

VIRGINIA COOPERATIVE EXTENSION SERVICE

EXTENSION DIVISION - VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY - BLACKSBURG, VIRGINIA 24061

VIRGINIA-MARYLAND
REGIONAL COLLEGE
OF
VETERINARY MEDICINE

VIRGINIA VETERINARY NOTES



November-December, 1984

No. 12

WHAT'S INSIDE!

CARDIOMYOPATHY IN THE DOG	Page 2
KERATITIS SICCA	Page 3
PRACTICE INFORMATION BOOK	Page 4
STRAIN 19 DISEASE	Page 5
NEW SHEEP VACCINE	Page 6
TOXICOLOGY LABORATORY	Page 6
REPTILIAN PRACTICE	Page 7
AVIAN DISEASE CONFERENCE	Page 8
BOVINE LEUKOSIS	Page 9
CE OPPORTUNITIES	Page 10
SUCCESS IS NO ACCIDENT	Page 10
FOOD ANIMAL PRACTICE SURVEY	Page 11
PRESENT STATUS OF THE PROFESSION	Page 12

VM Library

Kent C. Roberts, DVM
Extension Veterinarian

CARDIOMYOPATHY: DILATED CARDIOMYOPATHY IN THE DOG

Congestive heart failure in dogs due to cardiomyopathy is most common in the giant breeds, such as the Doberman Pinscher, Great Dane, Irish Wolf Hound, St. Bernard, Bull Mastiff, and Newfoundland. Less commonly, the disease can be seen in Golden Retrievers, Irish Setters, and German Shepherds. It is characterized by the clinical signs of cardiomegaly, increased ventricular volume, and decreased cardiac output which produce the typical syndrome of congestive heart failure. Most dogs which develop the disease are affected between the ages of 3 and 7 years, and it is more common in males than females. The prognosis is very poor in this disease with the mean survival time being only 6-12 months after treatment is commenced.

The most common form of heart failure associated with this syndrome is left-sided pump failure. As a result, the most common clinical signs are coughing, exercise intolerance, weak femoral pulses, and pulmonary edema. It is not uncommon for patients to exhibit atrial fibrillation on initial presentation for diagnosis and treatment.

The clinical course is particularly severe in Doberman Pinschers and survival times are much shorter in this breed than in the others mentioned. Therapeutic regimes utilized in the disease are aimed at decreasing pulmonary edema, increasing cardiac output, and decreasing afterload. Lasix, aminophylline, digitalis, and after-load reducers such as hydralazine are the most common drugs of choice. Dobermans have been reported to be more sensitive to digitalis than other breeds, and the total daily dose should not exceed 0.5 mg. Frequently, digitalization precipitates ventricular arrhythmias. These may be controlled with Lidocaine, Procainamide, or aprindine.

Family lines of Dobermans have been affected, and therefore it appears that this breed probably has a genetic predisposition. Since the disease has a poor prognosis, many clients may elect to euthanatize the dog.

Here at Virginia Tech, we are very interested in this disease. If dogs are presented to your hospital and dilated cardiomyopathy is diagnosed, we would be extremely interested in discussing diagnostic techniques and therapeutics with you. If owners do not wish to pursue therapy and request euthanasia, we would be interested in the animal being donated to the college for study of this disease. Only by intensive investigation of this disease can we elucidate its pathophysiologic features.--**James C. Keith, Jr., D.V.M., Ph.D.; Assistant Professor, Cardiopulmonary Pathophysiology; VA-MD Regional College of Veterinary Medicine.**

NOTE: This is the first of a series of articles by Dr. Keith on cardiomyopathy.

PRACTICE TIP

.....to convert pounds to kilograms, divide the patient's weight in pounds by two, then subtract 10% from that number. This mental calculation is particularly accurate for small patients. For example, when considering a 20 lb dog: 20 divided by 2 = 10, 10% of 10 = 1, 10 - 1 = 9.

Thus, we approximate 20 lb as nine kilograms. Using the accurate conversation factor (2.2046) 20 lb equals 9.0718 kilograms.--**R.B. Leonard, in Ann. Emergency Medicine. Veterinary Medicine Newsletter, University of Florida, Sept 1984.**

NOTE: The following letter-to-the-editor is printed in its entirety. Dr. Bromberg is director of the Eye Clinic for Animals, 4105 Brandywine St., NW, Washington, DC

Dear Dr. Roberts:

I am writing in response to your "Practice Tips" for the treatment of keratitis sicca in the Sept.-Oct. issue of the Virginia Veterinary Notes (No. 11). These recommendations were taken from Dr. William Jackson's talk at the D.C. Veterinary Academy meeting in May, 1984. He recommended use of Maxitrol ointment qid and 2% Pilocarpine solution either in food or topically. I disagree strenuously with these recommendations. In my opinion, they can both be detrimental to the integrity of the eye and the health of the patient unless used with discretion and caution.

