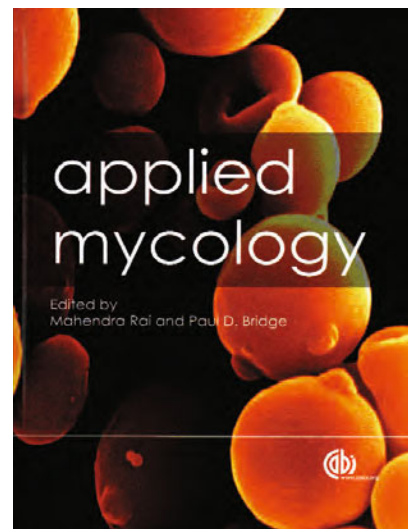


Applied Mycology. Edited by Mahendra Rai & Paul D Bridge (eds). 2009. ISBN 978-1-84593-534-4. Pp. xiii + 318. Wallingford: CAB International. Price: £ 85, US\$ 170, 135 €.

To provide an overview of such a diverse and rapidly advancing topic, at least in a single volume, would be a daunting prospect. This book is consequently inevitably eclectic. Following an overview of mycology as a neglected megascience, which makes the case for its increased support, the chapters are organized into three parts. The first, "Environment, agriculture and forestry", has contributions on mycorrhizas and endophytic fungi, tree canopy fungi (which are evidently extremely diverse), leaf litter decomposers, and, somewhat surprisingly under this heading, ochratoxin research. The second, "Food, food products and medicines" covers yeasts and brewing, the potential

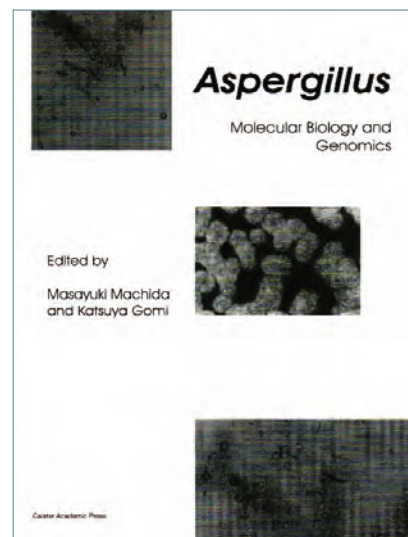
of yeasts in biomass conversions, spoilage yeasts and other fungi in wine making, the medicinal potential of compounds from *Ganoderma lucidum*, and dematiaceous mycotic infections. The final group of chapters, "Biotechnology and emerging science", has ones on biotechnological aspects of *Trichoderma* species (including biocontrol and chitinases), proteases, *Agrobacterium* transformation systems in the study fungal pathogens, and the production of nanoparticles by fungi (formed as reaction products from metallic salt solutions). The chapters are well-illustrated and extensively referenced. This will be useful as a source of recent reviews on the topics included, and leaves the impression of applied mycology as a



highly pertinent and exciting field.

Aspergillus: Molecular Biology and Genomics. Edited by Masayuki Machida & Katsuya Gomi. 2010. ISBN 978-1-904455-53-0. Pp. x + 238. Norwich: Caister Academic Press. Price £ 159, US \$ 310.

This book provides a wide overview of the forefront of *Aspergillus* genomics from bioinformatics and systems biology to gene regulation, secondary metabolism and novel industrial applications. It comprises ten chapters involving 29 authors from eight countries, with Japan and the USA predominant. The focus is very much basic genomics and no chapter is focussed on medical aspects such as aspergillosis. This work is mentioned here, as while not primarily systematic, two chapters will be of particular interest to fungal systematists.

