

BOCKUS

GASTROENTEROLOGY

257
E807.2
3

R 11
2.1.2.1

外文书

7996662

GASTROENTEROLOGY

HENRY L. BOCKUS, M.D.

*Emeritus Professor of Medicine,
University of Pennsylvania Graduate School of Medicine*

and

Present and Former Colleagues at the University
of Pennsylvania Graduate School of Medicine

and

School of Medicine

VOLUME III

Second Edition



W. B. SAUNDERS COMPANY

Philadelphia & London 1965

Gastroenterology, Volume III

© 1965 by W. B. Saunders Company. Copyright 1946 by W. B. Saunders Company. Copyright under the International Copyright Union. All Rights Reserved. This book is protected by Copyright. No part of it may be duplicated or reproduced in any manner without written permission from the publisher. Made in the United States of America. Press of W. B. Saunders Company. Library of Congress Catalog Card Number: 62-11598

Dedicated to

the student physicians of the University of
Pennsylvania Graduate School of Medicine who,
throughout the years, have been a never-failing
source of inspiration

Contributors

DENIS M. ABELSON, M.D.

Associate Professor of Medicine, Graduate School of Medicine, University of Pennsylvania; Chief, Section of Endocrinology, Graduate Hospital of the University of Pennsylvania.

ROLAND W. BANKS, M.D.

Palmetto Medical Clinic and Hospital, Wauchula, Florida; Formerly Resident in Internal Medicine, Graduate Hospital of the University of Pennsylvania.

GIULIO J. BARBERO, M.D.

Associate Professor of Pediatrics, School of Medicine, University of Pennsylvania; Gastroenterologist, Children's Hospital of Philadelphia.

STANLEY BAUM, M.D.

Assistant Professor of Radiology, School of Medicine, University of Pennsylvania; Associate Radiologist, Graduate Hospital of the University of Pennsylvania.

LAWRENCE H. BEIZER, M.D.

Associate Professor of Medicine, Graduate School of Medicine, University of Pennsylvania; Director, Division of Hematology, Department of Medicine, Graduate Hospital of the University of Pennsylvania.

SAMUEL BELLET, M.D.

Professor of Clinical Cardiology, Graduate School of Medicine, University of Pennsylvania; Director, Division of Cardiology, Philadelphia General Hospital, Philadelphia, Pennsylvania.

J. EDWARD BERK, M.D., D.S.C.

Professor and Chairman, Department of Medicine, California College of Medicine; Visiting Lecturer and Former Instructor, Graduate School of Medicine, University of Pennsylvania; Senior Attending Physician and Chairman, Department of Medicine, Los Angeles County General Hospital, Unit 2.

THOMAS L. BRANNICK, M.D.

Consultant, Section of Psychiatry, Mayo Clinic; Instructor in Psychiatry, Mayo Graduate School of Medicine, University of Minnesota, Rochester, Minnesota.

HARRIS R. CLEARFIELD, M.D.

Instructor in Internal Medicine, Graduate School of Medicine, University of Pennsylvania; Staff Physician, Graduate Hospital of the University of Pennsylvania.

EDWIN M. COHN, M.D.

Assistant Professor of Gastroenterology, Graduate School of Medicine, University

of Pennsylvania; Associate Attending Physician in Gastroenterology, Albert Einstein Medical Center, Philadelphia, Pennsylvania.

FRANZ GOLDSTEIN, M.D.

Assistant Professor of Medicine, Jefferson Medical College, Philadelphia, Pennsylvania; Assistant Physician, Jefferson Medical College Hospital and Gastroenterology Clinic; Assistant Attending Physician, Philadelphia General Hospital; Formerly Chief Medical Resident, Graduate Hospital of the University of Pennsylvania.

WILLIAM S. HAUBRICH, M.D.

Associate Physician, Division of Gastroenterology, The Henry Ford Hospital, Detroit; Formerly Resident in Gastroenterology, Graduate Hospital of the University of Pennsylvania.

PHILIP J. HODES, M.D., D.SC.

Professor and Head, Department of Radiology, Jefferson Medical Center; Chief Attending Physician, Jefferson Medical College Hospital; Former Professor of Radiology, School of Medicine, University of Pennsylvania.

J. WARREN HUNDLEY, M.D.

Assistant Professor of Clinical Medicine, School of Medicine, University of Pennsylvania; Associate in Gastroenterology, Graduate School of Medicine, University of Pennsylvania; Attending Physician, Presbyterian Hospital, Philadelphia, Pennsylvania.

