

No. 6.

MEMORANDUM for the UNDER SECRETARY, Public Works.

WITH reference to my previous memorandum relative to the employment of birch timber for permanent works, I have to state that Mr. Sinclair has submitted a series of specimens of the timber which they obtain at Wainui-o-mata, together with the leaves, so that I have been able to identify the trees from which they are respectively derived.

I find that the term black heart birch is applied to *Fagus solandri*, or the white birch of the South Island. Specimens of the heart-wood of this tree, that have been in a fence for twenty years, show it to be exceedingly durable; but the proportion of heart to sap is very small, so that to procure only sound wood would cause much waste of labour and loss to the sawyer.

The term black birch has only of late been applied to the tree which is known in Nelson by that name, and which previously, by the Wellington sawyers, was termed red birch. This is *Fagus fusca*, and undoubtedly the best of all, as it contains the largest proportion of heart to sap-wood. The heart-wood of this tree is remarkably durable, and can be obtained and distinguished from the sap with facility. Its chief defect arises from its becoming so hard after a few years that it cannot be bored or worked, which would render the repair of works constructed of this timber somewhat difficult. Mr. Sinclair brought in a second kind of timber, as red birch, which belongs, however, to a totally different tree, being the Tawhero of the Natives (*Weinmannia racemosa*). The use of this timber must be guarded against, as it is perfectly worthless.

The third specimen of birch, which is called the red birch in the South (*Fagus menziesii*), is termed white birch at Wainui-o-mata, from the colour of the wood, or circular bark from the marking on the trunk. It is only found on hill tops, so that it is not brought to the mill. The proportion of heart-wood in this tree is very small. As far as I have yet learnt, the difference in the value of the three kinds of *Fagus* as timber trees depends entirely on the proportionate quantity of heart-wood which they contain, and as this will vary in different parts of the country, it serves to explain the conflicting opinions which have been expressed of the relative durability of the trees. I think it may be accepted that in all the heart-wood is a reliable timber for construction.

JAMES HECTOR.

4th November, 1871.

No. 7.

Mr. G. ALLEN to the Hon. W. GISBORNE.

Waiwetu, The Hutt, 28th November, 1871.

SIR,—

I have the honor to forward the following information relating to the timber of this Colony:—

1. *Kowai* (*Sophora tetraptera*).—This is a timber little known in the North Island, but in the earlier stages of this Province I was enabled to obtain it for the knees and timbers in building the coasters used here. It is a splendid timber, very strong, lasts well in the ground. Why I draw this inference is that the timber obtained was in all cases completely hidden by moss and vegetable mould that had fallen on the ground; there was no appearance of any barrel of the trees to be found in the immediate vicinity of the timber obtained for the uses above described. The kowai used to be plentiful in the Province of Otago, and was extensively used by the whalers for making oil-casks, and for railway works is, in my opinion, equal to any wood, either here or in the Australian Colonies. It is also used in this part of the Province by wheelwrights, being very elastic, and does not shrink. This wood must not be mistaken for the *goe-goe*, which is of no use whatever, and will only last some two or three years exposed.

Totara (*Podocarpus totara*).—I need not make any remarks as its good qualities are well known, and if used in its green state for retaining walls on the sea-shore, resists the *teredo navalis* better than any Australian or New Zealand wood that I am acquainted with.

Black Birch.—What I wrote in my previous letter to you relative to the strength and durability of this timber is more confirmed by information I have obtained from settlers who have been in the Colony since its first settlement in 1840, and they all declare that they have never seen any of the heart of birch rotten in any removal of fencing, stockyards, and shedding. I must also mention that in all cases the timber was obtained from large trees. Young or small trees from one foot to eighteen inches in diameter do not last well. The trees must not be less than two feet six inches in diameter, and as much larger as can be obtained; and I do not think that it matters whether the timber is used green or not for railway sleepers. This timber is soon destroyed by the *teredo* in salt water.

Matai, or black pine, is of no use whatever for any work that is much exposed. It is rapidly destroyed by a large grub that generates in the middle, and in eight or nine years is rotten. Many of the houses in this district were built on piles of matai, and in nearly all cases have had to be removed years ago. The black pine of the Province of Canterbury is of the same description as the matai of this Province. I have used it in this place for planking of a vessel. The timber, black pine, was sent by its owner for me to use; no doubt it is the best they have at hand in Canterbury for the purposes required, namely, sleepers or posts for fencing, but I have no hesitation in saying that, should you use it for the purposes mentioned, you will have, after a few years, to make extensive repairs; whilst confining yourself to kowai, black birch, or totara, another generation will succeed us, and find that the works were of the most durable character. There are no other woods in this or the Southern Provinces at all fitting for ground or exposed works whatever.

I have, &c.,

GEO. ALLEN.

The Hon. W. Gisborne.