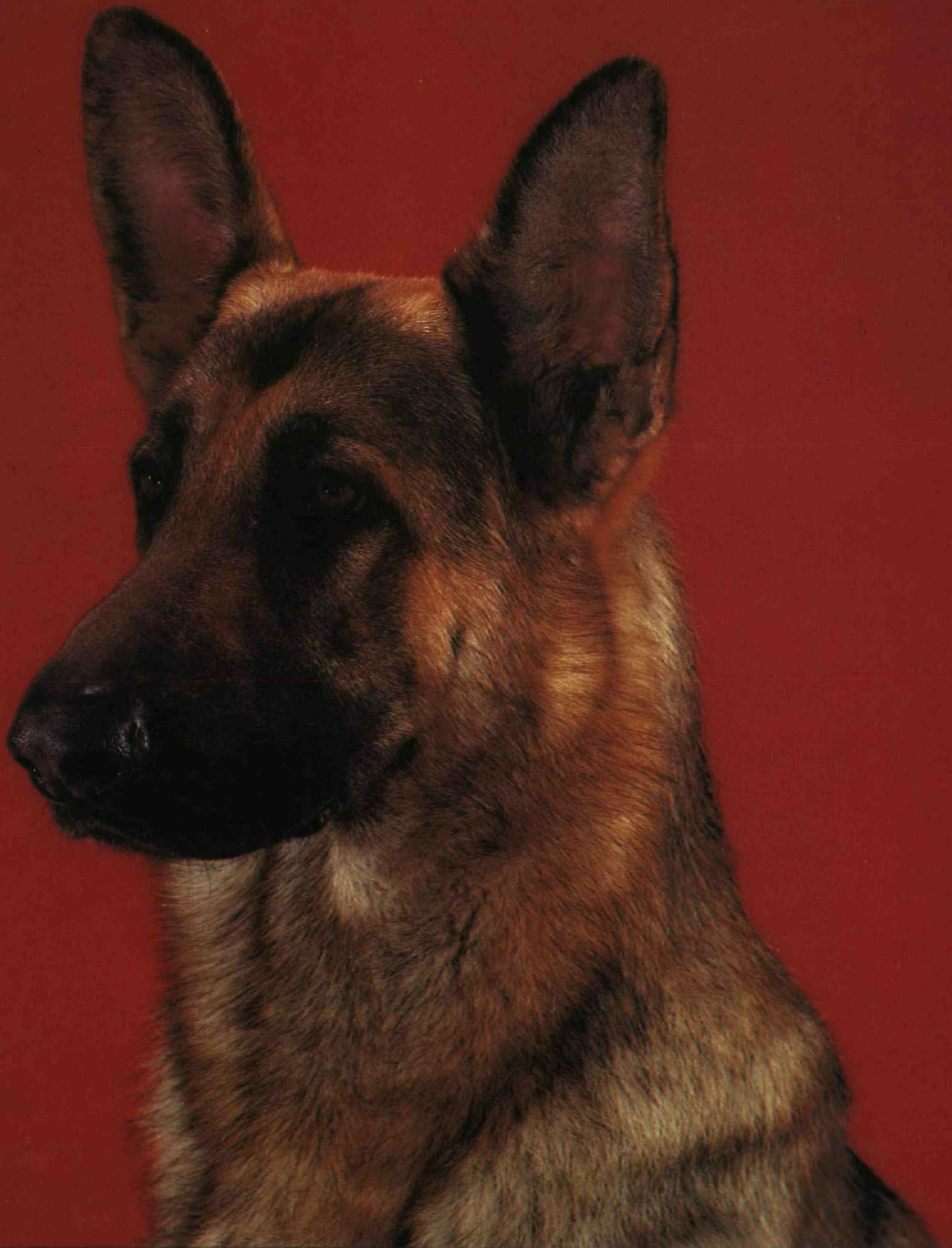


Today's **Animal Health**

may/june 1980



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May/June 1980

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TODAY'S ANIMAL HEALTH is published to inform animal owners about responsible animal ownership and animal health. There are subscribers in all 50 of the United States and in 17 foreign countries. The magazine is used as a tool for client education by veterinarians and for educational purposes in classrooms and school libraries.

The ANIMAL HEALTH FOUNDATION supports research in animal health and pet population control. The Foundation also provides free veterinary care to pets belonging to elderly persons living entirely on social security benefits and those living on Aid to the Totally Disabled in the Southern California area. This program is made possible through the cooperation of local veterinarians. These activities are supported by donations from the public and can be maintained only through your continued financial support. Your contributions to the Foundation are tax deductible.

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dialogue

We need more copies of the January/February 1978 issue with the article about how to medicate cats. Our club wants to distribute them to all members. Can we purchase copies of that issue?

Ellen Johnson
Chicago, Illinois

Would you please start a one year subscription in my name? Your periodical seems to be one that will give me much information that I have been looking for. I saw my first issue in the waiting room for the small animal clinic at Cornell University.

Mary C. Zingerella
Shortsville, New York 14548

I have been a loyal reader of Today's Animal Health Magazine for over a year. I also gave subscriptions for Christmas to my family and friends for one year. I really enjoy reading Today's Animal Health and I save my copies for reference purposes around the barn.

Janet Leach
Berwyn, PA 19312

I have always been a champion of the under-dog which is why in the past my dogs have all been 'unwanted mongrels'. Until I was made to realize that some of the most blue blooded breeds are in need of help and support. Topping this list is the greyhound! A more mis-understood breed does not exist, in the minds of the public they are chasers, and racing machines, only those of us who take a greyhound into our homes realizes what fine pets they can become!

Over here in Britain there is an organization known as the Retired Greyhound Trust which is run under the auspices of the National Greyhound Racing Club. The Trust has many volunteer workers whose efforts involve first encouraging racing owners to take their ex-racers into their homes when the dogs retire from the racing scene and to encourage other animal lovers to 'adopt an ex-

racer'. Obviously we do not hand out dogs without due care, we insist that dogs are only placed with families who are true animal lovers and who will act sensibly. Those who exercise their dogs on a lead is the first must, and the would-be owners must provide a place indoors (an old couch is very suitable). A lone greyhound housed in a kennel becomes very unhappy.

Greyhounds are gentle with children, affectionate, intelligent animals who love being made a fuss of and do not require long marathon walks when they are no longer racing. A walk round the block two or three times a day suits them fine, providing they have company indoors for most of the day. I know that in the U.S.A. household pets are given all sorts of luxuries unheard of elsewhere (some which we think a trifle silly — matching clothes, etc.) but how many people think of giving a home to a retired greyhound? They race only for a couple of years retiring usually around the age of five and their natural life span averages twelve to thirteen years so obviously they need a home to spend their 'middle years in'. Rightly most say their racing owners should arrange this but when an owner has a string of racers it is not possible to take them all home and frankly some racing owners are just not animal lovers, hence the problem for the ex-racer!

In a country where in some areas there is so much space surely there should be some official body to help the ex-racing greyhound . . . they don't have to be racing folk. Can I interest somebody in pioneering an organization to help the ex-racer? I would be only too happy to answer any questions on any aspect referring to the welfare of the ex-racer if they care to write to me!

I have read some awful articles in U.S.A. newspapers about the lack of feeling for greyhounds and I feel it unbelievable that in a country such as the U.S.A. with all the well-known and unknown animal lovers that more is not being done to educate the public and the greyhound racing owner into the need for care for these wonderful

dogs. Some years back I received a letter from a member of an American Embassy staff which stated 'Apparently the treatment of greyhound racers in the United States leaves much to be desired. I am sure that the most effective way of rectifying the situation is by pressure from a public aroused by the press'. So why not make a start? Slanging the owners and showing 'horror pix' is not the way but giving the ordinary people the true picture of what a greyhound in the home is like is surely a better way to encourage folk to take these dogs into their homes. Whose willing to have a go??? There are many notable figures within the sport (I refuse to call it an industry) who are working hard without much support to try to get something started. A few ideas would be large or small companies sponsoring greyhound races, the funds to go to a welfare society for boarding greyhounds awaiting good homes. Publicity for the firms and rewarding for the dogs in need. With a little foresight and effort so much could be achieved. In England we hold Charity meetings for Retired Greyhounds, the whole meeting being covered by sponsors, winning sponsors receiving a much coveted trophy and all sponsors receiving publicity on the race cards and in the local press. Someone has to be the first to initiate these events, so how about YOU?

Mrs. Gee Lebon
"Little Brays"
Brays Lane
Rochford, Essex, SS43RP
England

We are pleased to have the many requests we receive for reprints and/or back issues. Unfortunately, most issues have been "sell-outs" and there are few if any copies left. The Animal Health Foundation is not financially able to provide reprints. Since many of the articles requested do not copy well we've decided to reprint a few of the articles in current issues. If you would like to see an article rerun, please drop us a line. If there is sufficient demand, we will consider reprinting the article.
ed.

worth reading

Cat Encounters

A Cat-Lover's Anthology

By: Seon Manley and Gogo Lewis

New York: Lothrop, Lee & Shepard

1979: \$12.50

Don't buy this one unless you have an afternoon and evening free. A collection of most unusual cat essays and stories, illustrated with an outstanding selection of engravings, this one was very hard to put down. The authors range from Herodotus to James Thurber and most of these "Encounters" were completely new to me. Before each selection there is a short paragraph by the collectors explaining the author and his or her relationship with cats. At the back of the book there are biographical notes on all the authors.

The Complete Care of Orphaned or Abandoned Baby Animals

By: C.E. Spaulding, D.V.M. and Jackie Spaulding

Emmaus, PA: Rodale Press

\$7.95

The price above is for the paperback edition of this excellent book. The first section covers Farm Animals and Pets, then Wild Babies, Baby Birds, First Aid and Follow-Up Care of Wounds and finally Pet Shop Babies. The Appendix is loaded with charts, definitions and priceless information. Simply written this should be an invaluable aid to animal lovers who are lucky enough to live in the wide open spaces. It's good reading even for those of us who have tried to raise baby birds or stray kittens or abandoned puppies.

Are Cats People?

Notes of a Cat-Watcher

By: Paul Corey

Chicago: Contemporary Books, Inc.

1979: \$7.95

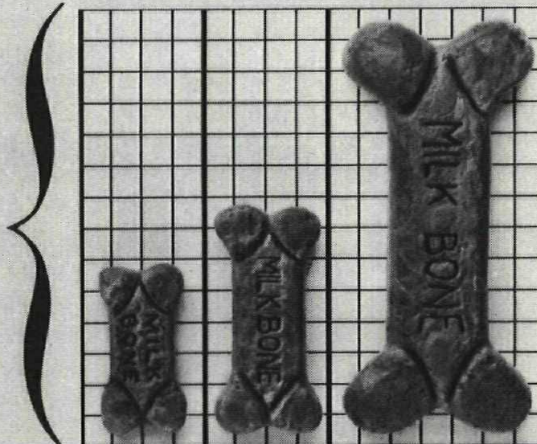
The author is a free-lance writer and as he states in the Preface, he is "hooked on cats." He has watched and studied the cats he has lived with for many years. He feels that his cats ("advantaged cats") develop the mental age of a child of five or six. His observations are funny and sad but never dull and his approach, though not new, is calm and objective and therefore much easier to accept and enjoy. A book to make you think and to open your eyes to the capabilities of your pets.

MILK-BONE Dog Biscuits come in different sizes because dogs do.

Dogs come in different sizes. That's why Milk-Bone® Dog Biscuits come in different teeth-cleaning sizes and hardness for small, medium and large dogs. Milk-Bone Dog Biscuits help scrape away stains and tartar to get your dog's teeth cleaner and whiter. They're 100% nutritious, too, in Original flavor or Beef flavor.



How Milk-Bone Brand Dog Biscuits provide the proper chewing exercise for dogs.

Relative size of biscuits			
	SMALL	MEDIUM	LARGE
Average weight per biscuit (ounces)	.14	.28	1.17
Overall length (inches)	1.8	2.4	4.3
Overall width (inches)	.94	1.1	2.0
Relative breaking force* (pounds)	77	80	164

* Breaking force is determined by placing biscuits in specially designed fixtures which are then placed in a Dillion tester which applies a measured force.

THE THINGS THEY

Anyone who has ever sent the family away for a holiday and lived alone with the dog and the refrigerator understands why old virgins soliloquize to their cats and canaries.

