



Phase Two of the construction program. This building houses the laboratories and equipment for teaching the new Animal Health Technician curriculum, plus animal isolation units.

New Facility Provides Research, Teaching and Diagnostic Services for Veterinary Science and Bacteriology

Livestock disease prevention and treatment in North Dakota has taken a great leap forward this year with the opening of the new Veterinary Science and Bacteriology Laboratory on the North Dakota State University campus.

According to Dr. Myron F. Andrews, chairman of the Department of Veterinary Science, demand for diagnostic service in the state has shown a dramatic increase over the past few years. The case load, for example, increased 131 per cent in two years from 1,631 cases in 1969 to 3,604 in 1971. Lower livestock prices since then caused a case load drop, but it is now increasing again.

One reason the demand for diagnostic service is increasing is that North Dakota's 90 practicing veterinarians service the largest area per veterinarian in the United States. Nearly half of the state's farms and ranches raise some livestock, and the growing livestock industry has been providing from one-fourth to one-fifth of the total state new income each year, some \$489 million in 1974. Livestock complements North Dakota's grain production by providing a local market for feed grains.

The North Dakota livestock industry for years has recognized that disease prevention is one of their largest management problems. Therefore, the livestock producers supported the idea for this new modern facility when it was proposed and welcome its availability now that it is in operation. Money for the new building was appropriated by the North Dakota Legislature, according to Dr. Kenneth A. Gilles, vice president for agriculture at NDSU, but the project also had the enthusiastic support of the livestock owners and veterinarians in the state.

Leaders of many of the livestock, dairy, poultry, veterinary and farm organizations were appointed to a committee by Gilles to evaluate and recommend changes in the Veterinary Science program, which was instrumental in stating the need for and obtaining the new facility.

Dr. Kenneth J. McMahon, chairman of the Department of Bacteriology, which shares the new facility, points out that the two departments

provide a mutually supportive and beneficial relationship by being housed together. This permits sharing of certain equipment, diagnostic techniques and scientific expertise among the personnel of the two departments.

In addition to diagnosis, the new \$1,778,000 facility includes research and teaching laboratories in the various divisions of both Veterinary Science and Bacteriology. More than 500 undergraduate and graduate students were enrolled in courses taught in the new facility during the Winter Quarter 1975-76. The new facilities provide additional efficient working space for the research in progress, and new research programs that will be developed.

While there remains a present need to modernize several other agricultural research, teaching and extension facilities at NDSU, some of the most pressing needs were helped by providing a new space for Bacteriology which has been located in Morrill Hall. Several of the other departments in agriculture have benefitted from the new facility through reallocation of available space.

The new Veterinary Science and Bacteriology Building provides more than 33,000 square feet of floor space in its up-to-date research laboratories and scientific equipment rooms. An amphitheater-type auditorium seating 127 is fully equipped with screens for closed-circuit television, with cameras in the laboratories being able to bring pictures of a demonstration to the classroom over the monitors.

Unique designs were incorporated into the structure to provide for both veterinary science and bacteriology needs. This includes a special ventilation system to protect against contamination and unwanted odors, an approved incinerator for disposal of diseased carcasses following necropsy, and a large necropsy area complete with observation room.

Dedication of the new facility is scheduled for Friday, November 5, in conjunction with the annual Agricultural Recognition and Harvest Bowl Day to be held on campus in Fargo on Saturday, November 6.

Department of Veterinary Science



Dr. Myron Andrews, chairman of the Department of Veterinary Science, uses the physiograph to measure some of the physiological functions of animals in his studies of disease effects.



Dr. Ivan Berg prepares to dissect a calf in the necropsy room looking for the cause of death. More than 4,000 cases are analyzed each year in this diagnostic facility.



Dr. Howard Casper is able to measure the amount of lead or mercury in animal tissues through this atomic absorption spectrophotometer. Such analysis helps determine some specific poisons that cause death in farm animals.



Students in the new Animal Health Technician program will learn physiology, surgical assistance procedures and anesthesiology on this electrocardiograph machine from Drs. Tom and Joann Colville, as a part of their course work.



Dr. I. A. Schipper uses this protective chamber to analyze nasal washings from a sick animal when he is looking for such infectious disease organisms as those from Bovine Virus Disease (BVD).



Eventual control of calf scours disease is the objective of Dr. George Staples as he isolates and grows different bacteria from the gut of infected animals, and measures the number in this colony counter.



Dr. Raul Weiss continues the diagnostic procedures through tissue analysis in his laboratory as he prepares various organs for histopathological examination by means of microscopic slides.

Department of Bacteriology



Dr. Kenneth J. McMahon, chairman of the Department of Bacteriology, with the colony counter in his laboratory determines the survival rate of "Bacillus thuringiensis" that has been sprayed on Siberian elm trees for canker worm control.



In his basic bacterial genetics research, Dr. David Berryhill screens for mutants of the bacterium that fixes nitrogen on dry edible beans.



Dr. Mary Bromel runs bacterial analyses on water of questionable purity from solid waste disposal systems and other sources in her water testing laboratory.



Dr. Bromel and Beverley Baldwin identify which bacteria cause abscess problems in cattle and poultry, and look for different methods that farmers might be able to use for control.



John A. Doubly uses a freeze drying technique and conducts electrophoresis runs on antiserum to identify various antigens involved in producing the flax and wheat rusts.



Dr. Berdell R. Funke tests the effects of pesticides on nitrogen fixation by legumes. He uses a gas chromatograph and a technique known as acetylene reduction.



Dr. Paul Holmes uses gas chromatography to help identify the various kinds of psychrophilic anaerobic bacteria that break down waste materials in solid waste disposal systems.



Dr. Bayard Sleeper works with a recording spectrophotometer to identify the enzymes involved in bacterial nitrogen metabolism, searching for the reasons why flaxseed meal is toxic to farm animals.