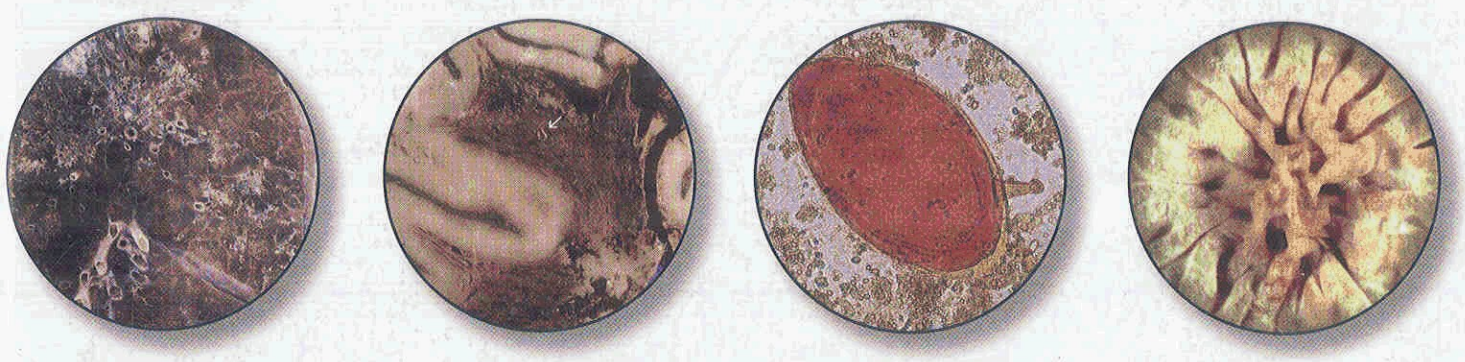
Robin A. Cooke

Atlas

Cases

Text

INFECTIOUS DISEASES



1 Historical overview 1

2 Bacterial infections 8

3 Tuberculosis 39

4 Leprosy 65

5 Sexually transmitted infections (STIs) 105

6 Atypical mycobacterial infections, rickettsial infections, yaws and colonic spirochetosis 146

7 Fungal infections 174

8 Viral infections 235

9 Parasitic infections—protozoa 287

10 Parasitic infections—nematodes, trematodes and cestodes 356

11 Pandemic diseases 451

12 Emerging viral infections 465

Preface *xii*
The Author *xiv*
Acknowledgments *xv*

1 Historical overview 1

Empirical observations that preceded the germ theory of disease **2**
Ignaz Semmelweis and washing hands 2
John Snow's research on cholera 3
Clinical observations on cholera 3
Antisepsis **3**
The history of penicillin **4**
Alexander Fleming's discovery 4
The work of Howard Florey and Ernst Chain 6
Subsequent advances in antibiotic research 7
Vaccines **7**
Some vaccines that are currently available 7
Acknowledgments **7**

2 Bacterial infections 8

Meningitis **8**
Organisms that most commonly cause meningitis 8
Less common organisms that cause meningitis 8
Organisms that cause meningitis found particularly in neonates 8
Pathology 9
Diagnosis 9
Complications of meningitis 16
Beta hemolytic streptococcal (*Streptococcus pyogenes*) infections **20**
Complications of *S. pyogenes* infections 20
Long-term cardiac complications of rheumatic fever 21
Erysipelas 23
Streptococcus pneumoniae **23**
Staphylococcus aureus **24**
Abscesses 24
Osteomyelitis 24
Pneumonia 25
Toxic epidermal necrolysis (scalded skin syndrome) 26
Disseminated intravascular coagulation 26
Enterobacteriaceae **26**
Typhoid fever **27**
Helicobacter **28**
Diphtheria **29**
Rhinoscleroma **30**
Clostridial infections **32**
C. tetani—the cause of tetanus 32
C. difficile—the cause of membranous colitis 32
C. perfringens—the cause of gas gangrene, food poisoning and puerperal infection 33
Case 2.1 *34*
Case 2.2 *34*
Case 2.3 *35*
Anthrax **35**
Melioidosis **35**
Case 2.4 *36*
Acknowledgments **38**

