

Today's Animal Health

MAY / JUNE 1977 \$1.00

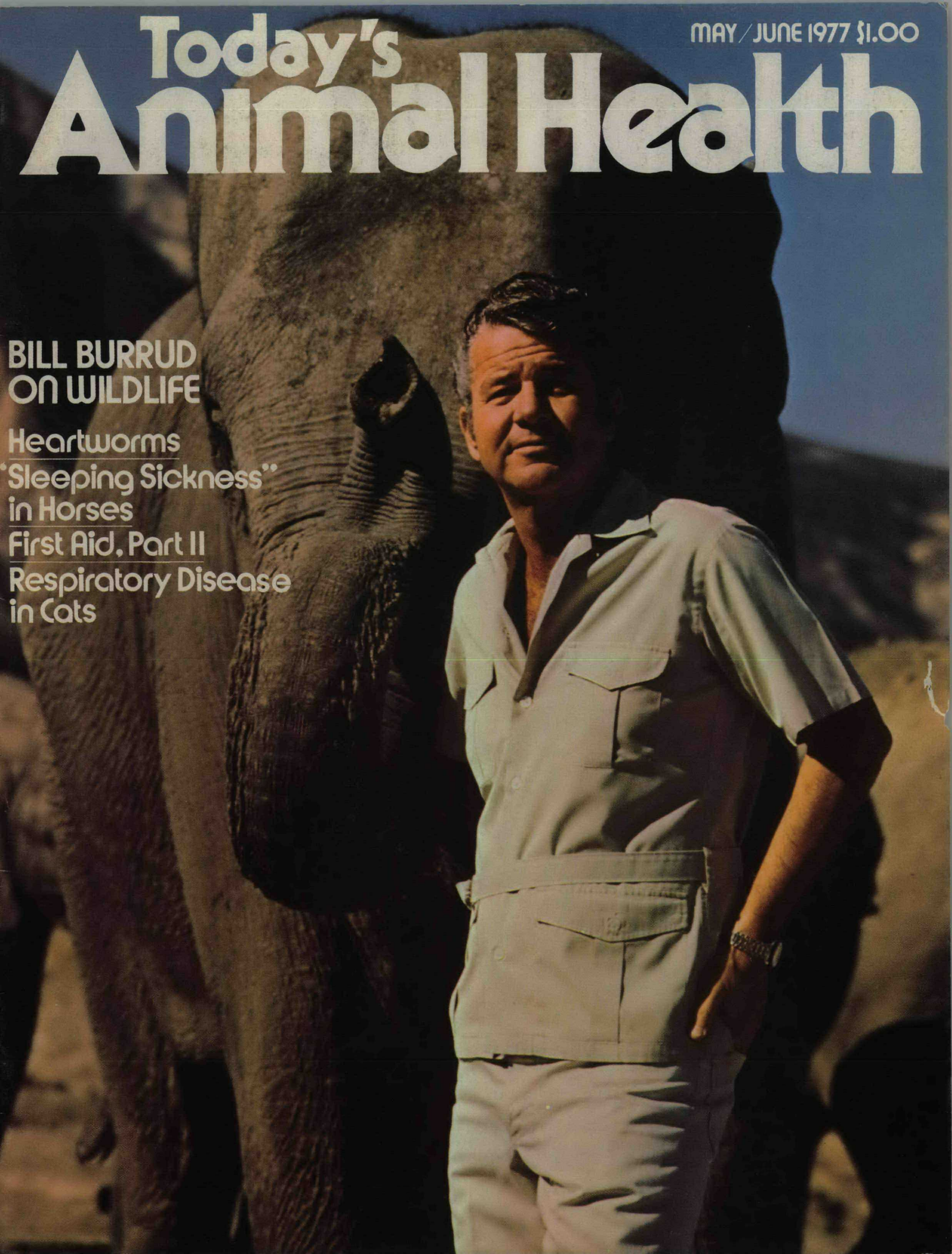
**BILL BURRUD
ON WILDLIFE**

Heartworms

**"Sleeping Sickness"
in Horses**

First Aid, Part II

**Respiratory Disease
in Cats**



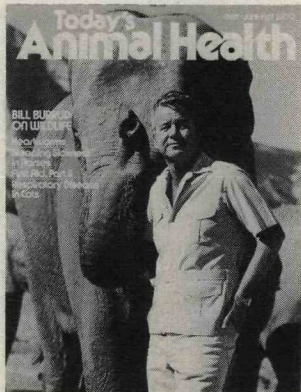
Today's Animal Health

Volume 8/ Number 3

May/June 1977

COVER PHOTO:

Bill Burrud on Safari



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dialogue

Editor's Note: In the last issue of Today's Animal Health, we ran a Reader Survey asking for honest opinions and comments on our magazine's content and new format. We are pleased to share a cross sample of the answers with you.

I don't know the type of person that subscribes to your magazine but perhaps an article on how to give medicines to pets. What happens when people try to pill a cat and the pill ends up constantly on the other side of the room? Do they give up in disgust and then the pet doesn't get the needed medicine? You could have a series of photographs or drawings illustrating how to open the mouth.

Sandra Johnson
Los Angeles, California

I wish you would print up fliers about saving the environment and post around - or give as a yearly gift to all your subscribers so that we can post them.

C. Leone
Levittown, PA

I would like to see more articles on rodents, rabbits, fish with details on health, species differentiation, sex differentiation, etc. Also more articles dispelling myths, like the one on garlic.

Nancy Hassing, D.V.M.
Sacramento, California

I would like to see more articles on pet birds (all kinds), fish and small animals. Don't do too much on goats. I quit "Countryside & Small Stock" because that's all they seemed to write about.

**Owner of Breeding
and Boarding Kennel**
Rootstown, Ohio

Yes, I very much prefer the new format. I'm sending the goat article to a friend, at his request - and the Cousteau article to President Carter! Right?

The new format is both helpful and interesting.

Mrs. Dan Lombard
Los Angeles, California

editor's viewpoint

by Richard Glassberg, D.V.M.

IT'S FOXTAIL TIME, PET OWNERS!



It's not cave canum. It is cave Hordeum. **Hordeum jubatum** or wild barley grows wild all over Southern California - in fact North America. It is a grassy weed with bristly awns and glumes (even the terms sound foreboding).

Specifically it is a common weed with tall spikes at the end of which are bristles. These bristles dry and have barbs on them like a spear or an arrow. Pets running through them get them stuck in their fur, in their ears, up their nostrils - just about anywhere.

Then the fun begins. The barbs work themselves into the skin or the mucous membranes. They very seldom work themselves out without the help of the veterinarian. If they are not discovered in the hair of your pet, then suppurative lumps develop and, of course, if the foxtail is in the mucous membrane, the reaction is even worse.

What can we do to prevent this from happening? Be sure to pull every foxtail you have in your yard and do not just throw the weed down. The barbs will dry and be just as potent. Wrap them up in a bag and put them in the trash. If it is impossible to clean up where your animal is running, you must examine the fur carefully every day and remove the sticklers.

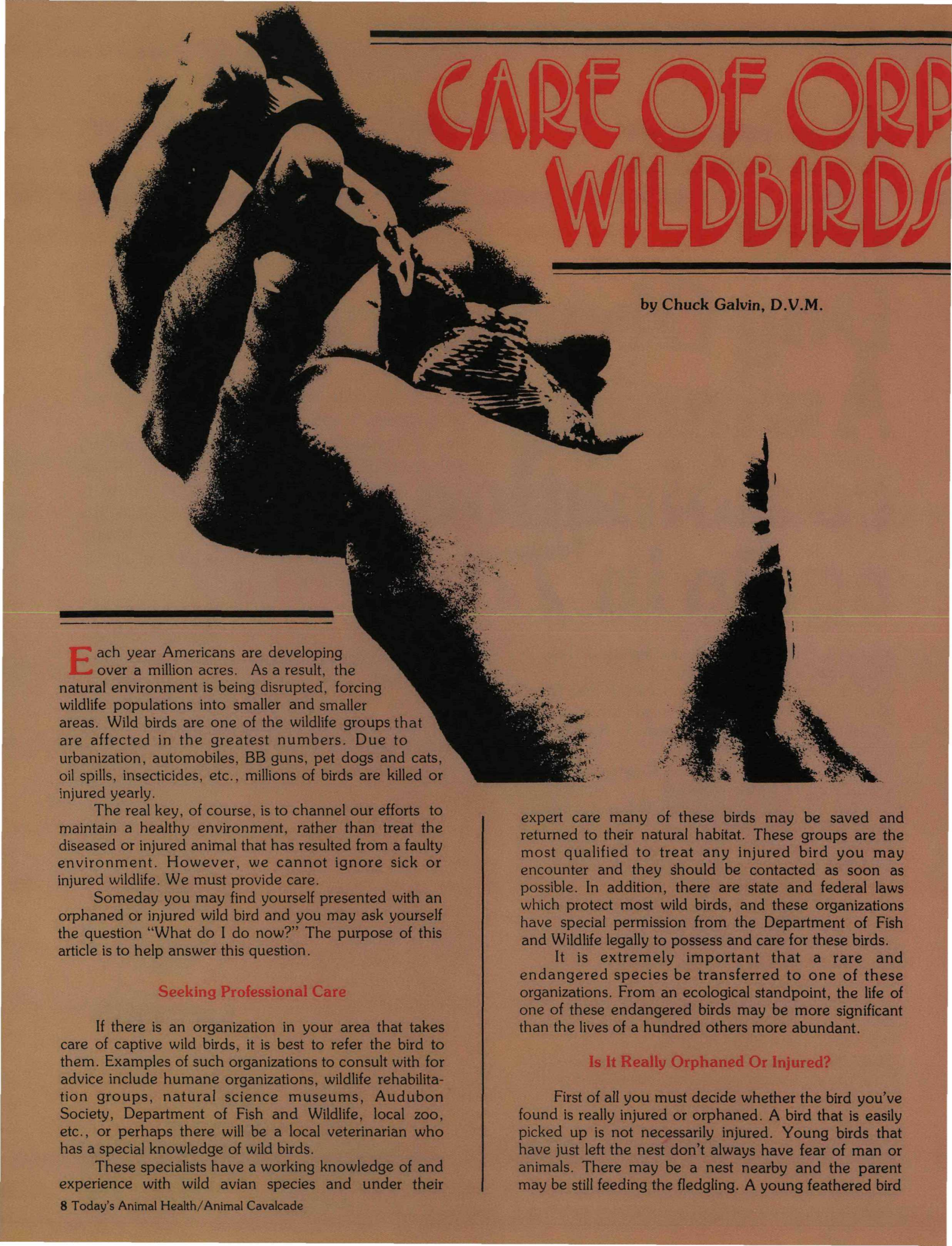
If you do find unexplained lumps under the skin of your pet, consult your veterinarian. If you know your pet has been running where foxtails occur, mention this to your doctor.

In answer to the letter under **DIALOGUE (March-April)** I believe written by Betty Evans of San Francisco, California, I would like to relate my experience which is the complete opposite of people putting pets to sleep, in order to take vacations. First of all, those kind of people cannot possibly love an animal as a living functioning life that deserves the time that GOD has given it. There, of course, are circumstances that preclude this attitude when an animal is old and sick, or there is absolutely no one to love and care for it. Perhaps I am exceptional or eccentric in my thinking, but I chose to stay home with my pet because there was no one qualified or willing to care for her while I was away.

The airlines have refused to fly us together in the cabin as they had done in the past. All other transportation likewise have changed their rules - and baggage compartments are no place for pets.

I haven't found anyone to motor across country who is willing to travel with a little dog - so I stay at home. You can't have it both ways. MY PET to me is worth more than trips. People should consider the alternatives before taking a pet in the first place. They are not toys to be shoved around indiscriminately or tossed out, because of inconvenience.

Betty Sparks
Long Beach, California



CARE OF ORPHAN WILDBIRDS

by Chuck Galvin, D.V.M.

Each year Americans are developing over a million acres. As a result, the natural environment is being disrupted, forcing wildlife populations into smaller and smaller areas. Wild birds are one of the wildlife groups that are affected in the greatest numbers. Due to urbanization, automobiles, BB guns, pet dogs and cats, oil spills, insecticides, etc., millions of birds are killed or injured yearly.

The real key, of course, is to channel our efforts to maintain a healthy environment, rather than treat the diseased or injured animal that has resulted from a faulty environment. However, we cannot ignore sick or injured wildlife. We must provide care.

Someday you may find yourself presented with an orphaned or injured wild bird and you may ask yourself the question "What do I do now?" The purpose of this article is to help answer this question.

Seeking Professional Care

If there is an organization in your area that takes care of captive wild birds, it is best to refer the bird to them. Examples of such organizations to consult with for advice include humane organizations, wildlife rehabilitation groups, natural science museums, Audubon Society, Department of Fish and Wildlife, local zoo, etc., or perhaps there will be a local veterinarian who has a special knowledge of wild birds.

These specialists have a working knowledge of and experience with wild avian species and under their

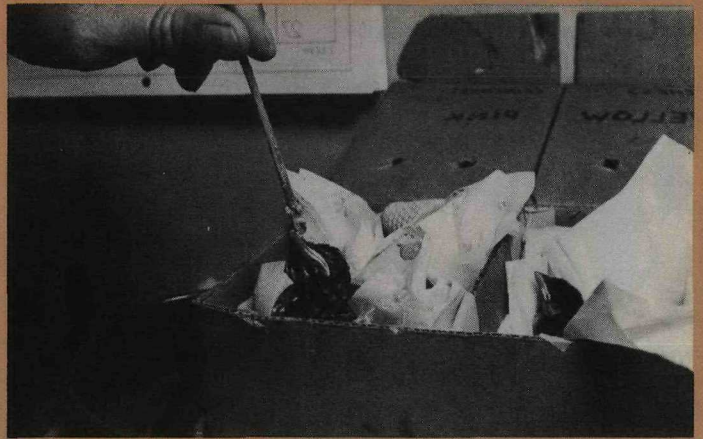
expert care many of these birds may be saved and returned to their natural habitat. These groups are the most qualified to treat any injured bird you may encounter and they should be contacted as soon as possible. In addition, there are state and federal laws which protect most wild birds, and these organizations have special permission from the Department of Fish and Wildlife legally to possess and care for these birds.

It is extremely important that a rare and endangered species be transferred to one of these organizations. From an ecological standpoint, the life of one of these endangered birds may be more significant than the lives of a hundred others more abundant.

