cating forty millions—as in Japan. In their endeavors the present teachers of China deserve sympathy. To condemn the inadequacy of Chinese education—and it is inadequate—means ignorance of the conditions. Sympathy should be given by the teachers of the world to their professional brethren in China, and reenforcements, too. For these reenforcements the Chinese government is loudly calling.

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SCIENTIFIC BOOKS

A Text-book of Physiology for Medical Students and Physicians. By William H. Howell, Ph.D., M.D., LL.D. Second edition. Philadelphia and London, W. B. Saunders Co. 1907.

"Economy," wrote Burke, "consists not in saving, but in selection." This principle Professor Howell has applied in writing his text-book of physiology. Instead of attempting to condense the great mass of fact and theory which constitutes the body of present-day physiology, he has chosen subjects which have seemed to him most desirable for the man with medical interests to know. And these subjects he has presented with simplicity and lucidity. The result of this method has been the production of a treatise which states with a fair degree of completeness the facts and theories of many important phases of physiology, while other phases are wholly eliminated. The method permits the writer to avoid the bleak statements of fact which characterize attempts at too great condensation, and allows a variety and discursiveness, at times into the historical development, at times into the practical bearings of the subject, which are entertaining. This text-book has already been used two years by medical students, and they report to their instructors, "Howell is interesting reading."

The first exception which might be made to a text-book based on the principle of elimination rather than condensation is that the writer may emphasize his special interests and may eliminate subjects which seem important to others. Fortunately Professor Howell's extensive experience as a teacher and investigator in different medical schools has served him well. This experience, together with the fact that in all the larger medical schools in which the laboratory method is an important feature of physiological training the subjects taught do not greatly vary, has led to a selection of material which would be generally admitted as desirable for students of medicine to know, and to the elimination of little that is at present medically important.

The first section of the volume deals with the physiology of muscle and nerve—the fundamental tissues for most of the systems which follow. The second section on the physiology of the central nervous system is concerned with the governing agent of the muscular structures already studied. A discussion of the physiology of sleep in this section is an unusual and commendable chapter in a physiological text-book. Treatment of the special senses as the recipients of stimuli for the central nervous system is taken up in section three. Blood and lymph are next considered as a preliminary to section five which is devoted to the organs of circulation. The discussion of the physiology of respiration in section six, and digestion and secretion in section seven presents further application of the fundamental activities studied in the earlier chapters. In all these general subjects the chemical side of the physiological activities has received due recognition. This is also true of the treatment in section eight of nutrition, and heat production and regulation. The formal exposition closes with an excellent account of the physiology of reproduction. An appendix, however, gives a brief description of proteins and their classification, and a clear statement of some of the facts and principles of physical chemistry in their application to physiological processes. The large array of original illustrations is a pleasing feature of the volume.

In this second edition a number of small errors which crept into the first edition have been corrected, and additions have been made with the object of keeping the book abreast of the times. As far as possible, however, these

additions have been counter-balanced by the elimination of material which could be spared, and the volume, therefore, remains of practically the same size as in the first edition.

At this time when physiological facts and methods are becoming more generally recognized for their importance in experimental pathology and surgery it is highly gratifying that so excellent a treatise as Professor Howell's can be placed in the hands of students who are to become the future investigators and practitioners of scientific medicine. So few text-books are written now-a-days by men who are themselves active in research that the spirit of research rarely is expressed in them. This book, however, is an exception to the rule. Professor Howell has not hesitated to bring before his readers phases of physiology in which the conclusions are not yet settled; the student is thus made to see that there are live issues in the determination of which he may himself engage. Other evidence of the hand of the scholar in this book is the presence of numerous references to the original sources. This feature, likewise, is so unusual in the conventional text-book that it is worth noting and commending as admirable. By these methods the student may be led to take no secondary account as final authority, but to base his judgment on the weighing of first evidence. It is a real pleasure to find these scholarly qualities in an American text-book widely used by American students.

WALTER B. CANNON

The Microscopy of Technical Products. By Dr. T. F. HANAUSEK, Director of the Gymnasium at Krems on the Danube; Member of Various Imperial Commissions and Learned Societies; formerly Professor of Natural History at Vienna, Analyst of the Government Food Laboratory at Vienna, etc. Revised by the author and translated by Andrew L. Winton, Ph.D., Chief of the Chicago Food and Drug Laboratory, Bureau of Chemistry, U. S. Department of Agriculture; formerly in charge of the Analytical Laboratory of the Connecticut Agricultural Experiment Station, with the collaboration of Kate G. Barber, Ph.D., Microscopist of the Connecticut Agricultural Experiment Station. With 276 illustrations. New York, John Wiley & Sons; London, Chapman & Hall, Limited. 1907. Cloth, $5.00.

With the development and application of scientific methods in all lines of industry and with the increasing use of the microscope in the analysis of various raw and manufactured products, the need for books dealing with its application in this field is being felt in this country as well as abroad, and we in this country are highly indebted to Dr. Winton for making available first the valuable work of Moeller on food products and now the work by Hanausek on technical products.

As stated in the preface, Hanausek's work is intended on the one hand as a text-book for the "student entering the field of technical microscopy," the requirements being that he shall possess a general knowledge of the natural sciences, particularly the morphology and histology of organisms, and shall also be familiar with the principles of chemistry; and on the other hand, as an aid in the solution of practical problems. Thus, as stated by the translator, the book "is unique in that it teaches the microscopic identification of technical products and at the same time the fundamental principles of vegetable histology and the histology of certain animal materials" as well.

The author's reputation as a teacher, investigator and technical expert, and the translator's ability and experience as an analyst, assure at once the high character of the work and bespeak for it a wide use in this country.

The book covers some 471 pages, and is divided into two parts. Part I. includes three chapters and deals with the microscope, microscopic accessories and micro-technique. Part II. embraces nine chapters, and treats of the microscopy of the most important types of technical raw materials under the following heads: (1) Starch and Inulin; (2) Vegetable Fibers, including hairs, the fibers of monocotyledonous and dicotyledonous stems, and the microscopic examination of paper; (3) Animal Hairs, Silk and Silk Substitutes, Mineral Fibers, and Microscopic Examination of Textile