

## **Professor Adam Kołataj – 70 years of life, 50 years of research work**

Professor Adam Kołataj was born on May 21, 1934 in Końskie – his mother was a teacher in a small town Radoszyce, while his father organized there a commercial co-operative within the organization „Społem”.

In February 1955, Adam Kołataj completed his studies for a BSc degree at the Faculty of Agriculture of the Marie Curie-Skłodowska University (UMCS), Lublin, and in June 1956 he got his Masters degree at the Faculty of Animal Production, Agricultural University of Lublin.

In 1954, during his third year of studies, Adam Kołataj started his first job, accepting the position of assistant at the Chair of Animal Breeding at the UMCS Faculty of Agriculture (soon transformed into the Agricultural University of Lublin). At that time the Chair was headed by Professor (Mrs) Laura Kaufman, an animal geneticist of worldwide renown, and it was under her direction that Adam Kołataj made his first steps in research.

Currently, in year 2004, after 50 years of work, we have a chance to summarize the scientific output of Professor Adam Kołataj. It includes 315 original papers, 45 review articles, over 400 short reports presented at national and international scientific conferences, 5 books and 15 other publications.

At the beginning of his scientific career Adam Kołataj published a work - the first in Polish literature on animal production – discussing glutathione as a physiological indicator relating to inter-breed differences in chickens. Moreover, this work introduced a novel for those times method of polarographic determination of -SH groups in avian blood serum proteins.

After obtaining his MSc Adam Kołataj developed his interest in the problems of heterosis, observed from the physiological point of view. In many of his later works, based clearly on physiological and biochemical methods, he was seeking to explain the increased vitality of crossbreds. As glutathione and sulphhydryl groups proved to be extremely biologically active compounds, their physiological role in the organism

and principally in responses to the environmentally-induced stress, became the second field of Adam Kołataj's interest. This was manifested in three articles published on changes in the level of SH groups in the blood of rabbits during hypothermia and heart perfusion. He also put together – for the first time in Poland – three comprehensive review articles on the necessity of research into the problem of heterosis in animals and next, again first in Poland, and article on the physiological role of SH groups (all published in the *Kosmos*).

In 1961 Adam Kołataj received a PhD degree on the basis of the work entitled „Experiments on blood proteins in chicken in connection with heterosis”. This was the beginning of a wider research, which led to five more publications.

In the years 1962-1963 Professor Kołataj published two articles on the relations between blood coagulation time and cholesterol and lipids content of blood serum. He also mastered the fluorometric and polarographic methods of determining the level of adrenalin and noradrenalin in the blood and biological fluids and the method of histamine determination, all of which were novel in those days. As result, two new articles appeared in *Acta Physiologica Polonica*. Further works on the rate of oxygen intake by tissues of chicks at different ages and under the influence of adrenalin, demonstrated that adrenalin accelerates metabolic processes not only *in vitro*, acting through the blood circulation, but also *in vivo*, through the mechanism of enzyme activation in the tissue.

Basing on a cycle of articles entitled „Physiological investigations on heterosis in chicken” (part I-IV) the Scientific Council of the Animal Breeding Faculty of the Cracow Agricultural University granted Adam Kołataj the title of Habilitated Doctor.

In September 1968, Adam Kołataj was appointed head of the Laboratory of Animal Physiology and next head of the Department for Inheritance of Physiological Traits at the Polish Academy of Sciences Institute of Genetics and Animal Breeding, Jastrzębiec. The name of this Department joined animal genetics with physiology and reflected the scientific interests of its head. It is with pleasure that I can say that Professor Adam Kołataj remains on the staff of this Institute until today and is here celebrating his 70th birthday and 50 years of scientific work.

During his first years of work in the Institute he published further articles on the inheritance and variation of physiological traits in tissues and organs from laboratory and farm animals.

At the same time Professor Kołataj published in *Folia Biologica* four articles devoted to the problems of storing glutathione solutions in such a way as to retain their physiological properties for as long as possible. The results of this research are important for blood conservation.

In the years 1970-1975 Adam Kołataj published 8 review articles in various journals. His opinions about the genetic variation of physiological traits in animals were discussed widely and comprehensively against the background of the current world literature on heterosis. Those were subsequently collected in a book, of which Professor Kołataj was chief editor and which was put together with the co-operation of Halina Krzanowska and Napoleon Wolański and published in 1973 by Polish Scientific Publishers (Polskie

Wydawnictwo Naukowe - PWN).

During the last 30 years of his research work, Professor Kołataj concentrated on the problems of stress, initiating as the first in Poland, the introduction of this problem into the National Research Programme [1975-1980]. Together with his co-workers he published over 160 papers on this topic, mostly in foreign journals included in the "Philadelphia List".

