

Still it is most desirable that all these barks with a low percentage of tannin should be utilized instead of being wasted to the extent of thousands of tons yearly, and it seems probable that by devising some cheap plan of preparing an extract the bulk and weight may be reduced, and a mere waste product converted into an important article of export.

The Americans have successfully achieved this result with their extract of hemlock (*Abies canadensis*), the bark of which contains about 9 per cent. of tannin; rather less than pokaka, and considerably less than kamai. The extract is produced to the extent of nearly 120,000 barrels per annum, and the manufacture is found so profitable that nearly 200,000 acres of hemlock spruce are cleared annually to supply the demand in the United States alone; fears are freely expressed that in a short time the hemlock spruce forest will be destroyed. The extract is largely imported into England, and the demand is increasing.

During the year ending 31st December, 1884, the imports of tanning bark into New Zealand amounted to 4,129 tons, valued at £43,578. A large portion of this outlay might have been kept in the colony had the extent of our resources been properly understood.

So far back as 1876, extract of towai was exhibited at the United States International Exhibition, Philadelphia, by Mr. Grayling, of New Plymouth, who was awarded a certificate of merit by the judges in 1879. Mr. Grayling obtained a similar award at the Sydney Exhibition, and was equally successful at the Melbourne Exhibition in 1880. Mr. Kingsland, of Invercargill, uses large quantities of rimu for tanning, and pronounces it excellent for certain qualities of leather, although it imparts a red colour to the skins. He is now carrying out a series of experiments with the view of placing it on the market in the form of an extract. Mr. Tyer, of Ngahauranga, has, I believe, taken out a patent for a process of manufacture. Mr. Godsif, of Havelock, has recently produced an extract of tooth-leaved beech containing 22·51 per cent. of tannin by a simple method.

At my request, Mr. Kingsland kindly experimented with pokaka bark, and has favoured me with the following statement of results:—

“From 22lb. bark to 10 gallons of water, boiled for two hours, the barkometer registered for the following different barks: Rimu, or red-pine, 7°; kamai, 10°; pokaka, 12½°; mimosa, 16°. The red-pine tested was from a parcel that had been stacked outside all the winter, while the pokaka was fresh; if the others had been fresh they would have registered another 1½ degrees. Basils tanned from pokaka bark are good firm leather.”

Mr. Kingsland further remarks: “The trial was not a scientific one, but it probably shows fairly enough the relative value of the different barks. I think you will agree with me that the experiment has been worth the trouble, and, I think, fairly shows a good percentage of tannin: pokaka might be largely used for ‘dressing goods,’ whether it would be useful or not in dressing ‘sole’ leather could only be determined by an extended trial on a larger scale.” I have to express my thanks to Mr. Kingsland for the valuable information he has placed at my disposal.

In November last “tannin extract” was selling in London at from £16 to £21 per ton; oak-wood extract, £18; larch extract, £14; chestnut, £10 10s. to £15 10s.; oak bark, £6 to £6 10s.; and sumach, £13 to £18 per ton.

I may express the opinion that in such low-class barks as rimu, tooth-leaved beech, and towai, we have the material for replacing the greater portion of the imported bark and forming a valuable article of export; or—to put the statement in another form—of increasing the wealth of the colony to the extent of from £70,000 to £100,000 per annum by the utilization of waste material.

It will probably be found that most of the indigenous barks named afford the greatest amount of tannin when peeled during the last four months of the year, but actual experiments will be necessary to determine this point.

SECONDARY FOREST PRODUCTS.

Next in importance to the utilization of our “tanning barks,” must be placed the utilization of the waste branches and sawmillers’ refuse, which hitherto have not attracted the slightest notice; but, left to decay, have not unfrequently led to the destruction of a large amount of standing timber by fire.

At the present time the value of the imports of turpentine, resin, tar, pitch, and varnish is upwards of £19,000 per annum. No efforts have been made at present to extract turpentine and resin from our native pines, although several species afford them in considerable quantities. Tar and pitch can be produced to any extent from the tops and waste branches at present left to rot on the ground. Varnish is manufactured to a small extent in Auckland, but the quantity imported is far too large, considering the abundance of raw material at our command. It certainly cannot be considered economical to export kauri resin to the United States, and import it in the form of varnish, paying outward and inward freights, with the addition of a heavy duty, and allowing another country the profit arising from the manufacture.

It will be advisable to describe the chief methods employed for the extraction of tar, pitch, and resin, so as to demonstrate the facility with which the waste tops, &c., may be converted into a source of profit, at once affording employment to a considerable amount of labour, and minimizing one of the greatest risks to which our forests are liable.

KAURI RESIN.

The so-called kauri “gum” will occasionally have to be treated as a forest product, since it is found abundantly on open spaces in many kauri forests, sometimes in situations where it may be profitably extracted, under restrictions calculated to prevent damage from fire or other causes.