Professor Lucyna Buraczewska on the 45th anniversary of her professional career and 70th birthday

Prof. Lucyna Buraczewska, nee Jędrzejewska, was born in the village of Sieraków near Gostynin, where her parents, Maria and Józef, owned a farm. After completing her secondary education in a high school in Gostynin in 1951, Lucyna Buraczewska began her studies at the Warsaw Agricultural University, at the Faculty of Agriculture, specializing in agricultural chemistry. She graduated with a master's degree in 1956, which she earned at the Department of Biochemistry by doing research under the supervision of Prof. I. Reifer on the characterization of bacterial glutaminase from *Clostridium welchii.* After graduation, she worked for three years at the Department of Biochemistry and Biophysics of the Polish Academy of Sciences, where she participated in studies on amino acid metabolism in the ornithine cycle in plants.

Her studies, and then research under the supervision of the distinguished biochemist, Prof. Reifer, had a decisive influence on the interests and direction of Lucyna Buraczewska's further research work, and in particular, on her ability to make skilled used of analytical methods in studies on animals.

In 1957 Lucyna Buraczewska married Dr. Stanislaw Buraczewski, with whom she shares the same research interests and with whom she continues to work today.

In 1960, the couple of young scientists accepted positions at the Institute of Animal Physiology and Nutrition of the Polish Academy of Sciences, and moved with their young daughter to Jablonna.

This was a period of intensive work on formulating research topics on the metabolism of protein and energy in growing animals and on equipping the newly founded institute with modern equipment and establishing up-to-date research methods. Lucyna Buraczewska took part in this work, participated in setting up quantitative analysis of amino acids according to the Moore and Stein procedure, and in establishing the Department of Nutrition Physiology. Thanks to the work of Lucyna and Stanisław Buraczewski, the Institute in Jabłonna became the first center in Poland where methods of determining the amino acid composition of feeds, carcasses and body fluids were introduced and developed. Lucyna Buraczewska became a foremost specialist in matters relating to amino acid analysis. Many scientists from throughout Poland trained at her laboratory.

In 1965 Lucyna Buraczewska defended her doctoral thesis, "The composition and nutritional value of the protein of annual legumes harvested in various stages of vegetation". In this work she demonstrated that the constitutional protein of the studied plants has a relatively constant amino acid composition and that the factor differentiating the amino acid contents in green plants harvested at various times are free amino acids.

Lucyna Buraczewska then obtained a 6-month post-doctoral fellowship at the National Institute in Dairying w Shinfield in Great Britain, where together with Dr. J. Ford, using microbiological and biochemical methods she studied the digestion of thermally damaged proteins. She applied these methods after returning to Poland in her work on the nutritive value of protein in products that had undergone thermal processing, such as fish meal, dried cereal grain and yeast.

Dr. Buraczewska participated in shaping the model of modern research on the nutritive value of protein in the feeding of monogastric animals, including the analysis of amino acid composition, evaluation amino acid availability using chemical and biological methods, and then feeding experiments. An important direction in this research was the study of the effectiveness of supplementing deficit protein with crystalline amino acids. In these studies it was shown that the key to effectiveness is the time factor, i.e., the difference between the rates of absorption of the added amino acid and those of other amino acids released from protein.

In the early 1970s, the Institute began pioneering studies, even by international standards, on the digestion of protein and absorption of amino acids in the digestive tract of pigs. These investigations led to the development of systems of standardizing protein for pigs based on the content of amino acids that are digested not in the entire gastrointestinal tract, but only in the small intestine.

The studies that Prof. Buraczewska started in this field and continues today initially explored various endogenous aspects related to the animal, and then the factors related to nutrition. In a series of experiments on the ability of various sections of the small intestine of pigs to absorb peptides, amino acids, sugars and water, Lucyna Buraczewska showed that there is a substantial difference in the

intensity of absorption of products of protein hydrolysis, amino acids and peptides, in different sections of the small intestine. These results were presented in a publication entitled "Studies on the absorption of protein hydrolysis products in various parts of the small intestine of pigs" and were the basis on which, in 1977, the Council of the Faculty of Animal Science of Warsaw Agricultural University - SGGW awarded her the degree of doctor habilitated of agricultural science in the field of physiology and nutrition.

Work continued by Associate Professor Lucyna Buraczewska, among others in France at the INRA centre in Jouy-en-Josas and in Germany at the FAL centre in Brunswick, and in cooperation with the Institute in Rostock, pertained to the secretion of endogenous nitrogen compounds, circulation of ammonia and urea in the pig and rate of protein turnover in tissues.

In 1988 Lucyna Buraczewska was awarded the title of Professor.

Studies on the influence of factors related to feed on digestion in the small intestine focused mainly on antinutrients in legume seeds, the effect of technological processes in rape seed technology, and recently also on carbohydrates. The results of studies on rape seed contributed to the development of optimal conditions for the production of meal from double 00 rape seed that were put into practice mainly in Finland, while the propagation and implementation of these methods by the oil industry in Poland took much longer. The results of studies on legumes were summed up in two doctoral theses written under the direction of Prof. Buraczewska and served to elaborate recommendations for the feeding of legumes in pig nutrition and on supplementing diets containing these seeds with crystalline amino acids.

For her scientific achievements, Prof. Buraczewska received research awards from the Secretary of the Polish Academy of Sciences.

Prof. Buraczewska is the author of about 170 publications, the promoter of three completed doctoral theses and two in progress, and has taught many trainees and doctoral students.

A description of a scientist is not only a dry enumeration of his achievements and topics that interest him, thanks to which Polish and international science has benefited. These studies are conducted by a human being, who leaves his mark on his work and on the people with whom he works and cooperates. This mark, the "trademark" of Prof. Buraczewska, is precision and attention to the credibility and integrity of results. In her field of study, which is methodologically difficult, this approach means that one cares about everything, even the most minute details of experimental techniques and management of animals. The researcher must be personally involved in preparing and carrying out the experiment and elaborating the results. Work with her is an excellent school of responsibility and dedication for her young coworkers.

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