

By arrangement with the authorities of the Commonwealth Council of Scientific and Industrial Research, the services of Dr. R. J. Tillyard have been retained in an advisory capacity and as overseas representative. During his present visit to the United States of America, Great Britain, and Europe, Dr. Tillyard has been asked to ascertain further particulars in regard to sources of supply of insects required for the development of the work in the Dominion.

Mineral Content of Pastures Research.

Advisory Committee: Professor H. G. Denham, Professor W. Riddet, Mr. Q. Donald, Mr. Bruce Levy, Mr. S. Fletcher. Director of Research: Mr. B. C. Aston, in association with Mr. T. Rigg.

Early in 1927 it was decided that Messrs. T. Rigg and R. E. Grimmett (the latter of the Department of Agriculture) should proceed abroad to study the research technique and methods devised by Dr. Orr, of Rowett Institute, Aberdeen, who had been appointed to direct Imperial investigations into the problem of mineral content of pastures. This being the case, it was considered highly desirable that methods of research should be standardized. Pending the time when these methods could be applied to the proposed New Zealand investigations, work remained in abeyance, but was again commenced in April, 1928, when a programme was elaborated and put into action.

Investigations, both laboratory and field, are now proceeding in the King-country, Waikato, and Rotorua districts, where there are wide areas of various classes of soils remarkable for the poor nutritional quality of the often abundant pasture-grasses they maintain. The solution of the deficiency problem on even one of these soil types will increase the carrying-capacity over a very considerable area of land well favoured by reason of location, contour, and climate to become highly productive.

Similar work will be undertaken in the Nelson Province, where already an extensive area has been dealt with in a systematic soil survey, the results of which will serve eminently as a basis for the pasture investigations. A limited number of stock-feeding trials will be conducted in all the areas under investigation.

The funds for the research are provided as follows: Empire Marketing Board, £2,000 for two years; New Zealand Government, per Department of Scientific and Industrial Research, £1,000; New Zealand Government, per Department of Agriculture, £1,000: total, £4,000.

The Cawthron Trust Board has placed its laboratory and staff at the disposal of the committee for the purpose of assisting in the work.

The total of the combined Empire Marketing Board and Department of Scientific and Industrial Research grants is being apportioned to the Department of Agriculture and the Cawthron Institute in the approximate ratio of 2 to 1.

Fuel Research.

Advisory Committee: Colonel W. D. Holgate (Chairman), Professor H. G. Denham, Mr. A. H. Kimbell, Mr. Robert Lee, Mr. T. O. Bishop, Mr. H. Vickerman, Mr. Flauvel.

Arrangements have been made for the establishment of a fuel-research laboratory, financed by the sum of £1,000 per annum from the coal-mine owners, and £1,000 subsidy from the Government. Two officers, Messrs. W. A. Joiner and W. G. Hughson, have been appointed, and the necessary apparatus is now to hand and has been set up. Many varieties of New Zealand coal will be analyzed with a view to obtaining data as to their applicability to the different distillation and other processes in course of development in Europe and America. Two bulletins have been issued during the year—

(1) "Report on the Carbonization and Briquetting of Waikato Lignites," by Sir Richard Redmayne.

(2) "Report on the Bergius Process for the Liquefaction of Coal," by Dr. H. O. Askew.

Two others are in the press—

(1) "Report on the Fischer Process," by Dr. H. O. Askew.

(2) "Summary of Work carried out to Date on New Zealand Coals," by W. Donovan.

A special investigation on coal-dust in mines is also in progress. To date, some eight mines have been thoroughly examined.

Pig-industry Investigations.

Advisory Committee: Mr. Q. Donald (Chairman), Mr. H. Morton, Mr. J. Lyons, Professor Riddet, Mr. M. J. Scott, Mr. E. J. Fawcett, Mr. A. H. Cockayne.

In order that the pig industry, to which a subsidy of £30,000 per annum has been granted, may be given additional technical information, a programme of research along four main lines has been arranged. This involves—(1) Fundamental investigations at Otago University into the various foodstuffs available; (2) feeding trials conducted on carefully supervised experimental lines at Lincoln and Massey Agricultural Colleges; (3) the establishment of pig-recording groups at Lincoln and Massey Colleges, and, in conjunction with the Group Herd-testing Association, at Hamilton; (4) investigations into factory processes connected with pork and bacon production. Work has commenced in almost all the four lines of research indicated, but full activity will not be reached until the end of the present year.

A considerable amount of investigation is necessary in order that this industry, which gives such good promise of development, may be placed upon a sound footing, enabling a successful export trade to overseas markets to be secured.