



VIRGINIA VETERINARY NOTES

VIRGINIA-MARYLAND REGIONAL COLLEGE OF VETERINARY MEDICINE

March-April 1992

VPI Publications LIBRARY

No. 56

MAR 20 1992

BLACKSBURG, VA

WHAT'S INSIDE!

PET VACCINES IN DRUG STORES 2

CHOLESTEATOMA: A COMPLICATION OF CANINE OTITIS 2

CANINE ACRAL LICK DERMATITIS: RESPONSE TO THE ANTI-OBSSESSIONAL DRUG CLOMIPRAMINE 3

FUNGAL ISOLATES FROM THE HAIR COATS OF HEALTHY PET CATS 4

ANIMAL SOURCE OF INSULIN LIMITED 4

MICROFILARIA IN URINE 4

1990 VIRGINIA SWINE INDUSTRY SUMMARY 5

4TH ANNUAL VIRGINIA HORSE FESTIVAL 5

DID YOU KNOW 5

NATIVE INTELLIGENCE 5

INTERNAL HELMINTHS OF LLAMAS 6

CONTINUING EDUCATION OPPORTUNITIES, SPRING 1992 7

IN EQUINE DIETS, FAT'S WHERE IT'S AT 7

Kent Roberts
 Kent A. Roberts, DVM
 Extension Veterinarian

THOUGHT FOR THE MONTH

Sometimes you can observe a lot by just watching. --Yogi Berra

PET VACCINES IN DRUG STORES

During the past year, a number of drugstore chains have begun advertising the sale of pet vaccines. Among those involved were Osco, Skaggs Alpha-Beta, Krogers, Super X, World Pharmacies, Zunast Corporation, Payless Drug Stores, Giant Foods and Safeway. Many veterinarians and veterinary associations have expressed disappointment, even outrage, that such sales were taking place without involvement of a veterinarian and have asked the American Veterinary Medical Association (AVMA) to become involved.

Rabies is the only pet vaccine presently restricted by the United States Department of Agriculture (USDA) to distribution to veterinarians and that restriction is in effect only where state laws or regulations correspond with the USDA regulation. Administrators from USDA have stated that they plan to propose restriction on a national basis, but that proposal has yet to be issued.

The AVMA and state veterinary medical associations must carefully avoid any actions that might be construed as restraint of trade. Nevertheless, it is certainly appropriate to register concern about the need to involve veterinarians in proper immunization procedures, the liability related to dispensing pet vaccines for owner administration, disease prevention, avoiding misuse of syringes and needles dispensed with pet vaccines, and the safety of animal owners.

Many of the vaccines being dispensed by pharmacies are sold without the complete manufacturer's label. These practices are apparently under investigation by USDA. If your association is aware of vaccines that are being sold or dispensed without appropriate labelling, the Director of Biotechnology, Biologics and Environmental Protection, USDA-APHIS may be contacted.

Some veterinary associations have taken steps to communicate with the drugstore chains in their area to make them aware of the ramifications of dispensing vaccines without involvement of a veterinarian. Some biologics producers have taken steps to discourage the distribution of their vaccines to non-veterinarian animal owners --From Idaho VMA Newsletter, as reported in Large Animal Veterinary Report, Jan. 1992.

CHOLESTEATOMA: A COMPLICATION OF CANINE OTITIS

Aural cholesteatoma is a form of epidermoid cyst found within the middle ear cavity; the cystic structure is lined by stratified squamous keratinizing epithelium and rests on a fibrous stroma of inflammatory granulation tissue within the middle ear. Keratin squames are shed into the lumen of the cyst so that the lesion slowly enlarges. Bone resorption is associated with these lesions. Cholesteatoma is an important and potentially serious complication of otitis media in human beings for which surgical treatment is usually required. A similar condition has been reported in the Mongolian gerbil (*Meriones unguiculaus*) where it occurs spontaneously.