JOSÉ MARTINS JOB, M.D., F.M.P.A.

Professor of Internal Medicine and Director of Institute of Gastroenterology and Nutrition, School of Medicine, University of Rio Grande de Sol, Pôrto Alegre, Brazil; Formerly Graduate Student in Gastroenterology, Graduate School of Medicine, University of Pennsylvania.

CHARLES ALEXANDER JONES, M.D., D.SC. (MED.)

Clinical Professor of Medicine, West Virginia University Medical Center, Morgantown, West Virginia; Formerly Associate in Medicine, Graduate School of Medicine, University of Pennsylvania; Chief of Medicine, Veterans Administration Hospital, Clarksburg, West Virginia.

ALLAN A. KAPLAN, M.D.

Assistant Professor of Internal Medicine, University of Miami College of Medicine; Chairman, Section of Gastroenterology, Mount Sinai Hospital, Miami Beach, Florida; Formerly Resident in Gastroenterology, Graduate Hospital of the University of Pennsylvania.

EDMUND L. KEENEY, M.D.

Medical Director, Scripps Clinic and Research Foundation, La Jolla, California.

M. S. LOPUSNIAK, M.D., D.SC.

Formerly Associate in Gastroenterology, Graduate School of Medicine, University of Pennsylvania; Assistant Physician, Lankenau Hospital, Philadelphia, Pennsylvania.

T. FIGUEIREDO MENDES, M.D.

Adjunct Professor of Internal Medicine, School of Medicine, University of Brazil; Formerly Fellow in Gastroenterology, Graduate School of Medicine, University of Pennsylvania.

MAURICE MENSCH, M.D.

Assistant Clinical Professor of Medicine, School of Medicine, George Washington University; Staff Physician, George Washington University Hospital; Consultant in Gastroenterology, District of Columbia General Hospital, Washington, D. C.

MERLE M. MILLER, M.D.

Associate Professor of Allergy, Graduate School of Medicine, University of Pennsyl-

vania; Attending Allergist, Abington, Germantown, Graduate, Presbyterian and Wills Eye Hospitals, Philadelphia, Pennsylvania.

LEE S. MONROE, M.D.

Chief, Division of Gastroenterology, Scripps Clinic and Research Foundation; Associate Clinical Professor of Medicine, California College of Medicine; Senior Staff, Scripps Memorial Hospital, La Jolla, California; Formerly Graduate Student of Gastroenterology, Graduate School of Medicine, University of Pennsylvania.

PAUL NEMIR, JR., M.D.

Associate Professor of Surgery, School of Medicine, University of Pennsylvania; Surgeon, Graduate Hospital of the University of Pennsylvania; Consultant in Cardiovascular Surgery, United States Naval Hospital, Philadelphia.

JOHANNES F. PESSEL, M.D.

Formerly Associate Professor of Gastroenterology, Graduate School of Medicine, University of Pennsylvania; Formerly Medical Director and Chief of Medicine (Retired), Mercer Hospital, Trenton, New Jersey.

I. J. PINCUS, M.D., D.SC.

Associate Clinical Professor of Medicine and Physiology, University of Southern California School of Medicine; Attending Physician, Los Angeles County Hospital and Cedars of Lebanon Hospital; Formerly Resident in Medicine, Graduate Hospital of the University of Pennsylvania.

EDWIN O. POLISH, M.D.

Assistant Professor of Medicine, Hahnemann Medical College; Junior Attending Physician, Hahnemann Hospital, Philadelphia; Formerly Resident in Medicine, Graduate Hospital of the University of Pennsylvania.

ROBERT J. PRIEST, M.D.

Physician-in-Charge, Division of Gastroenterology, The Henry Ford Hospital; Formerly Graduate Student in Gastroenterology, Graduate School of Medicine, University of Pennsylvania.

ABRAHAM E. RAKOFF, M.D.

Professor of Obstetrics and Gynecology (Endocrinology) and Professor of Medicine (Endocrinology), Jefferson Medical College; Visiting Lecturer in Gynecic Endocrinology, Department of Medicine, Graduate School of Medicine, University of Pennsylvania; Endocrinologist to the Jefferson Hospital Clinical Laboratories.

HOWARD P. ROME, M.D.

