

SECTION I.—THE FOUNDATION:

FOREST RESOURCES OF NEW ZEALAND.

Actual knowledge of the extent of the commercial timber areas in New Zealand is scanty and very much scattered, for no consistent nor deliberate forest census has ever been made. Estimates which are *very much generalized* must be relied upon. (The need of definite knowledge of this resource is very apparent.) Various estimates or guesses of the commercial timber available in the Dominion range between 16 billion and 33 billion feet.

1913 Royal Commission Estimate.

The Royal Commission on Forestry, 1913, stated the following: "According to evidence before us the estimate of 33,060,883,000 superficial feet available in the indigenous forests in 1909 is at best a guess, and no one can truly say whether the amount be too much or too little. Our opinion is that it is not safe to conclude that there will be any supply of moment at the expiration of thirty years (1943) at the present time, and that unless more stringent methods are adopted to conserve the supply as far as possible the period of supply may be even shorter."

The same Commission estimated that the amount of timber consumed yearly in New Zealand at that time was 358,000,000 ft., and that notwithstanding substitutes for timber the *per capita* consumption in certain countries appears to be on the increase. This Commission, after assuming a doubling of population in thirty-five years, and taking the present demand for timber as a basis, estimated the future demand at that time at about 716,000,000 ft.

Preliminary Estimate.

The writer, after carefully considering and weighing past, present, and future needs and consumption, is convinced that the available supply of usable timber will be *very much higher than 35,000,000,000 superficial feet*. Enormous strides have been made in the discovery of new uses and methods of utilizing wood—such as, for instance, development of ply-wood, pulp-board, built-up products, wood-preservation, seasoning, manipulation, &c. These improvements open up vast opportunities for the use of the inferior timber-trees of New Zealand and its milling-waste; and where to-day not more than 25 per cent. of the ligneous material per acre is used in industry, in a few years' time this utilization *will probably exceed 65 per cent.*

Species formerly regarded as valueless are now valuable. The yield from an acre of land is now often double what it was in former years. Grades have gone down as prices have gone up. Processes have been developed by which waste may be converted into by-products of greater value than the timber formerly cut from the trees. In the past, wood was wood only: to-day it is known as a structure of countless cells filled with valuable materials for the use of man.

The Future.

Timber is cheaper to-day than it was three decades ago because of fuller utilization, broader markets, greater safety, and possible saving of cellular values which were lost. The up-to-date tree-utilization plant of the future will operate sawmills as an adjunct to the principal business of converting the chemical elements of wood into commercial products.

It must be further borne in mind that the modern scientific use of species of timber such as were at one time looked upon as without value, through better methods of logging and a vaster and constantly increasing market and demand, together with the increased utilization of waste, have combined to practically double the actual yield per acre of timber land. That is the answer to the cry of an imminent "timber famine."

Future Consumption of Wood.

However, within a generation the population of this country will probably exceed five million people, and on the basis of a probable consumption of 200 ft. *per capita* at this period the annual consumption of timber will be 1,000,000,000 ft., and even if the visible timber capital be 60,000,000,000 superficial feet it will be seen that considerable economies in utilization *must be introduced without delay*. The writer is convinced that this is possible, and may be effected in such a manner as not to inflict unreasonable hardships on the present generation.

In ten years' time it is estimated that if the State persists with its aggressive policy of dedicating the forests on absolute forest soils for the growing of trees it will have a virtual monopoly of the raw material.

The ownership of forests, according to the histories of other and older countries, carries with it an obligation on the part of the State to see that mountains and plains are not laid waste, because forests affect fundamentally the economic welfare of communities and the nation.

Fuller Utilization.

It is right, therefore, that the State should impose those silvicultural rules and manufacturing regulations that will ensure efficient conversion and clean utilization—for instance, such practical measures as clean logging, use of all merchantable material, disposal of slash, use of inferior trees for construction of logging-works, low stumps, high tops, protection of woods from fire, economical milling-machinery, as well as stimulating the use by the public of the low grades wherever possible.