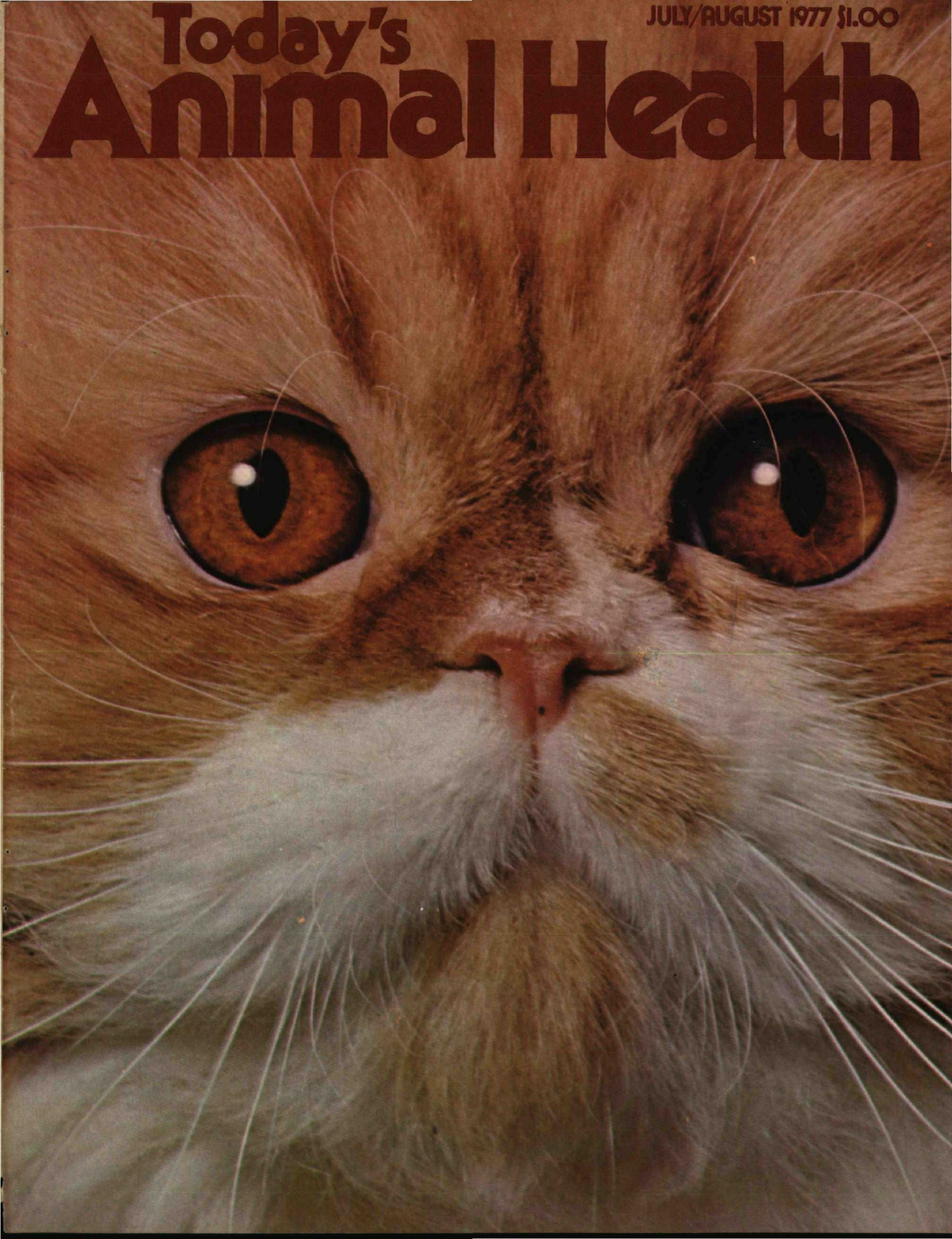


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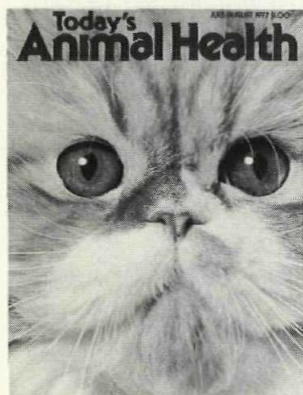


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dialogue



Our plant-eating beagle, Rudy, is occasionally thrown in the slam for eating my wife's roses.

The penalty is not, however, a matter of indeterminate sentencing: Periods of confinement in this 5' x 40' run are determined by the number of plants consumed; he also has food and water during his incarceration.

It isn't hard to catch him in this chin-on-paw pose because he spies on the back yard in this manner during the greater part of his confinement periods. Thought you might like the photo for your excellent magazine.

Dan Cotterman
La Habra, California

I'm with you 99-44/100 percent of the way. The other 56/100 comes in when you agree with people like Betty Evans, who object to fur coats.

When you object to captured endangered species for fur--I'm with you. However, when you stretch this to include RANCH GROWN FUR ANIMALS, I object. Whether animals are raised for meat or fur is the farmer's affair. A crop is a crop is a crop, etc.

Dave Goodman
Odenton, Maryland

IT'S THEIR JOB TO KEEP A WATCHFUL EYE ON ZOO ANIMALS



United States Department of Agriculture
Office of Communication

A U.S. Department of Agriculture veterinarian and a representative of the Baltimore Zoo are shown checking a black panther. USDA makes twice-yearly unannounced inspections of zoos to make sure they are providing a level of care that keeps animals healthy and functioning normally.

USDA Photo by Charles D. Herron

Washington, D.C. - The elephant is ankle-deep in mud. The hippopotamus has blood on his back. The lion is strolling down main street. The monkey has a red swelling on its buttocks. The hyena is throwing up.

Trouble at the zoo? Could be--but, then again, maybe not.

There's a lot of interest in zoo animals, according to Dr. Keith Sherman, the government veterinarian who handles zoo animal care for the U.S. Department of Agriculture (USDA). His office in USDA's Animal and Plant Health Inspection Service (APHIS) licenses and inspects the 200 major zoos in this country, along with many smaller animal exhibits.

By law, zoos must provide a level of care that keeps animals healthy and functioning normally. To check this, APHIS makes twice-yearly unannounced inspections. Inspectors look at the housing of zoo animals--the buildings, the cages, and proper separation of incompatible individuals.

They also look at the quality, quantity, and frequency of feeding and watering, and cleanliness of the food handling and dishes. They inspect the environment--like shelter for animals kept outdoors, sanitation, drainage and ventilation. And, they examine veterinary care and handling of animals.

APHIS keeps up with what happens between inspections by monitoring personnel records to see if the zoo has adequate staff working throughout the year. Exhibitors must have competent animal keepers who work under the direction of a veterinarian. APHIS inspectors also look at animal records to note how well disease and injury is prevented

and controlled. And they review kitchen records to see if menus are adequate and nutritious.

And . . . inspectors check out complaints from the public. Some of them prove to be merely misunderstandings, Dr. Sherman says. For example, the "bloody" hippopotamus was just sweating. This type of hippo's sweat is naturally red.

The chimp with the bulbous red rear was just a female showing normal signs of the breeding season, Dr. Sherman says. And the hyena, like many meat-eating animals, throws up food at times to feed her young. That's the way a weanling gets started on solids.

The lion on the loose, however, was real, not just a bad dream. On APHIS's complaint, the owner got a severe warning from a federal judge to keep better cages--even though the lion was trained, and well-behaved during his stroll. And the elephant ankle-deep in mud got relief by way of an APHIS order to his owner to either drain the manure and standing water from the pen or close the exhibit.

How can a zoo goer distinguish an animal's natural peculiarity from a real problem? Dr. Sherman suggests talking to the animal caretaker or his boss, the zoo keeper or curator. A tactfully worded inquiry usually gets the peculiarity explained or a problem corrected.

In the meantime, APHIS inspectors are regularly checking on care for zoo animals. If deficiencies are found, they are brought to the attention of the zoo to be corrected. If action is not taken to correct the problem, the government can impose a fine, get an injunction, or even close the zoo.

ask Dr. Smithcors

Q Where do dogs and cats get tapeworms?

A Tapeworms have a life cycle requiring an intermediate host, which for the most common types are cat and dog fleas. Tapeworm eggs in segments, passed in cat and dog feces are eaten by flea larvae, and the infective stage is attained in the adult flea. Dogs and cats become infected by ingesting fleas when they groom themselves, or when the fleas fall into feeding dishes. Tapeworm infections are notoriously difficult to cure, so the old adage about an ounce of prevention really applies. If you keep your pet from getting fleas, you will also greatly reduce the chance of his getting tapeworms. Intermediate hosts for other species of tapeworms include small rodents, rabbits, fish, lizards and even domestic animals. If your pet roams freely and is a hunter, there isn't much you can do to prevent infection, but the food you supply should not include raw meat or fish, especially if it has not been inspected.

Q My cat sleeps on the color TV. Will it get radiation poisoning?

A I haven't heard of this happening, and offhand, I'd be inclined to say it isn't likely, but it is risky to make generalizations when dealing with a particular situation. Some color TV sets have been known to leak radiation, and the chance of this increases if they are not properly maintained. Your cat is probably less interested in what's on the tube than in the warmth it supplies, so you might consider providing another warm spot and blocking access to the TV. A heavy aluminum cookie sheet will

filter out a considerable portion of the radiation, if any is occurring.

Q What should I feed a desert tortoise?

A Tortoises are vegetarians and will eat lettuce, tomatoes, dandelions, clover, apples or any succulent garden plants. They will do best if the diet is varied. Some will eat bread, but this should be allowed only sparingly. Water should be available at all times, especially when they are coming out of hibernation.

Q Will it hurt my dog if he eats raw eggs?

A Raw egg white (not the yolk) contains a substance called avidin that combines with biotin (a member of the vitamin B₂ complex) and makes it unavailable, although some biotin is synthesized in the intestine. Signs of biotin deficiency include dermatitis, hair loss and poor growth, but long before this occurs your dog would show direct effects of the raw egg white. In dogs weighing 12 to 15 pounds, a single raw egg has produced no ill effect, but two caused the feces to soften, and four or five caused diarrhea. But heating destroys avidin, and cooked eggs are the best possible source of high quality protein.

Q Can human lice live on a dog?

A Yes! Like other parasites, lice tend to prefer their particular hosts, but they will take what they can get. An interesting case reported in the veterinary literature concerns a dog with human crab lice acquired by sleeping with his infested owner. Generally such wanderers will return to their own host if given the opportunity.

POMERANIAN BREEDER WILLS \$58,000 FOR CANINE BIRTH CONTROL STUDIES

Ms. Catherine Stofft, a Pomona, Calif., Pomeranian breeder has willed nearly \$58,000 to the Morris Animal Foundation for studies into canine birth control.

"For many years Pomeranians supported my invalid mother and myself, and both the love and sustenance received contributed more to my life than has any human," Ms. Stofft once said. Her family had imported some Pomeranians in the 1920s and developed valuable breeding lines from them.

Ms. Stofft had been concerned for several years about the overpopulation of stray and unwanted dogs, millions of which die in the wild or must be destroyed in animal shelters each year.

She earmarked her bequest for the Canine Birth Control Fund of Morris Animal Foundation, which is currently supporting such a project at Southern Illinois University and fund-

ed earlier work at Colorado State University. All told, the Foundation has spent about \$250,000 in the search for a better means of birth control for dogs.

Ms. Stofft also left portions of her estate to Guide Dogs for the Blind and the Humane Society of Pomona Valley, California.

BREAKFAST "WITH" TIFFANY

Thanks to the efforts of the Southeastern Michigan Veterinary Medical Association (SEMVMA), "Tiffany" a beautiful two year old snow leopard at the Detroit Zoological Park, has become a celebrity and her room and board have been guaranteed for another year.

The southeastern Michigan Veterinary Medical Association recently staged a large-scale press conference to announce the public debut of Tiffany and to present the Zoo with a check for \$500 to pay for her meals for another year. In doing so, SEMVMA not only assisted the

financially pressed Detroit Zoo but also stimulated public interest in the unique educational values offered by the Detroit Zoological Park.

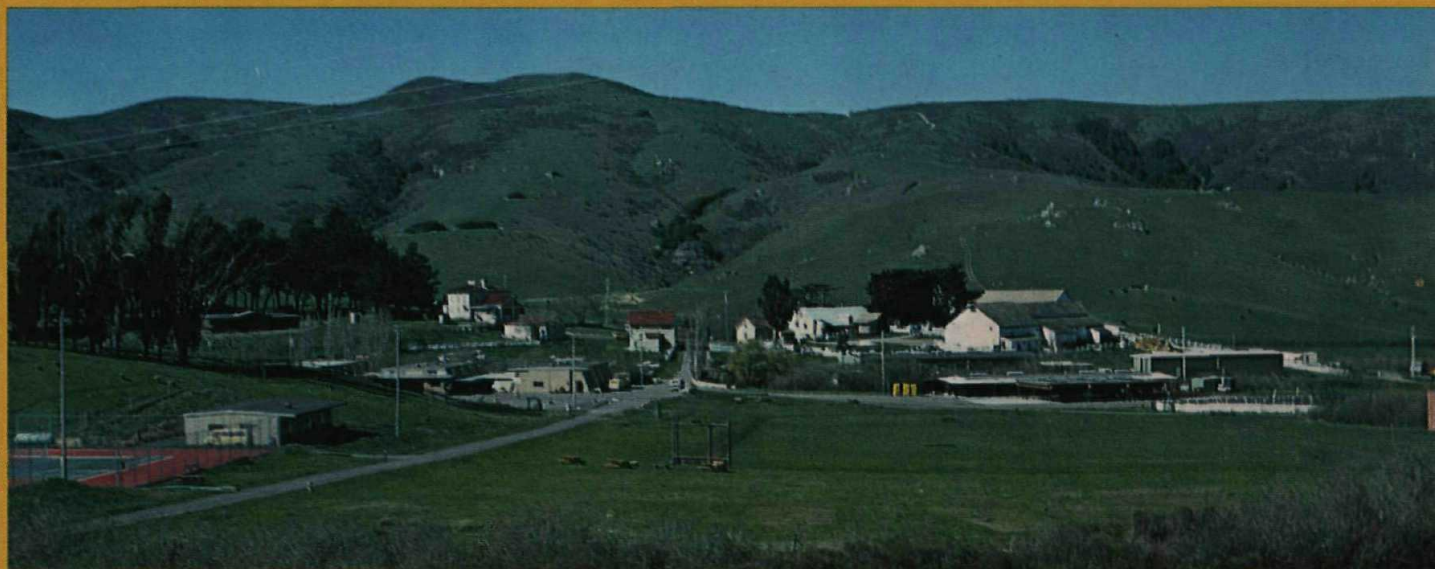
SEMVMA has helped support Tiffany since her birth in 1975. The hundred-pound Himalayan Cat was born at the Detroit Zoo in May of that year, and since then this precious animal has been kept in a special area until readied for exhibition.

