Contents

1. Introduction 1

2. Clinical Presentation of Fungal Keratitis 3

3. Specimen Collection 15

4. Staining Procedure for Rapid Identification of Fungi 19
- Light Microscopy 19
- KOH 19
- Gram 25
- Grocott-Gomori Methenamine Silver (GMS) Stain 30
- Fluorescent Microscopy 31
- Calcofluor White Staining 31
- KOH—Calcofluor White Procedure 32

5. Recommendations for Isolation of Fungi from Ocular Specimens 33
- Recommended Media 33
- Routine Processing of Ocular Specimens 34

6. Incubation and Processing of Cultures in the Laboratory 37
- Incubation Requirements 37
- Processing of Cultures 38

7. Identification of Common Ocular Fungal Isolates 39
- Colony Characteristics 39
- Lactophenol Cotton Blue Mounting Media 39
- Direct Examination of a Portion of the Colony 40
- Adhesive Tape Technique 40
- Slide Culture Technique 40
- Simplified Slide Culture Technique 41

8. Macroscopic and Microscopic Characteristics of Ocular Fungal Isolates 43
- *Acremonium* 43
- *Alternaria* 46
- *Aspergillus species* 48
- *Aspergillus flavus* 50
- *Aspergillus fumigatus* 52
- *Aspergillus niger* 54
- *Aspergillus terreus* 56
- *Aspergillus nidulans* 58
- *Aspergillus tamarii* 60

- *Bipolaris* 62
- *Candida* 64
- *Cephaliophora irregularis* 66
- *Cladosporium* 68
- *Colletotrichum* 70
- *Curvularia* 74
- *Exserohilum* 76
- *Fusarium* 78
- *Lasiodiplodia theobromae* 82
- *Neocosmospora vasinfecta* 84
- *Paecilomyces* 86
- *Penicillium* 88
- *Phialophora* 90
- *Rhizopus* 92
- *Scedosporium apiospermum* 94

9. Molecular-based Diagnostics for Ocular Fungal Infections 98

10. Treatment of Fungal Keratitis 102
- Preparation of Amphotericin B 103

Appendix *109*

Bibliography *115*

Glossary *119*

Index *147*