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# Today's Animal Health





# Today's Animal Health

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January/February 1978

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

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

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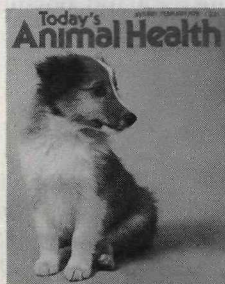
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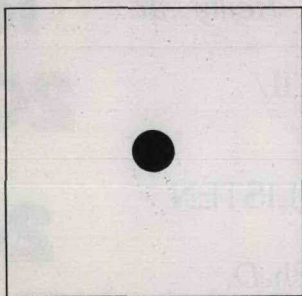


COVER PHOTO:

Compliments of Norden Laboratories



# A blood clot the size of this dot can cause a Heart Attack.



## Or a stroke.

Every year, thousands die because of a blood clot. Thousands more become disabled, some permanently.

What's being done to stop it?  
Plenty.

We're the American Heart Association. We're giving scientists the chance to find out more about blood clots.


How to detect them. How to treat them. How to keep them from happening.

We're fighting hard. With new drugs. New kinds of treatment. Better ways to help heart attack and stroke victims return to a normal life.

And it's only a part of the total war we're waging against the number one cause of death in this country: heart disease and stroke.

But we can't fight without your money. When the Heart Association volunteer asks for your dollars, be generous.

The blood clot is small, the problem is enormous.

American Heart Association. 

**WE'RE FIGHTING FOR YOUR LIFE**

## dialogue

I have seen several issues of your interesting magazine and am considering subscribing. One thing bothers me, however, and I should appreciate a definite, non-equivocal statement of your position on sports hunting.

The reason I ask this question is a story you picked from the virulently anti-hunting "Los Angeles Times" and reprinted on page 29 of your January/February, 1977, issue. The story propagandizes that a condor was "shot, maimed and left to die by a hunter."

Naturally, no hunter, nay, no human being worth of the name would commit such an atrocity! I would seriously doubt that the killer (a far-better word) even had a hunting license. I am sure you realize that the 23,000,000 hunting licenses sold in the U.S., plus the excise taxes shooters voluntarily asked to pay, finance our nation's wildlife preserves, research, and the actual existence of many species that would have been killed off — not by carefully and scientifically controlled cropping. The animals' real enemy is the bulldozer, not the rifle.

As the owner of several Thoroughbred hunters, three cats (all neutered), two neutered bitches and a fenced-in male Doberman, three tortoises, and a dozen marine fishes, I think I qualify as an animal lover! Instead of having someone else hit a steer on the head or stick a pig for me, I prefer to take my meat in fair chase. A true hunter has a greater affinity for his quarry than a backpacker blundering through the woods, stepping on delicate flora and frightening non-game fauna.

That is my position. **Please advise me of your magazine's official position vis-a-vis legal hunting.**

**G. B. Corday Fain**  
Tarzana, California

*ED: We have no "official position vis-a-vis legal hunting." I personally don't hunt but have no argument with ethical hunters such as yourself. Perhaps other readers have comments on the subject.*

Attached is an account of a harrowing experience that my cat, a Chocolate Point Siamese, had as a result of the carelessness of an attendant at one of the so-called "better kennels in our area.

While I can appreciate the fact that it is possible of a pet, especially a cat, to escape, it is quite another thing for the owner of the kennel to blatantly lie about the effort he was making to find her. For three weeks my poor little house cat had to fend for herself. Trying to find food and shelter and to just generally survive especially through that heavy two or three day rain we had in August. The people in the neighborhood saw her but because they were not notified that the kennel had lost a cat they just assumed that it belonged to someone in the area.

I don't know whether you publish this kind of letter but I certainly would like to make people aware that leaving a pet in what looks like a fine place (visual appearance) is not the best criteria. The integrity of the owner or manager plus his/her sincere interest in giving the best of care to the animals in his kennels is not easily ascertained but there must be organizations who could investigate kennels and give ratings such as the Triple A does for hotels and motels. We need to have a directory of kennels with ratings, maybe this would put some of the charlatans out of business.

**Mary Shelter**  
Long Beach, California

Thanks for saving my life! I'm a six year old ex alley cat. I've had a great home for the past 5½ years . . . good care . . . shots . . . the works. Four months ago I got sick . . . Leukemia. My family was thinking seriously of "putting me out of my misery" . . . that is until they read the articles on leukemia in Today's Animal Health. Well, I've had a few transfusions . . . chemotherapy, etc. I'm feeling pretty good and eating well. They say I seem to be in remission. Thanks for providing the information that saved my life!

**"Malcolm"**  
La Habra, Calif.



# IGOR & AJAX

by Rebecca Norris, Age 17

**A**t precisely 10:30 PM the lights were flicked off and only faint rays of moonlight filtered through the wavy-glassed windows. Two furry forms, rhythmically breathing, turned over restlessly in their sleep. Minutes ticked by and their breathing started to quicken. Two pairs of sleepy eyes peered out, and eight feet wiggled and stretched. The two rats in separate cages sat up in bed, and at an almost imperceptible nod, rose as one from their corners.

Stumbling sleepily but with increasing vigor, the two made a circuit of their cages. Their pace increased and soon they were clambering up the water bottle, sliding down it, diving through a paper tube, and digging furiously and with gay abandon at their meticulously made beds fashioned only the night before. As they got warmed up, each tried to outdo the other as they ran through a repertoire of tricks. First was the leap to the top of the water bottle. A reckless plunge back to earth caused the cage to shudder with the muffled thud. Next came the rapping of pink knuckles against the glass wall, followed closely by the plucking of unique "rat rhythms" on the wire roof. The two quit their antics for a moment, and began meticulously grooming their

feathery whiskers, soft downy coats, and long ropey tails.

Then, as if from a signal, their heads swiveled as one and turned to the food and seed bowls. Gleefully, they sprang with one leap and began pawing through the assortment of delicacies like greedy children. An overly enthusiastic rat fell face first in some milk and surfaced sputtering loudly. Grapes and raisins were rolled down the length of the cage, and came to rest in a corner with but one bite taken out of them. Food containers were taken up and tossed away across the sawdust, rebounding with a loud crack when they hit the glass walls. The seed bowl was then discovered and the two dove in headfirst for some tasty morsel at the bottom. Furious digging caused spray after spray of sawdust and feed to rain down the walls, and the pair grinned excitedly under the shower. One discovered a rather wilted leaf of lettuce, which made fine sounds when whacked wetly on the glass. Long spikes of raw spaghetti followed, and the pair traversed their cages like knights with long javelins. A few quick snips and the plaything quickly disappeared when shoveled into the rats' cavernous mouths.

The feasting gave them renewed vigor, and with gay abandon the rats

kicked up their heels and ran across the cage looking for new amusements. With twinkling tenacious feet they zipped up the glass wall and amused themselves by fly-walking on the ceiling, hooking their claws in the wire. With a clumsy flip both met the ground on four sturdy legs, and then whirled around for more fun.

A split second later they froze and turned slowly, whiskers quivering, pink noses twitching. Racing to the wall and swinging up on their hind legs, the four beady black eyes inquisitively peeked out. The rats inched along the wall, front paws making whispery noises on the glass. The pair stared incredulously out from the cage. A split second later they unfroze and whirled around to head for their nests. One grabbed a chunk of cookie in passing, and then hurled himself headfirst into his nest, furiously arranging tissue paper over himself. Whiskers twitching, both curled up and tightly shut their eyes.

They fooled the huge face glaring into their cage, and it soon left muttering suspiciously as it noticed the food splattered walls and chaos within. All was quiet again but the rats didn't rise. Breathing slowed down and bodies relaxed, until they finally dropped off to an exhausted sleep.



# ask Dr. Smithcors

**Q** My veterinarian said that my cat has acne. Is he putting me on?

**A** No, this is a rather common problem in all kinds of cats and is the result of hair follicles becoming plugged with debris from the skin and sebaceous (oil) glands. These lesions usually occur on the chin and lips and can become very sensitive. Secondary bacterial infection is common, in which case thorough daily cleansing with an antibacterial soap and application of an antibiotic ointment is necessary. If the infection persists, culturing of material from the lesions may be required to find an effective drug. As in human acne, blackheads may form, and some of the same products you might use for yourself are helpful in preventing or controlling the condition.

**Q** Do dogs get poisoned by toadstools? My dog ate a great big one and she didn't get sick.

**A** Some toadstools are moderately or highly poisonous to dogs as well as people. It takes a knowledgeable person to know which are safe, and it seems doubtful that dogs are this discriminating. In fact, there are reports of both dogs and cats being poisoned, sometimes fatally, especially by the kind known as Amanita — which for obvious reasons is called Death Angel. The "great big" one your dog ate may have been a puffball mushroom, which is harmless, but don't press your luck.

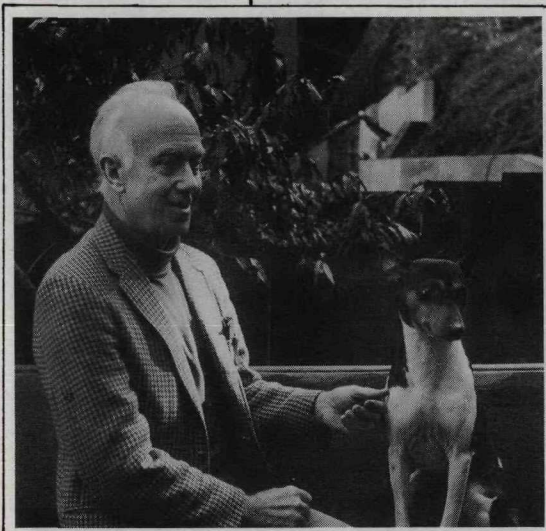
**Q** I have some koi and they have been swimming funny. They always swim at the top of the water, sometimes on their backs. They usually die after they get this disease. What could it be?

**A** I don't know much about fish diseases, but this sounds as though it might be an inflammation of the swim bladder, an organ that enables fish to maintain their equilibrium at various depths. Swim bladder disease is usually caused by chilling and causes them to make tumbling movements. Finally, some will remain at the bottom, others at the top of the tank. Several parasites and bacterial diseases can also cause inflammation of the swim bladder. In this case the condition is more serious than if caused by chilling (which can be easily

corrected). If this problem persists, I would suggest you try to find a veterinarian or perhaps a knowledgeable person at a store that sells such fish who might be more helpful.

**Q** My dog has bad allergies which the veterinarian treats with little pink pills that he says are a type of cortisone. Do I have to worry about side effects? The doctor says I should try to give the pills every other day instead of every day.

**A** Almost any drug may produce side effects in some individual animals, but I would presume that your veterinarian has determined to the best of his ability that the dosage he recommended for your dog is safe. The aim in treating allergies with cortisone-like drugs is to find the lowest dosage that will relieve the condition and keep the dog from scratching. Most veterinarians recommend alternate-day treatment as long as it is effective. Occasionally a dog being treated may become exposed to a heavier than usual dose of the causative allergen (pollen, food, etc.) and the drug dosage may have to be temporarily increased or



given more frequently — but this should be done only on the advice of your veterinarian.

**Q** My rabbit has ear mites and plays a lot with my cat. Do I have to worry about my cat getting them?

**A** No, but you should keep your rabbit away from other rabbits. The rabbit is the only host for the rabbit ear mite, which will not live on other species of animals. If untreated, the rabbit is likely to develop ear canker and become unthrifty. Mineral or vegetable oil applied to the affected areas of the ear will kill the mites, though some may remain. The canker will then reappear in 8-12 weeks, in which case another treatment is necessary. The treatment is harmless, and it would be a shame to let your rabbit suffer. Your veterinarian can also provide you with even more effective medication for this troublesome problem.

**Q** My dog eats horse manure every time I take him out on the bridle trail. Should I have him wormed?

**A** None of the worms found in horses can become

*continued on page 30*



A SIMPLIFIED RESTRAINING  
TECHNIQUE FOR

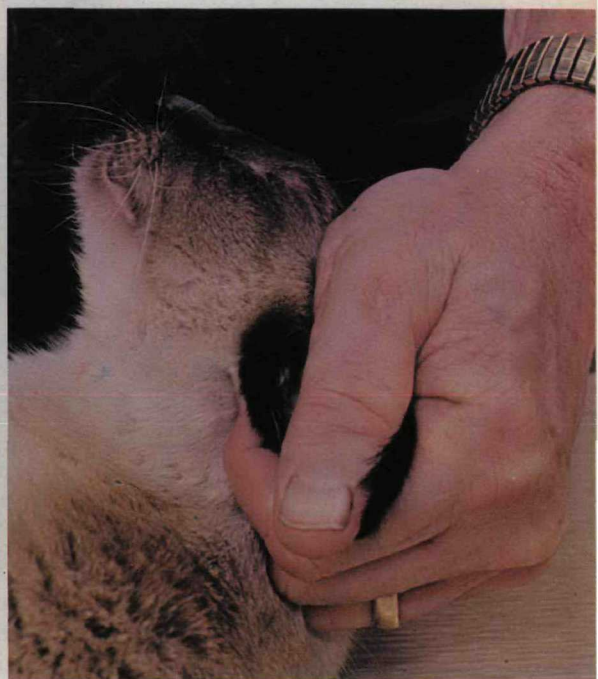
# MEDICATING THE CAT

(photos courtesy Norden News)



1

Using Dr. Hilton's restraint technique for medicating a cat, the animal is positioned on the table facing you.



2

The left ear, grasped firmly between thumb and forefinger of the left hand allows maximum control of the cat and leaves right hand free for administering the medication.

Many readers have written and asked for an article demonstrating an easy method for medicating cats. Dr. Finus Hilton, a veterinarian, has used this technique successfully for over twenty years. With this technique you should be able to give tablets, capsules, liquids, eye drops or nose drops with no assistance. The technique can also be used for applying medicine to the face and for force feeding cats. For the 1 or 2 percent of cats with which this technique is not successful, Dr. Hilton recommends making a bib from a turkish towel, tying it around the cat's neck and then proceeding as

described. If you have someone to hold the front legs for you this won't be necessary.

**STEP 1:** With the cat sitting on the table facing toward you, place your left palm on the cat's head. Grasp the left ear with your thumb and forefinger, and the skin at the base of the neck with the remaining fingers (Figs. 1-2).

**STEP 2:** Rotate the cat's head until his nose points toward the ceiling. (Do not raise the head; rotate it to the right.) In this position, about 90 percent of the cats will relax their chewing

muscles and the mouth can be easily opened with the free hand (Figs. 3-4).

