

Book review

C. Buhl, H. Weidner und H. Zogg, 1975: Krankheiten und Schädlinge an Getreide und Mais, ein Bestimmungsbuch (Diseases and pests in cereals and maize, a determination book). Verlag Eugen Ulmer, Stuttgart. 451 pp. and 307 Figs. Price DM 88.

Keys to diseases and pests in cereals were prepared from 1956 onwards by B. Rademacher as a new version of the former chapter 'Cereals' in O. Kirchner's determination book 'Die Krankheiten und Beschädigungen unserer landwirtschaftlichen Kulturpflanzen'. Fourteen such volumes were planned by the publisher, but only Vol. VI on vegetables and cooking spices was published in 1962. The keys to diseases and pests of cereals and maize were prepared for separate publication and C. Buhl took over the editorship after Rademacher's death. Buhl dealt with the virus diseases, diseases of non-parasitic origin and pests and Zogg with the mycoses and bacterioses of the plants in the field; Weidner took care of diseases and pests in stored grain. The authors aimed at a complete coverage of all species mentioned in the literature, particularly those of Central Europe.

The main text is divided into keys to diseases and pests of living plants in the field (341 pp.) and on stored cereals (57 pp.); both sections contain keys based on symptoms and brief characterizations of the noxious organisms. The symptomatic keys are subdivided into parasitic and non-parasitic diseases and pests, and subsequently according to the five host plants. The keys usually lead to a short list of names amongst which a selection can be made in the diagnostic section. The diagnostic part gives short keys to the groups and brief characterizations of the species, often with small figures redrawn from various sources.

Viruses are dealt with only in the symptomatic section. Bacteria are keyed out according to symptoms and ten species are briefly characterized. The diagnostic section dealing with fungi (117 pp.) contains a wealth of information. The keys to the major groups follow Müller and Loeffler (1971), but they only lead to lengthy lists of genera and species. The user will spend much time in reading through all descriptions and he is not even helped by generic definitions. Similar species are not clearly delimited so that it is often not possible to name the fungus to be identified without consulting special literature. Many insufficiently known or hardly pathogenic fungi have been included and often old information has been copied not critically enough and without taking into account modern revisions. The following examples may be mentioned. *Pythium* is inadequately treated (no characters of the antheridia mentioned) with poor drawings: *P. ultimum* does not have conidia (which fall off) but hyphal swellings. *Rhizopus nigricans* is correctly called *Rh. stolonifer*, *Rh. nodosus* is *Rh. oryzae* (or *Rh. arrhizus*). Ascomycetes are often described on the place of their conidial states; the species described in the ascomycete section are often those for which no modern study of connection with imperfect states is available. Amongst the rusts five *Puccinia* species mentioned 'are now regarded as forms of *P. recondita*', but *P. recondita* is not treated. In the hyphomycetes no details about conidium formation are given (not even in the illustrations) which would be essential for an accurate identification. Three *Acremonium* species are listed according to Gams, but the doubtful *Cephalosporium acremonium* Corda *sensu* Fresenius (not Fr. = Fries!) is still maintained. Identification of the *Penicillium* species mentioned is impossible. In *Trichoderma* the essential diagnostic features are missing. *Sterigmatocystis* is an old synonym of *Aspergillus*. *Coniosporium* is *Arthrinium*. Part of the *Alternaria* conidia are illustrated upside-down. *Alternaria tenuis* is now *A. alternata*, *Stemphylium consortiale* is now *Ulocladium consortiale*, *Stemphylium botryosum* is the conidial state of *Pleospora harbarum*. In *Phoma* the conidiogenous cells are not thread-like but very short and blunt. The *Phyllosticta* species listed and *Pyrenochaeta terrestris* are now regarded as *Phoma*.

Keys to the insect and mite pests also lead to lists of species of which short descriptions are given. Species of little or no economic importance are included, so that identification of the more important pests becomes more difficult than necessary. It would have been better to deal more extensively with less species and leave the rare ones to specialists.

The chapter on damage in stored cereals deals almost exclusively with animals. A few fungi are mentioned which have been characterized in the first section, while the typical storage fungi which have greatest economic importance by causing mycotoxicosis and reduction of germinating power have regrettably been neglected.

It is a major weakness of the diagnostic parts that they do not contain references to special literature, and a list of references is completely lacking.

The book is well produced and contains few printing errors. Its greatest merit is the comprehensive coverage of large numbers of organisms. But the main purpose, reliable identification of pathogens, has not been achieved because too little care was taken to key out and to differentiate all organisms in detail.

W. Gams and G. W. Ankersmit

Publications received

The publications marked with an asterisk will be reviewed in due time.

- *Bradnock, W. T. (Ed.): *Advances in research and technology of seeds. Part 1.* Pudoc, Wageningen 1975. Price Dfl. 35.
- *Claussen, T.: *Die Reaktionen der Pflanzen auf Wirkungen des photochemischen Smogs.* Heft 3 'Acta Phytomedica'. 132 pp. Verlag Paul Parey, Berlin and Hamburg 1975. Price DM 39.60.
- *Hurst, G. W.: W.M.O. Technical Note 137. *Meteorology and the colorado potato beetle.* 1975.
- *Kirchner, H. A.: *Grundriss der Phytopathologie und des Pflanzenschutzes.* 2nd ed., 328 pp. VEB Gustav Fischer, Jena 1975. Price 27.40 M (for non-socialist countries 35 M).
- *Wheeler, H.: *Plant pathogenesis.* 106 pp., Springer-Verlag, Berlin-Heidelberg-New York 1975. Price DM 39; U.S. \$ 16.
- *Winter, F., Janszen, H., Kennel, W., Link, H. & Silbereisen, R.: *Lucas' Anleitung zum Obstbau.* 29th ed., 522 pp. Verlag Eugen Ulmer, Stuttgart 1974. Price DM 62.

Internal Therapy of Plants

An international symposium on 'Internal Therapy of Plants' will be held from 22–28 August 1976 at Wageningen, the Netherlands. Prominent investigators will discuss various aspects of basic and applied research on systemic fungicides. In addition short communications on current research will be presented. Topics are: mechanism of action of systemic fungicides, uptake and transport in plants, conversion, development of fungicide resistance, ecological implications.

For further information, contact: J. Dekker, Symposium chairman, Laboratory of Phytopathology, Binnenhaven 9, Wageningen, the Netherlands.