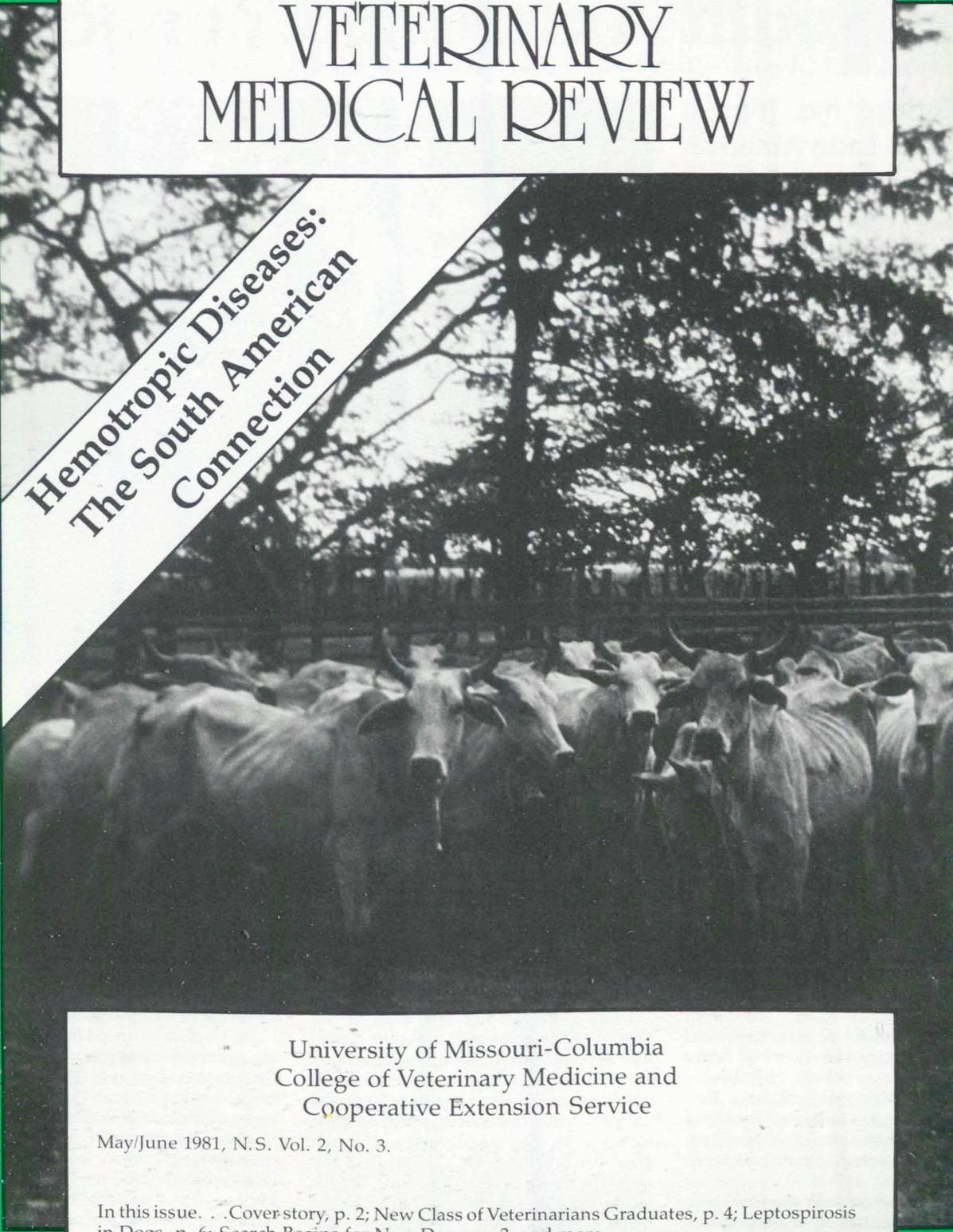


# VETERINARY MEDICAL REVIEW

**Hemotropic Diseases:  
The South American  
Connection**



University of Missouri-Columbia  
College of Veterinary Medicine and  
Cooperative Extension Service

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# Hemotropic Diseases: The South American Connection

The College has joined forces with Latin America in an international war on livestock diseases.

Healthy livestock are not rare in Latin America, but they are in danger.

