

Book reviews

Books for consideration to review in this section should be posted to the Editor-in-chief.

Rating system

- ★★★★★ Exceptional/brilliant.
- ★★★★☆ Excellent.
- ★★★☆☆ Good'
- ★★☆☆☆ Has merit
- ★☆☆☆☆ Not worth reading

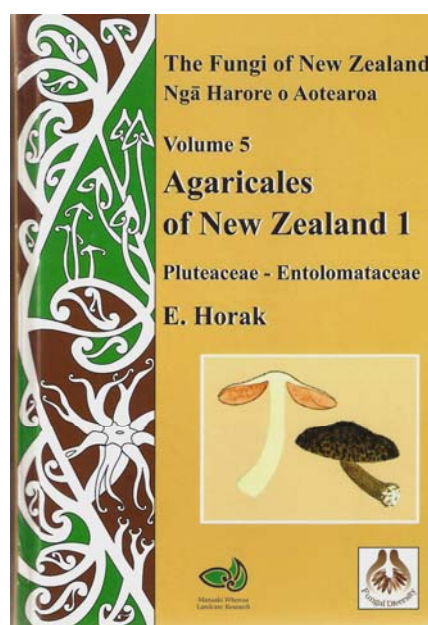
Agaricales of New Zealand 1. Pluteaceae-Entolomataceae

by Egon Horak,
The Fungi of New Zealand, Volume 5
Fungal Diversity Press
2008, 305 pages, hard back
ISBN 978-988-99320-1-5.

New Zealand mycologists studied fungi during the late 19th Century and especially since the early 20th Century. *The Fungi of New Zealand* Series through Fungal Diversity Research Series consists of monographs of fungal groups occurring in New Zealand. This volume is a monograph and definitive treatment of the pink-spored agarics in the families *Pluteaceae* and *Entolomataceae*. Even though New Zealand is relatively small in area, the biodiversity is so distinctive because of its geographic isolation for over 50 millions years. Therefore 36% of species (39 new species from 108 species) that are described in this book as new to science is not unexpected.

This book deals with the genera *Pluteus* and *Volvariella* in *Pluteaceae* and *Claudopus*, *Clitopilus*, *Entoloma*, *Pouzarella*, *Rhodomataceae* and *Richoniella* in *Entolomataceae*. The keys to species level in each genus are well presented as are the keys to Orders of Holo-basidiomycetidae with agaricoid and boletoid mushrooms, families and genera in those two families. The keys make liberal use of technical terms and microscopic features, so that the reader requires some basic mushroom knowledge for identification. However, the

keys can be used easily by expert and amateur mycologists.



One hundred and eight species are described critically. Each species description includes the full name, list of synonyms, macroscopic and microscopic features, material sources, habitat, distribution, etymology along with exquisite illustrations. Most species is also provided with notes about this species diagnostic morphological characters, differences with similar species in morphological and ecological features.

Although this volume contains many species which are only recorded in New Zealand, this volume will be great value in the identification of the species from Southeast Asia. In addition some species are introduced

from other areas to New Zealand, so that would be very interesting to compare the different aspects with those species. Generally the critical descriptions, keys, high quality line drawings and colourful plates would not only help the reader to understand the fungi in New Zealand, but also is a good book in identification and used in related other research.



As with all Fungi of New Zealand series this book is good. It is well illustrated with some colour microphotographs and well written text. The detailed discussion of genera and additions of new species or illustrations of known species will add significantly to our understanding of fungi and because of this all mycologists should see this book.

Rating: ★★★★★

Recommendation: The book should be available in all Universities and colleges and any research institute where research in any aspect of mycology is carried out or where mycology is taught.

Cost: US\$80.00

Order from: www.fungaldiversity.org

Microfungi occurring on Proteaceae in the fynbos

by Seonju Marincowitz, Pedro.W. Crous, Johannes Z. Groenewald and Michael J. Wingfield

