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Book reviews and notices

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Introduction

It is a pleasure to compile this present set of reviews of recently published books. Two important European contributions to our knowledge of genera in the *Agaricales* came out, a thorough monograph of *Rosellinia* saw the light, and the book announcements show the results of many more systematic and taxonomic activities concerning various groups of fungi in different places of the world. The book that catches the eye and most attention is The kingdom of fungi by J.H. Petersen, as it is par excellence the way to bring fungi to the attention of everyone.

Ascomycota

Atlas of soil ascomycetes. By J. Guarro, J. Gene, A.M. Stchigel and M.J. Figueras. 2012. CBS Biodiversity Series 10. CBS-KNAW Fungal Biodiversity Centre, P.O. Box 85176, 3508 AD Utrecht, The Netherlands. <info@cbs.knaw.nl>. Pp. 486, 322 figs. Price 70 €.

Soil fungi are ubiquitous and are found in great numbers in every environmental study focusing on fungi, but their identities often remain obscure.

This atlas gives an overview of the ascomycetes found in soil that make ascomata in culture, and it provides identification tools for this specific group of fungi.

Keys to genera and species, descriptions, and illustrations (photographs and beautifully executed line drawings) will help with the identification process.

* Books for consideration for coverage in this column should be mailed to the Book Review Editor at the address above. All unsigned entries are by the Book Review Editor.

Different culturing techniques and observation methods, and identification criteria are elaborated on.

The genera are presented in alphabetical order, as are the species within each genus.

The authors realize both that the classifications of the treated groups are very much in flux and that these identification methods may soon be replaced by new generation sequencing. Nevertheless, the morphological information presented here is valuable and might give clues to the diverse life styles of these fungi and their environments. It might also stimulate future students and studies in the field. This non-ascomycete-specialist, who spent a pleasurable hour browsing through this volume, certainly hopes that the work will find its place in the hands of many soil biologists and other environment-oriented mycologists.

***Rosellinia* – a world monograph.** By L.E. Petrini, 2013. BIBLIOTHECA MYCOLOGICA 205. Schweizerbart science publishers, Johannesstr. 3A, D-70176 Stuttgart, Germany, < www.schweizerbart.de>. ISBN 978-3-443-59107-6. Pp 410, figs 72. Price 119 €

Rosellinia necatrix and its close relatives are important root pathogens of many woody food plants, but the rest of the genus *Rosellinia* has sparsely been investigated. Liliane Petrini's monograph has changed that dramatically.

The work presented here is an old-school morphological study of herbarium specimens from all over the world. *Rosellinia* fruitbodies are small, inconspicuous, not abundant, and hard to find. The fruitbodies form in stromata on a subiculum; the spores often have appendages or are embedded in a mucous sheath.

A short introduction to the genus and its history, generic and specific delimitation criteria, and a short methodology overview precedes the real part of the book, comprising keys and species descriptions. Species descriptions follow a fixed format, so the descriptions are easily compared; line drawings and photos are included, and keys to species groups and species are dichotomous and arranged by group. A total of 142 species (including 37 new taxa) is treated. The species concept is narrow, and subtle characters in stromatal and spore sizes are used. Some of the new taxa are based on only one collection. Very valuable are the lists of names that are not covered in this work as well as the chapters on geography and ecology of the species. The briefness of the chapter on ecology is an indication of the lack of knowledge on this group. Also included are country and host species lists (each organized by both main categories). The numerous indices make this a very useful book.

So far *Rosellinia* has not undergone phylogenetic studies, but with this monograph and the morphological basis laid, it should be much more feasible.

Sequence data of endophytes could then also be linked to named species. I also hope that more attention will be paid to the ecology and pathogenicity of the species.

Dr. Petrini must be congratulated on the completion of a work certain to become a standard, and I am looking forward to seeing other monographs on equally intriguing and understudied genera in the future.

Basidiomycota

***Agaricus* L. – *Allopsalliota* (Parte II).** By L.A. Parra Sánchez . 2013. Fungi Europaei 1A, 2nd Ed. Candusso Edizioni, Via Ottone Primo 90, I-17021 Alassio (SV), Italy. ISBN 978-88-905310-2-6. Pp 1168, 679 coloured Pl. 89 €

The second part of the volume in the series Fungi Europaei on the genus *Agaricus* came out in 2013, 5 years after part 1. Luis Alberto Parra Sánchez and colleagues have produced a tome of 1168 pages, in which the European species of sections *Xanthodermatei, Arvenses, Minores*, and *Lanosi* (in subg. *Lanagaricus*) plus the genus *Allopsalliota* are treated, a total of 56 species.

The format follows that of Part I. Text is in both Spanish and English, and the keys have also been translated into Italian. The descriptions precede 150 pages of illustrations, mainly colour photos of fruitbodies and microscopical characters; multiple entries per species illustrate variability according to age and circumstance. There is a section with published and unpublished older plates, two spore size scatter diagrams, and a number of ITS sequence-based phylogenetic trees showing species relationships and justification for describing some of the new species. Bibliographic references and addenda to the first volume complete this work.

