

BOOK REVIEWS

Lehrbuch der experimentellen Psychologie. By J. FROBES. S. J. Herdersche Verlagshandlung, Freiburg. Bd. I, 1916, 605 pp., Bd. II 1920. 704 pp.

These two volumes constitute a remarkably complete compilation of psychological investigations culled from a wide and varied domain and done with a thoroughness typically Teutonic. The author's purpose was to bring together the material of experimental psychology as it exists to-day in a manner at once comprehensible for introductory work and suitable as a point of departure for advanced specialization, somewhat after the fashion of Tigerstedt's *Lehrbuch der Physiologie*. A glance at the wealth of matter in the book shows that the author has been far more inclusive than the title might indicate, for branches of psychology other than experimental are treated at considerable length.

In the first volume Frobes deals with the simpler psychological processes. The order of treatment is conventional. The first section, following an introductory chapter on the object and methods of empirical psychology, discusses the nature and conditions of sensation in general, specific nerve energies, correspondence between sensation and stimulus, psychophysical parallelism, and leads directly to a survey of the special senses in section two. Here we find detailed treatment of the sensory phenomena of each sense department. The chapter on vision, *e. g.*, begins with the structure of the eye and takes up in turn the psychological arrangement of visual sensations, the relation of color sensations to the stimulus, color mixture, adaptation, indirect vision, contrast, after-images, the temporal course of visual sensations, color blindness, and concludes with a statement of visual theories. No less complete, although not so lengthy, are the chapters on audition, taste and smell, tactual sensations, kinaesthetic and static sensations, and organics. A chapter on the simple feelings closes section two. Section three, which is devoted to perception, deals with simple and complex ideas (*Vorstellungen*), tonal fusion, consonance and dissonance, visual and tactual space perceptions, and perceptions of time and movement. An excellent presentation of the subject of psychophysics is given in the next section. The development and practice of psychophysics from Fechner down through Wirth and Urban—but not Thomson!—with a confessed predilection for the views of G. E. Müller, are outlined without undue sidesteps into points of controversy. Frobes' own investigations in this department are referred to quite modestly in passing. A good chapter on correlation brings the section to an end. An hundred page section on the association of ideas completes the first volume.

The second volume leaves the field of experimental psychology for those wider domains which serve as supports for language, aesthetics, criminology, sociology, education, medicine, law, *etc.* In the first volume the author was well at home in his own special branch of study: lacking this intimate familiarity with certain of the subject matter of the second volume he had the sagacity to seek expert advice from *Fachmänner*. An opening section treats of disturbances of association and cerebral localization; the so-called higher mental processes,

attention, the self, memory, reasoning, imagination, come in for detailed discussion; over an hundred pages are devoted to the emotions, aesthetic feelings, mimicry, and physiognomy; well-known authorities are quoted at length in chapters on the will, morals, customs, religion, personality, mental development, and social psychology; and the volume is brought to a close with some 125 pages on psychopathology. A valuable survey for those wishing an orientation into the topics treated!

This work of Fröbes is unquestionably the most useful source of reference for general psychology which has appeared to date. It would seem, however, that a Handbook of Psychology would be a more fitting title than a Textbook of Experimental Psychology. It does not attempt to be systematic and to that extent would be dangerous in the hands of those beginners who have no guidance from a particular point of view. But to those students who have gotten grounded somewhere in psychology and want reliable reference to less familiar topics, this work will come as a tremendous contribution. The author has selected his literature wisely and widely (some 400 references to writings in English, 230 of which are by Americans!) and has not littered the pages with inverted commas, colons, and semicolons, which verbatim quotations necessitate, but has given in clear, concise form (sometimes painfully concise: *ebenso* Witasek) an epitome of the views of authorities cited.

July, 1921, Clark University

C. C. PRATT

Fundamentals of High School Mathematics. A Textbook Designed to Follow Arithmetic. By HAROLD ORDWAY RUGG and JOHN ROSCOE CLARK, both of the Lincoln School, Teachers College, Columbia University. Cloth xv+368 pages. Illustrated Price \$1.80. Also Answer Book, 16 cents. Yonkers-on-Hudson, New York: World Book Company.

Every teacher or school administrator who is interested in improving the educational value of the first-year high school mathematics course should examine this new book. Unlike many recent texts in algebra this one has a real excuse for being.

The authors have assembled in this ninth grade course the most important mathematical tools and notions which all children should know. The excessive manipulation of symbolisms of formal algebra has been replaced by material which is, both from the mathematical and social point of view, of far greater value. Specifically, graphs, methods of direct and indirect measurement, the properties of the right triangle, and a comprehensive treatment of the concept of relationship between changing quantities (*i. e.* functionality) have replaced the elaborate treatment of factoring, fractions, and operations with long polynomials.

The selection of material for this course is quite in agreement with the recommendations of the National Committee on Mathematical Requirements. The authors are to be congratulated upon having sensed fully the best thought of the day in the reorganization of first-year high school mathematics courses.

Among the unique impressions made upon the reviewer, the following stand out most prominently:

- (1) The careful explanations and development of new processes;
- (2) The wholesome omission of formal material;
- (3) The excellent presentation of word-problems;