

Contents

Preface	xi
1. <i>Acremonium</i>	1
2. <i>Acrophialophora fusispora</i>	3
3. <i>Alternaria</i>	5
4. <i>Aphanoascus fulvescens</i>	7
5. <i>Apiotrichum</i>	9
5.1. <i>Apiotrichum domesticum</i> (syn. <i>Trichosporon domesticum</i>)	9
5.2. <i>Apiotrichum loubieri</i> (syn. <i>Trichosporon loubieri</i>)	10
5.3. <i>Apiotrichum mycotoxinovorans</i> (syn. <i>Trichosporon mycotoxinovorans</i>)	11
6. <i>Apophysomyces</i> complex	12
6.1. <i>Apophysomyces elegans</i>	12
6.2. <i>Apophysomyces variabilis</i>	13
7. <i>Arthroderma</i>	15
7.1. <i>Arthroderma terrestre</i> (syn. <i>Trichophyton terrestre</i>)	15
7.2. <i>Arthroderma uncinatum</i> (syn. <i>Trichophyton ajelloi</i>)	16
8. <i>Arthrographis kalrae</i>	18
9. <i>Aspergillus</i>	20
9.1. <i>Aspergillus felis</i>	22
9.2. <i>Aspergillus fischeri</i> (syn. <i>Neosartorya fischeri</i>)	23
9.3. <i>Aspergillus flavus</i>	24
9.4. <i>Aspergillus fumigatus</i>	26
9.5. <i>Aspergillus lentulus</i>	27
9.6. <i>Aspergillus nidulans</i>	28
9.7. <i>Aspergillus niger</i>	30
9.8. <i>Aspergillus terreus</i>	31
10. <i>Aureobasidium pullulans</i>	33
11. <i>Basidiobolus ranarum</i>	35
12. <i>Beauveria bassiana</i>	37
13. <i>Bipolaris</i>	39
14. <i>Blastomyces</i>	40
14.1. <i>Blastomyces dermatitidis</i>	41
15. <i>Candida</i>	43
15.1. <i>Candida albicans</i>	46
15.2. <i>Candida auris</i>	47
15.3. <i>Candida bracarensis</i>	49
15.4. <i>Candida dubliniensis</i>	50
15.5. <i>Candida glabrata</i>	51
15.6. <i>Candida haemuloni</i>	52
15.7. <i>Candida inconspicua</i>	54
15.8. <i>Candida metapsilosis</i>	55
15.9. <i>Candida nivariensis</i>	56
15.10. <i>Candida orthopsilosis</i>	57
15.11. <i>Candida parapsilosis</i>	58
15.12. <i>Candida tropicalis</i>	59

16. <i>Chaetomium</i>	61
17. <i>Chrysosporium</i>	63
17.1. <i>Chrysosporium tropicum</i>	63
18. <i>Cladophialophora</i>	65
18.1. <i>Cladophialophora bantiana</i>	65
18.2. <i>Cladophialophora carrionii</i>	66
19. <i>Cladosporium</i>	68
20. <i>Clavispora lusitaniae</i> (syn. <i>Candida lusitaniae</i>)	70
21. <i>Coccidioides immitis/posadasii</i>	72
22. <i>Colletotrichum coccodes</i>	75
23. <i>Conidiobolus coronatus</i>	77
24. <i>Coniochaeta hoffmannii</i> (syn. <i>Lecythophora hoffmannii</i> ; <i>Phialophora hoffmannii</i>)	79
25. <i>Cryptococcus</i>	81
25.1. <i>Cryptococcus gattii</i> complex	82
25.2. <i>Cryptococcus neoformans</i> complex	84
26. <i>Cunninghamella bertholletiae</i>	86
27. <i>Curvularia</i>	88
27.1. <i>Curvularia australiensis</i> (syn. <i>Bipolaris australiensis</i>)	88
27.2. <i>Curvularia hawaiiensis</i> (syn. <i>Bipolaris hawaiiensis</i>)	89
27.3. <i>Curvularia lunata</i>	90
27.4. <i>Curvularia spicifera</i> (syn. <i>Bipolaris spicifera</i>)	91
28. <i>Cutaneotrichosporon</i>	92
28.1. <i>Cutaneotrichosporon cutaneum</i> (syn. <i>Trichosporon cutaneum</i>)	92