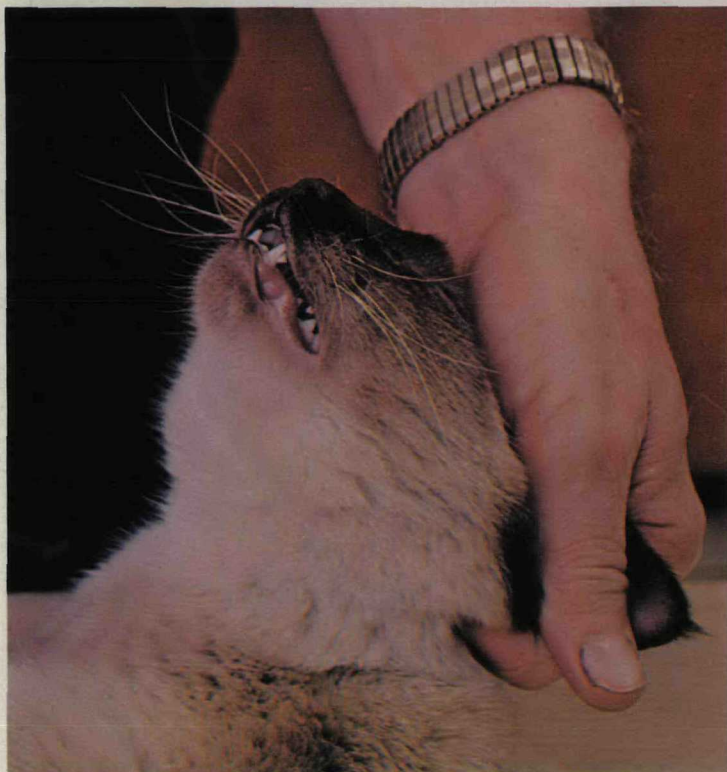
**STEP 3:** Place the capsule, tablet, bolus of food, or liquid medicine far back into the mouth, over the base of the tongue. A reflex action will cause the cat to swallow. When he licks his nose, he has swallowed and you can release his head (Fig. 5).

You can use this same method to apply medicine to the face or administer eye drops or nose drops (Fig. 6). When putting drops in the eye, try to keep the eye level so that the drops will remain in place.



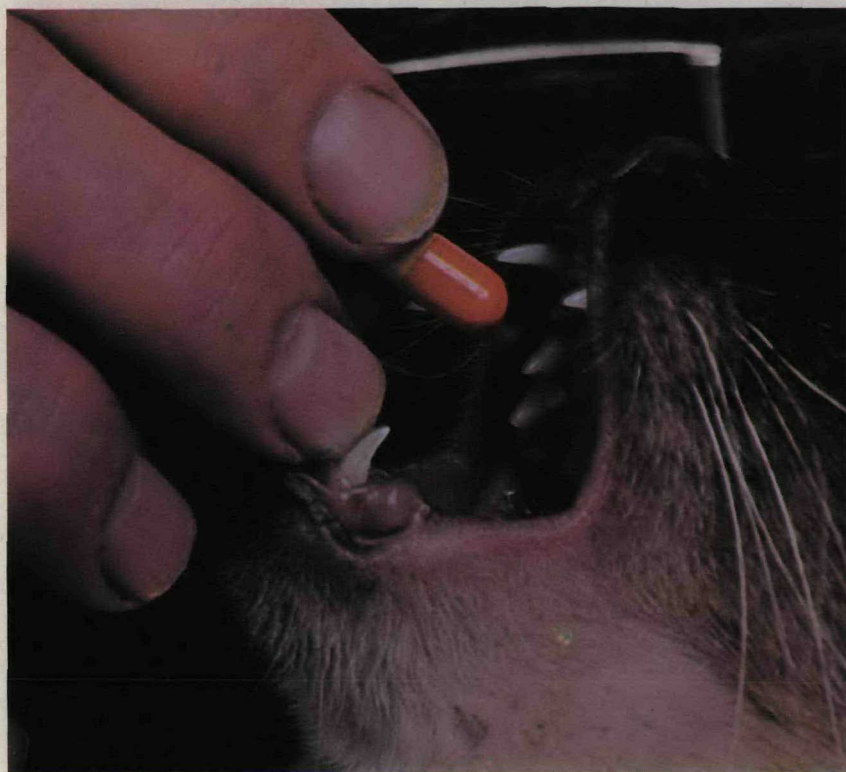
3

The cat's head has been rotated until the nose points to the ceiling.



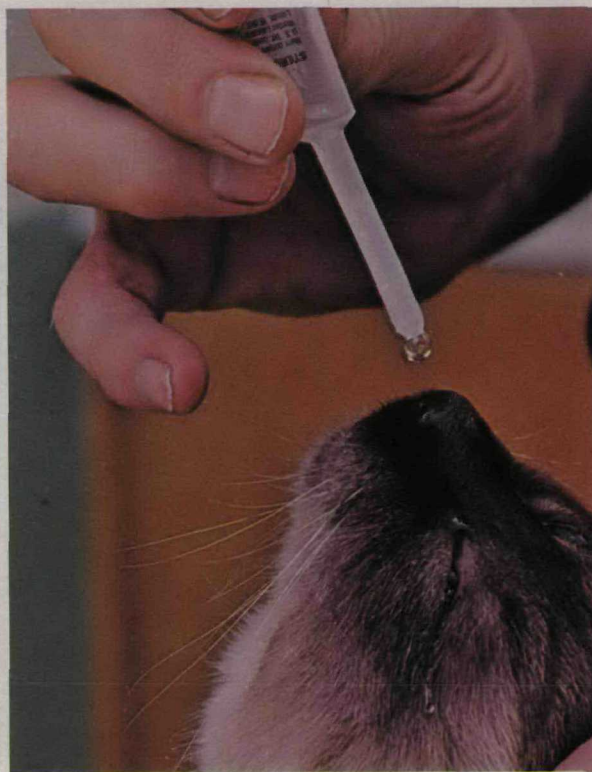
4

As the chewing muscles relax, the right hand is used to pry open the mouth.



5

The capsule is placed far enough back on the tongue that reflex action will cause the cat to swallow.



6

Using the same restraint technique, you can administer eye drops or nose drops.



It had been a long day for Dr. William R. McFadden at his animal hospital in Sedona. Many small pets had been treated or given shots. A few emergencies had preempted appointments and kept clients waiting. Phone calls had been unusually heavy. However, the evening looked as if it might be one of those rare times when the whole McFadden family would be able to have supper together. Midway through the meal, the phone rang. McFadden was needed at the animal hospital for an emergency.

A client with a large dog was waiting. McFadden diagnosed the problem as a serious intestinal blockage of long duration. The only treatment was an immediate operation. The owner went home to await the outcome. McFadden phoned Jacque, his wife, to assist with the surgery, and the animal was readied. It was 9:30 p.m.

The large blockage was found and removed. The animal had eaten some garbage along with newspapers used to wrap it. The dog never regained consciousness.

McFadden said, "That garbage-can enteritis, as I call it, can cause more needless suffering and pain to animals than most people realize."

The client was phoned and told about his dog. At 1:30 a.m. the McFaddens went home. It had been a lousy evening, but McFadden appreciated one aspect. Since he had removed his practice from California to Arizona, his family had been able to assist him. They were a team again.

The following morning the veterinarian arrived earlier than usual at the animal hospital, as he does every Wednesday. This is the day he flies to his practice in Page. Laurie Feathers arrived early too. She is a veterinary assistant who works with McFadden in Sedona.

She put a small box on the counter and said, "I brought a mouse I caught in a trap last night. I decided to invite him to Hoot's for breakfast."

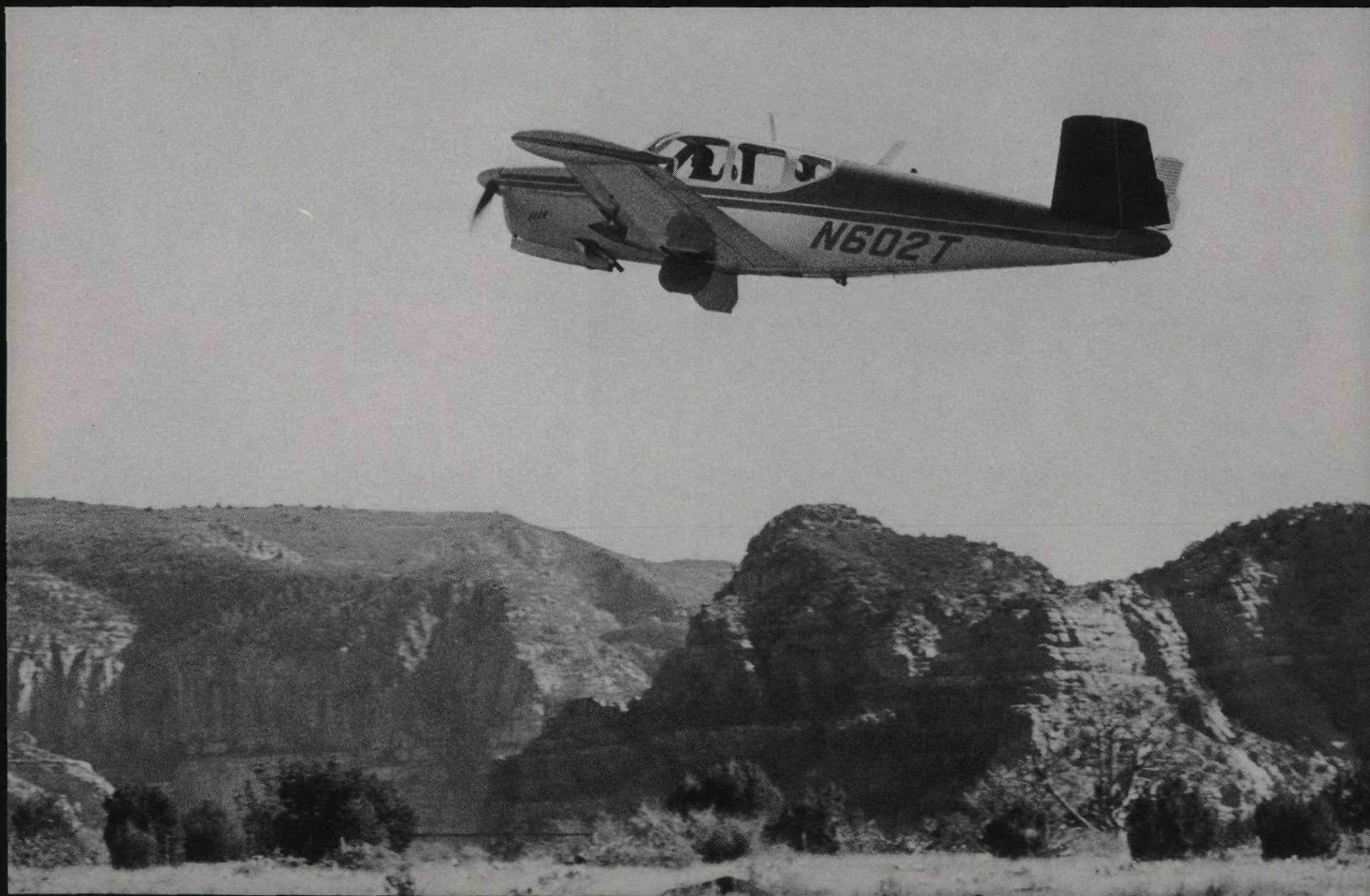
Hoot is an immature horned owl with a broken wing

DR. WILLIAM R. McFADDEN

# The Flying Veterinarian

by William H. Howard

Reprinted in part from Arizona Magazine  
Photos by Rod Moyer





that had been brought to the hospital by a tourist who had found him by the side of the road.

"As you can see," McFadden said, "Hoot's not very friendly. That's just the way we want him. No attempt is ever made to tame wild animals that come to us for care. Any learned friendship with man could seriously jeopardize the animal's safety when it is released."

McFadden's practice covers his animal hospitals in Sedona, Page and Flagstaff. His services are also available on the Navajo Reservation, the Grand Canyon, Williams and in Utah. It is impossible for him to serve these areas without an airplane so he uses a four-place Beechcraft Bonanza, with the call letters 602 Tango. It is also known as Doc's Ark.

"My practice keeps me quite busy, but it's not the same rat race I left when I sold my four-man hospital in California."

Wednesdays, McFadden tries to limit his stay in Sedona to the morning. By noon he usually is ready to take off for his day and a half in Page. Somehow, there never is time for a leisurely transition from the animal hospital to Doc's Ark. Three surgeries had taken longer than expected.

"Your sterile packs and medical bag are on the counter," Mrs. Feathers reported. "All that has to be done is tranquilize the dogs going with you to Page."

"Tranquilizing small animals going with me in the plane is very necessary," McFadden said. "Two or three frightened, fighting animals under my feet during flight could terminate my career as well as theirs."

"I have to be careful about the dosage of the tranquilizer. Reduced oxygen at higher altitudes necessarily reduces the amount of sedation from that which would be adequate at ground level."

Three dogs would be flying to Page with McFadden. On the way he would stop at Flagstaff where another would be delivered to him by Shirley Rossnagel, a veterinary technician employed at the animal hospital there. The dog would be going home after extensive orthopedic surgery. Dr. Gary Still, McFadden's partner, runs the hospital at Flagstaff.

Some of the animals being returned to their owners were cured while others would require additional treatment.

"Where home care is possible," McFadden said, "I have found that animals recover at a faster rate than when they are in the unfamiliar surroundings of a hospital."

It was takeoff time in Sedona. Animals and supplies had been loaded aboard the Ark. As soon as the flight plan was radioed to the flight service station, McFadden took off.

"Every once in a while I have people flying with me who are unfamiliar with flight jargon," he said. "When radioing in a flight plan, it is usual to indicate the number of passengers (people) on board. They are referred to as 'souls on board' and are verbally reported as SOBs. They are surprised when I radio, as I once did, that there were three SOBs, two dogs, one cat and a rabbit on board. Even the man receiving my report at

*continued on page 30*





# DENTAL PROBLEMS

## PART I

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

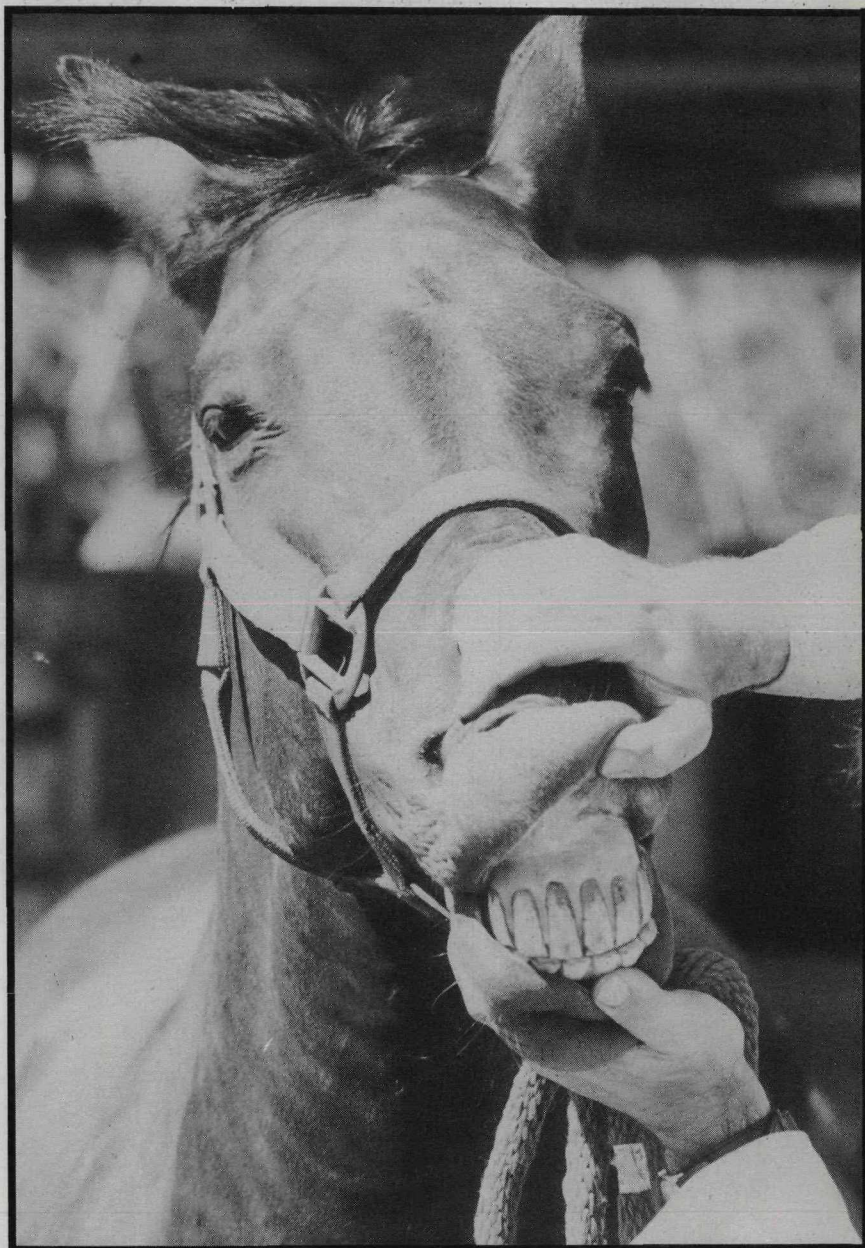
*This is the first in a series on dental problems in animals sponsored by the ANIMAL HEALTH FOUNDATION. Did you know that the number one cause of teeth loss in adult cats and dogs is preventable? Only through awareness of dental disease can animal owners hope to prevent much needless suffering of their pets.*

An animal's teeth are an important aspect of his general health and it is interesting how many dental ailments seen in people also show up in animals.

