

Contents

Editorial Board.....	ix
Contributors	x-xvi
Preface.....	xvii

Section I. GENERAL

Section Editor: Henry D. Isenberg

1. Taxonomy, Classification, and Nomenclature of Bacteria. DON J. BRENNER	1
2. Microscopy. STEVEN D. DOUGLAS	8
3. Quality Control in Clinical Microbiology. RAYMOND C. BARTLETT	14
4. Indigenous and Pathogenic Microorganisms of Humans. HENRY D. ISENBERG AND RICHARD F. D'AMATO	24
5. Procedures to Use During Outbreaks of Food-Borne Disease. FRANK L. BRYAN	36
6. Rapid and Mechanized/Automated Systems in Microbiology. RICHARD F. D'AMATO, JAMES C. McLAUGHLIN, AND MARY JANE FERRARO	52
7. Computers in Clinical Microbiology. JAMES D. MACLOWRY AND KENNETH J. RYAN	66
8. Collection, Handling, and Processing of Specimens. HENRY D. ISENBERG, JOHN A. WASHINGTON II, ALBERT BALOWS, AND ALEX C. SONNENWIRTH	73

Section II. NOSOCOMIAL INFECTION PREVENTION AND CONTROL

Section Editor: James M. Hughes

9. Epidemiology of Nosocomial Infections. JAMES M. HUGHES AND WILLIAM R. JARVIS	99
10. Nosocomial Infection Surveillance and Control Programs. JULIA S. GARNER AND T. GRACE EMORI	105
11. Role of the Microbiology Laboratory in Prevention and Control of Nosocomial Infections. JOHN E. MCGOWAN, JR.	110
12. Infection Control Priorities in Critical Care Medicine: Device-Associated Intravascular Infections. RICHARD P. WENZEL	123
13. Sterilization, Disinfection, and Antisepsis in the Hospital. MARTIN S. FAVERO	129
14. Biological Safety in the Clinical Laboratory. JOHN H. RICHARDSON AND W. EMMETT BARKLEY	138

Section III. AEROBIC BACTERIA

Section Editors: Marie B. Coyle, Josephine A. Morello, P. Byrd Smith

15. Staphylococci. W. E. KLOOS AND J. H. JORGENSEN	143
16. Streptococci and Aerococci. RICHARD R. FACKLAM AND ROBERTA B. CAREY	154
17. <i>Neisseria</i> and <i>Branhamella</i> . JOSEPHINE A. MORELLO, WILLIAM M. JANDA, AND MARJORIE BOHNHOFF	176
18. <i>Corynebacterium</i> spp. and Other Coryneform Organisms. MARIE B. COYLE, DANNIE G. HOLLIS, AND NEAL B. GROMAN	193
19. <i>Listeria</i> . ROBERT BORTOLUSSI, WALTER F. SCHLECH III, AND WILLIAM L. ALBRITTON	205
20. <i>Erysipelothrix</i> . ROBERT E. WEAVER	209
21. <i>Bacillus</i> . R. J. DOYLE, K. F. KELLER, AND J. W. EZZELL	211
22. <i>Mycobacterium</i> . HERBERT M. SOMMERS AND ROBERT C. GOOD	216
23. Aerobic Pathogenic <i>Actinomycetaceae</i> . MORRIS A. GORDON	249
24. <i>Enterobacteriaceae</i> . MICHAEL T. KELLY, DON J. BRENNER, AND J. J. FARMER III	263
25. <i>Aeromonas</i> and <i>Plesiomonas</i> . ALEXANDER VON GRAEVENITZ	278
26. <i>Vibrio</i> . J. J. FARMER III, F. W. HICKMAN-BRENNER, AND MICHAEL T. KELLY	282
27. <i>Campylobacter</i> . GEORGE K. MORRIS AND CHARLOTTE M. PATTON	302
28. Gram-Negative Fermentative Bacteria and <i>Francisella tularensis</i> . ROBERT E. WEAVER, DANNIE G. HOLLIS, AND EDWARD J. BOTTONE	309

29. Glucose-Nonfermenting Gram-Negative Bacteria. SALLY JO RUBIN, PAUL A. GRANATO, AND BENEDICT L. WASILAUSKAS	330
30. <i>Pseudomonas</i> . GERALD L. GILARDI	350
31. <i>Legionella</i> . PAUL H. EDELSTEIN	373
32. <i>Brucella</i> . W. J. HAUSLER, JR., N. P. MOYER, AND L. A. HOLCOMB	382
33. <i>Haemophilus</i> . MOGENS KILIAN	387
34. <i>Bordetella</i> . CHARLOTTE D. PARKER AND BEVERLEY J. PAYNE	394
35. <i>Streptobacillus moniliformis</i> and <i>Spirillum minus</i> . MORRISON ROGOSA	400
36. Mycoplasmas. GEORGE E. KENNY	407

