## SUBJECT INDEX

- Acetal formation from a pyruvyl thioacetal, catalyzed by methyl triflate, dimethyl(methylthio)sulfonium triflate, or nitroso tetrafluoroborate, pyruvic, c5
- N-Acetyl-N-p-chlorophenyl- $\beta$ -D-ribopyranosylamine derivatives, nucleophilic displacement reactions of some, 262
- Adenosine, 5'-deoxy-, synthesis by coupling methods of, 250
- Adriamycin, conversion of daunorubicin into, 231
- Alkenes, C-(D-glucopyranosyl)-, synthesis, 221
- β-L-Altropyranose, 6-deoxy-6-(dimethylphenylsilyl)-1,2:3,4-di-O-isopropylidene, synthesis of, via hydrosilation, and its reactivity, 276
- 2-Amino-2-deoxy-D-glucose, the reaction of lysine with, 67
- α-Aminonitriles related to lincosamine, stereochemical studies of the synthesis of, 121
- 3,7-Anhydro-2-azi-1,2-dideoxy-D-glycero-D-gulo-octitol, synthesis of malto-oligosaccharide homologues of, for use as photoaffinity reagents, 113
- 1,6-Anhydro-β-D-glucopyranose, kinetics and mechanism of the acid catalysed butanolysis of, 163
- 2,6-Anhydro-D-mannononitrile, X-ray structure of 3,4,5-tri-O-acetyl-, 247
- Anomerization, of furanose rings, 13
- Anthracyclines: synthesis of derivatives of 3amino-3,4,6-trideoxy-L-lyxo- and -L-xylo-hexose, and attempts at fluorination at C-2, carbohydrate components for modified, 151
- α-D-Arabinopyranosyl cyanide, X-ray structure of 2,3,4-tri-O-acetyl-, 247
- Assessment of the values of the C-H-stretching force constants in sugar molecules, 1
- Borate-guar D-galacto-D-mannan complex, thermodynamic data of, 236
- Butanolysis of 1,6-anhydro-β-D-glucopyranose, kinetics and mechanism of the acid-catalysed, 163
- Candida krusei, novel structure of the cellular mannan of the pathogenic yeast, 171
- Carbohydrate components for modified anthracyclines: synthesis of derivatives of 3-amino-3,4,6-trideoxy-L-lyxo- and -L-xylo-hexose, and attempts at fluorination at C-2, 151
- Carbon resonances of peracetylated derivatives, the determination of complex carbohydrate structure by using carbonyl, 47

- Cell walls of regenerating tobacco protoplasts, a  $(1\rightarrow3,4)$ -linked  $\beta$ -D-glucan from the, 285
- Conformational studies of oligosaccharides, application of long-range carbon-proton coupling constants to, 39
- Daunorubicin, conversion into adriamycin and 14-O-acetyldoxorubicin, 231
- Degree of esterification and the distribution of methylated and free carboxyl groups in pectins, determination by n.m.r. spectroscopy, 183
- 5'-Deoxyadenosine, synthesis by coupling methods of, 250
- 6-Deoxy-6-(dimethylphenylsilyl)-1,2:3,4-di-*O*isopropylidene-β-L-altropyranose: synthesis *via* hydrosilation, and reactivity, 276
- Determination of complex carbohydrate structure by using carbonyl carbon resonances of peracetylated derivatives, 47
- Determination of the degree of esterification and the distribution of methylated and free carboxyl groups in pectins by <sup>1</sup>H-n.m.r. spectroscopy, 183
- Dextran, evidence for the formation of different types of phosphate moieties in the phosphorylation with polyphosphoric acid of, 193
- Doxorubicin, 14-O-acetyl-, conversion of daunorubicin into, 231
- Effects of methyl, ethyl, and carboxymethyl *O*-substitution on the anomeric equilibrium of p-glucopyranose, 244
- Enzymic hydrolysis of potentially aromatic glycosides from grape, sequential, 139
- Enzymic hydrolysis of rhizobial 4-O-methyl-Dglucurono-L-rhamnan, 203
- Evolution; chemical and enzymic degradation, and <sup>13</sup>C-n.m.r. spectral evidence of the maintenance of heparan sulfate structure throughout, 292
- Facile regio- and stereo-selective synthesis of  $\alpha$ glycosides of N-acetylneuraminic acid, C1
- Fluorination at C-2 of carbohydrate components for modified anthracyclines: synthesis of derivatives of 3-amino-3,4,6-trideoxy-L-lyxo-and-L-xylo hexose, and attempts at, 151
- 4-Fluoro derivative of uridine 5'-(2-acetamido-2-deoxy-α-D-galactopyranosyl) diphosphate, synthesis of. 77
- 6-Fluoro derivative of uridine 5'-(2-acetamido-2,6-deoxy-α-D-glucopyranosyl) diphosphate synthesis of, 77