Keratoconjunctivitis Sicca (KCS) can be caused by a myriad of etiologies and its treatment must be based on identification of the cause, the overall condition of the eye (especially the cornea) and the Schirmer tear test value.

Oral or topical pilocarpine, used as a lacrimogenic agent, will work only when there is evidence of functional lacrimal gland tissue to be stimulated to produce tears. In cases of absolute KCS it usually doesn't help. It may cause GI upset and cardiac problems, so it should not be used in older animals, animals with cardiovascular compromise, or a history of GI problems. Pilocarpine, as a parasympathomimetic, causes miosis of the pupil and 2% pilocarpine can cause ciliary spasm and possibly an iritis. If pilocarpine is to be used topically in a normal eye for the purpose of stimulating the lacrimal gland, a weaker solution is called for.

Keratitis Sicca, by definition, is the lack of tears. The term itself, "keratitis", represents compromise of the cornea - usually pigmentation, neovascularization, and/or chronic, recurrent ulcerations. The use of Maxitrol in the treatment of the condition can be devastating to the already compromised cornea. A superficial ulcer may "melt down" and perforate within 24 hours when treated qid with 0.1% Dexamethasone (the steroid in Maxitrol). In addition, a recent report by Dr. Glen Severin, et al in the AJVR indicates that a large percentage of topically applied ophthalmic steroids are absorbed systemically. Since many breeds predisposed to KCS are small, such intense treatment with a strong steroid may induce iatrogenic steroid problems.

My recommended treatment for KCS, originally presented at the Jan., 1984 D.C. Veterinary Academy meeting, is as follows:

1. Good cleansing of eye using warm water on cotton.
2. Lacrimogenics - stimulate tear production
1/2 - 2% Pilocarpine: 1-4 drops on food sid-bid according to weight.
(NOTES: 1) can be used topically, but may cause discomfort from miosis and reflect iritis, 2) Don't use in dogs with cardiovascular disease, 3) Discontinue or decrease dosage if signs of toxicity occur - vomiting, diarrhea, tachycardia.

3. Lacrimomimetics - tear substitutes
Artificial Tear Products - replace aqueous and mucin portion (Methyl-cellulose, Polyvinyl Alcohol solns i.e. Hypotears, Adapt)
Petrolatums - reduce irritation of lid movement and decreases evaporation (i.e. Lacrilube).
4. Antibacterial - broad spectrum antibiotic.
5. Anti-inflammatory - steroid.
Use "weak" steroid such as hydrocortisone to decrease inflammation and for mild neovascularization. Stronger steroids such as Maxitrol and Pred Forte (1% pred. acetate) can be used with caution in cases of severe pigmentation and neovascularization.

I hope that my comments help to clarify the Keratoconjunctivitis Sicca treatment issue. Each case must be taken individually. In my experience, no across-the-board "cook book" treatment is adequate.

Sincerely,

Nancy M. Bromberg, V.M.D., M.S.
Diplomate, American College of Veterinary
Ophthalmologists

PRACTICE INFORMATION BOOK - A GOOD P.R. TOOL

"But my veterinarian used to make housecalls!"

"My previous doctor gave me all the advice I wanted when I called."

If you have listened in on your office phone as my colleagues and I have done at many practices, these are the sort of mini-complaints you may have heard. In most cases, complaints like these require an extended explanation of the way you practice medicine. You and your assistants may become irritated by client references to their "exalted" previous veterinarian. (After all, why shouldn't you be on that pedestal?)

In the clients' defense, they often have a tough time figuring out your practice style. Every doctor is different, and how are clients to know these differences? The solution is a practice information booklet.

In an effort to reduce confusion and improve client - doctor communications, many practices have produced practice information booklets. The booklet may run from 4-20 pages, depending upon the quantity and range of information the veterinarian wants to communicate. The contents can vary depending upon the veterinarian's speciality, group size, and other services rendered (boarding, x-ray, lab work, surgery).

