

RŪATANGATA NURSERY, KAMO, NEAR WHANGAREI.

(Area, 65 acres, approximate; altitude, 320 ft.)

Forest trees to the number of 652,200, valued at £1,217 3s., now comprise the stock in this nursery. A most favourable season generally prevailed, maintaining a steady growth in all classes of plants. Totara seedlings collected within a radius of eight miles from the nursery were sized and lined in under covered frames. Small lots of *Podocarpus dacrydioides* (white-pine), *Phyllocladus trichomanoides* (tanekaha), *Podocarpus ferruginea* (miro), *Alectryon excelsum* (titoki), *Knightia excelsa* (rewarewa)—in all, approximately, 100,000 trees—were dealt with at an average cost of 4s. per thousand for collecting and "lining in," and, as in previous years, these have made satisfactory progress. It is essential for success that trees so treated be well shaded for at least three months. They require to be lifted and classed, and the majority grown in the nursery for another year, by which time they make splendid roots, and are well fitted to bear transplanting when the time arrives for transferring them to the plantations.

This plan affords some provision against the failure of subsequent seed-crops, and it is also gratifying to find a use at a payable rate for plants, which must inevitably die if left under the parent trees.

During June 50,000 totara, averaging 3 in. in height, were lined out (at the rate of 4s. 8d. per thousand) on volcanic-ironstone land, previously cropped with oats, limed, and well cultivated. Beyond a check from a number of late frosts and the more serious attacks of wireworm, this lot of trees made rapid growth, now averaging 12 in. in height.

An autumn sowing of totara-seed contended against very adverse conditions throughout the winter, with poor results. This is a familiar experience, showing that whilst sometimes much is to be gained, on the other hand considerable risk attends autumn-sowing of tree-seeds here.

In the first week in September, after treatment in pits, the main crop of totara-seed was sown, resulting in a fine sturdy lot of trees, to the number of 250,000, 6 in. high.

Seven pounds of *Sequoia sempervirens* (redwood), sown at the same time, yielded a thin crop of healthy seedlings, all of which are sufficiently large for permanent removal. It is a most difficult matter to secure fresh, sound seed of this valuable timber-tree, and is a matter of regret, as it is well suited to the district.

About 300 lb. of puriri-seed (*Vitex lucens*) was sown in October, after being pitted, 60,000 seedlings being raised, now averaging 9 in. in height, and valued at £1 5s. per thousand. Puriri-trees require another season under nursery treatment in order to build up strength and form a good fibrous-root system, when they transplant well. They bear the hot dry weather splendidly, but succumb to frost in a disappointing manner. This is especially the case when the plants are young and growing in a rich soil, many failures being due to this cause.

Other small sowings of *Pittosporum crassifolium* (karo), *Fraxinus Americana* (white American ash), *Sequoia gigantea* (mammoth tree), *Pseudo-tsuga taxifolia* (Oregon pine), and a few Japanese trees have also given satisfactory results.

The main crop of Eucalypti was sown in December, comprising *E. rostrata*, *E. marginata*, *E. leucorhylon*, *E. paniculata*, *E. siderophloia*, *E. resinifera*, and *E. obliqua*. All these varieties germinated well.

The total number of trees raised on this station since May, 1903, is 934,484, valued at £2,091 13s. 4d. Trees to the number of 158,660, valued at £408 15s. 2d., were transferred to Puhipuhi Plantation during the year, and the number of trees sent out from the nursery since the inception in May, 1903, is 282,284, valued at £874 10s. 4d.

Experimental work, devoted to testing various trees with regard to their general merits, is of great interest. Many years must necessarily elapse before more than a superficial knowledge can be obtained. Even at the present stage, however, such information as has already been acquired is of considerable value.

Under the conditions existing in the present plantations the various Eucalypti planted here two and a half years ago now average 5 ft. in height. Those varieties under observation appearing to be more suited for extensive planting in this district are: *E. amygdalina*, *E. regnans*, *E. rostrata*, *E. resinifera*, *E. Stuartiana*, *E. teretecornis*, *E. obliqua*, *E. maculata*, *E. marginata*, and others. Those yet of undetermined merit are *E. gigantea*, *E. crebra*, *E. siderophloia*, and *E. eugenoides*, these being slow in growth and lacking in vigour. *E. redunca*, *E. virgata*, *E. teretecornis*, and others are severely attacked by the cicadas (locust). *E. salegna*, *E. pauciflora*, and *E. capitellata* appear to outgrow their strength. *E. corynocalyx*, *E. maculata*, *E. marginata*, *E. corymbosa* are affected by frost in a young state, the first two being especially delicate to handle in mossing.

Various American oaks are making excellent growth. About 500 *Quercus suber* are now quite established. Well-branched specimens are 3 ft. in height on poor situations. In a few years an ample supply of seed-acorns can be assured. A consignment of cork-acorns, imported direct from Italy, opened in a most unsatisfactory condition, being practically worthless. Repeated experiments of this kind have invariably proved disappointing, so that when a reliable seed-supply can be reckoned on the great difficulty will be met regarding the raising of cork-trees.

Sequoia sempervirens (Californian redwood) continue to grow excellently. Situated on a stony slope, individual trees are 4 ft. in height and sturdy in proportion, having made 18 in. of new growth this season.

Poor results so far have attended the *Catalpa speciosa*. The trees suffered from uncongenial surroundings and the attacks of numerous insects.

Native trees are thriving, although some grow very slowly, the average height of three-year-old totaras being 2 ft. 6 in. Taken as a whole, all the trees are in a thriving condition.

Considerable labour has been expended on general formation-work during the year, necessary in order to bring the land under workable conditions, by breaking up new land, removing stony