### MALOCCLUSIONS

Malocclusions or improper bites, where the upper and lower rows of teeth do not fit together correctly, are seen in various kinds of animals and occur fairly commonly in dogs. In fact dogs have more dental problems than other domestic animals because of man's creation of so many different breeds of dogs without proper knowledge and regard to dental disease. Cats are fortunate in having a very low incidence of various dental problems. People often refer to an undershot jaw when the lower jaw is longer than the upper jaw and overshot when the lower jaw is shorter than the upper jaw. The most common jaw deformity in horses is called parrot mouth by horse people and refers to an overshot jaw. Jaw deformities are usually congenital (present at birth) and often hereditary. It is wise not to use animals with jaw deformities for breeding.

In determining a proper bite on a dog both the lower canine and fourth premolar teeth are evaluated for correct position (see diagram). The inner lock of the upper and lower rows of teeth play a vital role in coordinating the growth of the two jaws. In puppies removal of deciduous or baby incisor



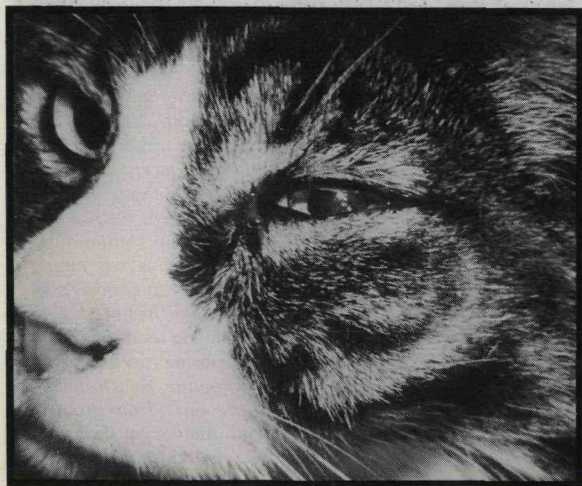
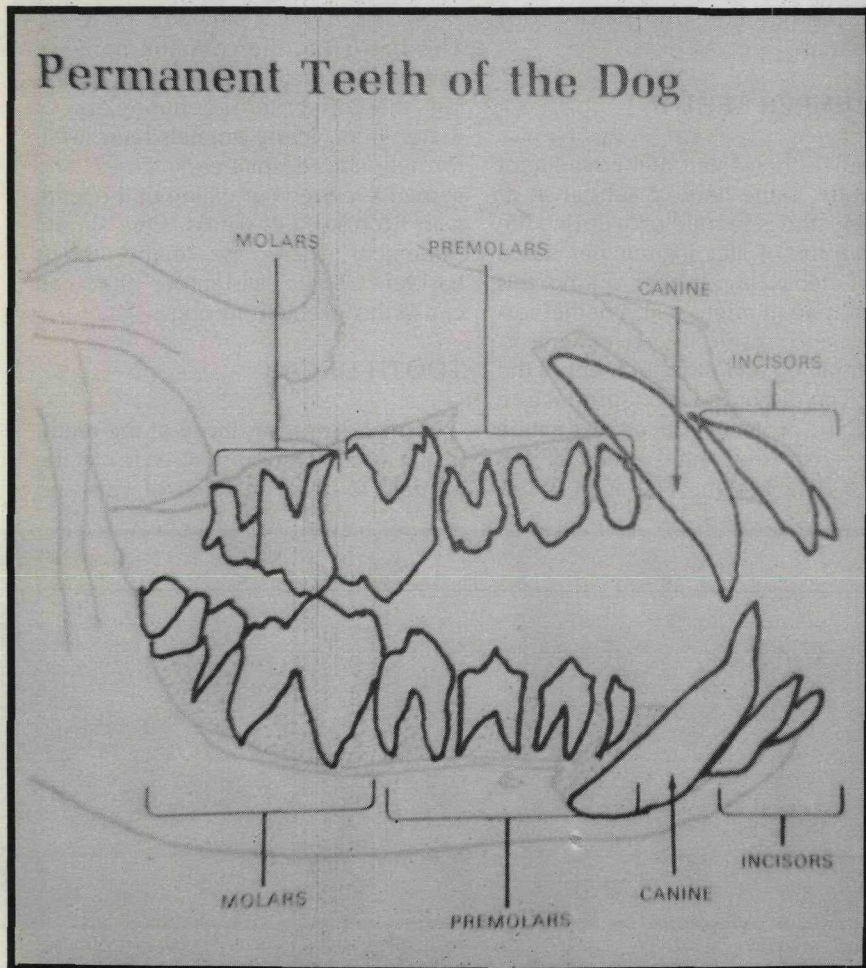
*A veterinarian checking a horse's teeth. This mare has a proper bite. Horses have dental problems just as we do. Horses that have trouble chewing their food and drool excessively should have their teeth checked. Can you see dental tartar and staining on the teeth?*

Photos by C. P. Ryan



# MS IN ANIMALS

## Permanent Teeth of the Dog



*Diagram of the dog's teeth  
The names of the teeth in  
animals are the same as that  
in man. Adult cats have a  
total of 30 teeth while adult  
dogs have a total of 42  
teeth.*

*Cat with abscessed tooth  
If you have ever had an  
infected tooth, you can  
sympathize with this poor cat  
whose jaw is swollen because  
of an abscessed tooth. The  
cat was anesthetized and the  
tooth extracted. Proper  
dental hygiene could prevent  
most tooth loss in pets.*

and/or canine teeth that are impeding the forward growth of the short jaw can be done at 10-12 weeks of age to allow the short jaw to grow as much as possible and reduce the unequal length.

In dogs, such as Pekingese, Boston Terrier, and English Bulldog, which have been bred for shorter jaws, there is an overcrowding of the teeth. Individual teeth may be rotated as much as 90 degrees in the jaw in order for all the teeth to fit. This type of tooth rotation has become accepted unfortunately as "normal" in some breeds. If overcrowding and rotation of teeth is severe, the offending teeth may have to be removed.

Other forms of malocclusion of importance are supernumerary (extra) teeth and retained deciduous (baby) teeth. Cats, dogs, horses and other animals may be born with supernumerary teeth. If these extra teeth interfere with the normal bite and chewing, they should be removed by your veterinarian.

## DECIDUOUS TEETH

Your pet has two complete sets of teeth, the first set is the deciduous or baby teeth and are only temporary. At birth, puppies, kittens and foals have no teeth showing, but shortly the baby teeth begin to erupt. The incisors are the first teeth to erupt and this usually occurs within one week in foals. Puppies and kittens start getting their first teeth by the time they are two to three weeks old and begin losing their baby teeth when they are about two months old. In dogs and cats all the permanent or adult teeth have usually erupted by six months. However, in horses, this doesn't occur until around five years.

A serious problem that may occur in puppies is retention of deciduous teeth after the permanent teeth erupt. The factors that control the shedding of the deciduous teeth are still incompletely

*continued on next page*



# DENTAL PROBLEMS IN ANIMALS

understood. The smaller breeds of dogs, such as Chihuahuas and Poodles, are notorious for failure to lose their baby teeth. Some dogs actually develop two rows of teeth with the baby teeth in front of the adult teeth. Retention of baby teeth can result in abnormal position of the adult teeth, since they both can't be in the same place. The baby and adult teeth side by side also cause damage by trapping food particles between the teeth which, over a period of time, leads to inflammation of the surrounding gums. If a deciduous tooth has not fallen out by the time the permanent replacement tooth begins to come in, it should be extracted. In dogs, the most common area for retention of deciduous teeth is the canine teeth. In horses, retention of deciduous teeth is referred to as dental "caps", and these

may have to be removed when causing problems. A good rule of thumb is that there should never be two teeth of the same type in the mouth at the same time. If your pet is retaining his baby teeth, consult with your veterinarian.

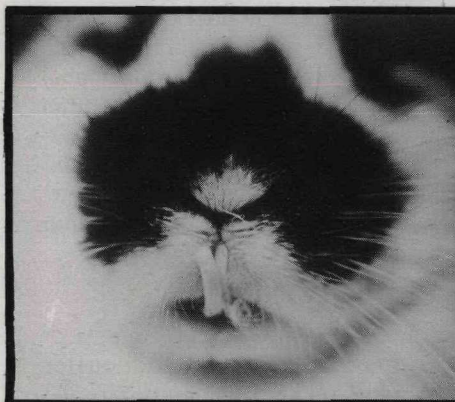
## "DISTEMPER TEETH"

Enamel, the white outer covering of the tooth, is the hardest substance of the body and is formed only during the first months of life. If your pet has a serious debilitating illness during this time, it may interfere with enamel formation and result in permanent irregular pitting and disfigurement of the teeth. The disfigured tooth produces a secondary protective layer of dentine which stains the pitted areas of the tooth a dark brown. The stain is un-

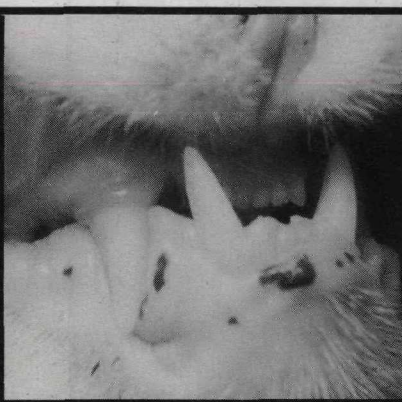
sightly and permanent but gives some protection to the damaged tooth and should not be removed. Canine Distemper is a serious and common disease of young puppies which can cause this irregular pitting of the teeth. This has led to the common name of "distemper teeth". Medically speaking, the correct term is hypoplasia of the enamel. Many animals have well-formed teeth despite early illness, and some have irregular pitting of the teeth with no history of illness. One should remember there are many things besides Canine Distemper that can cause this problem in dogs.

## TOOTH DECAY

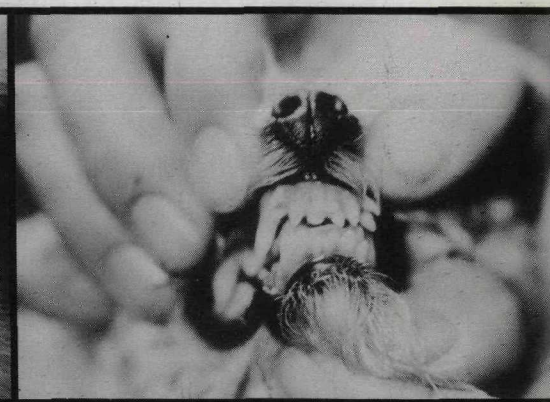
Dental caries, or decay of the teeth, is the most common disease of the primate tooth. The teeth of cats and



A rabbit with malocclusion as a result of an unusually short upper jaw which has allowed the lower incisor teeth to grow continuously upward. The protruding buck teeth are clearly visible. Rabbit's teeth grow constantly and are worn down by the grinding action of the upper teeth against the lower teeth. This rabbit's buck teeth must be trimmed repeatedly throughout his life. If you look closely you can also see hair collecting around the bottom teeth. This is a common problem in animals that groom themselves. Check your pet for hair accumulating around his teeth as this can result in gum infections and odor problems.



Severe malocclusion in a cat. Notice how short the upper jaw is. This cat's bite looked like an English Bulldog's bite. Some of the teeth in the upper jaw are rotated 90 degrees in order for all the teeth to fit in the jaw.



Shark teeth in a young adult poodle. This double row of teeth resulted when the baby teeth failed to shed. The teeth closest to you are the baby teeth. If the baby teeth do not fall out by the time the adult teeth come in, they should be extracted.

Enamel hypoplasia of teeth. Defects in the enamel covering this Labrador's teeth can be seen (arrows). The teeth have roughened, irregular, pitted surfaces in places. This is a permanent defect that will be with the dog the rest of her life. These defects in the enamel occurred during the early growth period of the teeth.



Horse with a missing lower incisor tooth. You can see how the upper teeth are not being worn down and are elongating. All permanent teeth in the horse are continuously growing. This is a natural adaptation to compensate for wear. In horses with missing teeth often the opposing tooth must be trimmed or filed routinely to prevent it from growing into the vacant space left by the missing tooth.



dogs are quite resistant to tooth decay. Three factors which are thought to help prevent tooth decay in dogs are:

1. The anatomy of dogs' teeth with pointed crowns and smooth surfaces doesn't favor retention of the food between the teeth.
2. The dogs' saliva is alkaline and an acid environment favors tooth decay.
3. The dogs' saliva is high in urea which neutralizes acid and also retards caries formation.

The tooth decay can be seen as a cavity on the surface of the tooth filled with brown debris. Usually by the time cavities are seen by veterinarians, the inner pulp of the tooth has become infected, and the tooth must be extracted. Cavities in pets can be filled in

the early stages just as is done in people.

It is estimated that 95% of people are affected by dental caries at some time in their lives. Tooth decay is the principal cause of tooth loss up to the age of 35 in humans, after which it is exceeded by periodontal disease. Periodontal disease in adult cats and dogs is the number one cause of tooth loss. Tooth decay plays a minor role, in contrast to man. More on what periodontal disease is and what can be done to prevent it later will be discussed in Part II of this series.

