

CONTENTS

CHAPTER I

GENERAL CONSIDERATIONS

	PAGE
I. Anatomical and Pathological Principles	5
(a) The Blood-retinal Barrier	8
(b) The Reactions of the Retinal Elements	11
(i) Retinal Neurons	11
Neuro-epithelium, 11; bipolar cells, 11; plexiform layers, 11; ganglion cells, 12; nerve fibres, 12 Hyaloid (cytoid) bodies, 13; cotton-wool patches, 17	
(ii) Neuroglia	25
(iii) Microglia (Mesoglia)	28
(iv) Retinal Blood Vessels	32
(v) Pigmentary Epithelium	34
II. The Healing of Wounds	40

CHAPTER II

DISTURBANCES OF THE CIRCULATION

I. General Considerations	43
Structure of the retinal capillaries, 44; measurement of the calibre of the retinal vessels, 49; blood pressure in the ophthalmic artery, 50; fluorescence angiography, 50; retinal circulation-time, 52.	
II. Hyperæmia	53
(a) Active Hyperæmia	53
(b) Passive Hyperæmia: Cyanosis: Venous Congestion	53
Unilateral intermittent amaurosis with retinal venous dilatation, 56; erythromelalgia, 57	
III. Anæmia: Ischæmia	58
(a) Ischæmia due to Failure of the General Circulation	58
Cardiac arrest, 59; exsanguination, 60	
(b) Obstruction of the Arterial Flow to the Eye	64
(c) Arterial Obstruction in the Retina	66
(i) Obstruction of the Major Circulation	66
(α) Angiospasm	79
Raynaud's disease, 81	
(β) Embolism	82
(γ) Endarteritis and Arterial Thrombosis	87
(ii) Obstruction to the Terminal Circulation	92
IV. Venous Obstruction: Venous Thrombosis	98
Incipient venous occlusion, 103; central venous occlusion, 104; tributary occlusion, 107	

	PAGE
V. Œdema	121
Macular Œdema	124
(i) Stellate Retinopathy	126
(ii) Central Serous Retinopathy	128
VI. Retinal Hæmorrhages	137
(a) Intraretinal Hæmorrhages	137
Retinal Hæmorrhages in the Newborn	139
(b) Preretinal (Subhyaloid) Hæmorrhages	145
(c) Vitreous Hæmorrhages	147
(d) Subretinal Hæmorrhages	148
(e) Post-hæmorrhagic Retinitis Proliferans	150
VII. Anomalies of the Blood Vessels	154
(a) Tortuosities and Varicosities	154
(b) Anomalous Anastomoses	155
(c) Aneurysms	157
Capillary micro-aneurysms, 159	
VIII. Coats's Syndrome	164
IX. New-vessel Formation	179
Retrolental Fibroplasia: Retinopathy of Prematurity	187

CHAPTER III

INFLAMMATIONS OF THE RETINA

I. General Pathology	199
Vascular responses, 199; neural elements, 201; pigmentary epithelium, 202	
II. Non-specific Types of Retinitis	204
(a) Endogenous Primary Retinitis	204
(i) Acute Suppurative Retinitis	204
(ii) Subacute Focal Retinitis (of Roth)	206
(b) Secondary Retinitis	212
(i) Exogenous Purulent Retinitis	212
(ii) Endogenous Exudative Retinitis	212
Chorioretinitis, 212; retinitis secondary to iridocyclitis, 213	
III. Vasculitis	218
(a) Retinal Perivasculitis	218
(i) Perivasculitis Secondary to Uveitis	219
(ii) Perivasculitis Secondary to Systemic Disease	221
(iii) Primary Perivasculitis: Eales's Disease	222
(b) Granulomatous Arteritis	237
(i) Thrombo-angiitis Obliterans (Buerger's Disease).	237
(ii) Giant-cell (Temporal; Cranial) Arteritis	238
IV. Specific Types of Retinitis	245
(a) Bacterial Infections	245
(i) Tuberculosis	246
Miliary, 246; massive, 246; exudative, 247; perivasculitis, 248	
(ii) Leprosy	251

	PAGE
IV. Specific Types of Retinitis— <i>contd.</i>	
(a) Bacterial Infections— <i>contd.</i>	
(iii) Actinomycosis	252
(iv) Syphilis	252
(α) Acquired Syphilis	252
Diffuse neuro-retinitis, 253; syphilitic vascular disease, 255; neuritis papulosa, 256; gummatous lesions, 257; toxic exudative syphilitic retinitis, 259	
(β) Congenital Syphilis	260
Pepper-and-salt fundus, 260; retinal periphlebitis, 260	
(v) Leptospirosis	263
(b) Rickettsial Infections	263
Epidemic typhus, 263; scrub typhus, 263; murine typhus, 263; boutonneuse fever, 264; Q fever, 264	
(c) Viral Infections	264
(i) Measles	266
(ii) Rubella	267
(iii) The Varicella-Zoster Virus	268
(iv) Variola	270
(v) Vaccinia	270
(vi) Influenza	270
(vii) Herpes	271
(viii) Cytomegalic Inclusion Disease	272
(ix) Virus Pneumonia	274
(x) Dengue	274
(xi) PLT Viruses	274
(xii) Presumptive Viral Infections	274
Infectious mononucleosis, 274; Behçet's disease, 275; the uveo-meningitic syndromes, 275	
(d) Mycotic Infections	276
(e) Parasitic Infections	276
(f) Non-infective Retinitis	276
Sarcoidosis	276

