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Veterinary Hygiene

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Veterinary Hygiene

The curriculum, history, and personnel of the Department of Veterinary Hygiene

Terrance A. Dorsey, '43 and Donald L. Spaulding, '43

The late Charles Henry Stange said, "During the past fifteen years, the prevention and control of the infectious diseases of animals has become a state and national problem, the work being organized on the basis of state and national cooperation. Livestock owners have available to them much information concerning animal diseases and the public is becoming increasingly conscious of the possibilities of disease transmission from animals to man. At present, there is little information available in the epidemiology of the contagious diseases of animals which would make their successful control and eradication very much easier. In the midst of the transition period in which we now find ourselves, it is apparent that veterinarians need considerable information, much of which may seem of a diverse nature, but all having a significant bearing on the most important problem confronting the veterinary profession today viz., disease prevention and control."*

The Curriculum

With this problem in mind, the Department of Veterinary Hygiene offers the undergraduate students instruction in bacteriology, immunology, food hygiene, and in the diagnosis and control of the infectious diseases. Although the science of bacteriology is one of the youngest of the biological sciences, it may be considered the fundamental subject in the study of hygiene. However young this subject is, bacteriology has enabled the veterinary hygienists to engage in such fields as general practice, government control work, milk sanitation, education, and research.

For the Practitioner

The general practitioner must be able to diagnose, treat, and prevent the spread of infectious diseases. In addition to this, he must know the fundamental rules of sanitation and be familiar with those factors which are significant in animal health.

Such animal plagues as tuberculosis, Bang's disease, hog cholera, swine erysipelas, and foot and mouth disease are now being controlled or eradicated by the state and federal governments through the hygienic training of veterinary graduates. Government inspectors examine all meat and meat products which enter into interstate commerce or are exported from our country. Necessary knowledge for conducting such food inspection is supplied in the course of veterinary hygiene.

The sanitary control of milk supplies, by the elimination of diseased animals and by teaching methods of cleanliness in milking and milk handling, is an important function of the veterinary graduate. Students enrolled as I. S. C. are particularly fortunate in having, as a part of their class-room study, the opportunity to work in the laboratory of milk sanitation for the City of Ames, Iowa.

Work in veterinary hygiene originally was offered in the Department of Pathology. However, in the fall of 1931, a separate department was established with

Dean Stange as the first head, Dr. Murray, professor, and Dr. Merchant, assistant professor. Dr. Murray succeeded Dean Stange as head of the department in 1936.

The Staff
Charles Murray, B. Pd., B. S., D. V. M.
Dean of Division of Veterinary Medicine, Professor and Head of Department.
R. A. Packer, B. S., D. V. M. Assistant.
S. G. Kenzy, B. S. Graduate Assistant.

Charles Murray, B. Pd., B. S., D. V. M.

Dr. Charles Murray was born in Ohio, but moved to Iowa at a very early age. He received his Bachelor of Pedagogy degree from Drake University in 1906. In 1908, he accepted a position at I. S. C. as an assistant in bacteriology, where he received his B. S. degree in 1910. In 1912, he received his degree in Veterinary Medicine. Following graduation, he became Assistant Professor in Veterinary Pathology as a bacteriologist. In 1914, Dr. Murray was placed in charge of the Department of Research and was made the head of that department in 1917. Upon the death of Dean Stange in 1936, Dr. Murray was appointed Professor and Head of the Department of Hygiene and Dean of the Veterinary Division.

In addition to teaching bacteriology, infectious diseases, and veterinary hygiene, Dr. Murray has contributed liberally to scientific journals. In 1911, he and Dean Buchanan were co-authors of the text, "Veterinary Bacteriology."

Dr. Murray has been a member and committee chairman in the American Veterinary Medical Association and the U. S. Live Stock Sanitary Association. He has been chairman of the Research Workers of America in Animal Diseases, president of Phi Zeta, a former member of the National Research Council, and is a member of the Iowa State Veterinary Medical Association Sigma Xi, Gamma Sigma Delta, Phi Kappa Phi, and Phi Beta Kappa.