### REASONS FOR EXTRACTING TEETH IN PETS

The indications for extraction of teeth by veterinarians fall into 4

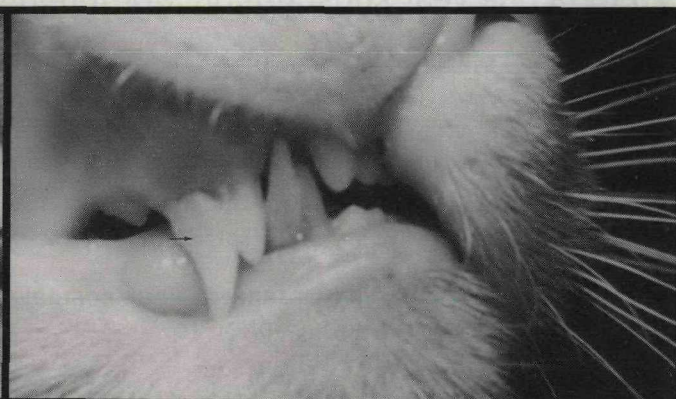
general categories. The teeth are extracted in order to prevent further health problems.

- 1 . Infected teeth\*
- 2 . Retained deciduous (baby) teeth
- 3 . Maloccluded and supernumerary (extra) teeth
- 4 . Broken or traumatized teeth

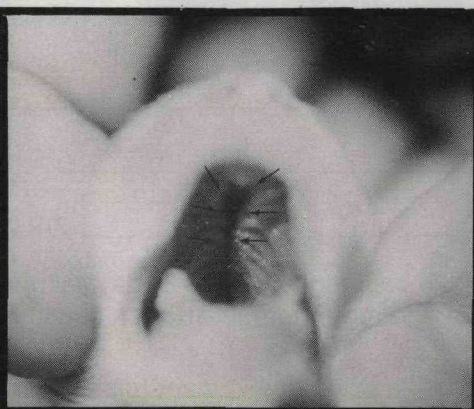
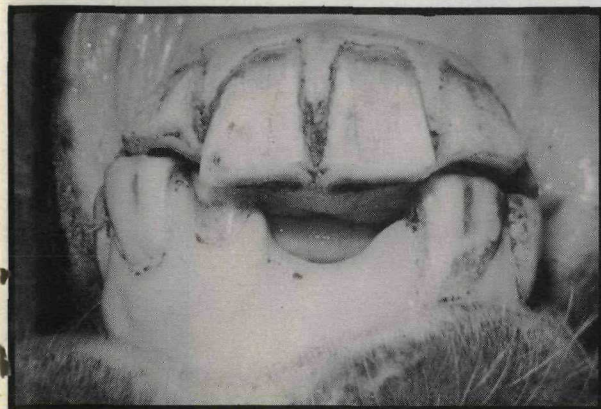
\* Periodontal disease is the most common cause of infected teeth and tooth loss in cats and dogs and can be prevented by proper dental hygiene done by pet owners at home. In the absence of home care extraction of severely affected teeth is often the only method of establishing a healthy mouth.



*The lower jaw is slightly shorter than the upper jaw. The upper incisor teeth can be seen protruding beyond the lower jaw. In severe malocclusions the individual may have difficulty eating.*



*Retained baby teeth in a 10 month old cat. The canine teeth (arrow) are the most common deciduous teeth to be retained in cats and dogs. Food particles and hair tend to accumulate between the two sets of teeth resulting in dental plaque build-up and gum infections--one of the reasons for extracting the retained baby teeth.*



*Newborn puppy with a cleft palate. All problems in the mouth are not tooth related. A large slit-like opening can be seen in the roof of the puppy's mouth (arrows). Routine post-natal examination of the mother and puppies by a veterinarian found this problem. This puppy cried constantly because it was always hungry. When the puppy tried to nurse, milk came out the nose instead of going into the stomach. With the large hole in the roof of its mouth the puppy could not swallow correctly.*



# can you depend on it?

J. F. Smithcors, D.V.M.

## The Viper Hath "Medicinal Virtues"

Wild animals have always loomed large in the affairs of mankind. First as a food source, then as symbols of various traits both admirable and otherwise, and with domestication they performed many useful tasks. These values still apply, but today we are also concerned with their role in ecology as it relates to their own welfare as well as ours. Not so with the ancients, who seem to have been preoccupied with the uses the dead animal and its parts might serve. As recorded by the 2nd-century historian Pliny the Elder, these included the "medicinal virtues" of numerous species, among which the viper family was well represented.

Concerning vipers, Pliny says in an early translation: "Of a certainty, they are thought to be medicinal in many respects, which is the cause that a snake is dedicated to the god of Physick, Aesculapius." That this concept still lives is apparent from the use of the staff of Aesculapius as the insignia of the medical and veterinary professions in several countries, including the U.S. To the ancients the snake, by periodically shedding its skin, exemplified the renewal of life, which of course is an appropriate aim of medicine for both human and animal kind. For the same reason some primitive peoples in the Amazon basin today worship the anaconda.

Between the ancient god of medicine and the snake oil peddler of more recent vintage is a body of folklore filling many large volumes. There are numerous beliefs relating to snake remedies for domestic animals, many of which were adapted from similar uses in human medicine. Pliny says: "Some burn a viper with salt in an earthen pot and give this unto sheepe when they are not well at ease, and it is thought to be very wholesome for the venome of serpents...The skin of an asp, tempered with her own grease, mundifieth the eies of horses and such laboring beasts, if they be anointed therewith." How this latter remedy might work is a bit obscure, except that snakes were reputed to grow new eyes if those they had were

plucked out, but at least the salt in the burned viper concoction should have had some benefit.

The ancients had many remedies for man or beast bitten by a serpent, the venom of which was thought to originate in the bile, and perhaps this was reason enough for a bitten person to feel bilious. Although in hindsight some of these antidotes seem far-fetched, the idea that the liver (which is the source of bile) preserved in salt should be useful for such a purpose has some logic.

The 4th-century veterinary writer Vegetius, whose work *On the Distempers of Horses* was translated into English in 1748, says, concerning "an animal that is stricken and wounded by a viper: It is a present remedy, if, while the wound is fresh, you kill a kid, or a cock, or a lamb, and apply the warm lungs of it, with the blood, or the heart, or the liver to the wound, and bind it very fast and carefully, that it may draw out all the poison." By a "present remedy" Vegetius means a common one easily available when any of the numerous drugs used for this purpose were not at hand, snakebite having been early recognized as an emergency.

As a commentary on the persistence of such beliefs, a folk remedy used in the enlightened eastern U.S. as late as the 1930s for the bite of a dog or snake consisted of splitting a live chicken and tying it to the wound (I can vouch for this because I was there). The rationale was the same as proposed by Vegetius 15 centuries earlier, i.e., the still-live flesh was presumed to draw the poison from the wound. Then as now not all such wounds would be fatal, and so in some cases most any remedy would appear to be successful. But when used as the sole remedy in more recent times, it deprived the victim of better treatment. The midwestern pioneers used a live toad for this purpose; if it died, another was applied, and if the second or third toad lived the patient was cured.

In 18th-century Britain the best remedy for a venomous bite was the "fat of a viper, to be smeared on the wound at once; so certain a cure is this

that no large family should be without a pot of viper's grease." In 1725 the farrier William Gibson recommended, for bitten horses, a poultice made of a half ounce of viper's grease added to oil of bay, frankincense, quicksilver, hog's lard, a pint of white wine, four ounces of earthworms and three frogs. This remedy, he assures us, "is also excellent for the treatment of hard, bony lumps on a horse's legs."

The father of French veterinary medicine, Jacques de Solleysell, about 1760 championed the virtues of the essence of vipers but warned it was expensive and sometimes scarce, particularly since a horse would require a minimum of a half ounce per dose. The essence would, however, "consume all impurities in the stomach, and so undermine and destroy the very root of all diseases." Because the formula had been kept secret, he generously offered instructions: "Nitrate is dissolved in water about the time of the vernal equinox, so it may attract the Universal Spirit contained in the air. The viper is added to this solution, with angelica, coral, pearls, saffron and juniper water to make the much extolled Essence of Vipers, sold very dear."

Catching vipers was a profitable trade in 18th-century Britain, where in 1773 the live snakes brought 10 shillings a dozen, a substantial amount at that time. Viper catchers used small dogs trained to be very wary in seeking out the serpents, many of which could kill a dog with a single well-placed strike. The dogs announced their quarry by barking, whereupon the catcher used wooden tongs to transfer the prize to his basket.

Toward the end of the 18th century, scientific curiosity had been aroused in the properties of venoms of all kinds. The physician-farrier Henry Bracken described tiny spicules he saw through the microscope while examining the saliva of rabid dogs and venom of various snakes. These were most likely crystalline artifacts produced in preparing the specimens, but he was nevertheless able to theorize the viper's fat was efficacious in treatment of snakebite because "it so sheathes

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# UNDESIRABLE ALIENS

Reprinted courtesy of "The Conservationist"

By E. M. Reilly, Jr.

When the first European, would-be settlers arrived in North America they found many strange, rather unfamiliar plants and animals. There were no terrible dragons nor man-eating plants to make nightmares of their day-to-day pursuits and gradually the colonists came to accept the fact that, although the species were different, the fauna and flora were rather similar to that of their home lands. As part of the transported culture of these pioneers there were tales of folklore and literature. They soon accepted the American robin as "the" robin when in fact these two birds are quite unlike and although such English rhymes as "April showers bring May flowers" didn't exactly fit the New England climate the adaptations were relatively easy.

The idea of importing wild plants and animals from overseas didn't take hold right away and the European plants which became established very early in America were what are called "anthropochorous," a wonderful word from the Greek which means "dancing in the footsteps of man," indicating that they came accidentally and unpreventably with man's belongings, seed supplies, livestock, etc. Among the animals we might think of the Norway and black rats and the house mouse in the same category. The first settlers did bring the domestic pigeon which may roam all over America, but which is not truly wild. The Indians had brought their varieties of dogs over from Asia but the settlers added their varieties plus the house cat and both of these have gone wild in places as has the horse.

The Europeans' domestic animals and cultivated plants and the clearing of the land for agriculture raised enough havoc with the natural environment as the ecology of many wild plants and animals was upset and altered to make place for the intruders. The balance of nature is not, as some might envision, the carefully level pans of a scale but consists of many large and small balances within the vast kaleidoscope of nature. There is a major balance between plant life which produces its

own substance and food with energy from the sun converted to tissue through chlorophyll and animals which couldn't exist without the vegetation. The flora can do without the fauna even though some plant species do depend on some animals for pollination. *Whenever a new animal species arrives in an area, a smaller balance of nature must be adjusted.* The new arrival must compete with a native animal for the food supply, for shelter, and breeding space; either the native or the alien may lose out or they may adjust so that they are able to live side by side with some reduction in geographical or ecological range. The native may have lived happily in both meadow and brushland but now the alien which does a little better in the meadows eliminates the native from those habitats.

Natural invasions of plants and animals from one continent to another do occur. Man has hardly noticed the movement of the great black-backed gull from Europe to America in the last 40 years because it was natural. But what about introduction of new species into the midst of American wildlife by mankind?

In 1852 a committee of the Brooklyn Institute of Science sent its chairman to England for the express purpose of obtaining house sparrows (then called English sparrows) and other European "song birds" for introduction into America. It was part of a mania! The birds purchased by the institute were released in 1853 and succeeded in establishing themselves in New York. Others introduced the house sparrow separately and at different times in Portland, Maine; Peacedale, Rhode Island; Boston, Massachusetts; Rochester, New York; Galveston, Texas; Salt Lake City, Utah; Sheboygan, Wisconsin; and elsewhere. It wasn't too long before some people noticed that these aliens were usurping the nesting and feeding places of our native swallows, chipping sparrows, and others. It registered not at all on the rest of America.

A certain Eugene Scheiffelin had, to him, a very



meritorious reason for releasing about 100 European birds in Central Park of New York City during 1890 and 1891: these were birds mentioned in various works of Shakespeare and Eugene felt all Americans would benefit by knowing at firsthand the creatures immortalized by such reference. The skylark didn't make it but the starling did. Even today there are people who would do the same thing if the law allowed. *The starling is considered by most people as an unrepentant pest, even when it eats insect pests. It has taken over nesting sites of the Eastern bluebird and other equally favored species; it gathers in dense flocks in our cities creating noise and dirt in the air; it has spread over most of the continent; and it has become one of the most abundant land birds in the world.*

It is true that some introduced animals have not become pests, but then these few species haven't been all that successful either. In New York State they have introduced the chukar partridge, the gray partridge, and the ring-necked pheasant among the birds and the mammals intentionally introduced include the European rabbit, the black-tailed jackrabbit, the European hare, the black-tailed deer, the sika deer, and for good measure they introduced the varying hare from the Adirondacks to Long Island. They introduced the coypu, which furnishes a fur we call nutria, into Louisiana from South America and prior to the Civil War no less a person than Jefferson Davis, then U.S. Secretary of War, tried to introduce the dromedary camel to our southwestern deserts. There are still some tales rampant of these camels being seen in the Arizona area in recent years but their survival is debatable. Somebody tried to bring in the mongoose to New Jersey and this was extirpated by nature, mongeese not being adapted to New Jersey winters, after man suddenly discovered that the animals preferred chicken meat from henhouses to snake meat on the hoof.

Accidental introductions have generally caused us the most trouble. Pets and laboratory animals do escape and pet owners have been known to release troublesome pets transferring magnified troubles to others. Birds in this category include the monk parakeet, now breeding in New York and likely to become a serious agricultural pest in orchards and cornfields, the red-whiskered bulbul, the rose-ringed parrot, the blue-gray tanager, the canary-winged parakeet, the hill mynah, the bronze-winged mannikin, the Brazilian cardinal, the budgerigar, and the spot-breasted oriole. Mammals enter this list too. On Long Island they have the thirteen-lined ground squirrel (from the mid-west), the European hedgehog, and believe it or not some California sea lions, which escaped from Ocean City, Maryland, reached our shores. Reptiles become pets also, and escape and become established; around West Hempstead where they have a good chance of surviving is a colony of the

Italian green lizard (*Lacerta sicula*). Tropical frogs brought to Florida in shipments of plants have survived and are beginning to spread — they won't spread far from tropical Miami, we hope.

Fishes need a separate mention. The carp was intentionally introduced; those responsible thought it would make a great food and game fish! We hope none of the fishes accidentally introduced become one-tenth as much of a pest as has the carp. Fishermen who carelessly empty the remains of the live-bait pails into the stream or lake miles from where they were caught may be unknowingly introducing new fishes to the particular stream or lake. And not only that the bait pail may include eggs of pestiferous insects, snails, or other invertebrates.

