Book Reviews


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This substantial volume is a collection of papers in English (24), Italian (20), French (4), Spanish (4), and German (4), illustrated with line drawings and colour photographs. It is effectively a festschrift for the millennium, compiled by the editors of Rivista di Micologia. It brings together 56 papers by 90 mycologists from 22 countries, with the emphasis on macrofungi and field mycology, mostly but not entirely European.

By far the longest paper, at just over 100 pp., is by Francesco Doveri et al. on Italian dung pyrenomycetes, with detailed, illustrated descriptions (in English) of over 40 species, with keys to these plus 40 more. After this, choosing which of the remaining 55 papers to mention here is a little difficult, but Hans-Otto Baral & Guy Marson’s monographic revision (in English) of the discomycele genera Gnatospisis and Calloriopsis is noteworthy, particularly since the taxa concerned are parasitic on a range of other fungi, from polyopes and corticioid species to the Geoglossaceae. Other international contributors include Bruce Ing on Swiss Exobasidium species (with colour photographs), Leif Ryvarden with a checklist of African polyopes and some new species, Roy Watling on Malaysian boletes, Annemieke Verbeken et al. on Lactarius ruginosus and L. romagnesi, and Kees Ulijé on some rare Coprinus species (with colour photographs). No less than 49 new taxa and new combinations are featured, in genera such as Inocybe, Lyophyllum, Ramaria, Marasmiellus, Xerocomus, Omphalina, Rhodocybe, Russula, and the inevitable Cortinarius.

In many ways, *Mycologia* 2000 is like a bumper issue of *Mycotaxon* with colour photographs, and perhaps it would have been better to give the book a more specific theme or subject. There is, nonetheless, plenty of interest and value inside, and it well deserves a place on the shelves of all larger mycological libraries.

Peter Roberts


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About the time I became old enough to have a newspaper route in my village on Cape Cod (Quissett), Massachusetts, I also began to fall in love with mushrooms. The paper delivery allowed me to wander through yards and woods without suspicion, and I began to notice, as the seasons came and went, a surprising array of (sometimes) quickly appearing and disappearing fungi. I think now that repetition and the lonely easy pace were important factors that finally allowed me to focus on what I was seeing, and I was quickly disabused of the notion that all mushrooms had gills and looked essentially like amanitas. My parents found me the only handbook available then (the end of the fifties). It was The Observer’s Book of Common Fungi, by E. M. Wakefield. A British book, a true ‘handbook’, but not a book likely to have many of the species found on Cape Cod. It remains a weathered but treasured member of the ever burgeoning shelf of handbooks in my library. It is still useful and provides for me a standard with which I approach all handbooks.

Now forty years and a few handbooks and field guides later, I have in my hands the book I might have wished for. Mushrooms of Cape Cod and the National Seashore is not only a fine overview of more than two hundred fifty of the species found where I live; it is a good looking book, full of excellent photographs. I don’t know whether it takes a certain loss of habitat to stimulate people to begin to document the natural life they live with, or simply the right persons at the right time, but I am thankful that there is at last an appropriately regional guide to these important and fascinating organisms. Indeed, for the United States, the idea of regional texts (of all sorts of taxa) for those interested in discovering their natural neighbourhood world is to my mind a necessary but all too neglected concept.

Handbooks are a selection and weighting of several considerations, not all of them scientific or technical. The Mushrooms of Cape Cod . . . has solved many of these judgement calls with finesse and understanding. First of all, Cape Cod is a peculiar region geologically, and the authors explain why this is so and what it means to fungi. That discussion leads immediately to a discussion of major habitats encountered here as well as what mushrooms are typical in each area. The more technical para-
graphs following these sections are short, to the point, without condescension, but they allow the book to spend more effort on identification and pictures. In my opinion, the first few pages are superb, suggesting that all regional texts should have this kind of information, allowing the user a big picture as well as the particular moment.

