

Contents

General Aspects

Chapter 1

Guidelines for Autopsies in the Tropics

S. LUCAS

A. Introduction	3
B. The Roles of the Autopsy	4
I. General and in AIDS	4
II. Cancer Registries	5
III. Perinatal Mortality	6
IV. Maternal Mortality	7
V. Future Clinicopathological Research	8
C. The Performance and Product of the Autopsy	8
I. Consent for an Autopsy	8
II. Performance of Autopsies in the Tropics	9
III. Clinicopathological Discordance	9
IV. Mortality Statistics	10
V. Autopsy Histopathology and the Costs of Autopsy	10
D. Medicolegal Autopsies	11
E. Safety Issues	12
I. Risks of Acquiring Infection from an Autopsy	13
1. Hepatitis Viruses	13
2. Tuberculosis	14
3. HIV	15
II. Glove Puncture	17
F. Facilities and Practice Within Mortuaries	17
G. Conclusions and Suggestions	19
References	20

*Chapter 2***Geomedicine**

H. J. DIESFELD

A. Introduction	25
B. Early History of Geomedicine	26
C. The Evolution of Geomedical Research	29
I. Europe and North America	29
1. Germany	29
2. France	30
3. United Kingdom	31
4. United States	32
5. Canada	33
6. Scandinavia	33
7. Soviet Union	33
II. Asia	34
III. Africa	35
IV. Latin America	36
D. Concepts and Definitions	36
E. Methods and Examples of Geomedical Research	43
I. Methods	43
II. Examples of Geomedical Research	46
1. Disease Mapping	46
2. Geocancerology	46
3. Disease Diffusion	46
F. Future Prospects of the Geography of Health	49
References	52

*Chapter 3***Genetic Diseases in the Tropics**

T. JENKINS

A. Introduction	61
B. Genetic Variation and Disease: Ecogenetics	64
I. Physical Agents	65
1. Cold Stress	65
2. Heat Adaptation	66
3. High Altitude Adaptation	66
4. Ultraviolet Light	67
a) Albinism	67
b) Xeroderma Pigmentosum	72

Contents	XIII
II. Chemical Agents	73
1. Pseudocholinesterase Variation	73
2. Acetyltransferase Variation	74
3. Paraoxonase Variation	77
4. Alcoholism and Genetics	78
III. Infectious Agents	78
1. Blood Groups and Other "Normal" Traits	79
2. Mannose Binding Protein	81
3. Sixth Component of Complement Deficiency	82
4. Fungal Infections	82
IV. Nutritional Factors	83
1. Persistent Hereditary Intestinal Lactase Activity	83
2. Dietary Iron Overload	86
3. Metabolic Diseases Probably Due to Dietary Change	87
4. Coronary Heart Disease and Hypertension	91
a) Coronary Heart Disease	91
b) Hypertension	93
C. Congenital Malformations.	94
I. Introduction and Definitions	94
II. Incidence in the Tropics	95
III. Down Syndrome in the Tropics	99
D. Consanguinity and Genetic Disease	101
E. The Burden of Genetic Disease in the Tropics	106
I. Genetic Diseases and Public Health in the Tropics	108
II. Genetic Services and Primary Health Care	110
F. Conclusion.	113
References	114

Infectious Diseases

Chapter 4

New Technology for the Diagnosis of Infectious Disease

S. R. ZAKI and A. M. MARTY

A. Introduction	127
B. Nucleic Acid Hybridization	128
I. Principles	128
II. Nucleic Acid Probes	128
III. Labeling and Detection of Nucleic Acid Probes.	130

IV. Hybridization Formats	131
1. Solid Support Hybridization	131
2. In Solution Hybridization.	133
3. In Situ Hybridization	134
V. Nucleic Acid Amplification	135
VI. Analysis of Nucleic Acids in Archival Tissues	136
VII. Applications in Infectious Disease Diagnosis and Research . .	137
C. Immunoassays	140
D. New Laboratory Instrumentation	141
I. Recombinant Gene Products and Synthetic Peptides	141
II. Flow Cytometry	142
E. Summary	145
References	145

Bacterial Diseases

Chapter 5

Intestinal Bacterial Infections

M. ISAÄCSON and M. J. HALE

A. Diarrhoeagenic <i>Escherichia coli</i>	157
I. Epidemiology	157
II. Clinical Features	158
III. Pathogenesis and Pathology.	159
IV. Laboratory Confirmation	160
B. Cholera.	161
I. Epidemiology	161
II. Clinical Features	162
III. Pathogenesis	163
IV. Pathology	163
V. Laboratory Confirmation	164
C. Shigellosis	164
I. Epidemiology	165
II. Clinical Features	165
III. Pathogenesis	166
IV. Pathology	167
V. Laboratory Confirmation	168
D. Typhoid Fever	168
I. Epidemiology	168
II. Clinical Features	169

Contents	XV
III. Pathogenesis.	169
IV. Pathology	171
V. Laboratory Confirmation	174
References	175

Chapter 6

Non-Intestinal Bacterial Infections

M. ISAÄCSON and M. J. HALE

A. Plague	179
I. Epidemiology	179
II. Clinical Features	180
III. Pathogenesis.	182
IV. Pathology	184
V. Laboratory Confirmation	186
B. Brucellosis	187
I. Epidemiology	187
II. Clinical Features	188
III. Pathogenesis and Pathology	189
IV. Laboratory Confirmation	192
C. Melioidosis (Whitmore's Disease).	193
I. Epidemiology	193
II. Clinical Features	193
III. Pathogenesis	194
IV. Pathology	195
V. Laboratory Confirmation	195
D. Anthrax	196
I. Epidemiology	196
II. Clinical Features	197
III. Pathogenesis	198
IV. Pathology	200
V. Laboratory Confirmation	204
E. Scleroma (Rhinoscleroma)	204
I. Epidemiology	204
II. Clinical Features	205
III. Pathogenesis	206
IV. Pathology	206
V. Laboratory Confirmation	208
F. Tropical Pyomyositis	208
I. Epidemiology	209
II. Clinical Features	209
III. Pathogenesis.	210

IV. Pathology	210
V. Laboratory Confirmation	210
G. Cutaneous Diphtheria	211
I. Epidemiology	211
II. Clinical Features	212
III. Pathogenesis	212
IV. Pathology	213
V. Laboratory Confirmation	213
H. Tropical Ulcer	213
I. Epidemiology	213
II. Clinical Features	214
III. Pathogenesis	215
IV. Pathology	215
V. Laboratory Confirmation	216
J. Buruli Ulcer (Searle's Ulcer, Bairnsdale Ulcer, Kakerifu Ulcer, Toro Ulcer)	216
K. Actinomycotic Mycetoma and Botryomycosis	216
References	216

