

temperature. Alkylation of tryptamine with the bromoester in boiling ethanol in the presence of potassium carbonate led directly to the lactam of *dl-trans-N*-( $\beta$ -3'-indolyloethyl)-2-aminomethyl-hexahydrophenylacetic acid, m.p. 243–245° (Calcd.: C, 77.0; H, 8.16. Found: C, 77.19; H, 7.94). The latter substance was cyclized by means of phosphorus oxychloride in benzene to a yellow, crystalline solid (m.p. 196–198°), the analysis of which (Found: C, 55.16; H, 5.46) is consistent with its formulation as the dichlorophosphate<sup>6</sup> of *dl*- $\Delta^3$ -dehydroyohimbane (Calcd.: C, 55.23; H, 5.61). Hydrogenation of this salt

(6) K. Gleu, S. Nitzsche and A. Schubert, *Ber.*, **72**, 1093 (1939).

over Adams catalyst gave, after treatment with aqueous alkali, a high yield of *dl-yohimbane*, m.p. 180° (Calcd.: C, 81.38; H, 8.63. Found: C, 81.71; H, 8.35), which was identified by comparison of its infrared spectrum with that of yohimbane derived from the natural source—tracings of both substances dissolved in chloroform were identical in every detail. The synthesis of an optically active form of yohimbane is now under way in this Laboratory.

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## BOOK REVIEWS

**Elsevier's Encyclopaedia of Organic Chemistry.** Series III—Carboisocyclic Condensed Compounds. Volume 12B—Naphthalene. A. Compounds Containing One Naphthalene Nucleus. By F. RADT (Editor). Elsevier Publishing Company, 402 Lovett Boulevard, Houston, Texas. 1953. xlviii + pages 3261–3964. 19 × 26 cm. Price, Single Vol. \$66.00; Series Sub. \$58.00; Complete Sub. \$50.00.

This volume is part VI of Volume 12B, and covers the naphthalenecarboxylic acids with the carboxyl group in the side chain. Previously issued bound parts of various volumes of the different series of this encyclopedia have received glowing praise by reviewers. "We have had full opportunity to convince ourselves of its reliability, completeness and usefulness." "High character with respect to organization, scholarship, scope, accuracy and quality of composition and printing." "A splendid encyclopedia, which should be part of every good chemical library." "A fresh breeze blowing through the tedious field of organic chemical documentation." The present volume lives up to these superlatives in every respect.

This part of Volume 12B is divided into four major sections, monocarboxylic acids, dicarboxylic acids, tricarboxylic acids and tetracarboxylic acids. Each of the first two sections is divided into simple acids, halogen-acids, nitro-acids, hydroxylamino-acids, amino-acids, hydrazino-acids, hydroxy-acids, and oxo-acids. The available information on the tri- and tetracarboxylic acids is very limited. The literature has been completely covered through 1944, but there are many later references, a few as recent as 1952. The data presented are generally more nearly complete than found in "Beilstein." For example, the treatise on Santoninic acid, santonin, and its derivatives covers eighty-one pages, and is very complete. It includes not only the usual brief concise accounts of physical properties, methods of formation, and reactions, but also several reaction scheme charts showing the relationship of various derivatives, and accounts of the physiological properties and therapeutic uses, and analytical methods.

The volume is well indexed. A complete table of contents is followed by a special index of all hydronaphthalene acids recorded in the book, which is very useful, since these compounds are classed as derivatives of the parent aromatic, and would otherwise have to be searched out individually. Each section is prefaced by a unique and quite useful summary table, whereby one may locate quickly any specific isomer. Finally, there are complete subject and formula indices at the end of the book.

The typography should receive special mention. It

stands in strong contrast to most catalogs of this kind, in that it is very readable, and has no sections which require a reading glass to decipher. It is to be hoped that the publisher will be able to maintain the excellent format and editing and at the same time issue the remaining volumes of the set at a more rapid rate in the future.

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**Tratado de Química Orgánica Segunda Edición.** By DR. ENRIQUE ZAPPI, Profesor Titular de Química Orgánica en la Universidad de Buenos Aires. Librería "El Ateneo" Editorial, Florida 340, Cordoba 2099, Buenos Aires, Argentina. 1952. 17 × 24 cm. *Serie Acíclica*: 2189 pp. Price, 3 Ts. Enc. m\$ñ 480.00, equivalente u\$ 35.55. *Serie Cíclica*: 1804 pp. Price, 3 Ts. Enc. m\$ñ 480.00, equivalente u\$ 35.55.

