

**CECIL
TEXTBOOK OF
MEDICINE**

WYNGAARDEN

SMITH

17th Edition

IGAKU-SHOIN/SAUNDERS INTERNATIONAL EDITION

Igaku-Shoin/Saunders International Edition

17th edition

CECIL TEXTBOOK OF MEDICINE

Edited by

JAMES B. WYNGAARDEN, M.D.

Director, National Institutes of Health,
Bethesda, Maryland

LLOYD H. SMITH, Jr., M.D.

Chairman, Department of Medicine,
University of California, San Francisco, School of Medicine,
San Francisco, California



1985

W.B.SAUNDERS COMPANY

Philadelphia/London/Toronto/Mexico City/Rio de Janeiro/Sydney/Tokyo

Igaku-Shoin/Saunders

W. B. Saunders Company: West Washington Square
Philadelphia, PA 19105

1 St. Anne's Road
Eastbourne, East Sussex BN21 3UN, England

1 Goldthorne Avenue
Toronto, Ontario M8Z 5T9, Canada

Apartado 26370—Cedro 512
Mexico 4, D.F., Mexico

Rua Coronel Cabrita, 8
Sao Cristovao Caixa Postal 21176
Rio de Janeiro, Brazil

9 Waltham Street
Artarmon, N.S.W. 2064, Australia

Ichibancho, Central Bldg., 22-1 Ichibancho
Chiyoda-Ku, Tokyo 102, Japan

Listed here is the latest translated edition of this book together with the language of the translation and the publisher.

Chinese (7th Edition)—Chinese Medical Association, Shanghai, China
Italian (9th Edition)—Societa Editrice Universo, Rome, Italy
(15th Edition, in preparation)—Piccin Editore, Padova, Italy
Japanese (14th Edition)—Igaku Shoin Ltd., Tokyo, Japan
Polish (9th Edition)—Panstwowy Zaklad Wydawnictw Lekarskich, Warsaw, Poland
Portuguese (14th Edition)—DISCOS CBS Industria e Comercio Ltda., Rio de Janeiro, Brazil
Serbo-Croat (11th Edition)—Medicinska Knjiga, Belgrade, Yugoslavia
Spanish (14th Edition)—Nueva Editorial Interamericana Ltda., Mexico City
(15th Edition, in preparation)—Nueva Editorial Interamericana Ltda., Mexico City

Library of Congress Cataloging in Publication Data

Main entry under title:

Textbook of Medicine.

Simultaneously published in 1 v.

Includes bibliographies and index.

1. Internal medicine. I. Cecil, Russell L. (Russell La Fayette), 1881-1965. II. Wyngaarden, James B., 1924- . III. Smith, Lloyd H. (Lloyd Holly), 1924- . IV. Title: Cecil Textbook of Medicine.
[DNLM: 1. Medicine. WB 100 T354]
RC46.T35 1985 616 84-20225
ISBN 0-7216-9629-5 (set)
ISBN 0-7216-6927-9 (v. 1)
ISBN 0-7216-9628-7 (v. 2)

Library of Congress Cataloging in Publication Data

Main entry under title:

Textbook of Medicine.

Simultaneously published in 2 v.

Includes bibliographies and index.

1. Internal medicine. I. Cecil, Russell L. (Russell La Fayette), 1881-1965. II. Wyngaarden, James B., 1924- . III. Smith, Lloyd H. (Lloyd Holly), 1924- . IV. Title: Cecil Textbook of Medicine.
[DNLM: 1. Medicine. WB 100 T354]
RC46.T35 1985b 616 84-20226
ISBN 0-7216-9626-0

Textbook of Medicine

ISBN 0-7216-9626-0 (US Edition)

ISBN 4-7557-0087-6 (Igaku-Shoin/Saunders International Edition)

© 1985 by W. B. Saunders Company. Copyright 1927, 1930, 1933, 1937, 1940, 1943, 1947, 1951, 1955, 1959, 1963, 1967, 1971, 1975, 1979 and 1982 by W. B. Saunders Company. Copyright under the Uniform Copyright Convention. Simultaneously published in Canada. All rights reserved. This book is protected by copyright. No part of it may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without written permission from the publisher. Library of Congress catalog card numbers 84-20225 and 84-20226.

This International Edition is not for sale in the United States of America, its dependencies or Canada.

Printed in Japan, 1985

Last digit is the print number: 9 8 7 6 5 4 3 2 1

Editor for Neurologic and Behavioral Diseases

FRED PLUM, M.D.

Anne Parrish Titzell Professor and Chairman,
Department of Neurology, Cornell University Medical College;
Neurologist-in-Chief, The New York Hospital-Cornell Medical Center,
New York, New York

The Consulting Editors:

Renal Diseases

THOMAS E. ANDREOLI, M.D.

Professor and Chairman, Department of Internal Medicine,
University of Texas Medical School at Houston; Chief of
Medicine, Hermann Hospital, Houston, Texas

Infectious Diseases

CHARLES C. J. CARPENTER, M.D.

John H. Hord Professor and Chairman, Department of Medicine,
Case Western Reserve University School of Medicine,
Cleveland, Ohio

Therapeutics

ROBERT J. LEFKOWITZ, M.D.

Investigator, Howard Hughes Medical Institute; James B. Duke
Professor of Medicine, Duke University School of Medicine,
Durham, North Carolina

Respiratory Diseases

JOHN F. MURRAY, M.D.

Professor of Medicine, University of California, San Francisco,
School of Medicine, San Francisco, California

Hematologic and Hematopoietic Diseases

DAVID G. NATHAN, M.D.

Robert A. Stranahan Professor of Pediatrics, Harvard Medical School,
Boston, Massachusetts

Immunology

WILLIAM E. PAUL, M.D.

Chief, Laboratory of Immunology, National Institute of Allergy
and Infectious Diseases, National Institutes of Health,
Bethesda, Maryland

Diseases of the Digestive System

MARVIN H. SLEISINGER, M.D.

Professor and Vice Chairman, Department of Medicine, University of
California, San Francisco, School of Medicine; Chief, Medical Service,
San Francisco Veterans Administration Medical Center, San Francisco, California

Cardiovascular Diseases

ANDREW G. WALLACE, M.D.

Walter Kempner Professor of Medicine, Duke University School of Medicine;
Vice Chancellor for Health Affairs and Chief Executive Officer,
Duke University Medical Center, Durham, North Carolina

DOSAGE NOTICE

Extraordinary efforts have been made by the authors, the editors, and the publisher of this book to ensure that dosage recommendations are precise and in agreement with the highest standards of practice.

However, dosage schedules are changed from time to time in the light of accumulating clinical experience and continuing laboratory studies. This is most likely to occur in the case of recently introduced products.

We urge, therefore, that you check the package information data for the manufacturer's recommended dosage. In addition, there are some quite serious situations, each encountered only rarely, in which drug therapy must be individualized and expert judgment advises the use of a higher dosage or administration by a different route than is included in the manufacturer's recommendations. Throughout the text many such instances are indicated by a footnote.

THE EDITORS

ALSO ASSOCIATED WITH THE CECIL TEXTBOOK OF MEDICINE

Review of General Internal Medicine: A Self-Assessment Manual, 3rd Edition, 1985

Editors: Lloyd H. Smith, Jr., M.D., James B. Wyngaarden, M.D.

The third edition of this self-assessment book contains approximately 1200 questions covering all the specialty areas of internal medicine. The answers are linked to the Cecil Textbook of Medicine and to other readily available sources.

Available from W. B. Saunders Company
West Washington Square
Philadelphia, Pa. 19105

Preface

Both the science and the practice of medicine change rapidly. This has been true throughout the twentieth century; it has been particularly true during these last decades of the century. Since it first appeared in 1927, the *Cecil Textbook of Medicine* has reflected that change in its successive editions appearing every three to four years. This seventeenth edition represents a continuation of that long tradition.

The theme of the book has always been to provide an "authoritative clinical guidance and a reasoned, scientific basis for the pursuit of medicine." This can be accomplished only by a rigorous periodic reexamination of the content, organization, and balance of the book, which, despite its large scope, cannot be truly comprehensive. Judgments must be made as to what to exclude, as well as what to include and what is likely to be of greatest interest and importance in the early future. As an editorial responsibility, a plan must then be developed to best translate these ideas into improvements in the book. In arriving at these judgments for the seventeenth edition, we have been greatly assisted by a talented group of eight Consulting Editors and by Fred Plum, Editor for *Neurologic and Behavioral Diseases*.

In this edition we are privileged to have four new Consulting Editors: Thomas E. Andreoli (Renal Disease), Charles C. J. Carpenter (Infectious Diseases), Robert J. Lefkowitz (Principles of Therapeutics), and William E. Paul (Diseases of the Immune System). They join four editorial colleagues from previous editions who have continued in this important role: John F. Murray (Respiratory Diseases), David G. Nathan (Hematologic Diseases), Marvin H. Sleisenger (Gastrointestinal Diseases), and Andrew G. Wallace (Cardiovascular Diseases). The Consulting Editors have carried out extensive reviews of their respective sections for content, presentation, and organization. In concert with them we have selected the individual authors who have contributed the specific chapters: the concise, scholarly reviews that, after all, collectively compose the substance of such a book.

In keeping with past tradition there has been a significant turnover of participants in the book in order to ensure fresh approaches to specific topics. In this edition, for example, there are 109 new contributors or previous contributors with newly assigned areas of responsibility. As such, approximately 40 per cent of the individual chapters have been completely rewritten under new authorship, in addition to the extensive editorial changes to be found in chapters that have remained under previous authorship. This type of "programmed regeneration" requires that, in addition to the usual editorial scrutiny of all parts of the book, each individual chapter be completely recast every two to three editions. In addition to advising on the selection of the new participants, the Consulting Editors have been particularly concerned with reviewing these new chapters and sections of the book. The contributors who collectively compose the authorship of this seventeenth edition of *Cecil* represent a remarkably broad source of collaborators from more than 100 institutions. It is to them that we are particularly indebted for the substance of this large compendium of the science and practice of medicine.