As the numerous existing definitions of stress are since Hans Selye unequivocal and susceptible to various interpretations, Professor Kołataj proposed a new definition, more adequate and increasingly more accepted by physiologists – „stress is a sharp and sudden informative and energetic stimulation of the organism as a whole or even of individual cells”. The last results of studies within this field, referring to lysosomes – the degradation region of the cell – seem to confirm such an interpretation of stress.

The scientific output of Professor Kołataj is imposing. It is also worth emphasising, that the problems on which he concentrated initiated a wider development of animal physiological genetics in Poland. The keynote of his work seems to have been the conviction that modern breeding, must be conducted on animals with a high, genetically determined limit of physiological efficiency, so that even under stress caused by different environmental factors those animals may show maximum production of high quality products. The papers by Professor Kołataj indicate also that animals selected for increased levels of production traits become more susceptible to stress than animals not selected. This problem is of considerable importance from the point of view of practical animal breeding.

Beside research work Professor Adam Kołataj has also been active as an academic teacher. His output in this field is measurable and imposing – he supervised 26 PhD Theses, 318 MSc Theses, and 76 licentiates. Six of his closest collaborators obtained the degree of Habilitated Doctor. Moreover, Professor Kołataj was the reviewer of over 60 papers prepared for the MSc, 37 for the PhD, 7 for a habilitation and 7 in connection with nominations for a Professor. Over all the years of his activity as a teacher, Professor Adam Kołataj regularly conducted lectures, seminars and classes with students of the Lublin University, Gdańsk University, Pedagogical University in Kielce, Łódź University, as also lectures and seminars for PhD students at the Institute of Genetics and Animal Breeding, Jastrzębiec.

Professor Adam Kołataj was active also in academic life, beginning with his days as assistant. As the scientific secretary of the Lublin Section of the Polish Society of Animal Production and Polish Physiological Society he organized conferences and symposia. Over a period of three terms he was the head of the Warsaw Section of the Polish Genetics Society. He was a member of the Editorial Board for *Genetica Polonica* and currently is a member of the Programme Council for *Przegląd Hodowlany* (*Animal Production Review*).

For 22 years Professor Adam Kołataj was member of the Senate of the Pedagogical University, Kielce, and of Faculty Council for the Mathematical and Biological Faculty. Later, over two terms (1990-1996) he served as Rector of this University. In the years

1977-1984, Professor Kołataj was also the Director of the Biology Institute at the Pedagogical University in Kielce and in the years 1984-1987 – the Prorector of the University. For many years Professor Kołataj was member of the Polish Academy of Sciences Committee for Animal Production Sciences, and remains a member of the Scientific Council of the Polish Academy of Sciences Institute of Genetics and Animal Breeding.

For his research work, Professor Adam Kołataj was three times awarded the award of the Secretary of the Polish Academy of Sciences and eight times the award of the Minister of National Education (this included four first-degree awards). He received many awards of the Director of the Polish Academy of Sciences Institute of Genetics and Animal Breeding as well as other awards. He received the Polonia Restituta Order, the Golden Cross of Merit and other medals.

Professor Adam Kołataj is an acknowledged scientist with a genuine scientific output. He has inspired new research directions connected with heredity and variability of physiological traits, stress and the phenomenon of heterosis.

The research currently conducted on those problems on the level of the cell is a continuation of the work developed by Professor Kołataj already in the seventies.

The work conducted by Professor Kołataj on the problems of heterosis, based on a thorough analysis of physiological processes met with interest and recognition of the scientific world. Heterosis is a phenomenon, which is currently used in programmes for the hybridization of poultry and pigs. Those studies, interesting both from the point of view of theory and practice, have been summarised in form of a text book.

Professor Adam Kołataj was one of the first in Poland to undertake studies on the phenomenon of stress.

As befitting a pupil of Professor Laura Kaufman his scientific interests are wide and linked to problems of fundamental value for animal breeding and husbandry.

However, fully appreciation the scientific output of Professor Kołataj one cannot forget his considerable contribution to the education of many generations of research workers.

Professor Adam Kołataj has a rare gift for reaching out to young people. His contribution as regards the promoting of young research workers are really exceptional. Without exaggeration one may state that his pupils would be enough for the staff of a large university. Professor Kołataj's contribution in this field is recognized at the Institute.

Professor Adam Kołataj is still in the prime of his creative abilities, what is confirmed by his leading position on the list of research workers of the Institute, made out on the basis of their scientific output. Retaining this position was possible due to unusual capability together with hard work and internal discipline.

On the occasion of this magnificent Anniversary I wish him further productive work giving satisfaction and pleasure. May good health render it possible to maintain old, tested friendships and scientific collaboration.

*Zygmunt Reklewski*