

BOOKS RECEIVED BY THE RIJKSHERBARIUM

R. Agerer (Editor). *Colour atlas of ectomycorrhizae* [Fasc. 2]. (Einhorn-Verlag Eduard Dietenberger GmbH. Schwäbisch Gmünd. 1988.) Pp. 95, including 12 pp. with colour and 24 pp. with black-and-white photographs, on loose leaves to be assembled in binder. Price: DM 35.80.

The second instalment of Agerer's colour atlas of ectomycorrhizae containing 12 double-sheets each with four good to excellent colour photographs and two sets of black-and-white photomicrographs of external and internal structures of the same mycorrhiza. The following mycorrhizae are illustrated: *Cenococcum geophilum*, *Cortinarius obtusus*, *Piceirhiza nigra*, *P. obscura*, and *Tuber puberulum*, all on *Picea*; *Fagirhiza cystidiophora*, *F. granulosa*, *F. tubulosa*, and *Laccaria amethystina*, all on *Fagus*; *Dermocybe crocea* and *Rhizopogon luteolus* on *Pinus*.

The introduction of this work has been rewritten and considerably extended (from 16 to 32 pages), whereas an appendix is added with synoptical tables for the most conspicuous characters (host tree, surface structures, colour and microscopical characters of the fungal sheath).

M. Bon. *Pareys Buch der Pilze*. (Verlag Paul Parey. Hamburg, Berlin. 1988.) Pp. 361, including 138 pages with water-colour drawings of about 1250 species of macromycetes. Price: DM 36.-.

This is the German version of Bon's 'The Mushrooms and toadstools of Britain and north-western Europe' translated and adapted by T.M.R. Lohmeyer. It is a low-priced mushroom guide of high quality in which about 1250 species are illustrated in water-colours and concisely described. The descriptive part is preceded by an extensive introduction, a glossary illustrated in colour, and a set of identification keys mainly to the genera. Separate keys to the species of Boletaceae, *Russula*, Hygrophoraceae, omphaloid species. *Clitocybe* and allies, *Tricholoma* and allies, *Cortinarius*, *Inocybe*, *Lepiota* and allies and *Amanita* are inserted in the descriptive part. In the keys only macroscopical characters are utilized. The book is well-indexed.

Lohmeyer corrected the distribution data for Central Europe and added German names and Red Data List-notations.

M. Bon. *Champignons d'Europe occidentale*. (Les Editions Arthaud. 1988.) Pp. 368, including 138 pages with water-colour drawings of about 1250 species of macromycetes. Price not known.

This is the French edition of the book mentioned above. A list of addresses of 205 French mycological societies has been added.

N. Garrido. *Agaricales s.l. und ihre Mykorrhizen in den Nothofagus-Wäldern Mittelchiles.* (Bibliotheca mycologica 120, J. Cramer in der Gebrüder Borntraeger Verlagsbuchhandlung. Berlin-Stuttgart. 1988.) Pp. 528, 264 Text-figs., 1 Col. Pl. Price: DM 180.-.

In this study a survey is given of the mycorrhizal fungi of the Boletales, Agaricales, and Russulales in the *Nothofagus* forests in central Chile. From literature a total of 1159 mycorrhizal basidiomycetes (in 96 genera) are known world-wide to be associated with Fagaceae (excl. *Quercus*). A list of these species with a bibliography is appended. The Cortinariaceae predominate with 516 taxa, followed by the Russulaceae (158), Boletaceae (153), and Tricholomataceae (75). In this study 150 species of basidiomycetes are reported from *Nothofagus* forests of central Chile, 52 belonging to the Cortinariaceae and 51 to the Tricholomataceae. Boletaceae (27) and *Russula* (6) are poorly represented, while *Lactarius* is absent.

Microscopical investigation of roots showed that in species of *Nothofagus* always an ectomycorrhizal status is found. The possibility is discussed, that *Paxillus statum* could be used as a biological tool in mycorrhizal inoculation programs to improve survival and growth of pioneer *Nothofagus* in central Chile.

In the systematic part 170 species are described and illustrated. The genus *Austroomphaliaster* and 51 species are described as new, 39 new combinations are proposed. A key for South American species of *Paxillus* is included.

L.J.L.D. van Griensven (Editor). *De teelt van champignons/Cultivation of mushrooms.* (Coöperatieve Nederlandse Champignonkwekersvereniging B.A. Milsbeek. 1987.) Pp. 524, including many black-and-white photographs and many tables. For sale only at the Centrum voor Champignonsteeltonderwijs, Westerholtstraat 2, 5961 BJ Horst, Netherlands. Price: Netherlands' edition Dfl. 104.-; English edition Dfl. 169.-.

