

*The Laboratory
in Clinical Medicine*
INTERPRETATION AND APPLICATION

Second Edition

Edited by

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The Laboratory in Clinical Medicine

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Diseases of the Skin

PREFACE

Advances in technical knowledge useful in medical diagnosis have been enormous. Accordingly, a new edition of *The Laboratory in Clinical Medicine* seems timely.

The economics of medical care have assumed compelling proportions. This development, coupled with a faltering national economy, has required the physician to keep costs in mind as never before. The editors were very fortunate in persuading a distinguished authority in this broad subject, James L. Bennington, M.D., Professor of Pathology at the Children's Hospital in San Francisco, to write a sophisticated new section on cost-effectiveness in laboratory diagnosis.

The purposes and background of the book remain unchanged from those elaborated in some detail in the Preface to the first edition. Contributors have changed rather substantially and have increased in number to seventeen. Associate editors have been very helpful not only in lending additional expert knowledge but in speeding the book toward completion.

Finally, the editor of the first edition felt the need of a younger man who was conversant with the latest complex technological principles and procedures to take a share of the burden. He found a person fulfilling these criteria in his son, Charles H. Halsted, M.D., Professor of Medicine (Gastroenterology and Clinical Nutrition) of the University of California at Davis. Dr. Charles Halsted has brought in a number of the new contributors. We hope this infusion of new blood will brighten the book.

Sensitive to possible charges of nepotism, Dr. James Halsted discussed with a number of objective-minded authorities the propriety of asking his son to be co-editor. All were unanimous in their approval.

The editors have missed the helpful and friendly advice rendered by George Vilks, who handled the publisher's role in the first edition. Donald H. Abbott, who has replaced Mr. Vilks, is assuming an equivalent degree of expert assistance. We are grateful to the many individuals at the W. B. Saunders Co. who have taken an interest in our book and have given valuable advice—especially Mr. John J. Hanley, formerly Medical Editor and now President of Saunders. We also thank Mr. John Dyson, Copy Editor of long experience, and Mrs. Grace Gulezian, Production Manager, for their expert help with this new edition.

JAMES A. HALSTED
CHARLES H. HALSTED

PREFACE TO THE FIRST EDITION

This volume is the successor to *Clinical Pathology: Application and Interpretation*, by Benjamin B. Wells. Four editions of the earlier work were published—in 1950, 1956, 1962, and 1967. For the 1967 edition Dr. Wells invited the present editor of this book as coauthor, and the subtitle was changed to *Interpretation and Application*, emphasizing that *before* using or applying a test, one should further understand its physiologic background.

Eight years after the fourth edition of *Clinical Pathology* this new volume appears, its name changed, and its size tripled over that of the first edition. It is truly a new book, entirely rewritten. The authorship now numbers fourteen instead of two. Increased size, a peculiarly American measure of progress, is not itself an objective of this book; quite the contrary, if only it could be smaller! But the complexity of present-day medical knowledge that is essential not only to the academician or researcher but, even more important, to the practicing physician precludes such a possibility. The involvement of the laboratory in medicine has become so extensive and diverse that it would be unrealistic to expect one or even two authors to write this book. So it has, of necessity, become multiauthored. The loss of the unifying style of one writer is small compared to the gain in thoroughness and expanse of coverage made possible by the combined experience of the contributors.

In coming to an understanding of the purposes and underlying philosophy of the present approach, it may be well to mention certain facets of the dilemma in health care now facing the American people. In part, the changes in format and expansion in scope of this book are based on changes that have occurred in the practice of medicine.

Shortly after World War II the National Institutes of Health began to grow. For a time seemingly limitless government funds as well as large increases in private foundation funds were available for basic and clinical research. The results were phenomenal, and without question, those funds have yielded consistently high dividends. Expansion of the field of immunology, for example, is changing diagnostic and therapeutic concepts in many diseases such as those of the joints, blood, kidney, and liver. Basic knowledge of enzymes, the structure of genes, and genetic and chromosomal abnormalities has led to practical measures to prevent disability in some inherited disorders and to genetic counseling of prospective parents. Numerous other solid and profound achievements have changed the face of medicine.

Yet, the optimal care of patients has not kept pace with these revolutionary developments. The translation of advances in scientific medical research into better medical care and more effective preventive medicine has not been implemented as rapidly and effectively as desirable. Demands for more doctors to care for patients at

the primary level are becoming more emphatic. An increasing number of studies are concerned with further extending expert care with better distribution of doctors and the use of physicians' assistants and nurse practitioners to work in concert with them. Creating a better system to ensure that everyone receives proper medical care that does not impose an excessive financial burden on the individual is a national goal being intensely debated.

The upward spiral in medical knowledge is leading to the need for periodic self-assessment by physicians in all branches of medicine. There are calls for recurrent certification of specialists and even for periodic licensing of physicians.

Although a gap has always existed between the medical scientist primarily involved in research and teaching and the physician who is primarily involved in the care of patients, the distance is widening year by year. This book attempts to add another wide bridge between the science and practice of medicine. Each section, written by a specialist in the field, outlines salient clinical features of diseases and syndromes, providing the basic physiologic, anatomic, and biochemical aspects; then laboratory procedures that are helpful in specific diagnosis are discussed. Understanding the basic mechanisms of laboratory procedures depends on a knowledge of pathophysiology, and such knowledge is also accumulating at a rapid pace.

As Arthur H. Sanford stated in the Foreword of the 1950 ancestor of the present volume, this is neither a textbook of medicine nor a laboratory manual. It is instead a discussion of how the laboratory is interdigitated into clinical medicine. This volume is addressed primarily to the practicing physician. Both the primary care physician and the specialist engaged in research and teaching can learn from each other; they are interdependent members of the health delivery system. Medical students, physicians' assistants, and other members of the health services professions who wish to learn how the laboratory in its broadest definition serves the practice of medicine should also find this book to be a useful reference.

If it helps to advance the delivery of optimal health care by strengthening communication and serving as a reference for those who provide that care, most of our objectives will have been achieved.

The term *laboratory* has been construed very broadly to include not only those tests usually performed in the clinical laboratory of a hospital but also a wide variety of specialized procedures, such as cardiac catheterization, gastrointestinal endoscopy, liver biopsy, electrocardiography, echocardiography, and certain roentgenographic studies. The clinical laboratory once included a few benches and simple apparatus for what today would be viewed as minor routine procedures. At present, the "cath lab," "GI lab," pulmonary function laboratory, and other areas for specialized studies seem reasonably akin to places where urinalyses, blood counts, bacteriologic procedures, and blood chemical determinations are performed because they provide data which is similar in character even though more complex.

It is a great satisfaction to express deep appreciation to my friend, Gilbert Cherrick, M.D., for his helpful participation and sound advice in the early planning stages of the book.

It is a unique pleasure to acknowledge the enormous help provided by the publishers in the creation of this book. In particular, George Vilks, John L. Dusseau, and John J. Hanley gave wise and broad guidance. Mrs. Lee Walters, copy editor par excellence, saw to it that the book would appear as error-free as possible. The well-integrated efforts of a host of others also were needed to produce this book. As editor, it has been a satisfying experience for me not only to have made new friends among the contributors through working with them but also to have learned so much medicine by reading their works.

JAMES A. HALSTED

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