

| Year.                     |    |    |    |    | Average<br>Number<br>employed. | Value of Work. |    |    | Value<br>per Man<br>per Day. |
|---------------------------|----|----|----|----|--------------------------------|----------------|----|----|------------------------------|
| Waiotapu Plantation.      |    |    |    |    |                                |                |    |    |                              |
|                           |    |    |    |    |                                | £              | s. | d. | s. d.                        |
| 1913-14                   | .. | .. | .. | .. | 12-36                          | 1,113          | 5  | 0  | 5 9                          |
| 1900-14                   | .. | .. | .. | .. | 28-98                          | 26,388         | 2  | 6  | 4 5                          |
| Whakarewarewa Plantation. |    |    |    |    |                                |                |    |    |                              |
| 1913-14                   | .. | .. | .. | .. | 11-66                          | 1,019          | 17 | 3  | 5 7                          |
| 1905-14                   | .. | .. | .. | .. | 12-16                          | 8,573          | 16 | 0  | 4 7                          |

#### THE PROCURING OF TREE-SEEDS.

The majority of farmers recognize the great importance of obtaining seeds which are true to type and of good germinating quality, and they realize—perhaps to a lesser extent—that the source of the seed is also a very important matter. When purchasing seeds great care is therefore taken to procure only such as are likely to succeed, for the simple reason that success or failure of the crops depends to a large extent upon the quality of the seeds. If such care is necessary for crops which, as a rule, take only part of a year to mature, how much more important is the procuring of tree-seeds the crops from which take forty to fifty years to reach maturity? Too great importance cannot be attached to the source of tree-seeds, as it is a well-known fact that seeds of a given species gathered in a place where the climatic conditions are similar to the locality in which it is desired to grow the species are much more likely to give satisfaction than are seeds gathered in a dissimilar climate. For instance, if it was desired to grow Douglas fir in the Canterbury District, failure would probably result from seeds gathered in the moist coastal districts of California; whereas good results would probably be obtained from seeds gathered in the drier Colorado State. In addition to the selection of seed as regards climatic conditions, there is another important aspect of the question which should be equally borne in mind—namely, the strain or selection of the parent trees. If it is desired to obtain healthy, vigorous, and large-growing trees for plantation-work, then the seed must be gathered from trees which have all these characteristics. Seed gathered from diseased or misshapen trees will naturally perpetuate in the progeny the defects of the parents. The germinative quality and purity of seeds is also of great importance. In Europe—notably, at Copenhagen and at Zurich—State seed-testing stations are conducted, where for a comparatively small sum any one can have seeds tested for purity and germination, and obtain a certificate of same. It is now usual for European seed-merchants to have their seeds tested at one of these establishments, and furnish to each large buyer such a certificate duly attested. The supplies of seeds for use in the State nurseries have had necessarily to be mostly imported from the Northern Hemisphere, as, with few exceptions, all the species grown cannot be procured from trees growing in the Dominion. *Pinus radiata*, many species of *Eucalypti*, and a number of the broad-leaved deciduous trees are the exceptions; and it has always been customary to purchase New-Zealand-saved seed of these trees when such is procurable. *Pinus radiata* having been largely planted throughout New Zealand for shelter purposes, there is usually very little difficulty in procuring all the seed required for State afforestation; and, in fact, the export of this seed to the European market is now fairly large, so that we can depend entirely on the New Zealand product for our requirements. The past experience in obtaining *Eucalypti* seeds has been very disappointing, owing to the confusion in the nomenclature of this genus both in New Zealand and Australia. Fortunately, this difficulty has been greatly overcome by the researches of Australian and New Zealand botanists, and it is now possible to procure supplies of seed true to name.

Of the American timber-trees the chief difficulty has arisen with *Pinus ponderosa*. This species occupies immense areas in the mountainous regions of North America, ranging from Southern British Columbia to Northern Mexico, and from the midland States of Nebraska and Western Texas to the Pacific Ocean. With a species so widely distributed it is not surprising that there are numerous forms, so that the quotation of the specific name only is not sufficient guarantee that the form most adapted for New Zealand conditions is being supplied. It has been found that the seeds vary considerably in size, and that some forms are very slow growing, whilst others are among the fastest of the pines we grow. According to some American authorities there is also a considerable difference in the dimensions attained by the various forms, and in the quality of the timbers of each. What is true of *Pinus ponderosa* is also true of almost all trees, and it is with the object of overcoming this difficulty that the present article is being written. The length of time which must elapse between the sowing of the seed and the utilization of the timber-crop is sufficient argument to justify this question being ranked as of first importance; and it must be admitted that it is not true economy to spare any extra expense in the early stages of our work if such extra expenditure will ensure the plantations being filled with the best possible timber-trees. Of the species which can be procured from New-Zealand-grown trees the seed should be gathered under the supervision of a capable officer, who would see that the best types of parent trees were selected from which to collect the seeds. This would occasion more expense than if the seed was purchased direct from a seedsman, but we would be certain that our crops came from a thoroughly healthy strain. Those seeds which it is necessary to import should be purchased from seedsmen who specialize in catering for the requirements of foresters. Fortunately for us, forestry is not a new science in Europe, and the difficulties which beset us have been largely overcome by the forestry authorities in France, Germany, America, &c., whose demands for seeds which are good in every respect have been met by many reputable firms of seed-merchants.