A mature dog is excellent for conversation. If you chat with him a while, gradually building up the argument and the intonation, he relishes it so that he will roll around the floor, lie on his back kicking, and groan with joyous worship. Very few wives or husbands are so affected.

— *Christopher Morley*

Let us not say to ourselves that we need the dog as a protection for our house. We do need him — but not only as a watchdog. I have often stood in need of my dog's company, and I have derived from the mere fact of his existence, a great sense of inward security. In the almost film-like flitting-by of modern life, a man needs something to tell him, from time to time, that he is still himself, and nothing can give him this assurance in so comforting a manner as the four feet trotting behind.

— *Konrad L. Lorenz*

Ignorant people think it's the noise which fighting cats make that is so aggravating, but it ain't so; it's the sickening grammar they use.

— *Mark Twain*

If a dog will not come to you after he has looked you in the face, you ought to go home and examine your conscience.

— *Woodrow Wilson*

Dogs live with man as courtiers round a monarch, steeped in the flattery of his notice and enriched with sinecures. To push their favour in this world of pickings and caresses is, perhaps, the business of their lives; and their joys may lie outside.

— *Robert Louis Stevenson*

If women could watch the slow progress of a Persian cat into a crowded drawing room — the delicate tread, the tail held at exactly the right angle, the sudden pause, the glance over the left shoulder, and then the final exquisite nonchalance of the attitude in which it curls itself by the fire — they would receive a perfect lesson in poise. If they could enter restaurants like that they would break even the headwaiter's heart.

— *Beverley Nichols*

Let dogs delight to bark and bite,
For God hath made them so.

— *Izaak Walton*

To his dog, every man is Napoleon: hence the popularity of dogs.

— *Aldous Huxley*

The man recovered of the bite,
The dog it was that died.

— *Oliver Goldsmith*

When a dog occasionally wants to hang out the "Do Not Disturb" sign, as all of us do now and then, he is regarded as a traitor to his species.

— *Ramona E. Albert*

I have shared the greater part of my life with cats, but I have never at any time chosen one myself; the decision has always rested with the cat.

— *Penelope Turing*

By associating with the cat one only risks becoming richer.

Colette

The song of canaries
Never varies,
And when they're moulting,
They're pretty revolting.

Ogden Nash

The trouble with a kitten is
That
Eventually it becomes a
Cat.

— *Ogden Nash*

SAY ABOUT PETS

Every household should contain a cat, not only for decorative and domestic value, but because the cat in quiescence is medicinal to irritable, tense men and women.

In spite of all the physicians and hospitals and books that endeavour to induce them to relax, few human beings understand the art of repose. Now when a cat decides to rest, he not only lies down; he pours his body out on the floor like water. It is reposeful merely to watch him. The average man looks up from the morning newspaper and roars at the world's follies. Then he happens to see the family cat, who seems to put to him every day the Emersonian question — "So hot, my little Sir?"

William Lyon Phelps

The great pleasure of a dog is that you may make a fool of yourself with him, and not only will he not scold you but he will make a fool of himself, too.

Samuel Butler

Of all God's creatures there is only one that cannot be made the slave of the lash. That one is the cat. If man could be crossed with the cat it would improve man, but it would deteriorate the cat.

Mark Twain

Living with a cat is like being married to a career woman who can take domesticity or leave it alone. Nobody owns a cat.

Margaret Cooper Gay

Those who wish to pet and baby wild animals, "love" them. But those who respect their natures and wish to let them live normal lives, love them more.

Edwin Way Teale

The great tie that binds us to dogs is not their fidelity or their charm or anything else but the fact that they are not critical of us.

Sydney Harris

I don't like cats. A cat is a poker-faced creature and I, for one, don't take poker-faced animals or people at their face value. It is too easy to act deep and mysterious. I question the so-called wisdom of cats; I think they are bluffing.

I like dogs because they spill their beans. A dog is no compote of cagey inhibitions. A cat makes no mistakes, but a dog starts to make mistakes the minute you enter the door. He wags without thinking it over.

Don Herold

A real dog, beloved and therefore pampered by his mistress, is a lamentable spectacle. He suffers from fatty degeneration of his moral being.

Agnes Repplier

I think one reason we admire cats, those of us who do, is their proficiency in one-upmanship. They always seem to come out on top, no matter what they are doing — or pretend they do. Rarely do you see a cat discomfited. They have no conscience, and they never regret. Maybe we secretly envy them.

Barbara Webster

When a dog bites a man that is not news, but when a man bites a dog that is news.

Charles Anderson Dana

We have discovered that the best way to get medicine into the family dog is to talk to him on a variety of dull subjects, then drop a pill down his throat when he yawns.

Franklin Jones

Cruel, but composed and bland,
Dumb, inscrutable and grand,
So Tiberius might have sat,
Had Tiberius been a cat.

Matthew Arnold

Continued on page 30

KENNEL COUGH

Reaching a solution at the race track

by William Etheredge

Any greyhound owner will tell you that his dog is a special animal. The product of selective breeding that has gone on since the time of the pharoahs, the greyhound is a creature built purely for speed. He is the second fastest animal on earth for distances up to 300 yards, reaching speeds up to 45 mph – so fast, in fact, that the greyhound can hunt by sight rather than scent. Greyhounds achieve this performance thanks to heart and lung capacities equivalent to an average adult human, two or three times greater than the normal dog.

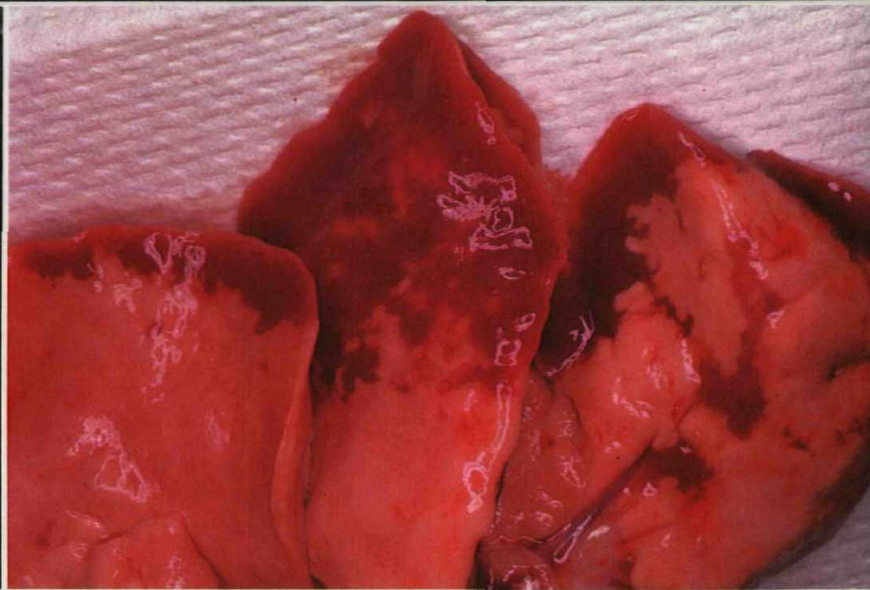
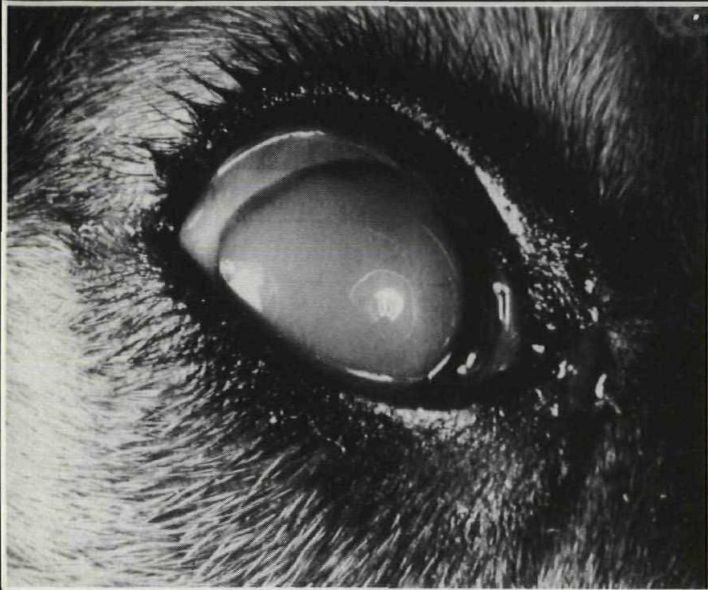
Infectious respiratory disease (or “kennel cough”) is a constant threat to the racing greyhound, which is in almost continuous contact with other dogs. Some of them inevitably carry the viruses and bacteria that cause the disease.

Kennel cough is highly contagious in situations where dogs are in close contact with one another or where there is frequent movement of dogs on and off the premises. Early kennel cough is typified by a dry, hacking cough with nasal and ocular discharge and loss of appetite. Bacterial involvement produces a moist, productive cough that can progress to pneumonia if left untreated. Dogs 9 months to 2 years of age are the ones most often affected.

The disease, of course, is not peculiar to the greyhound industry. It is found throughout the country wherever dogs are congregated – pet shops, boarding kennels, humane shelters, veterinary hospitals and grooming parlors, to name some common examples. It has been a source of surprise and delight to discover



0/0/0/0/5/10/15/20/25



Conventional hepatitis vaccines can cause "blue eye," a clouding of the cornea. In a normal dog, the pupil and iris will be clearly visible. CAV-2 vaccine was developed as a replacement because it avoids this type of reaction. The added bonus is that it also prevents respiratory disease caused by CAV-2 virus.

Lungs from a dog infected with virulent CAV-2 virus show dark areas where hemorrhage has occurred.



/30/35/40/45

Racing greyhounds are a blur of motion reaching speeds up to 45 m.p.h.

KENNEL COUGH



that conscientious immunization with a new vaccine, combined with sensible management, has enabled us to significantly reduce the incidence of kennel cough in our dogs and safeguard the welfare of the racing greyhound.

GREYHOUND A SPECIAL CASE

Naturally, any significant insult to the racing greyhound's respiratory tract results in prompt curtailment of training and racing. A dog with kennel cough is not only incapable of peak athletic performance, but he can develop pneumonia or incur permanent physical damage if he is exercised instead of allowed to recover. Because the disease is so contagious, it typically spreads throughout the kennel, affecting breeding stock as well as dogs in training.

Unfortunately, greyhounds are considerably more sensitive to anesthetics and therapeutic drugs (including those used to treat respiratory disease) than most other breeds. This is because they have low fat-to-body mass and muscle-to-body mass ratios, resulting in increased levels of unbound drugs circulating in the bloodstream (instead of bound to the body tissues). As a result, the normal dog dosage is often too great for greyhounds, producing undesirable side effects and occasional fatalities. This makes treatment for kennel cough or other diseases riskier for greyhounds than most other breeds. More than a few have died of drug overdoses, particularly thiobarbiturate anesthetics, in the hands of inexperienced handlers. The breed's sensitivity to drugs is another good reason for controlling disease by prevention rather than with therapeutic agents.

A NEW VACCINE

Starting in the spring of 1978, we saw convincing evidence that a new vaccination program we had adopted was greatly reducing the incidence and severity of respiratory disease at Windaway Kennels. It appears this was the result of using a new "CAV-2 vaccine" developed as a replacement for canine hepatitis vaccines.

Canine adenovirus type 2 (CAV-2) is a common cause of respiratory disease in dogs. Some years ago, scientists found that a CAV-2 vaccine will not only protect dogs from CAV-2 respiratory disease, but will also prevent canine hepatitis, caused by a closely related virus (designated CAV-1). Conventional hepatitis vaccines sometimes produce adverse reactions such as "blue eye" and excretion of the attenuated vaccine virus in the urine. To avoid these reactions, a CAV-2 vaccine was developed as a replacement for hepatitis (CAV-1) vaccines. The bonus, of course, is that the CAV-2 vaccine gives improved respiratory protection, because CAV-2 virus is a common cause of kennel cough. Most dogs are immunized once a year for hepatitis (usually in combination with distemper, parainfluenza and leptospirosis), so use of the CAV-2 vaccine has become widespread since its introduction in 1978.

