

portions and the white in the outer. Black kauri is heartwood excessively charged with resin, and the soft kauri is a local variety. Although these different kinds possess such very different characteristics, no distinction is made in the books of reference. It is all spoken of simply as kauri, and therefore one series of tests will be remarkably different from another, and the conclusion which has hitherto been drawn is that kauri is such an unreliable wood that it should not be used. In every series of tests not only should the exact variety be distinguished, but the position which the piece tested occupied in the tree should be stated. Timber taken from the butt end of the tree is stronger than that from other portions. Black-pine, its confusion with miro: The same difficulty from lack of classification exists in relation to the woods used for durability, for, while matai or black-pine is a timber of great durability, the timber miro, which resembles it in appearance very closely, is extremely undurable; and, again, although not durable if in contact with moisture, it is very much stronger than black-pine, and is of great value for beams if under cover, whereas black-pine is more brittle, and if used for beams in place of miro will result in failure. In rimu also there are misleading differences in the qualities of wood cut from various parts of the tree. For instance, heartwood from large trees is extremely durable, being impregnated with resin, while heartwood from small trees is much less durable, and could not, therefore, be used when in contact with the ground. A reliable handbook needed: The great difficulty architects have to contend with is that there is no good, reliable handbook on New Zealand timbers. Good work has been done in the past by engineers, but the results which they have published are so conflicting that it is impossible to know which to follow, and one serious defect is that one set of tests cannot be compared with another, because they worked under different conditions with different sizes of timber, and an exact description of the wood is not given. Mr. T. Kirk's book on Forest Flora of New Zealand is a very valuable one, but it is chiefly botanical, and Mr. Kirk points out the weakness in his record of "Strength of Timbers," and expresses the regret which all architects must share that a "series of experiments with the chief New Zealand woods had not been made in which these matters would have received proper attention, and to accompany the statement of results with drawings of the structure of each kind as shown under the microscope; but this has been frustrated for the present by the abolition of the Forestry Department." This was twenty years ago. I am not sure that this defect has been remedied. At any rate, no work of the kind is to be found in our Reference Library. The essential need, then, for architects in relation to the timber industry is that all the different varieties of building-wood should be very carefully tested on a uniform system, and small samples for reference supplied, together with full particulars of their qualities. In addition to this, all timbers should be sorted into their proper varieties at the mill and marked in accordance with a uniform system to be determined. The use of timber in contact with the ground: There is one essential point in respect of the preservation of timbers used in contact with the ground, as telegraph-poles, posts, gate-posts, &c., and that is, whether or not timber which is placed in the ground the reverse way from its growth lasts longer than that which is placed with the butt end down. Opinions at present are divided, and, as this is an extremely important question in a country where so much fencing is done and so much timber used for telegraph-poles and posts, it is one to which a series of careful tests on a scientific basis should be directed. I have shown there are four distinct kinds of kauri which have very distinct properties, and therefore it is wholly misleading and of no value at all if a piece of kauri is taken to an engineer unless he knows and distinguishes at once the exact class of kauri and the position in which it was grown. I have a small pamphlet here published by the Bureau of Forestry in America which I will hand in for the information of the Commission. It explains my idea of the kind of thing that should be published in reference to our own timbers.

3. *Mr. EU.*] Have you been in business in Christchurch for a number of years?—Yes, since 1885.

4. Can you give the Commission any information with regard to the cost of building-timber now and, say, ten years ago? Has it advanced to any great extent?—I cannot remember that. It is much dearer than it was a good many years ago. I remember you could get good building-timber for 9s. 6d., and now it is 14s. 6d., but I am only speaking from memory. It is certainly very much dearer than it was some years ago, but as to the exact dates I cannot remember.

5. Now, in regard to the nature of the imported timbers in connection with the building industry, can you give us any information as to the kinds of timbers which you think are more suited than the native timbers for building purposes?—Yes, yellow-pine and Baltic. It is absolutely essential we should be able to get them because it is impossible to obtain the white soft kauri of which I have spoken. We cannot really depend upon getting it here, and the consequence is, we have to fall back and insist on Baltic and yellow deal from America.

6. With regard to the cost of those two imported timbers and kauri, is there any very great difference?—That I should not like to say from memory, but they are dearer than kauri as far as I remember. I have been away from Christchurch for some time, and perhaps they have varied since I left.

7. Then, they would not come into competition with kauri so far as the prices are concerned?—I do not think so.

8. Then, with regard to its being better for certain purposes?—It is essential to use it.

9. What other timbers do you think essential to the timber industry?—I think Oregon pine is not absolutely essential. I think we could get on very well without it. It is certainly a remarkably good wood, but good, first-class rimu in nearly every instance could take its place if available. I have always used the native rimu, and have not used the imported timbers unless specially asked for by the client. Good rimu, I think, is an excellent building-material, and if it could be obtained in good quality nothing better could be wished for. I do not think Oregon pine is as essential in New Zealand as Baltic pine and yellow deal.