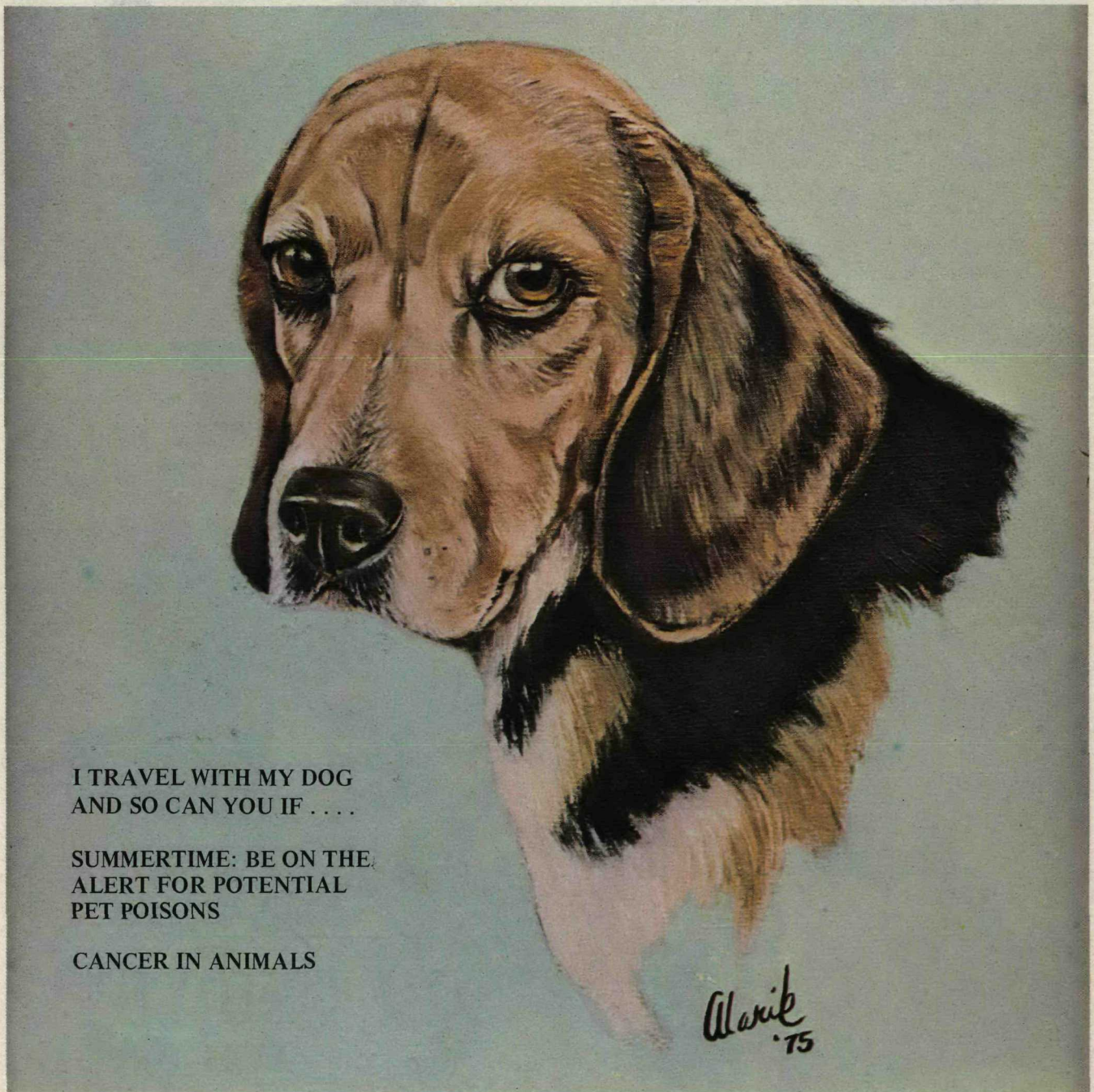


ANIMAL CAVALCADE

JULY/AUGUST 1976

60¢

THE ANIMAL HEALTH MAGAZINE



I TRAVEL WITH MY DOG
AND SO CAN YOU IF . . .

SUMMERTIME: BE ON THE
ALERT FOR POTENTIAL
PET POISONS

CANCER IN ANIMALS

EDITOR'S NOTEBOOK

There is good news for readers of ANIMAL CAVALCADE! The magazine is being provided to all animal hospital waiting rooms. *If you do not find it, ask the receptionist.* Probably someone has beaten you to it. As a service to clients, your veterinarian wants Cavalcade to be available to you. If you become 'hooked' on it, you may want to subscribe and receive your own copy. Increasing readership is promoting better animal health and also promotes additional Animal Health Foundation activities in research for animal health.

Good news comes from the Animal Health Foundation's announcement of the Golden State Championship Horse Show to be held at the Los Angeles County Fair Grounds in Pomona on November 19, 20, and 21. This will be an American Horse Show Association approved Class 'A' for Morgan horses and Class 'A' for open breeds as well. This benefit horse show will return *all* of its profits to two charitable foundations — The Animal Health Foundation and The San Gabriel Kiwanis Foundation. The Animal Health Foundation has a waiting list of worthy research projects and the Kiwanis Foundation has many projects for boys and girls that will benefit from this show. The cooperation of the horse industry and the public in assuring the show's success is gratifying to the Animal Health Foundation and the San Gabriel Kiwanis Foundation. This is an example of the impact of cooperative efforts on the quality of animal and human life.

Reports on past and present research projects by the Animal Health Foundation are forthcoming. These will be presented in a manner of interest to our readers.

On behalf of the Animal Health Foundation, I would like to thank all who are supporting these voluntary efforts.

C.M. Baxter

Editor

URGENT!!!

Please notify Animal Cavalcade when you move! Failure to do this costs the Animal Health Foundation funds which should be spent on caring for sick animals or for veterinary medical research.

Send change of address information to Animal Cavalcade, 8338 Rosemead Blvd., Pico Rivera, Calif. 90660.

ANIMAL CAVALCADE

Official Journal of the Animal Health Foundation on animal care and health.

JULY/AUGUST 1976

Volume 7 Number 4

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Address all advertising and editorial communications to ANIMAL CAVALCADE, 8338 Rosemead Blvd., Pico Rivera, Calif. 90660. All editorial correspondence and manuscripts must be accompanied by a stamped self-addressed envelope.

COVER: portrayed in pastels by Goodwin Mark Alarik.

SUBSCRIPTIONS AND CHANGE OF ADDRESS

Send subscriptions and change of address to ANIMAL HEALTH FOUNDATION, 8338 Rosemead Boulevard, Pico Rivera, Calif. 90660. Be sure to notify us of your change of address at least six weeks before the change is made, including an address label clipped from your latest copy. Give both your old and new address and include your ZIP CODE.

ANIMAL CAVALCADE is published bi-monthly by the Animal Health Foundation, 8338 Rosemead Blvd., Pico Rivera, Calif. 90660. Single copies \$.60. 12-issue subscription, \$6.00; additional gift subscriptions (if ordered at the same time), \$4.00 each. Copyright, 1972, Animal Health Foundation.

DOCTOR'S ADVICE

Readers with health and other pet problems are invited to send in their questions to ANIMAL CAVALCADE. Those with the greatest reader interest will be handled on this page by Dr. J.F. Smithcors, D.V.M., Ph.D., who is technical editor of American Veterinary Publications, Inc.

Q Would you please explain what swine flu is? I would like to know if human flu is the same. Also, are the swine in danger if there is an epidemic in people? How is a swine flu epidemic predicted nearly a year in advance?

A Swine flu is a respiratory disease of swine, and until better information is available, it is not strictly accurate to speak of "swine flu" in persons. The virus identified in the human outbreak at Fort Dix, New Jersey has been designated as A/New Jersey/76, indicating the type (A), site of origin (NJ) and year of discovery (1976). The human disease should be called New Jersey flu, just as the epidemic of 1968 was called Hong Kong flu. The virus which causes the swine flu produced antibodies that are the same in hogs and persons, but there is considerable question as to whether the swine virus can cause human disease. If the decision to vaccinate millions of persons against swine flu is based on a firm belief that swine flu is in fact a public health hazard, then flu in swine should also be controlled, but to date there is no plan to do so. About 50% of swine already have antibodies to this virus, and there is no reason to believe that swine are in danger from exposure to the human disease. The only good evidence to date regarding the effects of swine flu virus on persons is that exposed persons develop antibodies and become immune, without developing symptoms of the disease. Predicting an epidemic has some analogies with a forest fire; after the first focus of infection (hot spot) is discovered, it

usually smolders for some time until it reaches enough susceptible persons (tinder) from which it can spread rapidly enough to get out of hand. Flu is a seasonal disease, susceptibility to which is increased during cold, damp weather, so it would not be expected to spread widely until the coming winter.

Q My old Shepherd dog has had an itchy skin problem for two or three years. This year my horse became itchy and lost patches of hair, especially around the face, neck and legs. After several injections by our veterinarian and a prescription used on the mare, she got well. Now my new 4 months old Labradors have a skin problem that looks the same. Do you suppose that the mare got her problem from the dog, and that the puppies did also?

A Several skin problems, including mange and ringworm, could be transmitted from your old dog to the puppies and the mare. An animal may have a mild form of a skin disease for a long time, in part because its body has "learned" to live with it, but when the conditions are right the disease might be transmitted to other animals. I presume this was not ringworm, since this could also affect you.

Q I have a Dalmatian that destroys some of her newborn puppies. Is this just nervousness, or is there something wrong with the puppies or the mother?

A Mother dogs will often destroy abnormal puppies, and certain matings produce more of these than others. Some bitches are just naturally not good mothers, perhaps because of a nervous temperament, and others will destroy their puppies if they become disturbed, frightened or overly excited by noise, meddling by persons, etc. In some cases a bitch with her first litter will bite off the umbilical cord too short and keep on going.

Q Is it normal for dogs and cats to eat blades of grass? I noticed that they sometimes vomit afterwards. Should I keep them away from grass?

A Dogs and cats probably eat greens to supplement their diet, which in the wild would contain grasses present in the stomachs of their prey. Some are highly selective; I once had a dog that liked the flower heads of field daisies (dog fennel) and in any case it is better that they eat grass than any of the numerous plants. Sometimes they apparently eat grass to induce vomiting; if this is repeated fre-

quently the cause should be looked for.

Q Are dogs sensitive to diet changes? I am wondering if I need to take dog food with me on our summer vacation to feed our Great Dane.

A A dog fed a good balanced diet will probably do best if it is not changed, especially too abruptly. A summer's supply for a Great Dane would be a bit too much to lug along, and if you are using a good commercial food, you can depend on it being the same everywhere. Changing to a more palatable food may result in over-eating and possibly temporary diarrhea.

Q I have noticed that Animal Cavalcade is published by the Animal Health Foundation. Is this foundation supported just by veterinarians or could I help in some way?

A Many persons other than veterinarians support the Animal Health Foundation by their donations, whether large or small, and such support by you and your friends would be most welcome. Among its other functions, *Animal Cavalcade* serves to promote the objectives of the Foundation, and you could help in this regard by suggesting that your friends become subscribers.

Q I have heard that cats may become addicted to fish, so they won't eat other foods and may even become sick on a fish diet. Would you clarify this for me, please?

A Contrary to popular belief, cats are not naturally finicky eaters, but they may become addicted to a single food if this is allowed or encouraged. Cats can certainly become ill on any diet if it is not properly balanced, but cats fed properly can also become ill from other causes, in which case the diet should not be blamed. Cats given a free choice of several foods will rarely select a diet that meets their requirements (unless each by itself is a complete food) and they should not be allowed to "demand" only what they like.

Q I recently attended a horse show and noticed that a man was waiting in the winner's stall to 'collect' a urine sample. Who does this and why do they want a specimen?

A This is done to make sure that the winner was not under the influence of a drug that would make the animal more spirited or easier to handle and thus create a more favorable impression that it normally would. These drugs, or an anesthetic injected to obscure lame-

Continued on page 21

CAVALCADE NEWS

PET AID FOR SENIOR CITIZENS

A recently approved Los Angeles animal control program provides free dog licenses and free spay-neuter service for dogs owned by senior citizens over the age of 62 with an income not exceeding \$7500. This new program will become effective July 1, 1976. Call (213) 485-5771 for details.



Mary M. Flint, Executive Director (1) and Todd Martin, Voting Member (far r) of Actors and Others for Animals with Norene Harris, Associate Editor "Animal Cavalcade" and Senator David A Roberti, author of California SB 778, legislation sponsored by humane organizations to prevent abuses of animals in the motion picture industry. All relaxing after a recent dinner in Los Angeles in Senator Roberti's honor.

In this connection, Cavalcade also supports the work of the American Humane Association, through its Hollywood Office, to insure the humane treatment of animals in both television and the movies.

DON'T TAKE YOUR PET TO WASHINGTON FOR A BICENTENNIAL VACATION

According to John A. Hoyt, President of the Humane Society of the U.S., it is not a good idea to bring pets to the nation's capitol for the Bicentennial.

Approximately 30 million visitors are expected to tour Washington, D.C. during '76. As many as 5 million of them are expected to bring their pets.

Pet owners are expected to have problems as a result of this overcrowding. These will include: 1) those who don't have kennel reservations before they leave home will find there is no room when they arrive. 2) It won't be simple to leave a pet in a parked car while seeing the "sights." Much of Washington parking will be in perimeter lots. This means tourists will have to take busses into the city. In addition, a car's inside temperature can reach 160° in the sun in less than 20 minutes. AN ABSOLUTE NO-NO for any dog, and 3) Many motels and hotels do not allow pets.

UPCOMING ACUPUNCTURE SEMINARS

The National Association for Veterinary Acupuncture (NAVA) will sponsor two three-day seminars in veterinary acupuncture: 1) August 20, 21 and 22, 1976 and 2) November 19, 20 and 21, 1976. According to Dr. Richard S. Glassberg, NAVA President, "The primary thrust of our three day seminars will be the clinical use of acupuncture in small animals and horses. The course will be very practical and will emphasize treatment of conditions frequently encountered in practice and amenable to acupuncture treatment. Acupuncture analgesia for abdominal surgery in small animals will be covered and demonstrated."

