Today's Animal Health

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TODAY'S ANIMAL HEALTH is published bi-monthly by the nonprofit charitable Animal Health Foundation
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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.

FEATURES

DEPARTMENTS

dialogue

We have received a number of anonymous contributions to the DIALOG column recently. As a matter of policy we do not publish unsigned letters in Today's Animal Health. We do, however, withhold names from publication on request.

ed.

Read my "Animal Health" cover to cover always enjoy the articls but the story of "Miracle" by Patricia Theofen was especially heartwarming. Have always had a special place in my heart for our "sea-cousins." When I lived on the Gulf of Mexico always looked forward to seeing the porpoise when we would go out on the boat.

Keep "them" articles comin', folks, love 'em!

Mrs. Patricia Szukalski
Oak Creek, Wisconsin

HAS MAN NO CONSCIENCE?

There seems to be no end to the cruel lengths some people will go to, in order to make money. Not only do we have to tolerate savage money seekers, clubbing baby seals to death. But also, dog fighting has entered the scene. Despite the fact that this so called sport known as conventions to the participants, is illegal, hundreds of people are involved.

Have we become this uncivilized? This barbaric? Animal lovers, we must unite and prevent this disgusting disease from spreading further. Have we no means of stopping this despicable crime against helpless animals?

In addition to raising these dogs (commonly American Staffordshires and English Bull Terriers) for the sole purpose of killing each other, they are also abused by their owners, to make them mean.

Rabbits, cats, and small dogs are also the helpless victims of this nauseating scheme, being used as bait to teach the dogs to kill, during their conditioning period. Once trained, these dogs participate in approximately 1,000 fights, nationwide, where the betting reaches thousands of dollars. After being subjected to this cruel treatment, the animals can be sold for $5,000 to $10,000.

This situation has only recently come to my attention. But I feel if enough people are made aware of this barbaric "event", it **can** be stopped. I am outraged that activities like this, can take place in such supposedly civilized countries as the United States and Canada.

If this act is regarded as a felony, as it is under Massachusetts law and enforced, perhaps it can be stopped. The more insidious acts involving animals, I become aware of, the more I am ashamed to be, a member of the human race.

Beverly Vikse
Auburn, WA 98002

I came across a copy of "Today's Animal Health" magazine while in the waiting room of my veterinarian's office. The articles were not only very informative, but extremely interesting as well.

Enclosed please find a check for one year's subscription to "Today's Animal Health." The issue I read was the September/October 1979 issue and I would like my subscription to start with this issue since it contained an article on cancer in dogs and one on feline rspiratory diseases, which were very well written.

I am very glad I came across your magazine and look forward to receiving my first issue.

Mrs. P. Cancilla
Brooklyn, New York 11209

I am so glad I got a chance to subscribe to your magazine, it is so helpful and informative.(I want to be a veterinarian when I grow up). I thank you so much again.

Another animal lover,

Marcia Escobosa
Placentia, CA 92670

I am sorry I cannot afford to renew my subscription right now, but I think that you have a very good magazine and organization, so I hope you will accept my small contribution of $2.00 toward helping animals. I will try to renew my subscription in the near future, for I have spent money on my own animals up here. I hope your magazine keeps going for a long time and I will try to get new subscriptions for you from my friends. Thank you for your attention.

Marie Demyen
Radville, Saskatchewan, Canada

Thank you for your letter and the contribution. We're extending your subscription for 1 year - compliments of Mr. Harry Maiden, Executive Director of the Animal Health Foundation.

ed.

Please find enclosed a copy of the LLAMA NEWSLETTER which I publish six times yearly to promote better understanding of the animals' medical needs, temperament, training and care and to provide a format for the exchange of information for llama-owners and their veterinarians. I have sent issue #1 because it contains normal values for hematology and blood chemistry for llamas, with comparisons to bovine values, perhaps your office might sometime find these useful.

I would appreciate any input your office might have to offer in the way of contacts with veterinarians or other individuals who have questions about llamas or experiences to relate, especially in the realm of llama medicine.

If the newsletter interests you let me know and I will provide your office with a complimentary subscription for one year. If it would be possible, I'd greatly appreciate some mention of the availability of the newsletter in Today's Animal Health, an individual subscription runs $12 per year for six issues.

Thank you.

Andy Tillman
Andes LLamas
Box 135
Athena, Oregon 97813

This newsletter contains valuable information about Llamas—anyone with an interest should subscribe!

ed.

Why does a dog behave like a dog? Why not like a cat or a human being? The reason is obvious, and is aptly summarized by the words of T.S. Eliot in his poem: **The Ad-dressing of Cats:**

> So first your memory I'll jog
> And say a CAT is not a DOG.

This answer may seem over simplistic, but actually there is much truth in it. A puppy's behavior is very much limited by the maturation of his sensory and motor skills. In the first week of life a puppy is equipped to do little else but sleep, eat and crawl. Gradually the puppy learns to walk, run and play as his muscular coordination improves with practice. Similarly, in the first week of life the puppy lives virtually in a sensory void. Because he is born both deaf and blind, he cannot react to sights and sounds. However, this changes abruptly during the transition period when the pup's eyes and ears open and he suddenly becomes aware of a whole new environment to which he can respond.

