

# Retiring Faculty Members Share Parting Thoughts

Three long-time members of the faculty of the College of Agriculture and Agricultural Experiment Station have announced their retirement in 1985. These three, collectively and individually, have had a great effect on the state of North Dakota through their research and through the students they have influenced over the years. No strangers to the pages of **Farm Research**, we offer them one more chance to share their thoughts on agricultural research and teaching, past, present and future.



**Orville J. Banasik**

## **Importance of Technology in Education**

The Department of Cereal Science and Food Technology has been an integral part of the teachings of North Dakota State University since its early beginning. Some of the early classes taught at NDSU before the turn of the century included three courses in cereal chemistry. Dr. Edwin Ladd, who taught these early courses, recognized the importance of the quality of the cereal grains grown in North Dakota. It was through his insight and concern about wheat utilization that brought about the creation of the "AC mill" in 1905. North Dakota became the first state to develop a wheat quality testing laboratory which has grown into an internationally known department that specializes in the chemistry, processing technology and utilization of cereal grains.

This article is not intended to be an historical review of the department, since much of this material was

covered in a recent article published in **Farm Research** entitled "Cereal Chemistry at NDSU - Approaching a New Plateau: Exploring Broader Horizons." I would like to enlarge on certain views or observations not discussed in that article.

One of our major concerns and a significant thrust in our work is to assist in the promotional and educational programs of the Northern Crops Institute. It seems appropriate that we assist in the development of quality crops for the region but our attention should also be directed toward that fact that barley, wheat or other commodities need to be sold at a price that returns a profit to the producer. This is a very difficult assignment, since world production of most grains and reserves are at very high levels. Continuing efforts on our part to aid the efforts of the Northern Crops Institute, the North Dakota State Wheat Commission, the North Dakota Barley Council and other commodity groups need to be done.

The competition is fierce for exported grains of high quality. Countries that have been purchasing our wheat and barley have to be continuously educated as to their use in indigenous products but also for new food uses.

The Northern Crops Institute is involved in the promotional use of all crops. For our department and others on campus associated with food production and quality, it appeared logical that we look beyond the present activities of production technology. Although some effort has been initiated along these lines, a more effective approach must be tried. Eventually, all of this future activity is going to require more people and space. Also, the redirection of present efforts in food research must be tried. An effective program needs a strong back-up in the area of food science teaching to generate the activity needed for food research.

A start has been made to develop a course of study that will lead to a bachelor of science degree in food technology. Most of the courses are already in place at NDSU. However, to develop an effective program that will provide the kind of trained scientist that the food processing industry will seek, some new courses must be offered to fill in the gaps. Plans are already underway to meet the curricula needs. The whole approach needs a coordinated effort from the university administration and contributing departments of Engineering, Food and

Nutrition, Chemistry, Mathematics, Bacteriology, Horticulture and others, just to name a few. The mission and scope of the Department of Cereal Science and Food Technology has been expanded to meet and to be integrated into these future needs.

The federal government, through the Cooperative State Research Service, is taking a very forward look in the general area of food, which as a business is our country's largest. Their goals are focusing on the need for more safe food, reduced food spoilage, new and more efficient food processing technology, and a better understanding of the chemistry and physiology of foods are important aspects of reaching a goal of wholesome food that is safe to eat and is nutritious for us. Since North Dakota is a major producer of agricultural products, we have to be a significant contributor to this program as well as other associated departments in agriculture.

I envision that a university integrated food technology program will become a significant teaching/research unit on campus. There will be need to support this activity with people and space which should pay off handsomely in service to North Dakota. Much of the funds needed to support this work could come from various sources of income other than from appropriated funds. There is no doubt that space will be needed in seven to eight years. By careful planning, these needs can be met.

As a final comment related to this program (and others now in place), there will be a need to add to present equipment and to replace electronic, analytical equipment that soon goes out of date. It is an expensive operating expense that cannot be ignored for any great length of time.

I leave my position as a scientist, teacher and administrator with this satisfying note - I have been privileged to serve the people of North Dakota these past 37 years.



**Myron F. Andrews**

Twenty seven years ago I arrived in Fargo from California to become a brand new assistant professor of Veterinary Science at NDAC. The change from "NDAC" to "NDSU" has been only one small change that I have been privileged to see since I arrived.

