

volume. It is almost superfluous to add that the style in which the essays are written is clear and fluent, and we are sure that even the scientific opponents of the great Sanskrit scholar will be glad to possess in a collected and handy form some of the last writings of a man who has scored his mark broadly and deeply upon the edifice of Indian philology.

HETEROCYCLIC ORGANIC COMPOUNDS.

Die Heterocyklischen Verbindungen der Organischen Chemie. By Edgar Wedekind. Pp. iv + 458. (Leipzig: Veit and Co., 1901.) Price 12 marks.

THE author of the book before us states in his preface that his object is to extend those chapters of the elementary treatises on organic chemistry which deal with heterocyclic derivatives, to supply a text-book of the subject for the use of advanced students and the technical chemist, and thus to render unnecessary the possession of exhaustive and expensive text-books.

But, with the best will in the world, we regretfully come to the conclusion that the work is of very slight practical value; heterocyclic derivatives are frequently derived from straight chain compounds possessing complex molecules, and the chemist will find himself compelled to refer to one of those works Dr. Wedekind would avoid the use of in order to elucidate the synthesis of the heterocyclic ring.

One example of this difficulty, which may, indeed, be met with on almost every page of the book, will suffice; speaking of the methods of formation of osotriazoles, we find given as the second method: "intermolecular separation of the elements of water from the hydrazo-oximes of 1:2-diketones



Now unless the student or technical chemist had made a special study of the hydrazo-oximes he would possess the vaguest idea of their method of formation, and would have to refer to a text-book. A well-known and inexpensive work of this nature ("*Organische Chemie*," Richter, ninth edition), under the heading α -hydrazo-oximes, describes, not only the formation of these bodies, but also, on the same page, their intramolecular condensation to the heterocyclic ring.

Dr. Wedekind has adopted an empirical classification which brings substances of most dissimilar constitution under the same heading; for example, in the group—Hetero-rings containing five members:

I. Oxygen as member of the ring.

(1) Single rings with one oxygen,

we find the following bodies, which possess slight genetic connection: furfuran, tetramethylene oxide, γ -lactones, and anhydrides of the acids of the succinic series (it is true the author announces his intention of passing over reduced and easily resolvable rings, such as anhydrides and lactones, but to be consistent, should not a reduced ring, such as piperidine, be also ruled out of court?)

Nor does Dr. Wedekind's system even possess the merit of originality; this system first appeared in the seventh (German) edition of Richter's "*Organic Chemistry*," and has been adhered to in subsequent

editions; it was adopted by Brühl from Anschütz and Schroeter (editor and sectional editor of the above work) in his continuation of the German translation of Roscoe and Schorlemmer's "*Organic Chemistry*" (vols. vi. and vii.).

The genetic or rational system of nomenclature was adopted by Krafft in 1893, and is to be found, further freed from empiricism, in the last instalment of Meyer and Jacobson's "*Organic Chemistry*" (the group of the polynucleic benzene derivatives, 1901).

A due sense of the proportionate importance of certain classes of bodies is frequently absent; thus the very important purine group is dismissed in a few pages as an appendix to the benzopyrimidine group, purines being considered as glyoxalinepyrimidines.

For the rest, the book, which contains an enormous amount of information, seems carefully compiled, up-to-date and accurate; we prefer to find the references at the foot of the page instead of being collected at the end of the first and of the second part; out of 1475 references there are fifteen to English publications, which, considering the amount of work which has been done in this country on heterocyclic rings, seems scarcely a fair proportion.

In view of the facts that the ninth edition of V. von Richter's "*Organic Chemistry*" (Anschütz-Schroeter) has appeared, and that Messrs. Veit and Co. promise the rapid completion of Meyer and Jacobson's admirable handbook, we can only repeat that such books as the one which forms the subject of this notice are completely superfluous.

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OUR BOOK SHELF.

The Induction Motor. A Short Treatise on its Theory and Design, with numerous Experimental Data and Diagrams. By B. A. Behrend. Pp. 105. (New York: *The Electrical World and Engineer*, 1901.

MR. BEHREND, in the preface to his book, rather offers an apology for adding one more to the already overwhelming number of books dealing with electricity and its applications. In some cases an apology of this kind is, unfortunately, justified; but in this instance, in view of the very great importance of the subject from the electrical engineer's point of view and the increasing introduction of polyphase electrical installations, a work on the above subject, written by a writer who, from his continental experience, should know what he is talking about, is to be welcomed. The author's point of view is made clear by a quotation from Prof. J. J. Thomson, printed on the title-page: "The absence of analytical difficulties allows attention to be more easily concentrated on the physical aspects of the question . . . than if he merely regarded electrical phenomena through a cloud of analytical symbols"; and on a first glance at the book, which consists of only 105 pages, one had hoped for a concise and easily comprehensible statement of the subject. This cannot, however, be said to be the case. The book could be very conveniently entitled "A notebook for the designer of induction motors," and to an electrical engineer well versed in polyphase work it would be, without doubt, very useful. The reader who does not possess these qualifications will not find it of much value. The author admits this, in that he adds an appendix containing an extract from Gisbert Kapp's "*Electric Transmission of Energy*," dealing with the elementary theory of the induction motor, and says that after reading this the reader will be better able to understand his own diagrams and deductions. We think, however, that the author