

## Book review

***Phoma* identification manual. Differentiation of specific and infra-specific taxa in culture.** G.H. Boerema, J. de Gruyter, M.E. Noordeloos and M.E.C. Hamers. 448 pp. CABI Publishing, CAB International, Wallingford, UK. ISBN-0-85199-743-0. £75.00; US\$140.00.

The genus *Phoma* is very large and comprises a multitude of species. Some of them are of great economic importance and have been known under many different names since they were first described. It is important, therefore, to be able to distinguish and identify species belonging to this genus. The present book gives an overview of the genus and provides help for species identification. The text is very thorough and detailed throughout. This is not surprising since the authors are leading experts on *Phoma* taxonomy. The book is generally very clearly written and a great effort is made to help the user through the often difficult task of identifying *Phoma* species.

The book contains 17 chapters, followed by references, an index of fungal species included in the book (with synonyms) as well as an index of substrata from where *Phoma* may be isolated. Chapters 1 to 7 contain background information for successful identification of a species. The book uses mainly *in vitro* growth characters for identification purposes and the Introduction in Chapter 1 gives the background for this and stresses the importance of conidiogenesis. Chapter 2 is very short and provides an overview of the naming and subdivision of the genus into sections, with teleomorphs and synanamorphs. Chapter 3 is also very short and contains information on how conidia are produced and their characteristics. Chapter 4 is slightly longer and sums up all the characters and methods used for identification of a particular species. This starts with *in vivo* information (where it is possible to obtain this) and continues with descriptions of *in vitro* structures and characteristics. A test is also included, namely the NaOH spot test, the result of which is shown in the only, but very useful, colour plate in the book. Chapter 5 gives keys for identification in the nine sections to

which a particular species might belong and Chapter 6 contains descriptions of genera which resemble the genus *Phoma* and therefore often may be the cause of misidentifications. The last of the introductory chapters (Chapter 7) contains a list of taxonomic abbreviations and synonyms used in the actual descriptions of *Phoma* species.

All the presented background information is relevant for identification of a species and the fact that the authors put such effort into presenting this information shows that they know their subject very well and where problems might arise. For example, misidentification of *Phoma* species especially from species belonging to the genera *Ascochyta* and *Phyllosticta* has always been a problem and this is addressed in Chapter 6.

There are only a very few points which one could have wished were slightly different. Some of the chapters are very short and these could have been combined with others to provide more clarity to the text. Thus, I think it would have been better to merge Chapters 2 and 5 dealing with division of the genus into sections. Likewise, the information on conidiogenesis in Chapters 1 and 3 could also have been combined. However, these are minor points. A second point I would like to mention is that it would have been very helpful to have some additional explanations of terms used in the book. A list of some taxonomic abbreviations etc. is given in Chapter 7 (the title: 'Entries to the species per section' may appear a bit puzzling), but why are only these abbreviations explained? Other terms related to taxonomy are used without explanation. For the experienced taxonomist, such terms are already well-known and therefore explanations are not needed. However, considering that many of the potential users of this book may not be taxonomists, it would have been useful to make a more exhaustive list for a particular chapter, e.g. at the back of the book. I also think it would be helpful to have a list of explanations of terms relating to, amongst others, morphology, especially as some characters are difficult to use.

The major part of the book (Chapters 8–16) contains descriptions of the nine different sections

into which the genus is divided and the species belonging to these sections. The last chapter (17) contains a miscellaneous group of *Phoma*-like species, which have not yet been classified. These chapters start with descriptions of characteristics of the section, keys for species identification, notes on the possibilities for *in vivo* identification and distribution among host species and other substrata. After the introduction to a section, a detailed description of each species is given, with name, synonyms, *in vitro* morphology, ecology and distribution. Where necessary, detailed line drawings of fungal structures are included.

Basing identification of a species on only one set of characters is sometimes very difficult. The fact that the book combines all available information relevant for identification makes it a very efficient tool for serving its purpose. There are extensive lists of synonyms and previous names of species considered to belong to the genus *Phoma*. I think

the lists are generally complete. However, I was looking for the wheat glume blotch pathogen now known as *Stagonospora nodorum*, but without success, as this organism was previously named *Phoma hennebergii* Kühn according to Sutton and Waterston (1966) [C.M.I. Descriptions of Pathogenic Fungi and Bacteria No. 86].

In conclusion, I found this book to be a very important and valuable tool for identification of *Phoma* and I believe it will and should be found in many laboratories in the future.

HANS J. LYNDS JØRGENSEN  
The Royal Veterinary and Agricultural University  
Department of Plant Biology  
Thorvaldsensvej 40  
DK-1871 Frederiksberg C  
Denmark