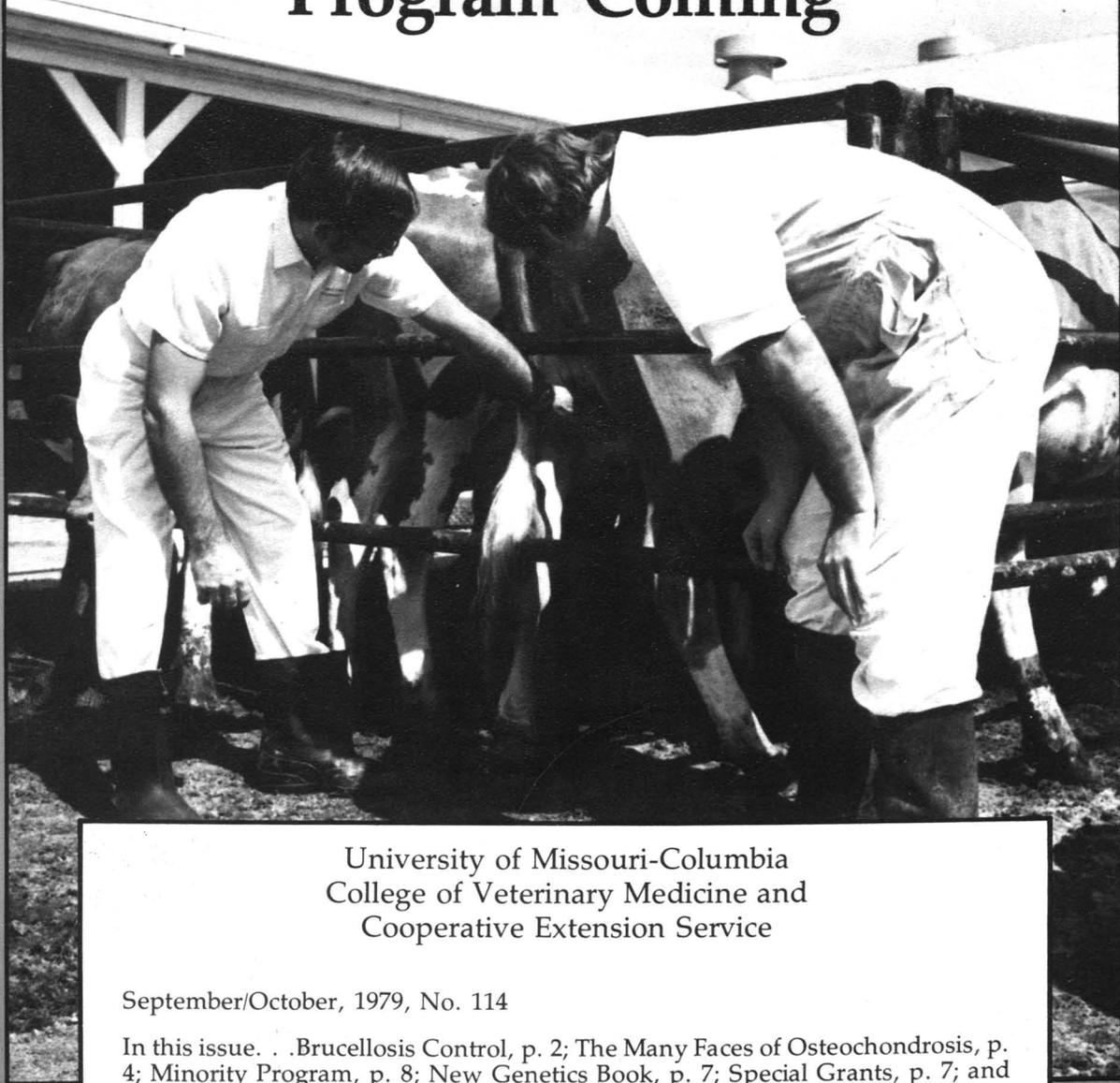


VETERINARY MEDICAL REVIEW

New Brucellosis Control Program Coming



University of Missouri-Columbia
College of Veterinary Medicine and
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Brucellosis Control Program Coming

New Program Introduced at a Special Meeting Held at the College; Over 120 Attend.