A booklet usually is provided to a new client when he/she arrives at the hospital and is in the reception area. Some veterinarians prefer to mail the booklet prior to the client coming in.

The main points to be communicated to the client should include the following:

- Explanation of the practice and range of services
- Practice hours
- Coverage and after-hour calls
- Telephone calls and how the practice handles them
- Prescriptions and renewals
- Office visit fees

Practices that have designed their own practice information booklets have told us that they have experienced the following positive results:

- Less client confusion about practice procedures
- Less phone traffic to doctors and nurses
- Reduced incoming calls
- Fewer arguments with clients

A number of hospital information booklets have a special section with a checklist for the pet's preventive health care. Some hospitals have printed a map in the booklet to remind clients of their location. Many providers of these booklets tell us that the booklets serve as a valuable marketing tool - a take-home reminder of the hospital that may be passed along to others.--**Bulletin, American Animal Hospital Association, April 1984. Veterinary Medicine Newsletter, University of Florida, Sept. 1984.**

STRAIN 19 DISEASE--AN OCCUPATIONAL HAZARD FOR VETERINARIANS

Case Report: A 38 year old veterinarian was attempting to vaccinate a cow with strain 19 *Brucella abortus* when he accidentally inoculated himself in the forearm. He began taking tetracycline 250 mg, by mouth, four times a day. Five days later he developed fever (39°C), chills, sweats, myalgia, headache, and a one cm inflamed lesion at the site of injection. His physician doubled the dose of tetracycline, which was continued for five weeks, and added streptomycin during the first two weeks. Although the forearm lesion initially increased in size and a three cm abscess was noted, both the abscess and the symptoms resolved on antibiotic therapy. Five days after tetracycline was discontinued symptoms recurred and the skin lesion reappeared. Three blood cultures were positive for *B. abortus*. The course of antimicrobial therapy was repeated and the lesion was incised and drained. There were no further recurrences.

Editor's Comment: Strain 19 vaccine is a live bacterial vaccine containing *B. abortus* of attenuated virulence. It is used by veterinarians to prevent disease in cattle due to more virulent field strains.

Veterinarians have been inoculated with strain 19 after receiving accidental needlesticks or when vaccine has splashed into their eyes. Such accidents are apparently quite common. A study in Ontario, Canada found that over one half of 282 veterinarians surveyed had experienced accidental self-inoculation and approximately 20% had done so more than once. Strain 19 disease, almost certainly under-reported, accounts for 1-2% of brucellosis cases reported in the U.S. Following accidental exposure the recipient may develop strain 19 disease. The attack rate is not known, but probably depends on the volume of material inoculated. Illness resembles classic brucellosis but is generally milder, although severe manifestations have been reported occasionally. In persons with no prior immunity,

the incubation period is usually 7-10 days, but has been reported as long as 30 days following exposure. Blood cultures may yield strain 19 B. abortus. Persons with prior immunity may develop severe local inflammation at the site of inoculation within 1-6 hours after exposure, usually accompanied by fever and chills. An allergic mechanism is postulated for these early reactions. Abscesses may develop at the site of inoculation and may have yielded the strain 19 organism. Treatment of strain 19 disease is the same as for classic brucellosis with the addition of incision and drainage, as indicated, for abscesses, and corticosteroids for allergic manifestations.

Prophylactic tetracycline (2 grams per day, by mouth, for 21 days) has been administered to some veterinarians following accidental inoculation. Although there are no controlled studies which have examined the value of such a practice, prophylaxis with tetracycline would appear to be a reasonable action if there are no contraindications to its use. A serum specimen should be obtained and saved at the time of the first visit for possible diagnostic use later, if illness develops.--Epidemiology Bulletin, Virginia Department of Health, Vol. 84 No. 8.

NEW VACCINE AVAILABLE FOR SHEEP

The State Veterinarian of Virginia has approved the sale and use of Ovine Enzootic Abortion vaccine in sheep. The new vaccine is combined with Ovine Vibriosis vaccine to produce the final product. Recommended use of the vaccine in sheep is an inoculation 30 days prior to breeding with an annual booster.

The Virginia-Maryland Regional College of Veterinary Medicine has agreed to serve as a dispersal center for the new vaccine. The Veterinary Medical Teaching Hospital (VMTH) pharmacy plans to continuously stock the product, produced by the Colorado Serum Company. The vaccine will be dispensed only on the order of a licensed veterinarian.