CHAPTER IV

RETINOPATHIES ASSOCIATED WITH GENERAL DISEASE

I. The Vascular Diseases	277
(a) Retinal Manifestations of Vascular Disease	281
Changes at the arterio-venous crossings, 281; focal vascular narrow- ing, 288; general attenuation and straightening of the arterioles, 290; tortuosity and enlargement of the vessels, 292; translucency of the vessel walls, 293; the vascular reflex, 293; sheathing of the vessels, 295; angiospasm, 298; aneurysms, 298; hæmorrhages, 298; thrombosis, 299; exudates, 300	
Retinal Capillarosis	300
(b) Clinical Syndromes in Vascular Disease	302
(i) Arteriosclerosis	304
(α) Involutionary Arteriosclerosis	304
(β) Atherosclerosis	308

	PAGE
I. The Vascular Diseases— <i>contd.</i>	
(b) Clinical Syndromes in Vascular Disease— <i>contd.</i>	
(ii) Arterial Hypertension	315
(α) Hypertension without Sclerosis	323
(β) Hypertension with Involutionary Sclerosis	324
Arteriosclerotic Retinopathy	327
(γ) Hypertension with Arteriolar Sclerosis	328
(δ) Malignant Hypertension	337
(ϵ) Toxæmia of Pregnancy	350
(iii) Arterial Hypotension	356
(α) Carotid Insufficiency or Occlusion	357
(β) Pulseless Disease	367
Hypotensive Retinopathy	369
II. The Blood Diseases	373
(a) The Anæmias	374
(i) The Macrocytic Anæmias	374
(ii) The Microcytic Anæmias	378
(iii) The Normocytic Anæmias	379
(iv) The Hæmolytic Anæmias	380
(b) Polycythæmia	382
Polycythæmia rubra vera, 382; secondary polycythæmia, 384	
(c) The Hæmorrhagic Diseases (Purpuras)	385
(d) The Leucæmias	387
Leucæmic Retinopathy	388
(e) The Hæmoglobinopathies	393
(i) Sickle-cell Disease	393
(ii) Thalassæmia	398
(f) The Dysproteinæmias	400
III. The Reticulo-endothelioses	407
Hodgkin's Disease	407
IV. Metabolic Diseases	408
(a) Diseases of the Carbohydrate Metabolism	408
(i) Diabetes Mellitus	408
Diabetic Retinopathy	410
Pre-diabetic retinopathy, 416; simple diabetic retinopathy,	
416; proliferative diabetic retinopathy, 422	
(ii) Glycogen-storage Disease (von Gierke)	448
(iii) Hurler's Disease (Gargoylism)	449
(iv) The Unverricht-Lafora Familial Myoclonia	450
(b) Diseases of the Lipid Metabolism	451
(i) Hyperlipæmia	452
(ii) Primary Hypercholesterolæmia	456
(iii) The Lipidoses	458
(α) The Systemic Lipidoses	458
1. Gaucher's Disease	458
2. Hereditary Dystopic Lipidosis (Fabry)	459

	PAGE
IV. Metabolic Diseases— <i>contd.</i>	
(b) Diseases of the Lipid Metabolism— <i>contd.</i>	
(iii) The Lipidoses— <i>contd.</i>	
(β) The Cerebro-retinal Lipidoses	460
1. Amaurotic Family Idiocy	462
Infantile form, 463; late infantile form, 473; juvenile form (familial cerebro-macular degenera- tion), 475; adult form, 480	
2. Essential Lipid Histiocytosis (Niemann-Pick)	483
3. Disseminated Lipogranulomatosis (Farber)	488
4. Heredopathica Atactica Polyneuritiformis (Refsum)	488
5. The Syndrome of Bassen and Kornzweig	491
(c) Disorders of the Metallic Metabolism	492
Hæmochromatosis	492
(d) Metabolic Diseases of Unknown Origin	493
(i) Lipid Proteinosis (Urbach-Wiethe)	493
(ii) The Chédiak-Higashi Syndrome	494
(iii) Primary Familial Amyloidosis	495
(e) Deficiency Diseases	495
Hypovitaminosis A	496
V. Diseases of Connective Tissue	501
(a) Disseminated Lupus Erythematosus	502
(b) Polyarteritis Nodosa	505
(c) Dermatomyositis	508
(d) Scleroderma	511
VI. Diseases of the Central Nervous System	512
(a) Disseminated Sclerosis	513
(b) Diffuse Leuco-encephalopathy	514