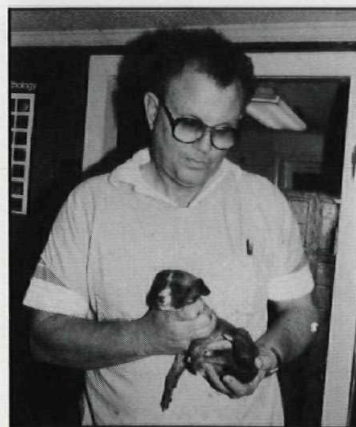
We started using the CAV-2 vaccine in all of our dogs on a trial basis in the spring during the height of

the kennel cough season. Immediately, we noticed a reduction in the incidence of kennel cough in vaccinated dogs. This was made more dramatic by the fact that other dogs brought into our kennel for breeding or training would often come down with the familiar hacking cough. Our own dogs were seldom affected even though they were quartered next to coughing dogs. Those few CAV-2 vaccinates that were affected had very mild coughs that usually cleared up within 48 hours after treatment. As a result of this experience, every dog coming onto our premises is now vaccinated with CAV-2 within 48 hours after arrival. Kennel cough as we used to know it is a thing of the past.

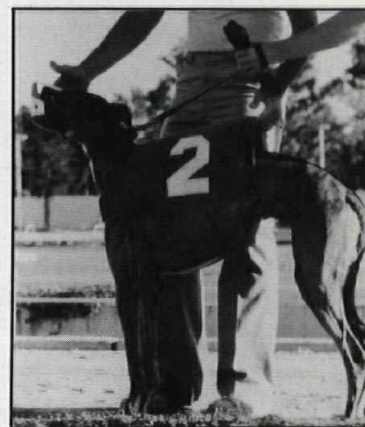
My observations are supported by those of our veterinarian, Dr. James Andress. "I've seen the same sequence of events that occurred at Windaway happen at other kennels," he says. "As long as they vaccinate with CAV-2, we don't see respiratory outbreaks affecting the whole kennel. Instead it's just a sporadic thing that's relatively easy to treat. There's no question in my mind that the vaccine results in a noticeable reduction in kennel cough."

A DISEASE-FREE KENNEL

Dr. Andress also believes that keeping free of respiratory disease has a definite impact on the overall health of our animals. This is most apparent by abrupt decline in the incidence of highly contagious intestinal disease (we call it "kennel sickness") that, prior to the use of CAV-2 vaccine, periodically swept through our dogs. Kennel sickness has been the nemesis of the greyhound industry for years. It is characterized by diarrhea, vomiting, fever, dehydration and a lengthy



1



2



3



4

recovery. Although it shares some similarities with the parvovirus diarrhea that has been recognized since 1978, the causative agent has not been determined. Unlike kennel cough, it affects older dogs as often as the young ones. One of my good racing dogs that came down with kennel sickness required three weeks of intravenous feeding before he even began to eat. He lost 25 lbs. and took two months to recover. It was another four months before he competed at his former level of performance. Obviously, the expense of such treatment and the loss in earnings is enormous if it occurs on a large scale.

A close friend of mine who also raises greyhounds is so convinced that CAV-2 vaccine reduces both respiratory and secondary intestinal disease that he vaccinates all his dogs every time they move to the next track to compete. Revaccination generally has a booster effect on an animal that has already been immunized, so that a high level of protection is maintained.

"I figure it costs me several hundred dollars to vaccinate 60 dogs," he told me. "I average \$8,000 to \$10,000 per week in purse money, so if I prevent just one outbreak of kennel cough or kennel sickness I've more than recouped my vaccination costs. It's cheap insurance. I can also tell you this, I've practically eliminated epidemic diseases from my kennel, and I have the satisfaction of knowing that I have healthy dogs under circumstances where respiratory and intestinal disease is commonplace."

The CAV-2 vaccine is available through veterinary practitioners in various combinations with distemper, parainfluenza, and leptospirosis vaccines. We vaccinate our pups with distemper-adenovirus type 2-parainfluenza

('Vanguard' DA₂P, Norden Laboratories) at three weeks of age and again at five weeks. A final vaccination including leptospirosis immunization ('Vanguard' DA₂PL) is administered after maternal antibody levels have declined. Thereafter, our dogs are vaccinated annually with the DA₂PL combination.

Of course, vaccination must be combined with sound management to maintain a disease-free kennel. We usually have about 60 greyhounds quartered on five acres. This allows us to disperse the dogs over a reasonable area to avoid buildup of contaminants and to allow adequate room for exercise. Our kennel building is well ventilated — a key factor in controlling respiratory disease and maintaining an ideal temperature for greyhounds (about 78 degrees). Air in the kennel building is continuously exhausted to minimize concentrations of the viruses and bacteria responsible for canine respiratory disease. Likewise, sanitation is a critical factor in limiting contact between the dogs and agents that cause intestinal disease. The best vaccination program in the world will be ineffective if overcrowding, inadequate ventilation, and poor sanitation exist.

It should also be noted that kennel cough is caused by a variety of agents. Although the CAV-2 agent is often involved, CAV-2 vaccination won't prevent all cases of kennel cough, nor should it be expected to. By preventing disease caused by CAV-2, however, we can significantly reduce the overall incidence and severity of respiratory disease in kennel dogs.

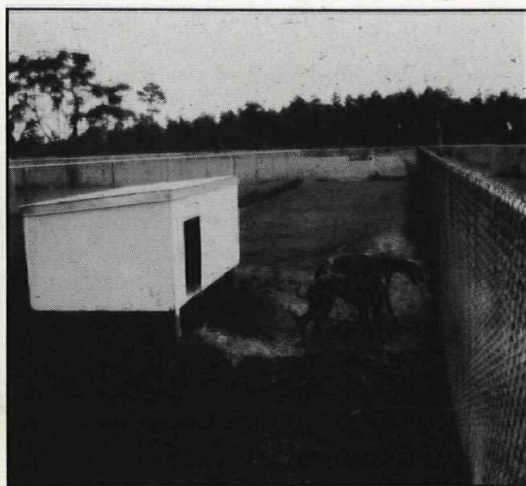
IMMUNIZATION AS SAFEGUARD

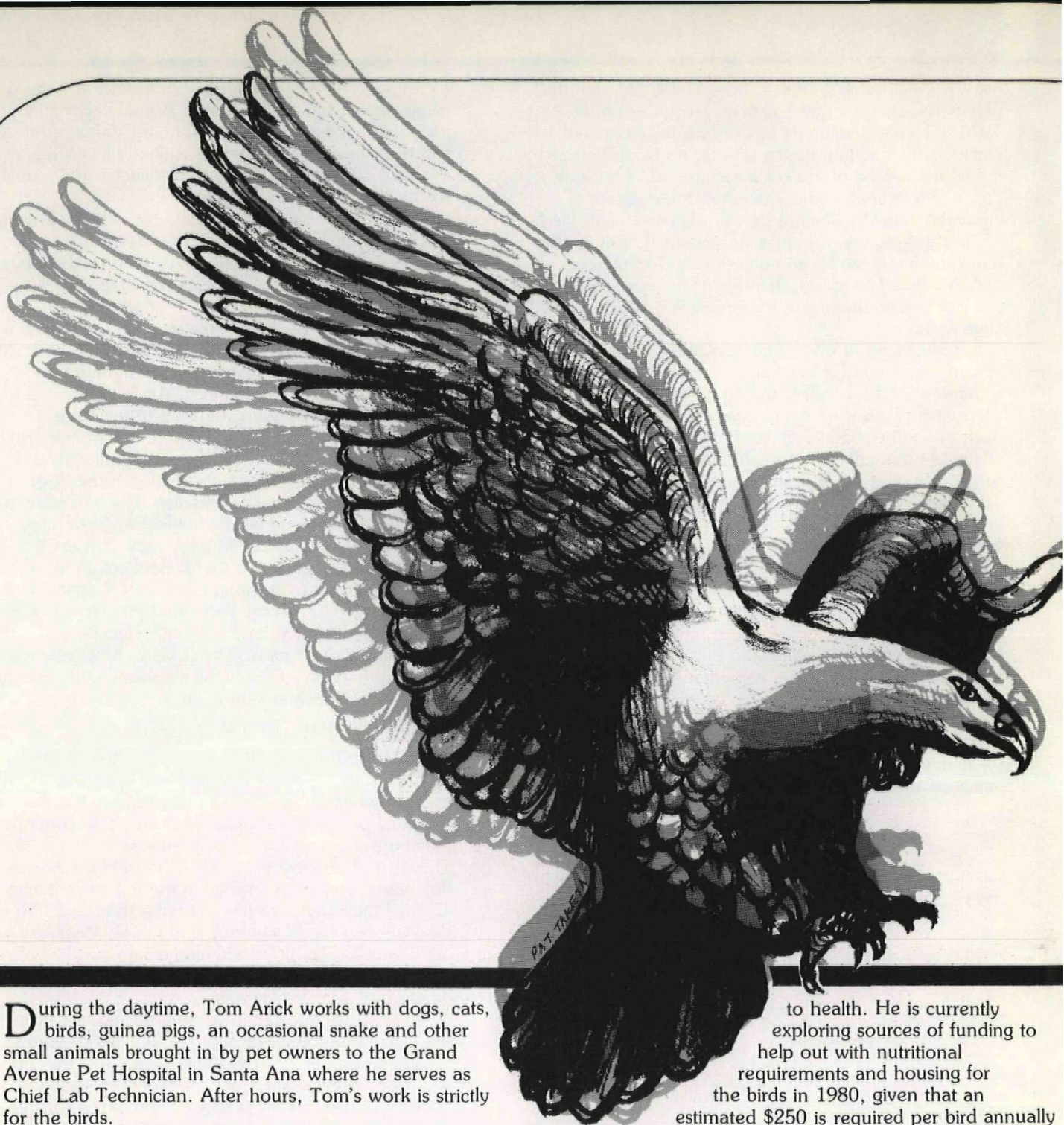
The performance of Windaway greyhounds gives ample testimony to the importance of keeping our dogs free of respiratory and kennel diseases. At the end of the most recent racing season at Pensacola Greyhound Park, our kennel ranked first in overall standings with 159 wins, 124 seconds, and 134 third-place finishes in 969 starts. Our dogs finished in the top three places in 43% of their starts, earning us more than \$43,000. This kind of consistency would simply not be possible if we were periodically hit with kennel cough and kennel sickness — two syndromes that have plagued the greyhound industry for years.

Those of us involved in greyhound racing believe it's the fairest parimutuel sport in the U.S. According to George Johnson, Jr., Executive Director of the American Greyhound Track Operators Association, "Greyhound racing gives fans a fairer shake for their money because of some important distinctions from other parimutuel sports. For at least an hour before race time, all competing dogs are kept under lock and key with veterinary supervision. Owners and handlers do not have access during the pre-race period, so the dogs can be independently evaluated for illness or the effects of drugs. Above all, greyhounds compete without the human element — no jockeys or trainers are present to influence the outcome of a race."

Maintaining healthy, disease-free dogs contributes to the public's confidence in greyhound racing as a sport. When people believe they can depend on a consistent performance from a given dog, they're more willing to place the bets that support the greyhound industry.

- 1 Dr. William Andress, Windaway veterinarian, holds a greyhound pup with the "kennel sickness" syndrome. Unless treatment is implemented promptly, death often occurs in young animals.
- 2 Sunbelt, a Windaway greyhound ready to race at Pensacola Greyhound Park.
- 3 The author with one of his Windaway greyhounds.
- 4 Though bred strictly to race, greyhounds are one of the most docile and playful of all canine breeds.
- 5 Windaway greyhounds are housed on ample acreage to minimize spread of infectious agents and to permit the dogs to exercise.





During the daytime, Tom Arick works with dogs, cats, birds, guinea pigs, an occasional snake and other small animals brought in by pet owners to the Grand Avenue Pet Hospital in Santa Ana where he serves as Chief Lab Technician. After hours, Tom's work is strictly for the birds.

He is one of four individuals in Orange County, California, licensed to care for and rehabilitate protected species of raptors — birds of prey — confiscated by the State Fish and Game Department, or downed on the scrimmage line between civilization and the wild.

Over 125 hawks, falcons, and owls were taken under Tom Arick's wing in 1979, most requiring medical attention. Kestrels, prairie falcons, red-tail hawks, cooper's hawks, red-shouldered hawks, sharp-skinned hawks, marsh hawks, ospreys and several species of owls were treated and reintroduced into remote areas in Orange County. Tom can keep up to fifteen birds at any one time, but says he could use more housing facilities. He spent \$500 on one of the large "mews" (a free-flight aviary) where he keeps the birds that have been restored

to health. He is currently exploring sources of funding to help out with nutritional requirements and housing for the birds in 1980, given that an estimated \$250 is required per bird annually for food alone.