All three of Detroit's major TV stations as well as the city's largest morning newspaper and suburban papers covered Tiffany's coming out party. Reporters, photographers and TV camera crews carried full details of her party and dwelt at length on the background, heritage and beauty of the rare exotic cat.

To dramatize and emphasize its efforts in the public interest and its contribution toward the support of the animal, SEMVMA had a large horsemeat cake prepared. Projecting from the top of the cake, attached to a fountain pen, was the check for \$500 contributed to the zoo by SEMVMA.

SYNANON

Building a Ranch for Healthy



Bob Salkin has been a prep school boy, a Miami tennis player and a cabana boy, a law student — and a drug addict — certainly one of the more unlikely candidates to be the manager of a 3,000-acre ranch and a budding expert in animal husbandry.

Yet, this is what Salkin finds himself doing at 31: the manager of a lush spread in the heart of Northern California operated by what might seem at first to be an unlikely organization to run a sizeable, complex operation.

The organization is named Synanon.

A community and lifestyle, a California-based nonprofit corporation, Synanon provides a new way of living for 1,400 men, women and children, most of whom came to Synanon asking for help with problems of drug addiction, juvenile delinquency and other character-disordered troubles.

But the 17-year-old community is not merely a way station for the unhappy and the alienated: instead, it is a complete way of life, an alternate lifestyle and a social experiment exploring notions of improving the quality of everyday life while helping to find answers to some of America's most disturbing social problems.

Synanon communities are located in four California locations, in Chicago, outposts in Detroit and New York, and affiliates in Berlin and Manila — combinations of urban and rural settings, all oriented toward the creation of healthy environments.

North of San Francisco, in Marin County, Synanon owns a 3,350-acre complex which blends a sophisticated, intensely diverse lifestyle with the beauty of rural, rustic countryside: green rolling hills, wind-sculptured trees, weathered buildings and peaceful herds of livestock.

But it is a most unusual ranch

precisely because of the way it looks. The sense of peace it exudes is the effect it is meant to give. In the words of Synanon founder Chuck Dederich, this is not a working ranch; it is a people ranch.

"In Synanon economics," he said, "four good hustlers (who solicit tax-deductible donations of goods, food and services throughout the country for the community) bring more beef to Synanon than we could possibly produce on this ranch. Quite obviously, it makes no sense to ranch this land in the traditional way.

"Instead, we're in the people-raising business starting with babies, little children, kids up to 18, kids over 18, 28, 38, 48 . . . We want to provide an aesthetically pleasing, psychologically pleasing, philosophically pleasing place in which people can dwell and learn and live and enjoy themselves.

"It may be that one of the

ANNOINT

Animals-and People

by Skip Ferderber

Reprinted from Fort Dodge Biochemic Review



Bob Salkin, who heads Synanon's Land and Livestock department, is seen vaccinating one of the community's 125 commercial cows.

The Synanon/Tomales Ranch in Marin County, California.

Some of Synanon's young people are checking and vaccinating cattle.



problems we have in our society is that we have somehow let go of certain ancient rhythms: agriculture rhythms, livestock rhythms and so on. These rhythms are quite possibly needed as an anchor, something to steady us out.

"What makes Sammy run?" philosophers ask. Sammy may be running because he's not tied at all to the birth of a calf.

"To get back to why we're doing this, instead of growing rose bushes and privet hedges, we have cattle and sheep. We have them because they are nice to look at. Now someday, somebody is going to eat them — maybe us, maybe somebody else. But once again, this is the point: aesthetics is prime rather than economics being prime.

"The side effect of this aesthetics is that it's a people-business ranch. We educate people, and we produce more food here than it has ever

produced. It all comes because living is prime, aesthetics is prime, the environment is prime. That's what we're after."

The ranch's peaceful facade, however, hides a beehive of activity. In its metal-framed structures and old farm buildings, it is conducting school for nearly 300 children, special structured environments for juvenile delinquents called the Punk Squad and the Boot Camp for adults, while building a community that calls for virtually every skill needed in urban and rural society — everything from carpenters to doctors. And for its youngsters and character-disordered population, Synanon offers training and apprenticeships in virtually every trade and skill.

At the same time, Synanon people live a lifestyle which liberates people from many conventional chores such as home and auto repair, cooking and even tending the

children. It also employs a work/leisure schedule, called the Cube, which, by doubling up on work hours, allows most Synanon people to have nearly 26 weeks off a year.

But most important is the sense of family that is part of the lifestyle, engendered in no small part by a communications exercise called the Synanon Game, a forum for conversation and information that allows people to speak their subjective truths to each other on personal and community issues without regard for titles, rank or position.

It is this unvarnished expression, conducted in a totally safe session which allows no retribution "outside" of the game, which is at the heart of Synanon's success.

Synanon's countryside and livestock is Salkin's province. As head of the community's department of Land and Livestock, he is responsible for all

continued on next page

SYNANON

agriculture as well as 125 commercial cows and their calves, 200 ewes and lambs, 30 registered Angus cattle and 12 horses. None are raised for outside sale; all livestock is slaughtered and eaten by Synanon residents to supplement the community's meat needs. The operation is run by a staff of 15, virtually all of whom were trained in Synanon.

Salkin is also Synanon-trained and somewhat of a livestock convert to the livestock world. By his own admission, he could not tell a steer from a heifer only a few years ago. The son of a well-to-do Miami Beach attorney, he started using drugs in college and graduated to heroin shortly after he entered law school at the University of Tennessee.

"I was about to approach the bench from the wrong side of the bench," Salkin quips.

His parents brought him to Synanon in June of 1971. Shortly thereafter he went to work in the Supply Department and was soon specializing in hustling livestock throughout the country, aided by a network of feedlots and shippers which would dress and ship the cattle to the West Coast.

But Bob foresaw a vision of Synanon raising its own cattle. He read a book, "Cowboy Economics," and made a series of recommendations to Synanon founder Chuck Dederich regarding the future possibilities of a Synanon cattle operation.

And then one day, because of his demonstrated interest in land and livestock, the community's management asked Salkin if he would be interested in the job of running the operation.

"I was stunned," he said. "I really knew nothing about how to do it, nor what I was getting into." But the Synanon community is an unusual place. It allows people to learn on the job and take on responsibilities which by far exceed their grasp. And so it was with Salkin, who was forced to undertake a crash program in animal husbandry and other aspects of farming in order to



Debbie Garrett is busy vaccinating Synanon's cattle.



Petaluma, California veterinarian Don Hansen does a pregnancy check on one of Synanon's cattle.

run the complex operation.

If he is successful, he says, it is because of the experts he has been able to contact who have helped Synanon out in its ranching endeavor. One of them is a veterinarian, Don Hansen of Petaluma, a livestock specialist who has been instrumental in helping nurse the herd through various ills during the two years he has been Synanon's vet.

"We have the herd on a herd-health program," said Hansen, "a full preventive disease program. We've gone through a couple of disease battles: pneumonia, clostridium. We also have an abortion problem, but we never identified the agent."

The herd is now on a vaccination program, Hansen said and

Synanon is also experimenting with implanting calves with zeranol, an anabolic agent, which will hopefully induce extra growth in calves. Ninety per cent of the herd is being inoculated, with the remaining ten per cent as a control group. It is the first time the treatment has been used in this part of the country, he said.

The first year and a half has been quite a learning experience for Salkin: "I was always getting caught off base," he said. "Now, I'm better equipped, but this is the only place that a guy like me would get a chance to manage an operation like this."

His staff was similarly equipped: "We never had experienced people to inspect the cattle, to say that this one had worms or this one needed further medical attention."

But the staff, mostly people under 25, is learning the full range of cattle-raising activities. Some of them have taken college courses, but most have learned on the job.

Involvement in livestock, however, goes beyond merely raising cattle. The art of animal husbandry is a regular part of the education of Synanon's children. And some kids have taken on the care of Synanon's Angus herd, one of which was the 1975 Reserve Champion at the California State Fair.

Veterinarian Hansen seemed to be impressed with the Synanon people he had met who were involved in animal husbandry. "The people I worked with seem to be very bright and anxious to learn most of the time. Their biggest problem is their lack of experience. It would be anybody's problem."

Salkin looks forward to the day when he and his crew are fully developed experts on animal husbandry. "We now castrate and de-horn our cattle and dock and castrate the sheep. But our main purpose is, as Chuck Dederich says, to help get people back into the rhythm of life. Most of our people come here without much in their life, with sort of a hole in their personality. This helps to fill it."

CONTROLLING INTERNAL PARASITES of HORSES

J. H. Drudge, Department of Veterinary Science,
University of Kentucky; Bonnard L. Moseley, School of
Veterinary Medicine; and Melvin Bradley, Department of
Animal Husbandry, College of Agriculture

Tips for internal parasite control

- Don't feed on the ground
- Pile manure before spreading
- Worm periodically
- Control flies
- Clip pastures

Reprinted courtesy the University of Missouri - Columbia Extension Division

More than 150 types of internal parasites are known to infect horses. From a practical standpoint, the most important ones are strongyles, ascarids, pinworms, and bots. **The digestive tract, or stomach and intestines, is the most commonly affected area**, although larvae migrate through all tissues of a horse's body.

Every horse is infected by one or more of these parasites and for this reason should be on a parasite prevention and control program. A general knowledge and understanding of the nature of these parasites and their development is essential before necessary prevention and control measures can be effectively applied.

Internal parasites occur widespread, and unless control measures are practiced, **they are likely to increase and cause severe injury or death of the horse**. Injury or harm inflicted on the horse is related to (1) **the kind of parasites**, (2) **number involved**, and (3) **the time over which the parasites are acquired**.

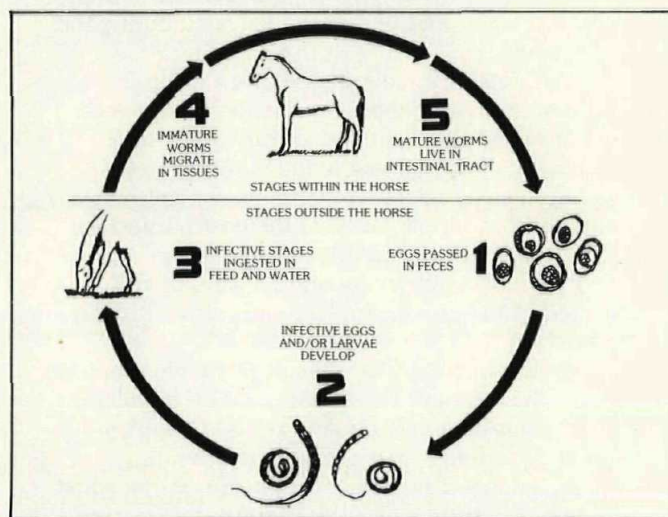
Strongyles are the most injurious, whereas ascarids, bots, and pinworms are generally less harmful. A few parasites may be tolerated by the horse without apparent signs of ill effect, but larger numbers are quite apt to be harmful. Acquiring a large number within a few days may overwhelm and kill a horse, however, getting the same number over a period of weeks or months is generally much less harmful.

Horses affected the most by parasites are young sucklings or weanlings and yearlings. Generally speaking, ascarid and pinworm infections are problems restricted to young horses. This is because resistance or immunity is built up by the time a horse is two or three years old, in most cases. On the other hand, strongyles and bots affect horses of all ages. Even so, the young are much more severely affected than older horses. The table on page 12 gives a brief outline of the location, ages affected, injury and symptoms.

LIFE CYCLES

Each species of parasite has a specific life cycle. Fortunately, from a control and treatment standpoint, the four species are rather similar. They involve five stages, **two of which are inside the horse and three on the ground**. Since all of the parasites pass out in the droppings, controlling the manure goes a long way toward ridding the horse of parasites.

The general life cycle starts with stage one where the eggs are passed out to the pasture; in stage two they are hatched and become infective; in stage three they have crawled up on grass and are ingested by the horse completing the development outside the animal. Stage four is the migration of immature worms through the tissue. Stage five is the reproductive stage where mature worms have occupied the intestinal tract.



General parasite life cycle—including strongyles, ascarids, and pinworms.

Strongyles; Strongyle eggs (Stage 1) leave the horse via the feces and contaminate the ground, paddock or pasture. Under optimum conditions, strongyle eggs hatch and develop into infective larvae in one week (Stage 2).

These larvae are encased in a thin skin or sheath which protects them to some extent from the

continued on next page

CONTROLLING INTERNAL PARASITES of HORSES

A LOOK AT THE MOST COMMON INTERNAL PARASITES

	LOCATION	AGES AFFECTED	INJURY & SYMPTOMS
1. Strongyles	a. Larvae - arteries, liver and gut wall b. Adults - large intestine	All ages but young especially susceptible.	a. retarded growth b. loss of weight c. poor appetite d. rough hair coats e. general weakness f. anemia g. recurrent colics h. death
2. Ascarids	a. Larvae - liver & lungs b. Adults - small intestine	Young under 2 years old.	a. retarded growth b. pot bellied c. rough hair coat d. digestive upsets (colic) e. pneumonia f. death (ruptured intestine)
3. Bots	a. Eggs - on hair b. Larvae - tongue c. Bots - stomach	All ages	a. excitement (by flies) b. digestive upsets c. retarded growth d. poor condition e. death (stomach rupture)
4. Pinworms	a. Larvae - large intestine b. Adults - large intestine and rectum	Larvae - all ages	a. digestive disturbances b. retarded growth c. tail rubbing

environment and they may live for several months. They are quite active and crawl up on grass or other pasture forage. Thus they become available to the horse and are consumed (Stage 3) in the grazing process. Some may gain access to water and thereby be ingested during the drinking process.

