On Presentation of the Proctor Medal of the Association for Research in Vision and Ophthalmology to Dr. Hans Bloemendal

Abraham Spector

I recently asked Hans Bloemendal’s wife for some information concerning her husband’s personal life. Her brief response dramatically changes one’s perspective of this highly productive scientist. Indeed, her comment that “he also seems to do something in biochemistry” is more than an amusing observation. It implies a significant life aside from his science.

Hans was born in 1923 in Fulda, Germany. His father was Dutch and his mother German. Since Jewish children were not allowed to study at public high schools in Nazi Germany, he was sent to Amsterdam to continue his schooling. In 1939, his parents also came to Amsterdam in an attempt to escape the Nazi regime. But, this was not to be. The war began, and in 1943, his parents and his sister were killed by the Nazis, with Hans being the only member of the family saved by the underground movement. These horrible events left an indelible mark on Hans of which only his closest friends are aware.

Hans has a fine voice and significant musical talent. At an early age, he began to study Jewish religious music. In 1949, while still a student, he was appointed a cantor in the most prominent synagogue in Amsterdam, and in 1954, he became the chief cantor of this synagogue, a position he has now held for 36 years. His singing brought him considerable prominence, not only in the Netherlands, but throughout Europe. He has made a number of records, some with the Choir of the Netherlands Broadcasting Company. He has performed in concerts, been featured on radio programs, and appeared on television. He has performed five times for the Queen of the Netherlands.

There is still another career that Hans has quietly pursued. He is a successful writer, having published four books of children’s stories and a text on Hazanuth—the art of the cantor.

But what of Hans Bloemendal’s scientific career? He received his PhD in 1957 from the University of Amsterdam. His first two papers are concerned with the qualitative analysis of organic sulfides, but his third paper indicates that he had found the lens. The paper discusses the development of starch electrophoresis of bovine lens protein. A few years before receiving his PhD, Hans began working in the Department of Anatomy at the University of Amsterdam, and it is probably there that he was introduced to the lens.

In 1965, only 8 years after receiving his PhD, Hans was appointed Professor of Biochemistry at the School of Medicine in Nijmegen, and shortly thereafter, he became the Director of the Preclinical Institutes at Nijmegen. In this capacity, Hans became perhaps the only chairman of a major biochemistry department in the world with an interest in lens cell biology. Early on, his work developed two major themes, the general mechanism of protein biosynthesis and elucidation of the major proteins of the lens and their biosynthesis. He began his studies on protein biosynthesis by studying what was then called soluble RNA and interaction of this RNA with microsomes. This work swiftly led to examination of polysomes and mammalian messenger RNA, development of cell-free systems for protein synthesis, the synthesis cDNAs, and finally, the study of genes, their sequences and relationship to mRNA, and their control of gene expression. One might say that a review of Hans’s work reflects the developments in the field of protein synthesis and gene expression over the past 20 years. A similar statement can be made about his work in the lens starting with his interest in purification of the lens crystallins in general and then alpha crystallin in particular. He quickly became interested in and contributed to our understanding of all aspects of the lens proteins and their synthesis. His laboratory was the leader in elucidating the primary structure of many of the lens crystallins and introduced molecular biology into the lens field.

I recognize that this very brief summary does not adequately describe Hans’s work in terms of originality, scope, and importance. It is difficult to summarize in a few minutes the work of a scientist who has published over 350 papers. Let me simply assure you the work is highly original, broad in scope, and certainly important. Without his contributions, lens-protein chemistry and molecular biology would not have achieved its present position. Yes, Hans Bloemendal seems to have done something in biochemistry.