VETERINARY SCIENCE

Myron Andrews, Chairman

The Department of Veterinary Science is committed to research in animal disease, veterinary diagnostic service to the livestock raisers of North Dakota and the adjacent area, and teaching in areas appropriate to the expertise of the staff. Work has been centered around the economically important mammals raised in North Dakota, with some effort involved with poultry. Changing economic conditions have tended to alter the species worked on in the last quarter century, with the decrease in relative importance of sheep, dairy and poultry.

In the latter half of the 1950's a major research effort of the department was conducted cooperatively with the Department of Animal Husbandry as personnel from both departments tried to gain a better understanding of the dwarf syndrome that had become established in the beef cattle. Research results helped ranchers to identify the carriers of the dwarf gene in their herds and were instrumental in eliminating dwarfism in North Dakota cattle. An extensive study of the microscopic anatomy of the organs affected by the dwarfism in the animal also gave a better understanding of the mechanism of the abnormalities seen.

For many years North Dakota State University was a world center for research in listeriosis, with the work on the disease involving both cattle and sheep. Studies here helped define the ecology of the organism and a bacterin was developed that was, for many years, the only commercially available listeria bacterin available in the United States.

The parasites of ruminants and swine gained much attention from department personnel in the first half of this period. Sheep were often used as a model for ruminant parasitology since they were less expensive to work with, but have parasite problems very similar to cattle. The work was primarily concerned with identifying the magnitude of the problem in North Dakota and studying the effects of the parasite on the host. The roundworms and coccidia received major efforts in the department. Some work was also done with control measures for internal parasites.

A research interest that has continued through most of the period is concerned with viral diseases of cattle. Early work was primarily involved with mucosal disease or bovine virus diarrhea with recent efforts in delineating the best control measures for infectious bovine rhinotracheitis.

Calf scours is always a concern to cattlemen as it is one of the most destructive diseases economically that effects the cattle industry. Work in the department has helped identify factors predisposing calves to scours and has been concerned with developing more effective and economical methods of fluid therapy.

Swine research has included work on pseudorabies, a disease which recently emerged as a major problem in the swine industry. A major accomplishment was the development of a new serological test for pseudorabies that is faster and less expensive to run than the formerly used test.

During the last 25 years, rabies in the United States has changed from a threat primarily from dogs to one concerned primarily with wildlife. This same change in North Dakota has focused attention on skunks, which are now responsible for over half of the reported rabies in North Dakota. A research project on rabies in skunks has increased our understanding of the skunk population in the state and how it is involved with rabies. Domestic cattle are now one of the most important hosts of rabies and most cattle rabies in North Dakota is due to exposure to infected skunks.

Toxicology has received an increasing attention within the department as recognition of the many problems in animal health attributable to poisonous substances increases. Present projects are involved with mycotoxins, the poison found in moldy feeds, and copper shortages which bring about imbalances in other minerals in the animal.

During the last quarter centry the diagnostic service has grown from a small effort that was undermanned and underfunded to a nearly complete diagnostic laboratory offering services in pathology, microbiology and toxicology. As the service has improved, the number of diagnostic accession has increased. The diagnostic laboratory is providing a valuable service to the economy of the state. The service is of value to the practicing veterinarians and the livestock owners alike.

The Veterinary Science Department has long been involved with teaching service courses to students in agriculture and the sciences and has administered the pre-veterinary program for North Dakota students. In the early part of the period there were often no more than two or three North Dakota students accepted into veterinary schools a year. There are now contracts between North Dakota and three accredited veterinary schools for from seven to 12 students per year to be accepted into one of the schools. North Dakota State University has been very successful in having preveterinary students from this campus excel in the professional

school after acceptance, attesting to the high quality of education provided from the entire campus.

In 1976, the first class was admitted to a new two-year program in animal health technology. In 1978, before the first class was graduated, the program was accredited through the American Veterinary Medical Association. Twenty students per year now have the opportunity to receive an accredited program in our area and as they graduate they are providing a valuable pool of trained personnel to assist veterinarians in their practices and thereby provide a service to the veterinary profession and to the veterinarian's clients.

The last quarter of a century has been a time of progress in the veterinary science department. It has been a time of growth and development with an ever increasing service to the state's economy. Dean Arlon Hazen has been a continuing source of support and encouragement during that time and has been instrumental in strengthening the offerings of the department in research, diagnostics and teaching.

BRANCH STATION CHANGES AND DEVELOPMENT 1957 to 1978

Six branch stations and an agronomy seed farm strategically located around the state are an integral part of the Experiment Station. Each serves a specific need in its area.

As compared to some other states, the manner of funding and operating the branch station system in North Dakota is rather unique. There is autonomy in funding yet there is central administration. Operation is the responsibility of personnel at each branch station yet there are a large number of cooperative uniform crop production experiments conducted at all branch stations. In addition there are numerous other experiments involving the cooperative effort of project leaders on campus with individuals at branch stations as well as between branch stations participating in research of common need. This extensive cooperative effort is not mandated. Rather it results from research workers recognizing common problems that can best be solved by a combined effort using available facilities across the state. The usefulness of information obtained from a broad cross sectional base is obviously of greater value to the farmer than that obtained from only one site.

Branch stations are closely identified with the communities in which they are located. Without exception, communities exhibit a healthy kind of prideful possessiveness of their local experiment station. Without a doubt this stimulates and encourages branch station personnel to perform and manage in a manner that might endorse a view expressed in a quotation from Abraham Lincoln — "I like to see a man proud of the place he lives. I like to see a man live so that his place is proud of him."

The character, growth and effectiveness of branch stations during Arlon Hazen's 22 years as Director have been due in no small measure to his philosophy and the direction he has given. Namely, an effective agricultural research program is only as good as its many parts which include a competent staff, sufficient land, equipment and facilities adequately supported with operating funds and the interest of the people being served. To identify improvements and other changes at the branch stations during Dean Hazen's tenure a brief summary prepared by the superintendent at each location has been prepared.