Is It Really Orphaned Or Injured?

First of all you must decide whether the bird you've found is really injured or orphaned. A bird that is easily picked up is not necessarily injured. Young birds that have just left the nest don't always have fear of man or animals. There may be a nest nearby and the parent may be still feeding the fledgling. A young feathered bird

HANDLED OR INJURED



that is able to hop is usually considered healthy and should be placed in a bush near the place where it was found. Keep pets away so that the bird is not disturbed, and observe to see if the parents come to its rescue. If the nest is within reach, return the bird directly to its nest. If the nest is out of reach, you may make a substitute nest using a berry box or small basket lined with fine dry grass or soft non-stringy cloth. Fasten this container at or near the nest site where it will receive warmth from the morning sun. Parent birds, in most instances, will continue to care for a bird that has been handled.

If it is not possible to place the bird back in its own nest, another approach is to try putting the bird in another nest with nestlings of similar age and species. The foster mother bird will raise the foster bird without appearing to know the difference.

After careful observation from a distance for two hours, if you see no nest or parent bird, you can assume that the young bird has been abandoned. During this observation period, be prepared to rescue the bird from the neighbor's cat.

Careful observation during this period will also help you decide if the bird is injured or diseased. Some common signs of illness may include (1) lameness or drooped wing (2) ruffled feathers, eyes closed (3) reluctance to move, listlessness, weakness (4) heavy breathing, wheezing, or gasping for breath (5) thinness (prominent breast bone)

Care of Orphaned Songbirds

We are now into the "baby bird" season (March through September). The following is a guide to the emergency care of orphaned songbirds--the most common type of bird you may encounter. Some species of birds such as swallows, hummingbirds, birds of prey, shorebirds and others require special care and diets and will not be discussed here. In the event that you are unable to have the parents or foster parents care for the orphaned bird, and are unable to transfer it to a rehabili-

tation organization, the following discussion may be helpful.

The basic rules are: (1) keep the bird warm (2) don't handle it unnecessarily (3) provide proper nutrition (orphans are often dehydrated and hungry).

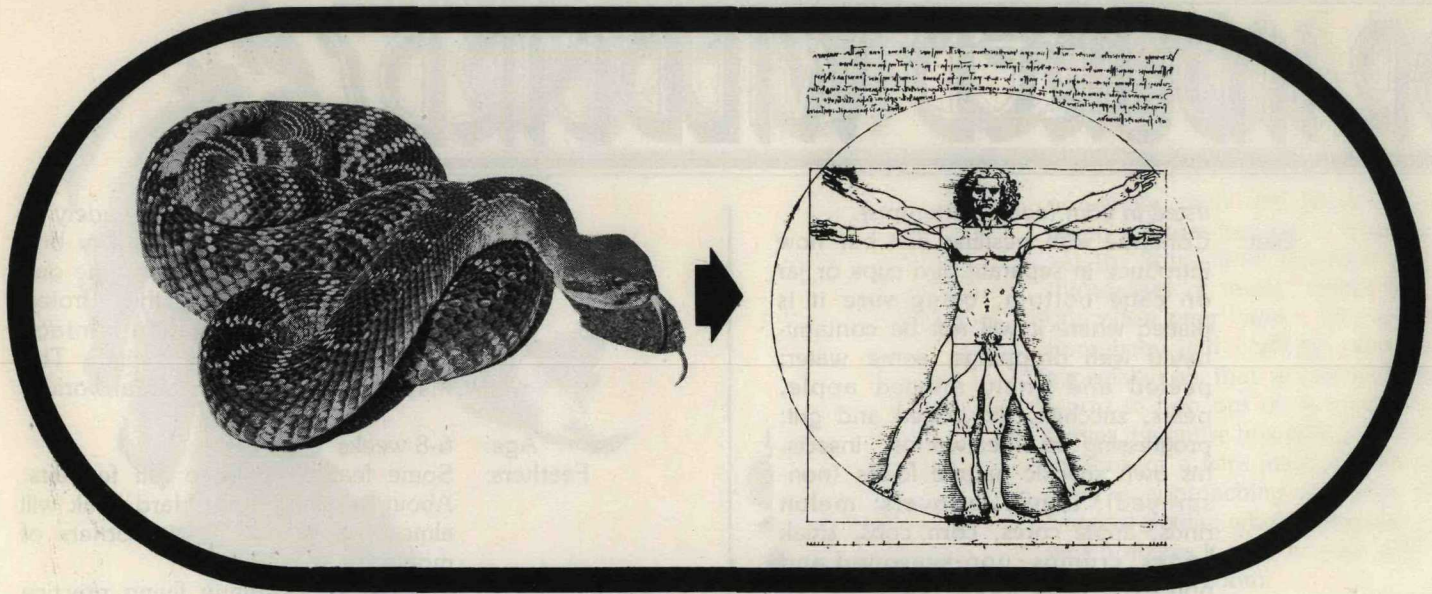
The ideal way to check the adequacy of the feeding program of an orphaned bird you are caring for is: (1) weigh it regularly, looking for a steady gain (a scale for weighing human food portions or a small postal scale may be used) (2) palpate the breast bone and muscles on either side of it (muscles should be plump and round with no sharpness of breast bone) (3) count the daily droppings (approximately 25 per day, formed grey to brown stool and white urine).

The following outline for care and feeding of orphaned songbirds has been carefully prepared, after years of experience, by Carol Hamilton of Wildlife Rescue, Inc., 3281 E. Bayshore Rd., Palo Alto, California. Although there are other programs and suggestions which also are effective, this guideline has worked out very well for thousands of orphaned birds.

Nestling:

- Age: Newborn to 2-3 weeks
- Feathers: Unfeathered / downy / feather quills. No tail to small one. Soft yellow beak.
- Flying: Unable to fly well enough to leave nest.
- Basic Diet: $\frac{2}{3}$ Nestling Food (e.g. Mockingbird Food--may be obtained from pet shops which handle bird supplies). (If eyes are still closed, add yogurt.) $\frac{1}{3}$ strained beef baby food. Vitamins (bird vitamins available at pet stores). Add enough High Protein baby cereal to give good consistency to mixture. Until this diet can be obtained, canned dog food made mushy with water or soaked puppy kibble makes a good substitute. Food must be made fresh daily (Discard if sour smelling).

continued on next page



Beware of Rattlers This Spring

Warm spring weather, together with bringing out the best in mother nature, also brings out the rattlesnakes. With the advent of spring and early summer, the rattlers emerge from hibernation and become a source of potential danger, especially to children, hikers and picnickers.

Rattlesnakes, according to reptilian authorities, are generally shy and not prone to attack, *but are hungry when emerging from hibernation and are active in search for food.* The rattler most likely will be present in areas harboring small rodents such as rats, mice and gophers.

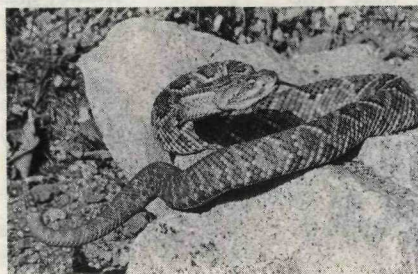
Robert I. Rush, general manager of the Los Angeles City Department of Animal Regulation, urges persons sighting rattlers to exercise a policy of non-aggression.

"Don't tease a rattler by throwing stones or other objects at it," he warns. "If a rattler of any other snake is observed in a Los Angeles residential area, report it to our department and let professional animal handlers take care of the situation." In areas outside of Los Angeles, contact the appropriate animal regulation department in your locale.

Children should be warned against playing or hiking in areas with tall grass or rocky formations. Fallen trees, man-made wood piles or

accessible open spaces under dwellings are all possible hiding places for the rattler. The rattler seeks cool places on a hot day. *Hikers are best protected by high top boots with loose jeans worn outside.*

A person bitten by a rattlesnake should remain as calm as possible and seek immediate treatment from the nearest physician or medical center, says Dr. Findlay E. Russell, snake bite



authority, USC School of Medicine, Los Angeles County General Hospital.

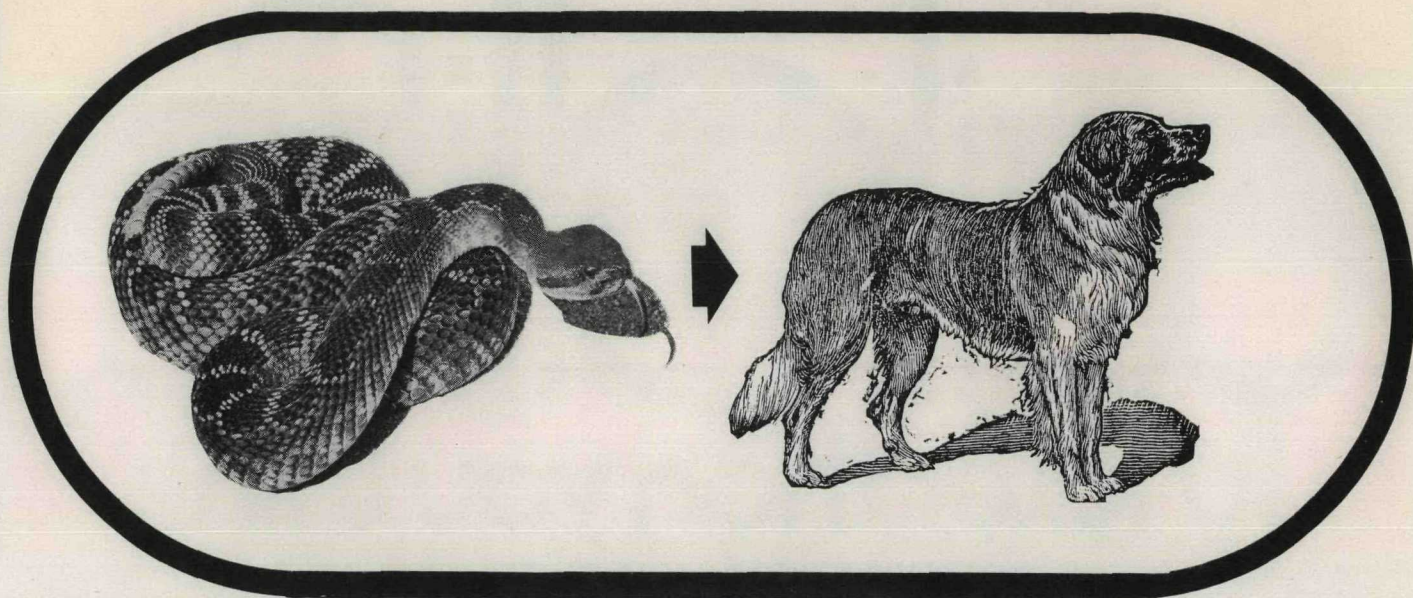
The first step in the event of snake bite, says Russell, is to capture the snake if possible for identification. Next, Russell recommends application of a constriction band two to four inches proximal to the bite. The band should be applied not later than 30-minutes following the bite, should be released for 90-seconds every ten-minutes and should not be used

for more than two hours. The band should be used in conjunction with incision and suction first aid measures. Oral suction should not be used if other means of suction are available, as provided in snake bite kits. Incision and suction are of value only if carried out within thirty minutes following the bite.

The part of the body where the bite occurred should be immobilized. This can be done by splinting as for a broken leg. The bite victim should be kept warm, should not be given alcohol, but may be given water, coffee or tea. If possible the victim should be transported by litter or other conveyance to the nearest source of medical aid. If the victim must walk, he should proceed slowly and rest periodically.

At the doctor's office or hospital, inform the doctor of the genus of the snake involved (if known) or turn the unidentified snake over to the doctor.

Russell estimates that at least 8,000 bites by venomous snakes occur each year in the United States, and that approximately 7,000 of these result in some degree of snake venom poisoning. A large percentage of the snake bites occur in Southern California. However, Russell says, he can recall no more than three deaths from snake bites in Southern California in the past decade.



Snake Bite and Your Pet

by James D. Smith

Photos courtesy of Los Angeles Zoo

What should I do if my pet is bitten by what I think is a venomous snake? This is a question that has been asked by many people - pet owners, breeders, hunters, who use sporting dogs in the field, and ranchers who use dogs to "work" cattle or sheep. The obvious answer is to get the animal to a veterinarian. But what do you do between the bite and professional help? Here are some things you can do. They may mean the difference between an animal who recovers and one who does not.

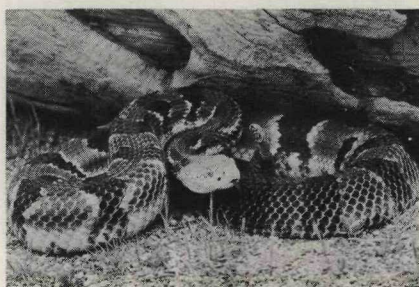
First, it will help you to know something about snake bites. Bites by venomous snakes kill over one hundred thousand animals annually. Most are not domestic animals, and only a small percentage are pets, but it happens often enough to warrant concern by owners of animals not confined to a city apartment.

Dogs are more apt to be bitten than cats. This isn't to say cats don't get bitten. They do, but cats seem to avoid snakes, whereas dogs sometimes seek an encounter with them. Dogs, when bitten, appear more able to tolerate venomous snake bites than other domestic animals.

When a dog encounters a snake, his movements are often quicker than the snakes, and this quickness often

thwarts the snake's ability to inject a full measure of venom into the animal.

Encounters between animals and snakes are due to defensive and offensive tactics, on the part of both. The action of the venom, once injected into the animal's tissue, is immediate cell and tissue destruction in the area of the bite. This



destruction occurs regardless of how soon antivenin treatment begins. It is this local reaction that most often brings the pet to the hospital for treatment. All too often, the local reaction is the only evidence of the bite. But the systemic reactions, resulting from the injection of venom, are profound and deadly. Shock, paralysis, cardiovascular collapse and death are often the sequence following a venomous snake bite.