Malaria-like hemotropic diseases are almost a way of life for South American cattle. These maladies, along with recent outbreaks of African swine fever and foot-and-mouth disease, spurred a recent meeting of officials in Bogota, Colombia. They've turned to the University of Missouri for help.

The College of Veterinary Medicine's Dr. C.A. Carson recently spent 17 days in the Andean region, consulting with regulators and researchers about animal disease problems in those countries. Sponsored by the Inter-American Institute for Agricultural Cooperation in Costa Rica, the gathering brought together animal health directors from Colombia, Peru, Ecuador, Bolivia and Venezuela.

"These officials recognize the tremendous cost of disease control," Dr. Carson says, "but they also recognize the even greater cost of apathy." Out of the trip emerged a proposal for an international project to control several infectious diseases of South American food animals.

Pending approval from University administrators and Latin American officials, the proposal will be submitted to international funding agencies to solicit agricultural development loans. The money will fund surveys for disease detection, research programs, and training of scientists from the northern region of South America.

The goal is control of anaplasmosis, babesiosis, African swine fever, foot-and-mouth disease, bovine brucellosis, tuberculosis, rabies and leukemia. Researchers also hope studies on babesiosis may shed light on the closely related Plasmodium organism causing malaria in humans.

Dr. Carson, chairman of the College's microbiology department, has spent 14 years studying bovine hemotropic diseases. His studies in Colombia have familiarized him with disease problems in the Andean region and it was this expertise that animal health directors



*Neglected cattle on a South American ranch.*

sought during the five-day meeting in Bogota. Dr. Carson delivered a paper, "The Epidemiology of Anaplasmosis and Babesiosis in Colombia and Australia," describing how to evaluate hemotropic diseases and determine the cost-benefit analysis of control measures. He says increased milk production is a high priority in Latin America. "But they need efficient management, parasite and disease control to reach their optimal capability. Then," he adds, "these countries could well become self-sufficient in milk production."

Dairy cattle do not fare well in the tropics and to combat that, South American breeders are crossing northern cattle with the criollo, a native, tick-resistant beef breed. Previously unexposed animals from the North must be protected when they are shipped to enzootic areas for breeding. Dr. Carson says the imports need preconditioning before facing the stresses that await them in the tropics, where high temperatures and humidity provide a perfect breeding ground for tick vectors of hemotropic diseases.

"There is even a problem in moving animals from one area with a particular

disease strain to another area with a different strain," he says.

Dr. Carson thinks new epidemiological studies should be done in the area and he discussed potential methods with officials at the meeting. "We've got to determine the prevalence, severity and cost of animal losses related to these diseases," he says.

While in South America, Dr. Carson helped set up programs to identify affected animals, and determine the cost of disease. He spent several days near Tarpoto in the Peruvian jungle, examining cattle for tick numbers and identity.

Dr. Carson returned from his trip with an optimistic attitude. Interest in the international cooperative program is high, he says, and the spectrum of support includes the dean of Peru's San Marcos Veterinary College and that country's agriculture minister. The task now before animal health officials is to impress upon national leaders the seriousness of food animal diseases in South America and the need for control programs.

"Then the programs must be imple-

*Continued, page 3.*

mented through education," says Dr. Carson. "The small farmer may not understand what he is being advised to do."

Carson also sees benefits from the program for the U.S. livestock industry.

"People have a tendency to be apathetic toward exotic diseases," he says, "but they are a constant threat." Rapid livestock mobility through American commercial channels heightens the danger. "A disease could spread throughout this country in a matter of days," Dr. Carson says.

"I advocate control of these diseases where they now exist—south of us," he says, "as opposed to waiting to fight them here."

### Dr. Kim Waggie Awarded Research Grant

Dr. Kim Waggie, a postdoctoral student in veterinary pathology and lab animal medicine, has received a National Research Service Award from the National Institutes of Health.

The three-year fellowship, worth more than \$15,000 a year, will fund Dr. Waggie's research on Tyzzer's Disease, a bacterial disease that causes enteritis and hepatitis in several domestic, wildlife and laboratory animal species.

Dr. Waggie hopes to develop a serological test for diagnosis of Tyzzer's Disease in laboratory animals and apply her results to domestic species.

