

$$k_i = \frac{(k'_{\text{H}_2\text{O},3}a_{\text{H}^3} + k_{\text{H}_2\text{O},3}a_{\text{H}^2} + k_{\text{H}_2\text{O},1}K_{\text{S}^+}a_{\text{H}}) \left( \frac{KK_{\text{PCHO}^+}K_{\text{PCHO}}K_{\text{AH}}K_{\text{AH}_2}[\text{H}_2\text{O}]}{K_{\text{S}}K_{\text{S}^+}} \right)}{\left[ \left( \frac{K_{\text{PCHO}^+}}{K_{\text{B}}} + 1 \right) a_{\text{H}^2} + K_{\text{PCHO}}(K_{\text{Z}} + 1)a_{\text{H}} + K_{\text{PCHO}^+}K_{\text{PCHO}} \right] (a_{\text{H}^2} + K_{\text{AH}_1}a_{\text{H}} + K_{\text{AH}}K_{\text{AH}_2})} \quad (12)$$

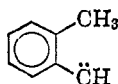
**Catalytic Reactions Involving Azomethines. IX. General Base Catalysis of the Transamination of 3-Hydroxypyridine-4-aldehyde by Alanine** [*J. Am. Chem. Soc.*, **89**, 2098 (1967)]. By DAVID S. AULD and THOMAS C. BRUCE, Department of Chemistry, University of California at Santa Barbara, Santa Barbara, California 93106.

At the bottom of eq 7 the following definition should be added.

$$k_{\text{B},3'} = k_{\text{B},3}/K_{\text{SH}^+}$$

**The Vacuum Ultraviolet Photochemistry of *o*-Xylene** [*J. Am. Chem. Soc.*, **89**, 2367 (1967)]. By HAROLD R. WARD, Metcalf Chemical Laboratories, Brown University, Providence, Rhode Island 02912.

In the first group of structure drawings on page 2371, the bottom structure of the group should be



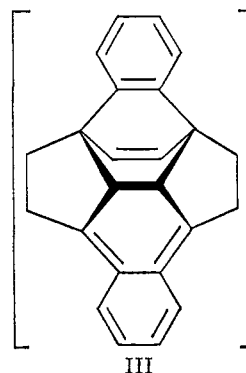
**New Heteroaromatic Compounds. XXV. Studies of Salt Formation in Boron Oxyacids by <sup>11</sup>B Nuclear Magnetic Resonance** [*J. Am. Chem. Soc.*, **89**, 2408 (1967)]. By MICHAEL J. S. DEWAR and RICHARD JONES, Depart-

ment of Chemistry, The University of Texas, Austin, Texas 78712.

In Table I the value of  $\delta_{\text{EBT}}$  for 10-hydroxy-10,9-borazarophenanthrene (I) in EtOH should read  $-29.3$  ppm and not  $-36.8$  ppm as indicated.

**Dibenzoequinene. A Novel Heptacyclic Hydrocarbon from the Photolysis of [2.2]Paracyclonaphthene** [*J. Am. Chem. Soc.*, **89**, 2770 (1967)]. By HARRY H. WASSERMAN and PHILIP M. KEEHN, Department of Chemistry, Yale University, New Haven, Connecticut 06520.

On page 2771 formula III should be



## Book Reviews

**Indole Alkaloids, An Introduction to the Enamine Chemistry of Natural Products.** By W. I. TAYLOR, CIBA Pharmaceutical Company. Pergamon Press, Inc., 44-01 21 St., Long Island City, N. Y. 1966. xi + 148 pp. 13 × 19.5 cm. \$4.50.

This book represents a lucidly written introduction to the chemistry of indole alkaloids. It skims the surface of the large field of present-day research therein and thus only whets the appetite of the potential scholar in the field. Its strength lies in its compactness, but its weakness derives from its potential appeal to only a limited reading audience. While the book may be of aid to the beginning graduate student entering the field of alkaloid research, it is too cursory a test to be of value to the advanced worker and loses in competition with exhaustive review books, *e.g.*, Manske's "The Alkaloids."

While thus of limited value in research, the book is also unlikely to score well in teaching. This is no fault of the author who makes a valiant attempt to make the chemistry of indole alkaloids appear alive, but rather reflects the subtle requirements of teaching the chemistry of natural products. Properly presented, a university course on the chemistry of natural products can be the high point of a graduate student's career, reviewing, strengthening, and collating his knowledge of organic chemistry, acquainting him with related scientific disciplines, and opening to him vast vistas of new research ideas. Improperly taught, such a course can be extraordinarily stale and can be the most effective means of making physical-organic chemists (or even less respectable chemists) out of budding young natural-products scientists. One of the drabest methods of presentation of an organic natural products course is in the form of a survey of the field ("taxonomic chemistry"). Per-

haps the most refreshing and forever-changing mode of delivery of such a course (with different, never repeating contents every year) is in terms of rigorous, critical analyses of recent research data of a limited number of natural products of chemical significance. Fortunately no book is needed nor can any be written for such a special topics course.

