THIRD EDITION

PHYSIOLOGY OF EXERCISE

MOREHOUSE AND MILLER

ILLUSTRATED THIRD EDITION

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PREFACE

The writing of this book was undertaken because of the authors' belief that the physical potentialities of the human body are best revealed by an analysis of the manner in which they meet the exacting requirements of exercise. Since it has been assumed that the reader has only an elementary knowledge of some of the basic principles of chemistry and physics, an attempt has been made to provide the essential physiological background which is necessary for an understanding of the response of the body to exercise. Most of the technical terms are defined the first time they are used, but for the convenience of the reader a glossary has been appended. No attempt has been made to include an exhaustive survey of the extensive literature on exercise physiology. Instead, the references are, for the most part, either to monographs and reviews or to original papers dealing with controversial topics or recent advances.

An extensive revision has been made in this edition, mainly because of the rapid advances in physiological knowledge made possible by recent developments in electronic, biochemical, and photographic instruments of research. Many of the results of investigations in which the more sensitive instruments of observation have been used have disproved old theories of ways in which the human organism functions during physical movement and meets the demands of maximum and continuous physical effort.

The student of the physiology of exercise is faced continually with the necessity for discarding old theories and trying to create new ones as rapidly as the mysteries of human function are solved by the new technological tools of science. In doing this, he accepts present-day knowledge as tentative only and

keeps his mind open to the constant stream of new information from physiological laboratories all over the world.

Thus, the physiology of exercise today is not a firmly resolved body of knowledge. It is, rather, a subject of study in which the data are incomplete and in which principles related to physical education, athletics, work performance, and similar applications can seldom be adequately substantiated by definitive evidence.

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We are also grateful to Philip J. Rasch who assisted in the preparation of the four new chapters in this edition.

L. E. M.
A. T. M., Jr.

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