

Naturally amid much agreement is some conflict of opinion, a fact which has its humorous aspect. Thus, at the close of his essay on "The Criminology of Alcoholism," Dr. Sullivan, who believes that parental alcoholism "has a very high degree of importance . . . in the genesis of those conditions of arrested or perverted development which characterise the moral imbecile and instinctive criminal," refers the reader to the essay on heredity. When, however, we turn to that essay, we find no reference to the alleged effects of parental intemperance on the morals of offspring, but a statement that "we should expect those communities which for the greatest number of consecutive generations have had opportunities for chronic drunkenness—or what comes to the same thing, those possessing the most ancient civilisations—to be the most disposed to temperance."

BERNTHSEN'S ORGANIC CHEMISTRY.

A Text-book of Organic Chemistry. By A. Bernthsen. Edited and revised up to date by Dr. J. J. Sudborough. Pp. xvi+658. (London: Blackie and Son, Ltd., 1906.)

THE new issue of Bernthsen's text-book, which has been edited and revised by Prof. Sudborough, is a great advance on former editions. Although the general arrangement of the contents has been preserved, the amount of additional material has so much extended the scope of the original work that, in its present form, it is practically a new book. Some of the more prominent alterations and additions may be briefly noticed. In the first place, there are frequent references to physical chemistry and its application to problems of organic chemistry which are interesting and suggestive. Secondly, more than 100 additional pages at the end of the book are devoted to topics which have undergone recent development, such as the alkaloids, the terpenes, resins, glucosides, and proteins; there is a section on reagents, a section on stereochemistry, and one on physical constants in relation to structure. Though highly condensed, they are clear and explicit, and are furnished with full and useful references (which, by the way, would be more convenient and less disturbing to the reader at the foot of the page than embodied in the text). Finally, the system of nomenclature has been modernised. The term "atomic," applied to alcohols, phenols, &c., has been replaced by "hydric"; "ether," used in connection with organic salts, becomes "ester"; "alcohol radical" is changed to "alkyl," and the word "radical" is properly spelt. The editor seems to have been in doubt about *isomer* and *isomeride*, and *oxy* and *hydroxy*, which are used indiscriminately. The writer entirely sympathises with this uncertainty in the use of certain terms, for the chemist often finds himself awkwardly placed. Not only does he feel obliged to respect the nomenclature adopted by foreign chemists, which is not always happily chosen, but he must conform in some measure to the system laid down by the Chemical Society. The purine derivatives offer a case in point.

NO. 1961, VOL. 76]

E. Fischer derives uric acid from purine and calls it a "trioxy" purine, though the usual formula is innocent of hydroxyl groups. The English equivalent, "trihydroxypurine," is consequently misleading. He is therefore confronted with the alternative of either using German nomenclature which is not official or confusing the reader with its English equivalent.

Another example is that of the carbohydrates, to which the term "saccharide" is applied in Germany by analogy with "glucoside." This analogy is lost in the case of the hexose group of sugars, which are not anhydrides in the ordinary sense. The editor in this case has wisely employed the termination "-ose," and divided the group into mono-, di-, tri-, and polysaccharoses. Incidentally it should be pointed out that the terms monose, biose, triose, &c., which he employs as synonymous with the above are also used to distinguish the sugars by the number of their carbon atoms, with the result that triose is applied equally to raffinose, with eighteen carbon atoms, and glycerose, with three. It is a little unfortunate that the Chemical Society does not tackle these questions of terminology as soon as they arise, and, by a sensible and authoritative revision, remove a real difficulty in the way of writers on organic chemistry. One cannot but think that a generic terminal syllable denoting a particular class of compounds has much to recommend it, and had this been recognised such a word as "proteose" could not have crept into the new *protein* nomenclature.

The defects of the volume before us seem to be few in comparison with its many excellences, and where so much information has been collected and arranged it may appear hypercritical to find any fault.

The following omissions and corrections, however, seem important, and may perhaps be rectified in a future edition. The modern methods used in the manufacture of potassium cyanide, potassium ferrocyanide, and cyanamide are omitted; so are Piloty's synthesis of glycerin, Lawrence's synthesis of citric acid, Bertrand's method for obtaining dihydroxyacetone and other ketonic alcohols, and the citric acid fermentation of glucose. The following errors should also be corrected. The product obtained by Fischer from glycerin by oxidation is mainly dihydroxyacetone, and not glyceric aldehyde (p. 306); in the conversion of pseudouric acid into uric acid, hydrochloric acid, and not oxalic acid, is now used (p. 291); it is not true that all the chlorinated products of benzene up to C_6Cl_6 can be obtained by chlorinating benzene (p. 253), for some of the isomers are not formed in this way; in preparing the esters of the amino acids from the hydrolytic products of protein substances, Fischer and Speier's method is not employed, but the alcoholic liquid is saturated with hydrogen chloride (p. 576).

It only remains to add that, in the writer's opinion the new edition of Bernthsen may claim to be one of the best, if not the best, text-books of organic chemistry for advanced students in the English language.

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