

To the Right Hon. the Prime Minister.

SIR,—

Wellington, 12th March, 1926.

I have the honour to submit the following report on the organization of scientific and industrial research in the Dominion of New Zealand.

I. ORDER OF REFERENCE AND ITINERARY.

1. The order of reference under which I have conducted my inquiries in the Dominion is as follows :
 “To consult with Ministers, Government officials, and others concerned with the industries of New Zealand, both primary and secondary, with a view to advising on the outlines of a suitable organization for promoting the application of science to these industries and facilitating co-operation with Great Britain and the dominions in work of this kind.”

2. Since I arrived on 2nd February last I have visited all the provinces of the Dominion except Southland. Of the cities, Wellington has naturally claimed most of my time, but I have spent several days in Auckland, Christchurch, and Dunedin. My activities in these centres and their neighbourhood are briefly described in paragraphs 9 to 12 below.

3. In the South Island I spent two days in Nelson and the neighbourhood, and made careful inquiry into the work of the Cawthron Institute. I visited the Moutere apple-growing area, inspecting the orchards, and visited a progressive undertaking which had grown into successful production under scientific guidance. It was noticeable that the owners had placed part of their holding under *Pinus insignis* as a future source of supply for fruit-boxes. I also visited the Onakaka Ironworks, and Messrs. Kirkpatrick's jam and canning factory.

I visited the West Coast, and in particular Westport, Reefton, and Greymouth, and met representative citizens at each place, visiting a local engineering-works in the last-named town. On my way north from Dunedin I spent two days in Central Otago, visiting Lawrence (including Gabriel's Gully), Roxburgh, Clyde, Cromwell, Alexandra, and the Ida Valley, and meeting the fruitgrowers and others in each centre. I saw a number of orchards, and discussed the irrigation systems in work and projected with the Resident Engineer of the Public Works Department, who accompanied me throughout my trip.

4. In the North Island I spent three days in Hamilton and the district, studying the dairy industry of the Waikato, and visiting the Hautapu Dairy Factory of the Cambridge Co-operative Dairy Company, three of the factories of the New Zealand Co-operative Dairy Company, including their large and progressive box and butter works at Frankton Junction. At this works interesting research work is going on in their own laboratory. I also saw Mr. Hector McLeod's experiments in the precipitation of additional solids from whey and buttermilk for cheesemaking. I spent some hours in the works of Messrs. Glaxo at Matangi, and in their laboratories at Hamilton.

While in this district I visited the State Farm of Instruction at Ruakura and the hydro-electric station at Horahora. I also inspected the works under construction at Arapuni. From Hamilton I travelled by car to Rotorua in order to see the difficult pumice lands of that district, and throughout these journeys I had the willing and helpful assistance of Mr. A. H. Cockayne and Mr. B. C. Aston, of the Department of Agriculture.

5. At Rotorua I visited the State Forest nursery, and spent some hours in a careful inspection of the State Forest plantations in the neighbourhood.

6. From Rotorua I travelled by road across the Kaingaroa Plains, for which as yet but little economic use has been found, and thence across the limestone hills to Napier and Hawke's Bay. On my way south to Wellington I was accompanied for part of the journey by a Veterinary Officer of the Department of Agriculture, who gave me information as to the pastoral industry of that famous district.

7. I have also visited the State Farm at Weraroa, near Levin, on my way to the flax-mill and swamps owned by Messrs. Seifert. I spent some hours here in the field, the experimental plots, and the works. Thence I went on to Hawera, where I met representative citizens, and carefully studied the most interesting and promising laboratories established by the co-operation of the local butter and cheese factories with the assistance of a grant of £1,000 a year for three years from the Department of Agriculture. The laboratory, under good scientific guidance, managed by a committee of farmers who are keenly and intelligently interested, is doing excellent work in establishing a scientific control of the butter and cheese industries, and has already succeeded in solving one or two of the difficulties experienced by the works. This example of active and financial co-operation between an industry and the Government is significant, and full of hope and suggestion for future developments. During too short a stay at Hawera I visited two local farms to see milking-appliances and stud herds.

8. From Hawera I turned eastwards and passed through the Marton agricultural district, extending my observations as far north as Taihape. On my journey south I saw the small forest plantations near Foxton, called on Sir James Wilson, and had a long conversation with him on the proposed agricultural college to be managed jointly by the Auckland and Wellington University Colleges, and travelled through the large native forests on the hills above the Upper Hutt Valley.

9. Turning now to my activities in the cities, I visited first a number of factories in and around Auckland—a well-known rug and upholstery works, a flour-mill and biscuit bakery, a dairy-appliances works, a lead-sheet-rolling mill, the Australian Glass Company's works, the admirable superphosphate