

into the work. Another point is this: The Committee would be well advised to take into account the comparatively small quantity of coal that we possess in Australia and New Zealand. If we take the world's reserves, Australia and New Zealand contain only a little over 2 per cent. of the total. For domestic purposes we waste as much as any country I have ever been in. There are three ways in which that loss may be made considerably smaller. There ought to be (1) a much greater use of gaseous fuel, (2) a greater use made of electric power, and (3) coal ought to be economized by sending coal to the consumer not in the form of coal, but in the form of partially carbonized coal or in the form of oil.

*To Mr. Sidney.* The State is testing coals more or less. It gave a grant of £500, and £200 of the amount was given to me to carry on experiments with brown coal. We are experimenting on the general distillation products of brown coal, especially with reference to fuel for internal-combustion engines, and also for chemicals. I take it that the Board of Science and Industry would supervise work of that kind. In regard to gaseous fuel, I think that on the West Coast they might gassify a great deal. The State coal-mine might deliver gas to industries in the neighbourhood, and instead of sending coal send partly carbonized coal. The lignite coals could be treated in that way with advantage. I think the Government ought to experiment for the purpose of ascertaining whether lignite coals can be so treated. I think we shall be dependent on lignite coals before many years have passed. I suggest that the Government might well assist various chairs in our colleges. It ought to give £500 a year to each chair of chemistry. I think that each chair of chemistry is worth £500 a year, simply and solely for a research assistant who shall be there to take up various technical problems and who shall be quite under the University authorities. The £500 would be earmarked specially as the salary of the assistant in that department. Probably he would find it to his advantage to give £100 of the amount to a young fellow to assist him. I make that recommendation apart from any money found by the Board it is proposed to set up. The money should come through the Board or direct from the Government. It will probably be part of the £20,000.

C. COLERIDGE FARR, Professor of Physics, Canterbury College, examined. (No. 58.)

There is not very much that I can add to what has been said by my colleagues. I do not disagree with them in any respect. Their evidence covers a very wide range. With some of the subjects I am familiar, and I do not express any opinion upon those parts of subjects with which I am unfamiliar, but where I am familiar with them I totally agree with my colleagues. Dr. Chilton advocated the claims of pure science; I would also like to advocate that very strongly from a physics point of view. One can point from time to time to tiny little, apparently unimportant, discoveries which have revolutionized the world. With regard to the existence of an Advisory Board that has been mentioned, I am strongly in favour of that. I am also rather strongly in favour of it being associated with the New Zealand Institute. I think the New Zealand Institute should have some representatives on the Board. I want the New Zealand Institute to become to New Zealand the same as the Royal Society is in England. With regard to what has been said regarding research in laboratories, I am of opinion that Dr. Evans is quite right that a research assistant should be appointed, or some money should be set aside for that purpose. Physics has not such a direct bearing upon commerce problems as chemistry has; but perhaps I might point to quite a little investigation which was carried out in my laboratory lately which may turn out important and play some part in connection with works in this country. The Lake Coleridge insulators were breaking down. The ordinary tests for porosity had failed. We subjected them to some extraordinary tests, and applied very heavy pressure to the square inch and squeezed a die into them, showing that they were porous; their porosity was the reason of their breaking down. We hope by tests to be able to reject the bad ones, but we have not got to that yet. I support my colleagues in what they have said.

W. NICHOLLS, Chairman of the Wool-sourers' Association of New Zealand, examined. (No. 59.)

There are thirteen hundred employees in New Zealand working in the wool-scouring and fellmongering business. There is about £200,000 a year spent in wages. We contend that there ought to be more wool scoured in New Zealand. If that were done it would cause a great many more men to be employed. A lot of our wool that ought to be scoured is shipped to foreign countries, such as France and America—shipped in the grease. We suggest that any amount of that wool ought to be scoured before leaving the country. I do not say that there ought to be a duty put on, because individually I do not agree with a duty being put on exports, but at the same time I suggest that wool that loses more than 35 per cent. should be scoured in New Zealand. I do not see how it is to be done unless it is made compulsory. Experts could tell beforehand how the wool should be dealt with by examining it, and it could be put on one side. Our firm employs ninety men all the year round. We pay in wages from £12,000 to £13,000 a year; we also pay in railway charges from £10,000 to £11,000 a year.

*To the Chairman.* Wool does not deteriorate after being scoured. We dry our wool outside in the open air. We find that the sun bleaches the wool and also keeps the nature in the wool. I do not believe in machine drying; it takes the nature out of the wool. Since the Government commandeered the wool we have not attempted to save any of the by-products in the way of lanoline. I was just starting the business of saving the grease when the Government commandeered the wool. It is now wasted. It is a pity to waste it; its value was from £12 to £16 a ton. As soon as the commander is ended no doubt the utilization of the by-products will be started.

THOMAS T. ROBSON, Member of Wool-sourers' Association, examined.

Mr. Nicholls has told the Committee about the amount of wages paid by the employers of the Dominion. Our firm employs from sixty to sixty-five men, and the amount of wages we paid