TOXICOLOGY SERVICE LABORATORY

The Veterinary Medical Teaching Hospital, Virginia-Maryland Regional College of Veterinary Medicine maintains a service laboratory for toxicological specimen evaluation. This well equipped and well staffed laboratory can perform a variety of tests and is available for veterinarians who need toxicological services. Turn around time on specimens is within four working days.

The laboratory is prepared to run a wide variety of tests, the most commonly asked for of which are:

- metals (both toxicology & deficiency) lead, arsenic, copper, zinc, selenium, molybdenum, cadmium
- strychnine
- mycotoxins
- cyanide
- urea
- ethylene glycol
- vitamin E

For further information on tests or using the laboratory contact: Dr. Blair Meldrum, Dr. Marion Ehrich, Dr. Dennis Blodgett -- (703)961-7666.

REPTILIAN PRACTICE PROBLEMS

Birds, reptiles and fish are becoming increasingly popular as pets and this trend is likely to continue as our population becomes more and more urbanized. These "exotic" pets, some of which may be valued in hundreds or even thousands of dollars, require and deserve good veterinary care. The curriculum at most veterinary colleges has seldom included these species in the course of study. These articles are designed to acquaint the practitioner with the basics of caring for the reptilian patient.

The most commonly owned reptiles are members of the order Chelonia (turtles, terrapins, tortoises) or the order Squamata (snakes, lizards). Occasionally someone will own a member of the Crocodylia (alligator, crocodile, caiman).

Proper handling and restraint of reptiles is very important and a few suggestions are in order.

When restraining a snake or lizard, do not hold the thorax tightly. Like birds, both snakes and lizards rely on expansion of the ribs and body wall to inspire adequate oxygen. By restricting this bellows-like motion, one can easily suffocate these animals.

Do not attempt to pick up a lizard by the tail since many lizards have tails which break off easily as part of their defense mechanism. Both head and tail control are important as some lizards, such as the iguana, can use the tail effectively as a weapon.

Do not pick up a snake solely by grasping behind the head. Always support the snake's body in the other hand. The articulation between the occiput and the atlas in snakes is not as stable as it is in mammals. Snakes which struggle when picked up by the head only have been known to luxate the joint and sever the spinal cord.

REPTILIAN REFERENCES

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- Frye, FL: Biomedical and Surgical Aspects of Captive Reptile Husbandry, Veterinary Medicine Publishing Co. Edwardsville, 1981.
- Marcus, LC: Veterinary Biology and Medicine of Captive Amphibians and Reptiles, Veal and Febiger, Philadelphia, 1981.

Donald K. Nichols, D.V.M., National Zoological Park, Washington, D.C.

Editors note: This is the first of a series of articles on reptiles by Donald Nicholas, D.V.M., dealing with the proper care and treatment of reptiles.

**57TH NORTHEASTERN CONFERENCE ON AVIAN DISEASES AND 6TH
MID-ATLANTIC STATES AVIAN MEDICINE SEMINAR FOR VETERINARIANS**

June 16-19, 1985
The Columbia Inn
Columbia, Maryland

Psittacosis, biotechnology, finch health and much more, discussed by national authorities at an outstanding modern lakeside location next year, will provide unique opportunities for veterinary practitioners, diagnosticians and researchers to share many items of common concern. Held in the New City of Columbia, Maryland, the meeting will be steps away from excellent restaurants, recreational facilities and free parking. The Baltimore-Washington International Airport is a convenient 30 minute (\$7) limousine ride away. Many attractions in Baltimore and Washington, D.C. are similarly within close driving distance.

Prominent speakers will discuss topics on psittacosis of practical interest to all veterinarians during a major Chlamydiosis Symposium on Tuesday, June 18. Demonstrations of the latest advances in rapid avian diagnostic biotechnology are being planned for Monday, June 17 in conjunction with invited scientific papers and case reports. Expert presentations on finch and waterfowl diseases are scheduled for Wednesday morning, June 19.

A bus trip will be available on Monday evening for those interested in visiting Baltimore's exciting Inner Harbor, where opportunities for good fellowship, seafood and gourmet dining will abound.

Hosted by the Virginia-Maryland Regional College of Veterinary Medicine, the conference is jointly sponsored by two prominent regional groups: the Pennsylvania Association of Avian Veterinarians, organizers of popular annual Mid-Atlantic Avian Medicine Seminars for Veterinarians; and the Northeastern Conference on Avian Diseases, now in its 57th year of serving poultry and avian veterinarians and scientists in the Northeastern U.S. and Eastern Canadian Provinces.