Professor of Psychiatry, Mayo Graduate School of Medicine, University of Minnesota; Consultant, Section of Psychiatry, Mayo Clinic, Rochester, Minnesota; Formerly Resident in Internal Medicine, Graduate Hospital of the University of Pennsylvania.

MAURICE M. ROTHMAN, M.D.

Assistant Professor of Gastroenterology, Graduate School of Medicine, University of Pennsylvania; Attending Gastroenterologist, Graduate Hospital of the University of Pennsylvania.

ALEXANDER RUSH, M.D.

Assistant Professor of Clinical Medicine, School of Medicine, University of Pennsylvania; Formerly Associate in Gastroenterology, Graduate School of Medicine, University of Pennsylvania; Head, Department of Gastroenterology, Pennsylvania Hospital, Philadelphia, Pennsylvania.

M. H. SAMITZ, M.D., M.SC. (MED.)

Associate Professor of Dermatology, University of Pennsylvania School of Medicine; Staff Physician, University of Pennsylvania Hospital.

GERALDO SIFFERT, M.D.

Professor of Gastroenterology, Graduate School of Medicine, Pontifical Catholic University of Rio de Janeiro (Brazil); Formerly Graduate Student in Gastroenterology, Graduate School of Medicine, University of Pennsylvania.

LEROY H. STAHLGREN, M.D.

Assistant Professor of Surgery, Graduate School of Medicine, University of Pennsylvania; Assistant Professor of Surgery, Women's Medical College; Chief of Surgery, Philadelphia General Hospital; Attending Surgeon, Graduate Hospital of the University of Pennsylvania and Women's Medical College Hospital, Philadelphia, Pennsylvania.

GEORGE N. STEIN, M.D.

Clinical Professor of Radiology, Graduate School of Medicine, University of Pennsylvania; Associate in Radiology, Graduate Hospital of the University of Pennsylvania.

VAHAKEN O. TACHDJIAN, M.D.

Instructor in Gastroenterology, Graduate School of Medicine, University of Pennsylvania; Assistant Physician, Graduate Hospital of the University of Pennsylvania and Presbyterian Hospital, Philadelphia, Pennsylvania.

C. ROBERT TITTLE, JR., M.D., F.A.C.P.

Formerly Associate Professor of Metabolic Diseases, Graduate School of Medicine, University of Pennsylvania; Director of Medicine, Maumee Valley Hospital, Toledo, Ohio.

EMANUEL G. TULSKY, M.D.

Assistant Professor of Radiology, Graduate School of Medicine, University of Pennsylvania; Associate Radiologist and Director

of Tumor Clinic, Graduate Hospital of the University of Pennsylvania.

HENRY J. TUMEN, M.D.

Chairman, Department of Medicine, and Professor of Medicine, Graduate School of Medicine, University of Pennsylvania; Chairman, Department of Medicine, Graduate Hospital of the University of Pennsylvania; Consultant in Gastroenterology, Walter Reed General Hospital, Washington, D. C.

FRANCISCO VILARDELL, M.D., D.SC. (MED.)

Director, Escuela de Patología Digestiva, Hospital de la Santa Cruz y San Pablo, Barcelona, Spain; Formerly Fellow and Instructor in Gastroenterology, Graduate School of Medicine, University of Pennsylvania.

HENRY WALTER, JR., M.D., F.A.C.P.

Formerly Assistant Instructor of Gastroenterology, Graduate School of Medicine, University of Pennsylvania; Senior Physician, and Gastroenterologist, Lancaster General Hospital, Lancaster, Pennsylvania; Gastroenterologist, St. Joseph's Hospital, Lancaster, Pennsylvania.

JOHN H. WILLARD, M.D.

Assistant Professor of Gastroenterology, Graduate School of Medicine, University of Pennsylvania; Chief of Medicine, Harlan Appalachian Regional Hospital, Harlan, Kentucky; Medical Director, The Daniel Boone Clinic, Harlan, Kentucky.

BERNARD A. L. WISSMER, M.D.

Consultant in Gastroenterology, Medical Policlinic of the University of Geneva; Former Graduate Student in Gastroenterology, Graduate School of Medicine, University of Pennsylvania.

Preface

Volume III has been completely rewritten. Sections are devoted to intestinal parasites, the liver, the biliary tract, the pancreas, and the so-called secondary gastrointestinal disorders. The contributors have been chosen from our official family (past and present) of the gastrointestinal division of the Graduate School of Medicine.

