

BOOK REVIEW

R. N. GOODMAN, Z. KIRÁLY and M. ZAITLIN. *The biochemistry and physiology of infectious plant disease*.

D. van Nostrand Inc., Princetown, New Jersey 1967. Size 16 × 24 cm, 354 pages, £ 5/-/-.

For a good survey in the field of physiological plant pathology we probably have to go back as far as 1958 and 1960 when the „Golden Jubilee Volume” and „Plant Pathology” by Horsfall and Dimond were published respectively. In addition, in 1967 two studies appeared in which a comprehensive treatise on the physiology of infectious disease is given. Wood's „Physiological plant pathology” appeared in „Botanical Monographs.” Goodman, Király and Zaitlin weighed in with „The biochemistry and physiology of infectious plant disease” It is a fine book. It gives a lot of well-presented information. The material referred to is kept up to date as far as 1966. Its form, however, leads almost unavoidably to a certain amount of ambiguity and inconsistency.

The book is divided in nine chapters covering the infection process (chapter 1); photosynthesis (2); respiration (3); cell-wall composition and metabolism (4); nitrogen- (5), phenol- (6) and growth regulator-metabolism (7); vascular transport (8) and toxins (9). Each of the chapters 2 inclusive 8 is subdivided in a section in which the physiological processes in the *healthy plant* are discussed, three sections in which, successively, the consequences of fungal, viral and bacterial infection are treated and a final section, an analyzing and summarizing part. The introductory coverage of the physiological processes in *healthy plants* might have given very adequate and advantageous information in connection with the following three sections in each chapter. In their book, however, only few cross-references between the different sections have been made and in some cases in the pest sections general systems have been treated a second time without even mentioning the fact that the same subject has been done adequately already in the first section (for instance pages 99 and 77). If indeed as they mention in the preface it was only „the intent of the authors to set before both students and scientists in the field recent information concerning some key biochemical and physiological processes that occur in the *healthy plant*”, without any linkage with the following sections then they have reached their aim. In this case a book on plant physiology seems more obvious.

To a much lesser degree the same objection concerning the interlinkage of the different sections is valid for the various pest sections. The last section of most chapters giving a „comparative analysis of disease physiology” covers the three foregoing sections in broad outline. In some cases a cross-reference to the sections in which the effect of the other organisms is described would be helpful. This is the more so since the authors keep rather strictly to the group of organisms they have to deal with (although I was surprised by the sudden introduction of *Xanthomonas* among the fungi on page 178). For the fungi, for instance, the increasing susceptibility with increasing water content of tissues is mentioned in one short sentence (page 138). In the section on bacteria much more attention is paid to this phenomenon (pages 126–27). Since most people not using the book for a general study in plant pathology will be interested in either fungi or bacteria or virus, a cross-reference is needed here.

An ambiguity which is probably due to the fact that the book is meant both for students and scientists in the field is also found in the abbreviations explained and the definitions given. Thus we find the meaning of ADP and of NAD accounted for but not that of DNP (dinitrophenol, page 77) and of HeLa cells. In a second edition, which this book indeed deserves, perhaps a separate list of abbreviations and definitions could be added.

Summarizing I can say that this book certainly does fill a need. All sections, in their own right, give a lot of well-written and recent information in the field. The fact that the book has been composed by three authors, probably without a general editor, has made it somewhat unbalanced in the treatment of the different subjects. The book would be still more valuable if more cross-references between the different sections had been included.

G. J. Niemann