is meant, as two pages further on an abstract on Calcium Phosphide is printed 'Phosphite,' but these are mere printer's errors; the book is full of such.) In the directions no reference is made to a filtration or other mode of separation of phosphoric acid formed from the by-product. The same criticism applies to the next method, 'Phosphoric acid from calcium phosphate,' though both the original articles mention the modes of separation, and careful attention to details is necessary in a laboratory manual.

On page 174 is an abstract of an article by E. J. Maumené, entitled 'Chydrazaïne or Protoxide of Ammonia.' The attention of the present writer was attracted by the statement at the end of the abstract, that 'on evaporating Chydrazaïne nitrate, nitric acid, nitrogen peroxide, nitrogen and a compound having the composition N_2H_2 are evolved.'

Suprised at finding the long-sought-for diimide as a by-product in a preparation for college students, the original article was consulted. Maumené is responsible for diimide and chydrazäine, and this is not the place to offer any further criticism of his work than to call the attention of the authors to the fact that the existence of chydrazäine has not been confirmed. Maumené uses a solution of potassium permanganate and sulphuric acid. He says, 'je les versais doucement dans une dissolution faite à l'avance de 111 grammes ammonium oxalate róel, cést a dire $111 \times \frac{78.86}{62} = 141.2$ sel cristallisé bien sec; le mélange était fait avec soin dans mon mélangeur; nécessaire en pareil cas.' The authors abstract this in these words. "A solution of potassium per maganate (158 grams) and sulphuric acid (40 grams SO_3) is added to dried crystallized ammonium oxalate (141.2 grams), the whole well mixed." Comment is unnecessary.

If this review be deemed harsh, the writer pleads that no one should publish a laboratory manual of preparations without knowing that the preparation of all substances described is not too difficult for students, and that the directions given are good and clear. By careful revision and excision, the authors can make their manual very valuable, as it contains an abundance of excellent matter.

E. RENOUF.

A Handbook of Industrial Organic Chemistry. By SAMUEL P. SADTLER, PH. D., F. C. S. 2d Edition, revised and enlarged. Philadelphia, J. B. Lippincott Co. 1895. 8vo., pp. 537.

That a second edition of this work should be called for within four years after the first appeared is evidence that the book has met general approval and satisfies the requirements it was intended to fill. The dearth of works of this class in the English language has been felt by instructors of technical chemistry for a long time, and consequently this volume, enlarged and improved and brought up to date, will be received with pleasure by every teacher of the subject. The chemical manufacturer and general reader will also find this an excellent work, neither too brief in its treatment of the several subjects, nor too abstruse in dealing with the minor details of processes or apparatus, and happily within the reach of modest pocket books.

There is no change in the manner or order of treatment of the various industries from that adopted in the first edition, but numerous additions and corrections have been made in the text. The bibliographical lists at the close of the several chapters have been entirely revised, added to and brought up to the present time. This feature of the book is one of its most valuable points, since it places at the disposal of the reader a very complete list of works on any of these industries, should he desire more detailed accounts of processes or apparatus, thus saving him hours of laborious search through library or publishers' catalogues.

The numerous tables of statistics have been corrected and increased with the latest data obtainable and add much to the value of the book. In the appendix new tables showing the chemical and physical constants of oils, fats and waxes have been added.

The schematic tables of the various processes, scattered through the book are a great assistance to the reader, by showing at a glance the connections between different parts of the processes and also aiding to refresh the memory in reviewing the work.

The subjects treated are briefly: Petroleum and Mineral Oils, Fats and Fatty Oils, Essential Oils, Resins, Cane Sugar Industry, Starch and

its alteration Products, Fermentation Industries, Milk, Textile Fibres of Vegetable and Animal Origin, Animal Tissues and their Products, Destructive Distillation, Artificial Coloring Matters, Natural Dyes, Bleaching, Dyeing and Textile Printing. A very complete index adds to the convenience and worth of the book. The print is excellent, and numerous illustrations are distributed through the text. It is, as its name indicates, a 'handbook,' in which the various subjects are concisely and clearly explained, important topics being quite fully considered, while details of less importance, which often become so confusing and wearying to the student or general reader, are but slightly touched upon or entirely omitted. It is presumed that the reader who wishes minute and extended descriptions will look for them in the larger works or special literature bearing on the particular point in question.

This book presents, to a greater extent than any other work on the subject, processes and apparatus employed in America and hence will find favor with American readers. A translation which has appeared in German demonstrates, however, that it is also appreciated on the other side of the Atlantic.

It is to be hoped that a companion volume dealing with the inorganic side of technical chemistry may soon appear.

Frank H. Thorp.

SCIENTIFIC JOURNALS.

THE AUK, JANUARY.

With the present number '*The Auk*' enters upon its thirteenth year of publication as a quarterly journal of Ornithology, and the official organ of the American Ornithologists' Union. The first article is a memorial sketch of the late George N. Lawrence, of New York City, by D. G. Elliot. Mr. Lawrence died in January, 1895, in the ninetieth year of his age, being the last of the links connecting the present generation of ornithologists with the Audubonian period. He was the last also of the great trio of ornithologists—Cassin, Baird and Lawrence—who from the middle of the century onward laid anew the foundations of American ornithology. For a period of over fifty years Lawrence published almost continously on American birds, more especially on those of the West Indies, Central and South America, on which he was everywhere recognized as a leading authority. Mr. Elliot, from long personal acquaintance with Mr. Lawrence, was well fitted to unfold the tale of his simple life, which he has here done with rare felicity. An excellent portrait of Mr. Lawrence forms a fitting frontispiece to the number.

Mr. Frank M. Chapman, in an article on 'The Standing of *Ardetta neoxena*,' illustrated with a colored plate, gives the technical history of a rare and peculiarly interesting Heron, described about ten years since from a specimen taken in the Florida Everglades, but now known from about fifteen specimens, of which seven have been taken at Toronto, Canada, one each in Michigan and Wisconsin, and the rest in Southern Florida. D. G. Elliot describes two new Ptarmigans from the Aleutian Islands, A. W. Anthony, a new woodpecker from California, Gerrit S. Miller, Jr., a new jay from Mexico, and William Brewster, a new warbler and sparrow from North America. George H. Mackay writes of the Colony of Terns that still, thanks to careful protection, have their home on Muskeget Island, Massachusetts; L. Belding gives a rendering in musical notation of twelve songs of the meadow lark; and Miss Florence A Merriam writes at length on the habits of the Phainopepla in California. Other leading articles treat of the Pine Grosbeak, of an important factor in the study of Western bird life, and of the Thirteenth Congress of the American Ornithologists' Union, held in Washington, November 11–14, 1895. Some fifteen pages are devoted to 'General Notes,' under which are grouped some thirty short articles relating to the occurrence or habits of as many little known birds, while nearly twenty pages are devoted to reviews of current ornithological literature. There are also several pages devoted to obituaries and to various items of ornithological news.

THE AMERICAN GEOLOGIST, FEBRUARY.

Notes on the Geology of Eastern California: By H. W. Fairbanks. This part of the Great Basin, on account of its desert character and re-