

Plant research has been consolidated into an organization fully equipped to deal with problems involved in the control of plant diseases and insect pests, and also the further improvement of our grasses and feed and horticultural crops. During the year the experiments of the Bureau on the culture of linen flax in New Zealand, supported by examinations of the fibre by courtesy of the British Linen Industry Research Association, reached a stage at which some indication of the commercial possibilities for the establishment of the industry in New Zealand can be obtained. The system of testing and certifying plant sprays and other protective materials, carried out by the Plant Diseases Division, has been further developed during the year and continues to give valuable service to fruitgrowers and horticulturists. Two officers were sent overseas, one to make a special study of the control of important insect pests of the Dominion (*e.g.*, the diamond-back moth); the other to become acquainted with the latest advances in plant bacteriology to facilitate the study and control of bacterial diseases of plants in New Zealand.

On the recommendation of the Council of Scientific and Industrial Research, the Government invited Dr. John Hammond, F.R.S., of the Animal Nutrition Research Institute, Cambridge, to visit New Zealand and report on the organization of animal research with a view to securing the most effective means of directing and co-ordinating a comprehensive attack on the problems of animal nutrition and production. Dr. Hammond's report was duly presented and will be considered by the various interests involved with a view to making recommendations to the Government.

Three new research associations were established to provide a co-ordinated scientific and technical service for the woollen manufacturing, boot and shoe manufacturing, and tobacco industries.

Much has been said, and is still being said, in regard to the impacts or reactions of scientific progress on industry and on society, and it is undoubtedly right that close attention should be given to the study of these reactions and their relation to human welfare. It was for this reason, therefore, that I established two new branches of the Department to promote research on standards and social science respectively. The advantages to be gained by the application of the principle of standardization to everyday commodities and processes are manifold and, furthermore, ensure the intelligent, speedy, and economic application of technological progress with resultant benefit to industry and the consumer.

Since its inception, the Standards Institute has promoted the development of standards over a wide front, and a detailed account of its activities and the progress made is contained in a separate addendum to this report.

The activities of the Social Science Research Bureau during the past year have been directed chiefly to a study of the standard of living of dairy-farmers, which has produced results of definite value and interest in a new field of research as far as New Zealand is concerned. The study of dietary requirements which was commenced under the auspices of the Bureau has been handed over to the Medical Research Council at a stage where family diets had been formulated, giving sufficient energy and protective food value.

One of the biggest factors in the industrial efficiency of most secondary industries is that of the technical education of managers and foremen who are in charge of special technical operations. The need for such education has been emphasized, for example, by the recent experience of the Dairy Research Institute in connection with the maintenance of the activity of single-strain starters under factory conditions. It was found that personal instruction in the special technique had to be given in the factories by officers of the Institute, and when this was done no difficulty was experienced in obtaining entirely satisfactory results.

The question of providing suitable educational facilities for training men in industrial technology, so as to provide them with a basic knowledge of science as applied to industrial processes and thus enable them to avoid troubles by anticipating their causes, is therefore an important one, and is at present being actively discussed by the Council of Scientific and Industrial Research and the educational authorities.

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Research Department.