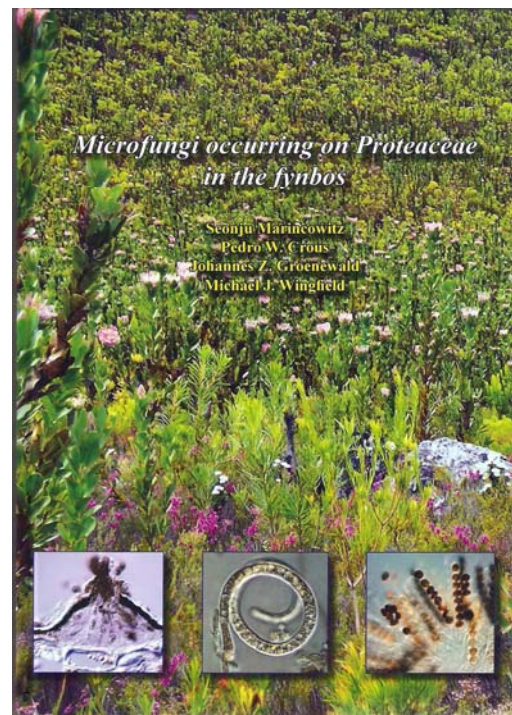
CBS, Utrecht, Netherlands

May 2008, 166 pages, hardback

ISBN 978-90-70351-71-7

This lovely colourful book results from several years work on the fungi in the fynbos which is

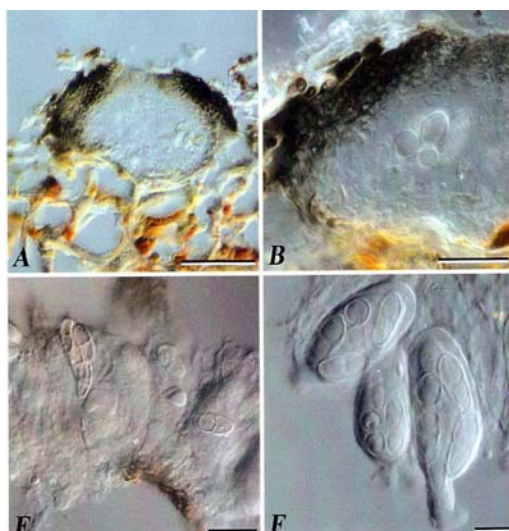
a unique fire-prone shrubland habitat in South Africa with high plant diversity and a high degree of floral endemism. This book deals with fungi on the Proteaceae which themselves are rather unique stout plants with persistent flowerheads. The book comprises an Introduction which deals with location, the Fynbos, fire, the plants, studies on microfungi and the aims of the study. The latter being to establish whether the diversity of microfungi is similar to the high diversity of plants. There is a Table of plant pathogenic fungi on Proteaceae followed by a list of fungi known to occur on Proteaceae prior to this study.



The materials and methods section lists the study area and host plants, laboratory procedures, and biodiversity analyses. This includes some nice colour photographs of the plants studied.

The main section of the book deals with the 141 fungal species found and their taxonomy. There are 59 species and two genera which are new to science, eight of which have previously been published, while 38 of the species collected are new records for South Africa and 48 new to the Proteaceae. The entry for each new species comprises the Mycobank number, a reasonably detailed description and a nice colour plate detailing most characters. In most cases there is a fairly lengthy discussion

on the genus and justifying the introduction of the new species. There is a lot of data here. The authors have carefully identified their taxa and obtained references to justify their naming of taxa or new species. This is a very important book for anyone dealing with ascomycetes and their anamorphs as the taxa are well illustrated and will serve to gain a better understanding of genus concepts.



The final part deals with the diversity of microfungi on fynbos Proteaceae. This is an interesting part and adds further data concerning the ecology and diversity of microfungi which have generally been poorly studied.

As with all books coming out of CBS these days this book is good. It is very well illustrated with colour microphotographs and well written text. The detailed discussion of genera and additions of new species or illustrations of known species will add significantly to our understanding of microfungi and because of this all mycologists should see this book.

I love this book. A huge amount of work has gone into compiling this book and it should be in the library of all mycologists for its wealth of information.

Rating: ★★★★★

Recommendation: The book should be available in all Universities and colleges and any research institute where research in any aspect of mycology is carried out or where mycology is taught.

