

## Book Review

**Hansen, L. & Knudsen, H. (eds.) 1997: Nordic Macromycetes 3. Heterobasidioid, aphylloroid and gastromycetoid basidiomycetes.** — 444 pp. Nordsvamp, Copenhagen. ISBN 87-983961-1-0.

The volume 3 of Nordic Macromycetes summarizes the basidiomycetes traditionally referred to as the Aphyllorales, the Gastromycetes and the Heterobasidiomycetes. Geographically it covers the Nordic countries Denmark, Finland, Iceland, Norway and Sweden. The book was edited by Danish mycologists Lise Hansen and Henning Knudsen, and the text was written by 22 mycologists, most of them Nordic specialists of the fungal groups treated. The book was preceded by the volume 2 of Nordic Macromycetes, which mostly deals with the Boletales, the Agaricales and the Russulales.

The introduction gives detailed instructions how to use the flora providing outlines of the vegetation zones and maps of the biogeographical provinces in the area. It also includes an illustrated glossary and gives a welcome introduction to the taxonomy of the fungi treated. The classification originates from the revision of the higher taxa of basidiomycetes by Walter Jülich (1981) provided, however, with several later modifications. The Basidiomycetes are treated as a phylum with three classes, the Urediniomycetes, the Ustilaginomycetes and the Hymenomycetes. The Hymenomycetes is divided into two subclasses: the Tremellomycetidae and the Hymenomycetidae. Altogether 43 orders and 105 families have been accepted; 8 orders and 18 families were at least partly treated already in vol. 2. Accordingly, the practical albeit polyphyletic taxa such as the Aphyllorales, the Gastromycetes, the Heterobasidiomycetes, the Polyporaceae s. lat. and the Corticiaceae s. lat. have been abandoned. Instead, the species and the genera are arranged in phylogenetically more natural orders and families. Therefore the genera are not presented alphabetically inside their classical form taxa but are found in several places in the system. It should be noted that, e.g., rusts and smuts have been excluded.

The introduction (pp. 1–46) is followed by the keys to orders and families (pp. 47–74), and the actual treatment of the taxa (pp. 75–416). The first key separates the 43 orders including also those presented already in vol. 2. As pointed out by the editors this key is difficult to use for the identification purposes but is given mostly to show important characters of the orders. It is followed by a more practical key which is based on morphological characteristics of the hymenophore. This key divides the fungi already in the beginning into more classical form groups, such as poroid, hydroid, corticioid or jelly fungi, finally, however, sorting the taxa to their "natural" orders and families. The families are then treated alphabetically under the orders as well as the genera under the families.

Each family includes keys to the genera and the species treated, and they are presented according to the highly concise format previously used in vol. 2. The essential morphological and ecological characteristics of the genus are summarized and a brief note on the occurrence of the species and references to the latest taxonomic publications are added. The species are not described separately but briefly inside the identification

keys. Therefore the species data only include the characteristics crucial to the identification and abbreviated notes on the distribution and occurrence in the Nordic countries. The species treatment is spiced with 775 line drawings (pp. 357–416), however, mostly showing merely details of spores, basidia and cystidia. Lastly, the manual is supplied with several indices: one to Latin names, separate indices to generic names in Nordic languages and, finally, a practical index to the orders and the families.

The present manual gives the first comprehensive treatment of the aphylloroid, gastromycetoid and heterobasidioid fungi of the area. Undoubtedly it serves well as an updated and well-equipped checklist of the taxa treated. Almost all of the newly described species and the latest (to the year 1996) additions to the fungal flora have been taken into account. This is seen well, e.g., in the treatment of the genera *Amaurodon*, *Anomoporia*, *Antrodia*, *Postia* and *Trechispora*. Also the distribution and occurrence data have been fairly well brought up to date. The future will reveal how this book survives as an identification manual. My first feelings are that the species descriptions follow too a concise format, and the illustrations are too few and all of them are not high quality. It also seems to me that too often the key separates microscopically almost identical (albeit phylogenetically heterogeneous) species too far from each other. This may lead to several misidentifications. Therefore, what it comes to the identification of poroid or corticioid fungi I will personally prefer to use the classical Nordic and European floras.

The main purpose of a flora is usually found in identifying, describing and listing the species of the area. Here the reader's interest is arisen, above all, by the taxonomic treatment, and the classification, indeed, steals the show. In practice this means that, e.g., polypores are found in 23 different families in 14 different orders. Many mycologists may feel that this has been made at expense of practicality. In addition to the exciting treatment of the orders and families the present book puzzles the reader with some generic arrangements and delimitations. Interesting presentations are found e.g., in *Gloeoporus*, *Hyphodontia*, *Postia* and *Steccherinum*. The order Hymenochaetales is a case in point. The treatment of the poroid taxa (families Inonotaceae, Phellinaceae and Coltriciaceae) follow the revision by Fiasson and Niemelä (1984) excluding the family Phaeolaceae, which is included in the order Fomitopsidales. Accordingly, the classical polyphyletic genera *Phellinus* and *Inonotus* are divided into phylogenetically more homogeneous genera. Although this revision was based on European taxa only, in my opinion this is an acceptable step towards a more natural system of the Hymenochaetales.

Although a flora is perhaps not the right forum to present or test a new classification system, I feel that vol. 3 of Nordic Macromycetes is a must not only for a mycologist dealing with the Nordic countries but also for a taxonomist in general. Although it is probable that the classification applied in this book is premature, it gives us something refreshing to think about while awaiting more comprehensive results from molecular and cladistic studies, and the complete revision of the Basidiomycetes.

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