

Zadoks, J. C., Rijsdijk, F. H. & Rabbinge, R., 1981. Epipre: A systems approach to supervised control of pests and diseases of wheat in the Netherlands. Proc. IIASA Pest Management Network Conference, Laxenburg, Austria, 1979. In press.

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## Book review

E. Punithalingam, 1979. Graminicolous Ascochyta species. Mycological Papers No. 142, Commonwealth Mycological Institute, Kew, Surrey, England. 214 pp., 109 text figures and 17 photographic plates. Price £ 12.

This publication is the first of a series of monographs concerning the coelomycetous genus *Ascochyta*. The species occurring on gramineous hosts are considered first because of their economical importance.

Short introductory chapters go into the history of the genus, including the genus and species concepts, and particular attention is paid to the processes of conidiation. The genus concept of *Ascochyta* is rather broad and the genus comprises species formerly described in the genera *Ascochyta*, *Ascochyula*, *Ascochyella*, *Pseudodiplodia*, *Diplodina*, *Diplodinula*, *Macrodiplodia*, *Stagonosporopsis* and *Apiocarpella*. The subdivision in sections proposed by Melnik (Opredelitel' gribov roda Ascochyta Lib., Izvo Nauka, Leningrad, 1971) is justly avoided but the old Saccardian sections *Euascochyta* (species with hyaline conidia) and *Ascochyella* (species with faintly coloured conidia) are adopted and supplemented by a third section: *Apiocarpella* (species with unequally two-celled conidia).

In the delimitation of *Ascochyta* from other genera, especially from *Phoma*, the conidiogenous process is regarded as one of the most important characters and is described from light microscopy of *Ascochyta* species in pure culture. The author distinguishes between temporary conidiogenous cells, which are short-lived, holoblastic, form only one conidium and are found in immature pycnidia, and permanent conidiogenous cells, which are phialidic and occur in mature pycnidia. The latter are considered to be annellidic by Boerema & Bollen (1975) on the basis of detailed electron-microscopical studies and this interpretation is not sufficiently disproved by Punithalingam's light-microscopical observations. In addition, Boerema & Bollen's well documented interpretation of the distoseptation of the two-celled conidium of *Ascochyta* is regarded as a disputable hypothesis by Punithalingam. The electron micrograph that shows this distoseptation (Plate 2; reproduced from Brewer & Boerema, 1965) is used to illustrate that the conidial septum is not always median in relation to the conidium. However, the author apparently did not notice that the 'unequally septate conidia' in this micrograph were cut at an oblique angle.

The species are distinguished by morphological characters and by teleomorphs where possible. Host specificity is not used except that species on gramineous host plants are generally regarded as restricted to members of this host family. The major part of this book consists of the dichotomous keys and descriptions of the taxa. The general key leads to the sections and is

followed by keys to the species. Separate keys are given for species occurring on the host genera *Agropyron*, *Agrostis*, *Avena*, *Bromus*, *Festuca*, *Hordeum*, *Lolium*, *Poa*, *Stipa*, *Triticum* and *Zea*. A last key concerns the varieties of *Ascochyta leptospora*.

The descriptions cover 79 specific and subspecific taxa, including 19 new species, 12 new varieties and several new names and combinations. The descriptions are clear and concise and are followed by accounts of the specimens and cultures examined. Where possible cultural characters are added and a comparison is made with related species. Line drawings are given of conidia, conidiogenous cells, and sometimes of pycnidia, perithecia and further details of the ascigerous states. On 17 plates photographs of varying quality illustrate the conidia of most, and sectioned pycnidia of some species and further details of conidiogenesis. In the closing chapters the excluded and unexamined species are discussed. After 3½ pages of references and some additional notes, the book ends with indices of host plants and fungal taxa.

The usefulness of the book can only be judged after prolonged use, but some random tests with the keys gave positive results. Notwithstanding the above mentioned objections against parts of the introductory chapters I expect that both taxonomists and phytopathologists will welcome this new monograph of an important group of imperfect fungi.

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