

now easily obtained; partly by the addition of one hundred and fifty pages to the book. The larger part of the new experiments pertain to electrochemistry, but there have been included, also, experiments with liquid air, Goldschmidt's process for obtaining high temperatures and a considerable number of experiments to illustrate the principles of the newer physical chemistry. One finds, also, experiments with hydroxylamine, hyrazine, hydrazoic acid and with fluorine. The new experiments as well as the old are, in general, well selected and clearly described. Only occasionally is an error to be noted, as where the decomposition of ammonia gas by electric sparks is spoken of as an electrolysis. Every one who has occasion to give experimentally illustrated lectures in chemistry will find in the book a storehouse of valuable material.

W. A. N.

*A Treatise on Chemistry.* By Sir H. E. ROSCOE and C. SCHORLEMMER. Vol. I., The Non-metallic Elements. New edition completely revised by Sir H. E. ROSCOE assisted by Drs. H. G. COLEMAN and A. HARDEN. London, Macmillan & Co., Ltd.; New York, The Macmillan Co. Pp. xii + 931.

This book has been so well and so favorably known since its first appearance more than twenty-five years ago that an extended notice is not necessary. Those features which made the first edition such delightful reading have been retained, while, at the same time, the authors have incorporated with painstaking care the results of a very large amount of experimental work which has enriched our science during the past quarter of a century. The completeness and accuracy with which this has been done are really surprising.

A rather brief discussion of the properties of solutions from the modern point of view is given, but in matter pertaining to the newer physical chemistry the book can not be considered as altogether satisfactory. The omission of the chapter on crystallography is to be regretted. It also seems unfortunate that the double standard for atomic weights should be used at a time when chemists seem to have decided pretty generally in favor of a single standard.

A very good though rather brief account of the gases of the helium group is given.

W. A. N.

*Cours de Chimie. A L'Usage des Etudiants du P. G. N.* Par R. DE FORCHAND. Paris, Gautier-Villars. 1905. Vol. I., 325 pp.; Vol. II., 317 pp. Price, 10 francs.

These books, according to the author's statement, are intended for the use of students who are intermediate in attainment between those who are candidates for the bachelor's degree and for the degree of master of arts. They are intended to furnish the basis for three exercises a week for one year. The plan followed is that of presenting an outline of the more important theories of chemistry first before considering any details with regard to the elements or their compounds—a method which may answer for students who have already acquired a considerable knowledge of the subject, but one which is wholly unsuitable for beginners. The theoretical point of view of the book corresponds more nearly to that of the average chemist fifteen years ago than to the present condition of the science. One is surprised to find the long-abandoned 'principle of maximum work' presented as one of the fundamental principles of chemistry; also the old formula  $\text{Cl-O-O-OH}$  for chloric acid. The portions devoted to organic and to analytical chemistry are so brief as to be quite unsatisfactory. In the former many structural formulæ are given, but no attempt is made to give the student an idea of the means by which such formulæ are developed.

By an oversight the author has retained the old value for the density of hydrogen. Less excusable is the value 15.84 for the atomic weight of oxygen on the hydrogen basis, calculated from the value 1.01 for hydrogen, as given by the international committee, and that too with the statement that the ratio is very accurately known.

The volumes contain no index.

W. A. N.

STRABO ON CLIMATOLOGY.

*Klimalehre der alten Griechen nach den Geographica Strabos.* Von Dr. HANS RID. Kaiserlautern, 1904. 8vo. TPp. 62.

Strabo has been called the greatest geographer of ancient times. His views on geographical subjects were remarkably advanced, and his statements on the particular division of geography which has now become known as climatology were in most cases surprisingly accurate. In the little volume before us, Dr. Rid gives an excellent presentation of Strabo's views on climatological matters. While adopting the division of the earth's surface into five zones, which Parmenides had probably originally proposed, Strabo recognized the fact that the 'torrid' zone, which was then believed to be uninhabitable because of the heat, was at least partly habitable. He was also the first of the Greeks to state explicitly the fact that mountain climates have lower temperatures than the surrounding lowlands. He realized that what we now call *solar* climate is much modified by the physical features of the earth's surface, and that a latitude line runs through diverse climates. This was a distinct step in advance. Some of the relations of climate and man were emphasized by Strabo in much the same words as those we use to-day. The discussion by Dr. Rid will prove interesting to classical students as well as to climatologists.

R. DEC. WARD.

#### SCIENTIFIC JOURNALS AND ARTICLES.

THE October-November number of *The Journal of Geology* gives a biographic sketch of Ferdinand, Freiherr von Richthofen, by Mr. Bailey Willis. This is followed by the leading article, entitled 'Structure and Relationships of American Labyrinthodontidæ,' by E. B. Branson. He describes a new genus and under it two new species. The article is accompanied by fourteen figures. Professor John J. Stevenson's 'Recent Geology of Spitzbergen' deals mostly with glaciation and the submerged channels of the island. Professor Stuart Weller, in his article on 'The Northern and Southern Kinderhook Faunas,' says: "The interrelationships of the various expressions of the Louisiana-Kinderhook-Burlington faunas under discussion are such as to make their correlation a matter of some certainty." The last article of the number is

an illustrated one on 'The Development of Scaphites,' by W. D. Smith. The writer concludes that 'the genus *Scaphites* is in need of revision' since it is polyphyletic.

THE fore-part of the October number of *The American Geologist* is devoted to 'Ten Years' Progress in the Mammalian Paleontology of North America,' by Professor Henry Fairfield Osborn. He traces the lines along which research has been conducted and points out the directions in which future results may be expected. Dr. Osborn's article is illustrated by seven diagrammatic figures. 'Some Geological Observations on the Central Part of the Rosebud Indian Reservation,' by Mr. Albert B. Reagan, gives some interesting sections of Tertiary and Cretaceous formations and also an account of the surface features with a geological map of the reservation. Dr. August F. Foerste's 'Notes on the Distribution of Brachiopoda in the Arpheim and Waynesville Beds' give some valuable information regarding species found associated in these beds. In the editorial comment on 'The Willamette Meteorite' Professor Winchell takes exception to Dr. Ward's atmospheric pressure theory of the formation of the concavities in its base and regards them as the spaces formerly occupied by some such minerals as olivine and troilite which have been removed since its fall by the ordinary processes of rock decay.

#### SOCIETIES AND ACADEMIES.

##### THE OHIO ACADEMY OF SCIENCE.

THE fifteenth annual meeting of the academy was held in Cincinnati on November 30, December 1 and 2, 1905, the president of the society, Professor Herbert Osborn, presiding. On Thursday evening an informal meeting took place at the Museum of the Society of Natural History. The sessions on Friday and Saturday were held in Cunningham Hall, at the University of Cincinnati.

The address of the president of the society, on 'The Origin of the Wings of Insects,' occurred at 1:15 P.M., on Friday, and at 7:30 P.M. President Dabney of the University of Cincinnati, vice-president of the society, de-