After strongyle larvae are swallowed, further development occurs but there are marked differences between large and small strongyles during this stage. (Stage 4) of the cycle. Larvae of the large strongyle (*Strongylus vulgaris*) migrate extensively within the walls of the arteries that supply blood to the gastro-intestinal tract. Hence they are commonly referred to as "bloodworms." Damage to the arterial walls by this parasite causes an "aneurysm," an enlargement of the blood vessel.

Blood clots also form as a result of the bloodworms migrating in the arteries. These clots shut off the blood supply to the intestine and result in colics. Complete blockage of the arteries may occur, and when this happens the animal dies. **Thus, *S. Vulgaris* is the most harmful and dangerous of all the internal parasites.**

Small strongyle larvae (Stage 4) penetrate the wall of the intestine. Their development causes nodule formations in the walls. This injury is relatively much less serious than that caused by large strongyle larvae but is none the less important in interfering with digestion.

Ascarids: The ascarid cycle is also initiated by the passage of eggs in the feces (Stage 1). Under favorable conditions ascarid eggs develop to the infective stage (Stage 2) in two weeks. Ascarid larvae remain in their thick, tough egg shells which are quite resistant to environmental conditions, so pastures, paddocks, and

stables may remain infested for a matter of years.

Infection of the horse (Stage 3) occurs in the act of grazing or drinking materials contaminated with infective ascarid eggs. Inside the stomach the eggs hatch and the larvae penetrate the walls. They migrate (Stage 4) in the bloodstream to the liver and to the lungs. After a short period of development in the lungs they are coughed up and swallowed. This brings them back to the small intestine where they develop into mature worms (Stage 5) and start egg production in about 10 weeks to complete the cycle.

Ascarids don't suck blood but they are the largest of the parasites of the horse, attaining lengths of 10 to 12 inches. **Masses of ascarids may rupture the small intestine and result in peritonitis, usually a fatal consequence.**

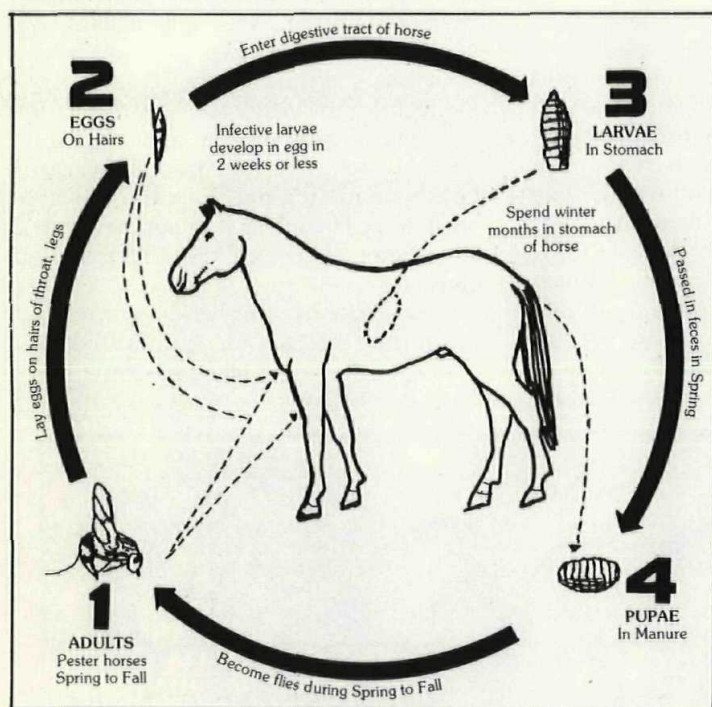
Pinworms: Pinworm eggs (Stage 1) are deposited under the tail by rupture of the gravid females, or are voided in the feces. The eggs are sticky and adhere to stable walls, fixtures, fences, bedding, etc. Development to the infective stage (Stage 2) is quite rapid, requiring three to five days. The infective eggs are swallowed (Stage 3) in contaminated feed or water or by licking and chewing on walls, fences, etc.

Larval development (Stage 4) takes place in the large intestine, without penetration and migration in the tissues. Development of mature worms (Stage 5) takes about five months. **The principal damage from pinworm infection is the irritation to the anal region caused by the egg deposits from the ruptured females. Thus the affected horse rubs his rear quarters on any available object, and this results in a loss of hair from the tail.**

Bots: The bot cycle of development is similar in many respects to that of the worm parasites. The adult bot flies attack the horse and deposit eggs (Stage 1) on the hairs, principally on the legs, chest, neck, throat and around the mouth. Development of infective larvae in the eggs (Stage 2) takes one week. These eggs hatch and the larvae gain access to the horse's mouth (Stage 3) either by active migration or when the horse bites or chews at his legs, etc. Inside the mouth, the larvae invade the tongue or gums.

After a developmental period of three weeks, the larvae emerge, are swallowed, and attach themselves to the lining of the stomach. These larvae in the stomach are commonly referred to as "bots." They remain attached to the stomach for several months. In essence, this period spent in the stomach is a mechanism for overwintering.

In the spring and summer, the bots detach themselves from the stomach wall and are passed to the outside in the feces. Thence the discharged bots burrow into the ground and pupate. After about three weeks, the adult flies emerge from the pupae to complete the cycle. In temperate regions, there is only one cycle completed each year.



Bot life cycle.

PREVENTION AND CONTROL

Sanitation and management practices should be used to assist in controlling internal parasite infections. **Remember that foals are born free of internal parasites, and the build up of their internal parasite infections is related to the degree of contact, either direct or indirect, with older animals carrying the infections.** All of the worm parasites discussed here utilize feces or manure as the means of spreading the infections by contamination of feed and water supplies or the environment.

Sanitation and management practices aid in controlling or minimizing spread of the infections. These practices assist the natural destructive forces such as sunlight and drying during transfer stages. Also, susceptible animals should have limited contact with contaminated pastures, paddocks, or stables. A check-list of sanitation and management practices that have been

found effective in reducing numbers of parasites includes the following:

1. Proper manure disposal.
 - a. Stable manure—compost before spreading on pasture, or spread on crop-land and other ungrazed areas.
 - b. Small corrals or paddocks—pick up all manure and compost or dispose as above.
2. Pasture Management
 - a. Practice frequent mowing and chain harrowing.
 - b. Avoid overstocking.
 - c. Rotate grazing as much as practicable.
 - d. **Grazing young animals separate from older horses.**
 - e. Follow horses with cattle or sheep before returning to horses.
3. Feed
 - a. Provide mangers, racks or bunks for hay and grain.
 - b. **Do not feed off of ground.**
4. Water
 - a. **Provide clean water supply.**
 - b. **Avoid sources contaminated with feces.**
5. Removal of bot eggs—clip egg bearing hairs or sponge affected areas with warm water.

TREATMENT

In addition to the foregoing practices, it is generally necessary to treat the animals with specific drugs, commonly referred to as anthelmintics, to obtain effective control. These drugs remove the parasites from the intestinal tract. Thus the treated animal is relieved of the immediate damage or injury caused by parasites, **but probably more important removal of parasites breaks the cycle.** This serves to reduce contamination of the environment with transfer stages thereby limiting the spread of the infections and protecting animals from reinfection. In most cases, it is best to have your veterinarian administer anthelmintics and to follow his counsel and advice on a parasite control program.

A number of new drugs have been developed in recent years. Some are effective against all four of the important kinds of parasites and thus are referred to as "broad-spectrum" in action. Others are most effective against one or two of the kinds of parasites and these are known as "specific" anthelmintics.

Most drugs are best administered by a procedure requiring a veterinarian's knowledge and skill, to obtain most effective action. Some of these drugs, and others, can be given by mixing the proper dose in the grain ration. When the feed method is used, **give special attention to see that the medicated grain is consumed by the animal if you expect results.**

With primary emphasis on strongyle control, some operations may require only one or two treatments per year. Whereas others with factors or circumstances favoring heavy infections may take as many as six treatments per year to maintain effective control. All horses on a farm should be included in the control program. New stock or transient boarders should be treated and quarantined for a week or so before they are placed on pasture or otherwise allowed to mingle with resident horses.

Parasitic infections are inherently insidious and tenacious. Success in controlling them must be a determined and sustained effort. A continuing battle must be waged against internal parasites, **the most common danger to the health and well-being of horses.**

In the past several years there has been a considerable amount of controversy regarding cats and leukemia.

This article is the first in a series of three articles which will deal with the problem of feline leukemia. The following paragraphs will be a sincere effort to provide the cat-owning public with accurate information about leukemia as a disease, the virus found to be associated with the disease, and its implications to cats and cat lovers.

In many ways the feline species has been a mystery to veterinarians and scientists. When a cat becomes ill, the problem of anemia is often found to accompany his illness. Anemia is the condition of not having enough red blood cells in the blood stream. This condition will make the sick cat sicker and retard his ability to recover.

Until recently, scientists felt that cats had a very sensitive bone marrow which became depressed easily and stopped producing red blood cells. This type of anemia, which was associated with illness, was classified as a depression anemia. Often these sick cats would not respond with new red blood cells even when the illness was properly treated. This kind of anemia was called a non-regenerative

anemia. These sick cats would become more and more anemic and then die. Many of these cats would show a particular disease which could be diagnosed as upper respiratory disease, feline infectious anemia, feline infectious peritonitis, or cancer.

Many other cats simply had a non-regenerative anemia and perished from weakness or secondary infections.

In the last ten years, people in the United States have literally fallen in love with the cat, adopting more and more cats as family pets. Cats have become very important patients in the field of veterinary medicine--even to the point where they have become a practice specialty. Since the demand for care and attention of cats has grown, more study has been directed to understanding this common household pet.

Blood work and laboratory tests have become very sophisticated in the field of veterinary research and medicine. More investigators started looking at the mysterious bone marrow of cats. Researchers found a virus which they classified as a C-type virus because it could incorporate itself into the DNA of the cat's own cells. DNA is the very molecule which can direct the reproduction of new cells. If DNA is changed in any way, it becomes abnormal and can cause cancer and other diseases found to be

related to the early stages of cancer. Researchers began to associate this C-type virus with the mysterious anemia of cats.

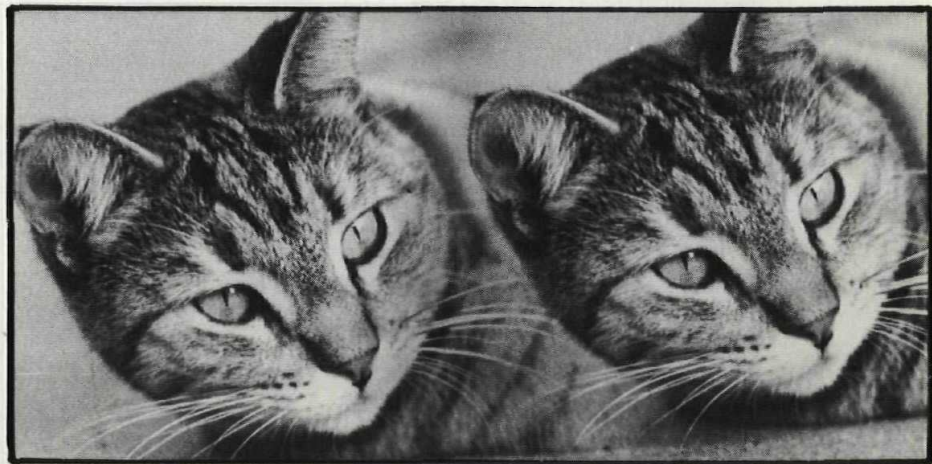
The feline leukemia virus was first discovered by Oswald Jarrett, D.V.M. in Scotland in 1964. Later in 1968, Gordon Theilen, D.V.M., isolated strain #74 of the feline leukemia virus at the University of California, Davis. Strain #74 was tested in laboratories and was found to have the ability to induce leukemia in young kittens and make older cats react with antibody production. These antibodies were especially designed by the cat's immune system to fight the feline leukemia virus in the serum. A blood test which could identify whether cats were infected with the feline leukemia virus was developed in the laboratory of W. D. Hardy, D.V.M. who is associated with the Memorial Sloan Kettering Institute, N.Y. This test identifies virus antigen (not virus antibody) by means of indirect fluorescence.

The arguments for and against the maintenance and treatment of healthy and non-healthy cats which have a positive feline leukemia test have been both very disturbing and tragic.

Dr. Hardy published papers which gave statistics for the horizontal spread of the feline leukemia virus in catteries, households and neighbor-



Photos by D. M. Diem



CATS AND LEUK

by ALICE E. VILLALOBOS, D.V.M.

hoods in New York, Boston and surrounding areas. These statistics were based upon detection of virus-infected cats using the indirect fluorescent antibody test. Somehow the technique for accurate duplication of this test was not made readily available for use in commercial veterinary laboratories across the United States until recently. Dr. Hardy also suggested that cats which happen to be positive to the feline leukemia test should be euthanized in order to stop the spread of the disease. He further suggested the possibility that this feline virus could cause leukemia in man.

The spread of the feline leukemia virus from one cat to other cats in the same household presents a definite problem. However, a fair percentage of cats may become immune to the virus after exposure. In general, older cats are more resistant than younger cats, and antisocial cats are less likely to

become infected than social cats. The virus has been found in the urine, blood, saliva and milk of infected cats. The virus can only survive a few hours in a dry environment and only for a few days in a moist environment. The virus is also easily killed with many household disinfectants.

A cat breeder has little choice but to eliminate virus positive cats from the line in order to preserve a healthy cattery. However, for the average cat-owner the choices are totally up to the individual.

Statistically, genocide of virus-infected cats in order to stop the spread of leukemia is unrealistic. Less than 8% of all cats in the United States will ever get through the front door of a veterinary hospital. A lesser percent of that small number of cats will have the virus test run on their blood. Therefore, the agonizing choice to euthanize or not to euthanize a positive cat will not make the slightest difference in the total control of feline

leukemia. Euthanasia should be a personal matter between the cat owner and the veterinarian.

Dr. Murray Gardner and his research staff at the University of Southern California have run repeated tests which fail to give any indication of human infection with the feline leukemia virus. There is not one case on record which can incriminate a cat as causing cancer in people.

