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R. Agerer (Ed.). *Colour atlas of ectomycorrhizae, Issue 9*. (Einhorn Verlag, Eduard Dietenberger GmbH, Schwäbisch Gmünd. 1996.) ISBN 3-921703-77-8. Pp. 27, 6 col. pls. Price: DM 45.-.

The ninth issue of this colour atlas of ectomycorrhizae provides 6 colour plates, descriptions and micrographs of mycorrhizae of *Pisolithus tinctorius* (host *Shorea parviflora* Dyer), *Quercirhiza squamosa* and *Xerocomus subtomentosus* (host *Quercus robur* L.), and three truffles, *Tuber melanosporum*, *T. mesentericum*, and *T. rufum* with the host *Corylus avellana*. In addition (updated) keys are given for the identification of mycorrhizae on *Quercus*, *Corylus*, and *Shorea* as well as additional references on literature and an appendix on identified mycorrhizae and how to arrange the plates in issue 1 through 9. This most valuable series will be continued.

D. Boertmann. *The genus Hygrocybe (Fungi of Northern Europe – vol. 1)*. (Svampetryk, The Danish Mycological Society, P.O. Box 168, DK-2670 Greve, Denmark. 1995.) ISBN 87-983581-1-1. Pp. 184, many colour photographs and line-drawings.

This study of the genus *Hygrocybe* in Northern Europe is meant to be the first of a series of book on the fungi of Northern Europe, initiated by the Danish Mycological Society. Each volume will give identification keys, detailed descriptions and colour photographs. With this first volume a good start has been made. The keys are well written and easy to use. The descriptions are short, but contain all important diagnostic features. Of the microscopical characters, only the spores are illustrated. The most attractive part of the book are the excellent colour photographs of each species. It will certainly be of great help in identifying these beautiful, but not always easy to identify mushrooms. In addition to the taxonomic treatment of the genus, also extensive information is given on the ecology of the species, and their value as indicator organisms for certain habitats with a high biological diversity. As such the book is also a valuable tool for nature conservationists.

C.J. Bos (Ed). *Fungal Genetics, Principles and Practice*. (M. Dekker, New York, Basel, Hong Kong. 1996.) ISBN 0-8247-9544-X. Pp. 442, numerous text-figs. Price: US\$ 175.-.

The book covers formal and molecular genetics and techniques as a guide for biochemists and other scientists who use molecular genetic analysis and gene manipulation, but may have little genetic background. The first part of the book deals with genetic principles. The second part contains case studies on the genetics of specific fungi, indicating what the interesting features are of each organism for genetic studies. Numerous specialists have been asked to provide chapters on particular subjects. Examples of such chapters are in the first part on genetic principles: Biology of Fungi, Mutation, Meiotic and Somatic Recom-

ination, Molecular Genetic Analysis. In the second part case studies are given of e.g. Construction of a Physical Map of the *Candida albicans* genome, Mutation in *Neurospora crassa*, Horizontal Transmission in Fungal Populations, Production and Analysis of Meiotic Mutants in *Coprinus cinereus*, and Genetic Analysis in the Oomycetous Fungus: *Phytophthora infestans*. The book is well-written and very suitable to use in courses and teaching. References are given for further reading.

E. Gerhardt. *Taxonomische Revision der Gattungen Panaeolus und Panaeolina (Fungi, Agaricales, Coprinaceae)*. (Bibliotheca Botanica, Heft 147, E. Schweizerbart'sche Verlagsbuchhandlung, Stuttgart, Germany. 1996.) ISSN 0067-7892. Pp. 149, 77 text-figs. Price: DM 186.-.

We have long been waiting for this new world monograph of *Panaeolus* sensu lato, which has become available now. The genus *Panaeolus* has a wide distribution, including many taxa that occur in anthropogenous habitats all over the world. To solve the big taxonomic problems in this genus, a revision on a world-wide scale appeared to be necessary. The author studied numerous fresh and dried collections, including types. Much attention has been paid to the variability of characters such as basidiocarp size, expression of veil, hygrophaneity, etc. The author reduced about the 160 taxa existing in literature to 32 species and varieties. The former genera *Annellaria* and *Copelandia* are treated as subgenera within *Panaeolus*, but *Panaeolina*, with slightly paler, roughened spores, is still maintained as a separate genus. Good analytical keys, in German as well as in English, are followed by very extensive descriptions, amply illustrated with drawings of basidiocarps and microscopical characters. Much information is also given on ecology and distribution. Type-studies gave way to some name changes. An account is given of excluded and dubious names.