For further information contact NAVA, P.O. Box 5181, Fullerton, CA 92635 or call Dr. Warner (714) 871-3000.

IMMUNE DEFICIENCY IN SOME FOALS OPENS DOOR TO DISEASE

Adenoviral infection and other ordinarily mild diseases are fatal to some foals because their natural immune systems are inadequate, according to Colorado State University veterinary scientists.

Headed by A. E. McChesney, D.V.M., the investigators found that some horses are deficient in their ability to produce lymphocytes and

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A DOG-IN-OUR-LANGUAGE GAME

(As conducted by Carsten Ahrens)

1. Aerial combat between two fighter planes
2. Bowfin
3. Bright spot or halo near the sun
4. Degenerate
5. Determined
6. Dictorial
7. Ejected majestates in the old republics of Venice and Genoa in Italy
8. In trouble
9. Kind of swimming
10. Long time
11. Mild expletive
12. Military identification disk
13. Officer in Shakespeare's
MUCH ADO ABOUT NOTHING
14. Ostentacious display
15. Period between mid-July and September
16. Plant poisonous to dogs
17. Ruthless competition
18. Shrub bearing attractive pink or white flowers
19. Sing-song verse
20. Stray Calf
21. Sirius
22. System of beliefs or principles
23. Track or trail persistently
24. Turned-down corner of a page of a book
25. Vehicle holding two people who sit back to back
26. World War II infantryman in the U.S. Army (slang)

- | | |
|-----------------------|-----------------------|
| A. Dog (verb) | N. Doggone |
| B. Dogbane | O. Dog house (in the) |
| C. Dogberry | P. Dogie |
| D. Dogcart | Q. Dogma |
| E. Dogdays | R. Dogmatic |
| F. Doges | S. Dog paddle |
| G. Dog-eared | T. Dog's age |
| H. Dog-eat-dog | U. Dog Star |
| I. Dog face | V. Dog tag |
| J. Dog fight | W. Dogwood |
| K. Dog fish | X. Go to the dogs |
| L. Dogged (adjective) | Y. Put on the dog |
| M. Doggerel | Z. Sun dog |

Answers on page 33

IT'S NOT A DOGGIE BONE — IT'S A DIAMOND!

by Richard Bauman

When John T. Williamson first fed a stray dog that wandered into his campsite, he could hardly know that same dog would someday mean millions of dollars to him.

Williamson had always been searching for wealth. He'd prospected for gold and never struck it rich. At the time he acquired the dog, he was in Tanganyika searching for diamonds.

Nearly broke and totally discouraged, he'd all but decided to give up on that adventure too. In fact, he was just sitting under a tree, trying to figure out what he should try next when he noticed the dog nosing around the parched earth.

Williamson called to the animal, but it just ignored him. The dog began digging a hole, and minutes later pushed his snout into the hole and came up with a rock.

But what a rock! Williamson spotted it and quickly grabbed it from between the dog's jaws. It was a diamond, one of the largest he'd ever seen. While he'd never managed to find even a trace of diamonds, that dog had accidentally dug up a huge and valuable one.

Needless to say, Williamson filed a claim on that area and within weeks he'd unearthed dozens of diamonds, which have made him one of the richest men in the world.

His success came when he least expected it, and he had a stray dog he befriended to thank for it.

Perhaps not as dramatic, but just as startling was the case of Mrs. Winifred Mansvill of Keston, England, and her cat Ginny.

As cats do, Ginny had been out prowling one night, and the next morning Mrs. Mansvill noticed Ginny was limping. Being a thoughtful owner, she took the creature to a veterinarian.

Sure enough, in the cat's left front paw there were two apparent chunks of glass. But the vet noticed something odd about them and he jokingly suggested they looked like diamonds.

Rather than toss them away the doctor wrapped them in tissue and gave them to Mrs. Mansvill. Weeks later she re-discovered them in her purse and on a lark had them appraised.

The jeweler who examined them offered her one hundred dollars for each of the tiny diamonds.

Somewhere in her ramblings, Ginny had actually dug up two valuable diamonds, but to Mrs. Mansvill's chagrin, she didn't know where Ginny's evening adventures had taken her!



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INTERESTING & FUN FACTS ABOUT CATS

DID YOU KNOW...

- that there are an estimated 22 million cats in 12.9 million U.S. households (that's 1.7 cats per cat-owning household).
- that 50% of the cat owners also own a dog, proving that cats and dogs don't always fight.
- that the pet cat population has increased 13% in the past eight years.
- that one of the reasons for the cat's rise in popularity is his adaptability to apartment living. He can live indoors with his kitty litter box and never need to be taken out for what is euphemistically called "exercise!" Because he is a clean, quiet creature, a cat is often more acceptable to landlords.
- that the all-American mixed breed cat is most popular with feline fanciers, but the new status pet is the pure-bred cat.
- that the top pedigreed breeds are the Siamese and the Persian.
- that people who want a more unusual cat might select a Manx, a cat with no tail; a Sphynx, a cat with no hair; or a Rex, a cat with curly hair.
- that *Cats* magazine says 350,000 pure-bred cats are sold annually by 15,000 hobby breeders. There are more than 400 clubs exclusively for pure-bred cat owners.
- that while millions of cats lead lives of ease and comfort, it is estimated that 25,000,000 more die from auto accidents, starvation, or are humanely destroyed in animal shelters.
- that animal welfare organizations and veterinarians urge pet owners to have their cats spayed or neutered. These surgical procedures pose no threat to a cat's health or disposition. Besides preventing litters of excess kittens, the operation makes the cat a better pet, more affectionate, cleaner and definitely more home-loving.
- that cats became domesticated housepets about 3,000 B.C.
- that the Egyptians worshipped a cat goddess called Pasht or Bast and from her name the word "puss" is derived.
- that exporting cats was against Egyptian law but Phoenician traders smuggled them to other parts of the world. The Romans took pet cats to Ireland, Great Britain and other parts of the Empire.
- that because of pagan cat worship, medieval Christians thought the cat was a consort of witches and the devil, so cats were persecuted and badly mistreated. Some say the wholesale slaughter of cats caused the rat population to proliferate, causing the plagues that swept over Europe in the Middle Ages.
- that the cat's charm as a pet and his expertise as a mouser helped him survive. Cats were brought to the North American continent by colonists to protect their granaries. As settlers moved West, cats went along in covered wagons. In rat-ridden mining towns, cats were imported and sold for as much as \$25 in gold.
- that nearly half the pet cat population lives in metropolitan areas.
- that some psychologists believe that pets fulfill a deep human need for daily contact with nature, so instead of earning his keep as a mouser, Puss "works" at being a companion and a bridge to the world of nature.

CAN YOU TELL IF YOUR DOG HAS A HEALTHY MOUTH?

What Can You Look For? A dog should have clean, white teeth with healthy-looking, pink gums. Plaque and tartar can be signs of trouble and can cause painful mouth problems for your dog.

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I TRAVEL WITH MY DOG

Some practical tips on traveling with your pet.

Dogs these days are not merely animals who are fed, watered and left behind when families set out to enjoy themselves. As a respected and respectful family member, the dog often accompanies his owner throughout the trip.

Traveling with your pet can be fun for both of you — or a total disaster. In order to avoid the potential trauma of a poorly planned vacation, we would like to offer several hints and suggestions to ensure that the proverbial pleasant time will be had by all.

Needless to say, precautions must be taken to ensure your pet's comfort and safety enroute. Before you plan to ship your dog by air, make some preliminary telephone calls to several airlines. You may be surprised at how different airlines handle the problem of the traveling pet.

For example, TransWorld Airlines allows passengers to take pets along in the cabin of the plane, *provided this request has been cleared in advance, and the pet is small enough to be placed in a carrying case and tucked*

under your seat. TWA can allow only one pet in first class and one in tourist class, so it is wise to make reservations for yourself and your dog *well in advance.* Pet owners are truly indebted to TWA for their progressive thinking. There is one fare for all dogs, great or small, according to TWA. Large dogs must be in a kennel 24 x 30 x 40; it can be purchased at the airport for approximately \$24; or one can make his own kennel.

The law authorizes the U.S. Department of Agriculture "to regulate the transportation, sale and handling of dogs." A number of states have passed laws requiring that access be given to public accommodations, such as hotels, motels, theaters, or restaurants, for any blind person accompanied by a trained guide dog.

Suggestions on Transporting your Dog

Your dog should never become a problem, if you and the dog start out properly. Initially, the young dog should be introduced to riding in

automobiles by taking him on short trips under ideal conditions. Confine the young dog in a carton or box. *Never start on a ride just after the dog has been fed.* Try to have a passenger along to soothe and comfort the dog as he becomes anxious. *Keep the first ride short.*

A well trained dog will "Down" on the floor of either the front or back seat and will probably stay there, though wide-eyed and frightened, even if he becomes sick. Even when planning a trip with a seasoned canine traveler, you should have a couple of old rags or a roll of paper toweling along with you. *At the first sign of drooling or rapid swallowing, stop and let the dog, with his leash on, out of the car for a few minutes.*

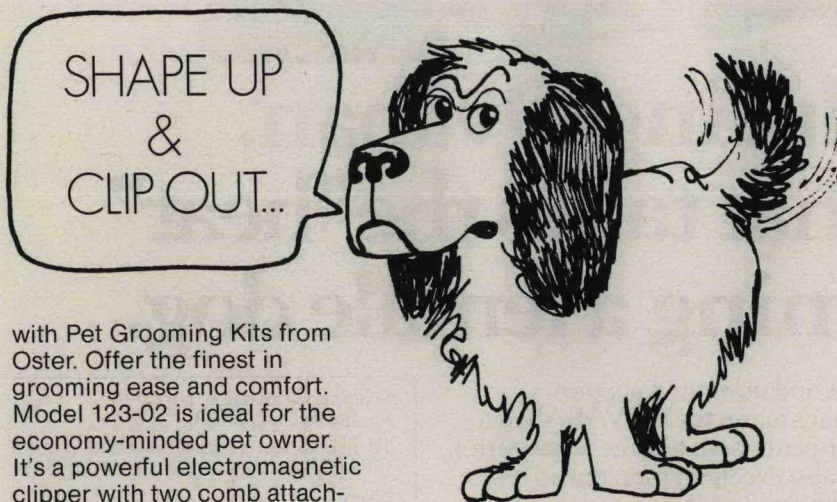
If your dog is more the unruly, rowdy type, you may want to confine him to a crate, or kennel box. For station wagons, these are an excellent answer, for they not only restrict the dog's movement without causing him any discomfort, they also prevent the dog from sliding around — perhaps injuring himself — in the event of a sudden stop.

Dogs and Hotels need not Bark at each other

It is a sad but true fact, that many hotels these days do not look favorably on accepting a canine guest. I believe we as dog owners are to blame for this attitude. Who is at fault when the hotel management has finally had enough of howling, piddling, shedding dogs who destroy property and wreck havoc with hotel guests? It is up to all of us, whether traveling with our pets for pleasure, business or to shows and exhibitions to convince the managements of these hotels that remain open to us and our canine companions that their decision to allow us to stay with them was well-merited.

If your dog is an incorrigible barker when left alone, if he is notoriously destructive, *board him rather than take him along with you.* It is unfair to those owners whose pets are well-mannered to have hotels bar pets from their premises because one person allowed one dog to grossly misbehave. Even if you are confident that your dog will be a welcome guest, it is still a good idea to take these tips:

... Before you check into your hotel, provide an adequate exercise period for your dog. Allow the dog plenty of time to relieve himself and, if he is



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AND SO CAN YOU IF

by Dr. Sam Ellis

overexcited, perhaps a run, on leash, would be advisable.

... So that your animal will not be plagued with a bad case of diarrhea, bring along his favorite dog food and bottle some water from home also. No one can enjoy a vacation when forced to walk a distressed, uncomfortable dog at half-hour intervals.

... Never allow your dog off leash. Cities like New York and San Diego, for example, enforce leash laws and owners are often given stiff fines for allowing pets to run free. Remember, too, that your dog is not familiar with his surroundings, and may well become confused and perhaps lost when unleashed in a strange location. This includes walking your pet inside the hotel.

... Allow time for introducing your dog to the hotel in general and your room in particular; for, unless your hotel provides separate kennel space, your room will serve as his confinement area for the major portion of your trip. Hopefully, your dog has become adjusted to being left alone while at home. Assuming this is the case, be sure to spend a fair amount of time in the room with your dog, allowing him to become accustomed to it before you leave him alone.

Think of your dog for a moment. Should you hurriedly confine him in a strange room in a strange place and leave immediately without reassuring him, he will no doubt believe he has been mercilessly abandoned and will set up a forlorn howling that will alert the entire hotel of his presence.

... When you do leave your pet alone, stand down the hall for at least five minutes to make sure he does not begin to wail. If he becomes frightened and starts barking, be prepared to return immediately and reprimand him severely. Then leave him again and wait to hear if he will begin to bark. *If he does, make up your mind to have a hamburger at the nearest drive-in, with your noisy dog as a dinner companion.*

... Whenever you leave your room and your dog in it, kindly post a notice to this effect for the chambermaid who may become frightened should she open the door and find your dog facing her. This is also an excellent safeguard to prevent your dog from escaping accidentally when she enters to clean your room.

... Hotel managers naturally resent having their bedding used to accommodate your dog, so bring along your dog's bed or his favorite blanket and make sure he understands that he must

use it, and not the bed or chair.

... It is a good idea to use a separate little suitcase for your dog's belongings; grooming equipment, toys, blankets, food packets, food and water dishes, etc. If your dog sheds profusely, don't forget his comb and brush. Use them daily to keep the dead hair off hotel chairs and carpets. ... If your dog is of the destructive sort, *never* leave him unattended. If you must go out without him, confine him in a wire crate and be certain he does not set up a howl.

Remember that you are liable for anything your dog destroys and that you may be asked to sign an agreement to this effect before you are shown to your room.

... In most places, dogs, with the one exception of guide dogs, are not allowed in dining rooms. The Guide Dog or Seeing Eye Dog is the only dog that may accompany his owner on public transportation.