Twelve new species are proposed. Several were only discovered through ITS sequence differences while others are also morphologically supported. Taxonomic confusion from the past is cleared up (as in the case of *Agaricus semotus* and its various interpretations throughout time), and four species are now lectotypified.

It is a pleasure to see Rick Kerrigan, the North American *Agaricus* specialist, honoured with a species named for him, along with József Geml (now in the Netherlands) and Jacques Guinberteau (France). The author also named a species in honour of his wife, and the names of his two children are given to yet another species.

Many more taxa and names than the ones described in full are discussed in the text, and this work is truly a must for every one interested in the group. It also serves as an example of thorough work on a very difficult and daunting

group. The combination of morphological and phylogenetic work is great, and I now await even more eagerly Kerrigan's North American *Agaricus* book that will also combine both sets of characters.

Parra Sánchez is not a professional mycologist in the sense of someone who earns a living by doing mycological research. But the book reflects collaboration with many others in the field (many of the new species are group efforts), and the translations and editing have been done by again another set of people.

It amazes me to see some western North American species present in Europe and vice versa, and I would love to see a biogeographic study of the genus and speculations on migration routes and centres of diversity.

I have one minor bone to pick, which has more to do with the formatting and layout than with the contents. I really miss page headings indicating which species is treated on that particular page; the species entries are long, and one gets easily lost in the sea of words and information.

In short: highly recommended, but because of its weight and bulk definitely not a book for the field.

The genus *Tricholoma*. By M. Christensen & J. Heilmann-Clausen. 2013. FUNGI OF NORTHERN EUROPE VOL. 4. The Danish Mycological Society. Svampetryk, <www.svampe.dk; svampetryk@svampe.dk>. ISBN 978-87-983581-8-3. 228 pp, numerous colour pl. Price 300 DKK. Also available in Danish.

A new book in the series FUNGI OF NORTHERN EUROPE is always a happy event, and this installment does not disappoint.

Tricholoma is the subject, and the authors give a thorough introduction to the genus, including a preliminary tree based on ITS sequences with the promise of a more in-depth article, information on the ecology of the species and where to find species assemblages, and some notes on edibility. The main part presents keys, descriptions, and illustrations of all the treated species. Following are lists of collections on which the descriptions are based, geographical distribution data, interpretation of the colour illustrations in the literature, colour references, and literature references. For a number of species, neo- or epitypes have been selected, which are also elaborated on at the end. Though the title may suggest that only northern Europe is taken into account, the authors have traveled all throughout Europe to gain insight into species diversity, variability, and distribution.

Tricholoma species lack interesting microscopical characters, and identification is for the most part based on the macromorphology: colour and shape of the fruitbodies, the characters of the veil, and the structure of the pileipellis. The keys handle these characters well. The descriptions are good, and the colour illustrations are of high quality; for most species, only one

photo is given, but for some highly variable taxa (e.g., *Tricholoma saponaceum*), the range of variation is illustrated. For each species, spore drawings and a distribution map are given. Short discussions point to comparisons with similar looking species, problems in the literature etc. It is clear that some names have been misapplied in North America.

This is a beautiful and very useful book, not only within Europe, but also outside the continent. I hope that this, together with the North American *Tricholoma* book (Bessette et al. 2013), will stimulate the study of this important ectomycorrhizal genus, which includes one of the most highly valued edible taxa in the world.

Bessette AE, Bessette AR, Roody WC, Trudell SA. 2013. *Tricholoma* of North America. A mushroom field guide. Austin, University of Texas Press. 208 pp.

General mycology

Texas mushrooms. A field guide. By S. Metzler & V. Metzler, 1992; 2013. University of Texas Press, P.O. Box 7819, Austin, TX 78713-7819, U.S.A. <www.utexaspress.com>. ISBN: 978-0-292-75126-2. Pp. 358, numerous colour pl. Price US$ 23.42 (web)

This is a reprint of the 1992 edition with a new preface, in which the revolutions in mushroom classification of the last 20 years are mentioned. The new classifications resulting from in-depth phylogenetic research show that species first considered closely related because of similarities in morphology (think *Coprinus comatus* and *C. lagopus,* both of which autodigest their lamellae) are now placed in different genera, families, or orders (for the ink cap example above, the genera are now *Coprinus* in the *Agaricaceae* and *Coprinopsis* in the *Psathyrellaceae*). However, as the nomenclature in the book has not been updated according to the newly gained insights, the reader is encouraged to search the Internet and other resources to do so herself.

The quality of the photos, a very important component of a field guide, varies considerably: some pictures are too dark and too blue; others—such as the close-up of *Phyllotopsis nidulans*—are beautiful. Some species are clearly misidentified (e.g., the photo of *Laccaria amethystina* shows *Mycena pura*). And as usual in books like this, the source of descriptions and photos is not revealed.