What changes have been introduced in this newest edition of a venerable book? The most important changes are dispersed throughout the book as the painstaking updating of all of the chapters. Particular attention has been directed to the selection of recent references in readily available journals and books to supplement the necessarily compressed summaries offered in

the chapters. As before, the references have been annotated to make them more useful for the reader. Beyond these general improvements throughout the book, some more specific changes have been introduced, a few of which will be noted here. Part II, *Human Growth, Development, and Aging*, has important new chapters on "Management of Common Problems in the Elderly" (T. Franklin Williams) and on "Care of Dying Patients and Their Families" (Sylvia A. Lack). These thoughtful chapters, and that on "Ethics in the Practice of Medicine" (Albert R. Jonsen), concern themselves with issues of increasing importance to medicine and to society at large. A new Part III has been introduced on the topic *Personal Health Care and Preventive Medicine*. It has become increasingly clear that maintenance of health is greatly influenced by factors under the control of the individual. At the extremes this is a topic that shades into the faddism and cultism of certain "life styles" and that is tinged with shamanism, commercialism, and unfounded claims. Nevertheless, there is a large body of scientific information to buttress our intuitive sense that the individual can have a considerable influence on his or her health through daily decisions concerning diet, exercise, the use of tobacco, alcohol or other drugs, the use of automobile seat belts, and many other factors. Therefore, seven brief chapters have been devoted to these topics with which all physicians must be concerned.

A new Part IV on *Principles of Diagnosis* has also been introduced, composed of three essays: "Clinical Approach to the Patient" (William L. Morgan, Jr.), "The Use and Interpretation of Laboratory-Derived Data" (James B. Wyngaarden), and "Overview of Imaging Techniques and Projection for the Future" (Alexander R. Margulis). Of course the specifics of diagnosis are discussed in the chapters concerning individual diseases and further outlined in the introductory chapters for each organ system. Nevertheless, this Part offers a valuable overview of how clinical and laboratory medicine can be integrated by the clinician in pursuing a diagnosis. Part XXVI on *Occupational and Environmental Medicine* comprises a series of chapters that relate to the increasingly important role of the environment, whether ambient or in the workplace, in the health of the individual or of the public. These physical, chemical, and even psychological factors may be overt or they may be extraordinarily elusive unless they are specifically looked for by history or laboratory investigation.

In addition to the above newly organized Parts of this seventeenth edition of *Cecil*, novel chapters have been introduced within other Parts to reflect the changing importance of areas of biological science and medical practice. For example, Part VI on *Principles of Human Genetics* contains new chapters on "Expectations from Recombinant DNA Research" (W. French Anderson) and "Contributions of Recombinant DNA Research to Diagnosis of Heritable Disease" (C. Thomas Caskey). Together these chapters offer a broad overview of this remarkable area of molecular biology and its relevance to clinical medicine. Similarly, Part XXI, entitled *Diseases of the Immune System*, now contains a new chapter on "Acquired Immunodeficiency Syndrome" (Anthony S. Fauci) to reflect current progress in our understanding of the etiology, pathogenesis, and clinical manifestations of AIDS, perhaps the most alarming and baffling epidemic related to an infectious agent in the United States in the past generation.

Cecil is a very large book, but still it cannot hope to cover all

of medicine or medical science. Three current books are linked to *Cecil* by design, format, and joint editorial responsibility and serve to extend its breadth. All three will appear in new editions in 1985. *Pathophysiology: The Biological Principles of Disease* (Volume I of the *International Textbook of Medicine*), edited by Lloyd H. Smith, Jr. and Samuel O. Thier, summarizes the most pertinent aspects of basic science relevant to medical practice. Similarly, *Medical Microbiology and Infectious Diseases* (Volume II of the *International Textbook of Medicine*), edited by Abraham I. Braude, contains a more comprehensive summary of the world experience with the infectious and parasitic diseases. *Review of General Internal Medicine*, edited by the editors of *Cecil*, will appear in a third edition linked to the seventeenth edition of *Cecil*. As before, its 1200 questions and answers are designed to be of intrinsic educational benefit as well as to reinforce the value of *Cecil* as a reference text. *Cecil* can stand alone, but it is further enhanced by members of its extended family.

"Language is the armoury of the human mind; and at once contains the trophies of its past, and the weapons of its future

conquests." As all editors know, the weaponry of language, in Coleridge's image above, does not always come fully burnished in submitted manuscripts. We have been privileged to work with skilled editorial assistants at all stages of planning and preparation of this book. Margaret Quinlan in Bethesda and Judith Serrell in San Francisco have been invaluable collaborators working directly with the editors on a daily basis. Lorraine Kilmer, Donna Walker, Edna Dick, and Frank Polizzano at the W. B. Saunders Company have brought long experience and admirable professionalism to this large and complex enterprise. In the course of this project the overall editorial responsibility for *Cecil* at the W. B. Saunders Company was shifted from John J. Hanley to J. Dereck Jeffers. Both of these seasoned editors have been of immense help to us in planning and in bringing this seventeenth edition to completion. We express our deepest appreciation to all of our collaborators above, with whom it has been a pleasure to work in maintaining the traditions of a book that has itself become an institution in medicine.

JAMES B. WYNGAARDEN

LLOYD H. SMITH, JR.

Contributors

FRANÇOIS M. ABBOUD, M.D.

Professor of Internal Medicine, Professor of Physiology and Biophysics, University of Iowa College of Medicine. Head, Department of Internal Medicine, University of Iowa Hospitals and Clinics, Iowa City, Iowa.

Shock

DAVID H. ALPERS, M.D.

Professor of Medicine, Washington University of School of Medicine. Physician, Barnes Hospital, St. Louis, Missouri.

Enteral Nutritional Therapy

DAVID F. ALTMAN, M.D.

Associate Clinical Professor of Medicine and Associate Dean of Student Affairs, University of California, San Francisco School of Medicine. Director of Gastroenterology Clinic, University of California, San Francisco, Hospitals and Clinics, San Francisco, California.

Food Poisoning; Diseases of the Rectum and Anus

WILLIAM J. C. AMEND, Jr., M.D.

Clinical Professor of Medicine and Surgery, University of California, San Francisco, School of Medicine. Attending Physician, Moffitt-Long Hospitals, San Francisco, California.

Renal Transplantation

W. FRENCH ANDERSON, M.D.

Adjunct Professor of Genetics, George Washington University, Washington, D.C. Chief, Laboratory of Molecular Hematology, National Heart, Lung and Blood Institute, National Institutes of Health, and Attending and Admitting Physician, Clinical Center, National Institutes of Health, Bethesda, Maryland.

Expectations from Recombinant DNA Research

THOMAS E. ANDREOLI, M.D.

Professor and Chairman, Department of Internal Medicine, University of Texas Medical School at Houston. Chief of Medicine, The Hermann Hospital, and Medical Director, Texas Kidney Institute, Hermann Hospital, Houston, Texas.

Approach to the Patient with Renal Disease; Disorders of Fluid Volume, Electrolyte, and Acid-Base Balance; Posterior Pituitary

VINCENT T. ANDRIOLE, M.D.

Professor of Medicine, Yale University School of Medicine. Attending Physician, Yale-New Haven Hospital, New Haven, Connecticut.

Urinary Tract Infections and Pyelonephritis

CLAUDE D. ARNAUD, M.D.

Professor of Medicine and Physiology, University of California, San Francisco, School of Medicine. Chief, Endocrine Section, San Francisco Veterans Administration Medical Center, San Francisco, California.

Mineral and Bone Homeostasis; The Parathyroid Glands, Hypercalcemia, and Hypocalcemia; The Ultimobranchial Cells and Calcitonin

K. FRANK AUSTEN, M.D.

Theodore B. Bayles Professor of Medicine, Harvard Medical School. Chairman, Department of Rheumatology and Immunology, Brigham and Women's Hospital, Boston, Massachusetts.

Polyarthritis Nodosa Group

BERNARD M. BABIOR, M.D., Ph.D.

Professor of Medicine, Tufts University School of Medicine. Physician, New England Medical Center Hospital, Boston, Massachusetts.

Function of Neutrophils and Mononuclear Phagocytes; Disorders of Neutrophil Function

H. J. M. BARNETT, M.D., LL.D.

Professor and Chairman, Faculty of Medicine, Department of Clinical Neurological Sciences, University of Western Ontario. Chief, De-

partment of Clinical Neurological Sciences, University Hospital, London, Ontario, Canada.

Cerebrovascular Diseases: Introduction, Cerebral Ischemia and Infarction, Intracranial Hemorrhage

D. W. BARRY, M.D.

Adjunct Associate Professor of Medicine, Duke University School of Medicine, Durham, North Carolina. Head, Departments of Clinical Investigation and Virology, Wellcome Research Laboratories, Burroughs Wellcome Company.

Antiviral Therapy

JOHN G. BARTLETT, M.D.

Professor of Medicine, Johns Hopkins University School of Medicine. Chief, Division of Infectious Diseases, Johns Hopkins Hospital, Baltimore, Maryland.

Lung Abscess; Bronchiectasis and Cystic Fibrosis; Clostridial Myonecrosis and Other Clostridial Diseases; Pseudomembranous Colitis; Botulism

MICHAEL BARZA, M.D.

Professor of Medicine, Tufts University School of Medicine. Attending Physician, Infectious Disease Division, New England Medical Center Hospital, Boston, Massachusetts.

Diseases Caused by Pseudomonads; Listeriosis; Erysipeloid

DAVID A. BASS, M.D., D.Phil.

Professor of Medicine, Bowman Gray School of Medicine of Wake Forest University. Attending Physician, Infectious Diseases, North Carolina Baptist Hospitals, Inc., Winston-Salem, North Carolina.

Eosinophilic Syndromes

STEPHEN G. BAUM, M.D.

Professor of Medicine, Cell Biology, Microbiology and Immunology, Albert Einstein College of Medicine of Yeshiva University. Attending Physician, Bronx Municipal Hospital Center and Hospital of The Albert Einstein College of Medicine, Bronx, New York.

Mycoplasmal Infections; Adenovirus Diseases

JOHN D. BAXTER, M.D.

Professor of Medicine and Biochemistry and Biophysics, University of California, San Francisco, School of Medicine. Chief, Division of Endocrinology, Director, Metabolic Research Unit, University of California, San Francisco, Moffitt-Long Hospitals, San Francisco, California.

Principles of Endocrinology; Disorders of the Adrenal Cortex

WILLIAM S. BECK, M.D.

Professor of Medicine, Harvard Medical School. Physician and Director, Hematology Research Laboratory, Massachusetts General Hospital, Boston, Massachusetts.

Megaloblastic Anemias

CHARLES E. BECKER, M.D.

Professor of Medicine, University of California, San Francisco, School of Medicine. Chief, Occupational Medicine and Clinical Pharmacology and Toxicology, San Francisco General Hospital Medical Center, San Francisco, California.

Principles of Occupational Medicine

DONALD P. BECKER, M.D.