For years, brucellosis control has sat on the "back burner". When talking about problems currently facing the nation's cattle industry, producers, shipping and market people, and veterinarians seldom say that their immediate concern is brucellosis. Why should they be concerned—economic losses for both beef and dairy producers have dropped to the point of being tolerable. A vaccine does exist and is used for controlling the disease, and there are some regulations regarding buying, selling, and shipping cattle to restrict the spread of brucellosis. Lately, people in the cattle industry have even felt that compliance with regulations and attention to precautions were more of a nuisance than the disease itself.

Although control of brucellosis may have been relegated to the back burner, the disease itself may soon boil up. At this moment, incidences of the disease may be increasing because many beef producers are rebuilding their herds—a lot of cattle are being purchased by producers and introduced into existing herds. Dr. Taylor Woods, State Veterinarian, fears this situation will spread the disease in Missouri. He said that now only about 0.5% of Missouri cattle are test-positive for brucellosis. He foresees that in two years 2 to 3% of cattle will be tested positive unless steps are taken very soon to stop the spread of the disease.

Dr. Woods is not alone in his concern about the spread of brucellosis. The U.S. Department of Agriculture (USDA) is worried enough to devise new guidelines aimed at stopping first the spread of brucellosis and then eventually eradicating it in this country. These guidelines, referred to as the New Uniform Methods and Rules (NUMR), have been over three years in preparation.

Although not issued by August 2, the NUMR were introduced to Missouri cattle interests at a special meeting held that day in the College's Teaching Hospital Au-

ditorium. Brucellosis was the sole topic of that special meeting organized by the State Veterinarian's Office. Mr. Jack Runyon, Director of the Missouri Department of Agriculture (MDA) started the five-hour program which included Dr. John Jeffries, Regional Director, USDA, APHIS, Mr. Sid Moore, APHIS Informational Division, USDA, and Dr. Woods himself. The NUMR, however, were of top interest, and the man who introduced them was Dr. Paul Bectin, Director of the National Brucellosis Eradication Program, USDA, APHIS.

Dr. Bectin discussed the NUMR and their implications for more than an hour before a packed audience. He began by stressing the need for a uniform, coordinated effort across the entire country. He quickly moved into discussing the NUMR. The crux of the NUMR is requiring improved surveillance of all U.S. cattle, especially when cattle are moved. For an outline of the NUMR, please see page 3.

Dr. Woods talked about a plan of action for Missouri. This plan included: 1) recommendations that all cattle shipped from counties with over 2% infection rate will have to undergo *down-the-road* testing; 2) test-eligible cattle are heifers and bulls 18 months of age and over, or those in which the juvenile incisors have been lost or the heifer is pregnant; 3) any calf may be vaccinated with respect to its proper age and that the vaccination be reported by an accredited veterinarian; 4) no adult vaccinated animals will be allowed into Missouri except those consigned to slaughter and transported in sealed trucks; and 5) adult vaccination will not be allowed in Missouri until the need has been shown and a special permit has been issued by cooperating state/federal officials.

Mr. Sid Moore talked about the importance of informing everyone associated with the cattle industry about the stepped-up controls for

brucellosis. He stressed a point that had been made earlier in the day: If there is no public acceptance of the program, it will simply not work!

To gain that public acceptance, Mr. Moore spoke about use of specific public relations techniques. For example, the slogan for the program will be "Don't Buy Bangs", with a sub-slogan, "One Test Is Not Enough". These slogans are being printed on such items as lapel buttons and bumper stickers. In addition, special spot radio announcements have been prepared for airing on country-and-western stations. New handouts and other printed educational materials are being made ready. A special slide show on brucellosis has been created, and copies of this show can be borrowed for showing at any public meeting. The State Veterinarian's Office may be contacted if anyone should want any of this material.

Mr. Moore repeated that this information effort must reach those producers who do not have brucellosis in their herds. If they have been alerted before the disease strikes, rather than afterwards, these producers can stop the spread of brucellosis by exercising appropriate caution when buying or shipping cattle. Much of the brucellosis information given to date to producers has been handed to those unlucky few found with test-positive animals as way of explaining why their herds are being quarantined or being shipped to slaughter.

