



the same order in both diosgenin and neodiosgenin. Since these substances are epimeric at C-22, consequent to the above considerations, then previous correlations<sup>4,5</sup> of the relative intensities of these bands with configuration at C-22 do not hold for all cases. To assume retention of configuration at C-22 in passing from II to III requires the further unlikely assumption either that (1) inversion has occurred at C-20 without breaking the C-O bond at C-22, or (2) *cis* addition has taken place after the initial formation of II through *trans* addition.

We intend to extend this work and to present the

results in detail, together with an expanded discussion of the above considerations, in a subsequent publication. Based upon information now at hand, consistent application throughout the steroidal saponins of the criteria of stability toward acid and infrared absorption spectra should contribute to a clarification of the many inconsistencies and ambiguities in the literature of the side-chain stereochemistry of these substances.

RESEARCH DEPARTMENT  
CIBA PHARMACEUTICAL PRODUCTS, INC.  
SUMMIT, NEW JERSEY

J. B. ZIEGLER  
W. E. ROSEN  
A. C. SHABICA

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## BOOK REVIEWS

**The Alkaloids—Chemistry and Physiology, Volume III.** By R. H. F. MANSKE, Dominion Rubber Research Laboratory, Guelph, Ontario, and H. L. HOLMES, The Carwin Company, North Haven, Connecticut (Editors). Academic Press, Inc., 125 East 23rd Street, New York 10, N. Y. 1953. viii + 422 pp. 16 × 23.5 cm. Price, \$11.00.

The third volume of the Manske and Holmes treatise on The Alkaloids has now appeared and continues to meet the same high standards set by the earlier volumes. Again the editors have succeeded in assembling a group of reviews by especially well-qualified authors. Chapters on the cinchona alkaloids (Richard B. Turner and R. B. Woodward), quinoline alkaloids other than those of cinchona (H. T. Openshaw), quinazoline alkaloids (Openshaw), lupin alkaloids (Nelson J. Leonard), imidazole alkaloids (A. R. Battersby and H. T. Openshaw), solanum and veratrum alkaloids (V. Prelog and O. Jeger),  $\beta$ -phenylethylamines (L. Reti), ephedra bases (Reti) and the ipecac alkaloids (Maurice-Marie Janot) are included. The volume is highly recommended.

DEPARTMENT OF CHEMISTRY  
UNIVERSITY OF ROCHESTER  
ROCHESTER, NEW YORK

MARSHALL GATES

**Elementary Introduction to Molecular Spectra.** By BORGE BAK, Chemical Laboratory of the University of Copenhagen. Interscience Publishers, Inc., 250 Fifth Avenue, New York 1, N. Y. 1954. x + 125 pp. 14.5 × 21.5 cm. Price, \$2.90.

The author has compressed the most important topics and equations of modern molecular spectroscopy into one small volume of only 125 pages! He deals with the practical or experimental side of the subject and he treats the modern

theory of molecular spectra as based on wave mechanics. He discusses the microwave, infrared and visible-ultraviolet regions of the spectrum. For this tremendous field he gives only 20 references to the literature. The small index contains only 125 citations. The book is written for biologists, chemists and chemical engineers. They are expected to learn enough about modern spectroscopy from both the theoretical viewpoint and to some extent from the experimental angle, so as to enable them to use modern spectroscopic investigations as a tool in the solution of their own problems. When the complexity of modern quantum theory of molecular structure and spectra is considered, it seems difficult to believe that scientists from other fields can obtain much benefit from a study of this book. The derivations are too brief to be useful as a means of teaching a neophyte this complex subject matter.

On the other hand, the compact nature of this volume may well interest the expert who might use it as a quick reference book. There are a number of awkward phrases which, however, do not detract from the intended meaning. There are very few misprints. The physical appearance and the printing of the mathematical formulas are excellent.

OFFICE OF ORDNANCE RESEARCH  
BOX CM, DUKE STATION  
DURHAM, NORTH CAROLINA

GEORGE GLOCKLER

**Radioactive Isotopes: An Introduction to their Preparation, Measurement and Use.** By W. J. WHITEHOUSE and J. L. PUTMAN. Oxford University Press, 114 Fifth Avenue, New York 11, N. Y. 1953. xvi + 424 pp. 17 × 24 cm. Price, \$10.00.

This book is directed primarily to those who are making practical use of radioactive isotopes. In the words of the authors, "It is intended primarily for the use of scientific