Clinical, radiological and pathological findings imply that cholesteatoma in the dog is an aggressive lesion which must be differentiated from uncomplicated otitis media and from neoplasia involving the middle ear cavity. Extensive resorption and remodeling of adjacent bone occurs in some cases in which cholesteatoma is found, and is responsible for several of the clinical signs, such as pain localized to the ipsilateral temporo-mandibular joint. Neurological abnormalities may be present. In spite of extensive middle ear lesions, facial nerve disorders should not be expected. The prognosis for dogs in which cholesteatoma accompanies otitis media appears to be significantly poorer than for those in which cholesteatoma is absent. In the future, it may be possible to discriminate, on clinical and radiological evaluation, between dogs with cholesteatoma and dogs with otitis media alone. --From: Little, C.J.L, et al., Veterinary Records 128 (1991), p. 319-322, as reported in Animal Health Beat, Vol. 7, No. 8, Nov. 1991, University of Nevada, Reno.

CANINE ACRAL LICK DERMATITIS: RESPONSE TO THE ANTI-OBSessional DRUG CLOMIPRAMINE

Acral lick dermatitis (ALD), also known as lick granuloma, acral pruritic nodule, and neurodermatitis, is a common self-inflicted skin disorder in dogs in which localizing alopecia and granulomatous lesions are caused by continued licking, biting, or scratching of one or more areas usually near the carpus or hock.

Although etiology of ALD is unknown, it commonly is considered to be of psychogenic origin secondary to separation anxiety, boredom, loneliness, or confinement, but some cases appear to be provoked by a biological initiating factor such as local irritation. Many treatments have been used for ALD, but none of them are consistently effective. They include surgical intervention, radiation, cobra venom, cryosurgery, topical antichew substances or glucocorticoids, systemic glucocorticoids and orgotein, behavior modifying drugs, bandaging, Elizabethan collar, and acupuncture. Antibiotics are used to help secondary infections. While each of these treatments has proven effective for some individual cases, none is effective in all cases, and in any given dog any or all may fail.

Obsessive compulsive disorder (OCD), a psychiatric disturbance frequently characterized by excessive cleaning and grooming behaviors, recently has been found to be much more frequent than had been thought previously. Considerable research has shown that certain new antidepressant drugs, all serotonin reuptake inhibitors, are specifically effective in the treatment of OCD. Following local media presentations of the specific effects of these new agents for trichotillomania (human hair pulling) and OCD (in which frequent handwashing and showering are the most common symptoms), two owners of pets with ALD contacted the authors' clinic and asked for a trial medication. Intrigued by this idea, the authors agreed to carry out the clinical test in consultation with their veterinarians. Because of successful responses to clomipramine in these two cases, several local veterinarians were contacted for referrals and several oral presentations of the author's findings at local professional meetings brought still other referrals. The present study is a single-blind comparison of clomipramine and desipramine for the treatment of ALD.

Results - Of the nine dogs who entered the study, six showed an initial response to clomipramine and licking behavior was significantly improved during treatment with clomipramine. While clomipramine improved behavior, desipramine did not. The three dogs not responding to clomipramine did not differ from the rest with respect to presence of anxiety, history of trauma, or infection.

The side effects of clomipramine observed in this study included sedation (in three), weight gain (two), slightly elevated liver enzymes (two), and dry mouth (three). None had to be dropped from the study due to intolerable side effects.

Discussion - Toxicological studies conducted in dogs showed that clomipramine seems safe for dogs, (unpublished data, CIBA-Geigy Corporation). Clomipramine is not available in the United States (Anafranil).

Because long term benefits of clomipramine for ALD still are unknown, more research is indicated to establish long term safety and efficacy.

Demonstration of the therapeutic effect of clomipramine on ALD also is of interest because it suggests a link between abnormal "grooming behavior" in dogs and obsessive compulsive disorder, an abnormal psychiatric behavior in humans in which rituals of dress and self-cleaning are most prevalent. --Abstracted from: Erica Goldberger, BA; Judith L. Rapoport, MD, Journal of the American Animal Hospital Association, March-April, 1991, Vol. 27, as reported in Veterinary Newsletter No. 227, Nov. 1991, University of Georgia, Coop Extension Service, Athens, GA.

FUNGAL ISOLATES FROM THE HAIR COATS OF HEALTHY PET CATS

A recent study examined the fungal flora of the coats of cats and assessed the frequency with which *Microsporium canis* (zoonotic potential) was isolated. A total of 172 healthy cats (from 52 single cat households and 119 multiple cat households) free of skin disease and medication free for at least 21 days prior to the study were sampled during a 2-week period in November in the Midwest. The cats' average age was 4.2 years (ranging from 3 months to 16.5 years); 98 (57 percent) were female and 74 (43 percent) were male; 109 were short-haired, 21 had medium length hair and 42 were long-haired.