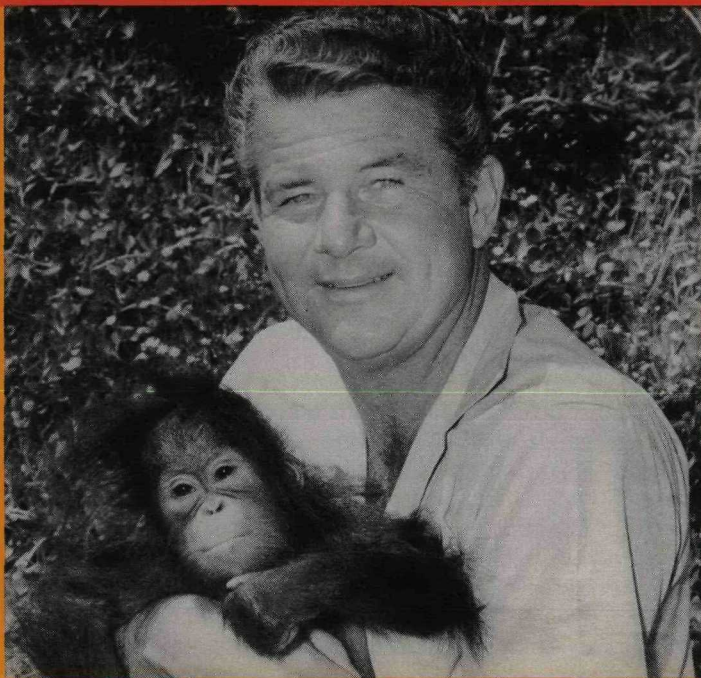
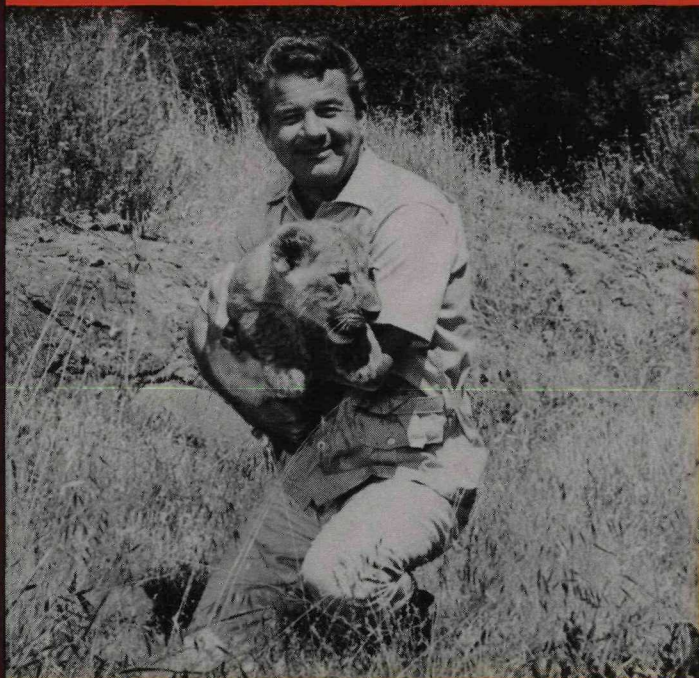
Should you witness an encounter between animal and snake, here are some rules to follow: 1) Quickly subdue and quiet the pet, if possible, so that the spread of venom is held to a minimum. 2) Kill and save the snake, if you can, for identification by the veterinarian. *Be extremely careful not to be bitten yourself.* A description of the snake is better than having to treat the animal and his owner. 3) Apply a tourniquet if the bite is on a suitable part of the body. The tourniquet should only be loosened to allow for swelling---never as an off and on procedure. 4) If the bite is on the legs or feet or head, try to keep that part on a level with the heart. Never elevate or lower the bitten area. 5) Get your pet to a veterinary hospital. If you fear your pet may attack you, even though you are trying to help him, back off and see if the veterinarian will come to you. Be sure to tell him all the facts, as you know them.

Due to the availability of antivenin and other newer therapeutic approaches to treatment, veterinarians are now able to reduce trauma and deaths in pets following an encounter with any venomous snake. Venomous snakes are found in most parts of the United States.

By Bill Burrud

wildlife,

it's later than you think



How would it be if the last animal were to disappear from the face of the earth?

The innocent act of feeding peanuts to an elephant in the zoo...a child's delight at the antics of chattering monkeys...man's admiration and awe of the sleek tiger...the lion's roar at feeding time...the trilling of a songbird on a spring morning. All would be gone forever.

You say, animals have always been with us, it just couldn't happen? Don't you believe it. It could and very well may happen. Unless further steps are taken NOW to prevent it.

And if something isn't done, within a relatively short period of time our only link with the vanished animals would be on film or in picture

books. Think of it. That would be akin to watching departed stars in old movies on television or seeing their photos in long-gone fan magazines.

From the time of Christ until today man has been responsible for the extinction of a staggering 75 percent, or more, of the earth's animals.

In modern times the guns of the hunters, the cruel poisoned arrows of poachers, the encroachment of civilization swallowing up terrain where the animals once roamed freely, drought and fire have combined with ever-increasing force to decimate and help destroy the worldwide animal population.

The sad truth is that if the extermination of animals continues at

its present pace about 100 more species will become extinct by the year 2000.

Let us look at the record. Come with me now for a trip around the world and some hard statistics concerning the animal kingdom.

In our own country and the North American continent, the greatest carnage of all has taken place. In addition to fearsome decimation of so-called minor species such as great auks, carrier pigeons, etc., no less than 28 bird and 12 fish species were totally eliminated between 1850 and 1973.

In the mid-19th Century over 20 million North American bison roamed the western ranges. But by the beginning of the 20th Century only

about 500 had survived. Today, thanks to federally protected preserves and conservation legislation the herd has now increased to some 30,000, but that is, of course, a far cry from 20 million.

The fate of the condor has been even worse. In the mid-1800s they were abundant. Then came the Gold Rush. The miners, spurred by greed, declared war on the bird, often selling the condor eggs for as much as \$300 each! Now there are estimated to be perhaps only 40 to 60 surviving condors. Almost gone, too, are the Florida panther and the brown pelican.

In Latin America the Mexican grizzly is nearing the point of no return. No more than 20 to 30 survive.

The plight of the spotted cats in Argentina is a grim one. Fewer than 100 jaguars remain. Recently, in one Brazilian state an approximate 17,000 spotted cats were killed in a single year. This carnage was duplicated in at least four other Brazilian states.

Similarly, 13,000 ocelot skins were shipped out of two Columbian ports within a six-month period. As a result commercial hunting in that country was banned in 1971--but widespread poaching continues.

The animal horror story is even worse in India where some authorities are calling the present decade, "The twilight of India's wildlife."

Here's the reason: there are only about 1500 tigers left in all of India

and Bangladesh. The species has become the hapless victim of trophy hunters, poachers, skin traders and the encroachment of the wild for the cultivation of food for India's huge, starving population.

The Asiatic lion, Indian rhino and Siberian tiger face a bleak future, if any. Their numbers have been cut to incredibly low figures. There are but 175 Asiatic lions left and fewer than 800 Indian rhinos. Yet, less than a century ago they were so plentiful that bounties were offered because of damage to crops. Today, although protected by law, poaching of these great animals is slowly but surely further diminishing their ranks.

The orangutan is another endangered species. Once plentiful in India and China they are now found only in Sumatra and Borneo.

That brings us around to Europe which has few endangered species. But before you start cheering, the presumed reversal of the trend is simple. Europe has so few to lose!

Moving North to the Polar regions - the frozen wastes - the animals for a long, long time had comparatively little to fear from humans. But with the advent of airplanes, snowmobiles and high-powered rifles all that has changed. Today, several species of seals, the walrus and the mighty polar bear are endangered.

What about Africa? When you think about Africa you automatically conjure up a picture of abundant

wildlife. But the sad truth is that African animals are in dire straits. The deserts of North Africa creep ever southward. The emergence of new states and nations encroach on the wild. Poaching has become big business.

The result is that the black rhino has become extinct. The white rhino is not far behind and the cheetah now numbers less than 100. Included among other vanishing animals are the elephant, the spotted cats, crocodiles, giraffes, zebras and mountain gorillas. All seem doomed.

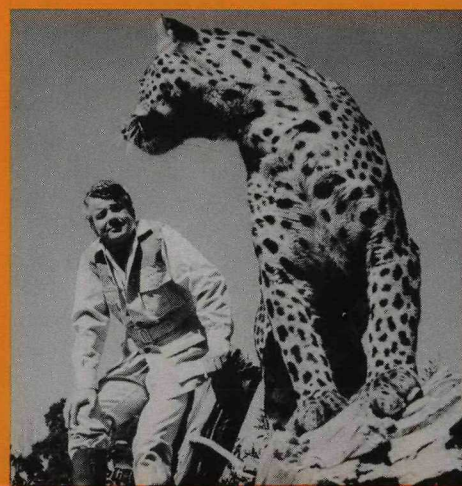
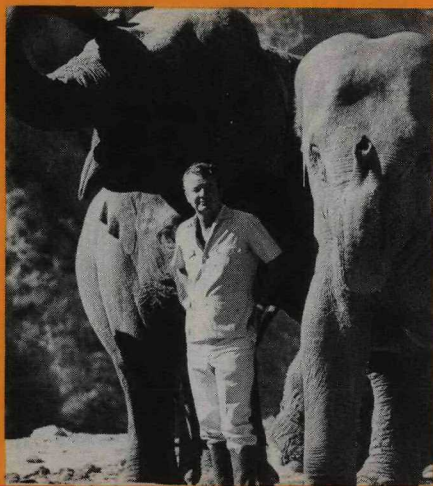
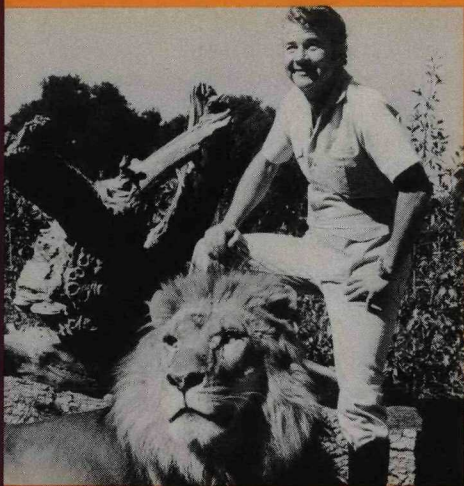
An example: elephants although supposedly inviolate in Kenya's vast Tsavo Park game preserve have been slaughtered by poachers at the rate of two or three per day. It is estimated that perhaps an about 10 years there won't be an elephant alive outside of zoos, if the illegal carnage isn't somehow stopped.

Not long ago in an attempt to bring the desperate plight of the elephant to public awareness, we formed the Bill Burrud Anti-Poaching Fund, dispatched a crew to Kenya and filmed a one hour special, "Where Did All the Animals Go?"

The film was distributed to television stations around the nation and viewers were invited to send contributions to the fund with which to purchase a police-type helicopter for Tsavo National Park.

The contributions poured in and we were able to purchase and deliver the helicopter to the Kenyan govern-

continued on next page



wildlife

it's later than you think

ment. Chief Game Warden Ted Goss has since reported to us that the craft has been successful in trapping many poachers and has cut the illegal slaughter of elephants by a considerable margin.

But that, of course, while highly gratifying to us, is but a drop in the bucket in the total world situation concerning the grave peril facing the animal population.

Perhaps not too many are aware of it, but aside from the humane aspects of attempting to save wildlife from extinction, it is in our best interest to do so.

Indeed, in some cases NOT to do so might endanger man's individual survival. Hence, in helping the animals survive we would also be fostering the preservation of human life.

If that sounds puzzling, it really isn't. Let me cite a couple of examples of what I mean.

Imagine yourself, if you can, as a native in a South American jungle village. Your village was once virtually free of rats. But no longer. That's because trappers have wiped out the spotted cats who used to eat the rats. As a result you may now have a very good chance of becoming the victims of a fatal disease transmitted by the rats. And all because a species was first endangered and then made extinct by man.

Thousands of miles away in Europe a vast number of frogs, perhaps millions, have died because humans have polluted the ponds. Well, the insect population that used to be kept in check by the now departed frogs (who regarded them as delicacies) has escalated, often beyond control, threatening the health of not only resident animals and crops, but man as well.

These are just two examples of what happens when a cog in the delicate balance of nature is destroyed. And for a variety of reasons it is happening elsewhere. As you can see, the extermination of one species not only affects other species, but mankind as well.

Although the situation is dismal,

there are some encouraging signs indicating that the magnificent animals of the earth may not, like the dinosaur, become extinct.

Captive breeding, the reproduction of animals brought from the wild to breed in zoos, conceivably may be the best hope for the preservation of wildlife.

A number of species have been rescued by such programs in the U.S., Asia and Europe.

For instance, three white tigers, leopards and other cats were born at the Cincinnati zoo. Orangutans in captivity are breeding to the point where they are being reintroduced to their native habitat, Borneo.

Indian rhinos have been born in captivity in Basel, Switzerland and other zoos. Pandas have been born in zoos in the People's Republic of China. European zoos have had considerable success with captive breeding. Item: the bison was extinct in the wild, but as a result of the "token" bison's reproduction efforts in the zoos, many bison are now being released to their normal habitats.

In captivity breeding programs for some African animals seem to be going well in American zoos. The Cincinnati zoo, the Columbus, Ohio zoo and Chicago's Lincoln Park zoo have made great strides in the domestic reproduction of gorillas. Cincinnati and the San Diego Wild Animal Park have been successful in the breeding of cheetahs. Not too long ago television news noted a blessed event - the birth of a killer whale at Marineland of the Pacific.

These are hopeful signs, but unfortunately not enough in relation to the total picture.

The obvious question that will occur to the reader is: "What can I do to help the generally deteriorating situation?"

The first thing one can do is to acquire as much knowledge and understanding as possible concerning what is going on, in this country and internationally in the animal world. (And this includes what is NOT going on to help in its preservation.)

Then you might decide whether

or not to join an environmental group.

Among these groups are those attempting to increase and staff preserves and protected wilderness areas. Money is always needed, and happily almost all donations are tax deductible.

It must be remembered that while government control and aid toward the preservation of wildlife has finally taken more aggressive steps, unless means of support (financing) are strengthened, our captive breeding programs may be only means to slow up, not prevent extinction.

The editorial policy of National Wildlife, the official publication of the authoritative National Wildlife Federation, is as follows: "To create and encourage an awareness among the people of this nation of the need for wise use and proper management of those resources of the earth upon which our lives and welfare depend: the soil, the air, the water, the minerals, the plant life, and the wildlife."