CHAPTER V

DEGENERATIONS AND DYSTROPHIES

I. Senile Changes	517
(a) General Changes	519
In the retina, 519; in the pigmentary epithelium, 520; in Bruch's membrane, 522; functional changes, 523	
(b) Peripheral Senile Retinal (Paving-stone; Cobblestone) Degeneration	523
II. Secondary Degenerations	528
(a) Secondary Pigmentary Degeneration: Pseudo-retinitis Pigmentosa	530
(b) Pigmented Paravenous Retino-choroidal Atrophy	533
(c) Colloid Bodies (Drusen)	535
(d) Verrucosities of the Internal Limiting Membrane	541
(e) Cystoid Degeneration	543
Of the macula, 545; of the periphery, 549	
(f) Palisade (Lattice) Degeneration	554
(g) Non-pigmented Epithelial Proliferation	559
(h) Degenerative Retinoschisis	559
Peripheral, 561; central 567	
(i) Circinate Degeneration	568

	PAGE
III. The Tapeto-retinal Dystrophies	574
General Considerations	574
(a) The Peripheral Tapeto-retinal Dystrophies	577
(i) Pigmentary Retinal Dystrophy	577
(α) Heredity	578
(β) Clinical Picture	582
(γ) Atypical Forms	589
1. Senile Pigmentary Dystrophy	590
2. Pigmentary Dystrophy with little or no Pigment	590
3. Fleck-shaped and Mosaic Pigmentation	591
4. Central and Pericentral Pigmentary Dystrophy	591
5. Sectorial Pigmentary Dystrophy	593
6. Unilateral Pigmentary Dystrophy	596
(δ) Pathology	598
(ϵ) \AA tiology	602
(ξ) Treatment	606
(η) Associated Conditions	608
1. Ocular Associations	608
Cataract, 608; glaucoma, 608; microphthalmos,	
608; myopia, 609; keratoconus, 609	
2. Systemic Associations	609
Deafness, 609; dumbness, 609	
3. Diencephalic Anomalies	610
Laurence-Moon-Bardet-Biedl syndrome, 610;	
neuro-endocrine dyscrania, 612; Cockayne's syn-	
drome, 613	
4. Central Nervous Lesions	614
Hallgren's syndrome, 614; Pelizaeus-Merzbacher	
syndrome, 614	
5. Myotonic Dystrophy; External Ophthalmoplegia	615
6. Metabolic Dyscrasias	615
(ii) Albipunctate Dystrophy	622
Progressive albipunctate dystrophy, 623; fundus albipunc-	
tatus, 625	
(iii) Fundus Flavimaculatus	628
(b) Central Tapeto-retinal Dystrophies	629
(i) Heredo-macular Dystrophies	629
Infantile (Best's disease), 632; juvenile (Stargardt's disease),	
634; adult (Behr's disease), 638; presenile and senile, 638	
(ii) Reticular Pigmentary Dystrophy (Sjögren)	643
(iii) Polymorphic Dystrophy (Braley)	645
(c) Hyaline Dystrophies	645
Tay's, Doyne's and Léventine Dystrophies	647
(d) Diffuse Dystrophies	652
(i) Diffuse Dystrophy of the Retinal Cones	652
(ii) Retinal Aplasia (Amaurosis of Leber)	653
(e) Vitreo-retinal Dystrophies	658
Idiopathic Retinoschisis	658
Sex-linked retinoschisis, 658; recessive vitreo-retinal dystrophy	
(Favre), 661; dominant vitreo-retinal dystrophy (Wagner),	
662	

CHAPTER VI

CYSTS AND TUMOURS OF THE RETINA

I, Cysts of the Retina	667
II. Tumours of the Retina	672
(a) Primary Tumours	672
(i) Neuro-epiblastic Tumours	672
(α) Retinoblastoma	672
1. Incidence	676
2. Inheritance	678
3. Clinical Course	681
4. Pathology	692
5. Direct Spread	700
6. Metastases	707
7. Diagnosis	710
8. Treatment	713
9. Prognosis	723
(β) Astrocytoma	728
(γ) Hyperplasias and Tumours of the Pigmentary Epithelium	732
(ii) Vascular Tumours	735
Angioma, 735; telangiectases, 736	
(iii) The Phacomatoses	736
(α) Angiomatosis (von Hippel-Lindau)	738
(β) Tuberosus Sclerosis (Bourneville)	754
(γ) Neurofibromatosis (von Recklinghausen)	761
(b) Secondary Tumours	765
Metastatic carcinoma, 767; metastatic sarcoma, 768; metastatic malignant melanoma, 768	

CHAPTER VII

DETACHMENT AND FOLDING OF THE RETINA

I. Detachment of the Retina	771
(a) History	772
(b) Exudative Detachments	775
(c) Traction Detachments	777
(d) Perforated Detachments	778
(i) Ætiology	779
(ii) Retinal Perforations	788
(iii) Experimental Detachment	793
(iv) Incidence and Heredity	794
(v) Pathology	797
(vi) Clinical Features and Symptoms	804
(vii) Diagnosis	812
(viii) Treatment	816
Prophylactic measures, 822; surgical treatment, 826	
(ix) Prognosis	846
II. Retinal Folds	856
Contraction folds, 856; deformational folds, 858	
Index	862