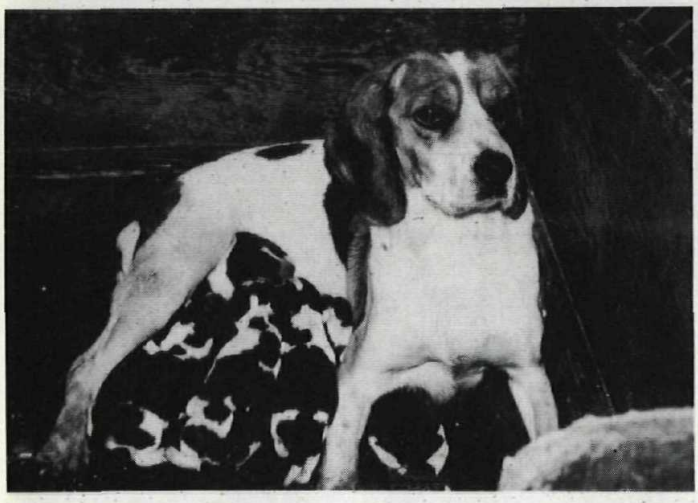
The same principle applies to the behavior of adult dogs. Not only has adult behavior developed throughout puppyhood, but it is also the result of numerous years of evolution during which time dog behavior has become purposefully specialized toward survival in the wild. In particular, the behavior of an adult dog is very much limited or specialized by: the dog's anatomy; the dog's sensory impression of the environment; and the dog's brain.

It is very important to understand these limitations because they are very different from the equivalent constraints on human behavior. One of the reasons why many people have great difficulty in understanding dog behavior is that they tend to see things from a human point of view. Humans see, hear, smell and experience their environment with human senses, and they respond to these stimuli with human brains and bodies. The dog, on the other hand, sees life very differently. He experiences life from a dog's point of view. A dog can hear sounds that a human cannot hear and experience smells that are well beyond the senses of humans. It is apparent that dogs and humans can be exposed to the same physical environment and yet experience it very differently. Obviously this will have a marked effect on behavior.

The part of the brain that is devoted to processing sensory information (particularly the senses of smell and hearing) are developed much better in dogs than in humans. Generally the dog is aware of more sophisticated information about his surroundings. The human brain, however, has a much larger cerebral cortex and far superior powers of reasoning.

The behavior of the dog is considerably restrained by his anatomy, and to a large extent it is true that a dog behaves like a dog because he has a dog's body. For instance, a dog cannot manipulate objects like a human, climb trees like a cat, or swim like a whale because he simply does not have the specialized anatomical structures to do so. Instead he will run, bury bones and wag his tail like a dog.

Although there is a great variety of shapes and sizes of dogs, the general anatomy remains the same for all breeds. The dog's body is the product of years and years of evolution, during which time it has become ideally



WHY DOGS DO WHAT THEY DO

by Ian Dunbar, Ph.D., M.R.C.V.S.

suited to perform specialized behaviors that were necessary for survival. As such, these behaviors now represent the natural way of life for dogs, both domestic and wild.

The dog's limbs have become specialized for endurance running at high speeds. The dog is *digitigrade*, that is, he stands on his toes, unlike bears for example, which are *plantigrade* and walk on the soles of their feet. As a result, dogs are able to run faster than bears; on the other hand, dogs have greater difficulty in maintaining balance while standing on their two hind legs. The same principle applies to humans. Short-distance runners tend to sprint on their toes, as compared to the slower and much more cumbersome, plantigrade 'executive joggers'.

The dog is limited in the amount of abduction of his front limbs. The front leg may only be moved away from the body a few degrees, since the skin that covers the chest wall also encloses the upper two thirds of the humerus. This holds the leg against the chest wall and limits the movement of the shoulder joint to a backwards-and-forwards motion as employed in walking and running. In this respect the horse is even more specialized, since the skin covering the chest wall almost totally encloses the elbow joint. In humans, however, the arms may be abducted through a complete semi-circle and may be rotated in all directions. Thus, because of the dog's specialization for long-distance running ability, he loses a great deal of mobility in his front legs.

A dog does not have the manual dexterity of a human. There are several reasons for this. Humans are bipedal, and as such their hands are free to manipulate and carry objects. A dog has evolved to stand and run on four legs, and when he raises his forelegs from the ground, it merely increases the probability that he will fall over. Some dogs have become quite adept at sitting on their haunches and begging; some can even walk short distances on their hind legs. But even so, a dog would have great difficulty in holding a fountain pen or a cup of tea as we humans do. Human hands have more digits, longer fingers and a thumb in apposition, all of which greatly facilitate the manipulation of objects.

Humans have five fingers and five toes, whereas a dog has only four toes on each of his fore and hind feet. The dog has a vestigial 'thumb' on the foreleg, and a vestigial 'big toe' on the hind leg. These serve no particular function and are usually removed at an early age to prevent the possibility of subsequent injury. (Some breeds, such as the Pyrennian Mountain Dog, have paired dewclaws on each leg). This reduction in the number of digits is a further specialization for running. Many ungulates, such as the cow, have two digits, and the horse has only one.

Compared to a dog, a cat has a greater ability for manipulating objects because of his sharp, retractable claws, which are kept sharpened for hunting, fighting and climbing trees. A dog has non-retractable claws, which are comparatively blunt and used mainly for traction when moving over rough terrain. Dogs may use their claws to some extent for holding objects but are generally somewhat clumsy. Horses are even worse off.