### Foul-tempered Patient

Dr. Gary Weddle, a member of the College's Class of 1978, found himself in the spotlight this spring.

Dr. Weddle was the surgeon who removed an arrow from the breast of Donna the duck at his Las Vegas, Nev., clinic. The mallard, a victim of an errant archer, had eluded Humane Society and Nevada wildlife officials for several weeks. But tranquilizer-laced breadcrumbs ended the chase and the tipsy bird was captured and taken to Weddle for surgery.

Donna's plight captured the world's fancy. Dr. Weddle says he was deluged with calls from as far away as Japan and Germany. The national media descended upon his clinic, clogging traffic. "Real People" and "That's Incredible" have stories in the works for their television shows. And Las Vegas townspeople threw a party at the Desert Sands Country Club to celebrate the duck's apparent recovery.

At last report, Donna was back on the road to good health, but a bit miffed at all the fuss. She bit the doctor.

# Faculty Update

### Dr. Robert E. Miller Joins Zoo Staff

Dr. Robert Eric Miller has joined the College faculty as a resident in zoo animal medicine. He replaces Dr. Thomas Meehan who completed his zoo animal residency in March.

Dr. Miller, 27, will be based at the St. Louis Zoological Park, but will lecture on campus in the veterinary medicine and surgery department.

Hailing from Ohio, Dr. Miller received his B.S. in zoology and his D.V.M. from Ohio State University. He comes to Missouri from a small animal medicine and surgery residency at Metropolitan Veterinary Hospital in Akron, Ohio. He also has worked in a small animal/exotic practice in Dunwoody, Georgia.



### Dr. Mark Dallman Receives One-Year Appointment

Dr. Mark Dallman is not new to Columbia, but he is in a new position at the College. He has been given a one-year appointment as assistant professor in veterinary medicine and surgery, replacing Dr. Steven Stoll who leaves in July.

Dr. Dallman, 40, received his M.S. in veterinary anatomy and his D.V.M. from the University of Missouri. He holds a B.S. in zoology from the University of Wisconsin. In May, he completed a residency in small animal surgery at the College and received his Ph. D. in veterinary anatomy.

### Dr. Roger Brown Retires

Dr. Roger Brown has retired from teaching at the College after 12 years. A professor of veterinary anatomy-physiology, he left April 30. Dr. John Amann will replace him in July.

## Committee Formed for Dean Search

A search committee has been formed to find a new dean for the College.

Headed by Veterinary Microbiology Chairman Dr. C.A. Carson, the panel includes: Dr. Harold E. Garner, interim associate dean and professor of veterinary medicine and surgery; Dr. Joseph P. McGinity, professor of veterinary medicine and surgery; Dr. Ann B. Kier-Schroeder, assistant professor of veterinary pathology; Dr. Vincent St. Omer, associate professor of veterinary anatomy-physiology; Karen Riley, adminis-

trative associate; and Jenifer Whiteside, a fourth-year student and president of the student chapter of the AVMA.

Other committee members from outside the College are: Dr. James Dexter, associate professor of medicine, agriculture professor Bill Day; and Dalton Research Center Director Dean Franklin.

Dr. Kenneth Weide resigned as dean Feb. 27. University Provost Ronald Bunn appointed Dr. Willard H. Eyestone as interim dean on March 3.

### Research Team To Conduct Neurotoxicology Study

The College's Dr. Vincent St. Omer and university psychologist Dr. Dennis Wright have received a \$127,528 contract from the National Center for Toxicological Research in Jefferson, Ark.

Dr. St. Omer, an associate professor in veterinary anatomy-physiology, is the co-principal investigator in a two-year project to evaluate the reliability and sensitivity of certain neurotoxicologic test methods.

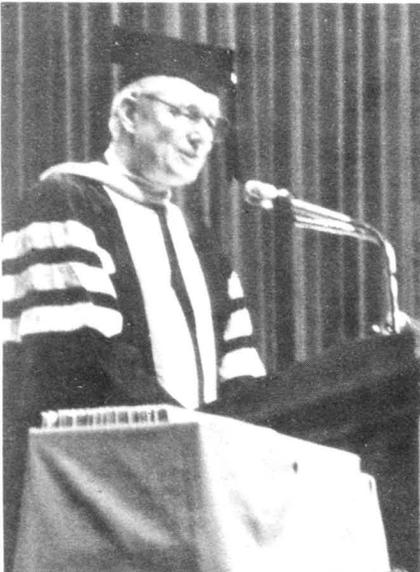
He and Dr. Wright, an associate professor of psychology, will evaluate the subtle behavioral and maturational ef-

fects of toxicants on developing rats. Pregnant mothers will be exposed to d-amphetamine sulfate and methylmercury chloride and the offspring will be monitored. The researchers will compare their results with those of four other laboratories where identical work is to be performed.