... If you are traveling out of state or out of the country, be sure to check quarantine requirements and have a

veterinary health certificate including immunization against distemper, hepatitis and leptospirosis (DHL or 3-in-1 inoculation) and rabies along with you.

From Alaska's Gold Rush Motor Lodge in Anchorage to Florida's Royal Motel in Miami; from Los Angeles' Sheraton Universal to the Plaza in New York City; from coast to coast and border to border, many hotels still open their doors to travelers with pets.

A more complete listing of these hotels and motels can be found in "Touring With Towser", distributed by the Gaines Dog Research Center for 50 cents, P.O. Box 1007, Kankakee, Illinois 60901.

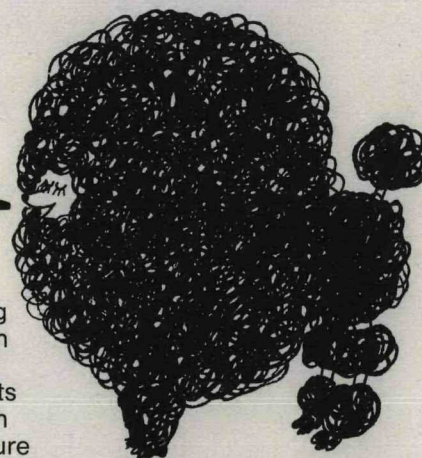
A well-mannered pet, like a well-mannered guest, is a welcome one. Please make sure your pet is not the one responsible for another "No Pets Allowed" sign to crop up at another new hotel this year. Fellow dog owners and their traveling pets salute you for your cooperation. A pleasant vacation to you and yours.

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summertime-

BE ON THE
ALERT FOR
POTENTIAL

PET POISONS



Kojak smiles for the camera.



Kojak in search of more tasty bits on the garden cart.

by Naomi Hornberger

Photos by Calvin Wesley Wilcox

Kojak, our Cockapoo pup, lay listless in his bed. His only greeting was a slight wag of his tail. His customary appetite was gone. He refused to eat. He even spurned the little tidbits we offered.

Thinking back to an experience of the previous afternoon, I realized what we had dismissed as a mischievous prank was turning out to have serious consequences. I had been gardening with Kojak underfoot. He had seized every opportunity to command my attention by snatching articles from the garden cart. Suddenly the commotion stopped. Peering around the shrub, I realized, to my horror, the last item pilfered had been a bag of Castor bean seed. They were scattered on the lawn and Kojak was chewing them with relish.

"Kojak!" I yelled. He fled, with me in hot pursuit.

"What's he been into now?" my husband Jack asked, laughing.

"Castor beans and they're poisonous," I answered breathlessly, "help me corner him so we can look in his mouth."

Once captured, Jack held him and I pried his jaws open.

"There's nothing in his mouth," he said.

"I know, but we should watch him for signs of poisoning," was my worried reply, "let's pick up the seed before he gets any more."

This morning my fears seem justified.

"Mary, it must be those castor beans," Jack said with alarm, "you call the veterinarian's office before he leaves while I get the car out."

The nurse said, "You'd better rush him to the Veterinary Emergency Clinic."

I relayed her message to my husband and we headed for the clinic. On the way I was filled with remorse for not having taken him to the doctor immediately following my unfortunate discovery.

The doctor at the clinic, examining him carefully, remarked, "Even one or two seeds could be fatal." He administered an injection to induce vomiting. The wait that followed was one of hopeful expectation. The result of the shot, however, produced only liquid, no solids. Due to the time lapse, the poison had entered the intestines.

Dismissing Kojak, the doctor advised that if listlessness persisted or other symptoms developed we should have the pup rechecked by our veterinarian.

After a sleepless night we got up to find Kojak still refusing to eat. He

Dangerously Toxic Plants

Castor bean (*Ricinus communis*) — the seeds and the foliage of young seedlings are poisonous.

Oleander (*Nerium oleander*) — all parts of the plant are poisonous, even the dried leaves.

Poisonous Plants That May Invade The Garden

Scientific Name	Common Name	Poisonous Part
<i>Rhus diversiloba</i>	Poison oak	All Parts*
	Toadstool	All Parts
<i>Conium maculatum</i>	Poison hemlock	All Parts
<i>Solanum nodiflorum</i>	Black nightshade	Leaves, berries
<i>Nicotiana glauca</i>	Tree tobacco	Entire plant
<i>Phoradendron</i>	Common mistletoe	Berries

*Plant causes dermatitis.

A more complete list may be found in "Poison Plants In The Garden" put out by the Agricultural Extension Service.



Kojak's objections to confinement earned him the nickname by Dr. Gunn, the veterinarian, of 'the wild one!'.

seemed content just to lie in my husband's lap. Being so docile was foreign to his usual lively behavior.

About noon, he began to show more life and even drank a little milk. The rest of the day he still lay around and slept.

Next morning, although weak, he ate all of his rations and begged for more. He began to act like his old rambunctious self again.

In an effort to avoid a repetition of this unhappy experience, and perhaps alert other pet owners, we consulted our veterinarian to determine the names of some of the more common potential pet killers and precautions we should take to avoid them.

According to veterinarian, Dr. Charles Gunn, "Insect and rodent bait are the chief cause of pet poisonings in our area, Sacramento, California. "One of my pet peeves," continued Dr. Gunn, "is lack of proper warnings or antidotes on containers of some of these dangerous products. Indiscriminate use of over the counter drugs for deworming is also dangerous."

"The variety of objects pets have consumed is endless but the most unusual case developed following an urgent call from a frantic client who, after a fruitless search for her poodle's choke chain, insisted he swallowed it. I assured her it was an impossibility but she was not convinced. In order to ease her mind I advised putting him under the fluoroscope. The fluorescent screen revealed a distinct snake like object, verifying her conviction. He was given medication and next morning he relinquished his choke chain."

Garden chemicals are poisons which may enter the body by skin contact, breathing the fume vapors and dust, or by eating or drinking the material. Products containing these dangerous chemicals should be used and stored with extreme caution.

KEY WORDS AND SYMBOLS ON LABELS

Many of the terms used on labels are set by law.

The signal words "DANGER," "POISON," and the skull and cross bones symbol are required on the labels for all highly toxic compounds.

The word "WARNING" is required on the labels for all moderately toxic compounds.

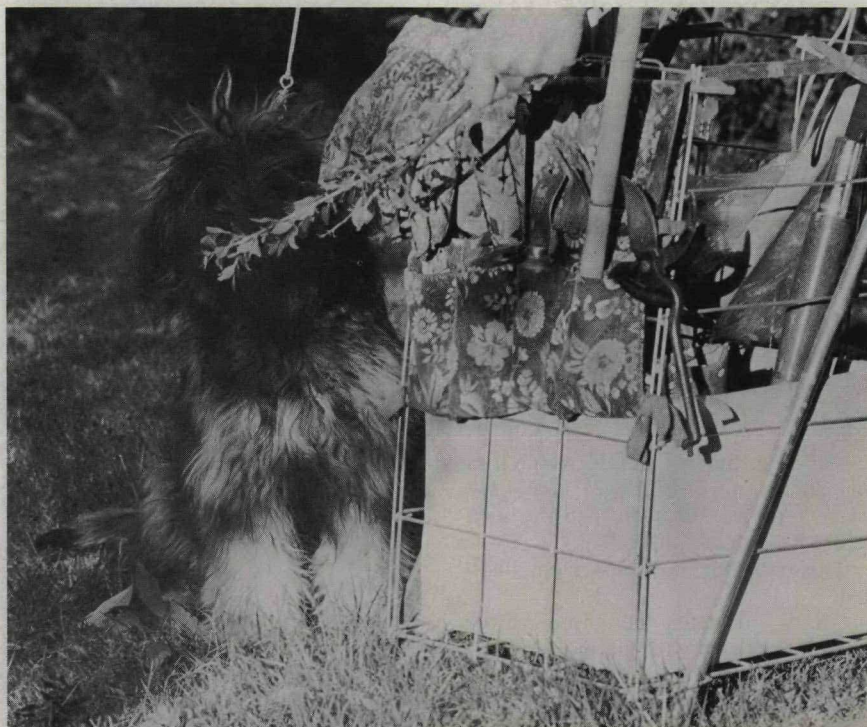
The word "CAUTION" is required on the labels for all slightly toxic compounds.

Poison should be suspected when

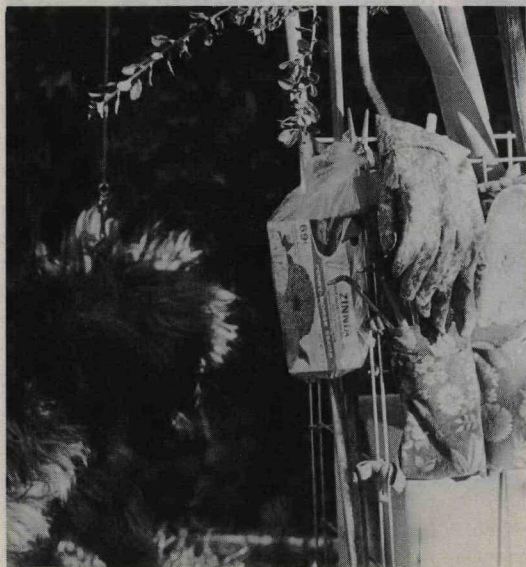
the following symptoms are seen: intense abdominal pain, vomiting, sudden diarrhea, rapid, hard breathing, convulsions, coma, or any other illnesses of unknown cause.

If it is desired to cause vomiting so that the poison(s) will be partially removed from the system, concentrated salt solution, or one ounce of hydrogen peroxide with an equal amount of water are effective emetics. *In all cases of poisoning, it is advisable that the animal be taken to the veterinarian as quickly as possible.*

Your pet's safety will be enhanced by practicing the same precautions used to protect children.



Pointing out a 'no no' to Kojak with a 'persuader.'



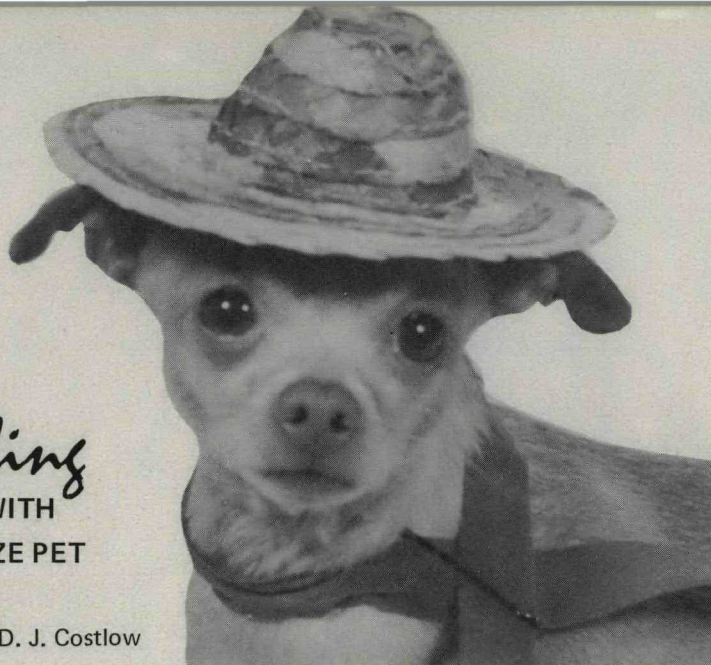
Kojak choosing his next 'tasty bit' of garden seed.



Kojak happy and well again.

traveling AMTRAK WITH YOUR PRIZE PET

by D. J. Costlow



Because of the increase in travelers accompanied by their pets, the nationwide rail system, AMTRAK, has established new policies for traveling pets, and will accept pets and animals *in baggage service only*. Dogs, cats and other domestic pets will no longer be allowed in any passenger car; *guide dogs will remain the only exception*.

Those who are traveling *first class* may ship a pet by providing a suitable container, or purchasing one from AMTRAK, and no excess baggage charge is levied for this service. However, *coach passengers* will be charged for the total weight, pet and container, as excess baggage.

Pets in well-ventilated containers can be checked on any train that has a baggage car. Twenty-four major AMTRAK stations now have pet containers in three sizes for sale to passengers, including Albuquerque, NM; Los Angeles, CA; Oakland, CA; San Diego, CA; and Seattle, WA. Arrangements can be made in advance with AMTRAK to have pet containers supplied to other locations on a request basis.

Passengers who wish to visit their pets enroute may do so when safety and operating conditions permit by making prior arrangements with the conductor. It is the responsibility of the owner to make sure that their pet is supplied with adequate food while in transit, although downline stations should be advised when pets are traveling in transit so that station personnel can check the condition of the animal and supply water. *The animal may be exercised by the owner at those regular train stops when the layover time is at least 10 minutes.*

Some AMTRAK stations are served only by bus connection, such as San Francisco, and do not have checked baggage facilities. *Therefore, pets can never be checked as baggage to these stations.* Other trains have peculiarities

in their operation schedules which do not allow for the shipment of pets, i.e., Metroliner trains have no baggage service; trains crossing into Canada have sealed baggage cars and cannot accept pets, etc.

ON THE ROAD WITH ROVER

Summer travel often raises the question of what to do about the family dog. "There is no reason not to take the family pet along on an extended road trip. Furthermore, leaving the family pet behind in a kennel costs money, adding to the vacation expense. All it takes is a bit of planning," says Mrs. Pat Dittmann, Public Service Representative of the ALPO Center for Advanced Pet Study. "Each year thousands of dog show people travel all over the country with their dogs to compete in dog shows."

"A wire traveling crate with a secure snaplock is the most useful item a pet owner can buy when taking their pets on a motor trip. They can be purchased at any pet store, and the return in peace of mind, knowing the family pet is secure, more than offsets the cost."

"The traveling crate is more than security," Mrs. Dittmann says, "it becomes a home for your pet on the road. A water dish can be attached to the side of the crate, ice cubes put in it exists at a particular city on a train's route, request a copy of Baggage Circular No. 6 under your specific train number."

