



Photos by Frank K. Vasovski

## Polish scientist's research efforts bring her praise

(continued from the cover)

**DR. ZEBROWSKA**, above left, inserts the collection cannula into the pig's small intestine. The hole for the cannula is created surgically. Above right, she collects digestive juices directly from the pig's intestine. The juices are used to help determine the efficiency of feedstuffs used in pork production.

Zebrowska's success in the field of animal nutrition prompted Tanksley to invite her, with the concurrence of Polish authorities, for an extended visit to Texas A&M to assist Animal Science Department personnel in refining surgical techniques and designing a system for the collection and evaluation of digesta in swine.

"The overall purpose of the project is to determine how to improve the efficiency of feedstuffs used in pork production, which would result in lower production costs," Tanksley said. If availability of amino acids in feedstuffs for pigs can be determined, producers will be able to formulate rations more precisely. It is hoped that information from this research will allow substitution of lower quality, less expensive feedstuffs for a portion of the expensive, high protein soybean meal now recommended.

Dr. Tanksley is grateful to Polish authorities for allowing Dr. Zebrowska's working visit at Texas A&M. Her assistance and guidance have helped to refine digesta collection problems and have provided an excellent opportunity to train other members of the swine section, insuring continuity of the research after her departure.

"I am very much impressed with her knowledge, ability to adjust quickly to a new working environment, her assistance to students, but especially with her dedication to the task at hand," Tanksley said. "Simply speaking, she is just super," he added.

Zebrowska's fluency in English is another beneficial factor in the successful accomplishment of her work at Texas A&M. She is also fluent in Russian and Serbo-Croatian.

Tanksley's comments on Zebrowska are echoed by Kenneth Purser and Barton Cousins, graduate students conducting doctoral research at the Swine Metabolism Building of the Texas Agricultural Experiment Station.

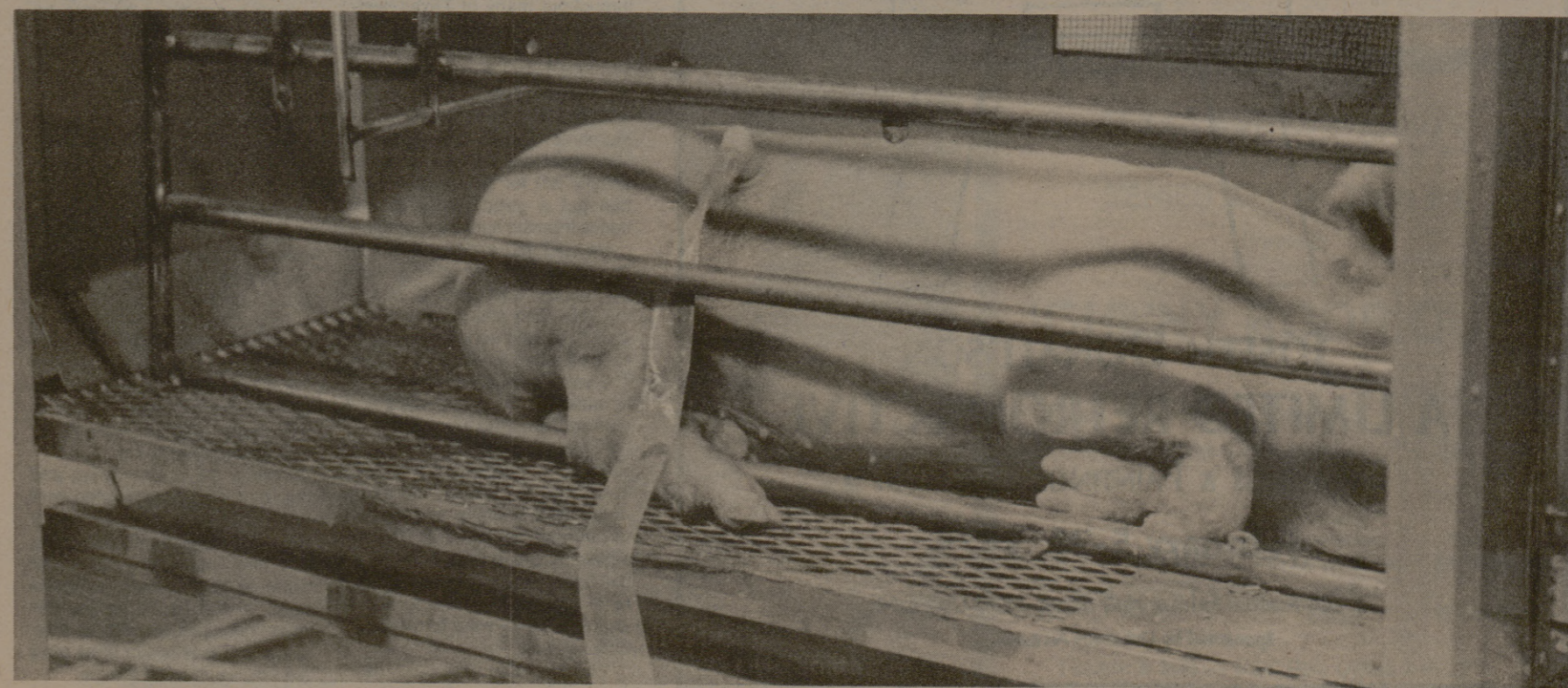
"I consider myself very fortunate to benefit from her guidance and advice," Purser said.

