

word in reference to the circumstances under which this book was written. It is well known among his many friends that Professor Holman's active participation in the work of the Rogers Laboratory of Physics was arrested two or three years ago by the development of an illness from which, unfortunately, he has not yet recovered. During this time he has been confined to a reclining chair, and, in his own characteristic words, 'even the familiar utilization of the convenient gamut of ether waves' has been denied. Although unable to move and unable to see, his courage has never faltered. There has been no loss in his power of thought, and he has gone on thinking the many fine things which he has put into this book, for which, even if it had not been prepared under conditions that would have defeated most men, all physicists, friends and strangers alike, will ever be his debtor.

T. C. M.

*A Brief Course in Qualitative Analysis.* By ERNEST A. CONGDON, PH.D., Professor of Chemistry in the Drexel Institute. New York, Henry Holt & Co. 1898.

The method of treatment adopted in this book consists in giving, first, a clear, concise statement of the most important reaction for each metal and acid, and then tables giving one or more schemes of analysis for each group. The tables are supplemented by explanatory notes. At the end of the book a series of questions, well designed to test the student's grasp of the subject, are given. While the tabular form always has the advantage of presenting the scheme for analysis very clearly, in the opinion of the writer, the same object is better attained by a tabular record prepared by the student. Because of their concise form, tables necessarily omit many details which are essential for the successful execution of an analysis, and the notes which follow do not entirely overcome this difficulty.

The selection of reactions and of schemes for analysis is excellent, and in the hands of good teachers the book will prove a useful one.

*A Short Manual of Analytical Chemistry, Qualitative and Quantitative, Inorganic and Organic, following the Course of Instruction given in*

*the Laboratories of the South London School of Pharmacy.* By JOHN MUTER, PH.D. Second American Edition. Illustrated. Adapted from the Eighth British Edition. Philadelphia, P. Blakiston's Sons & Co. 1898. Pp. xiii + 228. Price, \$1.25.

As the title implies, a very large amount of information is compressed into comparatively little space in this volume. In the qualitative portion the statements giving the deportment of metals and of acids toward reagents are given consecutively and are followed by tables of schemes for analysis. Then follow directions for the identification of alkaloids and of a number of common organic compounds. The quantitative portion includes volumetric and gravimetric analysis, ultimate organic analysis, and directions for the examination of air, water, food, alcoholic liquors, etc. It is in this portion that American chemists will find most to criticise; Gooch crucibles are nowhere described, not even for the cases where they should be used in place of weighed filters. Directions for the determination of 'citrate soluble phosphoric acid' are not given under the analysis of 'manures,' and no reference is made to the 'official methods.' The old uranium acetate method is given for the volumetric estimation of phosphoric acid instead of the more satisfactory methods with a reductor or with a standard alkali. Metaphenylene diamine is recommended for the detection of nitrites in water analysis, although the reagent is not sufficiently sensitive to be of any practical use in many cases. But, while the authors do not appear to be conversant with the best American practice in these and some other cases, and while some of the directions appear to be too much abbreviated for the satisfactory use of a beginner, it would be difficult to find another book which compresses so much information about analysis into so small a space and for so moderate a price.

W. A. NOYES.

*Wild Animals I have known.* By ERNEST SETON THOMPSON. New York, Charles Scribner's Sons. 1898. Square 12mo. Pp. 359. 200 illustrations. Price, \$2.00.

Rarely are the qualities of naturalist, writer and artist combined in one person, but Mr.

Ernest Seton Thompson has won distinction in all three rôles. As a naturalist he has enjoyed opportunities for study and observation both in Canada and the United States, chiefly in Ontario, Manitoba and New Mexico. As a writer he is known as the author of 'Birds of Manitoba,' 'Mammals of Manitoba,' and numerous articles contributed to magazines and scientific journals. As an artist he is perhaps still more widely known through his 'Art of Taxidermy,' and work in illustrating several popular books on natural history, more especially on birds.

His latest book is original in conception and execution. Here he has brought together some of his most interesting adventures and field experiences, woven them into entertaining and instructive stories, and illustrated them in a manner entirely unique. Under the title of 'Wild Animals I have known' Mr. Thompson has departed from the beaten path of natural history description, and given us an insight into the habits and daily lives of some of the lower animals with which he has been on more or less familiar terms. He describes his friends from what might be termed the human standpoint, *i. e.*, not as mere objects, but as individuals endowed with personality and reason. "What satisfaction," he asks in the prefatory note, "would be derived from a ten-page sketch of the habits and customs of Man? How much more profitable it would be to devote that space to the life of some one great man. This is the principle I have endeavored to apply to my animals."

The book consists of eight stories detailing the adventures of Lobo, King of Currumpaw; Silverspot, a crow; Raggylug, a rabbit; Bingo and Wully, two dogs; The Springfield fox; the pacing mustang; and Redruff, a partridge. Lobo was a large wolf well known to the cattlemen of northern New Mexico who suffered from his depredations; Silverspot, an old crow, has received his name on account of a conspicuous white spot on the side of his head; Raggylug, a rabbit with a ragged ear. Each animal and bird had some peculiarity by which it could be readily distinguished and thus kept under observation, sometimes for several years. The stories are told in a delightfully interesting style and contain many new facts and observa-

tions. Nearly all end tragically, for, as the author explains, the end of a wild animal is usually tragic. The book is not, and is not intended to be, a scientific treatise on mammals. The reader is assured that the stories are true, but this does not necessarily imply that every detail was based on actual observation. In fact, it would be practically impossible to observe some of the scenes depicted in the biographies of the rabbit and the fox. In describing the habits of a particular animal there is little more than a skeleton of fact on which to build. The record is so fragmentary that an author is compelled to fill in the gaps from his general knowledge of the species and to represent the characters as he conceives them to be. Such descriptions are of necessity composite and subject to personal equation and imagination.

The book is copiously illustrated with 29 half-tone plates and a large number of marginal sketches. The type bed is narrow and the margins are utilized for sketches which are sometimes mere outlines or suggestions, but so skillfully executed as to make it possible to follow certain parts of the story merely by the illustrations. No one can fail to notice the author's careful attention to details and his skill in woodcraft. The student of natural history will find many things of interest in the descriptions and illustrations, and the general reader will not regret an introduction to some of the animals Mr. Thompson has known.

T. S. P.

*Human Anatomy.* Edited by HENRY MORRIS, M.A. Philadelphia, P., Blakiston's Sons & Co. 1898. Second Edition.

The appearance of a revised and enlarged second edition of this work within less than six years from its original entry into the arena is in itself a sign of success. The well-known textbooks of human anatomy which have held almost undisputed sway since the memory of the oldest teacher, continually enlarging their field with the lapse of years, are so strongly entrenched that the prospects of a new rival at first can hardly have appeared hopeful. Not only have they done their work very well, but their methods have become so familiar to teachers, and the latter have got so habituated to