While the book had extraordinarily few mistakes (*e.g.*, page 30, line 17, "... molecule..." should read "... molecular..."), it does incorporate some flaws that are worthy of correction. For example, Chart 3.2 shows the detailed mechanism of the intriguing, thermally induced unravelling of akuammicine (the mechanism of the migration of the ethylidene double bond into the piperidine ring is portrayed meaningfully by an arrow in the fourth formula), but omits the mechanistic details of the perhaps most interesting chemical change in the last step(s). The discussion of stereochemistry on pages 68-70 represents a slight rewriting of history. [The stereochemical problems were not resolved by the total synthesis of ajmalicine (since it, as the earlier degradation of the alkaloid, had proceeded through the potentially stereochemically ambiguous 19-ketone), but rather by complete degradation of tetrahydroalstonine and correlation of the degradation products with those of ajmalicine (omitted in the book) as well as by the "measurement of rates of alkylation and the proton topology deduced from nuclear magnetic resonance spectra" (cited in the book).]

The past few years have seen a growing expansion of the market of scientific books accompanying the logarithmic increase of publications in scientific journals. Sometimes the books have been of value in chemical research, although often they are reviews which more advantageously (especially for the scientists' pocketbooks) could find space in review journals. More frequently they occupy

the scarce space of libraries and deplete their low treasuries while offering their authors dubious prestige, being ignored by the readers and merely satisfying the avarice of the more aggressive book companies. This sociological dilemma is annoying in the research field, but becomes tragic in the area of pedagogy. The most important person to accrue benefit from a text is the student. Unfortunately, his needs frequently are ignored in the mad dash toward prestige and profit. The present book suffers from this difficulty.

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**Biochemistry and the Central Nervous System.** By HENRY MCILWAIN, Ph.D., D.Sc., Professor of Biochemistry in the University of London at the Institute of Psychiatry (British Postgraduate Medical Federation), Honorary Biochemist, the Bethlem Royal Hospital and the Maudsley Hospital. Third Edition. Little, Brown and Co., 34 Beacon St., Boston, Mass. 1966. vii + 412 pp. 16 × 24 cm. \$18.00.

As the title of this book implies, it represents an attempt to understand the functional aspects of the central nervous system from the standpoint of biochemistry and, to a lesser extent, pharmacology. The author's aim is to examine the chemical constitution and metabolic patterns of the brain as a whole and in terms of its cellular and subcellular units. He then proceeds to demonstrate how alterations in the metabolic pathways are related to physiological and nutritional variations, growth and development, neuropharmacological agents, and various neuropathological conditions. Although the chapters dealing with chemical composition and metabolic pathways provide an adequate and extensive survey, the presentation is too factual and often cumbersome reading, particularly for the neophyte or one not actually engaged in neurochemical research. In some chapters, such as that on cerebral lipids, too much discussion is devoted to the metabolic pathways which are common to most tissues. Advances in the area of the biochemistry of subcellular organelles from brain tissue are so rapid and the problems of interpretation so complex that the chapter dealing with this topic must be evaluated critically. Throughout the author makes a laudable effort to relate biochemistry to neural transmission and other functional activities. He does, however, deal too extensively with the chemical changes associated with the "electrical stimulation" of brain slices (the author's own work), a preparation which is electrically inexcitable.

One of the best features of the book is that it provides the broad survey of the field of neurochemistry along with a detailed bibliography at the end of each chapter. It can be recommended to chemists, and biologists seeking an introduction to neurochemistry, while the extensive bibliography and accompanying index would be useful to the investigator interested in specific problems in the field.

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## BOOKS RECEIVED, June 1967

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- JELKS BARKSDALE. "Titanium, its Occurrence, Chemistry, and Technology." Second Edition. The Ronald Press Co., 15 East 26th St., New York, N. Y. 1966. 691 pp. \$20.00.
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- RALPH W. G. WYCKOFF. "Crystal Structures." Second Edition. Volume 5. "The Structures of Aliphatic Compounds." Interscience Publishers, John Wiley and Sons, Inc., 605 Third Ave., New York, N. Y. 1966. 785 pp. \$25.00.