

pine. Possibly it would be a good plan not to grow so many larch, but rather timber suitable for building-construction. Beyond the *austrica* pine and the larch I do not think we have planted anything but useful timbers.

65. What about the alder? Will that be of much use?—Only a few dozen were planted on bare shingle along the river-bank where nothing else would grow.

66. Would not gums grow there?—No.

67. *Dr. Cockayne.*] You say that the fire-breaks on the Kaingaroa Plains are so arranged that the fire would strike them obliquely. Is that the case also with regard to fire-breaks at Whakarewarewa and Waiotapu?—No.

68. Then the oblique fire-breaks are a more recent development?—Yes.

69. Are not the older fire-breaks therefore much more dangerous than the new ones?—Yes, some of them, not all.

70. How much of the Douglas fir have you got planted?—Roughly speaking, about 300,000 trees.

71. How much *Pinus strobus*?—About the same number. It is doing very well.

72. How does its growth compare with the *Pinus ponderosa*?—About equal.

73. Is that and the *Laricio* doing well?—Both are doing equally well.

74. Then the *strobus* is quite as good in your experience as the *ponderosa* or *Laricio*?—Yes, in regard to rate of growth.

75. Have you had any experience in regard to getting the seed of the Norfolk Island pine?—No.

GEORGE GUIDO SCHWARTZ sworn and examined. (No. 79.)

1. *The Chairman.*] I understand that you are an architect?—Yes. I am the president of the Wellington Branch of the New Zealand Institute of Architects.

2. The Commission thought that probably you could give us some valuable information in regard to the timbers you consider might be useful to plant here for building purposes?—Any of the Home timbers would be suitable here.

3. How long have you been in the Dominion?—Thirty-five years.

4. In practice all that time?—Yes.

5. I suppose your experience is similar to that of others, that timber is increasing very much in price?—Yes.

6. Is the quality of the timber as good as it was ten or fifteen years ago?—Nothing like it. The quality is steadily going down.

7. What are the principal timbers used here?—Red-pine, matai, and totara. Some black-birch growing in this neighbourhood is used for piles.

8. What is the difference in building in timber and in brick or concrete as regards a dwellinghouse?—It would run from 30 to 40 per cent. more in the case of brick or concrete, timber being that much cheaper. We have not advanced so much in the case of ferro-concrete as far as machinery goes to make it cheaper.

9. In the event of timber rising to double its present price would it be cheaper to build in permanent material than in timber?—Decidedly.

10. In that case the demand for timber would slacken off?—It would indeed, and as more machinery comes into the country, and people better understand how to work concrete, the latter would be even far cheaper than brickwork. But that is not the case at present.

11. Is the expense of upkeep much less in the case of permanent material than with a wooden building?—Yes. With any building-timber the cost of upkeep is altogether too much in this country.

12. Is there much Oregon pine being imported into this city now?—A big load came in two months ago.

13. Is that considered a satisfactory timber by architects?—Provided always you get the quality. A large number of trees in America have been tapped for resin, and they are being cut down and sent out for building-timber.

14. How does tapping affect the timber?—It makes it very poor and takes the life out of it.

15. Do you know the timber called the "three-ply" timber?—Yes.

16. Is much of it used locally?—In joinery only. It all comes from Norway.

17. Is there anything you wish to add?—In regard to New Zealand timbers, one thing should be observed—that is, the time of the year when the tree is allowed to be cut. On the Continent of Europe—I am a German—nobody can cut a tree without the permission of a forester. The offence of cutting without permission is punishable with imprisonment.

18. Whether on private or Government land?—Every class of timber land is under the supervision of a forester, and he is the only man who can grant permission to cut a tree. He sees that only matured timber that does not shrink is cut. If our timber-trees were treated in the same way we would get better-quality timber. At present it twists and shrinks only because it is cut down out of season.

19. Have you had any experience in regard to birch timbers—the red-birch, for instance?—Only in respect to the silver-birch from the West Coast, used for boards round the foundation.

20. *Dr. Cockayne.*] Do you think if that birch were cut at the right time it would not warp?—It would not; the difference would surprise you.

21. *Mr. Clarke.*] Do you agree that afforestation should be undertaken in order to supply our wants when our native forests are exhausted?—It is a most essential matter. It is the duty of the forester in Germany to see that the man who cuts the timber replants ten times as much as he cuts, consequently the Germans have not cut out their supply. A similar law is wanted here.