S. Gravesen, J.C. Frisvad & R.A. Samson. *Microfungi*. (Munksgaard, Copenhagen, Denmark. 1994.) ISBN 87-16-11436-1. Pp. 168, about 100 colour and 50 black-and-white photographs. Price: DEK 320.-, US\$ 52.- excl. VAT.

This attractive book on microfungi gives a concise introduction into the world of filamentous microfungi. The first part concentrates on themes such as biodeterioration and spoilage, biotechnological aspects, mycotoxins and allergies, and fungal infection, whereas the second part gives descriptions of a selection of common microfungi. The book is very well illustrated. It is highly recommended as a guide for students and professionals in various disciplines who want to get acquainted with the subject.

D.H. Jennings & G. Lysek. *Fungal biology: understanding the fungal lifestyle*. (Bios Scientific Publishers, Oxford/Washington. 1996.) ISBN 1-85996-15-09. Pp. 176, numerous text-figs. Price: £ 16.95.

This is a text book for students starting a course in mycology or microbiology, who have never been trained in mycology. It is not an introduction in taxonomy of fungi or an overview of life-cycles, but claims to give an overview of the fundamental properties and ac-

tivities of fungi. The book falls apart in three main sections. Part one, called "The fungal lifestyle" gives an introduction to hyphae and mycelium, and how they explore their substrate, also in connection with saprotrophism and parasitism. Part two, called "The environment" deals with the fungal response to external factors such as water, oxygen, light and temperature, as well as with fungal competition. The third part of the book deals with reproduction, including sexuality, spores, and spore germination. Appendices give an overview of five representative fungal lifestyles and the classification of fungi as used in the book. A glossary and list of abbreviation facilitates the use of this book. Altogether this is a clearly written introduction to fungal biology, and recommended for students and teachers in mycology.

U. Jungehülsing. *Genomanalyse bei Claviceps purpurea*. (Bibliotheca mycologica 161, J. Cramer in der Gebrüder Borntraeger Verlagsbuchhandlung, Stuttgart. 1995.) ISBN 3-443-59063-2. Pp. 125, 50 text-figs. Price: DM 160.-.

This paper presents data on 29 isolates of *Claviceps purpurea*, which have been analyzed genetically to study their relation. RAPD analysis of DNA showed that isolates from *Secale cereale* are more closely related phylogenetically than isolates from other grasses. Infection experiments confirmed the existence of varying virulence for *Secale cereale* in relation to the origin of the isolates. Karyotyping showed a great deal of variability as to chromosome numbers and size in such an extent, that for every isolate a specific karyotype could be discovered. Both haploid and diploid isolates occur, as well as some triploid and aneuploid ones. Crossing experiments showed a high degree of rearrangements and recombination in the genome.

The book is clearly written and well-edited. Unfortunately an English summary is lacking.

U. Køljalg. *Tomentella (Basidiomycota) and related genera in Temperate Eurasia. Synopsis Fungorum 9*. (Fungiflora, Oslo, Norway. 1995.) ISBN 82-90724-16-0. Pp. 213, 171 text-figs. Price: unknown.

This is the result of a study over many years of tomentelloid fungi in the Baltic countries and the Russian Far East by the author. It presents the conclusions of a study of the systematics of these fungi with contemporary methods. Following a brief introduction with the taxonomic history, attention is paid to the different methods used. The taxonomic descriptions are made up in the DELTA format. The resulting data matrix is used for cladistic analysis with the programs PAUP and Pee-Wee. The suggested phylogenetic relationships are reflected in the proposed classification of genera, subgenera, and sections in this group. In the tomentelloid fungi the genera *Amaurodon* (6 sp.), *Pseudotomentella* (8 sp.), *Tomentellopsis* (3 sp.), and *Tomentella* (43 sp.) are distinguished; while *Tomentella* is subdivided in two subgenera each with several sections. Nine new combinations for names are proposed. Keys to the genera and species treated are included. Most species are fully described and illustrated, but in some cases there are only references to other descriptions in literature. Of most species a distribution map, drawings after microscopic details, and SEM-graphs of the basidiospores are shown.