Section VIII deals with intestinal parasites. Parasitosis constitutes one of the most important facets of public health endeavor throughout the world. The gastroenterologist everywhere must be prepared to recognize such infections. Succinct but comprehensive coverage of the various intestinal parasites will be found in Chapter 87. They are appropriately illustrated. A separate chapter has been devoted to schistosomiasis because of the wide distribution of this parasite and its importance as a public health menace in many countries.

The liver (Section IX) continues to be an area of the utmost interest to the gastroenterologically minded physiologist, clinician, surgeon, and radiologist. Its status in health and disease has been extensively reviewed in the light of the many additions to our knowledge and better understanding of its function and diseases. The chapter dealing with diagnostic procedures reflects present thinking in the application of techniques based upon sound physiologic principles. In this chapter will be found a description of the liver tests now generally employed, as well as an appraisal of the various procedures utilized in the roentgen study of the liver and its circulation. Liver scanning and biopsy are fully described. Jaundice is allotted space appropriate to its clinical

importance. This section is introduced by a lucid discussion of bilirubin metabolism and classification of jaundice, followed by chapters concerned with the clinical aspects of the various types of icterus and their differential diagnosis. The task of bringing up to date present concepts in the areas of hepatic inflammations and cirrhosis has been a herculean one. I believe the reader, whether neophyte or erudite scholar, will concede that this material has been thoroughly and judiciously presented. Chapter 97 contains a complete check list of substances injurious to the liver with bibliographic references to them. Indeed it is believed that the section on the liver successfully reflects the great advances that have occurred since the publication of the first edition of this text.

In Section X, dealing with affections of the gallbladder and biliary tract, basic material has been carefully revised. The chapter on diagnostic procedures will undoubtedly be frequently consulted. It comprises all of the accepted techniques concerned with the roentgen visualization of the gallbladder and bile ducts as well as the various methods of applying diagnostic biliary drainage procedures, including timed biliary drainage and the utilization of cholecystokinin-secretin techniques. Inflammatory and calculous diseases as well as tumors of the gallbladder and biliary tract are fully discussed. The sections on therapy have been thoroughly considered. The many controversial aspects of the functional disorders of the biliary tract (dyskinesia, etc.) are, I believe, fairly presented. Sec-

tion X includes a discussion of the cystic duct syndrome and postcholecystectomy symptoms.

Much new knowledge has accrued in the area of functions and diseases of the pancreas during the past two decades. In the section devoted to this organ (Section XI), the contributors have succeeded, I believe, in assimilating and correlating recent increments to our knowledge with pre-existing factual data. A perusal of the chapter on diagnostic procedures should afford the clinician adequate information concerning the many tests that are available. These have been critically examined and appraised. Pancreatography and isotope scanning have been added. Pancreatitis and tumors receive thorough treatment. A rational selection of tests (pancreatic profile) as well as a thorough discussion of therapy will be found in these chapters. New chapters have been added dealing with endocrine functions of the pancreas, hypoglycemia, postoperative pancreatitis, and cystic fibrosis.

Much that is new and of great clinical interest and importance will be found in the section dealing with the so-called secondary disorders of the gastrointestinal tract (Section XII). New chapters in this section include: (1) the psychiatric aspects of gastrointestinal function and disease; (2) a clinico-physiologic correlation of functional disorders; (3) intimations of autoimmunity in digestive disease; (4) collagen disorders affecting the gastrointestinal tract; (5) abdominal vascular lesions; (6) angiography in the diagnosis of abdominal disorders; (7) gastrointestinal manifestations of endocrine disorders; and (8) dermatologic-gastrointestinal interrelationships. These topics constitute important links between gastrointestinal function and disease on the one hand and systemic disease on the other. They constitute valuable additions to a text on gastroenterology. These data have not before been gathered together in any volume with which I am familiar. The chapters in this section dealing with allergy, food poisoning, and the interrelationship of cardiovascular and urologic disorders and gastrointestinal affections have been rewritten.

In Volume III, as in the preceding volumes, the need for an intimate correlation of basic material with clinical data, both diagnostic and therapeutic (medical and surgical), has been ever in mind. This interrelationship has

been evaluated throughout the text. Chapters concerned with diagnostic procedures have been given ample space, commensurate with their importance and their usefulness to the clinician. Certainly these various diagnostic aids have great value in the study of affections of the liver, the pancreas, and the biliary tract that are discussed in this volume. The practicing physician and surgeon will find adequate discussions on therapy in all affections under consideration.

