



Stella Niemierko
(1906–2006)

The Polish biochemical and neurobiological Community have learned with deep sorrow of the death of Professor Stella Niemierko. She died on 20th May barely a few days after celebrating her 100th birthday. Her long-standing scientific career was connected with the Nencki Institute of Experimental Biology and she is considered one of the founders of neurochemistry in Poland.

Professor Stella Niemierko was born on May 8, 1906 in Łódź into a family of medical doctors. She has started her work in the Nencki Institute of Experimental Biology in 1926. Professor Niemierko's PhD dissertation on animal physiology was supervised by Prof. Kazimierz Białaszewicz, director of the Nencki Institute and lecturer at Warsaw University. For a few years she worked with Prof. Włodzimierz Missiuro at the University of Physical Education (Warsaw) and during World War II she worked with Prof. Tadeusz Chrapowicki at the Childrens Hospital in Kopernik St., Warsaw.

Immediately after World War II, Stella Niemierko together with her husband Prof. Włodzimierz Niemierko and professors Jerzy Konorski, Liliana Lubińska, Jan Dembowski, and Stanisława Dembowska successfully re-established the Institute in Warsaw, from the temporary location in Łódź. At both sites Stella Niemierko and Włodzimierz Niemierko conducted pioneer work investigating the metabolism of phosphorus in the wax moth (*Galleria mellonella*). The first results of those investigations appeared in *Acta Biologiae Experimentalis* (now *Acta Neurobiologiae Experimentalis*), at that time the only journal in Poland publishing biochemical papers in the English language. These investigations were conducted successfully for several years together with a team of younger scientists and brought about important new data in the field of insect metabolism.

Professor Stella Niemierko is considered as one of the founders of neurochemistry in Poland. She writes in her biographical article: "In the late fifties it occurred to me that it would be important to introduce neurochemistry to the Institute, already well known for its research in neurophysiology, particularly since no other laboratory of functional neurochemistry existed in Poland". The first national research team to introduce a neurochemical approach to systems based physiology was established, within the Department of Biochemistry, in 1959. Four years later, Prof. Niemierko officially founded the Laboratory of Neurochemistry.

Encouraged by Liliana Lubińska she decided to undertake a joint project on the axoplasmic flow in the peripheral nervous system. In view of the often considerable disparity between the size of the cell body and the extent of the processes, the investigation of axoplasmic transport was extremely important. It should be pointed out, that

at this time, it was generally accepted that the axoplasm moves from the cell bodies to the nerve terminals as a solid column at a low speed similar to that of the elongation of the axons. Using acetylcholinesterase (AChE) as a marker of some subcellular axoplasmic components Lubińska and Niemierko teams clearly showed that the transport of AChE is bidirectional. In the anterograde direction the velocity is characteristic of “fast” transport and is twice that in the retrograde direction. Major findings of these studies were published in the leading journals: *Nature*, *Science*, and *Journal of Neurochemistry*. These results and their interpretation were not at first readily accepted, but they provoked many similar studies in other laboratories. The resulting new data confirmed the existence of bidirectional movement of some axoplasmic components.

Around 1972 Stella Niemierko, encouraged by Jerzy Konorski, became interested in the central nervous system, particularly in the neurochemical basis of learning and memory. In collaboration with the team of Bogusław Zernicki she dealt with biochemical changes in the visual system of cat deprived monocularly of light and visually stimulated thereafter. For these studies she was awarded a national prize for scientific achievement. In addition, some experiments in collaboration with Kazimierz Zieliński were carried out by Stella Niemierko and her collaborators, which questioned the current view on the role of the mysterious peptide – scotophobin. Its effect on the mobility of animals was discovered.

Professor Stella Niemierko supervised several PhD dissertations conducted mostly, but not exclusively, at the Nencki Institute. She initiated and maintained scientific collaboration with several centers in Poland, including the Medical Research Center of the Polish Academy of Sciences, contributing to the development of neurochemical research projects in these institutions.

Following her retirement in 1977, Stella Niemierko has continued to participate actively in the scientific life of the Nencki Institute. Currently, research in the field of neurochemistry is pursued by Prof. Niemierko’s pupils and their successors.

In addition to her achievements in research, Prof. Niemierko has also been involved in other important activities at the Nencki Institute. Between 1968 and 1976 she served as the Institute’s vice-director. For many years she also chaired the Scientific Board of the Institute. She served on the editorial board of *Acta Neurobiologiae Experimentalis*. Prof. Niemierko was a member of several Polish and international scientific societies: Polish Neuroscience, Biochemical and Physiological Societies (Honary Member), International Brain Research Organization (IBRO), International Society for Neurochemistry (ISN), European Society for Neurochemistry (ESN). Her achievements and services have been recognized with many awards.

She won respect and admiration not only for her scientific achievements but also for giving a helping hand to everybody. We, her pupils and close collaborators, consider ourselves very fortunate for being able to stay close to her for all these years. She has shared with us our successes and misfortunes. She was like a beloved member of our families. She will be greatly missed and always remembered.

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