Cost: €50.00

Order from: www.cbs.knaw.nl

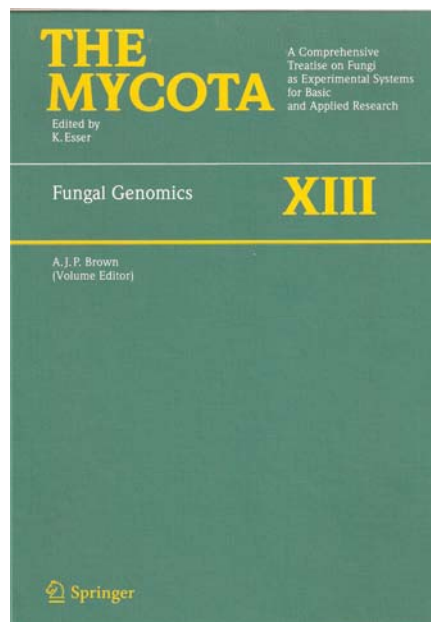
The Mycota: Fungal Genomics

Edited A.J.P. Brown

Springer

2006, 275 pages, hardback

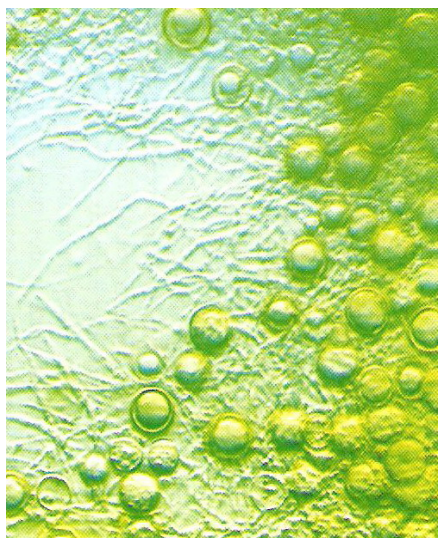
ISBN 978-3-540-25594-9



This is a very important text summarizing the work on fungal phylogenetics to July 2005. The book claims to illustrate the current impact and potential future impact of genomics in different fungal species and also show how genomic is being applied to answer a diverse range of interesting questions in mycology. The chapters illustrate the fundamental principles of fungal genomics; in three sections: biochemistry and molecular genetics, fungal rhythms and responses and fungal pathogenicity.

Twenty-six authors have contributed to this volume in 13 chapters. Scrolling down the chapters I did not recognize any of the authors, suggesting this book is either biased to medically or industrial micro-organisms. The first Chapter deals with the yeast *Saccharomyces cerevisiae* which is proposed as a model organism for understanding the eukaryotic cell in a holoblastic and integrated manner. The second Chapter also deals with *Saccharomyces cerevisiae*, this time with genome evolution, while Chapter 3 explores the evolution of virulence by functional genomics. I tried hard to extract some overall meaningful conclusions from these Chapters. Basically it comes down to - by sequencing more genomes of the

species we can have a better understanding of their functioning.



Chapter 4 deals with *Neurospora* and particularly circadian rhythms and photobiology, but again stressing on the importance of this fungus as a model organism. Chapter 5 deals with protein secretion and hyphal growth in *Aspergillus*, Chapter 6 in stress response in fission yeast and Chapter 7 in programmed cell death in fungi. Cellular morphology in *Candida albicans* is analysis by genomics in Chapter 8.

The final section on fungal pathogenicity deals with approaches to analyze pathogenicity (Chapter 9), integration of metabolism with virulence (Chapter 10), regulators of pathogenicity (Chapter 11) all in *Candida albicans*. Chapter 12 uses genomics to investigate the life cycle of *Histoplasma capsulatum* and Chapter 13 deals with *Cryptococcus neoformans* pathogenicity.

This book is very specialized and is of interest to those dealing with uses of genomics in organisms. It is not something most mycologists would follow unless they were deeply interested in genomic functioning in the fungi.

The book is well written but rather complex, has many models and flow diagrams, and brings together the latest on fungal genomics. Chapters could have benefited from an abstract for each chapter but otherwise this is a very useful text.

Rating: ★★★★★

Recommendation: Should be available in all libraries having any association with mycological research, plant pathology, genomics or medical research.

Cost: Hardback £107.00, US\$199.00, €143.95.00

Order from: www.springer.com

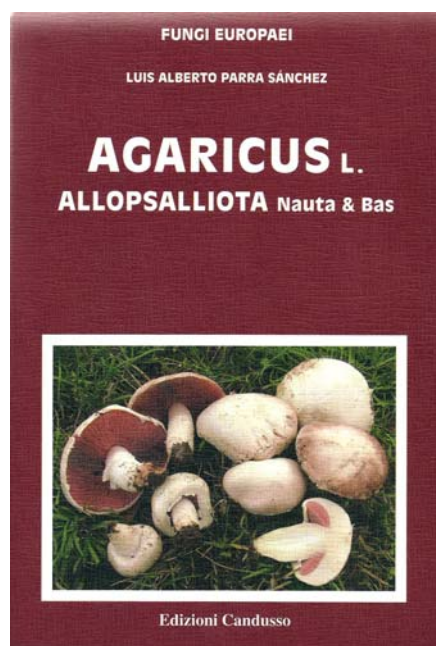
Agaricus L. *Allopsalliota* Nauta & Bas

By Luis Alberto Parra Sánchez

Fungi Europaei Volume 1

2008, 824 pages, hardback

ISBN 88-901057-7-1



This is one beautiful book and the amount of work that has gone into this is colossal. It is the work of a passionate mycologist and is a work of art. Congratulations Luis on producing such a beautiful book.

