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ZOETHOUT'S LABORATORY EXPERIMENTS IN PHYSIOLOGY

Illustrated

Sixth edition

THE C. V. MOSBY COMPANY

Saint Louis 1963

SIXTH EDITION

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Third printing

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Library of Congress Catalog Card Number 63-11564

Distributed in Great Britain by Henry Kimpton, London

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The major change in this revision is reorganization. The manual consists of twenty-eight experiments, each designed for completion in a normal three-hour laboratory period. The section on physicochemical studies has been completely rewritten, with extensive background material included. The sections on muscle, nerve, circulation, and respiration contain most of the material included in Part I of previous editions. The section on digestion has been revised but contains material from previous editions which was considered to be fundamental in nature. Most of the chemistry, except that which pertains to the experiments on digestion and kidney, has been eliminated. This was considered desirable on the basis of the present state of both the experimental techniques and the teaching in biochemistry. The experiments on metabolism and endocrine function appear for the first time in this edition.

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As always, we would appreciate any suggestions for the improvement of the manual which would better satisfy the needs for an introduction to experimental work in physiology.

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Because a large number of those replying to the questionnaire sent out by the publisher favored the inclusion of some experiments in chemical work, the second section of the manual is devoted to the rudiments of physiologic chemistry.

In writing, . . . the simpler experiments and those requiring a minimum of laboratory equipment have . . . been selected. The book has not been burdened with directions for elaborate demonstrations usually performed by the instructor; larger manuals are available for that purpose.

To preface an experiment with a long and detailed introduction usurps, in my opinion, the function of the textbook. The student should regard a laboratory experiment in the same light as an assignment in English or Mathematics, something to be properly studied by him before coming to the laboratory. The laboratory period is too short for studying the nature and content of the problem and its method of solution; this should be done at home. To guide him in this, nearly all experiments are prefaced with "preparation" questions which aim to lead up to the problem and to connect it, to a certain extent, with facts already mastered. These questions frequently require reference to the textbook and other sources of information. I have refrained from directing the student to book, chapter and verse, because

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of the multiplicity of texts used in the various schools and the constant appearance of new editions.

The present laboratory guide is perhaps made conspicuous by the absence of all kymographic records and coordinate graphs. Most textbooks show them in abundance, and placing them in a laboratory manual has perhaps a tendency to make the student "ape" them too much. A beautiful tracing is not a matter to be despised, but the student must thoroughly realize that its proper sphere is only as a means to acquire knowledge. If model tracings and graphs are deemed advisable, those obtained by the preceding class, suitably inscribed with the student's name and placed in a frame hung on the wall, will be of more inspirational value than a perfect copy on the printed page.

I am greatly indebted for many of the illustrations to Dr. D. E. Jackson and to the Harvard Apparatus Company.

Any criticisms or suggestions by those using the book will be highly appreciated.

W. D. Z.

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