

A PRACTICAL MANUAL OF
MEDICAL AND BIOLOGICAL
STAINING TECHNIQUES

by

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PREFACE TO FIRST EDITION

THIS book has been written because it is felt that there is an urgent need of a practical manual dealing with all or most branches of microscopic staining, entirely divorced from theory and general statements. It has been the writer's experience that a great deal of time is lost in searching through volumes of theory and general statements in order to extract a particular staining method which, even when found, may not be complete.

It is hoped that this book will form a useful supplement to the standard works on anatomy, bacteriology, biology, botany, cytology, embryology, entomology, histology, mycology, pathology, veterinary science, zoology, etc.

It should be pointed out that this book contains all the subject matter, revised, rearranged and co-ordinated, of the writer's own publications *Microscopic Staining Techniques* which were put out in the form of three booklets, No. 1, 2 and 3 as a temporary measure in an endeavour to meet the more pressing demands for information on the application of microscopic stains. The booklets attained a world-wide circulation and were in fact chosen by the British Council for inclusion in their exhibits of British medical books. The writer has since received many requests to incorporate all three parts of *Microscopic Staining Techniques* into one and this has been done in the present book, but with many additions.

Many of the methods given here are standard, some are not so well known, while others are unknown.

In writing this book, references have been made to numerous journals and standard works, chief of which were as follows:

Stain, Technology (Biotech Publication, Geneva, N.Y., U.S.A.).

Plant Microtechnique, by D. A. JOHANSEN (McGraw-Hill, New York).

Handbook of Practical Bacteriology, by T. J. MACKIE and J. E. MCCARTNEY (E. & S. Livingstone, Edinburgh).

McClung's Handbook of Microscopical Technique, edited by RUTH MCCLUNG JONES (Paul B. Hoeber, Inc., New York, 16, U.S.A.).

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Laboratory Technique, by E. V. COWDRY (Williams & Wilkinson, Baltimore, U.S.A.).

Histopathologic Technic, by R. D. LILLIE (Blakiston Co., Philadelphia, U.S.A.).

Schaffer's Essentials of Histology, by H. M. CARLETON and E. H. LEACH (Longmans, Green & Co., London).

Pathological Technique, by F. B. MALLORY (Saunders, Philadelphia, U.S.A.).

Histological Technique, by H. M. CARLETON and E. H. LEACH (Oxford University Press, England).

The section on Fluorescence Microscopy is a modification of the writer's paper which was published in *The Journal of the Royal Naval Medical Service*, 1951, Vol. XXXVII, No. 3, and thanks are due to the editor of that journal for permission to include the modified paper in this book.

I should like to place on record my thanks to my wife, F. P. Gurr, B.Sc., for her helpful criticism of the manuscript.

August, 1952

PREFACE TO THE SECOND EDITION

I am very happy that the first edition of this book has met with so kindly a reception; and I hope that this enlarged and revised edition will be of greater service to medical research workers and biologists all over the world.

Many additions have been made to the subject-matter of the book, and I wish to thank readers of the first edition for their helpful suggestions, most of which have been incorporated in this second edition.

A section of histochemical methods has been added as it is felt that this may be of service to various laboratory workers, including those engaged in cancer research, who may be interested in the rapidly expanding science of histochemistry, which offers a rich field for investigation.

The subject-matter of the book, as before, has been divided into various headings: some of the methods which might have been classified as "Cytological" have been placed under other headings because the particular methods are more frequently required by workers other than cytologists. For similar reasons, methods which might have been transferred to the histochemical section have been left under the same headings where they appeared in the first edition.

In addition to the standard works mentioned in the preface to the first edition, reference has also been made to *The Microscopist's Vade-Mecum* edited by J. Brontë Gatenby and H. W. Beams (J. & A. Churchill, Ltd., London), and *Microscopic Histochemistry* by George Gomori (University of Chicago Press, U.S.A.).

It was stated in a review in a Balkan journal, and correctly so, that the first edition of this book gave no information on the techniques used in eastern and south-eastern European countries. The reason for this is the scarcity here of the medical and biological literature of those countries. I am not a linguist, but I have painfully translated some hundreds of pages of French and German literature to find some missing link for inclusion in this present edition and, if any medical or biological laboratory workers

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in any country in the world have any new or improved techniques that would prove to be of help to their fellow laboratory workers in other countries, I should be very pleased to be given the opportunity of considering such techniques for inclusion in the third edition of this work: I am most anxious that it should be of the greatest possible service to medical and laboratory workers throughout the world and information in any language concerning particular techniques will be welcomed.

It has been stated in a Netherlands journal in a review, of the first edition of this book, that Gram's Iodine and Lugol's Iodine are identical; I must correct this misleading statement which was evidently made in error: Gram's Iodine is not identical with Lugol's Iodine; the two formulae are given in this book.

I should like to express my appreciation of the very energetic co-operation afforded me by my publishers, and the efficient manner in which their production manager, Mr. R. G. Thixton, and the printers Messrs. J. W. Arrowsmith Ltd., have handled the complicated business of getting the second edition into print.

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LONDON.

EDWARD GURR

April, 1955

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