Used for tramway sleepers at the Taupiri Coal Mines, good results were obtained. Sleepers in use for nine years were perfectly sound, with the exception of the sap.

Although it has been somewhat brought into disrepute by the substitution of miro for it in several localities, there can be no doubt that it is one of the most durable timbers in the colony. For sleepers, piles, &c., it will probably rank next in value to puriri, the most durable of all New Zealand timbers. I was much struck with the remarkably durable appearance of a large quantity of new black pine sleepers laid near the Chain Hill Tunnel, Dunedin, and have no doubt they will be found superior to totara, kauri, and black birch, all of which are in use on the same line of railway.

The *P. spicata* is generally known throughout the Nelson and Marlborough Provincial Districts as red pine, and is shipped under that name, the proper red pine (*Dacrydium cupressinum*) being known invariably by its native name of rimu (No. 20).

4. KAWAKA.—(*Libocedrus Doniana.*)

This fine tree attains the height of from 60 to 100 feet, with a trunk 3 to 5 feet in diameter. The timber has been used for fencing and for cabinetwork; it is smooth and compact, although light, and will, I have little doubt, prove of equal durability with the next species. It attains unusually large dimensions in the Hunua and Pokeno districts, and ought to come into general use.

5. CEDAR—PAHAUTEA.—(*Librocedrus Bidwillii.*)

A handsome, conical tree, 60 to 80 feet high, 2 to 3 feet in diameter, producing a dark red, close-grained timber of great durability, but rather brittle. Found on the central ranges of the North Island, and sparingly throughout the South Island: most abundant in Otago, but rarely descends below 1,000 feet.

For my knowledge of the value of this timber for constructive works I am entirely indebted to Mr. W. N. Blair, who is now using it for sleepers on the Otago railways. He showed me a fencing post, taken up at Tokomairiro after having been in the ground sixteen years. The post showed slight symptoms of decay, but would probably have lasted two or three years longer. The timber is now largely employed in the district for fencing purposes, and is preferred to totara.

Mr. J. E. Brown, engineer to the Southbridge Highway Board, in a letter to Mr. Blair, states that a bridge constructed chiefly with this timber over the Tokomairiro River in 1868, having the piles driven 12 feet into the bed of the river, is still in good condition, but has had the roadway renewed, the 3-inch planking originally laid not having proved equal to the heavy traffic.

Other bridges of the same material in the same district, but laid with 4-inch road planking, have withstood the effects of heavy traffic without requiring repairs.

It appears to be a timber well adapted for railway sleepers, if cut of somewhat larger scantling than usual; but I should be inclined to question the propriety of employing it for the bearing timbers of bridges of large span subject to heavy traffic.

Mr. Blair suggests that many of the prostrate logs found on the Otago mountains in all probability belong to this species.

NOTE.—In the North Island the native kohekohe (*Dysoxylum spectabile*), which yields a tough reddish-coloured wood, useful for the manufacture of furniture, but liable to be injured by insects when exposed, is also called cedar by the settlers.

6. TANEKAHA.—(*Phyllocladus trichomanoides.*)

A straight, handsome tree, 50 to 60 feet high, trunk rarely exceeding 3 feet in diameter. Common in hilly districts in the North Island, and more abundant in the Province of Auckland. The timber is white, dense, and heavy, closely resembling the best crown Memel of Europe in everything but size. No experiments have been made to test its strength and elasticity, but it appears to be one of the strongest timbers in the colony, and one of the most durable, although, from its occurring most freely in the kauri district, it has scarcely been utilized at present.

On the Thames Gold Field it is greatly valued for mine props, struts, and caps, which were perfectly sound after having been in use six years. Tramway sleepers were in the same good condition after having been laid five years. Used as round piles, it was sound, fresh, and untouched by teredines after being driven four years.

Squared land piles in the Waikato Coal Mines showed the sappy edges decayed after having been driven nine years, but the heart in excellent condition. Totara from small trees, and large manuka under exactly the same conditions, were badly decayed at ground level: miro and rimu were worthless.

A quantity of railway sleepers, split at the commencement of the Auckland and Drury Railway, in 1865, were stacked in Mr. Hay's paddocks at Papakura, where, in consequence of the discontinuance of the works, they remained untouched until 1873, when the stacks were taken down. The bottom layer of one of the stacks was composed of tanekaha sleepers, which had been laid directly on the grass, and, although in this trying position for about eight years, had remained perfectly sound, with the exception of some trivial patches of sap, which had decayed without affecting the heart-wood.

I have been informed that tanekaha has been used for water-tanks at the Bay of Islands, and has remained sound after being eighteen years in use.

This timber appears specially adapted for railway sleepers and for road planking for bridges. As it occurs in several places near the line of the Auckland and Waikato Railway, its durability may be readily tested.

It does not occur in the South Island.

7. MANOAO.—(*Dacrydium Colensoi.*)

A small tree, 30 to 40 feet high, found in various places from the Bay of Islands to Dunedin, but has scarcely been utilized except locally for house-building, although well known to the Natives as one of the most durable timbers in the colony. Mr. Bell, of Whangaroa, informed me that round piles, the thickness of a man's arm, driven into the bed of the river at Waimate, in the construction of a Native pa, were perfectly sound, although eighty years old.