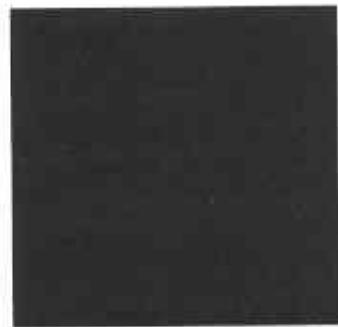


contents



I.

INTRODUCTION TO THE STUDY OF THE RHEUMATIC DISEASES

1. Skeletal Paleopathology of Rheumatic Diseases: The Subprimate Connection <i>Bruce M. Rothschild, M.D.</i>	3
2. Skeletal Paleopathology of Rheumatic Disorders <i>Paul Dieppe, M.D., and Juliet M. Rogers, M.D., Ch.B.</i>	8
3. Epidemiology of the Rheumatic Diseases <i>Alfonse T. Masi, M.D., D.R.P.H., and Thomas A. Medsger, Jr., M.D.</i>	16
4. Differential Diagnosis of Arthritis: Analysis of Signs and Symptoms <i>Daniel J. McCarty, M.D.</i>	55
5. Synovial Fluid <i>Daniel J. McCarty, M.D.</i>	69
6. Magnetic Resonance Imaging of the Joints <i>David W. Stoller, M.D., and Harry K. Genant, M.D.</i>	91
7. Osteoporosis and Bone Mineral Assessment <i>Harry K. Genant, M.D.</i>	132
8. Computed Tomography of the Lumbar Spine, Cervical Spine, and Sacroiliac Joint <i>Guillermo F. Carrera, M.D.</i>	148
9. Clinical Evaluation in Rheumatic Diseases <i>Nicholas Bellamy, M.D., and W. Watson Buchanan, M.D.</i>	153

II. SCIENTIFIC BASIS FOR THE STUDY OF THE RHEUMATIC DISEASES

10.	Structure and Function of Joints <i>Henry J. Mankin, M.D., and Eric Radin, M.D.</i>	189
11.	Synovial Physiology <i>Peter A. Simkin, M.D.</i>	207
12.	Collagen in Normal and Diseased Connective Tissue <i>Darwin J. Prockop, M.D., and Taina Pihlajaniemi, M.D.</i>	222
13.	Structure and Function of Proteoglycans <i>Lawrence Rosenberg, M.D.</i>	240
14.	Regulation of Connective Tissue Metabolism <i>C. William Castor, M.D.</i>	256
15.	Structure and Function of Synoviocytes <i>Robert I. Fox, M.D., Ph.D., Martin Lotz, M.D., and Dennis A. Carson, M.D.</i>	273
16.	Chondrocyte Structure and Function <i>Edith R. Schwartz, Ph.D.</i>	289
17.	Immunoglobulins and Their Genes <i>J. Claude Bennett, M.D.</i>	296
18.	Structure and Function of Monocytes and Macrophages <i>Ralph Snyderman, M.D., and Marilyn C. Pike, M.D., Ph.D.</i>	306
19.	Lymphocytes: Structure and Function <i>John D. Stobo, M.D.</i>	336
20.	Neutrophil Structure and Function <i>Bruce N. Cronstein, M.D., and Gerald Weissmann, M.D.</i>	346
21.	Eosinophil Structure and Function <i>Peter F. Weller, M.D.</i>	366
22.	The Mast Cell in Rheumatic Diseases <i>Barry L. Gruber, M.D., and Allen P. Kaplan, M.D.</i>	374
23.	Granulocyte Chemotaxis <i>Isaias Spilberg, M.D., and Brian F. Mandell, M.D., Ph.D.</i>	383
24.	Platelets in Rheumatic Disease <i>Robert A. Terkeltaub, M.D., and Mark H. Ginsberg, M.D.</i>	391
25.	Complement Mediators of Inflammation <i>Douglas T. Fearon, M.D.</i>	399
26.	Arachidonic Acid Metabolites <i>Edward J. Goetzl, M.D., and Ira M. Goldstein, M.D.</i>	409
27.	Characteristics of Immune Complexes and Principles of Immune Complex Diseases <i>Mart Mannik, M.D.</i>	426
28.	Genetic Structure and Functions of the Human Major Histocompatibility Complex <i>Gerald T. Nepom, M.D., Ph.D.</i>	440
29.	Immunogenetics and Rheumatic Diseases <i>Frank C. Arnett, M.D.</i>	453
30.	Arthritis and Autoimmunity in Animals <i>Eliot A. Goldings, M.D.,* and Hugo E. Jasen, M.D.</i>	465
31.	Infectious Agents in Chronic Rheumatic Disease <i>Paul E. Phillips, M.D.</i>	482