He has been very active in bacteriological research since 1910. The study of Bang's disease, enteritis in swine, and leukosis in chickens especially interested him.

I. A. Merchant, D. V. M., Ph. D., C. P. H.

Dr. Merchant was born in Colorado. He received his D. V. M. from Colorado State College in 1924. After graduation, he was employed as a meat inspector for the Bureau of Animal Industry at Omaha, Nebraska, later in the eradication of cattle scab and tuberculosis in Nebraska. In 1925, he accepted the position as Instructor in Pathology at Iowa State College. After three years as Instructor in Pathology, he was promoted to the rank of Assistant Professor in Pathology. When the Department of Veterinary Hygiene was created in 1931, he was transferred to that department as Assistant Professor. During the school year 1933-34 he attended the School of Medicine at Yale University, enrolled in the Department of Public Health. In 1934, he returned to Iowa State College as Associate Professor in Veterinary Hygiene.

Dr. Merchant teaches pathogenic bacteriology, milk hygiene, meat hygiene, and epidemiology. In addition, he has collaborated in writing a laboratory manual and has written a text book on veterinary bacteriology which was published in 1940. This text is being adopted by most of the veterinary colleges.

Besides Dr. Merchant's academic position, he is the official milk sanitarian for the City of Ames; he is a member of the Committee on Approved Laboratory Procedure of the International Association of Milk Sanitarians. He is also a member of the American Veterinary Medical Association, the American Public Health Association, the International Association of Milk Sanitarians, Phi Zeta, Alpha Psi, Phi Kappa Phi, Sigma Xi, and Delta Omega.

(Concluded on page 50)
depression. This may appear only periodic and at times they liven up and eat and drink as normal chicks. Typical gasping may be observed at the onset, but most usually between the fifth and ninth days; and this appears to be the age when most chicks contract the disease. The severity is lessened in older chicks and symptoms are very rarely noted after fifteen days. Gentle rales, rattling and wheezy breathing is observed; and, when a chick is held close to the ear, any variety of respiratory sound can be heard. Discharge of a thin watery nature is frequently observed from the eyes and nostrils and sneezing is frequently observed. Coryza is sometimes present. The feathers become coarse and rough; the birds grow progressively weaker, huddling near the hover with eyes closed and apparently asleep, only to awaken periodically, thrusting their heads forward and upward and gasping for breath. Chicks die from asphyxiation or complete exhaustion.

Lesions. The most constant lesions are congestion with excessive mucus in the trachea and bronchi, especially at the bifurcation of the bronchi. The bronchi and bronchioles are filled with fluid. The lungs are generally congested and edematous, and thin watery fluid is easily squeezed from the lungs. In many cases, the only lesion is an inflammation of the bronchi at the bifurcation. This inflammation may be so slight as to be determined only by histopathologic examination. In some cases, the nasal passages and sinuses become coated with a mucopurulent exudate, which is observed if the head is cut in cross section just anterior to the eyes, and pressure is exerted in this region.

Treatment and preventive measures. The disease is very acute and rapid in its course, so that any treatment must be preventive. Many types of mist or fine powder sprays have been used, but it is rather doubtful if beneficial effects, of permanent value, are noted. The most important measures are to see that absolute sanitation and hygienic measures are carried out. The brooder room and house should be carefully washed, using plenty of water. Paper may be used on the floor and burned daily; temperature should be kept normal at all times. In severe outbreaks the plant should be closed and no chicks allowed in it for five or six weeks.

HYGIENE (Continued from page 22)

R. A. Packer, B. S., D. V. M.

Dr. Packer, a native Iowan, received his B. S. in Animal Husbandry and his D. V. M. from Iowa State College in 1940. After his graduation, he became an assistant in the Department of Veterinary Hygiene.