Professor and Chairman, Division of Neurological Surgery, Virginia Commonwealth University Medical College of Virginia. Chief of Neurosurgery, Medical College of Virginia Hospitals; Consultant Neurosurgeon, McGuire Veterans Administration Medical Center, Richmond, Virginia.

Head Injuries; Injuries to the Spine

VICTOR S. BEHAR, M.D.

Professor of Medicine, Duke University School of Medicine. Director, Cardiovascular Laboratory, Duke University Hospital, Durham, North Carolina.

Diseases of the Myocardium

MICHAEL D. BENDER, M.D.

Associate Clinical Professor of Medicine, University of California, San Francisco, School of Medicine, San Francisco. Attending Physician, Director of Medical Education, Peninsula Hospital and Medical Center, Burlingame, California.
Diseases of the Peritoneum; Diseases of the Mesentery and Omentum

J. CLAUDE BENNETT, M.D.

Professor and Chairman, Department of Medicine, University of Alabama School of Medicine. Physician-in-Chief, University of Alabama Hospitals, Birmingham, Alabama.
Rheumatoid Arthritis

JOHN E. BENNETT, M.D.

Head, Clinical Mycology Section, Laboratory of Clinical Investigation, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland.
Brucellosis

PAUL D. BERK, M.D.

Albert A. and Vera G. List Professor of Medicine (Hematology), Mt. Sinai School of Medicine of the City University of New York. Attending Physician, The Mount Sinai Hospital, New York; Consultant, Veterans Administration Hospital, Bronx, New York, and National Institutes of Health, Bethesda, Maryland.
Erythrocytosis and Polycythemia; Myeloproliferative Disorders

ROBERT N. BERK, M.D.

Professor and Chairman, Department of Radiology, University of California, San Diego, School of Medicine. Director, Department of Radiology, University of California, San Diego, University Hospital, La Jolla, California.
Diagnostic Imaging Procedures in Gastroenterology

ERNEST BEUTLER, M.D.

Clinical Professor of Medicine, University of California, San Diego, School of Medicine. Chairman, Department of Basic and Clinical Research, and Head, Division of Hematology/Oncology, Scripps Clinic and Research Foundation, La Jolla, California.
Galactosemia

EDWIN L. BIERMAN, M.D.

Professor of Medicine and Head, Division of Metabolism, Endocrinology and Nutrition, University of Washington School of Medicine. Attending Physician, University of Washington Affiliated Hospitals, Seattle, Washington.
Obesity

DANIEL D. BIKLE, M.D., Ph.D.

Assistant Professor of Medicine, University of California, San Francisco, School of Medicine. Codirector, Special Diagnostic and Treatment Unit, San Francisco Veterans Administration Medical Center, San Francisco, California.
Vitamin D; Osteomalacia and Rickets

J. MICHAEL BISHOP, M.D.

Professor of Microbiology and Immunology, University of California, San Francisco, School of Medicine. Director, The George Williams Hooper Research Foundation, University of California, San Francisco, California.
Oncogenes

ALAN L. BISNO, M.D.

Professor of Medicine, Department of Medicine, Division of Infectious Diseases, University of Tennessee College of Medicine. Attending Physician, Memphis Regional Medical Center and The University of Tennessee Medical Center; Consulting Physician, Baptist Memorial Hospital, Memphis, Tennessee.
Rheumatic Fever

D. MONTGOMERY BISSELL, M.D.

Associate Professor of Medicine, University of California, San Francisco, School of Medicine. Attending Physician, University of California, San Francisco Hospitals and Clinics and San Francisco General Hospital Medical Center, San Francisco, California.
Porphyria

LEO F. BLACK, M.D.

Professor of Internal Medicine, Mayo Medical School. Consultant in Internal Medicine and Thoracic Diseases, Mayo Clinic, Rochester, Minnesota.
Neoplasms of the Lung

DANIEL S. BLUMENTHAL, M.D.

Associate Professor of Community Medicine and Family Practice, Morehouse School of Medicine. Attending Physician, Southwest Community Hospital and Hughes Spalding Pavilion, Grady Memorial Hospital, Atlanta, Georgia.
Nematodes: Introduction; Strongyloidiasis; Capillariasis; Hookworm Diseases; Cutaneous Larva Migrans; Trichostrongyliasis; Gnathostomiasis; Primate Nematodiasis; Ascariasis; Toxocariasis; Anisakiasis; Trichuriasis; Enterobiasis; Angiostrongyliasis

DANE R. BOGGS, M.D.

Professor of Medicine, University of Pittsburgh School of Medicine. Staff Physician, Presbyterian University Hospital, Pittsburgh, Pennsylvania.
The Leukopenic State; Leukemoid Reactions

GILES G. BOLE, M.D.

Professor of Internal Medicine and Physician-in-Charge, Rheumatology Division and Rackham Arthritis Research Unit, University of Michigan Medical School. Chief, Rheumatology Division, Department of Medicine, University of Michigan Medical Center, Ann Arbor, Michigan.
Diseases With Which Arthritis is Frequently Associated; Miscellaneous Forms of Arthritis; Nonarticular Rheumatism; Synovial Tumors

THOMAS D. BOYER, M.D.

Associate Professor of Medicine, University of California, San Francisco, School of Medicine. Chief of Gastroenterology, San Francisco Veterans Administration Medical Center, San Francisco, California.
Cirrhosis of the Liver; Major Sequelae of Cirrhosis

PHILIP S. BRACHMAN, M.D.

Clinical Professor of Community Health and Clinical Instructor in Medicine, Emory University School of Medicine, Atlanta, Georgia.
Anthrax

JEROME S. BRODY, M.D.

Professor of Medicine, Boston University School of Medicine. Chief, Pulmonary Section, University Hospital and Boston City Hospital, Boston, Massachusetts.
Diseases of the Pleura, Mediastinum, Diaphragm, and Chest Wall

JOHN D. BRUNZELL, M.D.

Professor of Medicine, Division of Metabolism, University of Washington School of Medicine, Seattle, Washington.
The Hyperlipoproteinemias

ANTHONY D. M. BYCESON, M.D., D.T.M. & H.

Senior Lecturer, London School of Hygiene and Tropical Medicine. Consultant Physician, Hospital for Tropical Diseases, London, England.
Tropical Phagedenic Ulcer

REBECCA H. BUCKLEY, M.D.

James B. Sidbury Professor of Pediatrics and Professor of Immunology, Duke University School of Medicine. Chief, Division of Allergy and Immunology, Department of Pediatrics, Duke University Medical Center, Durham, North Carolina.
Primary Immunodeficiency Diseases

WARD E. BULLOCK, M.D.

Arthur Russell Morgan Professor of Medicine and Director, Division of Infectious Diseases, University of Cincinnati College of Medicine, Cincinnati, Ohio.
Leprosy (Hansen's Disease)

DAVID M. BURNS, M.D.

Assistant Professor of Medicine, University of California, San Diego, School of Medicine. Division of Pulmonary and Critical Care Medicine, University of California, San Diego, Medical Center, La Jolla, California.
Tobacco and Health

BENJAMIN BURROWS, M.D.

Professor of Internal Medicine, University of Arizona College of Medicine. Attending Pulmonologist, Arizona Health Sciences Center, Tucson, Arizona.
Chronic Airways Diseases; Abnormalities of Lung Aeration

THOMAS BUTLER, M.D.

Associate Professor of Medicine, Case Western Reserve University School of Medicine, Cleveland, Ohio. Consultant, International Centre for Diarrheal Diseases Research, Dhaka, Bangladesh.
Yersinia Infections; Nonsyphilitic Treponematoses; Relapsing Fever

JOEL N. BUXBAUM, M.D.

Professor of Medicine, New York University School of Medicine.
Chief, Rheumatology Section, Veterans Administration Hospital;
Associate Attending Physician, Bellevue Hospital Center, New York,
New York.

The Amyloid Diseases

ANDREI CALIN, M.D.

Consultant Rheumatologist, Royal National Hospital for Rheumatic
Diseases, Bath, Ireland.

The Spondyloarthropathies

GEORGE P. CANELLOS, M.D.

Professor of Medicine, Harvard Medical School. Chief of Medical
Oncology, Dana-Farber Cancer Institute, Brigham and Women's
Hospital, Boston, Massachusetts.

Carcinoma of the Breast

CHARLES C. J. CARPENTER, M.D.

Professor and Chairman, Department of Medicine, Case Western
Reserve University School of Medicine. Physician-in-Chief, Univer-
sity Hospitals, Cleveland, Ohio.

*Introduction to Microbial Diseases; Extraintestinal Infections Caused by Enteric
Bacteria; Shigellosis*

C. THOMAS CASKEY, M.D.

Professor of Medicine, Cell Biology, and Biochemistry, Baylor College
of Medicine. Attending Physician, St. Luke's Episcopal Hospital and
The Methodist Hospital, Houston, Texas.

Contributions of Recombinant DNA Research to Diagnosis of Heritable Disease

JOHN P. CELLO, M.D.

Associate Professor of Medicine, University of California, San Fran-
cisco, School of Medicine. Chief, Gastroenterology, San Francisco
General Hospital Medical Center, San Francisco, California.

Carcinoma of the Pancreas

BRUCE A. CHABNER, M.D.

Director, Division of Cancer Treatment, National Cancer Institute,
National Institutes of Health, Bethesda, Maryland.

Principles of Cancer Therapy

ROBERT M. CHANOCK, M.D.

Chief, Laboratory of Infectious Diseases, National Institute of Allergy
and Infectious Diseases, National Institutes of Health, Bethesda,
Maryland.

Respiratory Syncytial Virus; Parainfluenza Viral Diseases

BAYARD CLARKSON, M.D.

Professor of Medicine, Cornell University Medical College. Chief,
Hematology/Lymphoma Service, Memorial Sloan-Kettering Cancer
Center, New York, New York.

The Chronic Leukemias

RAY E. CLOUSE, M.D.

Assistant Professor of Medicine, Washington University School of
Medicine. Assistant Physician, Barnes Hospital, St. Louis, Missouri.

Parenteral Nutrition

CHARLES G. COCHRANE, M.D.

Member, Department of Immunopathology, Scripps Clinic and Re-
search Foundation; Adjunct Professor, Department of Pathology,
University of California, San Diego, School of Medicine, La Jolla,
California.

Immune Complex Diseases

MARTIN G. COGAN, M.D.

Assistant Professor of Medicine, University of California, San Fran-
cisco, School of Medicine. Attending Physician and Medical Director,
Acute Hemodialysis Unit, Moffitt-Long Hospitals, San Francisco,
California.