Neurotoxicology is the systematic study of unwanted effects of toxic agents on the nervous system. Recent interest in neurotoxicology, especially behavioral toxicology, is largely due to growing concern over environmental pollutants associated with an industrialized society.

The tests will be performed at the University's Sinclair Farm, with the cooperation of Dr. Charles Middleton. Dr. Joseph Wagner will screen the animals used in the project.

# Commencement 1981



Dr. Mosier addresses the class of 1981.

## 71 Graduate in 32nd Class

The title of "doctor" was bestowed on 71 new veterinarians May 9 at the College of Veterinary Medicine's 32nd Academic Convocation.

The afternoon ceremony followed the University of Missouri's general commencement that morning in Hearnes Multipurpose Building on the Columbia campus.

Dr. Jacob E. Mosier, President-elect of the American Veterinary Medical Association, addressed the graduates. Dr. Mosier is the chairman of the Department of Surgery and Medicine at Kansas State University's College of Veterinary Medicine.

Missouri's Veterinary Medical Association president, Dr. John A. Hennessey of Poplar Bluff, administered the Veterinarian's Oath.

The investiture followed, assisted by Assistant Dean Kenneth Niemeyer and Interim Associate Dean Harold Garner. Interim Dean Willard Eyestone also recognized 10 residents completing their training programs at the college.

A special moment came when Dean Eyestone conferred professor emeritus status on Dr. Arthur Case, a professor at the College since 1947.

The 1981 commencement marked the 1,350th veterinarian to graduate from the College since 1950.

## Graduating Class of 1981

*Doctor of Veterinary Medicine Summa Cum Laude*  
Stephen Edward Collier

*Doctor of Veterinary Medicine Magna Cum Laude*  
Owen Lee Henderson  
Alicia Marie Keegan

*Doctor of Veterinary Medicine Cum Laude*  
Karen Duesenberg Collier  
Tina Marie Cone  
Christopher Robert Ross

*Doctor of Veterinary Medicine*

Betty Linda Bassett  
Lauren Ann Bauer  
Timothy Mark Bernt  
J. Mark Beverly  
Jonathan Scott Boschen  
James Robert Brummit, Jr.  
Cheryl S. Crecelius  
Stephen Leroy Denny  
Denise Ann Detry  
Dale Robert Diesel  
Margaret Jacobson Dillender  
Nancy Kay DiMarco  
Kim Mahan Dimmitt  
Randall Steven Dugal  
Johnnie Joel Eighmy  
James Lee Fallert  
Kent Raymond Findley  
Roger Busch Fingland  
Marilyn Anne Finke  
Robert Raun Foss  
Roy Eugene Fox, Jr.  
Phillip Freiling  
Gwenn Lee Freitag  
Katalin Suzanne Grant  
Stephen Anthony Greene  
Douglas Alan Hardy  
Mark Theodore Higgins  
Lucile F. Hirsch  
Christine Sue Hotz  
Ben Williams Johnson  
Kenneth Joseph Kopp  
Michael Dale Lairmore

Kenneth James Lambrecht  
Cheryl Lynn Peterein Lewis  
David Nestor Lowell  
Tod N. Luethans  
Richard Patrick McDonough  
Ann Elizabeth McDowell  
Edward Dennis McKnight, III  
Garry Dennis Miller  
Sheri Mueller Moellinger  
Gregory Eugene Morse  
Scott Alan Nieberg  
Tim Alan Pennington  
Douglas Steven Pernikoff  
John Randall Schildknecht  
David R. Schnuckenbrock  
Betty Jean Seay  
Kerry Gayle Silva  
William Stehnach  
Daniel Phillip Stoup  
William Joseph Taylor  
Paul Brian Terry  
Michael Francis Thompson  
Pierre Louis Tung  
William George VanAlstine  
David M. Vandever  
Jack Adolph Wagner  
Diana Sue Webster  
Daniel Hiram Weddle  
Mary Alice Whitlock  
Patrice Adele Whittington  
Priscilla Jill Whittington  
Douglas Clemons Wolf  
Lawrence William Zeis

*Frankie Lynn Bowers will complete the requirements for graduation and receive the D.V.M. degree in July 1981.*

## College Grants Dr. Case Emeritus Status

Dr. Arthur A. Case was appointed professor emeritus at the College after 34 years of service during the May graduation ceremonies.

