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the major organ systems. Other units consider the microscope, cells, tissues, and medical terminology. The medical terminology unit contains some especially good exercises concerning the terms used to describe the location of body structures and the meanings of prefixes and suffixes. The unit on the cell includes the discussion of mitosis and osmosis. Each unit is prefaced by a statement of purpose, a materials list, and a list of behavioral objectives.

The procedural portion of the integrated units has the student identify major organs and study the gross anatomy of selected organs. The fetal pig is the featured anatomical subject in this edition, although a companion volume featuring the cat is also available.

Many good drawings and photographs are used to help the student. Some of the photographs are partially labeled, thus allowing the student to complete the identification. The answers are given in an illustrations appendix in the back of the manual.

The discussion portions of the units have the major terms in boldface type and these terms are defined in a glossary-index.

I think this is a fine laboratory manual and would recommend it to teachers of anatomy and physiology at the college level and for advanced high school biology classes as well.

Gordon G. Snyder  
Schoolcraft College  
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### UNDERSTANDING HUMAN ANATOMY AND PHYSIOLOGY

by Eldra Pearl Solomon and P. William Davis. 1978. McGraw-Hill Book Company (1221 Avenue of the Americas, New York 10020). 642 p. Price not given.

The title of this new, richly illustrated text appropriately stresses the *understanding* of human anatomy and physiology. Little is left unsaid or unillustrated that might clarify a point for the reader. It seems at times that elucidation has lowered the sights of the presentation below those of "today's college student" for whom it is intended (p. xi). "That thumbprint, so important to law enforcement officials, is produced by a series of concentric ridges, etc." (p. 10) and one

may "end up looking like a Chinese mandarin or the Cat Lady" (p. 10) if one does not cut one's nails are remarks out of keeping with a readable, unpatronizing text, discussing in a mature and creative fashion the structure and function of the human body. Exemplary sections are those on skull structure, the structure and operation of the thumb, and the fate of a drop of urine.

Despite the emphasis upon function, anatomy receives reasonable treatment, and it is portrayed well by both recent and classical figures. Regional and systemic approaches, and the function of anatomical structures are emphasized.

Each chapter includes an introductory list of learning objectives and a concluding set of review questions. A useful glossary precedes an adequate but not exhaustive index. Various categories of information are summarized in informative tables and charts. The double-column format adds to the book's appeal. Typographical errors occur infrequently.

There are a few annoying misconceptions, probably intended to be clarified in lectures or laboratories (I have not seen the Study Guide or the Laboratory Man-

ual). The heart lies within the pericardial cavity, only secondarily within the mediastinum (p. 416), which is undefined. The recognition of dorsal and ventral cavities (p. 4) in humans is not general. Hair is not usually considered an organ. The delimitation of structure is sometimes wanting in accuracy due to necessary abbreviation. The suggestion that articular cartilage respire anaerobically is not supported by physiological studies known to me.

The sustained readability of the 19 chapters of this book is perhaps its most salient feature as it presents anatomy and physiology in an understandable, well-integrated fashion to beginning college students, assuming very little relative to their prior training. It should be particularly useful for those students whose background in science is inadequate or inferior.

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#### THE HUMAN BODY: ITS STRUCTURE AND PHYSIOLOGY

by Sigmund Grollman, 4th ed., 1978. Macmillan Publishing Company, Inc. (866 Third Avenue, New York 10022). 648 p. \$15.95.

This book is an updated version of one of the standard textbooks in human physiology, designed for the student who has completed an introductory college level biology course. Each of the systems of the body is explained at the organistic, cellular, and subcellular levels, with clear photographs, diagrams, charts, tables and photomicrographs that make the material understandable to the undergraduate.

The printing is more attractive than that of previous editions. Topic headings in bold type appear in the wide margins. Paragraph headings and important items stand out in deep print. The material follows in logical sequence.

The book is as current as a textbook can be. In the bibliographies at the chapter ends are references up to 1977. The author has included a new chapter on the immune defense system, which is an adequate introduction to this complicated topic. He introduces much new material including the control of insulin secretion and the formation of catecholamines, with a concise summary of the secretions and functions of the adrenal gland.

My criticisms are minor. I felt confused by having the key to the innervation of the bladder in one chapter differ from the key to the innervation of the urogenital system in another chapter. It would have been clearer if the keys had been uni-

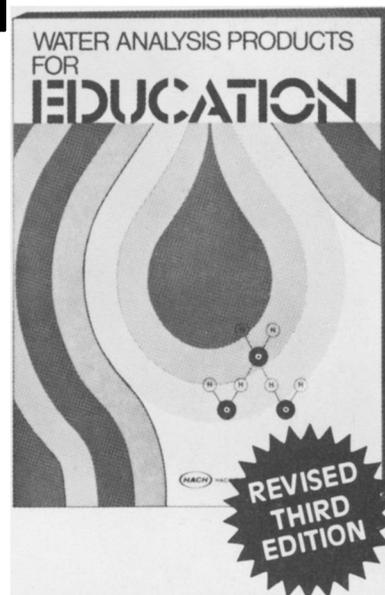
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form. Many instructors are now teaching by student objectives, and such a list at the beginning of chapters would have been helpful. As an alternative, a list of questions at the end of the chapters would have been useful.

Overall, in my opinion, this is an excellent textbook, interestingly written, well illustrated, and with the material presented at an appropriate level for its intended users.

Margaret L. Watson  
Simpson College  
Indianola, Iowa

#### A LABORATORY MANUAL FOR HUMAN PHYSIOLOGY

by Barbara H. Kalbus and Kenneth G. Neal. 2nd ed., 1978. Burgess Publishing Company (7108 Ohms Lane, Minneapolis, Minnesota 55435). 399 p. Price not given.

This laboratory manual is a complete collection of physiology exercises, including both basic and advanced experiments that cover most physiological concepts.

Many of the experiments provided are not new, however; a considerable amount of the manual has activities that have been written for the area of electro-

physiology. Activities include work with the physiograph, electrocardiograph, and respirometer, which are all important in today's study of physiology.

Sufficient material is presented for a full year's course involving six hours of laboratory a week. One could certainly select activities to meet the needs of any human physiology course.

One of the valuable features of the manual is the inclusion of a results and question section at the end of each unit. These sections can be removed and handed in by the student.

Each activity has the procedure well written with good illustrations of equipment used where needed. Students should encounter no more than the normal amount of problems in following the procedure for the activities. The instructor will need to demonstrate the operational procedure for some of the more sensitive electrical equipment.

Many excellent sections in this manual are worth mentioning; however, the equipment that is available to instructors will dictate which sections will be most useful.

The manual provides a good in-depth study for the college student in nursing, physical education, or any of the medical health related areas. Included in the man-