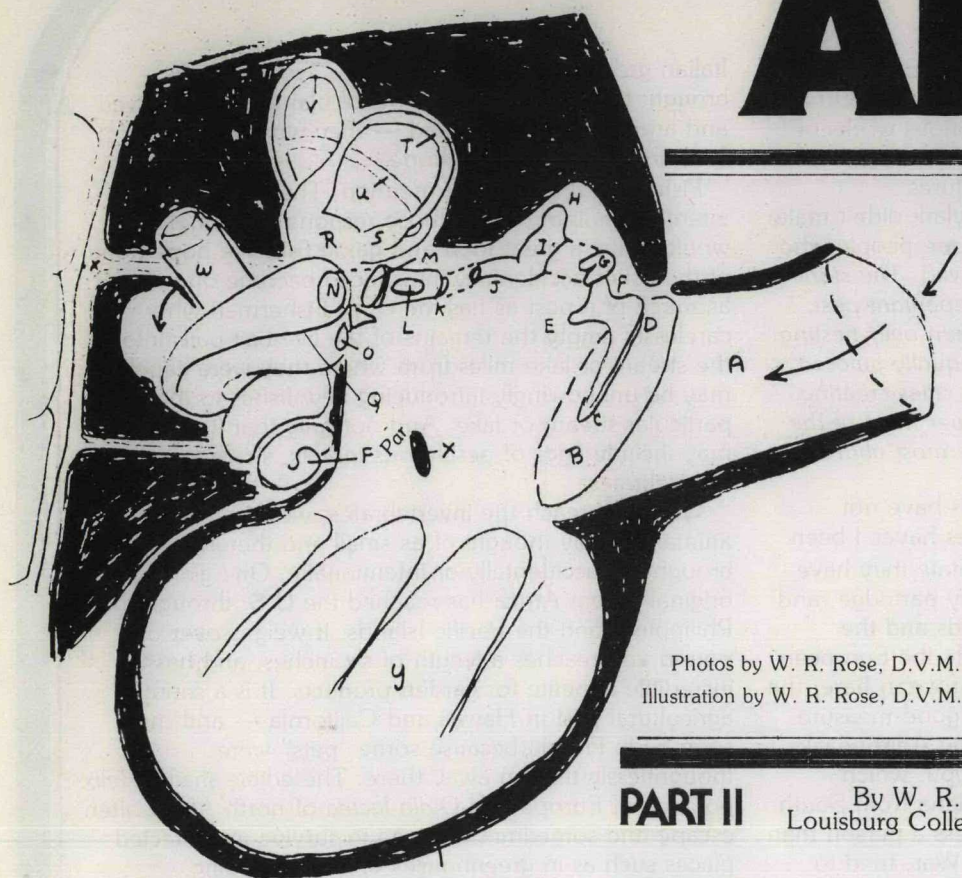
When we reach the invertebrates, we reach those animals usually thought of as small and therefore easily brought in, accidentally or intentionally. One giant snail, originally from Africa has reached the U.S. through the Philippines and the Pacific Islands. It weighs over one pound and reaches a length of six inches, and has an incredible appetite for garden products. It is a serious agricultural pest in Hawaii and California — and may soon be in Florida because some "pets" were thoughtlessly thrown away there. The edible snails, *Helix pomatia* of Europe and *Otala lactea* of north Africa often escape and sometimes manage to survive in protected places such as in greenhouses or along building foundations: occasionally they are found in the wild on Long Island.

Insects present one of the greatest problems. One is never sure which insect will become a serious pest in its new land. The European corn borer was a relatively innocuous insect of southern Europe where it did minor damage on the broom grass crops. The broom grasses are closely related to maize (our corn) which was not a major crop in Europe but when some corn borers accidentally reached America in a shipment of brooms from Hungary or Italy between 1901 and 1914 they found the banquet table over here spread with corn to which they became addicted. In 1969 it was estimated that they damaged \$183 million worth of corn. The Colorado potato beetle chewed contentedly on plants of the potato family scattered thinly over wild fields until we started raising potatoes in heavy crops over acres and acres. The beetle multiplied exceedingly and caused catastrophes and famines in Europe when accidentally transported there. We play host to the gypsy moth because someone, in 1869, brought them from Europe and carelessly let them escape. There are probably over one thousand insect aliens in the U.S. alone; a few were brought in intentionally as parasites on pests which entered accidentally or, like the praying mantises, as predators on many insects. We did bring over the fig wasp because we wanted to raise figs in California and

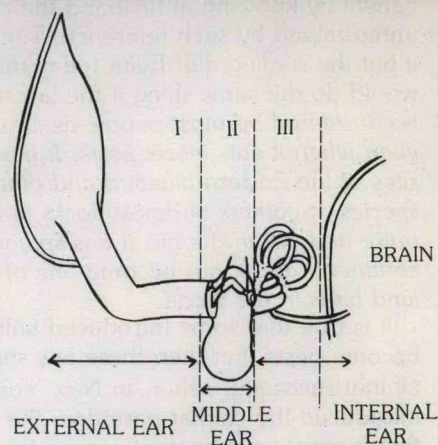
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# ANATO



Photos by W. R. Rose, D.V.M.  
Illustration by W. R. Rose, D.V.M.



The anatomy of the dog and cat ear.  
The ear is divided into the external ear, middle ear and inner ear.

## PART II

By W. R. Rose, D.V.M.  
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This is the second in a series on the ear and ear problems in dogs and cats. The first article appeared in the Nov/Dec 1977 issue of Today's Animal Health.

The ear of the dog and cat is divided into three major divisions:

- I. *The External Ear* — the ear found outside the skull. This division includes the pinna and the external ear canal.
- II. *The Middle Ear* — the parts of the ear found between the ear drum and the inner ear. This division includes the ear bones (ossicles), muscles, tendons and eustachian tubes.
- III. *The Inner Ear* — the parts of the ear found between the middle ear and the brain. This division contains the hearing and balance organs.

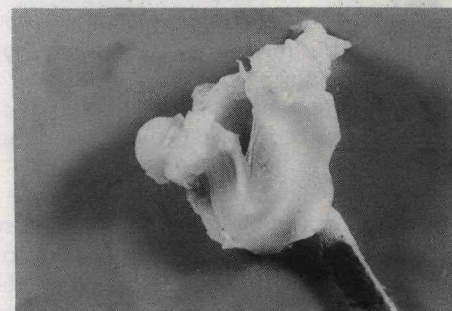
These three divisions are not true separations but parts of a single working unit.

In veterinary medicine these three divisions are used to categorize diseases:

- A. External ear disease (called Otitis externa)
- B. Middle ear disease (called Otitis media)
- C. Inner ear disease (called Otitis interna)

The ears of dogs and cats differ from those of man in several important aspects:

*The external ear*, the pinna of the dog and cat, is larger, is exposed and more subject to injury than the ears of man. There are many pinna types in dogs varying from erect to flop ears. Flop ears seem to be more disposed to injury. The incidence of external ear disease in flop-eared dogs is higher because of the reduced circulation of air, moisture, and temperature build-up. This type of ear is found in beagles, hounds, cocker spaniels, and poodles.



An ear drum of a dog showing the attached malleus (hammer bone). Note the small size of the drum as indicated by the match at the lower right.

*The external ear canal*, (external auditory canal) in dogs and cats is also different from man. The ear canal of the dog and cat is divided into two parts:

- A. A vertical canal that runs downward,
- B. A horizontal canal abruptly turning toward the head.

Both canals form an "L" shaped tunnel that ends with the ear drum. The



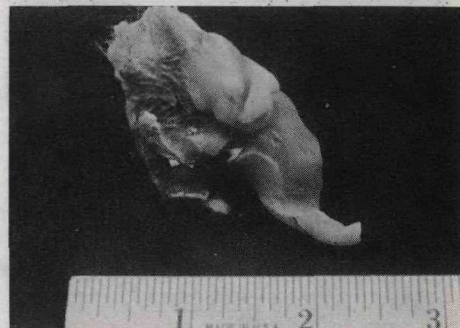
# MY OF THE EAR



*Poodles and mixed poodle breeds have problems with hair growth in the opening of the external ear canal.*



*A flop-eared dog showing the large size of the external ear (pinna). The pinna is supported by cartilage and covered with skin. It is thus subject to injury.*



*A wax cast of the external ear canal of a cat. This canal is divided into two parts: the large vertical canal and the smaller horizontal canal ending at the ear drum.*

entrance and part of the vertical canal may have hair follicles. It is excess hair growth that produces conditions of high temperature and humidity. Excess hair growth is especially prevalent in poodle and poodle mixes.

The walls of the canal are also lined with wax producing glands (cerumen). The glands produce the wax that serves to trap dust and debris that might enter the ear. Excessive or hardened deposits may be a problem and even cause hearing loss. With irritation from parasites or infection these glands may produce excessive secretions that change in color, texture, and odor.

The eardrum (tympanum) is a thin translucent membrane about the size of a small button. This membrane is very delicate and can be easily ruptured. It serves as a barrier against the spread of infection to the middle ear. It responds to round waves entering the ear. Examination of this membrane can aid the veterinarian in diagnosing certain types of infection that may lie behind it in the middle ear.

The middle ear cavity of the dog and cat contains the three ear bones (ossicles). These three bones are

called the hammer (malleus) that is attached to the ear drum, the incus (anvil) that connects the malleus to the stapes, and the stapes (stirrup) which joins a thin membrane, the oval window. These three bones are very small, in fact the stapes is the smallest bone in man, dog and cat. These bones are suspended in the upper part of the middle ear cavity by ligaments and muscles. The muscles react to loud noises, reducing the movement of the ear bones and protecting the delicate ear drum and oval window. The middle ear muscles also keep a certain amount of tension on the eardrum and oval window so that these structures can respond to sound waves striking the ear drum. One of the muscles, associated with the stapes (the stapedius muscle), is the smallest muscle in the body.

So the smallest muscle and smallest bone in the body are found in the middle ear. This fact is pointed out here to indicate that the ear is an extremely delicate structure just as much as the eye. In the dog and cat there is an enlargement of the bottom of the middle ear cavity called the tympanic bulla or "bulla". Middle ear infections tend

to gravitate or settle in this cavity. When middle ear infection persists for a period of time, the walls of this cavity may become thickened or eroded. This is one reason why your veterinarian will X-ray your animal's head with ear trouble. X-rays may show changed "bulla" walls or dense material inside the cavity that may require surgical removal.

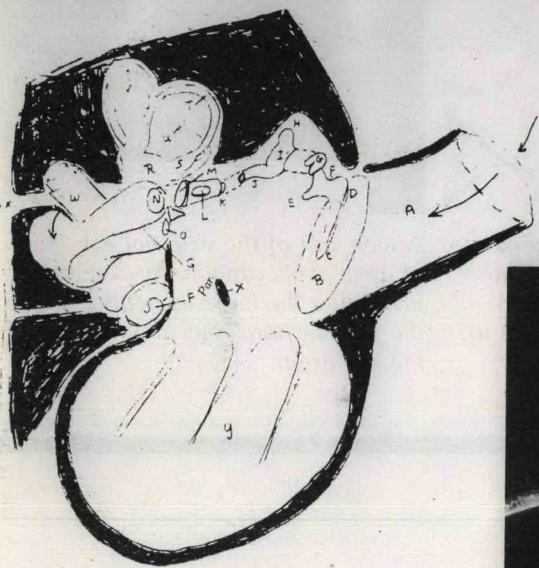
There is a tube, the eustachian tube, that leads from the middle ear to the back of the nasal cavity. This tube equalizes pressure on both sides of the ear drum. The value of pressure equalization is brought sharply into focus when we descend rapidly to land after an airplane flight. Yawning and swallowing both help to open this tube. If infection exists in the back of the throat, it may follow the eustachian tube and enter the middle ear at the same time, causing swelling and closing of this tube. Very little swelling is needed to close this tube because it is very small. An example of this closure of the eustachian tube is when we have a head cold and we say, "our ears are all stopped up".

Besides equalization of air pressure,

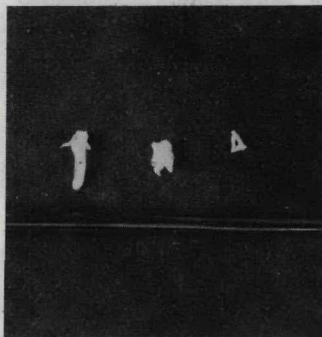
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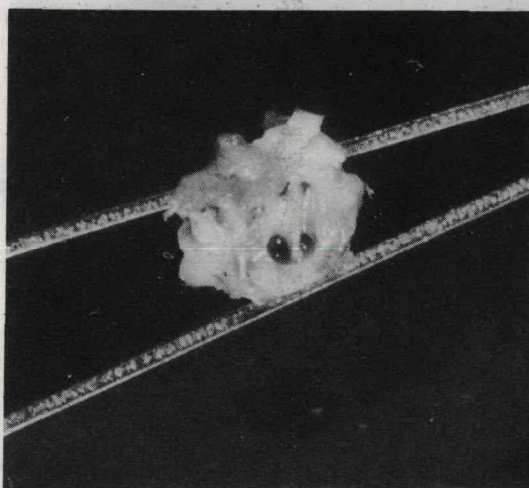
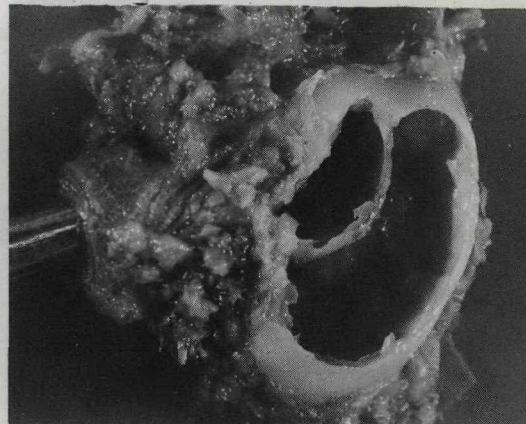
# ANATOMY OF THE EAR



The three earbones from left to right, malleus (hammer), incus (anvil) and stapes (stirrup). The stirrup is the smallest bone in the body.



The middle ear cavity of a dog opened showing the tympanic bulla at the bottom and the middle ear cavity that contains the ear bones at the top.



A dog cochlea opened. Note the size of this structure compared to a pair of tweezers on which it sits.



The semicircular canals that are responsible for the function of balance. This structure is located in the inner ear.

the eustachian tubes provide a pathway for drainage of the middle ear fluids during infection. This is why your veterinarian may use nasal sprays or nose drops to reduce swelling and reopen this tube. Relief of pressure in the middle ear cavity rapidly reduces pain and discomfort. Sometimes surgical drainage of the middle ear has to be established when this tube is swollen shut.

The inner ear is composed of two basic parts:

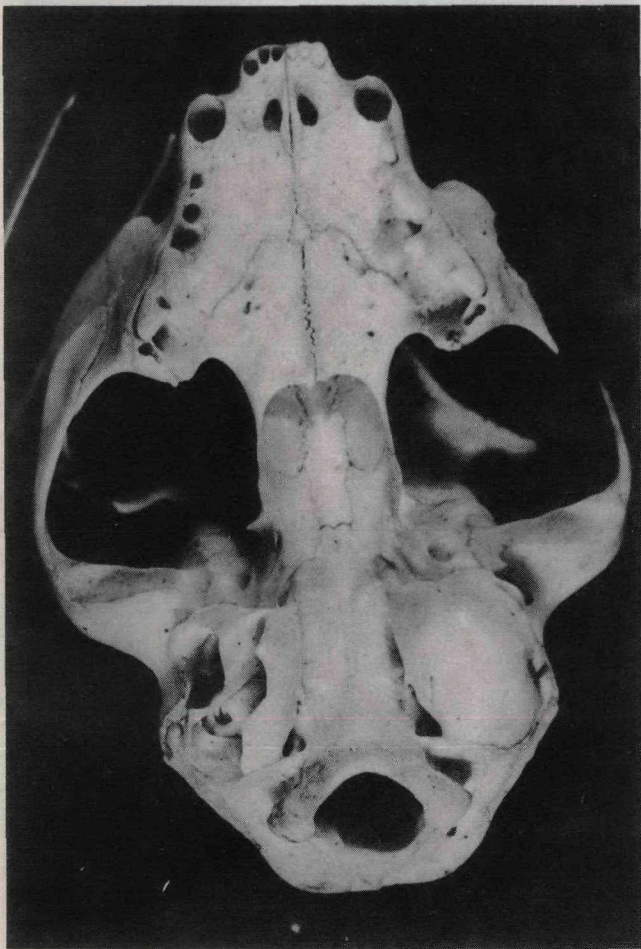
A . The balance mechanism composed of semicircular canals, utricle and saccule.