In recognizing Dr. Case's achievements at the College, Interim Dean Willard Eyestone recalled the professor's part in creating the Teaching Hospital, where he taught almost every aspect of clinical work.



Last fall, University President James Olson honored Dr. Case at the Annual Conference by presenting him with the College's Distinguished Service Award.

A Diplomate and charter member of the American College of Veterinary Toxicologists, Dr. Case is a recognized expert on poisonous plants. A graduate of Kansas State University, he taught pathology at Ohio State University for five years before coming to UMC's fledgling College in 1947. The drought of 1954 piqued his interest in toxicology, where he has concentrated his research since 1965.

Dr. Case will retire in August.



Dr. Louis Tritschler congratulates Robert Foss on winning the Elsie S. Roth Equine Award.

## 48 Students Honored At Banquet

More than \$31,000 found its way to veterinary students at the College's Honors Convocation Banquet May 7.

Thirty-four awards and scholarships went to 48 students at the recognition dinner sponsored by Upjohn. The honors ranged from proficiency in the basic sciences and clinical areas to academic excellence and leadership.

Four new awards were added to the College rolls this year: the A.J. Durant Memorial Award for outstanding knowledge of poultry diseases went to Doug Pernikoff; the Lucy B. Davis Scholarships in small animal medicine and surgery was awarded to Gwenn Freitag and

Pierre Tung; the Dr. and Mrs. Clair Hibbs Award for excellence in veterinary diagnostic laboratory work went to Randy Spragg; and the Frank E. and Ina Hinkerson Rhoads Scholarships for high scholastic average honored Dusty Sarazan.

Two one-time awards by anonymous donors were presented to Charley Love and Kathy Muller.

Standing ovations greeted Dr. Roger Brown, who retired this year from the Department of Veterinary Anatomy-Physiology, and Dr. Steven Stoll, who received the Norden Distinguished Teacher Award.

## Dr. Stoll Receives Norden Award For Teaching

"It's nice to receive an award for something you enjoy doing."

That was Dr. Steven Stoll's reaction to his winning the 1981 Norden Distinguished Teacher Award.



An associate professor of veterinary medicine and surgery, Dr. Stoll was selected by the students to receive the award at the College's Honors Convocation Banquet May 7. The honorarium is presented annually by Norden Laboratories to an outstand-

ing teacher at each of the nation's veterinary schools.

Dr. Stoll came to UMC from The Animal Medical Center in New York City where he practiced orthopedic surgery. Born in Budapest, Hungary, he attended Marquette University and the University of Illinois, where he received his B.S., B.V.M. and D.V.M. degrees. After becoming a veterinarian in 1969, he interned and served a residency at The Animal Medical Center before becoming staff surgeon there. He also has completed visiting residencies in orthopedics at New York's Hospital for Joint Diseases and Medical Center, and in surgical pathology at that city's Beckman Downtown Hospital.

In 1975, Dr. Stoll became a Diplomate of the American College of Veterinary Surgeons, serving on that college's examination board for three years. He

received the Upjohn Award for Clinical Excellence in Small Animal Medicine in 1969 and is a member of Phi Zeta scholastic honor fraternity. He also is a member of the board of directors of the Veterinary Orthopedic Society and the Association for Veterinary Orthopedic Research and Education. He serves on the editorial board of several scientific journals.

Dr. Stoll has published 16 scientific articles and has given more than 50 scientific presentations nationally and internationally.

In the past nine years, the award-winning teacher proudly says he has advised and helped train more than 100 interns and surgical residents. Thirteen of those advisees have gone on to become Diplomates of the American College of Veterinary Surgeons.