Another aspect of brucellosis that everyone in the livestock industry should not forget is the threat the disease poses to humans. Dr. William Raithel, Director, Bureau of Veterinary Public Health for Missouri, reminded the audience of this danger. Brucellosis in humans, or Undulant Fever, occurs largely as a result of occupational exposure. Packing house employees, producers, shippers, and veterinarians are at greatest risk. From three to seven cases have occurred in humans each year since 1974 in Missouri (except in 1977 when nine people came down with the dis-

ease). Because Undulant Fever lacks pathognomonic symptoms and often mimics other diseases, this disease may be underreported. Fortunately, Undulant Fever is not transmitted from one human to another.

Drawing the day to a close, Dr. Woods invited questions and comments from the audience. Overall, strong support was expressed for the program.



These three men are shaping the course of brucellosis control in Missouri. L to R: Mr. Jack Runyon, Dr. Taylor Woods, Dr. Paul Becton.

Brucellosis/Cattle/New Uniform Methods and Rules

One reason Dr. Taylor Woods, State Veterinarian, called the August 2 conference on brucellosis was to help Missouri get a headstart on complying with the New Uniform Methods and Rules (NUMR) as issued by the U.S. Department of Agriculture (USDA). What does the NUMR mean for Missouri?

A big feature of the NUMR is the change in classification of states with regard to presence of brucellosis. Before, each county in each state has been classified as: certified free, modified certified free, and non-certified. This changes to: A, B, and C classifications for whole states.

A classification—No infection found for at least twelve months anywhere in the state (except for isolated incidences in which an individual herd has been moved in from out-of-state, tested, and then found to have brucellosis *before* any animals had been moved from receiver's premises or had contact with other cattle).

B classification—Less than 1% of herds determined infected in the state, and surveillance of all cattle reveals less than 0.5% infection overall. Furthermore, the state must have made documented efforts to eradicate the disease by means of a workable program.

C classification—The state does not meet requirements of either A or B.

If Missouri were classified today, it would fall somewhere between B and C, according to both USDA and Missouri Department of Agriculture (MDA) predictions. Dr. Woods and Mr. Jack Runyon, Director of MDA, want to make sure that Missouri will receive a B classification when the time comes, which is projected for the end of 1980. Mr. Runyon stated

that the Governor's Office supports his department in efforts to bring Missouri to within B classification.

By the end of 1981, USDA will require those states given a C standing to put into effect what is now called Test Option #2. That means all cattle moving within or from such a state must originate from a certified brucellosis-free herd, or the animals must be tested *twice* for the disease, 60 days apart, *before* being moved. The receiver must then hold those cattle for 45 to 120 days for retesting (to detect incubating disease).

Sometime after Test Option #2 has been in effect, USDA may apply Test Option #1. This Option will require that cattle moving within or from a C state must originate from a certified free herd, or be tested *three* times, 90 days apart, prior to moving. Then the receiver must retest as in Test Option #2.

The new classifications and the test options give bite to the NUMR; teeth for the bite come with a new provision for S-branding. Before the NUMR, only cattle from exposed herds were S-branded, thereby consigning them to slaughter only. The NUMR require that all test-eligible cattle be tested for brucellosis *or* be S-branded at first test point during transit. So, if anyone attempted to ship cattle from a C state without complying with, say, Test Option #2, the entire shipment would be S-branded.

Other provisions of the NUMR. . .

Age is lowered for defining test-eligible cattle. The new age is 18 months for both dairy and beef animals, and age is determined by whether or not adult incisors are present in the lower jaw.



Thousands of Missouri cattle move each year through places such as this. Such places will receive more attention in the future for brucellosis control.

States must require dealers to keep records, shipment by shipment, of where cattle were purchased and their destinations. A state may be permitted to tie this requirement to its brand laws.

If infection is traced to a particular herd, regulatory officials will have a qualified person visit that herd owner to ascertain what must be done to help that person clean up his herd. However, to alert that owner's neighbors, and area veterinarians and shippers, the identity of that owner will be made public.

Under old regulations, provisions for whole herd vaccination applied only to quarantined herds; NUMR expand provisions to include high-risk herds. Use of reduced vaccine coupled with improved diagnostic testing should help to distinguish six months after vaccination infected cattle from vaccinated ones. The card test in current use will be used only for a screening test.

With widespread acceptance and use of the NUMR, Dr. Paul Becton of the USDA, along with Dr. Woods, foresees the day in which brucellosis will go the way of hog cholera—eradicated from the U.S. For that day to come, though, will require support of the NUMR from every sector of the livestock industry.