28.2. <i>Cutaneotrichosporon dermatis</i> (syn. <i>Trichosporon dermatis</i>)	93
28.3. <i>Cutaneotrichosporon jirovecii</i> (syn. <i>Trichosporon jirovecii</i>)	94
28.4. <i>Cutaneotrichosporon mucoides</i> (syn. <i>Trichosporon mucoides</i>)	95
29. <i>Cyberlindnera fabianii</i> (syn. <i>Candida fabianii</i>)	96
30. <i>Cylindrocarpon</i>	98
31. <i>Debaryomyces hansenii</i> (syn. <i>Candida famata</i>)	99
32. <i>Diutina</i>	101
32.1. <i>Diutina catenulata</i> (syn. <i>Candida catenulata</i>)	101
32.2. <i>Diutina rugosa</i> (syn. <i>Candida rugosa</i>)	102
33. <i>Drechslera</i>	104
34. <i>Emergomyces</i>	105
35. <i>Epicoccum nigrum</i>	106
36. <i>Epidermophyton floccosum</i>	107
37. <i>Exophiala</i>	109
37.1. <i>Exophiala dermatitidis</i>	109
37.2. <i>Exophiala jeanselmei</i> complex	110
37.3. <i>Exophiala spinifera</i> complex	112
38. <i>Exserohilum</i>	114
38.1. <i>Exserohilum rostratum</i>	114
39. <i>Fonsecaea</i> complex	116
40. <i>Fusarium</i>	118
40.1. <i>Fusarium chlamydosporum</i> complex	120
40.2. <i>Fusarium dimerum</i> complex	121
40.3. <i>Fusarium fujikuroi</i> complex	122
40.4. <i>Fusarium incarnatum-equiseti</i> complex	122
40.5. <i>Fusarium oxysporum</i> complex	123
40.6. <i>Fusarium solani</i> complex	124
41. <i>Geotrichum candidum</i> (syn. <i>Dipodascus geotrichum</i> , <i>Galactomyces candidus</i>)	126
42. <i>Gliocladium</i>	128

43. <i>Graphium</i>	129
44. <i>Histoplasma capsulatum</i> complex	130
45. <i>Hortaea werneckii</i>	132
46. <i>Kluyveromyces marxianus</i> (syn. <i>Candida kefyr</i> ; <i>Candida pseudotropicalis</i>)	134
47. <i>Lasiodiplodia theobromae</i> (syn. <i>Botryodiplodia theobromae</i>)	136
48. <i>Lichtheimia corymbifera</i> (syn. <i>Mycocladius corymbifera</i> ; <i>Absidia corymbifera</i>)	138
49. <i>Lodderomyces elongisporus</i>	140
50. <i>Lomentospora prolificans</i> (syn. <i>Scedosporium prolificans</i>)	142
51. <i>Lophophyton gallinae</i> (syn. <i>Microsporium gallinae</i>)	144
52. <i>Madurella</i> complex	146
52.1. <i>Madurella mycetomatis</i>	146
53. <i>Magnusiomyces</i>	148
53.1. <i>Magnusiomyces capitatus</i> (syn. <i>Saprochaete capitata</i> ; <i>Geotrichum capitatum</i>)	148
53.2. <i>Magnusiomyces clavatus</i> (syn. <i>Saprochaete clavata</i> ; <i>Geotrichum clavatum</i>)	149
54. <i>Malassezia</i>	151
55. <i>Malbranchea pulchella</i>	154
56. <i>Marquandomyces marquandii</i> (syn. <i>Paecilomyces marquandii</i>)	156
57. <i>Meyerozyma guilliermondii</i> (syn. <i>Candida guilliermondii</i>)	158
58. <i>Microsphaeropsis arundinis</i>	160
59. <i>Microsporium</i>	162
59.1. <i>Microsporium audouinii</i>	162
59.2. <i>Microsporium canis</i>	164
59.3. <i>Microsporium ferrugineum</i>	167
60. <i>Mortierella wolfii</i>	168
61. <i>Mucor</i>	170
61.1. <i>Mucor amphibiorum</i>	171