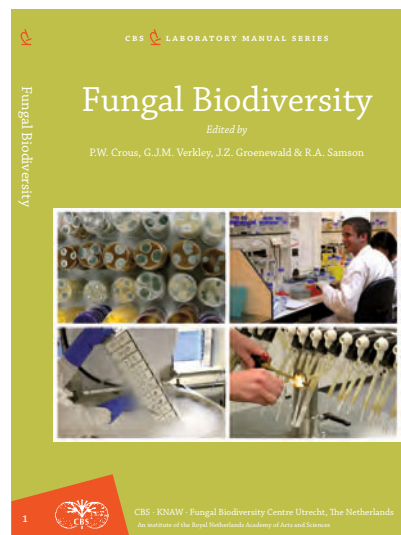


Fungal Biodiversity. Edited by Pedro W Crous, Gerard JM Verkley, Johannes Z Groenewald & Robert A Samson. 2009. [CBS Laboratory Manual Series no. 1.] ISBN 978-90-70351-77-9. Pp. 270. Utrecht: CBS-KNAW Fungal Biodiversity Centre. Price: 50 €.

Mycology is desperately short of authoritative, quality, and up-to-date teaching texts. This one has evolved from the *CBS Course of Mycology* manuals, first published in 1975 (with the fourth edition in 1998), nurtured by hands-on experience, and transformed into what something all teachers of mycology must have dreamt. About half of the manual is devoted to the fungal system (including chromistan fungi, but sadly not slime moulds) with notes on classes and orders followed by double-page spreads of exemplar species (almost all ascomycetes) that can be used in practical classes – each has a brief description, and superb photographs in colour of colony and microscopic features, sometimes supplemented by line drawings. The selection is necessarily eclectic, but lichens are not forgotten. A general methods section covers basic

techniques, including step-by-step photographs of slide preparation (with a “Sellotape” method I had not seen figured before), culturing (including slide culture preparation), microscopic examination, culture and specimen preservation. There is a summary of the rules of nomenclature and an exhortation that “when possible a single name should be used per organism”. A 20-page introduction to molecular methods is the best I have seen with how to conduct BLAST searches and make alignments clearly illustrated. Also include are surveys of ecological groups, which include a list of pathogens regulated in Europe, and introductions to aspects of applied mycology – especially those in food, air, or of medical importance. The work concludes with an extensive glossary, 32 pages of references, information on media, an arrangement of fungal orders,

and a detailed index. The book is hard-bound but with internal rings so it lies flat on the bench. This will be a boon to all involved in running practical mycology classes.



Fungi from Different Environments. Edited by J K Misra & Sunil K Deshmukh. 2009. [Progress in Mycological Research no. 1.] ISBN 978-1-57808-578-1. Pp. xii + 393. Enfield, NH: Science Publishers. Price: US\$ 119.95, £ 71.

This book is the first of a series of four which “aims to bring together what we know about fungi from different environments”. It comprises 14 chapters, which live up to the title in concerning different environments. However, the first is, somewhat surprisingly, being an important and succinct overview of palaeomycology – it includes illustration and notes on 52 fossil fungi, but unfortunately some important works are not mentioned and nor are more recent discoveries of fungi preserved in amber or peat deposits discussed. The others consider: aeromycology (with an emphasis on bioaerosols in India), saline and hypersaline environments (notably the Dead Sea), marine chemical ecology (with tabulations of novel antimicrobials), an overview of *Achlya* (emphasising

the Indian species), keratinolytic and keratinophilic fungi in sewage sludge, psychrophilic fungi on plants under snow, so-called “ammonia fungi”, prospecting for novel enzymes from extreme environments (including Antarctic bryophytes), termite egg mimicking *Fibularhizoctonia* species cared for by the termites (figured on the cover), hallucinogenic mushrooms (especially *Psilocybe* species), effects of the environment on fatty acid composition of membranes (in *Saccharomyces cerevisiae*), *Microsporium canis* on cats and its control, and potential of thermophilic fungi in bioconversions (especially “*Chaetomium cellulolyticum*”, i.e. *C. virescens*). There is much to fascinate and reflect on here, both in particular chapters and overall in showing the versatility of fungi.

