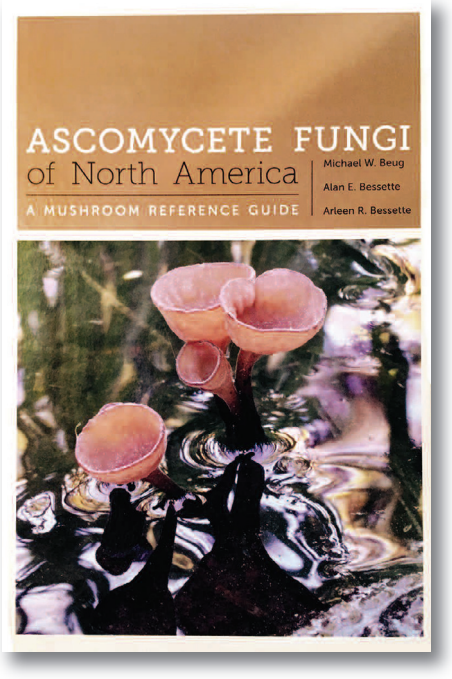
Book Review

Ascomycete Fungi of North America: A Mushroom Reference Guide

The Corrie Herring Hooks series no. 69.
Beug, M.W., Bessette, A.E. & Bessette, A.R. (2014). University of Texas Press, Austin, xii, 488 pp., 26 cm, hardcover. US retail, $85.00, UK retail, £54.99 - £59.00.

The cover designs of this title are identical to no. 68 of the same series, *Tricholomas of North America* (Bessette *et al*., 2013), except for the front cover picture of *Sclerotinia sulcata* by Noah Siegel. The modern, colour-coordinated designs are very attractive. The cover picture reflects the high standard of photographs throughout the book. Other than Siegel and themselves, the authors acknowledge forty-three contributors of photographs. The arrangement of pictures and text is aesthetically pleasant. The publisher and the designer are to be congratulated.

The authors dedicate this book to the late Catherine 'Kit' Scates Barnhardt (1937 – 2003), the founder of the Idaho Mycological Association, and previous Vice President of the North American Mycological Association. An admired figure, Kit Barnhardt was an inspiration to Alan & Arleen Bessette, who, along with David Fischer, created picture keys to North American fungi in 1997. Those keys, published in *Mushrooms of Northeastern North America* (Bessette *et al*., 1997), were designed to guide users to the major groups of fungi. Since then, the Bessettes, liaising with differing authors, have published seven (at least) major North American fungi books, the latest being this title. In this book the picture key constitutes chapter 2, and is more focussed in theme than the 1997 keys. Indeed, the key is designed to lead the users to a genus. This picture key is no doubt the raison d'être of the book. A similar key for European ascomycetes is available but only as an electronic version (Mycokey 4.0, Petersen & Læssøe).



Glossary and indices

A glossary, eleven pages long and well populated with special terminology for ascomycete studies, is found at the end of the book. I find definitions of various colours particularly useful.

The book concludes with an index of scientific names of over 600 ascomycete species, forms, and varieties found in North America, together with synonyms and species not described in this book but only mentioned in the text for comparison. Common names are provided where available, and are indexed separately from the scientific names. They are primarily American but are supplemented by English ones.

Chapters and coverage

The introductory chapter gives a fine overview of the phylum *Ascomycota*, starting with the evolution of major subphyla. I wish the authors had mentioned the importance of cell shapes in ascomata (prismatic, isodiametric), but the text ends abruptly without doing so. The micrographs on pages 2–12 are all superb, but readers must be aware that the magnification in the legends does not reflect the magnification of the printed images; the numbers presumably refer to the setting of the microscopes on which each picture was taken.

One statement which concerns me is that, as mounting medium for the specimen, 3% KOH solution is recommended as well as water. A

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An example from the pictorial key pages.

wisdom handed down to me from older generations of British ascomycete specialists is that NaOH is infinitely preferable to KOH, because the latter, however weak the solution may be, would not only dissolve spore ornamentation but also distort the very structure of the fungal cells. My routine is to mount the section in water first, then in Melzer's reagent, and then in Lugol solution separately. Also the authors could have pointed out that spore ornamentations are usually responsive to Cotton Blue.

The picture key includes 542 thumbnail-size pictures representing 541 taxa. However, only 275 out of the 541 are described in full. Compared with the celebrated *Fungi of Switzerland*, Vol. 1, (Breitenbach & Kränzlin, 1981, includes 390 spp) and to *Atlante fotografico degli Ascomiceti d'Italia* (Medardi, 2006, 400 spp), this book covers less. Instead, the authors provide a greater quantity of information for each species, and concentrate on some special subjects in ascomycete studies, as explained later.

The majority of the species described are *Pezizomycetes* (152 spp), but also included are *Sordariomycetes* (60 spp) and *Leotiomycetes* (50 spp). Only a handful of other fungi are included. *Orbiliomycetes* are included, but only one species is shown with a photograph, despite the fact that many more species are expected to be found in North America. The lichenised ascomycetes are excluded. Each chapter covers one class or one subphylum or, in the case of chapter 8, *Geoglossaceae* sensu lato, and chapter 3, species forming hypogeous ascomata. The definition of hypogeous is naturally vague, and as a result, *Geopora arenosa* appears in two places in the picture key, as hypogeous as well as cup-shaped epigeous.

Species descriptions

Most 'full' entries occupy a single page, with macroscopic and microscopic descriptions; occurrence, including habitat, substrate, and host plant, if specific; season of appearance in the year; and geographical range. Furthermore, comments include selected nomenclatural and taxonomic synonyms, the origin of colloquial names, or comparison with fungi with similar fruitbodies. The text is particularly rich in some entries where the paragraphs extend to the second page. This reflects the fact that a number of leading ascomycete specialists helped the authors in preparing this book, including Richard Korf and Donald Pfister, as well as specialists in