

minent, teaching experimental chemistry at the University of Basle, where he was made professor of chemistry and physics in 1835.

We cannot in a book-review further follow his fortunes in such detail; suffice it to say that he made all his notable discoveries after he had reached the age of 36, and while holding the chair just named; he read his paper on the passivity of iron before the Natural History Society of Basle in 1835; he discovered ozone in 1839 and worked at it until 1860; and his discoveries of guncotton and of collodion were made between 1846 and 1853.

The long studied and puzzling problems connected with ozone and "antozone," that occupied so much of his life are here set forth with a minuteness not elsewhere found; the claims of others to the discovery of guncotton are dwelt upon fully, and it is significant to read that Schönbein reaped about \$20,000 from his discovery, while Alfred Nobel gained no less than \$10,000,000.

Schönbein enjoyed the friendship of nearly all his contemporaries in the physical sciences; his correspondence with Faraday forms a volume edited by Kahlbaum and Darbishire and published at London in 1899.

The volumes under review form so important a contribution to the history of chemistry that no library can well afford to be without them.

H. CARRINGTON BOLTON.

THE ELEMENTARY PRINCIPLES OF CHEMISTRY. By A. V. E. YOUNG. 12 mo. xiv + 252 pp. New York: D. Appleton & Co. 1901. Price. \$1.20.

The author of this book desires "that the first notion of a topic should come to the student through his own observation" and provides, with this end in view, a relatively large amount of laboratory work, more of which is quantitative in character than is usual in elementary courses.

In a pamphlet entitled "Suggestions to Teachers," which accompanies the book, Professor Young points out the advantages of the plan which, he advocates, indicates the amount of time required—eight hours per week for thirty-five weeks,—and gives helpful advice to teachers. The greater part of the time is, evidently, to be devoted to the laboratory work.

The introductory chapters discuss matter, energy, chemical and physical properties, the fundamental laws of chemical action, equivalent and combining weights and methods for obtaining

them, equations, the relation between the volume, pressure, and temperature of gases, etc. Then follows a chapter on the atomic and other theories, the distinction between the theories and the facts, which they are intended to explain being clearly shown. The author has been very successful in presenting, with a limited use of theoretical considerations, the prevailing views of chemists.

The remaining two-thirds of the book give a clear, and sufficiently full description of twenty-five elements, and some of their compounds, the order of treatment being that of their increasing combining weights. The writer believes that this part of the subject would have been of more value, if enough elements had been described to show more clearly the relation of elements belonging to the same groups.

Part second, which may also be obtained separately, contains directions for work in the laboratory. Illustrations of twelve distinguished chemists and physicists are an attractive feature of the book.

L. B. HALL.

BOOKS RECEIVED.

The Elementary Principles of Chemistry. By A. V. E. Young. New York : D. Appleton & Co. 1901. xiv + 106 pp. Price, \$1.20.

Suggestions to Teachers ; designed to accompany "The Elementary Principles of Chemistry." By A. V. E. Young. New York : D. Appleton & Co. 1901. 48 pp.

Pure Air, Ozone and Water. A practical treatise of their utilization and value in oil, grease, soap, paint, glue, and other industries. By W. B. Cowell. London : Scott, Greenwood & Co.; New York : D. Van Nostrand Co. 1900. 85 pp. Price, \$2.00.

The Testing and Valuation of Raw Materials used in Paint and Colour Manufacture. By M. W. Jones, F.C.S. London : Scott, Greenwood & Co.; New York : D. Van Nostrand Co. 1900. 88 pp. Price, \$2.00.

The Manufacture of Lake Pigments from Artificial Colours. By Francis H. Jennison. London : Scott, Greenwood & Co.; New York : D. Van Nostrand Co. 1900. 136 pp. Price, \$3.00.

Iron Corrosion. Anti-fouling and Anti-corrosive Paints. By Louis Edgar Andés. Translated from the German by Charles Salter. London : Scott, Greenwood & Co.; New York : D. Van Nostrand Co. 1900. viii + 275 pp. Price, \$4.00.

Glue and Glue Testing. By Samuel Rideal. D.Sc.Lond. London : Scott, Greenwood & Co.; New York : D. Van Nostrand Co. 1900. viii + 144 pp. Price, \$4.00.

(1) An Apparatus for the Determination of the Melting-Point of Fats.