

BOOK REVIEWS

R. Agerer (ed.). *Colour atlas of Ectomycorrhizae, vol. 13, and Descriptions of Ectomycorrhizae, vol. 9/10.* (Einhorn Verlag, Schwäbisch Gmünd. 2006.) Pp. 150, 23 folders with descriptions and coloured photographs. Price: EUR 95. ISSN 1431-4819.

From 2006 the editors of both series decided to publish the ‘Descriptions of Ectomycorrhizae’ and the ‘Coloured Atlas’ together for the convenience of the users. The descriptions match the coloured Atlas and include data sheets for 23 species, including *Amanita strobiliformis*, *Boletus subappendiculatus*, *Byssoporia terrestris*, *Clavariadelphus pistillaris*, *Cortinarius bouillardii*, *Entoloma nitidum*, *Gyroporus castaneus*, *Lactarius lilacinus*, *Leccinum lepidum*, *Porphyrellus porphyrosporus*, *Ramaria flavosaponaria*, *R. formosa*, and a number of *Quercirhiza* taxa. The quality of the descriptions and illustrations is of the same high standard as the previous volumes. These series are indispensable for mycorrhiza researchers and ecologists, and highly recommended.

Machiel Noordeloos

Arora, D.K (ed.). *Fungal biotechnology in agricultural, food, and environmental applications.* (Dekker, New York/Basel. 2003.) English. Pp. 509, numerous illustrations. ISBN 0-8247-4770-4.

Fungal biotechnology is a very dynamic research field, where new tools and techniques rapidly develop and change. Therefore the present publication is a very welcome up to date overview of the role fungal biotechnology plays in various applied sciences, such as Agriculture, Food processing, and in the environment. The book bundles chapters by an impressive number of contributors, each specialist in their field. Three main parts form the backbone of this publication. The first part is devoted to agricultural biotechnology, dealing with plant protection and the tools that have been developed to identify pathogenic fungi with help of chemical, isozyme and molecular markers. The potential use of biotechnology for pest and weed management is discussed, as well as the applications in growth regulation, and the detection of food spoilage. Further chapters deal with biofungicides, biological control of diseases with antagonists, and the use of arbuscular mycorrhiza in plant disease control. Part two is entirely devoted to food and feeds. It deals with fungi in food technology, fermentation, the production of edible fungi, and the role of fungi and mycotoxins in spoilage of food and feed. Part three deals with environmental biotechnology, and contains chapters on biodegradation and its impact on i.e. wood decay, degradation of waste water, mineralization of heavy metals. This publication gives a wealth of information and will prove to be very useful in education and as a reference work.

Machiel Noordeloos

A. Bidaud, X. Carteret, G. Eyssartier, P. Moëgne-Loccoz & P. Reumaux. *Atlas des Cortinaires, pars XV.* (S.A.R.L. Editions Fédération Mycologique Dauphiné-Savoie, Marlioz. 2005.) French. Pp. 72, 52 coloured plates. Price: EUR 90.

The fifteenth issue of this *Cortinarius* flora deals with subgenus *Cortinarius* and includes beside section *Cortinarius*, also section *Pholidei* and *Leproclybe*. 87 taxa are treated, of which 20 are new to science. All species are described and illustrated with line drawings of the spores and coloured plates. In the accompanying booklet an introduction to the subgenus is given, with a taxonomic outline. 20 new series and stirps are created. Dichotomous keys to the species facilitate the identification. The series will be continued.

Machiel Noordeloos

T. Borgen & E. Arnolds. *Taxonomy, ecology, and distribution of Hygrocybe (Fr.) P. Kumm. and Camarophyllopsis Herink (Fungi, Basidiomycota, Hygrocybaceae) in Greenland.* (Meddedelser om Grønland Bioscience 54. Copenhagen. 2006.) English. Pp. 64, 21 line-drawings. Price: DKK 200 excl. postage. ISBN 87-90369-68-8.

