

## CONTENTS

CONTRIBUTORS TO VOLUME 8 . . . . .	v
PREFACE . . . . .	vii
JAMES COLQUHOUN IRVINE . . . . .	xi

### Relative Reactivities of Hydroxyl Groups of Carbohydrates

By JAMES M. SUGIHARA, *Department of Chemistry, University of Utah, Salt Lake City, Utah*

I. Introduction . . . . .	1
II. Configurational Relationships and Neighboring-group Effects . . . . .	2
III. Selective Etherification . . . . .	16
IV. Selective Esterification and Hydrolysis . . . . .	24
V. Selective Oxidation . . . . .	38
VI. Conclusions . . . . .	44

### The Chemistry of the 2-Desoxysugars

By W. G. OVEREND, *The Pennsylvania State College, U. S. A., and Chemistry Department, University of Birmingham, England*, AND M. STACEY, *Chemistry Department, University of Birmingham, England*

I. Introduction . . . . .	45
II. Nomenclature . . . . .	46
III. Occurrence and Isolation . . . . .	49
IV. Detection . . . . .	53
V. Synthesis of 2-Desoxysugars . . . . .	66
VI. Transformation Products . . . . .	91

### Sulfonic Esters of Carbohydrates

By R. STUART TIPSON, *Department of Research in Organic Chemistry, Mellon Institute, Pittsburgh, Pennsylvania*

I. Introduction . . . . .	108
II. Methods for Sulfenylation of Carbohydrates . . . . .	111
III. Physical Properties and Chemical Stability . . . . .	140
IV. Reductive Desulfenylation and Desulfonyloxylation . . . . .	161
V. Action of Some Alkaline Reagents on Sulfonic Esters . . . . .	165
VI. Action of Alkali-Metal Halides on Sulfonic Esters . . . . .	180
VII. Action of Other Salts on Sulfonic Esters . . . . .	212

### The Methyl Ethers of D-Mannose

By G. O. ASPINALL, *The University of Edinburgh, Scotland*

I. Introduction . . . . .	217
II. Monomethyl-d-mannoses . . . . .	218
III. Dimethyl-d-mannoses . . . . .	220
IV. Trimethyl-d-mannoses . . . . .	224
V. Tetramethyl-d-mannoses . . . . .	228

### The Chemical Synthesis of D-Glucuronic Acid

By C. L. MEHLTRETTER, *Northern Regional Research Laboratory, Agricultural Research Administration, U. S. Department of Agriculture, Peoria, Illinois*

I. Introduction . . . . .	231
II. Reduction of 1,4-D-Glucosaccharolactone . . . . .	233
III. Oxidation of D-Glucose Derivatives by Various Agents . . . . .	236

### D-Glucuronic Acid in Metabolism

By H. G. BRAY, *Department of Physiology, Medical School of the University, Birmingham, England*

I. Introduction . . . . .	251
II. D-Glucuronide Formation in Vivo . . . . .	252
III. Structure of Glucuronides . . . . .	254
IV. Origin of D-Glucuronic Acid and Mechanism of D-Glucuronide Synthesis . . . . .	257
V. Site of D-Glucuronide Formation . . . . .	259
VI. Kinetics of D-Glucuronide Formation . . . . .	260
VII. Enzymes and D-Glucuronide Formation . . . . .	261

### The Substituted-Sucrose Structure of Melezitose

By EDWARD J. HEHRE, *Department of Bacteriology and Immunology, Cornell University Medical College, New York, New York*

I. Introduction . . . . .	277
II. The Concept of Structural Relationship of Melezitose and Sucrose . . . . .	278
III. A Bacterial Degradation of Melezitose to Sucrose . . . . .	282
IV. Melezitose Degradation by Cell-free <i>Proteus</i> Enzymes . . . . .	287
V. Melezitose as a Sucrose-ended Sugar . . . . .	288

### Composition of Cane Juice and Cane Final Molasses

By W. W. BINKLEY AND M. L. WOLFROM, *Department of Chemistry, The Ohio State University, Columbus, Ohio*

I. Introduction . . . . .	291
II. Composition of Cane Juice . . . . .	292
III. Composition of Cane Final Molasses . . . . .	303

### Seaweed Polysaccharides

By T. MORI, *Tokyo University, Tokyo, Japan*

I. Introduction . . . . .	316
II. Agar . . . . .	317
III. Mucilage of <i>Dulsea Edulis</i> . . . . .	328
IV. Carrageenin . . . . .	330
V. Fucoidin . . . . .	340
VI. Laminarin . . . . .	344
VII. Other Polysaccharides . . . . .	347
<b>AUTHOR INDEX . . . . .</b>	351
<b>SUBJECT INDEX . . . . .</b>	370
<b>ERRATA . . . . .</b>	405
<b>Contents of Volumes 1-7 . . . . .</b>	406