

## Book Reviews

Samuels G. J., Rossmann A. Y., Chaverri P., Overton B. E., Pöldmaa K. (2006). *Hypocreales of the Southeastern United States: An Identification Guide*. – CBS Biodiversity Series 4, Centraalbureau voor Schimmelcultures (eds.), Beeld & Visie, Barn, The Netherlands: 145 pp.

An illustrated guide to 101 species and two varieties in 20 genera of Hypocreales is presented. The identification guide was developed for a workshop on the Hypocreales of the Great Smoky Mountains National Park, and the species described within this book are therefore selected with respect to this area. Dichotomous keys as well as synoptic keys to families, genera and species of Hypocreales are provided. Applied methods as well as technical terms are expatiated in the introduction part. This makes the book very useful not only for specialists but also for newcomers in this field of systematic mycology. Each taxon description is completed by excellent colour pictures (macro- and micrographs) which whet one's appetite studying these interesting fungi in detail. Helpful notes highlighting important diagnostic characters of the different species facilitate identification and recognizing.

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Crous P. W., Wingfield M. J., Slippers B., Rong I. H., Samson R. A. (2006). *100 Years of Fungal Biodiversity in southern Africa*. – *Studies in Mycology* 55: 305 pp.

In this issue of *Studies in Mycology* (SIM), an illustrious circle of mycologists contributed to the celebration of the 100<sup>th</sup> Anniversary (1905–2005) of the South African National Collection of Fungi, an event that was also the 100<sup>th</sup> anniversary of mycology in southern Africa.

After an introductory paper, which offers a lot of amazing background information and historical facts on the PREM (acronym for the South African National Collection of Fungi; PREtoria and M for 'mycological') (Rong and Baxter), Crous *et al.* profoundly review questions concerning the biodiversity of fungi in general, and, consequently, they are focusing on South Africa as one of the world's biodiversity "hotspots": more than 200 000 species of fungi can be found there.

Having read the first two contributions to this special volume of SIM, it becomes already clear that this is not a "southern Africa issue": an assemblage of 18 additional high quality papers offer a huge amount of information/data on fungal systematics of global importance. The quality of these papers is characterised throughout by a polyphasic approach (I would prefer the term 'multilevel' instead of 'polyphasic') that takes into account all available phenotypic, genotypic, and ecological data integrating them in a consensus type of classification, framed in a general phylogeny derived from DNA comparisons. Documentation and illustration of data is exemplary: the 305 pages (incl. Preface

and Index) are equipped with some 591 macro- and micrographs (416 of them in colour) and 17 line drawings, most of them in excellent quality. Phylogenies based on DNA sequences are represented by 41 trees. One hundred and one new entities are introduced (1 family, 10 genera, 37 species, 1 forma, and 52 new combinations).

Because a more detailed discussion of the single contributions is beyond the scope of a book review (and certainly beyond my mycological competence), I list here only the titles of the 18 taxonomic papers:

- Microthia*, *Holocryphia* and *Ursicollum*, three new genera on *Eucalyptus* and *Coccoloba* for fungi previously known as *Cryphonectria* (Gryzenhout *et al.*).
- Eucalyptus* microfungi known from culture. 1. *Cladoriella* and *Fulvoflamma* genera nova, with notes on some other poorly known taxa (Crous *et al.*).
- Characterisation of *Phomopsis* spp. associated with die-back of rooibos (*Aspalathus linearis*) in South Africa (Janse van Rensburg *et al.*).
- Multi-gene phylogenies define *Ceratocystiopsis* and *Grosmannia* distinct from *Ophiostoma* (Zipfel *et al.*).
- Phylogenetic reassessment of *Mycosphaerella* spp. and their anamorphs occurring on *Eucalyptus*. II. (Crous *et al.*).
- Multi-gene phylogenies and phenotypic characters distinguish two species within the *Colletogloeopsis zuluensis* complex associated with *Eucalyptus* stem cankers (Cortinas *et al.*).
- A multi-gene phylogeny for species of *Mycosphaerella* occurring on *Eucalyptus* leaves (Hunter *et al.*).
- Re-evaluating the taxonomic status of *Phaeoisariopsis griseola*, the causal agent of angular leaf spot of bean (Crous *et al.*).
- Pestalotioid fungi from *Restionaceae* in the Cape Floral Kingdom *DNA sequence comparisons* (Lee *et al.*).
- Species of *Cercospora* associated with grey leaf spot of maize (Crous *et al.*).
- Multi-gene phylogeny for *Ophiostoma* spp. reveals two new species from *Protea* infructescences (Roets *et al.*).
- Calonectria* species and their *Cylindrocladium* anamorphs: species with clavate vesicles (Crous *et al.*).
- Neonectria liriodendri* sp. nov., the main causal agent of black foot disease of grapevines (Halleen *et al.*).
- Phylogenetic lineages in the *Botryosphaeriaceae* (Crous *et al.*).
- Celoportha dispersa* gen. et sp. nov. from native *Myrtales* in South Africa (Nakabonge *et al.*).
- DNA sequence comparisons of *Ophiostoma* spp., including *Ophiostoma aurorae* sp. nov., associated with pine bark beetles in South Africa (Zhou *et al.*).
- A disease epidemic on *Zizyphus mucronata* in the Kruger National Park caused by *Conidictyum chevalieri* (Maier *et al.*).
- Phylogeny of the *Quambalariaceae* fam. nov., including important *Eucalyptus* pathogens in South Africa and Australia (Wilhelm de Beer *et al.*).