Another specialization for locomotion is that all dogs have partially webbed feet, which probably evolved as a specialization for walking on soft sand and snow. In some breeds, which have been selectively bred for working in water, such as the Otterhound, the degree of webbing is greater and covers the second phalanges.

A dog's lips are not as mobile as those of some other animals but his dentition has become highly specialized. Not only are the teeth efficient tools for eating fleshy bones, but they are also formidable weapons. The long canine teeth are used for making deep bites when catching hold of prey and they may also inflict serious wounds during aggressive encounters. Often the wounds are complicated as the dog tends to pull his head away, causing deep tears in the skin or flesh. The incisors are used for nibbling at food and fleas, the specialized carnassial teeth work like a pair of scissors when shearing flesh; and the large molars are for crushing bones.

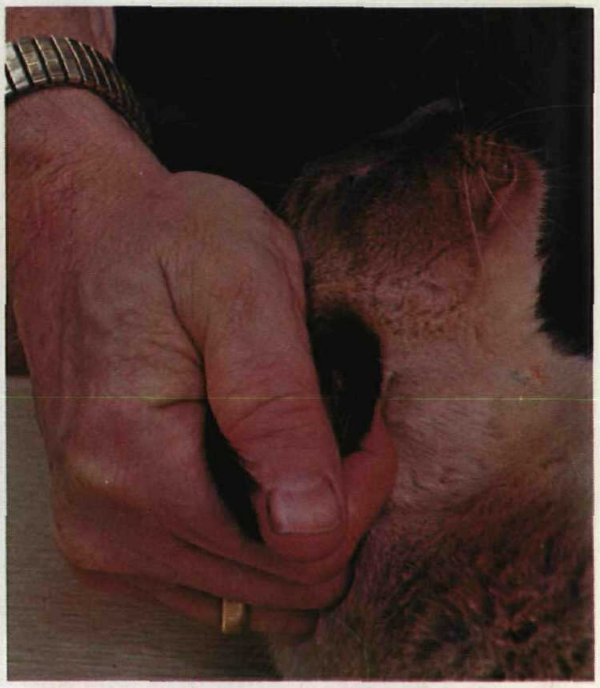
Unlike eagles, dogs cannot fly because they do not have wings. However, an eagle on the ground cannot run as fast on two feet as a dog can on four. I hope this absurdly obvious example will help to emphasize the main point of this article. Specialization of the body for a particular function usually limits its usefulness for other purposes. A bird will use his wings for flight and a human's arms and hands are specialized for manipulating objects. Although dogs cannot fly and are less dexterous than humans, they can run faster and for longer distances on four legs than either birds or people. This is an evolutionary behavioral 'trade-off'. "What one gains on the roundabouts one loses on the swings."

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.

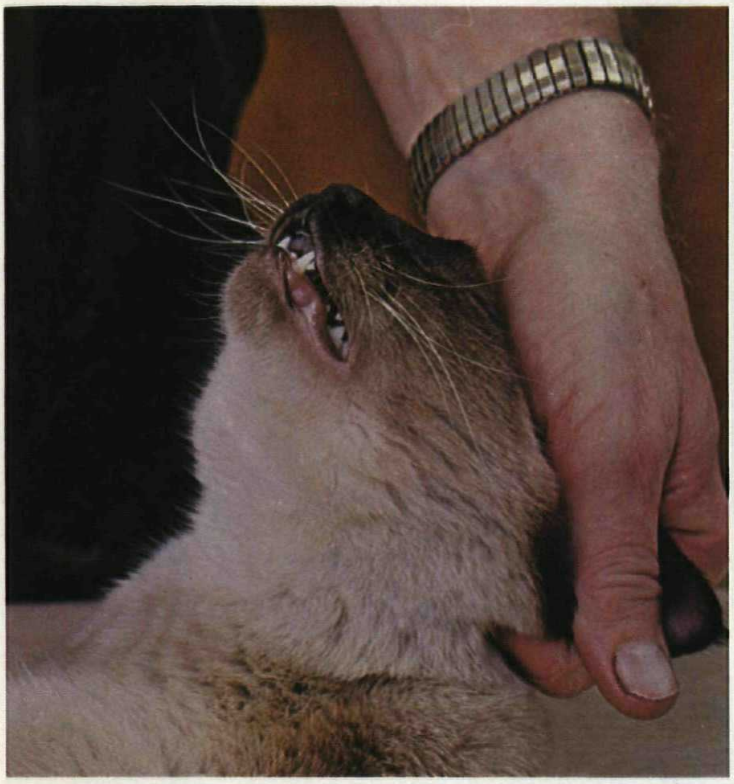
STEP 1: With the cat sitting on the table facing toward you, place your left palm on the cat's head. Grasp the left ear with your thumb and forefinger,and the skin at the base of the neck with the remaining fingers (Figs. 1-2).

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).