Figure 1 - Lateral view shoulder. Defect in the caudal articular surface of humeral head.

Several musculoskeletal diseases associated with the young, large, growing dog have been grouped under the term osteochondrosis. These include: osteochondritis dissecans, ununited anconeal process, fragmented coronoid process, and retained endochondral cores. The typical clinical and radiographic findings associated with osteochondrosis are presented in this paper. Treatments are mentioned, but the author suggests other sources for a more detailed discussion.

The common link between these diseases is a defect in the formation of bone from cartilage or endochondral ossification at the growth centers. For a long time endochondral ossification was thought to occur only at the metaphyseal portion of a long bone. However, research has indicated that the joint cartilage is also a growth center for the epiphysis. Hence, endochondral ossification is occurring at the articular surface of a bone in the growing dog. When osteochondrosis affects the joint surface, pain, lameness and degenerative joint disease (DJD) are the result.

Other diseases such as panosteitis, hip dysplasia, and hypertrophic osteodystrophy affect this same group of dogs and can have similar clinical signs. In addition, some dogs may have multiple diseases, so a thorough physical examination and radiography are necessary for accurate diagnosis.

Osteochondritis Dissecans (OCD)

As osteochondrosis occurs the cartilage becomes thicker than normal due to improper resorption and formation of bone. The deep layers of cartilage become necrotic and crack with the stress of joint motion. This

allows synovial fluid to reach the subchondral bone and the bone marrow. Cartilage remnants break off and float in the joint capsule causing inflammation. This lesion is termed "osteochondritis dissecans" because of the joint inflammation and the dissection of the cartilage. It is found at multiple articular surfaces including the shoulder, elbow, stifle, and hock. Some researchers feel it may also play a role in articular disease of the cervical vertebrae and hip. Clinical signs are dependent upon the affected joint.

The radiographic findings generally consist of a defect or flattening of the subchondral bone along the articular margin. This may be accompanied by a cartilage flap or a free floating articular body (joint mouse). Arthrography may be necessary to document the presence of a cartilage flap. Sclerosis of the subchondral bone bordering the defect may also be present. With long standing disease DJD will be evident as periarticular osteophytosis, sclerosis of the articular margins, and narrowing of the joint space.



Figure 2 - A-P view elbow. Defect in medial condyle of humerus. Note sclerotic margin (black arrow).

The Many Faces of Osteochondrosis

Due to the Degenerative Joint Disease Which Frequently Accompanies Osteochondrosis Dissecans Lesions, Early and Accurate Diagnosis is Necessary to Minimize Loss of Joint Function.

Joanne Burns, D.V.M.
Radiology Resident
Dept. Veterinary Medicine & Surgery

Shoulder OCD

Osteochondritis dissecans of the shoulder has been long recognized and well documented. It generally affects large to medium sized dogs at 4 to 9 months of age. A higher percentage of males than females are affected. Nutritionally pushed, rapidly growing dogs seem to be those most frequently affected. Clinical signs are insidious as lameness may shift from one forelimb to the other. Pain can be elicited on palpation and movement of the shoulder, especially upon full extension. The client may note a stiffness in gait immediately after rest.

Radiographically, the lesion affects the caudal portion of the humeral head (Figure 1). Lateral radiographs usually provide the most diagnostic information. The use of detail screens and a grid will enhance radiographic detail and aid in diagnosis. Both shoulders should be examined since the lesion is frequently bilateral. Concurrent study of the elbows should be strongly considered especially if no lesions are found, as elbow and shoulder lameness may be difficult to differentiate. Arthrography may be necessary to determine if there is a cartilage flap.

Treatment consists of surgical curettage in the presence of a cartilage flap. Medical treatment in the absence of a flap is controversial as some authors recommend rest and confinement to allow the shoulder to heal while others recommend exercise to remove the flap and allow it to be resorbed in the joint. Occasionally these free fragments will attach to the joint capsule and establish blood supply. It is felt that they cause no significant problem unless they interfere with the bicipital ten-

don. In the absence of a flap the defect will fill in with fibrocartilage, the pain will resolve, and the dog will become sound.

