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AGRICULTURAL RESEARCH.

FIRST IMPERIAL CONFERENCE.

PROFESSOR RICHARDSON INTERVIEWED.

"Foundation of Imperial Co-operation."

Professor A. E. V. Richardson (Director of the Waite Agricultural Research Institute) returned from London by the R.M.S. Osterley on Saturday. He was one of the delegates representing the Commonwealth Government at the first Imperial Agricultural Research Conference, which was held in London from October 4 to 29.

In discussing the work of the conference, Professor Richardson said that all the dominions, 18 Crown colonies, and all the agricultural research institutes of Great Britain were represented at the conference. There were 180 delegates from all parts of the British Empire. Lord Bledisloe (Parliamentary Secretary to the Ministry of Agriculture) presided over the conference.

The main objective of the conference was to discuss the needs of the Empire in regard to its most important industry, and the methods whereby Imperial co-operation in agricultural research might

PROFESSOR A. E. V. RICHARDSON, D.Sc., M.A.

be effected. Three important administrative problems were discussed in detail by the conference:—(1) The recruiting and training of workers for the agricultural services; (2) the establishment of a chain of research stations in the tropical and sub-tropical portions of the Empire; and (3) Imperial co-operation in agricultural research.

Man Power and Agricultural Research.

The conference affirmed that agriculture was by far the largest industry in the Empire, and upon its enhanced productivity through the application of science depends the prosperity of the commonwealth of nations comprising the British Empire. Agricultural improvement, the increasing production of wealth from crops and stock—should be the aim of every agricultural department. The progress of scientific research in agriculture, and its effective application to the development of agriculture, depends ultimately on an adequate supply of well-trained scientific men. To obtain the highest efficiency in the agricultural services, it was essential to attract candidates of the highest class, and to equip them with the best possible scientific and technical training. It was shown by the conference that the primary reason for the existing shortage of scientifically trained officers for the agricultural services of the Empire is the wholly inadequate appreciation of the importance and value of scientific research on the part of the public and even of governments. Adequate emoluments, facilities for work, and a career, were regarded as essential to attract men of the right type into the agricultural services. A flourishing agriculture throughout the Empire was the best guarantee of a market for Empire manufactures. Therefore the founding of scholarship schemes to promote agriculture deserves the attention of all industries and governments. The conference considered in detail the type of training needed for officers of the agricultural departments. For the specialist officer or research workers a sound honours training in science, especially biological science, combined with such a knowledge of agriculture as will enable him to appreciate clearly the role of science in agriculture, were essential. For the agricultural administrative officer a wide agricultural knowledge, a practical outlook, and scientific knowledge adequate for the full utilization of scientific results in agriculture, were essential.

Shortage of Suitable Candidates.

The evidence submitted to the conference, Professor Richardson continued, conclusively showed that there was a serious shortage of suitable candidates for most branches of the scientific services supported by Governments. Serious as this shortage now is, it will become more serious as the development of the less advanced portions of the Empire proceeds, for these areas cannot be properly developed without the aid of adequate and highly trained scientific staffs. It was the considered opinion of the conference that the basic remedy is the adoption of a settled policy in regard to the application of research to development in the various portions of the Empire. Granted such a policy, many difficulties will be removed, continuity of work will be ensured, confidence will be established, and educational institutions will feel free to encourage men to take up appropriate lines of training, and parents will be more ready to incur the necessary expense of training. It might be urged that owing to financial stringency it is unwise to embark upon such a policy, but it was shown that the poorer a country is the greater its need to develop and employ its scientific resources to the fullest possible extent. This is particularly true for the Empire with its enormous potential resources, which cannot be developed without the aid of science. Germany in the nineteenth century, provided a classic instance of the way in which a comparatively poor country can, by the organized application of scientific research, immensely increase its wealth and power and rapidly overhaul neighbouring nations possessed of greater natural advantage.

Chain of Research Stations.

The conference surveyed the whole tropical and sub-tropical Empire as a field for organized research, the professor added. It recommended the establishment of a series of central tropical and sub-tropical research stations located at convenient centres where groups of related problems could be advantageously investigated for the benefit of the whole Empire. The conference defined the needs which these stations are to meet, the scope and character of the work they should undertake, and the relationship of such stations to the Government Agricultural Departments. The conference agreed that the establishment of such a chain of research stations should be governed mainly by the ascertained needs of Empire research in particular fields of agriculture rather than by considerations of geographical distribution. The stations should be located interritories affording specially advantageous conditions for the investigation of the group of problems allotted to them. Finally, these Empire research stations should in the main confine themselves to "long range" and "wide range" research; that is, they should concentrate upon the type of problems requiring more prolonged research than could normally be expected from any single administrative agricultural department, and on problems arising in more than one territory of the Empire. One of the tropical research stations will be located in northern Queensland to serve the interests of tropical Australia. It was made clear that these central research stations should not conflict with or compete with the work of agricultural departments, but they should be complementary and supplementary to the work of the local Departments of Agriculture. The conference made recommendations regarding two subjects of vital importance to the Empire—1. The establishment of a central research station to deal with the important question of animal diseases. 2. A research station to deal with the scientific problems associated with irrigation and irrigated agriculture. The work of these two Empire stations would be of especial interest and value to Australia.