3 Tuberculosis 39

Some manifestations of tuberculosis **39**
Lymphadenopathy 39
Gastrointestinal tract 41
Lungs 43
Case 3.1 *43*
Case 3.2 *47*
Bones 51
Central nervous system 53
Case 3.3 *53*
Case 3.4 *55*
Kidneys 56
Case 3.5 *56*
Gastrointestinal tract 57
Case 3.6 *57*
Male genital tract 59
Female genital tract and breast 59
Adrenal gland 60
Heart 61
Skin—lupus vulgaris 62
Historical overview **62**
Acknowledgments **64**

4 Leprosy 65

Clinical examination of a patient suspected of having leprosy 66
Laboratory investigations 66
Historical overview 67
Contribution by D.C. Danielssen and Armauer Hansen to leprosy research 69
Classification of leprosy 70
Lepromatous leprosy 71
Clinical features 71
Histologic features in a skin biopsy—lepromatous leprosy 73
Tuberculoid leprosy 75
Clinical features 75
Histologic features in a skin biopsy—tuberculoid leprosy 76
Joint manifestations 78
Cranial nerve manifestations 80
Eye manifestations 80
Pathologic changes in nerves 82
Systemic involvement in leprosy 85
Amyloidosis in leprosy 88
Illustrative case histories 88
Case 4.1 88
Case 4.2 90
Case 4.3 91
Case 4.4 92
Case 4.5 93
Case 4.6 95
Reactions in leprosy 95
Acute reaction (Type 1 reaction) 95
Case 4.7 96
Erythema nodosum leprosum (Type 2 reaction) 97
Case 4.8 97
Social attitudes to leprosy 101
Reconstructive surgery in leprosy 102
Research in leprosy 104
Acknowledgments 104

5 Sexually transmitted infections (STIs) 105

Causative organisms 106
Gonorrhea 106
Nonspecific urethritis (NSU) 107
Syphilis 108
Clinical presentation of syphilis 108
Laboratory diagnosis 108
Case 5.1 109
Case 5.2 111
Condylomata 113
Later manifestations of syphilis 114
Hepatic lesions 120
Mid face deformities 121
Central nervous system pathology 121
Joint pathology 122
Bone pathology 124
Congenital syphilis 124
Case 5.3 125
Case 5.4 126
Case 5.5 129
Case 5.6 130
Donovanosis (*granuloma inguinale*) 133
Clinical features 133
Laboratory diagnosis 136
Case 5.4 139
Case 5.5 140
Pubic lice 141
Scabies 141
Case 5.6 142
Case 5.7 143
Mobiluncus 145
Acknowledgments 145

6 Atypical mycobacterial infections, rickettsial infections, yaws and colonic spirochetosis 146

Atypical mycobacterial infections 146
Mycobacterium ulcerans 147
Clinical appearance 147
Case 6.1 147
Case 6.2 148
Case 6.3 148
Diagnosis 149
Treatment 150
Mycobacterium scrofulaceum 150
Mycobacterium marinum 151
Case 6.4 152
***Mycobacterium avium* complex** 153
Case 6.5 153
Case 6.6 155
Vibrio vulnificus 156
Rickettsial infections 158
Australian spotted fever (*R. australis*) 158
Scrub typhus (*Orientia tsutsugamushi*) 160
Case 6.7 160
Q fever (*Coxiella burnetii*) 161
Yaws 164
Case 6.8 170
Colonic spirochetosis 172
Acknowledgments 173

7 Fungal infections 174

Superficial mycoses 175
Tinea 175
Yeasts 187
Case 7.1 195
Case 7.2 197
Case 7.3 198
Case 7.4 203

Case 7.5 210
Case 7.6 216
Case 7.7 219
Fungal infections that occur in specific geographic regions 220
Case 7.8 220
Case 7.9 224
Case 7.10 226
Mimics of fungal infections 230
Lesions that look superficially like fungal diseases but are not 234
Acknowledgments **234**