Additionally, other railway systems have their own regulations regarding travelling pets, and each should be consulted if your plans involve using their facilities. The Denver and Rio Grande Western Railroad, for example, permits pets in private room accom-

modations only. Dogs or other pets will not be handled in baggage service. The Chicago, Rock Island, and Pacific Railroad allow pets to accompany passengers in private room accommodations operating only on the "Peoria Rocket." *Mexican travel of pets requires a health certificate indicating current rabies and distemper shots. This certificate must be stamped by a Mexican Consulate before travel into Mexico is permitted.*

If your vacation plans involve train travel with your pet, remember to check with the conductor and station personnel *in advance* to assure a safe and comfortable trip for your prize pet.

while you travel, and the dog will have a cooling treat without spillage, the crate makes a good place to bed the dog down at night as a guarantee to motel managers that the motel's furnishings will be safe.

"Your dog is also 'crate safe' in your motel room when you are out. Protect both your pet and maid, should she suddenly enter the room. Dogs have been known to run away into a strange countryside when the maid has opened a motel room door."

"When you stop for lunch or dinner, the pet can be left in the crate with the car windows open for full ventilation, under a shady tree. Overheated cars and heat prostration is all too common. The cool of the morning becomes the heat of the afternoon, and the car heats up in a hurry."

Mrs. Dittmann suggests that pet owners make lunch stops a snack break for their dog too. "Give him a good run, and allow him a treat before you put him back in the car. The exercise will allow him to stretch his muscles, and the treat will take the edge off his hunger until you arrive at your destination and give him his regular full meal." She also cautions that *a pet should not have a full meal for at least one hour before traveling.*

"Other equipment must include a water bowl and feeding dish. An unbreakable stainless steel bowl is light, easy to clean and store. However, if the pet's usual dish can travel, the familiarity of it will add to the pet's sense of security in unfamiliar surroundings. A strong leash, a good leather buckle collar, with a securely fastened, complete identification tag, is also a necessary requirement. Dogs running at large in strange areas, no matter how well trained, oftentimes fail to respond to commands. And remember, your dog doesn't know where he is or where to go. A strong leash will keep him with you. If he should get loose, a dog tag with complete identification will bring him home safe and sound."

Continued on page 21



Christa and her owner accept the crowd's applause for her Super Dog victory. John Keenan, President of Mid-Atlantic Obedience Association, in bicentennial costume, holds the Super Dog trophy, a sterling silver dumbbell.

the 1976 DOG OBEDIENCE CLASSIC

... TIME, TRAINING AND LOVE TRIUMPH

Hundreds of excited spectators in Elizabeth, New Jersey recently watched 120 of the best trained dogs in the nation competing for the title of Super Dog and recognition as the finest obedience dog in the country. The winner in the 1976 United States Dog Obedience Classic was a 10-year old female Doberman Pinscher officially named Our Own Dark Secret, but who answers to the call name of Christa.

How are the Dogs Judged?

For those unfamiliar with the sport of dog obedience, competition takes place in rings, like those used in breed shows. At a dog obedience competition, or trial as it is called, dogs and handlers perform various exercises, and are scored on their performance

by approved judges. Competition is divided into different classes according to the difficulty of exercises, and dogs qualify for the advanced classes through scores and titles earned at previous recognized trials. Each exercise has a maximum point value with a total of 200 points available for all exercises in a class. *The dog with the highest score in his class wins.*

Origin of the '76 U.S. Obedience Classic

The United States Classic was created by a group of enthusiasts in Illinois led by Barbra and George Goodman. This group recognized that while hundreds of obedience trials were conducted every year in this country, there was no real way of

determining which obedience dog was best... *the Super Dog*. With the support and financial aid of many individuals and clubs across the nation, they formed the Illini Obedience Association, and proceeded to create the first United States Obedience Classic. Their efforts culminated in the 1975 Classic conducted just outside Chicago with only top qualified dogs competing.

Promoting Responsible Pet Ownership

The U.S. Classic is a tremendous undertaking and requires a considerable amount of cooperation, work and funds to organize. Gaines® Dog Foods, a division of General Foods Corporation, has long advocated the importance of responsible dog owner-

ship. The makers of Gaines saw an opportunity to promote the sport of dog obedience through sponsorship of the Classic, and through it, the value of dog training to ordinary dog owners. They volunteered to underwrite most of the expenses attached to the Classic, but equally important, *they agreed to set up and underwrite a series of Regional Championship competitions to bring top quality performers to the public in local areas.*

The Purpose of the Regional Events

Each competition will be held at a sizeable arena and the public is invited to attend. *Gaines is hopeful that by demonstrating the benefits of a well-trained dog, significant numbers of ordinary dog owners will be motivated to enroll their pets in local obedience classes, and thereby increase the number of well-behaved dogs in the country.*

CLOSE COMPETITION

The 1976 Classic was the first competition sponsored by Gaines, and

it was hosted by the Mid-Atlantic Obedience Association. The quality of the dogs entered was superb since the event attracted only top dogs. Since 200 is a perfect score, the following list will demonstrate the close competition.

Obedience Competitions are Fun for Everyone

From the spectator's point of view, a dog obedience competition is full of activity. Because several rings are involved, and different exercises are

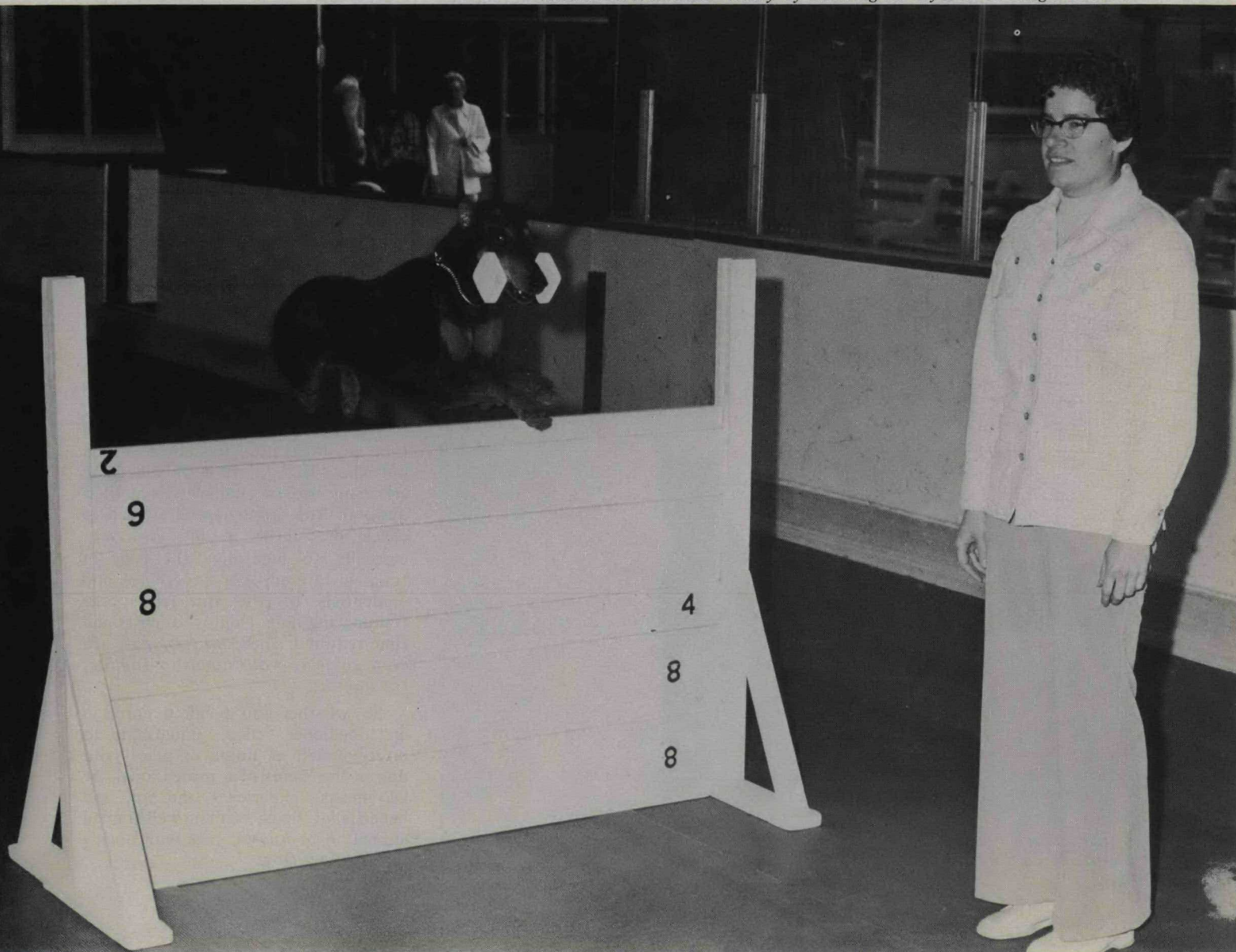
going on in each one, there is continuous action throughout. Even the uninitiated spectator soon learns to distinguish between superior and mediocre performances. He will also see a variety of breeds in participation.

Many people are impressed with the general behavior of so many dogs congregated in one place. Usually the dogs behave as though the others didn't exist; there is no snarling, growling, lunging or other forms of misbehavior. Above all, one is impressed by the eagerness and happiness of obedience-trained dogs.

An obedience competition demon-

Score	Breed	Name	State
195.58	Doberman Pinscher	Our Own Dark Secret	Michigan
194.91	Poodle	Fiesta's Tacosan	Illinois
194.00	Labrador Retriever	Royal Oaks Tar of Dorrccliffe	Florida
193.83	Border Terrier	Pete	Michigan
193.50	Golden Retriever	Sundowner II	Minnesota
193.41	Brittany Spaniel	Victoria At A Girl	Missouri
192.83	Miniature Poodle	Coxinelle Des Fabian	New Jersey
192.50	Border Collie	Dreamalot Ben	Indiana
192.50	Pembroke Welsh Corgi	Thurlow's Little Lizajane	Virginia
191.41	Airedale Terrier	Willo-Aire Proud Piper	Illinois

Christa celebrates her victory by showing her style in clearing a barrier.



strates how dogs should act, and one comes away determined to work more closely with his/her own dog.

To experience the friendly excitement of a dog obedience trial, check with your local kennel club or dog obedience club about when their next event will be held. Take the whole family; the children will enjoy it. Then, to see really top qualified dogs performing, make plans to attend one of the Super Dog competitions in the Gaines Obedience Program. There are four of these scheduled within the next several months:

Chicago, Illinois — The Central Regional Dog Obedience Championship — November 6 & 7, 1976 — O'Hare Exposition Center.

Atlanta, Georgia — The Eastern Regional Dog Obedience Championship — November 28 & 29, 1976 — Stone Mountain State Park.

San Diego, California — The Western Regional Dog Obedience Championship — December 4 & 5, 1976 — Del Mar Fairgrounds.

St. Louis, Missouri — The 1977 United States Obedience Classic — March 26 & 27, 1977 — Forest Park Community College.

Dog Obedience Means More Than Competition

While dog obedience is a fast growing sport attracting tens of thousands of dog owners every year, there is a more serious side to the activity. *The ever increasing dog population has created an absolute need for responsible dog ownership. No one should be denied the right to own a dog, but everyone who exercises that right assumes the obligation of seeing to it that the animal behaves in a socially acceptable manner. This requires training.*

Most obedience enthusiasts began by enrolling their pets in an obedience class in order to gain control over their behavior at home and in their neighborhood. They found the training experience to be personally both challenging and rewarding. Since there is a natural tendency to compare your dog's accomplishments with others, these enthusiasts were motivated to compete. This in turn led to more advanced training and an even greater sense of achievement. So, what began as an act of social responsibility turned into a rewarding personal achievement.

The real enjoyment of a well-trained dog far surpasses the pleasure given by any degrees of titles he may win. Indeed, many well-trained dogs are never entered in competition to earn degrees and titles. *The real enjoyment comes from the closer relationship that develops between owner and dog as a result of training.* A dog wants to please and requires only that he be taught what is expected of him. Now that doesn't mean that proper training is easy, nor that you dog will not require a firm hand at times during training. *It simply means that a dog by nature will respond to consistent, steady handling, and as he progresses, will eagerly perform that which he has been taught.* The sheer joy shared by owner and trained-dog is one of life's pleasures available to any dog owner.

The best and recommended way to train your dog is through an obedience class. You are taught what and how to train, and you gain even more from the group sessions. Dog obedience classes are widely available. Most kennel clubs conduct them on a regular basis, and the number of dog obedience clubs throughout the country is steadily increasing. Check the local clubs in the area for information. Additionally, many municipalities offer dog obedience classes through local school extension courses or through a parks and recreation program. No matter which you choose, you will find the enrollment fees quite nominal.

For those whose schedule will not permit them to participate in an actual obedience class, or who prefer the do-it-yourself backyard approach, there are many good dog training books available. Check with your local bookstore or library. To begin, you can write for: "What Every Good Dog Should Know." *It is available free from Gaines Dog Research Center, 250 North Street, White Plains, NY 10625.*

For those who have neither the time nor inclination to train their dog, but who wish to have it trained, there are many professional schools at their disposal. The reader is well advised to check out those in his area very carefully to determine the type of training offered, the experience and credentials of the instructors, the training methods employed, costs and time required. *Some professionals will even come to your home to conduct the training.*

So, whether you decide to enroll in an obedience class, undertake to do-it-yourself at home or place your dog in the hands of a professional, by all means, experience the joy and benefits of living with a well-trained animal. *Who knows, you may own a future Super Dog.*



Christa and her owner/handler, Norma Currier of Oxford, Michigan, pose with Christa in a sitting-at-heel position.

TRAVELING

continued from page 17

Several weeks before you plan to travel, get your dog ready. *A veterinary checkup is good insurance against sudden illness. Bring distemper booster shots and rabies shots up to date. Carry health vaccination certificates, signed by your veterinarian, with you for your own protection in case of an inadvertent dog bite. If you plan to visit Canada, or Mexico, you will need these certificates to cross the border. Vaccination should be within twelve months and the certificate should state the vaccine used and also a description of the pet. If your pet is inclined to become car sick, or extremely nervous, ask your veterinarian for medication.*

Decide on your feeding schedule. Your veterinarian can recommend the best diet for the trip based on the dog's age and weight. Switch from the pet's regular at-home feeding schedule slowly. Give your pet at least two weeks to get accustomed to a new diet.