# Leptospirosis in Dogs

## A College Study Found An 11.9% Infection Rate Among Random-Source Dogs in Missouri.

Robert J. Marx, BA, BS  
Veterinary Diagnostic Laboratory

Dwight R. Owens, BS, MS

Ronald H. Lentsch, BS, MS, PhD  
Veterinary Microbiology

Joseph E. Wagner, DVM, MPH, PhD  
Veterinary Pathology

Most leptospiral infections appear to be mild or inapparent (1), but urinary shedding of leptospires can be detected for extended periods after clinical infections subside (1-3). Canine leptospiral infections frequently are epizootic. Serological surveys show many leptospiral serovars involved in these epizootics (4). The three most common serovars of *Leptospira interrogans* in the United States have been canicola, pomona, and icterohaemorrhagiae (1).

This study was designed to evaluate the prevalence of the more common serovars causing leptospirosis among the random-source canine population arriving at the University of Missouri-Columbia School of Medicine. The dogs were from towns or cities throughout the state, thus data obtained should provide information on the prevalence of leptospiral infections in Missouri dogs.

### Materials and Methods

Blood samples were drawn from 582 random-source dogs from seven Mis-

souri pounds between March 15 and June 29, 1977. While we attempted to collect urine samples from all dogs, cystocentesis (5) was successful in only 255 during the dogs' initial processing at the school. Blood was separated into plasma and serum fractions, then stored at -23°C until antibody titration. One milliliter of each urine sample was injected into Ellinghausen, McCullough, Johnson and Harris (EMJH) culture media and re-examined for growth after six days. Results were recorded as positive or negative. Urine samples also were centrifuged at 2,000 rpm in a Sorval refrigerated RC5B centrifuge for 30 minutes within two hours of collection. The sediment was examined for leptospires using darkfield microscopy and the pH was recorded.

Plasma and serum titers to *Leptospira interrogans* serovars canicola, pomona, and icterohaemorrhagiae were determined by the microscopic agglutination microtiter test (MAMT) (6). Specimens with 50 percent (+2) agglutination at 1:100 dilution or greater were considered positive.

### Results

Thirty (5.2 percent) sera tested had significant titers to one or more leptospiral antigens. Eighteen (3.1 percent) of 582 sera tested had antibody titers to canicola of 1:100 or greater. Two dogs (0.34 percent) had significant antibody titers to pomona, 10 dogs (1.7 percent) to icterohaemorrhagiae.

Antibodies to leptospirosis were demonstrated in 34 of 582 (5.8 percent) plasma fractions: 16 (2.8 percent) canicola; 4 (0.7 percent) pomona; and 14 (2.4 percent) icterohaemorrhagiae.

Plasma demonstrated more frequent antibodies to canine leptospiral infection than did serum for pomona (Table 1) and icterohaemorrhagiae. Canicola antibodies were demonstrated less frequently in the plasma fraction than the serum fraction. Antibody titers to the leptospiral antigens at a 1:100 dilution or greater were found in plasma and serum fractions in 23 (3.8 percent) cases: 14 (2.3 percent) canicola; 1 (0.2 percent) pomona; and 8 (1.3 percent) icterohaemorrhagiae.

Darkfield examination of the 255 urine samples revealed leptospires in 24 (9.4 percent) dogs. Only three darkfield positive urine samples correlated with positive canicola titers in sera and plasma. Three other darkfield positive samples correlated with positive plasma titers; one to each of the three serovars tested (Table 1).

Urine placed in EMJH media produced 17 (6.7 percent) positive cultures. Of these, one correlated with a darkfield positive sample and positive serology titers to canicola and pomona. The remaining 16 dogs with positive urine cultures were negative by darkfield microscopy and serology.

Urine pH ranged from 5.0 to 8.6. Darkfield positive samples had pH 5.6 to 8.3 EMJH positive cultures came from urine samples in the 5.3-8.0 pH range.

Sixty-nine (11.9 percent) of the 582 dogs tested (Table 2) were positive by one or more of the methods employed in the screenings. The pound origin of all dogs is listed in Table 2.

