

While the *Fagus fusca* is the best of New Zealand beeches for manufacturing purposes, the *F. solandri*, or entire-leaved species, runs it close. The principal source of supply for the latter is the Oxford Forest, Province of Canterbury. The timber is heavy, tough, and strong, but unless carefully selected is not durable. The tree is found in both islands, and grows from 60 ft. to 100 ft. in height, the wood pale-red or greyish, often with black streaks, the figure-marking particularly handsome, and the heart-wood black.

*Fagus menziesii* (silver beech) grows also from 60 ft. to 100 ft. The tawhai, a handsome tree of large size, the bark white and silvery, of a pale-grey colour, differing in this appearance of the bark from the *Fagus cunninghamii* (Tasmania) and *F. moorei* (New South Wales), which it resembles botanically, having the glandular involucre, &c. The wood is of deep-red colour, straight-grained, hard, dense, and plain. It is tough and elastic, but not durable when exposed to the weather. Its fissile character causes it to be used extensively for shingles and fences, though it does not last when placed in the ground. It, with other of the beech timbers, should be shipped extensively to Australia, being well adapted for conversion into wine-casks and butter-boxes. The silver-beech is the strongest of the beeches, and is very useful for works under cover (Professor Kirk). Blair gives the weight per cubic foot (green) at 52.62 lb.; and seasoned, at 38.99 lb.; breaking-point, 175.50 lb. The tree affects mountain country, generally to an altitude of 3,000 ft., is well distributed over the North and South Islands, and should certainly command a market in Australia for casks, boxes, and also for flooring.

#### SILVER OR WESTLAND PINE (*Dacrydium westlandicum*), Kirk.

This tree, well known in the South Island, is much prized in the Railway Department for its lasting qualities, and is extensively used for sleepers. Owing to its small size, the silver-pine is not in much demand among sawmillers, rarely exceeding 3 ft. in diameter. It is therefore looked upon as the special property of the hewers, and hewn silver-pine sleepers are highly prized. Unfortunately, sleeper-hewing entails much waste of timber, and, in view of the probability of scarcity of silver-pine at no distant date, it is a grave question whether hewing should not be altogether discontinued. However, selection fellings have left chiefly inferior trees, which would not suit the miller, and possibly the hewers are now doing good work in removing the matured trees remaining. This pine rarely attains any great height, running as a rule from 40 ft. to 50 ft. Its principal habitat is in the neighbourhood of Hokitika and Kumara, on the west coast of the South Island; but it is also found in limited numbers at Whangaroa North, and near Ngauruhoe (Professor Kirk). During my trip in the volcanic country about Ruapehu and Tongariro I saw some of the finest silver-pines in the island, on Field's Track to Taumaranui. These were much superior to those of the same species in other localities, and, so far as I was able to observe the country between Waimarino and the Wanganui River, considerable quantities of silver-pine exist in these forests, interspersed with rimu, white-pine, matai, and other trees. This is not far from the totara forest mentioned previously. The silver-pine is noted for its great durability, and is specially valuable for use as in piles and marine construction-works requiring stability and staying-powers. This timber owes its immunity to attack from marine and other insects to the fact that the wood contains a fine volatile oil, very powerful and also very lasting. This oleaginous secretion is most distasteful to insect-life, and it is only when it is exhausted from the wood through age or other circumstances that decay sets in.

The Tasmanian Huon pine (*Dacrydium franklinii*) is characterized by a similar secretion, and hence was in the past much in vogue in Tasmania for ship and boat-building. It is a much larger tree than the silver-pine, though the latter, being hardy and easily transplanted, could probably, under favourable circumstances, be grown to greater girth and height than is usual under present conditions. Unless, however, steps are taken to check the destruction of the forests now in progress the silver-pine will within a few years be a thing of the past. In some places this tree is called the yellow-pine, the confusion of names for the same species probably arising from the fact that timber cut from mature trees is deeper in colour than the white or whitish-yellow of those cut young.

The mottled silver-pine is most handsome, the marking on some of the knobs or burrs being strikingly effective for use in cabinet-making. The tree is closely related botanically to the rimu, both belonging to the genus *Dacrydium*, while another, the *D. bidwillii*, is an alpine form. Its botanical designation was fixed in 1876 by Professor Kirk, who describes the wood as dense, compact, of great strength, toughness, and elasticity, though of low specific gravity.

Yet another of the genus *Dacrydium*, the mountain rimu, or *D. laxifolia*, has no commercial or economic value, though of botanic interest.

#### MATAI, the BLACK PINE (*Podocarpus spicata*), R. Brown.

This fine tree is also well distributed over the North and South Islands, though rarely met with on Stewart Island. A rounded head of bushy thick-set foliage, dense dark-green leaves, with beautiful silver-white underleaf when stirred by the wind, gives a peculiarly light and graceful appearance to the black-pine. The average height is about 50 ft., and, as it rarely exceeds 3 ft. diameter, the logs are of convenient size for transport and for handling on the skids. The matai produces a berry-like fruit; which, owing to the absence of the usual cones, tests the faith in botany of the unlearned observer, who is informed that this tree is one of the Conifers. That it really is so, however, the authority of Professor Kirk and Mr. R. Brown goes to show; and though sawmillers and fellers may laugh at the idea that the luscious plum-like fruit is in point of fact analogous to the cone of a pine, science proves conclusively that *Podocarpus spicata* is actually of the natural order *Conifera*. A "weeping" habit at times suggests the idea of a distinct species, but is really that of the young trees, which, as they reach maturity, assume the erect bushy form described above.