

it is durable, beautifully coloured, free of knots, and is adapted to all sorts of construction and for household furniture; it is, however, but little used in the sparsely settled and remote region in which it abounds. The thickness of the bark of this larch enables it to resist the heat of the forest fires, which are fast destroying the noble coniferous trees in the Columbian basin; and, in the struggle for supremacy between the different inhabitants of the Columbia forests under the changed conditions which have followed the white man's occupation of the country, *Larix occidentalis* seems destined to hold its own, and probably even to extend its way."

*Sequoia sempervirens* (redwood) is a native of California and Oregon, where it attains a height of from 180–250 ft., and with a diameter at the base of from 12–18 ft. The timber is used for general building purposes, furniture, railway-sleepers, fencing, and joinery. The chief obstacle the Department has had in growing this tree is the difficulty of getting seed of good germinating quality. For several years large quantities of seed were sown regularly, sometimes not a single tree resulting, and on other occasions a fairly good crop being produced. There is no doubt that this is the greatest obstacle to be met with in raising large quantities of this species. The redwood is a very fast grower. At Rotorua the season of growth extends from September to well on in May, and the late spring and early winter frosts are sometimes rather severe on the young growth. The species has, however, marvellous recuperative power, for if the leaders are damaged a new one is produced quite readily. Several specimen trees at Rotorua, nine years old, are 35 ft. in height. The species requires a moist atmosphere, and an equable temperature best suits its proper development. It transplants best in autumn, as it then gets the benefit of the rain during the following winter months. Spring planting has been proved with us to be rather risky, as the planting must be done when the earth and air are moist. Redwood has been planted with nurses of other species, but no mixture that has been tried has proved entirely satisfactory. Our best results have been got by planting the species pure on the hills facing the Green Lake, where, within the influence of this large body of water, the climate is fairly equable and humid.

*Pseudo-tsuga Douglasii* (*Abieta Douglasii*, Douglas fir, Oregon pine).—Habitat, Washington, Oregon, British Columbia, where under favourable conditions it reaches from 150–200 ft. in height, with a trunk from 4–6 ft. in diameter. Timber is used for general building purposes, and ships' spars. It is heavy, hard, and close-grained, and very strong. This species is easily raised from seed, although the seed-supply is precarious, and frequently poor in quality. The transplanting of young trees must be carefully done, as this species is not as hardy as the majority of the European pines. It has been found that this is not a good species for general planting, but that selected spots of good land in an elevated situation must be chosen in order to get the best results. In situations where the spring frosts are most severe the young growth is usually badly frosted and the plants remain stunted in appearance for years.

Oregon pine may be described as a moderate shade-bearer, but owing to the uneven growth made by the trees it is difficult to choose a species to plant along with it. At Rotorua the growth made by individual trees has equalled that of the larch, but when planted along with that species it needs a lot of protection to prevent it becoming suppressed by the larch. All the trees of this species now being grown by the Department are being planted pure, but when some of the larch areas are well thinned it is proposed to use the Oregon pine for underplanting.

*Pinus ponderosa* (western yellow-pine) is a native of the western States of North America, where it is very widely distributed. One of the largest of the pines attains a height of from 100–150 ft., with a diameter of from 3–6 ft. Good fertile seed can be readily procured. No particular difficulty is attached to raising young plants, which are moderately quick in growth. Of all the species yet tried by this Department *Pinus ponderosa* has proved to be the hardiest, having thriven equally well in valleys and on the drier land of the hillsides. As regards the rate of growth, it stands midway between the Austrian and Corsican pine. In light-requirements, as far as can be judged from our young plantations, it is similar to the Corsican pine, and on this account pure planting is recommended. The timber is reputed to be heavy, hard, and strong, and to be useful for general building purposes. On account of the wide distribution of this species, many forms have been produced, and these vary greatly in character. The varieties *Jeffreyi* and *scopulorum* are now under trial, but nothing definite can yet be said of them.

*Pinus strobus* (Weymouth or white pine) is a native of the Great Lakes region of North America, where it attains to a height of from 100–150 ft., with a trunk from 3–4 ft. in diameter at the base. It is one of the most important of the North American timber trees. The timber, which is largely used in Great Britain, is light, soft, not strong or durable in contact with the soil; suitable for cabinet-work, interior finishings of buildings, and for general construction purposes. We have found the seed-supply to be somewhat precarious, and frequently poor in germination. Seed should be mixed with damp sand for a fortnight before sowing, otherwise the germination is protracted over many months. The Weymouth pine is very hardy as regards winter frosts, but suffers from late frosts if planted in damp valleys. Rate of growth, 14 ft. in ten years, and in this respect it stands along with *Pinus ponderosa*. In regard to light-requirements, the Weymouth pine is reputed to stand midway between the light-demanders and shade-bearers, and in this respect it will probably be found suitable for planting under larch. At Waiotapu several areas planted pure with this species have made excellent headway, but when planted with Austrian pine the results are unsatisfactory, on account of the slower growth of the latter species.

*Pinus Laricio* (Corsican pine) is a native of southern Europe and Corsica. The timber is durable, and in many respects similar to the Austrian pine. Seed is easily procured. Next to larch this pine takes the greatest part in the afforestation operations in the Rotorua District. It is easily raised from seed, but great care must be exercised in transplanting the young trees. To get the best results autumn planting is recommended. This pine produces a long taproot, does not readily develop secondary roots, and if planted in the dormant season—say, June or July—when frost is prevalent, the plants are liable to die. It is a much quicker grower than the Austrian pine, and is not nearly so bushy in appearance, the whorls of branches being much