The first part of the book deals with various problems with *Agaricus*, the etymology, the nomenclature and typification and the historic revision of the genus. The next part looks at the principal characters in the genus which are beautifully illustrated with carefully prepared photos of fresh mushrooms. Staining is illustrated so carefully and explicitly and in colour and the whole section is very very detailed. In the next section the importance of morphological characters are discussed and species concepts are briefly dealt with. Edibility and toxicity are dealt with in the next section, followed by cultivation and taxonomic position in the genus.

At this point each of the Tribes is dealt with again in great detail and this is supplemented with a key to tribes in the genus. Then the sections and subsections of the subgenera are also detailed and keyed out. We then move on to the main contents of the book which is on the section *Agaricus*. This begins with a key to all species in the section and a description of each species. The descriptions are very detailed and supplemented with photographs and line drawings. Several collections and original are illustrated for most species to show variety in species. There are also considerable taxonomic comments. The book deals with 35 species.



There are some problems with the book. It is not easy to use as everything is written in Spanish? and English. I cannot fault this but it does make sifting through the text complicated. There is also no abstract – this would have been better. On the other hand one cannot fault the thoroughness of this book and the beauty of the photographs of the many many species.

This is a very nice book. It is wonderfully illustrated, printed with large print on glossy paper and is colourful. If I have one complaint it concerns the binding which is not so robust. This book should be obtained by all mycologists and be present in all University libraries where mycology and ecology and taught or studied.

Rating: ★★★★★

Recommendation: For all libraries where mycology and ecology are taught. Should be available on all mycologists' bookshelves.

Cost: €75.00

Order from: www.edizionicandusso.it

The Aspergilli. Genomics, Medical Aspects, Biotechnology and Research Methods

Edited by Gustavo H. Goldman and Stephen A. Osmani

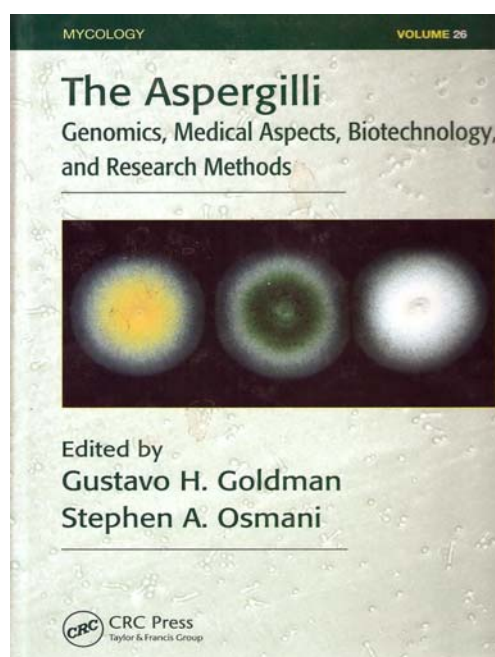
CRC Press, Taylor and Francis Group

Mycology Series 26,

2008, 551 pages, hardback

ISBN 0-8493-9080-X

This book has a very exciting title and looks very nice – I wonder if what is between the covers is good as the promise. Well lets get over the boring stuff first – this is the 26th book in the Mycology Series by CRC Press.

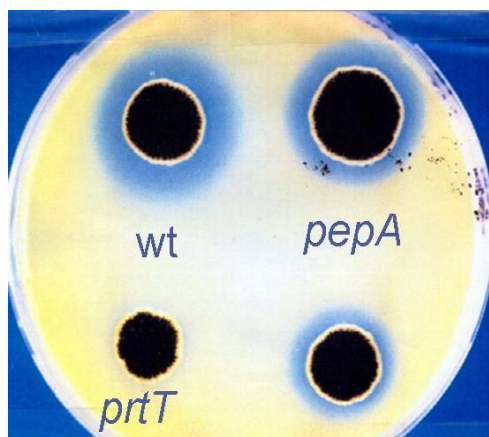


The book has a lot of information in it – laid out in 4 parts, the first dealing with genomics, the second basic biology, the third medically important aspects, the fourth biotechnological aspects and the fifth methods – techniques and resources – all of *Aspergillus*. It includes 32 Chapters written by 71 contributors!

