

## PROFESSOR WANDA LEYKO (1921 – 2015). A BIOGRAPHICAL NOTE

Professor Wanda Leyko from the Stodolski family, a daughter of Henryk and Zofia, maiden name Ostrowska, was born on 1<sup>st</sup> December 1921 in Bierzyn, in the Włocławek district, however, since the age of two she lived in Warsaw. In 1939 she graduated from secondary school named after Cecylia Plater-Zyberkówna in Warsaw. Unfortunately, her youth and further education coincided with the tragic years of the German occupation of Poland. Her studies in a clandestine study group of the State Technical College in Warsaw started in 1942 were interrupted by the outbreak of the Warsaw Uprising in 1944. She was also a member of the Home Army and was actively involved in the underground resistance movement. After the collapse of the Warsaw Uprising she went through the transitory camp in Pruszków and next, having been transported to Kielce, she was forced to do hard physical work building military fortifications. When the war finished, for a short time she was employed as a chemist in the State-owned Water Supply Plant in Upper Silesia at the Laboratory for Water Control.

In autumn 1945 Professor came to study in Łódź, where she stayed until the end of her life. In 1947 she graduated from the Faculty of Chemistry at the Lodz University of Technology and obtained a Master of Science degree in chemistry. During the last year of studies she got employed as an assistant at the Division of Chemical Technology, Lodz University of Technology, where she worked until the year 1950. At the same time she took up a job at the Division of Pharmacology, and next at the Division of General and Physiological Chemistry at the University of Lodz. Later, after disaffiliating the medical faculties from the University of Lodz, she worked at the Medical Academy in Lodz in the team of Prof. B. Filipowicz until 1961, first as an assistant and since 1955 as an adjunct. In 1951 she obtained a Ph.D. degree in mathematics and natural sciences at the Faculty of Mathematics and Natural Sciences, the University of Lodz, having defended the dissertation "Oxidative-reducing potential of cysteine". She was awarded a title of a habilitated doctor in 1960 at the Faculty of Biology and Earth Sciences, the University of Lodz, presenting the dissertation "Adenine compounds in human blood". She obtained a title of associate professor in 1969 and full professor in 1975 at the Faculty of Biology and Earth Sciences, the University of Lodz.

In 1961 Prof. A. Dmochowski appointed her as the Head of the Division of Analytical Biochemistry at the Department of Biochemistry, the University of Lodz. When Prof. Dmochowski retired in 1967, she became the Head of the Department of Biochemistry. In 1968 she created at the University of Lodz the first in Poland Division of Biophysics, subsequently transformed into the Department of Biophysics. She also held other important positions at the Faculty of Biology and Earth Sciences, the University of Lodz, including the position of the Head of the Institute of Biochemistry and Physiology and the Institute of Biochemistry and Biophysics. She also served as a Deputy Dean of the Faculty of Biology and Earth Sciences. For many years she was the director of the Field Station in Suszek in the Bory Tucholskie Forest, which conducted the examination of the level of environmental pollution and its influence on organisms.

Professor Wanda Leyko had an exceptional talent for inspiring other researchers and arousing their interest in biophysics. Her scientific work was focused on biophysical investigations, which dominated throughout her career until the end of her life and since 1989 have been continued by her followers and students. According to the chronological and thematic order, her studies involved the following topics: carbohydrate metabolism (metabolites and coenzymes) of red blood cells; total balance of phosphate metabolism in human, rabbit, dog, pig and pigeon erythrocytes; quantitative measurements of the content of nucleotides, mainly adenine, in the blood of healthy individuals and patients with diseases such as diabetes, tuberculosis, haemolytic anemia, multiple sclerosis, chronically progressive rheumatoid arthritis and others; the *in vivo* and *in vitro* influence of gamma, X and UV radiation on the structure and function of biopolymers (proteins, enzymes, DNA), cells (erythrocytes, lymphocytes, granulocytes, chloroplasts, etc.) and tissues (preserved blood, lymph glands, etc.). Working with proteins, Professor Leyko was particularly interested in respiratory proteins (myoglobin, haemoglobin) and enzymes such as catalase, peroxidase, superoxide dismutase, which were analyzed in terms of their role and participation in removing harmful oxygen from the body. Her other interest was the study of biological membranes, mainly the ultrastructure and function of erythrocyte membranes. She examined the changes

occurring at the molecular level under the influence of ionizing radiation, temperature and pharmacological agents. Professor Leyko was one of the first researchers in Poland who introduced the electron paramagnetic resonance (EPR) and spectroscopic methods, including spin labels and fluorescence probes, for the investigation of the fluidity and viscosity of biological membranes. She was also interested in the problem of the influence of the natural environment on living organisms at the molecular level.