An up to date manual on the cultivation of mushrooms with contributions of 20 Dutch specialists on the many aspects of this economically very important but complex agricultural industry. This work is edited by the director of the Experimental Station for the Cultivation of Mushrooms at Horst. Successively are treated: history and development, nutrition and mushroom compost, casing soil, construction and fitting up of mushroom houses, air conditioning, climate in growing rooms, automation, cultivation technics, mechanization and apparatuses, diseases and pests, cost and profit, and health problems of mushroom workers. The book is well-edited and has a good index. A separate English edition is available.

E. Gronbach. *Charakterisierung und Identifizierung von Ektomykorrhizen in einem Fichtenbestand mit Untersuchungen zur Merkmalsvariabilität in sauer beregneten Flächen.* (Bibliotheca mycologica 125, J. Cramer in der Gebrüder Borntraeger Verlagsbuchhandlung. Berlin-Stuttgart. 1988.) Pp. 291, including 64 Text-figs. and 37 black-and-white Pls. presenting many photomicrographs. Price: DM 130.-.

The research – of which this publication is the outcome – is part of a large-scale research project on the forest damage revealing itself in Europe in recent decennia. Its aim was the comparison of *Picea* mycorrhizae in undamaged *Picea* stands with those in *Picea* stands exposed to artificial acid rain.

The main part of the book consists of very precise descriptions and illustrations of 19 kinds of *Picea* mycorrhizae. The descriptions comprise morphological, anatomical, karyological, and microchemical data, as well as data on autofluorescence. Aberrant structures possibly representing diseased mycorrhizae were found in all plots. A correlation of the occurrence of 'diseased' mycorrhizae with different conditions in the plot could not (yet) be established.

G. Gulden & K.M. Jenssen. *Arctic and Alpine Fungi*-2. (Soppkonsulentene, Wesselsgt. 3, 0165 Oslo 1, Norway. 1988.) Pp. 58, 28 Col. Pls. and 25 Text-figs. Price: NOK 210.-.

The second fascicle of a series of publications with descriptions and illustrations of arctic and alpine agarics. Treated in this part are *Agaricus arcticus*, *Alnicola tantilla*, *Arrhenia auriscalpium*, *A. lobata*, *A. retiruga*, *A. salina*, *Calocybe orychna*, *Clitocybe candicans* var. *dryadicola*, *C. festiva*, *C. inornata*, *C. lateritia*, *C. cf. mortuosa*, *C. paxillus*, *Cortinarius pauperculus*, *C. phaeopygmaeus*, *Fayodia arctica*, *Galerina arctica*, *G. clavata*, *G. pseudocecina*, *Laccaria pumila*, *Lactarius lanceolatus*, *Mycena citrinomarginata*, *Omphalina rivulicola*, *O. velutina*, and *Phaeotellus acerosus* var. *tenellus*. The colour photographs are very good, some even superb.

Hack Sung Jung. *Wood-rotting Aphyllophorales of the southern Appalachian spruce-fir forest*. (Bibliotheca mycologia 119. J. Cramer in der Gebrüder Borntraeger Verlagsbuchhandlung. Berlin-Stuttgart. 1987.) Pp. 260, 74 Text-figs., 30 black-and-white Pls. Price: DM 120.-.

Over a period of seven years the author studied the composition of the flora of wood-rotting Aphyllophorales in *Abies frazeri* - *Picea rubens* in the southern Appalachians in the U.S.A. A total of 130 species were collected and named, representing 66 genera in 11 families, but only about 15 species are common and play an important role in the ecology of the area studied. Not more than 8% of the species encountered are believed to be brown-rotters.

All species collected are extensively described and their microscopic characters are illustrated by line-drawings. Keys to families, genera and species are provided. In the introductory chapters are discussed: taxonomic characters, distribution and composition of the southern *Abies-Picea* forest, and fungal ecology.

E. Michael, B. Hennig & H. Kreisel. *Handbuch für Pilzfreunde, 2. Aufl., Band 6: Die Gattungen der Großpilze Europas. Bestimmungsschlüssel und Gesamtregister der Bände I bis V*. (Gustav Fischer Verlag. Stuttgart-New York. 1988.) Pp. 300, including 5 Text-figs., 1 Col. Pl., and 33 black-and-white photographs. Price: DM 36.-.

