



Shraga Segal
(1939–2006)

Obituary

The untimely death of Shraga Segal, in his sixty-seventh year, was a saddening loss for his family and many friends in Israel and abroad. He died of a heart attack on February 26, 2006. Shraga was the founder of the Department of Microbiology and Immunology at the Faculty of Health Sciences, Ben Gurion University of the Negev, in 1975. He was Chair of the Department until his appointment in 1994 as Dean of the Faculty of Health Sciences, and in 2002 he was appointed as Deputy Rector of the Ben Gurion University.

Born in Przasnysz, Poland, on April 29, 1939, Shraga and his mother were forced to flee Poland during World War II after losing most of his family, including two sisters. For several years they lived in Russia as very poor immigrants, and in 1949 they immigrated to Israel. As a child, Shraga spent much time working after school helping his father support the family, and used the night hours to prepare homework and read as many books as possible. He was always curious, with a remarkable thirst to learn, a compassionate person with great leadership skills. He was extremely charismatic and inspired others to search for unconventional solutions for basic scientific questions.

Shraga did his undergraduate studies in microbiology and immunology at Bar-Ilan University and continued at the Weizmann Institute of Science, from which he graduated in 1971. He performed his postdoctoral training at the Johns Hopkins University in Baltimore, Maryland (1971–1972), and the Stanford University School of Medicine in Stanford, California (1972–1974). Upon his return to Israel, Shraga took upon himself to build the Department of Microbiology and Immunology at the newly established Faculty of Health Sciences at

the Ben Gurion University, Beer Sheva, in addition to his position as a researcher at the Department of Cell Biology of the Weizmann Institute of Science.

Throughout the years, Shraga's curiosity could never be satiated, and his interests included a plethora of scientific topics in immunology, general biology, and the natural sciences. His wide interest resulted in scientific publications on diverse topics in the field of immunology, and included the determination of the immune functions of macrophages and lymphoid cell populations, their trans-regulation, and their effects on cell differentiation, maturation, and acquisition of effector functions. Shraga expanded the concept of T cell-B cell collaboration by showing that macrophages from T cell-deprived mice were impaired in their ability to initiate antigen-specific T cell-mediated immune responses. He suggested, therefore, that the immunogenic properties of peritoneal macrophages are dependent on thymus-derived lymphocytes, which are likely to regulate critical steps in the induction of macrophage differentiation. He later used B cell-deprived mice in order to demonstrate that B cells are also required for the induction of antigen-reactive proliferating T cells.

Above all, Shraga was fascinated by the possible involvement of MHC molecules in the regulation of so many immune functions, by the potential differential involvement of class I and class II molecules in distinct immune responses, and by the polymorphic nature of these molecules, which also dictated the susceptibility and resistance of hosts to a wide range of pathologies. His major contribution to the field was the observation that H-2K and H-2D class I MHC glycoproteins are not equally expressed among cells and that, in contrast to

primary tumor cells, which express both H-2K and H-2D glycoproteins, highly metastatic tumor cells express H-2D but not H-2K. These results led him to suggest that H-2K, but not H-2D, glycoproteins are immunogenic entities that are required for the effective recognition of disseminating tumor cells by the host's immune system.

Shraga co-authored more than 230 manuscripts, many of which were published in highly prestigious scientific journals. A significant part of his published work reflected the writing of his students and collaborators, since he himself was too busy looking for new scientific avenues and attempting to solve new enigmas, than to summarize and discuss "old data". A common joke among his students was that Shraga published his discoveries in the "Journal of the Drawer", a place in his desk where he used to keep data that he considered interesting and that related to new hypotheses and ideas that were ahead of their time and too revolutionary for the present. He regarded the data kept in his desk drawer as a fine Cabernet that is stored in a dark cellar in order to improve with age and reach full maturity.

Shraga was a bright scientist and dear friend, a man of extraordinary sensitivity and abundant humor. Even his most serious scientific discussions would be introduced with anecdotes and funny stories. He was a non-conformist, highly original in his ideas, and a true pioneer and leader. He never spared time and energy in his endless attempts to serve the larger community of scientists and volunteered to serve on numerous national and international committees.

Shraga was gifted with a phenomenal memory. His imaginative insights and experimental prowess enabled

him to make significant contributions to the field of tumor immunobiology. He was a brilliant thinker, but accorded his students full freedom of inquiry, which he regarded as fundamental for a true research environment. He had the ability to ask fundamental questions and explore them with great enthusiasm and imaginative verve. A special smile would illuminate his eyes when exciting ideas were encountered, and each finding became a springboard for speculation and a starting point for new projects. His example and aura inspired many young scientists who followed in his footsteps. Shraga's loyalty to and deep affection for his friends, students, and peers were unsurpassed. He loved the University and was proud of the Faculty and the Department.

Shraga was a science guru for his students and peers and a refreshing source of new and stimulating ideas. He had a natural ability to connect with people. Having the privilege of working with him for so many years, it was not surprising to see the deep sorrow and outpouring of love and respect his loss evoked. His sudden passing has left a deep void in the academic community which will be difficult to fill.

Shraga is survived by his wife Mazal, daughter Dorit, sons Rony and Arik, and their spouses and children.

May his memory be blessed.

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