This book will be of great value to the teacher, and to every chemist who has attempted to examine for himself the basis of laws and theories frequently accepted as established or self-evident. W. C. BRAY.

Elementary Modern Chemistry. By WILHELM OSTWALD, Emeritus Professor of Chemistry in the University of Leipzig and HARRY W. MORSE, Instructor in Physics in Harvard University. x+291 pages. Ginn & Company. Price, $1.00.

A text-book in elementary chemistry written by a former professor of chemistry in one of the great German universities in collaboration with an instructor in physics in one of the great American universities would naturally command the attention of those engaged in teaching this subject. While there is a general belief, perhaps more or less unwarranted, that it is a difficult undertaking for one not engaged in teaching chemistry under the conditions which exist in secondary schools to write a text on that subject, nevertheless it is always of great interest to learn the views of others, especially of one whose achievements in chemistry have gained for him the Nobel prize. The nature of Ostwald's "die Schule der Chemie" published in 1903 would naturally lead one to believe that his ideas upon the methods of teaching elementary chemistry were entirely different from the methods in general use in the United States. In Ostwald and Morse's text, however, no such extremely radical difference from prevailing methods is to be found. In general the book not only looks, but for the most part reads, like many of the well-known modern texts on elementary chemistry. Since one of the authors is a physical chemist and the other an instructor in physics, naturally the subject is approached from a physico-chemical standpoint. For example, the subject of "phases" is introduced in the first chapter (page 5) and is followed in the text by other physico-chemical conceptions. Accordingly one looks in vain for any mention of such old and familiar terms as "physical" and "chemical changes." Even the term "valence" is conspicuous by its absence.

As was to be expected the subject is presented in an attractive form. While the text proper contains only 278 pages, printed in large type and including nearly 200 experiments and one hundred figures, it contains a fairly comprehensive discussion of such fundamentals of chemistry as the average student can grasp. More attention is devoted to the general laws and less to the application of chemical processes than is generally customary in an elementary text. The book would be of little value except when used under the direction of a competent teacher well versed in the modern conceptions of chemistry. With such a person as a teacher it should prove an acceptable one for students who expect to continue the subject. WILLIAM MCPHERSON.

Recent Advances in Physical and Inorganic Chemistry. By A. W. STEWART, D.Sc.,

with an Introduction by SIR WILLIAM RAMSAY, K.C.B., F.R.S. With diagrams. Longmans, Green, and Co., 1909. Price, $2.50.

The book contains chapters of a dozen pages or so on some hydroxylamine derivatives (nitroxyl), reactions in liquid ammonia (Franklin's work), the fixation of nitrogen (production of nitrogen oxides, amines, cyanides, nitrides), colloids, elements of the rare earths (with a discussion of their position in the periodic system), and the inactive gases (including a history of their discovery).

More space—from thirty to fifty pages each—is devoted to cobalt-ammines, absorption spectra, atomic weights, double salts and the oceanic salt deposits, and radioactivity.

The essays are interesting and well written, and the author does not hesitate to express his own opinions when occasions arise. He stands for purposive research, not that of "investigators who photograph spectra apparently with no idea beyond finding out what the absorption curve looks like," or that of the organic chemists who "apply somebody else's reaction to the iso-propyl derivative when the lower members of the series have already been made." Theories, he thinks, should be capable of being tested, and not "mere verbiage and an excuse for dodging round a dialectic corner as soon as people begin to look into the subject."

The book might well find a place in the reading prescribed for advanced students of chemistry; its one weak point seems to be the chapter on Double Salts, which needs very careful revision. W. LASH MILLER.

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