

## Book review

J.I. Cooper and F.O. MacCallum, 1984. *Viruses and the environment*. Chapman and Hall, London/New York, 182 pp. ISBN 0-412-22880-7. Price £ 7.50. Science Paperbacks No 192.

In books on viruses published in the series of Science Paperbacks, plant viruses receive proper attention and this book is no exception. The first author is a plant virologist and viruses of crop plants are amply treated. This provides a good reason to present a review of the book in a plant pathology journal. Although obviously not meant to treat viruses of seed plants and those of other host groups comparatively, this book offers to plant virologists a good opportunity for placing their research material in a broad virological context.

Chapter 1, on the nature of viruses, gives information on the nomenclature and classification of viruses, and some details of pathology and socio-economic impact for some virus groups and families. It also describes the mechanisms of variation and adaptability of viruses, such as interactions in multiple infections and genetic interactions. However since information on molecular biology of viruses is largely lacking, this part may fall short of proper appreciation.

Chapter 2 is titled Exposure to viruses and some consequences. This hardly descriptive title appears to cover infection, invasion, pathological and defence reactions, and transmission. Much is written about vertical transmission although, surprisingly, vertical transmission in seed plants through vegetative propagules is completely ignored. Transmission through contact, by fungi (for plant viruses), and through food are also dealt with here. However transmission by insect vectors is the subject of Chapter 3, called Viruses associated with invertebrates, which contains also a treatment of the insect-pathogenic viruses, including their pathology and vertical transmission. This setting apart in one chapter of both vectored and pathogenic viruses in insects tends to unbalance the organization of the book.

Chapters 4 and 5 are on viruses in terrestrial and aquatic environments, respectively, giving information on sources and broadcasting of viruses and on ecological factors influencing their fate. Chapter 6 presents an extensive treatment of theories and models for strategies of virus maintenance in host communities. In Chapters 4-6, plant viruses play only a minor role. Yet striking similarities and differences with viruses of other host types can be noted.

The three page Conclusion mainly elaborates on the evolution of viruses and does not round off the book very clearly. The scope of the book is not easily assimilated anyway. There is much interesting information but it does not form a unity. One gets the impression that in drafting the book a division was found for a certain body of knowledge instead of the reverse. Summarizing conclusions at the end of each chapter would have been helpful, in order to grasp the essence of the book. To me, this essence is as follows. Viruses are ubiquitous; they are very diverse; and they have great potential for variations and adaptation. Man, persistently opening new areas for new activities and rearranging world's natural system will continue to run into new problems with viruses. Knowledge necessary to cope with these problems is still fragmentary or virtually lacking.

So there is still much to be done and this includes plant virology.

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