The second and enlarged edition of the last volume of this well-known serial work on European macromycetes. It comprises keys to the European genera, a list of all concerning generic names and their synonyms, a glossary, an introduction to the history of mycology, and perhaps most important of all, an index to the newest editions of the first five volumes. The colour plate and the photographs show mainly non-agaricoid species.

M. Moser & W. Jülich. *Farbatlas der Basidiomyceten. Colour Atlas of Basidiomycetes. Lief. 6.* (Gustav Fisher Verlag. Stuttgart, New York. 1988.) Pp. XVIII, 78 Pls. with 163 coloured figs. Price: DM 98.-.

The sixth issue of this colour atlas contains five generic descriptions in four languages and 163 colour photographs of agarics (especially species of *Cortinarius*, *Hebeloma*, *Hygrocybe*, *Mycena*, and *Russula*) and aphylophorales. Most plates are of reasonable to good quality. Only the deep red of *Hygrocybe splendissima* and *H. coccinea* seems difficult to reproduce in print. On the plates with agarics two related species are illustrated. The plates of the aphylophorales show two or more images of the same species. Only with the agarics, reference is made to deposited herbarium collections.

M.E. Noordeloos. *Entoloma in North America. The species described by L.R. Hesler, A.H. Smith, and S.J. Mazzer: type-studies and comments.* (Cryptogamic Studies 2, Editor W. Jülich, Fisher Verlag. Stuttgart, New York. 1988.) Pp. 164, 92 Text-figs. Price: DM 78.-, for subscribers to the series DM 70.-.

This is the first in a series of studies on the genus *Entoloma* in North America by the author. It includes type studies of taxa described by L.R. Hesler, alone or in combination with A.H. Smith, in his study on *Entoloma* in Southeastern North America and by S.L. Mazzer in his world-wide monographic study of *Pouzarella*.

In the light of modern concepts in the taxonomy of the Entolomataceae, the author critically evaluated the North American material of Hesler and Mazzer. Of the 94 taxa studied here 62 proved to be good species and 32 were considered to be synonyms of taxa described before. Of the latter 26 are identical with European taxa. A synoptical key to the species is given.

A most valuable study and precursor for a monograph of *Entoloma* in North America, with full descriptions and clear illustrations. A study on the taxa described by C.H. Peck is announced.

E. Parmasto & J. Parmasto. *Variation of basidiospores in the Hymenomycetes and its significance to their taxonomy.* (Bibliotheca mycologica 115, J. Cramer in der Gebrüder Borntraeger Verlagsbuchhandlung. Berlin-Stuttgart. 1987.) Pp. 168, 1 Text-fig., 36 Tables. Price: DM 80.-.

Spore size and spore shape are characters which play an important role in the taxonomy of fungi, especially in distinguishing species. Spore size is determined by effects of genetical and environmental factors. As a result, spore size is a variable character, both within individuals and between the individuals of a species. The variability of basidiospores and its limits in the Hymenomycetes is the subject of this study. Statistical methods and techniques are offered to enable a more critical use of these characters in the taxonomy of these fungi.

Strongly recommended to students and mycologists who are interested to use elementary statistical methods with their spore measurements.

K.A. Pirozynski & D.L. Hawksworth (Editors). *Coevolution of fungi with plants and animals*. (Academic Press, Harcourt Brace Jovanovich, Publishers. London. 1988.) Pp. 285. Price: £ 35.-.

This book was conceived during the Third International Congress of Systematic and Evolutionary Biology (Brighton, U.K., 1985), when a symposium on coevolution of fungi with plants and animals was organized. In the view of the editors fungi exert a major influence on the evolution of their hosts. They adapt themselves to the changing genotype of their host in producing more intimate coevolved situations. This volume draws attention to a wide range of associations between fungi and other living organisms, especially plants and animals, where possibly coevolution played an important role in their development. In most cases there is no proof of reciprocal genetic changes, but there is circumstantial evidence that can be concluded from ecological and biological observations.

The editors provoked the contributors to be speculative and not to hesitate to put forward new hypotheses for testing. Besides a few more general chapters, there are contributions on coevolution of fungi with organisms like angiosperm and insect hosts of pathogenic fungi, hepatics, algae and cyanobacteria (in lichens), arthropods, and Diptera (in *Ambrosia* galls). A book that will stimulate research and debate in mycology and evolutionary biology.

G. Richartz. *Einfluß exogener und endogener Faktoren auf die Fruchtkörperentwicklung des Basidiomyceten *Pleurotus ostreatus**. (Bibliotheca mycologica 121. J. Cramer in der Gebrüder Borntraeger Verlagsbuchhandlung. Berlin-Stuttgart. 1988.) Pp. 165, 12 Text-figs., 8 black-and-white Pls. Price: DM 80.-.

