

Obituary: Nathan Sharon (1925–2011)

Harry Schachter • Hans Vliegthart

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On June 17, 2011, Nathan Sharon, Emeritus Professor of the Department of Biophysics at the Weizmann Institute of Science, Israel, passed away in Tel Aviv, Israel. Born in November 1925 in Brest-Litovsk, Poland, he moved with his family to “The mandate Palestine” in 1934. After military service, he studied chemistry at the Hebrew University in Jerusalem and obtained his PhD in 1953. In 1954 he moved to the Department of Biophysics at the Weizmann Institute, headed by Ephraim Katchalski-Katzir. Nathan was there appointed full Professor in 1968. When Katzir was elected President of the State of Israel, Nathan succeeded him as head of the department in 1973, a position that he occupied till 1990 with intervals. Between 1976 and 1986 he served as Dean of the Faculty of Biophysics and Biochemistry. Of great importance for the development of his broad knowledge of and insight in biochemistry were his postdoctoral studies in the U.S. with Fritz Lipmann and Roger Jeanloz at the Massachusetts General Hospital, Boston, and Daniel E. Koshland at the Brookhaven National Laboratory. With Jeanloz he discovered the novel bacterial monosaccharide constituent bacillosamine (2,4-diamino-2,4,6-trideoxy-D-glucose). Apart from the finding as such and its potential relevance for

the development of new antibacterial drugs, it made him aware of the importance of chemical structures in relation to their function. Nathan held a number of visiting professorships in the US and Europe in the years 1968–1994. He was a highly esteemed guest in many laboratories, all over the world and often an invited participant at international meetings. His encyclopedic knowledge of biochemistry and biochemists was famous as well as the small black notebook, he had always at hand and wherein he took notes of all relevant recent (unpublished) findings. In the Joint Committee of IUPAC and IUBMB on Biochemical Nomenclature this knowledge was of great value, in particular for all glyco-related documents that were produced when he was a member of JCBN. His research was mainly focused on lectins. All aspects of these compounds had his interest. He investigated lectin specificity in terms of carbohydrate structures. The primary and three-dimensional structures of these proteins fascinated him as well as the source and genetics. He converted the lectin research into a relevant field being important for insight in plasma membrane structure and function, immunology and cancer. Lectins found many applications *e.g.* for fractionation of glycoproteins and cells. Especially the finding that the lectin from the peanut plant can be used for the separation of mature and immature thymocytes attracted quite some attention. This important immunological tool was applied by his coworker Yair Reiner to carry out bone marrow transplantations in victims of the Chernobyl nuclear disaster and in immunodeficient “bubble” children. Bacterial lectins formed another class of lectins explored by him, with emphasis on their roles in pathogenesis and the use of sugars in antiadhesion therapy of microbial diseases. Together with his colleague for many years, Halina Lis, he wrote several books and review articles on lectins. They belong to the standard literature in this field. He was a very

H. Schachter
Molecular Structure and Function Program,
Hospital for Sick Children,
555 University Avenue,
Toronto, Ont M5G 1X8, Canada
e-mail: glcnactrans@hotmail.com

H. Vliegthart (✉)
Bijvoet Center, Utrecht University,
Padualaan 8,
NL 3584 CH Utrecht, The Netherlands
e-mail: j.f.g.vliegthart@uu.nl

gifted writer as is evidenced by his more than 450 research articles, his contributions for the general public in publications and in broadcasting programs. His book on complex carbohydrates based on lecture notes and published in 1975, was for a long time a text used for teaching in a number of institutes. With his characteristic enthusiasm he wrote in the preface: “I tried to convey the feeling of excitement and fascination which, I believe, permeates research on carbohydrates, which is now undoubtedly one of the liveliest and most exciting fields in biochemistry”.

The great impact of his work on carbohydrates and glycoproteins during more than 50 years has brought him a number of distinctions and honors *e.g.* the Fogarty International Scholarship of at NIH, Bethesda (1977), the Weizmann Prize for Sciences (1987), the prestigious Bijvoet Medal of Utrecht University, The Netherlands (1989), Honorary doctorate from the Université René Descartes, Paris, France (1990), Membership of the Israel Academy of Sciences and Humanities (1992), the Israel Prize in Biochemistry (1994), the Rosalind Kornfeld Award for Lifetime Achievement in Glycobiology from the Society for Glycobiology (2008).

Nathan was very active in various international organizations as national representative *e.g.* FEBS (Federation of

European Biochemical Societies) and the IGO (International Glycoconjugate Organization). For both bodies, he organized the large International Symposia in Israel. He was a member of many editorial boards including the Glycoconjugate Journal. For that journal he was responsible for review articles. His referee reports were clear and critical, but always fair to the authors.

Nathan approached everybody with a positive attitude. At their home Nathan and Rachel created the atmosphere wherein the guest felt comfortable and welcome. Nathan will be greatly missed, first and for all by Rachel and his family, but also by the scientific community.

