

Contents

Preface

Preface to the First Edition

Acknowledgments

Bacterial Physiology and Bacterial

Genetics 1

1. Evolution of Microbiology and of Microbes .. 3
Bernard D. Davis

2. Bacterial Architecture 21
Bernard D. Davis

3. Growth and Death of Bacteria 51
Bernard D. Davis

4. Nutrition; Energy, Membrane Transport;
Chemotaxis 65
Bernard D. Davis

5. Biosynthesis and Its Regulation; Allosteric ... 91
Bernard D. Davis

6. Protein Synthesis and Localization 105
Bernard D. Davis

7. Gene Variation and Transfer 123
Bernard D. Davis

8. Molecular Aspects of DNA Replication and
Variation 143
Bernard D. Davis and Renato Dulbecco

9. Regulation of Gene Expression 177
Bernard D. Davis

10. Chemotherapy 201
Bernard D. Davis

11. Yeast as a Model Eukaryotic Cell 229
Fred Winston

Immunology 237

12. Introduction to the Immune Responses 239
Herman N. Eisen

13. Antibody-Antigen Reactions 249
Herman N. Eisen

14. Immunoglobulins and Immunoglobulin
Genes 277
Herman N. Eisen

15. Cellular Basis for Immune Responses 319
David H. Raulet and Herman N. Eisen

16. Antibody Formation 363
Herman N. Eisen and Malcolm L. Gefter

17. The Complement System 385
John P. Atkinson and Herman N. Eisen

18. Antibody-Mediated (Immediate-Type)
Hypersensitivity 405
Herman N. Eisen

19. Cell-Mediated Immunity 431
Herman N. Eisen

20. Aberrant Immune Responses 453
Herman N. Eisen

Pathogenic Bacteria 483

21. Host-Parasite Relations in Bacterial
Infections 485
*Samuel C. Silverstein and Thomas H.
Steinberg*

22. *Corynebacteria* 507
R. John Collier

23. *Pneumococci* 515
Robert Austrian

24. *Streptococci* 525
Maclyn McCarty

25. *Staphylococci* 539
Richard P. Novick

26. *Neisseriae* 551
Emil C. Gotschlich

27. Enteric Bacilli	561	42. Indigenous Bacteria; Oral Microbiology.....	727
<i>Stanley Falkow and John Mekalanos</i>		<i>Morton Swartz, Ronald Gibbons,</i>	
		<i>Sigmund Socransky</i>	
28. Bacteroides and Fusobacterium	589	43. Fungi.....	737
<i>Stanley Falkow</i>		<i>George S. Kobayashi</i>	
29. Pseudomonas and Other Nonfermenting		Virology.....	767
Bacilli	595	44. The Nature of Viruses	769
<i>Stephen Lory</i>		<i>Renato Dulbecco</i>	
30. Yersinia, Francisella, Pasteurella, and		45. Multiplication and Genetics of	
Brucella.....	601	Bacteriophages	795
<i>Morton N. Swartz</i>		<i>Renato Dulbecco</i>	
31. Hemophilus.....	615	46. Lysogeny and Transducing Bacteriophages ..	817
<i>Stephen I. Morse* and Porter Anderson</i>		<i>Renato Dulbecco</i>	
32. Bordetella	621	47. Animal Cells: Cultivation, Growth Regulation,	
<i>John B. Robbins and Margaret Pittman</i>		Transformation	833
33. Aerobic Spore-forming Bacilli.....	625	<i>Renato Dulbecco</i>	
<i>Morton N. Swartz</i>		48. Multiplication and Genetics of Animal	
34. Anaerobic Spore-forming Bacilli: The		Viruses	845
Clostridia	633	<i>Renato Dulbecco</i>	
<i>Morton N. Swartz</i>		49. Interference with Viral Multiplication	871
35. Mycobacteria	647	<i>Renato Dulbecco</i>	
<i>Emanuel Wolinsky</i>		50. Viral Immunology.....	885
36. Actinomycetes: The Fungus-like Bacteria	665	<i>Renato Dulbecco</i>	
<i>George S. Kobayashi</i>		51. Pathogenesis of Viral Infections.....	899
37. The Spirochetes	673	<i>Harold S. Ginsberg</i>	
<i>Joel B. Baseman</i>		52. Adenoviruses	915
38. Rickettsias	687	<i>Harold S. Ginsberg</i>	
<i>Charles L. Wisseman, Jr.</i>		53. Herpesviruses	929
39. Chlamydia	699	<i>Harold S. Ginsberg</i>	
<i>Julius Schachter</i>		54. Poxviruses	947
40. Mycoplasmas.....	707	<i>Harold S. Ginsberg</i>	
<i>Wallace A. Clyde, Jr., Robert M. Chanock,</i>		55. Picornaviruses	961
<i>Joseph G. Tully</i>		<i>Harold S. Ginsberg</i>	
41. Other Pathogenic Microorganisms;		56. Orthomyxoviruses.....	985
L-Forms	717	<i>Harold S. Ginsberg</i>	
<i>Morton N. Swartz</i>			

* Deceased

57. Paramyxoviruses	1007	62. Reoviruses and Epidemic Acute Gastroenteritis Viruses	1075
<i>Harold S. Ginsberg</i>		<i>Harold S. Ginsberg</i>	
58. Coronaviruses	1029	63. Hepatitis Viruses	1089
<i>Harold S. Ginsberg</i>		<i>Harold S. Ginsberg</i>	
59. Rhabdoviruses	1035	64. Oncogenic Viruses I: DNA-Containing Viruses	1103
<i>Harold S. Ginsberg</i>		<i>Renato Dulbecco</i>	
60. Togaviruses, Flaviviruses, Bunyaviruses, and Arenaviruses	1045	65. Oncogenic Viruses II: RNA-Containing Viruses (Retroviruses)	1123
<i>Harold S. Ginsberg</i>		<i>Renato Dulbecco</i>	
61. Rubella Virus	1067	Index	1153
<i>Harold S. Ginsberg</i>			