Elbow

Osteochondrosis of the elbow expresses itself in three forms: 1) OCD of the medial humeral condyle; 2) ununited anconeal process (UAP); and 3) fragmented coronoid process (FCP). All present with similar clinical signs of stiff gait after rest and an insidious lameness first noticed at about 4 to 5 months of age. As the dog ages, DJD sets in and lameness becomes more marked. The patient will hold the front limbs slightly laterally rotated with the elbow close to the chest. Pain can be elicited on extension and sometimes flexion. Serial radiographic studies may be necessary to demonstrate the etiology of the lameness. Radiographic examination of the elbow should include anterior-posterior (AP), lateral and flexed lateral views. Again, good quality radiographs are essential for diagnosis.

OCD Medial Humeral Condyle. This lesion presents as a triangular defect in the weight bearing surface of the medial humeral condyle (Figure 2). A sclerotic margin may or may not be present. Usually the AP view will be most diagnostic. Treatment generally requires surgical curettage. Since this frequently accompanies FCP, a thorough exploratory of the coronoid process should be done at the time of surgery.

Ununited Anconeal Process. This condition is seen in many breeds, but is most common in the German Shepherd dog. The anconeal process fails to undergo bony fusion with the ulna but is still attached by a fibrocartilage attachment. Examination of the cartilage surface reveals cracks and fissures consistent with OCD. Normally fusion takes place at 124 ± 17 days, and the anconeal process is considered ununited if not fused by 5 months of age.

Radiographically, the anconeal process is separated from the ulna which is best demonstrated in the flexed lateral view. The physis of the medial humeral epicondyle may overlay the anconeal process and should not be confused with an UAP (Figure 3).

Treatment has generally been sur-

gical removal which still allows some instability of the joint but retards the formation of DJD. Surgical removal is recommended to be done at 9-12 months after the period of rapid growth as this seems to lessen the amount of DJD. Some authors recommend surgical fixation of the anconeal process. It has not yet been demonstrated whether this results in a better outcome in the long run.

Fragmented Coronoid Process. This condition has been recently described and is thought to be more common than UAP. It occurs in most breeds of large dogs but seems most prevalent in Labrador and golden retrievers. Clinical signs are typical of elbow lameness with an onset at 4 to 5 months. Radiographic examination at that time may not reveal a lesion, therefore, serial radiographs should be taken at 4 week intervals with persistent clinical signs. No abnormalities may be noted until approximately 7 months of age, although clinical signs may be present earlier. Fragmentation of the coronoid itself is usually not visualized, rather DJD of the elbow is noted (Figure 4). Small osteophytes on the dorsal part of the anconeal process is frequently the earliest sign and are best demonstrated on the fully flexed lateral view. Other changes include sclerosis along the semilunar notch of the ulna and osteophytosis. DJD can be quite pronounced by one year of age. Treatment is an effort to minimize degenerative disease by surgical removal of the FCP.

OCD of the Stifle

Lameness caused by this lesion is more a gait abnormality and mimics the gait of the dysplastic animal. The dog should be evaluated for hip dysplasia as one or both lesions may be present. Posterior-anterior (PA) views and sometimes PA oblique views are necessary to demonstrate the flattening or defect in the lateral femoral condyle (Figure 5). Although this is the most frequent site, the medial condyle may also be involved. Many stifle lesions heal spontaneously while others develop severe DJD. Surgery is indicated if there is acute lameness and a flap or joint mouse can be demonstrated. Arthrography may be necessary to demonstrate a flap.

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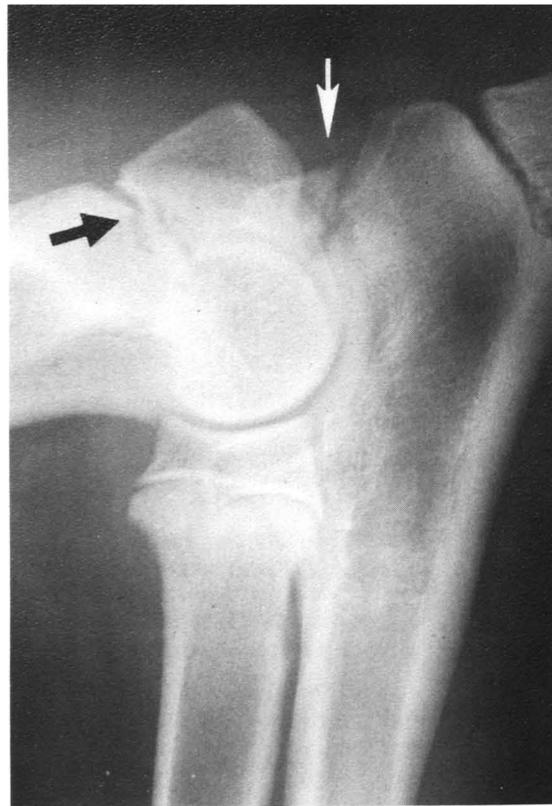


Figure 3 - Flexed lateral view elbow. Ununited anconeal process (white arrow). Note open physis of medial humeral epicondyle (black arrow).



