NOTE.

The Action of Trioxymethylene on the Various Hydrocarbons in the Presence of Aluminum Chloride.—In a paper published by Kokatnur and myself on the "Action of Trioxymethylene on the Various Hydrocarbons in the Presence of Aluminum Chloride" (THIS JOURNAL, 36, 1529 (1914)) it was stated that so far as we know, trioxymethylene had never been used with aluminum chloride. Professor Nastukof has called attention to the fact that he published a paper in 1913 in the Imperial Russian Society in Baku in which he mentioned the action of trioxymethylene upon naphtha hydrocarbons in the presence of aluminum chloride. As the article referred to is not abstracted and the publications of the Baku Society do not appear in the general chemical libraries of this country, we had no means of obtaining reference to the article. Attention is called to the introduction of the above-mentioned article in which reference is made to experiments by Kritchevsky and myself which began as early as 1911. Extended experiments were made on the aldehydes, an outline of which was given at the meeting of the Eighth International Congress of Applied Chemistry in New York, 1912, in a paper, an abstract of which appeared in the proceedings of the Congress, entitled "the Action of Chloralbromal and Aluminum Chloride on the Phenolethers." Naturally, in testing out the various aldehydes, trioxymethylene was one of the first to be tried. But as chloral gave better crystallized compounds than the other aldehydes, it was taken up first. The above reason for taking up chloral and bromal first was given in presenting the paper at the New York Congress. I also indicated at that time that we were following up these experiments as rapidly as possible. The work is still under way. G. B. FRANKFORTER.

UNIVERSITY OF MINNESOTA,
MINNEAPOLIS, MINN.

CORRECTION.

Mr. R. de M. Taveau has called our attention to the fact that Purdie and Lander in 1898 (*J. Chem. Soc.*, 73, 287 (1898)) found that silver malate and silver lactate give, in part, ethers along with esters on treatment with alkyl iodides. We had overlooked this in the statement made in our paper, THIS JOURNAL, 39, 2711 (1917). In the cases studied by Purdie and Lander the hydroxyl group was in the alpha position. Ciscamphonolic acid, which we used, has the hydroxyl group in the gamma position.

W. A. NOYES,
G. S. SKINNER.

NEW BOOKS.

The Chemists' Year Book, 1917. Edited by F. W. ATACK, assisted by L. Whinyates. Two volumes. London: Sherratt and Hughes, 1917. 1030 pp.

A collection of chemical and physical tables does not offer great oppor-

tunity for variety of treatment, except in the selection and arrangement of the material. The little work before us presents the standard data upon which chemists and physicists depended. In form and content it more nearly resembles the Chemiker-Kalender than any other book with which we are familiar, but it is a distinct improvement upon it in at least two respects. There is a fifteen-page index and by the use of a more open-faced type legibility is increased without enlarging the size of the page.

If any fault is to be found with the Year Book and other works of this class, it must be on account of the ground they attempt to cover rather than for sins of omission. One cannot well complain about the introduction of brief sections on qualitative analysis, volumetric analysis, etc., but it has always seemed to the reviewer, in twenty years' experience with the Chemiker-Kalender, that much could be omitted without lessening the value of the book. This criticism applies also to the Year Book, which devotes only 387 pages to the discussion of twenty-seven topics of such varied range as Water Analysis, Portland Cement, Oils and Fats, Paints and Pigments, Beer and Spirits, Cellulose and Paper, Physiological Chemistry, India Rubber, Tobacco, Photography, etc. It is quite evident that, in such a limited space, not much more than a smattering of information on any one topic is given. Perhaps, however, it is only fair to assume that the editor knows what is called for. In any case he is to be commended for having put into our hands such a wealth of information in convenient form. C. E. W.

A Systematic Course of Qualitative Chemical Analysis of Inorganic and Organic Substances. By HENRY W. SCHIMPF. Third edition, revised. New York: John Wiley & Sons, Inc., 1917. Pp. ix + 187.