Tom's employer, the Grand Avenue Pet Hospital in Santa Ana, helps sponsor his efforts, providing free medical and surgical attention for the injured birds. The hospital's radiological services were utilized recently on a male prairie falcon, called a tiercel (see photo). The x-rays of the tiercel's wing revealed an old fracture that had not healed properly, resulting in a fused joint. The condition is not correctable and will hamper the bird's flight, preventing the bird from successfully competing for food in the wild. However, Tom hopes the bird will one day become involved in a breeding program. "At least this way he will be productive and well cared-for the rest of his life," he says.

Some of the more common injuries and ailments he



"ON EAGLE'S WINGS"

Raptor Rehabilitation Program Offers Top Flight Care

sees are oil-soaked and pesticide-poisoned birds, birds that have been hit by cars (especially owls), and birds that have been shot with pellet guns or otherwise mistreated by people.

Every spring he receives a number of young birds of prey that have been orphaned or displaced, especially owls. Last spring a construction crew was clearing land for a housing development in Glendora and toppled a tree where some great horned owls were nesting. Tom received four baby owls. Since orphaned owls can sometimes be successfully introduced into the nest of another owl of the same species and raised by new parents, Tom hiked back into the Santa Ana Canyon area and found a great horned owl nest. He rappelled down a 20-foot rope off the side of a cliff, owls in hand, and placed the baby birds in the nest, where he found two additional young. Then he sat on the other side of the canyon and watched the nest through his binoculars. The parents returned, and seemed to accept their extended family. A week later, Tom returned to find all six baby owls doing well.

On his days off, Tom likes to hike and scout out new nests and potential nesting sites in remote areas. He keeps topographic maps of the locations for future reference in introducing birds into the areas, which he keeps top secret. To improve the chances of the birds successfully adapting to new surroundings, further human contact must be eliminated.

Tom recently selected a name for his raptor rehabilitation program: "On Eagles' Wings." He says the name comes from a biblical passage having to do with strength and power, and seems to sum up his goal of bringing these birds back to their original place in life's general plan. Interested individuals may write to Tom Arick, "On Eagles' Wings," care of this magazine.

The next time your dog jumps up and scratches you, instead of scolding him, check his nails — they may need trimming. If they do need trimming do not run to the phone to make an appointment with your veterinarian — instead do it yourself. All you need are the tools mentioned in this article and the instructions that go along with them.

Your pet's nails should be checked regularly, especially if he is an indoor pet whose nails do not wear down quickly. If your pet's nails are allowed to grow too long, he will be forced to walk flatfooted. This pushes his weight behind the wrists. Long nails pounding on hard pavement can be very painful and may cause lameness. If the nails are allowed to grow beyond the point where they are nourished by the quick, they become dead and brittle and can break and tear off.

NAIL TRIMMING

by Michelle Baccaro

Photos by D.M. Diem



1 The only equipment required for trimming nails is a nail trimmer and something to stop bleeding in the event a nail's trimmed too short. Either a styptic stick or ferric subsulfate may be used.



2 These overly long nails need to be trimmed.

5 If a nail is accidentally cut too short and bleeds, use a styptic stick or ferric subsulfate on a cotton tipped applicator to stop the bleeding.



6 After trimming, the nails no longer protrude past the pads when viewed from the bottom of the foot.



The main thing to keep in mind when trimming your pet's nails is not to cut into the quick, which is the live pink flesh within the nail. The quick is easily seen in dogs with white nails, but more difficult to see in dogs with dark or black nails. The quick can be located from the underneath part of the nail where it has a soft, spongy appearance in contrast to the hard brittleness of the nail itself.

Nails often overlooked are the dewclaws. Dewclaws are vestigial digits. These serve no purpose and often get caught and are painfully torn off. They also grow very long and tend to curve back into the animal's paw. If the dewclaws become overly long and you are not sure how short to trim them, see your veterinarian for assistance.

The dewclaws can be removed without anesthesia in puppies up to three days old and can be removed with

anesthesia anytime after that.

Thorough and proper nail shortening is accomplished by the use of a nail clipper, and either ferric subsulfate or a styptic stick — which can be purchased at a pharmacy. One of the latter two items should always be kept on hand in case a nail is trimmed too short.

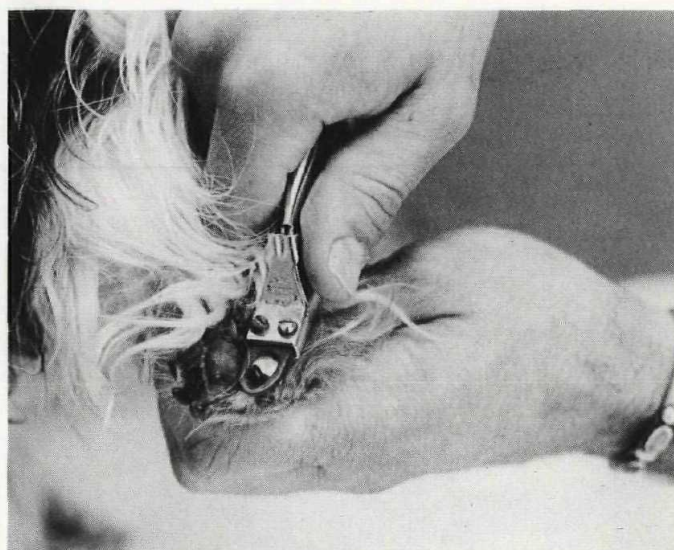
When using a nail clipper, which can be bought in most pet shops, the animal's paw should be turned so you can see his pad. The nails should be kept in a relaxed position, not pushed forward so the nails are forced forward over the pad, then clip the nails even with the pad.

By checking your pet's nails regularly, you not only keep your pet happy and healthy, but also save yourself a few scratches.



3

Use one hand to hold the tool with pads facing up.



4

While holding the foot with one hand use the other to trim the nails level with the pads.

Don't forget to trim the dewclaws if the dog still has them.

8

This is how the foot and nail trimmer is held to trim the dewclaw.



9

Keeping the dewclaws trimmed properly will lessen the chance of them being caught and torn.





PETS AND FLYING

Is your pet safe in a plane?
Not as safe as he should be. But a lot of people, including
members of Congress, are determined to change that.

Cleveland Amory



Illustration by Malcolm McNe

For a long time it was assumed that pets in the air traveled, if not in the lap of luxury, at least in a compartment that was as carefully pressurized and temperature-controlled as the passenger cabin. But, all of a sudden, disturbing stories began to appear. The first of these was a news report that 73 of 80 greyhounds en route from Shannon, Ireland, to a dog track in Seville, Spain, had been found during a refueling stop at Bilbao to have died of suffocation. The temperature in the plane compartment where the dogs had been was reported at 131°F.

At this a lot of people began to worry, particularly those who have experienced a long wait on the runway — during which the aircraft often becomes unbearably hot.

As President of The Fund for Animals, I was more than personally concerned. I immediately alerted our animal workers, both paid and volunteer, to investigate airline travel. And all too soon, I learned that those greyhounds on that foreign airline were not the only victims. There was trouble at home in domestic air travel, too — and not just in the air, but on the ground. One Washington, D.C., animal worker, for example, documented case after case of cruelty involving, ironically, the case itself — puppies shipped, for instance, in shoeboxes, or in flimsy vegetable crates; of animals not picked up; of animals neglected for days, without food. David Steinhart, a lawyer in San Francisco

representing a family whose St. Bernard had suffocated, was told: "Yes, the airline will pay for the dog"; the price: 50¢ a pound.

One day during the course of my investigation, a pretty young stewardess came into my office. Even before the greyhound story, she told me, she had been worried about animals in the air. It all started, she explained, when one day she had begun to wonder why her suitcase, which had been placed in the compartment where the animals are kept, was so cold. "Until then," she said, "I assumed the cargo compartment was heated, which I have since learned is not the case."

"From zero to 104°"

The stewardess' next step was to buy a maximum-and minimum-registering thermometer. On her next trips, she placed the thermometer not in a suitcase but just in her ordinary flight bag. She did this seven separate times.

"The temperatures," she told me quietly, "went from below zero to 104°."

We discussed this at length. It was the stewardess' firm opinion that the incredibly high temperatures occurred before takeoff, after the cargo doors had been closed, when the plane was standing on the ground or taxiing down the runway. The stewardess had other complaints: In the baggage compartment itself, she discovered, there is a limited oxygen supply for the animals because such



PETS AND FLYING

unloading passengers, he started hacking away.

Troubles in pet air travel have now become a lot of people's business. And incredible contradictions keep coming to light from all sides. One Northwest Airlines pamphlet, entitled "Good Advice for Shipping Pets on Northwest Airlines" — one designed, apparently, for passengers — declared, "Cargo compartments are heated and pressurized so your pet will have a comfortable journey." On the other hand, another Northwest Airlines pamphlet — one designed, apparently, for baggage personnel — declared, "There is a pattern of mortality (for some dogs) during summer months." As if the words "pattern of mortality" weren't red flag enough, this pamphlet then added the curious note, "Short-nosed dogs seem to have difficulty breathing when it's hot and humid."

Another contradiction from American Airlines: their commercials call a new, wide-bodied aircraft "an inspiration for planes yet to be built." Yet an American Airlines official testifying on freight rates had called the hold of this same plane "a frying pan." In-flight temperatures, he added, went up to 115°. "Right adjacent to that same area," he pointed out, "we are freezing things."

And United Airlines: "Pets," says United's "Guide to Pet Travel," "travel in heated, pressurized comfort, just like you." And, the pamphlet goes on, "in air-conditioned aircraft." This is simply not true. No airline has air-conditioned baggage compartments. Nor are they, at least from the animals' point of view, properly pressurized. *Consumer Reports* summed up the matter: "The airlines are quick to point out in their literature that baggage compartments are pressurized. What they don't tell you, however, is that those compartments are also virtually airtight. That's so if a fire should break out in the air, it would hopefully die from lack of oxygen. Thus, animals traveling in luggage compartments must, for the most part, endure for the entire flight on the oxygen in the compartment at the beginning of the flight. The freight aboard displaces and reduces the oxygen available for breathing. So a pet unlucky enough to wind up in a jammed luggage compartment may have a deadly problem."

There is still one way, of course, that airplane travel for pets can be made safe. And this is, ironically, the way things were in the old days — take your pet right with you in the passenger compartment. Unknown to a surprising number of people, seven airlines still permit this — American, United, Eastern, TWA, Northwest, Frontier and Hawaiian. But there's a small catch: you can carry on your pet only if the container in which you must put him fits under your seat — i.e., eight inches. And, as if this were not enough, five of the seven (all but American and Frontier) limit carry-on pets to one per first-class cabin, and one per coach.

Such an option, it is clear, does not satisfy an enormous number of people. In the past year, no less than nine bills about airplane travel for pets have been

compartments have to be virtually airtight to reduce fire hazards. Outside, she pointed out, the animals were often left on the loading ramp at the mercy of the weather, with their sensitive ears exposed to the deafening noise of the jet engines. She told me that some animals escaped their cages, became lost and were never recovered. She repeated the charges that the cages were often too small or had insufficient air holes, and added that some had sharp chicken wire, which cut the animals.

Just as I had learned that the greyhounds had not been an isolated instance, I soon learned that the stewardess was not alone in her complaints. In January last year, an article appeared in — of all publications — *Air Line Pilot*, the magazine of the Airline Pilots Association. This magazine told the story of a woman in a plane taxiing down the runway at the San Francisco airport and recognizing, deep down in the baggage compartment, the barking of her dog, Penny. Then she heard Penny stop barking. She summoned a stewardess and burst into tears. Penny, she said, was dead. The stewardess assured her that that was impossible, that the cargo hold was "perfectly safe." However, when the plane arrived in New York, the woman was right. Penny was indeed dead.

Just nervous and excited

Then came another story, this time from the Associated Press, and this time it was not only a horror story — of an Irish wolfhound named Lost River who had died on a flight from Dallas to Miami — but also a story of revenge. Lost River's owner, a carpenter named Thomas William Brown, had sued Eastern Airlines, claiming that the shipping hold had not contained enough oxygen for his dog and that there was no temperature control. Eastern replied that it was not negligent, that Lost River was a highly nervous dog and that "this nervousness and excitement was probably the cause of the . . . eventual state of prostration to which the dog succumbed."

