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BOOKS

REVIEWS

Organic Reactions in Steroid Chemistry, Volumes I and II. Edited by JOHN FRIED and JOHN A. EDWARDS. Van Nostrand Reinhold Co., 450 W. 33rd St., New York, NY 10001, 1972. 15 × 23 cm. Price: Vol. I (xv + 510 pp.) $26.00; Vol. II (xii + 466 pp.) $24.00; for the 2-volume set $45.00.

This work consists of up-to-date critical reviews of the mechanism and scope of a number of types of transformations which have proven to be particularly useful in steroid chemistry. Most authors are experts in the areas which they discuss and, in consequence, they are able to offer many practical suggestions. Selected experimental procedures are given for all recommended reactions. While other authorities might occasionally question the procedures recommended by a given author, those presented are typically procedures which have proven to be particularly reliable.

Volume I begins with a discussion by Dryden of metal–ammonia reductions and reductive alkylations. The excellence of this chapter is marred only by the lack of any mention of related reactions in higher amines or in trimesitylborane. Following authoritative reviews of ketone reductions by hydride reagents, diborane, and iridium complexes by Wheeler and Wheeler and of hydrogenation by Augustine, Tökés and Throop present a definitive account of techniques which have been used for selectively deuterating steroids. Rasmusson and Arth then give a particularly lucid account of selective oxidation of hydroxyl groups in polyfunctional steroids. A long (109 pages), but selective, chapter by Beard provides a good overview of methods for introducing double bonds. This chapter includes a discussion of the preparation of haloketones which is generally quite useful but which does slight several methods and which fails to make clear that 21-halo-20-ketones readily rearrange to 17α-halo-20-ketones. Both of these deficiencies are rectified in a chapter by Oliveto in Volume II (but without cross-referencing or adequate indexing). A chapter by Gardi and Ercoli gives a thorough coverage of a number of methods for selectively protecting carbonyl and hydroxyl groups but fails to even mention the use of *tert*-butyl ethers and silyl ethers for the protection of hydroxyl groups or of the tetramethyl bismethylenedioxy group for the protection of the dihydroxyacetone side chain. The first volume concludes with an excellent review by Josef Fried and N. A. Abraham of methods for introducing fluorine into steroids.

Volume II begins with a chapter by Matthews and Hassner on the synthesis of oxiranes, aziridines, and episulfides. This is followed by a review by Laurent and Wiechert of methods for selectively introducing alkyl and methylene units into steroids. The Wittig reaction is considered in the following chapter, by Oliveto, which focuses on methods for interconverting androstanes and pregnanes and on procedures for oxygenating the side chain of pregnanes. Heusler and Kalvoda contributed a chapter on functionalization of angular methyl groups and on the conversion of C-19 functionalized steroids to 19-norsteroids. The photochemistry of chromophores containing the carbonyl group is reviewed by Schaffner. Ring expansion and simultaneous ring contraction–ring expansion reactions are reviewed by Boswell, and ring contraction reactions are covered by Scribner. Although the material presented by Oliveto, Boswell, and Scribner is excellent, it is to be regretted that none of them included a discussion of the sequences which have been developed for converting D-homosteroids to 20-ketopregnanes.

The utility of these books, particularly for the nonsteroid chemist, could have been improved by a more thorough indexing. Despite this lack, all steroid chemists and any others who may be concerned with analogous reactions (provided that they are put off neither by the title nor by the cost) will want these volumes at their desks.

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Civilization & Science in Conflict or Collaboration? A Ciba Foundation Symposium. American Elsevier, 52 Vanderbilt Ave., New York, NY 10017, 1972. 227 pp. 16 × 24 cm.

The symposium was held in late June 1971, and was attended by scientists, politicians, economists, and historians from several nations. They attempted to review the origins of today's conflict and reexamine the traditional lack of value orientation in science. The antiscience movement is considered along with such problems as scientific involvement in politics and the effects of social conflicts and recent cutbacks in funds on the creative work of scientists.

Staff Review ■

Analytical Emission Spectroscopy, Vol. I, Part II. Edited by E. L. GROVE. Marcel Dekker, Inc., 95 Madison Ave., New York, NY 10016, 1972. ix + 570 pp. 15 × 23 cm. Price $35.75.

This book contains four sections on excitation of spectra, flame spectrometry, qualitative and semiquantitative analysis, and quantitative analysis. Each chapter covers a particular area and coordinates the earlier basic developments with the more recent work in the field.

Staff Review ■