- K. Mallett & C. Grgurinovic (Eds.). *Fungi of Australia Vol. 1A. Introduction—Classification*. (CSIRO Publishing, P.O. Box 1139, Collingwood 3066, Victoria, Australia. 1996.) ISBN 06-43058-02-8 (hardcover), 06-43058-89-3 (softcover). Pp. 413, 85 figs. in colour and black-and-white. Price: hardcover US\$ 69.95, softcover US\$ 54.95.
- K. Mallett & C. Grgurinovic (Eds.). *Fungi of Australia Vol. 1B. Introduction—Fungi in the environment*. (CSIRO Publishing, P.O. Box 1139, Collingwood 3066, Victoria, Australia. 1996.) ISBN 06-43059-35-0 (hardcover), 06-43059-36-9 (softcover). Pp. 405, 78 figs. in colour and black-and-white. Price: hardcover US\$ 69.95, softcover US\$ 54.95.

This is the result of a major new initiative for the Australian Biological Resources Study. The 'Fungi of Australia' is planned as an ambitious new series of 60 volumes, dealing with fungi in a very broad sense. It will incorporate all those organisms traditionally studied by mycologists, and covers organisms belonging to at least three Kingdoms. Included are *Myxomycota*, *Oomycota*, *Hypochytriomycota*, *Chytridiomycota*, *Zygomycota*, *Ascomycota*, and *Basidiomycota*; all in accordance with a classification by J. Walker, adopted for this series. For historical reasons nine orders of lichenized fungi, that are treated in volumes of the 'Flora of Australia', will not be included in the 'Fungi of Australia'.

The first volume provides an introduction to the many aspects of Australian mycology, in the form of a series of reviews. These reviews summarize the state of knowledge with some accent on the Australian situation, but placed in a world context. The first part (Vol. 1A) contains chapters by Australian mycologists on classification, keys to orders of fungi, a bibliography of Australian myco-taxonomy, history, biology, biogeography, and fossil fungi. A glossary of terms frequently used in mycology and an index close the first part.

The second part (Vol. 1B) completes the introduction to Australian mycology with a series of thirteen reviews on fungi in relation to their environment, their interaction with other organisms, and their use as food. There are chapters on freshwater and marine fungi, toxin-producing fungi, parasitic fungi, and on fungi causing mycoses in animals and humans. In a substantial contribution the association between arthropods and fungi is treated. Fungi as a food resource for mammals reveals interesting aspects of mycophagy and the taxonomy of Australian hypogeous fungi.

In an fascinating chapter the aboriginal knowledge and use of fungi is summarized.

This first volume of the 'Fungi of Australia' is high quality, both in content and in production. Great care has been paid to lay-out and print of text and illustrations. It certainly is of general interest to mycologists, not only in Australia but also in other parts of the world.

- M.P. Martin. *The genus Rhizopogon in Europe*. (Societat Catalana de Micologia, Apt. de Correus 186, 08330 Premià de Mar, Spain. 1996.) ISBN 84-92161-70-1. Pp. 166, 80 figs., 5 col. pls. Price: Pts 3900.

This modern monograph of the hypogeous or semihypogeous Gasteromycete genus *Rhizopogon* gives keys and full descriptions of all 21 accepted species in Europe. The book is well illustrated with good line-drawings, distribution maps, SEM pictures of spores and colour plates illustrating a selection of species. The author has a rather wide species concept, which is also based on electron microscopical, chemical and molecular studies. The book is recommended for all interested in this genus.

M. Nuñez & L. Ryvarden. *Polyporus (Basidiomycotina) and related genera. Synopsis Fungorum 10*. (Fungiflora, Oslo, Norway. 1995.) ISBN 82-90724-15-2. Pp. 85, 20 text-figs. Price: unknown.

