

BOOK REVIEWS

Błaszowski, J. 2012

Glomeromycota

W. Szafer Institute of Botany, Polish Academy of Sciences,
Kraków, 303 pp. ISBN 978-83-89648-82-2

Melania Gyosheva

Department of Plant and Fungal Diversity
and Resources, Institute of Biodiversity and
Ecosystem Research, Bulgarian Academy of
Sciences, Acad. Georgi Bonchev St. bl. 23, 1113
Sofia, Bulgaria, e-mail: gyosheva@bio.bas.bg.

The book presents the results of long-term investigations into the arbuscular mycorrhizal fungi (AMF) of the phylum *Glomeromycota* provided by Janusz Błaszowski.

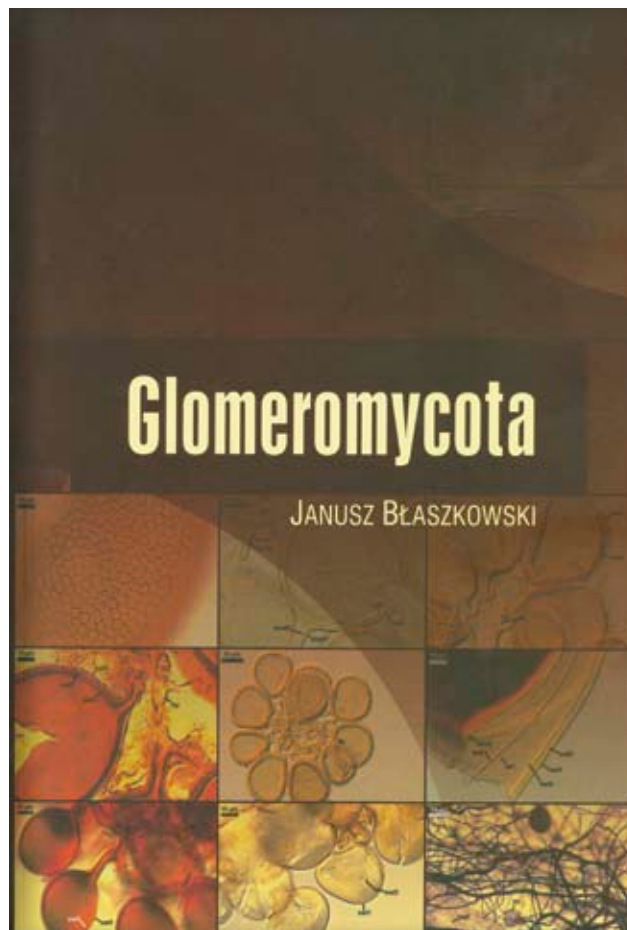
The arbuscular mycorrhizal fungi of this phylum form AMF associations with the roots of 70-90% of the terrestrial plants (Smith & Read 2008).

The author has verified the characters of 135 species, applying the uniform criteria. Most of the species collected by him come from maritime sandy dunes in different regions of the world and in rhizosphere soils of different cultivated plant species and inland dune and non-dune noncultivated plant species growing mainly in Poland.

Detailed methods are provided for collection of mixtures of rhizosphere soils and roots, isolation of spores, establishment of trap and one-species cultures, preparation of diagnostic slides, and determination of wall layers of spores and mycorrhizae.

The life cycle, significance, and structures of arbuscular mycorrhizae are described profoundly in the book.

Definitions of morphological and biochemical characters of spores are presented in a separate chapter of the book. The morphological features of sub-cellular structures of spores (spore wall, inner walls, pregermination structures) are also specified. Each component part of AMF spore structures contains unique phenotypic data and biochemical specificities of great diagnostic significance.



In the chapter “Taxonomy and classification of arbuscular mycorrhizal fungi”, the author presents all so far used systems for classification of these fungi, and outlines the present division of the phylum *Glomeromycota*: four orders (*Archaeosporales*, *Diversisporales*, *Glomerales*, *Paraglomerales*), 10 families and 14 genera. The basionyms and synonyms of all species of the *Glomeromycota* described to date are listed down too.

According to the author, “The fungi forming arbuscules in the roots of plants have always created great taxonomic problems, mainly because of the difficulty of extracting their spores from the soil and maintaining the fungi in culture”.

The major part of the book is occupied by the chapter “Orders, families, genera, and species of the *Glomeromycota*”. Dichotomous keys to orders of the phylum are provided and the characters of all taxa included in the book are defined.

Description of each species includes the mode and site of spore formation and germination, the morphological features of sporocarps, spores and its subcellular structures. The features of mycorrhizae structures are also characterized. Following the descriptions, the phylogenetic position of each taxon, its distribution and habitats in Poland and other regions of the world, and the specimens examined are presented. The microphotographs showing the diagnostic characters of sporocarps, spores and spore wall layers of each species illustrate very well the descriptions.

At the end of the book, there is a list of cited references, list of geographical sites and indexes of fungal names and of plant species.

The book will be undoubtedly of great help to mycologists, botanists and ecologists interested in mycorrhizal fungi and especially in arbuscular mycorrhizae.

Smith, S. E. & Read, D.J. 2008. Mycorrhizal Symbiosis. 3rd ed. Academic Press, San Diego.