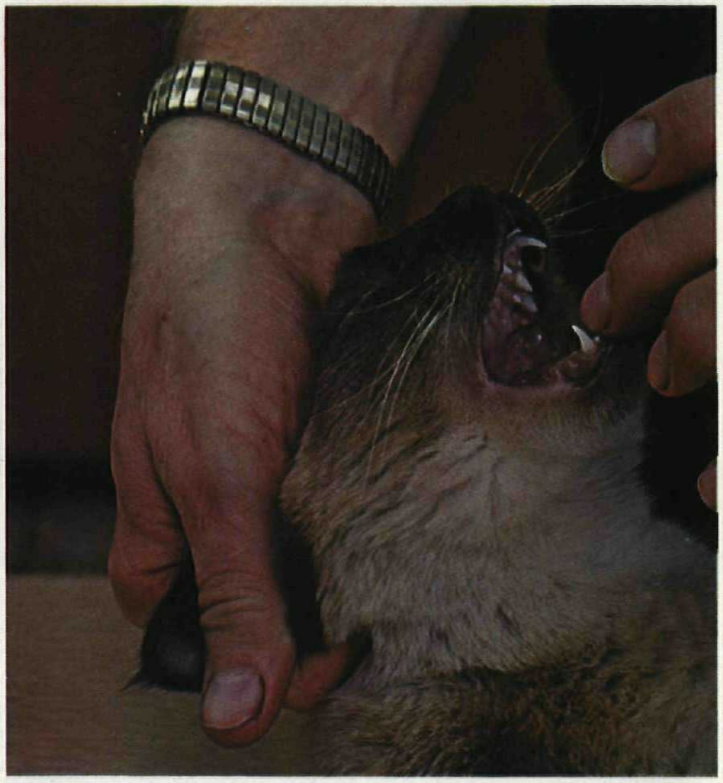
STEP 3: Place the capsule, tablet, bolus of food, or liquid medicine far back into the mouth, over the base of the tongue. A reflex action will cause the cat to swallow. When he licks his nose, he has swallowed and you can release his head (Fig. 5).

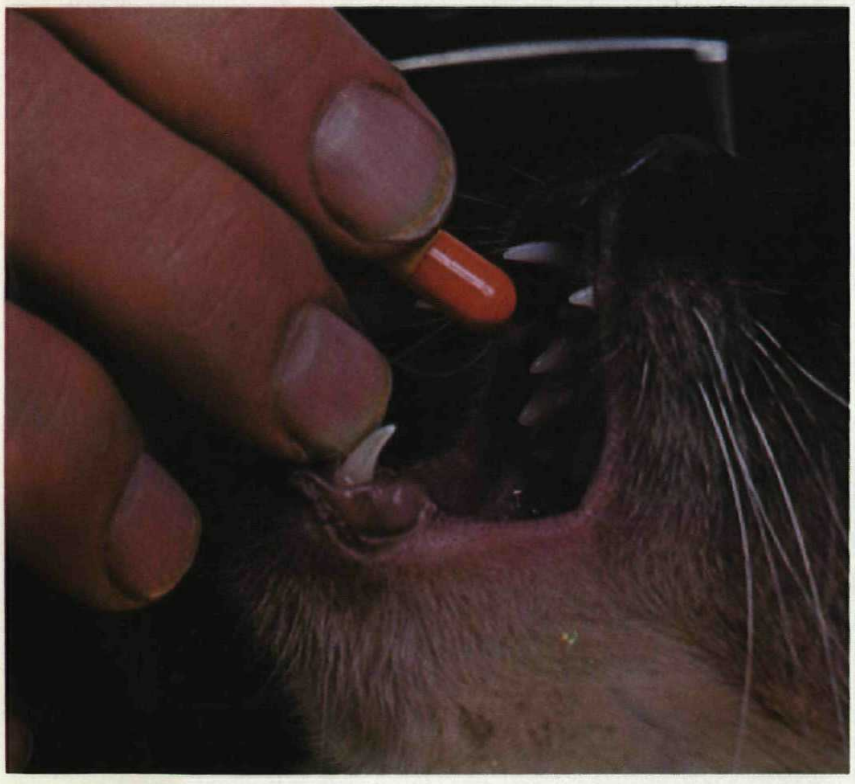
You can use this same method to apply medicine to the face or administer eye drops or nose drops (Fig. 6). When putting drops in the eye, try to keep the eye level so that the drops will remain in place.

