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V. Notice of some of the Woods used for Economical Purposes in New Zealand

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ciated with *Sphagnum cuspidatum* var. *plumosum*. *Hypnum irriguum* grows in one of the small streams of the neighbourhood, and *Splachnum sphaericum*, on the naked peat soil. The Tents Muir is a station of peculiar interest in a Bryological point of view. *Bryum Marratii*, *B. calophyllum*, *Catoscopium nigratum* and *Distichium inclinatum* cover large patches of the Muir. *Amblyodon dealbatus*, with *Meesia uliginosa*, occurs densely covered with fruit. *Hypnum albicans*, *H. salebrosum*, *H. polygamum* and *H. lutescens* are also found in fruit. We also find *Bryum pseudo-triquetrum*, *B. pallens*, and various other species more generally distributed, as well as *Climacium dendroides* and *Tortula vinealis* in fruit.

At Largo we come upon the basalt and trap which produce abundance of *Orthotrichum anomalum*, with a few examples of *O. sawatile*, *O. diaphanum*, and other species; *Grimmia leucophœa* and *G. Doniana* are also found. On Largo Law, *Grimmia apocarpa* is associated with *Pterogonium filiforme*, *Leucodon sciuroides*, and *Bryum crudum*. At Kilconquhar Loch specimens of *Mnium affine* var. *rugicum* occur in fruit; also *Hypnum cordifolium* in fruit. In the parts of the Links which are occasionally flooded by stream tides we meet with *Distichium inclinatum*, also *Hypnum abietinum* and *H. nitens*, *Encalypta rhabdocarpa* in considerable quantity and in dense fruit; further inland from the sea, *Tortula intermedia*, with *Orthotrichum anomalum* and *Hypnum lycopodioides*.

V. Notice of some of the Woods used for Economical Purposes in New Zealand. By Dr TUKE.

The *Kauri* or *Cowrie* (*Dammara australis*).—Supplies spars from thirty to ninety feet long; does not grow south of the province of Auckland; light and tough, and easily sawn. Much used in house-building and ship-building; is a handsome upholstery wood; turns easily, and takes a good polish. On the sites of old Kauri forests a gum is found beneath the surface, which forms a considerable article of export.

Totara (*Podocarpus Totara*).—Much used in house-building, and for bridges and wharfs. It stands water well, but the short grain renders it difficult to drive; when driven, it makes the best piles. The natives manufacture their canoes almost entirely from this timber. It is easily sawn and worked. From its handsome grain and rich colour, it is eminently adapted for first-class upholstery and turnery.

Maire (*Santalum Cunninghamii*).—Of this timber there are two varieties, black and white, as it is sawn from the male or female tree. The former is the most durable. Too hard to saw, except in small quantities for wheelwright's work; is very tough, splits easily, and is much used for fencing. Stands water well. Is much used by turners; and is manufactured into small articles of furniture.

Puriri or *Kanereë* (*Vitex littoralis*), called Iron Wood by settlers, does not grow south of the province of New Plymouth; is difficult to work; used for bridge and other piles, and by turners. It is so hard as to turn the saw, and, when seasoned, even the axe; splits well, and is useful for fencing; does not rot under water.

Rimu (*Dacrydium cupressinum*).—Red Pine of the settlers—is a very elegant tree; easily sawn and worked; much used in house-building, particularly for joiner-work; is a first-class wood for furniture, panels of cabinets, &c., presenting a very handsome appearance. Articles turned from this wood are also much admired. It is used by carpenters, cabinet-makers, wheelwrights, and turners, and is in fact a favourite timber.

Matai or *Mai* (*Podocarpus spicata*).—A good useful wood, handsome in

grain, and durable in the ground or under water. Much employed in house-building, cabinet-making, wheelwright's work, and turning; takes a good polish, and is a good furniture wood; makes good fencing and stock-yards, bridge-piles; being very tough, it drives well.

Kahikatea (*Podocarpus dactyloides*).—Useful wood for house-building purposes; light and tough, though not durable unless well painted; does not stand water; makes good spars, principally used for weatherboarding.

Rota (*Metrosideros robusta*).—A tough wood, useful for fencing, but impossible to saw from the tortuosity of the fibre. Is used for cart-shafts and wheel-spokes; makes good firewood.

Puka tea.—Sometimes sawn, but warps easily, and does not stand exposure; used for rails.

Ake (*Dodonaea viscosa*).—Very tough, but never grows to any size; is used by wheelwrights. The natives manufacture their spears and clubs from this tree. It is a wood much admired by turners.

Hinau (*Elæocarpus Hinau*).—From the bark the natives obtain a dye, with which they stain their mats and tattoo their bodies. The wood is of no value.

Kahikatoa or *Manuka* (*Leptospermum scoparium*).—A tough wood, but impossible to saw from the tortuosity of the fibre; turns well, and the natives manufacture their paddles from it; makes excellent firewood.

