

News and Views

PLANT POLYSACCHARIDE SYMPOSIUM GUELPH, ONTARIO, CANADA, 13–15 JULY 1994

Some 14 years ago several carbohydrate chemists and biochemists met in Melbourne, Australia, to attend a workshop on Cereal Carbohydrates organised by Professor B. A. Stone, and held during the week before the Xth International Carbohydrate Symposium in Sydney. This workshop was so successful that it set a pattern for future years in which a scientific meeting devoted to cereal carbohydrates and related plant polysaccharides has become a recognised satellite meeting of the biannual International Carbohydrate Symposium. The latest meeting in this series, the eighth, was held in the University of Guelph, Canada, where an excellent scientific programme had been arranged by Professor V. Rasper and his colleagues.

The first day comprised nine lectures on various aspects of the Biochemistry, Structure and Analysis of Plant Polysaccharides. In the first lecture, Dr A. Neszmelyi reviewed the work carried out with Professor J. Hollo (Hungary) on the structure of starch as determined by solid state NMR and the development of computational methods to elucidate three-dimensional conformations. Other lectures included an investigation of the intriguing subject of the internal structure of starch granules, determination of polysaccharide conformations in gels and solids, polysaccharide–lignin associations in the cell walls of grasses, and various aspects of the biosynthesis of starch and cell wall polysaccharides. The programme was completed by the presentation of 26 posters on related topics.

The second day was devoted to six lectures on Biosynthesis and Enzymes, and to three on Functional Behaviour. The morning session included lectures on Starch Branching and Debranching Enzymes, Carbohydrate–Protein Interactions in Amylolytic Enzymes, Limit Dextrinase Inhibitors in Barley and Malt, and β -Glucan Endo-hydrolases from Barley. The afternoon lectures concentrated on Starch, and its Functionality in Low Moisture Baked Goods, the Acceleration of Retrogradation by Freeze–Thaw Cycles, and the Molecular Weight Distribution and Solution Behaviour of Amyloses and Amylopectins. The programme was completed by a further 28 posters.

The final day dealt with Nutritional Applications and Industrial Utilizations. The five lectures on nutrition included two on the Digestibility and Nutritional properties of Starch, a topical account of the Physiological Effects of (1-3)(1-4)- β -D-Glucans in Humans, and an authoritative account of the Classification and Measurement of Carbohydrates by H. Englyst (UK). The final session on Industrial Utilization included a notable survey of the Functionality of Structural Polysaccharides in Cereal Technology and nutrition by L. Munck (Denmark) and an account of the novel Biotechnological Use of Polysaccharides in Protein Separations by R. J. Sturgeon (UK).

Viewed as a whole, the symposium provided a splendid opportunity for plant carbohydrate chemists and biochemists to meet together and exchange news on the latest laboratory findings. Within the relatively compact conference area, this was more easily accomplished by the 117 participants from 15 different countries, than in larger symposia. The organisers also provided thoughtful hospitality for the participants and accompanying guests, and for many, the symposium ended with an extremely pleasant day spent at the Niagara Falls and surrounding countryside.

XVIIIth INTERNATIONAL CARBOHYDRATE SYMPOSIUM OTTAWA, CANADA, 17–22 JULY 1994

The latest International Carbohydrate Symposium in the biannual series was held in the beautiful Canadian city of Ottawa, and attracted some 770 scientists from 37 countries, together with 75 accompanying persons. The Symposium was based on the Westin Hotel where the scientific programme was arranged in adjacent rooms, many of the social events took place, and most of the participants were housed. The decision to use the Westin Hotel by the Organizing Committee, chaired by Dr H. J. Jennings, provided an ideal location, and together with a first class scientific programme, ensured the success of the Symposium.

The scientific programme began on 18 July with the Whistler Award Lecture for 1994 by Professor C. H. Wong (USA) on 'Enzymatic and Chemo-enzymatic Synthesis of Carbohydrates'. The range of current carbohydrate interests

can be judged by the titles of the nine plenary lectures which followed during the week—‘Chlamydial Lipopolysaccharide: Chemical and Antigenic Structure, Biosynthesis, and Biomedical Application’ by H. Brade (Austria), ‘Stereo-selective Syntheses using Carbohydrates as Chiral Auxiliaries’ by H. Kunz (Germany), ‘Ubiquitous and Temporal Glycosylation of Nuclear and Cytoplasmic Proteins’ by G. W. Hart (USA), ‘Development of Novel Antiviral Nucleoside Analogues’ by J. W. Gillard (Canada), ‘Glycals in the Synthesis of Oligosaccharides and Glycoconjugates’ by S. J. Danishefsky (USA), ‘Glycosaminoglycans: Synthetic Fragments and their Interaction with Serine Protease Inhibitors’ by C. A. A. van Boeckel (Netherlands), ‘Enzymatic Cleavage of Glycosides: How does it happen?’ by S. G. Withers (Canada), ‘Design and Antiviral Properties of Influenza Virus Neuraminidase Inhibitors’ by P. M. Colman (Australia), and ‘The Sugar Chain Structures of Carcinoembryonic Antigen and Related Normal Antigens’ by A. Kobata (Japan).

The remainder of the scientific programme consisted of four simultaneous sessions of invited lectures covering A, Structure; B, Synthesis; C, Biochemistry; D, Biotechnology/Industry, together with two sessions of posters. One hundred and twenty-eight of the posters were devoted to Structure, 225 to Synthesis, 100 to Biochemistry and 39 to Biotechnology/Industry. Although the total number of posters (492) was less than at the Paris meeting in 1992 (663), the relative interest in the four subject areas was similar, with Synthesis being the most popular topic. The Symposium Abstract Volume contained some 560 pages, but was of a more reasonable size (A5) and weight than certain recent volumes, and was widely used during the Symposium.

One impression of the Symposium was the continuing and increasing interest in the structure and analysis of biologically active carbohydrates, many of which form part of glycoproteins or proteoglycans isolated from a wide variety of cells. Much of this work is carried out on the sub-micro scale, using a range of recently developed molecular biological methods, high resolution NMR and FAB-MS techniques. A significant proportion of the posters devoted to synthesis also dealt with biologically active carbohydrates. By contrast, the full potential of carbohydrates in biotechnology does not yet appear to have been realised.

The Symposium was completed by a programme of social events and tours which enabled participants to enjoy many parts of Canada’s Capital and the picturesque countryside. Overall, this was one of the most scientifically interesting, stimulating and enjoyable Symposia that I have been privileged to attend.

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