B . The hearing mechanism, the cochlea.

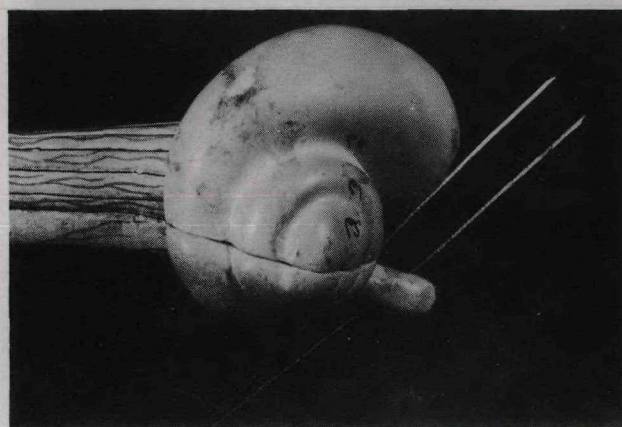
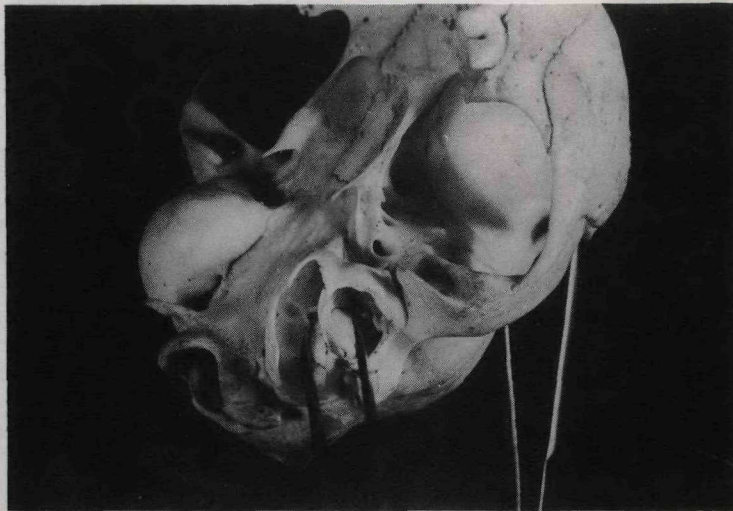
Two membranous windows enter the inner ear from the middle ear, the oval window already mentioned, and a round window. These windows lead to the hearing apparatus. The cochlea is filled with fluid (endolymph) and shaped like a snail shell. The canal within the cochlea is divided into two major parts by a basilar membrane. This membrane contains many little hair cells (sensory cells). These cells respond to fluid movement starting a nerve impulse that travels by the auditory (VIII nerve) to the brain. It is



*The skull of a cat showing an open middle ear cavity on the left and a closed ear on the right.*



*The same skull showing the location of the cochlea (the hearing mechanism).*



*A model of a cochlea showing the coiled structure and auditory nerve to the left.*

the type of wave initiated by the movement of the middle ear bones, and in particular the stapes on the oval window that causes the sensory cells of the cochlea to send nerve impulses to the brain and thus sound is heard. Loud sounds, infection, injury and poisons can all damage the sensitive hair cells and cause hearing loss or deafness.

Special tests (audiometric tests) are needed to determine the degree of hearing loss. The type of hearing loss may be indicative of certain types of ear diseases and can help your veterinarian in diagnosis.

The second part of the inner ear is

*the balance (vestibular) apparatus.* Both the hearing and balance parts of the inner ear are connected by fluid-filled canals. This fact is important, for if one part of the inner ear is diseased then all parts may be affected. Many ear infections are accompanied by balance problems such as head tilt, circling and falling. The control of balance (body position) is extremely complex, but in part it is controlled by the semicircular canals, utricle and saccule. These structures contain sensory hair cells that respond to fluid movement in them. These structures may be better understood if we think of them as a continuous, fluid-filled

pumping system. When we move our heads or bodies, the fluid in these tubes also moves, causing stimulation of the sensory hair cells. The sensory cells send impulses to the brain for processing.

The relationship of the information structures to the brain and other areas of the brain can explain some of the symptoms seen with ear disease. Symptoms such as vomiting, flicking of the eyes (nystagmus) are all the result of complex nerve pathways.

The third article in this series will be concerned with diseases of the ear. I will discuss symptoms, diagnosis and the different categories of ear diseases.



# EQUINE LANGUAGE

## LISTEN TO A HORSE

**H**orses, like most animals, communicate with one another in three ways; 1) by means of vocal communication just as humans do; 2) by means of olfaction or sense of smell; 3) by means of vision or looking at one another's head and body position.

Horses have a limited number of words in their "spoken" language. A horse can whinny, nicker, snort, blow and squeal. Each of these "words" is used in a variety of different situations. The whinny is used as a separation call primarily. When a mare and foal or stable mates are separated, they neigh back and forth. Similarly whinnies are used as long distance greeting between strange horses. To our ears, at least, there is little difference between the whinnies given in the two situations — strangers meeting or companions separating. These loud neighs are of considerable value in helping a foal to find his mother or a horse to rejoin his herd. If the whinny is considered a long distance call,

the nicker can be considered a close up or short distance call. Nickers are given when a horse is begging for food or when a mare is reunited with her foal after a separation. There are two types of snort; the explosive snort of the startled horse that is shying at a frightening object; and the more drawn out snort of the horse that is frustrated or doing something that he would rather not do. Stallions make a sound called a blow. It is a very

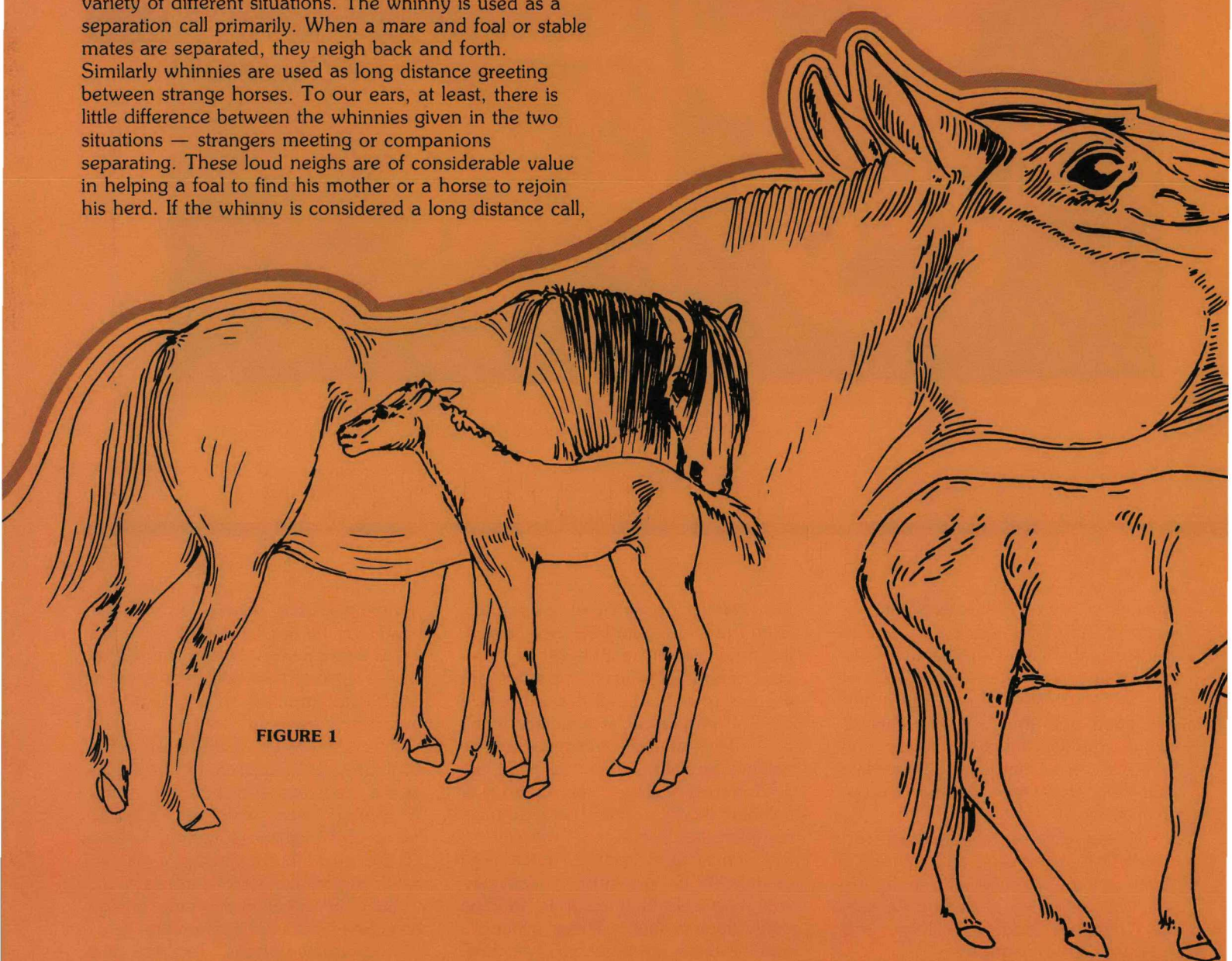


FIGURE 1



# IMAGE: HOW TO HORSE

by Katherine A Houpt, V.M.D., Ph.D.

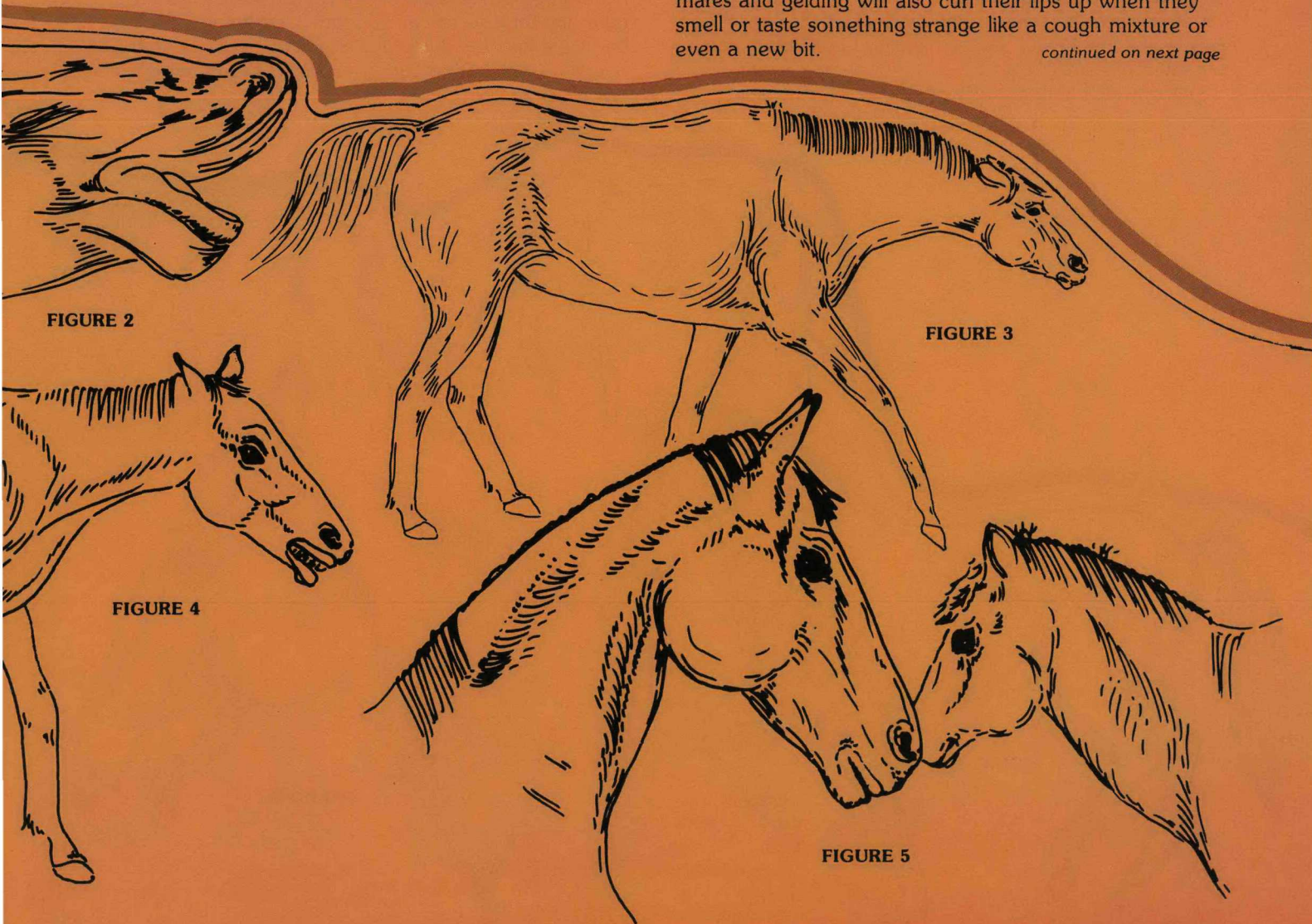
Drawing by Erica Melack  
Courtesy of the Journal of Equine Medicine and Surgery

loud exhalation or blowing of air out through the nostrils usually given while the stallion is investigating a mare. The squeal is a cry of pain or fear in horses. The intensity of all these calls can vary with the excitement of the horse. For example the whinny of a mare whose foal is out of sight is much louder than that of a gelding that is approaching a few horses in a pasture.

We make better use of vocal language than horses do, but they make far better use of their sense of smell than we do. Watch a horse that is turned into a corral where other horses have been. He will investigate the area very thoroughly with his head down, alert for strange new smells, especially of manure. Horses may be able to

identify one another individually by the smell of the manure. This is particularly important for mares. When a foal approaches a mare, the mare sniffs him under the tail (Fig. 1) before she will let him nurse. Even when a mare runs up to her foal in response to his neighs, she will give a final check by sniffing him before she will accept him. Smell is important in communication between adult horses as well. Fig. 2 shows a stallion curling his upper lip. There is no good English word for this facial expression; in German it is "flehmen". Many people call it a horse laugh, but the stallion is not laughing. He is reacting to the smell of a mare in heat. Although stallions most frequently exhibit "flehmen", mares and gelding will also curl their lips up when they smell or taste something strange like a cough mixture or even a new bit.

