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Book review

Mycorrhizas: Anatomy and Cell Biology

by R. Larry Peterson, Hugues B. Massicotte, and Lewis H. Melville

NRC Research Press, CABI Publishing, Ottawa (2004), XXXIV, 173 pages, 271 figures, ISBN 0-660-19087-7

This is an excellent book that should be present on the desk of every plant biologist who teaches mycology, plant ecology, plant physiology or biotechnology. It will be also extremely valuable for students intending to specialize in mycorrhiza and for those willing to understand how ecosystems function or to discover the beauty of the underground world, its ecological importance and its applicability. The book will be as well very useful for secondary school teachers and might strongly influence their students and even can arouse their interest in discovering a world so far hidden to them.

The illustrations gathered in the book are absolutely impressive and have nothing comparable in the literature, gathering all types of mycorrhizal symbiosis in the same volume. They include detailed color diagrams and high-quality photographs of fungal fruitbodies, plants that form the symbiosis and mycorrhizas taken from under the binocular, as well as high resolution microscopy images (obtained with conventional light microscopy and with Nomarski DIC, fluorescence microscopy and various staining techniques) and also high quality scanning and transmission electron microscope images. The images are very helpful in understanding the mycorrhizal structures and functioning.

The book is well organized with a general introduction followed by chapters, each devoted to an individual type of mycorrhiza and including the definition, information on plant and fungal species involved and description of the morphology and anatomy. Each chapter starts with a picture composed of several images of the sites where the mycorrhiza plays an important role. I like this kind of a puzzle with soft-edge images. It takes less place than several individual photos and by its novelty stimulates our thinking. Some of these pictures are real art, a mycorrhizalogist's dream.

The book was not intended to provide a review of research on individual mycorrhizal types – this is already available in the book by Smith and Read (1997, *Mycorrhizal Symbiosis*, Academic Press, London) and is continuously being reviewed and updated in various journals. The authors, however, besides the general description of the mycorrhizas, gave well condensed information on special topics that mostly deal with the functioning of mycorrhiza and pinpointed the important questions that should be addressed in the near future. This will certainly be appreciated by new students getting familiar with mycorrhiza.

The book by Peterson, Massicotte and Melville perfectly fills the gap between practical manuals such as the book by Brundrett et al. (1996, *Working with Mycorrhizas in Forestry and Agriculture*, ACIAR Monograph 32) which is another extremely useful source of knowledge on mycorrhiza, and the literature available so far, including published review papers. The book also includes a description of the most important methods used in studies on mycorrhiza, in the form of appendices.

In many countries, despite the very vigorously developing mycorrhizal research, there is still no bridge between mycorrhiza researchers and people working on plant ecology and physiology. The book is highly recommendable to build or to strengthen such bridges. Its quality guarantees that this is a book of a lasting value and I believe that it should find its place at least in each university library.

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