

purposes in any special locality. It has been abundantly proved of late years, through the researches of De Vries, Niilsen, and others, that many of the ordinary seed—samples of commerce—consist not of a number of uniform seeds each producing a similar individual, but that they are rather mixtures, and that there will be more or less non-uniformity, while some individuals will differ so much from the majority that they obviously belong to different races. Variation of the above character is so frequent in certain so-called species of *Eucalyptus* that it is impossible to get a uniform crop from commercial seed, nor will the seed supplied from a number of different localities produce similar individuals. So, too, with *Pinus radiata* is there a great distinction between plants raised from ordinary commercial seed. Remembering these facts, it becomes a matter of prime importance that seed of these variable species should be collected from some *one* tree, which has been proved to produce plants of the required character. The specific name is obviously of no moment in cases such as the above; *the important point is that the seed should come from the one tree*, and such seed might have some special designation such as “M.N.” Thus *Eucalyptus* M.N. would always mean that the seed had been procured from the one special tree or its progeny, that tree having been proved of a higher value than the species in general to which it belongs. In the case of *Pinus Laricio* and *P. ponderosa* there are undoubtedly races of these superior for forestry purposes to the average of ordinary commercial seed. It is possible, too, that races for special localities may be procured by such selection, as described above—that, *e.g.*, a more hardy race may be discovered of one or other of the less-hardy gums so valuable for timber purposes. Selected seed of the above character we are calling “pedigree seed,” and the original parent the “pedigree tree.”

The present method of procuring seed is for the Superintending Nurserymen to draw up a list of what is required and the Head Office of the Lands Department to send the order to a local seedsman. It happens not infrequently that seed of certain of the species desired is not available at the time, and as it appears to be a fixed rule that a definite number of acres must be planted yearly, seed of other species not on the nurseryman's list is procured. This, in our opinion, is a remarkable course to take. It has happened more than once that trees not at all suitable for afforestation purposes have been raised for this reason—as, *e.g.*, *Pinus canariensis* at Tapanui, a tree not possibly hardy in that district. Another matter that we must refer to, and which has led to comparatively worthless trees being planted, is that pressure is sometimes brought to bear on those in authority by quite well-meaning persons, who, judging from examples of certain trees in their neighbourhood, or even from hearsay, are persuaded that such would be admirable for afforestation purposes. An idea such as the above is fallacious. The behaviour of a tree in one district is no certain criterion of its thriving elsewhere, and undoubtedly no tree should be used for afforestation until a full knowledge of its capabilities is ascertained.

Taking into account the matters discussed above, we recommend—

1. That seed, if not procurable from trees growing in the Dominion, should be procured direct from the best available foreign sources.

2. That, where possible, seed from selected pedigree trees should be collected in New Zealand by the Department. As an example of this latter case there are several trees of a form of the cider-gum (*Eucalyptus Gunnii*) growing on private property at Tapanui and plainly suited to the conditions of that locality. The finest of these trees could be selected as the pedigree tree, and from it alone seed be collected. So, too, with one tree or other in the important gum-plantation, preferably the one with rough bark, on the property of Mr. R. Reynolds, Cambridge, Waikato.\* In this connection it gives us great pleasure to state that Mr. Reynolds has offered to allow the Lands Department to collect seed from these trees, and we thank him most sincerely for his generous offer.

\* See Appendix C, and also remarks in the introduction.