APPROVED LABORATORY TECHNIC

CLINICAL PATHOLOGICAL, BACTERIOLOGICAL, SEROLOGICAL, BIOCHEMICAL, HISTOLOGICAL

Prepared under the Auspices of

THE AMERICAN SOCIETY OF CLINICAL PATHOLOGISTS

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With eleven colored plates and three hundred illustrations in the text

Dedicated

to

GEORGE H. MEEKER, PH.D., D.D.S., SC.D., LL.D.

PROFESSOR OF BIOCHEMISTRY AND DEAN, GRADUATE SCHOOL OF MEDICINE,
UNIVERSITY OF PENNSYLVANIA

and in memory of

WARD BURDICK, M.D.

FOUNDER OF THE AMERICAN SOCIETY OF CLINICAL PATHOLOGISTS

PREFACE

It is hoped that this manual will aid in the fulfillment of several of the objects of the American Society of Clinical Pathologists, namely, to establish standards for the performance of various laboratory examinations, to promote the practice of scientific medicine by a wider application of clinical laboratory methods to the diagnosis of disease and to encourage a closer coöperation between the practitioner and the clinical pathologist.

In the preparation of this edition, however, the authors have assumed responsibility for the selection of the methods given and therefore these can not be stated to have the approval of the Society as a whole. But the description of the technic of each method has been definitely approved by at least five members of the Society so that the title finally chosen for this edition of the book is "Approved Laboratory Technic, Prepared under the Auspices of The American Society of Clinical Pathologists."

In exercising a special effort to strike a proper balance in the amount of detail given to fulfill the needs of the laboratory technician without being burdensome to the expert, even the simplest details are frequently given with the hope that these will insure greater accuracy and uniformity in results and inspire greater confidence by physicians in laboratory examinations conducted by A. S. C. P. Approved Technic. And since there is a growing and gratifying increase in the use of laboratory methods by practicing veterinarians in the diagnosis of diseases of the lower animals, an effort has been made to render the manual of equal service to them.

It is realized that no amount of detail or simplicity of presentation can make up for the deficiencies of inexperienced, careless and incompetent technicians, but it is believed that the descriptions and illustrations are adequate for insuring accurate work by experienced and careful workers and for the teaching of clinical pathology.

Throughout the book an effort has been made to emphasize the importance of using accurate and reliable apparatus and reagents, as not infrequently the results of very careful and painstaking examinations and analyses are rendered worthless by inaccuracies in these particulars. For example, if blood counting pipets and counting chambers are inaccurately calibrated or broken, the counts can not be even approximately correct despite great care exercised in making them; if the antigen and other biological reagents employed in the complement-fixation test for syphilis are lacking in sensitiveness, the reactions can not be reliable regardless of the care and skill exercised in setting up the tests. Under such conditions any method may be very precise and the worker very careful,

but the results quite inaccurate and misleading. It is fitting and proper, therefore, to lay particular emphasis upon these and other sources of error.

Special emphasis has been placed upon quantitative tests and reactions, since these tend to greater accuracy and render more nearly possible approximately similar results from different laboratories. And in qualitative tests an effort has been made to suggest a uniform terminology and methods for reporting reactions.

Since laboratories are frequently required to secure specimens of blood, spinal fluid, gastric contents, bile, etc., for examination, methods for obtaining these are included.

While the field of "clinical pathology" is difficult to define, yet in p actice it has come to include not only methods for the examination of blood, urine, feces, sputum, etc., but likewise those bacteriological, serological and chemical methods ordinarily requested in medical laboratories. Therefore, these subjects are included. Histological methods may be omitted and for this reason are not considered with the same amount of detail, although it is particularly gratifying to be able to include a chapter on Methods for the Microscopical Examination of Tissues by Dr. William C. MacCarty and Dr W. L. A. Wellbrook.

The authors are particularly indebted to Mr. Alexander Keller, Jr., for assistance in reading and correcting the proofs of the section on Chemical Methods and for permission to use a number of methods from the Manual of the Biochemical Laboratories of the Graduate School of Medicine of the University of Pennsylvania, prepared mainly by himself with the coöperation of Dr. W. G. Karr and Dr. W. B. Rose under the direction of Professor George H. Meeker. Also, indebtedness to Mr. Herman Brown, Chemist to the Research Institute of Cutaneous Medicine, for several illustrations and assistance in preparing the section on Chemical Methods as well as to Dr. William G. Exton and Dr. Anton Rose, is acknowledged; also, to Dr. Elizabeth Yagle for assistance in preparing the section on Serological Methods and to Dr. Henry L. Bockus for assistance in preparing the chapters on the examination of stomach and duodenal contents and bile. And we especially beg to express deep appreciation of the unselfish, highly efficient, painstaking and prompt assistance rendered by the Committees of the Society whose names are gratefully given on the title page and without whose coöperation the book would not have been possible, as well as deep appreciation of the unvarying courtesy and efficiency of the publishers.

J. A. K.
F. B.

Philadelphia.

NOTE

THE *technic* of the methods contained herein has been approved by Committees of the American Society of Clinical Pathologists.

But there has been no attempt at present on the part of the Society to approve or recommend any of the *methods* for the diagnosis of disease. The authors alone assume full responsibility for the selection of these and in some instances have included two or more for the same examination, when it was impossible to decide upon one and when it was considered advisable to furnish alternate methods for controls.

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