During my tenure in North Dakota I have worked closely with the students in the preveterinary program. It has been an exciting and rewarding experience. I had entered at a crucial stage for North Dakota students wanting to become veterinarians, for the preveterinary program had been very chaotic in the previous years. I came to the state in 1958, and in 1959 the first students entered veterinary schools under the contracts that give financial support for veterinary schools providing training to North Dakota students.

I had nothing to do with the initiation of the contract program, but I have been very interested in following the progress of the preveterinary program since that time. For several years, as far as our state was concerned, veterinary school was almost the exclusive domain of the male student. Anne J. Scully was admitted to Kansas State University in that class of 1959-60 and graduated in 1963. She has given many years of dedicated service to North Dakota since that time.

It was not until 1967 that the next female from the state entered veterinary school. Joann Kaftan (Colville) entered the University of Minnesota veterinary school that year, and is now a co-director of the animal health technician training program at NDSU.

In the 1970s, the doors of veterinary schools began to open wider for women, and by 1974 the admission of females to veterinary schools across North America had reached 48.9 percent of total admission. North Dakota has contributed to that number, with a significant number of women in each of the last several classes. Four of the 12 students from this state accepted into the 1985 classes are females.

Since the legislature started providing contract support, North Dakota has a rather spectacular success record in having students accepted to veterinary schools. A summary of admissions from all 50 states plus the District of Columbia during the years 1971 to 1974 was published in the Journal of the American Veterinary Medical Association. It showed that the average number of students accepted into veterinary

school from North Dakota was 1.58 per 100,000 population. This put the state in sixth place, with only Wyoming showing a better record among those states not having a veterinary school. All but four of the states with their own veterinary school ranked lower than North Dakota. South Dakota ranked 12th at that time, but their legislature has since dropped support for student admissions. In the last two years South Dakota has had a total of only eight students accepted, whereas North Dakota, with a smaller total population but with legislative support, has had a total of 19 accepted for the same period.

I am proud of the legislature of our state for the progressive and forward-looking policies they have implemented in relation to professional education for North Dakota students. I think that we should all be proud of their record and feel a sense of gratitude for the support they have given to the young resident people. In supporting the talented people from our own state in their educational objectives, they have also helped to supply North Dakota citizens with the best kind of veterinarians and other professionals, because the people who were born and raised in this area have the best knowledge of our agriculture and social conditions and the highest interest in the state.



**W.E. Dinusson**

When presented with this opportunity to reflect on the past four decades of associations with land grant institutions, it was a problem. Memories and experiences were so many. Some were those of sadness and regret. Fortunately, most were pleasant and satisfying. Association at Oklahoma A&M, Texas A&M and Purdue provided excellent training and background information for work at South Dakota State and North Dakota Agricultural College.

It was in 1935 that I first visited NDAC as a member of an FFA judging team. As a country boy I was impressed by what I saw. It wasn't until 1936 when I returned on another judging team that I recognized the unrest among the faculty. What followed that year with political interference and loss of faculty and accreditation caused me to seek another college.

In 1949 I returned to the campus as an associate professor in animal husbandry. Five staff members and a graduate student taught all classes and tried to find time for research and the other activities always associated with college work. Classes were small, but the students, many ex-GIs, wanted to learn and teaching was fun.

In the following years student enrollment increased and the department eventually grew to the present 29. In the 60s many of the "students" were not sure why they were here and teaching became more difficult. Fortunately students' attitudes changed and teaching became a challenge.

The graduate program was growing and approval of a Ph.D. program in 1963 provided additional input in educational development. Working with these students was both a frustrating and satisfying experience. It is a source of pleasure to note the success of my past graduate students.

Working with student groups and organizations was fun. My first association was as advisor to Alpha Zeta. Establishing chapters of Farm House and Phi Eta Sigma on the campus were some of the most satisfying experiences. Phi Kappa Phi provided relationships with some of the top scholars in the nation. Helping to charter a chapter of Sigma Xi was progress. As a member of Blue Key, the service organization, I was privileged to work with those students.

Not to be overlooked was working with the FFA and 4H youth in their judging contests on campus and at the Winter Show in Valley City.