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

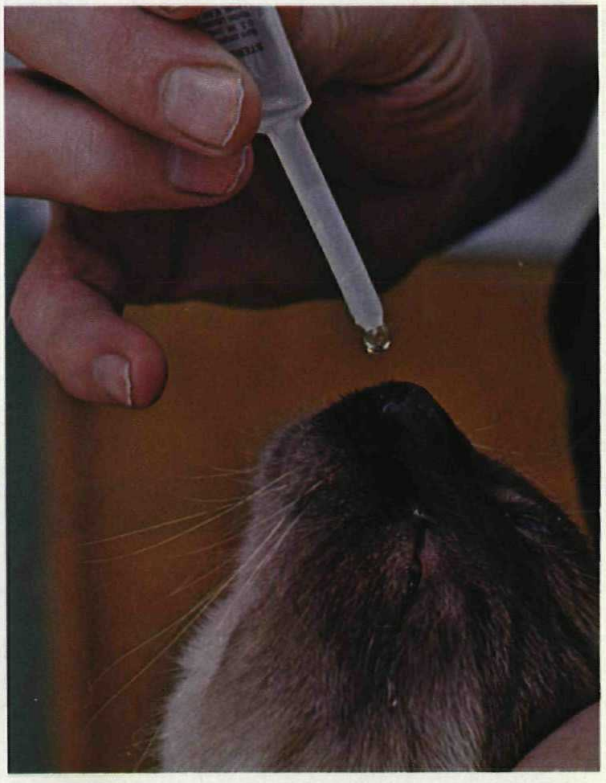


4 *As the chewing muscles relax, the right hand is used to pry open the mouth.*





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

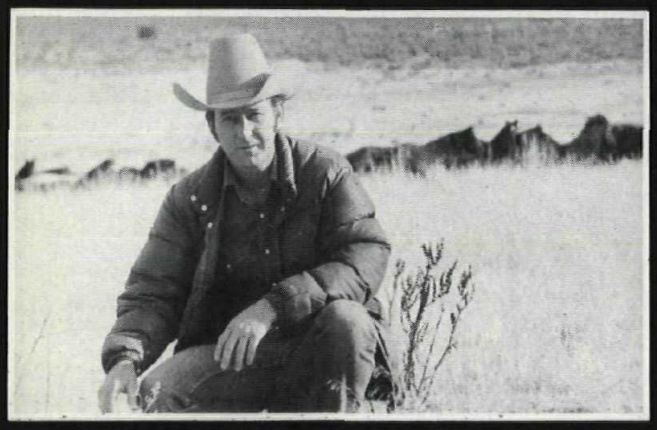


6 *Using the same restraint technique, you can administer eye drops or nose drops.*

A LAST CHANCE

for young people

FOR WILD HORSE



A LAST CHANCE FOR WILD HORSE

Through this program, responsible persons can adopt a number of horses. Anyone wanting to adopt a horse must be able to care for the horse properly and not use it for any commercial purpose. Eventually, because of a new law that has just been passed, complete ownership of the wild horse or burro will be given to its adoptor after a suitable probationary period has passed. (Anyone interested in adopting a wild horse or burro should contact: Adopt-A-Horse, Bureau of Land Management, Denver Federal Center, Building 50, Denver, Colorado 80225.)

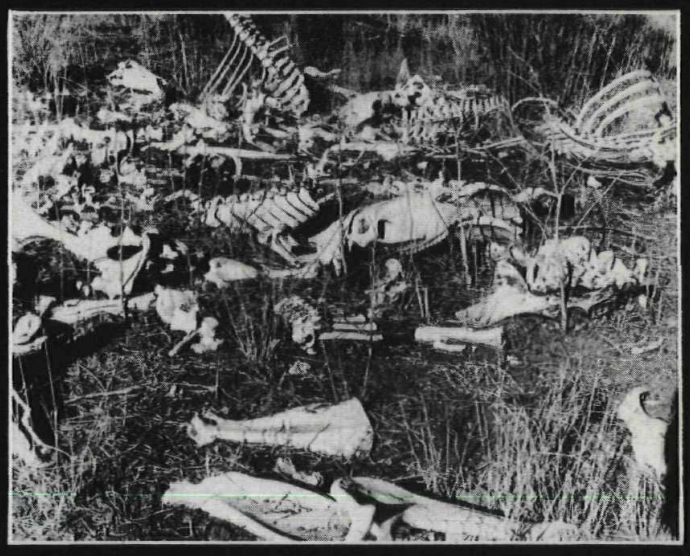
Adopt-A-Horse program has provided homes for a great many horses, but hundreds of horses have had to be killed by the government because homes couldn't be found. There was no alternative but death!

Generally, it is the older stallions that no one wants. These stallions can be dangerously aggressive after having run free and fought for their domain for a number of years. At times even mares, because of old age, disabilities, or some undesirable characteristics, had to be destroyed since there were just not enough people who wanted to give them homes.

Just recently all that has changed! Now there is help and a home at last for these horses that would otherwise have to be killed!

Through the efforts of a California rancher, a 10,000 acre Wild Horse Sanctuary has been created for these unadopted horses.

On the Carey Ranch, a working cattle spread near Alturas, California, the wild horses once again run free



over lush meadowlands that provide good forage in the summer and protection in the winter. They are also fed hay during the winter months when the grass doesn't grow in the colder northern climate of Alturas. The Pit River winds its way through the ranch, providing a natural habitat for the wild geese and ducks that nest there. Deer, antelope, and eagles can be seen at times in the same pastures as the wild horses. Surely, the Cary Ranch is a place where the horses and burros rightly feel at home.

One hundred unadopted wild horses' and burros' lives have been saved by the home the Carey Ranch Sanctuary has made possible for them. More unadopted ones are scheduled to arrive there in the near future.

This Sanctuary is the first and only one of its kind and is financed through donations. The Sanctuary has a tax deductible program whereby people throughout the nation can contribute the $38.00 a month required to maintain each horse. This is called the Sponsorship Program. Persons wanting to save an unadopted horse or burro's life can sponsor one or more animals through this program, or they may co-sponsor a horse with more than one individual. Persons who would like to help save a life, (but are unable to sponsor a horse) may contribute any amount they wish to a general fund for saving horses who do not have sponsors. The ranch says they could save as many wild horses as there are funds for their support.

Sponsors may choose the kind of horse or burro they would like to be their own. They receive a picture of their animal, a certificate of sponsorship, and a form describing and identifying their animal.

