**Medically Important Fungi, 5th ed.**


Broad arrays of fungal diseases play an increasingly important role in human disease, especially as we continue to generate large numbers of immunologically altered hosts through a wide array of medical interventions. Hence, timely diagnosis of fungal pathogens is a critical task of the microbiology laboratory. Prior editions of Dr Larone’s *Medically Important Fungi* have been key resources for clinical laboratories worldwide. The fifth edition of this textbook is particularly well positioned to continue to serve as an essential clinical laboratory companion as it builds on the rich material of the prior editions by detailing new information about fungal species, presenting new images, describing additional laboratory methodologies, and broadly updating relevant references as well as adding evolving methodologies for the molecular detection and identification of fungi. In fact, the textbook is 101 pages longer than the prior edition. Part of the beauty of this textbook is the pairing of detailed images (photomicrographs and line drawings) with remarkably clear and concise presentations of information to efficiently facilitate the identification of fungal pathogens.

This exceptional fifth edition guide to the identification of medically relevant fungal pathogens is comprised of four parts. Part I, written in collaboration with Drs Joan Barenfanger and Sara B. Peters, expertly focuses on the direct microscopic examination of clinical specimens. The direct microscopy portion is divided into a presentation of histological terminology, tissue reactions to fungal reaction, basic fungal stains, a brief guide to the interpretation of direct microscopic examination, and detailed descriptions of individual organisms. The intent of this section is to prepare microbiologists for participating in collaborative diagnostic efforts with members of anatomical pathology laboratories. Part II is simply outstanding, providing a wealth of information for the hands-on identification of fungi in culture. Part II is divided into 2 sections, with the first part presenting a guide to identification and the second section detailing individual fungi. The descriptions, encompassing pages 101–314, provide focused information about pathogenicity, growth rates, colony morphology, and microscopic morphology. Additionally, there are tables detailing the production of hyphae, pseudohyphae, conidia, and other structures by specific species as well as details on the utilization of sugars and other compounds. Part III provides instruction on basic methods for the molecular identification of fungi and is coauthored with Dr Sanchita Das. However, the information is not sufficient for functionally performing the assays. Nevertheless, lead fungal targets are described and prevalent molecular methodologies are reviewed. A gold mine of information, part IV details mycological laboratory techniques, including instructions on media, fungal cultivation methods, and staining techniques. Additionally, there is a comprehensive glossary of terms as well as a list of important, helpful references and recommended websites. Furthermore, safety precautions as well as methods for cultivating and shipping samples are clearly presented.

The images of the fifth edition are central to its usefulness as a guide. In particular, the detailed descriptions in part II include a line drawing and photomicrograph of each species as they typically appear on standard laboratory media. Along with these images, 167 color plates have been selected to enhance written descriptions of certain fungi. For example, there is a hematoxylin and eosin stain of tissue containing Langerhans giant cells engaging a *Coccidioides* spherule and a Gomori methenamine silver stain of invasive *Aspergillus*. Additionally, there are photographs of pigment formation by different fungi, diverse colony morphotypes, and a variety of biochemical reactions.

Since the publication of the first edition by Dr Larone in 1976, the overarching theme of the textbook has been to serve as a functional guide for laboratory technicians at the clinical mycology bench. The organization of the guide deliberately presents information such that fungi can frequently be efficiently identified by characteristics as simple as those obtained by observing the macroscopic growth and microscopic morphology of an isolated specimen. The focus on identification deliberately largely avoids the pathobiological aspects of the fungi as well as the clinical management, but appropriate comprehensive references are provided for these purposes. Nevertheless, in addition to laboratory technologists, the fifth edition will be particularly informative to students of laboratory medicine, microbiologists, pathologists, and infectious diseases physicians. Without question, it is expected that this edition will be nearly omnipresent on clinical mycology laboratory benches for hands-on, daily use in fungal diagnosis as well as for clinical instruction.
Note

Potential conflicts of interest. Author certifies no potential conflicts of interest.

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