This flora is a modified part of the doctoral thesis of Maria Nunez. It presents a concise treatment of the world species of *Polyporus* and its allies. After a short introduction on history, typification, species concept, taxonomic characters, and ecology, the delimitation of genera and the distinction of five infrageneric groups within *Polyporus* are discussed. Here anatomical characters of the hyphal system play a major role. Keys to the genera and species of *Echinochaete* (4 sp.), *Laccocephalum* (5 sp.), *Pseudofavolus* (4 sp.), and *Polyporus* (32 sp.) are presented. Of each taxon treated a restricted synonymy and a clear description are given. The illustrations are line-drawings of basidiospores and of hyphal elements, as far as relevant. There are four new combinations (all under *Laccocephalum*) and a new species (*Polyporus centrafricanus*). A list of specific names which are excluded from *Polyporus sensu stricto* terminates this study. It is a valuable and handy book for the identification of species of *Polyporus* and its allies.

S.C. Redlin & L.M. Carris (Eds.). *Endophytic fungi in Grasses and Woody Plants. Systematics, Ecology, and Evolution*. (APS Press, St. Paul, Minnesota, USA. 1996.) ISBN 0-89054-213-9. Pp. 223, 31 figs., 20 tables. Price: US\$ 49.- (in USA US\$ 39.-).

This book is a collection of papers presented at a discussion session of the APS Mycology Committee in 1991, supplemented by invited papers on the subject. Topics include Latent infections vs. endophytic colonisation by fungi, isolation and analysis, ecology and distribution of endophytes, interactions and response to terpenoids, special chapters on the endophytes of palms and grasses, and finally the effects of anthropogenic environmental changes on endophytes, and the possible use of manipulated endophytic fungi for vegetation biocontrol.

J.L. Rodriguez-Armas & E. Beltrán Tejera. *Contribución al estudio de los Aphyllophorales (Basidiomycotina) del Monteverde de las Islas Canarias*. (Bibliotheca mycologica 160, J. Cramer in der Gebrüder Borntraeger Verlagsbuchhandlung, Stuttgart. 1995.) ISBN 3-443-59062-4. Pp. 456, 101 text-figs, 14 plates. Price: DM 190.-.

245 species of Aphyllophorales have been studied, mainly from the evergreen Laurisilva forest (*Pruno-Laureta azorica* and *Myrica-Erica* communities) on the Canarian Islands (Spain), with special emphasis on the wood-inhabiting taxa (88.4 % of all studied species). Although many collections were made on typical Canarian/Mediterranean woody plants, such as *Laurus azorica*, *Myrica faya*, *Ocotea foetens*, *Persea indica*, *Pinus canariensis*, and *Ilex canariensis*, most of the fungi found belong to species with a much wider host-spectrum and contribution. Contrary to the situation in Phanerogams, the Aphyllophorales flora of the Canarian Islands does not seem to be influenced by the isolated position of the island, and did not develop endemism to such an extent.

The book gives extensive descriptions of most taxa with a selection of microscopical details in the form of text-figures, and black-and-white photographs of fruiting bodies. Also extensive data are given on ecology, distribution on the islands, and a list of col-

lections. The nomenclature used and the taxonomy that has been applied fit modern standards. With the present publication much information has become available, and therefore it is warmly recommended for all people interested in Aphyllophorales as well as those interested in biogeography.

L. Ryvarden & R.L. Gilbertson. *European Polypores, part 2. Synopsis fungorum 7.* (Fungiflora, Oslo, Norway. 1994.) ISBN 82-90724-13-6. Pp. 394–743. Price: unknown.

The first volume of this practical guide to European Polypores is discussed in *Persoonia* 15 (3): 403. 1993. The second volume of this flora treats the genera *Meripilus* through *Tyromyces* with generic diagnoses, and keys and descriptions of all taxa known to occur in Europe. The book is nicely illustrated with line-drawings of microscopical characters and rather simple distribution maps. Some descriptions are accompanied by elaborate, highly detailed line drawings of basidiocarps. Both volumes form a very valuable identification tool for this group of economically important fungi.

H.O. Schwantes. *Biologie der Pilze. Eine Einführung in die angewandte Mykologie.* (Eugen Ulmer Verlag, Stuttgart. 1996.) ISBN 3-80012-69-15. Pp. 478, 60 text-figs. Price: DM 42.80.

