

Cotton-growing in the British Empire.*

THE work undertaken during the year 1929-30 by officers of the Empire Cotton Growing Corporation stationed in the various cotton-producing countries of the Empire is summarised in the report now before us. Following the lines of the similar reports issued in preceding years, with which it requires to be read, the volume is a record of steady progress.

The outstanding feature of the year is the continued success of the Barberton selections of Jassid-resistant strains of cotton. This success is not limited to South Africa, where it has given a new lease of life to an industry threatened with extinction through the depredations of the insect; it extends through a wide tract of country embracing the whole of East Africa as far as Uganda, and even into the Sudan. Though in the latter country U4, the main resistant race, did not show up well under irrigation, of the cottons grown it proved itself one of the most resistant to leaf curl. Being itself a preliminary selection as yet unstabilised in respect of many characters of economic importance, it promises to become, by selection or hybridisation, the parent of numerous strains adapted to one or other of the varied conditions which naturally occur through so wide a stretch of country. In South Africa itself selections from U4 are being crossed with Cambodia, certain selections from which have proved to be even more Jassid-resistant than the original U4.

Of the impressions which a perusal of the various reports leaves on the mind, perhaps the most lasting is concerned with the manner in which local conditions force into prominence different aspects of the problem which the organisation has set itself to solve. In South Africa the primary problem was concerned with Jassid, for on that solution the life of the industry depended. With the solution of that problem, other

aspects are assuming prominence. Cotton is here one of a series of crops; it occupies no dominant position. Its setting in the rotation is receiving growing attention, and progress is recorded in the investigation of that interesting problem of the harmful effect of a preceding fallow. In the two Rhodesias, if the work at Barberton has removed one danger and provided in U4 a basis for remunerative cultivation, other dangers exist, and in the cotton stainer and the boll worm the insect world exercises a dominating position. In Nyasaland, soil problems are engaging attention, especially in relation to root development. In Uganda, the varietal question predominates.

In that complex area, the Sudan, the question of staple assumes importance in those areas, like the Gezira, in which the Egyptian type of cotton is grown, and much attention is devoted to spinning tests. The appearance of leaf curl during the last few years has introduced a new threat into these tracts which has to be met within the group of cottons yielding that class of fibre, and here resistant strains of Sea Island afford a promising basis for progress. It is of interest to note the suggestion that this resistance may be the result of a capacity to form an adequate root system, for there is in this suggestion further evidence of a growing recognition of the need both for a better knowledge of root systems in general and for a deeper search for the basis of resistance either in morphological character or in physiological reaction. While there is still much to learn with respect to the transmission of the disease, its development appears to depend in large measure on the capacity of the root system to make use of the particular soil in which the plant is growing.

The potentialities of the rain area in the Southern Sudan are being explored, and the work, as is natural in a country lacking an indigenous system, is mainly concerned with variety trials and dates of sowing. The necessity of early sowing is clearly demonstrated.

* Empire Cotton Growing Corporation. Reports received from Experiment Stations, 1929-30. Pp. xi+342. (London: Empire Cotton Growing Corporation, 1931.) 2s. 6d.

History of the Fauna and Flora of the British Isles.

THE British Isles, with their comparatively small area but considerably varied natural conditions, present a number of highly interesting biogeographical problems, the solution of which would bear an important relation to the larger problems of the distribution of organisms in Europe and in the northern hemisphere generally. It is not surprising, therefore, that the French Société de Biogéographie should have selected the history of the fauna and flora of the British Isles as a subject for its new volume,* the third of a series devoted each to the treatment of a separate biogeographical problem; the two previous volumes dealt with the biogeography of Corsica and of the high mountains of the world respectively.

The volume represents a collection of papers by ten different authors, writing in French or in English, and each dealing with his special group of organisms in his own way. An introductory article, by L. Joleaud, on the palæogeographical history of the British Isles, is followed by a paper on mammals, by H. Heim de Balsac, who discusses not only the recent fauna, but also summarises the post-glacial palæontological evidence. One of his general conclusions is that the history of the British fauna is in many respects different from that of the European fauna, particularly with regard to the effects of the glacial

period, which were considerably less serious in the British Isles owing to their milder oceanic climate. The next article, by the same author, deals with British birds, and emphasises the high percentage amongst them of endemic races, as well as the presence of certain Mediterranean elements.

The spider fauna of the British Isles is analysed by W. S. Bristowe, who divides the country into five zones, limited mainly by temperature conditions. With regard to the history of the spider fauna, Mr. Bristowe believes it to be relatively simple, and appears to derive it directly from the continent after the original fauna had been exterminated by glaciation. A great portion of his article is devoted to the discussion of a general problem of the aerial migration of spiders as a factor in populating island areas.

A full list of British Orthoptera includes only 36 species, 10 of them being introduced through human agency. The affinities, distribution beyond the British Isles and the probable history of each of them, is discussed by B. P. Uvarov. Out of this number, nine species are considered to be relics of a very ancient, probably Tertiary, fauna connected with humid and warm climate. Another definitely pre-glacial group of five species, distributed mainly in the Mediterranean region, is called Atlantic, and they are regarded as relics of the rich fauna of Atlantis, which continent has probably extended as far northwards

* Contribution à l'étude du peuplement des Îles Britanniques.— Société de Biogéographie, 3, pp. 193. (Paris: P. Lechevalier, 1930.)