8 Viral infections 235

DNA viruses **235**
RNA viruses **236**
Prion diseases **236**
Structure of viruses **236**
How does a virus enter a cell? **236**
Chickenpox **236**
Clinical features 236
Chickenpox pneumonia 236
Case 8.1 238
Herpes zoster virus **242**
Clinical features 242
Measles **244**
Complications of measles 244
Case 8.2 245
Case 8.3 247
Case 8.4 248
Case 8.5 249
Case 8.6 250
Case 8.7 251
Mumps **252**
Herpes simplex virus (HSV) **252**
Clinical features of HSV 252
Microscopic appearances of HSV skin infections 254
Complications of HSV 254
Case 8.8 255
Case 8.9 257
Human papilloma virus (HPV) **259**
Skin lesions (warts—*verruca vulgaris*) 259
Genital lesions 261
Condylomata accuminata 262
Laryngeal papillomatosis 262
Molluscum contagiosum **262**
Cytomegalovirus (CMV) **263**
Rubella **264**
Chlamydia infections **265**
Chlamydia trachomatis, Chlamydia psittaci and Chlamydia pneumoniae 265
Hepatitis viruses **266**
Hepatitis A 266
Hepatitis B 266
Hepatitis C 269
Yellow fever **269**
Lyssaviruses **271**
Rabies 271
Case 8.10 271
Australian bat lyssavirus (ABLV) 274
Case 8.11 274
Prion diseases **276**
Creutzfeldt-Jacob Disease (CJD) 276
Case 8.12 276
Iatrogenic CJD 278
Bovine spongiform encephalopathy (BSE) 278
CJD variant type 278
Kuru 278
Epstein–Barr virus (EBV) **279**
Infectious mononucleosis 280
Burkitt lymphoma 281
Poliomyelitis **283**
A short history of the polio vaccine 286
Acknowledgments **286**

9 Parasitic infections 287

Protozoa

Protozoa **288**
Trypanosomiasis 288
Case 9.1 292
Case 9.2 294
Case 9.3 296
Case 9.4 297
Case 9.5 298
Malaria 299
Case 9.6 310
Case 9.7 310
Case 9.8 311
Case 9.9 313
Case 9.10 315
Case 9.11 316
Case 9.12 321
Case 9.13 325
Toxoplasmosis 326
Case 9.14 328
Case 9.15 330
Amebiasis 334
Case 9.16 334
Case 9.17 337
Case 9.18 340
Case 9.19 341
Free-living amebas 347
Balantidiasis 350
Giardiasis 351
Trichomoniasis 352
Cryptosporidium 353
Microsporidium 354
Acknowledgments **355**

10 Parasitic infections 356

Nematodes, trematodes and cestodes

Nematodes 356
Bancroftian and Malayan filariasis 356
Case 10.1 359
Case 10.2 363
Case 10.3 367
Case 10.4 368
Case 10.5 371
Case 10.6 372
Case 10.7 375
Case 10.8 376
Case 10.9 383
Case 10.10 389
Case 10.11 395
Trematodes 396
Schistosomiasis 396
Case 10.12 398
Case 10.13 399
Case 10.14 400
Case 10.15 400
Case 10.16 400
Case 10.17 405
Case 10.18 407
Case 10.19 408
Clonorchiasis 409
Case 10.20 409
Paragonimiasis 414
Cestodes 414
Echinococcosis/hydatid disease 414
Case 10.21 416
Case 10.22 419
Case 10.23 420
Case 10.24 421
Case 10.25 423
Case 10.26 424
Case 10.27 425
Case 10.28 426
Echinococcus multilocularis 427
Sparganosis 430
Case 10.29 431
Case 10.30 432
Cysticercosis 437
Case 10.31 440
Case 10.32 445
Case 10.33 446
Acknowledgments 449

11 Pandemic diseases 451

Plague 451
Clinical manifestations 452
Case 11.1 453
Plague epidemics in London and in Hong Kong 455
Could there be another epidemic of plague? 457
Smallpox 458
History of smallpox vaccination 459
Influenza 460
An interesting story of scientific sleuthing 460
Influenza virus 460
Some clinical and pathologic features of fatal influenza 461
Case 11.2 461
Case 11.3 462
Bird flu 463
What of the future? 463
Acknowledgments 464

12 Emerging viral infections 465

Human immunodeficiency virus (HIV)—the cause of AIDS 466
Altered host response in HIV infection and in AIDS 466
HIV-associated defects in immunity 466
Immune restoration syndrome 467
Some presenting manifestations of HIV/AIDS 467
Case 12.1 468
Case 12.2 470
Case 12.3 471
SARS 473
Case 12.4 474
Morphological findings 475
Monkeypox virus infection 477
Case 12.5 477
Human monkeypox—commentary 478
Hendra virus outbreak 480
Human cases of Hendra virus 480
Case 12.6 481
Case 12.7 484
Equine cases of Hendra virus 486
Case 12.8 486
Hendra virus—commentary 488
Biological warfare/bioterrorism 489
What of the future? 489
Acknowledgments 489

Index 491