5. *To the Chairman.*] I want this Committee to ask the Government to find the money to carry out our scheme.

6. *To Mr. Hornsby.*] The haulage charge for coal from the ship's side to the works is about 10s. 6d. per ton.

ARTHUR WOOD MOUAT, Chief Clerk, Head Office, Railway Department, examined. (No. 28.)

Our schedule will disprove the statement that the Department penalizes local industries by charging more freight on the article manufactured here than on the materials imported for that article. The distance to Masterton is sixty-six miles. The freight on 1,000 imported asbestos slates is 14s. 11d., whereas the material for the slates—mostly raw material—is £1 1s. 5½d. Ordinary roofing-slates, which have already been spoken about before the Committee, are classified more favourably for New Zealand than for imported slates. They are in the "cheaper-freight" class. Asbestos slates are separately classified. They are a manufactured article, but not quarried. The quarried New Zealand slate has a preferential rate over the imported. There is no distinction between the manufactured imported slate and the quarried imported slate. In the case of the goods to Masterton there is a discrimination of 6s. 6½d. in favour of the imported manufactured slate. Probably it is an exceptional anomaly. It is a matter of policy. If you take the railway tariff as a whole you will find that the locally manufactured article is given preference in rates over the imported article. The tariff was revised in 1913, although it may not have been altered. It is many years since there was a general revision.

1. *To Mr. Veitch.*] I do not accept the statement that the only tar suitable for roadmaking is not carried at the special rate provided for such tar. Tar for local bodies is carried 100 miles in 5-ton lots at 13s. per ton. Tar is a raw material of low value, and the question of the freight for the manufactured article called "Restar" becomes a matter of policy. It is of higher value than raw tar. When the tar is manufactured and made suitable for roadmaking purposes the charge is £1 0s. 9d. per ton when consigned to a local body.

J. ORCHISTON, Electrical Engineer, examined. (No. 29.)

1. *The Chairman.*] We understand you propose to establish a company with the view of manufacturing nitrogen from the air, at Milford Sound, and that you have had a difficulty in obtaining from the Government the necessary license for the utilization of the water-power?—Yes. I think it would be advisable to give a brief summary of the position and what influenced me to take up this line of work. In this case it is a question of dealing with applied science, not pure science. I have been following up the subject for about twenty years. At that time two scientists discovered nitrogen in the form of nitric acid at the Niagara Falls, but it was found that the power was too costly to carry out their system. They were only working in a small way, and the thing virtually lapsed. Two Norwegian scientists, having read the accounts of the experiments, and knowing that they could get water-power more cheaply harnessed, started experiments at Notodden, Norway, with the result that in 1904 they had so far developed their work as to demonstrate that it would be a commercial success if the operations were carried out on fairly large lines. They ultimately extended their works, and up to 1911 they had reached something like 260,000 horse-power, which was utilized for the extraction of nitrogen from the air, which was converted into calcium nitrates, and delivered it at English ports at £7 15s. per ton c.i.f. The demand was so great that they had at least twelve months' orders ahead, with the result that in 1913 they raised sufficient capital to duplicate their works, which were completed in 1916. The horse-power developed was 260,000 on the Rjukon River, and 60,000 horse-power at Notodden. The material had eight different handlings before it was landed in England. [Witness gave particulars of the different handlings in transhipment.] The reason I give these details is because in our case if we establish works at Milford Sound there will be only 300 yards transit to deep water. They sold at £7 15s. c.i.f. English ports in 1911. At that time Chile nitrates were bringing about £10 per ton, nitrates containing a slightly higher percentage of nitrogen. In 1907 I explored the watershed of the Bowen River, Milford Sound, and came to the conclusion that that was by far the best power available here for the purpose wanted. About a year subsequently I drew the attention of Sir James Allen to the possibilities of the Bowen River for that purpose. He consulted some others, amongst them Mr. G. M. Thomson. Mr. Thomson wrote to Sir William Crooks, in England, and, on his advice, to two scientists in Norway. The question was brought up in Parliament in 1910 by Mr. Thomson, but he got practically no more encouragement than I have got. The application which has been made to the Government has been simply turned down. Many persons say, "What is the use of our entertaining a thing of this sort?" It is said that we have got no market. I say the world is our market. Australia could easily consume all that we could produce. At Milford Sound we could ship our products just as cheaply to Australia as we could to some of the chief ports of New Zealand. There is an unbounded market in India. Nitrogen is the most suitable fertilizer for rice-growing. We do not expect for some time to turn out more than 15,000 tons a year. The Chile nitrate is what we are up against. Chile had a monopoly until this aerial manufacture was established. They have a wide extent of nitrates in Chile, but they have labour troubles. The American demand for nitrates has increased practically threefold in four years.

2. *To the Chairman.*] What has prevented us going ahead in New Zealand has been the fact that the Government has declined to grant us the water-power rights. They gave practically no reason for refusing except that it was too big a thing to give us. The usual term of such a lease as we ask is for forty-two years. If we got one-third of the capital in the Dominion, no doubt we would get the other two-thirds out of it.