61.2. <i>Mucor circinelloides</i>	172
61.3. <i>Mucor indicus</i>	173
61.4. <i>Mucor irregularis</i> (syn. <i>Rhizomucor variabilis</i>)	174
61.5. <i>Mucor ramosissimus</i>	174
62. <i>Myrmecridium schulzeri</i> (syn. <i>Ramichloridium schulzeri</i>)	175
63. <i>Naganishia albida</i> (syn. <i>Cryptococcus albidus</i>)	177
64. <i>Nannizzia</i>	179
64.1. <i>Nannizzia fulva</i> (syn. <i>Microsporium fulvum</i>)	179
64.2. <i>Nannizzia gypsea</i> (syn. <i>Microsporium gypseum</i>)	180
64.3. <i>Nannizzia nana</i> (syn. <i>Microsporium nanum</i>)	181
64.4. <i>Nannizzia persicolor</i> (syn. <i>Microsporium persicolor</i>)	183
65. <i>Neoscytalidium dimidiatum</i> (syn. <i>Hendersonula toruloidea</i>)	184
66. <i>Ochroconis</i>	186
67. <i>Onychocola canadensis</i>	187
68. <i>Paecilomyces variotii</i>	188
69. <i>Papiliotrema laurentii</i> (syn. <i>Cryptococcus laurentii</i>)	190
70. <i>Paracoccidioides brasiliensis/lutzii</i>	192
71. <i>Paraphyton cookei</i> (syn. <i>Microsporium cookei</i>)	194
72. <i>Penicillium</i>	196
73. <i>Phaeoacremonium parasiticum</i> (syn. <i>Phialophora parasiticum</i>)	199
74. <i>Phialophora verrucosa</i>	201
75. <i>Phoma</i>	203
76. <i>Pichia</i>	205
76.1. <i>Pichia kudriavzevii</i> (syn. <i>Candida krusei</i>)	205
76.2. <i>Pichia norvegensis</i> (syn. <i>Candida norvegensis</i>)	206
77. <i>Pleurostoma richardsiae</i> (syn. <i>Pleurostomophora richardsiae</i> ; <i>Phialophora richardsiae</i>)	208

78. <i>Pneumocystis jirovecii</i>	210
79. <i>Prototheca</i>	212
80. <i>Pseudopithomyces chartarum</i> (syn. <i>Pithomyces chartarum</i>)	214
81. <i>Purpureocillium lilacinum</i> (syn. <i>Paecilomyces lilacinus</i>)	216
82. <i>Quambalaria cyanescens</i> (syn. <i>Sporothrix cyanescens</i>)	218
83. <i>Rhinocladiella</i>	220
83.1. <i>Rhinocladiella atrovirens</i>	220
83.2. <i>Rhinocladiella mackenziei</i>	221
84. <i>Rhizomucor</i>	222
84.1. <i>Rhizomucor miehei</i>	222
84.2. <i>Rhizomucor pusillus</i>	223
85. <i>Rhizopus</i>	225
85.1. <i>Rhizopus arrhizus</i> (syn. <i>Rhizopus oryzae</i>)	225
85.2. <i>Rhizopus microsporus</i>	227
86. <i>Rhodotorula</i>	229
86.1. <i>Rhodotorula glutinis</i>	229
86.2. <i>Rhodotorula mucilaginosa</i> (syn. <i>Rhodotorula rubra</i>)	230
87. <i>Saccharomyces cerevisiae</i>	232
88. <i>Saksenaea vasiformis</i> complex	234
88.1. <i>Saksenaea vasiformis</i>	234
89. <i>Sarocladium</i>	237
89.1. <i>Sarocladium strictum</i> (syn. <i>Acremonium strictum</i>)	237
90. <i>Scedosporium</i>	239
90.1. <i>Scedosporium apiospermum</i>	239
90.2. <i>Scedosporium aurantiacum</i>	241
90.3. <i>Scedosporium boydii</i> (syn. <i>Pseudallescheria boydii</i>)	242
91. <i>Schizophyllum commune</i>	244
92. <i>Scopulariopsis</i>	246
93. <i>Sepedonium</i>	248
94. <i>Sporothrix schenckii</i> complex	249