Dr. Packer is an instructor in veterinary bacteriology, milk hygiene, and mastitis control. He also teaches a course in farm sanitation offered for students in Animal Husbandry. In addition, Dr. Packer is pursuing graduate study in veterinary bacteriology. His special problem is the study of streptococci, with particular emphasis on the use of selective media in that study.

Dr. Packer is a member of the American Veterinary Medical Association.

Sam G. Kenzy, B. S.

Mr. Kenzy was born in South Dakota. He received his B. S. from South Dakota State College in 1934, with a major in mathematics and a minor in chemistry. The following year he accepted a position as a high school instructor and for three years taught mathematics and biology. In 1937, he became a graduate assistant in bacteriology at South Dakota State College. He accepted a similar position in the Department of Veterinary Hygiene at Iowa State College in 1938.

He is graduate assistant in bacteriology in milk hygiene. In addition to this, he is
conducting a research problem on the bacterial flora of acute calf pneumonia.

He enrolled in Veterinary Medicine in the fall of 1939, and is now a member of the Senior class.

Mr. Kenzy is a member of the Junior American Veterinary Medical Association, and is a First Lt., Field Artillery, United States Army Reserve.

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**X-RAY** *(Continued from page 27)*

low as possible, within a reasonable exposure time, since scattered radiations are produced in soft tissue in relatively greater amounts as the kilovoltage increases.

Proper film exposure is necessary to reproduce accurately relative densities of a subject. Too long an exposure results in a very dark film with a loss in contrast or gradation. Too brief an exposure results in a film that ranges from being thin and contrasty to a blank. Modern film allows a latitude of from 50 percent to 100 percent over or under timing from the optimum while still producing a good, readable X-ray picture. X-ray machines today are supplied with conventional split second timers. To be of value, these must be accurate.

The operator of a new machine with all his data before him, unfortunately, is still not ready to produce radiographs of his patients in an economical manner. The machine must first be calibrated radiographically and any deviations from the supplied data on exposure conditions should be noted as correction factors. A practical way of doing this and at the same time becoming familiar with the actual work is to take an average subject and make a series of one or two dozen pictures. The subject could well be a thirty to forty pound dog, in normal health, which has been put under surgical anesthesia. Nembutal with its prolonged effect would be suitable. Pictures should be made of the head, thoracic region, abdominal region, pelvis, and the limbs. The first picture of any part should be made exactly according to data supplied by the manufacturer. Upon development the picture will probably show considerable deviation from normal exposure. Another film of identical subject matter is then made with a correction in either timing or milliamperage. At first any correction should be two to four times more or less than the original factors. Thus, a picture of the foot taken at 30 inches, 10MA, 1/4 second could show overexposure to a noticeable degree. To reduce this exposure to one half any one of the factors could be changed as the 30 inches to 42 inches, 10MA to 5 MA, or 1/4 to 1/6 second. If the problem is handled in this manner, the veterinarian will be able to produce reasonably good pictures in the majority of his first attempts on subsequent subjects. Good common sense coupled with an understanding of the fundamentals is always required. In addition to his calibration data, the veterinarian will also have collected a series of good radiographs of normal areas of the animal body. If kept available, these are often of value when compared to similar pictures concerning the pathological subject. This comparison will also help in explaining an abnormal condition to a patient's owner.

Handling and restraint of a small animal is often attended by much trouble. A frightened or hurt animal resists being held in position for X-ray examination. Whenever possible, anesthetize the patient. The barbiturates, especially those of short effect, are applicable. Morphine or ether may be used, but the latter with a shockproof machine only because of the danger of explosion. The use of small sandbags, holding a pound or two of sand, is a frequently used device in maintaining the immobility of a limb. In order to make better contact between subject and cassette and aid in immobilization, a thin strip of cloth may be put over the part to be X-rayed. Hanging weights may be attached to both ends or the operator may pull the free ends down tightly by hand while making the picture. Movements of respiration are annoying when radiographing the body cavity. These may be stopped for several seconds by pinching