is a bit of pure assumption. It is so much more easy to hastily plunge into a theoretical discussion with a paucity of data than to amass facts and thereon build a sound theoretical explanation. The author, in his endeavor to give full recognition to the labors of others, presents working conditions and results in tabular form indicating those which from his experience warrant the most confidence. However, the student will find nothing more recent on these points than has already appeared on the pages of THIS JOURNAL and other chemical journals of our own country.

He refrains from the use of the mercury cathode in a single cell, although it certainly has proved itself most valuable in the determination of metals. His thought seems to be that the small volume of the electrolyte militates against the procedure for practical use. Such, however, has not been the experience of the reviewer, under whose eye hundreds of metal determinations have been made in this way with ease, rapidity and complete satisfaction.

The double cup with mercury cathode, as used in the determinations of the halogens and other anions with simultaneous determinations of metals, *e. g.*, sodium, barium, etc., does find very full recognition. Its constant daily use is demonstrating its real value and helpfulness. With its aid most interesting separations are being carried out.

The technical problems, constituting the concluding part of the book, are suggestive.

There are many points in the text which the reviewer might discuss if space were not so precious; suffice to say that every student of electroanalysis will read it with interest. It is deserving of study. It is additional evidence that the domain of electroanalysis is far from being exhausted, and that its study will be fraught not only with many results of purely scientific interest but also with such as have an immediate practical bearing. The solution of such problems is now being the subject of most earnest thought not only abroad but here in America, where electroanalysis first began and where it has been prosecuted diligently for a period of forty years.

EDGAR F. SMITH.

The Data of Geochemistry. By FRANK WIGGLESWORTH CLARKE. 8vo. 716 pp. Washington, 1908. United States Geological Survey, Bulletin No. 330.

This is an important and useful book presenting a vast amount of well selected data concerning the chemistry of the earth, and summarizing in an able and thorough manner what is known at present concerning this broad subject. The references to the literature are very comprehensive and valuable.

The distribution of the chemical elements and their relative abundance are first considered. The composition of the earth's crust, to which the author has previously paid much attention, is very fully treated. Lakes and rivers, the ocean, waters of closed basins, mineral wells and springs,

and saline residues are very thoroughly discussed; then volcanic gases and sublimates and the molten magma are well considered. After this, rock-forming minerals, igneous rocks, sedimentary and detrital rocks and metamorphic rocks are well treated. An interesting discussion of metallic ores covering 77 pages follows, and finally comes a treatment of the natural hydrocarbons and coal.

The preparation of the work must have cost the author a great amount of painstaking labor, and much knowledge and ability have been displayed in the discussions which it contains. H. L. WELLS.

Report of the Eleventh Annual Convention of the Association of State and National Food and Dairy Departments. Jamestown Meeting, July, 1907. New York: John Wiley & Sons. 1908. 8vo. vii+416 pp. Cloth, $3.00.

Besides the minutes of various sessions held, and a considerable number of routine reports of committees, this volume contains over thirty papers and addresses on topics related to food. While a few of these articles are of very indifferent merit, the majority of them possess interest for chemists and others who have anything to do with questions relating to the inspection and sale of food products.

The problem of food preservatives is touched upon in several of the contributions, and in view of the present agitation of that question, these papers will be read with profit. Other interesting papers are by A. L. Winton on "Diabetic Flours," E. F. Ladd on the "Bleaching of Flour," and William Frear on "Spice Standards." J. H. LONG.

RECENT PUBLICATIONS.

BECKMAN, E.: **Das Laboratorium für angewandte Chemie der Universität Leipzig in seiner neuen Gestaltung.** Leipzig: Guelle & Meyer. M. 2.50.

Berichte des Verbandes der Laboratoriums Vorstände an deutschen Hochschulen. 9 Heft. Leipzig: Veit & Co. M. 2.

Bericht über die Tätigkeit des chemischen Untersuchungsamtes der Stadt Ulm a. D. im Jahre 1907. Von Hofrat Dr. Wacker-Ulm a. D. 1908. 23 S. 8°.

BIGELOW, WILLARD DILL: **Food Legislation during the Year ended June 30, 1907.** Wash., D. C. (Office of the Superintendent of Documents.) 1908. 2 pts., 8° (U. S. Dept. of Agriculture, Bureau of Chemistry, bulletin) pap. (Address Supt. of Documents for price.)

BOTHAS, DR. LUDWIG, Regierungsbaumeister a. D., St. Petersburg: **Massen-Distillation von Wasser, insbesondere zur Erzeugung von Trinkwasser und Lokomotive-speisewasser.** Mit. 8 Abb. Berlin, Verlag von Julius Springer. 1908. 53 S. 8°. M. 2.

BROCHET, A.: **Manuel practique de Galvanoplastie et de dépots électro-chemiques (Encyclopédie industrielle).** Paris: J. B. Bailliers & Fils. 1908. Frs. 5.

BRUCE, EDWIN C.: **Detection of Common Food Adulterants.** N. Y.: D. Van Nostrand Co. 1907. 184 pp. $1.25 net.

COLLETT, HAROLD: **Water Softening and Purification of Hard and Dirty Waters.** 2d ed., rev. N. Y.: Spon & Chamberlain. 1908. 177 pp., ill. 12°. Cl., $2.00.