Plan ahead for reservations at motels and camp grounds; some accept pets and some do not. Several travel guides, including Mobil and AAA, list motels and campsites which allow

pets. They are published by region and list places of interest and restaurants, as well as housing, to make the trip more interesting.

Campers will find that the U.S. Department of Parks and state park services list park campsites which allow pets. *Many no longer do.* Be sure to check in advance.

Mrs. Dittman concludes: "Try to remember your pet is away from familiar surroundings, and is daily building up new frustration responses. Your pet will look to you for security in strange surroundings.

"Spend a little extra time with your dog at the end of each day's travel, or when you return to the room after dinner. Not just 'Good Dog' but some active play or grooming.

"Take along a toy or rubber ball small enough for the dog to hold in his mouth, but too large to swallow. Start a game of fetch. Keep your pet active and playing for five or ten minutes, just as you do at home, and he will be 'At Home' happy and healthy for the rest of the trip."

Editor's Note: A good I.D. for your dog, cat, or any animal is a registered tattoo.

DOCTOR'S ADVICE

continued from page 4

ness, will show up in the urine. The samples are taken by or under the direction of a veterinarian.

Q As a child, I recall that our veterinarian took a vacation during the summer and a 'vet' student took care of the practice. Is this still the accepted procedure?

A No, it most definitely is not, and today it is not only unethical, but illegal. Many veterinarians do, however, serve as preceptors for students who want to learn what actual practice is like, and the veterinarian benefits by learning from the student some of the newer things being taught in school. In a group practice this may permit one veterinarian to take a vacation while the student is there, but a solo practitioner who allowed a student to "take over" could lose his license—aside from having rendered a disservice to the public—and the student might be expelled from school.

Q What is the practice of Acupuncture? Is it done with animals? If so, does the private practitioner of veterinary medicine offer this?

A Acupuncture is a form of treatment developed in the Orient and which is finding favor for various problems here, especially some which have not responded to more conventional therapy. It consists of inserting needles at highly specific locations, depending on the problem, and although the mechanism of action is not well understood by many persons, there appears to be little doubt regarding its effectiveness in various conditions, both in persons and animals. The practice is relatively new in this country, and most of the qualified veterinary acupuncturists were trained in the Orient, but in the past year or so courses of instruction have been available to veterinarians here. Until more results have been tabulated it might be best to be a bit cautious, but we should certainly not depreciate the idea. The rationale is that disease results when a life force that flows throughout the body in a network of vessels or "meridians" is interrupted or imbalanced, and this flow can be re-established by insertion of needles at various of the approximately 1,000 acupuncture points which have been specifically identified.

Editor's Note: Cavalcade ran a 3-part series on "The Use of Acupuncture in Veterinary Medicine" in the recent past. For further information contact NAVA (714) 871-3000.

ANY OLD FIRE HYDRANT

(A true Anecdote — Just for Fun)

by Marion C. Hotley

I carefully locked Benji in the bathroom before I started out for the grocery store. Still couldn't trust the puppy.

As I pushed my cart down aisle six, my eyes suddenly focused on a package that demanded my attention. On the shelf that held the neatly stacked cans of dog food, was a product that was guaranteed to housebreak a reluctant puppy.

I picked up the package and eagerly read about the contents of the bottle inside. Sounded like just what we needed for Benji. A drop of this concentrated solution on a newspaper would end our problem.

As I turned to place my "find" in the cart, it somehow slipped out of my hand. I picked it up from the floor and my hand became moist as the package slipped again. Inside that oily little package was a broken bottle. An unpleasant aroma soon surrounded me.

My first impulse was to walk innocently away. Either my conscience or the knowledge that the odor from my hands would give me away made me admit my deed to a passing stock boy, who courteously found a mop.

A long line awaited me at the check out counter. I casually glanced about as heads began turning in my direction, pretending that I, too, was curious about that awful smell. I secretly wiped my hand with the one tissue I could find in my pocket. But traces of the oily substance remained. The pen almost slipped out of my hand as I wrote a check for the groceries.

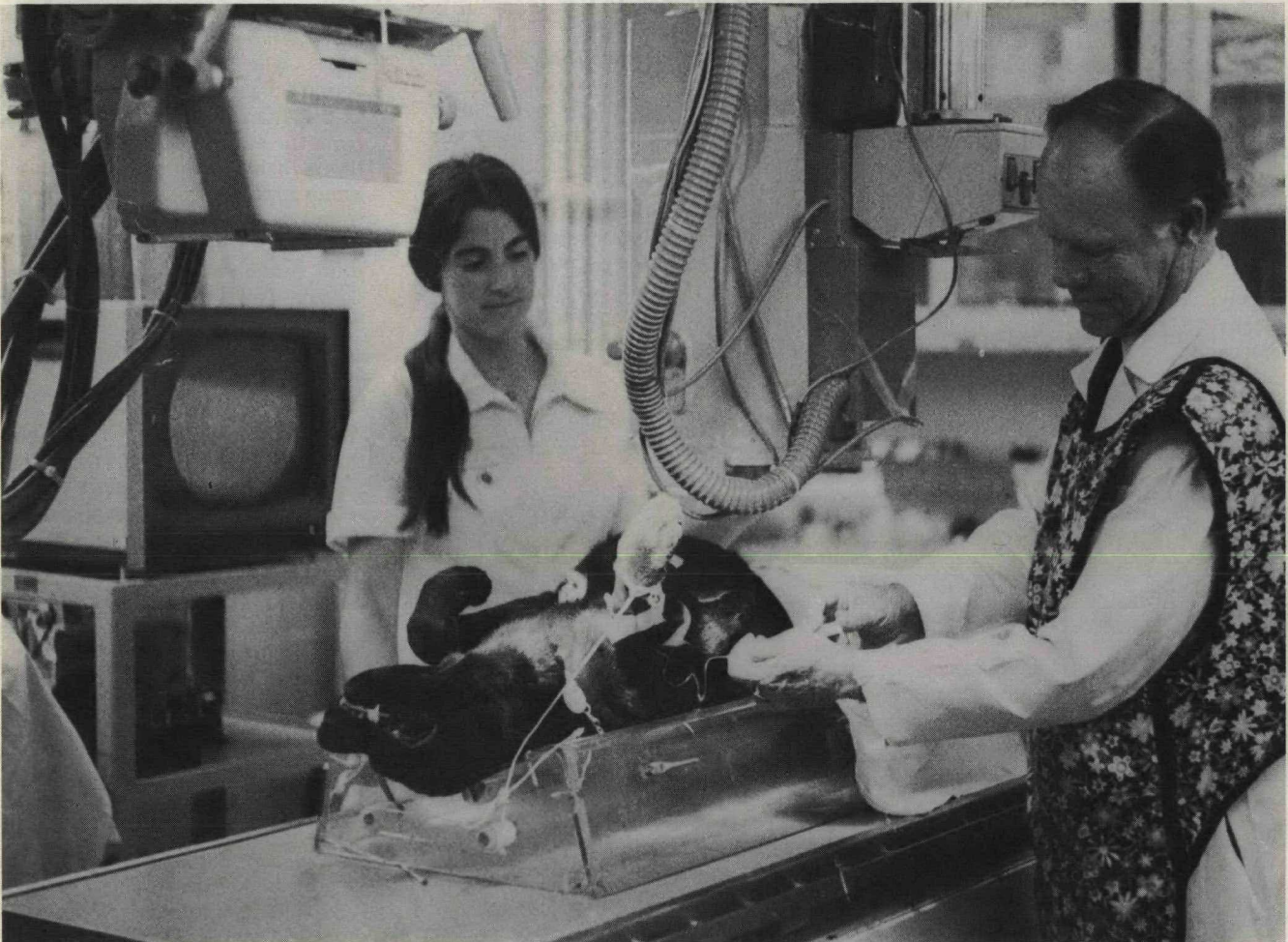
Believed to be out of "smelling distance" of those curious shoppers, I raced to my car. I managed to get the door slammed before the alert neighborhood dogs realized a moving fire hydrant was in the area. If guarantees for that product were accurate, I was only seconds away from being drenched.

Upon arriving home, I took that oily tissue from my pocket and placed it on a newspaper. I then released Benji from captivity and led him to the paper. He sniffed it and then stood beside me as I washed my hands with strong soap. It was when I reached for a towel that the warm wet sensation reached my right foot. Well, at least I didn't waste my money, I reasoned as I tossed my tennis shoes in the washer.

cancer in animals

by C. P. Ryan, D.V.M.

Photos by Roy Martin



Checking a patient in the diagnostic laboratory of the Rigler Research Center at UCLA is Dr. Harold D. Snow, assistant director, and X-ray technician Susie Snow assisting her husband.

Most people are personally familiar with cancer as it is estimated that one of every four Americans now living will eventually have cancer and that over the years it will occur in approximately two of three families. *Surprisingly few pet owners realize that animals are susceptible to cancer too.* Cancer is basically an uncontrollable growth of abnormal cells within the body.

Breast Cancer in Pets

Breast cancer, the most common form of cancer in women in the United States, *occurs in all of the domestic animals but it occurs with frequency only in the dog and to a*

lesser extent in the cat. Breast cancer or mammary cancer is second only to skin cancer in dogs and accounts for about one fourth of all cancers in dogs. In cats, breast cancer is much less common and accounts for one tenth or less of all cancers. *Over ninety percent of mammary cancer occurs in the female and it generally is seen in the middleaged and older animal.*

Studies have revealed that the age and sex distribution of breast cancer in man and dog are very similar. Comparisons of human and canine breast cancer reveal that breast cancer in females increased at the same magnitude for both species until the age of natural menopause in women. At

menopause age in women the breast cancer rate has a pattern of leveling off. *Menopause normally doesn't occur in domestic animals and breast cancer in dogs shows no leveling off during old age.*

The Animal Neoplasm Registry of the California Department of Public Health found that removing the ovaries has a significant sparing effect on mammary cancer development: *both intact female dogs and cats have an approximately seven fold greater risk of developing mammary cancer than spayed ones of the same species.*

What causes cancer in animals? Vast sums of money have been and are being spent trying to answer this

question and as of today with many forms of cancer the cause is still unknown. The federal government spends more money fighting cancer than any other disease.

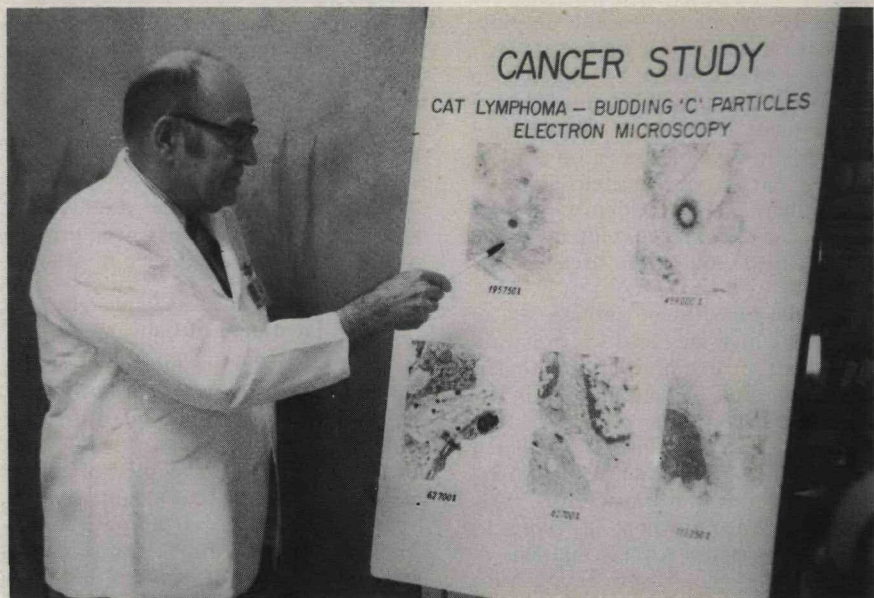
U.S. Has World Health Model

An excellent example of cancer research being conducted at the local community level would be the Los Angeles County Veterinary Services. The Los Angeles County Comparative Medical and Veterinary Services has been selected by an expert committee of the World Health Organization and the United Nations Food and Agriculture Organization as a world model for a well-developed program in veterinary health and comparative medicine at the local level. The committee designated the Republic of Germany as their national model and the County of Los Angeles as their local model. The comparative medicine section has as its objectives the advancement of comparative pathology through a program of collaborative research and education involving veterinarians, pathologists, physicians, scientists and graduate students who have an active interest in the relationship of animal and human diseases. One objective of the comparative pathology section is to study the incidence of tumor types in various species in Los Angeles county as possible indicators of the factors that are involved in the development of tumors.

An additional asset to pets in the Los Angeles area is the Rigler Center formed in 1971 at UCLA. It is the first world center for advanced radiological research. Here specialists in the field of radiology and related sciences come together to develop new life-saving techniques expanding the range of diagnosis and treatment of cancer, heart disease, birth defects and kidney disease. One section operates an animal research hospital which also serves as an outpatient clinic for pets. *Cancer patients referred by practicing veterinarians receive the latest diagnostic and treatment procedures used for human patients.* Usually the owners bring their pet to the Rigler Center for tests and treatment. This may require several trips as the patients are encouraged to return home between treatments. Research grant funds cover a large portion of the costs but the animal's owner is also asked to cover some part of the treatment expenses. The service provides the pet with advanced care and treatment of cancer and provides the Rigler Center with important information that can be applied toward new and innovative methods of treating human cancer patients.