Professor Schimpf's book is written for students in Pharmacy, but this in no wise makes it less valuable for students of Chemistry.

Part I, 16 pages, is a review of chemical terms. Part II, 117 pages, is entitled "Identification and Separation of Inorganic Bases and Acids." It includes, however, a list of 17 organic acids. Part III, 54 pages, is devoted to the "Qualitative Analysis of Organic Substances."

The general style of the book is characterized by an abundance of charts presenting in a concise way the essential procedures, and also by numerous reactions. These reactions are all of the good, old-fashioned type as evidently the author sees no virtue in the theory of ions as an aid in teaching qualitative analysis. From a literary standpoint the book suggests an informal lecture style.

In the reviewer's opinion, the chief value that Professor Schimpf's book has for chemists is its copious treatment of the methods for examining the commoner organic substances. After all, why should they not be included in elementary qualitative analysis? The trend of the times

seems to show that in the near future the detection of ethyl alcohol will be of more importance than, for example, tests for cadmium or strontium.

C. W. FOULK.

Principles of Agricultural Chemistry. By G. S. FRAPS, PH.D. Chemist, Texas Experiment Station, Agricultural and Mechanical College of Texas. State Chemist. Second edition, pp. 501. The Chemical Publishing Company, Easton, Pa.

The author states that this revision of the first edition, which was published in 1912, was undertaken for the purpose of making such changes and additions as were required to keep it abreast of the times and for the purpose of including recent work on "soil organisms, the nutritive value of proteids, and productive value of feeds."

The book is divided into twenty-four chapters dealing with the essential features of plant nutrition, the relation of the plant and the atmosphere, the origin, classification, physical properties, water relations, and chemical composition of soils. A chapter is devoted to active plant food and water-soluble constituents of the soil, and the chemical changes, deficiencies, and losses and gains of the soil. The discussion of manures and the composition, purchase and sources of fertilizers is covered in three chapters. A reasonable amount of space is devoted to plant constituents and the chemical composition of plants and feeding stuffs. In the remainder of the book the author covers the general subject of digestion, the utilization of food, and the general fundamental questions connected with the rational feeding of farm animals.

The discussion of feeds and feeding, while furnishing much useful information to the ordinary student, is primarily of value to those who are desirous of fitting themselves to engage in research work connected with human and animal nutrition. In fact, these particular phases are discussed perhaps with more thoroughness and completeness than in those works on cattle feeding which are designed primarily for use by students who wish to study the question solely in its relation to animal production.

The chapter on "Origin of Soils" is usually covered in courses in geology. The author, however, evidently intended this work to cover all of the subjects discussed, even though they may have been covered by the student in part in other courses. It is a matter of convenience to a student to have all of these various subjects covered in one book, although it is more or less of an innovation as compared with previous books on agricultural chemistry and its various subdivisions which have been published in this country.

In discussing the assimilation of nitrogen by the legumes in the chapter on "Chemical Changes," the author makes no mention of the work with peas by Atwater which was published in 1884 showing unquestionably that they had assimilated atmospheric nitrogen.

In the chapter entitled "Soil Deficiencies" it is unfortunate that the author in discussing experiments with burned lime or ground limestone, particularly at the Pennsylvania Agricultural Experiment Station, did not give more fully the conditions under which the experiments were conducted. The fact is that the author and other writers have accepted certain statements regarding these tests without analyzing the conditions, whereas Dr. Frear of that Station, in published articles, has stated essentially that, in view of the manner in which the experiments were conducted and the amounts of lime used, quite erroneous conclusions have been drawn by others from the experiments. A careful study of the experiments at the Maryland Station would reveal certain discrepancies indicating an apparent wide variation in the character of the soil or other features which do not justify a sweeping denunciation of burned lime as compared with ground limestone. The general effect of the quotation of these two experiments is to place slaked or burned lime in a somewhat false position as concerns its efficiency and value for agricultural purposes as compared with ground limestone. The latter has unquestioned advantages, but not to the extent which the reader would be led to believe.