Of the 172 cats sampled, fungi were isolated from 136 (79 percent). A mean of 1.5 fungi were isolated per cat (range per cat was 1 to 7). Fifteen genera of fungi were isolated, with 13 genera considered saprophytes and two genera considered pathogens (*Microsporium* and *Trichophyton* spp.)

Microsporium gypseum (1/16), *Microsporium van breuseghemii* (1/16) and *Trichophyton rubrum* (14/16) were isolated from 16 cats. *T. rubrum* was the sole isolate from 3/16 cats. Saprophytic fungi were also isolated from 11/16 cats (at least one species per cat). No *Microsporium canis* was isolated from any of the 172 cats sampled.

All owners were questioned and none reported contraction of a dermatophyte infection from their cat within the last year. Although four participants, owning five cats, reported that they had chronic athlete's foot (which may be associated with *T. rubrum*), *T. rubrum* was not isolated from any of these felines. Of three cats reported to have had previous *M. canis* infection and eight cats reported to have had contact with another cat with dermatophytosis, none produced samples from which pathogenic fungi were isolated. --From K.A. Moriello and D.J. DeBoer. "Fungal Flora of the Coat of Pet Cats." *Am J Vet Res*, Vol. 52, No. 4, April 1991, pp. 602-606, as reported in *Veterinary Quarterly Review*, Texas Extension Service, Texas A & M University, College Station, TX.

ANIMAL SOURCE OF INSULIN LIMITED

Effective December 1, 1991, Eli Lilly and Company discontinued production and distribution of all its U-40 insulins and U-100 protamine zinc insulins (PZI).

The absence of these insulins affects the procedures used by the practicing veterinarian when treating diabetes mellitus in dogs and cats.

Published information and report experiences by practice and research veterinarians indicated that U-100 insulins are acceptable alternatives for U-40 insulins in dogs and Ultralente U-100 can be used instead of protamine zinc insulin in cats. A pharmacist can be contacted for the appropriate insulin diluting fluid.

The U-100 insulins and Ultralente U-100 are supplied by both Eli Lilly and Company and Novo Nordisk Pharmaceutical, Inc. --From Idaho VMA Newsletter, as reported in *Large Animal Veterinary Report*, Jan. 1992.

MICROFILARIA IN URINE

Examining urine sediment is an important part of every urinalysis. In the case of one North Dakota veterinary practice, the sediment examination provided extra information. Four *Dirofilaria immitis* microfilaria were found while examining a canine urine sediment. These four microfilaria were the only evidence of heartworm found in the dog, emphasizing the importance of examining the entire sediment slide. --From *Vet Trax*, as reported in *Large Animal Veterinary Report*, Jan. 1992.

1990 VIRGINIA SWINE INDUSTRY SUMMARY

Hog and pig numbers decreased 4 percent on December 1, 1990 to 430,000 head. Hog numbers had increased steadily during the previous three year period, after reaching a record low of 360,000 head in 1986. Breeding hog numbers totaled 50,000 head, decreasing 9 percent below 1989 and the same as the 1988 level. The market hog inventory groups also declined as they numbered 380,000 head. The pig crop for 1990 totaled 759,000 pigs, 1 percent more than in 1989. The number of sows farrowing for 1990 totaled 92,000 head compared to 95,000 in 1989. Litter averages for pigs saved were improved for all quarters. The annual average pigs per litter was 8.3, up 4 tenths from 1989. Fewer and fewer farms are now raising hogs. The number of farms with hogs totaled 3,500 placed in 1990, 2,000 fewer than 1989.

The value of hogs and pigs on December 1, 1990 was \$35.7 million, 6 percent above 1989. The average value per head increased \$8.50 to \$83.00. Marketings for 1990 totaled 729,000 head, 88,000 more than 1989. Cash receipts were 53 percent higher than the previous year. The average price received by producers was a record high of \$53.50 per hundredweight, \$13.30 higher than 1989 and \$.40 above the previous record set in 1982.

Based on the above statistics, Virginia continued to rank 19th in the U.S. in term of number of pigs produced. In addition, Virginia remained a hog-deficit state. In 1990, a total of 4,550,700 head were slaughtered in the state, 6.24 times as many as were marketed. --From 1990 VA Agricultural Statistics, as reported in Livestock Update, Feb. 1992, Virginia Cooperative Extension Service, Dept. of Animal Science, VPI & SU, Blacksburg, VA.