The genera *Hygrocybe* and *Camarophyllopsis* form an essential and colourful part of the mycoflora of the (sub)arctic plant communities in Greenland. The authors based their revision on more than 500 collections, most of them from a fairly recent date. This resulted in a thorough monograph, covering the genus *Camarophyllopsis* with one and *Hygrocybe* with 26 species. The introduction deals with critical characters for the delimitation of species, distribution patterns and phenology of the Greenland species. The taxonomic part starts with a dichotomic key to the species. The species descriptions are elaborate, listing nomenclature and synonymy, all relevant macroscopic and microscopic characters, a list of collections studied, and often lengthy discussions. The line-drawings accompanying the descriptions are adequate to excellent. The book is completed with a full list of references and an appendix on the sampling localities.

Machiel Noordeloos

G. Consiglio, D. Antonini & M. Antonini. *Il genere Cortinarius in Italia, parte 2 and 3.* (Associazione Micologico Bresadola, Fondazione centro Studi Micologici, Trento. 2006.) Italian. Pp. 96 resp. 44, numerous coloured photographs. Price: EUR 50 per volume, excl. postage.

The second and third part of this loose-leafed series contains 150 and 100 datasheets, respectively. Vol. 2 has in addition an introductory part with notes on nomenclature and ecology of *Cortinarius*, and vol. 3 contains a key to the subgenera and an account on statistical methods to study the dimensions of the spores. Every datasheet gives the accepted name with bibliographic references, basionym and synonyms, the original diagnosis with a translation in Italian, etymology, a full description of the macro- and microscopical characters, and taxonomic notes with SEM pictures and line-drawings of the spores, and usually two coloured photographs in situ. The photos and print are of excellent quality, and the concept of loose folders enables the owner to arrange the descriptions in the most convenient way for their use. For the convenience of English-reading users, the publisher offers an English translation of the datasheets at cost. Considering also the relatively low price, this work is highly recommended to all interested in the large and varied genus *Cortinarius*.

Machiel Noordeloos

R. Franchi, M. Giovannetti, L. Gorreri, M. Marchetti & G. Monti. *La biodiversità dei funghi del parco*. (Felice Editori, Pisa, Italy. 2006.) Italian with English summary. Pp. 360, numerous coloured photographs and line-drawings. Price: EUR 35 incl. postage. ISBN 88-6019-032-0.

This book is the result of a long term inventory of the mycoflora of the National Park Migliarino San Rossore Massaciucoli in Tuscany, Italy. The inventory of macrofungi goes back to early 1800, and therefore the book covers about 200 years of mycological research in the area. The reserve, being situated west of Pisa along the coast, has a rich diversity in habitats, varying from coastal sand-dunes, pine-woods, mesophilous and sclerophyll forests, and has a typical Mediterranean signature. In total almost 1500 species have been recorded, most of them basidiomycetes (1135 taxa), and higher ascomycetes (291 taxa). The taxa are listed in systematic order per main group and genus. Per taxon the correct name is given and a list of findings. Many species are also described in short and comments are given. A large number of good quality photographs illustrate many interesting species, sometimes in addition also with their microscopic characters. For that reason the book has a wider importance than a local inventory, and will certainly gain interest in a wider circle of students of higher fungi in the Mediterranean.

Machiel Noordeloos

R.E. Halling & G.M. Mueller. *Common mushrooms of the Talamanca Mountains, Costa Rica*. (New York Botanical Garden Press. 2005.) English. Pp. 195, numerous coloured photographs. Price: USD 19.95. ISBN 0-89327-460-7.