Whatever Lost River's nervousness and excitement, it was as nothing to owner Brown's. For \$6.60 he bought himself an ax and, walking up to an Eastern jet as it was

introduced in Congress. Despite the number of bills, it is clear that legislation is virtually impossible to pass until (a) the problem is defined and (b) someone is held responsible for pet safety.

One passenger in five

First, the problem. How many animals do the airlines carry? At first, in the absence of industrywide statistics, no one really knew. But it soon became evident that your pet and other people's pets are only a miniscule part of the whole picture. The animal breeders — and there are over 3,000 in the state of Kansas alone — ship what are called "prepets" by the thousands. The ill-famed "puppy mills" ship not just by the thousands, but by the hundreds of thousands. The Doktor Pet Centers ("Instant Credit — Pay as You Love") is a huge shipper. Then there's the infamous exotic pet trade, and zoo animals, farm animals, animals for laboratories — monkeys by the thousand, mice by the million. In short order, an amazing statistic was available: One out of every five airline passengers is not a human being, it is an animal.

The second question, the question of responsibility, is a thorny one indeed. According to statistics proudly compiled by the Air Transport Association, less than 1 percent of all animals shipped died "while in the care of the airlines." Yet 1 percent of millions is still a horrifying figure.

The airlines specially claimed that once on the ground, the animals were not in their care. In the terminals, apparently, no one wanted responsibility. "To an airline cargo handler," said *Air Line Pilot*, "a boxful of mice or a cage of monkeys is just another item that must be lifted and placed somewhere else for movement out of his jurisdiction." The few so-called "animal ports" in major terminals are not the answer, either. Run by private animal welfare societies or private companies, these shelters perform good works but they are in no position to take on any major responsibilities.

Who, then, if not the airlines? The shippers, perhaps: most especially, Railway Express Agency, the largest, which earned \$6 million in 1971 for what it calls "forwarding" animals. How about the purchasers? The most obvious answer seemed the Civil Aeronautics Board, but the CAB, it soon appeared, wanted none of it. Neither did the National Council on Animal Transportation, whose meetings on the subject last summer turned out to be a calculated mixture of buck-passing, rug-sweeping and whitewashing.

Finally, Congress acted and full-fledged hearings were begun by the House Government Operations Special Studies Subcommittee. "Each year millions of animals are shipped by air," said Chairman Floyd V. Hicks (Dem., Wash.), opening the hearings. "Yet all too often the Subcommittee has received reports of animals being treated as just another piece of baggage — no more valuable than a suitcase or mail sack." Among the first

facts the committee unearthed was that carriers are excluded from U.S. Department of Agriculture scrutiny under the Animal Welfare Act of 1970, as are breeders who raise dogs and sell them directly to an individual — even though Hicks' staff found "the highest per capita of abuse" had occurred in just such shipments.

Here are highlights from the lengthy testimony given at committee hearings.

- Dr. David Bromwell, staff veterinarian of the Illinois Department of Agriculture, testified to faulty health certification given by veterinarians certifying a particular animal as healthy enough to be shipped. "I am ashamed," he said, "that there are members of my profession who have prostituted themselves for a few lousy dollars."

- Fay Brisk, of the Washington, D.C., Animalport: "It was the suffering of hungry, thirsty animals, packed like toys in wooden boxes, that forced me to take action. As far as animals are concerned, flying is really for the birds — and sometimes not even for them."

- John Hoyt recalled that CAB examiner Louis Sornson had once said: "When the aircraft is on the ground, with the cargo doors closed, the compartments are as airtight as a car with the doors and windows closed."

- To this writer the most interesting testimony of all was that of a pilot, Duane E. Best, special representative for animal transportation for the Airline Pilots Association. Of his many grisly stories, this was the most dramatic: A pilot in Maine taxied out on the runway, experienced mechanical failure, taxied back and taxied out again, for a total of two hours. During this time, seven of 15 German shepherds in the baggage compartment died. Said Best: "There is a terrible double standard that exists through their checked baggage and what they accept from forwarders for air express shipments."

Conditions must change

Whatever the final outcome of the hearings, it seems certain that at long last Congress will take a hand in this grave matter. It is a situation that has for too long outraged only "animal people"; now that a wider public is aware of the seriousness of the situation, it's to be hoped that conditions will change.

One thing that has long made it hard to take remedial action is the lack of careful documentation of animal abuse by the airlines. If you know of such cases and can document them, please tell me about them in a letter addressed to me at the JOURNAL, 641 Lexington Avenue, New York City 10022. Working together is the only way to make our animals safe in the air.

VIRAL DISEASES OF PUPPIES

by Leland E. Carmichael, D.V.M. and Roy V.H. Pollock, D.V.M.

Advances in Knowledge and Recent Discoveries

ADVANCES DURING THE 1970'S

In 1969 more than sixty research workers from several countries met in New York City to consider infectious diseases of dogs. The decade since has witnessed remarkable progress in the development of our knowledge and the means for control of the most important canine viral infections — distemper, hepatitis and parainfluenza. At least 21 viruses now have been recovered from dogs, the most recent ones being reovirus type-2, coronavirus and, canine parvovirus-2 (CPV-2). The more common canine viruses are listed in Table I.

Most of the practical research needs identified in 1969 have been meaningfully addressed, amongst them being:

1. Formulation of uniform and successful approaches of distemper immunization and clarification of the role of measles virus in vaccination programs.

2. Development of a novel vaccine against hepatitis (CAV-1) by rationally substituting an attenuated canine adenovirus (CAV-2). CAV-2 fully cross-protects but does not cause vaccine-induced eye disease (uveitis, "blue eye") which occasionally occurs in CAV-1 vaccinated dogs, especially in certain breeds such as Afghans.

3. The complexity of mixed viral and/or bacterial infections in canine respiratory disease was recognized. *Bordetella bronchiseptica* (abacteria) has been identified as a significant cause of "kennel cough" in the absence of virus. Parainfluenza vaccines and the recent introduction of *B. bronchiseptica* bacterins (killed vaccine) encourage hope that significant impact finally can be made on canine respiratory illness. Unfortunately, there has been little progress in controlling *Mycoplasma*. These protean agents often act as opportunists to complicate viral infections and prolong illness. *Mycoplasma* are notoriously poor immunizing agents and their sites of growth in the respiratory tract render them difficult to immunize against or to treat.

4. Canine brucellosis has been identified as a worldwide bacterial disease of dogs, occasionally infecting man. Spontaneous abortion two to three weeks before term is the most common clinical sign in dogs. Its prevalence generally reflects the degree to which dogs are allowed to roam and breed freely. Improved but as yet imperfect blood tests have been developed.

Experimental treatment regimens have been explored. Certain treatment schedules have been found successful under laboratory conditions but they are very expensive, time consuming and the outcome in individual cases still is uncertain.

5. An experimental attenuated canine herpesvirus (CHV) vaccine has been developed and tested in the laboratory. Because of the relative infrequency of reported outbreaks of fatal disease in puppies, further study of the significance of CHV in the dog population at-large is necessary before a CHV vaccine can be made available to veterinarians.

6. New and significant challenges are presented by the very recent association of outbreaks of enteritis (intestinal inflammation) with a previously unknown virus (CPV-2) and a virus not previously recognized as a widespread cause of illness (canine coronavirus).

VIRAL ENTERITIS: CAUSES AND PROSPECTS FOR CONTROL

Within the past year viral enteritis in dogs has become a major problem. Dogs of every age and breed in many countries throughout the world have been affected. Many cases, especially in puppies, have proved fatal. Dog owners, especially those who show their animals, are justifiably concerned. Their fears have been amplified by reports in the lay press and some breeders' journals of "killer" and "deadly" viruses and other such sensational headlines much like the early reports that followed outbreaks of "Legionnaire's Disease" in man. Researchers on several continents recently have turned their attention to the study of infectious canine enteritis and our knowledge of the causative agents is expanding rapidly. It should be cautioned, however, that sufficient time has not yet elapsed for in-depth controlled laboratory studies of all aspects. Many important questions remain unanswered.

HISTORICAL BACKGROUND

In 1971 research workers at the Walter Reed Army Institute of Research reported isolation of a coronavirus from outbreaks of diarrhea among military dogs stationed in Germany. Initially, the disease appeared to

TABLE 1
COMMON CANINE VIRUSES: ROLE IN PUPPY DISEASES

Virus	Principal Type of Disease	Disease Frequency*
Canine distemper	Systemic, nervous	Common
Infectious hepatitis (CAV-1)		
(CAV-1)	Systemic	Infrequent
Canine adenovirus type-2	Respiratory, enteric (?)	Variable
Canine herpesvirus	Systemic (neonatal pups)	Infrequent
Canine papillomavirus	Oral warts	Variable
Picornavirus	Not defined	Not reported
Canine parvovirus-1 (MVC, CPV-1)**	Not defined (mild enteritis?)	Unknown
Canine parvovirus-2 (CPV-2 +	Severe enteritis/heart damage	Common ('78)
Canine parainfluenza virus	Respiratory	Common
Reoviruses (types 1, 2, 3)	Not defined; respiratory/enteric (type 2)	Unknown
Canine coronavirus	Enteritis	Variable

*Frequency refers to clinical disease in non-immunized dogs, not antibody prevalence. In most instances, true prevalence rates are unknown.

**"Minute virus of canines" (MVC)

+ Canine parovirus-2 (CPV-2) is a recently discovered virus antigenically similar to feline panleukopenia virus, but distinct in dog and cat pathogenicity. The use of "CPV-2" is solely for purposes of clarification.

TABLE 2
CLINICAL FEATURES (FIELD CASES)
OF CORONA- AND PARVOVIRAL DISEASE

Clinical Features	Coronavirus	Parvovirus (CPV-2)
Vomiting	Variable	Common, repeated episodes
Appetite loss	Common	Common
Depression	Mild to moderate	Severe, especially puppies
Diarrhea	Common	Common, all ages
Stool character	Mushy, fetid, \pm blood	Loose, grey-bloody diarrhea
Fever	Rare	Common (104 to 106 F)
Onset	Sudden	Sudden
Duration of illness	3 days to 3 weeks	Generally short (2 to 5 days)
White blood cells	No change or slight decrease	Severe to moderate decrease
Incubation period	1 to 5 days	3 to 10 days
Mortality	Unknown (low)	Unknown (10-100%); higher in puppies
Recovery period	Variable, 1 to 3 weeks	Less than 1 week
Heart damage	Not reported	Common, especially puppies
Contagiousness	High	High
Transmission	Feces, nasal discharge (?)	Feces, vomitus, fomites

VIRAL DISEASES OF PUPPIES

be an unusual phenomenon. Natural cases had not yet been recognized in the United States although it is known that antibody against coronavirus is common in dogs.

Our first encounter with coronaviral enteritis was in the Spring of 1978, following outbreaks of severe gastroenteritis in dogs that had attended shows in the southeastern United States. The disease was characterized by rapid spread, high morbidity (number of dogs affected) and variable fatality. A corona-like virus was isolated in our laboratory from the feces of several affected dogs.

Shortly after the causal agent was recognized, outbreaks of coronaviral disease were confirmed throughout the United States. Retrospective serologic evidence indicates that canine coronavirus has been present in the U.S. for more than ten years. It is unclear why coronaviral enteritis suddenly emerged as a significant disease of dogs but awareness of disease is sharpened by hindsight. Coronaviruses are known to cause a variety of infectious diseases, including gastroenteritis, in other species and man.

In 1977 parvovirus-like particles were observed by electron microscopy in the feces of puppies with diarrhea in Texas but the virus could not be grown in cell cultures. Later, Texas investigators reported several cases of severe fatal enteritis associated with a similar parvo-like virus in the feces. Such cases had lesions closely mimicking those of feline panleukopenia (distemper). Reports of similar episodes elsewhere rapidly followed. By early 1979, cases of parvoviral enteritis had been seen throughout the United States. A similar agent has been associated with outbreaks of infectious canine enteritis in Canada, Australia, Europe and, most recently, Thailand. The causative agent of severe enteritis in dogs is distinct from the Minute Virus of Canines (MVC, "CPV-1"), a parvovirus isolated in 1969 from the feces of normal dogs. Retrospective serologic analyses of more than 750 sera have failed to find antibodies to the canine parvovirus in sera collected prior to June 1978. Antibody titers to MVC, however, are common.