The next two articles in this series will discuss the reliability of the different virus tests as they vary across the country, what these tests mean, the maintenance of a healthy, yet positive, cat and the possibility of developing a vaccine against this virus.

Editor's Note: The author will provide references if a stamped self-addressed envelope is sent to:

*Coast Pet Clinic
1560 Pacific Coast Highway
Hermosa Beach, CA 90254*



LEUKEMIA PART I

"Pets Are Pass

Those words belong to Milton H. Abram, dog fancier. But for American Airlines, they have a special significance. Mr. Abram is a senior analyst in the line cargo and baggage section of American's Passenger Services Department, and as such, he plays a critical role in determining how the airline handles pets.

Long a dog lover and currently the proud owner of two poodles, "Suise" and "Pepe," Mr. Abram brings a lot of understanding to this facet of his job.

"I know what my dogs mean to me," he says, "and I've tried to reflect this in developing our handling policies and procedures.

"Over the years, my own dogs have taken more than 200 flights to all parts of the world," Mr. Abram says, "so I know how it feels to get to the airport and entrust your pet to an airline."

When he's traveling, whether on business or for pleasure, Mr. Abram, a 23-year airline veteran, says he makes it a point to check for kennels and watch how the airline people handle them.

"The way I look at it," he notes, "it could be my own dogs they're loading."

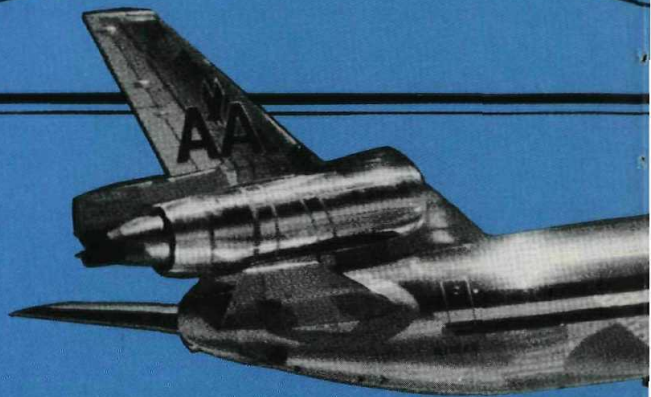
American flies more than 20,000 pets a year, most of them dogs and cats and many of them valuable show dogs on their way to competitions such as the annual Westminster Kennel Club show at New York's Madison Square Garden.

Exclusive of seeing-eye dogs, the airline allows only one kennel per cabin aboard its airplanes, so the vast majority of the pets fly in the baggage compartments, which are pressurized and heat-controlled and safely comfortable for the animals.

The first thing American suggests to pet owners is that they contact their veterinarian before making a trip to see if their pet should be tranquilized. Some animals simply travel better than others, and a tranquilizer can help.

A second vital point concerns kennels. American will not accept an animal, even for transportation in the main passenger cabins, unless it is in a sturdy kennel large enough to allow the animal to stand up and move around and breathe properly.

Passengers may use their own kennels or purchase one from the airline at the airport ticket counter. If they have a kennel, they should check to see that the screening or air holes are large enough for proper



PET IDEA -- American Airlines has sturdy plastic pet kennels available at most airport ticket counters. Pictured with three of the kennels are American Sales Representative Linda LaFever and her favorite cocker spaniel, Mr. Smith. The reusable kennels range in price from \$5 to \$33 plus tax, depending on size.

breathing, since some kennels come with air holes only about the size of a 50-cent piece. An object or piece of cloth with a familiar scent is an added comfort to the pet, Mr. Abram notes.

American's kennels come in four different sizes. All are made of strong molded plastic, are re-usable and come with an absorbant tray for animal comfort.

The smallest of the kennels is only 17 by 12 by 7½ inches in order to meet the requirement that pets flown in the passenger cabins be kept inside the kennel and underneath the seat. The unit costs \$5 plus tax. Since there is a limit of one pet per cabin and pets are accommodated on a first-come-first-served basis, it is suggested that owners reserve the spot when making their own reservations.

engers, Too."



PLAYFUL POODLES -- Milt Abram, a senior passenger services analyst for American Airlines, checks out one of the airline's kennels with his own pet poodles, "Suise" and "Pepe". Mr. Abram plays a key role in determining American's pet-handling procedures.

The other kennels are:

- * A 22-by-17-by-15-inch unit priced at \$15 plus tax for pets up to 10 inches at the shoulder and up to 18 pounds.

- * A 27-by-21-by-19-inch kennel selling for \$19 plus tax for animals up to 14 inches at the shoulder and up to 25 pounds.

- * A 36-by-24-by-27-inch unit that costs \$33 plus tax for pets up to 25 inches at the shoulder and up to 70 pounds.

The kennels can be purchased at the airport in advance or on the day of the departure and can be paid for with cash or a check (but not a credit card).

Once a pet is turned over to an American employee, the airline's stringent procedures take over.

For one thing, although most animals are flown in baggage compartments, they are not handled with the normal luggage. When possible, Sky Caps or ticket counter people carry the pet-bearing kennels to the baggage room. There, the animals are kept aside in a special area for last-minute baggage so they can be the last items loaded aboard the flight.

Before the pets are put aboard, airline people make sure the compartments are free of dry ice and certain other commodities. They also double-check on breathing room by employing a special formula that compares animal weight with the size of the baggage load and the flight's flying time in order to establish the number of pets that can be flown on the flight.

When the time comes for actually loading the plane, baggage and cargo are placed in a careful arrangement to prevent shifting during the trip and to leave plenty of space for the kennels. The kennels are then hand-carried to the aircraft and when necessary are tied down securely. They are always placed near the compartment door, though never directly against the wall of the plane, and other luggage is kept away from the kennel's front and side air holes. If there is more than one kennel aboard, the kennels are not positioned next to each other. Also, kennels are never placed inside baggage pods.

The paramount concern is that animals have enough air and breathing room during the flight, Mr. Abram said. It is for just that reason, he said, that the airline uses the special animal-weight-to-baggage-load formulas and the special rules for loading baggage.

Pressurized just as the passenger cabins are, the baggage compartments are also temperature-controlled. In 727's and 707's, the temperatures are kept between 40 and 50 degrees. The range for DC-10's and 747's is 50 to 70 degrees. In rare instances, the temperature may drop to 35 degrees, but that's still within safe limits for animals.

Temperatures, however, are not taken for granted. American regularly tests the temperature ranges of its baggage compartments from departure to arrival with special temperature testing equipment that records actual temperature fluctuations on a tape, much as an electrocardiogram tracks a heartbeat.

Once a flight is locked up and ready to go, American ground personnel at planeside radio a close-out message to the plane's captain that tells him how many pets are aboard and exactly where in the baggage area they are located.

continued on page 30

OLD DOG ENCEPHALITIS

From the University of California Medical Center, Department of Pediatrics, and the Leo G. Rigler Center for Radiological Sciences, Los Angeles, California 90024

Old dog encephalitis (ODE) is a form of inflammation of the brain which occurs in *mature* dogs, so we can define ODE as a rare disease of middle-age dogs which usually has a slow onset of symptoms characterized by a progressive impairment in their mental and motor abilities. Convulsions are rarely seen in ODE and symptoms referred to as circling, motor incoordination and "Hackney" gait is observed in the forelegs, the dog stepping high because of stiffness and hobbling in the hind legs. Some dogs with ODE fall while turning corners indicating a visual disturbance.

A brief historical review will serve to bring out some of the more common signs and symptoms which may occur when a dog is developing ODE.

Dr. D. R. Cordy's classical description of ODE in mature dogs was published in 1942. He described the details in six dogs, age two to six years. He reported on abnormal findings in the brain and spinal cord of these animals and emphasized the destruction of brain tissue about the small vessels in the brain where he observed small hemorrhages in two dogs. Cordy found that the material from dogs with ODE was not contagious. He found evidence of brain damage widely scattered throughout the central nervous system, including the spinal cord. The grey and white substances were attacked with equal intensity. (See Fig. 1.) He found virus bodies in brain cells and his studies implicated canine distemper virus as the cause of ODE in dogs.

In 1971, canine distemper virus was isolated from the brains of two dogs with ODE. The distemper virus was demonstrated by the fluorescent antibody test. Dr. S. D. Lincoln and associates also found the distemper virus from dogs with ODE could not be transmitted to other animals, and they suggested that the virus was noninfectious which corresponded with the original findings of Dr. Cordy who also failed to implicate the canine distemper virus by transmission experiments. Further study by Lincoln and associates reported in 1973 demonstrated that ODE was caused by the distemper virus. A clear relationship between measles and distemper viruses was reported in 1957 when it was shown that measles growing in tissue cell culture was rendered ineffective by distemper antibodies. The results indicated

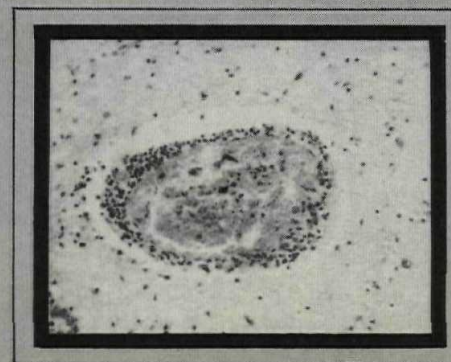


FIGURE 3.

Picture of a blood vessel in the brain of a dog with ODE, showing lymphocytes and plasma cells in area of demyelinating. X 100

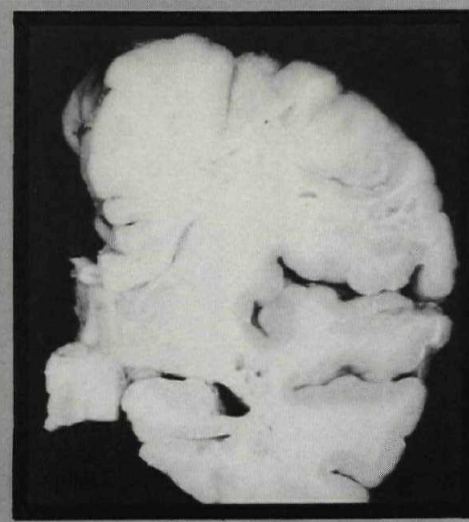


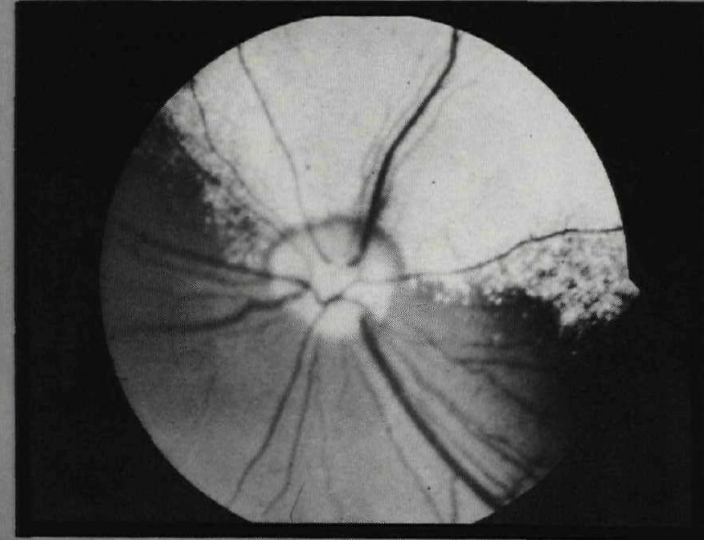
FIGURE 1.

Picture of brain
showing grey and white
matter and cavity
formation, actual size,
stain.



FIGURE 2.

Picture of the back of
the eye in a dog showing
palor, an early sign of
old dog encephalitis.



that measles and distemper were similar viruses but the diseases they caused were restricted to animals in the case of distemper and to human beings in the case of measles.

In 1953 J. M. Adams reported that human serum, such as gamma globulin, contained antibodies to canine distemper. The relationship between measles, distemper and rinderpest (distemper in cattle) was also reported by D. T. Imagawa and associates. In 1964, C. A. Fisher

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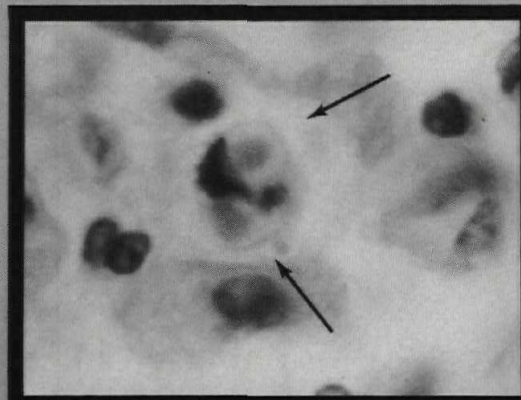


FIGURE 4.

Picture of a brain cell
from a dog with ODE
showing a distemper
virus body inside of the
cell, indicated by arrow.
X 500

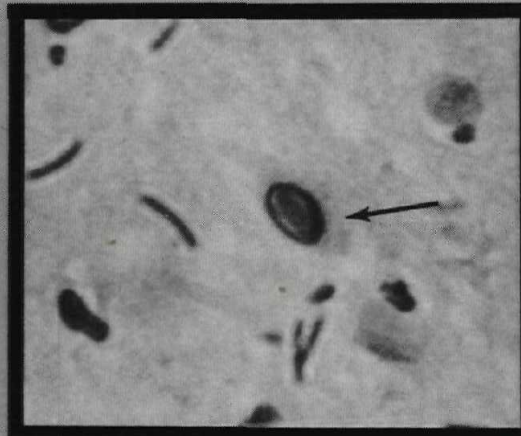


FIGURE 5.

Picture of a brain cell
from a human being
with demyelinating
disease showing measles
virus inclusion bodies
inside the cell. X 1500
Arrow points to virus
bodies.

OLD DOG ENCEPHALITIS

reported that optic neuritis (inflammation of main nerve in the eye) associated with measles in man also occurred in canine distemper. The finding of optic neuritis in dogs may be the initial sign in the eventual development of serious progressive disease in the brain and spinal cord, such as ODE.