The authors, both world-known specialists in Agaric and Bolete taxonomy, made several collecting trips during ten years to the *Quercus* dominated forest of the Talamanca Mountains in Costa Rica. For this popular booklet, they made a selection of mushroom species they encountered during their stay that they found characteristic for these forests, to illustrate the rich diversity of this unique ecosystem. Species treated include representative of large, ectomycorrhizal genera, like *Amanita*, *Boletus*, *Laccaria*, *Leccinum*, *Phaeocollybia*, *Tylopilus*, *Phylloporus*, and others, as well as saprotrophes like *Clitopilus*, *Gymnopus*, and *Rhodocybe*. Many species appear to be endemic to this region. The authors give a short introduction and recommendations for scientific collecting of species, followed by a key to the included families. The species are listed per family, including full descriptions and photographs, some good, some a bit poor, of fruit bodies, and microscopic details. A glossary is given for technical terms. It is to be praised that the authors made the effort to make part of their scientific results available in a field guide for a larger user group. It is warmly recommended.

Machiel Noordeloos

L. Lenaerts. *Paddestoelen in Limburg, verspreiding en ecologie, determinatiegids*. (Likona, Genk. 2004.) Dutch. Pp. 570, numerous coloured photographs and distribution maps. Price unknown. ISBN 90-74605-21-4.

The Centre of Nature Studies in the province of Limburg, Belgium (Likona) stimulates inventories of all organisms in the province, resulting in publications like this, a distri-

bution atlas of macrofungi. The book brings together information of 1587 species of macrofungi recorded in the province, with information on their ecology and distribution. Additional information is provided in numerous, good quality photographs, distribution maps, and short characteristics per species. The large size and good print resulted in a book that should not be missed on the bookshelf of Belgian and Dutch mycologists, ecologists and nature-lovers.

Machiel Noordeloos

G. Medardi. *Atlante fotografico degli Ascomyceti d' Italia*. (Associazione Mycologico Bresadola, Fondazione centro Studi Micologici, Trento. 2006.) Italian. Pp. ccxxi + 454, numerous coloured photographs. Price: EUR 40, excl. postage.

This field-guide is merely meant to introduce the user in the taxonomy of the larger ascomycetes. The first 221 pages are therefore written to encourage a correct identification, with chapters on ascomycetes taxonomy, characters used, and extensive identification tools in form of three different dichotomic keys: the first using only macroscopic characters; the second one being based on fruitbody-shape; and the final one with microscopic characters. The remaining pages contain descriptions of more than 400 species, all with a relatively good photograph, a description, notes and often also small line-drawings of diagnostic microscopic characters. A short bibliography and list of references conclude the book. Since there are not so many comprehensive books on larger ascomycetes, this book will certainly be of great interest as a reference book for amateur and professional mycologists, also outside Italy.

Machiel Noordeloos

G. Mueller, G.F. Bills & M.S. Foster. *Biodiversity of fungi: inventory and monitoring methods*. (Elsevier, Amsterdam. 2004.) Pp. 776, numerous illustrations. English. Price: EUR 93.95. ISBN: 978-0-12-509551-8.

This is the first attempt to offer standard protocols for qualitative and quantitative sampling of fungi from all groups within the fungal kingdoms and all kind of habitats. It is the result of a very ambitious project, carried out by the principal authors and a wide circle of collaborators and contributors. The book is divided in six parts. Part 1 deals with general issues with the following chapters: 1. Fungi and Their Allies; 2. Preparation, Preservation, and Use of Fungal Specimens in Herbaria; 3. Preservation and Distribution of Fungal Cultures; 4. Electronic Information Resources; 5. Fungal Biodiversity Patterns; 6. Molecular Methods for Discriminating Taxa, Monitoring Species, and Assessing Fungal Diversity. Part 2 deals with sampling protocols, divided over three main groups of chapters: 2A. protocols for macro- and microfungi on soil, wood, leaves, lichens, and other substrata; 7. Fungi on Living Plant Substrata, Including Fruits; 8. Terrestrial and Lignicolous Macrofungi; 9. Lichenized Fungi; and 10. Sequestrate Fungi; Part 2B. deals with protocols for sampling microfungi on plants; 11. Microfungi on Wood and Plant Debris; 12. Endophytic Fungi; 13. Saprobic Soil Fungi; 14. Fungi in Stressful Environments; 15. Mutualistic Arbuscular Endomycorrhizal Fungi; 16. Yeasts; 17. Fungicolous Fungi; part 2C gives protocols for sampling of fungi associated with animals: 18. Insect- and Other Arthropod-Associated Fungi; 19. Fungal Parasites and Predators of Rotifers, Nematodes, and Other Invertebrates; 20. Fungi Associated

