

Miro.—*Miro* occurs occasionally in small clumps and individual trees in the Nelson District, but practically it does not appear in the western forests. I only saw a few dozen specimens in all my travels.

White Pine.—Kahikatea—generally called white pine in the South Island—is the second most plentiful of the pine family within the area accommodated by the proposed railways. In Nelson and Marlborough it constitutes probably about one-half of the marketable timber in the mixed bush, and on the western side of the range there are large quantities dispersed in clumps all through the pine forests. In the aggregate, however, it only occupies a mere fraction of the western pine forests: they are composed chiefly of rimu.

White pine affects low swamp ground, and the richer river-flats. The trees grow closer together and are taller in the swamps, but attain a greater girth in drier ground. Some remarkable patches of tall, thin trees occur in the Arahura and Grey Valleys and other low-lying places. The trunks are perfectly straight and nearly cylindrical, and the branches spread very little. Poles 90ft. and 100ft. long, and from 12in. to 18in. diameter at the base, are readily procurable. White pine frequently grows to a diameter of 5ft. and over, but these trees are seldom so tall as the smaller ones. Sawing-timber is generally about 3ft. diameter and 40ft. to 50ft. long in the trunk.

The East and West Coast Railway first strikes white-pine bush after crossing the Teremakau. There is a considerable quantity here, and at Lake Brunner, a few miles further on, and again in the Arnould Valley. The Nelson line and Westport branch run right through considerable-sized patches at short intervals. One of the best occurs near the Inangahua Junction, and there are several other good ones further up and down the Buller. There are also large patches close to the line in the Grey and Inangahua Valleys, and nearly all the river-flats south of Greymouth contain white pine in greater or less quantities.

Rimu.—Next to *Fagus fusca*, rimu occupies by far the greatest area in the forests under consideration. It occupies a considerable percentage of the mixed bush in Nelson and Marlborough, and is the all-prevailing timber in the western pine woods. South of the Teremakau there is rimu everywhere, and frequently for miles nothing else.

The timber is always good, sound, straight, and of large dimensions, and the trees grow very closely together. There are specially fine tracts around Lake Brunner and south of the Mikonui. The timber is particularly good at the latter place. The trees attain an extreme height of from 120ft. to 150ft., and about 3ft. diameter at the base. One lying alongside the track measured 140ft. over all: the trunk was 90ft. long, by 2ft. 9in. at the base and 1ft. 3in. at the top. Another in the same position measured 85ft. in the trunk; it would square 12in. for this length. In Nelson and Marlborough rimu grows to 5ft. diameter, but the trees are not so high as in Westland. Like *fusca*, the rimu on the West Coast is of all ages. In a large tract between Marsden and Maori Creek the trees are about 100ft. high, but only 18in. in diameter at the base.

Kawaka and Silver Pines.—The next most important timbers in Westland are the two smaller pines, kawaka and silver pine. They are all small trees, ranging from 30ft. to 45ft. high and 1ft. 6in. to 2ft. 6in. diameter. Kawaka is somewhat larger than the others; but the trunk tapers very much, so it does not yield more timber. Although the trees are small, and occurring only in small quantities, these timbers are very valuable on account of their durability in all situations. The silver pines also give beautiful furniture-woods. These small pines are dispersed all through the mixed forests of the West Coast, particularly on the margin of swamps. Sometimes the kawaka climbs the spurs of the ranges, as at the Lyell.

Yield of Timber.—Referring to the yield of timber in the Westland pine forests, Mr. Kirk, in his report of November last, says, "The average quantity of timber per acre is very high on the flats and lower levels, and may be estimated at 40,000 superficial feet for red and white pine. Near Lake Brunner several acres of red, white, and black pine gave over 80,000 superficial feet to the acre. Mr. Malfroy informed me that he had recently purchased 300 acres near Hokitika which would average fully 70,000ft. per acre for the entire block."

Mr. Kirk averages the yield of all the Southland bushes at 25,000, and that of the Pelorus bush at 15,000 superficial feet per acre. Occasional patches of bush that would yield from 60,000ft. to 80,000ft. have been met with in Southland and the Pelorus, but Westland is the only place in the South Island where such heavy bush exists in large quantities. I had the number of trees worth sawing counted on three separate acres near Arahura: they ranged from 65 to 85 per acre, the average being 73. Similar information obtained from seven places in Southland shows the number of trees on the acre to range from 8 to 32, the average being 20. At Catlin's River the number is estimated at 16, and in the Pelorus at 17.

MIXED BUSH.

The mixed and pine forests in the area accommodated by the proposed railways contain the usual proportion of less important timbers. The only ones of this class deserving special notice are rata, kamai, and tawa. Both the northern and southern ratas are found. The former goes down the coast as far as Razorback, and the latter is scattered all over the forests. The southern rata is plentiful at Kumara, where it is used for firewood—a deplorable waste, this being the best wheelwright-wood in New Zealand.

There are two kinds of kamai—*Weinmannia racemosa*, the one known by that name in other parts of the Middle Island; and native lilac—*Quintinia serrata*. They are locally known as red and white birch. The former, which is very plentiful, grows to 3ft. diameter and 30ft. or 40ft. long in the trunk. It furnishes timber much given to warping and splitting, but very durable. It is now extensively used in Southland for railway-sleepers. The bark of kamai is one of the most valuable in the colony for tanning. Its use hitherto for this purpose has been restricted solely by the difficulty of getting a supply. The lilac is a much smaller tree than the kamai, and is not a durable timber.