Figure 4 - Lateral view elbow. DJD secondary to fragmented coronoid process. Note sclerosis of semilunar notch (white arrow)



Figure 5 - Lateral view stifle. Defect with sclerotic margin in lateral femoral condyle (black arrow). Lesion was an incidental finding on post-operative evaluation.



Figure 6 - Lateral view distal radius and ulna. Retained endocartilaginous core in metaphysis of ulna (black arrow).

Osteochondrosis, cont.

OCD of the Hock

This lesion is the least common and frequently unilateral. Labrador and golden retrievers seem to be the most commonly affected breeds. These dogs generally show slight hind limb lameness at 4 to 5 months of age. Pain may be elicited on extension and/or flexion of the hock, and the dog may have a shortened stride when exercised. Joint effusion is sometimes present. Radiographs demonstrate a flattening of the medial ridge of the talus frequently accompanied by joint mice. The AP view is usually most helpful in making a diagnosis. Surgery is the treatment of choice and the prognosis is good if performed early in the course of the disease.

Retained Endocartilaginous Cores

These occur at any metaphyseal growth plate but are most frequently observed in the ulna, tibia, and femur (Figure 6). They usually remain non-clinical but in some cases may cause slowed growth rates in the affected bone. In the ulna this can have serious consequences as asynchronous growth between the radius and ulna can result in deformity and lameness, necessitating surgical correction.

Conclusions

Due to the degenerative joint disease which frequently accompanies OCD lesions, early and accurate diagnosis is necessary to minimize loss of joint function. Persistence on the part of the veterinarian and client may be necessary as gait and postural abnormalities may occur before radiographic lesions are evident. Good quality radiographs make diagnosis easier but require attention to many factors such as screen and film speed, exposure factors, and processing.

Shoulder OCD, fragmented coronoid process, and ununited anconeal process are the most frequently diagnosed lesions of osteochondrosis. However, as we become more aware of the other lesions of OCD, critical examination of radiographs may reveal their presence with increasing frequency.

Research Associate Appointed Assistant Professor

Dr. Ann B. Kier has been appointed Assistant Professor of Veterinary Pathology, effective July 1, 1979. Dr. Kier is now working in the Veterinary Medical Diagnostic Laboratory. Her position is one of two new faculty positions made possible through a service contract from the Missouri Department of Agriculture for the Diagnostic Laboratory. The other faculty position will be filled this fall.



Dr. Kier received the B.A. degree from the University of Texas at Austin, and her B.S. and D.V.M. degrees from Texas A&M University. After graduation in 1974, she became director of an AAHA-approved cat referral clinic in Austin. In 1976 she was appointed Research Associate at Missouri's Veterinary College and an NIH post-doctoral fellow in laboratory animal medicine. Dr. Kier completed a residency in laboratory animal medicine in February, 1979, and in August was awarded the Ph.D. degree in Comparative Pathology from the University of Missouri-Columbia.

In the Diagnostic Laboratory, Dr. Kier works with Drs. Kintner and Nelson in a service capacity on pathology of general mammalian species. She is also engaged in research activities.

Resident Named Assistant Professor

Dr. Philip Roudebush has completed his residency at the College and, as of August 1, has been appointed assistant professor in the Department of Veterinary Medicine and Surgery. Dr. Roudebush's interest lies with small animal internal medicine. He is currently helping teach the small animal medicine block. Dr. Roudebush received his D.V.M. degree from Purdue.



New Department Head

Dr. Arthur A. Bickford began work August 1 as the chairman of the College's Department of Veterinary Pathology.

Dr. Bickford received his V.M.D. from the University of Pennsylvania in 1960. Following that, he pursued graduate studies at the University of Vermont, Colorado State University and Purdue University. He received the Ph.D. degree from Purdue in 1966.