C14 SUBJECT INDEX

- 2-*O*-α-L-Fucopyranosyl-D-galactose (H-disaccharide), synthesis of, *via* the trichloroacetimidate method, 254
- Furanose-ring anomerization: a kinetic study of the 5-deoxypentoses and 5-O-methylpentoses, 13
- D-Galacto-D-mannan (guar)-borate complex, thermodynamic data of, 236
- β-D-Glucan from the cell walls of regenerating tobacco protoplasts, a (1→3,4)-linked, 285
- 1,4-β-Glucanase, pea, stimulation of activity of, by oligosaccharides derived from xyloglucan, 213
- D-Gluco-oligosaccharides, preparation by transglycosylation of  ${}^{14}\text{C-labelled}$  (1 $\rightarrow$ 3)- $\beta$ -, 268
- D-Glucopyranose, anomeric equilibrium of, effects of methyl, ethyl, and carboxymethyl Osubstitution on the, 244
- C-(D-Glucopyranosyl)alkenes, synthesis of, 221
- D-Glucose, synthesis of (1*S*,3*R*,4*R*,5*R*)-3,4-(isopropylidenedioxy)-1-[(1*R*)-1,2-(isopropylidenedioxy)ethyl]-2-oxaspiro[4.4]non-6-en-8-one from, 271
- Glycophorins, structural analysis by f.a.b.-m.s. of the mixture of alditols derived from the Olinked oligosaccharides of murine, 27
- Grape, sequential enzymic hydrolysis of potentially aromatic glycosides from, 139
- Guar D-galacto-D-mannan--borate complex, thermodynamic data of, 236
- Heparan sulfate structure throughout evolution; chemical and enzymic degradation, and <sup>13</sup>C-n.m.r.-spectral evidence of the maintenance of 292
- 2-Hydroxy-2-cyclopenten-1-ones, formation of, from polysaccharides during kraft pulping of pine wood, 131
- Isomalto-oligosaccharides, methyl  $\alpha$ -glycosides of, and related compounds, systematic chemical synthesis and n.m.r. spectra of, 87
- (Isopropylidenedioxy)-1-[(1R)-1,2-(isopropylidenedioxy)ethyl]-2-oxaspiro[4.4]non-6-en-8-one from D-glucose, synthesis of (1S,3R,4R, 5R)-3.4-, 271
- Kinetics and mechanism of the acid-catalysed butanolysis of 1,6-anhydro-β-D-gluco-pyranose, 163
- Kraft pulping of pine wood, the formation of 2hydroxy-2-cyclopenten-1-ones from polysaccharides during, 131
- Lincosamine, stereochemical studies of the synthesis of  $\alpha$ -aminonitriles related to, 121

- Long-range carbon-proton coupling constants: application to conformational studies of oligo-saccharides, 39
- Lysine, the reaction of 2-amino-2-deoxy-D-glucose with, 67
- Maintenance of heparan sulfate structure throughout evolution. Chemical and enzymic degradation, and <sup>13</sup>C-n.m.r.-spectral evidence, 292
- Malto-oligosaccharide homologues of 3,7-anhydro-2-azi-1,2-dideoxy-D-glycero-D-gulo-octitol, synthesis of, for use as photoaffinity reagents, 113
- Mannan of the pathogenic yeast *Candida krusei*, novel structure of the cellular, 171
- Mass spectrometry of the mixture of alditols derived from the O-linked oligosaccharides of murine glycophorins, structural analysis by f.a.b., 27
- Neuraminic acid, *N*-acetyl-, a facile regio- and stereo-selective synthesis of  $\alpha$ -glycosides of, Cl
- Novel structure of the cellular mannan of the pathogenic yeast *Candida krusei*, 171
- Nucleophilic displacement reactions of some *N*-acetyl-*N-p*-chlorophenyl-β-D-ribopyranosylamine derivatives, 262
- Oligosaccharides, application of long-range carbon-proton coupling constants to conformational studies of .39
- Pectins, determination by n.m.r. spectroscopy of the degree of esterification and the distribution of methylated and free carboxyl groups in, 183
- (E)-1,3-Pentadiene, 5-(2,3,4,6-tetra-O-acetyl-α-D-glucopyranosyl)-, synthesis of, 221
- Pentoses, 5-deoxy-, a kinetic study of the anomerization of the, 13
- Pentoses, 5-O-methyl-, a kinetic study of the anomerization of the, 13
- Peracetylated derivatives, the determination of complex carbohydrate structure by using carbonyl carbon resonances of, 47
- Phosphorylation of dextran with polyphosphoric acid, evidence for the formation of different types of phosphate moieties during the, 193
- Photoaffinity labels for malto-oligosaccharide binding sites, synthesis of malto-oligosaccharide derivatives of 3,7-anhydro-2-azi-1,2-dideoxy-D-glycero-D-gulo-octitol as, 113
- Pneumococcal polysaccharide S4, a structural re-assessment of the, 279

