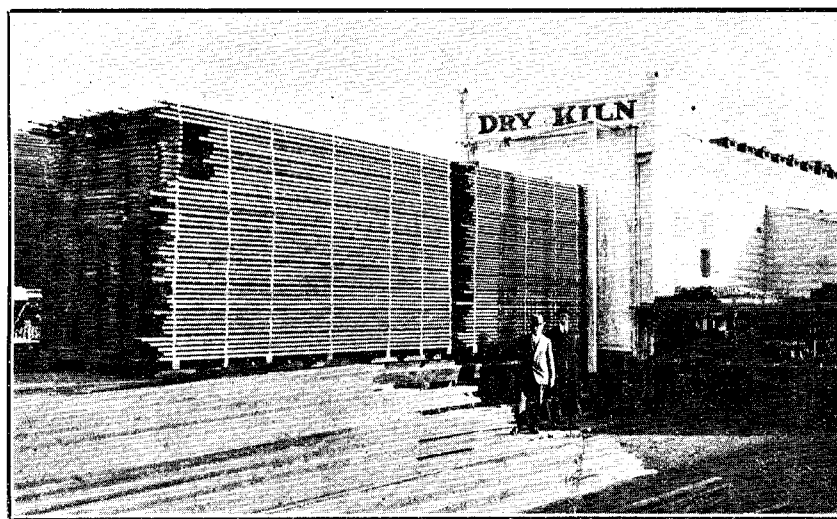


10 per cent. of the exploited forest reaches the consumer in the form of square-edged lumber, with a wastage of eight times as much ligneous material as is utilized. It was noted that certain territories, such as Auckland, Hawke's Bay, Marlborough, and upper Nelson, which a few years ago were exclusively timber-exporting regions, have now become dependent in a large measure for their timber-supplies on other centres. Building-timber cargoes have been imported into Auckland City from Southland and Westland mills; *Pinus insignis* fruit-case timbers were imported into Nelson from Canterbury; and other extraordinary timber movements have been noted during the year. More and more is the community becoming dependent on the forest resources available from State forests in Westland, Southland, and through the central North Island massif. It is only a question of time when the country will face a real and actual timber famine; and it behoves this agency of Government to solve the problem of a balanced Dominion-wide supply and demand by the elimination of waste, more efficient conversion, better conditioning of timber, and the utilization of our substitute timbers, such as the beeches, tawa, kamahi, rata, and others.

Notable advances in manufacturing technique and utilization have been made during the year; and the preliminary steps towards the erection of a paper-pulp mill have been taken by a New Zealand group in Westland. This plant will use as raw material rimu and white-pine slabs and mill-waste. A complete wood speciality factory, turning out handles in all numbers, clothes-pegs, dowels, &c., from Southland beech, has been established in Southland. Several sawmills throughout the Dominion have installed Dutch ovens for the burning of sawdust and the generation of steam, thus freeing valuable mill-refuse for other purposes. The construction of a modern woodworking plant equipped for the manufacture of ready-cut houses was begun during the year by the Railway Department at Frankton. In many other ways a marked improvement in wood-conversion, technique, and economy of manufacture has been evidenced. The Service has contributed in no



(State Forest Service, photo.)

SEASONING TIMBER BY THE DRY-KILN PROCESS: MR. C. E. OTLEY'S KILN AT CHRISTCHURCH.

small way by assisting in the greater stability and refinement of the timber industry, and it aims to help further by the operation of a wood-waste exchange, by continuity of exploitation through its timber-sale policy, forest-products studies in timber-testing, conditioning research, educational propaganda, and by other means and resources in its power.

FOREST-PRODUCTS INVESTIGATIONS,

The greatest forestry problem in New Zealand is the fuller use of our timber resources—the “cut-hack-burn” day is, or should be, past in the interest of the Dominion. The problem is to turn to more use the weed trees and “garbage of the forest,” and by this means bridge over a future possible epoch of want and privation. In recognition of the importance of this work, an engineer in forest-products was appointed early in the year to initiate and carry out the many problems concerning wood and its better utilization in New Zealand.

Substantial progress has been made during the year in their solution. A study was made of markets for timber-products, utilization methods and technique, application of timber in use, and general suitability of various classes, grades, and qualities, and possibility of substitution therefor (a bulletin dealing with this subject will be published this calendar year). With a view to bringing the tawa and Southland-beech timber before the consuming public a comprehensive series of engineering and physical-strength tests were begun at Auckland in co-operation with Auckland University College. The results, while as yet incomplete, are very encouraging, and point to a wide potential application in commerce for these two most important species.

The standard export bushel apple-case specification was, in co-operation with the agricultural authorities, rewritten, and a package obtained to satisfactorily compete with the best North American type of case.