(4) *Tree Genetics.*—The initial steps have been taken in the study of tree types in *Pinus radiata*, Douglas fir, and Corsican pine; and a little experimental grafting of these species has been done so that progress in the technique of collecting cuttings and grafting will keep pace with investigation of types. If successful, the grafting method will give quicker results than cuttings in the creation of stands of good-type trees from which high-grade seed can be collected.

(5) *Vegetative Propagation.*—The experiments on vegetative propagation of *Pinus radiata* described in the last report as giving almost entirely negative results were repeated on a larger scale under more suitable conditions; this time with appreciable success. The principal planting was in June, 1948, using 400 cuttings of each of several types of shoot, 200 being heeled cuttings—*i.e.*, torn off the tree with a fragment of the parent stem—and 200 unheeled cuttings—*i.e.*, removed from the tree by a clean cut. Half of each were treated with a hormone preparation and half used untreated. These units of 100 cuttings were broken into sets of 25 and planted in random blocks in the nursery beds. Repetition is necessary before definite conclusions can be drawn, but interim results can be summarized as follows:—

(*a*) Survival percentage was about the same (60–70 per cent.) for all six types of cuttings used—viz., cut tops of one-year-old seedlings; first order laterals from two-year-old trees; first order laterals from five-year-old trees; second order laterals from five-year-old trees; and second order laterals from seven-year-old trees.

(*b*) There was no significant difference between results from heeled and unheeled cuttings.

(*c*) Vagaries in weather immediately after planting had a marked effect, but if the weather was favourable, August plantings were as successful as those in June.

(*d*) Owing to difficulties in the supply of hormone preparations this aspect of the investigation was not handled as systematically as could be desired, hence repetition is necessary.

(6) *Sample Plots.*—By courtesy of New Zealand Forest Products, Ltd., and Afforestation Proprietary, Ltd., permission was obtained to establish sample plots in the dense natural regeneration of *Pinus radiata* and *Pinus pinaster* which followed the extensive fires of 1946. A set of plots is also planned in a seven-year-old crop of similar origin. Methods of treatment, which of necessity must be exploratory, will be considered next year.

Permanent sample plots were established in natural regeneration of *Pinus radiata*, aged five to seven years, to study the effect of pruning and thinning at various seasons. There is evidence that if such operations take place between December and March when *Sirex noctilio* is plentiful the incidence of attack by this insect is so heavy that undue casualties occur among trees it is intended to retain.

(7) *Soil Deficiency.*—Abnormal mortality in young plantations of *Pinus radiata* in Rotoehu Forest, Rotorua Conservancy, gave cause for concern. In stands planted initially at 6 ft. by 6 ft. spacing, survivals per acre were:—

Age.	Living Trees.	Dying Trees.
4	842	12
6	740	..
8	490	100
11	283	124