SUBJECT INDEX C15

Polysaccharide, a re-examination of the structure of the *Streptococcus pneumoniae* type 29, 288

- Polysaccharide S4, a structural re-assessment of the pneumococcal, 279
- Polysaccharides, the formation of 2-hydroxy-2cyclopenten-1-ones from, during kraft pulping of pine wood, 131
- Preparation of <sup>14</sup>C-labelled (1→3)-β-D-glucooligosaccharides by transglycosylation, 268
- 1-Propene 3-(2,3,4,6-tetra-*O*-acetyl-α-D-gluco-pyranosyl)-, synthesis of, 221
- Pyruvic acetal formation from a pyruvyl thioacetal, catalyzed by methyl triflate, dimethyl(methylthio)sulfonium triflate, or nitroso tetrafluoroborate, c5
- Reaction of 2-amino-2-deoxy-D-glucose and lysine: isolation and characterization of 2,5-bis(tetrahydroxybutyl)pyrazine, 67
- Re-investigation of the phosphorylation of dextran with polyphosphoric acid: evidence for the formation of different types of phosphate moieties, 193
- L-Rhamnan, 4-O-methyl-D-glucurono-, rhizo-bial, enzymic hydrolysis of, 203
- D-Ribopyranosylamine derivatives, nucleophilic displacement reactions of some *N*-acetyl-*N*-*p*-chlorophenyl-β-, 262
- D-Ribose, 5-deoxy-, synthesis of 5'-deoxyadenosine from, 250
- Sequential enzymic hydrolysis of potentially aromatic glycosides from grape, 139
- Stereochemical studies of the synthesis of  $\alpha$ aminonitriles related to lincosamine, 121
- Stimulation of pea 1,4-β-glucanase activity by oligosaccharides derived from xyloglucan, 213 Streptococcus pneumoniae type 29 polysacchar-
- ide, a re-examination of the structure of the, 288
- Stretching force constants in sugar molecules, assessment of the values of the C-H, 1
- Structural analysis by f.a.b.-m.s. of the mixture of alditols derived from the *O*-linked oligosaccharides of murine glycophorins, 27

Structural re-assessment of the pneumococcal polysaccharide \$4,279

- Structure of the *Streptococcus pneumoniae* type 29 polysaccharide, a re-examination of the, 288
- O-Substitution, by ethyl, methyl, and carboxymethyl groups, effect of, on the anomeric equilibrium of D-glucopyranose, 244
- Sugar molecules, assessment of the values of the C-H-stretching force constants in, 1
- Synthesis of (1*S*,3*R*,4*R*,5*R*)-3,4-(isopropylidenedioxy)-1-[(1*R*)-1,2-(isopropylidenedioxy)ethyl]-2-oxaspiro[4.4]non-6-en-8-one from D-glucose, 271
- Synthesis of the H-disaccharide (2-O-α-L-fucopyranosyl-D-galactose), *via* the trichloro-acetimidate method. 254
- Systematic chemical synthesis and n.m.r. spectra of methyl α-glycosides of isomalto-oligo-saccharides and related compounds, 87
- Thioacetal, catalyzed by methyl triflate, dimethyl(methylthio)sulfonium triflate, or nitroso tetrafluoroborate, pyruvic acetal formation from a pyruvyl, C5
- Tobacco protoplasts, a  $(1\rightarrow3,4)$ -linked  $\beta$ -D-glucan from the cell walls of regenerating, 285
- Transglycosylation, preparation of <sup>14</sup>C-labelled (1→3)-β-D-gluco-oligosaccharides by, 268
- Trichloroacetimidate method, synthesis of the H-disaccharide (2-*O*-α-L-fucopyranosyl-D-galactose) *via* the, 254
- Uridine 5'-(2-acetamido-2,4-dideoxy-4-fluoro-α-D-galactopyranosyl) diphosphate, synthesis of, 77
- Uridine 5'-(2-acetamido-2,6-dideoxy-6-fluoro-α-D-glucopyranosyl) diphosphate, synthesis of, 77
- X-ray structure of 3,4,5-tri-*O*-acetyl-2,6anhydro-D-mannononitrile (2,3,4-tri-*O*acetyl-*O*-D-arabinopyranosyl cyanide), 247
- Xyloglucan, oligosaccharides derived from, stimulation of pea 1,4-β-glucanase activity by, 213