Chapter 7

Spirochaetal and Leptospiral Diseases

R. SINNIAH, V. BOONPUCKNAVIG, and B. SINNIAH

A. Introduction	223
B. Spirochaetal Diseases	224
I. Syphilis	224
1. Serological Tests for Syphilis	224
2. Acquired Syphilis	224
a) Primary Syphilis	225
b) Secondary Syphilis	225
c) Latent Stage Syphilis	226
d) Tertiary Syphilis	226
3. Congenital Syphilis	230
a) Congenital Pulmonary Syphilis (Pneumonia alba)	231
b) Congenital Syphilitic Hepatitis	231
c) Stigmata of Congenital Syphilis	232
II. Endemic Treponematoses (Non-Venereal)	232
1. Yaws	232
a) Early Yaws	233
b) Late Yaws	233
2. Non-Venereal Endemic Syphilis	235
a) Bejel	235
b) Pinta	236

Contents	XVII
C. Leptospiral Diseases	236
I. Leptospirosis (Weil's Disease)	236
II. Borrelia Infections	243
1. Relapsing Fever	243
2. Lyme Disease	245
D. Tropical Phagedenic Ulcer.	246
References	247

Chapter 8

Infections Caused by Rickettsiae and Rickettsia-Like Organisms and Bartonellosis

M. ISAÄCSON and M. J. HALE

A. Rickettsial Infections	253
I. The Typhus Group of Infections	253
1. Epidemic Typhus Fever	254
a) Epidemiology	254
b) Clinical Features.	254
c) Pathogenesis and Pathology	255
d) Laboratory Confirmation	258
2. Endemic (Murine) Typhus Fever	258
a) Epidemiology	258
b) Clinical Features.	259
c) Pathology	259
d) Laboratory Confirmation	259
II. The Spotted Fever Group of Infections	259
1. Rocky Mountain Spotted Fever	261
a) Geographical Distribution	261
b) Clinical Features	261
c) Pathogenesis and Pathology	262
d) Laboratory Confirmation	263
2. Other Spotted Fevers	264
a) Geographical Distribution	264
b) Clinical Features	264
c) Pathogenesis and Pathology	266
d) Laboratory Confirmation	268
3. Rickettsial Pox	268
a) Geographical Distribution	268
b) Clinical Features	268
c) Pathology	268
d) Laboratory Confirmation	269

III. Miscellaneous Rickettsial Infections	269
1. Scrub Typhus	269
a) Epidemiology	269
b) Clinical Features	270
c) Pathology	270
IV. Laboratory Confirmation of Rickettsial Infections	271
B. Infections Caused by Rickettsia-Like Organisms	273
I. Q Fever	273
1. Epidemiology	273
2. Clinical Features	274
3. Pathogenesis	275
4. Pathology	275
5. Laboratory Confirmation	276
II. Trench Fever	277
1. Epidemiology	277
2. Clinical Features	277
3. Pathology	277
4. Laboratory Confirmation	278
III. Other Rochalimaea-Associated Infections	278
IV. Ehrlichial Infections	278
1. Epidemiology	279
a) Sennetsu Fever	279
b) Human Ehrlichiosis	279
2. Clinical Features	279
a) Sennetsu Fever	279
b) Human Ehrlichiosis	279
3. Pathology	280
4. Laboratory Confirmation	280
a) Sennetsu Fever	280
b) Human Ehrlichiosis	280
C. Bartonellosis	281
I. Epidemiology	281
II. Clinical Features	281
1. Oroya Fever	281
2. Transition Phase	282
3. Verruca Peruviana	282
III. Pathogenesis and Pathology	282
IV. Laboratory Confirmation	284
References	284

*Chapter 9***Mycobacterial Infections of the Skin**

W. M. MEYERS

A. Introduction	291
B. Leprosy	294
I. Introduction and Epidemiology	294
II. Clinical Features	297
1. Indeterminate Leprosy	299
2. Polar Tuberculoid Leprosy	299
3. Borderline Leprosy	299
4. Polar Lepromatous Leprosy	300
5. Neuritic Leprosy	301
III. Pathogenesis and Pathology	301
1. Immunology	302
a) Lepromin	302
b) Nonspecific Factors	302
c) Specific Factors	303
2. Pathology	305
a) Indeterminate Leprosy	305
b) Tuberculoid Leprosy	305
c) Borderline Leprosy	306
d) Lepromatous Leprosy	307
e) General Pathology of Leprosy	313
IV. Reactions	319
1. Reversal Reactions	320
2. Erythema Nodosum Leprosum	320
3. Therapy of Reactions	323
V. Treatment of Leprosy	324
1. Chemotherapeutic Agents	324
a) Dapsone	324
b) Clofazimine	324
c) Rifampin	325
d) Thioamides	325
e) Other Chemotherapeutic Agents Under Study	325
2. WHO's Multidrug Therapy	326
3. Determination of Efficacy of Chemotherapy	327
4. Immunotherapy and Vaccination	328
VI. Leprosy and HIV Infection	329
VII. Experimental and Naturally Acquired Leprosy in Animals	330
VIII. Diagnosis and Differential Diagnosis	332
C. Tuberculosis of the Skin	334
I. Primary Tuberculosis	335
1. Primary Inoculation Tuberculosis	335
2. Generalized Miliary Tuberculosis (Tuberculosis Cutis Miliaris Disseminata)	336

II.	Reinfection Tuberculosis	336
1.	Lupus Vulgaris	337
2.	Tuberculosis Verrucosa Cutis	337
3.	Scrofuloderma	338
4.	Tuberculosis Cutis Orificialis.	341
III.	Tuberculids	341
1.	Papulonecrotic Tuberculid	341
2.	Lichen Scrofulosorum	342
3.	Erythema Induratum of Bazin	342
D.	<i>Mycobacterium ulcerans</i> Infection (Buruli Ulcer)	342
I.	Introduction and Epidemiology	342
II.	Clinical Features	345
III.	Pathogenesis and Pathology	347
IV.	Treatment	351
V.	Diagnosis and Differential Diagnosis	353
E.	Less Common Mycobacterial Infections	353
I.	Rapid-Growing Mycobacteria (<i>M. fortuitum</i> and <i>M. chelonae</i>)	353
II.	Swimming Pool Granuloma (<i>M. marinum</i> Infection)	355
III.	<i>M. avium-intracellulare</i> complex (MAC) and <i>M. scrofulaceum</i>	357
IV.	<i>M. kansasii</i> Infection	358
V.	<i>M. haemophilum</i> Infection	358
VI.	<i>M. szulgai</i> Infection	360
VII.	Other Mycobacteria Causing Cutaneous Lesions	360
	References	361