Section IV. ANAEROBIC BACTERIA

Section Editor: Stephen D. Allen

37. Isolation and Examination of Anaerobic Bacteria. STEPHEN D. ALLEN, JEAN A. SIDERS, AND LINDA M. MARLER	413
38. <i>Clostridium</i> . STEPHEN D. ALLEN	434
39. Anaerobic Cocci. JON E. ROSENBLATT	445
40. Gram-Negative, Nonsporeforming Anaerobic Bacilli. SYDNEY M. FINEGOLD AND MARTHA A. C. EDELSTEIN	450
41. Gram-Positive, Nonsporeforming Anaerobic Bacilli. STEPHEN D. ALLEN	461

Section V. SPIROCHETES

Section Editor: Russell C. Johnson

42. <i>Leptospira</i> . AARON D. ALEXANDER	473
43. <i>Borrelia</i> . WILLY BURGDORFER	479
44. <i>Treponema</i> . THOMAS J. FITZGERALD	485
45. Anaerobic Spirochetes. ROBERT M. SMIBERT	490

Section VI. FUNGI

Section Editor: Billy H. Cooper

46. Taxonomy, Classification, and Nomenclature of Fungi. BILLY H. COOPER	495
47. Detection and Recovery of Fungi in Clinical Specimens. GLENN D. ROBERTS, NORMAN L. GOODMAN, GEOFFREY A. LAND, HOWARD W. LARSH, AND MICHAEL R. MCGINNIS	500
48. Dermatophytes and the Agents of Superficial Mycoses. LIBERO AJELLO AND ARVIND A. PADHYE ...	514
49. Yeasts of Medical Importance. BILLY H. COOPER AND MARGARITA SILVA-HUTNER	526
50. Fungi of Systemic Mycoses. HOWARD W. LARSH AND NORMAN L. GOODMAN	542
51. Fungi Causing Eumycotic Mycetomas. ARVIND A. PADHYE AND LIBERO AJELLO	554
52. Dematiaceous Fungi. MICHAEL R. MCGINNIS	561
53. Agents of Zygomycosis (Phycomycosis). DONALD L. GREER AND ALVIN L. ROGERS	575
54. <i>Aspergillus</i> Species and Other Opportunistic Saprophytic Hyaline Hyphomycetes. FRANK E. SWATEK, CARLYN HALDE, MICHAEL G. RINALDI, AND H. JEAN SHADOMY	584

Section VII. PARASITES

Section Editor: James W. Smith

55. Diagnostic Parasitology: Introduction and Methods. JAMES W. SMITH AND MARILYN S. BARTLETT	595
56. Blood and Tissue Protozoa. DONALD J. KROGSTAD, GOVINDA S. VISVESVARA, KENNETH W. WALLS, AND JAMES W. SMITH	612
57. Intestinal and Urogenital Protozoa. DOROTHY M. MELVIN AND GEORGE R. HEALY	631
58. Tissue Helminths. THOMAS C. ORIHIEL AND LAWRENCE R. ASH	651
59. Intestinal Helminths. LAWRENCE R. ASH AND THOMAS C. ORIHIEL	660
60. Arthropods of Medical Importance. HARRY D. PRATT AND JAMES W. SMITH	674

Section VIII. VIRUSES, RICKETTSIAE, AND CHLAMYDIAE

Section Editor: C. George Ray

61. Collection and Preparation of Specimens for Virological Examination. DAVID A. LENNETTE	687
62. Taxonomy of Viruses. JOSEPH L. MELNICK	694
63. Adenoviruses. MARION K. COONEY	701
64. Herpes Simplex Viruses. W. LAWRENCE DREW AND WILLIAM E. RAWLS	705
65. Human Cytomegalovirus. STUART E. STARR AND HARVEY M. FRIEDMAN	711
66. Varicella-Zoster Virus. NATHALIE J. SCHMIDT	720
67. Epstein-Barr Virus. EVELYNE T. LENNETTE	728
68. Poxviruses. JAMES H. NAKANO	733
69. Reoviruses. MARILYN A. MENEGUS	742
70. Enteroviruses. MARILYN A. MENEGUS	743
71. Rhinoviruses and Coronaviruses. JACK H. SCHIEBLE	747
72. Influenza Viruses. ALAN P. KENDAL, WALTER R. DOWDLE, AND GARY R. NOBLE	755
73. Parainfluenza and Respiratory Syncytial Viruses. KENNETH MCINTOSH AND JULIA C. CLARK	763
74. Measles Virus. ERLING NORRBY	769
75. Mumps Virus. ERLING NORRBY	774
76. Rubella Virus. KENNETH L. HERRMANN	779
77. Arboviruses. ROBERT E. SHOPE	785
78. Rabies Virus. GEORGE M. BAER AND JEAN S. SMITH	790
79. Marburg Virus, Ebola Virus, and the Arenaviruses. PETER B. JAHRLING	796
80. Viral Gastroenteritis Agents. NEIL R. BLACKLOW AND GEORGE CUKOR	805
81. Hepatitis Viruses. F. BLAINE HOLLINGER AND JULES L. DIENSTAG	813
82. Human Parvoviruses and Papovaviruses. LINDA L. MINNICH AND C. GEORGE RAY	836
83. Human T-Cell Leukemia Viruses. M. ESSEX	840
84. Rickettsiae. RICHARD A. ORMSBEE	845
85. Chlamydiae (Psittacosis-Lymphogranuloma Venereum-Trachoma Group). JULIUS SCHACHTER	856