Other viral agents including a reo-like virus, paramyxovirus-like virus and adenovirus (probably CAV-2) have been observed in the diarrheic feces of dogs either alone or together with parvoviruses. The significance of these observations is not known as the present time. However, in our laboratories, a reo-like virus has been associated on several occasions with fatal enteritis in very young puppies where neither canine parvovirus nor canine coronavirus could be isolated. Reo-like viruses (rotaviruses) have been recently recognized as important neonatal enteric pathogens in man and other species; future work may well demonstrate a specific canine rotavirus as well.

PARVOVIRUS-CORONAVIRUS: WHAT'S THE DIFFERENCE?

All viruses are extremely small obligate parasites of higher life forms. A million parvoviruses end to end, for example, would measure less than an inch long. Viruses can be seen with the electron microscope and can be

differentiated by their characteristic sizes, shapes and surface features as well as by other laboratory tests. Viruses cannot replicate except inside living cells. Parvovirus additionally requires that the cells themselves be dividing. Thus parvovirus affects primarily those tissues with rapid division rates: the intestine, the bone marrow and lymph nodes. Antibiotics have no effect on viruses. Many viruses are very resistant and difficult to destroy. Parvovirus, for example, can withstand freezing and thawing, temperatures over 100° for three days, most detergents and alcohol. Clorox (1:30 dilution), however, rapidly destroys parvoviruses.

WHAT'S ENTERITIS?

Enteritis means "inflammation of the intestine." Gastroenteritis means "inflammation of the stomach and intestine." Both coronavirus and parvovirus attack cells that line the intestinal tract. If sufficient damage occurs there may be vomiting, fever, diarrhea and bleeding into the intestinal tract. Parvovirus also invades the bone marrow and destroys the cells which produce the white blood cells, so a drop in white blood cell count (leukopenia) generally accompanies parvoviral enteritis.

Canine parvoviral enteritis apparently is a new disease. Veterinarians and breeders have never before encountered anything like the recent outbreaks. There is evidence that this present parvovirus (CPV-2) never infected dogs prior to 1978. The coronavirus, however, has apparently been around for some years but apparently wasn't an important cause of disease in dogs in North America until an extensive outbreak in show dogs was recognized in 1978.

WHAT ARE THE SIGNS OF VIRAL ENTERITIS?

Canine viral enteritis is characterized by loss of appetite, depression, vomiting and diarrhea, which may contain blood (see Table 2). The onset of vomiting and diarrhea is often sudden although some dogs won't eat and act depressed for several hours prior to the onset of other signs. With enteritis caused by canine coronavirus the feces are often orangish and have a very foul odor. They may contain some blood and a great deal of mucus. Deaths occasionally have occurred in as little as 24 hours after the onset of signs but most dogs recover in a week to ten days, especially with proper treatment. Some cases, however, have had continuous diarrhea for three to four weeks in spite of therapy. Fever is usually mild or absent when enteritis is caused by the coronavirus, for much less damage occurs to the intestinal cells than with the parvovirus.

Signs of parvoviral enteritis are similar to those of coronaviral enteritis and laboratory tests may be necessary to distinguish the two. In general, enteritis caused by canine parvovirus has been more severe. Temperatures may reach 104-107 degrees F especially in puppies. Vomiting is usually the first sign of parvoviral enteritis, followed by diarrhea which later becomes bloody. Prompt treatment is essential; most deaths occur in the first 24-48 hours.

Reo-like viruses also may cause diarrhea in puppies but little is known about it at the present time.

Of course, canine viral enteritis accounts for only a

portion of all cases of diarrhea in dogs. Familiar causes like coccidia, parasites or eating garbage are still with us. But when several dogs are affected, one after another, viral enteritis is highly suspect. Hemorrhagic gastroenteritis (HGE) also causes a very severe, often rapidly fatal onset of bloody diarrhea and vomiting which could be confused with viral enteritis. Again, however, HGE only affects one dog at a time, while viral enteritis spreads rapidly.

Recently, the parvovirus also has been shown to be a cause of acute deaths in four to eight-weeks old puppies. In these cases, parvovirus attacks the muscle cells of the heart. The puppies become listless, cry, have difficulty in breathing, and die of heart failure within a few hours. Some are simply found dead. Those that survive may be left with residual heart damage. Fortunately, enteritis is a more common symptom than is acute death from myocarditis.

WHAT IS THE RECOMMENDED TREATMENT?

Most dogs have relatively mild illness and soon recover. Severely affected dogs, however, require immediate veterinary care. Water losses in the vomitus and diarrhea may be so great that animals will die of dehydration unless they receive parenteral fluids. Drugs like Kaopectate, Darbazine and Lomotil, designed to help control the diarrhea and vomiting also will probably be prescribed. If sick animals will drink and can take fluids by mouth without vomiting, they should be given small amounts of fluid often. "Gaterade" or clear broth will help maintain water and salt balance. Antibiotics have no effect on the primary viral disease but are often used to control secondary bacterial opportunists.

WHY DO SOME DOGS FAIL TO HAVE SIGNS OF ILLNESS WHILE OTHERS DIE?

This is a very important question to which we don't yet know the answer. Stress certainly seems to play a role as does age. Intestinal parasites and intestinal bacteria also probably are important. The situation is likely even more complicated than that, and will require a good deal of work to sort out all the confounding factors.

IS THERE A VACCINE?

There is now a vaccine licensed for use in dogs to prevent canine parvoviral.

The close similarity between canine parvovirus and feline panleukopenia virus ("cat distemper virus") caused us to immediately investigate whether or not feline panleukopenia vaccines could be used to protect dogs against parvoviral enteritis.

Studies at the Institute showed that two doses of killed feline panleukopenia vaccine given ten to 14 days apart protected dogs against illness when they were experimentally challenged with canine parvovirus a month later. We do not know with certainty how long dogs vaccinated with killed panleukopenia remain immune to the canine parvovirus or how often vaccination needs to be repeated. Preliminary studies indicate that protection may only last three to four months.

Live feline panleukopenia vaccines also protect dogs against parvovirus infection and they appear superior to killed vaccine. Studies to be certain that live virus vaccines are safe already have begun. If live vaccines are shown to be both safe and effective, they will probably

be the vaccines of choice in the future.

Feline panleukopenia vaccines give no protection whatsoever against canine coronavirus. Development of a vaccine against coronavirus will be very difficult. Despite twenty years of research on transmissible gastroenteritis of swine, which is caused by a related coronavirus, the vaccines for TGE are not entirely satisfactory.

HOW ARE THE DISEASES TRANSMITTED?

Feces appear to be the most important source of virus in both diseases. There may be over a billion viral particles in a diarrheic stool. The parvovirus remains infective in feces for at least a week and perhaps much longer; coronavirus is much shorter lived. We do not know at this time whether virus is shed by other routes but even if this is proved feces will continue to be a most important means of spread. Some dogs may not show overt signs of illness but still shed virus. Dogs with coronaviral enteritis appear to be contagious for at least 18 days after infection (the longest time tested so far).

While canine parvovirus is closely related to panleukopenia of cats, there is no evidence that cats act as a source of disease for dogs. In fact when the canine virus was injected into cats it failed to cause illness. Outbreaks of viral enteritis have not been associated with sick cats.

Because of the enormous amount of virus in the feces, the unusual resistance of parvovirus to inactivation and its pathogenicity for dogs, canine viral enteritis is extremely contagious. It has spread rapidly throughout the United States, Canada, Europe and Australia and most recently to Thailand. There are a number of theories to account for this rapid spread but few data. Undoubtedly, the speed and ease of intercontinental air travel has played a role. Bringing susceptible dogs together at a show or in a boarding kennel of course favors spread of the disease.

SUGGESTIONS TO PROTECT YOUR DOGS MIGHT INCLUDE:

1) Minimize contact with other dogs, especially their feces, at shows and kennels. Cleanse "show shoes" with a 1:30 dilution of Clorox solution (5% sodium hypochlorite).

2) Be especially wary of dogs that have or have had signs of enteritis. In some cases it appears that the owners themselves carried the infection with them from one kennel (country?) to another. In one case, a veterinarian treated a sick dog in his hospital, changed and went home. Five days later, a litter of his own Golden Retrievers had severe parvoviral enteritis.

3) Keep dogs returning from shows and boarding kennels separate from dogs at home, especially puppies, for a week so. (The incubation period is apparently three to ten or twelve days).

4) If you have a dog become ill with viral enteritis, seek immediate veterinary care, separate the ill and well dogs promptly and minimize traffic between the affected and unaffected dogs. Clean all runs, cages, food bowls, and so forth used by sick dogs with a dilute Clorox or other chlorine solution. Even with all these precautions, however, outbreaks have proven extremely difficult to control.

5) If your dogs are at risk, you should consider vaccination with the only vaccine for parvovirus.

An increase in the rarity of animals at the world-famous San Diego Zoo has placed a greater demand on x-ray examinations to diagnose and prevent medical problems.

The zoo's veterinary staff relies heavily on radiological techniques to care for less familiar species. Monotremes, peccaries, galliformes and rhynchocephalia are just a few of the "unfamiliar" species at the zoo that require skilled veterinary care.

X-ray studies of these animals are critical for conventional clinical work as well as for preoperative examinations and followup of complex, medical and surgical procedures. "Since we don't know a great deal about some of the unconventional species, we count on conventional medical technique to study them," says Phillip Robinson, D.V.M., the director of the zoo's Veterinary Services Department. "X-ray studies are invaluable tools in our effort to learn the physiological nature of these animals. And the more we learn about the many species, the better chance we have to keep the animals healthy, and even curb extinction in some cases."

A trip through the San Diego Zoo reveals a collection of some 3,000 animals that include numerous very rare and endangered species. A closer look at the various identification plaques shows an abundance of phrases, such as "seldom seen by man" . . . "little is known about" . . . and "now reduced to a severely threatened remnant." These phrases are clear indications that the purpose of the zoo is not simply to display an assortment of animals for amusement; but it is also a place where maintaining healthy, active and reproducing groups of animals is a key goal.

This concern for the well-being of the zoo's animal population is reflected in the Jennings Center for Zoological Medicine, a long-time dream that has become a reality for the citizens of San Diego, the owners of the zoo. It is reflected in the Zoological Society of San

Diego, a private non-profit corporation that manages the zoo and a "sister" facility, the San Diego Wild Animal Park, an 1,800-acre wildlife sanctuary.

The two-story 10,000 square foot medical facility contains an elaborate surgical amphitheatre for large and small animals, a treatment room, isolation ward, a padded recovery room, a large x-ray room, a special care ward and some 50 indoor and outdoor cages. Visiting professionals and students may observe procedures in the surgical amphitheatre through observation windows in a second-floor library.

All new animals at the zoo are brought to this sophisticated center before they are placed in their respective living habitats. Initial clinical studies include a physical examination, hematology research, a dental exam and at least one chest x-ray. Most of the zoo animals ranging from small birds to not so small elephants have current clinical records.

The facility houses some 80 animals at any given time, and about 50 percent of the patients admitted are subject to some radiological studies. "Because many of the animals are not tame, much of the radiology has to be done under anesthesia," says Dr. Robinson. "There is much less stress for the animals under anesthesia — compared to animals that must be physically restrained."

"However, we have to be extremely careful while animals are anesthetized, and every effort is made to keep the procedures to the shortest period possible." The Veterinary Services Department has cut significantly anesthesia time for animals with automatic film processing, enabling the veterinarians to interpret finished radiographs quickly.

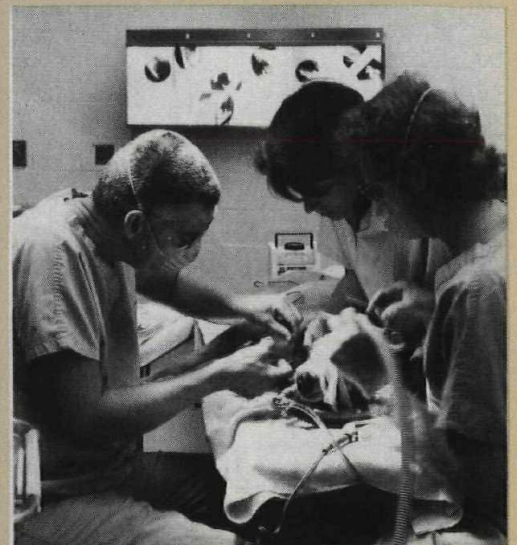
Using a Kodak automatic processor, the time period for film processing has been reduced to some two and one-half minutes. "Fast processing is critical, especially when we need to take second, possibly third views of

RADIOLOGY AT THE ZOO

by Tom Goodman

1

SPECTACULAR VIEW — A team of veterinary specialists at the San Diego Zoo, San Diego, California, conduct dental surgery in the Zoo's operating room, part of a two-story, 10,000-square-foot facility that regularly houses some 80 animal patients. Some of the most sophisticated tools in veterinary science help the San Diego Zoo care for the health of its 3,000 animals.