An excellent pictured key makes up the second section, separating sixteen groups of fungi using both pictures and description. The key takes the reader to the main body of text where there is a description of the characters of the group before the species are described. Nine groups are covered in 21 pp., then the gilled mushrooms take up the next 38 pp. It is here that I have a lover’s quarrel – I want more agarics! Finally, six more groups are covered in 14 pp. Clearly, if it was possible to have broken down the agarics further with some sort of key within their own section, that would have been helpful, especially to the newcomer, who is likely to spend most of their time there anyway.

The next 46 pp. consist of first rate photographs (even beautiful, and diagnostically arrayed) of every group and all the major species discussed in detail, some 134 in all (in addition to the eighteen or so used in the key). In the back are a glossary, indexes and references. I have not had my copy long enough to report on the book’s durability with use, but under close inspection it looks well made. It is unlikely that another handbook will match this one in overall excellence for a long time.

Eric H. Edwards


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These two volumes are the Proceedings of the Fifteenth International Congress on the Science and Cultivation of Edible Fungi, held in May 2000 in Maastricht to mark the 50th anniversary of the International Society for Mushroom Science. Given that they contain three keynote addresses and 123 papers by 287 authors, it is unlikely that there is anybody left in the world of edible fungus cultivation to whom I could send the volumes for an objective review. It is not feasible to produce a detailed review or list of the contents but, given the authors involved and the large list of topics covered, they provide an up-to-date record of advances in a continuously developing and important area of applied mycology, and will be useful volumes for researchers, advisers, growers and students.

The keynote addresses are Use of agricultural waste materials in the cultivation of mushrooms (J. Poppe), Genetics and breeding of Agaricus bisporus (A.S.M. Sonnenberg) and Medicinally important fungi (V.E.C. Ooi).

The rest of the contributions are distributed amongst eleven sections as follows:-(Vol. 1.) Physiology of edible fungi (6 papers); Development and morphogenesis (6); Genetics and breeding (23); Substrates (18); (Vol. 2) Crop Management (12); Pest and diseases (21); Quality control (6); Medicinally and industrially important edible fungi (8); Environmental aspects of mushroom cultivation (4); Economics of the industry and market research (2); Mushroom cultivation: Teaching and extension (3); and finally a group of 14 papers under the heading of Technical sessions. These last cover some interesting topics which would not normally be expected to be found in the proceedings of a scientific symposium, e.g. on the social and cultural aspects of mushroom cultivation – personnel management and employee relations, consumer confidence and sustainability. The majority of papers are about Agaricus bisporus and other Agaricus spp., but papers on many other fungi are also included, especially Pleurotus, Lentinus, and fungi of medicinal as well as culinary interest, e.g. Ganoderma and Hypsizygus.

The volumes are well produced and, given the method of production – camera-ready copy provided on disc by authors and corrected for compliance to a template by the editorial team, a huge task – relatively free of formatting and typographical errors. As might be expected of a symposium volume, there are some weak or sketchy contributions, and some by authors for whom English is not their first, or possibly even second, language. Nevertheless, as a whole the proceedings make a valuable contribution to the current knowledge of the science and cultivation of edible fungi. The one big omission which would have been useful is that of a subject index, particularly as the number of different species of edible fungi treated is so large.

M. J. Richardson


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Most mycologists and forest ecologists involved in research with ectomycorrhizal symbioses know the Colour Atlas of Ectomycorrhizae (also edited by R.
Agerer, same publisher) which displays detailed descriptions, excellent colour macro-photographs and black and white micro-photographs of 140 ectomycorrhizal morphotypes, many of them with the fungal symbiont identified at the species level. First published in 1987 and regularly augmented with new entries, the Atlas has been an invaluable tool to many students and researchers for the last decade.