Cousins voiced similar praise of Zebrowska's contribution to his research work: "Her willingness to assist, ability to communicate lucidly and her knowledge are outstanding," Cousins said.

Even the young hogs participating in the current series of experiments appear to be satisfied with Zebrowska's handling of the



**THE PIG ABOVE** is fully conscious yet is experiencing little if any pain, no matter how bad his situation may look. One of the important breakthroughs in Zebrowska's research has been her ability to evaluate digestive processes without causing the animal discomfort. A closer look at the cannulus, below, shows more clearly the precise spot of implantation in the pig's side.



The collection cannula is a small plastic device inserted at the end of the small intestine and fastened in place by means of a winged dual insert which prevents an accidental removal of the device. A transparent plastic tube connected to the outer tip of the cannula facilitates transfer of the digesta to a collection vessel on the outside of the cage. Although the animal is allowed certain freedom of vertical movement, its ability to move sideways is controlled to allow for access to and protection of the collection tube. "I insist on humane treatment of the experimental animals and all personnel at this University agree with me on that point," she said. "The insertion of the cannula is accomplished in full compliance with proper surgical procedures."

All animals are examined carefully prior to the testing. They are prepared for surgery in a manner similar to their human s. General anesthesia is used for the actual insertion of the cannula in the small intestine. The incision wound begins to granulate in a few days and the animals appear to be oblivious to the presence of the cannulas. Their feeding habits and appetite are not affected by the procedure.

The testing period for each group of animals consists of four separate 11-day cycles. The breakdown of a cycle is as follows: —The first five days are used for precollection processing, preliminary testing of experimental feed to detect a possible reaction of an animal to a specific diet, etc. —The following three days include feces and urine examination for future comparison purpose. —Collection of ileal digesta takes place during the last three days of the cycle.

"Different types of diets consisting of grains, grain by-products and several types of high-protein feedstuffs are utilized during separate cycles," Zebrowska explained. This requires an uninterrupted surveillance of the animals, particularly during the testing stage of the experimental diet. Samples of the digesta are collected at specific time intervals and processed at the Animal Science Swine Nutrition Laboratory under the supervision of Tanksley and his staff.

Upon completion of a 44-day testing period the animals are released to the University's meat production program.

Zebrowska credits two Russian scientists, Kwasnicki and Sinishchekov, with the invention of the basic cannula method. Their experiments are conducted now by another Russian scientist, Tkachev. Significant improvement in the cannula method was introduced by Professor Jan Kielanowski, founder of the institute in Jablonna. Dr. Stanislaw Buraczewski, current director of the institute, and Zebrowska added further improvements in equipment design and method of collection.

"In general, not much difference exists now between various foreign establishments involved in the evaluation of nutritional problems," she said. The equipment, such as Beckman's automatic amino acid analyzer manufactured in the United States, is used throughout the world. This permits the exchange of standardized data among all countries.

Zebrowska, who recently returned to Poland, commented before leaving, "Texans are the nicest people I have ever met." She was impressed with the helpfulness and friendliness of Americans and was especially touched when Dr. Tanksley and several graduate students drove from College Station to Dallas at night to meet her plane. However, she frankly admitted being homesick after a year's separation from her family and homeland.

Now back in Jablonna, she will continue research on animal nutrition. She expressed the hope that her contribution to the solution of nutritional problems would benefit producers worldwide.

Tanksley and his team will continue to analyze research data with the objective of formulating diets based on available amino acids rather than on the basis of protein, as is now the case. Zebrowska has served as a catalyst to help refine techniques and focus research efforts toward accomplishing this goal.

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