Empire Clearing Stations.

The conference examined in detail and prepared plans for a considerable extension of the existing machinery for co-operation between agricultural research workers all over the Empire. It recommended the establishment of Imperial bureaux for veterinary science, soils, and animal nutrition, and Imperial correspondence centres for animal breeding, horticulture, plant breeding, and agricultural parasitology. These bureaux and correspondence centres would function in the same manner as the existing Imperial Bureaux of Mycology and Entomology, and would act as clearing stations for the collection and dissemination of information of a scientific and technical character for workers all over the Empire. The needs of practically every branch of agricultural science had been surveyed by specialists of 12 technical committees, and valuable reports were submitted as to the best means of promoting research in animal disease, animal nutrition, animal genetics, soils, dairying, horticulture, plant breeding, agricultural economics, entomology, and mycology. In addressing the conference, Earl Balfour said that within the British Empire were contained some of the wettest and some of the driest parts of the world, some of the hottest, some of the coldest, some of the most fertile, and some of the most barren areas. The agricultural problems presented to the investigator covered the whole field of agricultural science and the common problem to the Empire was that of extracting from reluctant Nature all that reluctant Nature can be made to give. The solution of this problem lay in the most intensive application of science to agricultural production in every part of the Empire.

Necessities for Sound Progress.

Professor Richardson went on to say that the problem of the development of any one part of the Empire was part of the problem of the development of the whole Empire. The fundamental problems underlying the production of crops and stock were the same everywhere. In every progressive country in the world it was recognised that research and extension of work in agriculture were fundamental necessities for sound progress, because they inevitably led to more efficient production, higher economic levels, and greater output from the land. A comprehensive system of agricultural research must for the basis of any permanent scheme for agricultural development and agricultural advancement. Through the work of the first Imperial Research Conference the foundations have been laid for Imperial co-operation in agricultural research between the Empire Departments of Agriculture and the large research institutes and universities in Great Britain. In the development of agricultural resources of the Empire through the application of scientific research, the home country, the dominions, and the Crown Colonies could work in the very closest co-operation. The close co-operation and team work, which could be developed in this important field of effort, would lead naturally and inevitably to the closer economic co-operation of the constituent parts of the Empire, which would be the most effective means of solving national and Imperial problems.

A Self-Supporting Empire.

Sir Daniel Hall, of the Ministry of Agriculture, speaking at the conference, referred to the necessity for making the Empire self-supporting in regard to food supplies. Of the total wheat and flour consumed in Great Britain 17 per cent. was produced in Britain, the Dominions supplied 43 per cent., while no less than 40 per cent. had to be imported from foreign sources. The extension of area which sufficed in the past to produce foodstuffs, is no longer possible, and the extension has to be made now by more intensive production through research. Canada has led the way in showing how, by producing varieties of wheat with an early ripening period, an enormous area could be added to the wheat belt. Australia has to solve the problem of how to extend the wheat belt into drier areas by more efficient cultivation, and the breeding of new varieties which will throw more and more of their total production into useful grain, and less into the straw. After all, the wheat plant, with a limited amount of rainfall, can only produce a certain weight of dry matter—straw and grain. The scientific problem was to make the production of grain compared with total dry weight as large as possible. In regard to the other great source of food, beef, Great Britain produced 48 per cent. of its requirements, the dominions send 5 per cent., while 47 per cent. is obtained from foreign sources. There is an enormous field where research may extend the beef supply, in which industry there is more world pressure to be found than in any other commodity. There is need in the dominions for the type of research on beef production and animal instruction, which is being carried out at Cambridge in England, and the United States.

Next Conference.

Professor Richardson said that at the invitation of the Prime Minister (Mr. Bruce) the conference unanimously decided to hold the next meeting in Australia in 1932. Speaking of conditions in England, he said that people were complaining there that it had just as depressing effect upon agriculture as a dry season had on wheatgrowers and others in Australia. Owing to incessant rain there, it had been almost impossible to cultivate land and harvest what had been grown.

AGRICULTURAL RESEARCH.

IMPORTANT IMPERIAL CONFERENCE.

RETURN OF PROFESSOR RICHARDSON.

An important resume was given on Saturday by Professor A. E. V. Richardson of the work done and recommendations made by the Imperial Agricultural Research Conference, which was held in London in October. The next conference will be held in Australia in 1932.

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