Chapter 1 provides an overview of the genus *Aspergillus* ranging from its history and taxonomy, food products, pathogenicity, genetics and genomics. The genome sequence of *Aspergillus flavus* is glanced at in Chapter 2 – this predicts what can be found out by functional genomics rather than what we already know. The genome of *Aspergillus fumigatus* is compared in Chapter 3. There is a lot of interesting data in this chapter and it is

well worth a read. *Aspergillus nidulans* and genome evolution are explored in Chapter 4 while linkage maps and genome sequences are discussed in Chapter 5. Unfortunately the latter had no abstract or summary and the text was complicated. The final Chapter (6) in the genome section deals with genome sequence of *Aspergillus oryzae*.

Chapters 7-20 deals with some complex stuff – signal transduction (7), gene regulation (8), mitogen-activated protein kinase pathways (9), gluconeogenic carbon metabolism (10), amino acid supply (11), endocytosis (12), RNA silencing (13), hyphal morphogenesis (14) cytoskeleton, polarized growth and cell cycle (15), nuclear pore complex and transport (16), sexual development (17), transporters in (18), chromatin in (19) and transposable elements and repeat-induced point mutation (20). Like I say some specialized complex stuff – for the specialists mainly.



Chapter 21 deals with clinical aspects of *Aspergillus*. This had the potential to be a spine chilling readable prose but is presented in a scientific way. Chapter 22 deals with pathogenicity and allergens. This chapter is packed with data and certainly worth a read. Mammalian models of Aspergillosis take the stage in Chapter 23, while mini-host models are explained in Chapter 24.

Fermented food products produced by *Aspergillus oryzae* are reviewed in Chapter 25. This includes soy sauce, soybean paste, sake, and shochu. Protein production is addressed in Chapter 26, and mycotoxin and aflatoxin in Chapter 27.

The last four chapters deal with techniques: microarrays (28), chemostats and

microarrays (29), gene manipulations (30) and fluorescent labels (31).

The book is a good book but many chapters are certainly for the specialists. It is written in a serious precise scientific prose and although this may have good points it makes reading hard-going. The text is small and so good light and reading glasses are essential. The book is in need of more diagrams and plates to break up the text, but overall I can thoroughly recommend this book.

Rating: ★★★

Recommendation: All University, colleges, research institutes and libraries where genomics, mycology and medicine is taught or research should have this.

Cost: \$149.95

Order from: www.crcpress.com

Fungi in the Ancient World

Frank M. Duggans

APS Press

2006, 140 pages, paperback

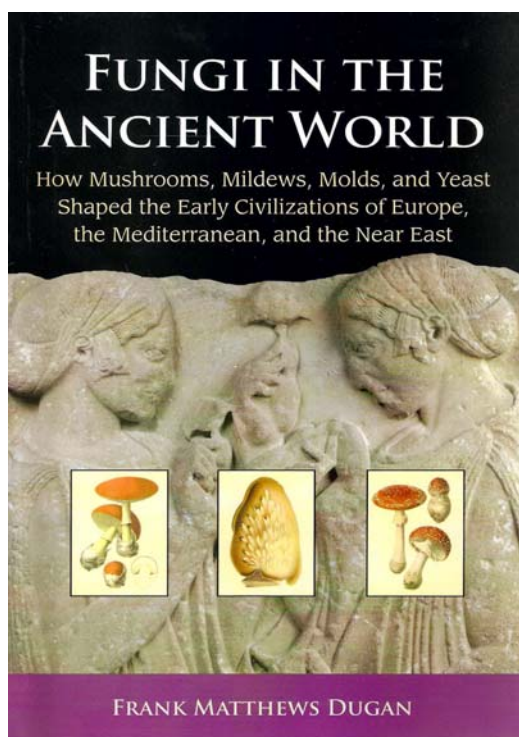
ISBN: 978-0-89054-361-0

There are books of all sorts and this book on *fungi in the ancient world* is a book that should be of interest to mycologists as well as those general public interested in history and novel things. The book is all about how mushrooms, mildews, molds and yeasts shaped the early civilizations of Europe, the Mediterranean and the near East.

So what comes to mind – alcohol, ice man and mushrooms, famines caused by fungi and perhaps early fermented foods? Lets see what is in the book.

Chapter 1 provides an interesting overview and makes interesting reading and leads into the remaining chapters. In Chapter 2 the history of bread baking and brewing are reviewed. There is some interesting information here – next time you go to the fungal symposium – remember symposium really means a drinking party - well I guess many meetings are like that!. Chapter 3 deals with edible fungi but there was not much written on this subject to pass on and so the chapter on “Enthogens” is more interesting. Enthogens you ask? Fungi that produce psychoactive substances - interesting chapter. Chapter 5

deals with mycotoxins and the way food was stored to prevent spoilage. The outcome of some major events due to mycotoxins are detailed.



