'Muscle and Nerve,' 'Central Nervous System' and the 'Special Senses,' prepare the way for the presentation of the complex nervous coordinating machinery found in the digestive, the respiratory or the circulatory systems, for example. The statement of the details of the sensory apparatus and the afferent nervous system thus early in the text seems strictly logical from this point of view, and it is gratifying to see an author of eminence take the responsibility for the order of presentation.

The relative space allotted to the various sections is good, and the subdivision of sections into chapters and paragraphs presents an analysis that appeals to the reader as both logical and exhaustive. This analysis, together with the printing of the paragraph topics in bold-face type, lends itself to quick and satisfactory use as a reference, a feature particularly valuable to the advanced medical student and the physician.

The general sections presented are as follows: 'The Physiology of Muscle and Nerve,' 105 pages; 'The Central Nervous System,' 127 pages; 'The Special Senses,' 132 pages; 'The Blood and Lymph,' 53 pages; 'The Organs of Circulation of the Blood and Lymph,' 132 pages; 'Respiration,' 68 pages; 'Digestion and Secretion,' 149 pages; 'Nutrition and Heat Production and Regulation,' 56 pages; 'Reproduction,' 35 pages; and an Appendix of 13 pages.

The section on 'The Physiology of the Organs of the Circulation of the Blood and Lymph,' 132 pages, has the following nine chapters, each with from 7 to 15 sectional topics: the Velocity and Pressure of the Blood Flow, 26 pages; the Physical Factors Concerned in the Production of Blood-pressure, 9 pages; The Pulse, 8 pages; The Heart Beat, 19 pages; The Cause and Sequence of the Heart Beat—Properties of Heart Muscle, 16 pages; The Cardiac Nerves and their Physiological Activity, 19 pages; and The Vasomotor Supply of the Different Organs, 16 pages.

The detail with which each chapter is treated is well illustrated by the subtopics on the twenty-five pages devoted to the chapter on 'The Cardiac Nerves and their Physiological Action.' These topics are: Course of the Cardiac Nerves, Action of Inhibitory Fibers, Analysis of Inhibitory Action, Effect of the Vagus on the Auricle and the Ventricle, Escape from Inhibition, Reflex Inhibition of the Heart Beat, the Cardio-inhibitory Center, the Action of Drugs on the Inhibitory Apparatus, the Nature of Inhibition, Course of the Accelerator Fibers, Tonicity of the Accelerators and Reflex Acceleration, the Accelerator Center.

A notable chapter, not often found in such text-books, is introduced at the end of the section on the 'Central Nervous System' on the neglected subject of sleep. The sectional topics of this chapter are: Introductory Statement, Physiological Relations during Sleep, The Intensity of Sleep, The Effect of Sensory Stimulation, Theories of Sleep, Hypnotic Sleep.

The type and press work, and especially the illustrations, are good. The publishers have maintained their recognized high standard of mechanical excellence. By a choice of thin paper the size of the volume is kept within reasonable limits. However, it is to be regretted that a book which will unquestionably rank as the leading text-book of physiology issued in America could not be printed on light-weight linen paper.

CHARLES W. GREENE.
UNIVERSITY OF MISSOURI,
COLUMBIA, MO.

*Karl Heumann's Anleitung zum Experimentieren bei Vorlesungen über anorganischen Chemie.* Von Professor Dr. O. KÜHLING. Dritte Auflage. Braunschweig, Friedrich Vieweg und Sohn. 1904. Pp. xxix + 818. Price, gbd. 20 Marks.

The first edition of this admirable work appeared in 1876. Since then great advances have been made in the subject of inorganic chemistry and many of the new discoveries have found an appropriate presentation in the lecture room. Space has been found for the presentation of this new material, partly by the omission of parallel experiments previously given in several forms, and by the omission of methods of preparing substances which are

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 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. Pp. 62.