Descriptions of Ectomycorrhizae is a yearly journal exclusively dedicated to the anatomy of ectomycorrhizae. Each volume comprises 10-20 newly characterized morphotypes, either ‘identified’ (the fungal associate is known at the species level) or ‘unidentified’ (the fungus species is unknown, but the ectomycorrhiza is named binomially, for instance as ‘Quercirhiza incrustata’). Each morphotype is described in a 6-8 pages folded leaflet (15x21 cm format, with holes to fit a ring folder), with 3-5 pages of line drawings. There are no photographs, either colour or black and white, in order to keep the price low, the editors say. The text is broken down into the following standard sections: short description, morphological characters, anatomical characters of mantle in plan view and longitudinal section, and of emanating elements, colour reaction with different agents, autofluorescence, reference specimen, discussion and references. Molecular data are also given for some morphotypes (PCR-RFLP of the ITS region of rDNA) to establish or confirm the taxonomical position of the fungal partner.

The April 2001 issue (vol. 5) is unusually large, with 33 new ectomycorrhizal types. Twenty five are ‘identified’, corresponding to 14 Russula species, three Cortinarius, two Tomentella and six other fungal genera. The hosts are mostly oak, beech, poplar, birch, alder, spruce and eucalpyt. The whole content of this issue cannot be presented and discussed in detail here, but it is worth considering a description of one of them more thoroughly as an example, for instance that written by L. Beenken for Russula cyanoxantha + Fagus sylvatica, which is indeed a very common association in our beech forests. There are three pages of drawings showing the general habit of the mycorrhiza and of a mycorrhiza cluster, as well as many microscopic details of cystidia, mantle surface and sections (with special attention to ‘vessel-like’ and ‘ladder-like’ hyphae which are typical of the mantle of some Russula and Lactarius ectomycorrhizae), emanating hyphae, rhizomorphs and structure of the gelatinous matrix. These drawings are extensively described and commented on in the text. The colour reaction of different parts of the mycorrhiza has been tested with many reagents: acid fuchsin, cotton-blue-lactic-acid, ethanol, FeSO₄, guaiac, KOH, lactic acid, Melzer’s reagent and sulpho-vanillin. The autofluorescence has been assessed at four wavelengths: 254 and 366 nm (UV) and 450-90 and 530-560 nm (visible light). The rDNA analysis has been performed by PCR amplification of the ITS region using the ITS1 and ITS4 primers, followed by restriction with four enzymes: Alu1, EcoR1, Hinf1 and Taq1. Electrophoresis gels are not shown, but fragment sizes (bp) are given. The geographical coordinates of the collection site are given, as well as relevant environmental factors. Eleven references are listed.

For readers used to the Colour Atlas of Ectomycorrhizae, the style of Descriptions of Ectomycorrhizas is somewhat disappointing in that the wonderful colour photographs of the former are missing (they proved to be very good for empirical, synthetic visual pre-identification, before checking significant anatomical details microscopically). This disappointment subsides, however, when one accepts that the objectives of the two publications are very different: while the Colour Atlas was designed as an identification tool (it contains keys, observation methods, etc.), Descriptions of Ectomycorrhizae is a periodical scientific journal aimed at recording new and accurate descriptions to be referred to as the authority in subsequent works.

As a conclusion, the 5th volume of Description of Ectomycorrhizae is an extremely dense and detailed piece of new scientific information, very valuable for specialized research scientists but less attractive and useful for ‘ordinary’ mycologists and forest ecologists.

