

## BOOK REVIEWS

**The Terpenes. Vol. IV. The Triterpenes and Their Derivatives, Hydrocarbons, Alcohols, Hydroxy-aldehydes, Ketones and Hydroxy-ketones.** By the Late SIR JOHN SIMONSEN and W. C. J. ROSS, D.Sc., D.I.C., F.R.I.C., Reader in Chemistry, Institute of Cancer Research, University of London. Cambridge University Press, 32 East 57th Street, New York 22, N. Y. 1957. ix + 524 pp. 21.5 X 15 cm. Price, \$13.50.

Volume IV of the contemplated five volumes of this treatise is devoted to an authoritative and well written discussion of the chemistry of triterpenes. The high standards set previously in volume III are maintained throughout the present work. The most interesting chapters are concerned with the structure elucidations of lanosterol, euphol, the amyryns and lupeol. It would have been helpful to the reader if the complete numbering of carbon atoms had been given not only for lanostane and lupane, but also for  $\alpha$ - and  $\beta$ -amyrane. Extensive listings of physical constants, including ultraviolet and infrared spectra, should make these chapters most useful also to workers not directly concerned with the compounds discussed.

Unfortunately, the literature could be covered only up to the end of 1953, but the authors were able to cite some more recent references to papers on friedelin, onocerin, butyrospermol, etc. A few of the German and Swiss investigators cited in references might have some difficulty recognizing their names but otherwise the text seems free of typographical errors. The very large number of structural formulas constitute a welcome time-saving because the reader rarely has to turn pages to find the structure of a substance named in the text. In the reviewer's opinion the use of Arabic numerals would have been preferable. The only incorrect formulas noticed appear on pp. 102, 196 and 249.

The authors are to be congratulated on this volume and we can only hope that the already announced volume V will be of equal excellence.

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**Epoxy Resins. Their Applications and Technology.** HENRY LEE, Technical Director, and KRIS NEVILLE, Project Engineer, The Epoxylite Corporation, El Monte, California. McGraw-Hill Book Co., Inc., 330 West 42nd Street, New York 36, N. Y. 1957. xi + 305 pp. 16 X 23.5 cm. Price, \$8.00.

Books on structural plastics are not new, but this is one of the earliest to deal solely with epoxy resins. Its content is practical, rather than academic, but portions of several chapters are devoted to a simple treatment of resin preparation and polymerization.

Four chapters discuss the polymerization, or curing, reaction. This is certainly justified, since the amines or organic acid anhydrides which bring this about must be considered as co-reactants, not merely catalysts. Their influence on the properties of the molded object is as great as that of the resin itself. Curing conditions are as important as curing agent, and it is unfortunate that exact conditions were not included with all tables and figures.

The six chapters on epoxy formulating and fabricating are drawn from technical bulletins and unpublished data of raw material suppliers, and from laboratory results of the authors. Such a discriminating compilation has been long in coming, and is very welcome to those who are looking for background information and typical resin formulations.

Chapter eleven on epoxy resin coatings is rather weak. By the authors' own conclusion, coatings applications account for by far the largest volume of resin sold. Yet their treatment occupies only twenty-four of three hundred pages. The book could have been titled, "Liquid Epoxy Resins," and would still be worth its price.

The important problems of safe handling and personal hygiene are discussed in chapter twelve, and warnings are repeated elsewhere. Proper respect for toxic diluents and

curing agents is vital to the successful, large-scale use of epoxy resins.

Generally, the workmanship and the quality print stock contribute much to easy reading. Indexing is adequate, and the table of contents is in gratifying detail. This book will be very useful to all who are concerned with liquid epoxy resins.

DOW CHEMICAL COMPANY  
MIDLAND, MICHIGAN

ROBERT F. HELMREICH

**Methoden der Organischen Chemie (Houben-Weyl).** Vierte Völlig Neu Gestaltete Auflage. Edited by EUGEN MÜLLER, Tübingen. Unter besonderer Mitwirkung von O. BAYER, Leverkusen, H. MEERWEIN, Marburg und K. ZIEGLER, Mülheim. Band XI/1. Stickstoffverbindungen II. Amine. 1. Herstellung. Bearbeitet von H. GLASER, F. MÖLLER, G. PIEPER, R. SCHRÖTER, G. SPIELBERGER and H. SÖLL. Georg Thieme Verlag, (14 a) Stuttgart N, Herdweg 63, Germany. 1957. viii + 1178 pp. 18.5 X 26 cm. Price, \$49.50; Subscription price, \$44.55.

Six chemists, all members of the staff of the Farbenfabriken Bayer, Leverkusen, are to be credited with having written the most recent volume of the new "Houben-Weyl," edited by Eugen Müller. The sections at hand deal exclusively with preparative methods for amines. The material is organized according to reaction types rather than according to nature of the products, in a manner reminiscent of the Weygand-Theilheimer scheme, *i.e.*, amines by direct amination, by exchange, by addition, by reduction, by condensation, etc. In accord with the editorial policy, an endeavor has been made to include a maximum number of methods known to be practical and practicable, rather than to attempt complete coverage.

There is no better way to acquaint the reader with the monumental nature of the present compilation than to quote, *verbatim*, from the table of contents the treatment given

the transformation  $\text{-NO}_2 \xrightarrow{6\text{H}}$   $\text{NH}_2$ , a subject generally occupying one-half page or less in texts on organic chemistry. This citation is made without prejudice to the other discussions, any one of which might have served equally well to show how the tools of laboratory manipulation are laid out in orderly array, and how large a number of them there is.

IV. Amines by Reduction	389 pages
(a) Reduction of Functional Groups	
1. General Discussion	
2. Reduction of Nitro compounds	128 pages
( $\alpha$ ) Catalytic Reduction	
$\alpha_1, \alpha_2, \alpha_3, \alpha_4, \dots$	
( $\beta$ ) Reduction with Iron	
$\beta_1, \beta_2, \dots$	
( $\gamma$ ) Reduction with Hydrogen Sulfide	
( $\delta$ ) Reduction with Tin and Stannous Chloride	
( $\epsilon$ ) Reduction with Dithionite	
( $\zeta$ ) Reduction with Sulfites	
( $\eta$ ) Less Important Methods of Reductions	
( $\lambda$ ) Partial Reduction of Polynitro-compounds	
$\lambda_1, \dots, \lambda_n$	

Format and print of the book are of the customary high standard. The literature has been considered up to, and at least partly through, 1956. The volume contains many hitherto unpublished data and procedures; Aug. 30, 1957, is to be considered the publication date for such material. At an earlier date (1953), this reviewer has expressed his gratification at the resumption of a great tradition, and he continues to do so.

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