Dr. D. McAlpine and associated (1972) in their textbook on multiple sclerosis state that optic neuritis may be the initial symptom and sign leading to the eventual diagnosis in some cases of multiple sclerosis. (See Fig. 2.) Drs. C. Kennedy and S. Carter, in 1961, reported 30 cases of optic neuritis, eight of whom eventually developed multiple sclerosis (MS). Abnormal findings in ODE were reported by authors Adams and Snow and associates in the **Journal of Veterinary Pathology** in 1975. The findings recorded in nine dogs were strikingly similar to the findings in human beings with severe demyelinating diseases. (See definitions.) The principal findings consisted of lymphocytes and plasma cells (white blood cells) about blood vessels in the brain and virus inclusion bodies in dogs with ODE and in human demyelinating diseases. (See Figures 3, 4, and 5.)

Discussion

Old Dog Encephalitis is a valuable model for the study of severe demyelinating diseases of dogs and man. The finding of optic neuritis is considered a highly significant event, possibly associated with an earlier attack of distemper. The finding of optic neuritis would suggest that the animal be watched closely for symptoms and signs of encephalitis, often difficult to detect. A disease occasionally affecting the spinal cord in the German Shepherd may be causally related to ODE and should be considered in the diagnosis. Diagnostic tests in dogs include a complete examination of spinal fluid and antibody tests on the serum and spinal fluid for canine distemper antibodies. These tests have been performed by Dr. Max Appel of the Veterinary Virus Research Institute, Cornell University, Ithaca, New York, and we are deeply indebted to him for his kindness in performing these helpful diagnostic tests. Preliminary treatment with drugs which act against viruses have shown signs of improvement in the symptoms and signs of some dogs with ODE. Further studies are necessary in order to establish the value of the preliminary results reported to us by the owners. Similar treatments have not as yet been tried in various forms of human demyelinating diseases such as SSPE and MS.

We wish to thank Dr. R. Foos and J. Sands for taking pictures of the nerve in the back of the dog eyes called discs. Special thanks to T. Patin and J. Robert for their technical assistance.

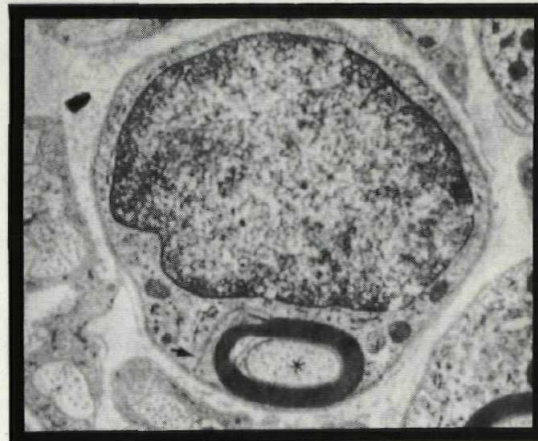


FIGURE 6. Shown is a large cell from a dog nerve. This cell makes a thick fatty covering (arrow) called myelin. Note the thick wrapping around nerve fiber (asterisk). This photo was produced by Prof. W. Jann Brown and is magnified 13,500 times.

GLOSSARY

ANTIBODIES:	Substances produced by cells in response to stimulating agents, such as viruses or bacteria
DEMYELINATION:	Destruction or removal of the substance (myelin) covering the nerve. (See Fig. 6.)
ENCEPHALITIS:	Inflammation of the brain, sometimes called sleeping sickness, caused by viruses or other germs.
FLOURESCENT ANTIBODY TEST:	Antibodies are labeled with a stain, when looked at with ultraviolet light, a yellow-green color indicates that virus is in the cell under study, such as virus inclusion bodies.
LYMPHOCYTES and PLASMA CELLS:	Both are white blood cells and make antibodies.
OPTIC NEURITIS:	Inflammation of the main nerve in the eye.
WHITE and GREY SUBSTANCES:	Are made up of insulation (myelin) covering nerve tracts in the nervous system.
SYBACUTE SCLEROSING PANENCEPHALITIS (SSPE):	A mild form of inflammation in the brain and opposed to very acute forms such as measles encephalitis and distemper or chronic forms such as MS and ODE.
RINDERPEST:	A disease of cattle caused by a virus similar to distemper in dogs and measles in man.

can you depend on it?

J. F. Smithcors, DVM

"Your child can get pinworms from the family dog."

"I'm afraid your youngster has pinworms again, Mrs. Jones, and you should see your veterinarian about having your dog treated...or perhaps you should think about getting rid of him." Let's hope your family doctor never tells you this, but not too many years ago it was not uncommon for some physicians to give such advice. Fortunately, few physicians have been so ill-informed, but several decades ago this idea was circulated by a nationally syndicated "Doctor's Column" which included such gross distortions that there was no such disease as rabies! Yet too often a concerned parent—who may have read this column or who had "been told" and relayed the information to an unsuspecting doctor—may have been incorrectly advised.

The plain fact is—and always has been—that dogs can't have pinworms. Yet the belief that dogs can transmit pinworms to children is still sufficiently strong in some quarters that the author of one of the most-respected medical textbooks finds it necessary to say: "Dogs and cats do not harbor pinworms and, hence, play no part in its spread." The doctor alluded to above should also have known that treatment of the child in question would most probably be ineffective unless all other persons in the household were examined and treated if necessary. Which is to say that pinworms are passed from one person to another—never from dogs or cats to people.

In speculating on why such a belief should have gained acceptance, it seems feasible to assume that most persons—especially adults—would dislike being told they may have worms or be the source of infection for others in the family. It's a lot easier to blame it on the dog. After all, dogs do have worms, and they can't argue the point if they are blamed for transmitting an infection—even one they can't possibly have. There should be no shame attached to finding your child has

pinworms—only in failing to become properly informed on the matter, or in refusing to accept the fact that everyone in the family may require treatment. The problem becomes a bit sticky, however, if it appears that a neighbor's child is the most likely source of reinfection.

So while Rover can be absolved of any blame in the transmission of pinworms, you should not blindly assume this is also true with regard to some other worms. The potentially very serious problem of hydatid disease, caused by a tapeworm passed from sheep to dogs to humans, was discussed in the March/April 1977 issue of **Today's Animal Health**. No more need be said about it here except to repeat the caution regarding your awareness of the problem if you live in an area where free-roaming dogs might have access to discarded sheep carcasses.

Another serious disease transmitted by dogs or cats is visceral larva migrans, which is caused by ascarid larvae. The adult worms live in the intestine of the dog or cat, and eggs which pass out with feces form larvae if they are deposited in damp places. In the "normal" course of events the larvae are ingested by their usual host (dog or cat) and the life cycle is repeated. Children are not notably hygienic in their habits, and if they are allowed to play in damp areas frequented by dogs or cats it is possible for them to ingest some ascarid eggs. The larvae which hatch in the intestine are carried by the blood stream to various of the internal organs (viscera) and remain there

instead of completing their migration back to the intestine, as they do in their normal hosts.

I would be the last one to tell you that your children should not be allowed to play with dogs or cats, but you should be aware of your responsibilities as a concerned parent. One of these is to avoid the possibility of their contracting visceral larva migrans. For at least as long as a child tests everything he touches by putting it in his mouth, he should not be allowed to play with just anybody's dog or cat. Your own pets, especially puppies and kittens, should be wormed regularly, and damp areas in the backyard or the neighborhood should be avoided, especially if you can't control access by dogs and cats.

Dog and cat fleas can transmit some tapeworm infections if the animal is infected and the child inadvertently eats a flea. The chance of this happening can be reduced almost to zero by treatment of the pet for tapeworms, if needed **and** by continuous control of fleas. Medication for tapeworms is often not 100% effective because it is difficult to get rid of the head of the worm which attaches to the lining of the intestine, so flea control is also essential. It will also keep the pet a lot healthier and happier.

So while the pinworm story is so much bunk, there is a potential risk of acquiring some other worm infections from dogs and cats. This should not be viewed with alarm, however, because with proper care your pets can be safe playmates for your children.

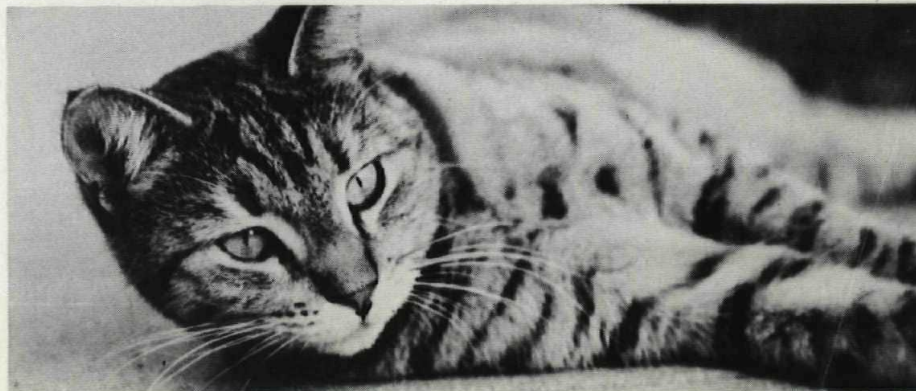
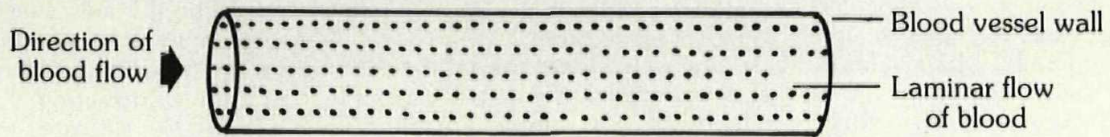


Photo by D. M. Diem

WHAT IS A HEART

SMOOTH FLOW (laminar)



ROUGH FLOW (turbulent)

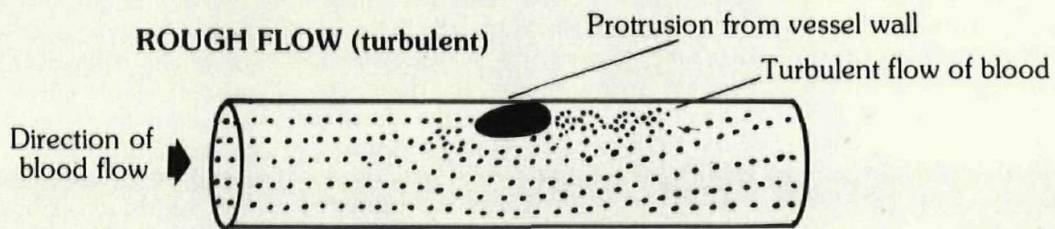


FIGURE 1.

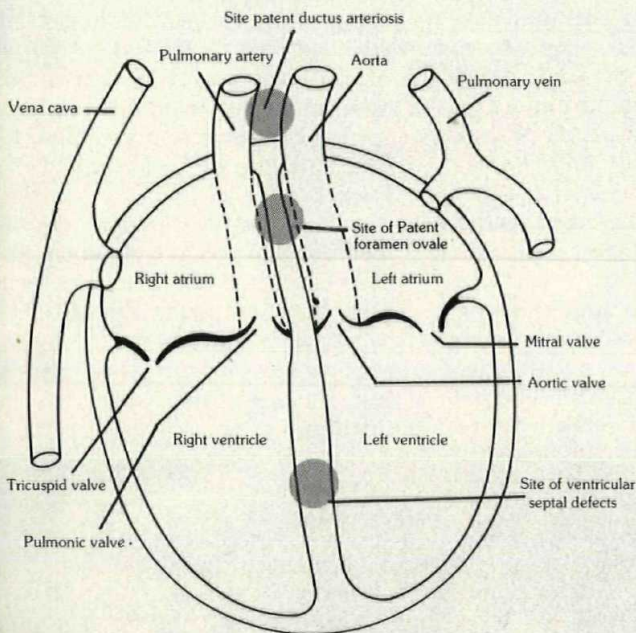


FIGURE 2.

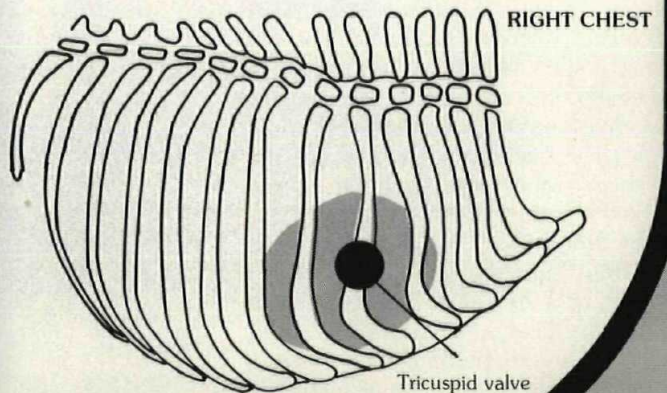
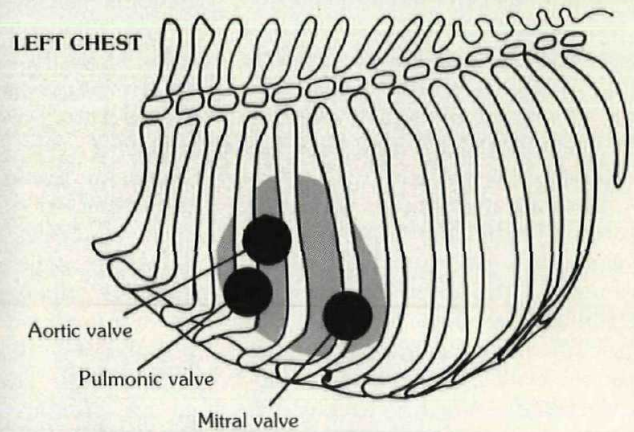


FIGURE 3.

RT MURMUR ?

Hear murmurs are always of concern to the pet owner. The client becomes very anxious when the veterinarian lifts his head and removes the stethoscope from his ears and says, "Did you know your dog has a heart murmur?"

Heart murmurs occur for a variety of different reasons in dogs of all ages, sizes and breeds. Before we discuss the different types of murmurs, you should understand what makes the noise that the veterinarian or physician calls a heart murmur.