The address of the Federation is - 1412 16th St. N.W., Washington, D.C. 20036. The Federation and other environmental organizations of its type may be able to answer questions which occur to you.

The main thing for concerned people to do is stand up and be heard.

For instance, if you feel more wilderness areas are needed, new areas where people can't "encroach" as they do in national parks, make your feelings known to your congressman...on that or any related subject.

Remember, once a species disappears, no power on earth can bring it back.

Apropos of that I would like to recall for you the creed of the Masai, a primitive East African tribe I once filmed, a creed that might well be adhered to by a more so-called civilized society. It goes like this: "All living things shall equally share the bounty of the land."

It is most certainly something to think about.

ask Dr. Smithcors

Q Before my dog was about to whelp, she followed me all day long, and she started to follow me out of the room when she went into the whelping pen. After she was certain I would stay in the room, she went ahead and had her litter. Why would she behave like this? She's a normal dog.

A It is normal for a bitch about to whelp to be apprehensive, especially if it is her first litter. Some seek seclusion and others, like yours, want the assurance provided by having a trusted friend close by. This would probably occur if she were overly dependent on you, to the extent that she could not socialize with other persons; since you say she is normal, I assume this is not the case. If she has another litter, she may decide to manage by herself; but even if she should want you there, I see no reason to be concerned about it; if she is contented, she will probably be less likely to have trouble with her litter.

Q Is it true that if my puppy is spayed before her first heat period she won't get breast cancer?

A The chances of getting breast cancer would be greatly reduced, but to say she won't get breast cancer is incorrect. In one study the risk was found to be only .5% for bitches spayed before their first estrus, meaning that only one in 200 would be likely to develop mammary cancer some time later in life. For bitches spayed after their first but before their second heat period, the risk increased to 8% (8 per 100) and after the second period, the risk was 26%. The above percentages hold whether the bitch has had a litter or not. So it simply isn't true that it's good for the bitch to have one litter before she is spayed; the risk of breast cancer is increased by 16 times, and by 52 times if she has more than one litter. If your puppy is a Poodle, it is especially important to understand these probabilities since this breed seems to have a predisposition for mammary tumors. You can do your puppy (and yourself) a great favor by having her spayed early.

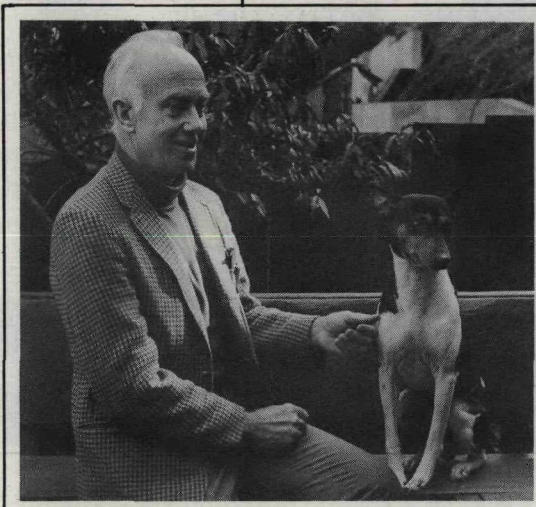
Q Do cats need baths?

A Some cats keep themselves impeccably groomed and may not ever need bathing. Others,

especially toms that roam a lot, may need some help to keep them socially acceptable. To accustom them to the procedure it's probably a good idea to start when kittens are about three months old and bathe them once a month. You can use your own shampoo if it is gentle (baby shampoo is good). There are also products made especially for cats. Don't use household detergent. A creme rinse makes it a lot easier to comb out long hair.

Q My child has ringworm. Should I have my cat put to sleep?

A Your question implies that your cat also has ringworm, but whether it does or not, your child could have contracted the disease from another animal (not necessarily a cat) or another person. Some cats can be infected but the only external indication may be a dry and ruffled haircoat. Unless a cat is severely affected or in poor general condition, ringworm can usually be treated successfully. If large areas are involved, dipping in medicated baths may be required, and some owners may become discouraged because it



is messy and may have to be repeated several times. A relatively new drug, griseofulvin, has been very effective when given by mouth, and I certainly suggest you consult your veterinarian about the advisability of treatment before considering having your cat put to sleep. In any case the cat's quarters should be cleaned and disinfected as thoroughly as possible.

Q Where can I get information about animal acupuncture?

A There are two groups in the United States investigating veterinary acupuncture. They can probably provide you with the name of a veterinarian in your area who has studied acupuncture. They are: The National Association for Veterinary Acupuncture, Box 5181 Fullerton, California 92635 and The International Veterinary Acupuncture Society, Box 458, Thomasville, Georgia 31792

can you depend on it?

J. F. Smithcors, DVM

"The Sins of the Mother"

If your purebred Poodle gets loose during her first heat period and consorts with one or more of the dozen mutts she is likely to meet, this is bad enough. But the crushing blow comes when an old breeder-fancier whom you trust tells you that her second and later litters will all be "tainted" by this mishap!

Naturally, you'd rather not believe the "expert" this once, and you're not too sure about the several anecdotes he offers as "proof." So he pulls his well-worn copy of Hill's book on **The Management and Disease of the Dog** (1890) and lets you read for yourself: "A purebred white English setter, belonging to my brother, by mischance had connection with a yellow-and-white mongrel, to which she conceived, and in each of her succeeding three litters, though put to stainless dogs purely white, the whelps were marked precisely like the first litter, *yellow and white!*"

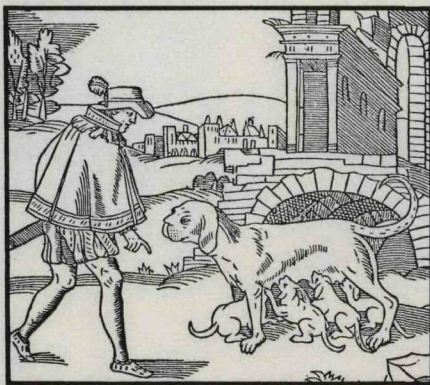
Now do you believe it? Well, let's read what some of the "experts" in the past have said and test their beliefs against scientific experiments.

Like many other such beliefs, some of which have a basis in fact, the concept of mongrel taint--or infection as it was sometimes called--is an ancient one. In his **Booke of Hunting** (1576) George Turbervile assured his readers: "Of what dogge soever a bytche shall be lyned, the first time she goeth proude, at her first lytter, whether it be by Mastiffe, Greyhounde, or Hounde, in all hir other lytters whiche she shall have afterwards, she wyll alwayes have one whelp which shall resemble the dogge that first lyned her. And for that cause you ought to have good regards that the first time she goeth proude, you cause hir to be lyned with some fayre dogge of a good kynde." In an earlier column we used good old George as an expert witness to disprove the notion that a bitch should be allowed to have one litter before she is spayed. And since we know he was right on one matter, shouldn't we believe him on others?

In his **Canine Pathology** (1832) the eminent British veterinarian Dela-

bere Blaine related the story of Lord Morton's mare to substantiate his belief that the first sire has an effect on later offspring sired by other males. This case had been reported to the Royal Society of London, and because a lord of the realm carried more clout than more ordinary mortals, his story popularized the theory of telegony. This term means "distant generation," which is an academic way of saying that a female's earlier indiscretions are ineradicable. Naturally, those who ascribed to this theory were of the male persuasion.

It seems that Lord Morton had an Arabian mare who got too close to a quagga, a now-extinct type of zebra, and to no one's surprise produced a striped foal. Later she was bred to a black Arabian stallion on two occasions and produced two conspicuously striped colts which also developed a mane like a quagga. This provided ammunition for those who were already convinced that telegony was a real and present danger and persuaded others that there must be something to it.



In his book on **Dogs** (1873) the prominent sportsman Frank Forrester accepted the theory of infection as fact and carried it a bit further. In elaborating on the common belief in maternal impressions he says: "Bitches are not always prudent in their loves, but are apt to fling themselves away on curs of low degree. If reared with a companion of vulgar appearance, there often springs up between the pair a devotion which no time can afterward subdue. The passion, for

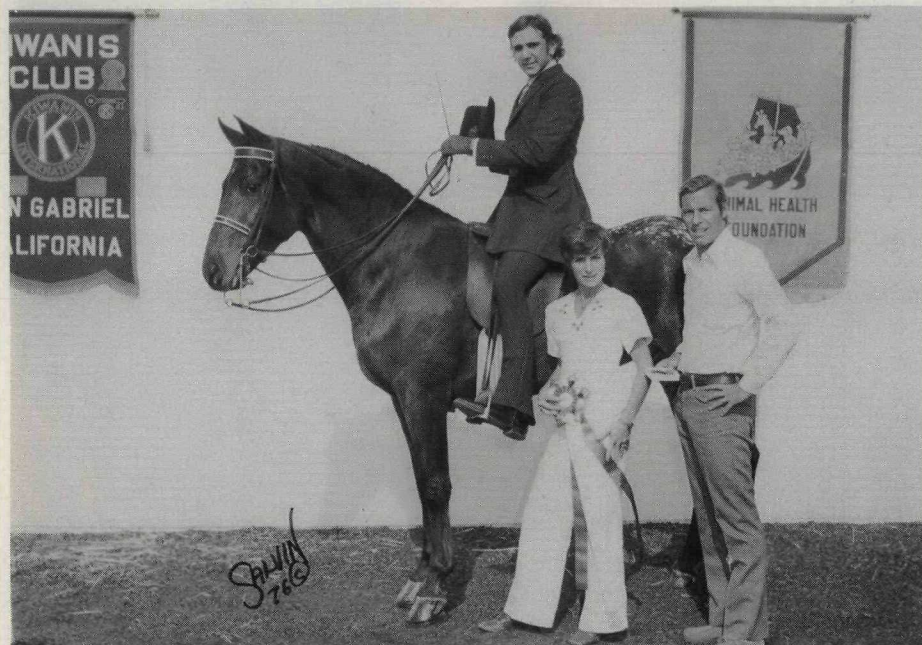
such it really is, becomes of a more than romantic endurance. The loved one's image grows to be so impressed upon the mind--so much so that all the faults of the body afterwards bear its likeness...in the offspring she brings forth the object of her affections will be represented...This is (also) very likely to be the case when the first male accepted is by accident or neglect of impure origin."

So firmly did the notion take hold in the scientific community--including Charles Darwin--that an elaborate experiment was set up about 1890 to test the theory. Eight mares were bred to a zebra stallion and in due time produced 13 striped hybrids, as expected. But when they were later bred to stallions of their own kind they produced a total of 18 honest-to-goodness horse foals. Other data obtained from the experiment also proved conclusively that mares which had never so much as seen a zebra from a distance occasionally would produce a foal with some stripes. This phenomenon is termed atavism, or reversion to an ancestral trait, and it is likely that the forerunners of the modern horse were striped.

Anyone who took the trouble to reflect on the matter for a few minutes would have conceded that a mare which produces a mule foal when bred to a donkey need not make apologies for any subsequent offspring sired by a horse, *ie*, they will all grow up to be horses. But the concept of taint was not to be disposed of lightly; and during this supposedly enlightened 20th century some breed associations have refused to register any offspring of a purebred female--regardless of the sire's credentials--if she had been bred earlier by a male of another breed.

The whole matter has been summed up nicely by one of the foremost animal geneticists of our times, Dr. F. B. Hutt, who says: "Even today many a dog breeder worries over the possibility that some promising bitch, having had an illegitimate litter by some disreputable mongrel, might thereby be ruined for future production of purebred stock. She isn't."

in the NEWS



Mr. & Mrs. Jim Franciscus and their horse "Blue Ensign" after taking 1st Place in the Park Saddle Open event at the last Animal Health Foundation - Kiwanis Golden State Championship

Horse Show. It was considered an unusual win, and probably the first Appaloosa to go Park, with a high stepping walk and trot not usually associated with this breed.

ANIMAL HEALTH FOUNDATION CO-SPONSORS CHAMPIONSHIP HORSE SHOW

The second annual Golden State Championship Horse Show For Animal Health will be held at the Los Angeles County Fair Grounds in Pomona, California on August 5, 6 and 7. This multi-breed show is sponsored by San Gabriel Kiwanis Foundation for youth projects, and the Animal Health Foundation For Animal Health. These two charitable, non-profit organizations were very successful in producing the first horse show in 1976.

Funds raised from the show will be used for animal research projects to discover new and better ways of improving animal health. The Kiwanis Foundation engages in many youth activities, such as: 4-H, Future Farmers, agriculture college projects, scholarships, student loans, conservation projects for school children, Key Clubs, Kiwanette Club and many other endeavors helpful in developing good citizens.

Horses and ponies from all over the United States, Canada and Australia are invited to enter the Championship Show. Horse enthusiasts believe this annual show will become one of the largest championship shows in the United States. This August show will attract professionals as well as juniors. The invited breeds this year are: Morgans, Peruvian Pasos, Welsh Ponies, Ponies of America and American Miniature Horses. There will also be classes for mixed breeds.

People interested in this fund-raising show may write or call this magazine's business office or Dr. C. M. Baxter, General Chairman, 393 Old Ranch Road, Bradbury, CA 91010 (213) 358-6118.

HELPING THE BLIND "SEE"

Two hundred and four blind men and women obtained Seeing Eye dogs in 1975-76, according to the school's annual report, recently issued. This is the largest number of students ever served in a single year

by the Morristown, New Jersey, school. Graduates came from 36 states, the District of Columbia, Canada, Israel and Spain.

Other highlights of the year outlined in the school's report include construction of a new Scientific Breeding Station and purchase of new German shepherd breeding stock. Completion of the new facilities makes it possible for the organization to enlarge its breeding program. It is expected that in coming years 70 percent of dogs assigned to blind students will be from the school's own stock.

With the availability of more dogs, and the addition of several new members in the Division of Training and Instruction, the school's overall training capacity has been enlarged.

The report entitled "The Means to an End" points out that the placement of the dog is not an end in itself; but the means to provide blind persons with the mobility and independence that enable them to lead full and purposeful lives.

The Seeing Eye is America's oldest and most experienced dog guide school, and has trained more than 6,900 dogs for some 4,200 blind persons at its Morristown, New Jersey, headquarters since it was founded in 1929.

TRAINER FINED \$500 TO SETTLE HORSE SORING CASE

A Mt. Orab, Ohio, horse trainer has been fined \$500 as a civil penalty to settle the charge that he violated the Horse Protection Act, the U.S. Department of Agriculture (USDA) reported.

