

MAKARETU RESERVE.

This State forest comprises 67,400 acres, and is the largest reserve in the Hawke's Bay District. It occupies the eastern slopes of the Ruahine Mountains, and is about twenty miles in length by rather more than six in breadth, extending from the source of the Makaretu River northwards to the Wakarare Range, and ascending from about 1,100ft. to the highest crests of the range. Much of the land along its lower margin is being prepared for settlement.

The entire reserve is excessively broken, and consists of a succession of sharp ridges and deep gullies or ravines. In a few places good patches of rimu of fair size may be found, on gentle slopes or at the head of gullies; here and there a little white-pine, and occasionally a fine matai. The total aggregate on an area of such great extent is unquestionably considerable, but it is so sparsely scattered, and the difficulties in the way of getting it out are so great, that it would not pay for removal, even with the advantage of direct railway communication. Mixed with the pines are vast quantities of mahoe and other valueless white woods, forming a dense undergrowth which renders progress slow and difficult. Tawa occurs but sparingly, and always of small size.

Open places on the spurs are almost invariably clothed with tooth-leaved and entire-leaved beeches, often of good quality, but small—it is rare to find a trunk 3ft. in diameter; but, for all this, there is a large amount of useful timber, unfortunately in situations most difficult of access. No good timber was observed above 3,000ft. of altitude, and the quantity between that limit and 2,000ft. was very small. Between 3,000ft. and 4,000ft. there is nothing better than scrub, chiefly mountain beech, mixed with low-growing shrubs, and forming in many places a dense close-set undergrowth, which becomes almost impassable in exposed positions. Above 4,300ft. or thereabouts the mountains are denuded of arboreal vegetation.

This reserve was formed chiefly for the protection of the numerous rivers and streams which have their source within its boundaries, and its conservation is absolutely necessary. It must of necessity be classed as a climatal reserve: no portion of it is adapted to settlement.

UMUTAOROA FOREST.

This lies about two miles from Tahoraite Station, the present terminus of the Wellington-Napier Railway, with which it is connected by a branch line worked by a steam-motor. About five thousand acres have been leased from the Maoris, and are now held by Messrs. Wilding and Co., of Waipukurau. The mill belonging to this firm at Waipukurau has been greatly enlarged, and furnished with new machinery; so that it is expected the annual output will be nearly 5,000,000 superficial feet per annum, of which totara will constitute three-fourths. All the timber felled in Messrs. Wilding's bushes is sent by rail to their mill at Waipukurau for conversion.

The only timber at present felled in this bush is the totara, of which there are two large groves, one of about seventy acres, which is mostly cut out; the other of less than four hundred acres, occupying an area roughly estimated at about a mile in length by half a mile in breadth, on which operations were being commenced at the date of my visit. Captain J. Campbell Walker visited the first of these groves during his examination of New Zealand forests in 1876-77, and pronounced it to be the finest piece of totara forest he had seen.

In addition to the totara, this forest contains large patches of rimu and kahikatea, with a little matai, and a large quantity of fine tawa; but it is the totara alone which gives the block its chief value. At present the other timbers have received but little attention.

Although fine timber, and of great value, the totara is not of the largest dimensions, either with regard to height or girth; but few of the trees yield more than two lengths, or exceed four feet in diameter at the base: it is timber of excellent quality, specially adapted to easy conversion. At the same time, trees of large dimensions are scattered amongst those of less size. The proportion of waste in the conversion of totara is greater than in any other New Zealand timber of large dimensions: it is rarely under from 40 to 45 per cent., and in some cases exceeds 50 per cent. In timber that has stood until it has passed its prime this rate is greatly exceeded, partly owing to the amount of decay at the base, which extends upwards, and partly owing to decay of the tops, which extends downwards. The latter cause is often found to be operative in timber which is apparently sound and good. A common cause of waste is the formation of irregular swellings on the trunk, or other outgrowths, which render it unsymmetrical. A careful examination of certain returns which I was permitted to make by the courtesy of one of the largest converters in the district showed that 920,394 superficial feet of logs, railway measurement, yielded only 387,000ft. of converted timber. It should, however, be explained that, with logs of large diameter, railway measurement is 20 per cent. in excess of the ordinary method, in which the fourth of the girth is taken as the side of the square; so that in this case the unusual amount of waste will be somewhat reduced if ordinary log-measure be adopted.

Some complaints were made respecting the mode of measuring logs adopted by the railway authorities, no allowance being made for bark or waste, while the actual contents of the log are ascertained by computing the superficies of a cross-section taken at the middle of the piece. The authorities have practically recognized the claim of the saw-miller to an allowance, by charging reduced rates for logs as compared with sawn timber, the difference varying from 26 to 33 per cent. in favour of logs: in some cases the rates are still more favourable.

TAMAKI FOREST.

This also belongs to the Natives, who have leased a block of 8,000 acres to Messrs. Nannestad and Richter. These gentlemen have erected a saw-mill on the ground, and are busily engaged in the process of conversion. The block is divided from that held by Messrs. Wilding and Co. by the