

is that the principal New Zealand trees grow about twice as fast as the five chief forest trees of Europe—oak, beech, Scotch pine, spruce, and silver fir. Kauri, the report observes, is superior to oak in every respect but strength, and as a tree it grows some 50 to 75 per cent. faster than oak. In showing what New Zealand has lost by the wasteful destruction of forests, Sir David Hutchins uses a particularly striking illustration. He remarks that the Puhipubi kauri forest, which was destroyed by fire years ago, occupied a space of 17,000 acres, an area less than that of Wellington Harbour from the sea to Somes Island. This single forest, he observes, if it had been preserved, and fully stocked with young kauri, would now have been worth an amount that would cover the cost of rebuilding Greater Wellington from the bare ground, "with better-graded streets, and the boulevards its peerless site merits."

Forests that will Endure.

While he emphasises the loss that has been suffered in the improvident destruction of forests, Sir David Hutchins is, of course, even more concerned to show how they can be profitably worked in future. In dealing with doubts that have been raised as to whether the native forests can be perpetuated successfully and with profit, he relies not upon his own knowledge and experience only, but upon a considerable body of evidence collected over a long period of years by New Zealand observers. It must suffice here to state briefly that he expresses a most decided opinion not only that the native forests can be preserved, but under that cultivation, as it is understood in Europe and elsewhere, they can be made immensely more productive than they ever were in their virgin state. The cultivated kauri forest, it is estimated, will produce eight times as much timber on a given area in a given time as the wild forest. Sir David Hutchins points out in this connection that the forests of Prussia, in a climate less favourable to tree-growth than that of New Zealand, have increased their timber-yield nine times, and their money-yield more than ten times during sixty or seventy years—a man's lifetime. Though detailed and interesting comparisons are drawn in the report between the native forests and plantations of imported trees, it can only be mentioned here that Sir David Hutchins rates the plantations as in every way vastly inferior to the indigenous forest, whether they are regarded simply as an investment or as a source of future timber-supply. Where plantations are made in the open, he thinks it will usually be best to plant imported trees, but he is doubtful whether such plantations will become established as self-regenerating forests. On the other hand, he is of opinion that a number of imported exotics would spread naturally if planted in the native forests to thicken the stand of timber to the acre.

An Important Source of Revenue.

As showing the possibilities of future forestry in New Zealand, Sir David Hutchins declares that half a million acres of kauri forest—an area that might yet be restored—would ultimately return a net amount of more than £10 per acre per annum, or

over £5,000,000 per annum in the aggregate, to the State. With the forest at this stage of production, this half-million acres would also afford settled homes and permanent employment for nearly seven thousand families. As they stand, the kauri forests offer some scope for permanent settlement, and a considerable amount of employment in forest restoration and development work; and Sir David Hutchins states that in the process of restoration the return from "well-timbered acres" would more than cover the outlay on areas from which the kauri forest has well-nigh disappeared. Ultimately the kauri forests, on account of their rapid growth and the valuable timber they yield, will be the richest in the Dominion. Since for the time being, however, these forests have been reduced to a mere remnant, more important possibilities so far as the immediate future is concerned attach to other classes of forest, notably totara. Totara forests of great value and extent, Sir David Hutchins remarks, remain to be demarcated, and he is of opinion that these forests are only less valuable than kauri. He adds that his estimate of an ultimate net return of over £10 per acre per year from kauri forest will be applicable with but little reduction to a large part of the forests in the northern half of the North Island.

Forest Settlement.

The present total area of forest in New Zealand not on native land or otherwise privately owned is ten and a half million acres, and of this only a small part, the report states, is as yet under nominally protective forestry. According to European standards, New Zealand ought to have sixteen million acres of permanent forest, but Sir David Hutchins suggests that on account of the mountainous character of much of its land this country needs a larger proportion of forest in order to secure the fullest extension of settlement and a maximum volume of production. If demarcation on approved lines is undertaken in this country, only poor land (much of it mountain country of little value for ordinary settlement) will be retained or set aside as forest. Sir David Hutchins estimates, however, that cultivated forest on this poor land, the bulk of it included in the "unoccupied third" of the Dominion, would ultimately support, on the soil and in sawmills, about as many people (workers and their families) as now constitute the total population of the Dominion. Such forest estates, he declares, would be amongst the most valuable in the world—they would easily surpass the most valuable forests in France and Germany—and they can be put in order usually for a fraction of the value of the timber on them, or at the worst for the cost of grassing.

Reckless Improvidence.

As showing with what reckless improvidence the native forest has been given over to destruction, Sir David Hutchins points out that during the last fourteen years over 829,000 acres of bush land have been alienated without any attempt at forest demarcation. He also cites numerous examples from the "Crown Lands Guide" of land which might be very valuable as forest offered under lease or for outright