### Discussion:

This was a clinical study of random-source dogs, so we cannot be sure of

TABLE 1  
Frequency of titers (1:100 or greater) to *Leptospira interrogans* serovars in serum and plasma plus results of urine darkfield examination and urine culture

Titers In	# Tested Serum & Plasma (Urine)	Serovars			Total # Positive
		canicola	pomona	icterohaemorrhagiae	
Serum	582 (255)	18 (3/0)*	2 (0/0)	10 (0/0)	30
Plasma	582 (255)	16 (3/1)	4 (1/1)	14 (1/0)	34
Serum and Plasma	582 (255)	14 (2/0)	1 (0/0)	8 (0/0)	23

\*The number in parenthesis equals the number of positive urine darkfield examinations over the number of positive urine cultures in EMJH media detected among the samples with positive serum or plasma titers.

TABLE 2  
Frequency of positive samples in relation to pound source

Missouri Pound Source	# Dogs	# Positive	% Positive
St. Louis	86	14	16.3
Mexico, Monroe & Centralia	84	7	8.3
Rutledge	115	10	8.7
Sedalia and Springfield	245	28	11.4
Louisiana	22	6	27.3
Holts Summit	11	2	18.2
Forsythe	19	2	10.5
TOTALS	582	69	11.9

vaccination status, inoculum dose, inoculation time and other disease parameters. Under such circumstances, results are difficult to interpret. Low antibody titers may be a result of vaccination that requires a four- to 40-day wait for maximum serum antibody levels (7). Titers also could have been due to recent exposure to leptospiral antigens after which four to 12 days is required (8) to attain detectable titers and 30 to 60 days to attain maximum titers. Freezing of serum prior to titration could have produced a reduction in titers.

Leptospiruric dogs demonstrating negative titers in sera and plasma may not have had time to develop significant titers or may have been anergic reactors; they may shed organisms longer than they remain seropositive (1,9), or they may have been infected with one or more of the serovars not tested. There are select reports of higher rates of infection in dogs from serovars other than icterohaemorrhagiae and pomona, for example grippotyphosa, harjo, and autumnalis (10,11).

Of 327 dogs in which cystocentesis was unsuccessful, 24 (7.3 percent) had serum or plasma titers to leptospirures at a 1:100 dilution or greater. Of 25 dogs in which cystocentesis was successful, 5 (2.0 percent) had serum or plasma titers to leptospirures. Most sick dogs should have full bladders following overnight confinement (5) which allows successful cystocentesis (12).

During this study, the dogs were not controlled as to the time of urine collection. Cystocentesis was attempted in the dogs upon arrival at the School of Medicine, not after an overnight stay. The presence of antibody titers in the absence of leptospiruria may indicate past exposure to leptospirures (9) or a nonlep-

tospiruric active infection (13). The most obvious reasons, however, for the lack of correlation between antibody titers and leptospiruria is that leptospiruria often is intermittent or transient (14).

There was no correlation between urine pH and positive darkfield examination or positive EMJH culture. Alston and Broom (15) and Van der Hoeden (16) suggest that leptospirures may be destroyed in acidic urine within a few hours. But Hubbert (2) and Bloom (4) indicate that acidic urine is not a safeguard against contagious urine leptospirures. Correlation between darkfield observation of spirochetes in urine and success in culturing leptospira *in vitro* was poor. The reasons could include: the possibility that urine inactivated or killed the leptospira; that there were nonculturable forms in the urine; or that media was incapable of sustaining leptospiral growth *in vitro*. Media, however, was adequate to maintain and grow laboratory strains of the spirochetes.

Leptospiral positive random-source dogs as determined by all three tests indicates an 11.9 percent infection rate in Missouri (Table 2). A comparison of number and percentage of positive titers to origin of dogs shows that while 16.3 percent of dogs from the St. Louis area were positive (Table 2), it is difficult to draw a meaningful correlation between rural vs. urban sources. The distribution of positive titers appears to have been somewhat higher in dogs coming from locations on the Mississippi and Missouri river bottoms in the east and east-central parts of the state (Holts Summit, Louisiana, and St. Louis). The majority of infections were canicola. This data correlates with other studies of canine leptospirures conducted in the United States (10, 12) and worldwide (11).

Leptospirosis is a transmissible disease to humans and appropriate precautions should be taken to minimize chances of human infections.

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# Unusual Pets Popular But Dangerous

Exotic pets are becoming increasingly popular in the United States. Missouri is no exception, where ferret ownership is growing in St. Louis and Kansas City.