Specific Renal Tubular Disorders: Introduction; Renal Tubular Acidosis

ALAN S. COHEN, M.D.

Conrad Wesselhoef Professor of Medicine, Boston University School
of Medicine. Chief of Medicine and Director, Thorndike Memorial
Laboratory, Boston City Hospital, Boston, Massachusetts.

Specialized Diagnostic Procedures in the Rheumatic Diseases

WILLIAM G. COUSER, M.D.

Professor of Medicine and Head, Division of Nephrology, University
of Washington School of Medicine, Seattle, Washington.

Glomerular Disorders

JAMES D. CRAPO, M.D.

Associate Professor of Medicine, Duke University School of Medicine.
Chief, Division of Allergy, Critical Care, and Respiratory Medicine,
Duke University Medical Center, Durham, North Carolina.

Physical, Chemical, and Aspiration Injuries of the Lung

PHILIP E. CRYER, M.D.

Professor of Medicine, Washington University School of Medicine.
Physician, Barnes Hospital, St. Louis, Missouri.

*The Adrenal Medullae and the Sympathetic Nervous System; The Carcinoid
Syndrome*

RONALD G. CRYSTAL, M.D.

Chief, Pulmonary Branch, National Heart, Lung and Blood Institute,
National Institutes of Health, Bethesda, Maryland.

Interstitial Lung Disease

RONALD P. DANIELE, M.D.

Professor of Medicine and Pathology, University of Pennsylvania
School of Medicine. Attending Physician and Director of the Inter-
stitial Lung Disease Program, Hospital of the University of Pennsyl-
vania, Philadelphia, Pennsylvania.

Asthma

THOMAS E. DAVIS, M.D.

Associate Professor of Human Oncology and Medicine, University
of Wisconsin Medical School. Associate Director for Clinical Pro-
grams, Wisconsin Clinical Cancer Center, Madison, Wisconsin.

Non-Hodgkin's Lymphomas

VINCENT W. DENNIS, M.D.

Associate Professor of Medicine, Duke University School of Medicine,
Durham, North Carolina.

Investigations of Renal Function

IVAN DIAMOND, M.D., Ph.D.

Director, Ernest Gallo Clinic and Research Center; Professor and
Vice-Chairman, Department of Neurology; Professor of Pediatrics
and Pharmacology, University of California, San Francisco, School
of Medicine, San Francisco, California.

Alcohol-Related and Nutritional Disorders of the Nervous System

CHARLES A. DINARELLO, M.D.

Associate Professor of Medicine and Pediatrics, Tufts University
School of Medicine. Physician, New England Medical Center Hos-
pital, Boston, Massachusetts.

Pathogenesis of Fever

RAPHAEL DOLIN, M.D.

Professor of Medicine, University of Rochester School of Medicine
and Dentistry. Physician with Admitting Privileges, The Strong
Memorial Hospital, Rochester, New York.

*Enteroviral Diseases: Introduction; Paralysis and Other Neurologic Complica-
tions of Nonpolio Enteroviruses; Epidemic Pleurodynia; Myocarditis and
Pericarditis Caused by Enteroviruses; Mucocutaneous Infections Caused by
Enteroviruses; Acute Hemorrhagic Conjunctivitis; Respiratory Tract Illness
Associated with Enteroviruses; Viral Gastroenteritis*

C. T. DOLLERY, M.B.

Professor of Clinical Pharmacology, Royal Postgraduate Medical
School, University of London. Consultant Physician, Hammersmith
and Ealing Hospitals, London, England.

Arterial Hypertension

R. GORDON DOUGLAS, Jr., M.D.

Professor and Chairman, Department of Medicine, Cornell University
Medical College. Physician-in-Chief, The New York Hospital, New
York, New York.

Immunization; Influenza; Herpes Simplex Virus Infections

BRIAN O. L. DUKE, M.D., S.D., D.T.M. & H.

Chief, Unit for Filarial Infections, World Health Organization, Ge-
neva, Switzerland.

Onchocerciasis; Streptocerciasis

DAVID T. DURACK, M.B., D.Phil.

Professor of Medicine and Professor of Microbiology and Immunology, Duke University School of Medicine. Chief, Division of Infectious Diseases, Duke University Medical Center, Durham, North Carolina.

Pneumococcal Pneumonia; Infective Endocarditis

DAVID J. DRUTZ, M.D.

Professor of Medicine and Microbiology and Chief, Division of Infectious Diseases, University of Texas Medical School at San Antonio. Chief, Infectious Diseases Section, and Attending Physician, Audie L. Murphy Memorial Veterans Hospital; Attending Physician, Medical Center Hospital and St. Luke's Lutheran Hospital, San Antonio, Texas.

Actinomycosis; Nocardiosis; The Mycoses: Introduction: Histoplasmosis; Coccidioidomycosis; Blastomycosis; Paracoccidioidomycosis; Cryptococcosis; Sporotrichosis; Candidiasis; Aspergillosis; Mucormycosis; Mycetoma; Chromomycosis

THEODORE C. EICKHOFF, M.D.

Professor of Medicine, University of Colorado School of Medicine. Director of Internal Medicine, Presbyterian Medical Center, Denver, Colorado.

Bartonellosis; Trench Fever; Q Fever; Colorado Tick Fever

BRYAN T. EMMERSON, M.D., Ph.D.

Professor of Medicine, University of Queensland Medical School. Department of Medicine, Princess Alexandra Hospital, Brisbane, Queensland, Australia.

Toxic Nephropathy

EDWARD A. EMMETT, M.B., B.S., M.S.

Professor and Director, Division of Occupational Medicine, Department of Environmental Health Sciences, Johns Hopkins University School of Hygiene and Public Health. Active Part-time Staff, Johns Hopkins Hospital and Wyman Park Health System, Baltimore, Maryland.

Occupational Diseases of the Skin

JEROME ENGEL, Jr., M.D., Ph.D.

Professor of Neurology and Anatomy, Department of Neurology, University of California, Los Angeles, School of Medicine. Neurologist, UCLA Hospital, Los Angeles, California.

The Epilepsies

STANLEY FAHN, M.D.

H. Houston Merritt Professor of Neurology, Columbia University College of Physicians and Surgeons. Attending Neurologist, Neurological Institute and Presbyterian Hospital, New York, New York.

The Extrapyrarnidal Disorders: Parkinsonism; Essential Tremor; The Chorea; Other Extrapyrarnidal Disorders; The Dystonias

ANTHONY S. FAUCI, M.D.

Chief, Laboratory of Immunoregulation, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland.

Glucocorticosteroid Therapy; Familial Mediterranean Fever; Acquired Immuno-deficiency Syndrome; The Vasculitic Syndromes; Wegener's Granulomatosis and Midline Granuloma

DOUGLAS T. FEARON, M.D.

Associate Professor, Harvard Medical School. Rheumatologist and Immunologist, Brigham and Women's Hospital, Boston, Massachusetts.

Complement

HARVEY FEIGENBAUM, M.D.

Distinguished Professor of Medicine, Indiana University School of Medicine. Director of Hemodynamic Laboratories; Senior Research Associate, Krannert Institute of Cardiology, Indianapolis, Indiana.

Echocardiography

MARK FELDMAN, M.D.

Associate Professor of Internal Medicine, University of Texas Southwestern Medical School at Dallas. Associate Chief of Staff for Research and Development, Dallas Veterans Administration Medical Center, Dallas, Texas.

Peptic Ulcer: Complications

PHILIP J. FIALKOW, M.D.

Professor and Chairman, Department of Medicine, University of Washington School of Medicine. Physician-in-Chief, University Hospital, and Attending Physician, Harborview Medical Center, Seattle, Washington.

Clonal Development and Stem Cell Origin of Proliferative Disorders

ALFRED P. FISHMAN, M.D.

William Maul Measey Professor of Medicine, University of Pennsylvania School of Medicine. Director, Cardiovascular-Pulmonary Division, Department of Medicine, Hospital of the University of Pennsylvania, Philadelphia, Pennsylvania.

Heart Failure; Pulmonary Hypertension

JOHN S. FORDTRAN, M.D.

Chief, Department of Internal Medicine, Baylor University Medical Center, Dallas, Texas.

Diarrhea

BERNARD G. FORGET, M.D.

Professor of Medicine and Human Genetics, Chief of Hematology Section, Department of Medicine, Yale University School of Medicine. Attending Physician, Yale-New Haven Hospital, New Haven, Connecticut.

Sickle Cell Anemia and Associated Hemoglobinopathies

NOBLE O. FOWLER, M.D.

Professor of Medicine and Director, Division of Cardiology, University of Cincinnati College of Medicine. Attending Physician, Christian R. Holmes and Cincinnati General Hospitals, University of Cincinnati Medical Center, Cincinnati, Ohio.

Diseases of the Aorta

DAVID W. FRASER, M.D.

President, Swarthmore College, Swarthmore, Pennsylvania; Adjunct Professor of Medicine, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania.

Legionellosis

F. CLARKE FRASER, Ph.D., M.D., D.Sc. (Acadia)

Professor of Clinical Genetics, Memorial University of Newfoundland Faculty of Medicine. Attending Physician, Department of Medicine, General Hospital, and Department of Medicine and Therapeutics, Janeway Child Health Centre, St. John's, Newfoundland, Canada.

Genetic Counseling

JOSEPH F. FRAUMENI, Jr., M.D.

Associate Director for Epidemiology and Biostatistics, National Cancer Institute, National Institutes of Health. Adjunct Professor of Epidemiology, Department of Preventive Medicine and Biometrics, School of Medicine, Uniformed Services University of the Health Sciences, Bethesda, Maryland.

Epidemiology of Cancer

GARY D. FRIEDMAN, M.D.

Assistant Director for Epidemiology and Biostatistics, Department of Medical Methods Research, Kaiser-Permanente Medical Care Program, Oakland, California. Associate Clinical Professor of Medicine and of Family and Community Medicine, University of California, San Francisco, School of Medicine, San Francisco; Lecturer in Epidemiology, School of Public Health, University of California, Berkeley, California.

The Preventive Health Examination

JAMES F. FRIES, M.D.

Associate Professor of Medicine, Stanford University School of Medicine. Attending Physician, Stanford University Hospital, Stanford, Palo Alto Veterans Administration Medical Center, Palo Alto, and Santa Clara Valley Medical Center, San Jose, California.

Approach to the Patient with Musculoskeletal Disease

LAWRENCE A. FROHMAN, M.D.