Mr. Whitehead settled the charge under an administrative procedure that permits him to neither admit nor deny guilt. At that point, a federal administrative law judge issues a written order to pay a penalty. The judge imposed a fine of \$250 for each of the violations for an overall fine of \$500.

Accidental Poisoning

Pets and people are exposed to a wide variety of toxic chemicals every day. Some 2000 chemicals and drugs are considered dangerously toxic and hundreds of new potentially toxic chemicals are introduced every year in the United States. Ignorance or human error causes the majority of poison cases in pets. Therefore, for your pet's sake, know the common sources of poisoning. Remember children too; accidental poisoning is the most common medical emergency seen in youngsters.

Common sources of poisoning include: *garbage, dead animals, rodenticides, pesticides, herbicides, fertilizers and medicines*. Even ordinary household plants like Hyacinth, Poinsettia, Rhododendron may be poisonous if chewed by pets.

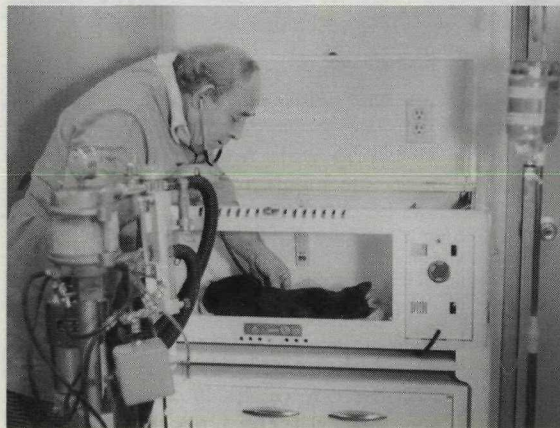
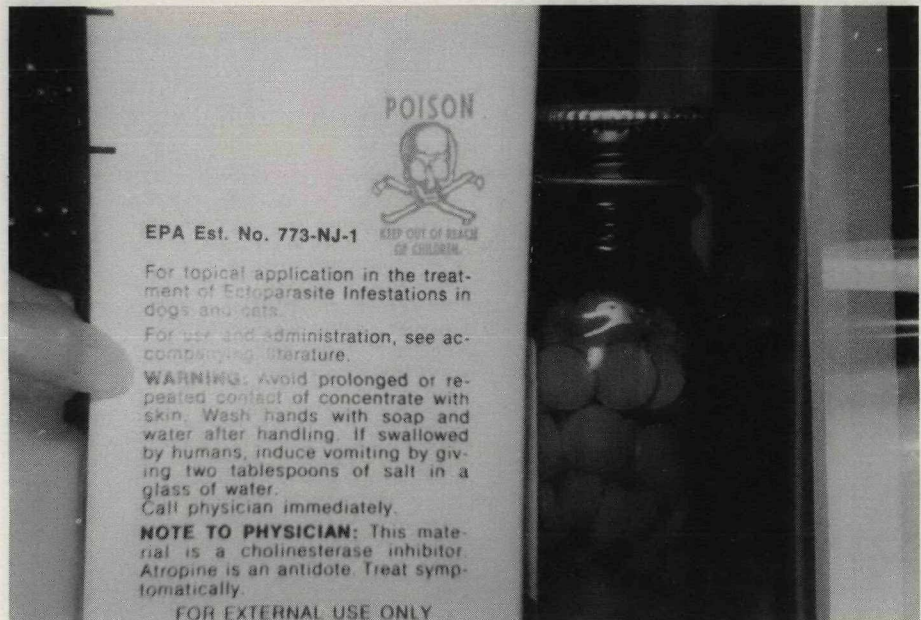
Vomiting, diarrhea, weakness, trembling, dizziness, salivation, excitability and convulsions are all signs that may be exhibited by poisoned animals. Contrary to popular belief, there are almost no distinctive, characteristic signs by which a diagnosis of a specific poison can be made.

Dogs most commonly ingest poisons as they tend to eat rapidly and gulp their food, whereas cats tend to eat more slowly and masticate their food well. Cats usually reject anything with an offensive taste. Horses are selective in their feeding and most poisonous plants are not palatable. Horses may ingest poisonous plants when they are mixed with hay or grain or when they are hungry and have nothing else to eat. Pets who eat garbage, spoiled feed or portions of dead animals are bound for trouble.

Animals can also be poisoned by absorbing chemicals directly from the skin. This often occurs when pets are sprayed, washed or dusted with chemicals used to control flies, fleas, lice, mites or ticks. Cats, being very fastidious, are constantly licking and cleaning themselves and are more likely than dogs to ingest toxic chemicals on their haircoat or paws.

Use of Aspirin in Cats and Dogs

In an emergency, aspirin can be used temporarily for pain and to help



Take time to observe the label on containers. Federal law requires special labeling of hazardous substances and the listing of toxic ingredients on the label.

Checking a cat poisoned from licking roach and ant killer off its feet. The owner had sprayed the kitchen floor heavily with roach and ant killer. Later in the day, the cat walked across the floor picking up the poison on the bottom of its feet.

HOW TO PREVENT ACCIDENTAL POISONING*

1. Read the label carefully on all chemical containers. Remember the label is for the animal owner to read--not the pet. Children of the age most often poisoned cannot read.
2. Don't let your pet roam. Wandering pets are much more likely to come in contact with poisons. They are also more likely to be hit by cars, get into fights and be stolen.
3. Don't let pets chew on or eat toxic plants and avoid feeding plant clippings to animals (guinea pigs, rabbits, goats, horses, etc.) unless you know the plant is non-toxic.
4. Keep all chemicals and medicines in their original containers and store in a safe place out of reach of curious pets and children.



Don't let your pet chew on toxic plants. Be especially careful with kittens and puppies as they will chew on most things they get hold of. There are over sixty common house and ornamental plants that are poisonous to animals. A specific antidote is not available for many poisonous plants.



When phoning for medical advice, have the container in hand so you can be specific about the ingredients. It is usually impossible for a chemist to analyze for a completely unknown poison.



The best treatment for a skin burn is the **immediate** application of cold water. Tap water is usually near by and easy to use. The sooner cold is applied, the better.

WHAT TO DO IF YOUR PET HAS BEEN POISONED

- Save the container. The label on the container is the single most useful diagnostic piece of information available. If you must take your pet to the hospital also take the container; this will enable the doctor to give the correct antidote, if one is available.
- Phone your veterinarian. Tell the doctor what your pet has gotten into (if you know) and ask for advice. Have the container by the phone when talking to the doctor.
- If the poison is on the skin, the animal should be washed with plenty of water to remove any unabsorbed chemical.
- If a toxic chemical, like smoke or carbon monoxide, has been inhaled, get your pet to fresh air.
- Vomiting can be induced by placing a teaspoon of salt in the mouth or by giving two tablespoons of hydrogen peroxide (3%) by mouth. Don't induce vomiting if your pet has swallowed corrosive materials (lyes, acids, etc.)

reduce a fever. *Avoid long term use unless advised by your veterinarian.* All drugs are potentially harmful and their safety depends on dosage. *Do not use the human dose of aspirin for your pet.* Cats and dogs can die if given too much aspirin; so can children, as it is the single most common cause of poisoning in children under the age of five.

For an average adult cat give one children's aspirin (1¼ grain tablet). Reduce this by ½ for small adult cats. *Do not repeat within 24 hours.* For a medium sized adult dog (30 pounds) give one adult 5 grain aspirin. For small adult dogs the dosage has to be reduced accordingly. *The dosage in dogs can be repeated in 8 hours. Do not give aspirin to kittens and puppies.*

Burns

Burns can be caused by scalding with hot liquids, fire or electricity. In man, burns of the skin often result in blisters forming on the skin but blister formation may not occur on your pet's burnt skin. This can mislead you as to the severity of the injury.

Most burns seen in pets occur in the home; so remember the cat around your feet when cooking with hot liquids and the dog that likes to jump up and jar your hand. Keep vaporizers out of both your pet's reach and your child's reach. Pets are not the only ones involved with burns. It is estimated that approximately two million people receive medical attention each year in the United States because of burn injuries. Among children aged 1 to 4 years, burns are the leading cause of accidental death in the home.

The first treatment of a skin burn should be the immediate application of cold water. *The sooner the cold water is applied the better.* Ice water is best. Water can be applied directly from a faucet or garden hose. Application of cold wet packs or immersion of the affected area in a pail of ice water is helpful. Besides preventing further tissue damage, cold relieves the pain associated with burns. *Do not use grease or ointments on burns.* Extensive burns require professional treatment as these injuries can be serious.

SLEEPING SICKNESS IN HORSES

R. Wayne Clark, D.V.M.

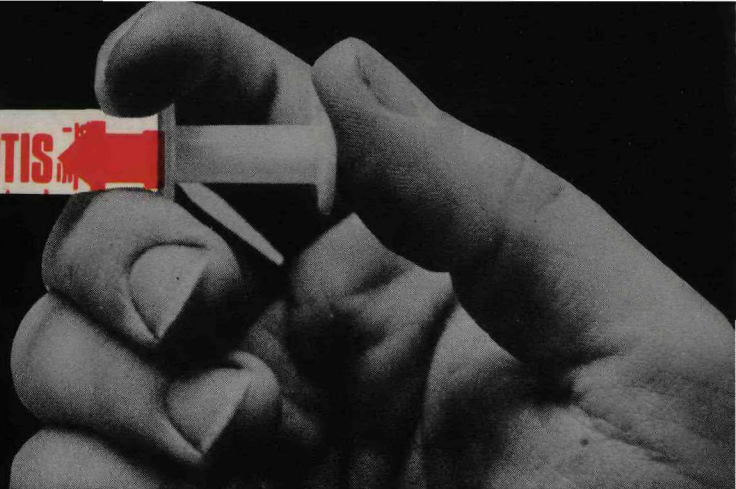
Photograph of the stallion Hard-to-Beat courtesy of R. S. Bar Ranch, and Haver-Lockhart, Kansas City, Missouri



photograph by John Freid



Both Haver-Lockhart and Norden Laboratories manufacture outstanding vaccines to prevent Equine Encephalomyelitis



There are three major arthropod-borne encephalitis that affect horses in the United States, viz., Venezuelan (**VEE**), Eastern (**EEE**), and Western (**WEE**) types of Equine Encephalitis. These are the viral, nervous system-affecting diseases transmitted in nature by insect vectors.

In general, birds and rodents serve as reservoirs of the viruses affecting horses and man. Specific mosquito species acquire infection by feeding on animals or birds whose blood contains the virus. After an incubation period in the mosquito, the virus concentrates in the salivary glands. When the mosquito feeds on a susceptible host, such as a horse or man, the resulting infection may or may not lead to central nervous system disease. Transmission from horse to man has not been proven.

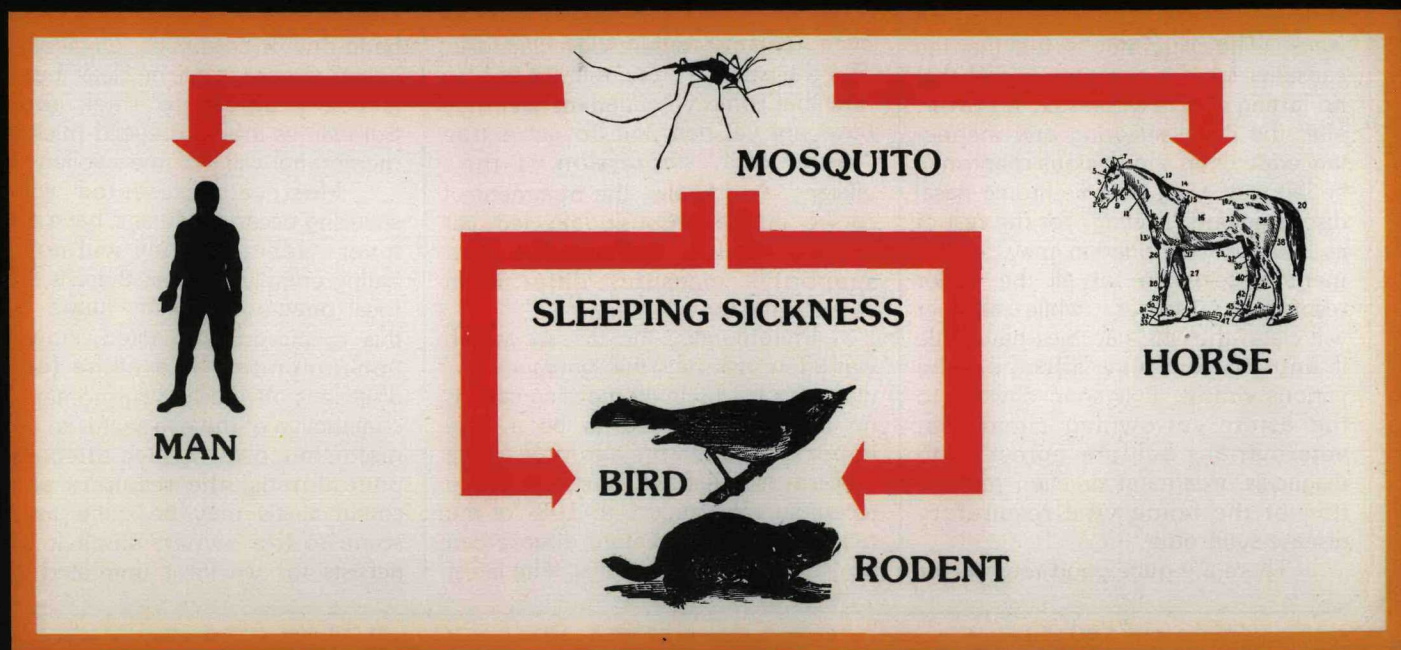
In the 1930's Equine Encephalitis was the most important disease affecting horses in the country. The number of cases has dropped but outbreaks do occur. The disease can be better controlled by use of vaccines, but there is little chance of eradicating the virus from the environment. Horses can be considered the victim of the disease, but it is now thought they can spread **VEE**. The particular designation of the virus (**EEE**, **WEE**, or **VEE**) does not limit it to that locality.

The clinical signs of the disease are initially a high

fever and depression. Reflexes are diminished, the head droops, the muscles twitch, the teeth grind, and there is a reluctance to move with a marked incoordination. If recumbent, an animal may have continuous running motion of the legs.