2

IN SURGERY — David Fagan, D.D.S., left, removes a tooth from a wild dingo dog, at the San Diego Zoo. Radiographs pictured on the viewbox help the veterinary team in all phases of animal care — from conventional chest x-rays to this complex tooth surgery. Dr. Fagan is a consultant and clinician to the zoo's medical and research staff.



the patient," according to Dr. Robinson. "Now, the consistency of quality radiographs and the ability to read them quickly have improved our overall radiological capabilities."

Dr. Robinson's staff of three clinicians, one veterinary intern and an animal health technician have found increasingly important uses for radiological studies with the addition of new, exotic animals at the zoo. "It is advantageous for many wild animals to hide or cover up any disease or problem that may arise," he says. "They don't want to look sick or injured to potential predators. This makes our job even harder, and places greater importance on x-ray techniques to find some of these hidden medical problems."

X-rays recently have played key roles in radiation therapy on a python with a malignant tumor and the search for a cure for lung mites in exotic monkey species. A pulmonary disease caused pneumonia in some of the monkeys, and lung damage due to mites was found during the radiological diagnosis of the cases. Radiation therapy on the python helped extend its life by stopping a cancerous tumor in the mouth, although some cancer had spread to other organs and later caused death.

X-rays also have become increasingly important in the zoo's dental work. Radiographs are used by a dental team, headed by David Fagan, D.D.S., dental consultant to the zoo, to study gums, bone and teeth structures in almost all new animals that arrive. They also are used regularly in complex repairs such as root canal work.

"The degree of oral or dental health of an animal greatly affects its overall health status," Dr. Robinson notes. "Teeth have other important functions aside from chewing food. Lemurs, for example, use their modified lower incisor teeth as a comb for grooming; tusks in

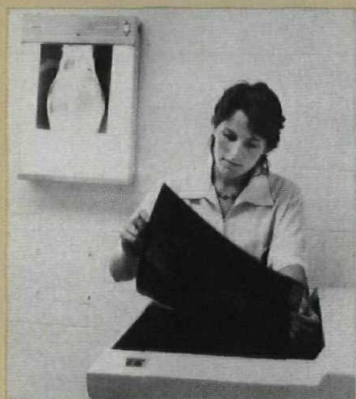
hippos and canine teeth in tapirs and some primates are used for behavioral threat displays and for fighting; carnivores use their teeth to pick up and to move their babies, as well as to catch and to eat prey. And without teeth, many animals are unable to survive, even with the assistance of special diets."

"X-ray studies of these animals help to assure their best possible dental health, and provide the veterinary staff with case studies that can be applied to future dental work. While actual tooth sizes are a significant problem, the varieties of tooth shapes, adaptations, and mechanical function hardly have begun to be studied from an anatomic viewpoint, much less in terms of clinical dentistry. However, we are confident that x-rays will help us set new trends and obtain new knowledge of even the most exotic species."

Drs. Robinson and Fagan modified the essential components of a modern dental office to adapt to the varied circumstances associated with clinical veterinary dentistry. The finished product is, perhaps, the world's only complete mobile veterinary dental care unit.

In addition to providing medical care for the captive animals at the zoo and the Wild Animal Park, the veterinary staff frequently treats a variety of injured native wildlife brought in by the California State Department of Fish and Game. The cooperative relationship between the state agency and the zoo has led to care for sea lions, deer, bighorn sheep and even desert tortoises. Most of the maladies involve wing and leg injuries to birds of prey, and almost all treatment is preceded by x-ray studies to show breaks or gunshot wounds unseen by human eyes.

Animals are then treated and released to the Department of Fish and Game, where they are set free, or placed on one of California's several wildlife rehabilitation centers before being returned to the wild.



FILM PROCESSING — Holly Downes, hospital assistant at the San Diego Zoo, checks a radiograph. Automatic processing enables Zoo veterinarians and technicians to check radiographs immediately after a two and one-half-minute processing cycle. This, in turn, reduced anesthesia time for animals who have been anesthetized prior to x-ray film exposures.



CHECKING RADIOGRAPHS — Dr. Robinson, checks radiographs with Terry Willingham, an animal health technician at the San Diego Zoo.



HOLDING SKULL — Dr. Robinson holds the skull of a baboon in the San Diego Zoo's veterinary library. A massive tumor that killed the animal is clearly seen in the left jawbone area. The zoo staff is creating a library of skeletal materials to increase knowledge of the many exotic animals among the zoo population.



BEFORE X-RAYS — Dr. Robinson, director of veterinary services at the San Diego Zoo, prepares a red tail hawk for an x-ray exposure to help locate a break in his left wing.

in the NEWS



"Frankie" (Francine Gruetker, left) looks pleased as "Louise" (Samuelle Eskind, right) brushes her properly

Photo by Susan Brooks

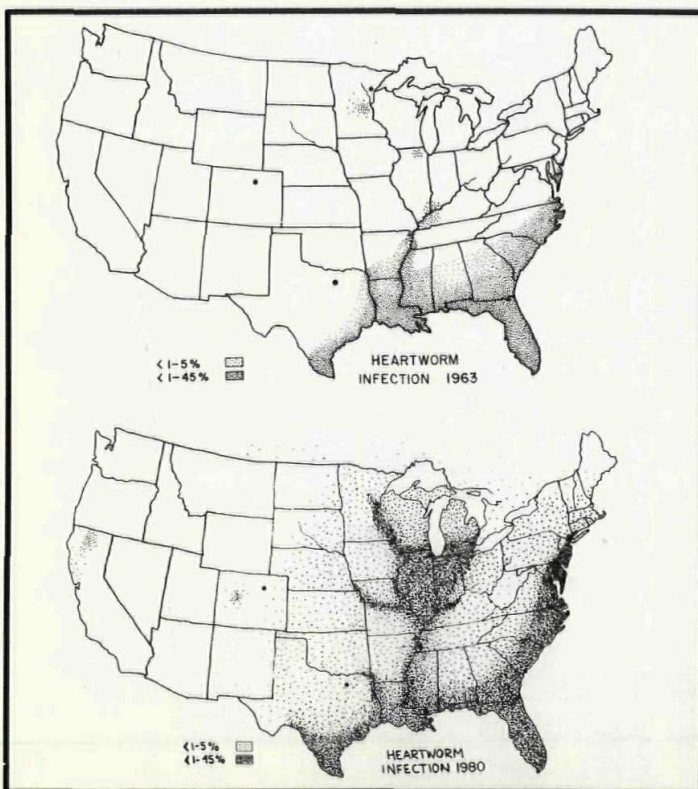
ENTERTAINING SKITS TEACH PROPER PET CARE

Bide-A-Wee, in cooperation with the Affiliated Dog Training Center, has launched what is believed to be a new and unique concept in humane education programs for children.

Through the use of entertaining and amusing skits children are being taught responsible pet ownership. Younger children are made aware of proper pet care by watching the antics of "Uh-oooh" the clown and his canine friend, Muffin. For older children there's "Frankie" (Francine Gruetker) and "Louise" (Samuelle Eskind) . . . the children watch as a talking dog — "Frankie" in a dog costume — tells "Louise," his owner, the right and wrong ways to care for and handle a pet.

Topics covered include proper feeding of puppies and dogs, the correct way to handle and walk a dog, basic dog grooming and care, neutering, the importance of veterinary checkups and necessary inoculations, local leash, licensing and dog litter laws, and a general discussion on do's and don't's of pet ownership.

What makes this program so unusual is that, unlike films or classroom demonstrations, the skit format allows the children to relate and respond more directly to the material being covered. They don't become bored and



Schaumburg, Ill. — The mosquito may be a pest to humans, but to dogs the mosquito is a potential carrier of death, warns the American Veterinary Medical Association and the American Heartworm Society.

Canine heartworm disease was once confined to the Eastern Seaboard and Gulf State regions. The disease is now known to exist in every state east of the Rocky Mountains, several areas in the Pacific Coast region, and Canada. In most areas where there are mosquitoes, there is danger of canine heartworm disease.

Mosquitoes carry the disease from dog to dog. When a healthy dog is bitten, infective larvae develop under the skin and ultimately penetrate a blood vessel and migrate to the heart and adjacent arteries. Adult heartworms, which can grow as long as 14 inches in length, block the flow of blood to the lungs and interfere with heart valve action. An infected dog develops shortness of breath, coughing, weakness and eventual cardiac collapse. This disease also affects the dog's lungs, liver and kidneys, allowing poisonous wastes to build up in the blood.

Canine heartworm disease, a health threat to the nation's dogs, has spread to nearly 42 states since 1963, according to the American Heartworm Society. The disease, which is transmitted by mosquitoes, can cause extensive organ damage and even death if not detected and treated.

are involved in the action to such a point that by the end of the skits they are able to participate verbally and state what's right and wrong.

Bide-A-Wee Home Association is a non-profit animal welfare organization whose main function is to find new homes for dogs and cats that can no longer be kept by their owners. Bide-A-Wee Home Association's main address is in New York City.

A.D.T.C., located at 1535 First Avenue in Manhattan, is a complete dog care center offering services ranging from grooming and training to "day care" for dogs whose owners are away at work all day.

Bide-A-Wee and A.D.T.C. are offering these humane education programs in the belief that responsible pet ownership must be instilled at as early an age as possible. Hopefully by educating today's children — the adults of tomorrow — problems for at least some of the world's animals will be avoided.

The programs, which are held at A.D.T.C., will be offered on a continuing basis. Schools and youth groups interested in participating should contact Don Graf at A.D.T.C., 212/734-6534.

Five to nine months may pass before these signs are noticed by the dog owner.

In its early stages, heartworm disease can usually be detected by a blood test. Sometimes a veterinarian must use x-rays, repeated blood examinations or other laboratory tests. Veterinarians can advise owners when a test should be given.

If a dog is free of adult heartworms, a preventive medication can be prescribed.

Most affected dogs can be treated successfully if the disease is diagnosed in time. Drugs are available that will kill the adult worms.

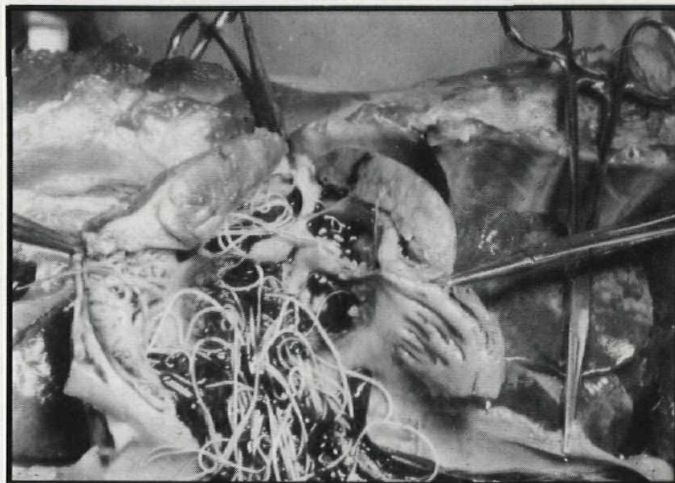
The test for canine heartworm disease should become a regular part of the animal's annual health check-up, especially in areas where mosquitoes are prevalent.

For more information, send a self-addressed, stamped business size envelope to: American Veterinary Medical Association, 930 North Meacham Road, Schaumburg, Illinois 60196, and ask for the free brochure, **What You Should Know About . . . Canine Heartworm Disease.**

Los Angeles — February, 1980 — Tony L. Kirk, DVM, long-time practicing veterinarian and president of the Southern California Veterinary Medical Association, announced today the beginning of a concentrated national campaign to inform better the professional dog-owning public about recent advances in the canine health and physiology research field, via his newly formed publication, CANINE UPDATE.

Says Dr. Kirk, "The professional dog fancier, and by that I mean anyone dedicated to the betterment of a particular breed through controlled breeding and championship competition, has for too long been dependent solely upon the major dog-oriented magazines and breed publications for all information from the fast-moving canine research field. In all other areas, such as show dates and information, canine-related legislation, 'source' material and goings-on within the fancy, the existing publications are superbly suited, but by their very nature they can't hope to provide the nearly instantaneous response time of a newsletter such as CANINE UPDATE."