Professor of Medicine and Director, Division of Endocrinology and Metabolism, University of Cincinnati College of Medicine. Attending Physician, University Hospital; Consultant Endocrinologist, Veterans Administration Hospital and Jewish Hospital, Cincinnati, Ohio.

Neuroendocrine Regulation and Its Disorders; The Anterior Pituitary

JOHN J. GALLAGHER, M.D.

Physician, Charlotte Memorial Hospital; Research Associate, Heine-
man Medical Research Center and Sanger Clinic, Charlotte, North
Carolina.

Cardiac Arrhythmias

JOHN I. GALLIN, M.D.

Chief, Bacterial Diseases Section, Laboratory of Clinical Investigation,
National Institute of Allergy and Infectious Diseases, National Insti-
tutes of Health, Bethesda, Maryland.

The Compromised Host

KENNETH D. GARDNER, Jr., M.D.

Professor of Medicine, University of New Mexico School of Medicine.
Chief, Division of Renal Diseases, University of New Mexico Teach-
ing Hospital/Bernalillo County Medical Center, Albuquerque, New
Mexico.

Cystic Diseases of the Kidney

JEFFREY A. GELFAND, M.D.

Associate Professor of Medicine, Tufts University School of Medicine.
Physician, Infectious Diseases Service, New England Medical Center
Hospital, Boston, Massachusetts.

Advice to Travelers

JOHN W. GITTINGER, Jr., M.D.

Associate Professor of Surgery and Neurology and Chairman, Divi-
sion of Ophthalmology, University of Massachusetts Medical School.
Chief of Ophthalmology, University of Massachusetts Medical Cen-
ter, Worcester, Massachusetts.

*Eye Diseases: Introduction; Cataract; Glaucoma; Disc Swelling and Optic
Atrophy; Ocular Inflammation; Ocular Infections; Orbital Disease and Tumors;
Intraocular Tumors; Rheumatoid and Connective Tissue Diseases; Ocular
Vascular Disease; The Eye and Medications*

RICHARD J. GLASSOCK, M.D.

Professor of Medicine, University of California, Los Angeles, School
of Medicine, Los Angeles. Chairman, Department of Medicine,
Harbor-UCLA Medical Center, Torrance, California.

Mechanisms of Renal Injury

JOHN H. GLICK, M.D.

Professor of Medicine, University of Pennsylvania School of Medi-
cine, and Associate Director for Clinical Research, University of
Pennsylvania Cancer Center. Attending Physician, Hospital of the
University of Pennsylvania, Philadelphia, Pennsylvania.

Hodgkin's Disease

ROBERT M. GLICKMAN, M.D.

Samuel Bard Professor of Medicine and Chairman, Department of
Medicine, Columbia University College of Physicians and Surgeons.
Director, Medical Service, Presbyterian Hospital, New York, New
York.

Malabsorption: Pathophysiology and Diagnosis

MARTIN GOLDBERG, M.D.

Gordon and Helen Hughes Taylor Professor of Medicine, University
of Cincinnati College of Medicine, and Director, Department of
Internal Medicine, University of Cincinnati Medical Center. Physi-
cian-in-Chief, University Hospital, Cincinnati, Ohio.

*Tubulo-interstitial Disease: Introduction to Interstitial Nephritis and Intersti-
tial Nephropathy; Analgesic-Associated Nephropathy*

DAVID W. GOLDE, M.D.

Professor of Medicine, University of California, Los Angeles, School
of Medicine. Chief, Division of Hematology-Oncology, UCLA Center
for the Health Sciences, Los Angeles, California.

Development and Morphology of Granulocytes and Macrophages

RALPH GOLDMAN, M.D.

Professor of Medicine in Residence, University of California, Los
Angeles, School of Medicine. Associate Chief of Staff for Education,
Wadsworth Veterans Administration Medical Center, West Los An-
geles, California.

Aging and Geriatric Medicine

SHERWOOD L. GORBACH, M.D.

Professor of Medicine and Microbiology, Tufts University School of
Medicine. Chief, Infectious Diseases Division, New England Medical
Center Hospital, Boston, Massachusetts.

Diseases Caused by Non-Spore-Forming Anaerobic Bacteria; Typhoid Fever

JARED J. GRANTHAM, M.D.

Professor of Medicine and Director, Division of Nephrology, Univer-
sity of Kansas College of Health Sciences and Hospital, Kansas City,
Kansas. Attending Physician, Veterans Administration Hospital,
Kansas City, Missouri.

Acute Renal Failure

JOSEPH C. GREENFIELD, Jr., M.D.

James B. Duke Professor of Medicine, Duke University School of
Medicine. Chairman, Department of Medicine, and Chief, Division
of Cardiology, Duke University Medical Center and Veterans Admin-
istration Hospital, Durham, North Carolina.

Electrocardiography

B. M. GREENWOOD, M.D.

Director, Medical Research Council Laboratories, Fajara, Banjul,
Gambia.

African Trypanosomiasis

JAMES H. GRENDALL, M.D.

Assistant Professor of Medicine and Physiology, University of Cali-
fornia, San Francisco, School of Medicine. Attending Physician, San
Francisco General Hospital Medical Center, San Francisco, California.

Vascular Diseases of the Intestine

JEROME E. GROOPMAN, M.D.

Assistant Professor of Medicine, Harvard Medical School. Attending
Hematologist-Oncohematologist, New England Deaconess Hospital, Boston,
Massachusetts.

Langerhans Cell (Eosinophilic) Granulomatosis

CARL GRUNFELD, M.D., Ph.D.

Assistant Professor of Medicine, University of California, San Fran-
cisco, School of Medicine. Co-Director, Special Diagnostic and Treat-
ment Unit, San Francisco Veterans Administration Medical Center,
San Francisco, California.

Pancreatic Islet Cell Tumors

ROGER GUILLEMIN, M.D., Ph.D.

Professor and Chairman, Laboratories for Neuroendocrinology, The
Salk Institute; Adjunct Professor of Medicine, University of Califor-
nia, San Diego, School of Medicine, La Jolla, California.

*Endorphins, Enkephalins and Other Opioid Peptides: Their Significance in
Physiology and Medicine*

J. CAULIE GUNNELLS, Jr., M.D.

Professor of Medicine, Division of Nephrology, Duke University
School of Medicine, Durham, North Carolina.

Vascular Disorders of the Kidney

JOHN L. HAMERTON, D.Sc.

Professor of Pediatrics and Human Genetics, University of Manitoba
Faculty of Medicine. Scientific Staff, Health Sciences Centre and St.
Boniface Hospital, Winnipeg, Manitoba, Canada.

Chromosomes and Their Disorders

EDWARD D. HARRIS, Jr., M.D.

Professor and Chairman, Department of Medicine, University of
Medicine and Dentistry of New Jersey, Rutgers Medical School,
Piscataway. Chief, Medical Services, Middlesex General-University
Hospital, New Brunswick, New Jersey.

Systemic Sclerosis (Scleroderma)

DONALD C. HARRISON, M.D.

Professor of Medicine and William G. Irwin Professor of Cardiology,
Stanford University School of Medicine. Chief of Cardiology, Stan-
ford University Medical Center, Stanford, California.

Cardiac Catheterization and Cineangiography

DONALD H. HARTER, M.D.

Charles L. Mix Professor of Neurology and Chairman, Department
of Neurology, Northwestern University Medical School. Chairman,
Department of Neurology, and Attending Neurologist, Northwestern
Memorial Hospital, Chicago, Illinois.

Parameningeal Infections

xiv CONTRIBUTORS

WILLIAM L. HASKELL, Ph.D.

Associate Professor of Medicine, Stanford University School of Medicine, Stanford, California.

Exercise and Health

MICHAEL A. W. HATTWICK, M.D.

Clinical Assistant Professor, Department of Community and Family Medicine, Georgetown University School of Medicine, Washington, D.C. Attending Physician, The Fairfax Hospital, Falls Church, and Arlington Hospital and Northern Virginia Doctors Hospital, Arlington, Virginia.

Rabies

JOHN P. HAYSLETT, M.D.

Professor of Medicine, and Chief, Section of Nephrology, Yale University School of Medicine, New Haven. Attending Physician, Yale-New Haven Hospital, New Haven, and Veterans Administration Hospital, West Haven, Connecticut.

Renal Disease in Pregnancy

LOUIS A. HEALEY, M.D.

Clinical Professor of Medicine, University of Washington School of Medicine. Rheumatologist, Virginia Mason Hospital, Seattle, Washington.

Polymyalgia Rheumatica and Giant Cell Arteritis

DONALD A. HENDERSON, M.D., M.P.H.

Dean and Professor of Health Policy and Management, The Johns Hopkins University School of Hygiene and Public Health, Baltimore, Maryland.

Variola and Vaccinia

J. ALLAN HOBSON, M.D.

Professor of Psychiatry, Harvard Medical School. Director, Laboratory of Neurophysiology, Massachusetts Mental Health Center, Boston, Massachusetts.

Sleep and Its Disorders

EDWARD W. HOLMES, M.D.

Professor of Medicine, Assistant Professor of Biochemistry, Duke University School of Medicine. Chief of the Division of Metabolism, Endocrinology, and Genetics, Duke University Medical Center, Durham, North Carolina.

Other Disorders of Purine Metabolism

LEWIS B. HOLMES, M.D.

Associate Professor of Pediatrics, Harvard Medical School. Associate Pediatrician and Chief, Embryology-Teratology Unit, Massachusetts General Hospital; Consultant in Pediatrics (Genetics), Brigham and Women's Hospital, Boston, Massachusetts.

Congenital Malformations

PHILIP C. HOPEWELL, M.D.

Associate Professor of Medicine, Scientific Staff of Cardiovascular Research Institute, University of California, San Francisco, School of Medicine. Staff Physician, San Francisco General Hospital Medical Center, San Francisco, California.

Critical Care Medicine

DONALD R. HOPKINS, M.D., M.P.H.

Assistant Director for International Health, Centers for Disease Control, Atlanta, Georgia.

Dracunculiasis

RICHARD B. HORNICK, M.D.

Chairman, Department of Medicine, University of Rochester School of Medicine and Dentistry. Physician in Chief, The Strong Memorial Hospital, Rochester, New York.

Salmonella Infections Other Than Typhoid Fever; Tularemia

DONALD W. HOSKINS, M.D.

Clinical Associate Professor of Medicine, Cornell University Medical College. Associate Attending Physician (Medicine), The New York Hospital; Attending Physician and Chief of Medicine, Doctors Hospital, New York, New York.