Turbulence of blood as it flows through the heart is what makes the sound called a murmur; it is much like the sound of turbulent water rushing over a rock in a stream of water. When blood moves through a normally structured, healthy heart, and the blood is of normal viscosity (thickness), no murmur is heard by the doctor listening with a stethoscope. The flow of blood would be laminar (smooth). (See Figure 1.) If there is an obstruction to the smooth flow of blood, then the turbulence created may be significant enough to produce a noise or murmur. The flow of blood would be called turbulent.

Murmurs can be produced by many different physical changes within the heart or great vessel, some of which will be discussed below.

Anemic Murmurs

Anemic Murmurs are not unusual and are caused by changes from normal blood viscosity to a very thin consistency. Turbulence is produced when the thin blood moves through the normal heart structures at a rapid rate of speed. There is no structural damage to the heart to cause the murmur, but the thinness of the blood and the increased heart rate which result from the anemia create the conditions for turbulence, and therefore a murmur is heard.

Anemic murmurs are functional murmurs, meaning they will be there only under certain conditions and will disappear when the anemia is corrected. The blood becomes thicker from the increase in red blood cells from the animal's bone marrow, or as the result of a blood transfusion. Anemic murmurs seem to be heard more often in younger, smaller animals with the smaller hearts and faster heart rates.

Your veterinarian may diagnose anemia from a variety of different conditions such as blood loss in puppies or kittens from hookworms, coccidiosis, feline infectious anemia, feline lymphosarcoma - leukemia complex, auto-immune hemolytic anemia or aplastic anemia. Loss of blood from injuries such as internal bleeding after being hit by a car may also be a cause.

Murmurs from birth defects

Puppies and kittens, like children, occasionally are born with structural defects of the heart or great vessels which leave the heart. There are three basic areas of defects.

The first area is in the septum between the left and right sides of the heart. The defects occurring here are

called **septal defects**. (refer to Jan-Feb issue **Today's Animal Health** page 17, figure 3.) These birth defects are actually holes between the left side (oxygenated or "red blood" side) of the heart, and the right side (unoxygenated or "blue blood" side) of the heart. (The defect between the upper chambers [atria] is called a **patent foramen ovale**; the hole between the lower chambers [ventricles] is called a **ventricular septal defect**.) When these holes are present, the heart cannot pump blood efficiently because of the leakage of blood from the high pressure left side of the heart to the low pressure right side of the heart. This leakage causes the heart to work harder and consequently enlarge in size (hypertrophy). The oxygenated and unoxygenated blood mix with one another which lowers the total oxygen supplied to the body and is one of the causes of "blue babies".

The second area of birth defects in the heart is the valves of the heart. Some animals are born with the valves too small or narrowed. (See Figure 2). The pulmonic valve and the aortic valves are the most commonly narrowed valves. When the animal is young, the narrow valves usually produce a high pitched murmur and no other symptoms. As the animal grows and the body demands more blood circulation (cardiac output) and the narrowed valves restrict this output, the animal will begin to show symptoms such as weakness, lack of stamina when exercising, or fainting (syncope). In some cases as the dog grows so does the heart; the valves enlarge and the murmur may disappear.

The third area of birth defects is in the great vessels that leave the heart such as the aorta and the pulmonary artery. One of the most common murmurs associated with the great vessels in the **patent ductus arteriosus**. The ductus arteriosus is a "by-pass" vessel present in the embryo that is supposed to close off when the animal is born. In some cases this does not occur and the ductus arteriosus remains open (patent); this impairs circulation by allowing blood to flow from the aorta (left side) into the pulmonary artery (right side).

Murmurs of older animals

The most common murmur that is heard by the veterinarian is from the heart of the older dog. The most common cause of these murmurs is from degeneration of the valves in the heart. Approximately 70% of the time this involves the mitral valve on the left side of the heart. (See Figure 2). This valve has the highest pressure gradient across it of all three heart valves, and probably along with tissue changes on the valve leaflets that occur with aging (or with disease) these are the reasons the valve gives way and begins to allow blood to "leak" back into the left atrium. This is called "regurgitation" of blood when it moves through a leaky, incompetent valve back into the chamber from which it just came. Most commonly the louder the regurgitative murmur is, the more defective the valve. If the valve is completely destroyed (which is called AV canal) there may be a very

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for young people

by Dyana L. Paul

SO YOU WANT A PET?

by Dyana Paul

A pet is a big responsibility. You need to feed your pet. You must make sure your pet has his shots. You need to give your pet water. You need to brush him. You need to love him.

You can't forget about him. He will suffer without your care and attention.

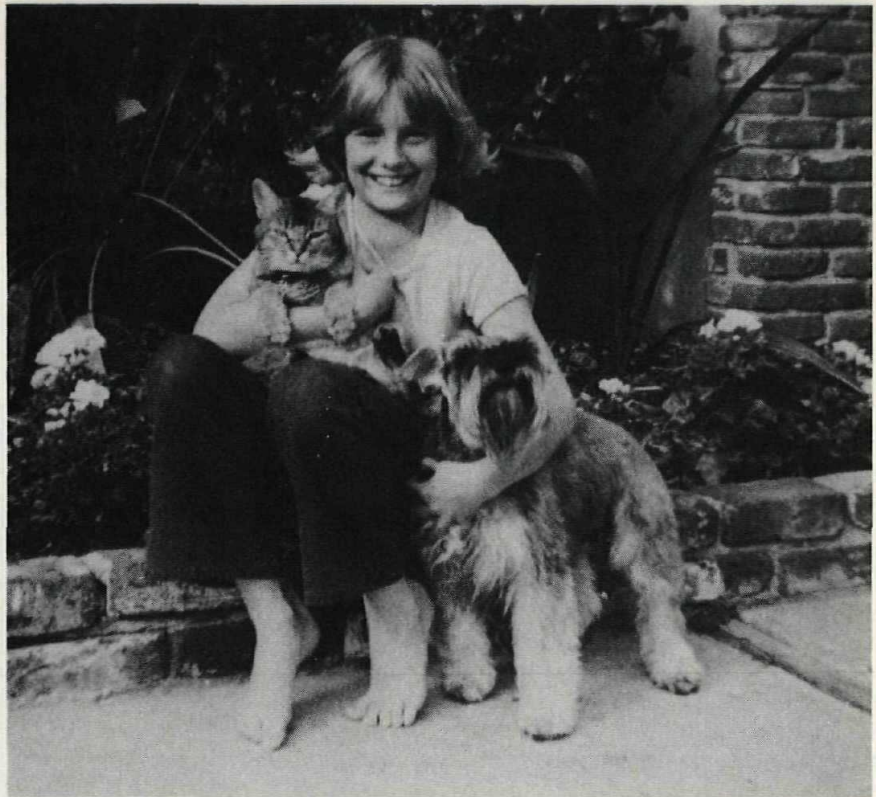
Having a pet is a lot of fun, but it is also a BIG responsibility. Your pet depends on you for everything. You need to feed and water your pet once or twice a day.

If you are going to be away, make arrangements for your pet to be properly taken care of by someone you trust. Your pet's body must be cared for just like your own.

If your pet gets hurt or looks or acts sick, take him to a veterinarian **RIGHT AWAY**.

Good care for your pet means your animal will be a happy and healthy friend.

A pet's love is really **SPECIAL!**



Youth Editor Dyana Paul, her Abyssinian cat Roya and her Miniature Schnauzer, Jason

GREAT CATS!

Match: by Carsten Ahrens

"Some are born great, some achieve greatness," wrote Shakespeare, "and some have greatness thrust upon them." The following cats fall into this final category because they had the good fortune to be owned and often loved by great people. See if you can match pet and owner:

- A. Author Matthew Arnold's ("Sohrab and Rustum") Persian cat
- B. Actress Tallulah Bankhead's Siamese cat
- C. Comedian Orson Bean's tomcat
- D. Author Frances H. Burnett's ("Little Lord Fauntleroy") cat
- E. Author Thomas Carlyle's ("Sartor Resartus") black cat
- F. President Coolidge's gray-striped White House cat
- G. Author Alexander Dumas' ("The Three Musketeers") cat
- H. Actor Errol Flynn's Siamese cat
- I. Author Mary E. Wilkins Freeman's ("Revolt of Mother") cat
- J. Author Victor Hugo's ("Les Miserables") cat
- K. Playwrite Joseph Kesselring's ("Arsenic and Old Lace") tan, gray, and white longhair cat
- L. Stage star Earle Larimore's Siamese cat
- M. Actors Pamela and James Mason's Siamese cat

- N. Author Sir Walter Scott's ("Ivanhoe") cat
- O. Author Booth Tarkington's ("Penrod") cat
- P. Author Mark Twain's ("Adventures of Huckleberry Finn") cat
- Q. Author Carl Van Vechter's ("The Tattooed Countess") Persian cat
- R. Poet Ella Wheeler Wilcox' ("Laugh and the World laughs with you") Chinchilla cat

- | | |
|----------------------|--------------------------|
| 1. _____ "Atossa" | 10. _____ "Fiddle" |
| 2. _____ "Augusta" | 11. _____ "Gipsy" |
| 3. _____ "Banjo" | 12. _____ "Hinse" |
| 4. _____ "Beebe" | 13. _____ "Mouche" |
| 5. _____ "Bes Mudi" | 14. _____ "Mysouff" |
| 6. _____ "Columbine" | 15. _____ "Pussy Galore" |
| 7. _____ "Dick" | 16. _____ "Sadie" |
| 8. _____ "Dolly" | 17. _____ "Sour Mash" |
| 9. _____ "Feathers" | 18. _____ "Tiger" |

ANSWERS:

- | | | | | | |
|---|-----|---|-----|---|----|
| F | 18. | N | 12. | E | 6. |
| P | 17. | O | 11. | H | 5. |
| M | 16. | K | 10. | L | 4. |
| C | 15. | Q | 9. | R | 3. |
| G | 14. | B | 8. | I | 2. |
| J | 13. | D | 7. | A | 1. |

ALLERGIES AND YOUR DOG

by Janet Harry

Is your dog scratching himself or chewing at his feet? Are his eyes running, is he gagging or throwing up? If so these could be symptoms of allergies. For some dogs, allergies may be slightly irritating but for others *they can lead to secondary infections or cause the dog to mutilate himself by uncontrollable scratching.*

The field of allergy and immunology is enormously complex. It is a difficult field to understand despite all of the research which has been completed.

Allergic diseases occur in any organ of the canine, but skin manifestations are the most commonly seen. It is important to understand the basic immunologic principles to understand your pet's allergic disease. Allergy and hypersensitivity are used interchangeably to mean that the reactivity to a substance is different than usual. The allergy is specific and is caused by a foreign substance that causes antibody formation and sensitivity. Antibodies are bodily substances produced to neutralize or counteract effects of unwanted agents. After exposures to foreign substances, hypersensitivity occurs. This is an antigen-antibody bonding reaction. Antigens are the foreign substances which stimulate immunological responses such as antibody production and then bond with antibodies. If the response is allergic, the antigen is more specifically called an allergen.

An immediate hypersensitivity to common allergens because of hereditary predisposition is called **atopic allergic dermatitis**. Atopy literally means "strange disease", and not until 1962 was it documented to describe allergy of ragweed in dogs. In atopic allergy an antibody believed to be Immunoglobulin (Ig E), is formed and the allergens bind to it causing the allergic symptoms of scratching, foot licking, face rubbing, and sometimes sneezing and runny eyes.

Atopic allergy has certain target areas where the itching and redness occur, and these are most frequently seen in the skin but are also seen in the throat, respiratory system, stomach, and other organs. The allergens are most often pollen from grasses, weeds, and trees, house dust, feathers, mold, kapok, wool, allergic bites, stings, injections; occasionally some foods are also allergens. The symptoms are periodic, persistent, or acute depending whether the allergens are seasonal or permanent. *The breeds most inclined to atopic allergy are Wire Haired Terriers, West Highland White Terriers, Dalmations, Poodles and Labradors.* It is seen in almost all breeds and mixed breeds however.

Another type of allergy found in dogs regardless of breed is **allergic contact dermatitis**. This is one of two types of inflammatory skin reactions caused by direct contact with an offending substance. Contact dermatitis can be caused simply by caustic substances, called *primary contact dermatitis*. When the offending substance causes an allergic reaction, it is *allergic contact dermatitis*. Allergic contact dermatitis is different from atopic allergy in that when a susceptible dog is exposed to contact allergens, a delayed type of hypersensitivity occurs—meaning that the substance is nonirritating until

antibodies are formed to it. Once the antibodies are formed, eruptions of itching and redness occur at the sites of contact, not in target tissues as in atopic dermatitis. Contact allergy has **no** hereditary basis as atopic allergy is believed to have.

There are a number of contact allergens, such as dichlorvos in flea collars, poison oak or ivy, carpeting either from wool or dyes in the nylon, soap, grasses, pollens, insect powders, paint, and rubber feeding dishes which are made from fully "cured" rubber products. These things cause localized itching and redness where the allergen contacts the skin. The rubber dishes cause sores around the mouth. Flea collars cause irritation where the collar rests. Often the symptoms and allergens of atopic and contact allergies overlap, making it difficult to know which one it is.

Veterinarians are primarily concerned with what causes the allergy and how to eliminate the source or treat the symptoms, rather than whether it is atopic or contact allergy. Once allergen and treatment are decided, the type of allergy is usually revealed. *The task of diagnosing allergies is very difficult and tricky. Often in some dogs there is more than one allergen.*

The diagnosing process entails several steps. The most important is the history of the dog. This should include all details of allergic type symptoms, behavior and the situations and environments in which they have occurred. Following a history, the dog undergoes a physical examination. Laboratory tests are made to ascertain that allergies are the ailment. Next, allergies to food are checked. Although food allergies represent only 1% of all skin allergies, it is easier to pinpoint the allergen, if foods are eliminated first.

If no conclusions are drawn, skin testing can be done as a final measure. When testing skin, there are many procedures and results are difficult to read. The dog owner and the veterinarian should correlate the skin tests with suspected allergens and also ones that are in the regional environment.

A simple diagnostic method that is reliable when there are only a few allergens is "provocative exposure." If there is a suspected allergen in the diet or environment, it is removed. If the symptoms disappear, the culprit has been found. To check the extent of the allergy, the offending allergen and dog can be put back together. The signs of allergy ought to return immediately. If it is food allergy, they will return after a few hours, and if it is a contact allergy, symptoms may return in approximately 48 to 72 hours.