The size of the volume has been expanded considerably, due in some measure to the liberal use of illustrations, made necessary quite often by the introduction of so many new techniques and procedures. These have been splendidly reproduced by the publisher. It is hoped that the reader will find them useful.

The subject matter contained in the various chapters, although frequently written by different authors, has been correlated so that a continuity of thought and substance has been reasonably maintained. Such continuity has not often been achieved in works of this magnitude in which chapters have been contributed by numerous authors. If we have succeeded in this, it was made possible by the cooperative efforts of our authors, who had the advantage of having worked in the same medical atmosphere, that is, the clinic of the Graduate School of Medicine. I appreciate their tolerance in accepting deletions and additions in order that the various chapters could be molded into a unity. Their criticisms and advice were most helpful. I fully appreciate the sacrifices in time and effort that their contributions entailed. If the text adds in some small way to the dissemination of knowledge in gastroenterology, their efforts will have been rewarded. It is hoped that their wives and families have been as tolerant as mine have been.

Finally I should like now to express sincere gratitude to my wife for her forbearance, and to my secretaries, Misses Peggy Hagan and Katherine Aurandt, for their boundless energy and unstinted help. The fullest cooperation and assistance has been afforded by the superb staff of W. B. Saunders Company in every way at all times. This is keenly appreciated.

H. L. BOCKUS

Philadelphia, Pa.

Contents

SECTION VIII PARASITIC DISEASES

Chapter 87

GASTROINTESTINAL PARASITES OF MAN	3
<i>LEE S. MONROE</i>	
INTRODUCTION: IMPORTANCE OF THE PROBLEM	5
INTESTINAL PROTOZOA	5
Amebas	5
Flagellates	5
Coccidia	8
Ciliates	8
INTESTINAL HELMINTHS	9
Nematodes	9
Cestodes	22
Trematodes	31
Acanthocephala	37
TECHNIQUES OF EXAMINATION FOR INTESTINAL PARASITES	38
THERAPY OF INTESTINAL PARASITISM	41

Chapter 88

THE SCHISTOSOMIASSES	52
<i>T. FIGUEIREDO MENDES</i>	
DEFINITION	53
HISTORY	53
MEDICAL IMPORTANCE	53
SCHISTOSOMIASIS MANSONI	54
SCHISTOSOMIASIS JAPONICA	72
SCHISTOSOMIASIS HAEMATOBIA	77

SECTION IX THE LIVER

Chapter 89

ANATOMY AND PHYSIOLOGY OF THE LIVER 87

*HARRIS R. CLEARFIELD*Part I *Anatomy of the Liver* 88Part II *Physiology of the Liver* 99

HEPATECTOMY AND REGENERATION 99

CARBOHYDRATE METABOLISM AND THE LIVER 100

PROTEIN METABOLISM AND THE LIVER 103

LIPID METABOLISM AND THE LIVER 105

BILE 109

ALCOHOL METABOLISM 111

STEROID HORMONE METABOLISM AND THE LIVER 113

COAGULATION FACTORS AND THE LIVER 114

DETOXIFICATION MECHANISMS 116

Chapter 90

ANOMALIES OF THE LIVER 124

HARRIS R. CLEARFIELD

Chapter 91

DIAGNOSTIC PROCEDURES IN THE EVALUATION OF
HEPATIC DISEASE 129Part I *Liver Function Tests and Other Diagnostic Procedures* 129*EDWIN M. COHN*