Trichinellosis (Trichinosis)

DAVID S. HOWELL, M.D.

Professor of Medicine, Director of Arthritis Division, Department of Medicine, University of Miami School of Medicine. Medical Investi-

gator, Veterans Administration Medical Center; Attending Physician, James M. Jackson Memorial Hospital, Miami, Florida.

Osteoarthritis (Degenerative Joint Disease); The Painful Shoulder; The Painful Back

R. RODNEY HOWELL, M.D.

David R. Park Professor and Chairman, Department of Pediatrics, University of Texas Medical School at Houston. Pediatrician-in-Chief, The Herman Hospital and University of Texas Health Science Center at Houston; Consultant in Pediatrics, M. D. Anderson Hospital and Tumor Institute and Shriners Hospital for Crippled Children, Houston, Texas.

The Glycogen Storage Diseases; Pentosuria; Essential Fructosuria and Hereditary Fructose Intolerance

STEPHEN B. HULLEY, M.D., M.P.H.

Professor of Epidemiology, University of California, San Francisco, School of Medicine, San Francisco, California.

Principles of Personal Medicine

JULIANNE IMPERATO-McGINLEY, M.D.

Associate Professor of Medicine, Division of Endocrinology, Cornell University Medical College. Associate Attending Physician, The New York Hospital, New York, New York.

Disorders of Sexual Differentiation

HARRY S. JACOB, M.D.

Professor and Chief, Division of Hematology, University of Minnesota Medical School—Minneapolis. Attending Physician, University of Minnesota Hospitals and Clinics of the University of Minnesota Health Sciences Center and Veterans Administration Medical Center, Minneapolis, Minnesota.

Hemolysis Due to Intracorporeal Abnormalities

D. GERAINT JAMES, M.D., LL.D. (Hon.)

Senior Physician and Dean, Royal Northern Hospital, London. Consultant Physician, Medical Ophthalmology Unit, St. Thomas' Hospital, London; Consulting Physician, Royal Navy.

Sarcoidosis

KARL M. JOHNSON, M.D.

U.S. Army Medical Research Institute for Infectious Diseases, Ft. Detrick, Frederick, Maryland.

Arthropod-Borne Viral Fevers: Introduction; Viral Hemorrhagic Fevers: Introduction; Hemorrhagic Fever Caused by Dengue Viruses; Tick-Borne Flavivirus Diseases; Crimean Hemorrhagic Fever; Hemorrhagic Diseases Caused by Arenaviruses; African Hemorrhagic Fever; Hemorrhagic Fever with Renal Syndrome

KENNETH P. JOHNSON, M.D.

Professor and Chairman, Department of Neurology, University of Maryland School of Medicine. Attending Physician, University of Maryland Hospital, Baltimore, Maryland.

Syphilitic Infections of the Central Nervous System

MARIE-LOUISE JOHNSON, M.D., Ph.D.

Clinical Professor of Dermatology, Yale University School of Medicine. Attending Physician, Yale-New Haven Hospital, New Haven, Connecticut; Director of Medical Education, Benedictine Hospital, Kingston, New York.

Cutaneous Manifestations of Internal Malignancy; Skin Diseases: Introduction; Pathophysiology; Examination of the Skin; Principles of Therapy; Differential Diagnosis; Significant Dermatologic Signs of Disease; Selected Significant Dermatologic Diagnoses

RICHARD T. JOHNSON, M.D.

Dwight D. Eisenhower Professor of Neurology and Professor of Microbiology and Neuroscience, Johns Hopkins University School of Medicine. Neurologist, Johns Hopkins Hospital, and Consulting Neurologist, Baltimore City Hospitals, Baltimore, Maryland.

Viral Infections of the Nervous System: Introduction; Viral Meningitis and Encephalitis; Herpes Simplex Encephalitis; Herpes Zoster; Acute Anterior Poliomyelitis; Slow Viral Infections of the Nervous System

ALBERT R. JONSEN, Ph.D.

Professor of Ethics in Medicine, Department of Medicine, University of California, San Francisco, School of Medicine, San Francisco, California.

Ethics in the Practice of Medicine

JOHN P. KANE, M.D., Ph.D.

Professor of Medicine, Cardiovascular Research Institute and Department of Medicine, University of California, San Francisco, School

of Medicine. Attending Physician, Moffitt-Long Hospitals, San Francisco, California.

The Judicious Diet

ALBERT Z. KAPIKIAN, M.D.

Head, Epidemiology Section, Laboratory of Infectious Diseases, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland.

The Common Cold

JERRY G. KAPLAN, M.D.

Assistant Professor of Neurology, Albert Einstein College of Medicine of Yeshiva University, Bronx, New York.

Nerve Biopsy in Peripheral Nerve Disease

MANUEL E. KAPLAN, M.D.

Professor of Medicine, University of Minnesota Medical School—Minneapolis. Chief, Hematology/Oncology Section, Veterans Administration Medical Center, Minneapolis, Minnesota.

Hemolytic Disorders: Introduction; Acquired Hemolytic Disorders

SAMUEL KAPLAN, M.D.

Professor of Pediatrics and Medicine, University of Cincinnati College of Medicine. Director, Division of Cardiology, Children's Hospital Medical Center, Cincinnati, Ohio.

Congenital Heart Disease

HERANT A. KATCHADOURIAN, M.D.

Professor of Psychiatry and Behavioral Sciences, Vice Provost for Undergraduate Education, Stanford University, Stanford, California.

The Life-Cycle Perspective in Medicine; Development to Adulthood; Adulthood

SAMUEL L. KATZ, M.D.

Wilburt C. Davison Professor and Chairman, Department of Pediatrics, Duke University School of Medicine. Chief of Pediatrics, Children's Medical and Surgical Center, Duke University Medical Center, Durham, North Carolina.

Whooping Cough; Measles; Rubella

ALAN S. KEITT, M.D.

Associate Professor of Pathology and Medicine, University of Florida College of Medicine. Director, Hematology Laboratories, Shands Teaching Hospital and Clinics; Attending Hematologist, Veterans Administration Medical Center, Gainesville, Florida.

Introduction to the Anemias; Anemia Due to Failure of Progenitor Cells

JOHN H. KERR, D.M.

Clinical Lecturer in Anaesthetics and Fellow of Green College, University of Oxford. Consultant in Anaesthetics and Intensive Care, Nuffield Department of Anaesthetics, Oxfordshire Health Authority, John Radcliffe Hospital, Oxford, England.

Tetanus

SIDNEY KIBRICK, M.D., Ph.D.

Professor Emeritus of Pediatrics and Microbiology and Associate Professor Emeritus of Medicine, Boston University School of Medicine. Visiting Physician for Pediatrics, Boston City Hospital, Boston, Massachusetts.

Varicella and Herpes Zoster

EDWIN D. KILBOURNE, M.D.

Professor and Chairman, Department of Microbiology, Mount Sinai School of Medicine of the City University of New York, New York.

Introduction to Viral Diseases

BENJAMIN KISSIN, M.D.

Professor in Psychiatry, Downstate Medical Center College of Medicine, State University of New York. Attending Physician, University Hospital, New York University Medical Center, and Kings County Hospital Center, Brooklyn, New York.

Alcohol Abuse and Alcohol-Related Illness

SAULO KLAHR, M.D.

Professor of Medicine and Director, Renal Division, Washington University School of Medicine. Physician, Barnes Hospital; Staff Physician and Consultant in Nephrology, The Jewish Hospital, St. Louis, Missouri.

Structure and Function of the Kidneys

JAMES P. KNOCH, M.D.

Vice Chairman and Professor of Internal Medicine, University of Texas Southwestern Medical School at Dallas. Chief, Medical Service,

Dallas Veterans Administration Medical Center; Senior Attending Physician, Parkland Memorial Hospital, Dallas, Texas.

Disorders Due to Heat and Cold

JUHA KOKKO, M.D., Ph.D.

Professor of Internal Medicine, Chief of Nephrology Division, University of Texas Southwestern Medical School at Dallas. Chief of Nephrology, Parkland Memorial Hospital, Dallas, Texas.

Chronic Renal Failure

EDWIN H. KOLODNY, M.D.

Associate Professor, Department of Neurology, Harvard Medical School, Boston. Associate Neurologist, Massachusetts General Hospital, Boston; Acting Director, Eunice Kennedy Shriver Center for Mental Retardation, Waltham, Massachusetts.

Gaucher's Disease; Niemann-Pick Disease

HERMES A. KONTOS, M.D., Ph.D.

Professor of Medicine, Health Science Division, Virginia Commonwealth University Medical College of Virginia. Attending Physician, Medical College of Virginia Hospitals, and Consultant, McGuire Veterans Administration Medical Center, Richmond, Virginia.

Vascular Diseases of the Limbs

STEPHEN M. KRANE, M.D.

Professor of Medicine, Harvard Medical School. Physician and Chief, Arthritis Unit, Massachusetts General Hospital, Boston, Massachusetts.

Connective Tissue Structure and Function

RICHARD M. KRAUSE, M.D.

Director, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland.

Streptococcal Diseases

WILLIAM L. KRINSKY, M.D., Ph.D.

Associate Professor of Epidemiology, Section of Medical Entomology, Yale University School of Medicine, New Haven, Connecticut.

Arthropods and Leeches

DONALD J. KROGSTAD, M.D.

Associate Professor of Medicine and Pathology, Washington University School of Medicine. Co-Director, Microbiology and Serology Laboratories, Barnes Hospital, St. Louis, Missouri.

Amebiasis and Amebic Meningoencephalitis

JAMES P. KUSHNER, M.D.

Professor of Medicine, University of Utah School of Medicine. Attending Physician, University Hospital and Veterans Administration Hospital, Salt Lake City, Utah.

Normochromic Normocytic Anemias; Hypochromic Anemias

SYLVIA A. LACK, M.D.

Consultant in Hospice Care, St. Mary's Hospital, Waterbury, Connecticut.

Care of Dying Patients and Their Families

DAVID J. LANG, M.D.

Chairman of Pediatrics, City of Hope Medical Center, Duarte, California.

Cytomegalovirus Infection

P. REED LARSEN, M.D.

Professor of Medicine, Harvard Medical School. Investigator, Howard Hughes Medical Institute; Senior Physician, Brigham and Women's Hospital, Boston, Massachusetts.

The Thyroid

JOHN LASZLO, M.D.

Professor of Medicine, Duke University School of Medicine, Durham, North Carolina. Attending Physician, Hematology-Oncology, Duke University Hospital, Durham, and Veterans Administration Hospital, Oteen, North Carolina.