*Deceased

III.**CLINICAL PHARMACOLOGY OF ANTI-RHEUMATIC DRUGS**

32.	Aspirin and Other Nonsteroidal Anti-inflammatory Drugs <i>Harold E. Paulus, M.D., and Daniel E. Furst, M.D.</i>	507
33.	Gold Compounds <i>John L. Skosey, M.D., Ph.D.</i>	544
34.	Antimalarials <i>Lorne A. Runge, M.D.</i>	556
35.	Cytotoxic Drugs and Sulfasalazine <i>Grant W. Cannon, M.D., and John R. Ward, M.D.</i>	563
36.	Penicillamine <i>Israeli A. Jaffe, M.D.</i>	593
37.	Glucocorticoids <i>Timothy W. Behrens, M.D., and James S. Goodwin, M.D.</i>	604
38.	Immunoregulation and Experimental Therapies <i>Seth H. Pincus, M.D.</i>	622
39.	Arthrocentesis Technique and Intrasynovial Therapy <i>Robert A. Gatter, M.D.</i>	646

IV.**RHEUMATOID ARTHRITIS**

40.	Etiology and Pathogenesis of Rheumatoid Arthritis <i>Nathan J. Zvaifler, M.D.</i>	659
41.	Pathology of Rheumatoid Arthritis and Allied Disorders <i>Aubrey J. Hough, Jr., and Leon Sokoloff, M.D.</i>	674
42.	Mechanisms of Tissue Destruction in Rheumatoid Arthritis <i>Stephen M. Krane, M.D.</i>	698
43.	Clinical Picture of Rheumatoid Arthritis <i>Daniel J. McCarty, M.D.</i>	715
44.	Extra-articular Rheumatoid Arthritis <i>Paul A. Bacon, M.D.</i>	1967*
45.	Laboratory Findings in Rheumatoid Arthritis <i>John Baum, M.D., and Morris Ziff, Ph.D., M.D.</i>	744
46.	Rheumatoid Factors <i>Mart Mannik, M.D.</i>	762
47.	Treatment of Rheumatoid Arthritis <i>Robert W. Lightfoot, Jr., M.D.</i>	772
48.	Role of Nursing and Allied Health Professions in the Treatment of Arthritis <i>Janice Smith Pigg, R.N., B.S.N., M.S.</i>	783
49.	Rehabilitation Medicine and Arthritis <i>Robert L. Swezey, M.D.</i>	797
50.	Correction of Arthritic Deformities of the Hand <i>Adrian E. Flatt, M.D.</i>	826

*Due to unforeseen circumstances the manuscript for this chapter was delayed, preventing us from placing the material in its proper sequence. Chapter 44 appears immediately after Chapter 119 on page 1967.

The Publisher and Author regret any inconvenience this situation may cause the reader.

51.	Correction of Arthritic Deformities of the Shoulder and Elbow <i>Allan E. Inglis, M.D.</i>	847
52.	Correction of Arthritic Deformities of the Spine <i>Glenn A. Meyer, M.D., and James E. Stoll, M.D.</i>	856
53.	Correction of Arthritic Deformities of the Hip <i>Richard N. Stauffer, M.D.</i>	863
54.	Correction of Arthritic Deformities of the Knee <i>Russell E. Windsor, M.D., and John N. Insall, M.D.</i>	876
55.	Correction of Arthritic Deformities of the Foot and Ankle <i>Mack L. Clayton, M.D.</i>	889