The remaining chapter in this book deals with medicinal fungi (8), plant pathogens (9) and wood and fabric rot (10). Chapter 11 is very short and looks at ancient fungi preserved in glacial ice and permafrost while ancient images are detailed in Chapter 12.

This is an interesting little book and certainly worth a read on some quiet Sunday afternoon. The paper is sound and print large enough but I would like to have seen more and better photographs. A book of this sort should also introduce a sense of humour and I am not sure this does. Overall however, I can recommend that you read this book.

Rating: ★★★★★

Recommendation: should be available in all college and university libraries and research institutions dealing with higher education. Public libraries should also take this since it deals in general topics of interest to the general public.

Cost: \$69.00 (includes postage).

Order from: www.apsnet.org

Compendium of Onion and Garlic Diseases and Pests

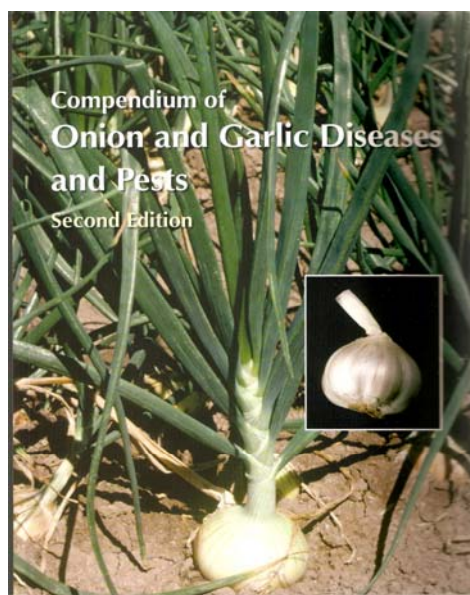
Edited by Howard F. Schwartz and S Krishna Mohan

APS Press

2008, 127 pages, paperback

ISBN 978-0-89054-357-3

The second edition of the *onion and garlic disease and pest compendium* is much better than the first edition, which itself was a great text. The colour pictures are greatly improved and the text laid out in a better way for easy reading and access. As usual there is an introduction, a section on infectious/biotic diseases and a section on noninfectious/abiotic disease.



Having never tried to grow onions or garlic I was intrigued to know if they had many diseases. I have also worked on the taxonomy of *Colletotrichum circinans* which is anthracnose described from onion in Brighton, UK – so I was interested to see what the book had to say about this disease and how it treated the *Colletotrichum* disease complex.

Chapter 1, the introduction discusses the genus *Allium* and the types of “onions” – did you know some onions are ornamentals?

Part II deals with more than 60 onion and garlic diseases with 40 caused by the fungi. As with other issues each disease deals with symptoms, causal organisms, disease cycle and epidemiology and management. Each disease is

nicely illustrated and life cycles often illustrated.

There are also sections dealing with diseases caused by bacteria and yeasts, nematodes, viruses, phytoplasmas and parasitic flowering plants. Part II deals with pests while part III deals with abiotic conditions..

So what about my queries? Certainly there are many more onion diseases than I ever expected. May be I won't every grow onions. Smudge as caused by *Colletotrichum circinans* is a disease of onion and there is no doubt as to the naming of this taxon.

This is a lovely book as are all compendium and a must for everyone having anything to do with onions. It is printed on nice papers and the illustrations are colourful and the photographs necessary and informative. Congratulations on this excellent job.

Rating: ★★★★★

Recommendation: This should be available in all university libraries and colleges where mycology and plant pathology is taught or researched. I would recommend that this is read by growers of Onion and extentionists.

