Book Reviews

Pflanzenparasitische Kleinpilze –

Bestimmungsbuch für Brand-, Rost-, Mehltau- und Flagellatenpilze und Wucherlingsverwandte in Deutschland, österreich, der Schweiz und Südtirol.

[Plant parasitic microfungi –

Identification handbook for smuts, rusts, mildews plus flagellates and pseudofungi in Germany, Austria, Switzerland and South Tyrol]

Klenke, F. & Scholler, M.

Springer Spektrum 1172+15pp; 77 plates (21 in black & white and 56 in colour); ca. €90.

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A book on this subject has been eagerly awaited for some time. The most recent predecessor in the German literature is Brandenburger's tome of 1985 (*Parasitische Pilze an Gefäßpflanzen in Europa*; ISBN 3-437-30433-X). The most recent book in English covering a similar spread of organisms is Ellis and Ellis "Microfungi on Land Plants" (original 1985, enlarged edition 1997; ISBN 085546 245 0). Much has happened in the intervening years, especially in the understanding of systematics and taxonomy, and the new book has taken account of recent advances in molecular DNA phylogeny and ensuing evolutionary findings. A literature list of 183 pages with ca 4500 references on the fungi involved and 15 (!) references on their host plants, covers the old literature as well as recent contributions to the subject. The use of internet based references is limited to very few DOI referenced quotations.

The book covers around 1700 taxa of parasitic microfungi occurring on vascular plants (Pteridophytes, Gymnosperms and Angiosperms) in the central European countries of Germany, Austria, Switzerland and the Italian region of Alto Adige (Südtirol). While not mentioned explicitly, it is assumed that Liechtenstein is included in the geographic cover. Some fungi from adjacent areas (e.g. Britain) are also included. The fungal taxa covered comprise the following systematic entities: *Ustilaginomycotina* (smut fungi) 281 species; *Microbotryomycetes* (smut relatives) 47 species; *Pucciniales* (or *Uredinales*, the rust fungi) 710 species; *Erysiphales* (powdery mildews) 202 species; *Taphrinales* 55 species; *Oomycetes* (downy mildews) 292 species; and various small groups of basidiomycetes, flagellate and pseudo-fungi, but excluding the majority of the very diverse group of ascomycete microfungi. The latter are reserved for an additional book in the future. As well as describing the microfungi on native plants, the book also contains those on cultivated plants (crop and ornamental) and neophytes.

For the arrangement the authors chose the following: after an introduction and general part, including the characteristics of the taxa involved, methods for collection and identification of the fungi, keys to the main groups and a useful glossary, the specific part lists the host plant genera in alphabetic order of their Latin names, each with a key to their associated parasitic microfungi. Where fungi are associated with several host genera, the keys are reproduced with appropriate adaptation (i.e. there is no need to refer to other host genera for keys and descriptions) and cross-referenced. Keys are dichotomous and pragmatic (e.g. where mixed infections are common, there are multiple choices provided). A significant emphasis is placed on host plant specificity. Phenological information is included in the descriptions where appropriate. The illustrations at the beginning of the book are in black & white while those at the end of the specific part are in colour.

The main part is followed by literature references, scientific names of fungi and German names of the plants. Unfortunately, these lists are only useful where the specific epithets or the accepted German generic names are known to the reader.

The book is presented in robust hardback, durable format, and can probably be taken into the field with little fear of damage, although it is too large for any pocket. Host genera are displayed prominently (a great improvement to the Brandenburger design of 1985). The fungal taxa follow a regular systematic arrangement. It is particularly useful to have the keys to the fungal taxa included with all of the potential host genera, not so useful to have the illustrations removed from the main text – however, the illus-

trations follow the same alphabetic arrangement of the host plant genera as the main text.

In my view, this is a very useful book for anyone interested in the groups of parasitic microfungi covered for the area. It will suit botanists, forest researchers, horticulturists, plant pathologists and agronomists, whether in professional capacity or as keen amateur enthusiasts. An obvious stumbling block for non-German speakers is the language.

Stephan Helfer, Edinburgh

The Microscopy Companion to the Resupinates of Hampshire

Paul Hugill and Alan Lucas
Self-published. 232 pp incl. 16 colour plates.
Available from hugill386@btinternet.com
Cost: £12 plus postage.

In Field Mycology 16(3) I reviewed the first of these two volumes, *A Field Guide to the Resupinates of Hampshire* and concluded by saying that a second volume with details of microscopy was essential and within a remarkably short period of time the authors have produced one.

The book begins with nine pages of drawings of the various microscopic structures, basidia, cystidia, spores etc, followed by a glossary of technical terms. A simple key is provided, principally based on spore shape, surface structures of the fruitbody, cystidial types, presence of clamps etc. It is divided into two main parts: a key to the corticioid forms and a key to the polyporoid forms. The keys are only partially dichotomous, with couplets followed by multiple choices, varying from just a couple to 15 or more. Dichotomous keys are notoriously difficult to produce for large, diverse groups and I am sure this is why the authors decided to use this rather simplistic format. I hope however that they will continue to develop the keys in future editions and hopefully produce a fully dichotomous version as this is perhaps the weakest part of the book.

Following the keys are 16 photographs of various microscopic structures. These are extremely useful as all too often what you see down a microscope is not always as clear as a drawing of a structure; it is nice to see what such structures look like in real life.

The remainder of the book consists of the descriptions of each species in a standardised format. Synonyms are given, where applicable, followed by a brief macroscopic description and details of the microscopy. The genera and species descriptions within each genus are arranged in alphabetic order—a system which I feel should have been used in the first volume also, rather than trying to arrange them by colour and surface structure.

Finally a page of references is provided and then the index, with included species in Roman type, synonyms in italics, usefully arranged by specific epithet.

In conclusion, anyone who has the first volume will of course want to complete it by purchasing this one and the two together must be considered extremely good value for money and an important addition to the library of any mycologist with an interest in these fascinating and challenging fungi. Is it too much to hope that eventually the volumes will be combined into one compact volume? The type face used in both volumes is rather large; shrinking the type down would I am sure produce enough space to incorporate all the text on one page opposite each colour photograph. With the addition of more complex keys this would then become a truly essential tome. Even with the books in their present form the authors are to be congratulated for helping mycologists everywhere.

Geoffrey Kibby