Oncology: Introduction

GERALD S. LAZARUS, M.D.

Milton B. Hartzell Professor and Chairman, Department of Dermatology, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania.

Panniculitis and Disorders of the Subcutaneous Fat

ROBERT J. LEFKOWITZ, M.D.

James B. Duke Professor of Medicine, Duke University School of Medicine, Durham, North Carolina.

Pharmacologic Principles Related to the Autonomic Nervous System

BERNARD LEVIN, M.D.

Associate Professor of Medicine, University of Chicago Pritzker School of Medicine. Attending Physician, University of Chicago Hospitals and Clinics, Chicago, Illinois.

Ulcerative Colitis

MICHAEL D. LEVITT, M.D.

Professor of Medicine, University of Minnesota Medical School—Minneapolis. Associate Chief of Staff for Research, Veterans Administration Medical Center, Minneapolis, Minnesota.

Pancreatitis

ROBERT I. LEVY, M.D.

Professor of Medicine, Columbia University College of Physicians and Surgeons. Attending Physician, Presbyterian Hospital, New York, New York.

Prevalence and Epidemiology of Cardiovascular Disease

ROBERT A. LEWIS, M.D.

Associate Professor of Medicine, Harvard Medical School. Immunologist and Rheumatologist and Associate Physician, Brigham and Women's Hospital, Boston, Massachusetts.

Mastocytosis

LAWRENCE M. LICHTENSTEIN, M.D.

Professor of Medicine, Johns Hopkins University School of Medicine, Baltimore, Maryland.

Anaphylaxis; Insect Sting Allergy

MORTIMER B. LIPSETT, M.D.

Director, National Institute of Child Health and Human Development, National Institutes of Health. Clinical Professor of Medicine, Uniformed Services University of the Health Sciences, Bethesda, Maryland.

The Testis

JOHN N. LOEB, M.D.

Professor of Medicine, Columbia University College of Physicians and Surgeons. Attending Physician, Presbyterian Hospital, New York, New York.

Polyglandular Disorders

D. LYNN LORIAUX, M.D., Ph.D.

Clinical Director, National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, Maryland.

Hirsutism

DONALD B. LOURIA, M.D.

Chairman, Department of Preventive Medicine and Community Health, New Jersey Medical School. Attending Physician, UMD—University Hospital, Newark, New Jersey.

Trace Metal Poisoning

ROBERT G. LUKE, M.D.

Professor of Medicine, Director, Division of Nephrology, and Director, Nephrology Research and Training Center, University of Alabama School of Medicine. Attending Nephrologist, University of Alabama Hospitals and Children's Hospital, Birmingham, Alabama.

Dialysis

VANIZE MACÊDO, M.D.

Professor of Tropical Medicine, University of Brasilia. Physician, University Hospital, Brasilia, Brazil.

Chagas' Disease (American Trypanosomiasis)

ADEL A. F. MAHMOUD, M.D., Ph.D.

Professor of Medicine and Molecular Biology and Microbiology, Department of Medicine; Chief, Division of Geographical Medicine, Case Western Reserve University School of Medicine. Physician, University Hospitals, Cleveland, Ohio.

Introduction to Protozoan Diseases and Helminthic Diseases; Schistosomiasis

STEPHEN E. MALAWISTA, M.D.

Professor of Medicine and Chief, Section of Rheumatology, Department of Medicine, Yale University School of Medicine. Attending Physician, Yale-New Haven Hospital, New Haven, and Veterans Administration Hospital, West Haven, Connecticut.

Infectious Arthritis

PETER F. MALET, M.D.

Assistant Professor of Medicine, University of Pennsylvania School of Medicine. Attending Physician, Hospital of the University of Pennsylvania and Veterans Administration Hospital, Philadelphia, Pennsylvania.

Normal Physiology of Bile Formation; Pathophysiology of Gallstone Disease; Roentgenologic and Other Imaging Tests; Chronic Cholecystitis; Biliary Stricture; Other Causes of Bile Duct Obstruction; Benign Tumors and Pseudotumors of the Gallbladder

HENRY J. MANKIN, M.D.

Edith M. Ashley Professor of Orthopaedic Surgery, Harvard Medical School. Orthopaedist in Chief, Massachusetts General Hospital, Boston, Massachusetts.

Bone Tumors

AARON J. MARCUS, M.D.

Professor of Medicine, Cornell University Medical College. Chief, Hematology-Oncology, and Attending Physician, Veterans Administration Medical Center; Attending Physician, New York Hospital, New York, New York.

Hemorrhagic Disorders: Abnormalities of Platelet and Vascular Function

ANDREW M. MARGILETH, M.D.

Professor and Vice Chairman, Department of Pediatrics, Uniformed Services University of the Health Sciences, Bethesda, Maryland. Senior Attending Physician, Naval Hospital, Bethesda, Maryland, and Walter Reed Army Medical Center and Children's Hospital National Medical Center, Washington, D.C.

Cat Scratch Disease

ALEXANDER R. MARGULIS, M.D.

Professor and Chairman, Department of Radiology, University of California, San Francisco, School of Medicine. Radiologist in Chief, University of California, San Francisco Hospitals and Clinics, San Francisco, California.

Overview of Imaging Techniques and Projection for the Future

ERROL B. MARLISS, M.D.

Garfield Weston Professor of Nutrition and Professor of Medicine, McGill University Faculty of Medicine, Montreal. Senior Physician, Royal Victoria Hospital, Montreal, Quebec, Canada.

Protein-Calorie Undernutrition

ROBERT J. MASON, M.D.

Professor of Medicine, University of Colorado School of Medicine. Head, Pulmonary Division, National Jewish Hospital and Research Center/National Asthma Center; Co-Head, Pulmonary Division, University of Colorado Health Sciences Center, Denver, Colorado.

Occupational Lung Disease

HENRY MASUR, M.D.

Deputy Chief, Critical Care Medicine Department, Clinical Center, National Institutes of Health, Bethesda, Maryland.

Toxoplasmosis; Pneumocystosis

J. BRUCE McCLAIN, M.D.

Assistant Professor of Medicine, Uniformed Services University of the Health Sciences, School of Medicine, Bethesda, Maryland. Chief, Infectious Disease Service, Walter Reed Army Medical Center, Washington, D.C.

Rat Bite Fevers; Leptospirosis

RICHARD V. McCLOSKEY, M.S., M.D.

Professor of Medicine, Jefferson Medical College of Thomas Jefferson University, Philadelphia. Former Chairman, Department of Medicine, Daroff Division, Albert Einstein Medical Center, Philadelphia, Pennsylvania.

Diphtheria

HUGH O. McDEVITT, M.D., Ph.D.

Professor of Medical Microbiology and Medicine, Stanford University School of Medicine. Physician, Stanford University Hospital, Stanford, California.

The Major Histocompatibility Complex and Disease Susceptibility

PAUL R. McHUGH, M.D.

Henry Phipps Professor of Psychiatry, Johns Hopkins School of Medicine. Psychiatrist-in-Chief and Director, Department of Psychiatry, Johns Hopkins Hospital, Baltimore, Maryland.
Psychologic Illness in Medical Practice

PATRICK A. McKEE, M.D.

Investigator, Howard Hughes Medical Institute; Professor of Medicine and Assistant Professor of Biochemistry, Duke University School of Medicine. Chief, Division of General Internal Medicine, Duke University Medical Center, Durham, North Carolina.
Disorders of Blood Coagulation

RONALD P. MESSNER, M.D.

Professor of Internal Medicine and Director, Section of Rheumatology-Clinical Immunology, University of Minnesota Medical School—Minneapolis. Consulting Rheumatologist, Veterans Administration Medical Center and Hennepin County Medical Center, Minneapolis, Minnesota.
Dermatomyositis and Polymyositis

LOUIS H. MILLER, M.D.

Head, Malaria Section, Laboratory of Parasitic Diseases, National Institute of Allergy and Infectious Disease, National Institutes of Health, Bethesda, Maryland.
Malaria

ROBERT B. MILLMAN, M.D.

Clinical Professor of Public Health and Associate Professor of Clinical Psychiatry, Cornell University Medical College. Director, Alcohol and Drug Abuse Programs, The New York Hospital-Cornell Medical Center, New York, New York.
Drug Abuse and Dependence

THOMAS P. MONATH, M.D.

Director, Division of Vector-Borne Viral Diseases, Center for Infectious Diseases, Centers for Disease Control, Public Health Service, Fort Collins, Colorado.
Arthropod-Borne Viral Encephalitides; Yellow Fever

WILLIAM L. MORGAN, Jr., M.D.

Professor of Medicine, University of Rochester School of Medicine and Dentistry. Associate Chairman, Department of Medicine, The Strong Memorial Hospital, Rochester, New York.
Clinical Approach to the Patient

ARNO G. MOTULSKY, M.D., D.Sc. (Hon.)

Professor of Medicine and Genetics, University of Washington School of Medicine. Attending Physician, University and Providence Hospitals; Consulting Physician, Children's Orthopedic Hospital, Seattle, Washington.
Hemochromatosis (Iron Storage Disease); Hereditary Syndromes Involving Multiple Organ Systems

S. HARVEY MUDD, M.D.

Laboratory of General and Comparative Biochemistry, Department of Health and Human Services, National Institutes of Health, Bethesda, Maryland.
Homocystinuria

MAURICE A. MUFSON, M.D.

Professor and Chairman, Department of Medicine, Marshall University School of Medicine, Huntington, West Virginia. Associate Chief of Staff for Research, Veterans Administration Medical Center; Active Staff, Cabell-Huntington and St. Mary's Hospitals, Huntington, West Virginia.
Viral Pharyngitis, Laryngitis, Croup, and Bronchitis

JOHN F. MURRAY, M.D.

Professor of Medicine of the Senior Staff, Cardiovascular Research Institute, University of California, San Francisco, School of Medicine. Chief of Chest Service, San Francisco General Hospital Medical Center, San Francisco, California.
Respiratory Diseases: Introduction; Respiratory Structure and Function; Respiratory Failure

BRYAN D. MYERS, M.D.

Associate Professor of Medicine, Stanford University School of Medicine. Director of Clinical Nephrology, Stanford University Medical Center, Stanford, California.
Diabetes and the Kidney

DAVID G. NATHAN, M.D.

