

## Book review for *Mycotaxon*

Uwe Braun and Roger T.A. Cook Taxonomic Manual of the *Erysiphales* (Powdery Mildews)  
CBS Biodiversity Series 11. ISBN 978-90-70351-89-2. 2012. 707 pp. 80 euros.

The powdery mildews are often ignored by field mycologists because they look rather interesting and require a microscope to determine their identity. Luckily this impression is not shared by all and the authors of this fine new book have provided abundant evidence to support much more research into the group. Following on from Braun's monograph of 1987 and his account of European species in 1995 this collaboration with Cook has laid a modern foundation for future work. These fungi have had a chequered taxonomic history with differing approaches by 'lumpers' and 'splitters' and by plant pathologists and mycological taxonomists.

The book begins with a review of the classification of the Erysiphales and the pathways by which the latest systems have been developed. Detailed accounts of structure, especially of the anamorphs are accompanied by a wide range of drawings and microphotographs. Detailed keys allow identification either via the host family or by examination of the fungi themselves. Descriptions of all known species are clear and convincing and all include drawings of the diagnostic features. Host information is generally full and distribution data is most helpful, although necessarily not without some minor omissions. Comprehensive indices and a useful glossary complete a *tour-de force*.

Using modern molecular techniques it can be demonstrated that the Erysiphales have evolved in a close partnership with their hosts and the systematics of the group closely mirrors that of the angiosperms. Host specificity is high and we now have a review of the world's species which will allow for far easier identification of the vast majority of taxa. The separation of species of *Golovinomyces* on hosts from different tribes in the Asteraceae is now clear, as is the division of *Podosphaera fusca* into a number of more narrowly defined taxa on the same host family. In addition the breaking up of the *Leveillula taurica* complex and the separation of host-specific species in *Phyllactinia* will greatly assist confident naming of these fungi.

A major feature of the book is the reliance on anamorph characters and the erection of different form-genera for the anamorph states, classified within the tribes of the teleomorphs. This will allow for a quicker placement of the many un-associated anamorphs to the correct perfect genus and, subsequently their absorption into existing species or description as new.

All reviewers are expected to find some fault but this is very difficult in this case. Perhaps the inclusion of three colour plates, rather fuzzy and not exciting, was a small mistake and the fact that the index does sometimes fail to lead to the fungus listed (pages and species numbers are in a few cases confused) and some of the distribution data is incomplete. But these are very minor quibbles.

The combination of traditional and molecular taxonomy is a timely justification for both approaches and the writers are to be congratulated on producing a truly magnificent work. The publishers too deserve praise for providing such a well-produced book at a really modest price.

This book should be in the library of all plant pathologists and also all those mycologists who are interested in the co-evolution of fungi and plants. The greatest praise that this reviewer can add is that he wishes that he had written this book, it is so good!

## References

- Braun, U. 1987. A monograph of the Erysiphales (powdery mildews.) *Beiheft zur Nova Hedwigia* **89**.  
Braun, U. 1995. *The powdery mildews (Erysiphales) of Europe*. Fischer, Jena.

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