition were inspected by inter-departmental committees representative of the Departments of Lands and Survey, Agriculture, and Scientific and Industrial Research (Soils Division), and the Forest Service. This procedure has assured the implementation of the policy of avoiding dedication to forestry of land suitable for farming and which, from the broad view of national land utilization, should not be withdrawn from agricultural uses.

9. *Water and Soil Conservation and Forest-fire Prevention.*—Widespread recognition by all land-controlling and land-using authorities that control of burning and grazing operations constitutes the only practicable administrative measure for limiting run-off and preventing accelerated erosion is the culmination of twenty-five years of pioneering work by the Forest Service. Under the combined efforts of the Lands and Survey Department, the Soil Conservation and Rivers Control Council, and the Forest Service, all of which are working in close co-operation, it should be possible to implement these measures so essential for the correction of the errors of the past century of trying to grow one blade of grass where two trees grew before. A much-expanded programme of fire-prevention publicity is in course of preparation for the forthcoming fire season. Numerous references are made throughout the main body of this report to the Taupo fires of last summer, which have served as never before to demonstrate that although in general