Robert A. Stranahan Professor of Pediatrics, Harvard Medical School. Pediatrician-in-Chief, Dana Farber Cancer Institute; Chief, Division of Hematology and Oncology, The Children's Hospital, Boston, Massachusetts.
Hematologic Diseases: Introduction

FRANKLIN A. NEVA, M.D.

Chief, Laboratory of Parasitic Diseases, and Member, Laboratory of Clinical Investigation, National Institute of Allergy and Infectious Diseases, National Institutes of Health. Attending Physician, Clinical Center, National Institutes of Health, Bethesda, Maryland.
Leishmaniasis

ARTHUR W. NIENHUIS, M.D.

Chief, Clinical Hematology Branch, National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, Maryland.
Hemoglobin Synthesis; The Thalassemias

ALAN S. NIES, M.D.

Professor of Medicine and Pharmacology, University of Colorado School of Medicine. Attending Physician, University Hospitals, The University of Colorado Health Sciences Center, Denver, Colorado.
Principles of Drug Therapy; Interactions Between Drugs; Adverse Reactions to Drugs

JOHN A. OATES, M.D.

Chairman, Department of Medicine, and Professor, Medicine and Pharmacology, Vanderbilt University School of Medicine. Physician-in-Chief, Vanderbilt University Hospital, Nashville, Tennessee.
Prostaglandins, Thromboxane A₂, and Leukotrienes

ROBERT K. OCKNER, M.D.

Professor of Medicine, Director of Liver Center, University of California, San Francisco, School of Medicine. Chief of Gastroenterology, Moffitt-Long Hospitals, San Francisco, California.
Clinical Approach to Liver Disease; Hepatic Metabolism in Liver Disease; Laboratory Tests in Liver Disease; Approaches to the Diagnosis of Jaundice; Acute Viral Hepatitis; Toxic and Drug-Induced Liver Disease; Chronic Hepatitis

WILLIAM D. ODELL, M.D., Ph.D.

Professor of Medicine and Physiology and Chairman, Department of Medicine, University of Utah School of Medicine and Affiliated Hospitals, Salt Lake City, Utah.
Endocrine Manifestations of Tumors: "Ectopic" Hormone Production

JERROLD M. OLEFSKY, M.D.

Professor of Medicine, University of California, San Diego, School of Medicine, La Jolla, California.
Diabetes Mellitus

ERIC A. OTTESEN, M.D.

Head, Clinical Parasitology Section, Laboratory of Clinical Investigation, and Senior Investigator, Laboratory of Parasitic Diseases, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland.
Filariosis: Introduction; Lymphatic Filariasis; Tropical Eosinophilia; Loiasis; Mansonella ozzardi Infection; Perstans Filariasis; Dirofilaria; Possible Human Meningonemias

CHARLES Y. C. PAK, M.D.

Professor of Internal Medicine, University of Texas Southwestern Medical School at Dallas, Dallas, Texas.
Renal Calculi

WILLIAM W. PARMLEY, M.D.

Professor of Medicine, University of California, San Francisco, School of Medicine. Chief of Cardiology, Moffitt-Long Hospitals, San Francisco, California.
Circulatory Function and Control

WILLIAM E. PAUL, M.D.

Chief, Laboratory of Immunology, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland.
Introduction: The Immune System

HERBERT A. PERKINS, M.D.

Clinical Professor of Medicine, University of California, San Francisco, School of Medicine. Scientific Director, Irwin Memorial Blood Bank of the San Francisco Medical Society, San Francisco, California.
Blood Transfusion

WALTER L. PETERSON, M.D.

Associate Professor of Internal Medicine, University of Texas Southwestern Medical School at Dallas. Assistant Chief, Medical Service, Dallas Veterans Administration Medical Center, Dallas, Texas.
Peptic Ulcer: Medical Therapy; Gastrointestinal Hemorrhage

SIDNEY PHILLIPS, M.D.

Professor of Medicine, Mayo Medical School. Director, Gastroenterology Unit, Mayo Clinic, Rochester, Minnesota.
Disorders of Gastrointestinal Motility

THEODORE L. PHILLIPS, M.D.

Professor and Chairman, Department of Radiation Oncology, University of California, San Francisco, School of Medicine. Attending Physician, Moffitt-Long Hospitals and Veterans Administration and Mt. Zion Medical Centers, San Francisco, California.
Radiation Injury

NATHANIEL F. PIERCE, M.D.

Professor of Medicine, Johns Hopkins University School of Medicine. Chief, Infectious Diseases, Baltimore City Hospitals, Baltimore, Maryland.
Cholera

SHELDON R. PINNELL, M.D.

Professor of Medicine and Chief, Division of Dermatology, Duke University School of Medicine, Durham, North Carolina.
Marfan's Syndrome; Ehlers-Danlos Syndrome

FRED PLUM, M.D.

Titzell Professor and Chairman, Department of Neurology, Cornell University Medical College. Neurologist-in-Chief, The New York Hospital, New York, New York.
Approach to the Patient Including General Management; Principles of Diagnosis; The Neurologic Examination; Acute Central Nervous System Poisoning; Prognosis in Severe Brain Damage and Diagnosis of Brain Death; Brief Loss of Consciousness; Regional Diagnosis of Cerebral Disorders; Focal Disturbances of Higher Function; Amentia and Dementia; Autonomic Disorders and Their Management; Smell and Taste; Neuro-ophthalmology; Asthenia, Fatigue, and Weakness; Ataxia and Related Gait Disorders.

CHARLES E. POPE II, M.D.

Professor of Medicine, University of Washington School of Medicine. Chief, Gastroenterology, Seattle Veterans Administration Medical Center, Seattle, Washington.
Diseases of the Esophagus

CAROL S. PORTLOCK, M.D.

Associate Professor of Medicine, Yale University School of Medicine. Staff Physician, Yale-New Haven Hospital, New Haven, Connecticut.
Introduction to Neoplasms of the Immune System; Burkitt's Lymphoma

JEROME B. POSNER, M.D.

Professor of Neurology, Cornell University Medical College. Chairman, Department of Neurology, Memorial Sloan-Kettering Cancer Center, New York, New York.
Nonmetastatic Effects of Cancer on the Nervous System; The Neurologic History; Sustained Impairment of Consciousness; Hearing and Equilibrium; Episodic Loss of Motor Function; Disorders of Sensation; Differential Diagnosis of Muscle, Nerve Root, and Spinal Disorders; Intervertebral Disc Disease; Neoplasms of the Spinal Canal; Inflammatory Diseases of the Spinal Canal; Vascular Disorders of the Spinal Canal; Congenital Anomalies of the Cranio-vertebral junction, Spine, and Spinal Cord

BASIL A. PRUITT, Jr., M.D.

Commander and Director, U.S. Army Institute of Surgical Research, Brooke Army Medical Center, Fort Sam Houston, Texas.
Electric Injury

CHARLES PUTMAN, M.D.

Chairman and Professor, Department of Radiology, and James B. Duke Professor of Radiology and Professor of Medicine, Duke Uni-

versity School of Medicine. Chief of Staff, Duke University Hospital, Durham, North Carolina.

Radiography of the Heart

CHARLES E. RACKLEY, M.D.

Anton and Margaret Fuisz Professor and Chairman, Department of Medicine, Georgetown University School of Medicine. Physician-in-Chief, Georgetown University Medical Center, Washington, D.C.
Valvular Heart Disease

SAMUEL RAPOPORT, M.D., Ph.D.

Assistant Professor of Neurology and Chief, Division of Clinical Neurophysiology, Cornell University Medical College. Assistant Attending Neurologist, The New York Hospital, New York, New York.
Neurologic Diagnostic Procedures

FLOYD C. RECTOR, Jr., M.D.

Professor of Medicine and Physiology and Senior Scientist, Cardiovascular Research Institute, University of California, San Francisco, School of Medicine, San Francisco, California.
Obstructive Nephropathy

CHARLES E. REED, M.D.

Professor of Internal Medicine, Mayo Medical School. Attending Physician, Saint Mary's Hospital and Rochester Methodist Hospital, Rochester, Minnesota.
Drug Allergy

SEYMOUR REICHLIN, M.D., Ph.D.

Professor of Medicine, Tufts University School of Medicine. Chief, Endocrine Division, and Senior Physician, New England Medical Center Hospital, Boston, Massachusetts.
The Pineal

HERBERT Y. REYNOLDS, M.D.

Professor of Medicine and Head, Pulmonary Section, Yale University School of Medicine. Attending Physician, Yale-New Haven Hospital, New Haven, and Veterans Administration Hospital, West Haven, Connecticut.
Introduction to Pneumonia; Pneumonia Due to Klebsiella (Friedländer's Pneumonia); Pneumonia Caused by Other Aerobic Gram-Negative Bacilli; Aspiration Pneumonia

CHARLES T. RICHARDSON, M.D.

Professor of Medicine, University of Texas Southwestern Medical School at Dallas. Chief, Gastroenterology, Dallas Veterans Administration Medical Center, Dallas, Texas.
Gastritis; Pathogenesis of Peptic Ulcer; Zollinger-Ellison Syndrome

RONALD F. RIEDER, M.D.

Professor of Medicine and Director of Hematology, State University of New York, Downstate Medical Center College of Medicine. Attending Physician, Kings County Hospital Center and State University Hospital, Brooklyn, New York.
Unstable Hemoglobins; Abnormal Hemoglobins with Altered Oxygen Affinity; Methemoglobinemia and Sulfhemoglobinemia

RICHARD A. RIFKIND, M.D.

Chairman, Sloan-Kettering Institute for Cancer Research, Memorial Sloan-Kettering Cancer Center. Attending Physician, Memorial Hospital for Cancer and Allied Diseases, Memorial Sloan-Kettering Cancer Center, New York, New York.
Diseases of the Spleen

B. LAWRENCE RIGGS, M.D.

Professor of Medicine, Mayo Medical School. Chairman, Division of Endocrinology and Metabolism, Mayo Clinic, Rochester, Minnesota.
Osteoporosis

RICHARD S. RIVLIN, M.D.

Professor of Medicine, Cornell University Medical College. Chief, Nutrition Service, Memorial Sloan-Kettering Cancer Center, and Chief, Nutrition Division, New York Hospital-Cornell University Medical Center, New York, New York.
Disorders of Vitamin Metabolism: Deficiencies, Metabolic Abnormalities, and Excesses

WILLIAM O. ROBERTSON, M.D.

Professor of Pediatrics, Department of Pediatrics, University of Washington School of Medicine. Medical Director, Seattle Poison Center, Washington Poison Network, and Children's Orthopedic Hospital and Medical Center, Seattle, Washington.
Common Poisonings