Veterinarians and health officials fear the fad may mask the dangers of owning unusual animals, and that fear strikes home when children are the victims of their pets. The U.S. Center for Disease Control reports two such attacks this year in a recent newsletter.

In Denver, a five-week-old infant was attacked in her crib by a young European ferret. The March 12 incident occurred just one day after the family had found the seemingly friendly animal in the front yard and decided to keep it as a pet.

The child was attacked within a 15-minute period in which the ferret traveled from its bed-box to the infant's crib. The baby suffered multiple face wounds and lost about 40 percent of each ear. An

examination of the ferret's head by Colorado health officials proved negative for rabies.

An Iowa case involved a four-year-old Union girl bitten on the finger by her pet rabbit last January. Initial fluorescent-antibody tests for rabies at Iowa's Veterinary Diagnostic Laboratory turned up negative, but mouse-inoculation studies proved positive for rabies after 17 days.

A source for the rabbit's exposure could not be determined. The breeder kept his animals safe from encounters with other species and the owner had kept the rabbit in the house. Other family pets have remained healthy.

Although naturally occurring rabies in lagomorphs is rare, another case of a rabid rabbit has been reported in Iowa since 1964. In 1980, a domestic rabbit in Minnesota contracted rabies from a skunk. A rabid cottontail rabbit bit a

Franklin County, Missouri, child in 1980.

Missouri's 1979 rabies cases were a threefold increase over 1978; fourfold in 1980. So far in 1981, the reported level is down slightly from the two previous years, but considerably higher than 1978. There still are several areas of the state that usually report considerable rabies cases, but have not increased in the present epidemic.

The dollar cost of rabies goes up with the increased caseload. The College's Dr. Donald Blendon estimates 2,000 Missourians currently are treated annually for rabies; at about \$500 a person, that's more than \$1 million. Actual costs are five doses of HDC vaccine at about \$50 a shot plus globulin at \$200 a dose. Dog and cat exposures alone are estimated to have cost Missourians \$210,000 in rabies treatment since 1978, exclusive of transportation, time lost from work, etc.

## Dates to Remember

**July 20-23.** American Veterinary Medical Association meeting, Cervantes Convention Center and Sheraton Hotel, St. Louis. The Missouri Alumni Reception will be at 6:30 p.m. July 21 in the Plaza Ballroom East and Anteroom of the Sheraton. The Missouri Alumni Luncheon will begin at noon July 22 in the Plaza Ballroom Center and West of the Sheraton.

**August 21-30.** Missouri State Fair, Sedalia. The College will have a booth in the Agriculture Building.

**October 10.** Annual Conference class reunions for 1956, 1966 and 1976 graduates of the College, at Columbia's Ramada Inn.

**October 11-12.** The 57th Annual Conference of Missouri Veterinarians, at the College and Columbia's Ramada Inn.

Featured speakers include Dr. Dale R. Nelson of the University of Illinois, Dr. Richard E.W. Halliwell of the University of Florida, and Dr. William J. Donawick of the University of Pennsylvania.

Dr. Nelson will speak on problems of the large animal digestive tract, fracture repair procedures on the farm, and stiffling lameness in cattle. Dr. Halliwell will address small animal surgery. Dr. Donawick will cover surgical techniques for large animals.

The conference will convene on a home football weekend, so participants are urged to make early reservations for area lodging. Tickets to the Oct. 10 Missouri-Kansas State game may be ordered when registering for the conference.

**October 24.** Second Annual Alumni Day, at the College. The day's activities will include the Missouri-Nebraska football game.

## New VMR Editor Named

Kathy Casteel is the new editor of *Veterinary Medical Review*. She joined the College May 1, replacing Barry Siler who moved to Montana with his wife, Dr. Alicia Keegan.

Casteel earned her B.A. degree in communication from Stanford University in 1976 and her M.A. in journalism from the University of Missouri-Columbia. She came to Columbia in 1979 from Springfield, Mo., where she was assistant news editor of the *Springfield Leader-Press*.

In Columbia, she has taught journalism at the university and was weekend editor of the *Columbia Daily Tribune*.

Her husband, Stan Casteel, is a third-year student at the College.



## Veterinary Medical Review

College of Veterinary Medicine  
and Cooperative Extension Service

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