

but thought some other timber was being "run in" in its place. They sent a specimen of the timber over to New Zealand, and without a microscopical examination of the wood it was very difficult to determine whether it was white-pine or not. Therefore, the question is, if our woods had been properly examined by the microscope it could have been definitely stated at once whether the wood in question was the species it was claimed it belonged to. What is your opinion on that point?—As far as I know the species could be determined. I can certainly tell white-pine from any other timber I have examined.

5. Would it be a very expensive business to have our New Zealand woods examined microscopically, and the results tabulated?—It ought not to be an expensive matter, because there is certain equipment in the Colleges for the teaching of science which would suffice for the purpose. The only difficulty would be in collecting the best samples. That is to say, we should not only want samples of every timber, but samples from every possible locality, and of as many different ages as we could get.

6. If these samples were furnished to the University you think the authorities have the plant there to carry out the work?—An expenditure of £25 would be sufficient to secure a good plant to do all that would be wanted. But with regard to the question of a scholarship, that is another matter. I thought of proposing that this very question should be a subject for Government research this year, but I found, unfortunately, that although we have a qualified student available, the scholarship is considered to be awarded this year to a man who is already working, and so I am afraid that my chance of getting the matter taken up is likely to suffer, if not to disappear altogether.

7. What is the value of the scholarship in question?—£100 a year for two years, with a possible extension, and it is given to graduates in Honours.

8. Would it be a good thing if the Government awarded another scholarship that might go to a suitable student?—I think it would be.

9. Would any other University College in New Zealand have any one well qualified who could take up such a branch of work?—I do not know of any one, but it is quite likely.

10. With regard to the educational qualifications of young men seeking to enter the Forestry Department, are there the facilities in the University Colleges to-day to enable them to obtain the necessary scientific groundwork in such subjects as botany, zoology, meteorology, &c.?—A man can get a thoroughly good grounding in botany and zoology in our University Colleges, but we have no facilities at present for dealing with the economic aspect of any subject. I think I can express the position by saying that we are qualified to teach botany, but not to teach any technical application of botany, the staff being inadequate for such a purpose.

11. You are referring now to the Victoria College?—The same remark applies to every other College in the Dominion, the staffs being inadequate to take up such work. There is a further limitation that applies to Wellington particularly: we are handicapped by the large majority of our students being night students, which means that they can only come to us for four or five hours at the end of the day, and we have to get them to do work we consider ought to be done by a man fit to take a degree. That leaves little time for special work.

12. Considering the importance of the question of forestry to New Zealand, do you think it would be well if one of the Colleges should specialize in that branch?—Undoubtedly I do. I do not know whether any mention has been made to the Commission of the fact that Auckland University College is now about to appoint a Professor of Biology. It has been suggested in that connection that they should appoint a Professor of Botany, and, of course, a man up to date. It seems to me quite possible that they could appoint a Professor of Botany who could take forestry, and give him a lecturer. That would be a good foundation to start on. There is no Professor of Botany in New Zealand; but the men who teach botany have also to teach zoology, two subjects of enormous range, and for a man to keep up to date in botany, with zoology added, makes it impossible for him to take up the technical branches of the same science.

13. Have you had any experience with regard to the treatment of timber by means of preservatives—either the creosoting or the powellizing process?—I have seen many samples of powellized timbers, and have co-operated in experiments. They have not gone far enough to be exhaustive, but I do not think they tended to complete confidence in the powellizing process. Of course, one often sees much fungoid or bacterial growth on timber of that kind.

14. Have you experimented in regard to the creosoting process?—I have never tried it, but I have examined creosoted samples of timber whenever I have had the opportunity.

15. *Dr. Cockayne.*] Would it surprise you to hear that we saw on some powellized timber at Invercargill the finest crop of a species of mould that any one could ever see?—I have seen a crop on powellized timber. I am inclined to think fungi would not get inside the timber for a long time.

16. Before a man can learn economic botany he must understand the preliminaries of science. Cannot they be perfectly well taught at Victoria College?—It depends on the student. If he is up to university standing then we can teach him; but one of the difficulties in connection with men from an expert department is that they sometimes have a limited secondary-school education, and so find it difficult to assimilate the ideas readily that can easily be done in the case of men with moderately good secondary-school training.

17. Do you think a man who has the ability to enable him to take a high position as a forester should be able to grasp the principles of elementary botany such as are required for the B.A. degree?—Undoubtedly I do.

18. *Mr. Murdoch.*] In the course of your experiments with the powellized timber you found that the liquid had not penetrated very far?—It seemed to me that it had not.

19. I thought from what I saw that the liquid only penetrates a quarter of an inch. What is your opinion?—Probably less than one-quarter of an inch, except with the grain. In the case of the timbers I saw I do not think the liquid had penetrated to a greater depth than that. The timber was all quite green.

20. That being so, what would be the result in the case of hardwood as street blocking?—The powellized portion of the wood would wear out presently, and there would be left exposed the untreated timber.