Karaka (*Corynocarpus lævigata*).—The natives soak the fruit of this tree in water, and store it for winter use. The tree itself is remarkably handsome and hardy, and might easily be imported.

Here Kiakia or *Korari*, New Zealand flax (*Phormium tenax*), is a considerable article of export. It is manufactured by the natives into rugs, mats, and other articles of dress, and in fact is constantly used both by Europeans and aborigines.

Korau or *Pitau* or *Mamaku* (*Cyathea medullaris*).—In spring this fern-tree is cut down, and steamed in the native ovens; when ready the bark is stripped off, and the inside presents a soft cooling mass, which has a faint taste of apple-pie. It is consumed by the natives to a great extent.

Koromiko (*Veronica parviflora*).—Used by the natives to heal wounds, by applying the leaf.

Kowhai (*Edwardsia grandiflora* β . *microphylla*).—A very tough, close-grained, handsomely marked, and durable wood, too small for sawing. Is much used by cartwrights and turners. Is admirably adapted for furniture. Is the only tree in New Zealand which sheds its leaves in winter.

Mahoë (*Meliccytus ramiflorus*).—A remarkably handsome shrub, hardy, and might easily be imported.

Makomako (*Aristotelia racemosa*).—A handsome shrub, hardy, and might be easily imported.

Miro (*Podocarpus ferruginea*).—A tough useful wood for farming purposes, such as fencing, &c.; difficult to saw.

Ngaio (*Myoporum lætum*).—A very tough wood, much used for bullock-yokes; cannot be sawn. Is used by wheelwrights.

Puwahananga (*Clematis indivisa*).—A beautiful creeper, easy of cultivation. The leaf blisters the skin if applied for some hours, and leaves a very painful irritable sore.

Rahurahu (*Pteris esculenta*, var. of *P. aquilina*).—The edible fern; the root is the esculent part; it is dried and pounded, and is very rich in starch. The Maories consume large quantities; it is in fact their favourite food.

Ramarama (*Myrtus bullata*).—A handsome tree, useful for rails, and used by turners.

Rewarewa (*Knightia excelsa*).—A remarkably handsome furniture wood, from its curious cross grain; is much used by turners. This is a wood well worthy of the attention of English cabinetmakers.

Tarata (*Pittosporum crassifolium*).—A very handsome hardy shrub, easy of carriage.

Tawa (*Nesodaphne Tawa*).—A tree much used by coopers for staves, and said by them to be equal to oak.

Titoki (*Alectryon excelsum*).—A very tough wood, much used by cartwrights and turners; does not reach a sufficient size for sawing.

VI. *Notice of the Cinchona Cultivation on the Neilgherry Hills.*

By Dr Hugh Cleghorn.

The cultivation of *Cinchona*, or the Peruvian bark plant, is likely to supply a new produce for the trade of India. Mr Vincent, an enterprising planter, has secured 5000 *Cinchona* plants for the land he has purchased, and M. de Facien, an enterprising planter, has secured as many more. Altogether, the orders on record exceed the number of plants Mr M'Ivor (the superintendent of the Ootacamund garden) will be able to supply at the close of the current official year, which we understand will be 34,000. The plants available in the course of the next year, or from May 1863 to April 1864, are estimated at 100,000. This will be out of the Government nurseries, but the settings from their own stock, which planters in the meantime will have been able to rear, will be something considerable, for a single plant, some six feet high, in the public garden here, has given Mr M'Ivor no less than 900 cuttings, each the nucleus of a healthy sapling now, with the promise of a gigantic forest tree hereafter. The enormous source of wealth to which the *Cinchona* points, is actually derived from bricks. When a shoot is taken off a plant, it is immediately placed in a pot filled with brick dust. Hundreds, nay thousands of these pots may be seen in Mr M'Ivor's conservatories, covered with what look like nothing more than diminutive leaves thrust into them. Here the shoots are allowed to remain till they recover from the shock attending their severance from the parent stem. They are then transferred to pots charged with a mixture of decomposed felspar and garden mould, in which the process of rooting goes on. Several acres of shola land in the vicinity of the Government garden have been planted, and there can be no doubt that wherever the shade of a forest tree has fallen upon the interesting suckling below, it has pined and withered, or been stunted. The instances of this effect in a romantic glen to which Mr M'Ivor will cheerfully lead visitors are very remarkable. At a few yards from the umbrage of a group of trees, the plants look exceedingly flourishing, but their healthfulness, size, and vigour diminish in proportion to their approximation to shade. Some plants, which were put out in the Government garden in various positions a year ago, fully bear out this result. Those in the shade look sickly, and those subjected to drippings look worse. Mr M'Ivor does not consider the Ootacamund plantation a complete demonstration of his principles, that at Neddiwattum being more corroborative of his views; but any one knowing the difference between a healthy and a sickly plant, must at once acknowledge that shade is not the condition for the active development of the *Cinchona*. There are, of course, other important particulars connected with the ultimate success of the *Cinchona* in India which must be left to time and ex-