Chapter 10

Sexually Transmitted Diseases in the Tropics

R. C. BALLARD and A. L. FREINKEL

A.	Introduction	379
B.	Gonorrhoea	381
C.	Non-Gonococcal Urethritis	383
D.	Acute Epididymo-Orchitis	387
E.	Acute Pelvic Inflammatory Disease	387
F.	Trichomoniasis	389
G.	Genital Candidiasis	390
H.	Bacterial Vaginosis	391
J.	Syphilis	392
I.	Early Syphilis	392
1.	Primary Syphilis	392
2.	Secondary Syphilis	392

3. Diagnosis and Treatment of Primary and Secondary Syphilis	395
4. Pathology of Early Syphilis	395
5. Latent Syphilis.	395
II. Tertiary Syphilis	396
1. Cutaneous, Mucosal and Bony Gummas	396
2. Cardiovascular Syphilis	397
3. Neurosyphilis	397
4. Diagnosis of Tertiary Syphilis	397
5. Pathology of Late Syphilis	398
III. Syphilis in Pregnancy	398
IV. Congenital Syphilis	398
1. Early Congenital Syphilis	398
2. Late Congenital Syphilis	398
3. Laboratory Diagnosis of Congenital Syphilis	400
K. Genital Herpes.	400
L. Chancroid	403
M. Lymphogranuloma Venerum	406
N. Granuloma Inguinale	408
O. Genital Warts	410
P. Molluscum Contagiosum	413
Q. Scabies.	413
R. Pubic Lice (Pediculosis Pubis)	415
References	416

Viral Diseases

Chapter 11

The Viral Haemorrhagic Fevers

M. ISAÄCSON and M. J. HALE

A. Mosquito Borne Viral Haemorrhagic Fevers	421
I. Yellow Fever.	421
1. Epidemiology	421
2. Clinical Features	423
3. Pathogenesis	424
4. Pathology	425
5. Laboratory Confirmation	426
II. Dengue Haemorrhagic Fever/Dengue Shock Syndrome	427
1. Epidemiology	427
2. Clinical Features	428

3. Pathology	428
4. Laboratory Confirmation	430
III. Rift Valley Fever	430
1. Epidemiology	432
2. Clinical Features	432
3. Pathology	432
4. Laboratory Confirmation	433
IV. Chikungunya Haemorrhagic Fever	433
1. Epidemiology	434
2. Clinical Features	434
3. Pathology	434
4. Laboratory Confirmation	434
B. Tick Borne Viral Haemorrhagic Fevers	435
I. Crimean-Congo Haemorrhagic Fever	435
1. Epidemiology	435
2. Clinical Features	435
3. Pathogenesis and Pathology	436
4. Laboratory Confirmation	438
II. Omsk Haemorrhagic Fever and Kyasanur Forest Disease	438
1. Epidemiology	438
2. Clinical Features	439
3. Pathology	439
4. Laboratory Confirmation	440
C. The Arenaviral Haemorrhagic Fevers	440
I. Epidemiology	441
II. Clinical Features	442
1. Argentinian and Bolivian Haemorrhagic Fevers	442
2. Venezuelan Haemorrhagic Fever	443
3. Lassa Fever	443
III. Pathogenesis	445
IV. Pathology	447
1. Argentinian and Bolivian Haemorrhagic Fevers	447
2. Venezuelan Haemorrhagic Fever	447
3. Lassa Fever	448
V. Laboratory Confirmation	450
D. Filoviral Haemorrhagic Fevers	450
I. Epidemiology	451
II. Clinical Features	452
III. Pathology	453
1. Marburg Virus Disease	453
2. Ebola Haemorrhagic Fever	455
IV. Laboratory Confirmation	457
E. Hantavirus Infections	458
I. Epidemiology	458
II. Clinical Features	459

III. Pathology	460
IV. Laboratory Confirmation	461
F. Haemorrhagic Smallpox	462
I. Epidemiology	462
II. Clinical Features	463
III. Pathogenesis and Pathology	464
IV. Laboratory Confirmation	466
References	466

Protozoal Diseases

Chapter 12

Intestinal Protozoa

A. E. MILLS and J. M. GOLDSMID

A. <i>Giardia duodenalis</i>	478
I. Introduction	478
II. Life Cycle and Transmission	479
III. Distribution and Epidemiology	481
IV. Pathogenesis and Symptomatology	482
V. Pathology of Giardiasis	484
VI. Diagnosis	486
B. <i>Dientamoeba fragilis</i>	486
I. Introduction	486
II. Life Cycle and Transmission	487
III. Distribution and Epidemiology	487
IV. Pathogenesis and Symptomatology	487
V. Diagnosis	488
C. <i>Entamoeba histolytica</i>	488
I. Introduction	488
II. Life Cycle and Transmission	489
III. Distribution and Epidemiology	491
IV. Pathogenesis, Symptomatology and Pathology	493
1. Luminal Amoebiasis	493
2. Invasive Amoebiasis	494
a) Intestinal Amoebiasis	495
b) Extra-Intestinal Amoebiasis	501
V. Diagnosis	504
1. Luminal Amoebiasis	505
2. Intestinal Invasive Amoebiasis	507
a) Parasite Recovery	507
b) Serology	507