with Vertebrates; 21. Coprophilous Fungi; 22. Anaerobic Zoosporic Fungi Associated with Animals; and finally part 2D deals with protocols for aquatic protoctistan fungi: 23. Fungi in Freshwater Habitats; 24. Marine and Estuarine Mycelial Eumycota and Oomycota; 25. Mycetozoans; 26. Fungi Associated with Aquatic Animals.

The final part of the book contains appendices, a glossary, and references.

The selected authors and contributors are all specialists in their respective field and stand for the high quality of text and illustrations. The book should therefore get a wide appreciation and is obligatory in each mycological lab or institute, but also private investigators and advanced amateur mycologist may well find much to their liking. It will greatly inspire the mycological community. The hard-cover binding ensures a long-lasting use of the book. The only criticism concerns the quality of the line drawings illustrating the glossary: these are of a quality one should not expect in a book like this, and should have been taken more care for.

Machiel Noordeloos

J. Undagoitia Picón, J. Fernandez & R. Fernandez. *Estudio y Catalogo de los macromicetos de la reserva de la biosfera de Urdaibai*. (Sociedad Micologica de Portugalaete, Bizkaia. 2006.) Spanish and Bask. Pp. 366, numerous coloured photographs. Price unknown.

In this study on the macrofungi of the natural reserve of Urdaibai on the Atlantic coast of Bask Country, an extensive overview is given of the fungi encountered in the various habitats of the conservation area. Some 175 taxa are illustrated with usually good photographs and a full description of the macroscopy, and notes on the microscopy, ecological data and comestibility. An appendix gives numerous photographs of microscopic features, and the book concludes with collection lists and a bibliography. This book is a valuable contribution to the knowledge of macrofungi in the north-western part of the Iberian Peninsula.

Machiel Noordeloos

M.J. Priest. *Fungi of Australia: Septoria*. (CSIRO Publishing, Collingwood, Australia. 2006.) English. Pp. 268, 136 text-figures. Price: AU\$ 110. ISBN 0-643-09376-1.

Within the scope of the series Fungi of Australia, this volume is dedicated to the important plant-pathogenic anamorphic genus *Septoria*. Being one of the largest form genera of pathogens, it is the causal agent of numerous defects and diseases in native and cultivated plants. The present book is a classical monograph, describing extensively 132 taxa, with authoritative descriptions and good-quality line-drawings. The introductory part gives information on typification and circumscription of the genus *Septoria*, and an outline of the taxonomic and diagnostic characters, information on teleomorphs, and host-relationships and geographical distribution. In the taxonomic part species are listed per host-family in alphabetical order. Per host-family a dichotomous key leads to the species with a description and line-drawing. An extensive bibliography and lists of fungal- and host-names conclude the book.

This excellent overview of *Septoria*, being the first one for the Australian continent, is certainly a valuable addition to our knowledge of this economically important group.

It will not only serve the Australian community of mycologists and plant pathologists, but also the world-community, since many species have a rather wide geographic range, and will also be spread with the trade of plants and plant products.

Machiel Noordeloos

M. Sarnari. *Monografia illustrate del genere Russula in Europa, tomo secondo*. (Associazione Micologica Bresadola, Fondazione centro Studi Micologici, Trento. 2005.) Italian with English summaries. Pp. 807–1568, numerous line-drawings and coloured photographs. Price: EUR 80 excl. postage.