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Gams W. (2006). *Hypocrea* and *Trichoderma* studies marking the 90<sup>th</sup> birthday of Joan M. Dingley. – *Studies in Mycology* 56: 179 pp.

After issues 41, 42, 46, and 48 of the CBS-series *Studies in Mycology*, this is a further jigsaw piece to the systematics of this ecologically and economically important group of ascomycetes. In four articles morphological hypotheses of anamorph and teleomorph taxonomy are tested by multiple-gene analyses. In the

first article, Overton and co-workers revise the taxonomy of *Hypocrea citrina* an allied species by means of DNA sequence analyses from three genomic regions as well as by morphological studies. A neotype for *Hypocrea citrina* (Pers.: Fr.) Fr. is designated. *Hypocrea lactea* (Fr.: Fr.) Fr. and *H. pulvinata* Fuckel are lectotypified. *Hypocrea citrina* var. *americana* is raised to species level, *Hypocrea americana* (Canham) Overton. A new species, *H. aurantiistroma* Overton is described.

Nine species of *Hypocrea* Fr. with effused stromata are newly described or re-described in the second article of the issue: *Hypocrea victoriensis* Overton, *H. parmastoi* Overton, and *H. alcalifuscescens* Overton are described as new to science. *Hypocrea eucorticoides* Overton is proposed as new name for *H. corticioides* Speg.

Ten new species and one new variety are described by Samuels *et al.* within three well-separated phylogenetic lineages of the *Trichoderma koningii* aggregate: *Trichoderma austrokoningii*/*Hypocrea austrokoningii* Samuels & Druzhinia, *T. carribaeum*/*H. carribaeum* Samuels & Schroers, *T. carribaeum* var. *aequatoriale* Samuels & H. C. Evans, *T. dingleyae*/*H. dingleyae* Samuels & Dodd, *T. dorotheae*/*H. dorotheae* Samuels & Dodd, *T. intricatum*/*H. intricata* Samuels & Dodd, *T. konigiopsi*/*H. konigiopsis* Samuels *et al.*, *T. peterenii*/*H. petersenii* Samuels *et al.*, *T. rogersonii*/*H. rogersonii* Samuels, *T. stilbohypoxyli* Samuels & Schroers, and *T. taiwanense*/*H. taiwanense* Samuels & M. L. Wu.

Jaklitsch *et al.* provide solutions to the intricate and important problem of clarifying the identity of *Trichoderma viride*. An epitype of *T. viride* is designated and five new, closely related species are described: *Hypocrea viridescens* Jaklitsch & Samuels, *T. gamsii* Samuels & Druzhina, *T. vinosum* Samuels, *T. neokoningii* Samuels & Soberanis, and *T. scalesiae* Samuels & H. C. Evans.

In all studies, combinations of phenotype (morphology of teleomorphs and anamorphs, and characteristics in culture) and phylogenetic analyses were applied. Illustrations, many of them in colour, are in "CBS-quality": excellent and highly informative.

The editor remarks within the introduction to this book that most of the common *Trichoderma* species "are now known and can be identified easily if one has access to DNA sequencing". I am convinced that besides molecular data, the excellent descriptions of the species as well as the dichotomous keys provided in each chapter will still have their value as an aid for classical identification too.

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