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Book reviews

L. Bos, 1983. Introduction to plant virology. Pudoc (Wageningen), in conjunction with Longman (London and New York). Vinyl cover, 160 pages, 63 illustrations and 22 colour plates. ISBN 90-220-0739-6. Price Dfl. 35/£6.95.

With a frequency of about once in 2 to 3 years voluminous, expensive textbooks on plant virology are published. Dr. Bos, feeling that the need for smaller works which give fundamentals rather than details is largely neglected, wrote the present book. It stresses the role of plant viruses as disease incitants, with a slight emphasis on ecological aspects.

There are nine regular chapters of c. 15 pages each, giving key references for further reading on the subject at the end of each chapter. In the first chapter the history of plant virus research is outlined and viruses are defined and compared with other submicroscopic disease agents such as mycoplasmas and viroids. The second chapter (somewhat evading its title Viruses as disease incitants) elaborates on disease symptoms, which are actually reactions of the host plant metabolism. The third chapter surveys the various ways in which plant viruses are transmitted. Virus purification and laboratory methods to characterize plant viruses physicochemically are the subject of the fourth chapter. The fifth chapter is dedicated to two of the most important methodologies of plant virus research: serology and electron microscopy. Chemical composition, architecture and molecular biology of plant viruses are dealt with in the sixth chapter. The seventh chapter discusses classification and nomenclature of viruses and diagnosis (in the etiological sense) and detection of plant virus infections. Then there is a chapter on the ecology of plant viruses, based on the five determinants of disease spread: viruses, infection sources, vectors, crops and environmental conditions. Much attention is given to the importance of these factors for epidemiology and forecasting. The last chapter is on human involvement with plant virus diseases, viz. losses and control measures, the latter being mainly sanitary.

There are two appendices. The first one is a survey of the taxonomic division of plant viruses into groups, characterizing each group and listing member viruses. The second in-

cludes titles of reference books and key references for virus diseases of specific crops or groups of crops. An extensive subject index is given.

Reading this book one gets a strong feeling of the subject being treated comprehensively, despite the conciseness of the book. There are very few places where the text is straightforwardly wrong (for example: the dimensions of the sedimentation coefficient are not cm s^{-1} dyn^{-1}, page 54) and only a few places where one could question the precision or correctness of words or phrasings (for example: a virus called multigenomic could easily be visualized as having more than one genome per particle, instead of having a split genome, which is actually meant, page 81). The conciseness pursued led in some instances also to a lack of essential information. For instance, not mentioning that one local lesion may be initiated by one infectious unit and thus may contain a virus clone, one cannot make clear to the reader that ". . . previous inoculation onto a local lesion host helps to obtain separate isolates from mixtures of viruses . . ." Another example is that rate zonal and equilibrium centrifugation are not properly differentiated and their basic difference, which can be essential, is not explained.

Photographs are well-chosen and clear, especially the colourpictures of symptoms.

According to the publisher's pamphlet this book is written for prospective and practising plants pathologists. Since the book is not meant to be exhaustive in giving details it cannot be used as a reference work. Practising plant pathologists, unless ignorant in the field of plant virology, will have to turn to more detailed works. However, students of plant virology will find this book an excellent possibility for a comprehensive introduction to the field of applied biology.

C.P. de Jager

W.A. Stevens, 1983. Virology of flowering plants. The Blackie Publishing Group, Glasgow, 192 pp., 83 illustrations. Paperback: ISBN 0-216-91356-X, cased: ISBN 0-216-91357-8. Prices: £8.50 and £17.50, respectively.

Students looking for an introductory text on plant virology are not necessarily committed to Dr Bos' book discussed above. They have a choice to make because, be sheer coincidence, a second book was published simultaneously in this field. It is also modest in size and appeared in a 'tertiary level biology' series.

The book has, roughly, the same division as Dr Bos' book with chapters on: history of plant virology and definition of viruses, symptoms of virus infection, transmission, composition and structure, replication, and control measures. The last chapter is dedicated to techniques of plant virus research, of which, in this book too, serology is amply treated.

The book of Bos slightly emphasises ecological aspects, but the present book gives more attention to details of structure and of molecular biology. One could say that the former book was written for beginning plant pathologists, where as the latter one is meant for beginning virologists.

This book, although small, gives many useful details and its conciseness does not exclude explanations of more complicated aspects. Unfortunately, however, many inaccuracies are found in the text and thus the book should not be studied without guidance of an expert virologist.

Division of the text and typography strike as pleasant but the printing technique proved to be disastrous for the photographs. Schematic drawings are in general clear, although they too do not all escape the randomly occurring inexactitudes mentioned earlier.

References are placed at the end of the book, but, regretfully, they are grouped per chapter, which makes finding a specific reference difficult.

This could be a useful book if we were not for the lack of precision in the presentation of the data. Users should be aware of this imperfection and the author should have his text thoroughly screened when planning a second printing.

C.P. de Jager