V.**OTHER INFLAMMATORY ARTHRITIC SYNDROMES**

56.	Seronegative Polyarthritis <i>Graciela S. Alarcón, M.D., M.P.H.</i>	905
57.	Juvenile Rheumatoid Arthritis <i>John J. Calabro, M.D.*</i>	913
58.	Treatment of Juvenile Rheumatoid Arthritis <i>Jane Green Schaller, M.D.</i>	926
59.	Ankylosing Spondylitis <i>Gene V. Ball, M.D.</i>	934
60.	Reiter's Syndrome: Reactive Arthritis <i>Denys K. Ford, M.D.</i>	944
61.	Psoriatic Arthritis <i>Robert M. Bennett, M.D.</i>	954
62.	Enteropathic Arthritis <i>Marlene A. Aldo-Benson, M.D.</i>	972
63.	Arthritis and Liver Disease <i>Joseph Duffy, M.D.</i>	980
64.	Intermittent and Periodic Arthritic Syndromes <i>George E. Ehrlich, M.D.</i>	991
65.	Arthritis, Food Allergy, Diets, and Nutrition <i>Richard S. Panush, M.D.</i>	1010

VI.**SYSTEMIC RHEUMATIC DISEASES**

66.	Introduction to Systemic Rheumatic Diseases: Nosology and Overlap Syndromes <i>Morris Reichlin, M.D.</i>	1017
67.	Systemic Lupus Erythematosus: Clinical Aspects and Treatment <i>Naomi F. Rothfield, M.D.</i>	1022
68.	Systemic Lupus Erythematosus: Immunologic Aspects <i>Eng M. Tan, M.D.</i>	1049
69.	Cellular Immunity and Immunoregulation in Systemic Lupus Erythematosus <i>David A. Horwitz, M.D.</i>	1055
70.	Antiphospholipid Antibodies <i>E. Nigel Harris, M.D., and Graham R.V. Hughes, M.D.</i>	1068

*Deceased

71.	Mixed Connective Tissue Disease <i>Gordon C. Sharp, M.D., and Bernhard H. Singsen, M.D.</i>	1080
72.	Polymyositis/Dermatomyositis <i>Lawrence J. Kagen, M.D.</i>	1092
73.	Systemic Sclerosis (Scleroderma), Localized Scleroderma, Eosinophilic Fasciitis, and Calcinosis <i>Thomas A. Medsger, Jr., M.D.</i>	1118
74.	Vasculitis <i>Anthony S. Fauci, M.D., and Randi Y. Leavitt, M.D., Ph.D.</i>	1166
75.	Pseudovasculitis Syndromes <i>Leonard H. Sigal, M.D.</i>	1189
76.	Sjögren's Syndrome and Connective Tissue Diseases Associated with Other Immunologic Disorders <i>Norman Talal, M.D.</i>	1197
77.	Rheumatic Fever <i>Angelo Taranta, M.D.</i>	1214
78.	Relapsing Polychondritis <i>David E. Trentham, M.D.</i>	1227
79.	Polymyalgia Rheumatica and Giant Cell Arteritis <i>Louis A. Healey, M.D.</i>	1234

VII.**MISCELLANEOUS RHEUMATIC DISEASES**

80.	Nonarticular Rheumatism and Psychogenic Musculoskeletal Syndromes <i>Hugh A. Smythe, M.D.</i>	1241
81.	Neuropathic Joint Disease (Charcot Joints) <i>Michael H. Ellman, M.D.</i>	1255
82.	Amyloidosis <i>Alan S. Cohen, M.D.</i>	1273
83.	Sarcoidosis <i>H. Ralph Schumacher, Jr., M.D.</i>	1294
84.	Arthritis Associated with Hematologic Disorders, Storage Diseases, Disorders of Lipid Metabolism, and Dysproteinemias <i>Michael H. Weisman, M.D.</i>	1301
85.	Heritable and Developmental Disorders of Connective Tissue and Bone <i>Reed E. Pyeritz, M.D., Ph.D.</i>	1332
86.	Hypertrophic Osteoarthropathy <i>Roy D. Altman, M.D.</i>	1360

VIII.**REGIONAL DISORDERS OF JOINTS AND RELATED STRUCTURES**

87.	Traumatic Arthritis and Allied Conditions <i>Robert S. Pinals, M.D.</i>	1371
88.	Mechanical Disorders of the Knee <i>Roger P. Johnson, M.S., M.D.</i>	1390
89.	Painful Feet <i>John S. Gould, M.D.</i>	1403

