

kauri. The head of the firm was prosecuted, convicted, and fined for making a false Customs declaration. Since then another Auckland firm of kauri-gum exporters who represent a New York house advertised in the Fiji papers for Fiji gums. The result has been that people in Fiji have been sending their gums to Auckland, and cases are known where these gums have been offered for sale as kauri. Other firms, not interested in kauri, are known to have imported Yacca gum for manufacturing polishes and stains. As a result, kauri-exporters who are not interesting themselves in these foreign gums are becoming anxious as to how matters are going to develop. Inquiries made in New York have not elicited that the firms in question were offering these foreign resins for sale there by themselves. It would be a simple matter for a gum broker or dealer at Auckland to mix a little Yacca or Fiji or other foreign gums or resins with kauri and sell to an exporter, who might ship the mixture quite unconscious of the adulteration. This Department is not so much concerned as the average shipper, as nearly all of our gum is bought direct from the producer on the gumfields, and very little business is done with dealers or brokers in Auckland. At the same time the matter is one deserving of immediate consideration, but it is a difficult one to handle. There is really no reason why firms should not deal in Fiji gums. Auckland constitutes an outlet for a large proportion of Fiji produce, and it is only natural that a bid should be made for their gums if there is any profit in the business. It is probable that legislation will have to be enacted to compel all buyers and sellers of these foreign gums and resins to take out licenses and to keep records of all dealings.

KAURI-PEAT OIL.

For many years a little was heard every now and again in regard to the production of kauri-peat oil. During the past few years, however, this subject has received especial attention throughout the Dominion, and inquiries have come forward from many parts of the world asking for information as to the stage of development reached and the possibilities of the oil proposition.

The whole matter was fully threshed out by the Royal Commission which took evidence on various matters in connection with the kauri-gum industry last year. All the information available was carefully considered, the Commission, of which I was Chairman, having amongst its members Professor Worley, Professor of Chemistry at Auckland University College, who had himself done a very considerable amount of research work in connection with kauri-peat oil.

The following extract from the Commissioners' report gives the position very clearly :—

"Although no practical results have yet been obtained in the way of establishing the industry, this is not necessarily due to the project being economically impracticable. The lack of success of the above companies is attributable to a variety of causes, including unforeseen misfortunes, and the failure of the directors to realize the paramount importance, if not the absolute necessity, of complete investigation, both on a laboratory scale and on a semi-industrial scale, before launching out on an industrial undertaking. There is still almost complete ignorance of the nature of the oils produced and of their commercial value. More complete investigation should have been carried out before the formation of companies, whose shareholders are impatient at the necessary slowness of scientific investigation. Further, the carrying-out of scientific investigation has some disadvantages to a company, inasmuch as no one company has a monopoly of the gumfields, and discoveries made at great expense are available to other companies with which the investigating company may be in competition."

The Commission recommended State aid in connection with research work in regard to the distillation of peat from various localities, and the chemical investigation of the nature of the products obtained, as well as the distillation of or extraction of oils obtained from swamp timber, and the nature of the oils produced. Nothing has been done so far, and it can be taken that the production of kauri-peat oil on a commercial scale is not at all likely in the very near future.

SALT WASHING OF KAURI ON THE GUMFIELDS.

It has been recognized in the trade for more than a generation that the difference in the specific gravity of kauri-gum and of the dirt recovered with it in the usual methods of digging is so great that a solution can be made—of common salt, for example—the specific gravity of which is slightly higher than that of kauri-gum and yet lower than that of the dirt. The gum will therefore float in the solution and the dirt sink. This is all right so far as the large pieces of gum are concerned, but it is almost wholly the small pieces—nubs, chips, seeds, and dust—that have a dirt content as at present recovered, that require treatment. By using a salt bath for these latter gradings it was found that a large proportion of the dirt floated as a result of air voids which are found in even the smallest particles of earth. Dr. Maclaurin solved the problem by placing solution and "dirty" gum in a vessel and exhausting the air. The cells in the dirt then filled with brine and the dirt sank, the gum, of course, still floating, and the recovery of the gum and dirt separately was an easy matter.

During the past year some gum-washers in the Wairoa district have been rewashing very dirty heaps of chips and dust which were put through during the "boom" in 1920, when anything at all was being sold on the Auckland market. It is doubtful if some of these accumulations contained as much as 40 per cent. of gum, and there was usually a good percentage of sand left in with the chips. These piles have been washed in salt solutions of varying strength and the floaters skimmed off. The chips and dust thus obtained have still a very considerable dirt content, although quite saleable in normal times.

Following on the lines of the Maclaurin process, a new method of treating the gum was developed at Ruakaka. Here it was found that when the material was taken from the "rubbling" tubs the air had not then got into the cells in the dirt, and the organic matter other than gum was water-