Six years after the publication of volume one of this magistral *Russula* monograph, the final volume has been realized, thanks to the effort of many friends and admirers of Mauro Sarnari, as a tribute to this remarkably gifted taxonomist. *Russula* taxonomy has long been dominated by the works of Romagnesi, in particular his monograph of 1967. Since then numerous new taxa have been described in various journals, some well-defined, others of unclear status. With the publication of the first volume of his European monograph, Sarnari brought together all knowledge on *Russula* in a very clearly conceived book, with analytical keys, standardized descriptions, and high quality illustrations and photographs. With the publication of Volume 2 his work is complete and ready for use by the large mycological community interested in the colourful and species-rich genus *Russula*. Volume 2 deals with subgenus *Russula*, sections *Viscidinae*, *Polychromae*, *Paraincrustatae*, *Tenellae*; subgenus *Incrustatula* with sections *Lilcinae* and *Amethystinae*. A supplementary chapter deals with additional species to section *Russula*, treated in Volume 1. Although the main text is in Italian, the English translation of the keys facilitate the use by those who do not master that language. The excellent illustrations speak for themselves. Sarnari's masterpiece will certainly find its way to the bookshelves of most European taxonomists.

Machiel Noordeloos

D.E. Vincey. *Larger fungi of North Cyprus*. (Richmond Publishing Co., Slough. 2005.) English. Pp. 302, numerous line-drawings and coloured photographs. Price: GBP 14.99 excl. postage and packing.

This flora deals with the northern part of Cyprus and is meant to be a field guide for interested amateurs and mushroom collectors. It is the first of its kind and therefore a welcome addition to our knowledge of the larger fungi of that area. The introductory part contains lists of localities, abbreviations used and a glossary, as well as a short introduction in mycology. The simple identification key is entirely based on macroscopic characters and leads to the genera treated in the book. The main part of the book gives an overview of the genera, in systematic order, with short descriptions of the species, a coloured photograph and sometimes additional line-drawings. The quality of the photos is often rather poor. It is unlikely that inexperienced users get to a successful and reliable identification. So it is not recommended for use by mushroom hunters who want to collect fungi for the pot. However, since it is the first extensive publication on macrofungi of Cyprus, it gives a valuable addition to the distributional data of many species occurring in the Mediterranean.

Machiel Noordeloos

A.M. Young. *Fungi of Australia. Hygrophoraceae*. (CSIRO Publishing, Collingwood, Australia. 2005.) English. Pp. 180, 60 coloured plates, 58 line-drawings, and 92 distribution maps. Price: AUD 99.95. ISBN 0-643-09195-5.

The current volume presents an up to date and modern account of the Hygrophoraceae of Australia, based upon numerous observations by the author during the past decades, mainly in southern Queensland, New South Wales, Victoria and Tasmania. The study shows a remarkable diversity of Hygrophoraceae in Australia, including *Hygrophorus*, with only one species, *Camarophylloopsis*, with two species, *Humidicutis*, with 8 species, and the largest genus being *Hygrocybe*, with altogether 75 species. Most of the species have been recorded in wet to moderately wet habitats, such as rain- and wet sclerophyll forest, and a smaller part in dryer sclerophyll forest and heath lands. The author, however, is conscious of the fact that more species might be expected when the geographic and habitat range is expanded. The introductory chapters deal with an outline of the family and an account of the history of research on Hygrophoraceae in Australia, ecology, biogeography, and conservation aspects of the family. A short account of the taxonomic characters forms the bridge to the taxonomic part. Clearly conceived dichotomic keys lead to species descriptions, which are rather comprehensive, well-illustrated with accurate line-drawings. Good colour photographs, showing the attractive nature of many Hygrophoraceae, made the book complete. The hard-cover bound makes it a good field companion to all who want to name and study wax-caps in Australia.

Machiel Noordeloos