The mortality of **EEE** is 90% and permanent brain damage may occur in those that survive. The course of the disease is short. The course of the disease in **WEE** is longer, the mortality rate 50% and the treatment is more justified. It is also more of a public health problem and animal outbreaks serve as a warning of the presence of the virus. **VEE** occurs in two different forms with high mortality, a poor prognosis, and the horse itself can serve as a reservoir host of the virus during an outbreak.

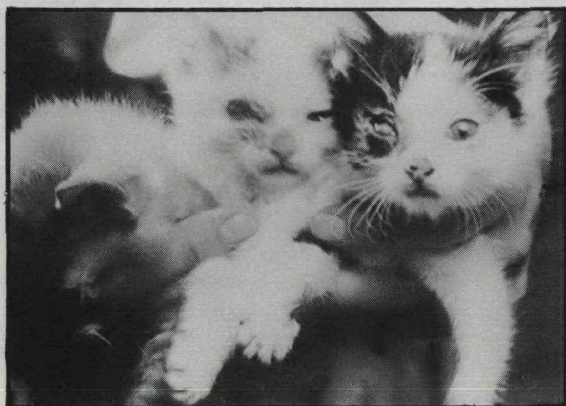
From the public health standpoint, an early accurate diagnosis of encephalitis is important. The treatment is supportive therapy. The proper use of vaccinations is primary in controlling the disease. Horse owners should check with their local veterinarians as to vaccination procedures and time of year to vaccinate. Control of the insect population at the time of an outbreak limits the spread of the disease. The ability of a mare to pass immunity to a foal, the length of time the foal may be protected, and vaccination procedures of each, varies with vaccine brands and the advice of your veterinarian should be followed.



FELINE RESPIRATORY DISEASE

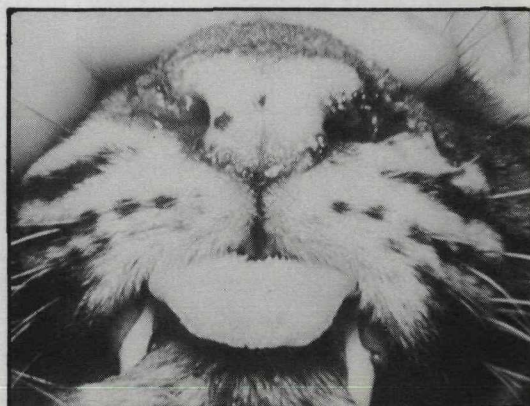
Claudia L. Barton, D.V.M.

A kitten affected with the severe conjunctivitis of pneumonitis.



A group of kittens with the conjunctivitis of pneumonitis.

A clouded leopard with the severe nasal discharge of feline viral rhinotracheitis. Note the crusty exudate around the nose.



There are few syndromes quite as confusing for the cat owner - and the veterinarian - as the feline viral respiratory diseases. The veterinarian may predict to the client that his cat's disease will last for a week, and the cat may then persist in sneezing stubbornly for four to six weeks. The client may be told that the causative virus is not serious and that no lasting effects will result; however, after the initial sneezing and inappetence are over, the anxious client may be left with a cat with a chronic nasal discharge and "sniffing" for the rest of its life. One veterinarian may recommend vaccination for all the major respiratory diseases, while another will claim that the vaccines have little if any preventative affect on the various viruses. It is soon obvious to the astute cat-owning client that veterinarians seldom agree as to diagnosis, treatment or even prevention of the feline viral respiratory disease syndrome.

There are quite good reasons for

this disagreement among veterinarians, of course. The feline respiratory viruses until recently were all lumped as "pneumonitis" by the practitioner, who did not have virus isolation readily available. Only lately have the viruses and their clinical signs been characterized well enough to permit even tentative differential diagnosis. The vaccines on the market are so new that some veterinarians feel they have not yet had time to get a true "in-the-field" impression of their efficacy. And finally, the treatment of choice in the seriously affected cat remains only supportive - and supportive measures differ from veterinarian to veterinarian.

Pneumonitis, the disease which was a few years ago the "garbage-can" diagnosis made on all sneezing cats, is no longer considered to be a very important causative agent of feline respiratory disease. According to recent surveys, only 5 to 10% of the cases of feline respiratory disease can be ascribed to pneumonitis. The latest

name for the causative agent is *Chlamydia psittaci*, a cat-adapted strain of the same organism which is responsible for psittacosis in birds. The incubation period for a cat exposed to pneumonitis ranges from 6 to 10 days. The cat generally presents with conjunctivitis which may be in one or both eyes. Originally the ocular discharge will be clear, but later it will progress to thick mucus. Sometimes the third eyelid (nictitating membrane) will become swollen.

Most cats presented will be sneezing occasionally and have a mild fever. Generally they will not quit eating entirely. Rarely, there is a mild focal pneumonia of the lungs. Since this is infrequently noted, however, "pneumonitis" as a name for this disease is obviously a misnomer. The conjunctiva of the eye seems to be the major mucosal surface affected by pneumonitis; the resultant severe conjunctivitis may be quite troublesome to the owner, since it often persists for weeks if untreated. The

organism of pneumonitis is quite sensitive to certain antibiotics, and cats treated with these antibiotics usually respond well.

There is a very definite carrier stage of pneumonitis, and many clinically recovered cats will continue to shed the organism for months. Since the disease is so highly contagious, isolation of a proven case from other cats is indicated for at least a month after infection. This is especially important for prevention of spread within a cattery. Prevention of pneumonitis in the cat population at large by vaccination is questionable, and many authorities do not recommend it. Cats do not seem to develop completely protective immunity following vaccination, and challenged vaccinated cats will break with disease. Since the incidence of the disease seems to be so low, the cost of the vaccine to most clients versus the small amount of protection conferred on their cat makes vaccination for pneumonitis impractical.

Of the truly viral respiratory infections of the cat, the disease caused by the feline reovirus is the least serious. Generally the respiratory tract is very mildly affected if at all, and the cat's temperature is normal. Most cats do not miss a meal. As in pneumonitis, the conjunctiva is the mucous membrane most affected by the reovirus; it is affected much less severely than with pneumonitis, however. Most commonly, the affected cat will show only a few days of a clear ocular discharge. The signs are so mild that many clients will not even consult a veterinarian. The virus is very contagious, of course, so proper precautions should be taken.

Feline pneumonitis and reovirus cause relatively mild respiratory infections in affected cats. Feline calicivirus and rhinotracheitis are comparatively much more severe, however. Each virus has been reported to be responsible for 40 to 45% of the total number of feline respiratory infections. Vaccines are available for these two viruses, and do confer protective

immunity. The first vaccine developed was administered by injection in the muscle, but the most recently available vaccine involves intranasal and intraocular administration of the vaccination material. Manufacturers' recommendations for a vaccination schedule should be followed religiously with the combined rhinotracheitis-calicivirus vaccine if good results are to be expected. It is recommended that cats in high-risk groups such as show cats be revaccinated every six months. In a rural area, the incidence of respiratory disease in cats may be so low that it is unlikely that a pet cat will be exposed to the viruses. On the other hand, in areas where the cat population is high, the incidence of respiratory disease may also be high, and vaccination would be much more important. A sheltered pet cat who never leaves his home is much less likely to be exposed than the cat who spends a good deal of time outside roaming. Thus it is apparent that the veterinarian must assess the facts in his or her area in deciding whether to recommend highly vaccination for these two viruses or to present vaccination as an option that the owner may decide to accept or reject for his cat. In many instances, the owner should expect a mild bout of sneezing in his cat 4 to 7 days after administration of the vaccine. This is due to the fact that the viruses of the vaccine are modified live viruses, and occasional cats will show very mild yet overt signs of disease as a post-vaccination complication. This mild sneezing lasts only a few days, however, and there is no shedding of virus into the environment. Secondly, the owner must not leave the veterinary hospital after having his cat vaccinated for these two viruses thinking that he has protected his cat against all feline respiratory disease. He should understand that there are other causative organisms of respiratory disease against which his cat cannot be effectively protected. Yet he may be reassured that his cat can be expected to have reasonable protection against the two most devastating and most common

(80-90%) of all the feline respiratory disease.

Differentiating a clinical case of feline calicivirus from a case of feline rhinotracheitis definitely is impossible without special tests. However, there are clinical points which allow the veterinarian to tentatively categorize at least some of the cases he sees. The two viruses have very definite areas of localization when seen in their uncomplicated form.

The feline calicivirus, formerly called picornavirus, has special affinity for the lung and oral mucosa; the upper respiratory tract and conjunctiva are generally minimally affected. Typically, there is a very short incubation period of 1 to 2 days. Initially, there is a moderate fever and possibly mild tear production. More typical of the calicivirus, however, is pneumonia. Thus, harsh lung sounds and labored breathing are often a part of the calicivirus infection caused by the more virulent strains of the virus. Cases caused by less virulent calicivirus strains may present with little or no pneumonia; in these cases oral ulceration is the most prominent clinical sign. Small round ulcers will be present on the tongue, hard palate, gums, and even in the nasal mucosa. These ulcers may begin as blisters, which will rupture leaving the abraded mucous membrane. Obviously, these ulcers are extremely painful to the cat, and the loss of appetite is a prominent clinical sign. In a calicivirus infection uncomplicated by secondary bacterial invaders, sinusitis and nasal discharge are very unusual clinical signs. In both the severe and mild cases of the disease the clinical course is comparatively short. Generally, the virus will persist for only 7 to 10 days as a clinically evident infection. Following recovery, there is shedding of the virus into the environment for an undetermined period of time.

The clinical picture of feline rhinotracheitis is very different from that of the calicivirus infection. Pneumonia and ulcers of the mouth, which are cardinal signs of calicivirus

continued on next page

HEARTWORM DISEASE IN DOGS

by RONALD F. JACKSON, D.V.M.

PART III

Heartworm disease is rapidly becoming the most important canine disease in America today. Perhaps it is already. Ten to fifteen years ago, the disease was confined to a relatively small geographic area of the U.S. -- the coastal areas of the South and Southeast and along the Atlantic Coast to New Jersey. In addition, there were a few isolated areas of infection inland, such as the Minneapolis area and a spot north of Chicago. Recently, heartworm disease has spread across most of the states east of the Mississippi River and even into Canada. The West Coast and Rocky Mountain areas have remained relatively free except for dogs brought from heartworm infected areas. However, cases are beginning to appear in native dogs in the Sacramento area of California.

One can only speculate on the cause of this rapid spread of the disease. While there is undoubtedly greater mobility of the human population and therefore the dog population, this would not explain the extent of the spread in native animals. Dr. G. F. Otto of the University of Maryland, a parasitologist who has made a study of the geographical distribution of the disease and of the biology of the parasite, suggests that a change in the adaptability of the parasite to colder climates may be the answer. Since the disease is mosquito born, it occurs more commonly where higher populations of mosquitoes are found. There was evidence that the eleven to fourteen day cycle of the parasite in the mosquito required a constant twenty-four hour temperature above 70 degrees. This apparently is no longer true in the North and may very well account for the increase of the disease in the

temperate climates of our country. If this is true, then I think that we can expect heartworm disease to continue to spread in the years to come.

The heartworm is a nematode, or type of roundworm, the adults of which live in the right side of the dog's heart and the large adjacent vessels. Adult females may reach a length of thirteen inches and the males nine inches. While the average number of heartworms found in an infected dog is less than twenty-five, some dogs may have two to three hundred. The mosquito is the only intermediate host and is necessary for transmission. The large adult females produce microscopic baby forms called microfilariae which circulate in the dog's bloodstream. These microfilariae may be picked up by a mosquito when the mosquito bites the dog. They grow and molt several times during the approximate two week period in the mosquito. They eventually migrate to the proboscis (biting parts) of the mosquito as infective larvae and when the mosquito again bites a dog, these larvae enter the skin of the dog. In the next two to three months the larvae migrate through the tissues of the dog and grow and finally enter the heart as small worms about two inches long. Another three months is required for the worm to reach full maturity. The total length of time between the mosquito biting the dog and the production of microfilariae is about six months. Thus, an infection resulting from mosquito bites during the summer may not be detected until microfilariae are found in the dog's blood the following spring.

A diagnosis of heartworm disease is usually made by the detection of microfilariae in the blood. The veterinarian may use one of several

methods to concentrate the microfilariae so that if only a few are present, they will not be missed. He will make a microscopic examination for the presence of microfilariae and in addition he will check to see whether the microfilariae are those of heartworm or **Dipetalonema**. The latter are produced by a small parasite that lives under the skins of dogs and, in contrast to heartworms that do a great deal of damage to the dog, the **Dipetalonema** are apparently harmless. A small percentage of dogs with adult heartworms do not have microfilariae, and in such dogs diagnosis is more difficult. Other blood tests may give some indication of infection, although the veterinarian relies primarily on chest X-rays to make his diagnosis in the absence of microfilariae.

Heartworms can cause damage to the dog's lungs, heart, liver and other organs, and perhaps the most dangerous aspect of the disease is that the damage can be quite well advanced before the dog shows signs of illness. For this reason, it is important to detect the disease as early as possible by having routine blood tests made. In areas where the disease is known to be common, dogs exposed to mosquitoes should be put on preventive medication. The first outward sign of heartworm infection is a cough. This may go on for some time before any other signs are noted. Later, the dog may show signs of tiring after exercise or may even collapse. Some dogs with heartworm disease of long standing, develop signs of congestive heart failure, dropsy and difficult breathing.

Fortunately, as we have said, the disease can be detected by your

continued on next page

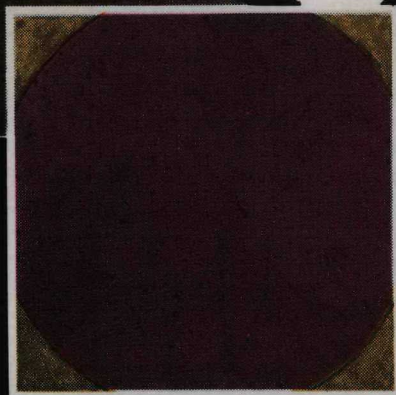
Heartworm Life Cycle

A Mosquito infected with microfilariae transmits the infective larvae which is in his saliva to the dog.

Infective larvae penetrate the dogs circulatory system moving to the heart. They develop into mature heartworms within five months. Here they live in the heart and adjoining blood vessels for up to five years.