This pocket-size paperback is a concise introduction to fungal biology and taxonomy. A short introduction on fungal biology and history of mycology is followed by chapters on the mycelium, vegetative and sexual reproduction, fungal lifestyle, secondary metabolites, damage caused by fungi, the commercial and industrial use of fungi, fungi and environment and fungal biogeography. About 250 pages are devoted to fungal taxonomy, with very much information in a rather condensed form. The line-drawings are generally small and vary in quality. In its rather traditional approach the book offers much information at low cost, and will certainly be welcomed by many German-speaking students in mycology.

P. Stamets. *Psilocybin Mushrooms of the world. An identification guide.* (Ten Speed Press, Berkeley, California. 1996.) ISBN 0-89815-839-7. Pp. 256, numerous illustrations, incl. colour photographs. Price: US\$ 24.95.

This is the most comprehensive guide to psilocybin mushrooms available at present. It is not only an identification guide, but offers also a thorough survey of the history of the use of *Psilocybe* with etnomycological facts and information on how to collect these mushrooms, the content of psilocybin and related compounds, and tips for dose and ritual settings. But the main part of the book is devoted to the mushrooms themselves: identification tools and extensive, scientific descriptions of all species known to contain psilocybin. Not only the main psilocybin genera *Psilocybe* and *Panaeolus* are treated, but also representatives of the genera *Conocybe*, *Gymnopilus*, *Inocybe* and *Pluteus*. Also information is provided on deadly look-alikes. The descriptions are accompanied by good to excellent colour photographs. A glossary and extensive literature guide is also provided. The text is written in an easy to read, spontaneous style. Warmly recommended.

S.C. Teng. *Fungi of China*. Edited by P. Korf. (Mycotaxon Ltd., Ithaca. 1996.) ISBN 0-930845-05-6. Pp. xiv + 586, 426 illus. Price US\$ 79.-.

This most remarkable and important contribution to the knowledge of Chinese fungi by Shu Chün Teng (1902–1970) has become available now in English thanks to the efforts made by Teng's daughter, R.C. Teng, and Prof. P. Korf, who did the editing of this book, which surely has been a time-consuming, but rewarding job. The introductory chapters include a brief account of Teng's life and work, written by his daughter, and a map of China's provinces. The descriptive part of the book contains an account of all Myxomycetes, Phycomycetes, Ascomycetes, Basidiomycetes, and Deuteromycetes known from China, including the new taxa described by Teng, with numerous keys, and short diagnostic descriptions of the species with data on ecology and distribution. Sometimes remarks on edibility or pathology are added. The book is illustrated with numerous line drawings of fruit-bodies and microscopical details. An extensive index to all taxa, prepared by P. Korf, makes this book readily accessible for the user. The editor is to be complemented with the result of his work, that enables mycologists and pathologists to learn about the fungi of China. It should be present in every public and private mycological library.

K. Vanky. *European Smut Fungi*. (Gustav Fischer Verlag, Stuttgart, Jena, New York. 1994.) ISBN 3-437-30745-2. Pp. 570, 1003 text-figs. Price: DM 398.-.

This book, written by one of the leading smut specialists of the world, gives an account of about 400 smut fungi that are known so far from Europe, with further 70 taxa that are not yet known from this continent. Keys to the genera are given and a host plant/smut index to facilitate identification. The genera are treated in alphabetical order, with generic diagnosis followed by keys to the species and descriptions, host range and distribution of all taxa. The book is very well illustrated with line drawings of infected host plants, details of infected structures, and micro- and scanning photographs of spores and basidia. Although the author sticks to a rather conservative species and generic concept, the book provides a very welcome source of information and identification tool for everyone interested in these parasitic fungi. And what is most important: the well edited book invites you to start looking for these intriguing organisms! It is a must in every mycological library.

T.J. Volk & H.H. Burdsall, jr. *A nomenclatural study of Armillaria and Armillariella species. Synopsis fungorum* 8. (Fungiflora, Oslo, Norway. 1995.) ISBN 82-90724-14-4. Pp. 121. Price: unknown.

After a short introduction to the delimitation of *Armillaria* and *Armillariella*, the authors give a list of all specific epithets that have been published in connection with the two generic names, with, when appropriate, the basionym, the current accepted name for the fungus involved, synonyms, and sometimes a short note as to nomenclature and/or taxonomy. As such it is a good start for everyone interested in the genus, but cannot be used for identification purposes.