Cost: \$59.00

Order from: www.apsnet.org

Phytophthora. Identifying Species by Morphology and DNA Fingerprints

Mannon E. Gallegly and Chuanxue Hong

APS Press

2008, 158 pages, paperback

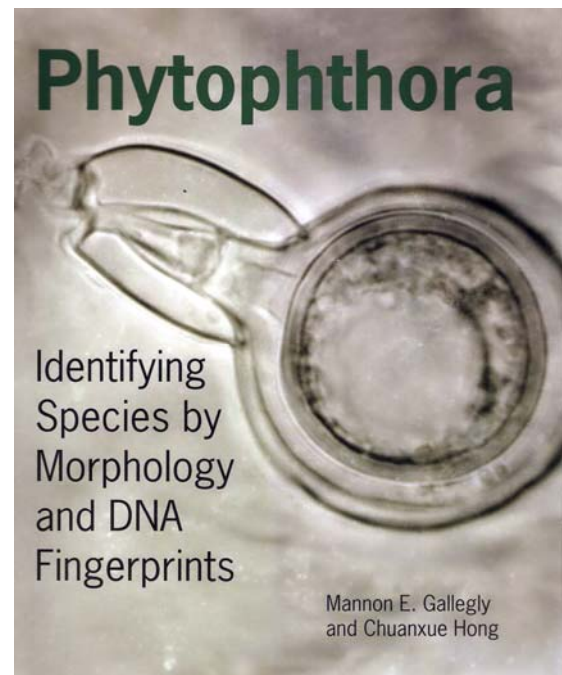
ISBN 978-0-89054-364-1

If you want to identify *Phytophthora* species this is your book! It has a mycological key, a DNA fingerprint key and a clear guide to general procedures for morphological identification and PCR-SSCP protocols.

The procedures for morphological identification are clearly illustrated with great photographs, shapes being illustrated by photographs rather than line drawings. Growth media are carefully explained while DNA methods are clearly outlined.

The main part of the book deals with 59 taxa with species complexes names I, II and III. Each entry provides some background, a description and a full set of figures. An appendix to this part provides information on location and host.

The book also has an good glossary, index citations and an index.



Anyone interested in *Phytophthora* should have this book. It is useful for teaching, laboratory identification and basic research. The book is printed on glossy paper, is nicely laid out with a good print size and is well illustrated. Congratulations on a lovely and useful book.

Rating: ★★★★★

Recommendation: This is a compact manual and is essential for all libraries, agriculture centres, universities, plant pathologists, researchers and extentionists.

Cost: US\$ 79

Order from: www.apsnet.org

Forest Fungi of Central India

R.K. Verma, N. Sharma, K.K. Soni and Jamaluddin

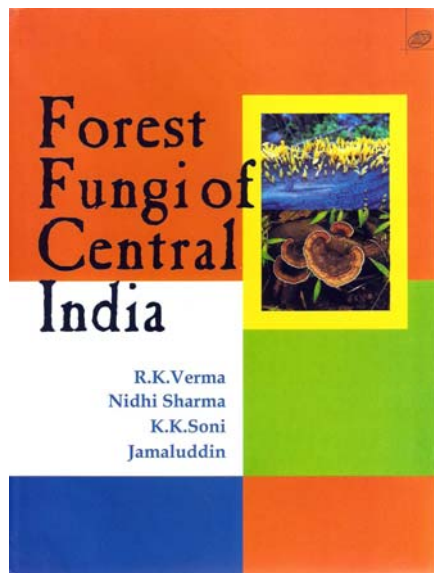
International book distribution Co.

2008, 418 pages, hardback

ISBN 81-8189-228-3

This is an attractive book on the fungi in forests of central India with full description and illustration fungi preserved at the mycology herbarium Tropical Forest Research Institute, Jabalpur, India. This comprises 17 lower fungi, 187 ascomycetes and 65 basidiomycetes arranged followed recent classifications.

Chapter 1 is an introduction and discusses the forests. Table 1 is a list of new genera, new species and new records for India in the book. It also very briefly discusses material and methods but this is very brief and unlikely to be of much use to novices.



Each section gives the Order and Family and then genus, which has a description. The entry for each species includes the species name and synonyms (this synonym part is really unnecessary as it can be obtained from *Index Fungorum* these days. There is a brief description, a drawing and/or photographic plate and material examined.

Since I know the Ascomycota best I will look more closely at some genera I know well. In this respect I like the fact that the anamorphic fungi are grouped in the correct taxonomic place, within the ascomycetes. I have studied *Phyllachora ficuum* (p 69). The entry provides the name, a description, a photograph and drawing and the material examined. Unfortunately, there is no discussion at all on the taxon.

Overall this is a reasonably written book which provides good descriptions of the taxa studied and is certainly worth obtaining. The print size is large and the drawings are good; some of the photographs could have been better printed.

Rating: ★★★

Recommendation: should be available in all college, university, research laboratories and

institutional libraries where there are courses and research in mycology or plant pathology. I recommend that all mycologists should obtain a set either personally or through their libraries.