Adult female heartworms give birth to microfilariae which then enter the bloodstream. Microfilariae will persist in the blood for three years or until a mosquito ingests them during feeding.



The infected mosquito contact with another dog continues the cycle.

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HEARTWORM DISEASE IN DOGS

veterinarian. Treatment of infected dogs can be accomplished with a high degree of success, provided the disease has not progressed to an advanced stage and provided the dog has no other organic disease such as nephritis. The initial stage of treatment is aimed at eliminating the worms in the heart. This consists of a series of injections of an arsenical compound into the vein over a period of several days. The arsenical is an organic type of arsenical similar to one that has been used against certain human diseases. It is not at all like the more toxic inorganic arsenicals. Nevertheless, there is some potential for damage to the liver and kidneys, and for this reason the veterinarian will want to run some laboratory tests to assess the dog's condition prior to treatment. Some veterinarians also take chest X-rays to help them determine how much damage may have already been done to the heart and lungs as a result of the presence of the worms. The veterinarian will observe the dog closely throughout the course of injections, and may want to do additional laboratory tests if any reactions occur. After the series of injections is completed, the dog will be examined periodically for the next week or ten days. As these large heartworms are killed, they float into the blood vessels of the lungs where they die and disintegrate. This creates an inflammatory reaction which may cause a fever and coughing and, in some severely infected dogs, signs resembling pneumonia. It is absolutely essential to keep the dog quiet during the first two or three weeks following treatment. Exercise aggravates the lung problems and can cause hemorrhage into the lungs, a very dangerous situation.

Several weeks after the treatment to eliminate the adult worms, a medication is given to destroy the microfilariae in the bloodstream. Several pharmaceuticals are available for this purpose and the dose, method of administration and length of treatment will vary depending upon which one the veterinarian chooses to use. Sometimes microfilariae are difficult to kill, and occasionally a lengthy treatment may be required or in some cases more than one preparation may have to be used.

Once the dog is free from

microfilariae, it can be put on the preventive medication. However, one must bear in mind that only the worms in the heart and the microfilariae have been eliminated. If infected mosquitos have bitten the dog at any time from two months prior to treatment until the preventive was started, the migrating larvae may mature into adult worms and the dog have have to be treated a second time.

In an area where heartworm disease is known to exist, preventive medications should be used in dogs that are out of doors. The medication, called diethylcarbamazine (D.E.C.), comes in powder, tablet or liquid form and is given daily starting at time of exposure to mosquitoes, continuing throughout exposure and for two months after the end of exposure. In southern areas where mosquitoes may be present most of the year, the medication is given year round. In areas where the mosquito season lasts for a definite period such as from April to October, the medication is started on the first of April and continued daily until the first of December. Dogs, taken by their owners from non-infected areas to infected areas, must be given the medication not only while in the infected area but also for two months after they leave.

One of the most important things to be aware of is that the preventive medication must not be given to a dog with microfilariae. Twenty to twenty-five percent of such dogs, if given D.E.C., will have a bad reaction and an occasional fatality may result. Puppies can be started on the medication without a blood test but any dog over six months of age

must be tested and shown to be microfilariae-free prior to starting the medication. Similarly, dogs taken off the preventive medication for the winter months must be tested before they are started back on it in the spring. While the medication is very successful in preventing the disease, there is always the possibility that a few days dosage may have been missed by the owner or perhaps vomited by the dog.

There have been a few reports that the continued use of D.E.C. as a preventive caused previously potent male dogs to fail to sire litters. Research with the use of D.E.C. in larger doses than those routinely used failed to show any change in the morphology or activity of sperm from males so treated. The occurrence of this temporary sterility has been extremely rare considering the wide usage of D.E.C. over a period of ten years, so that this should not deter one from using it as a heartworm preventive. Occasional vomiting in less than one percent of the dogs is the only other side effect of D.E.C. noted by this writer. The decision as to whether or not to give the medication to a dog should be made by the veterinarian after a discussion of the particular situation with the owner.

In conclusion, I would like to emphasize that heartworm disease is a severe disease of dogs that has spread rapidly throughout the U.S. in the past five to ten years. However, good methods of detection are available as are successful methods of treatment. Preventive methods have proven effective and should be used in dogs exposed to mosquitoes in an area where the disease is common.

Even dogs from nice families get worms.



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CARE OF ORPHANED OR INJURED WILDBIRDS

continued from page 11

Warnings: The following is to alert you to some preventable causes of injury and premature death.

1. Aerosol sprays: do not use in same room with birds. Also, household pesticides can kill birds.
2. Bird Sitters: be sure you instruct thoroughly.
3. Cage bars: a little bird can put his head through the bars and may not get it out. Cage size should fit the occupant.
4. Cats: probably the biggest killer of baby birds is the household cat. Keep the cat out. Secure the bird housing with ties on box lid or cage door.
5. Dogs: do not allow your bird to become "pals" with your dog. In the wild, trusting birds soon make the fatal error of being "pals" with the wrong dog.
6. House Guests: baby birds have been stepped on, sat on and accidentally released out open doors. Lock up birds until company is gone.
7. Open water: filled bath tubs, toilets, dishwashing water, pet water dish, etc. are a hazard to any bird, but especially to beginning flyers. Prevent drownings.
8. Stoves: lock bird up when cooking. Hot burners and open pots cause obvious tragedy.
9. Stringy cloth: e.g. terrycloth towels, ripped material, etc. Do not use around birds or their cages. Birds pick at the swallow string. Also it has been found wrapped around legs and neck.
10. Safety: always work with and hold baby bird over a table. They are wiggly creatures who easily slip out of our hands. A long drop to the floor can cause fractures or death.
11. Vacuum Cleaners: can suck up a baby bird who lands in front of them at the wrong time.

Note: All of the above tragedies have actually happened.

Care of an Injured or Diseased Bird

The care of an injured bird can be very involved and should be left to those who are experienced. Care and treatment can be a great responsibility. However, if you are unable to obtain professional help, the following first aid suggestions may be useful: (1) Provide warmth, proper housing in a quiet and dark place and nutrition as outlined for orphaned birds. (2) If the bird is extremely weak, it is best to supply sugar water and wait a couple of hours before supplying solid food. This helps provide fluid and quick energy. Mix about 1/8 cup sugar with a quart of water and give about 1cc (about 20 drops) to a bird the size of a sparrow and about 15cc (1 1/2 ounce) to birds the size of pigeons. Place this water way in the back of the throat behind the tongue to avoid fluid going into the lungs. (3) Small superficial wounds may be gently cleaned with peroxide or warm soapy water and an antiseptic may be applied. (4) Handle as little as possible.

The first solid food should be a soft, bland, moist diet as described for orphaned birds. In the injured or severely stressed birds, it is best to start by feeding small amounts every 2-3 hours. Do not force the food.

If you come across a mature bird that seems ill or

injured or for some reason doesn't seem to be able to function normally, approach him very slowly. Do not chase him because you may scare him and cause further injury. If he is a bird of prey or a bird with a long, sharp-pointed beak, be careful to avoid injury to yourself by sharp talons or beaks.

If the bird just seems weak and dispirited with no apparent outward injuries, he may just be in shock or stunned, and may only need warmth, a little time, nourishment and shelter in order to recover.

The injured bird will be more likely to be weak from lack of food and water in addition to whatever his primary problem is. Replacement of fluid and food is of primary importance. Feeding, warmth (80-85 degrees) and housing can be provided as described for orphaned birds. Place a small dish of water heavy enough so the bird will not spill it and place soft food in the box with the bird. Within a few hours of undisturbed rest and some nourishment, many birds recover and can be released. Release the bird in the same area as he was found (unless there are obvious hazards there), and keep pets away until the bird has flown to safety.

Common injuries among birds include broken wings, broken legs and concussion from flying into objects. Broken bones should be set by an expert as pressure in the wrong spot will further damage the bird.

If you find large numbers of sick birds, report them immediately to a local representative of the State Fish and Wildlife Department. There is not much that an untrained person can do for a severely injured or poisoned bird. It is important to keep the bird comfortable and quiet in a lined box until he can be treated by a professional.

Oil spills are the greatest threat to the survival of water birds in our increasingly polluted twentieth century. Sea birds will appear on the beaches in obvious distress, preening their oiled feathers and unable to swim without sinking. When a bird is oil-soaked, it is adversely affected in several ways. By coating the feathers, oil increases the weight of the bird and makes flight difficult or impossible. The oil also affects the feather structure itself, destroying its waterproofing ability. Thus the bird becomes wet and chilled. As a result many birds die of chilling, exhaustion and starvation in addition to the toxic effects of ingested oil. What you can do until you can obtain professional care is (1) provide warmth--place in a cardboard box with rags, near a source of heat (2) gently wipe oil from eyes, nostrils and beak, and (3) prevent any further ingestion of oil by either placing a rubber band around the beak or by wrapping towels around the body, whichever seems to cause less distress. After doing the above, contact a bird rescue organization in your area.

Conclusion

Each living thing links to many others in the chain of nature and there is a great joy and satisfaction achieved when a bird which has been injured or abandoned is released to its wonderful free life in the wild.

We have all experienced the frustration of being unable to assist a hurt or abandoned wild bird. I hope these suggestions and concrete advice will help everyone to achieve the deep joy and satisfaction which comes when we have returned one of nature's lovely winged creatures to health and freedom.

Taking care of baby birds is a wonderful experience but to do a good job you will need the following: tweezers, multiple vitamin drops such as ABDEC drops, dry dog food (I use Science Diet) and, if you don't have a heating pad, you will need a lamp without a shade to keep the bird warm. If you use a heating pad put lots of layers of newspaper on it so you don't burn the bird.

The tweezers need to be thin on the end so you don't cut the little bird's throat when you are feeding it. The ABDEC drops are liquid vitamins that help keep the birds healthy. They are very important.

You prepare the food by soaking it in water. You should soak about 10 pieces of food at a time so it doesn't dry out really fast. You put 4 ABDEC drops in the food and let it get good and "mooshy".

Next, you put a little piece of food on the tweezers. When the little bird opens his mouth, you stick the

food down his throat. But, be careful you don't stick the tweezers too far down the bird's throat; it could injure the bird.

The baby bird will need a nice warm nest in which to sleep. You should make a nest of paper towels, Kleenex or something soft. Keep the bird's nest or bed dry. If it is wet, the baby bird could get a chill and catch cold.

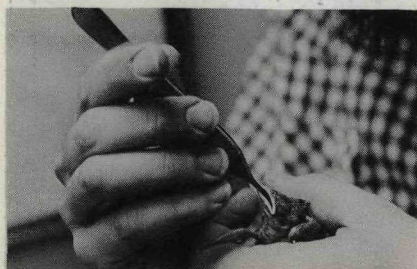
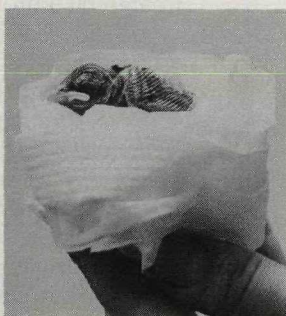
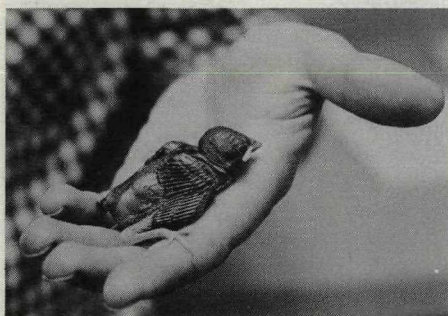
When feeding baby birds, you really have to watch out that you don't feed them too much or too little. Little birds need quite a lot of food. Baby birds have to eat every $\frac{1}{2}$ - 2 hours, even during the night. As little birds get older and stronger, they are able to go longer between feedings. Feeding the bird often enough is very important.

GOOD LUCK!

P.S. An eye dropper comes in handy for placing 1 drop of water at a time down your little bird's mouth.

DO YOU HAVE A STORY YOU WOULD LIKE TO SHARE? If so, please send it to Dyana Paul, Today's Animal Health, 8338 Rosemead Blvd., Pico Rivera, California 90660. If your story is accepted for publication, we will either send you a one-year's subscription to our magazine - or, if you already subscribe, we will extend your subscription one year FREE.

Please only submit typed or printed stories and good pictures if you have some. If you draw well, and would like to submit a drawing instead, please send it along. If you do, though, be sure and tell us about the drawing - either on the back or on a separate sheet of paper.



"MAN'S BEST FRIEND" by Sandra J. Kennedy

- A Dog used as firemen's mascot
- B Dog used in sport of fox hunting
- C Dog used to rescue people lost in snow
- D Favorite pet of English aristocracy
- E Dog used to drive cattle and sheep to market
- F Dog used to track criminals
- G Guard Dog
- H Dog used to pull sleds
- I Dog used to guide blind
- J Dog used in the sport of dog racing

- | | |
|------------------------|----------------------|
| 1 __ Doberman Pinscher | 6 __ Greyhound |
| 2 __ Saint Bernard | 7 __ Collie |
| 3 __ Eskimo Dog | 8 __ Bloodhound |
| 4 __ Yorkshire Terrier | 9 __ German Shepherd |
| 5 __ Dalmatian | 10 __ Foxhound |

Answers:

- | | |
|------|-----|
| B 10 | A 5 |
| I 6 | D 4 |
| F 8 | H 3 |
| E 7 | C 2 |
| J 6 | G 1 |

YOU CAN HELP SAVE THE WHALES

The killing of whales is, perhaps, mankind's darkest hour.

These magnificent creatures, which have taken millions of years to evolve, are being mercilessly hunted and slaughtered by Japan and Russia in defiance of a world-wide whaling moratorium. Here are some of the grim facts of whale killing:

1. Modern whaling is big business.

Huge convoys of ships roam the seas surrounding Antarctica searching for their prey. These fleets are equipped with sonar, helicopters, long-range explosive harpoons and factory ships which can reduce an 80-foot whale to a memory in less than one hour.

2. Whaling is not humane. Although searching for whales is highly sophisticated, the actual whale kill is barbaric. The whale is killed by a 200-pound, six-foot-long iron harpoon, shot from a 90 mm cannon. The harpoon head contains a time-fuse grenade which, literally, blows the whales entrails apart seconds after impact. The whale may spend hours in agony, and more than one harpoon may be necessary to bring death.