Causes of Cancer

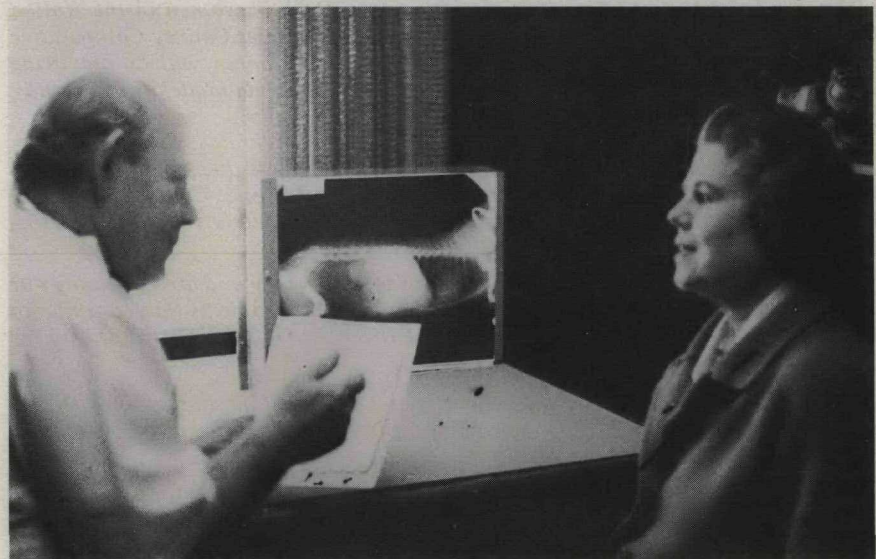
In animals several things have been



Dr. Frank S. Scott discussing leukemia in animals. Last year over 1700 cases of cancer were diagnosed by the Los Angeles County Veterinary Services including five cases in sea lions.



A patient receiving radiation therapy at the Rigler Center for mammary cancer that had spread to the axillary lymph nodes. After therapy, the patient will be sent home with her owners.



Your veterinarian may want a second opinion on certain patients which could require the utilization of specialists or referral centers.

shown to be related to the development of cancer.

Repeated exposure to sunlight in sensitive individuals has resulted in the development of cancer. White cats occasionally develop cancer on the tips of their ears from repeated exposure to sunlight. The incidence of eye cancer in cattle is more frequent in the sun-drenched southwest area of the country.

Certain parasites of animals set up irritation which may lead to formation of cancer. An example of this that is commonly seen by veterinarians in the southern states is a cancer of the throat that can develop in dogs which are infested with the spirurid worm.

X-rays are notorious for their cancerous effects when exposure to them is excessive over a period of time. This is the reason people who work closely around X-ray equipment wear protective clothing such as lead aprons and gloves.

Some chemicals in the environments, such as tobacco tars, are known to favor cancer formation. Mice are readily susceptible to "tar cancer." In fact, environmental agents causing cancer were first brought to light by Sir Percival Potts in 1775, when he astutely related the high incidence of scrotal cancer among men working as chimney sweeps to their chronic exposure to soot.

Viruses have been proven to cause a number of different cancers in animals. At present over 100 tumor viruses have been isolated in animals. The first viral tumor to be transmitted experimentally was accomplished by a Russian veterinarian with dogs in 1877. The common warts (papillomas) seen in animals are caused by viruses

and often the wart virus can be transferred from one animal to another of the same species by contact. The old wives' tale that warts come from touching toads isn't true. Leukemia, a disease affecting the blood cells, can be caused by viruses in birds, mice, rats, cats and dogs. As of yet no cancer in man has been proved to be of viral origin, but studies continue.

Treatment of Cancer

How is cancer in animals treated? Basically, veterinarians employ four major types of treatment; surgery, radiation therapy, chemotherapy and immunotherapy. The choice of treatment is determined to a large extent by the type of cancer the patient has and its location. In certain highly malignant forms of cancer the best therapy is really a combination of all the therapies together.

Tumors have been treated surgically throughout the world for centuries. Isolated skin tumors are often successfully treated in this manner. Recent findings tend to indicate that generally in highly malignant cancers the end result of surgery is inextricably tied to the nature of the specific cancer itself and only secondarily related to early diagnosis and the skill of the surgeon.

Radiation therapy is another approach used in treating cancer. One of the most common uses of radiation therapy is in the treatment of malignant cancers which can't be removed by surgery. Radiation therapy involves a great deal of expense to the pet owner which is a drawback in veterinary medicine where the animal doctor always has to take economics into consideration.

Chemotherapy in cancer is based on the use of chemicals to destroy cancer cells. Drugs are used extensively in treating such cancers as leukemia. The same problem that is encountered with radiation therapy is also seen in chemotherapy. The drugs available still lack great specificity for tumor cells and will destroy some of the animal's own healthy cells. The best hope for a "cure" requires that the animal be given all the cancer killing drug it can tolerate and usually this results in signs of drug intoxication. Drug intoxication occasionally results in death of the patient. It must be kept in mind that the alternative to treatment is to do nothing or euthanasia. Another recent development in chemotherapy is the experimental work being conducted on antiviral drugs. *If the antiviral drugs prove to be successful, they may revolutionize the treatment of viral diseases just as antibiotics revolutionized the treatment of bacterial infections.*

A fairly recent approach to the treatment of cancer is immunotherapy. Animals have internal body defense mechanisms which fight off diseases. In effect, the body is capable of enhancing its resistance to disease. The degree of resistance against various diseases, such as cancer, varies from slight to complete. Immunology is the strategy of self-defense — it recruits the cells of the body's immune system to attack and destroy the tumor from within. Your veterinarian makes use of immunity when he vaccinates your pet. Vaccines enhance the body's resistance to disease. Veterinary scientists are now testing experimental cancer vaccines in animals with promising results in certain cases.

Cancer Vaccine

One of the most successful examples of a cancer vaccine in the world today is the Marek's vaccine. Marek's disease is a highly contagious form of leukemia in chickens. Veterinary scientists at the USDA, principally in Michigan, have been studying the disease for more than 30 years. The disease exists throughout the world and avian pathologists report that the incidence of the disease has increased sharply in the United States and other countries in recent years. Studies by scientists revealed that a herpes virus produces the cancer. *Recently a commercial vaccine has been developed that reduces the incidence of Marek's disease in vaccinated chickens by 90 percent.* Before the vaccine was available Marek's disease resulted in a loss to the poultry industry of more than 200 million dollars annually in the United States alone. A whole new

PHOTOS

- 1 *Breast cancer is the number one cause of cancer death in women in the United States. Here Dr. Ewin B. Howard, Chief of the Los Angeles County Comparative Pathology Section discusses a case of feline breast cancer with a practicing veterinarian. Mammary cancer in cats may be the best animal model for the study of human breast cancer.*
- 2 *Checking the blood of a feline patient for evidence of the leukemia virus is George K. Matsumoto, public health microbiologist of the Los Angeles County Veterinary Services. Tests are now run routinely on cat's blood to detect the cancer causing virus.*
- 3 *"We have accepted a challenge here in Los Angeles County and are increasing our capabilities to help solve some of the significant disease problems that continue to plague animals and people alike," reports Dr. Robert J. Schroeder, head of the Los Angeles County Veterinary Services.*
- 4 *Checking cancer tissue cultures at the Rigler Center before they are made into vaccine is immunologist, Dr. Pamala T. Boyer. Some researchers feel that immunology — the strategy of self-defense — is the most promising new form of cancer treatment.*
- 5 *Preparing material from a mammary tumor removed from a canine patient at the Rigler Center is research associate Mr. Thomas Patin. Treatment of highly malignant cancer often requires the team approach to provide the best chance of a cure.*

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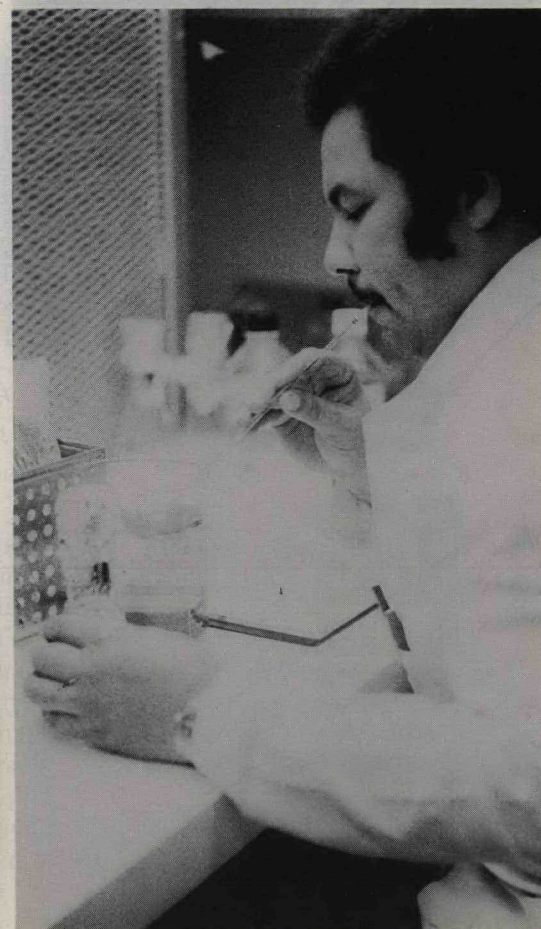
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THE PASSING OF THE ORYX

by Roy L. McCollough

You may never see an Arabian oryx. The last one may have died on October 20, 1973!

D. S. Henderson, a British naturalist, travelled to the sultanate of Oman in that year on a photographic safari. But instead of getting to film this remarkable animal, Henderson found the carcass of a mature male oryx. It was lying between the converging tracks of two landrovers. The oryx had bled heavily from the head and mouth and Henderson believes it was likely hit by one of the vehicles.

The Arabian oryx was an antelope-like creature with long straight horns on both sexes and long tufted tails. They were native to the desert and many Arabian legends have grown up about them. Back before the days of high-powered rifles and racing jeeps, the oryx was noted for its speed, strength and bravery. Warriors who succeeded in killing an oryx were believed to inherit its strength.

In the years since the Second World War the Arabian oryx has frequently been the object of poaching parties until they were so reduced in number their very existence in the wild was threatened. Henderson fears that the dead oryx he found on October 20, 1973, may be the last wild oryx.

Editor's Note: If any of our readers have information on this "vanishing species" please let us know and we will pass it on to our readers.

MY DREAM

by Lena MacLeod



I dreamed I was a doctor
For the animals at the zoo;
When the elephant broke his leg,
I knew just what to do.

(Want to know how he broke it?
He tripped on the end of his nose!)
I wrapped his leg all up,
From his knee down to his toes.

I said, "You'll soon feel better,
But if you have much pain,
Just make your nose longer
And use it for a cane."

A CANINE QUIZ

by Lee Avery Reed

QUESTIONS

1. What was the name of Bill Skyes' dog in "Oliver Twist"?
2. Name Elizabeth Barrett Browning's spaniel.
3. Lord Byron wrote a famous epitaph for his dog. What was the dog's name?
4. What dog traveled with John Steinbeck?
5. David Copperfield's wife Dora had a dog. Name him.
6. Sherlock Holmes solved a case concerning this terrifying dog.
7. What was Franklin D. Roosevelt's dog called?
8. This movie dog star was famous before Lassie.
9. Charlie Brown's dog is called what?
10. Name the dog that Stephen Foster wrote a song about.

Part IV

If there was any doubt about the Smith-Pitcairn detachment caring for its horses on the road, interestingly, one Concord observer noted that it did ("... (British soldiers were) drawn up before the door of the house where I live; and there they continued on green, feeding their horses within five feet of the door" (and also got water)). Seemingly, the British took possession of, or used, any horse standing about, and in this way, they gained a horse from militia Captain William Smith, who had led in his company of Lincoln minutemen ("... (and) was ordered to leave his horse by the field-officer, and take post on the adjacent hill—the British troops possessing the North Bridge... (Then) leaving his horse at the tavern; by which means, on their retreat, the horse, and, were carried off, with one of their wounded men").

During the remainder of Wednesday morning, the British grenadier companies stayed in the town, searching; and the light companies were dispatched to guard the South Bridge and the North Bridge and others, to Barrett's farm, also searching. (It was mostly "searching," because most all of the stores and supplies had already been removed from the town or were well hidden.) And between these widely dispersed British companies, there was at least one mounted officer (Lumm, originally with the Mitchel patrol) who was galloping back and forth on the town streets, carrying messages. A growing assembly of minutemen and militia companies from Acton, Concord, Lincoln, and Bedford momentarily advanced on a few British companies holding North Bridge; 3 minutes of musket fire ensued. And there were casualties on both sides: provincials, 2 killed and 8 wounded; British, 3 killed and 9 wounded. Eventually, the British companies came back to the center of town. The British wounded were cared for locally and a few were left behind. Other wounded were cared for locally and a few were left behind. Other wounded were prepared to accompany the British march column on its return to Boston—some being put on commandeered horses (such as the militia captain's horse) or in animal-drawn vehicles, such as the two chaises (belonging to Dr. John Beaton and Reuben Brown) that were specially taken to evacuate Edward Thoroton Gould and Edward Hull, both wounded. Also Sutherland (who earlier had been at the "point" of the Smith-Pitcairn detachment coming into Lexington), wounded at North Bridge, rode in yet a third buggy homeward from Concord.

Pursuit of the British Detachment Begins at Meriam's Corner

At Meriam's Corner, a mile outside Concord, where the Smith-Pitcairn detachment had to compress itself in order to cross over a narrow wooden bridge, the provincials moved in close and began a running fight that lasted until nightfall at Charlestown Neck. The Americans fired from behind trees, hedges, stone walls (some shoulder high), fences, and buildings, and hundreds of militia, patriots, "rebels," and Whigs swarmed in (riding, walking, running) from nearby and distant towns to do the shooting. Inside the British column, march discipline almost disappeared; redcoats began to stumble, crowded one another, and ran, and the platoon formations lost identity in a mass of men. At Fiske's Hill (just west of Lexington), British officers tried to get their men into marching order and fight a rear-guard retrograde action.

Here, Smith received a serious leg wound and gave up his horse to diminish the target for American musketry, and Pitcairn was unseated when he and his horse were fired at by provincials behind a pile of fence rails. Pitcairn was unhurt, but the horse was captured ("... (it) took fright, leaped the wall, and ran directly towards those (who had just fired)"). The British detachment resumed the march, and on the other side of Lexington was met and taken in by the British First Brigade—truly, a relief column—sometime between 2:30 and 3 P.M.

