

by heavy rains the sluices of the dams are opened, and the entire mass of logs driven down to deep water.

In broken country, where the mills are dependent upon driving for the supply of logs, a protracted period of dry weather may prevent conversion being carried on for several months, and the men are thrown out of work, while the capital of the proprietor is rendered unproductive for the time. Another source of loss is found in excessive floods, which bring down the logs with such impetuosity that the booms are broken, and hundred of logs are swept out to sea. In the Wairoa (Kaipara) immense rafts of logs brought to the river by its numerous tributaries may be seen towed to the mills by steam-tugs; the quantity moved in this river—as large as the Thames at London Bridge—cannot be estimated at less than 30,000,000 superficial feet per annum.

In some cases all the operations are performed by day-labour, but usually the trees are felled, cross-cut, and rolled into the creeks by contract, the cost varying, according to situation, at from 1s. to 2s. per 100 superficial feet; occasionally higher prices are paid. To this must be added the cost of flotation, which varies greatly according to distance. The cost of constructing a single dam ranges from £250 to £1,000.

In measuring the logs an allowance of from 4in. to 6in. in the girth is made for bark, but generally the mode of measurement appeared to me to be somewhat lax, and to tell rather unfairly against the sawmiller. So large a proportion of the kauri grows on steep declivities and in broken places that the logs are often much damaged before reaching the creek, and if the bed of the creek is rough they become further damaged to a great extent in the process of driving. From this and other causes the loss in conversion is larger than in any other native timber, and cannot be estimated at less than 30 per cent.; in some cases that came under my notice it was over 40 per cent. As the contractor is usually paid for logs without any allowance for damage of this kind, the loss falls upon the converter, and materially increases the cost of manufactured timber. The average cost of conversion may be stated at about 2s. per 100 superficial feet. In one or two instances, where a large supply of logs has been available, the electric light has been brought into use, and the mills worked by relays, so that conversion has been carried on continuously from Monday morning to Saturday night, but I believe that this practice has been found unprofitable on account of the increased percentage of waste in manufacture.

For the last two years prices have been fairly steady, the average rate being 10s. per 100 superficial feet. At some mills 11s. 6d. per 100ft. is charged for boards of first quality, and 7s. for second quality; 10s. may be taken as a fair average.

The manufacture of doors, sashes, &c., has assumed large dimensions in Auckland; in some large factories the timber is dried by hot air, but a difference of opinion exists as to the advantages attending the process. It is contended by some that the strength is diminished by rapid desiccation, but this is denied by those who advocate the method. Large quantities of kauri are shipped to Wellington, Christchurch, and Dunedin, much of which is worked up for doors and window-sashes. Kauri is the chief timber used in most parts of the colony for work requiring high finish, so that, partly on account of the ease with which it can be worked, and partly on account of its superior qualities and greater durability, it enters largely into consumption, and affords employment to a large number of persons in the chief centres of population outside the Auckland District.

Many of the mills obtain their supplies of logs from freehold land; others from lands leased from the Natives or Europeans; or the logs may be supplied by contractors, who obtain them from the most convenient source.

In past years some of the best forest-land was purchased at from 2s. 6d. to 5s. per acre; recently small sections have been purchased from settlers at £1 10s. to £3 per acre; and I was informed that still higher rates are occasionally paid, but the sums stated can scarcely be considered to represent the intrinsic value of the timber. There can be no question that timber is now obtained from positions so difficult of access that a few years ago it would have been pronounced impossible to remove it at any reasonable cost.

On the Thames Goldfield a fee of £1 5s. has to be paid for each kauri-tree used by the miners; but the right to cut ordinary timber free of charge is conferred by the miner's right.

In a few cases a royalty is paid, varying from 3d. to 9d. per 100 superficial feet, or even more in extremely favourable situations. I was informed of an instance in which blocks of land containing over 20,000 acres, belonging to Natives, were leased at a nominal rental of less than £1 per annum, and a royalty of 3d. per 100ft. on all logs taken out of the bush; but, on account of the difficulty attending the removal of the logs, the speculation did not prove lucrative, and operations were discontinued. The lease has still several years to run, but, as the deed contains no stipulation requiring a minimum sum to be paid as royalty, the owners receive about 15s. per annum only, as the present holder of the lease refuses to part with it, except on terms considered beyond its value.

Kauri is often beautifully waved, rhoded, or figured, and occasionally mottled. The mottling in some cases is caused by an excessive development of short branchlets, in others by a rapid development of cellular tissue, preventing the proper expansion of the bark, so that flakes or small portions are enclosed in the growing sap-wood, and indurated by excessive pressure, ultimately forming dark mottling on a light ground. Frequently the effect is intensified by the fragments of bark becoming encased with a film of translucent resin; in course of time the sap-wood becomes lignified and assumes a darker tint, while not unfrequently other portions of the wood are beautifully feathered. Figured and mottled trees are more frequent in rocky situations. Mottled timber is valued at from £3 to £5 per 100 superficial feet for conversion into veneers.

As a rule the common pines are not highly valued in kauri-districts. Rimu is sometimes converted for the purposes of the cabinetmaker, and, as already stated, white-pine is converted at the Turua Mills to the extent of fully 2,000,000 superficial feet per annum; but, except for packing-cases, &c., a very small portion of this passes into local consumption.