3. Extra-Intestinal Invasive Amoebiasis	508
a) Aspiration	508
b) Serology	508
D. <i>Limax and Leptomyxid Amoebae</i>	509
I. Introduction	509
II. Life Cycle and Transmission	509
III. Distribution and Epidemiology	510
IV. Pathogenesis and Symptomatology	510
V. Pathology of Limax and Leptomyxid Amoebiasis	511
VI. Diagnosis	512
E. <i>Blastocystis hominis</i>	513
I. Introduction	513
II. Life Cycle and Transmission	513
III. Distribution and Epidemiology	513
IV. Pathogenesis and Symptomatology	513
V. Pathology of Blastocystosis	514
VI. Diagnosis	515
F. <i>Balantidium coli</i>	515
I. Introduction	515
II. Life Cycle and Transmission	515
III. Distribution and Epidemiology	517
IV. Pathogenesis and Symptomatology	517
V. Pathology of Balantidiasis	518
VI. Diagnosis	520
G. <i>Isospora belli</i>	520
I. Introduction	520
II. Life Cycle and Transmission	520
III. Distribution and Epidemiology	521
IV. Pathogenesis and Symptomatology	522
V. Pathology of Isosporiasis	522
VI. Diagnosis	523
1. Stool Examination	523
2. Biopsy	523
H. <i>Sarcocystis Species</i>	524
I. Introduction	524
II. Life Cycle and Transmission	524
III. Distribution and Epidemiology	526
IV. Pathogenesis and Symptomatology	527
V. Pathology of Sarcosporidiosis	527
1. Intestinal Sarcosporidiosis	527
2. Extra-Intestinal Sarcosporidiosis	528
VI. Diagnosis	529
J. <i>Cryptosporidium Species</i>	530
I. Introduction	530
II. Life Cycle and Transmission	530
III. Distribution and Epidemiology	531

IV.	Pathogenesis and Symptomatology	532
V.	Pathology of Cryptosporidiosis	532
VI.	Diagnosis	533
K.	Microsporidiosis	535
I.	Introduction	535
II.	Life Cycle and Transmission	535
III.	Distribution and Epidemiology	536
IV.	Pathogenesis and Symptomatology	536
V.	Pathology of Microsporidiosis	537
	1. Intestinal Microsporidiosis	537
	2. Extra-Intestinal Microsporidiosis	538
VI.	Diagnosis of Microsporidiosis	538
	1. Intestinal Microsporidiosis	538
	2. Extra-Intestinal Microsporidiosis	539
L	<i>Toxoplasma gondii</i>	539
I.	Introduction	539
II.	Distribution and Epidemiology	539
III.	Pathogenesis and Symptomatology	542
IV.	Pathology of Toxoplasmosis	545
V.	Diagnosis	546
References		550

Chapter 13

Malaria

A. M. MARTY and E. M. ANDERSEN

A.	Epidemiology	557
B.	The Parasites	558
C.	Life Cycle	558
D.	Transmission	560
E.	Susceptibility and Manifestation of Disease	560
F.	Pathogenesis and Clinicopathologic Features	562
I.	Fever	564
II.	Anemia	566
III.	Liver Damage	566
IV.	Alterations to the Spleen	567
V.	Gastrointestinal Damage	567
VI.	Renal Damage.	568
VII.	Thrombocytopenia and Clotting Defects	568
VIII.	Pulmonary Damage	569
IX.	Cerebral Injury	569
G.	Gross and Microscopic Pathology of Fatal <i>Falciparum</i> Malaria . . .	570
I.	Brain	570
II.	Kidney	571

III.	Liver	573
IV.	Spleen	573
V.	Bone Marrow	577
VI.	Lymph Nodes	577
VII.	Heart	577
VIII.	Lungs	577
IX.	Gastrointestinal Tract	579
X.	Placenta	579
H.	Diagnosis	581
J.	Prophylaxis and Treatment	589
I.	Introduction	589
II.	Individual Medications	589
1.	The 4-Aminoquinoline Drugs	589
2.	The 8-Aminoquinoline Drugs	589
3.	Cinchona Alkaloids	590
4.	Dihydrofolate Reductase Inhibitors	590
5.	Sulfonamides	590
6.	Tetracyclines	590
7.	4-Quinolinemethanols and Other New Drugs	591
III.	Additional Drugs Used in the Treatment of Malaria	591
IV.	Other Forms of Therapy	591
K.	Pathologic Complications of Malarial Therapy	591
L.	Vaccine Development	592
	References	593

Chapter 14

Leishmaniasis

A. L. BITTENCOURT and M. BARRAL-NETTO

A.	Introduction	597
B.	Parasite Morphology and Life Cycle	600
C.	Cutaneous and Mucocutaneous Leishmaniasis	601
I.	Epidemiology	601
II.	Clinical Manifestations	602
1.	New World Cutaneous Leishmaniasis	602
a)	Cutaneous Leishmaniasis	602
b)	Mucocutaneous Leishmaniasis (Espundia)	605
2.	Old World Cutaneous Leishmaniasis (Oriental Sore)	605
3.	Diffuse and Borderline Cutaneous Leishmaniasis	608
III.	Pathogenesis	611
IV.	Pathology	613
V.	Immunology	623

VI. Laboratory Diagnosis	625
VII. Differential Diagnosis	626
D. Visceral Leishmaniasis	627
I. Epidemiology	627
II. Clinical Manifestations	627
III. Pathogenesis and Pathology	631
IV. Immunology	640
V. Diagnosis	643
VI. Differential Diagnosis	643
References	644

Chapter 15

Trypanosomiasis

A. L. BITTENCOURT and T. G. ASHWORTH

A. Introduction	653
B. American Trypanosomiasis (Chagas' Disease) (A. L. BITTENCOURT)	653
I. Introduction	653
II. Parasite Morphology and Life Cycle	655
III. Epidemiology	655
IV. Clinical Features	656
1. Acute Disease	656
2. Chronic Indeterminate Disease	657
3. Chronic Cardiac Disease	657
4. Chronic Digestive Disease	658
5. Chronic Nervous Disease	658
6. Congenital Disease	659
V. Immunology	659
VI. Pathogenesis	660
1. Acute Disease	660
2. Chronic Disease	661
VII. Pathology	662
1. Acute Disease	662
2. Chronic Indeterminate Disease	668
3. Chronic Cardiac Disease	668
a) Gross Aspects	668
b) Microscopic Features	670
4. Chronic Digestive Disease	673
5. Chronic Nervous Disease	675
6. Reactivation of Chagasic Infection	675
7. Congenital Disease	676
a) Fetal and Neonatal Aspects	676
b) Placental Aspects	678
VIII. Diagnosis	678

