

7. Have you any data available in connection with the cost of the prison camps?—Yes. At Waiotapu the cost per thousand trees was £1 5s.; at Hanmer, £2 6s.; at Waipa, £1 19s. The latter is a newer camp, and there has been a good deal of fixing up to do. Roughly speaking, these figures indicate that were we paid for the work the camps would be free of cost, taking the rates paid at those paid for free labour.

8. Are there any other matters you wish to mention in regard to the employment of consumptive labour?—I think Central Otago would be a magnificent place to send these men to, the climate being so fine, but it might be difficult to cater for their comfort there on account of the district being so far back.

9. *Dr. Cockayne.*] But the camp would be placed near the railway-line?—I suppose so. Medical attendance would only be required in an emergency, and with the railway handy a medical man could be brought down on a trolley if necessary. There must be a good nurse in charge who could apply first aid.

JAMES BURNETT SWORN and examined. (No. 84.)

1. *The Chairman.*] You are the Chief Engineer, Working Railways Department?—Yes.

2. Can you tell us the number of sleepers used by the Department at present and that are being treated by preservative methods, such as creosoting or powellizing?—At present we are powellizing about fifty thousand a year. There are a number of creosoted sleepers in use in the lines now.

3. Have the creosoted sleepers proved satisfactory?—Yes, comparatively. It certainly doubled the life of the softwood sleepers that were so treated, but there was a great difficulty in getting the creosote here. That being so, it was determined to make a trial with a new process called powellizing, which requires molasses only, a substance which is easily procured.

4. Was it on account of the cost that the creosoting process was abandoned?—No, mainly because of the difficulty in getting a supply of creosote, which comes from Great Britain.

5. What is the cost of creosoting a sleeper?—About 1s. 8d.

6. What class of timber was so treated?—Kahikatea, rimu, and a small quantity of miro.

7. What time did the creosoting add to the life of a sleeper?—The average life of the creosoted sleeper would be about sixteen years. There are many in the lines now which have been in about twenty years, but the average would be about sixteen years, as against two for white-pine and perhaps seven for rimu untreated.

8. Was any of the beech, or so-called "birch," timbers treated?—I think not. They tried to find means to make it penetrate, but the timber would not take the creosote, which is put in under pressure.

9. Are any birch timbers being used for sleepers by the Department now?—We are trying some in the south by the powellizing process.

10. Have you used any in their natural state?—We have not used any in their natural state for perhaps eight years.

11. Was the experience of the Department when they were used satisfactory?—Yes, taking the average sleeper; you will find some that will be sound after twenty-five years, but the average life worked out at about eight or nine years. There would be quite a sound surface on the face of the sleeper, but the rest of it was often a mass of pulp with hard ribs or spurs between. The acids in the birch have a bad effect on the fastenings and rust the spikes badly.

12. Have you had any experience with larch as a sleeper-timber?—No.

13. Does your Department import many foreign sleepers, say, from Australia?—We import as many jarrah sleepers as we can induce the Government to bring in, as we have never had anything to compare with them for durability and general stability.

14. What is the average price of the jarrah sleepers landed here?—4s. 9d. I might instance a branch line in Canterbury which was laid with jarrah and kauri—kauri at the joints and jarrah elsewhere. After thirty years the original sleepers were all taken out, and 75 per cent. of the whole were in a good usable condition, but they were so small that they would be unsuitable for sleepers now. In the case of another line seven or eight miles in length, at Catlin's, south of Dunedin, which was laid twenty-four years ago entirely with jarrah, only two sleepers have been removed in that time for decay.

15. What do you think of silver-pine sleepers?—They are good.

16. Have any experiments been made in New Zealand in regard to utilizing ferro-concrete for sleepers?—No, the cost is prohibitive, and the sleeper of ferro-concrete is inferior to one with greater elasticity.

17. Do you know whether they are being used in other countries?—Only experimentally, as far as I have heard.

18. Is ferro-concrete and iron replacing wood to a large extent in bridge-building?—Yes, to a considerable extent. We have not attempted to construct piles of ferro-concrete yet, because we can get first-class ironbark piles, which last at least thirty years, and are half the cost of the ferro-concrete ones.

19. If it cost you as much to build in timber as it would in ferro-concrete I suppose you would prefer ferro-concrete piles?—They are worth more than the timber. It would pay to spend more, but not to spend double. It is better to rebuild your structure at intervals of thirty years than to pay half as much again to begin with, and have the interest running on. The Australian hardwoods have reached such a price now that it is more economical to use steel for stringers instead of timber. We are increasing the use of steel very largely.

20. This sample of gum was taken from a tree which was cut down when it was nineteen years old. It was then 22 in. in girth at the butt. Do you think such timber would make a