*continued on next page*





# EQUINE LANGUAGE: HOW TO LISTEN TO A HORSE

The horse language that people can most easily understand is that of visual signals. Recently the term body English has been used; horse language might be called "body Equine". If one notices a horse's posture, ears and tail position, one can know his mood. This can be very important in handling a horse. An aggressive or angry horse lays his ears back; he may strike out with a front leg (Fig. 3) or lash his tail and pick up a hind foot in a threat to kick. The frightened, timid horse has a more subtle expression. He tucks his tail into his hindquarters and turns his ears sideways. Young horses (under 2 years old) have a more distinct frightened expression called "the submissive grin" (Fig. 4). The young horse raises his lip to expose his teeth and usually snaps his teeth together at the same time. Foals often "grin" at adult horses. Foals also greet their mothers before they nurse by nodding their heads at the mare. Two adult horses have another greeting expression. They stand nostril to nostril. They make no noises (that we can hear), but usually one horse will squeal and jump back. Occasionally one horse has nipped another, but often nothing seems to have provoked the squeal. Presumably the horses are exchanging information as to one another's smell (Fig. 5).

Stallions have two distinctive body postures which

they use when courting a mare. A stallion will separate a group of mares from potential rivals by "driving" them. When the stallion drives mares, his ears are laid flat to his head and his head is held very low. He weaves back and forth after the mares so that the behavior is sometimes called "snaking". Notice how similar this posture is to that of a cutting horse which is separating cows from a herd (Fig. 6). A stallion will also prance with head and tail held high between his opponents (any male horse-stallion or gelding) and his mares. This posture is very similar to the piaffe of the trained Lippizan (Fig. 7). The mare that is ready to be bred has a unique facial expression. Her ears are turned back and her lips hang very loose. The mare will accept a stallion, not kick at him, when she shows this expression (Fig. 8).

By looking and listening to our horses we can understand their moods. We can determine whether the horse is angry or frightened, whether he is frustrated, smells something interesting, or is ready to mate. Knowledge of the horse's feelings will make it easier to train him for one can avoid frightening the timid horse, but use a firm hand with the aggressive one. Even the rider of a well trained mount will enjoy interpreting the horse's language.

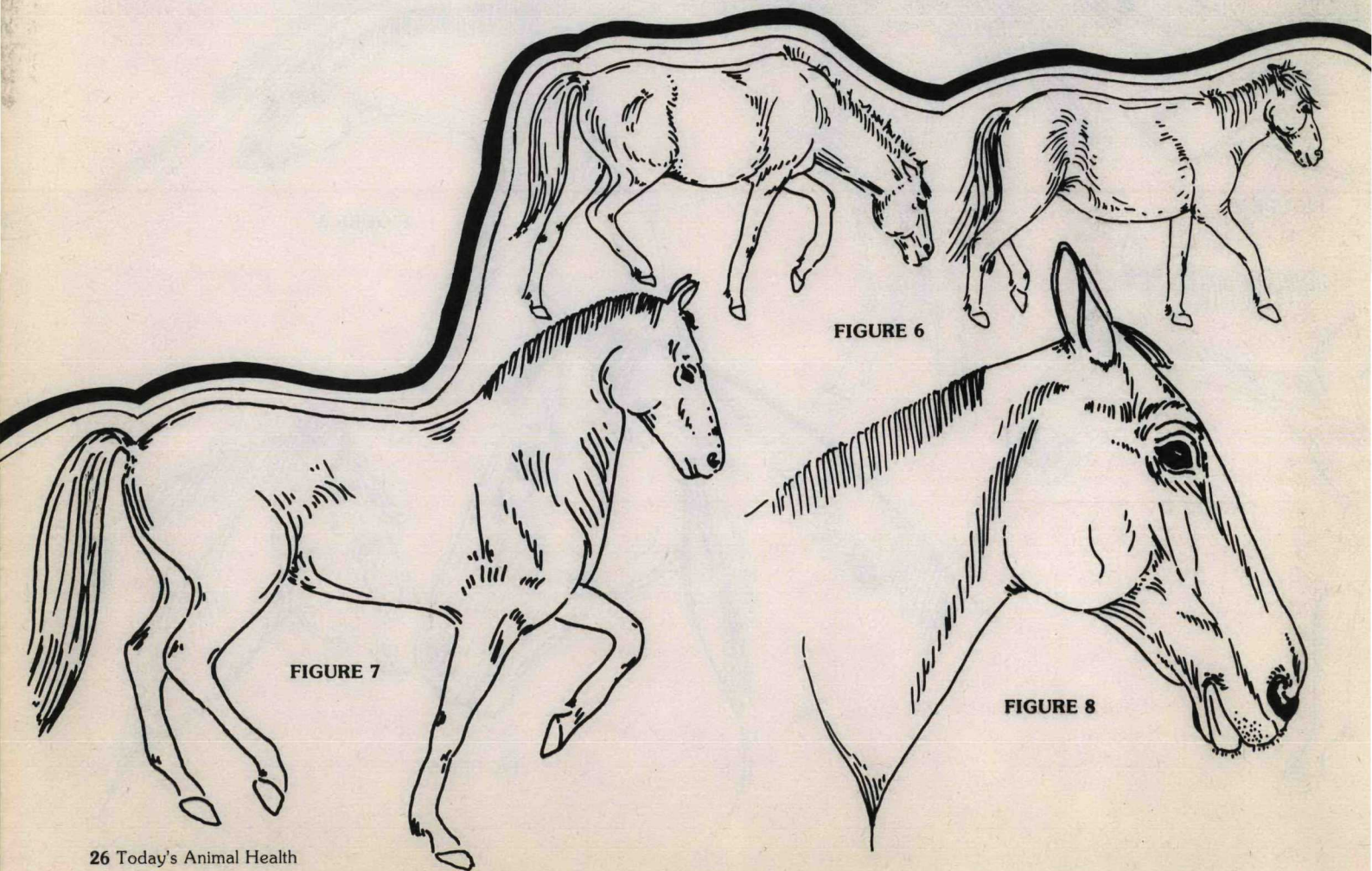


FIGURE 6

FIGURE 7

FIGURE 8



# UNDESIRABLE ALIENS

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these wasps are needed to pollinate the flowers without which there wouldn't be figs.

When any animal is introduced into a new environment by man without going through the natural range extension process it enters with a special visa without any of its natural enemies. If the new region has a suitable environment and climate, the alien species has a great advantage over the native species with which it might compete for food and range. They are not "better" than the natives in any way; they just have, as a gift from man, a great advantage. It may take the new species a little while to adjust to different conditions, but when it does expansion of range may be very rapid.

Too many animals are imported from far away and sold in stores of our cities as pets. They often suffer

indignities of poor food, inadequate quarters, and teasing by the public and when sold the buyer may be given no special instructions of care and feeding nor proper caging. Many of these are released or escape. The red-headed or Brazilian cardinal is now established in Hawaii and, to show that temperature is not always the critical factor, one beautiful male survived two winters near Hoosick Falls, N.Y.; several males and females might have established a colony but who knows which native species might suffer? Our laws on importing animals and the treatment of these during shipments and in pet shops and roadside zoos need to be much strengthened. We also need a better public attitude towards those officers who man our customs stations and our environmental conservation officers. They may have been having a very bad, frustrating day and thus not be at their most considerate, but when they confiscate some article which could harbor injurious pests remember they are doing you a favor. Instead of trying to bring in some possibly dangerous stranger try to get to know some of our native plants and animals better.

## can you depend on it?

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and envelopes the pointed spiculae that they are not able to work their way through the fibres of the body, they are so entangled by it."

The use of vipers or their parts by the ancients as a cure for snakebite is an example of the belief that "like cures like," which later formed the basis for homeopathic medicine as practiced on man and beast until relatively recent times. The belief that viper venom was formed in the bile made it appropriate to use the liver as a remedy. That this doctrine was sometimes carried to absurd lengths is evident from the popular Irish practice of taking "the hair of the dog that bit you" as a remedy for a hangover, even though another drink would seem to have an accumulative rather than curative effect. This superstition relates to 16th-century British medical

practice, in which a person (and later, animals) bitten by a dog was treated by applying to the wound some hairs plucked from the offending animal. Like many such beliefs that have beguiled otherwise intelligent peoples for a time, this practice had its origins in ancient folklore.

It would be illogical, however, to

ridicule an ancient belief merely because it is ancient or some of its adherents convert doctrine into dogma. With the discovery that specific antivenin can be used with considerable success for treating snakebite in both man and animals, a whole new breed of viper catchers has sprung up.


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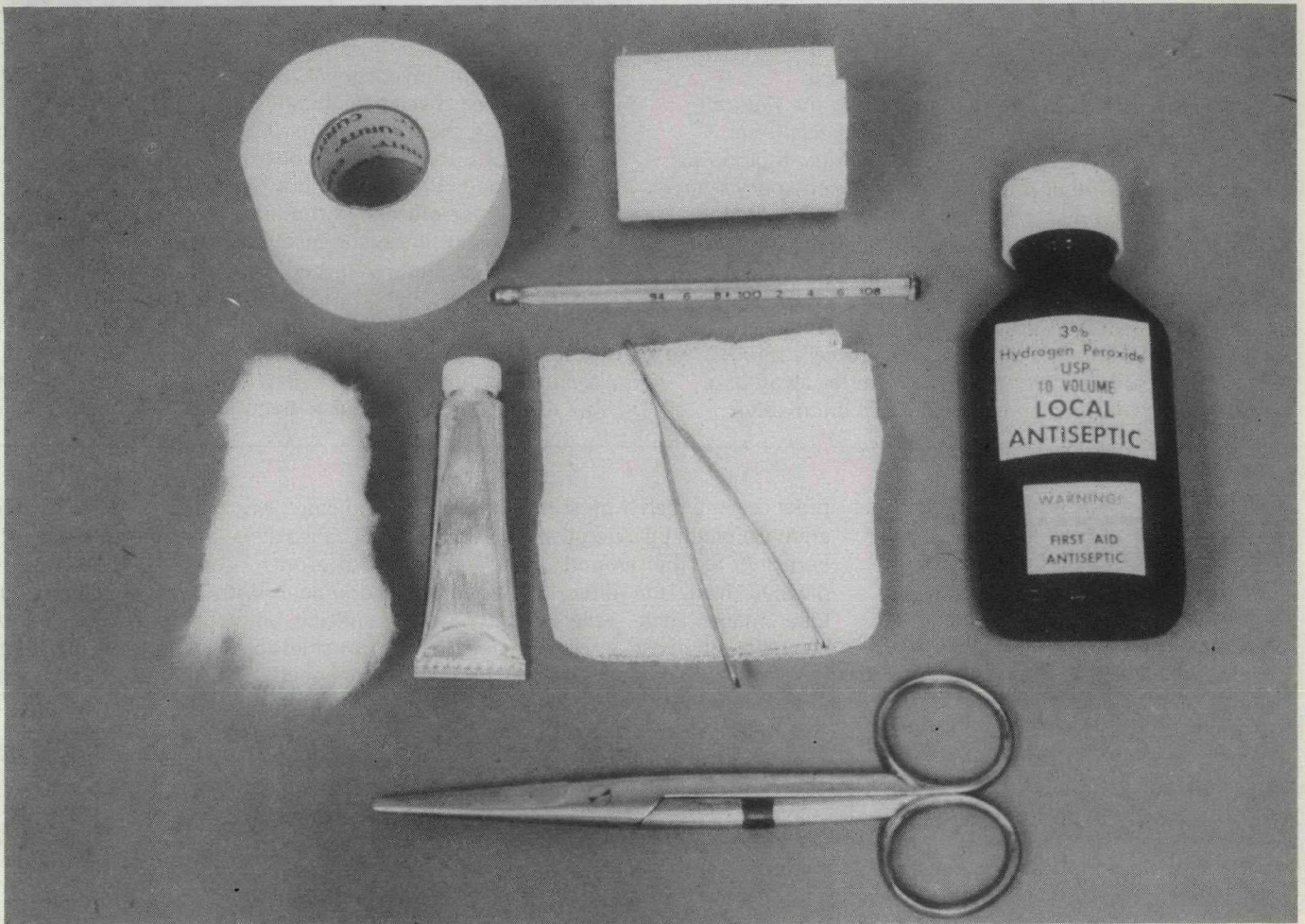


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PHOTOS by Dr. C.P. Ryan

Make your own first aid kit. Most of these items you already have scattered around the house. Be prepared for the unexpected.

The first aid kit you have for your family can also be used for your pet. Basic first aid is similar whether one is dealing with a cat, dog, horse or person although restraint is more of a problem with the animal patient. Animals often don't understand why they were injured and are frightened and apprehensive. In many cases of first aid, it is necessary to properly restrain your pet before attempting treatment. Things to keep in mind and to have for handy reference are First Aid Part I, II, III, IV, V.

When working around wounds, remember routine sanitation measures such as first washing your hands and using clean dressings. The term dressing refers to material placed directly over the wound to protect and cover

the injury. Bandage refers to the material used to hold the dressing in place and can be almost anything; roll gauze, tape, rag strips, string, etc.

Things to check for in your present first aid kit or to consider if you make one from scratch are:

### 1. Dressings and bandage materials

- a) **roll gauze** (2 inch) — It can be used for a variety of things. Roll gauze works very well as a muzzle to prevent an injured frightened dog from biting you when you are attempting to give first aid. It can also be used to secure a dressing to a wound. Folded it can be used to make gauze pads.

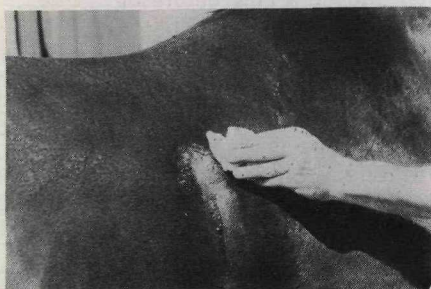
- b) **gauze pads** (2 X 2 inch) — preferably sterile, can be used to protect open wounds.
- c) **adhesive tape** (1 inch) — works well to secure dressings to the wound.
- d) **antiseptic solution, ointment or cream** — can be placed on wounds to check growth of microorganisms. Examples would be; povidone iodine solution, bacitracin ointment, polymyxin cream.

### 2. Hydrogen peroxide 3%

Hydrogen peroxide works well to clean wounds and can also be used to induce vomiting when necessary. Two tablespoons given



by mouth will induce vomiting if necessary in poisoning cases.



Cotton moistened with hydrogen peroxide or water and soap works well in cleaning wounds. The sooner dirt is cleaned out of a wound the better. Don't give germs a foothold.

### 3. Cotton

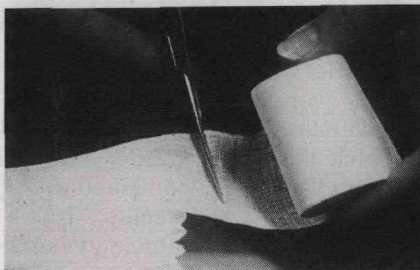
Cotton moistened with hydrogen peroxide or water works well in cleaning wounds. Do not put dry cotton directly on wounds as the fibers stick to the wound and are hard to remove.



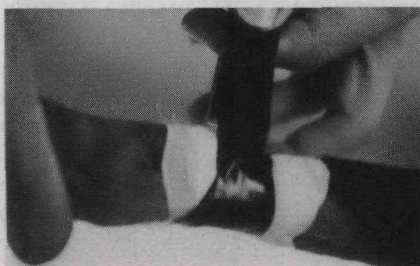
Running water being used to wash mud off a leg wound on a horse. First aid involves a lot of improvising and common sense.