In the same chapter regarding toxic substances in soil, the writer states that it is possible that some soils may contain injurious substances besides alkali or acids. This makes one wish that he had been more specific in view of the work of Conner of Indiana and Ruprecht of Massachusetts on the toxicity of aluminum compounds and the well-known toxicity of certain iron and other salts.

Referring to the manufacture of acid phosphate in the chapter on "Sources and Composition of Fertilizers," the author calls attention to the rotting of bags and the stickiness which results when an excess of acid is used. The fact is, however, that careful manufacturers avoid this or by the addition of very small amounts of calcium carbonate neutralize the excess of free acid, whereby the difficulties mentioned are overcome. Unfortunately the reader might infer that the rotting of bags and the presence of free sulfuric acid and phosphoric acid were matters of common occurrence, whereas the reverse is true.

In the chapter entitled "Purchase and Use of Fertilizers" it is stated by the author that there is no justification for the claim that sulfate of lime may liberate soil potash, yet European experiments are on record showing far greater percentages of potash in plants grown on soil to which sulfate of lime had been applied than on corresponding soil where none had been used. It is difficult to harmonize these particular experiments with this statement. And further on it is made to appear as if it were immaterial in the fertilization of corn whether acid phosphate at the rate named or raw rock phosphate was used as the source of phosphoric

acid. While this may be true possibly in the case of some special soils highly charged with acid organic matter, experiments at the Tennessee, Indiana, Massachusetts and other experiment stations do not seem to justify conveying such an impression.

On the whole, the book is a most valuable one which should be in every agricultural college and experiment station library and in the hands of every advanced agricultural student. In view of the volume of work represented, it is relatively free from typographical and other errors. Time might be taken to enumerate several of these errors, but the book is of so much importance and value that it would be supercritical to do so and indicative of a lack of proper appreciation of the vast amount of work and detailed care which is evidenced throughout. Agricultural chemists in this country and abroad will recognize this book as a most valuable acquisition. H. J. WHEELER.

Handbook of Antiseptics. By HENRY DRYSDALE DAKIN, D.Sc., F.I.C., F.R.S., AND EDWARD KELLOGG DUNHAM, M.D., Emeritus Professor of Pathology, University and Bellevue Hospital Medical College, Major, Medical Officers Reserve Corps, U. S. Army. IX, 126 pp., tables and figures. New York: The Macmillan Company. October, 1917. Price, $1.25.

In their new book on antiseptics, Dakin and Dunham have given a more practical and valuable account of antiseptics than is generally found in most bacteriological texts. In a series of eight chapters covering 126 pages the authors have discussed the general considerations of antisepsis, the various types of antiseptics, their preparation, the factors which affect their germicidal value and the type of antiseptic most desirable under certain conditions. One is impressed with the fact that the emphasis placed upon the different phases in the rather complex problem of proper disinfection is well balanced. The criticism of the antiseptics, which in the past have found rather general use, is very much to the point while the statements regarding the use and composition of the newer antiseptics is clear, concise and satisfactory. One of the most interesting sections of the book is that dealing with the antiseptics of the chlorine group, namely, "Hypochlorous acid and its sodium or other salts, Chloramine-T and Dichloramine-T." A detailed account of the technique in some procedures has been omitted as being beyond the scope of the book, but in such instances references to the original publications are given so that the reader may, without any great inconvenience, obtain most of the available information concerning such procedures. The authors have shown a singularly fortunate appreciation of the obstacles and difficulties which are encountered in the preparation, testing and use of various antiseptics. Dakin and Dunham have collected in a small and convenient volume material which has been scattered throughout various publications, and especially data on the antiseptics which have been found most

useful in the treatment of wounds during the war. The book, which does not pretend to be an exhaustive treatise on antiseptis, is clear, concise and adequate and should be most helpful to both the physician in the field and the investigator interested in the problem of antiseptics.

JOEL A. SPERRY, 2ND.