

cedar, manuao, hinau, &c. At the mouth of the Clutha is similar forest, with a large proportion of totara. Of the nature of the forest between Riverton and Martin's Bay, and on Stewart's Island, I am unable to speak from personal knowledge; but, from the best information that could be obtained, am inclined to think that the chief portion of valuable timber occurs between Big River and Dusky Bay, and that the total quantity has been greatly over-estimated.

43. In the Westland and Southland portions of the district, the red pine, *Dacrydium cupressinum*, is the prevailing tree over large areas. Although it rarely attains the large dimensions which characterize it in the northern red-pine district, it is of great length, straight, and tapers very gradually, with few branches. The bulk of the trees in some localities would not exceed 2 feet in diameter at the butt, and the proportion of sapwood is much larger than in the North Island. With the red pine we find incidental blocks of entire-leaved, tooth-leaved, and round-leaved beeches, black and white pines, Westland or white silver pine, yellow silver pine, ironwood, tea-tree, kamai, cedar, quintinia, pokako, southern toatoa. Nearly all of these also occur as scattered trees, with the addition of pukatea and tawa in the northern parts of the district.

In the Hokitika portion of the district the chief trees often occur in a succession of narrow belts or stripes. A belt of red pine will be succeeded by a belt of Westland pine, this by a belt of white pine or quintinia, and so on. This singular characteristic is confined to slightly undulating, low alluvial districts, and is well marked in several parts of the line of road between Hokitika and Ross, which cuts through successive belts.

44. *Quintinia serrata* forms a small tree 30 feet high or more, with a straight trunk 12 to 15 inches in diameter. It is the variety B of the Handbook of the New Zealand Flora, and differs from the northern form in its greater size and broader leaves. Its timber is used for fencing purposes, tramway sleepers, mine props, &c.

Westland pine, silver pine or white silver pine, *Dacrydium Westlandicum*, n.s., is a handsome tree, which has hitherto been confused with white pine by botanists, but, in reality, belongs to a different genus. So far as known, it is restricted to the western portion of Nelson and Westland. It is a handsome tree 30 to 50 feet high; trunk, $1\frac{1}{2}$ to $2\frac{1}{2}$ feet in diameter, with white thin bark and minute closely imbricating mature leaves. The young leaves are terete and spreading; gradually become shorter and somewhat flattened, resembling the young leaves of white pine, before they pass into the appressed condition. The timber is hard, dense, and extremely durable; it is used for general building purposes, piles, bridges, and wharves, and realizes a higher price in the market than red pine. It has been exported in balk to Melbourne, where it is in demand. In altitude it ranges from the sea level to nearly 2,000 feet, and was observed at intervals from Greymouth to Okarita; in all probability it will be found along the whole of the West Coast as far south as Dusky Bay.

Yellow silver pine, *Dacrydium intermedium*, n.s. This species somewhat resembles the preceding, but has larger mature leaves, less closely imbricating; the young leaves also are larger and resemble those of red pine; the branches are stouter, with dark bark, which is much thicker than the preceding. It not unfrequently branches from near the base. The timber is yellowish, dense, and heavy; it is even more durable than that of *D. Westlandicum*. It has a wider range than that species, being found in the North Island, but does not descend to the lowest levels.

Ironwood, *Metrosideros lucida*. This tree often attains a large size. Specimens were observed 60 feet high, with a clean trunk $2\frac{1}{2}$ feet in diameter; but usually the trunk is short, branching from near the base. It produces a durable timber of great density, and is inferior only to the northern pohutukawa and rata for shipbuilding purposes. In the extreme south it replaces the pohutukawa of the North Island, and is especially plentiful on the margins of maritime creeks and inlets, although it rarely attains equally large dimensions.

Cedar, *Libocedrus Bidwillii*. About Dunedin the elegant cone-shaped tops of this tree form an agreeable contrast with the round-headed trees amongst which it grows. It attains the height of 50 feet, but the trunk is rarely more than 2 feet in diameter. Its timber is compact, even in the grain, and of great durability, but rather light and brittle.

Kamai, *Weinmannia racemosa*. This handsome tree is inferior in the beauty of its flowers to its near ally, the towai of the North, *Weinmannia silvicola*, which is confined to the kauri district. The tawhero or kamai extends from the Hauraki Gulf to Stewart's Island, and attains its maximum development in Westland, Seaward Forest, and Catlin's River Forest. It is from 30 to 60 feet high, with a trunk 1 to 3 feet in diameter. The timber is hard when cut, but twists and cracks to an excessive degree, which must necessarily detract from its value alike with regard to strength and durability. At Catlin's River, where this tree attains unusually large dimensions, recently sawn scantling, 9 and 10 inches square, was cracked to a depth of seven inches. It would probably answer for railway sleepers if cut during the winter season and left exposed at the ends to allow the escape of the sap. The kamai ascends from the sea level to 3,000 feet.

45. The Seaward Forest contains large quantities of miro, kamai, black pine, ironwood, &c., but consists chiefly of red pine, which forms clean well-grown trunks of good dimensions. At Catlin's River the forest comprises a large amount of red pine, with a greater proportion of round and notch-leaved beeches and kamai.

Between Invercargill and Winton are several patches of forest in some places, consisting chiefly of white pine; at others of red pine, matai, and miro; at others again chiefly of beech.

In warm sheltered valleys, such as that of the Teremakau, the white pine, miro, black pine, and red pine attain their largest dimensions, the pines sometimes rivalling the finest specimens found in the North Island.

V.—The Southern Upland or *Fagus* District.

46. This district comprises those portions of the South Island above 1,000 feet of altitude. Sufficient data have not been recorded to admit of our forming precise ideas of the fluctuations of temperature in the *Fagus* district, meteorological observations having as yet been taken at only two stations within its limits—Bealey, altitude 2,104 feet, situate at the entrance to Bealey Gorge, on the eastern side of