Carmack and M. A. Spielman; 3, "Preparation of Ketenes and Ketene Dimers," W. E. Hanford and John C. Sauer; 4, "Direct Sulfonation of Aromatic Hydrocarbons and Their Halogen Derivatives," C. M. Suter and Arthur W. Weston; 5, "Azlactones," H. E. Carter; 6, "Substitution and Addition Reactions of Thiocyanogen," John L. Wood; 7, "The Hofmann Reaction," Everett S. Wallis and John F. Lane; 8, "The Schmidt Reaction," Hans Wolff; and 9, "The Curtius Reaction," Peter A. S. Smith.

Of particular interest to the reviewer was the chapter on the Willgerodt reaction and the Kindler variation of it. This is the reaction by which a ketone is converted to an amide by the reaction of ammonium polysulfide. It is an unusual reaction in the sense that a ketone such as ethyl phenylketone is converted into β-phenylpropionamide by this procedure, and there is considerable speculation as to the mechanism.

The chapter on "Azlactones" contains a large amount of interesting material which is not commonly discussed.

The material given in the chapter on the Schmidt reaction (reaction of hydrazoic acid and carbonyl compounds in the presence of strong mineral acid) will be found useful to those interested in the synthesis of amines, amides, and their derivatives.

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Smith's college chemistry. (6th ed.) William F. Ehret. New York-London: D. Appleton-Century, 1946. Pp. xii + 677. (Illustrated.) $4.75.

This revision is written under new authorship and from a fresh viewpoint, which sets it apart from the other editions; the author deserves more credit than the title would imply.

The text content is quite comprehensive and up to date. The sequence of topics is classical and seems to be well integrated, even though several times the author appears to be grasping for a connecting link. The method of presentation and quality of material indicates, however, that this edition is intended for the better student who has already had a course in chemistry in high school.

A feature well worth mentioning is the use of boldface print for new terms, for definitions, and for general emphasis.

Such topics as atomic structure, equilibria, and ionization seem to be adequately treated. A chapter on "Energy and Chemical Change" and another on "Electromotive Chemistry and Voltaic Cells" are well placed.

In general, however, the figures and pictures are very poorly executed, as demonstrated in Figs. 7, 11, 13, and 14 (which would not be recognized as a balance arm). This fact and the lack of sufficient pictorial material to break up the large pages give the book an unfortunately dull and drab effect. This is particularly true of the early chapters, which are already quite dull because of the subject matter contained in them.

Among items that can be listed as unfortunate are the use of the phrases "throw light on" and "sealed up the mouth" (p. 7); the statement, "Two substances can come together in two different ways" (p. 8); the definition of chemical property as a chemical reaction (p. 8); the verb in the sentence "The negative radicals stem from chlorine atoms . . ." (p. 71); and the use of double dots to show ratios (p. 111). Also, the periodic table (p. 178) contains elements 93, 94, 95, and 96 in positions not justified by their chemical properties.

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Practical physiological chemistry. (12th ed.) P. B. Hawk, B. L. Oser, and W. H. Summerson. Philadelphia: Blakiston, 1947. Pp. xiv + 1323. (Illustrated.) $10.00.

The 12th edition of this work appears on the 40th anniversary of the publication of the first under the signature of the senior author. The several revisions form a running commentary on the tremendous growth of physiological chemistry in this first half of the century. Inasmuch as 10 years have elapsed since the appearance of the 11th edition, revision for the 12th is considerably greater than for most of the earlier issues. The coverage of subjects is broader than ever, including tissues, foods, enzyme action, digestion, absorption, putrefaction, excretion, respiration, metabolism, hormones, vitamins, and antibiotics. It is up to date enough to include brief mention of the synthesis of penicillin G and production of isotopes by controlled nuclear fission. The table of atomic weights includes neptunium; however, virginium and alabamine likewise are there.

As in previous editions, laboratory procedures are given in sufficient detail to be followed easily. Presumably the authors are aware that their text is frequently used as a reference work as well as a teaching text. For these reasons the sharpening of certain minor points would be desirable. For example, the first experiments on dialysis include no recommendation for testing the membranes for leaks (p. 9); and perhaps it should be emphasized (p. 516) that, even with the improved Brown procedure, uric acid cannot be added to blood and satisfactorily recovered. In spite of these very minor criticisms, this revision will be welcomed by its friends and will undoubtedly win many new ones.

The text is handsomely bound, and the printing is unusually clean.

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Advances in carbohydrate chemistry. (Vol. 2.) W. W. Pigman and M. L. Wolfrom. (Eds.) New York: Academic Press, 1946. Pp. xiv + 323. $6.60.

The second volume of this series is again a valuable contribution to the field of carbohydrate chemistry. In contrast to reviews published during the war years, it is, as the preface states, international in scope: four reviews are presented by English authors, one by a French author, one by Canadian reviewers, and, in addition, there are four contributions by Americans.

Melezitose and turanose are the subjects discussed by Hudson. Evidence is presented to prove the structure of both the disaccharide and the trisaccharide. A thorough discussion of the anhydro sugars, presented by Peat, includes a comprehensive table of the properties of the anhydro sugars and their derivatives which should prove very valuable. Analogues of ascorbic acid is the topic discussed by F. Smith. Various syntheses are given, and the correlation between physiological activity and structure is presented. Lespieau describes the synthesis of hexitols and pentitols, giving rather detailed