

acid gas; the equivalent weight of zinc, and of tin; the volumetric analysis of caustic soda, and of iron; and the specific heat of tin.

In this improved edition, the book is one of the best of the many laboratory manuals in print.

JAS. LEWIS HOWE.

IRON CORROSION; ANTI-FOULING AND ANTI-CORROSIVE PAINTS. BY LOUIS EDGAR ANDÉS. London; Scott, Greenwood & Co. New York: D. Van Nostrand Co. 1900. viii + 275 pp. Price, \$4.00.

The extensive and important use of steel as structural material, which practically began about ten years ago, owing to the improvements in metallurgy which lowered the price of steel until its use became economical, has made the subject of this book one of great importance. Cast iron is not very easily corroded; and moreover is used in thick pieces which will stand considerable corrosion; but the opposite is the case with steel. The last preceding book on the subject was issued in 1895, and was of little value; hence much interest attaches to a new book. Like other books about other things by this author, this treatise contains practically no original matter, but gives the results of some of the more important German papers on the subject. The comparison of different passages will therefore give contradictory views on the same topic; but in such a work this is inevitable, and is nothing against it. The numerous illustrations are of very little value; and the whole treatise, which is a short one (about 80,000 words), reads as though the author were rather short of material to fill the book. The chemical part of the work is of more interest to the general reader than to the analyst, as is proper; but references to chemical literature might have been added with advantage. A rather interesting chapter is given on the composition of patent and proprietary paints, and a few pages of much value on specifications. The book is probably the best one on the subject, to date, but it is fragmentary, does not give recent English or American work on the subject, and leaves one with the impression that there is still room for a more elaborate treatise on the protection of structural metal.

A. H. SABIN.

TRAITÉ DE LA FABRICATION DES LIQUEURS ET DE LA DISTILLATION DES ALCOOLS. PAR P. DUPLAIS AINÉ. Septième édition, entièrement refondue par Marcel Arpin et Ernest Portier, en deux tomes. Paris: Gauthier-Villars, Quai des Grands—Augustins, 55. 1900. 1219 pp. Price, 18 francs.

This well-known work of Duplais, of which the earlier edition

was translated and appeared in an American issue, has recently been brought out in a seventh edition, which the present editors say has been thoroughly revised and in part rewritten. This applies, as the preface tells us, particularly to the first volume, that treating of the alcohols, their preparation and technology, while the second volume upon the liqueurs and alcohol containing products has not been so notably changed.

Duplais' work, as indicated by the full title given above, is mainly concerned with the manufacture of alcoholic products and this part of the work (Vol. II) will no doubt be considered as still entitled to the character long possessed by it, of being a standard authority upon the making of liqueurs and similar products.

The whole art of compounding these alcohol-containing products is explained and illustrated, the preparation of aromatic distilled waters, of tinctures and infusions, and of the nature of the volatile oils which are used and the means of recognizing their purity are covered, as is also the preparation of the sugars, syrups, and colors used. The manufacture of conserved fruits and factitious wines is also fully described and a chapter is devoted to the manufacture of carbonated waters and effervescing alcoholic liquids of artificial origin.

An alphabetically arranged account of the principal plants and drugs employed by the liqueur manufacturer is given, which puts together in convenient form quite an amount of information useful to the manufacturer.

Vol. I, devoted to the alcohols and covering the questions of fermentation and treatment of the products therefrom, is not of the same relative value. In this field there are a number of other works, both special and of general character that are more satisfactory. Thus, while this new edition of Duplais' notes Hansen's work on pure yeast cultures, it does not discuss the broader question of the part which soluble ferments play in the distilling industries. Works like "Les enzymes et leur applications" by J. Effront, published in 1898, "Soluble Ferments and Fermentation," by J. Reynolds Green, published in 1899, and the German edition of Effront's work by M. Bücheler, published in 1900, are much more valuable for this purpose. Fuller discussion of the methods of alcohol rectification and purification are also found in Barbet's "Manuel des Fabricants d' Alcools," Paris, 1894.

In its present form, Duplais' work will, however, be of value to

those interested in the liqueur manufacture and continue its reputation as a standard authority. SAMUEL P. SADTLER.

A MANUAL OF LABORATORY PHYSICS. BY H. M. TORY AND F. H. PITCHER. New York : John Wiley & Sons. 1901. 8vo. ix + 288 pp. Price, \$2.00.

This little manual embodies in book form the directions for the performance of the various experiments given in the course in elementary physics at McGill University, Montreal.

The arrangement and presentation of the subject-matter is original and somewhat novel, and is, as stated in the preface, "the outgrowth of experience in teaching large classes with a limited number of instructors."

Explanations and directions for 84 experiments are given. These are distributed as follows : Sound, 10 ; Light, 21 ; Heat, 9 ; Magnetism, 9 ; Electricity, 35.

The directions for each experiment are divided into a number of sections: 1. "References" for collateral reading; 2. "Apparatus Required ;" 3. "Theory of Experiment ;" 4. "Practical Directions ;" 5. "Example" illustrating the data and results to be obtained ; and lastly there is given a blank which is to be filled out by the student after the completion of the experimental work.

The directions are brief and terse, yet quite to the point. It is evident that there has been a studied effort on the part of the authors to give just what is absolutely essential, and to do this in as few words as possible.

As in all manuals of a similar nature there is the unavoidable local flavor as to apparatus and methods. It must be said, however, that the authors have apparently succeeded admirably in reducing this to a minimum and have so presented their subject that the book can be used as a manual in any properly equipped institution.

Viewed from the standpoint of the physicist, the experiments are doubtless well selected and described ; but from the chemist's point of view, it is to be regretted that the authors have omitted experiments which, it would seem, should be given to every student intending to follow up the natural sciences, as, for example, experiments dealing with polarized light, etc.

The manual is up to the usual excellence of the publishers, the paper being heavy, of good quality, and the impression neat and clear.

E. M. C.