

numbers of itinerant motorists and recreationists such as hikers, &c., combined with the ever-increasing value of the forests, make it imperative that further protection be secured. More lookout towers must be provided, improved mobility also for patrols and fire-fighting units, detection and quick suppression tactics being the secret of successful fire protection and control.

UTILIZATION.

Exotic Forests.

From a modest figure of 4,000,000 board feet in 1918-19 the production of exotic-pine timber increased eightfold to a peak record of 34,000,000 board feet in 1935-36, at which figure it ranks as the third most important timber produced in the Dominion. A subsequent decrease to 31,000,000 board feet in 1936-37 is due to the fact that log-supplies from old plantations and shelter-belts established by farmers in the early colonial days are now rapidly diminishing, constituting one of the basic considerations which have determined the Government policy of supplementing these diminishing supplies with timber from thinnings and improvement cuttings in the State exotic forests.

It is not in the form of sawn timber alone that the exotic species will be used. Already sales of firewood, rustic work, posts, poles, mining timbers, and sleepers have been made at Rotorua, Waioapu, Hanger, and Dusky. The sales of posts, poles, and sleepers, of course, have been strictly limited, on account of the lack of natural durability in most of the exotic timbers. Large markets for these products do exist, but high durability is essential to all, and the pole and sleeper market is supplied almost wholly from Australia and the post market from the indigenous forests. Only by the application of suitable preservative treatments may the State exotic forests supplement the declining supplies of indigenous post timbers and replace to any considerable extent the imported Australian hardwood products.

Encouraging as they have been, the sales of all types of products from both State exotic forests and privately owned mature stands have indicated the necessity for numerous reforms at every stage of production and manufacture. Failure to observe various fundamental precautions has resulted in the production of poor-quality material and created much prejudice against the use of exotic timbers for many purposes. Although no effort has been spared to educate exotic forest operators as to the handling and manufacture of their products, so little progress has been achieved over a comparatively long period of time that it has become imperative for the State to install utilization plants, including sawmills, box-factories, wood-preservation units, &c., which will effectively demonstrate the high quality of the products which can be manufactured from exotic timbers. So much trouble has been experienced during recent years in securing adequate supplies of good-quality boxes, especially for the fruit industry, that importations have been necessary, and the demonstration that boxes can be manufactured economically from thinnings and of a quality comparable with the best imported cases will not only ensure the local production of the whole of the Dominion's requirements, but will allow the fruit industry to realize the best value for its produce when packed in high-quality, reasonably priced containers.

Of ever-increasing importance is the necessity for demonstrating the value of exotic timbers for general building purposes, and the five-year programme provides not merely for the production of such timber, but for its extensive use in the housing programme of almost eleven hundred houses and hutments consequential upon the expansion of labour activities in both exotic and indigenous forests. The trend from seasonal to year-round employment makes the abandonment of tent accommodation and its substitution by commodious wooden housing a practicable objective, and marks a desirable step forward in stabilizing forest employment and in improving living-conditions in out-of-way locations.

Without exception the whole of the utilization projects listed for the 1938-42 period involve radical departures from current manufacturing, merchandizing, and wood-using practices in New Zealand, and, having for their objective as they do the establishment of permanent industries and communities, it is essential that the most modern equipment be employed. The programme accordingly provides for the establishment of suitable manufacturing and producing plants which will act as key units for the future guidance of the State in its policy of disposing of raw material. An additional factor necessitating State ownership of these units is the need for elasticity in respect to the type of raw material to be supplied during the earlier stages of operation. Reference has been made previously to the necessity for developing an improvement-cutting and re-establishment technique which will involve extraordinarily wide variations in the raw material made available for working up into the various products. The difficulty of dealing with such material in anything but a State-owned enterprise would prove quite uneconomical to the State, besides involving administrative difficulties which appear insurmountable. Of paramount importance, too, is the necessity for the State to have at its unlimited command manufacturing and producing units which may be operated, if necessary, twenty-four hours a day for the rapid salvaging of material damaged by extensive fire, wind-throw, insect or fungal attack, &c.

Only by the integration of the various manufacturing and producing units may maximum efficiency be obtained. Either improvement cuttings or final clear fellings will yield every type of raw material, and to minimize waste thereof it will be necessary to develop a co-ordinated demand for all classes of products, including firewood, rustic timbers, mining and scaffolding timbers, treated posts, poles, and sleepers, sawn timber for boxing and crating and for building and constructional work, and various classes of pulp products. The extent to which the various producing units may be integrated will be dependent upon the size of the available markets. This applies more particularly to pulp products, in which co-ordination of the local and Australian markets is essential if any marked progress is to be achieved.