

experimental researches on the quantity and chemical nature of the oils obtainable from the peats of different localities, and from swamp timber, full information should be obtained on the extent and nature of the peat deposits, on the commercial value of the oils, and on the various types of distillation apparatus used for similar purposes in other countries. We consider, further, that the failure of companies from other causes than the economic impracticability of the project has a serious effect on the development of the industry, and that for this reason such assistance as is reasonably possible should be given to companies engaged in pioneering work.

(5.) *The durability of kauri swamp timber, and its value for fencing, building, and other purposes.*

A large amount of evidence dealing with this question was taken in the course of our inquiry, and inspections were made of the kauri swamp timber in the various localities visited by us.

At Papakura, near Auckland City, we had an opportunity of inspecting houses built of this timber, which had been taken from a swamp nearby and sawn up at a local mill. Some of these houses, which were built about ten years ago, are in first-class condition, and the timber shows no sign of deterioration from dry-rot or other causes. This remark applies even to one of the oldest of the houses mentioned, in spite of the fact that it has received only one coat of paint since its erection.

Kauri timber is found in the swamps at various depths, and in some cases only partly buried. Its quality varies in different localities. This may be due either to a difference in the quality of the original trees, or to the fact that the timber is from different varieties of kauri. The general opinion of witnesses in some districts was that this timber is hardly worth consideration for fencing or building purposes, while in other districts we had evidence of a contrary opinion. At Mangawai there are fencing-posts of kauri swamp timber which have been in the ground for seven years, and are still perfectly sound, showing no signs of decay. It is generally recognized that the sap-wood from the swamp timber is useless for either fencing or building purposes.

Where the timber is used it is necessary that after the logs are taken from the swamp they should be seasoned, either in the whole or cut into flitches, before being sawn into boards. Where the timber is used for building purposes it is important that it should be given a coat of oil or paint as soon as possible. Split heart-wood of this timber is sometimes used in the erection of sheds and other outbuildings, and lasts longer than the sawn timbers. There is a class of timber found in the kauri peat swamps known as “manawau,” which is considered to be very durable for fencing purposes.

We are firmly of opinion that, apart from its possible uses for fencing and building purposes, none of the kauri swamp timber should be destroyed, as it may be found that it can be profitably treated, as indicated above, for the recovery of oils, charcoal, &c.

(6.) *The best means of treating the kauri-gum lands for settlement purposes generally, and the suitability of such lands for setting apart for occupation under the provisions of section 11 of the Land Laws Amendment Act, 1919.*

We have received much valuable evidence in regard to the best means of dealing with the gum lands from a settlement point of view, and, although we recognize that there are many difficulties to be faced, we are convinced that if the lands are handled in a practical and systematic manner satisfactory results will be attained, and large areas now lying idle will be brought into profitable use.

These gum lands vary so much in character that some classification of them is necessary, in order that the methods of treatment may be separately dealt with. With this end in view we have classified them as follows:—

- (1.) (a.) Land easily ploughable, consisting of heavy clay lands and light sandy loams. (b.) Similar lands not easily ploughable, and also lands with pipeclay soils.
- (2.) Poor pipeclay lands, lands with ironstone pan, and sandy wastes.
- (3.) Swamp lands, including the kauri peat swamps.