Principles of physiology and hygiene

Fitz George Wells
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PREFACE

Many years of experience in teaching physiology have convinced me that the ideal of a text-book should be the clearness, accuracy, and simplicity obtained by viewing the human body as a machine automatically adjusted to its work and its surroundings. From such a viewpoint, its complex structure is resolved into the definite working parts of a well-regulated mechanism; its varied forms of activity are revealed as organized effort toward development, maintenance, and adaptation to environment; and the laws of its health are seen to be the reasonable conditions essential to its effective working.

Whenever possible, technical terms and names have been omitted for the sake of relieving overburdened memories and of leaving them receptive for the important practical aspects of the subject. Indeed, the attempt throughout has been to utilize and supplement the knowledge of the student and thus to give to the physiology, and especially to the hygiene, a working value in his daily thought and life. When technical terms have of necessity been used, they have been italicized, not in every case where they first occur, but where they are most fully explained. This method supplemented by an accurate index is believed to be preferable to the very inadequate glossary often used.

While fully realizing and urging the value of experimental work, I have, nevertheless, so planned the text that it is independent of the experiments in connection with each chapter. Those schools, therefore, which lack either the time or the equipment for such work, will not find the book less well fitted for their use. By them, the book can be completed in half a year. For those who can carry out the laboratory work, the book offers either a half or a full year’s course, depending upon whether the experiments are demonstrated by the teacher or done by the students.

The experiments and demonstrations should be so planned that, when necessary, the one-hour period may be extended to two hours. In nearly all cases, the experiments should precede the text, that the student may be led, in so far as is possible, to make his own observations and conclusions. In order to get the most value from the work, a systematic record of the experiments should be kept in a notebook, to be regularly examined by the teacher.

Aside from those herewith acknowledged, many of the illustrations are new, being either original or redrawn from the best sources obtainable. To Dr. O. P. Dellingger of Clark University I am indebted for permission to copy his remarkable photographs of the ameba. I am further indebted to the following authors and publishers for permission to use certain cuts from their works: Tigerstedt’s Physiology, Mill’s Comparative Physiology, Doty’s Prompt Aid to the Injured, (D. Appleton and Co.); Bergen and Davis’ Principles of Botany, Conn’s Bacteria, Yeasts and Molds in the Home, Hough and Sedgwick’s The Human Mechanism, (Ginn and Co.); Gerrish’s Anatomy, Hall’s Physiology, Egbert’s Hygiene, (Lea Bros. and Co.); Martin’s Human Body,
Barnes’ Plant Life, Sedgwick and Wilson’s Biology, (Henry Holt and Co.); Ziegler’s Pathology, Foster and Shore’s Physiology, (The Macmillan Co.); Scudder and Cotton’s Fractures and Dislocations, Quain’s Anatomy, (W. B. Saunders).

The manuscript has been read by Professor C. F. Hodge of Clark University, to whom I am much indebted for criticism and suggestion. I am further indebted to my wife for her invaluable assistance throughout the preparation of the manuscript and the correction of the proofs.

Boston, March 3, 1908.

G. W. F.

PREFACE TO SECOND EDITION

The necessity for a second edition has afforded the opportunity not only of making certain slight verbal changes in the text but of substituting for the modified Sylvester method of resuscitation from drowning Schaefer’s new prone pressure method, and of adding a table of infectious diseases which gives the incubation periods, early symptoms, modes of entry, causes and school quarantine periods for the several diseases, including common diseases of the skin and eyes.

Boston, January 15, 1909.

G. W. F.
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