

REVIEW

Root Disease Fungi. By S. D. Garrett, M.A., D.I.C. *Annales Cryptogamici et Phytopathologici*, Vol. I, 1944. Waltham, Mass., U.S.A.: The Chronica Botanica Co.; Calcutta: Messrs. Macmillan & Co., Ltd. Pp. 177. \$ 4.50.

THIS notable publication, under the new series "*Annales Cryptogamici et Phytopathologici*," edited by Dr. Frans Verdoorn, is perhaps the first of its kind written on the epidemiology of soil-borne disease in crop plants, and contains certainly the first exposition of the principles of Root Disease control. Mr. Garrett is a leading authority on this widely dispersed group of root-infecting fungi, having given a new orientation to the study of these pathogens in their natural habitat, *the Soil*. From the ecological point of view of these soil organisms, precious little work had been done until the classical work of Waksman, Reinking and others was published early this century. There is no doubt whatsoever to-day that the soil, in general, represents a complex microflora actively competing for the organic and inorganic food material resulting in the inevitable chain of events like antagonism, specialization in food requirements, etc. To a large extent the original hypothesis of Waksman, viz., "that there are in most soils a basic cosmopolitan fungus flora of *soil inhabitants*, among which were to be found exotic fungi or *soil invaders*" has found support from both temperate and tropical workers engaged in this problem. Mr. Garrett's book admirably summarizes this and other allied problems.

The contents of the book under review are arranged under the following chapter headings: (1) Introduction; (2) Parasitic specialization in the root-infecting fungi; (3) Parasitic activity of the root-infecting fungi; (4) Influence of soil temperature upon parasitic activity; (5) Influence of soil moisture content, texture, and reaction upon parasitic activity; (6) Influence of soil organic content and concentration of plant nutrients upon parasitic activity; (7) Saprophytic activity of the root-infecting fungi; (8) Dormancy of the root-infecting fungi; (9), (10) and (11) Control of root disease in field crops: Crop rotation; Plant sanitation; Disease control under the growing crop; (12), 13 and (14) Control of root disease in plantation crops: on virgin areas; in mature plantations and on re-planted areas; special problems; (15) Control of root disease in glasshouse crops. A very exhaustive bibliography terminates the subject-matter of the entire text and is followed by two indices, general and author.

Of special interest to Plant Pathologists are the chapters on "Control of root disease in field and glasshouse crops". Quite a large number of wilts due to fungal attacks are commonly encountered in every-day cultural practices and in the tropics, particularly in seedling beds. Mr. Garrett has focussed sufficient attention in dealing with the subject-matter that forms these chapters. The book on the whole

presents a logical and sequential case into the various fundamental and applied aspects of root-infecting fungi and the author and the publishers deserve congratulation on bringing this volume out. The student of Botany and the Researchers on Soil Fungi in this country will amply benefit by reading this well-written, concise volume which summarises all the latest researches on this important group of soil micro-organisms.

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