J. Garbaye


Extracting dyes from mushrooms has been largely a craft-based interest over the last three decades, with pockets of activity appearing in the U.S., Europe and Australia. Biennial International Symposia have taken place, with gathering momentum, during the last 20 years. The most recent, the 10th, was hosted by Finland, at Rovaniemi, with 120 delegates from 11 countries. These symposia offer a variety of experimental dye workshops, demonstrations and lectures, and are accompanied by a lively exhibition of artefacts showing the application of the dyes. That the subject, now offered as a degree course at Umeå University in Sweden, and is the subject of a doctoral thesis by Riikka Raisanen of Tuusala, Finland, is a fine and fitting tribute to the hard work and perseverance of the pioneers of this work, and means that the subject is receiving the academic recognition it deserves.
Publications on the subject of mushroom dyeing have been few and far between. The Rainbow Beneath My Feet is an attractive publication and will appeal to beginners and more experienced practitioners of this art. The introduction to the Bessettes' comprehensive reference data and field guide states that their goal is to expand on and complement Miriam Rice’s pioneering work. The book is set out in a logical and easy-to-follow format. There is information for the dyer on collecting and preserving mushrooms, basic dyeing equipment, wool preparation and mordanting. Although there are no recipes per se, there is sufficient information in these preparatory sections to allow the dyer ample room for experiment. This part of the book is enhanced by a lively series of photographs that clearly show the enthusiasm and concentrated delight of the participants of the 8th International Fungus and Fibre Symposium, held at Paul Smiths, Sarenac, NY, where they were taken.

The larger part of the book is given over to descriptions and illustrations of the dye mushroom species. Names of the mushrooms are given throughout in Latin, with appropriate taxonomic references. The descriptions are all clear and comprehensive, covering microscopic features and macrochemical tests. Following each descriptive entry is a dye-note list giving the colours yielded by each specimen. There would appear to be rather a lot of ‘beige’, ‘pinkish-beige’ and brownish beige’, among the test experiments, alleviated only by the use of the more toxic yarn mordants – potassium dichromate, stannous chloride and copper sulphate. These mordants are now largely out of use among European, especially U.K., dyers due to their impact on the environment and the difficulties encountered in the safe disposal of dye-bath residues. I found the Bessettes’ mordanting ratios too inaccurate. Specific amounts of chemical worked out as a percentage, usually 4-10%, is better practice and gives better results. This section is followed by 24 pp. of excellent photographs of the dye mushrooms that they used, with page number reference to the descriptive section. Illustrations of this quality are vital to dyers, especially those among us whose mycological knowledge can at times be sketchy.

The Bessettes’ enthusiasm for their subject cannot be faulted. This is, to date, one of the most comprehensive and well-informed books about mushroom dyeing, and pulls together a lot of the ‘woolly ends’ of this fascinating subject. It should grace the shelves of dyers and mycologists alike. But it is also a book to be used and constantly referred to; a stepping-stone to further research.

Anna King

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**Mycological Dispatches**

The 2001 Nobel Prize in Physiology or Medicine [<www.nobel.se/medicine/laureates/2001> was awarded jointly to Leland H. Hartwell, R. Timothy (Tim) Hunt, and Paul M. Nurse for their seminal discoveries of the key regulators of the cell cycle. The following account is compiled and adapted from the Press Release announcing the Prize and Professor Anders Zetterberg's ceremonial Presentation Speech (the full texts of both of these are available at the above Nobel Internet site).

The three Laureates discovered the key regulators of the cell cycle: cyclin dependent kinase (CDK) and cyclin. Together these form an enzyme in which CDK is comparable to a “molecular engine” that drives the cell through the cell cycle by altering the structure and function of other proteins in the cell and cyclin is the main switch that turns the “CDK engine” on and off.

Dr. Zetterberg concluded his Presentation by saying that these fundamental discoveries had profoundly increased our understanding of how the cell cycle is controlled and that this new knowledge has had a huge impact on cell biology with broad applications in many fields of biology and medicine. He then extended warmest congratulations from The Nobel Assembly at Karolinska Institutet and invited them to receive the Nobel Prize from His Majesty the King.

The Nobel website also has links for each Laureate: to his CV, Prize Diploma, and videos of the Prize being presented to him and of his acceptance lecture.

Further information about the two yeasts can be found at <www.nature.com/genomics/papers/s_pombe.html> Nature 415 (2002): 845-848 (news and Views) and <www.bio.uva.nl/pombe/cycle/animation.html> which shows an animation of the pombe cell cycle.

A referenced article by Sue Assinder will appear in the next issue of Mycologist.

R. T. Moore