Symptoms of allergies can be stopped or reduced with medical care or by removal of allergens. *If atopic allergies are left untreated, lesions develop on legs, feet, and groin, and they may become infected.* The feet may become so painfully swollen that walking is difficult or impossible.

In contact allergies, localized areas may become infected. Uncontrollable scratching in either type will cause open wounds. **The only sure cure is removing the cause, but this is difficult if the cause is uncertain or if**

it is unavoidable like pollens. Already mentioned is the fact that some atopic allergic dogs may be allergic to many things. They may also become hypersensitive to more things as they get older; thus removal of the cause is almost impossible. Removal of allergens is most likely to succeed in dogs with contact allergies.

Antihistamines are helpful in treating mild symptoms, but corticosteroids are most effective for more severe symptoms. Corticosteroids cause side effects such as excessive water consumption which overworks the kidneys, water retention, hair loss, and hyperadrenalism. Because of these side effects, veterinarians must administer the drug carefully, checking the dog thoroughly every six months.

Use of either antihistamines or corticosteroids only relieve symptoms; they do not reduce sensitivity or cure the disease.

Treatment for allergic insect bites is variable. Flea bite is one that is an antigen-antibody reaction; the flea's saliva acts as the allergen. The symptoms of swelling and itching will be around the hindquarters and the ears where the fleas have bitten. A simple cure is to get rid of the fleas by giving the dog a bath in a special shampoo and disinfecting his bedding and sleeping area.

On rare occasions some dogs are allergic to specific injections or insect stings. When this happens, the dog will go into anaphylactic shock within fifteen minutes. There is sudden localized swelling and irregular heart beat and blood pooling in the veins. If a veterinarian is available epinephrine is given, otherwise the incident could be fatal.

A method used to reduce allergic sensitivity in man and sometimes in dogs is hyposensitization. This method is based on the immunological principle that when specific allergens (discovered through skin testing) are injected in increasing dosage the production of an antibody specific for the allergen is caused. This special antibody, called a blocking antibody, is different from (Ig E) mentioned earlier in that when it binds with an allergen it does not cause allergic responses. When optimal dosage of injected allergens is achieved, the dog can come in contact with allergens, and they will bind with the blocking antibodies not the (Ig E) and **the dog will not be sensitive to the allergen.** Although this is the only treatment which reduces sensitivity, there are several drawbacks.

For veterinary use, the skin tests are very expensive and it is difficult to read results and to get antigens in testing form. Facilities are not available in most practices for the above reasons. If the skin tests were easier to give and more reliable, hyposensitization would be a plausible solution.

There is hope. Veterinary scientists at the University of Philadelphia are in the experimental stage of diagnosing dog allergies by blood serum analysis instead of skin tests. It is called the RAST (radioallergosorbant) test. If this method proves reliable, it would be a great breakthrough. Small practices could send blood samples away to be tested and the system would be more reliable than skin testing.

Spring and Summer are the two seasons to particularly watch for allergic symptoms in your dog. The itching and soreness of allergies are traumatic to a dog. If symptoms are noticed at any time, get your dog **prompt veterinary care.** You and your veterinarian can work together in relieving the dog's symptoms, and hopefully in the near future there may be a reasonable way to reduce allergic sensitivity.

IS YOUR DOG ITCHING????

by Victor H. Austin, D.V.M., M.S.

If you're in the Santa Barbara (California) area, they call it the Santa Barbara itch--if you're in Long Beach (California), it's called the Long Beach itch and, perhaps, if you've been to your veterinarian lately, you will call it ATOPY or *inhaled allergic dermatitis*.

If itching manifested by scratching, chewing and licking is a constant problem to your dog, you had better have your veterinarian check your pet to determine what is going on to produce these symptoms.

Some of the dogs we see with an itching skin problem are having it because of ectoparasites. The lowly flea is the **worst** offender. All dogs are not allergic to fleas, but when they are, it can mean double trouble. Flea bite hypersensitivity is usually a rear end problem. The rump, the hind legs and often the lower abdomen are involved and the dog licks and chews itself, sometimes until it is raw. *Cortisone doesn't help--but ridding the dog of the fleas does.*

Another parasite problem is the sarcoptes mite also called sarcoptic mange. Veterinarians refer to skin conditions caused by mites as mange--and *not all types of mange itch.* Demodectic mange is not one to cause bad itching problems but sarcoptic mange does cause them. Here again--cortisone doesn't help; *finding the mites and treating for them will cure your dog.* This will become a progressively difficult problem and will not recede until the mites are killed. Treatment requires several applications of surface miticides--often as many as 10 or 12. So if your veterinarian has found the mites, **don't give up treatment until the dog is well. This is a contagious mange too--not only to other dogs but often to the owners and their family.**

Another cause of itching may be a contact allergan, however, this is not common. If it does occur, it will only involve the areas in contact with the offending substance. In other words--there is a definite pattern and it is not generalized.

Ingested allergic reactions can cause generalized itching. These would be associated with a medicine, food supplement or something that the dog is allergic to in its diet. This too is not common and only about 1% of the itching dogs is affected from this cause.

Testing should be done at home with strict control over the new diet and medication changes. Special Rx diets may be used or your veterinarian may want you to make something special and feed it to your dog for several days or weeks. If this is recommended, **don't slip your dog a treat, for you may spoil the whole test.**

One of the most common skin diseases that causes itching is the disease known as ATOPY or ATOPIC SKIN DISEASE. This is an inhaled allergic dermatitis. You can think of it as **hay fever of the skin.** The cause of the allergy may be many things, or, if the problem is seasonal--just a few. The substances may be pollens, molds, dust, danders,

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HEAT STROKE

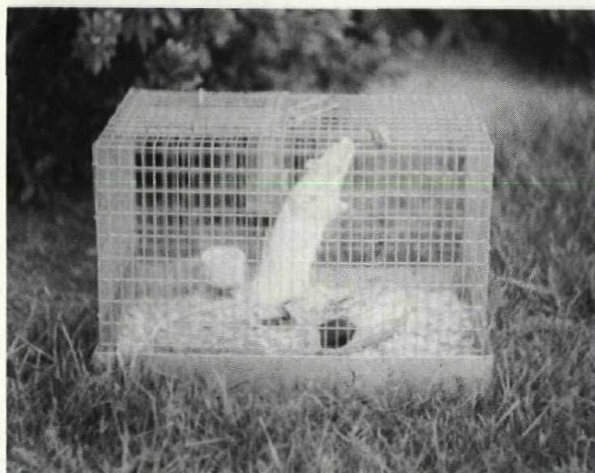
Heat stroke results when your pet is unable to keep his body cool in a hot environment. Every year veterinarians treat patients ranging from small baby hamsters to large mature horses for heat stroke. Heat stroke is a **medical emergency**, and if treatment is not given immediately to bring the body temperature back to normal, death results.

The majority of heat stroke deaths in pets is caused by ignorance or error by animal owners. The most common cause of heat stroke in pets is forced confinement by the owner in a hot environment. Conditions that make your pet susceptible to heat stroke are exposure to excessive heat, humid weather, confinement in a poorly ventilated place, over exertion and the unavailability of drinking water. In hot weather people and horses sweat which helps the body get rid of excess heat, but in cats and dogs sweating is insignificant in heat regulation. When cats and dogs become hot, they salivate and pant which gets rid of excess body heat by evaporative cooling which requires an increase in water intake.

Pets with heart conditions are more susceptible to the heat as are obese, sick or very young animals. Brachycephalic breeds of dogs such as Boston Terriers, Pekingeses and Bulldogs are predisposed to heat stroke because of their greater difficulty with breathing, and thus their greater difficulty in cooling off in hot weather. Pets confined in the car on hot days with the windows shut while the owner is shopping are in trouble, as are animals left in a small area with no shade or access to water. Horses ridden for long distances on hot days or confined in a hot poorly ventilated stable can easily develop heat stroke.

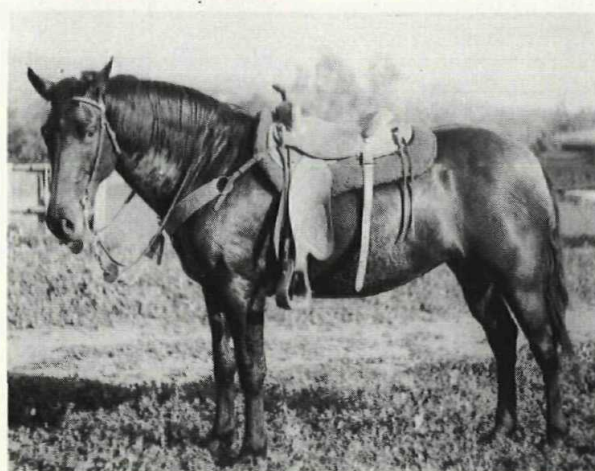
What to Look For:

A sudden onset of very rapid, shallow breathing is quite characteristic and the body temperature rises to 104 degrees or higher with heat stroke. Your pet may appear weak and have a blank stare and be unresponsive to your commands. Profuse salivation and vomiting are



Remember a car sitting in a parking lot on a warm day can become a death oven for the individuals inside. Every year pets die of heat stroke in parked cars. Don't let your pet become another statistic. Do not leave young children locked in the car either.

Small caged pets such as guinea pigs, hamster, rats and rabbits should not be left out during the hot part of the day. These pets, being confined in their cages, have nowhere to go when they get hot and can die rapidly from heat stroke.



Horses get tired and hot too. Saddle horses not accustomed to being ridden long distances on hot days are prone to trouble. Give your horse a cool shady break occasionally. Remember also to provide your horse with adequate salt in the diet because large amounts of salt are lost when your horse sweats. Most natural feedstuffs are low in salt.

Photos by: Roy Martin

common in cats and dogs. As heat stroke progresses the mucous membranes become bluish, and the animal has very labored breathing and eventually collapses and dies. In horses with impending heat stroke sweating ceases and the skin may become dry.

What to Do in Heat Stroke

Prompt action is necessary. Phone your veterinarian and tell the doctor what has happened and ask for advice. Your pet's temperature can be taken with a rectal thermometer. In heat stroke the body temperature can go as high as 110 degrees. If you are several miles from help there are a number of things that can be done at home. What you do depends on the size of the animal and what is available. The aim of your efforts is to lower the body temperature.

1. A very effective cooling method is partial emersion in a bath tub of cold water, swimming pool, lake, stream or pond.
2. A garden hose can be used to spray cool water on the body, and electric fans can be used to hasten evaporation of the water.
3. Put the animal in the shade, preferably where there is a breeze.
4. Ice packs or wet towels can also be used to cool the body but this method takes longer to work.
5. Once the pet begins to cool off the skin should be massaged, and the legs flexed to aid in circulation of the blood.

Heat stroke may cause alterations of the kidney, and other organs which can result in fatal secondary complications. Be sure to have any animal that has suffered heat stroke checked by a veterinarian, even if he appears to have recovered.

SUNBURN

Sunburn, a common occurrence in people during the summer months, also can affect animals. Fortunately animals are normally protected from the sun's harmful rays since their bodies are covered with a dense coat of hair. Certain animals when subjected repeatedly to sunshine may, over a period of time, become sensitized to the sun's rays and develop sunburn. Sunburn is not common in pets, but if

you suspect your pet may be sensitive consult with your veterinarian.

In pets the sunburned area, (commonly the nose and eyelids), is red, swollen and the skin peels off in layers. Repeated exposure results in scabs and crusts covering the area. The condition tends to worsen with the passage of each year, especially with prolonged exposure to intense sunlight. Neglect of such cases may result in skin cancer developing. For example cats with white ears that develop chronic sunburn on the tips of the ears may develop cancer of the ear tips and have to have the cancerous portion of the ear amputated.

Pets that sunburn easily should be prevented from further exposure to bright sunshine. In such sensitive individuals sun creams and lotions can be applied to the skin for protection against the burning sun's rays. In dogs with repeated sunburn of the nose the animal doctor may tattoo the area with black ink to protect the skin from future problems.

SEIZURES IN ANIMALS

Seizures, also known as "convulsions" and "fits" plague animals and man. Seizures are seen in animals ranging in size from small parakeets to large horses. It is estimated that approximately one person out of twenty-five will have at least one seizure during his lifetime. A recent study done at the University of California School of Veterinary Medicine indicated that seizure disorders make up about one percent of all diseases diagnosed in dogs at the University. Epilepsy is a state of chronically recurring seizures. The prevalence of epilepsy in man is about 0.5 percent.

What does an animal do when he is having a seizure? The animal may temporarily lose consciousness, become rigid and then develop running movements. Profuse salivation (foaming at the mouth), urination and defecation may occur. The duration can be from a few seconds to several minutes. When a pet has had repeated seizures, the owner is often able to tell when another seizure is about to occur, since the pet may

become restless, apprehensive or show other behavioral changes.

There are a number of things that are known to cause seizures in animals. Trauma, poisoning, brain infections, lack of oxygen and tumors are some of the causes of seizures. The most common cause of seizures in dogs is canine distemper. The distemper virus kills more dogs than any other single infectious disease. Years ago many pet owners had the experience of seeing their young puppy develop seizures from a distemper infection and die. Today there is a vaccine for this disease which is highly effective, but the vaccine must be given before the dog is exposed to the distemper virus.

Any animal having a seizure should be checked by a veterinarian to determine the cause of the attacks. In some individuals, even after extensive tests, no cause can be found for the existing seizures. These patients are said to have idiopathic epilepsy which means the cause of the seizures is unknown. Treatment of epilepsy in man and animals involves the same medicines.

WHAT TO DO IF YOUR PET HAS A SEIZURE

1. **Do not** put your hands in the pet's mouth during an attack as serious bite wounds can occur. Your pet is not conscious of his actions during a seizure and may clamp down violently on your fingers.
2. Leave your pet where he is during an attack if in no danger of falling. Clear the area surrounding the pet of objects that might cause injury if bumped during the seizure.
3. If your pet is in danger of falling or hitting objects during a seizure, place your pet on a clear area of the floor. A small pet may be placed in the center of a large bed where he will not injure himself.
4. During violent seizures it may be necessary to wrap the pet in a blanket or rug to protect him from injury.
5. Keep children away from a pet during and right after a seizure. Many animals are disoriented and do not recognize even familiar faces and may snap at children.