Visitors are welcome at the ranch, and sponsors are invited to visit their animal anytime. When they do, sightseeing, wildlife viewing, fishing and domestic horseback riding privileges are all available to them, as a sponsor, at no charge.

Under existing laws all wild horses and burros that are rounded up on B.L.M. or Forest Service lands are held in government corrals from 30 to 90 days. If the horses have not been adopted by that time, the government can legally kill them. Countless numbers of horses have been senselessly destroyed in this manner because there was no alternative.

When the wild horses were being abused prior to the 1971 Horse Act, the late Mrs. Velma Johnston (Wild Horse Annie), informed the American public, and enough people proved they cared about our wild horses by getting legislation passed to protect them. If Annie were alive today, it's certain she would be telling how people could save the horses now.

There are many people still working toward the goals Annie set when she began her fight to save the wild horses. That is why this Sanctuary has been created and is doing all it can to publicize the problems still facing the wild horses.

Carey Ranch Wild Horse and Burro Sanctuary is currently the only group that has any program in existence whereby individuals can save the unadopted wild ones. They realize that this Sanctuary will not solve the problem of what to do with all the unadopted horses and burros, but this Sanctuary is devoted in its efforts to save from death as many of these noble animals as it can. Until another solution can be found, or more sanctuaries created, the Carey Ranch Wild Horse and Burro Sanctuary is the only alternative other than death for all the unadopted wild horses and burros in America.

Anyone wishing to help save a life may contact: Wild Horse Sanctuary, P.O. Box 1591, Alturas, California 96101.

THE HEARING EAR DOG

New Assistance for the Deaf

by Kristin von Kreisler-Bomben

When the doorbell rings. Cookie, a mixed pointer springs into action, dashes toward the door and squeals frantically. She races back and forth between John and Janet Henry, her owners, and jumps and thrashes until they follow her to the front door and open it.

Cookie isn't a spoiled mutt or a trouble maker. She is doing her job as a certified Hearing Dog. She was trained at San Francisco's Society for the Prevention of Cruelty to Animals to be "ears" for John and Janet Henry, who are deaf and rely on Cookie to help them lead safer, more independent lives.

She has already saved the life of Elizabeth, the Henry's two year old daughter, who had a bad cold and was struggling to breathe at two o'clock one morning. Cookie rushed to awaken the Henrys, and they found Elizabeth choking; her face turning blue. "Thank God Elizabeth was okay," says John Henry. "Without Cookie I don't know what would have happened to our baby."

Cookie was trained at the S.P.C.A.'s Hearing Dog Program, begun just a year and a half ago. The program teaches strays picked up off the streets of San Francisco, to respond to certain sounds—alarm clocks, doorbells, and smoke alarms, by running to their trainer, getting his attention in any way they can, and then galloping back to the source of the sound to show him what it is. So far the program has placed twenty-two dogs in homes all over California, and Ralph Dennard, the head dog trainer for the program, hopes to place at least fifty with deaf people every year.

Each dog is selected from the S.P.C.A.'s shelter and is carefully observed and evaluated before being accepted into the Hearing Dog Program. Because the dog usually has been abandoned, nobody knows his background, age, whether he has been abused, whether he chews slippers or hates cats. The dog has to prove that he is healthy, active, curious and, most important, people-oriented and responsive to sound.

Any type of dog is eligible for the program, and Ralph Dennard even chose one with three legs, appropriately named Tripod. Dennard was looking in the S.P.C.A. kennel, saw Tripod standing there, and thought to himself, "If that dog had four legs, I'd probably consider her for the program. . .Why not?" Dennard says "she did just as well as any of the other dogs we have. And she ran as fast as the others." In spite of her handicap, Tripod was formally adopted into the program, trained and placed with a deaf person.

Once the dog is selected, the training begins. The dog is drilled in obedience, and learns early to respond to hand signals because many deaf people speak only with their hands.

John and Janet Henry of Pacifica, California, sit with Cookie, their hearing dog, and Elizabeth, their daughter, whose life Cookie saved.

Ralph Dennard plays with three-legged Tripod in the Training Center of the Hearing Dog Program at San Francisco's Society for the Prevention of Cruelty to Animals.

Ralph Dennard is awakened by Tripod when his alarm clock buzzes in the Training Center of the Hearing Dog Program.

In the next part of training, called "sound keying," the dog is exposed to specific sounds again and again and is taught to respond to them in particular ways. For example, when a doorbell rings, no matter where the dog is or what he is doing, the trainer pulls him back on a long leash and rewards it with praise. Eventually the dog gets the idea that whenever he hears a doorbell ring, he must rush to the trainer and alert him.

All this complicated training takes place in the S.P.C.A.'s Training Center, which also is Ralph Dennard's apartment. His bed, sofa, and house plants and books furnish the center and give it the appearance of any other San Francisco dwelling. The only unusual thing in the apartment is a remote control panel that enables the trainers to push a button and get a sound from another part of the room. Doorbells ring mysteriously from outside Dennard's front door. A baby's cry wails from a crib in his bedroom. A telephone rings on a telephone-telegraph system, used by many deaf people to communicate outside their homes.