Dr. Enrique Zappi, widely known by his teaching in the Buenos Aires and Plata Universities, is the author of an extensive work on organic chemistry, the first edition of which appeared in 1941.

His work is a very important contribution to the chemical bibliography in the Spanish language, and the publication of a second edition shows the interest that the book has aroused. The new edition maintains the general plan of the original one, but every part of it has been rewritten, a few mistakes have been corrected and a number of new facts or conceptions have been included. In this way, an increase of 300 pages has been obtained over the first edition. Thus, in the Cyclic Series (three volumes) four new chapters have been added under the titles: Carbohydrates with condensed nuclei, Acidic derivatives of amines, Dyeing materials and Biological catalysts.

The work is divided into 6 volumes, the three first dealing with Acyclic Organic Chemistry; the fourth and fifth with aromatic compounds and the last one with heterocycles.

The general distribution of Dr. Zappi's work follows the orientation marked by the classic treatises on organic chemistry: that is to say, it starts with the description of the common characteristics of each homogeneous group of substances, their methods of production and general properties, both physical and chemical. It then describes the main terms, thus avoiding the mistake found in many recently published books in which the author starts with the study of the first term of an homologous series, trying to deduce from this one, the properties that are common to the other terms.

The author does not limit himself to the simple enumeration of properties, research work, etc. He emphasizes, with a critical spirit, everything that explains in a better way the facts most in accord with reality. This critical aspect is due to the didactical purpose of Dr. Zappi's work. So, he purposely exaggerates, on certain points, the simplification of his explanations. In the sixth chapter, of the Acyclic part, for instance, referring mainly to valence and to the electronic theory as applied to organic chemistry, there are some unsatisfactory explanations and some mistakes are discernible. In reference, for instance, to the covalence he asserts that the electrons describe orbits common to both atoms, which does not agree with the conceptions now generally admitted.

He is not right either, when he states: "The sum of both kinds of valences equals 8, and in this way the meaning is found of that mysterious number which appears in the Abegg and Bodländer's theory." However, Abegg established, since 1904, the fact that here are elements the compounds of which maintain a certain relation to their position in the periodic classification of Mendelejeff. He found, for each element, both positive and negative valences, and he stated that the sum of the maximum valences must be 8.

Elsewhere in this chapter he states that the ionic bond is the typical form of combination for inorganic compounds. Such a statement, made in a final form, leads to narrow and mistaken conceptions, explicable in notes destined to the class room in an oral course, but not admissible in a work of such amplitude and importance as this one. More precision in the explanations would avoid possible misunderstandings and errors.

The above mentioned faults are by no means common in this book. On the contrary, the explanations concerning the process of the reactions, the theory of organic chemistry, etc., are dealt with in a masterly way, with true elegance and a profound grasp of the subject.

It is of special interest to Spanish American readers that Dr. Zappi has included in his book a lot of research work done by Spanish speaking men, and that he has found Spanish words not employed before, to translate foreign terms.

It is regrettable that the bibliography is deficient, notwithstanding the great amount of theoretical research work made by Dr. Zappi. He generally limits himself to giving the name of the authors of the reactions, without mentioning the publications in which the original work can be found.

Despite the care taken in the printing, as shown in the small number of typographical errors, we have found that in the first volume of the Acyclic part, that we have in our possession, pages 244, 243, 246, 247, 249, 250 and 255 are blank.

The structural formulas are well represented, although it might have been better to simplify some of them by the use of abbreviations.

Finally, we must insist on the fact that Dr. Zappi's book is not merely a new one on Organic Chemistry, the same as many others recently published, but a real effort to fill a gap in the chemical bibliography in the Spanish language. His book is of great interest, not only as a textbook, filling satisfactorily the requirements of such, but also as a reference book, exceptionally ample and complete, having chapters more detailed and better exposed than in the classic treatises on organic chemistry.

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## BOOKS RECEIVED

December 10, 1953—January 10, 1954

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- RALPH I. DORFMAN AND FRANK UNGAR. "Metabolism of Steroid Hormones." Burgess Publishing Co., 426 So. 6th St., Minneapolis 15, Minn. 1953. 170 pp. \$4.00.
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