Dr. Bickford has worked for such companies as William S. Merrell Company and Ayerst Research Laboratory, and for Purdue University and the New York City ASPCA Hospital. Since 1978, Dr. Bickford has been Unit Director of Veterinary



Extension at the University of California at Davis.

Avian pathology is Dr. Bickford's area of specialty. He has had published more than 70 papers. In 1965, he was awarded board certification by the American College of Veterinary Pathologists.

He is on the Board of Directors of the American Association of Avian Pathologists, and represents that association as a delegate to the AVMA House of Delegates.

When asked about his new position as Chairman of the Department of Veterinary Pathology, Dr. Bickford responded: "There are positive opportunities here in many respects. The department is evolving, and I see opportunities to develop and expand programs already here."

Genetics Book by Two College Faculty Published

"To provide the necessary information to animal breeders, the practicing veterinarian needs to be able to recognize an inherited condition or defect and should understand the mode of inheritance of the defect in order to suggest a workable solution for clients to eliminate the undesirable characteristics from their breeding programs. . ."

That statement in the preface of *Abnormalities of Companion Animals: Analysis of Heritability* sums up the intent of this reference book for veterinarians. The book was written by Drs. C. W. Foley and G. D. Osweiler, both of whom are professors at the College, with Dr. J. F. Lasley, Professor in the UMC College of Agriculture.

The book is in four parts. The first part briefly introduces the reader to fundamental principles of genetics. The following three parts are devoted each to the dog, the cat, and the horse. Within each part, abnor-

malities are grouped by body system. For each abnormality, the name is given, then description, pathophysiology, inheritance, and finally recommendation.

Iowa State University Press published the book this year.

New O.F.A. Director

Dr. Louis A. Corwin, Jr., has been appointed Project Director for the Orthopedic Foundation for Animals effective September 1, 1979.

Dr. Corwin has been Professor in the Department of Veterinary Medicine and Surgery at the College, and he is a specialist in radiology. He received his D.V.M. and Ph.D. degrees from Colorado State University.

The Orthopedic Foundation for Animals is a nation-wide, non-profit organization that serves the dog-owning public by evaluating radiographs of canine hips for evidence of hip dysplasia. This organization also promotes research into orthopedic diseases, distributes information on such diseases, and offers educational programs for the dog-owning public. The headquarters of the Orthopedic Foundation for Animals are located on the Middlebush Farm which is part of the College.



Coming Programs of Interest

On October 23 and 24, 1979, the College, University of Missouri-Columbia's Extension Division, and the Orthopedic Foundation for Animals, Inc. will hold a Symposium on Canine Hip Dysplasia at the Sheraton-Westport Inn in St. Louis, Missouri.

The Symposium will include Ms. Rachel "Pagey" Elliott who will show a film study of canine movement with footage taken by means of cineradiography. Included also in the program will be "Genetic Aspects of Hip Dysplasia: Another Look" by Dr. C. W. Foley, "Hip Dysplasia: Viewpoint of an Orthopedic Surgeon" by Dr. Guy Tarvin, and "Hip Dysplasia: Research Summary, Current Studies and Needs" by Dr. George Lust.

For more information, please contact Ms. Carol McAllister, 234 Veterinary Medicine Bldg., UMC, Columbia, MO 65211.

Ms. Elliott will in addition make a presentation on "Animal Locomotion" at a meeting of the Student Chapter, AVMA, 8:00 pm, October 22, 1979, in the College's Teaching Hospital Auditorium.

New Anatomist

Dr. Roger Brown has transferred from the College's Department of Veterinary Medicine and Surgery to the Department of Veterinary Anatomy-Physiology to fill the position of gross anatomist vacated by Dr. Hermann Meyer in August.

Dr. Brown officially made the transfer effective September 1. He first came to the College in July, 1969 from a faculty position at Michigan State University. He had received his D.V.M. and M.S. degrees from Michigan State University, and his Ph.D. from Purdue.



College Researchers Receive Special Grants

The Science and Education Administration of the U.S. Department of Agriculture (USDA) awarded special grants to three faculty researchers at the College. These grants, totalling more than \$331,000, were announced this June following review by scientific peer groups of preproposals and then full proposals.

These three grants were among the first awarded by USDA as authorized by the 1977 Food and Agriculture Act. Congress passed this act to specifically promote research into food animal health and disease.

