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Book review

H. Wheeler, 1975. *Plant pathogenesis*. Springer-Verlag, Berlin, Heidelberg, New York. 106 pp., 19 figs. Price DM 39.

This concise and very clearly written book presents an excellent account of the process of plant pathogenesis. The author defines it as: 'the sequence of events that occur during the development of a disease'. It is based on work with fungal pathogens.

After a short introductory chapter on concepts (4 pp.), a review is given of the mechanisms of pathogenesis (28 pp.). Penetration phenomena together with the 'chemical weapons' (enzymes, hormones, toxins) used by the pathogen are discussed. In Chapter 3 follow the 'responses of plants to pathogens' (35 pp.) as manifested by pathological alterations in structure, function and metabolism. Much attention is paid to recent additions to our knowledge on the ultrastructural level. Chapter 4 on 'disease resistance mechanisms' (11 pp.) deals mainly with resistance induced by inoculation with a non-pathogen and pays much attention to phytoalexins. Chapter 5 describes the genetics of pathogenesis (13 pp.) with an illuminating discussion of the gene for gene concept. The biochemical basis for pathogen specificity receives special attention. In a short final chapter on the nature of the physiological syndrome (5 pp.), the author speculates on the nature of the responses of the host to pathogens on the cellular level. Changes in the distribution of negative charges on the cell wall, changes in permeability and cell wall synthesis may be the initial events which trigger subsequent pathogenic processes. A list of 195 references, most of them quite recent, concludes the book.

The book is very stimulating in that it presents not merely facts (in a very systematic way), but also the author's interpretation thereof. The author is to be congratulated on his use of examples to illustrate the phenomena described and to make his points clear. One can thereby easily forgive the emphasis given to examples drawn from his own work (*Helminthosporium victoriae*). The excellent integration of biochemical, ultrastructural and genetic information is an important aspect of this book.

Its reading can be recommended to all phytopathologists.

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