of human physiology. Few can achieve more than a superficial understanding of those areas outside their own research specialization. It is difficult, if not impossible, for those not completely immersed in a subject to achieve the perspective which is essential if it is to be covered in detail without becoming bogged down in trivial and irrelevant detail. Textbooks should certainly cover their subject in depth; for most of their readers, their prime function is as a reference book rather than as a book to be read from cover to cover. Where the subject is a broad one, however, detail must not be allowed to obscure the important points. In this respect, the editors and authors of this book have succeeded remarkably well. The coverage is uniformly good and the joins hardly show.

The disadvantage of some well established texts is that they tend to slip into a comfortable middle age. By the tenth edition, their structure has become rigid and resistant to modernization. Although Schmidt and Thews' *Human Physiology* is advertised as the second edition, this is somewhat misleading, as this refers to the second English language edition. The first English edition (1983) was in fact a translation of the 20th German edition of Herman Rein's *Physiologie des Menschen*, which first appeared in 1936. In their preface to the new edition the editors state that the text has been fundamentally rejuvenated. Certainly, it shows no sign of old age.

The book is directed at students of medicine – or so we are told in the preface to the first edition. Unlike most English language physiology textbooks directed at medical students, however, the primary emphasis is on a comprehensive coverage of the basic physiology rather than on the clinical aspects of the subject. For the non-clinician, the pathophysiological aspects do not intrude. A Senior Honours physiology student who borrowed my copy for last minute revision was impressed!

As book prices go today, this is good value for money; more than 800 pages for a little more than £40. My only minor complaints are that the strength of the binding of my copy was not up to the standard I would expect from Springer Verlag: it will not stand up to the use I expect it to get. Also, the title page proudly proclaims the presence of 643 figures, 'Most in Colour'. In fact, only a handful are in full colour, most being two colour (red and black) line diagrams; these, however, are extremely effective, and this is not a serious complaint.

R. J. Maughan PhD

Women, Sport and Performance: a Physiological Perspective

C. L. Wells
Champaign, Illinois: Human Kinetics, 1991, 367 pp, £28.00

This unique volume is directed at a wide readership, from clinicians and scientists working in the field of sports medicine, to coaches, female athletes and women in general. Having perceived this as somewhat ambitious it is a pleasure to acknowledge that the author has succeeded in presenting ample basic information on female

anatomy and both general and reproductive physiology to assist the less well informed reader whilst providing a wealth of scientific data from a broad spectrum of research which has been brought together, carefully evaluated and presented with appropriate conclusions in most cases. There is a copious bibliography in support of the text and the author is at pains to indicate to those requiring more information where such can be found.

Initial chapters are a comparison between the sexes of morphology, physiology and physical performance, with a particularly clear and concise account of metabolic and thermoregulatory responses to exercise.

The substance of the book is devoted to consideration of the ages of women through puberty, the menstrual years, pregnancy and after the menopause. Each is treated to an examination of its associated physiology and problems, together with the risks and benefits of exercise of varying degree. The topic of 'athletic amenorrhoea' is well covered and appropriate emphasis given to the concern that these young women should be encouraged to consider

hormone replacement to prevent associated bone loss.

Appropriate consideration is given to nutrition and associated disorders, and the concluding chapters are devoted to the woman as an athlete.

This is an eminently readable book which also serves as an admirable source of reference for anyone interested, involved or concerned with the health of women generally, and female athletes in particular. At £28.00 it is particularly good value.

J. Fox FRCOG

Biomechanics and Exercise Physiology

A. T. Johnson
New York: John Wiley & Sons, 1991, £66.70, 0 471 85398 4

This original book spans two major subject areas and is highly selective in the topics that it addresses. Indeed, the title of the book is almost misleading as the main emphasis of the text, written by an engineer, is on quantitative description with mathematical or conceptual models being the main focus of attention. As such it is not for the beginner in biomechanics or exercise physiology, but will appeal primarily to those individuals with an interest in modelling, particularly to those working in Medical Physics and also to physiologists working in the areas of thermoregulation, cardiovascular and respiratory physiology, as these topics are well covered in the text.

The first and second chapters of the book give an introduction to exercise

physiology and biomechanics, covering topics ranging from muscle metabolism to the energy cost of movement. The main focus of the book is on the three more detailed chapters which examine thermoregulation, cardiovascular and respiratory physiology within the framework of feedback control mechanisms. For example, in the examination of cardiovascular control, baroreceptors and chemoreceptors are viewed as the sensors of the system, the vasomotor centre as the controller and the blood vessels

and heart as the effector organs. Mechanical models are then presented which examine an aspect of the system, such as left ventricular function, along with less refined models that attempt to predict the responses of the system as a whole to exercise stress. After reading the chapters presented within a similar framework for respiratory and thermal responses, one is left with the feeling that, whilst these models promote understanding of physiological mechanisms and therefore will be valuable for teaching,

if one is interested in modelling there is plenty of scope for further work in predicting the responses of physiological systems to exercise stress!

In short, this text is unusual and ambitious. It will probably prove most valuable as a library text for undergraduate courses focusing on biomechanics, physiology and sports medicine and will be of further interest to researchers in the fields outlined above.

M. E. Nevill PhD

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Further information from:-

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