C. African Trypanosomiasis (T. G. ASHWORTH)	681
I. Introduction	681
II. Epidemiology	681
1. Parasite Morphology and Life Cycle	681
2. Distribution and Frequency	683
3. Vector	683
4. Host-Parasite Relationship	683
III. Clinical Features	684
1. Introduction	684
2. Stage I Disease	684
3. Stage II Disease	687
4. Congenital Transmission	687
5. Coexistent Disease and Complications of Treatment	687
IV. Pathology and Pathogenesis	688
1. Introduction	688
2. Pathology and Pathogenesis of Stage I Disease	689
a) General Features	689
b) Involvement of Choroid Plexus	691
c) Blood-Brain and Blood-CSF Barriers	693
3. Pathology of Stage II Disease	694
a) Introduction	694
b) Brain	695
4. Pathogenesis of Stage II Disease	697
a) Introduction	697
b) Immunological Manifestation	697
c) Other Possible Pathogenic Mechanisms	699
V. Laboratory Diagnosis	699
References	701

Mycotic Diseases

Chapter 16

Tropical Mycotic Diseases

A. L. BITTENCOURT and A. T. LONDERO

A. Introduction	707
B. Mycetomas	708
I. Introduction	708
II. Epidemiology and Aetiological Agents	708
III. Clinical Aspects	710

IV.	Pathology	711
1.	Black Grains of Eumycotic Mycetomas	715
2.	Pale Grains of Eumycotic Mycetomas	718
3.	Grains of Actinomycotic Mycetomas	718
V.	Immunology	721
VI.	Diagnosis	721
VII.	Differential Diagnosis	722
C.	Sporotrichosis	722
I.	Introduction	722
II.	Epidemiology	724
III.	Clinical Aspects	724
IV.	Pathology	727
V.	Immunology	730
VI.	Diagnosis	730
VII.	Differential Diagnosis	730
B.	Chromoblastomycosis	731
I.	Introduction	731
II.	Epidemiology	731
III.	Clinical Aspects	732
IV.	Pathology	735
V.	Immunology	735
VI.	Diagnosis	735
VII.	Differential Diagnosis	737
E.	Rhinosporidiosis	737
I.	Introduction	737
II.	Epidemiology	737
III.	Clinical Aspects	738
IV.	Pathology	739
V.	Immunology	741
VI.	Diagnosis	742
VII.	Differential Diagnosis	742
F.	Lobomycosis	742
I.	Introduction	742
II.	Epidemiology	742
III.	Clinical Aspects	743
IV.	Pathology	744
V.	Immunology	747
VI.	Diagnosis	747
VII.	Differential Diagnosis	747
G.	Entomophthoromycosis	747
I.	Introduction	747
II.	Epidemiology	749
III.	Clinical Aspects	749
1.	Subcutaneous Form	749
2.	Mucocutaneous Form	749
3.	Primary Visceral Form	752

IV. Pathology.	753
V. Immunology	756
VI. Diagnosis	756
VII. Differential Diagnosis	757
H. Paracoccidioidomycosis	757
I. Introduction	757
II. Epidemiology	758
III. Clinical Aspects	758
IV. Pathology.	763
1. Gross Aspects	763
2. Microscopic Aspects	767
V. Immunology	770
VI. Diagnosis	773
VII. Differential Diagnosis	773
J. African Histoplasmosis	774
I. Introduction	774
II. Epidemiology	774
III. Clinical Aspects	775
IV. Pathology.	775
V. Immunology	778
VI. Diagnosis	778
VII. Differential Diagnosis	778
K. Cryptococcosis	779
I. Introduction	779
II. Epidemiology	779
III. Clinical Aspects	780
IV. Pathology.	781
1. Gross Aspects	781
2. Microscopic Aspects	784
V. Immunology	789
VI. Diagnosis	790
VII. Differential Diagnosis	791
References	791

Metazoal Diseases

Chapter 17

Helminthology

A. M. MARTY and E. M. ANDERSEN

A. Introduction to Helminths	801
I. Acoelomate.	801
II. Pseudocoelomate.	801

III. Coelomate	801
IV. Classifying the Worm	802
B. Helminths Pathogenic to Humans	802
I. Phylum: Platyhelminthes	802
Class: Trematoda	803
1. Schistosomiasis	803
2. Troglotrematidae	816
3. Opisthorchiidae	823
4. Dicrocoeliidae	827
5. Fasciolidae	829
6. Echinostomatidae	835
7. Heterophyidae	837
8. Paramphistomatidae	838
9. Rare Trematode Infections of Humans	839
10. General Comments on Therapy for Trematodes	840
Class: Cestoidea	841
1. Pseudophyllidea	841
2. Cyclophyllidea; Family: Taeniidae	848
3. Cyclophyllidea; Family: Hymenolepididae	862
4. Cyclophyllidea; Family: Dipylidiidae	864
5. Cyclophyllidea; Family: Davaineidae	866
6. Other Cyclophyllidean Infections of Humans	867
II. Pseudocoelomates: The Nematodes	868
Subclass: Adenophorea	871
1. <i>Trichuris</i>	871
2. <i>Capillaria</i>	875
3. <i>Trichinella</i>	879
4. <i>Diectophyma</i> and <i>Eustrongylides</i>	882
Subclass: Secernentea	883
1. <i>Halicephalobus</i> (syn. <i>Micronema</i>)	883
2. <i>Stronggyloides</i>	883
3. <i>Ancylostoma</i> and <i>Necator</i> Species	887
4. <i>Mammomonogamus</i>	892
5. <i>Trichostrongylus</i>	893
6. <i>Angiostrongylus</i> and <i>Metastrongylus</i>	895
7. <i>Ascaris</i>	900
8. Visceral Larva Migrans	907
9. <i>Anisakis</i> , <i>Contracaecum</i> , <i>Phocanema</i> (<i>Pseudoterranova</i>), <i>Terranova</i> , <i>Porrocaecum</i> , and <i>Hysterothylacium</i>	911
10. <i>Enterobius</i>	915
11. Cutaneous Larva Migrans	918
12. <i>Spirocerca</i> , <i>Thelazia</i>	920
13. Filarial Nematodes	920
14. <i>Dracunculus</i>	946
III. Pseudocoelomates: Acanthocephala	949
1. <i>Macracanthorhynchus</i>	950

2. <i>Moniliformis</i>	951
3. <i>Acanthocephalus</i> , <i>Corynosoma</i> , and <i>Bolbosoma</i>	953
IV. Phylum: Annelida	953
V. Phylum: Arthropoda	956
C. Helminths Categorized by Organ System Involvement	960
D. Artifacts, Arthropods and Nonpathogenic Worms Commonly Mistaken for Parasites	961
E. Polyparasitism and Final Comments	961
References	963

