

in which "aza" is used to denote the replacement of a -CH member of a benzene ring by a nitrogen atom. The "Chemical Abstracts" and "Ring Index" systems of nomenclature are also given.

A helpful, though somewhat superficial, introductory chapter serves to acquaint the reader with some of the more important cyclization procedures and mechanisms which form the basis of many of the subsequently described syntheses. Inevitably, a few minor errors have crept into the work which undoubtedly will be corrected in subsequent editions. For example, on p. 136 hydrogen cyanide (rather than cyanogen) is said to react with *o*-phenylenediamine to give 2,3-diaminoquinoxaline. A chapter describing some of the general ultraviolet absorption properties of heterocyclic systems is especially welcome, in view of the scarcity of such collected information. The chapter would perhaps have been more illuminating if the discussion had been illustrated with tables giving data for some specific compounds. On page 560 it is stated that the additional absorption ($\eta \rightarrow \pi$) band in polyaza compounds is shifted progressively to longer wave lengths with every increase in the number of annular nitrogen atoms. This is not strictly true, since pyridazine, with its two adjacent ring nitrogens, exhibits a larger red shift than *sym*-triazine with its alternating nitrogens.

In summary, this is a well-presented, readable volume which, like its predecessors, will be a fine asset to workers in this field.

CENTRAL RESEARCH DEPARTMENT
EXPERIMENTAL STATION
E. I. DU PONT DE NEMOURS AND CO.
WILMINGTON, DELAWARE

R. A. CARBONI

The Chemistry of Drugs. Third Edition, Entirely Revised and Enlarged. By NORMAN EVERS, Ph.D., F.R.I.C., formerly Director of Research to Allen and Hanburys Ltd., and DENNIS CALDWELL, B.Sc., F.R.I.C., Development Chemist to Allen and Hanburys Ltd. Interscience Publishers, Inc., 250 Fifth Avenue, New York 1, N. Y. 1959. 415 pp. 16 × 23.5 cm. Price, \$12.25.

This is the third edition of Evers' "The Chemistry of Drugs" and according to the authors this new version has been completely revised and rewritten. The book is divided into two major sections: The first deals with synthetic compounds which are grouped according to their biological action and the second covers naturally occurring drugs. Most of the latter section is devoted to alkaloids, although such topics as purgatives and antibiotics are also discussed. Chapters on hormones and vitamins are included although, strictly speaking, these substances are not drugs.

The authors' rigid adherence to the arrangement of material often led to difficulties. In the chapter on synthetic antimalarials the usual compounds such as pamaquine, pentaquine, chloroquine and mepacrine are covered. However, quinine and its congeners are described in the section on cinchona alkaloids. Similarly, atropine and scopolamine, prototypical compounds, which form the basis for most of the antispasmodic work, are not discussed in the chapter devoted to this subject because they happen to be solanaceous alkaloids. There are several other instances of this schismatic treatment and the opportunity to point out structural similarity between natural and synthetic drugs is missed. It is unfortunate that the authors did not use a unified approach by classifying all drugs according to their therapeutic similarities.

The method of presentation usually consists of giving the name and formula of a drug, a method or methods of synthesis and concluding with a description of some physical properties such as the melting point and solubility. In the first section each chapter begins with a brief definition of the activity in the heading. Thus tranquilizers are defined as drugs that induce a mental state free from agitation and anxiety. Even if one accepts this definition it is still difficult to see how methylpentynol, a sedative, mephenesin, a spinal cord depressant, and methyl phenidate, a mild stimulant, fall into the same class as the true ataractic drugs chlorpromazine and reserpine. The latter, of course, is not discussed here because it is a product of natural origin.

It would have been better if the authors devoted more space to the mode of action of drugs and to a critical discussion of the merits and demerits of those that are in cur-

rent use. In the chapter on synthetic tuberculostats more attention is devoted to the therapeutically obsolete thiosemicarbazones than to isoniazid which is the present drug of choice.

British names are used in preference to American ones, but this causes no more than a minor inconvenience. The appendices which list official (B.P. and U.S.P.), proprietary and chemical names of the drugs are extremely helpful. The errors in the book are few and easily recognizable.

The authors have compiled a volume wherein the synthesis of fairly common drugs can be found readily. If this was their goal then they have succeeded. I believe that most individuals will find that it is too modest an achievement to warrant purchasing the book.

STERLING-WINTHROP RESEARCH INSTITUTE
RENSSELAER, NEW YORK

S. ARCHER

The Physico-chemical Constants of Binary Systems in Concentrated Solutions. Volume I. Two Organic Compounds (without Hydroxyl Derivatives). By JEAN TIMMERMANS, Hon. Professor, Université Libre, Brussels, Belgium. Interscience Publishers, Inc., 250 Fifth Avenue, New York 1, N. Y. 1959. xiii + 1259 pp. 18.5 × 24.5 cm. Price, \$29.00.

This compilation of numerical data on "binary systems in concentrated solutions" is planned to appear in four volumes, arranged as follows: I, two organic, non-hydroxyl compounds; II, two organic compounds, at least one a hydroxyl derivative; III, one or both components a "metallic compound" (including salts); and IV "all other systems." The only class not to be included is the alloys. The present volume, I, is divided into seven parts, according to whether or not one or both components contain halogens, oxygen, nitrogen, oxygen and nitrogen, etc., in general "according to the degree of physico-chemical similitude of the components." The arrangement followed in each part is clearly explained and is easy to use.

The material for each system is presented in clearly constructed tables, covering first heterogeneous equilibria (vapor pressure, compositions of coexisting phases, freezing points), then properties of phases (density, viscosity, optical, electrical), and finally thermal constants (heats of mixing, etc.). The format is good, two columns to a page, with plenty of space and dividing lines. The legibility is excellent; there is no crowding, the numbers are not too small, and there is no microscopic print.

The book will thus make easily available an immense mass of data of a certain type. For what particular "field" or for what particular group of workers such a collection will be particularly valuable it is difficult to say, for "binary systems at high concentrations" is hardly a "field." This is perhaps not a serious question, for at twenty-nine dollars a volume we may expect that in general only libraries and large laboratories will be purchasing the work. When thus available, however, the book, in its spread and variety, will undoubtedly prove useful even if any one person will probably use only a small part of it.

Volume I, the only one presently available, is not complete in itself. The literature references are cited by author's name and year, and the required information is to appear in Volume IV for the whole series. Volume I, moreover, has no index. While the binary systems involving aniline, for example, can be found easily as long as aniline is the "first component," all those in which it is the "second component" cannot easily be searched out without the final index. Moreover, in the majority of cases each system is identified only according to the "common names" of its components, and it is promised that a Table, to appear in Volume IV, will follow the classification of *Chemical Abstracts*, together with synonyms.

These are only temporary drawbacks in the use of the present volume. In the meantime, however, some difficulty arises from the use of equivocal names such as nitronaphthalene, diethylbenzene, amyl naphthyl ketone, tetracyanoheptane, dichlorobenzophenone, etc. It is not clear how the final index will help this situation, which is an uncertainty in the tables themselves.

The preface implies that the literature has been covered through 1957. The discovery of omissions, if there are any, will have to wait upon the use of the book, as in all compilations. In the present case, however, uncertainties about