variations, theory of functions, elliptic functions, geometry and trigonometry, analytic geometry of plane and space, differential geometry, probabilities, calculus of errors, quaternions and vector analysis. Under each of these and other topics is a brief summary of the subject, often containing items that are not elsewhere so easily found.

Mechanics and Physics cover a wide range: Lagrange's equations, spherical harmonics, graphical statics, work and energy, hydrodynamics, elasticity, heat, sound, light, electric units, laws and measurements, electromagnetism, induction, hysteresis, Maxwell's theory, etc. Numerous tables accompany the text.

In arrangement and style the "Taschenbuch" reminds one of Pascal's "Repertorium of Higher Mathematics." It is, however, only about one third as large, and in mathematical content only one ninth. All references have been excluded under the heavy compression. But every mathematician and physicist will find it a useful book to have about, for it will often save searching through a library for an elusive item.

F. N. Cole

Vergleichende Anatomie der Wirbeltiere. Dr. Robert Wiedersheim. Seventh edition. Pp. 936, 476 figures, one plate. Jena, Gustav Fischer. 1909.

The rapid growth of this book, which now contains nearly a thousand pages and costs between five and six dollars, has transformed it from a text-book into a reference work. As such it will without doubt be as indispensable as in previous editions. It retains, however, much the same character as before.

It is pleasing to an American to note the large recognition of American work, but one regrets that in one or more instances the facts are recorded in footnotes only.

The text is brought up to date by the addition of new material on almost every page and certain sections are essentially rewritten, as for example, the discussion of the lymphatic system, which is more than twice as large as before. The chapter upon the skull has grown the most owing to a large degree to the introduction of more figures of chondrocrania. The section upon myology ought, it seems to the writer, to have received more attention than it has had. The subsection upon the electrical organs certainly ought to have been rewritten so as to embody recent discoveries. The sections upon the central nervous system, sense organs and the respiratory system have expanded about equally. The discussion of the peripheral nervous system is but slightly longer, but it has been largely rewritten and is greatly improved.

The sixty new figures are well chosen. A considerable number of illustrations which have appeared in several editions could well be dispensed with, and the printing of many of the old figures in colors has added little if at all to the usefulness or beauty of the book.

The bibliography has been thoroughly revised, a very large number of new titles have been added, and, owing to the omission of many of the older or less important titles, there has been only a small increase in size.

This edition can be heartily commended.

Leonard W. Williams

Lectures on the Experimental Psychology of the Thought-Processes. By Edward Bradford Titchener. New York, The Macmillan Company. 1909. Pp. xi + 318.

In these lectures, originally delivered at the University of Illinois in the spring of 1909, and now published with an appendix containing valuable notes and references, Professor Titchener presents a résumé and criticism of a much-debated recent development in experimental psychology—an attempt to extend the experimental method to the processes of thinking. The extended series of articles which are chiefly considered—though contributions by other psychologists receive due notice—have emanated from the pupils and colleagues of Professor Külpe at Würzburg. The principal names are Marbe, Watt, Ach, Messer and Bühler, and the dates run from 1901 to 1908. Many other writers, whose work or views bear on the problem, are considered in the notes or in the two introductory lectures.

The early experimental psychologists considered the higher intellectual processes too