

Book review

Advances in Carbohydrate Chemistry and Biochemistry: Volume 45, edited by R. STUART TIPSON AND DEREK HORTON, Academic Press, San Diego, CA and London, U.K., 1987, x + 351 pages + Author, Subject, and Cumulative Indexes, \$85.00.

Those of us who work in the carbohydrate field have come to take this series for granted. We have come to expect timely, in-depth reviews, and we are accustomed to very high standards of editing and production. The latest volume in this series offers no surprises in this regard. Reviewing it is difficult, as has been noted before, but at least it gives me the opportunity to thank publicly the present authors and editors for a superb job.

The first chapter (54 pages) deals with fast-atom bombardment mass spectrometry of carbohydrates. This excellent review by Anne Dell is especially timely, given the rapid advances made in using this technique for structural analysis of complex carbohydrates. The next three chapters also deal with physical methods for the structural analysis of carbohydrates, albeit, in this case, their secondary structure. Chapter 2 (52 pages) by W. Curtis Johnson, Jr., reviews the application of circular dichroism spectroscopy to problems in carbohydrate structure and stereochemistry, with special attention devoted to the determination of polysaccharide secondary structure. The third chapter (44 pages), by Photis Dais and Arthur S. Perlin, describes the theory, methods of measurement, and implications of proton spin-lattice relaxation-rates for the analysis of carbohydrate structures in solution. Chapter 4 (30 pages) by Kilian Dill deals with a n.m.r. topic of a different nature, namely, the utility of reductively ^{13}C -methylated derivatives for analysis of glycoprotein structure. The final chapter makes an abrupt change from these topics on physical methods to survey the status of knowledge on the chemistry and biochemistry of the sweetness of sugars. Approximately half of the volume (153 pages) is devoted to this thorough review by Cheang-Kuan Lee. The title of the review is actually misleading, since it deals with the sensations of sweetness *and* bitterness, and describes the results obtained for many compounds other than sugars.

In addition to its scientific reviews, this volume pays tribute to two pioneers in carbohydrate chemistry, namely, Burckhardt Helferich and Francisco García González.

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