

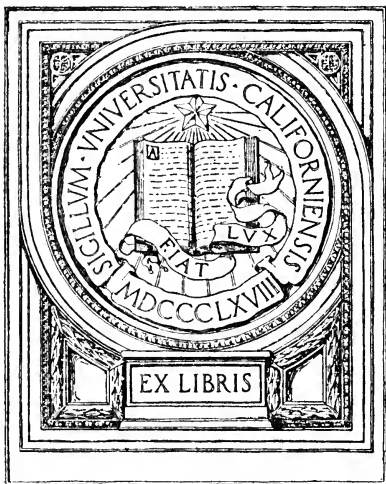
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ELEMENTARY TECHNIQUE
— IN —
HISTOLOGY AND BACTERIOLOGY

UNIVERSITY OF CALIFORNIA
AT LOS ANGELES



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G. W. Hoag.



ELEMENTARY TECHNIQUE

IN

HISTOLOGY AND BACTERIOLOGY

BY

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PREFACE.

This guide in elementary technique is intended for the use of medical and other students beginning work in either Histology or Bacteriology.

In its main features it is a new arrangement

ERRATA.

Page 12, 19, 23, for "creasote" read "ereasote."

Page 15, line 3, for "tissues" read "tissue."

Page 40, for "Shäfer" read "Sehäfer."

Page 16, 17, 20 for "fixitive" read "fixative."

Page 71, eighth line from bottom, for "or covered" read "are covered."

For "liquifying" read "liquefying."

are usually taken for granted, and which therefore, often greatly perplex the student.

It is not expected that the book will furnish the experienced student with much information; it is written to help the beginner and while it is thought that it will be sufficiently complete for the requirements of all such, we especially hope that it will serve as an introduction to more advanced works, and that the result will be, a clear understanding of the elementary methods, and therefore a much more intelligent use of the advanced books on Histology and Bacteriology.

It will be noted, that no attempt has been made to introduce descriptive Histology and scarcely any descriptive Bacteriology, but that the book is confined to *Technique*.

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PREFACE.

This guide in elementary technique is intended for the use of medical and other students beginning work in either Histology or Bacteriology.

In its main features it is a new arrangement of what is found in other books on these subjects, and in many instances direct quotations are made.

The absence of any concise, and yet sufficiently full, account of methods which will enable the beginner to form from the first, clear ideas of the various steps is the only apology offered for adding another book to the many excellent ones now to be found.

It is hoped that this little book will answer that common question of the beginner, "What shall I do next?" We have tried to make plain those simple points which are usually taken for granted, and which therefore, often greatly perplex the student.

It is not expected that the book will furnish the experienced student with much information; it is written to help the beginner and while it is thought that it will be sufficiently complete for the requirements of all such, we especially hope that it will serve as an introduction to more advanced works, and that the result will be, a clear understanding of the elementary methods, and therefore a much more intelligent use of the advanced books on Histology and Bacteriology.

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PREFACE.

We are particularly indebted for valuable assistance received from Dr. Stanley P. Black, Pathologist at Mercy Hospital. Dr. F. X. Walls, and Dr. E. G. Conklin of Northwestern University, Dr. A. C. Eychleshymer of Chicago University, and Dr. Adolph Gehrman of College of Physicians and Surgeons, Chicago, have also rendered us much assistance.

Among the books consulted, we have drawn more particularly for Part I from Lee's *Vade Mecum*, Stirling's *Histology*, Schäfer's *Histology*, Von Kahlden's *Pathological Histology*, and *Lehrbuch der Histologie und Mikroskopischen Technik*. (Böhm und Davidoff), and for Part II from Migula, Sternberg, Schenk, Novy, and Fraenkel. Suggestions and criticisms from those interested in the material here presented, will be greatly appreciated.

September, 1895.

PART I.
HISTOLOGY.



2nd. Hardening the elements of a tissue so that their structure will remain as nearly normal in appearance as possible, after the various reagents for their preparation have been used.

The fixing of a tissue is of the greatest importance, and final success or failure with the sections depends very largely upon this step.

One must know what fixing agent to use for a particular tissue; how long to allow it to act; with what to wash out the fluid, and what strength of alcohol to use after washing.

Secure perfectly fresh tissue if possible. Use small pieces, and 15 to 20 times their volume of the fixing fluid.

There are many good fixing agents and the choice of one depends upon the kind of tissue and the result desired. For most purposes the following will be found satisfactory fixing fluids, and among them, corrosive sublimate, absolute alcohol, Flemming's fluid and Perenyi's fluid are particularly recommended.

FIXING AGENTS IN GENERAL USE.

1. PERENYI'S FLUID.--Formula on page 32.

Objects are left in the fluid from 3 to 5 hours for small embryos and 4 to 12 hours for the tissues of vertebrates, and then transferred directly to 70-75 per cent. alcohol for at least 24 hours. They may then be placed in 80 per cent alcohol and left in this until wanted, or they may be dehydrated at once by carrying them through the alcohols, including absolute. This is a very valuable fluid for both embryonic and adult tissues. No serious results follow when a tissue is left in the fluid for a number of hours. Borax carmine may be added to 70 per cent alcohol so that the hardening and staining is done at the same time.



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