Associate Dean Lloyd Faulkner attributed this College's success in obtaining grant funds to the relevance of research here to food animal health and disease, and to the scientific quality of research proposed by College researchers.

Researchers, project titles and awards were: Dr. R. G. Elmore, Assistant Professor, "Endotoxins in the Pathogenesis of Lactation Failure (MMA) in Swine", \$93,235; Dr. H. E. Garner, Professor, "Endotoxemia and Lactic Acidosis: Their Specific and Combined Contributions to Equine Laminitis Onset", \$104,670; and Dr. G. D. Osweiler, Professor, "Hematologic and Immunologic Response of Cattle to T-2 Fusarium Mycotoxin", \$133,464. Funding period for each grant is three years.

College's Research Efforts Continue

The College's Research enterprise is healthy and growing. In Fiscal Year 1978-79, College researchers generated research grants totaling: \$958,544 in outside funding; \$101,798 in Missouri Agricultural Experiment Station funds; and \$52,844 in Veterinary Medicine Research Council support. These total \$1,113,186 in support of veterinary research at the College. These figures do not include the recently funded USDA special grants (see accompanying story above), which brings the total for grant funds to more than \$1,289,000.

College Participated in Minority Program

To interest Missouri minority students in veterinary careers, the College participated in the Rockefeller Foundation—Howard University Program in Life Sciences Careers for High School Minority Students.

This summer, three Black students who are now seniors in high school worked at the College. Ms. Venetia Brown of Columbia learned techniques of scientific illustration for eight weeks from the College's medical illustrator, Mr. Don Connor. Mr. Edwin Cooper from Hayti, Missouri, participated in research animal diagnostic medicine in the College's Veterinary Medical Diagnostic Laboratory. Mr. Robert Sheard, also from Hayti, worked with the Department of Veterinary Microbiology. Sheard and Cooper spent five weeks at the College.



Mr. Cooper



Mr. Sheard

The Rockefeller Foundation gave Howard University of Washington, D.C., a grant for the past summer from which awards were made to participating institutions to employ minority students as research apprentices. Because the College has a keen interest in recruiting more minority students for careers in veterinary medicine, it was selected by the project leader at Howard University to train three student appren-



Mr. Don Connor helps Ms. Venetia Brown prepare an illustration.

tices this summer.

The College has already applied to participate in this program next year.

The purpose of the program is to provide opportunities for needy and aspiring minority students to become aware of careers in biomedical sciences.

New Toxicologist

Dr. William Hewitt has been appointed Assistant Professor of Anatomy and Physiology for the College. He began work on June 11 after a two-year study as a post-doctoral fellow at the University of Montreal. He received his Ph.D. (Pharmacology) in 1977 from Michigan State University.



One area of interest for Dr. Hewitt is nephrotoxicity, in particular, those factors and compounds that modify toxicity of pollutants in the kidney.

Dr. Selby Chosen for Award

The American Association of Food Hygiene Veterinarians selected Dr. Lloyd Selby to receive the Outstanding Teacher of Veterinary Food Hygiene Award for 1979. This award was presented during the annual meeting of that organization held on July 25, in conjunction with the annual convention of the AVMA in Seattle, Washington.



Dr. Selby is Associate Professor of Veterinary Microbiology, and Family and Community Medicine. He received his D.V.M. degree from Colorado State University and his Dr. P. H. from Tulane.

Profile of the Class of 1983

As with the Class of 1982, 76 people have been admitted to the College in the Class of 1983. Four students were admitted in addition to the 72 normally accepted in order for the College to comply again this year with current federal guidelines. The College's administration considers this increase to be temporary.

The grade point average for the Class of 1983 is 3.47 (4.0 = A), down from 3.5 for the Class of 1982. The average VAT Percentile was 73, and the average number of semester hours completed was 128.

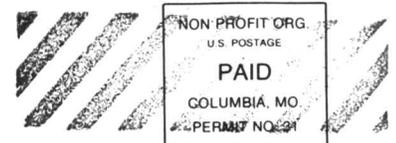
There were 322 applicants, 174 of whom were from Missouri. Of those accepted, 69 are Missouri residents, and the majority of these have been enrolled in the University of Missouri system. Most students came from the academic area of Agriculture.

Veterinary Medical Review

College of Veterinary Medicine
and Cooperative Extension Service

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