

ten by the intelligentsia of the clubs. The I. A. C. Student came later. It was published "fortnightly." It was called the I. A. C. Student because Iowa State College was then known as the Iowa Agricultural College.

For those dramatically inclined there were the Shakespearean plays given during commencement. There were no try-outs then. The teacher in elocution simply gave the parts to those she thought would be best able to play them.

VI.

RESEARCH



It is difficult to say just when veterinary research began in Iowa State College. Dr. Stalker did a little work in connection with his duties as State Veterinarian, but it was difficult to carry forward any systematic and definitely organized projects during those years.

Probably the first work of a serious nature was taken up by Dr. Niles when he became a member of the staff and devoted a part of his time to experiment station work.

Dr. Stalker had written a bulletin on ergotism, and his reports as State Veterinarian indicated that he was a keen observer. However, Dr. Niles was somewhat more inquisitive in regard to some of these diseases and was the first man west of Chicago to discover the actinomyces fungus in the tumors which it produces on cattle. This was in 1885, and Dr. Niles' graduation thesis was on the subject of actinomycosis. Dr. Niles also took some special work in bacteriology in 1886 under Prof. Halsted. This work was taken with special arrangement while he was acting as house surgeon.

The first tuberculin to be used in the state of Iowa was injected by Dr. Niles in the McHenry herd at Denison, Iowa. This was soon after Dr. Leonard Pearson had first used it in Pennsylvania. Dr. Pearson was the first man in America to apply tuberculin as a diagnostic agent.

I have referred elsewhere to the reports of the work they were doing with tuberculin and the preparation of mallein.

A bulletin published in 1895 (Stalker and Niles), reporting the investigation of bovine tuberculosis with special reference to its existence in Iowa, contains much interesting information, and among other statements which are given as established facts are the following:

1. Tuberculosis of the lower animals is identical with human consumption.
2. The disease may be transmitted from man to the lower animals and from the lower animals to man.
3. Milk from tuberculous cows may convey disease to the consumer.
4. Milk from tuberculous cows having non-affected udders may convey the disease.

5. The flesh of tuberculous animals may convey the disease.
6. Injection of tuberculin cannot produce tuberculosis or other harmful results.

The bulletin refers to the danger of feeding milk from tuberculous cows and to experiments conducted by other stations which prove the infectiousness of milk coming from tuberculous herds. A record is given on about 50 herds, which have been tested in Black Hawk, Kosuth, Story, Boone, Page, Harrison, Sac, Wapello and Floyd counties. Detailed records are given of the temperature reactions of these animals.

There is also the comprehensive bulletin on the diseases of sheep prepared by Dr. Niles as experiment station veterinarian. The sheep industry in the state at that time was of much greater significance than it is today, and diseases of sheep were important problems.

The development of the educational work and the reorganization of the division discouraged any considerable amount of experiment station work along veterinary lines for several years. When the new hog cholera serum was being developed, McNeil and Stange conducted some experiments with serum secured from the Bureau of Animal Industry laboratory.

During the reorganization ('08-'09) of the division, it was decided that it would be best to have a Veterinary Research Department on the same basis as we had an Agricultural Experiment Station and an Engineering Experiment Station.

Veterinary medicine may be likened to a tree, with its roots imbedded in the soil of the fundamental sciences and drawing its nourishment from this source, but bearing its fruit on the branches which extend up into the medium of agriculture, public health, etc. Reference is made in one of the dean's early reports to the advisability of having thoroly trained men in this branch of our work. Reference was also made to the proposed building at the southwest corner of the veterinary group, which could not be built on account of lack of funds. This building was intended for research work. The growth of the division and the development of the college to the north, which occupied land that otherwise might have been used for experimental animals, made it advisable to remove our research laboratory and farm to some distance from the college buildings in order to prevent interference with our research plant by further college expansion.

It can be said that we have at present, for the first time, buildings and support for our research which will enable us to do satisfactory work.

In the meantime problems have accumulated and we are being besieged on every side for work on some important project. Many of these projects with which we are confronted can only be solved by going back to the beginning and working out certain fundamental things, which have thus far not been satisfactorily explained. Things do not come as easily as many who are not connected with state institutions imagine, and one cannot help but be impressed with this fact at several

points in the history of this division. A history of the research work is a typical example of many of our problems, since it was just about 19 years from the time we realized the need of a definite research organization and program, with the buildings and equipment to carry them out, before these desires could be reasonably satisfied.

A brief statement of the history of the research staff is as follows:

"In July, 1914, Dr. Kurt Schern, whose employment has already been referred to, left for Europe to attend the International Veterinary Congress scheduled to meet in London. Adjournment of the congress was taken shortly after it convened, made necessary by the declaration of war. Dr. Schern was not permitted to return to America and the Department of Veterinary Investigation was left without a head.

"Charles Murray, then a member of the staff of the Department of Pathology, was placed in temporary charge under direction of Dean C. H. Stange. With the help of Paul Purwin, Dr. Schern's assistant, investigational work on hemorrhagic septicemia was carried on until the United States entered the World War. In 1917 Charles Murray was made head of the department. During the war the attention of the department was largely directed toward food conservation. A routine diagnosis laboratory had been established and this demanded the full time of one worker. Dr. L. E. Willey was placed in charge and continued in this capacity until his enlistment (November 28, 1917). Dr. Heinrich Wehrbein was employed for a year preceding our entrance into the war and completed some splendid work on dourine of horses and on hog cholera. In 1918, Dr. Wehrbein was succeeded by Dr. E. A. Benbrook, who remained one year, resigning in 1919 to become head of the Department of Veterinary Pathology. At the close of the war, Dr. L. E. Willey returned to assume his duties with the department, resigning July 31, 1920, to enter commercial work. Dr. S. H. McNutt became a member of the staff in 1918. In 1922, Dr. H. E. Belster entered the department as pathologist. At present the staff consists of Dean Stange, director; Charles Murray, vice-director and head of the department; Dr. S. H. McNutt and Paul Purwin, bacteriologists; Dr. H. E. Belster, pathologist; Dr. H. H. Dukes, physiologist; Dr. F. D. Patterson, Jr., graduate assistant. Three lines of major work are being conducted, in enteritis and related diseases of swine, abortion and related diseases of cattle and poultry diseases.

Three of the principal and fundamental veterinary sciences have been established in our Research Department, namely: Veterinary pathology, veterinary bacteriology and veterinary physiology. With the research work being carried on in chemistry and biological sciences on the campus, the work in connection with most animal disease problems can be pursued by the college in a thorough and effective way.

Since the work has been put in satisfactory quarters about a year ago, eight papers on research work have been published. From the standpoint of the future of the veterinary profession, it is anticipated that the Research Department will be one of the most valuable parts of our organization.