

forest of to-day is not slowness of growth, or bad quality in the timber, but a low "stand" of timber. The last official forest report quotes 15,000 superficial feet (1,250 cubic feet) as the average yield of sawn timber per acre of millable forest (Lands Department Report on State Nurseries, 1916). Very curiously, Captain Campbell Walker, the Indian forester, quoted exactly the same figure forty years ago (Trans. N.Z. Inst., 1876), the two computations being made quite independently. For good kauri forest Kirk quotes an average stand of about 2,000 cubic feet milled. This with more conservative working would probably represent a stand of about 3,000 cubic feet in Europe.

These New Zealand stands may be compared with 4,000 cubic feet (the usual figure for Scotch pine in Scotland), cutting at age eighty years, or central Europe, 5,340 cubic feet, cutting at 110 years. But the stand in the wild forest is generally low. Thus good forest on the Appalachians (latitude and climate of New Zealand) in North America has an average stand of 1,400 cubic feet only.

Thus the real fault in the New Zealand forest of to-day, the low "stand," is remediable by good forestry, of which the chief points would be a very careful marking of fellable timber so as to ensure the best natural regeneration, and a liberal expenditure on such cultural operations as the condition of the forest demanded—ring-barking or thinning to let in light, and seed-sowing, planting, or seedling transference in too open areas.

#### CLASSES OF FOREST.

In most countries we see three classes of forests—(1) The wild virgin forest, with trees sometimes very good (but in South Africa and New Zealand only good in patches), and stocked with much timber that is badly shaped, overmature, and unsound; (2) the cultivated forest, the common forest of most of Europe; (3) forest plantations.

The cultivated forest is produced by modern forestry science, mainly by regulating the cuttings. Almost always the forest regenerates itself, and, as a whole, is continuous in its growth and reproduction. To any one but a forester this forest looks exactly like the wild forest, except that it is somewhat more regular, with a better stand of timber. This class of forest, towards which all the forests of the civilized world are tending, has been entirely lost sight of in New Zealand, and this is the fundamental mistake that has been made in the forest policy of the country.

It has been assumed that plantations of exotic trees can replace the native forests, but that is a rather risky and certainly a costly assumption. There is always risk in planting exotic trees, and if New Zealand had to be supplied with timber grown entirely in