

Singularly, the kauri is only found in quantity in the northern parts of the North Island, and generally about Auckland.\* Some few "bushes" are also found between Auckland and the Waikato River, at Coromandel Peninsula, and in the Thames District. Captain Cook first saw the tree at Mercury Bay, and his practised eye at once recognised its value for masts and spars, &c.

I regret very much that I was unable to visit the most extensive kauri forests, and had only time to inspect those in the Waitakerei Bush and on Coromandel Peninsula. I am indebted however, to the directors of the Kauri Timber Company for much valuable information as to supplies and disposition of timber; also to the Commissioner of Crown Lands at Auckland, G. Mueller, Esq., who furnished me with statistics as to extent and quantities on the timbered lands of this district.

The kauri country commences at Te Aroha, and extends to the north end of the Auckland District, and the total available amount of timber is 1,371,405,080 ft., of which 371,405,000 ft. is growing on Crown lands, and on Native or private properties 500,000,000 ft. These figures were compiled and supplied to me by Mr. Mueller up to date, 10th October, 1896. This, of course, represents an immense quantity of kauri still at command for trade purposes; yet, when the annually increasing output is considered, and allowance made for destruction by fire and the slow growth of young trees, it is calculated that the supplies—subject to variation by increasing or decreasing output and losses by fire—will not last more than forty or fifty years. This means, if the authorities are correct in their theory that regeneration of the kauri forests is hopeless, that within about the period named the trade will become extinct. I do not, however, believe in this theory of non-regeneration, but, on the contrary, am satisfied that if undertaken and carried out in a systematic and scientific manner the kauri forests can be renewed and maintained. But as I shall deal more fully with the subject in another section I need not further discuss it here.

#### RIMU (*Dacrydium cupressinum*), Solander.

This is the most widely distributed of New Zealand trees, and, with the white-pine, constitutes the foundation of the chief forests in both North and South Islands. The rimu is extensively used, though only in New Zealand itself, for furniture and building, the export trade being insignificant as compared with that of kauri. It is a handsome tree, varying in height from 40 ft. to 90 ft., and averaging in diameter 2 ft. 6 in. to 3 ft. It is thus easily worked and trucked, and of a size that makes it convenient for conversion off the skids. The foliage is pendant, and at some stages of growth not unlike that of the weeping willow, producing the male and female flowers on separate trees. It is non-gregarious, and generally found associated with white-pine, matai, miro, rata, &c., flourishing most on river-flats or in littoral situations, between 300 ft. and 1,000 ft. above sea-level. So far as foliage is concerned, the rimu is certainly one of the most striking of New Zealand flora, and its light-green blends harmoniously with the darker tints of the trees usually found in the same forest, from which, owing to the colour of its leaves and its "weeping" habits, it can easily be distinguished even at a great distance. The timber is variable in quality, and the tree subject to "heart-shakes," which cause resin to accumulate in considerable quantities. When, however, this does not occasion "faults" it indicates great durability, and the heart of rimu is therefore much esteemed for work in which this quality is of special importance.

Figured rimu is in much request for cabinet-making; is also extensively used for ceilings, and when carefully disposed presents a very handsome appearance. It provides material for dados and office furniture in most parts of the colony. The figure-marks in the wood are caused by compression, probably through swaying in the wind.

A serious defect in rimu, common in the genus *Dacrydium* elsewhere, and notably in Tasmania, is the milky oleaginous sap which seems to permeate the wood, and after manufacture exudes, dulling, and in time destroying varnish or French polish, and giving a dead look to furniture made from it. The Huon pine of Tasmania has exactly the same characteristic. As a set-off, however, this oily matter is one of the most effective germicides known, and also preserves the timber.

Rimu is most extensively used locally for building purposes, but, though fairly durable for indoor work, cannot be depended upon to last if exposed to wind and rain. When used for heavy works in bridge-building, &c., it is often found necessary to piece rimu at the joints with other timbers—generally Australian gum—as rimu invariably commences to decay at the points of contact unless thus joined with other timber. Heart-rimu is of course superior to timber cut from other parts of the tree. The sapwood is especially unreliable, hence should be carefully cut away before the timber is converted for use. This sapwood varies in proportion to the rest of the timber in different trees, and, owing to the lack of due supervision in New Zealand, sawmillers are apt to cut those in which it predominates. These are young trees which have not reached maturity.

There can, indeed, be no doubt that this indiscriminate cutting has been the cause of the bad name many leading New Zealand timbers have in Australian markets. Were none but trees fully matured brought into use, a great deal of the ill-repute in which rimu, white-pine, matai, and miro are held would be removed. Careless selection, and the cutting of trees not yet matured, invariably lead to loss of trade and wasteful destruction of forests. Tests made by Balfour and Blair (*vide* Kirk's "Flora of New Zealand," page 30), place rimu as equal in strength to English oak; but I think these tests refer to matured, and not to mixed timber.

In specific gravity, rimu varies from 0.590 to 0.644; in weight, from 34.28 lb. to 40.11 lb. per cubic foot. The breaking-point for a piece 2 ft. long and 1 in. square, supported at both ends and loaded in the centre, is given by Blair at 350.88 lb.

Like most of the other New Zealand trees, rimu is of very slow growth; but I am of opinion that, properly cultivated, the rate of growth would be accelerated. Hitherto, however, experiments in tree-growth have been carried out in public gardens, &c., under unfavourable conditions, and nearly all the records refer to isolated trees, grown amid surroundings foreign to the natural habits

\* Professor Kirk states that kauri is found in one or two places in the South Island.