### 4. Scissors & tweezers

Scissors can be used to cut dressings and bandage materials while tweezers are helpful in removing splinters and dirt from wounds. Tweezers are also handy in removing single ticks from animals.



Making a wound dressing with roll gauze. Lay the gauze out the desired length then fold it back and forth until the desired thickness is obtained. Gauze squares can be conveniently purchased sealed in individual sterile packages.



You don't have to be fancy, any kind of tape will work to hold a dressing in place. Here electrical tape is used to hold a gauze dressing in place.

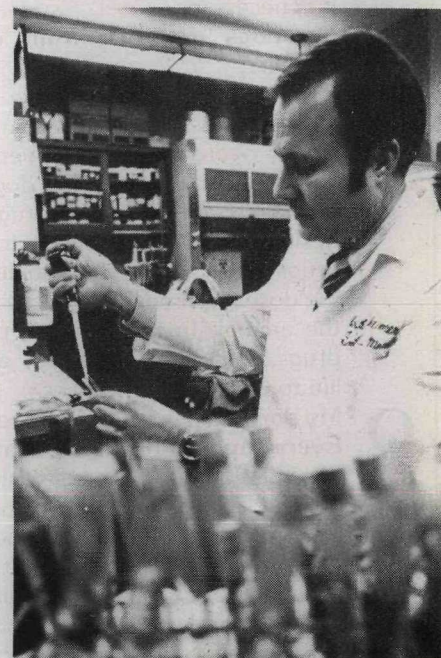
### 5. Rectal thermometer

Taking your pet's temperature is easy. Lubricate the thermometer end with vaseline and then gently insert it half way into the rectum for two minutes. Normal body temperature of cats and dogs is 101-102 degrees fahrenheit. Normal temperature of a horse is 100 degrees. Feeling your pet's nose will not tell you if your pet has a fever.



Does your pet have a fever? The only accurate way to know is to take a rectal thermometer and find out. Why guess?

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# ask Dr. Smithcors

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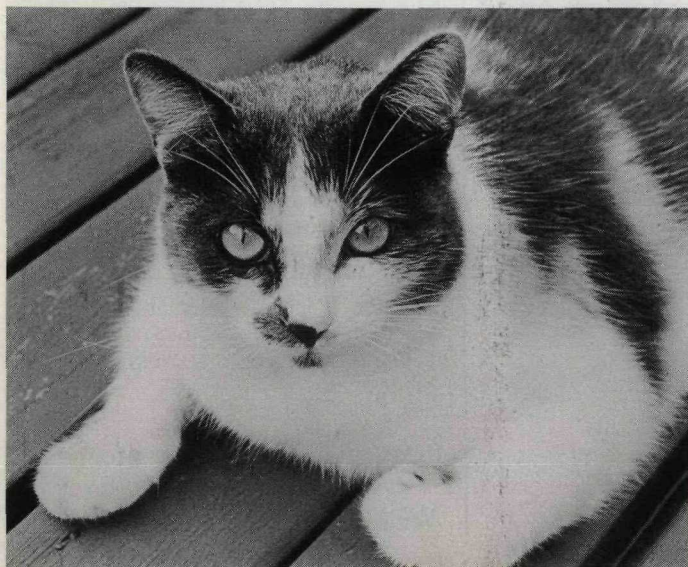
established in dogs, but this does not mean that your dog is free of worms. Any dog that has access to areas contaminated by other dogs is likely to have worms, and once a dog becomes infected he re-infects himself. One species of worm (ascarids) can be transmitted by the bitch before the pups are born, or through the milk while they are nursing. It is a good idea to have a sample of the dog's stool examined by a veterinarian at least once a year so your pet can be treated promptly if it is necessary.

## **Q** Do dogs get sick from chemotherapy for cancer?

**A** Yes, dogs respond to these drugs much in the same way as people and sometimes get sick. To avoid overdosage or adverse reactions, it is necessary to examine the dogs' blood frequently to make certain that the drug is having only the desired effect. The reason for this is that these drugs act by killing or inhibiting cancer cells, and the dose required is very close to the toxic dose for the animal. In many cases, proper use of these drugs has added months or even years of useful life to animals with cancer.

## **Q** My dog has a sore on his face below his left eye. Every time I think it is healed up it gets bad again. What could cause this?

**A** It would be hard to tell from this distance, and only your veterinarian could be sure after examining your dog. This could be an infected fistula resulting from an injury that failed to heal properly or an infected tooth. Perhaps it is caused by plugging of the naso-lacrimal duct that carries tears from the eye to the nasal cavity. In such cases the face on that side is usually wet by the overflow of tears, and the plugged duct may become infected, more obviously at some times than others. When an infection recurs several times, it is usually a sign that the condition is not going to clear up by itself.



photograph by D. M. Diem

# The Flying Veterinarian

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the flight service center paused a little before he acknowledged. "You've gotta be kiddin. That you, Doc?"

After a dog was picked up at Flagstaff, the Ark continued to Page. McFadden commented on the scenery. "Isn't it beautiful? Especially in the early morning when the sun reflects off the watering tanks on the reservation — the blues, the golds, the reds. Can't really appreciate the sights in the afternoon, though. Visibility is too limited."

"I wish my freeway-driving colleagues in California could see me now," McFadden said. He left California four years ago. "Sure, I'm going all the time. My kind of practice demands it. But it's a different pace from that I left in California. Here, I don't see all the clients in one building. I get a change of scenery, and get a different set of philosophies to experience."

He checked the animals behind them. All were asleep. "There have been times during takeoff, as well as in flight, when more than my usual attention was required," he said. "Once, just at the crucial moment of takeoff, a small dog was aroused from his tranquilized state by the roar of the propeller. He jumped from the back seat onto my shoulder where he was scared stiff. After the noise subsided, he went to sleep on the seat beside me and never woke up until we landed at Page."

"During flight quite a bit of turbulence sometimes occurs, especially near the San Francisco Peaks. This happened once when my three children, Mike, Kevin and Tami, were flying with me. The animals were getting excited from all that tossing around. Mike brought them, one by one, to the space between us where I could give them just enough sedation to calm them for the rest of the trip. I keep syringes on the dash in front of me for just that purpose."

"Sometimes, additional sedation is not necessary. All that's needed is to raise the plane's elevation. The oxygen gets thinner up there and causes the animals to go back to sleep again. And it does them no harm."

Lake Powell, Glen Canyon Dam, the Navajo Generating Station and Page Airport came into view forty minutes out of Flagstaff. The Ark landed and taxied to its tie down. The dogs, awake now, climbed onto the wing. Their masters had been informed of their arrival time and were waiting for their pets.

"Many times when I land at Page," McFadden said, "there are more people waiting for my cargo than there are waiting for Air West."

Pam Leslie and Joan Wright, assistants at McFadden's animal hospital in Page, already had scheduled the first patient.

Charlie Brown, a black and tan dachshund, is kind of a regular, because he has a spinal disc problem. When he first came for treatment, his hind legs wouldn't function at all. An operation followed by about eight weeks of medication and sitz baths made him mobile again.

continued on next page



"Charlie has flown back and forth with me so often," McFadden said, "the last time I returned him to his owners, Mr. and Mrs. Brown of Page, I told them that Charlie had qualified for the award as the only fifty thousand mile dachshund in the West." Charlie would be flying to Sedona the next day.

The next patient was a kitten which had been brought in earlier by a young Navajo. She had a swollen foreleg which the owner believed had been caught in the fan belt of his pickup. McFadden questioned him when he returned that afternoon to pick up his animal.

"Do you have small children at home?"

"Yes."

"Do they ever play with rubber bands?"

"Yes."

McFadden explained that a rubber band had been tightly wrapped around the kitten's leg and forgotten. In time it had cut off circulation and caused the leg to swell.

Some cats and dogs needed attention because of foxtails between their toes or in their ears. Then came six new puppies that were to have their tails docked.

Once a week, McFadden and an assistant drive to the corrals just north of town to treat horses or steers kept there. The corrals are on a bluff that overlooks Lake Powell.

McFadden gestured toward a weathered frame building that sits apart from the corrals. "When I first started my practice in Page, I used that building there. A couple of two-by-twelves laid on saw horses were the exam table. Since the only electric light in the building was in the center of the ceiling, the table was placed by a window where the incoming light could double as a surgery lamp. Before the building could be used, it had to be swept out each time, sprayed for flies and thoroughly disinfected. Quite a change from my former hospital in California, where I would have felt I was roughing it if I'd had to perform an operation without a heart monitor.

McFadden's present practice sometimes takes him out on the reservation to treat the Indians' livestock, mostly horses. Usually, though, the animals are brought to him.

Back at the hospital, an elderly Navajo was waiting. He had no animal with him, but stated his problem: "We traditional Navajos not touch dog that have snakebite (rattlesnake), but grandchildren want keep."

The animal had been left on the reservation so McFadden dispensed some antivenin to counteract the poison, some cortisone and penicillin and hoped it would be gotten back to the dog in time.

McFadden recalled a group of Navajos who came to see him. They spoke through a translator. One of their horses had been left back on the reservation too sick from rattlesnake bite to be moved. He gave them medication and they left. About a week later, one of the group returned all the medicines unused. By the time they got back to the animal, it had died.

"Often I find I'm treating a horse or other livestock and I know it is being treated by a medicine man at the same time. Where the two treatments do not conflict, I have no objections. The Indian is simply trying to get the best of two worlds. Who's to say whether the medicine man's treatment, or mine, will cure the animals?"

The morning of the next day was filled with the usual

problems, spayings, foxtails and dental work. Around noon, McFadden performed a tonsilectomy on a Chihuahua.

A phone call indicated McFadden's services were needed at the corrals to help a horse with colic. The lunch he had been looking forward to would have to wait. Colic can kill quickly.

While the horse was getting medical attention, another horse and owner stopped by. The animal had been trailered in from Keams Canyon. McFadden found he had encephalitis.

Mrs. Leslie arrived to say a phone call from Sedona concerned a bitch that was having a real problem giving birth. McFadden asked a few questions and didn't like the answers.

"Tell them to take the animal to our hospital in Flagstaff right away," McFadden said. "If the owners agree, phone ahead to let Doctor Still know they are coming. And leave a message for my wife that I'm going to be late getting home tonight."

When McFadden got back to the hospital from the corrals he had to treat a dog that had just been hit by a car. She suffered from two compound fractures. Internal injuries also were indicated. Clients with appointments would have to be asked to return at later times. The dog was saved, but would require a lot of post-operative attention.

It was 9 p.m. All patients had been taken care of. It was time to load the Ark and fly back home. On the return flight to Sedona, the dog that had been hit by a car would be a passenger, as well as Charlie Brown.

The Ark took off. Doc had radioed in his flight plan. His wife had called the flight service station and would be waiting for him at the airport. The Ark landed. While Mrs. McFadden helped him unload the animals, she reported that there were two more waiting at the animal hospital. One, a dog, had just tangled with a car. The other was a cat that had a large abscess.

The day was finished, almost. The phone rang. Some people had a cat with a badly mutilated tail. Since they lived twenty miles away, McFadden agreed to wait for them at the hospital. When they got there, they took a box from the back of their pickup, brought it in, placed it on the examining table and took off the lid. The only thing in the box was the cat's tail. During the trip, the animal had escaped and left its tail in the box. The people looked at each other, at McFadden and then at the box again. The silence continued until McFadden observed, "What we have here is a tail that needs a cat transplant."

Editor's Note: Dr. William R. McFadden is a 1957 graduate of the College of Veterinary Medicine at Washington State University. He now makes his home in West Sedona, Arizona, where he operates an animal hospital. The following feature story was written by freelance writer William H. Howard of Sedona. Accompanying pictures were taken by photographer Rod Moyer. "The Flying Vet of Northern Arizona" was published in the December 21, 1975 issue of Arizona magazine, a Sunday supplement of The Arizona Republic in Phoenix. We reprint the story with written permission of, and extend our gratitude to, author William R. Howard and Arizona Magazine Editor Bud DeWald.



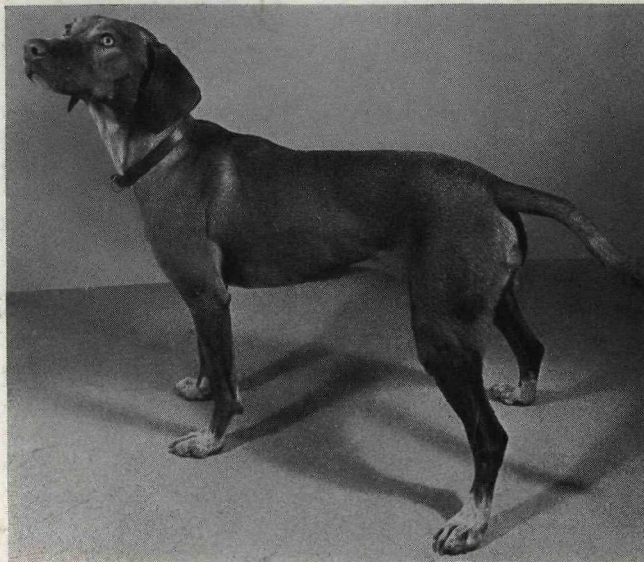
# "With lots of love and ALPO, Spirit now lives up to her name."

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## BEFORE ALPO:

Spirit on July 7, 1976. Suffering from insufficient protein, malnutrition and neglect.



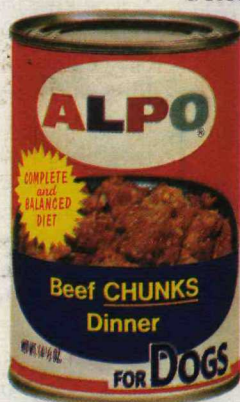
## AFTER ALPO:

Spirit on December 1, 1976. Enjoying good health after a steady diet of ALPO's meat protein and loving care.

"We found her on the 4th of July, so we just had to name her 'Spirit,' not that she had any. When we first saw her at the pound, we knew we had to adopt her. Why, we could count that poor pathetic dog's ribs. No pep, half starved and craving affection as much as food. We have plenty of both to give her."

Plenty of love and plenty of ALPO Beef Chunks Dinner. That's what the John Holbens of Allentown, Pa., had to offer Spirit, the sorrowful looking dog that won their hearts. The Holbens' local veterinarian informed them that Spirit had no diseases, but was badly in need of a proper diet and lots of attention.

"We figured that she needed the kind of food that would stick to her ribs—and build her up. And what's better than good rich chunks of beef? That's



why we decided on ALPO."

The Holbens made a wise decision. Meat-based foods are more digestible than cereal-based foods. Which meant Spirit's system was able to absorb and use more of the food she ate. Since meat is a dog's natural food, she loved ALPO and her appetite improved. Her health improved too, because ALPO, with meat by-products, beef, soy, vitamins and minerals has everything a dog needs every day.

"We'd always heard that ALPO had every vitamin and mineral a dog needs every day—now we know it's true. Because after just a few months of love and ALPO, that dog has so much energy and spunk that we can hardly keep her down. Now Spirit sure lives up to her name."

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