Gums,* Dr. Dieterich, Helfenberg; Essential Oils,* Dr. Gildemeister, Leipzig; The Sugar Industry,* Prof. E. von Lippmann, Halle; Starch, Prof. von Eckenbrecker, Berlin; Alcohol, Dr. Ebertz, Hohenheim; Brandy, Liquors and Vinegar, Dr. Schüle, Strassburg; Wine, Prof. Windisch, Hohenheim; Tannin, Etc., Dr. Councler, Münden; Leather,* Dr. Paessler, Freiberg; Paper,* Prof. Herzberg, Berlin; Inks,* Director Schluttig, Dresden; Organic Preparations, Dr. Messner with Merck in Darmstadt; Citric and Tartaric Acids, Dr. Rasch, Berlin; Organic Dyestuffs, Textiles and Printing, Prof. Gnehm, Zürich.

Many of these writers, notably those starred, have written monographs upon their respective subjects and are among the highest authorities in their specialties. The volume has been increased by about 20 per cent. over the fourth edition and represents the very latest and best work upon those subjects.

While it may be of advantage in some cases to have books unbound (geheftet) yet the writer feels, particularly in books which are sent for review, that these at least should be bound, so that they may be inspected at once without requiring the trouble either of cutting leaves or binding. A. H. GILL.

UNTERSUCHUNG DER MINERALÖLE UND FETTE SOWIE DER IHNEN VERWANDTEN STOFFE, MIT BESONDERER BERÜCKSICHTIGUNG DER SCHMIERMITTEL. BY DR. D. HOLDE, Professor, Director of the Royal Testing Station at Grosse Lichterfelde and Docent at the Technical High School, Berlin. Second edition, 8vo. pp. 408 with 99 figures. 1905. Berlin: Julius Springer.

The present edition represents about double the material contained in the former one, the increase relating not so much to the mineral oils as to the allied subject of lubricants.

The work is divided into four parts: 1, Petroleum; 2, Tars and Pitches; 3, Saponifiable Fats and Waxes; 4, Technical Products from Fats and Waxes. An excellent feature of the book is the fact that all the methods described have been tested under the supervision of the author, some of them being original.

The part relating to petroleum constitutes rather more than half of the volume; the subjects considered are, crude petroleum, its testing and evaluation particularly on a semi-industrial scale with a metal retort rather than a glass boiling flask. A full discussion follows of the tests applied to benzines, kerosenes, gas and lubricating oils; fuel, cleaning, and "water-soluble" oils; vaseline and

pitchy residues also find mention. The methods detailed relate more particularly to the German petroleum industry and requirements.

Part II, of about twenty pages, deals with various tarry products from brown coal, shale, and peat and also with ozokerite.

In Part III the saponifiable waxes and fats are discussed—making up nearly one-fourth of the volume. The discussion embraces the preparation and extraction of these oils and the usual physical and chemical tests.

Part IV treats of the tests to be applied to the technical products obtained from the three preceding; *viz.*, candles, wool oil, soaps and soap powders, Turkey-red oil, varnishes and lacquers, blown oils, dégras, linoleum and rubber substitutes.

A useful feature of the book is the system of tables of the preparation and properties of the various oils and of certain lubricants which have proved their value; also the requirements of various German railroads for their oils.

The work contains much valuable information not to be found elsewhere and may be warmly recommended to all interested in the subjects treated. A. H. GILL.

EXPERIMENTAL ELECTROCHEMISTRY. By N. MONROE HOPKINS, PH.D. New York: D. Van Nostrand & Co. 284 pp. Price, $3.00.

This book was evidently written by one who has experimented upon many of the subjects discussed. Photographic reproductions and drawings are very frequently used. It gives the impression that the author was willing to base it upon present theories of electrolytic dissociation, and unwilling to neglect many of the questions which their use force upon a reader. Probably most readers of the average book on the subject have asked themselves: Can an electric current be shown in an electrolytic conductor without electrodes? Is gaseous conduction similar to electrolytic conduction, etc. Such matters are considered experimentally at some length.

No references to the literature are made in the text, though an extensive and general electrochemical bibliography forms a part of the book. The discussion of electrodeless conduction makes it appear that the author is the originator of the scheme for the production of alternating currents in solutions by magnetic induction. Hering outlined these general processes in the *Trans-*