Rich scientific achievements of Professor Wanda Leyko include over 200 experimental papers and review articles as well as over 150 conference communications. Her papers were published in the majority of international journals and have had numerous citations both by Polish and foreign authors. She was one of the co-founders and the first editor-in-chief of the journal "Issues of Contemporary Biophysics" founded in 1976 and subsequently transformed into "Current Topics in Biophysics", the editor of "Folia biochimica et biophysica" (Scientific Press of the University of Lodz) and a member of the editorial staff of "International Journal of Radiation Biology". She was also an author or co-author of many popular and widely used academic handbooks in the field of biophysics. The work of Professor Leyko as a lecturer was highly appreciated and she was very popular among students. She conducted lectures in biophysics at the University of Lodz and the Military Medical Academy in Lodz as well as lectures in physiological chemistry at the Medical Academy in Lodz and biochemistry at Lodz University of Technology.

Professor mentored many generations of biologists in the fields of biochemistry and biophysics at the University of Lodz. The proof of her great engagement in teaching young professionals, including scientific workers, was the fact that she was a supervisor of almost 100 masters of science and 54 doctors. She also supervised and supported many students and co-workers preparing their habilitation theses.

Her legacy is being continued by a large group of professors, habilitated doctors and doctors. Today it is hard to estimate the Professor's participation in the boards assessing the scientific achievements of the candidates for scientific degrees and the title of professor, defense of doctoral dissertations and habilitation colloquia at the sessions of the Faculty Council, where she often took the floor in scientific debates and her opinions were always received with attention and respect.

The participation in educating the scientific staff involved also reviewing 75 doctoral dissertations, 42 habilitation theses and 21 opinions in the procedures of conferring the title of professor to the scientific workers of many universities and research centers in Poland. Some of these opinions were prepared by Professor

Leyko, who acted as an expert of the Central Qualification Committee for the Scientific Degrees and Titles in Warsaw.

Professor Leyko sat on scientific committees of the Polish Academy of Sciences; she was a member and an honorary member of numerous scientific societies including the Warsaw Scientific Society, the Lodz Scientific Society, the Radiation Research Society, the Polish Biochemical Society, the Polish Biophysical Society, the European Society of Radiation Biology, the Bioelectrochemical Society and the British Biophysical Society. She held the position of the first president of the Polish Biophysical Society and the Lodz Section of the Polish Biochemical Society. She was a member of the Trade Union "Solidarność" at the University of Łódź.

The Professor's high position in the scientific world and recognition of her scientific achievements were confirmed by the fact that she was entrusted with supervising the national programs for basic research. Many times she chaired the sessions at scientific conventions, congresses and seminars in Poland and abroad. She was invited to deliver lectures at many universities and research centers in Europe, the USA and Japan.

For her scientific, didactic and organizational achievements Professor Leyko won many awards and commendations including the Commission of National Education Medal, the Knight's Cross of the Order of Polonia Restituta and the Officer's Cross of the Order of Polonia Restituta.

Professor Wanda Leyko passed away on 31<sup>st</sup> December 2015. On 8<sup>th</sup> January 2016 at the Powązki Cemetery in Warsaw we paid our last respects to her – an exceptional figure of our academic community, the founder of the Lodz school of biophysics, a prominent Scientist and Scientific Authority, a Person dear to our hearts, our Mentor and Teacher. We paid our last respects to an academic lecturer who had exceptional merits in educating students and young scientific workers at the University of Lodz and other Lodz higher education institutions. We paid our last respects to a Person deeply concerned about the scientific development of her co-workers, willingly sharing her rich life experience with them, taking pride in their success, a Professor providing help and support for other research workers at the Alma Mater and other scientific centers.

We are grateful to the Professor for everything she did for our scientific community; we highly appreciate her knowledge and passion for science as well as her attitude to life. She has been and will remain our role model respected for her hard work, devotion, engagement and dedication to science, students, doctoral students and coworkers. We are forlorn after the death of a Person who played such an enormous role in the

development of not only the University of Lodz but also science and academic life in Lodz and Poland.

*“You carve your name on hearts not tombstones. A legacy is etched into the minds of others and the stories they share about you.”*

MARIA BRYZIEWSKA, ANETA KOCEVA-CHYŁA

Institute of Biophysics  
Faculty of Biology and Environmental Protection  
University of Łódź