So far, this is still the only popular book dealing with Texas mushroom species, but I sincerely hope that someone will post updates on the names and a critical evaluation of the species online for all to use, and that future books will reflect our current knowledge and insights.

The Kingdom of Fungi. By J.H. Petersen. 2013. Princeton University Press, 41 William Street, Princeton, New Jersey 08540 U.S.A. <orders@cpfsinc.com>. ISBN 978-0-691-1574-2. Pp 272, 800+ colour pl. Price US $ 29.95

Also available in other languages (Dutch as 'Het leven van paddenstoelen & schimmels, Danish as 'I svampenes rige', and Estonian as 'Seeneriigi illustreeritud entsüklopeedia'), and as an e-book (eISBN: 978-1-4008-4687-0).

One of the most exciting events for mycology in 2013 was the publication of Jens Petersen's book, THE KINGDOM OF FUNGI. It is a book full of beautiful, stunning, and insightful pictures of fungi and mushrooms, interspersed with short pieces of text. But all are so arranged and crafted that in a nutshell a thorough introduction to the kingdom is given and various evolutionary trends are made clear. The book also introduces fungal ecology and the different habitats where these organisms can be found. Mushroom-forming fungi in the *Basidiomycot*a and *Ascomycota* (including lichenized species) get the most attention, but other groups feature as well.

It is not a guidebook to identify mushrooms in a certain area; there are photos from many different places, in Europe, Asia, Africa, and South America.

The microphotos of asci and basidia, the close-ups of pores, lamellae, spines, and many other details make you look at the fungal world with different eyes.

The book is above all destined to live on your living room or office table, laid open at one of the detailed photos to convey the message that mushrooms are varied, intriguing, diverse, and still full of mystery for the human viewer.

The low price makes it affordable for many, and if you have not yet bought it, please do so soon, and give it to your students, prospective students, and anybody with the slightest interest in the natural world.

BOOK ANNOUNCEMENTS

Cultivation and diseases of *Proteaceae*: *Leucadendron, Leucospermum* and *Protea*. By P.W. Crous, S. Denman, J.E. Taylor, L. Swart, C.M. Bezuidenhout, L. Hoffman, M.E. Palm & J.Z. Groenwald. 2013 CBS BIODIVERSITY SERIES 13. CBS-KNAW Fungal Biodiversity Centre, P.O. Box 85176, 3508 AD Utrecht, The Netherlands. <info@cbs.knaw.nl>. Pp. 360. ISBN: 978-90-70351-95-3 Print ISSN: 1571-8859. Price 75 €.

Flora of the Guianas Series E: (fungi and lichens) *Cladoniaceae*. By S. Mota de Oliveira. 2013. Kew Publishing <www.kewbooks.com>. ISBN 9781842464793. 150 pp, 60 B&W pl. Price US$ 99.00.

Operculate Discomycetes (*Pezizales, Ascomycota*) of Israel. By G.S. Barseghyan & S.P. Wasser. 2013. BIODIVERSITY OF CYANOPROKARYOTES, ALGAE AND FUNGI OF

Israel. Koeltz Scientific Books, P.O.Box 1360, D-61453 Koenigstein, Germany. <www.koeltz.com>. ISBN 978-3-87429-442-3.Pp 240, 11 figs. Price 118 €

Ophiostomatoid fungi. By K.A. Seifert, Z.W. de Beer & M.J. Wingfield. 2013 CBS Biodiversity Series 12. CBS-KNAW Fungal Biodiversity Centre, P.O. Box 85176, 3508 AD Utrecht, The Netherlands. <info@cbs.knaw.nl>. Pp. 337. ISBN: 978-90-70351-94-6. Price 75 €.

Phytopathogenic *Dothideomycetes*. By P.W. Crous, G.J.M. Verkley & J.Z. Groenewald (eds). 2013. Studies in Mycology no. 75. CBS-KNAW Fungal Biodiversity Centre, P.O. Box 85176, 3508 AD Utrecht, The Netherlands. <info@cbs.knaw.nl>. Pp. 406, illustr. Price 70 € (paper copy, download free)

Plant pathogenic and endophytic *Botryosphaeriales* known from culture. By A.J.L. Phillips, B. Slippers, J.Z. Groenewald & P.W. Crous (eds). 2013. Studies in Mycology no. 76. CBS-KNAW Fungal Biodiversity Centre, P.O. Box 85176, 3508 AD Utrecht, The Netherlands. <info@cbs.knaw.nl>. Pp. 167, illustr. Price 65 € (paper copy, download free)

The lichens and allied fungi of Great Smoky Mountains National Park. An annotated checklist with comprehensive keys. By J.C. Lendemer, R.C. Harris & E.A. Tripp. 2013. Memoirs of The New York Botanical Garden 104. The New York Botanical Garden Press, 2900 Southern Boulevard, Bronx, NY 10458-5126, U.S.A. <nybgpress@nybg.org>. 164 pp. ISBN 978-0-89327-521-1. Price US$55.00.