Featured in recent magazine articles, Columbia, Maryland is considered a model of planned city development. Its stimulating residential and business areas blend tastefully with open woodlands, walking paths and ample recreational facilities.

Contact person for the combined conference is **Dr. E. T. Mallinson, Grayson Laboratory, VA-MD Regional College of Veterinary Medicine, University of Maryland, College Park, MD 20742. (301-454-3635).**

THOUGHT FOR THE MONTH

The Ten Commandments contain 297 words;
The Bill of Rights 463 words;
Lincoln's Gettysburg Address - 266 words;
and a Federal Directive to regulate the
price of cabbage - 26,911 words

Milton April, D.V.M.

BOVINE LEUKOSIS: A TRANSMISSIBLE FORM OF CANCER AFFECTING ALL BREEDS OF CATTLE

Bovine leukosis has been recognized in cattle for over 100 years. The condition has also been referred to as bovine lymphosarcoma and bovine leukemia. The adult form of bovine leukosis was suspected of being caused by a virus for many years, but is was not proven until 1969. Infection with this virus, commonly referred to as bovine leukemia virus (BLV), is usually detected by a blood test. The virus has been shown to be widespread in the United States. Studies in Washington have shown that 25% of dairy cattle tested have been infected by BLV. Since this is an overall prevalence this means that while few dairy herds had no infected cattle, some had as many as 90% of the cows infected.

In many herds, infection by BLV goes unnoticed and except for production of antibodies, there are no clinical signs of disease. Recent studies in a large commercial dairy showed that BLV infected cows did not have lowered milk production, poorer reproductive performance, or more mastitis, than non infected cows. However, cows that develop lymphosarcoma, which is a malignant tumor of the lymphoid tissues, do have a shortened life span when compared with other cows. Approximately 1 in 20 (5%) of BLV infected cows will develop lymphosarcoma. Almost all affected cattle are over 2 years of age and most are between 5 and 8 years of age.

Recognition of bovine leukosis is evident when the superficial lymph nodes are involved. These are observed as lumps beneath the skin, usually in the neck and hind flank areas. However, when the internal lymph nodes are the only ones affected, the diagnosis may be more difficult. Symptoms depend upon the organs involved and the rate of tumor growth. The tumor may involve the heart, abomasum, uterus, kidneys, spinal cord and eyes. Affected cows are frequently observed to be depressed, off feed, and have decreased milk production. Indigestion, chronic bloat, or displaced abomasum may occur. Occasionally, lameness, unusual gait or paralysis may be observed. Abdominal tumors are oftentimes detected by rectal palpation during pregnancy examination.

Economic Considerations - Why Test for Bovine Leukosis?

Of primary concern to the dairy industry is the clinical loss due to lymphosarcoma. In 1978 over 8,000 carcasses were condemned due to this disease. Losses in individual herds can be as high as 5% per year. Losses are greater in herds with high infection rates (greater than 80%) as compared to herds with lower infection rates (less than 20%).

Another major concern is the potential loss of the export market, which in 1978 amounted to 56,156 dairy cattle worth \$145 million. It has been estimated that 20% of adult dairy cattle in the United States are infected with BLV. In some herds infection rates up to 90% occur. Many countries are currently restricting the importation of BLV infected cattle in an attempt to eradicate the disease. In addition, several European countries are considering barring importation of any cattle from infected herds.

Another consideration that may have a considerable economic impact is the public's perception of leukemia. While it has been shown that milk contains BLV-infected cells, the infectivity of BLV is destroyed by routine pasteurization. Under natural conditions BLV affects cattle only. The virus does not appear to affect man.--Washington State VMA, Bovine Leukosis Committee, Sept 1983 as reported in Arkansas Animal Morbidity Report - 2nd quarter, 1984.