94.1. <i>Sporothrix schenckii</i>	249
95. <i>Stemphylium</i>	251
96. <i>Syncephalastrum racemosum</i>	252
97. <i>Talaromyces marneffeii</i> (syn. <i>Penicillium marneffeii</i>)	254
98. <i>Torulasporea delbrueckii</i> (syn. <i>Candida colliculosa</i>)	256
99. <i>Trematosphaeria grisea</i> (syn. <i>Madurella grisea</i>)	258
100. <i>Trichoderma</i>	259
101. <i>Trichophyton</i>	261
101.1. <i>Trichophyton concentricum</i>	261
101.2. <i>Trichophyton equinum</i>	263
101.3. <i>Trichophyton erinacei</i>	264
101.4. <i>Trichophyton interdigitale</i>	266
101.5. <i>Trichophyton mentagrophytes</i>	269
101.6. <i>Trichophyton quinkeanum</i>	271
101.7. <i>Trichophyton rubrum</i>	273
101.8. <i>Trichophyton schoenleinii</i>	275
101.9. <i>Trichophyton soudanense</i>	276
101.10. <i>Trichophyton tonsurans</i>	277
101.11. <i>Trichophyton verrucosum</i>	279
101.12. <i>Trichophyton violaceum</i>	282
102. <i>Trichosporon</i>	283
102.1. <i>Trichosporon asahii</i>	284

102.2. <i>Trichosporon asteroides</i>	285
102.3. <i>Trichosporon inkin</i>	285
102.4. <i>Trichosporon ovoides</i>	287
103. <i>Trichothecium roseum</i>	288
104. <i>Ulocladium</i>	290
105. <i>Veronaea botryosa</i>	292
106. <i>Verruconis gallopava</i> (syn. <i>Ochroconis gallopava</i>)	294
107. <i>Verticillium</i>	296
108. <i>Wickerhamomyces anomalus</i> (syn. <i>Candida pelliculosa</i>)	297
109. <i>Yarrowia lipolytica</i> (syn. <i>Candida lipolytica</i>)	299
110. Microscopy stains and techniques	301
110.1. KOH with Calcofluor white or Blankophor BA	301
110.2. KOH with Chlorazol Black	302
110.3. India ink mounts	302
110.4. Lactophenol cotton blue (LPCB)	302
110.5. Microscopic mounts and squash preparations	302
110.6. Cellotape flag preparations	303
110.7. Slide culture preparations	303
111. Specialised culture media	305
111.1. Bird seed agar	305
111.2. Bromocresol purple milk solids glucose agar (BCP)	305
111.3. Creatinine dextrose bromothymol blue thymine (CDBT) agar	305
111.4. Canavanine glycine bromothymol blue (CGB) agar	306
111.5. Cornmeal agar	306
111.6. Cornmeal glucose sucrose yeast extract agar	306
111.7. Czapek dox agar	306
111.8. Modified Dixon's agar	306
111.9. Hair perforation test for dermatophytes	307
111.10. Lactritmel agar	307
111.11. Littman oxgall agar	307
111.12. Malt extract agar	307
111.13. 1% Peptone agar	307
111.14. Potato dextrose agar	308
111.15. Rice grain slopes	308
111.16. Sabouraud's dextrose agar (SDA) with cycloheximide (0.05%), chloramphenicol, gentamicin and yeast extract	308
111.17. Sabouraud's dextrose agar with chloramphenicol and gentamicin	308
111.18. Sabouraud's dextrose agar with 5% NaCl	308
111.19. Tap water agar	309
111.20. Urea agar slopes with 0.5% glucose	309
111.21. Vitamin Free Agar (Trichophyton Agar No. 1)	309
Glossary	311
References	321
Index	345