LIVER FUNCTION TESTS 131

Tests Based on Bilirubin Metabolism 131

Tests Based on Protein Metabolism 135

Tests Based on Carbohydrate Metabolism 147

Tests Based on Lipid Metabolism 148

Tests Based on Detoxification 150

Dye Excretion Tests 150

Tests Based on Serum Enzyme Determinations 156

Serum Iron 162

OTHER DIAGNOSTIC PROCEDURES 163

Liver Biopsy 163

Vascular Procedures 167

Portal Venography 167

Measurement of Portal Venous Pressure 173

Hepatic Vein Catheterization 174

Hemagglutination Test in Hepatic Disease	175
SUMMARY	176
Part II <i>Radioisotope Visualization of the Liver</i>	178
<i>EMANUEL G. TULSKY</i>	
Chapter 92	
JAUNDICE: METABOLISM OF BILIRUBIN: PATHOGENESIS AND CLASSIFICATION OF JAUNDICE	191
<i>HENRY J. TUMEN</i>	
METABOLISM OF BILIRUBIN AND ITS DERIVATIVES	191
PATHOGENESIS AND CLASSIFICATION OF JAUNDICE	200
Chapter 93	
DIFFERENTIAL DIAGNOSIS OF JAUNDICE	208
<i>EDWIN O. POLISH</i>	
Chapter 94	
JAUNDICE OF HEMOLYTIC ORIGIN	221
<i>LAWRENCE H. BEIZER</i>	
Chapter 95	
OBSTRUCTIVE JAUNDICE	233
<i>LEROY H. STAHLGREN</i>	
Chapter 96	
VIRAL HEPATITIS	245
<i>HENRY J. TUMEN and EDWIN M. COHN</i>	
HISTORICAL NOTE	246
ETIOLOGY	246
EPIDEMIOLOGY	248
INCUBATION PERIOD	253
CLINICAL FEATURES	254
ACUTE (ICTERIC) VIRAL HEPATITIS	254
CHOLESTATIC HEPATITIS	258
NONICTERIC VIRAL HEPATITIS	258
FULMINANT HEPATITIS	259
VIRAL HEPATITIS IN PREGNANCY	260
NEONATAL AND INFANTILE HEPATITIS	261
LUPOID HEPATITIS	262

DIAGNOSIS	263
PROGNOSIS	265
PROPHYLAXIS	267
TREATMENT	270

Chapter 97

ACUTE LIVER INJURY INDUCED BY CHEMICALS AND DRUGS 277

WILLIAM S. HAUBRICH

TYPES OF ACUTE LIVER INJURY	278
CLINICAL FEATURES	281
DIAGNOSIS	282
TREATMENT	283
PROGNOSIS	284
EXEMPLI GRATIA	285
True Hepatotoxins	285
Hypersensitivity Reactions	286
Miscellaneous Adverse Reactions	288
CHECKLIST OF POTENTIALLY INJURIOUS SUBSTANCES	290

Chapter 98

CIRRHOSIS 299

HENRY J. TUMEN and EDWIN M. COHN

HISTORY	301
DEFINITION AND CLASSIFICATION	302
Portal Cirrhosis	304
Postnecrotic Cirrhosis	304
Biliary Cirrhosis	304
ETIOLOGY	304
PATHOGENESIS	311
PATHOLOGY	312
STATISTICAL FEATURES	313
CLINICAL FEATURES	314
ASCITES	315
HYDROTHORAX	321
EDEMA	322
RENAL DISTURBANCES IN CIRRHOSIS	322
JAUNDICE	324
SKIN LESIONS	325
ENDOCRINE DISTURBANCES IN CIRRHOSIS	326
CARDIOVASCULAR ABNORMALITIES IN CIRRHOSIS	328
HEMATOLOGIC ABNORMALITIES IN CIRRHOSIS	329
PEPTIC ULCER	332
MISCELLANEOUS CLINICAL FEATURES OF CIRRHOSIS	333
PHYSICAL FINDINGS IN CIRRHOSIS	335
DIAGNOSTIC STUDIES	336
TREATMENT	336

CAUSES OF DEATH AND PROGNOSIS	344
PORTAL HYPERTENSION	345
HEPATIC COMA	364
"PRIMARY" BILIARY CIRRHOSIS	378

Chapter 99

HEMOCHROMATOSIS	403
<i>J. EDWARD BERK and ROBERT J. PRIEST</i>	
CLASSIFICATION	404
PREVALENCE	404
ETIOLOGY	404
PATHOLOGY	408
CLINICAL FEATURES	412
LABORATORY FINDINGS	413
DIAGNOSIS	414
COMPLICATIONS	415
TREATMENT	416
PROGNOSIS	417

Chapter 100

PERIHEPATITIS AND CONSTRICTIVE PERICARDITIS	420
<i>MAURICE MENSCH and ROLAND W. BANKS</i>	
ACUTE PERIHEPATITIS	420
ACUTE GONOCOCCAL PERIHEPATITIS	421
CHRONIC PERIHEPATITIS	423
CONSTRICTIVE PERICARDITIS (PICK'S SYNDROME)	425

Chapter 101

DISEASES OF THE HEPATIC BLOOD VESSELS	428
<i>CHARLES A. JONES</i>	
DISEASES OF THE HEPATIC ARTERY	429
DISEASES OF THE HEPATIC VEINS	435
DISEASES OF THE PORTAL VEIN	441
CRUVEILHIER-BAUMGARTEN SYNDROME	452