4TH ANNUAL VIRGINIA HORSE FESTIVAL

Plans are literally going full gallop for the fourth annual Virginia Horse Festival. You are invited to join the Virginia Horse Council and the Virginia Horse Center for two days of fun and festivities at the Fourth Annual Virginia Horse Festival in Lexington, Virginia, On April 11-12, 1992.

Over the past three years, the Festival has attracted thousands of horse enthusiasts representing all breeds, disciplines, and levels. The Festival includes commercial vendors exhibiting everything from horse trailers, barns, fencing, equestrian college programs, and equine insurance to all types of saddlery and equipment, horse feed and supplies, clothing for people and horses, arts, crafts, and jewelry. Approximately 300 horses will participate in this gala two-day event. You don't want to miss this event that showcases the state's diverse horse industry.

To receive additional information, contact: The Virginia Horse Center, P.O. Box 1051, Lexington, VA 24450 (703/463-2194). --As reported in Livestock Update, Feb. 1992, Virginia Cooperative Extension, Dept. of Animal Science, VPI & SU, Blacksburg, VA.

DID YOU KNOW

The Federal Occupational Safety and Health Authority (OSHA) reported that elephant keeper is the most dangerous occupation in the United States based on deaths per capita (one death per 600 keepers per year). There were two reported deaths in 1991.

NATIVE INTELLIGENCE

"When I was a boy of 14, my father was so ignorant, I could hardly stand the old man around. But when I got to be 21, I was astonished how much the old man had learned in seven years."
-- Mark Twain

INTERNAL HELMINTHS OF LLAMAS

Recent investigations of the internal parasites of llamas has shown a number of different species to be present. Some of them are the same as those present in cattle and sheep, while others are acquired by grazing pastures frequented by deer and still others appear to be fairly unique to the llama. Parasite control depends on the extralabel use of anthelmintics as none are currently approved for use in the llama. As with cattle and sheep parasites, treatment regimens depend on the transmission patterns and species of parasites present within an area.

The gastrointestinal nematodes of llamas include species of the following genera: *Camelostongylus*, *Trichostrongylus*, *Nematodirus*, *Trichuris*, *Capillaria*, *Cooperia*, *Haemonchus*, *Ostertagia*, and *Oesophagostomum*. *Camelostongylus mentulatus* (related to the brown stomach worm of cattle and sheep) lives in compartment 3 and is so far the most common nematode found in llamas. With the exception of *Trichuris* and *Oesophagostomum*, the remaining nematode species are the same as those found in sheep and cattle. *Oesophagostomum venulosum* is more common in cervids while *Trichuris tenuis* is found in camelids. The clinical signs of gastrointestinal parasitism are similar to those of sheep and cattle. Infected llamas do not grow as well as their non-infected counterparts. Diarrhea, dehydration, emaciation and anemia may also occur.

Lungworms have not yet been reported as a problem in llamas in North America. The common species of *Dictyocaulus* which infect cattle and sheep also infect lamoids in South America and infections likely occur in these animals in North America.

Llamas are both the final host and intermediate host for tapeworms. Adult *Moniezia* live in the small intestine and are thought to be of clinical significance. Cysticerci of *Taenia* have been found in the mesenteries of llamas, but identification of species has yet to be done.

Two species of liver flukes occur in llamas--*Fascioloides magna* and *Fasciola hepatica*. The first is a common parasite of white-tailed deer, while the second is found in sheep and cattle. The prepatent period of *F. hepatica* in llamas is 10 to 12 weeks. The damage to the liver approximates that of sheep more so than cattle and, consequently, llamas are considered to be less resistant to infection. In contrast, *F. magna* infections are more like that seen in cattle than sheep and, therefore, llamas are considered to be capable of handling the infections.

Parelaphostrongylus tenuis, the brain worm of white-tailed deer, can be the most devastating internal parasite of llamas in those areas of North America in which it occurs. Larvae, passed in the feces of deer, infect snails or slugs where the larvae develop to the infective stage. When the infected snail or slug is eaten by a deer, digestion liberates the larvae and they first migrate to the spinal cord, then through the subdural space to the brain. Mature nematodes are found in the meninges. In contrast to deer, ataxis, paralysis, and death resulting from penetration of the spinal cord and brain occurs in the llama before maturation can be completed. Because no larvae are passed in the feces, antemortem diagnosis of infection is presumptive. Once clinical signs develop, treatment is often unsuccessful.

