AGRICULTURE IN THE WEST INDIES.

THE third annual Agricultural Conference, under the presidency of Dr. Morris, Commissioner of the Imperial Department of Agriculture for the West Indies, was held in the Legislative Chamber, Bridgetown, Barbados, on January 5. Besides Dr. Morris, the president of the Conference, and some fifty official, scientific, agricultural and educational representatives from the various West Indian colonies, there were present the Acting Governor, a large number of officials and representatives of the Legislature, and visitors.

After the usual preliminary formalities, Dr. Morris delivered his presidential address, which afforded a clear summary of the progress made by the Department of Agriculture for the preceding year and enumerated the questions which this Conference would be invited to discuss. The work of the officers of the Department during the preceding year covered a wide range. In the domain of the sugar industry it comprised researches to improve the sugar cane, experiments to reduce the cost of cultivation, efforts to advance the erection of central factories and researches upon insect and fungoid diseases, including an exhaustive investigation and monograph by the entomologist, Mr. H. Maxwell Lefroy, on the moth borer (*Diatraea saccharalis*).

Besides the work of the Department on the cacao industry and the lime industry, an attempt had been made, with prospects of success, to establish the growing of early potatoes for the English market; a small but promising onion industry had been established in Antigua, and there was every reason to believe that the fruit trade between Jamaica and the United Kingdom would receive an enormous impetus by the subsidising a direct fruit steamer service between the Mother Country and that Colony.

Agricultural education had occupied a large share of attention; the teachers of the elementary schools of nearly all the colonies were being trained by courses of lectures and demonstrations to teach the elementary principles of agriculture in their schools; seven exhibitions, of value varying from 10% to 75% per annum, had been awarded to pupils from first grade (public) schools in the various islands which were tenable at Harrison College, where a two years' course in agricultural science was given by the Science Department, Barbados. Agricultural industrial schools had been opened at St. Vincent and Dominica.

Nine botanic stations were now supported by Imperial funds, and a large number of experimental stations had been instituted in the various colonies, where experiments were being systematically carried out on questions connected with the sugar cane and all the other products of the West Indies.

Agricultural shows had been successfully carried out in three of the islands under the auspices of the Department, which had contributed 350% in prizes and more than one hundred diplomas of merit.

The address concluded with some remarks upon the subject of the treatment of diseased plants, and upon the advisability of legislation with a view to prevent the introduction of plant disease into colonies from without, and to provide for the eradication of disease within the colonies.

The following papers were read during the Conference:—

Sugar Industry: Recent experiments with seedlings and other canes, by Prof. d'Albuquerque and Mr. J. R. Bovell (Barbados), and a short history of seedling canes in Barbados, by Mr. J. R. Bovell (Barbados), followed by a discussion in which representatives from all the colonies took part; cane farming in Trinidad, by Prof. Carmody (Trinidad); insect pests of sugar cane, by Mr. H. Maxwell Lefroy, entomologist of the Department; fungoid diseases of the sugar cane, by Mr. Albert Howard (Barbados).

Educational: Agricultural education and its place in general education, by Rev. Canon Simms (Jamaica); teaching the principles of agriculture in elementary schools, by the Hon. T. Capper (Jamaica); results of ten years' experience with compulsory enactments in the Leeward Islands, by Mr. C. M. Martin (Leeward Islands).

General:—Legislation to control bush fires, by Dr. H. Nicholls (Dominica); the treatment of soils in orchard cultivation in the tropics, by the Hon. Francis Watts (Leeward Islands); on rubber planting in the West Indies, by Mr. J. H. Hart (Trinidad); pine-apple cultivation at Antigua, by the Hon. Francis Watts (Leeward Islands); the marine resources of the West Indies, by Dr. J. E. Duerden (Jamaica); bee-keeping, by Mr. W. K. Morrison, the acting bee expert of the Department; the cultivation of onions at Antigua, by Mr. Wm.

Sands; zebra cattle in Trinidad, by Mr. J. H. Hart and Mr. C. W. Meaden; artificial drying of cacao, by Mr. G. Whitfield Smith; and experiments on the treatment of insect pests in 1900, by Mr. H. Maxwell Lefroy. These papers, together with the discussions that followed them, will be produced in the *West Indian Bulletin*, the official organ of the Imperial Agricultural Department for the West Indies.

The Chemical Section of the Conference, adjourned from the previous year, drew up a report dealing chiefly with uniformity of records in reports upon sugar cane experiments. The Educational Section held a meeting to consider matters connected with the teaching of agriculture in elementary and first grade schools, including the compilation of teachers' handbooks.

J. P. D'ALBUQUERQUE.

NATIONAL ASPECTS OF SCIENTIFIC INVESTIGATION.

AS a rule, the recognition of scientific work by the State is the last matter with which men of science concern themselves. Their work is sufficient for them, and they are content with the results obtained, whether appreciated or not at the proper value to the commonwealth; they are the victors, but they leave the spoils to others. Most true investigators are inspired by this unselfish sentiment, rather than by the desire for personal profit, and all they ask for is the adequate provision of means for research. Even this request is not urged with the persistency necessary to produce effect. It must be remembered that the general public, as well as the persons who have it in their power to encourage investigation by granting subsidies and extending other facilities, do not understand the fundamental importance to the nation of contributions to the store of natural knowledge. When they appreciate the fact that scientific work furnishes the motive power of industrial progress, they will regard it in a more serious and liberal spirit than at present. For this reason no opportunity should be lost of reminding the State of its duties and responsibilities as regards scientific work, the claims of which are not urged with sufficient force by the men engaged in it. Scientific societies and associations in Great Britain interest themselves in the advancement of natural knowledge, but it might be well occasionally to hold a meeting for the purpose of stating some of the relationships between research and national welfare. Such a meeting was held recently at Baltimore, by the American Society of Naturalists, and addresses on the attitude of the State toward scientific investigation were given by Prof. H. F. Osborn, Prof. W. Bullock Clark, Dr. L. O. Howard, Dr. B. T. Galloway and Prof. W. T. Sedgwick. The following extracts from the remarks made upon this occasion are abridged from the report in *Science*.

In the course of the remarks with which the discussion was opened, Prof. H. F. Osborn said:—

A fair criterion of intelligence in the government of a country is afforded by an examination of its annual budget. There is first the provision for a certain number of expenditures which are purely conservative, because the State must maintain itself, it must defend itself, it must support a large class of office-holders who are more or less useful. These expenditures may be wisely and honestly made, but they largely go to waste; they are either immediately productive or altogether non-productive. On the other hand, there are expenditures in the nature of investments, looking to the future and characterising the most far-sighted statesmanship. Conspicuous among these are the funds invested in education and science.

Said Helmholtz in 1862: "In fact men of science form, as it were, an organised army, labouring on behalf of the whole nation, and generally under its direction and at its expense, to augment the stock of such knowledge as may serve to promote industrial enterprise, to increase wealth, to adorn life, to improve political and social relations, and to further the moral development of individual citizens. After the immediate practical results of their work we forbear to inquire; that we leave to the uninstructed. We are convinced that whatever contributes to the knowledge of the forces of nature or the powers of the human mind is worth cherishing, and may, in its own due time, bear practical fruit, very often where we should least have expected it."

Of European countries Germany places in its budget the largest productive investments of this kind; France is not far behind, England is perhaps fourth and affords a conspicuous