After working with each dog for four months in the Training Center, the trainer takes the dog to the home of his new deaf master and stays until the dog transfers his allegiance from the trainer to the new owner. After a few months, the trainer returns for a follow-up visit. If all is working well, the dog "graduates" and receives a bright orange collar and a certificate identifying him as an official hearing dog.

The idea for the Hearing Dog Program originated several years ago at the Minnesota Society for Prevention of Cruelty, where Agnes McGrath, a dog trainer and kennel supervisor, decided to teach dogs to help deaf people. After training six dogs, the society was deluged with requests for more by other deaf applicants, so the program was turned over to the American Humane Association, a national organization concerned with the prevention of cruelty to animals and children. A pilot program for training hearing dogs was started in Denver, Colorado, and began placing dogs with deaf people all over the United States. The success of that program led to the opening of the first official Hearing Dog Center in San Francisco.

San Francisco's program was financed by a bequest from John G. Vrahos, a watchmaker and real estate investor, who left his estate to charities for animals. Several volunteer organizations helped prepare the training facilities, which occupy the second floor of the S.P.C.A. building. Other donations have kept the program going and have also allowed deaf people to receive their dogs at no cost—even though it costs $2,500 to train each dog.

San Francisco's Hearing Dog Program has been very successful. In fact, using stray mutts for "ears" is so appealing that more Hearing Dog Centers are expected to open in other cities within the next few years. Hearing dogs may become as commonplace as guide dogs for the blind.

The best part about the program is that everybody can win. Deaf people get loving companions who allow them to live safely and independently, and stray dogs, destroyed if they are not adopted, find good homes and useful lives.

UNDERSTANDING OF THE DOG

Part I

There are two basic ideas that must be understood to appreciate how the heart and blood vessels work. The first is knowing the parts of the blood system which is called "anatomy". The second is knowing how each part works which is called "physiology". So we are going to discuss the anatomy and physiology of the heart, blood vessels and lungs.

I want you to refer to line drawings in figure 1 through 4 as we go along to understand where these parts are located in the dog. Figure 1 is looking at the dog from the side, and figure 2 is with the dog laying on his back; this is the same as looking at a human's chest. Figure 3 represents a close-up diagram of the four chambers of the heart, the valves between the chambers and the large arteries and large veins. Figure 4 is a diagram of how the blood circulation of the body works.

Begin with figure 4, the diagram of the body's circulation. This is the plumbing of the body; a system of pipes that are large when leaving the heart that get smaller and smaller as they reach the distant parts of the body until they reach the smallest of vessels (the capillaries). Here oxygen and nourishment exchange into the individual cells. The blood then passes into the small veins which collect blood into larger and larger veins to return to the heart.

The heart is the pump that moves the blood through these vessels, pumping it around and around the body. There are two major parts of the heart. The chambers on the right side (right atrium and right ventricle) pump blood through the lungs where oxygen is taken in by the red blood cells and carbon dioxide is given off into the lung cells. The blood is then pumped to the left side of the heart where the chambers on the left side pump blood (now oxygenated to its maximum and ready for use by the body cells) to the body.

The arteries contain blood that is being pumped away from the heart to the body cells and the veins collect the blood from the cells and return it to the heart. When the blood returns to the heart (the right side) it is pumped to the lungs for oxygen exchange (through lung arteries) and returns by the lung veins to the left side of the heart to be pumped through the arteries to the body once again.

In figures 1 and 2 the heart is located in the chest within the rib cage. The lungs are also located in the chest. The heart, the two lungs (left and right) and the main arteries and veins are the organs in the chest. The organs of the dog and other animals are very similar to man in their location in the body and the way they function. Animals walk on all four legs (limbs) while man walks on his rear limbs, standing erect.

The heart of the dog has four chambers, the same as man. Refer to figure 3. The upper chamber that collects blood from the main veins (anterior and posterior vena cava) is called the right atrium. The blood is passed through a valve (tricuspid valve) into the right ventricle where it is collected. It is then pumped through the pulmonary valve into the pulmonary artery and to the lungs where oxygenation of the red blood cells takes place in the capillaries of the lungs. The blood returns to the heart through the pulmonary veins and enters the upper left chamber of the heart called the left artium. The blood moves from the left atrium through a valve (mitrial valve) to the left ventricle. Blood collected in the left ventricle is pumped through the aortic valve into the main artery of the body called the aorta.

The aorta divides into seven major arteries. The ones going to the head are called the carotid arteries; the ones going to the front legs are called the brachial arteries; the ones going to the rear legs are called the iliac arteries; the one going to the intestines and organs in the abdomen is called the celiac artery; the one going to the kidneys is called the renal artery.

There are major veins returning blood from these major areas: from the head comes the jugular veins; from the front legs the brachial veins; from the rear legs the femoral veins; from the abdomen the splenic vein; from the kidneys the renal vein. These seven major veins collect into two very large veins before entering the right side of the heart. Blood from the head, neck, and front legs collect into the main front vein (anterior vena cava); blood from the abdomen, rear legs and kidneys collect into the main rear vein (posterior vena cava).