Cost: Rs 2,100

Order from: email: ibdco@airtelbroadband.in

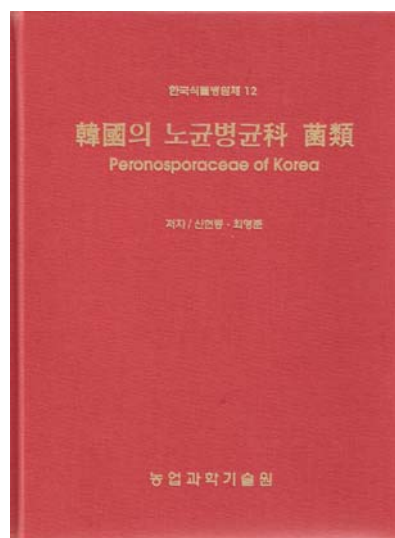
Peronosporaceae of Korea

H.D. Shin and Y.J. Choi

Plant Pathogens of Korea 12; published by National Institute of Agricultural Science and Technology, Korea

2006, 166 pages, hardback

This is an attractive book which any one interested in Plant Pathology and especially downy mildews should have. This monograph comprises descriptions of 35 species of downy mildews in 9 genera.



Chapter 1 is an introduction and discusses the history, economic importance, morphology and molecular study of this group. It includes list of downy mildews in Korea along with their host plants (Table 1).

The taxonomy section provides detailed accounts of each species, including name and reference, synonyms, literature for each species, a detailed description, habitat, specimen examined and distribution. The comprehensive notes discuss each species in detail and each species is nicely illustrated with colour pictures of the host symptoms.

There is a thorough reference list and an appendix comprising phylogenetic trees. The colour plates at the back are well reproduced

with good colours and finally there is a host index.

This is a very nice book which provides excellent detailed descriptions of the taxa studied and is certainly worth obtaining. The print size is average and the drawings and photographs are very good.

Rating: ★★★★★

Recommendation: should be available in all college, university, research laboratories and institutional libraries where there are courses and research in mycology or plant pathology. I recommend that all mycologists should obtain a set either personally or through their libraries.

Cost: unknown

Order from: hdshin@korea.ac.kr

Stress in Yeasts and Filamentous Fungi

Edited by Simon V. Avery, Malcolm Stratford and Pieter van West

Academic Press

2008, 311 pages, hardback

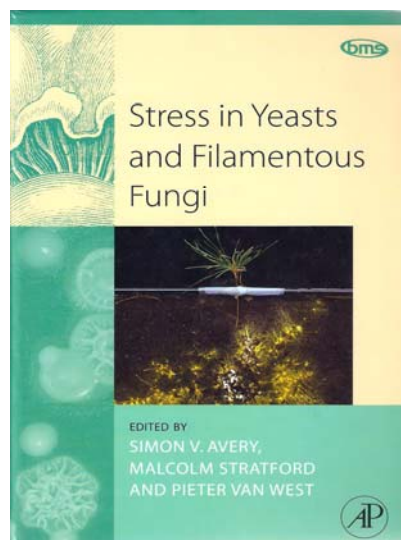
ISBN 978-0-12-374184-4

This is an attractive little book is a British Mycological Society Symposia Series resulting from the 2006 Annual Scientific Meeting of the Society in Birmingham in 2006. Well I reckon if you are willing to go to Birmingham, albeit invited, then you deserve a chapter in this book.

We all know about stress, we suffer from that at work and some at home, but this book deals with stress in yeasts and filamentous fungi. So let not wish for reincarnation as a fungus as you can still suffer from stress. So what stress do fungi suffer from?

Chapter 1 deals with interactions between *Agaricus bisporus* and its pathogens *Verticillium fungicola*. This is a very thorough chapter and certainly worth a read. Chapter 2 deals with fluxes and fungal interactions. In general it examines the by which fungi tolerate environmental stress. Chapter 3 deals with interactions between powdery mildews and *Ampelomyces*, while Chapter 4 density dependence in fungal plant pathogens. Models, stress and pathogens are the subject of Chapter 5 while Chapter 6 deals with host defense mechanism against Oomycetes. Other Chapters cover Ace2 and fungal virulence (7), yeast osmoregulation (8); oxidative stress,

fragmentation and cell death in bioreactors (9); organic acid resistance in spoilage yeasts (10); and heavy metal stress (11). Lichens and metals are the topic of Chapter 12 and stress in mycorrhizal fungi in Chapter 13. Oxidative stress and protein synthesis and dealt with in Chapter 14, and oxidative stress and cell differentiation (15), signaling and defenses (16) and oxidant-specific protein folding (17).



There is a huge amount of information in this book which certainly reveals much of the type of mycology being studied in the UK. The print size is average and the drawings and photographs are very good.

Rating: ★★★★★

Recommendation: should be available in all college, university, research laboratories and institutional libraries where there are courses and research in mycology or plant pathology. I recommend that all mycologists should obtain a set either personally or through their libraries.

Cost: US\$149.00, €124.00.

Order from: www.elsevier.com

Agaricales of New Zealand 1 reviewed by

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Tasud, Chiang Rai 57100, Thailand