Chapter 102

SPECIFIC INFECTIONS OF THE LIVER	460
Part I <i>Syphilis, Tuberculosis, and Actinomycosis</i>	461
<i>B. WISSMER</i>	
Part II <i>Weil's Disease (Leptospirosis)</i>	473
<i>F. VILARDELL</i>	

Chapter 103

PYOGENIC (NONAMEBIC) ABSCESS OF THE LIVER 487*JOHN H. WILLARD*

Chapter 104

TUMORS OF THE LIVER 502*J. EDWARD BERK and ROBERT J. PRIEST***BENIGN TUMORS** 503**MALIGNANT TUMORS** 506 **Primary Malignant Tumors** 506 **Metastatic Tumors** 517**THE LIVER IN HODGKIN'S DISEASE** 522**LEUKEMIC AND OTHER HEPATIC INFILTRATIONS** 524

Chapter 105

NONPARASITIC CYSTS OF THE LIVER 530*J. EDWARD BERK and ROBERT J. PRIEST*

Chapter 106

METABOLIC DISORDERS AND THE LIVER 539*V. TACHDJIAN***GLYCOGENOSIS (Von Gierke's Disease, Glycogen Storage Disease, Hepatonephromegalia Glycogenica)** 539**GALACTOSEMIA** 543**AMYLOID DISEASE** 545**THE LIPIDOSES** 548

Gaucher's Disease (Reticular and Histiocytic Cerebrosidosis) ... 548

Niemann-Pick Disease (Reticular and Histiocytic Sphingomyelosis) 550

Histiocytosis X (Hand-Schüller-Christian Disease, Letterer-Siwe Disease, and Eosinophilic Granuloma) 551

THE LIVER IN DIABETES MELLITUS 553**THE LIVER IN DISEASES OF THE THYROID GLAND** 556**SECTION X AFFECTIONS OF THE GALLBLADDER AND BILE DUCTS**

Chapter 107

ANATOMY AND PHYSIOLOGY OF THE GALLBLADDER AND BILE DUCTS 567*MAURICE M. ROTHMAN*

Chapter 108

ANOMALIES OF THE GALLBLADDER, BILE DUCTS, AND THEIR BLOOD VESSELS	590
<i>MAURICE M. ROTHMAN</i>	
ANOMALIES OF THE GALLBLADDER	591
MALPOSITION OF THE GALLBLADDER	598
AGENESIS OF THE GALLBLADDER	599
MISCELLANEOUS ANOMALIES OF THE GALLBLADDER	599
ANOMALIES AND ABNORMALITIES OF THE COMMON BILE DUCT	600
OTHER ANOMALIES OF THE BILE DUCTS	601
ANOMALIES OF THE BLOOD VESSELS	606

Chapter 109

DIAGNOSTIC STUDIES IN AFFECTIONS OF GALLBLADDER AND BILE DUCTS	609
INTRODUCTION	610
Part I <i>Roentgen Examination of the Gallbladder and Bile Ducts</i>	611
<i>PHILIP J. HODES</i>	
HISTORICAL DATA	611
SURVEY ABDOMINAL EXAMINATION	612
ORAL CHOLECYSTOGRAPHY	618
CHOLANGIOGRAPHY	637
Part II <i>Biliary Drainage Procedures and Other Laboratory Aids</i>	655
DIAGNOSTIC DUODENAL DRAINAGE OF THE BILIARY TRACT (<i>Meltzer-Lyon Technique</i>)	655
TIMED BILIARY DRAINAGE	664
CHOLECYSTOKININ BILIARY DRAINAGE AND COMBINED SECRETIN-CHOLECYSTOKININ TEST	665
SODIUM DEHYDROCHOLATE TEST	668
DIAGNOSTIC VALUE OF DUODENAL DRAINAGE PROCEDURES	668
OTHER LABORATORY AIDS	671

Chapter 110

MOTOR DISORDERS OF THE BILIARY TRACT (DYSKINESIA, DYSTONIA, DYSSYNERGIA)	681
<i>GERALDO SIFFERT</i>	

Chapter 111

ACUTE CHOLECYSTITIS, GALLBLADDER PERFORATION, EMPHYSEMATOUS CHOLECYSTITIS, GALLBLADDER TORSION, AND BILE PERITONITIS	700
<i>J. EDWARD BERK and LEE S. MONROE</i>	