

TREE-SEEDS.

What is written on the procuring of tree-seeds in the report of the Royal Commission on Forestry, 1913, is borne out by personal investigations. Several seed specialists attended the Conference in Edinburgh, and the results of their studies and recommendations regarding the seed selection, testing, extracting, &c., were placed before delegates in a series of extremely interesting conversations. Undoubtedly we in New Zealand have hitherto not paid sufficient attention to the sources of our seed-supply, but in this respect we do not stand alone, as other countries have also disregarded the absolute necessity of insisting upon agents procuring seed of good parentage, guaranteed germinative capacity, and distinctly true to name.

Instances were noted in experimental areas of the remarkable contrast in vigour and appearances generally of trees of a similar variety eventuating from seed collected from parent trees occupying different situations. The superiority in every respect of results from seed taken from healthy, medium-aged, and straight-boled specimens was conspicuous, and surely convinced even the most sceptical of the advantage that must arise from using "pedigree" seed generally and ignoring the tendency to purchase cheap supplies on the plea of economy. Of late, wherever possible, tree-growers on the Continent personally direct collecting for their own sowing, and many of the estate-owners have constructed small seed-extracting kilns suitable for the quantity of cones handled. Several such plants, costing between £25 and £60, came under my notice in Scotland, while the larger and more complete Canadian extractor, including building, trays, engine, and screens, was equipped for about £140.

Various means are employed by foreign Forestry Departments in the procuring of tree-seeds for their afforestation-work, but, generally, specially trained men, who thoroughly understand the indigenous and other extensively grown timbers, are placed in charge of collecting gangs and are made responsible for the securing of the required type of seed.

The American foresters are well aware of the confusion which has been created by the distribution of seeds traded under the name of *Pinus ponderosa*, but themselves get over the difficulty in their experimental plantations by recording from which district or State the seeds were obtained, and retaining distinguishing particulars. Subsequently it is a simple matter to decide from which *P. ponderosa* variety most success might be anticipated.

The opinions of foreign foresters, however, coincided with those of our leading New Zealand sylviculturists—viz., if we possess a sufficient number of trees that have reached a moderate age, and have by their development and economic value shown their partiality to existing conditions, there is no occasion to effect large importations of seed. Should the quantity or variety required, however (and this is at present likely), be unavailable from locally-grown trees, every effort should be made, on placing orders with known reliable merchants, to have expert representation in the country in which the seeds are collected, and from this source our Department would be in a position to more accurately determine the season's prospects by an official report bearing on the purity, parentage, and germinative capacity of the seed and district from which it was gathered. This additional precaution will perhaps slightly increase the purchasing cost, but our position would be more secure.

Already the whereabouts of quite a large number of excellent seed-producing pine, spruce, and gum trees are known; but too much stress cannot be directed upon the importance of the idea originating from the Royal Commission on Forestry—viz., "That the Government cause an economic survey to be made of the various plantations throughout the Dominion." Such information is, I believe, periodically collected in America and Great Britain, and the possession of knowledge relating to the adaptability of certain trees to various conditions influences greatly the preparation of afforestation schemes and subsequent working plans.

In my opinion the time is opportune for establishing in each island a small kiln (costing about £40), which could be utilized for the extraction of the various coniferous seed, in addition to providing suitable subsequent storage accommodation for same. Although perhaps it is not desirable to outline collecting and extracting methods here, it might interest you to hear that such seeds as *Pinus ponderosa*, Douglas fir, &c., are collected by the American Forest Service at about a 50-per-cent. cheaper rate than this Department is usually called upon to pay in New Zealand. It is gratifying to hear from Australia and other places of the high esteem in which New Zealand *Pinus radiata* is held, and Dr. Henry and Mr. Elwes, both eminent enthusiasts, are of opinion that the remarkable pine grown in the Dominion is assuming characteristics almost unknown to the species in its natural home, and that evidently our climatic and other conditions are ideal for its propagation.

ACQUIREMENT OF LAND FOR AFFORESTATION PURPOSES.

From personal interviews with several forestry experts attending the Conference it was possible to gather useful information bearing on the selection of areas for creating artificial forests, although generally the opinions expressed coincided to a great extent with those already held by officers responsible. Too much importance cannot be attributed to the acquirement of areas, and our experience shows the necessity in the future of a still more thorough investigation into the capacity of any waste lands resumed for tree-planting purposes.

In a country possessing the topographical features of New Zealand the prevalence of strong winds can only be anticipated, and adding to this the customary snowfalls and low atmospheric temperature during the winter period, particularly in the South Island, climatic conditions alone on the highlands are not conducive to the ideal development of timber. Land that will simply grow trees may prove quite incapable of yielding a crop sufficiently well grown to make the undertaking financially sound. Observations made clearly show the fallacy of attempting to create forests with either indigenous or exotic trees on very exposed, abrupt hillsides from 1,000 ft. upwards, where it is impossible to provide shelter by introducing belts of faster-growing