The most important parasite of lamoids in South America is a nematode *Lamanema chavezii*. This parasite undergoes an enterhepatic migration prior to its maturation in the small intestine. Anemia, eosinophilia, emaciation, anorexia, colic and death can occur. Upon necropsy, petechial hemorrhage, punctate abscessation with calcification and focal necrosis are present in the liver. Fortunately, this parasite has not been found in llamas in North America. However, little was known about the internal parasite fauna of llamas in the US and Canada until recently. It is possible *Lamanema* is actually present and, as work on llama parasites progresses, may be identified. --Lora G. Richard, AAVP Newsbrief 1:2; Summer 1991, as reported in Penn State Veterinary News, August, 1991, University Park, PA.

**CONTINUING EDUCATION OPPORTUNITIES
Spring 1992**

<u>Date</u>	<u>Program</u>	<u>Location</u>	<u>Contact Hours</u>
March 19	Small Animal Medicine Update	Charlottesville	4
*March 20-21	Urogenital Radiology	Blacksburg	10
*March 27-28	Spinal Surgery	Blacksburg	10
March 29	Small Animal Medicine Update	Charleston, WV	4
*April 10-11	Gastrointestinal Endoscopy	Blacksburg	10
*April 24-25	Ultrasonography	Blacksburg	10

*Limited enrollment course featuring hands-on experience.

NOTE: Program brochures are mailed 6-8 weeks prior to course dates. Course reservations cannot be accepted until the brochures are mailed. For CE course information, please contact:

Kent Roberts, DVM
VMRCVM, Blacksburg, VA 24061-0442
(703) 231-7181

IN EQUINE DIETS, FAT'S WHERE IT'S AT

Fat in the diet has a bad reputation these days for humans, but for horses -- particularly those faced with the demands of high performance -- a fat-supplemented diet appears to have some positive effects.

At Texas A&M University - College Station, Gary D. Potter, Ph.D. and colleagues originally started looking for a way to increase the energy density in diets of animals with high requirements, but little appetite. Their initial investigations were promising enough to spawn a series of further studies to examine responses to diets supplemented with rendered animal fat mixed in the feed.

The most dramatic results were seen in performance horses with strenuous workloads, such as racehorses and cutting horses. These equine athletes rely on glycogen stored in the muscle as a fuel supply when they switch from aerobic to anaerobic exercise during an intense workout. Yet the too-thin horse begins to metabolize glycogen to meet everyday energy requirements. While it's true that the thinner athlete can dissipate heat better, he'll also experience fatigue sooner without the benefit of a glycogen cache.

Fat-supplemented diets were found to have a sparing effect on glycogen stores, allowing the horse to reserve this fuel supply for when it's really needed (such as at the end of a race). Further, fat in the diet held muscle glycogen stores up better than control diets even in lean horses.

There is a critical amount of fat beyond which an opposite effect on glycogen stores is seen. According to Potter, 18-20% of dietary calories in the form of fat seems optimal, roughly equivalent to fat as 6-8% of the total diet. Fat can be added as a supplement or purchased already formulated in a complete feed. --Kelley, L.J., & deRibeaux, M.B., *Modern Horse Breeding*, July/Aug., 1991, as reported in *Animal Health Beat*, Vol. 7, No. 7, Oct., 1991, University of Nevada, Reno.

Virginia-Maryland Regional College of Veterinary Medicine Extension Staff:

- Dr. J.M. Bowen - Extension Specialist - Equine
- Dr. C.T. Larsen - Extension Specialist - Avians
- Dr. K.C. Roberts - Extension Specialist - Companion Animals
- Dr. W. Dee Whittier - Extension Specialist - Cattle

K.C. Roberts, Editor

Maura M. Wood, Production Manager of VIRGINIA VETERINARY NOTES

VIRGINIA POLYTECHNIC INSTITUTE
AND STATE UNIVERSITY
VIRGINIA COOPERATIVE EXTENSION
BLACKSBURG, VIRGINIA 24061-0512

Nonprofit Org.
U. S. Postage
PAID
Blacksburg, VA 24061
Permit #28