Section IX. SEXUALLY TRANSMITTED DISEASES

Section Editor: Stephen A. Morse

86. Sexually Transmitted Diseases. STEPHEN A. MORSE AND SAMUEL K. SARAFIAN	863
87. <i>Haemophilus ducreyi</i> and <i>Calymmatobacterium granulomatis</i> . WILLIAM L. ALBRITTON, FRANK A. PLUMMER, FRANCES O. SOTTNECK, AND STEPHEN J. KRAUS	869
88. <i>Gardnerella vaginalis</i> . PETER PIOT	874

Section X. IMMUNODIAGNOSTIC TESTS

Section Editor: Richard C. Tilton

89. Specific Immunoglobulin Detection. RAYMOND W. RYAN AND IRENE KWASNIK	877
90. Detection of Bacterial Antigens by Counterimmunoelectrophoresis, Coagglutination, and Latex Agglutination. JOAN C. FUNG AND RICHARD C. TILTON	883
91. Immunofluorescence Microscopy. ROGER M. MCKINNEY AND WILLIAM B. CHERRY	891
92. Immunology of Bacterial Infections. SILAS G. FARMER	898
93. Monoclonal Antibodies in Clinical Microbiology. MILTON R. TAM, LYNN C. GOLDSTEIN, AND DALE E. YELTON	905
94. Serologic Tests for Syphilis. LYNDIA L. BRADFORD AND SANDRA A. LARSEN	910
95. Viral Serology. KENNETH L. HERRMANN	921
96. Serodiagnosis of Fungal Diseases. LEO KAUFMAN AND ERROL REISS	924
97. Serodiagnostic Tests for Parasitic Diseases. KENNETH W. WALLS	945
98. Solid-Phase Enzyme Immunoassays for the Detection of Microbial Antigens in Body Fluids. ROBERT H. YOLKEN	949

Section XI. LABORATORY TESTS IN CHEMOTHERAPY

Section Editor: Clyde Thornsberry

99. General Considerations. CLYDE THORNSBERRY AND JOHN C. SHERRIS	959
100. Susceptibility Tests: Agar Dilution. JOHN A. WASHINGTON II	967
101. Susceptibility Tests: Microdilution and Macrodilution Broth Procedures. RONALD N. JONES, ARTHUR L. BARRY, THOMAS L. GAVAN, AND JOHN A. WASHINGTON II	972
102. Susceptibility Tests: Diffusion Test Procedures. ARTHUR L. BARRY AND CLYDE THORNSBERRY	978
103. Susceptibility Testing of Anaerobes. VERA L. SUTTER	988
104. Laboratory Studies with Antifungal Agents: Susceptibility Tests and Bioassays. SMITH SHADOMY, ANA ESPINEL-INGROFF, AND RODNEY Y. CARTWRIGHT	991
105. Susceptibility Tests: Special Tests. F. D. SCHOENKNECHT, L. D. SABATH, AND C. THORNSBERRY	1000
106. Assays for Antimicrobial Agents in Body Fluids. JOHN P. ANHALT	1009
107. Automated Procedures for Antimicrobial Susceptibility Tests. CLYDE THORNSBERRY	1015
Appendix 1. Preparation and Storage of Antimicrobial Solutions. JOHN P. ANHALT AND JOHN A. WASHINGTON II	1019
Appendix 2. Approximate Concentration of Antimicrobial Agents Achieved in Blood. CLYDE THORNSBERRY AND L. D. SABATH	1021

Section XII. MOLECULAR METHODS

Section Editor: John C. Feeley

108. DNA Methods in Clinical Microbiology. LUCY S. TOMPKINS	1023
109. Uses of Gas-Liquid Chromatography and High-Pressure Liquid Chromatography in Clinical Mi- crobiology. C. WAYNE MOSS	1029

Section XIII. MEDIA, REAGENTS, AND STAINS

Section Editor: Peter Nash

110. Quality Control of Media. JOHN E. FORNEY AND J. MICHAEL MILLER	1037
111. Culture Media. ELIZABETH PHILLIPS AND PETER NASH	1051
112. Reagents and Stains. DONALD A. HENDRICKSON	1093
Author Index	1109
Subject Index	1110