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.

By Frank T. Shutt and H. W. Charlton. Canadian Experiments with Nitragin for Promoting the Growth of Legumes. By Frank I. Shutt and A. T. Charron. From the *Transactions of the Royal Society of Canada*. Second Series. 1900-1901. Vol. VI, Section III.

Report of the Connecticut Agricultural Experiment Station for the Year ending October 31, 1900. Part III. Peach Foliage and Fungicides — Literature of Plant Diseases — Fertilizers for Forcing — House Crops — Chestnut Grafting — Insect Notes — Tobacco Experiments — Protection of Shade Trees — Cattle Foods. New Haven, Conn. 169 pp. 16 plates.

Commercial Feeding Stuffs in the Connecticut Market. Bulletin 133. Connecticut Agricultural Experiment Station, New Haven, Conn. 29 pp.

On the Separation of Alumina from Molten Magmas, and the Formation of Corundum. By J. H. Pratt. From the *American Journal of Science*, Vol. VIII. 5 pp.

On the Mode of Occurrence of Ruby in North Carolina. By J. W. Judd and W. E. Hidden, with crystallographic notes by J. H. Pratt. From the *American Journal of Science*, Vol. VIII. 13 pp.

Talc and Pyrophyllite Deposits in North Carolina. By Joseph Hyde Pratt. North Carolina Geological Survey. Economic Papers, No. 3. 29 pp.

The Farmer's Vegetable Garden.—Bulletin No. 61. 16 pp. The Market Classes of Horses.—Bulletin No. 62. 12 pp. Seed Corn and Some Standard Varieties for Illinois.—Bulletin No. 63. 28 pp. Treatment of Oats for Smut.—Bulletin No. 64. 16 pp. Construction and Care of Earth Roads.— Bulletin No. 65. 21 pp. University of Illinois Agricultural Experiment Station, Urbana, Ill.

Select Methods in Food Analysis. By Henry Leffmann. A.M., M.D., and William Beam, A.M., M.D. Philadelphia : P. Blakiston's Son & Co. 1901. 383 pp. Price, \$2.50.

Orchard Experiments. Bulletin No. 73. Hatch Experiment Station of the Massachusetts Agricultural College, Amherst, Mass. March, 1901. 15 pp.

Eggs and Their Uses as Food. By C. F. Langworthy, Ph.D. Farmers' Bulletin No. 128. U. S. Department of Agriculture, Washington, D. C. 1901. 32 pp.

Summer Forage Crops. Bulletin No. 72. Hatch Experiment Station of the Massachusetts Agricultural College, Amherst, Mass. March, 1901. 16 pp.

Fertilizers—Truck Shipments—Sweet Potatoes. Vol. 22, No. 4. The Bulletin of the North Carolina State Board of Agriculture, Raleigh, N. C. April, 1901. 36 pp.

Thirteenth Annual Report of the Hatch Experiment Station of the Massachusetts Agricultural College. January, 1901. Public Document No. 33. 132 pp.

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Qualitative Chemical Analysis: a Guide in Qualitative Work, with Data for Analytical Operations and Laboratory Methods in Inorganic Chemistry. By Albert B. Prescott and Otis C. Johnson. Fifth Revised and Enlarged Edition, Entirely Rewritten. New York: D. Van Nostrand Co. 1901. xi + 420 pp. Price, \$3.50.

Public Water Supplies. Requirements, Resources and the Construction of Works. By F. E. Turneaure, C.E., and H. L. Russell, Ph.D. With a Chapter on Pumping Machinery. By D. W. Mead, C.E. New York : John Wiley & Sons; London: Chapman & Hall, Ltd. 1901. xiv + 746 pp. 231 figures. Price, \$5.00.

Jahrbuch des Verein der Spiritus-Fabrikanten in Deutschland, des Vereins der Stärke-Interessenten in Deutschland und der Brennerei-Berufsgenossenschaft. Erster Jahrgang. 1901. Ergängungsband zur Zeitschrift für Spiritusindustrie. Für die Schriftleitung verantwortlich Dr. G. Heinzelmann. Berlin: Paul Parey. 316 pp. Price, 6 M.

Atoms and Energies. By D. A. Murray. New York : A. S. Barnes & Company. 1901. 202 pp. Price, \$1.25.

A Mica-Andesite of West Sugarloaf Mountain, Boulder County, Colorado. Some Relations of Tetrahedral Combinations to Crystalline Form. By John Charles Blake. *Proceedings of the Colorado Scientific Society*, Vol. 7. pp. 13-36. Denver, Colo.

The Chemistry of the Jaborandi Alkaloids. By H. A. D. Jowett. The Pharmacology of the Jaborandi Alkaloids. By C. R. Marshall. Remarks on Extractum Jaborandi Liquidum. By H. A. D. Jowett and C. R. Marshall. Reprinted from the *British Medical Journal*, Oct. 13, 1900. 13 pp.

A New Admixture of Commercial Strophanthus Seed. By Pierre Élie Félix. Perrédès. 12 pp. Researches on Morphine, Part II. By S. B. Schryrer and Frederic H. Lees. 18 pp. The Constitution of Pilocarpine, Part II. By H. A. D. Jowett. 23 pp. From the Wellcome Chemical Research Laboratories, Frederick B. Power, Director, 6 King St., Snow Hill, London, E. C.

Induction Coils. How to Make, Use, and Repair Them. By H. S. Norrie (Norman H. Schneider). Second edition, revised and much enlarged. New York: Spon & Chamberlain. 1901. xi + 269 pp. Price, \$1.00.

American Handy-Book of the Brewing, Malting, and Auxiliary Trades. Copiously illustrated. By Robert Wahl and Max Henius. Chicago : Wahl & Henius, 294 S. Water St. xv + 1266 pp. Price, \$10.00.

Humus and Soil Nitrogen : Climatic Studies with Wheat, Oats and Corn ; Brome and Timothy Compared ; Austrian Brome Hay. By E. F. Ladd. Bulletin No. 47, North Dakota Agricultural College. March, 1901. 32 pp.

Household Tests for the Detection of Oleomargarine and Renovated Butter. By G. E. Patrick. Washington: Government Printing Office. 1901. 12 pp.

An Introduction to the Study of Chemistry. By Ira Remsen. Sixth Edition. revised and enlarged. New York : Henry Holt and Company. 1901. $x \pm i + 460$ pp. Price, \$1.12.

Chemical Lecture Experiments. By Francis Gano Benedict, Ph.D. New York : The Macmillan Co. 1901. xiii - 436 pp. Price, \$2.00.

Lectures on the History of the Development of Chemistry Since the Time of Lavoisier. By Dr. A. Ladenburg. Translated from the Second German Edition of Leonard Dobbin, Ph.D., with additions and corrections by the author. Edinburgh : Published by The Alembic Club. Edinburgh Agent : William F. Clay, 18 Teviot Place ; London Agents : Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 1900. xvi + 373 pp.

A Short Manual of Inorganic Chemistry. By A. Dupré, Ph.D., and H. Wilson Hake, Ph.D. Third edition, thoroughly revised and partly rewritten, with special reference to the periodic law. London: Charles Griffin & Co., Limited; Philadelphia: J. B. Lippincott Company. 1901. xv - 391 pp. Price, \$3.00.