CONTINUING EDUCATION OPPORTUNITIES

November 16-17, 1984	Urogenital Surgery (Small Animal) Lecture/Wet Lab - Blacksburg, VA FULL
November 30-December 1	Cardiac Therapeutics Workshop (10hrs) Clinical Cardiology II - Blacksburg, VA
December 2, 1984	Veterinary Oncology (6hrs) Winston Salem, NC
December 9, 1984	Animal Technicians Seminar - Cytology Blue Ridge Community College, Weyers Cave, VA
December 12-15, 1984	Orthopedic Salvage Procedures (4hrs) Norfolk, Wednesday, December 12 Fairfax, Thursday, December 13 Baltimore, Friday, December 14 Richmond, Saturday, December 15
January 11-12, 1985	Equine Abdominal Surgery Lecture/Wet Lab - Blacksburg, VA
February 14-17, 1985	Virginia Veterinary Medical Association Convention Richmond Hyatt - Richmond, VA
March 10, 1985	Avian Medicine Seminar (6hrs)--Dr. Ted Lefeber - Richmond, VA

FOR MORE INFORMATION ON MEETINGS, CONTACT:

Dr. Kent Roberts
Director of Continuing Education
VA-MD Regional College of Veterinary Medicine
Blacksburg, VA 24061
(703) 961-7666

SUCCESS IS NO ACCIDENT

What has your experience been when you enter another professional's place of business such as a doctor's or dentist's office? Do you receive a cordial greeting? Is your name used in the conversation? Is there obvious concern for your problem?

People have very definite needs when they enter a place of business with a problem to be solved. Above all they need to feel that the people in that business (or practice) care about them and helping them with their problem. How much you care may be more important than how much you know.

What happens when people walk into your office?

Kent Roberts, D.V.M., VA-MD Regional College of Veterinary Medicine

FOOD ANIMAL PRACTICE SURVEY

There is an expressed need and interest in forming an organization of Virginia veterinarians committed to the practice of food animal medicine and surgery. This survey is an attempt to measure that interest so that further action toward the possible formation of a Virginia Academy of Food Animal Practice can be taken.

The large animal faculty of the Veterinary Medical Teaching Hospital, Virginia-Maryland Regional College of Veterinary Medicine at Blacksburg, is prepared to support this effort with continuing education programs and a newsletter on food animal subjects.

Please answer the following questions and return the survey as soon as possible if you are interested in participating in the organization and upgrading of food animal practice.

Survey Questions

1. Food animal medicine and surgery constitute _____% of my practice.
2. The breakdown of my food animal practice by species is approximately:

dairy cattle _____	sheep _____
beef cattle _____	swine _____
	goats _____
3. I am interested in participating in an organization of food animal veterinarians _____
4. I would expect to actively support this organization and the CE programs it sponsors _____
5. Name, address, telephone:

_____ Telephone: _____
6. Comments:

Please mail survey to: Dr. Kent Roberts
College of Veterinary Medicine
Virginia Tech
Blacksburg, VA 24061

PRESENT STATUS OF THE VETERINARY PROFESSION

The AVMA membership totals 38,539, some 965 of whom are designated as Canada or Foreign (12/31/83). A total of 29,058 (75.4%) are in practice, 16 of whom work exclusively with cats. Eight persons identify their primary interest as cardiology and 867 designated pathology. Fifty others are animal technician educators.

AVMA records show 5,421 women members as of 12/31/83. Ten of them are in exclusive feline practice, one identifies herself as a cardiologist, and 128 are primarily concerned with pathology. There are 2,535 in exclusively small animal practice out of 4,055 in all practice categories. One of our female members devotes her professional practice efforts to porcine practice and 195 work with horses.

The new numbers tell us that 14% of the total AVMA membership is now female. Our own quiet revolution is beginning to manifest itself more quickly in the numbers too, as evidenced by 1974 records which show 1,158 (4.8%) women members, and by the 1978 number of 2,401 women which was 8% of the total membership. The most compelling figures on the future trends (no surprise here) come from our veterinary schools and colleges. At the time of graduation in the spring of 1983, 45.7% of the U.S. veterinary student body was female. The current sophomore class is 49.7% women! The 1984 freshman numbers will be available soon. If one simply extends the lines we've been drawing on these graphs, the total should be a shade over 50%. The great thing about that is no one worries about it anymore!
--CE News, Vol. XI #1, Jan., 1984.

Virginia-Maryland Regional College of Veterinary Medicine Extension Staff:

Dr. C. T. Larsen - Extension Specialist - Avians
Dr. K. C. Roberts - Extension Specialist - Equine and Companion Animals
Dr. T. P. Siburt - Extension Specialist - Pharmacology and Toxicology
Dr. H. F. Troutt - Extension Specialist - Cattle and Swine

Barbara B. Jones, Managing Editor of VIRGINIA VETERINARY NOTES

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