

JOHN ALEXANDER MANSON, Company-manager, Palmerston North, examined. (No. 16.)

I desire to lay before the Committee a process to effect an improvement in the burning-qualities of lignite. It is a process which removes the water and the hydrocarbons. I wish to place the matter before the Committee in private. [The process was described.] I ask the Committee to recommend the Government to make a grant towards the expense of sending 5 or 10 tons to America to give the process a test. I think that £100 would cover the expense, and in return the whole of the results will be available to the Government.

E. PHILLIPS TURNER, Chief Officer, Forestry Branch, Lands Department, examined. (No. 17.)

On the subject of wood-pulp I have here a short paper which I wrote for the *New Zealand Journal of Science and Technology*. If you go in for pulping paper it is essential to have large forests containing a supply of suitable timber. In New Zealand the most suitable timber is probably white-pine. There is not a large amount of it left, and what is left is required for butter-boxes. It is therefore out of the question. The only remaining plentiful timbers are the birches (or beeches), kamai (or tawhero), and taraire (in the North of Auckland). Our birches are closely related to the Tasmanian myrtle, the difficulty about which is that the fibres are short. The chief timber used for pulping purposes in America is spruce. Ninety per cent. of the timber used in the world for pulp-making is spruce. The balance is composed of aspin, cottonwood, and balsam fir. In America there is an abundance of hard woods, but the spruce is used, as it is more suitable. It has been said that the New Zealand hardwood timbers could be used for pulping purposes. Tawa has not been tried, nor taraire. It is possible that the birches have been tried, but we have no official knowledge of it. It seems improbable that the pulping of native timbers could be carried on successfully in New Zealand. White-pine would certainly be suitable if available. The Australian Government are considering the planting of trees which are known to be suitable for pulping purposes, and it has been recommended by an expert that the spruce should be planted in large areas in Tasmania. On the West Coast of New Zealand the same thing might be done.

1. *To Mr. Hornsby.*] The Tasmanian beech is very similar to our silver-beech. Most of our silver-beech is to be found in the Catlin's River district. There is a good deal of it in the Nelson District. It is also found in the North Island.

2. *To Mr. Sidey.*] If spruce were planted it would take probably fifty-seven years before it could be used for wood-pulp. I am judging by the rate of growth that the spruce makes in Europe under forest conditions. We have not planted spruce here under forest conditions. Possibly it would grow quicker here, but I would not put it down at more than ten years quicker.

3. *To Mr. Hornsby.*] The production of timber should be our first aim, and the pulp-trees should be secondary.

4. *To Dr. A. K. Newman.*] I believe that experiments have been made with New Zealand trees by a syndicate that got an area on the West Coast, but I cannot make out what timbers they used, as the reports are very confusing. Only that tree is suitable for papermaking which will felt. I do not think that totara would felt. Spruce and Norwegian pine are converted into pulp, and practically no other tree is used.

5. *To Mr. Craigie.*] It is likely that *Pinus insignis* may be found suitable for pulping, though I do not know that any tests have been made. It is highly desirable that it should be tested. It grows quickly. In twenty years a crop might be got from *Pinus insignis*.

6. *To Mr. Sidey.*] A wood-pulping plant takes over £60,000 to establish. The smallest plant likely to be profitable uses about 12,000 superficial feet of timber per day, and an authoritative work states that 100,000 acres are required to keep a mill going. It would not be desirable to establish the wood-pulping industry here at present. We have not sufficient timber to warrant it.

7. *To the Chairman.*] The Government has only started planting *Pinus insignis* since 1913. We have largely increased the planting of the trees. There are sufficient plantations now in existence to enable us to form in years to come an opinion of the capabilities of the tree. I have considered the question of commercial alcohol from timber waste. It can be produced in the United States at from 6d. to 7d. per gallon.

8. *To Mr. Sidey.*] One of the most important things to be done is to prevent the waste that is going on in connection with the conversion of our native forests. There has been waste in every direction in the forest, in the mill, and all round. Where forest is on poor land which is not suitable for settlement the probability is that it will be retained under forest, and in some instances the regeneration of the native growth will be aimed at. Systematic trials will be made, and in other instances it is probable that we shall introduce valuable exotic shade-bearing trees, such as the Californian redwood, the Douglas fir (Oregon pine), and the West American cedar. We shall have to try experiments in introducing exotic trees into the native forests to ascertain which will stand the conditions best. Contemporaneous with the effort there will be two policies gone into. In the first place, there will be regeneration where it can be done, and no doubt it can be done in kauri forests, and the interplanting of exotic trees. At the same time we shall continue the planting of the most valuable exotic trees in bare open country, especially the *Pinus insignis*, for the production of butter-box timber. The *Pinus insignis* will also supply a large amount of beautiful timber. It has already been satisfactorily used in Canterbury for house-building. The antiseptic treatment of timber has been largely gone in for in America, and with antiseptic treatment a timber like *Pinus insignis* can be made as durable as the best kauri. The report of Mr. Hutchins has just been received. I cannot say that the Government at the present time is carrying out the demarcation in forests as recommended by the writer, but no doubt it will be aimed at when the thing is properly organized. Apropos of that matter, it involves a question of policy, and I wish the Committee to understand that the Government, or the Minister