WHAT IS A HEART MURMUR?

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slight murmur, but the regurgitative leakage is extreme and the heart's pumping ability is very poor.

Other murmurs can occur in older dogs from breakage of valve cords (cordae tendonae), infections, or inflammations of the heart lining (endocardium) or heart muscle (myocardium). These conditions create swellings or clots (thrombi) that can interfere with valves opening or closing or create turbulence of blood flow.

Veterinarians grade heart murmurs as to their loudness, the part of the cardiac pumping cycle when they occur, the type of sound that they make, and the valve where the murmur is heard or appears to be the loudest.

Loudness of the murmur is graded from I through VI. I is very faint on up through VI where the murmur can be heard without a stethoscope in some cases.

The type of sound is called pitch, some murmurs from narrow valves (stenosis) may be musical, while murmurs from wide valves (insufficient) may be harsh and rough sounding in character.

The portion of the heart cycle when the murmur is heard is one of two types. **Systolic** which occurs when the heart is contracting and pumping blood out of the heart. **Diastolic** which occurs when the heart is resting and filling with blood.

The location is determined by the area on the chest where the murmur is heard. This can be best understood by referring to Figure 3 and seeing the anatomical location where the stethoscope is placed.

You can now understand that hearing a heart murmur may mean many different things. The veterinarian has to consider all aspects of the history, breed of the animal, age, and physical features such as anemia, rapid heart beat from recent exercise, etc.

The heart murmur is an indication that there is something wrong, and further tests such as blood analysis, urine analysis, EKG and x-rays of the chest need to be taken into consideration, as well as consideration of the location and nature of the murmur. Some problems require special procedures like heart catheterization for blood pressure measurements inside the heart and across valves; or angiography where dye is used to outline the chambers of the heart and great vessels to detect abnormalities like septal defects that allow blood to move from one side of the heart to the other. Phono cardiograms also are used by cardiologists to get a "voice pattern" of the heart murmur to aid in identifying it.

A heart murmur does not mean the dog is in heart failure. Most murmurs are detected months or even years before the animal shows signs of heart failure. Other signs of heart failure appear when the heart's ability to pump blood is significantly impaired, such as cardiac cough, difficult breathing, weakness, and fainting. How rapidly a dog with a heart murmur will go into heart failure is variable. Some never do and die of other causes before the problem advances to the stage where failure occurs. Some take only a few weeks or months. Many take two or three years.

With proper diagnosis, your veterinarian can do many things to treat and help your animal. With new techniques and a knowledge of the basic cause of the heart murmur, he can prolong the life of your very special friend.

"Pets Are Passengers, Too."

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At the same time, a teletype message about the flight's baggage and cargo loads is sent to the cities along the flight's routing. Included in the message is information about any pets aboard: such things as location in the plane, type of animal, its final destination.

At each stop, the compartment's door is opened to give the animals fresh air while on the ground. If for some reason the flight experiences a lengthy delay, the pets may be unloaded and placed inside or under shelter until the flight is ready to depart. The airline's people are trained never to leave pets exposed to weather, regardless of the climate.

On arrival, the kennels are among the first items unloaded and are hand-carried to the baggage claim area. An effort is made to avoid sending the kennels down baggage slides or putting them on claim belts; the kennels usually are made available for pickup in areas set aside for over-sized baggage.

Furthermore, as a precautionary measure--and also because it's reassuring for the animal--pets cannot be transferred with other baggage on connecting flights. American requires that passengers making any type of connection, within its system or to another airline, claim their pets at the connecting center and re-check them.

Any pet not boarded on its flight is handled as a passenger would be, with the airline making alternate arrangements and telephoning ahead to keep its own people and the pet owner informed.

In cases where pets go unclaimed at destination and immediate efforts to contact the owner fail, American will either place the pet in an animal care center at the airport or with a private care facility until the owner can be located.

There's one more thing American will do, advises Mr. Abram:

"If owners place the pet's name on the outside of the kennel, our people will even talk to it by name. It's amazing how comforting that can be to a traveling animal," he says.

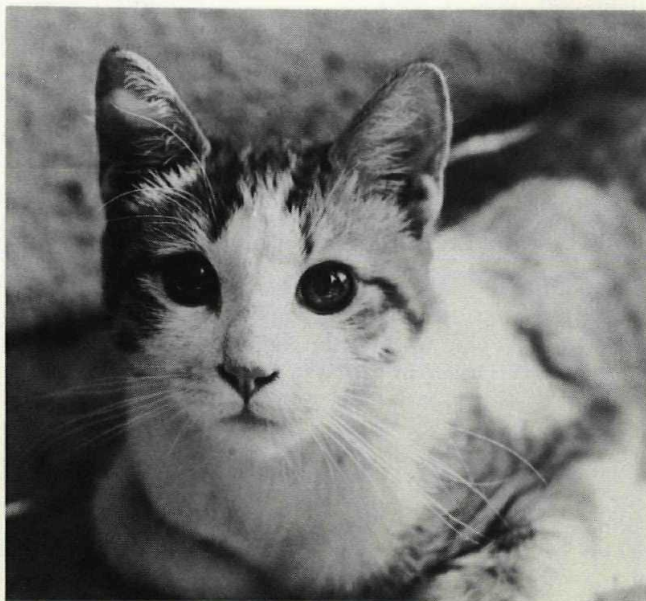


Photo by D. M. Diem

IS YOUR DOG ITCHING???

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etc. As they are inhaled into the lungs, they are eventually carried by the blood and lymph streams to the skin where the allergic reaction begins--this starts the skin to itch. The itching is most often seen under the front legs (in the arm pit area), between the back legs in the flank areas, the lower abdomen and often the tail and the feet. Some dogs just itch on their feet and are constantly licking their undersides which causes sores and infection.

The irritated skin usually becomes red, the hair is lost, the skin starts to thicken and look like elephant skin, and then it turns black.

Cortisone stops the reaction while it is being used, but soon after stopping the problem returns. Cortisone can usually be given by mouth and is just as effective this way as it is by injection; however, this method does not get quite as rapid a response. It is important to remember that prolonged

use of cortisone may cause body changes that are not good for the general health of your pet. Excess water consumption, increased appetite and increased body weight are indications that these changes are taking place.

Continual and prolonged use of cortisone is not recommended unless the dangers are understood and all other avenues of possible control of the disease have already been tried.

If cortisone is the only medication that helps the dog, it is now recommended that the dog be skin tested for inhaled allergic substances and, if indicated, *hyposensitization with allergy injections be tried*. If it helps, as it does in about 50% of the cases, it may take as long as 3-6 months to be effective. If this is achieved, the injections should be continued as directed by your veterinarian.

Just remember that there really isn't any such thing as the "Santa Monica Itch" and that the itchy dog should be thoroughly examined by your veterinarian to determine a course of action that will give your dog relief without harm.

Your Car Can Be A Death Trap

Pets trapped in locked cars by careless owners are doomed to suffer the slow agonies of heat suffocation again this summer.

The recurring animal tragedies happen every summer because pet owners are remiss in thinking about their pets, according to Robert I. Rush, general manager of the Los Angeles City Department of Animal Regulation.

"The fatalities among pets that succumb in the furnace heat generated in closed cars by a blazing sun generally are not the result of willful inhumane animal treatment," says Rush. "The fatalities are due mostly to sheer thoughtlessness on the part of the owners."

On a hot day the inside of a car heats very rapidly. On an 85 degree day, for example, the temperature inside the car, even with the windows slightly open, **may reach 102 degrees in ten to twenty minutes. In thirty to forty minutes it may rise to 130 degrees.** On warmer days the temperature would soar in direct ratio to the sun's intensity.

Pet owners, who find it necessary to transport their dogs and cats in the automobile during the summer months, are urged to seek shade when parking the car. Further, drivers are urged to make an estimate of the shade duration in relation to the time they will be absent from the car.

The traveling sun, quickly can

dispel temporary shade and convert a comfortable car into a lethal hot box for the trapped pet. In the space of an hour, a scorching sun can supplant an erstwhile shady environment.

Ventilation in the car is absolutely necessary if a pet is expected to survive at any time in a parked vehicle. Two windows in the car should be opened slightly, at least an inch, to provide cross ventilation.

There are other hot weather problems for pets that claim the attention of the responsible owner.

Heat exhaustion is a perennial danger to dogs and cats during periods of tropical weather. According to Dr. Walter Ziegler, chief veterinarian for the Los Angeles City Department of Animal Regulation, causes of heat exhaustion include high temperatures, high humidity, lack of adequate ventilation, excessive physical exertion, obesity, heavy coats of hair and lack of water. *Heat exhaustion strikes suddenly with exaggerated breathing, vomiting and subsequent collapse.* Cold water should be applied instantly to the heat stricken animal. If at all possible, get the animal into shade.

In the area of animal exercise during hot seasons, late evening or early morning hours are best suited to pet comfort and safety, says Dr. Ziegler. Late evening feeding is recommended. Dogs tend to eat

lightly during hot spells. Food containing carbohydrates should be limited or completely eliminated. *Cool clean water should be available to the pet 24 hours a day.*

Veterinarians generally subscribe to a reduction of heavy fur coats under hot weather conditions, but warn against clipping too close to the skin. Nature has provided the hair as a protective covering to shed the sun's rays, and some of the hair should remain.

Pets fortunate enough to enjoy an air-conditioned environment should not be allowed to remain in the direct draft of any cold air fan. This caution applies particularly to a female and her pups.

If it is absolutely necessary to ship a pet during times of peak temperatures, make sure the crate is properly ventilated. Attach a full itinerary to the shipping crate with instructions to water the animal at intervals. Never start a shipment to arrive on a Saturday, Sunday or holiday. Express offices in many towns are closed on weekends and the pet may be neglected.

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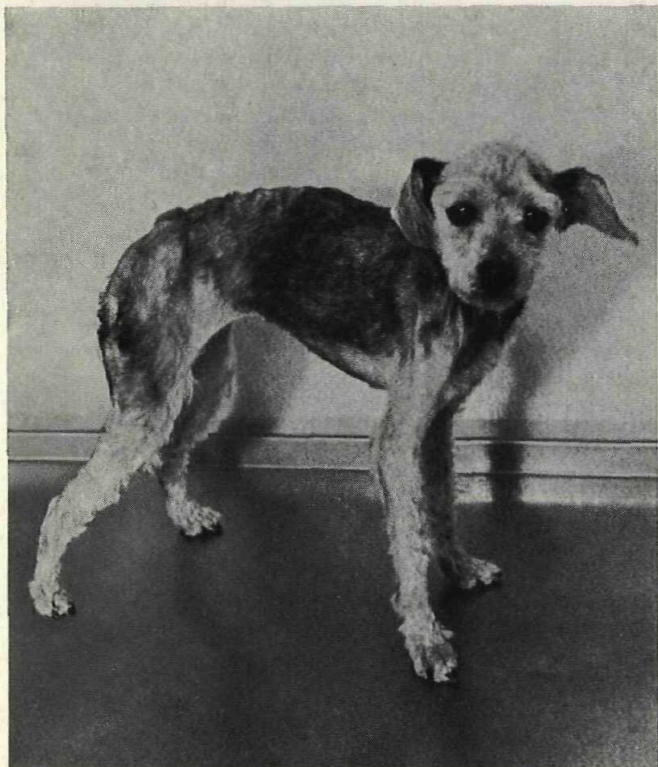


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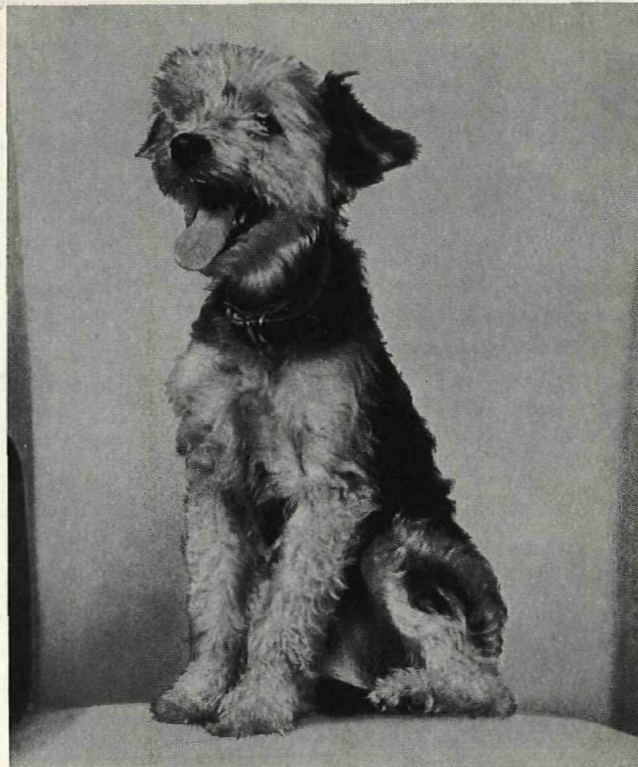
Twiggy on April 15, 1976. Suffering from malnutrition and neglect.

That's what Mrs. Virginia DeLong of Allentown, Pa. had to say about "Twiggy," a malnourished, part poodle she had adopted from the local dog pound.

"I swear, she was the most pitiful pup I'd ever seen, but when she looked up at me with those soulful eyes I knew I just couldn't resist."

Mrs. DeLong then took Twiggy to the vet. He found no diseases, but Twiggy was badly in need of a proper diet. "Figured meat was what she'd like best—so all I fed her was ALPO Beef Chunks Dinner."

ALPO turned out to be a wise decision. You see, meat-based foods are more digestible than cereal-based foods. Which meant Twiggy's system



AFTER ALPO:

Twiggy on July 16, 1976. Enjoying good health and loving care.

was able to absorb and use more of the food she ate. "I'd heard that meat is a dog's natural food. It sure is for Twiggy."

Meat is high in protein which helped build up Twiggy's muscles and helped her resist infection. And because ALPO, with meat by-products, beef, soy, vitamins and minerals has everything a dog needs every day, Twiggy was getting total nourishment.

"Twiggy really pulled through. I was amazed at the change. Now she's a bright-eyed, alert and playful member of the family. And I'm convinced that it was ALPO and a lot of love that made the difference."

We agree, Mrs. DeLong.



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