In this thesis the author publishes her results of extensive investigations on the formation of fruit bodies and mycelium in strains of *Pleurotus ostreatus*. Light has a strong influence on initiation and progress of fruit body formation, but environmental conditions also play a role. A short period of light after preincubation in the dark strongly promotes hyphal aggregation. Contrarily, primordial formation is inhibited by short irradiation but strongly promoted by continuous light. Of importance are also the size of the culture, the wave length of light, the light intensely, and the aeration of the mycelium. The presence of a 'cryptochrome' as a photoreceptor is made acceptable.

Crossing experiments with dikaryotized mycelia (neohaplonts) gave interesting results on the inheritance of certain deficiency factors. In many respects *Pleurotus ostreatus* proved to be an excellent organism for investigations on exogenous and endogenous factors.

G.J. Samuels. *Fungicolous, lichenicolous, and myxomyceticolous species of *Hypocreopsis*, *Nectriopsis*, *Nectria*, *Peristomialis*, and *Trichonectria**. (Memoirs of the New York Botanical Garden 48, Scientific Publication Office, The New York Botanical Garden, Bronx, New York 10458, U.S.A. 1988.) Pp. 78, 28 Text-figs. Price: US \$ 22.10.

In this volume 60 species of *Hypocreopsis*, *Nectria*, *Peristomialis*, and *Trichonectria* are redescribed or described as new. Most of these species grow on perithecia of other members of the Hypocreales. These Ascomycetes show minute, inconspicuous white to yellow peri-

thecia not staining red in potassium hydroxide. Most species in this study were encountered during the author's previous studies of Hypocreales in neotropical areas.

A key is given to all genera of Hypocreales known to have fungicolous, lichenicolous, or myxomyceticolous species. A dichotomous and a synoptic key to the species treated are given. Descriptions of the fungi and, as far as known, of their anamorphs are accompanied by illustrations. Many new species and new combinations are proposed.

G.J. Samuels (Editor). *Mycological contributions celebrating the 70th birthday of Clark T. Rogerson*. (Memoirs of the New York botanical Garden 49. Scientific Publication Office, The New York Botanical Garden, Bronx, New York 10458, U.S.A. 1989.) Pp. XXVI, 374, IV. Price: US \$ 80.-.

This volume of the Memoirs of the botanical New York Garden is fully devoted to Dr. Clark T. Rogerson at the occasion of his 70th birthday.

After a foreword with a biography by the editor, this voluminous anniversary bundle consists of 47 most valuable scientific contributions by Dr. Rogerson's students and his mycological friends. The contributions cover a wide range of mycological subjects. The volume is completed with two indices.

C. Scheuer. *Ascomyceten auf Cyperaceen und Juncaceen im Ostalpenraum*. (Bibliotheca mycologica 123, J. Cramer in der Gebrüder Borntraeger Verlagsbuchhandlung. Berlin-Stuttgart. 1988.) Pp. 274, 3 Text-figs., 32 Plates. Price: DM 110.-.

In this study 153 species and infraspecific taxa in 55 genera of ascomycetes growing on rotting leaves and culms of 78 species of Cyperaceae and Juncaceae are investigated. The author suggests that several of these could be considered as endophytes or even as weak parasites of the plants on which their fruit bodies develop after decay.

The ascomycetes belong to the Helotiales (57), Rhytismatales (6), Dothideales s.l. (75) and to the Sphaeriales s.l. (18). One genus, twelve species, and one variety are described as new. All species are described and illustrated. Keys for the identification of main groups, genera, and species are provided for.

A. Tartarat. *Les cortinaires, classifications, déterminations*. (Fédération Mycologique Dauphiné-Savoie, trésorière C. Roupioz, 74270 Marlioz, France. 1988.) Pp. 320. Price: FF 250.-.

The alternative title on the cover 'Flore analytique des cortinaires' probably covers the contents better than the one on the title page. After a short historical introduction 279 pages of dichotomous, but not-indented keys are given, more or less in the style of Kühner & Romagnesi's 'Flore analytique des champignons supérieurs'. Keys are given for the genera, subgenera, sections, and species of *Cortinarius*. To each key a list of notes is appended with references, additions, and descriptions. In the view of the author the keys have no systematic value, and are only meant to help the beginner in becoming familiar with the species of *Cortinarius*. He offers them a choice of 1350 specific and sensu names. In many cases his species concept is based on the series of studies on *Cortinarius* by Dr. R. Henry.