In reflecting on some research accomplishments, some have been a source of pride to me and of benefit to livestock production. While working toward my Ph.D. at Purdue I had the opportunity to do research on the hormonal stimulation of growth in cattle. Stilbestrol had been used as an implant in the broiler industry to facilitate finishing. No one had used the implant in cattle. Implanting heifers greatly increased gains and feed efficiency in finishing over those open or spayed. This research was the forerunner on the use of implants in cattle. Implants are the greatest cost-effective treatments in growing finishing cattle today.

In 1949 facilities for nutritional research with livestock on the NDAC campus were almost nil. One old small "research barn" provided for limited trials with sheep or swine. When the swine unit was moved off campus the "old swine barn" provided space for growing-finishing swine trials. A statement made by a swine producer, "You can't finish hogs on barley," provided a challenge to work with barley for feeding

hogs. In my absence from North Dakota, the state had become the leading state in barley production. Less barley was being fed to livestock than in the 30s. A bit of research on changing the physical form of barley rations by pelleting and improving the protein and mineral supplementation showed barley to be very competitive to rations based on corn. Synthetic lysine, the most limiting amino acid in cereal grains and cereal proteins, except soybean oil meal, became available at \$35.00 per pound (now less than \$2.00 per pound). Fortunately, a commercial company provided adequate amounts of lysine for research.

The lysine availability permitted the improvement of swine rations based on barley and proso. At present adding lysine to sunflower seed oil meal makes for a useful replacement for soybean oil meal in barley and corn based rations, particularly with the cost advantage. Research on barley, particularly on comparisons of barley varieties, is ongoing.

The many by-products of North Dakota crops, such as beet pulp, malt sprouts, and even screenings, were evaluated for use in rations.

Since little information was available on crops grown in this state for feeding to livestock, hard red spring wheat, durum, triticale, proso and even sunflower seeds were given attention in rations for both cattle and swine. This was made possible by the legislature funding the Research Center. The first research in that facility was started in 1960. Other research was of much interest. The ionophores, rumensin and lasalocid and others have been of tremendous advantage to cattlemen.

Three committee assignments have been very satisfying to me. The first was on the Scholarship Committee in the college of agriculture. It has been particularly gratifying to note the increase in money for scholarships provided by individuals and organizations for worthy students. The growth of funding has been fantastic since the early 50s.

The Project Committee of the Experiment Station was started in the middle 50s. The improvement in the proposals, methodology, and direction has been nothing short of fantastic. This is not to demean the greats that have gone on before, people such as Shepperd, Schalk, Amidon, Bolley, the Waldrons, Flor, Smith and others. This improvement reflects the improvement of facilities, equipment and training of the newer scientists coming on board the Experiment Station.

The third committee to give a challenge and satisfaction was the National Research Council - Sub-Committee Sheep. For 20 years all available world-wide publications had to be reviewed and evaluated in an effort to ascertain the minimum nutrient requirements for sheep production. The publication is now out of date. I hope that a revision of these requirements will be forthcoming to allow for the change in type, growth rate and increased production of the present day sheep.

All these activities will be missed but the time has come to let a younger generation take over.

---

**Continued from page 2**

Education in agriculture must be similarly flexible as it, too, has much to offer a rapidly changing world. As the number of farms continues to diminish, there will be at best a stabilizing need for traditionally trained people in the traditional fields of agricultural education. But there is a parallel change going on in our urban areas. There has been tremendous pressure for workers in urban areas to find more rural settings in which to live. The first indication of this in post WWII America was the blooming of the suburbs; but the last decade has seen considerable movement beyond the suburbs. In other words, our future is likely a much closer blend of urban and rural needs and values. This trend offers a tremendous opportunity for agricultural educators as

the demands for the skills they offer in their traditional disciplines grow ever greater. These skills must be cast as a changed perspective—a perspective that recognizes that the “agricultural student” of tomorrow is as likely (more likely) to reside in a “rurban” community as on the farm.

It seems more likely to me that my uncle thought of himself as a practical businessman rather than a wise man. But the wisdom that grew from that practicality led to a maxim which has held true for many years, and, in a more global view of a changing America, will hold true for many years to come.