90.	Cervical Spine Syndromes <i>Hugh A. Smythe, M.D.</i>	1413
91.	Painful Temporomandibular Joint <i>Doran E. Ryan, D.D.S., M.S.</i>	1422
92.	The Painful Back <i>David B. Levine, M.D.</i>	1432
93.	Spinal Stenosis <i>J. Desmond O'Duffy, M.D.</i>	1464
94.	Fibrosing Syndromes: Diabetic Stiff Hand Syndrome, Dupuytren's Contracture, and Plantar Fasciitis <i>Wilmer L. Sibbitt, Jr., M.D.</i>	1473
95.	Nerve Entrapment Syndromes <i>Nortin M. Hadler, M.D.</i>	1485
96.	Tumors of Joints and Related Structures <i>Alan S. Cohen, M.D., and Juan J. Canoso, M.D.</i>	1492
97.	Painful Shoulder and the Reflex Sympathetic Dystrophy Syndrome <i>Franklin Kozin, M.D.</i>	1509
98.	Osteonecrosis <i>John P. Jones, Jr., M.D.</i>	1545
99.	Uveitis <i>James T. Rosenbaum, M.D.</i>	1563

IX.**OSTEOARTHRITIS**

100.	Pathology of Osteoarthritis <i>Aubrey J. Hough, Jr., M.D., and Leon Sokoloff, M.D.</i>	1571
101.	Etiopathogenesis of Osteoarthritis <i>David S. Howell, M.D.</i>	1595
102.	Clinical and Laboratory Findings in Osteoarthritis <i>Roland W. Moskowitz, M.D.</i>	1605
103.	Treatment of Osteoarthritis <i>Kenneth D. Brandt, M.D.</i>	1631

X.**METABOLIC BONE AND JOINT DISEASES**

104.	Clinical Gout and the Pathogenesis of Hyperuricemia <i>Dennis J. Levinson, M.D.</i>	1645
105.	Management of Hyperuricemia <i>Robert L. Wortmann, M.D.</i>	1677
106.	Pathogenesis and Treatment of Crystal-Induced Inflammation <i>Robert A. Terkeltaub, M.D., Mark H. Ginsberg, M.D., and Daniel J. McCarty, M.D.</i>	1691
107.	Calcium Pyrophosphate Crystal Deposition Disease; Pseudogout; Articular Chondrocalcinosis <i>Lawrence M. Ryan, M.D., and Daniel J. McCarty, M.D.</i>	1711
108.	Basic Calcium Phosphate (Apatite, Octacalcium Phosphate, Tricalcium Phosphate) Crystal Deposition Diseases <i>Paul B. Halverson, M.D., and Daniel J. McCarty, M.D.</i>	1737

109.	Calcium Oxalate and Other Crystals or Particles Associated with Arthritis <i>Antonio J. Reginato, M.D.</i>	1756
110.	Metabolic Diseases of Muscle <i>Robert L. Wortmann, M.D.</i>	1778
111.	Ochronosis, Hemochromatosis, and Wilson's Disease <i>H. Ralph Schumacher, Jr., M.D.</i>	1798
112.	Osteopenic Bone Diseases <i>Bevra H. Hahn, M.D.</i>	1812
113.	Rheumatic Aspects of Endocrinopathies <i>Mary E. Cronin, M.D.</i>	1842

XI.**INFECTIOUS ARTHRITIS**

114.	Principles of Diagnosis and Treatment of Bone and Joint Infections <i>Frank R. Schmid, M.D.</i>	1863
115.	Bacterial Arthritis <i>George Ho, Jr., M.D.</i>	1892
116.	Gonococcal Arthritis <i>Don L. Goldenberg, M.D.</i>	1915
117.	Arthritis Due to Mycobacteria, Fungi, and Parasites <i>Ronald P. Messner, M.D.</i>	1925
118.	Viral Arthritis <i>Allen C. Steere, M.D.</i>	1938
119.	Lyme Disease <i>Stephen E. Malawista, M.D.</i>	1955
	Index	1999