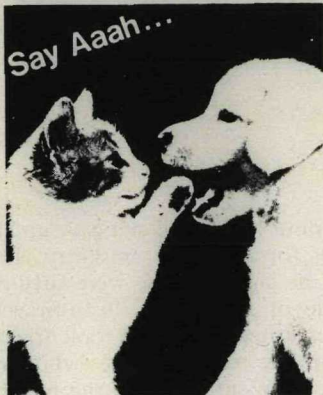
Percy's Relief Column

The First Brigade, about 1,200 men led by Brigadier Hugh, Earl Percy, was scheduled for early morning departure from Boston to support the Smith-Pitcairn detachment, but it did not depart across Boston Neck until about 9 A.M. By this late hour, four hours had lapsed since Smith's messenger had arrived from Menotomy, and twenty miles away, the half-day's British occupation of Concord had just begun. Between 9 A.M. and 2:30 to 3 P.M., out in the Massachusetts countryside, the Smith-Pitcairn detachment was being so badly mauled by the Americans that the purpose of the Percy brigade (namely, reinforcement) was necessarily changed to that of relief column as detachment and brigade met.

The new British column when it left Boston was accompanied by two 6-pounder cannons and a 2-wagon supply train. Usually, the 6-pounder (weight of the ball) was mounted on a field carriage fitted with a limber that was pulled by a team or two of horses hitched in tandem (i.e., in single file). Percy himself was mounted, and possibly others in the column were too. At the bridge across the Charles River, south of Cambridge, Percy hastily put back some of the planks which had been removed by American patriots and left his two wagons behind to complete the repairing of the bridge as the column marched on. Eventually, the wagons got across, but were prevented from rejoining the Percy brigade, because at Menotomy, the horses (probably four) and some of the men (drivers and guards) were killed.

Coming into Lexington, the van of the Percy brigade heard the sounds of musketry, then saw the chaise bearing a wounded lieutenant (Gould), and finally received the harried, exhausted men comprising the Smith-Pitcairn detachment. The British field guns were brought into position to fire at militiamen and patriots who had now become bolder and threatened, by numbers, to overwhelm the combined British force. (These guns were similarly used as decisive military deterrents several times during the remainder of the afternoon.)

Interestingly, Percy's relief force had collected two American colonist leaders in its wake, before it met the returning Smith-Pitcairn detachment. One was Warren from Boston, who had crossed over the Charlestown ferry and fell in behind the force then nearing Menotomy. ("... Two soldiers, going to Lexington, tried to steal Watson's horse... (and) Dr. Warren rode up, and helped drive them off... Two British officers rode up to Dr. Warren in the rear of the British, inquiring 'Where are the troops?'"") The other was Heath who tried to ride ahead of Percy's column coming out of Menotomy by taking a detour route through Watertown; somewhere Heath and Warren met and the two rode together for the remainder of the day.



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CANCER IN ANIMALS

Continued from page 24

way of looking at cancer is now possible. Finding a successful treatment for this type of animal cancer may entail a significant breakthrough in the control of at least certain kinds of cancer.

Many forms of cancer in animals can be cured, which is a great tribute to science. Unfortunately, there are some forms of cancer for which a cure is not known at this time. This is something that, at times, can be difficult to accept. Dr. Robert S. Brodey, a veterinarian at the University of Pennsylvania who has treated animal cancer patients for over 20 years, always feels a sense of sorrow when he has a patient that is incurable. Dr. Brodey believes, "While human friends vary from day to day in their reactions to an individual, most pets are remarkably faithful and affectionate."

In closing, remember the seven "warning signals" for cancer published by the American Cancer Society for yourself and your pet as well. **Often the warning signals are the same.**

Learn to recognize

Cancer's Danger Signals

- Signal 1. Unusual bleeding or discharge.
- Signal 2. A lump or thickening in the breast or elsewhere.
- Signal 3. A sore that does not heal.
- Signal 4. Change in bowel or bladder habits.
- Signal 5. Hoarseness or cough.
- Signal 6. Indigestion or difficulty in swallowing.
- Signal 7. Change in a wart or mole.

These symptoms may *not* mean cancer, but if any one of them lasts longer than two weeks, it should be checked by a doctor immediately.

AMERICAN CANCER SOCIETY, INC.

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Please notify Animal Cavalcade when you move! Failure to do this costs the Animal Health Foundation funds which should be spent on caring for sick animals or for veterinary medical research.

Send change of address information to Animal Cavalcade, 8338 Rosemead Blvd., Pico Rivera, Calif. 90660.

NEWS

Continued from page 6

gamma globulin, two components of the body's defense mechanism. A lymphocyte is a type of white blood cell that helps produce serumglobulins, proteins found in the blood that help fight infection. Gamma globulin is one of those proteins.

With funding from Arabian horse interests through the Morris Animal Foundation, the scientists analyzed blood samples from 214 foals to determine the blood cell types, cell numbers and immune globulin levels. Samples from a number of breeds and from foals that had died of adenoviral disease were compared. 2.7 per cent of the Arabian foals were found to have defects in their immune systems, but no foals from any other breed tested showed the deficiency.

Foundation fellow Luciano Ferraro, D.V.M., who took part in the study, said this immune deficiency is apparently hereditary. It appears to be a recessive trait that can show up only when both parents carry the gene. Since immunodeficient foals die early in life, the defect can be present in the adult horse population only in the recessive state.

Adenoviral infection, one of the major direct killers of immunodeficient foals, is a mild to severe respiratory disease in normal horses, which eventually produce antibodies to combat it.

ANSWERS TO CANINE QUIZ

from page 26

1. Bullseye
2. Flush
3. Boatswain
4. Charley
5. Jip
6. The Hound of the Baskervilles
7. Fala
8. Rin Tin Tin
9. Snoopy
10. Old Dog Tray

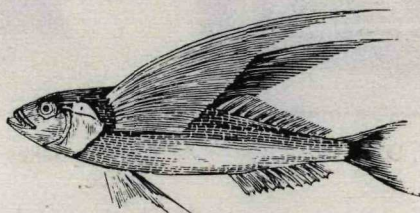
CATNIP-NAP?

by Ruth E. Riley

My cat concludes his daily wash-up
And springs up on my lap
To pause for rest, rest paws and mews,
And muse before his nap.

PET CARE

TROPICAL FISH



Courtesy of THE ANIMAL PROTECTION
INSTITUTE OF AMERICA

Fish are beautiful and fun to watch. Remember that they are also delicate and can easily become ill. Different species require different living conditions. Large fish will eat small fish — don't mix them. Be sure to talk to your fish or aquarium dealer about care and maintenance for your particular kind of fish.

DO be gentle when netting your fish. Rough handling or netting will cause loss of scales and infection.

DO know your fish's proper diet. Every species has different food requirements. Feed small amounts of food several times a day. Change occasionally for variety. **DON'T** serve more food than your fish can eat in five minutes.

DO keep plenty of water (distilled only) in the fish

tank, and change it if it becomes murky. Fish need the oxygen in water for breathing — a fish gulping at the surface needs oxygen. Provide the proper lighting and temperature your species needs. Use a filter, net, and siphon to keep the aquarium clean. Clean the filter once a week. **DON'T** use "fish bowls" — they won't give your fish enough oxygen.

DO check daily for signs of illness: white or red spots, patches or discolorations, folded fins, jerky movements, bulging scales, loss of color. Fish are very susceptible to disease and parasites. Consult a reliable book or your fish dealer for treatment. Isolate sick fish **IMMEDIATELY** in a separate tank. Quarantine all new fish for two weeks. **DON'T** crowd fish. Overcrowding reduces the amount of oxygen available.



... Marilyn Twitchell, D.V.M.

AC How has veterinary medicine affected your other choices in life?

MT One of the biggest choices I had to make was when I graduated from Michigan State and they were having the Olympic fencing tryouts in New York. If I had gone, I would probably have made the tryouts because at that time I was the State Women's fencing champion of Michigan. At the same time, the Veterinary State boards were taking place in California. I took the boards because I was afraid I wouldn't do well on the exam if I waited x number of months. That was the end of my fencing. Just like that. After four or five years of doing it every day.

AC I have the feeling that you enjoy being a veterinarian.

MT I am really fortunate. And I have a wonderful clientele. They appreciate that I really care about their animals and that's what is particularly gratifying.

AC I once heard an interview with Arthur Rubenstein and he was questioned as to how he felt about his work. He answered, "I consider it a joy and a privilege."

MT I feel the same way. I think it's a privilege to be a veterinarian. I can't believe I've been so fortunate to find a profession or a way of life that I can do every day and be happy. I have my ups and downs, like everyone else, but when you think of the people working in jobs that they don't even want, that they hate going to work, it really makes me sad.

AC Maybe it has to do with this business of choice — at significant moments. And then having what-

ever it takes to stick with that choice.

MT At the time I was graduating, there were so many jobs for engineers. That all went down the drain. The demand for teachers has been overfilled. Now, the demand for veterinarians is very high. There's no reason why every state shouldn't have 2 or 3 veterinary colleges. There is a great demand, and the reason we don't have more schools boils down to money and politics.

AC Do you think that if there were 2 or 3 veterinary colleges in every state that it would be possible to glut the market?

MT It would depend on how many people graduated each year. Probably 3 might be a little too many, but it seems to me that at least in California, Florida and New York, they should have at least two colleges. California could probably take at least 2. We really need another veterinary school. I think eventually we will have one in Southern California.

AC What would you say is the most important thing in veterinary medicine as far as research is concerned?

MT There's research going on all the time, but I do think that we could use more research into feline viral diseases — in the realm of the various leukemias that veterinarians see and we're seeing so much of it. I think last week we had 7-10 cases diagnosed as feline leukemia. Also, birth control is an important field for research. Each specialty has its specific problems in research.

AC Do people expect you to perform miracles?

MT Oh, definitely. I expect them myself. They do happen. Or I

consider them such. It's a miracle to me sometimes the ones that *do* "pull through."

AC I guess one of the big controversies now are these oral contraceptives.

MT Spaying is still the thing that does the best job. These new oral contraceptives, however, are the first hopefully safe, promising pills the dogs have had. We've had other medications that many times caused secondary problems like infections in the uterus, etc. It will be interesting to see how efficacious the newer pills are, and something had to be done! But I feel that no matter what kind of pill you get, the people who already control their animals are the ones who are going to use it. It's the ones who don't care, who let their dogs and cats run around and get bred who won't use it. How do you reach these people. If you put something in dog food, they probably won't feed it to the dog; they would give them something else, and these are the people who need educating — it appears an impossible situation.

AC Is being a veterinarian different from what you thought it would be?

MT When I first started school, I thought everything was going to be black and white. I thought I would be able to make a diagnosis and 1-2-3 all these things would treat it and then the animal would get well. And that was my first big surprise. "T'aint that way!" Some of your clients will always expect black and white. And there are so many things in between that we can't foresee, and "text book pictures" are rare in disease.

AC Are the financial rewards fair?

MT Actually, veterinarians don't really get paid for their time — equating it with other professions — for the time that's involved, some people probably do, but I would say generally we don't. For the overhead, the equipment, the drugs, the time involved — everything. There's no way a veterinarian can be paid for the time he puts into serious cases, because most people can't pay for that kind of time. The reason I'm mentioning this is because some people think veterinarians are just taking their money, and *so much* of their money. We are making money, but we work hard and we do a lot of work gratis. I've often wished I had a patron so I could take care of the sick and injured animals and not have to charge the clients!

VETERINARY MEDICINE— A SPECIAL WAY OF LIFE

Part II

... Kerry Wilets, D.V.M.

KW In the beginning when I first had the clinic, the veterinarians around me were really very, very nice and friendly. We had a very good relationship. Then as the years went on a little, I felt that they would just as soon not have me join them in various activities. I think that their wives would rather not have a woman veterinarian lunching with their husbands.

AC Do you think that's changing for women today who are entering the profession? Do you think it's more open and more easily accepted?

KW Yes. I think there's been a tremendous change in all professions. But there's never really any problem of that sort in veterinary medicine. Of the women who have gone through, most of them practice and have done very well. They have paved the road nicely for the others coming along.

AC Do you think it's a good profession for a woman?

KW Yes, I do. I think a woman lends herself to it better for some reason. Maybe not the surgery, but women work very well when it comes to nursing care, feeding the small meals several times a day, making up baby formulas for puppies, weaning little dogs and cats, taking in orphan puppies and cats. I think in these particular situations that the woman, especially if she's had a baby of her own, has much more empathy with the animals - more feeling for them.

AC What about surgery?

KW I think the men are just as good in surgery. I don't think it makes any difference whether you're a man or a woman in surgery. I think that some people are more gifted

for surgery than others, and that other people are more gifted toward the medical end. But I do think that any girl who's going to take a course that's six years long is going to want to take it much more than a fellow, and her marks are going to be higher.

AC Do you think that choosing the veterinary profession means that you are automatically excluding other choices from happening? Are you in a sense making a choice not to marry and have a family early?

KW It's hard to say. If a girl meets a man early she's probably not going to go to veterinary school. It depends on how badly she wants to become a veterinarian.

AC But of the women veterinarians you know, are many of them married with families or have some of them had to make a choice in favor of a career in order to be able to have time to pursue the career?

KW That's also very, very hard to say, because I think the type of girl who went into it a few years ago might be a little different from the girl who's going into it today. But the girls are always quite conscientious and quite above average in school.

AC Is your own practice fairly varied or do you tend toward one thing in particular?

KW I'd say it's right on the level of half dogs, half cats.

AC Despite the fact that you wanted to be a dog.

KW Yes, in spite of the fact that I wanted to be a dog from age four. For a long time I was in dramatics, and I was in a very special class where we did improvisations. Everyone admits that I make a

better dog than anyone they have ever seen in their lives. I make such a good dog that one guy wouldn't even give me a fake biscuit for fear I'd bite him because he's afraid of dogs. He wouldn't even pat me. *I would still like to be a dog.*

AC What do you think about the new spay and neuter clinics, and/or contraceptives in pet food?

KW I realize that we have an overpopulation problem, and I realize some of the reasons why. If I had my druthers, I'd like to see the dogs get an injection once a year or maybe once every two years. The reason for this is that pills get lost. They get taken by the wrong people. Not that I've ever found any child taking a dog pill. I really haven't. But I think an injection is more apt to be followed through. I think the idea of contraceptives would be great if it could be simpler.

AC We've heard that the people who would go to the trouble of giving their animals contraceptives are the same ones who watch their animals carefully or have them spayed or neutered anyway.