In launching his new publication, Dr. Kirk speaks not of competition with other dog magazines, but rather of cooperation: "We compliment each other. We serve much the same audience, but we answer different needs. By concentrating on our own strengths and working together I foresee a great future ahead for all who work with and enjoy dogs."



Canine heartworms infest your dog's heart, as shown in the photo. These long, white worms, called *Dirofilaria immitis*, can grow to adult size (6 to 14 inches) in about 5 to 6 months. Extensive organ damage and even death may result if the disease is not detected and treated.

Courtesy of American Veterinary Medical Association

HOW SMART IS YOUR DOG?

by Dr. Ian Dunbar



Photo by D.M. Diem

One of the most commonly asked questions about animal intelligence is "Which is more intelligent, a cat or a dog?" Perhaps the greatest problem in assessing relative intelligence is devising a test which is equally suitable for both animals. The difficulties lie in the establishment of non-biased terms of reference, i.e., whether to make the comparison in terms of cat intelligence or dog intelligence. A cat would certainly excel in a tree climbing test, whereas in a sheep herding competition a dog would no doubt be superior. These sorts of comparisons are, of course, meaningless. A cat is not a dog. Cats and dogs have evolved so that they are best suited for their own particular ecological niche, and as such the sensory and motor components of their behavior are tailored to perform in ways that are relevant to their natural situations. Many of the so-called 'intelligence tests' are dependent on sensory abilities, physique and learning from past experiences.

To the same extent, similar problems are encountered when attempting to measure breed differences in intelligence. For instance, there would be little point in comparing the performance of two breeds trained to retrieve an object from a table if the dogs are a St. Bernard and a Chihuahua and the table is four feet high. A ridiculous example? Not really, some people are still intent on making such comparisons.

A fairly common alternative is to compare cats and dogs in terms of human intelligence. This type of comparison is equally meaningless. A cat is not a dog, and neither cats nor dogs are human. The intelligence of dogs should be measured, if at all, in terms of their ability to adapt to and make the most of their immediate physical and social environment, rather than involving the solution of 'man-made' problems, which an animal would certainly never encounter in its natural surroundings.

At a southern college in the United States, an experiment was designed to compare the maze-learning performance of white rats and college sophomores, who followed the maze with their fingers. The rats learned

the maze three times faster than the sophomores. Surely no one would interpret these data to suggest that rats are more intelligent than college students. College sophomore's fingers are not used to maze running. It has little adaptive value for them. For rats, however, it bears some direct relation to their natural habitat. Rats live in mazes and rapid maze learning is an extremely adaptive trait. It would obviously be unfair to measure human intelligence in rat terms and similarly, there is little value in measuring animal intelligence in human terms.

Another way that dog owners often go astray when trying to assess the intelligence of their pet is that the examples on which the assumptions are based are not representative of the entire behavioral repertoire of the dog. Instead, they are merely isolated anecdotes. Anyone may convince himself that dogs or worms have a comparable intellect with humans, if only brief behavioral episodes are selected which seem desirable as instances of intellectual functioning or reasoning. (However, by the same maxim, it would be easy to prove the absence of reasoning in humans).

The validity of anecdotal evidence may be questioned for several reasons. It is difficult to be sure of the events that lead up to the particular 'remarkably intelligent' behavior. Often the preceding history is unknown or at the least, obscure. In addition, inaccuracies may occur when observing the behavior. Even a trained observer exerts some bias when observing his pet dog, which of course is the brightest star that ever coursed the heavens. More unreliable though, is the interpretation of the facts at hand. There may be a variety of suitable explanations and it is impossible to say which is correct in any given situation. For example, a dog owner might return home to find that the waste paper basket had been overturned and our amazingly intelligent canine friend had relieved himself right in the middle of the papers strewn on the floor. The owner (after recovering from the shock) assumed that the dog had surprised himself with a full rectum, and knowing that he could

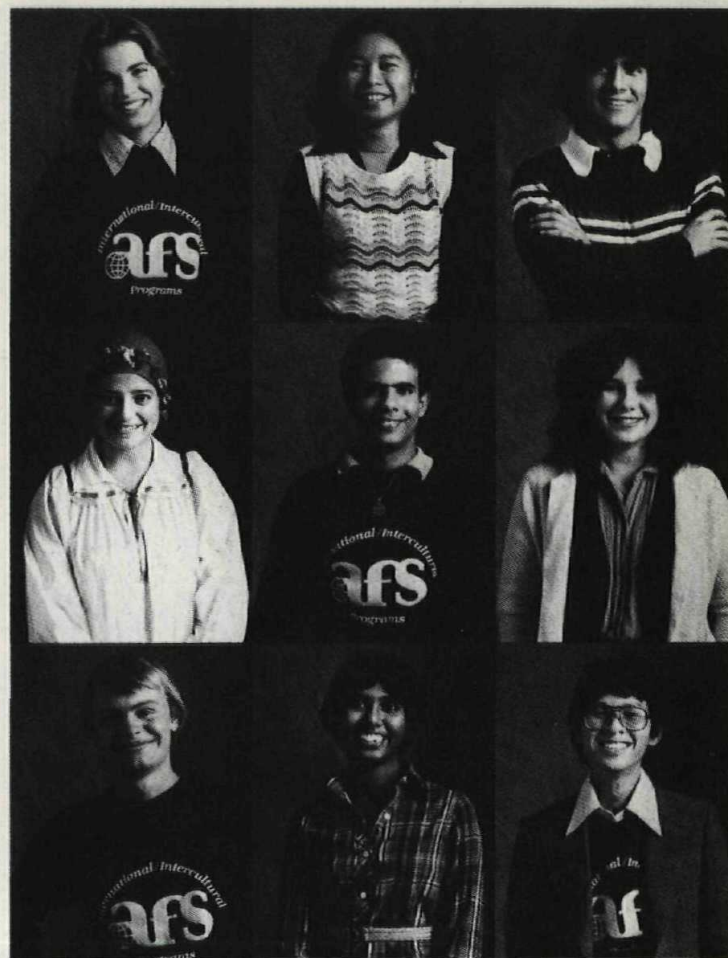
not get out of the house, cleverly reasoned that he would find some paper to protect the Navajo rug from fecal contamination. When there are several possible interpretations, it might be more astute to adopt the most parsimonious. What could be an alternative explanation for the above example? Perhaps the dog inadvertently knocked over the waste paper basket while playing? Perhaps he felt the need to relieve himself? Perhaps he stepped on the paper? Perhaps he had been paper-trained as a puppy and the combined stimulus of feces in rectum and paper underfoot caused the dog to defecate? A great many 'perhapses,' but then that is the trouble with anecdotes.

Then of course there is the classic example of Hans, the clever horse, which was owned by Herr von Osten in Berlin. Hans could solve very complicated mathematical problems which were written on the blackboard, and Hans would stamp out the answer with his hoof. Hans was not infallible. He would sometimes make an error, but the percentage of correct responses was truly amazing, and many people were convinced of Hans' outstanding equine intellect. However, it was found that if Herr von Osten was absent during the test period, Hans would be incapable of solving even the simplest arithmetic. Instead, he would continue stamping his foot far beyond the answer of the problem. It seemed that Hans was not so clever after all. He had simply learned to commence tapping when the problem was presented and to stop tapping in response to some involuntary signal given by his owner. Herr von Osten was not a con artist, but he was understandably anxious for Hans to succeed and hence was extremely tense during the performance. When Hans had given the correct number of taps, Herr von Osten would show very slight signs of relief, which Hans was capable of perceiving.

How then does a dog think? Although there is little evidence to suggest that they are capable of thinking and reasoning, it is impossible to say that they do not. If they do, however, it would be a very intangible and abstract kind of thought without any words, which is as difficult to imagine as it is to describe. It would be a rudimentary thought system of sensory impressions and feelings and perhaps some elementary canine symbolism of smell, tail-wags and ear positions.

Consider one final example of a dog that could operate a food vending machine. A dog was trained to press a lever on the side of the box in order to receive a food biscuit that was dispensed in a food chute. However, if the box was rotated through ninety degrees, the dog would continue to make pawing motions on the side of the box where the lever used to be, although the lever was still in full view only a couple of inches away. This example illustrates an important principle. The dog had not learned to press a lever, but instead had been trained to make pawing movements at a particular point in space. The dog was relying on different senses from those a human would use attempting to solve the problem. To the dog, the precise location of the pawing movements was more important than the actual lever. It took several trials with the vending machine in a variety of positions before the dog learned that the lever was the key to the dog biscuits.

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THE THINGS THEY SAY ABOUT PETS

Continued from page 7

If dogs could talk, they wouldn't make such good friends.

John Titus

A dog looks up to a man, a cat looks down.

Noel Armstrong

I might have been a goldfish in a glass bowl for all the privacy I got.

Saki

A dog's best friend is his illiteracy.

Ogden Nash

I beg you beware of giving your heart to a dog to tear.

Rudyard Kipling

Never stare at a dog; he thinks it's a challenge.

David Wilkins

There is no faith which has never yet been broken, except that of a truly faithful dog.

Konrad L. Lorenz

Dogs have more love than integrity. They've been true to us, but they haven't been true to themselves.

Clarence Day

The dog was created specially for children. He is the god of frolic.

Henry Ward Beecher

The idea of calm exists in a sitting cat.

Jules Renard

Cats seem to go on the principle that it never does any harm to ask for what you want.

Joseph Wood Krutch

I love cats because I love my home; and little by little they become the living soul of it.

Jean Cocteau

Animals are such agreeable friends — they ask no questions, they pass no criticisms.

George Eliot

Our dogs will love and admire the meanest of us, and feed our colossal vanity with their uncritical homage.

Agnes Repplier

When I play with my cat, who knows whether she is not amusing herself with me more than I with her.

Michel De Montaigne

A dog will never forget the crumb thou gavest him, though thou mayst afterwards throw a hundred stones at his head.

Sa'di (1258)

If 'twere not for my cat and dog, I think I could not live.

Ebenezer Eliot

The cat will mew and the dog will have his day.

William Shakespeare

Cats like silence, order and quietness and no place is so proper for them as the study of a man of letters.

Theophile Gautier

Cat: A soft, indestructible automaton provided by nature to be kicked when things go wrong in the domestic circle.

Ambrose Bierce

When a dog runs at you, whistle for him.

Henry David Thoreau

Give me a cat of character, and we will mature together.

Joseph Wood Krutch

When a cat is alone she never purrs.

Dr. Samuel Johnson

Cats, like men, are flatterers.

Walter Savage Landon

Every dog has his day.

George Borrow

Collected by DAVID GUNSTON

POETRY CONTEST OFFERS \$1000 PRIZE

A \$1000 grand prize will be awarded in the Poetry Competition sponsored by the World of Poetry, a quarterly newsletter for poets.

Poems of all styles and on any subject are eligible to compete for the grand prize or for 49 other cash or merchandise awards.

Says contest director, Joseph Mellon, "We are encouraging poetic talent of every kind, and expect our contest to produce exciting discoveries."

Rules and official entry forms are available from World of Poetry, 2431 Stockton Blvd., Dept. N., Sacramento, CA 95817.

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Research Projects Receive Donation from Animal Health Foundation

Two research projects recently received partial funding by the Animal Health Foundation. The first project headed by Dr. Stanley Creighton of the Brentwood Pet Clinic of West Los Angeles will study the disease of diabetes mellitus as it relates to the unstable diabetic dog. Diabetes a disease considered until recently as a simple deficiency of insulin may also have a deficiency of a second hormone known as glucagon. Dr. Creighton a board certified specialist in veterinary internal medicine believes the understanding of the relationship between insulin and glucagon in the diabetic dog may lead to a breakthrough in the management of the unstable or hard to manage diabetic person or dog.

The second project headed by Dr.

A.S. Randhawa of the Abby Animal Clinic in Beaumont, California is studying the possibility of a widespread canine bacterial disease existing in cats. The disease known as *Brucella canis* causes major breeding problems (infertility) in dogs. Experimental *Brucella canis* infection has been reported in laboratory mice, guinea pigs, rabbits, red foxes, and monkeys. *Brucella canis* infection in cats has only been studied to a limited extent. Dr. Randhawa believes this work will improve the diagnostic index of veterinarians for the diagnosis of *Brucella* infection in cats.

Additional financial support for these research projects is direly needed. Please send donations in care of the Animal Health Foundation. All donations are totally tax deductible.

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