that carried the timber were largely foreign-owned, and the return freight was coal. Britain was therefore paying to foreigners a much enhanced price for the timber, and was hampered by having to mine coal for them; furthermore, the foreigner got the advantage of the increased freights. The report shows that America and Canada are now taking measures to bring their annual cut into conformity with the natural annual increment of their forests, and that the development that is likely to take place in Russia after the war will probably lessen the amount that that country has previously had for export. The Committee therefore recommended that the British Government should at once start extensive afforestation on the large area of poor lands in Great Britain and Ireland, and that at the same time (as it will be several years before there will be a substantial return from the afforested area) the Government should endeavour to arrange for its use a large area of forest in a British dominion or in a friendly country. "It may be argued that there may be such revolutions in industrial processes that wood will become unnecessary, both in war and in peace; there may be such a revolution in human nature that wars or trade boycotts between nations will become inconsiderable. There may be climatic or other natural changes which will either make the areas that are now afforestable unsuited for timber-growing or less valuable to the State for timber than for some other purpose which as yet we cannot imagine. We regard all these possibilities as very unlikely to happen in forty years, and we therefore cannot too strongly emphasize our conviction of the necessity for steady progress upon a definite plan for at least that time." There is still a large proportion of the population of this Dominion who (mainly from want of thought) are indifferent to the question of our timber-supplies, or who, though admitting the necessity of the use of timber, think our future supplies can easily be procured from abroad. Consideration of the foregoing should convince them that a *laissez-faire* policy is dangerous, and that true patriotism, concerning itself more with the future of the country than with the present, demands the application of such measures as will ensure a sustained supply for ourselves and those that will succeed us.

Forest By-products and Research.

In America and Europe the war has stimulated research in connection with products from wood. Methods have been discovered by which alcohol for motor and other purposes can be profitably distilled from wood. Alcohol is now being obtained from the waste liquors of pulp-manufacture. Wood-flour is being largely made; it is used in the manufacture of dynamite, linoleum, wall-paper, wood plastics, and in Germany is used in admixture with ordinary flour from grain for human food. Our command of the sea has deprived Germany of her supplies of cotton, and that country is said to be using cellulose from wood as a substitute for it in the manufacture of her explosives. Numerous articles of clothing are now made from wood-pulp. By a subtle process the silkworm makes silk from the leaves of certain trees; by a chemical process man is now making silk from wood-pulp. In the United States one manufacturer of pulp building-board alone used 300,000,000 ft. of timber.

In this Dominion, at Palmerston North, a syndicate has started a plant for the distillation of spirit, oils, &c., from wood, and it is to be hoped that their enterprise will meet with success. Mr. B. C. Aston, Chief Chemist of the Agricultural Department, has during the year made investigations with respect to the dyes obtainable from plants of the genus *Coprosma*, and has also determined the tannin-contents of the barks and timbers of various indigenous forest-trees. As a result of his experiments it will probably be found profitable in the milling of our beeches to bark the logs and prepare from the bark a tannin extract.

In America portable distilling plants are used in the long-leaf pine (pitch-pine) forests of the southern States for the extraction of oils and resin from the stumps. There seems no reason why such a plant could not be successfully operated in a kauri forest, as the kauri resin would have a higher value than that obtained from the pitch-pine.

With the increasing importance of forest industries there is already abundant work for a special research officer, and antiseptic treatment, prevention of sap-stain, artificial seasoning, diseases of native trees, volume-increment of native trees, strengths, &c., are some of the many important matters awaiting investigation. Mr. Stanton Hicks, M.Sc., has carried out some interesting laboratory experiments in the fireproofing and antiseptic treatment of rimu, white-pine, and some of our beeches, and the results of his experiments are shortly to be published. It is to be hoped that he will be able to continue an investigation so important to the future of forestry in this country.

New Uses for Native Timbers.

There is little doubt that as kauri, rimu, matai, white-pine, &c., became scarcer, tawa, the beeches, taraire, &c., will be largely used. The chief defect of the beeches is the difficulty of seasoning them, but when seasoned they are certainly very fine timbers. The use of Southland beech for furniture is on the increase, and it is claimed that it has been successfully tested for butter-boxes. The very high price of iron should have made a market for our mountain-cedar (kahikawaka), for this timber makes an excellent shingle—it is light, durable, easily split or sawn, and is a very bad burning timber. It would also be most suitable for cutting into plaster-laths and venetian-blind slats. Even before the war had caused the rise in iron the Canadians and Americans largely used shingles. The scarcity of coal and its excessively high price must have made many people wonder why wood is not more used for fuel in this Dominion. In Canada, as a war measure, coal is being reserved for the requirements of the railways, factories, steamers, &c., and the use of wood fuel has become a necessity. Of late probably many people in this Dominion have wondered why high-priced coal, often difficult to obtain, is practically the only fuel—at least for town dwellers. The calorific value of American birch when dry is rather more than half that of an equal weight of anthracite coal. I am not aware that the calorific values of our woods have been properly tested, but I think it may be safely assumed that rata, maire, and manuka are superior to American birch, and that tawa and matai are about equal to it; or, say, the average native hardwood is equal to rather more than half its weight of our best