3. Whales are slaughtered to provide products for which there are substitutes. Whales are killed for animal feed, industrial oils, ferti-

zer, perfume, soap, shampoo, gelatin and margarine, to name just a few. Inexpensive and plentiful substitutes exist for each of these whale by-products.

4. The rate of whale killing during the past 10 years has been alarming. On the average, one whale is killed every 13 minutes — over 100 every day. In 1976, almost 40,000 Whales were killed. And all eight species of great whales have been reduced to the point where each is threatened, in varying degrees, with extinction.

Responsible people around the world can join our effort to help save the whales from extinction. **Everybody** can take part in this campaign.

Here's what you can do:

1. Boycott products manufactured in Japan and Russia. Economic loss is an excellent way to convince the whaling nations that we mean business.

2. Join our petition drive. Sign a petition protesting the whale killing and send it to us with your name and address immediately. We want to have 1,000,000 signed petitions presented to the governments of Japan and Russia later this year. **Every** signature will bring us closer to that goal.

3. Send us a tax-deductible contribution to help continue the petition drive. A \$15 donation will help us reach 100 other people. Any amount — no matter how large or small — will be put to immediate use in putting an end to the whale slaughter.

***A PETITION TO HALT WORLD-WIDE WHALE KILLING:**

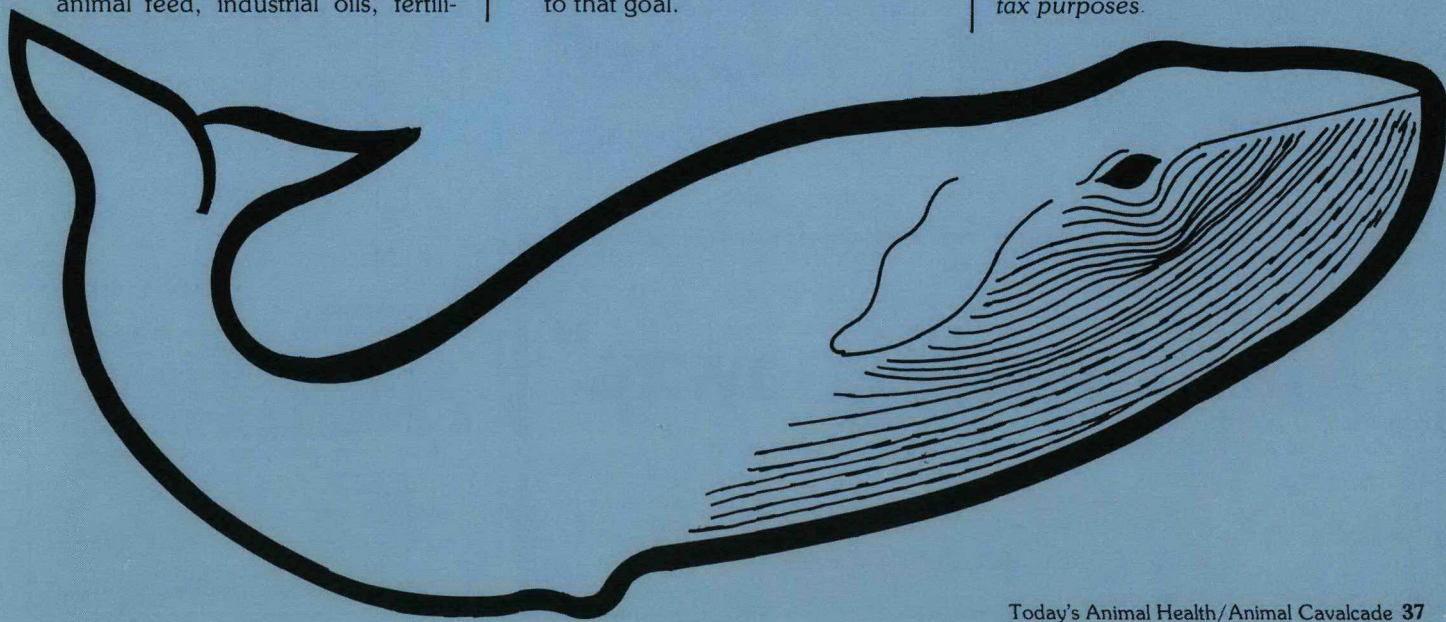
"I, the undersigned, join with the Center for Environmental Education to petition the governments of Japan and Russia, and all other countries engaged in commercial whale killing, to put an immediate stop to the needless slaughtering of whales."

(Signed) _____

Please help us today. Send your petition and contribution to:

The Whale Protection Fund
c/o Center for Environmental
Education
2100 M Street, N.W.
Washington, D.C. 20037

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PENNSYLVANIA SCIENTISTS REPORT PROGRESS ON CANINE ALLERGY TEST

Preliminary findings at the University of Pennsylvania offer hope that your veterinarian may soon be able to diagnose allergies in your dog with greater accuracy and without having to perform the often irritating skin sensitivity tests.

R.E.W. Halliwell, M.A., Ph.D., Vet.M.B., M.R.C.V.S., and research fellow Gail Kunkle, D.V.M., report progress in adapting for dogs an allergy test recently developed in human medicine. Called RAST, the diagnostic test can be performed on a blood serum sample; the veterinarian need not even see the dog.

Dr. Halliwell says the new test has been developed to detect ragweed allergy so far, and the investigators "are currently working on adapting the test for a wide range of additional allergens."

Studies in man have shown the RAST to be a more accurate diagnostic tool than skin testing because it measures the degree, not merely the presence, of an allergic reaction. Further work is needed to determine whether this is also true in the dog.

An additional advantage of the RAST is that it can be used on dogs that have recently undergone cortisone or antihistamine treatments, which would mask the results of skin testing. Such drugs often are used to treat allergies.

In another phase of their investigation, Dr. Halliwell and Dr. Kunkle are trying to find the best preventive therapy for allergic diseases, which usually take the form of skin problems.

Today's Animal Health

IN THE NEXT ISSUE, WATCH FOR:

1. What is Heart Murmur?
2. Global Animal Extinction
3. Cats and Leukemia, Part I
4. Old Dog Encephalitis
5. Synanon

Even dogs from nice families get worms.



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BETTER CARE FOR PETS IN TRANSIT by Peter Weaver

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Let's say you're taking your pet with you on a plane trip. You pay extra and think you'll get extra service and care.

While some airlines do, indeed, try to take extra care of pets, some do not. As a matter of fact, pets are officially regarded as "baggage" or "freight" and not living creatures.

There are no special rules governing the proper care, feeding or handling of pets by airlines and other shippers. Because of this lack of rules, some pet owners have been dismayed when their animals arrived near death in a crushed cage or have expired from the heat while a plane had to sit idle on some runway in 90-degree temperature.

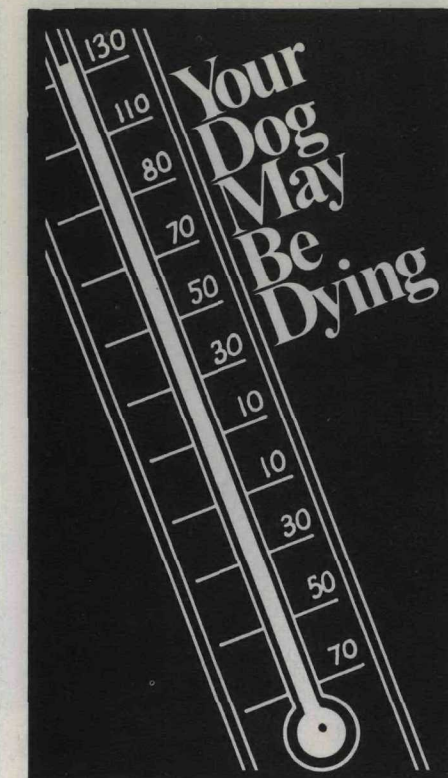
In answer to increasing complaints from pet owners and animal handlers who ship show dogs and cats, Congress passed a law that will require airlines and others to take better care of animals in transit.

Called the Animal Welfare Act Amendment of 1976, the new law will grant authority to the secretary of agriculture to require special handling of pets in airports, safety rules governing proper strength and ventilation of transport crates or cages and adequate air and temperature control in aircraft shipping compartments.

But the new law won't go into effect until sometime next winter. Rules have to be drawn up, hearings have to be held and this all takes time. So, in the meantime, if you plan to take your pet with you on a trip this summer or plan to ship a pet by freight, follow these rules offered by veterinarians and airline cargo experts:

—Take your pet with you in the cabin if it's at all possible. This is the safest and least expensive method of animal transportation. But most airlines won't allow anything bigger than a 10-pound cat or dog in the cabin. The pet must be able to fit comfortably in a relatively small container that can be stowed under the passenger's seat.

—Next best method for pet travel is "excess baggage." This is where the pet goes on the same plane with you but rides in the baggage compartment. You have to arrange this type of travel well in advance of your flight and be sure to arrive an hour ahead of flight time to make the proper arrangements. If possible, have the



We understand you meant to be kind in taking your dog with you today, but you could be risking his life.

On a hot summer day the inside of a car heats very quickly. On an 85 degree day, for example, the temper-

ature inside your car—with the windows slightly opened—will reach 102 degrees in 10 minutes. In 30 minutes it will go up to 120 degrees. On warmer days it will go even higher.

A dog's normal body temperature is 101.5 to 102.2 degrees Fahrenheit. A dog can withstand a body temperature of 107-108 degrees Fahrenheit for only a very short time before suffering irreparable brain damage—or even death. The closed car interferes with the dog's normal cooling process, that is, evaporation through panting. **IF YOUR DOG IS OVERCOME BY HEAT EXHAUSTION, YOU CAN GIVE IMMEDIATE FIRST AID BY IMMERSING HIM OR HER IN COLD WATER UNTIL BODY TEMPERATURE IS LOWERED.**

Editor's Note: This attractive and attention-getting leaflet is available in packages of 100 for \$1.00 per package. Write directly to API, 5894 South Land Park Drive, Sacramento, California 95822. If your Scout Troop or classroom is looking for a worthwhile community project, this could certainly be one. The leaflets could be easily distributed in the parking lot of a supermarket or in a shopping mall.

airline give you an "escort service" to permit following the pet along the way to the plane so you can observe the loading.

—Make sure you get a sturdy transportation crate that has plenty of ventilation, visibility and an easy access door. Avoid crates that come in two halves and lock the pet in without a door. Also avoid cardboard and other flimsy travel containers sometimes sold by pet shops. Most airlines will sell or rent you a sturdy crate or cage.

—Let the pet become acquainted with the crate a day or so in advance. Put some newspaper or a favorite security blanket inside to help calm nerves. Don't put in water, it will spill. And don't feed a pet too near flight time.

—Be sure to have your name, address and phone number printed on the crate (for both departure and arrival locations). Avoid flights that require stopovers and try to arrange flying time for early morning or late evening when heat build up in the baggage compartment will be less severe.

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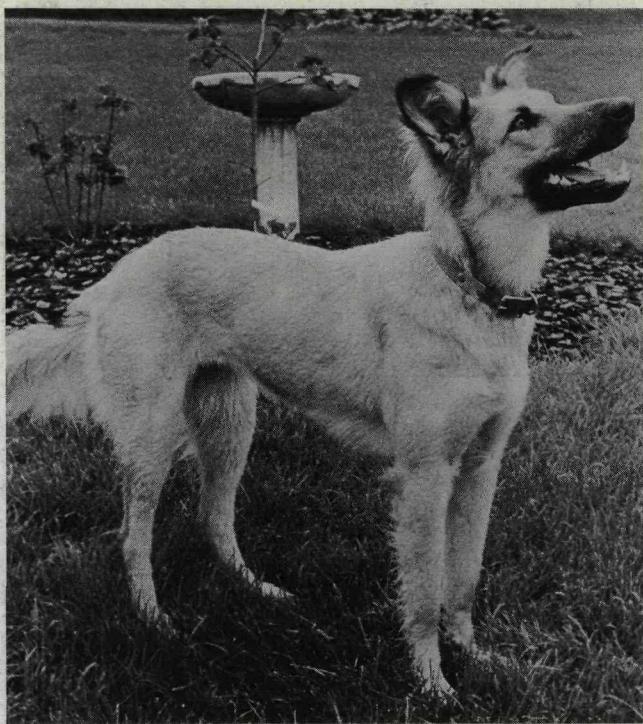
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Name Change

Several readers have written to ask why we changed our name. We felt that **Today's Animal Health** better described our editorial content, so we made a change!!



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AFTER ALPO: Honey on June 16, 1976. Enjoying good health and loving care.

ALPO® and love... they make a difference.

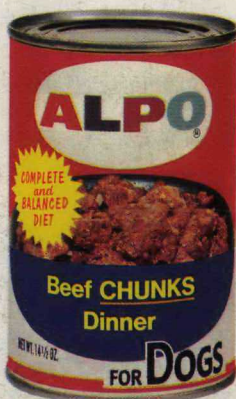
"That dog was so scrawny and forlorn, our hearts just went out to her."

When Mr. and Mrs. Grant of East Texas, Pa., visited their local pound to get a pet, an undernourished, frightened dog caught their eye. She had been picked up a few days earlier, alone, hungry and hiding under parked cars. "Well, before you knew it, we'd adopted 'Honey'."

When the Grants got Honey home, "she was underweight, you could see her ribs clearly, her skin was scaly and her eyes had a distant, sickly look." Underneath it all, they could see she had a loving personality.

The Grants took Honey to the vet. He found no diseases, but Honey was malnourished. They had to get her eating right.

"ALPO was all we fed her. We figured meat's what she'd like best, so we fed her ALPO Beef Chunks Dinner." It turned out to be the perfect choice.



Meat-based foods are more digestible than cereal-based foods. So Honey's system was able to absorb and use more of the food she ate. And since meat's a dog's natural food, she loved ALPO and her appetite improved. Meat is high in protein which helped build up Honey's muscles and helped her resist infection. And because ALPO, with meat by-products, beef, soy, vitamins and minerals, has everything a dog needs, Honey was getting total nourishment.

After six weeks of ALPO, "were we amazed at the change in Honey! Her eyes cleared up and her coat turned shiny and silky. She put on weight and it was all muscle, no flab. You never saw a happier, healthier dog. We could hardly believe the difference."

No more hiding under parked cars for Honey. Today, she rides in the back seat like a queen. "We're convinced it was lots of love—and ALPO—that pulled Honey through."