Non-Infectious Diseases

Chapter 18

Malnutrition and Intestinal Malabsorption

R. O. C. KASCHULA

A. Protein Energy Malnutrition	985
I. General Aspects	985
II. Overnutrition in the Tropics	989
III. Undernutrition (Nutritional Growth Retardation)	989
IV. Marasmus	990
V. Kwashiorkor	991
1. Oedema	991
2. Skin Changes	992
3. Mucous Membranes	992
4. Hair Changes	992
5. Muscle Wasting	993
6. Mental and Neurological Changes	993
7. Renal Function	994
VI. Marasmic Kwashiorkor	994
VII. Pathology of Protein Energy Malnutrition	994
1. Water and Electrolyte Balance	994
2. Skeletal Muscle Atrophy	994
3. Heart	995
4. Liver	995
5. Pancreas	996
6. Endocrine System	997
7. Gastrointestinal Tract	998
8. Haemopoietic System	1000
9. Lymphoreticular System	1000
VIII. Interaction of Protein Energy Malnutrition with Infection	1002
IX. Long-Term Sequelae of Protein Energy Malnutrition	1005

B. Vitamin and Mineral Malnutrition	1007
I. Vitamins	1007
1. Vitamin A	1007
2. Vitamin E.	1008
3. Vitamin K	1008
4. Thiamine (Vitamin B ₁)	1008
5. Riboflavin (Vitamin B ₂)	1009
6. Niacin (Nicotinic Acid, Vitamin B ₃)	1009
7. Pyridoxine (Vitamin B ₆)	1010
8. Pantothenic Acid	1011
9. Cobalamin Compounds (Vitamin B ₁₂)	1011
10. Folic Acid	1011
11. Ascorbic Acid (Vitamin C)	1012
12. Vitamin D, Calcium and Phosphorus	1013
II. Minerals and Trace Elements	1014
1. Iron Deficiency Anaemia	1014
2. Zinc Deficiency	1015
3. Selenium, Copper and Manganese	1015
C. Nutritional Siderosis	1016
D. Tropical Sprue	1019
E. Chronic Pancreatic Disease in the Tropics	1022
References	1023

Special Pathology of Organ Systems

Chapter 19

Cardiovascular Diseases in the Tropics

A. G. ROSE

A. Introduction	1033
B. Idiopathic Cardiomyopathy	1033
I. Dilated Cardiomyopathy	1034
1. Aetiology	1034
2. Macroscopic Pathology	1035
3. Microscopic Pathology	1038
4. Ultrastructure	1039
II. Variants of Dilated Cardiomyopathy	1041
1. Keshan Disease	1041
2. Duchenne Muscular Dystrophy	1041
3. Becker Muscular Dystrophy	1041
4. Familial Cardiomyopathy	1042
5. Right Ventricular Cardiomyopathy	1042
6. Non-Compaction of Ventricular Myocardium	1043

III. Hypertrophic Cardiomyopathy	1043
1. Macroscopic Pathology	1044
2. Microscopic Pathology	1045
IV. Restrictive/Obliterative Cardiomyopathy	1045
1. Aetiology	1045
2. Primary Endocardial Fibroelastosis	1045
3. Amyloidosis	1045
4. Cardiac Siderosis	1046
5. Sarcoidosis	1047
6. Endomyocardial Fibrosis: Obliterative Cardiomyopathy	1048
V. Löffler's Endocarditis	1050
B. Inflammatory Diseases of Myocardium	
I. Myocarditis	1050
1. Non-Specific Myocarditis	1051
2. Granulomatous Myocarditis	1051
3. Tuberculosis	1052
4. Typhoid Fever	1055
II. Protozoal and Parasitic Diseases	1055
1. Toxoplasmosis	1055
2. Sarcocystis	1057
3. Amoebiasis	1058
4. Trypanosomiasis	1058
a) American Trypanosomiasis (Chagas' Disease)	1058
b) African Trypanosomiasis (Sleeping Sickness)	1058
III. Helminthic Parasites	1060
1. Tapeworms (Cestodes)	1060
a) <i>Echinococcus granulosus</i> : Hydatid Disease	1060
b) Cysticercosis	1060
c) Schistosomiasis	1061
d) <i>Toxocara canis</i>	1061
C. Systemic Hypertension	1062
D. Rheumatic Heart Disease	1063
E. Idiopathic Cardiac Aneurysms	1065
F. Coronary Atherosclerosis	1067
G. Epidemic Dropsy	1068
H. Congenital Heart Disease	1069
J. Kaposi's Sarcoma	1069
K. Heat Injury and Role of Heat Shock Proteins	1070
I. Heat Injury	1070
II. Heat Shock Proteins	1070
L. Pericardial Diseases	1070
I. Purulent (Suppurative) Pericarditis	1071
II. Tuberculous Pericarditis	1071
M. Vascular Diseases	1072
I. Idiopathic (Takayasu's) Aortitis	1072
II. Tuberculous Arteritis and Aneurysms	1075

III. Peripheral Muroid Arteriopathy	1075
IV. Ainhum	1077
V. Cerebrovascular Disease	1077
VI. Thromboangiitis Obliterans (Buerger's Syndrome)	1077
References	1078

Chapter 20

Blood Diseases in the Tropics

H. H. M. KNOX-MACAULAY

A. Introduction	1083
B. Normal Values and References Ranges	1084
I. Haemoglobin (Hb)	1084
II. White Blood Cell Count (WBC)	1084
III. Platelet Counts	1084
C. Anaemia – General Features	1085
I. Introduction	1085
II. Basic Mechanisms	1085
III. Clinical Features	1086
D. The Nutritional Anaemias	1086
I. Introduction	1086
1. Iron Metabolism	1087
2. Iron Deficiency and Iron Deficiency Anaemia	1088
a) Causes	1088
b) Clinical Features and Laboratory Diagnosis	1090
c) Management and Prevention	1091
3. Iron Overload	1092
a) Aetiology and Pathology	1092
b) Treatment and Prevention	1093
4. Iron and Infection	1094
II. Megaloblastic Anaemia	1094
1. Folate Metabolism	1094
2. Folate Deficiency	1095
3. Cobalamin (Vitamin B ₁₂) Deficiency	1096
III. Anaemia of Protein Deficiency	1098
E. Anaemia of Chronic Disease	1098
F. Haemolytic Anaemias	1099
I. Hereditary Abnormalities of the Red Cell Membrane	1099
1. Hereditary Elliptocytosis	1099
a) Common Hereditary Elliptocytosis (CHE)	1100
b) Spherocytic Elliptocytosis (Haemolytic Ovalocytosis)	1100