KW That's true. And another thing is that some people, no matter what, will not have their animals spayed or castrated. They just will not do it. I think this is an education thing, and I think we're missing the boat because we're not educating our children that this is the right thing to do. I think you'd have to start telling them when they're six or seven years old. Just say that this is a better thing to do with animals living in small quarters in a large city.

AC What's the answer?

KW Responsible people. That's the

Continued on page 33

EFFECTS OF
EXERCISE AND
HEAT STRESS ON

Endurance Horses



By Gary P. Carlson, D.V.M., Ph.D.
University of California

Dr. Carlson conducted a study at the University of California, Davis, funded by a Ride for Research held by the Danville (Calif.) Junior Horsemen's Club for benefit of Morris Animal Foundation; this paper was presented in behalf of that Foundation.

Competitive endurance trail rides are becoming increasingly popular among horsemen throughout the country. These rides cover distances of 50 to 100 miles in a specified period of time, often in mountainous terrain. Since most of these rides are conducted in the summer, heat stress is added to the burden of work stress.

When environmental temperatures are exceptionally high, many horses develop problems, including excessive fatigue, dehydration, muscle spasms and cramps and exhaustion. Fluid and electrolyte losses through sweating would appear to play a major role in the development of many of these conditions.

The body attempts to maintain homeostasis (balance) in response to these stresses and to maintain its internal environment so the various organs can fulfill their functions. As a part of this balance against fluid and electrolyte loss, the animal tries to maintain a normal water balance.

Regulating the Acid-Base Balance

Another factor that must be regulated is the acid-base balance. There are acid products of metabolism which must be eliminated from the body. The hydrogen-ion concentration of the body must be regulated within fairly narrow limits, and there are a number of buffering systems that are used to maintain this balance.

Excess heat is generated with prolonged exercise, and heat must be lost in the environment. Sweating provides the most important means of losing heat into the environment, but if prolonged and severe, there can be a significant electrolyte loss. This can result in alteration in the electrolyte concentrations, particularly if the water deficit is replaced by electrolyte-free water. Electrolytes are ionized or dissociated salts dissolved in the body fluids. An electrolyte imbalance can adversely affect the thirst mechanism with a failure to replace water loss adequately. There may also be a failure to eat.

Our investigation at the University of California to study the effects of exercise and heat stress on endurance-trained horses was at the Davis campus in the Sacramento Valley to control some of the circumstances we could not control on actual ride competition. Many riders supplement the horses with electrolytes in the feed or water. We did not. We were able to control the length and pace of the ride and, since the laboratory was available, accurate acid-base balance determinations could be made.

Thirteen horses participated in this ride for a distance of 25 miles. None became stressed or frothy. Sweating was minimal in most of the horses.

Investigating Heat and Work Stress

It was the purpose of this ride to investigate the factors of heat and work stress. The date selected for the ride was September 1, which in the Davis area is ordinarily quite warm, with temperatures in excess of 90° to 100°. But on this day the weather was unseasonably cool, with temperatures in the 70° to 80° range. The low

temperatures influenced the outcome of the results to some extent, but there are several factors we were able to demonstrate.

Various blood factors were measured in these horses, and they were largely used as an index of the state of hydration.

We would expect with loss of fluid from the body that there would be an increase in packed-cell volume, plasma protein and fibrinogen. The packed cell volume is the volume percent of the whole blood that is red cells, plasma protein is the protein that is normally dissolved in serum or plasma, and fibrinogen is a component of total plasma protein. In the blood samples taken immediately following the ride, these factors increased.

Samples were also taken 30 minutes after the horses cooled out. Some of the problems in the horses seemed to appear after they had cooled. But in the 30-minute time period they returned to control values for all blood factors.

Following the ride, the serum electrolytes tended to increase, which would indicate that the horses had lost more water than electrolytes under the mild climatic conditions. However, after the horses had rested for 30 minutes and regained a normal state of hydration, there was a slight but significant decrease in potassium and chloride.

New Data Revealed

These changes varied quite a bit from our previous data, which was obtained on endurance rides during high environmental temperatures. Under those circumstances, there were major decreases in chloride and calcium despite dehydration. Once those horses had rehydrated themselves, there was only a slight but significant decrease in sodium and a rather large decrease in potassium. This reflects the relative losses from the body through sweat and adrenal mechanisms as well as the body's ability to come up with stores from the body reservoirs.

In the current investigation, there were rather minor changes observed as compared to what one might expect on a hot day.

It is often assumed that horses participating in endurance rides develop acidosis. This is thought to be due to a build-up of the acid products in metabolism, and a failure to fully eliminate the carbon dioxide that builds up in the body, again as a product of metabolism. However, to my knowledge the acidosis has never been measured.

Some of the horses that become stressed during endurance rides develop a condition known as "thumps," a spasm of the diaphragm

related to the heartbeat and electrolyte alterations, particularly decreases in calcium and potassium. In man and dog, where this condition has been fully evaluated, there is a significant association with alkalosis, or tendency away from acidic and toward base. The data we were able to obtain on this condition in the horse indicated that some of them were also alkalotic.

Following the ride, examination of the horses' blood revealed an elevated pH, or tendency to develop alkalosis despite the fact they were not having major physical problems. Along with the elevated pH, there was a significant positive base, as opposed to acid, excess in all 13 horses.

Following the 30-minute resting period, the pH declined to a slight degree. The horses' respiratory rates were quite high when they came in from the ride, and they soon returned to normal levels. We thought we might see a major change when the water balance was restored and the pulse-respiration rate was down to normal, but after the 30-minute rest there was still a mild tendency to be on the alkalotic side and an elevation of CO₂ (carbon dioxide) and bicarbonate.

The findings of this study differ with some opinions on what is expected after endurance rides. The causes of metabolic alkalosis should be considered. These include chloride and potassium depletion, which were seen only to a mild degree in this study but occur to a major extent in severe heat stress.

Results Indicate

In conclusion, before there will be major alterations in serum electrolyte concentrations, heat stress must accompany work stress. Horse owners should gauge electrolyte supplementation to some extent on the basis of the degree of heat stress and the potential losses that endurance horses are apt to incur. Some riders report problems with excess electrolytes. During this ride, there was a restoration of water balance in a rather short period. And there was a disproportionate increase in fibrinogen, a condition which has been determined in man.

Almost all the horses developed a tendency toward a metabolic alkalosis during this ride under mild climatic conditions.

There are a great many things we do not know about horses. More information is needed, especially on horses which become distressed during rides and require fluid and electrolyte supplementation. Through continued research and studies such as the one I just described we can provide guidelines for a rational approach to fluid and electrolyte supplementation of the horse.

WILETTS *Continued from page 31*

answer. Sweden is a country with just the right dog population. And they are almost all purebred.

AC So they're very careful with their animals.

KW Yes. And they learn it as small children. It's a training thing.

AC Of course, you're dealing with a much smaller population.

KW You're dealing with a much more responsible population, too.

AC Aside from birth control, what do you think are the other major problems in veterinary medicine?

KW *I don't think birth control is really a major veterinary problem. It's the problem of uncaring, uneducated pet owners. The veterinarian is the only one who for years has been trying to do something about the animal population. Probably the biggest problem in veterinary medicine is getting people to educate their children as to the proper care of animals, and getting people to listen to the advice of their veterinarians.*

AC What do you do for fun and enjoyment — to turn your attention away from your work?

KW I am the Grid Marshall for the California Sports Car Club. In essence my job is to check the underwear, socks, shoes, gloves, helmet, hair and safety harness for all the drivers who go out onto the track — both at the schools and at the amateur and professional races — like Ontario, Riverside (Calif.).

AC Do you get paid for the job?

KW No. This is my hobby and what I do in my free time. Basically, I make sure that the cars and drivers are licensed properly, have all the right numbers and have fulfilled all the safety precautions before they race. I have nine or ten girls who work under me. I was hired for six weeks about 16 years ago, on a trial basis, and I'm still doing it. I've little or no dissention with the drivers. The fellows get a kick out of me and I get a kick out of them.

AC It seems you enjoy the challenge.

KW Yes. Will I keep 450 guys happy without them becoming angry or fighting with me? I've learned an awful lot about gas and oil and cars; I've also learned a great deal about handling people under stress, understanding other folks' problems, and how one can help to make what might be a not-so-nice day into a very rewarding one for them as well as myself.



Dr. Harlan Bigbee, D.V.M.

ACCOLADES

THE SCHERING CORPORATION

Animal Cavalcade salutes the Schering Corporation for its contribution to animal health through its introduction of Ovaban to the dog owning public. This product is being successfully used by veterinarians in dog population control. There is need for products such as Schering's to include in the list of pet population control measures.

ANSWERS

from page 8

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| 1. J | 14. Y |
| 2. K | 15. E |
| 3. Z | 16. B |
| 4. X | 17. H |
| 5. L | 18. W |
| 6. R | 19. M |
| 7. F | 20. P |
| 8. O | 21. U |
| 9. S | 22. Q |
| 10. T | 23. A |
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LETTERS •

Dear Sir,

My sister subscribes to your magazine "Animal Cavalcade."

I was looking through it when I found a mistake that I think you should be corrected on. This article, "A realistic view of the modern Zoo" Part II has a picture of the Arctic Fox. Underneath the picture it says that the fox turns a blue gray sort of like a wolf.

Again, though it depends on the area which the foxes come from. In the St. Lawrence Islands these same foxes are referred to as "Blue Foxes" and are very prized because their furs are a bluish gray year round.

I have gotten my information from the Department of Fish & Game and various books which I have read on the subject. I just thought you'd be interested.

Sincerely yours,
Grace Butterfield
Fairbanks, Alaska -1975-

Dear Ms. Butterfield:

ANIMAL CAVALCADE referred your letter to me. I double checked facts with Mr. Crotty, Mammal Curator. The caption was NOT IN ERROR, and I trust the following answers your question. MAMMALS OF THE WORLD by Ernest B. Walker, page 1153, Book Two, states "There are two color phases, the "white" form which is brown in summer and white in winter, and the "blue" form, which is dark bluish gray in winter. However, in areas where the climate is less severe, the white form may remain fairly dark throughout the year."

I am enclosing a fact sheet that covers the Arctic Fox in depth. It is the information we use in our docent touring program and trust you will enjoy the added information.

Enjoyed your interesting letter and would love to hear from you again.

Sincerely,

Chris Garton (Mrs. R. T.)
PUBLIC RELATIONS
GLAZA Volunteer, Los Angeles Zoo

Ed. Note: Cavalcade wishes to thank Mrs. Garton at the Los Angeles Zoo for her excellent cooperation in responding to this inquiry.

Dear Mrs. McKown:

Regarding your inquiry via ANIMAL CAVALCADE concerning unexplained deaths in cats and kittens,

the information you provide is more compatible with feline panleukopenia (so-called distemper) than any other condition. The virus certainly can cause all the clinical symptoms you mention, and may fail to cause those you indicate are lacking, e.g., nasal discharge—which is present only when there is concurrent respiratory infection.

Abortions, stillbirths and fetal anomalies are common when queens are infected, and the virus can also cause cerebellar hypoplasia (faulty brain development) and ataxia (lack of equilibrium). Kittens may die with no obvious signs or may appear to have been poisoned.

Whether the virus can cause encephalitis or spinal cord lesions has not been clearly established; in these cases there might be a concurrent condition. Also not certain is whether dogs might be infected; several feline viruses can cause at least mild symptoms in dogs. The emaciation of cats ill for several days is characteristic.

You do not say whether blood studies were done. A characteristic finding in acute panleukopenia is a very low white blood cell (leukocyte) count, hence the name for the disease. Since you are close to the University of Pennsylvania Veterinary School, I would suggest you or your veterinarian consult with someone there.

I hope this will be of some help, and we appreciate your interest in ANIMAL CAVALCADE.

Sincerely,

J. F. Smithcors, D.V.M., Ph.D.
for ANIMAL CAVALCADE

Dear Cavalcade:

I have a 10-month-old puppy whose mother is a Peke-Pom and father a registered Poodle. She had normal hearing when 8 weeks old, but at 12 weeks was completely deaf. The veterinarian said she is an albino type, in which deafness is common, but she has a white head, black body, blue eyes and pink skin. She is a very intelligent dog, but if I let her have puppies, will she be able to take care of them?

Miss Thornburg

Dear Miss Thornburg:

Deafness in albino and some white dogs is hereditary, and even though your pup seems otherwise bright and healthy, if you let her have pups there is a fair chance that some of them may also be deaf. There is no reason why your pup should not have a long and happy life, but I would not recommend breeding her.

J. F. Smithcors, D.V.M., Ph.D.
for ANIMAL CAVALCADE

Dear Pet Owners
(via Animal Cavalcade):

In January, 1966, the National Dog Registry was founded to solve the desperate problems of concerned owners whose pets were disappearing. Pioneer in the field of pet protection through Social Security number tattooing, the National Dog Registry laid the groundwork systematically and effectively in establishing the first truly nationwide centrally located tattoo-registration service.

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Tens of thousands of pet owners have registered with the National Dog Registry, and, most gratifyingly, thousands of NDR Tattoo-Registered dogs have been returned to their owners by phone calls from the National Dog Registry.

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- (1) Tattooing services nearest you.
- (2) "How to Set Up a Tattooing Clinic"
- (3) Number of NDR registration brochures needed. (Registration is for the lifetime of the DOG OWNER - not the individual dog.)

Cordially,
David H. Timrud, M.D.
Founder and Director
National Dog Registry
277 Stebbins Road
Carmel, NY 10512

Dear Dr. Baxter:

Let me inform you that the response to an article of mine in the last issue (Help for the Paraplegic Canine) has been overwhelming. The telephone lines have been pretty hot between California and here since it came out. I received my two copies and was pleased with your handling of the story.

Again, thanks for proving to me that Animal Cavalcade is getting read all over this country. In fact, Dr. Short has run out of brochures already and is looking for a manufacturer. He did not anticipate a rush on orders as a result of the article. He simply wanted to inform animal owners that there is help for the paraplegic dog. Thanks again.

Respectfully,
Wanda Cornelius
Baton Rouge, LA

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