c) Southeast Asian Ovalocytosis (Stomatocytic Elliptocytosis)	1100
d) Elliptocytosis/Ovalocytosis and Malaria	1101
2. Hereditary Spherocytosis	1101
II. Hereditary Abnormalities of Hb Synthesis	1101
1. The Haemoglobinopathies	1103
a) Inherited Abnormalities in the Rates of Globin Biosynthesis	1104
b) Inherited Defects in the Structure and Rate of Synthesis of Hb	1116
c) Hereditary Failure of Normal Neonatal Switch (γ to β) Mechanism	1117
d) Inherited Changes in the Structure of the Globin Chain (Abnormal Haemoglobins)	1118
e) Prevention of Haemoglobinopathies	1131
III. The Enzymopathies	1131
1. G6PD Deficiency	1131
a) Genetics and Biochemical Variants	1132
b) Clinical and Haematological Features	1133
2. Pyruvate Kinase (PK) Deficiency	1135
IV. Acquired Haemolytic Anaemia	1136
G. Haematological Manifestations of Malaria and Other Parasitic Infections	1136
I. Malaria	1136
1. Anaemia	1136
2. White Cell Changes	1137
3. Changes in Platelets and Other Haemostatic Parameters	1137
4. Interaction of Malaria with the Hereditary Erythrocytopathies	1137
II. Other Parasites	1141
H. Hypersplenism and Pancytopenia	1141
J. Bleeding Disorders	1142
K. Blood Transfusion in the Tropics	1145
References	1146

*Chapter 21***Cirrhosis and Other Liver Diseases**

I. W. SIMSON

A. Viral Hepatitis and Hepatic Cirrhosis	1147
I. Viral Hepatitis	1147
II. Hepatic Cirrhosis	1149
1. Post-Viral Cirrhosis	1149
2. Indian Childhood Cirrhosis	1150
B. Idiopathic Portal Hypertension	1151
C. Hepatic Venous Outflow Obstruction	1151
I. Chronic Hepatic Venous Outflow Obstruction	1151
II. Veno-Occlusive Disease	1152
D. Primary Liver Carcinoma	1154
I. Hepatocellular Carcinoma	1154
II. Cholangiocarcinoma	1156
E. Primary Recurrent Pyogenic (Oriental) Cholangitis	1157
References	1158

*Chapter 22***Renal Diseases in the Tropics**

R. SINNIHAH and V. BOONPUCKNAVIG

A. Introduction	1161
B. Protozoal Infections	1164
I. Malarial Nephropathy	1164
1. Clinical Symptoms	1164
2. Pathology in Transient Glomerulonephritis	1164
3. Pathology in Acute Renal Failure	1166
4. Quartan Malaria (<i>P. malariae</i>) Infection	1167
II. Visceral Leishmaniasis	1167
III. American Trypanosomiasis (Chagas' Disease)	1169
IV. Amoebiasis	1170
C. Helminthic Diseases	1170
I. Filarial Nematode Infections – Bancroftian and Brugian Filariasis, Loiasis, Onchocerciasis	1170
II. Nematode Infection – Dioctophymiasis	1172
1. Trichinosis	1172
2. Dioctophymiasis	1172
3. Strongyloidiasis	1172
4. Opisthorchiasis	1173

III. Trematode Infections – Schistosomiasis	1173
IV. Cestode Infections	1175
D. Viral Infections	1176
I. Hantavirus – Haemorrhagic Fever with Renal Syndrome	1176
II. Arenaviridae Virus	1178
III. Togaviridae Viruses	1178
1. Chikungunya Fever	1179
2. Dengue Haemorrhagic Fever	1179
IV. Viral Hepatitis	1179
V. AIDS Virus (HIV)	1180
E. Spirochaetal Infections	1181
I. Leptospirosis	1181
II. Borrelia Recurrentis – Relapsing Fever	1181
F. Bacterial Infections: Enteric	1182
I. Salmonellosis	1182
II. Typhoid Fever	1182
III. Shigellosis	1183
IV. Cholera	1183
G. Mycobacterial Infections: Leprosy	1183
H. Venomous Snake Bites	1184
J. Metabolic Derangements in the Tropics	1185
I. Acute Rhabdomyolysis and Myoglobinuria	1185
II. Heat Stroke	1186
III. Fluid and Electrolyte Depletion	1186
K. Blood Dyscrasias	1186
I. Sickle Cell Disease	1186
II. Thalassaemias	1188
III. G6PD Deficiency and Haemolysis	1188
L. Renal Diseases of Epidemiological Importance	1188
I. Poststreptococcal Glomerulonephritis	1188
II. IgA Nephropathy	1189
III. IgM Nephropathy	1190
IV. Tropical Nephropathy	1190
V. Haemolytic Uraemic Syndrome in Infections	1191
References	1192

Neoplasias

Chapter 23

Cancer in the Tropics

A. R. P. WALKER, C. ISAACSON, and A. C. PATERSON

A. Epidemiology, Risk Factors and Prevention (A. R. P. WALKER)	1201
I. Introduction	1201
II. Description of Populations.	1202
1. Comments on Rates	1204
2. Time Trends of Cancers	1208
3. Comment	1211
III. Cancer Prevention and Avoidance	1211
1. Risk Factor Control	1213
a) Diet	1213
b) Smoking Practice	1215
c) Alcohol Consumption	1216
d) Reproduction Practices	1216
e) Viruses	1217
f) Poverty	1217
2. Other Avoidance Measures: Screening	1217
3. Survival from Cancer	1218
IV. Epidemiological Outlook	1219
V. Summary and Conclusions	1220
B. Pathology (C. ISAACSON).	1222
I. Carcinoma of the Breast	1222
II. Carcinoma of the Digestive System	1223
1. Tongue	1223
2. Salivary Gland	1223
3. Oesophagus	1224
4. Stomach	1225
5. Pancreas	1225
6. Large Bowel	1225
III. Malignant Disease in Childhood in the Tropics	1226
IV. Malignant Lymphomas	1227
V. Neoplasias of the Skin	1228
VI. Carcinoma of the Female Genital Tract	1229
1. Corpus Uteri	1229
2. Chorionepithelioma	1229
3. Ovary	1230
VII. Carcinoma of the Respiratory System	1230
1. Nasal Sinuses	1230
2. Larynx	1230
3. Bronchus	1230

VIII.	Carcinoma of the Urinary System	1231
1.	Kidney	1231
2.	Bladder	1231
3.	Prostate	1231
4.	Testis	1231
5.	Penis	1232
IX.	Tumours of the Central Nervous System	1232
X.	Tumours of the Endocrine System	1232
XI.	Tumours of the Jaw	1233
C.	Molecular Biology of Particular Cancers (A. C. PATERSON).	1233
I.	Breast	1234
II.	Oral Cavity	1234
III.	Nasopharynx	1234
IV.	Oesophagus	1235
V.	Stomach	1235
VI.	Exocrine Pancreas	1235
VII.	Colorectum	1236
VIII.	Uterine Cervix	1236
IX.	Burkitt's Lymphoma	1236
X.	Conclusion	1237
	References	1237

Chapter 24

Kaposi's Sarcoma

H. ITAKURA and K. TORIYAMA

A.	Introduction	1247
B.	Classification, Epidemiology and Geographical Pathology	1247
C.	Clinical Course and Disease Manifestations	1249
D.	Fundamental Histopathology and Histological Process	1252
E.	Additional Histological Findings	1263
F.	Immunohistochemistry	1267
G.	Ultrastructural Findings	1269
H.	Flow Cytometry and Cell Ploidy	1269
J.	Histogenesis	1272
K.	Diagnostic Pathology	1272
L.	Aetiology, Pathogenesis and Disease Entity	1276
	References	1276

Environmental Diseases

Chapter 25

Environmental Diseases in the Tropics

H. ITAKURA

A. Pathologic Conditions Caused by Arthropods	1283
I. Porocephalosis	1283
1. Synonyms	1283
2. Introduction and Definition	1283
3. Clinical Characteristics	1284
4. Pathology	1284
5. Distribution	1285
II. Tungiasis	1286
1. Synonyms	1286
2. Definition, Aetiology and Clinical Characteristics	1286
3. Pathology	1288
4. Distribution	1288
III. Myiasis	1288
1. Synonyms	1288
2. Aetioplgy and General Description	1288
a) <i>Oestrus ovis</i>	1290
b) <i>Dermatobia hominis</i> (<i>D. cyaniventris</i>)	1290
c) <i>Hypoderma</i> spp. and <i>Gasterophilus</i> spp.	1291
d) <i>Cordylobia anthropophaga</i>	1291
e) <i>Chrysomia bezziana</i>	1292
f) <i>Callitroga hominivorax</i> (<i>Cochliomyia americana</i>)	1292
g) <i>Auchmeromyia luteola</i> (Congo floor maggot)	1293
IV. Scabies	1294
B. Tropical Splenomegaly Syndrome	1294
I. Definition	1294
II. Clinical Characteristics	1294
III. Pathology and Pathogenesis	1294
IV. Aetiology	1296
V. Epidemiology	1299
VI. Additional Comments	1300
C. Myospherulosis	1300
I. Synonyms	1300
II. Definition, Clinical Characteristics and Pathology	1300
III. Distribution and Aetiology	1300
D. Mycotoxicosis	1301
I. Definition	1301
II. History, Epidemiology and Clinical Characteristics	1301
III. Pathology and Carcinogenicity	1303
IV. Role of Mycotoxin in Tropical Medicine	1305

E. Heat Disorders	1305
I. Heat Stroke	1306
1. Synonyms	1306
2. Definition and Aetiology	1306
3. Clinical Characteristics and Epidemiology	1306
4. Pathology	1307
5. Diagnosis	1309
II. Heat Exhaustion	1309
1. Synonyms	1309
2. Definition and Aetiology	1309
3. Clinical Characteristics	1309
4. Differential Diagnosis	1310
III. Heat Cramps	1310
1. Synonyms	1310
2. Definition and Aetiology	1310
3. Clinical Characteristics and Pathogenesis	1310
IV. Sunburn	1310
V. Miliaria Rubra	1311
1. Synonyms	1311
2. Definition and Aetiology	1311
3. Clinical Characteristics and Pathology	1311
VI. Anhydrotic Asthenia	1311
1. Synonyms	1311
2. Definition and Aetiology	1311
3. Clinical Characteristics	1312
F. Human Ecology and Disease Manifestations	1312
References	1314

Addendum

Chapter 26

Diseases of Uncertain Aetiology

H. ITAKURA

A. Familial Mediterranean Fever and Related Conditions	1321
I. Synonyms	1321
II. Introduction and Definition	1321
III. Clinical Characteristics	1321
IV. Pathology	1322

V.	Aetiology	1322
VI.	Distribution	1324
VII.	Additional Comments	1325
B.	Tumoural Calcinosis	1325
I.	Synonyms	1325
II.	Definition	1325
III.	Clinical Characteristics	1325
IV.	Pathology	1325
V.	Aetiology and Pathogenesis	1328
VI.	Distribution	1328
VII.	Additional Comments	1328
C.	Idiopathic Elephantiasis	1328
I.	Synonyms	1328
II.	Definition	1328
III.	Clinical Characteristics	1329
IV.	Pathology	1330
V.	Aetiology	1330
VI.	Distribution	1331
D.	Ainhum	1331
I.	Synonyms	1331
II.	Definition and Clinical Characteristics	1331
III.	Pathology	1332
IV.	Aetiology	1332
V.	Distribution	1334
VI.	Additional Comments	1334
E.	Tropical Ulcer	1334
I.	Synonyms	1334
II.	Definition	1334
III.	Clinical Characteristics	1334
IV.	Pathology	1335
V.	Aetiology	1336
VI.	Diagnosis	1336
VII.	Distribution	1337
VIII.	Additional Comments	1337
F.	Tropical Eosinophilia	1337
I.	Synonyms	1337
II.	Definition	1337
III.	Clinical Characteristics	1337
IV.	Pathology	1338
V.	Aetiology	1338
VI.	Diagnosis	1339
VII.	Distribution	1339
G.	Desert Sore	1339
I.	Synonyms	1339
II.	Definition and Clinical Characteristics	1339
III.	Aetiology	1340

IV. Diagnosis	1340
V. Distribution	1340
H. Toxaemia of Pregnancy	1340
I. Synonyms, Definition and Clinical Characteristics.	1340
II. Pathology	1341
III. Aetiology and Distribution	1341
References	1343
Subject Index	1347