For an animal to be normal and in good health, it is necessary for all of these anatomical parts to be in normal condition and carrying on their functions without difficulty. If any organ begins to fail, it will eventually, as the condition progresses, begin to show symptoms that you will see in your dog. For example, failure of one of the valves in the heart so that it leaks blood backward into a chamber that the blood just came from will cause a drop in body blood pressure. When this becomes advanced it can cause blood to pool or back up into the lungs causing fluid to accumulate (edema) in the lungs. This produces coughing and difficult breathing, weakness and lethargy (laziness) from poor oxygen supply to the body cells. The veterinarian may first anticipate this when he hears the heart murmur from the leaking valve, long before the symptoms begin to appear.

THE HEART

How the heart and blood vessels work

by Marvin W. Frace, DVM

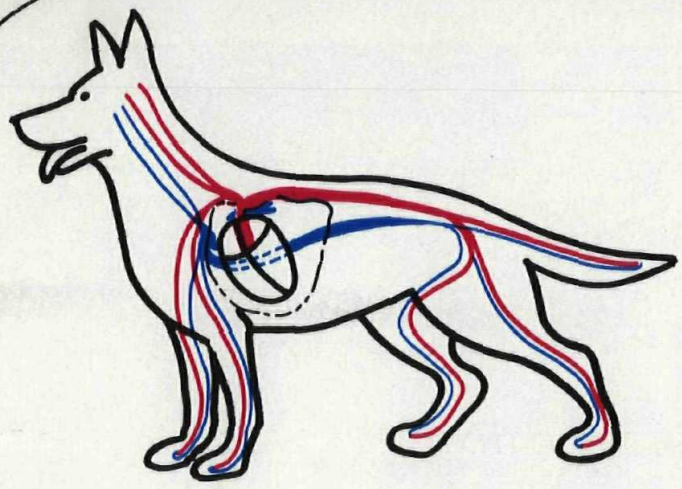


Figure 1

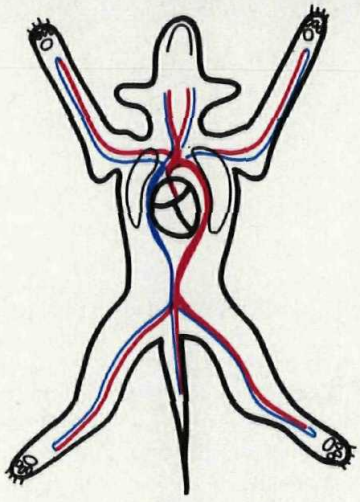


Figure 2

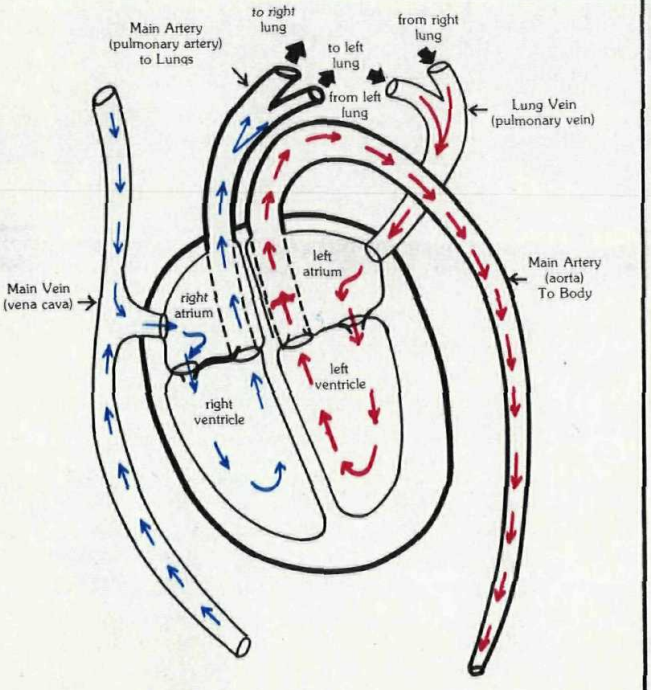


Figure 3

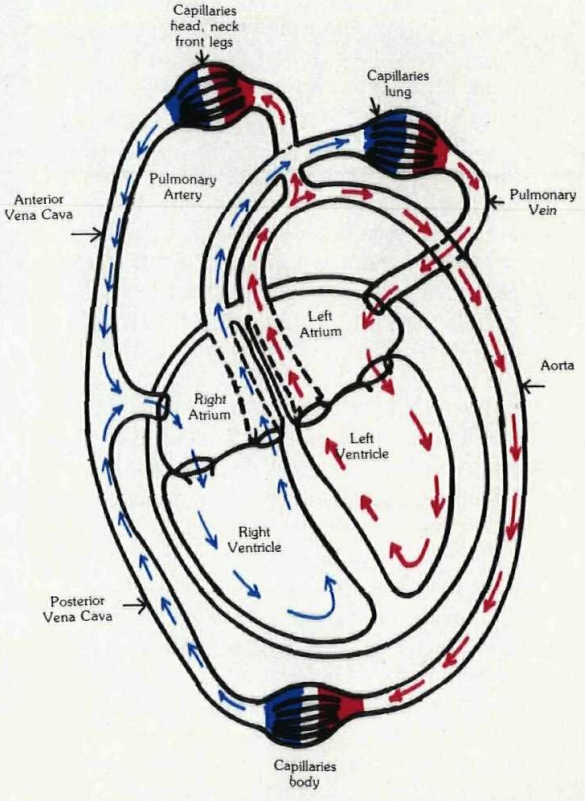
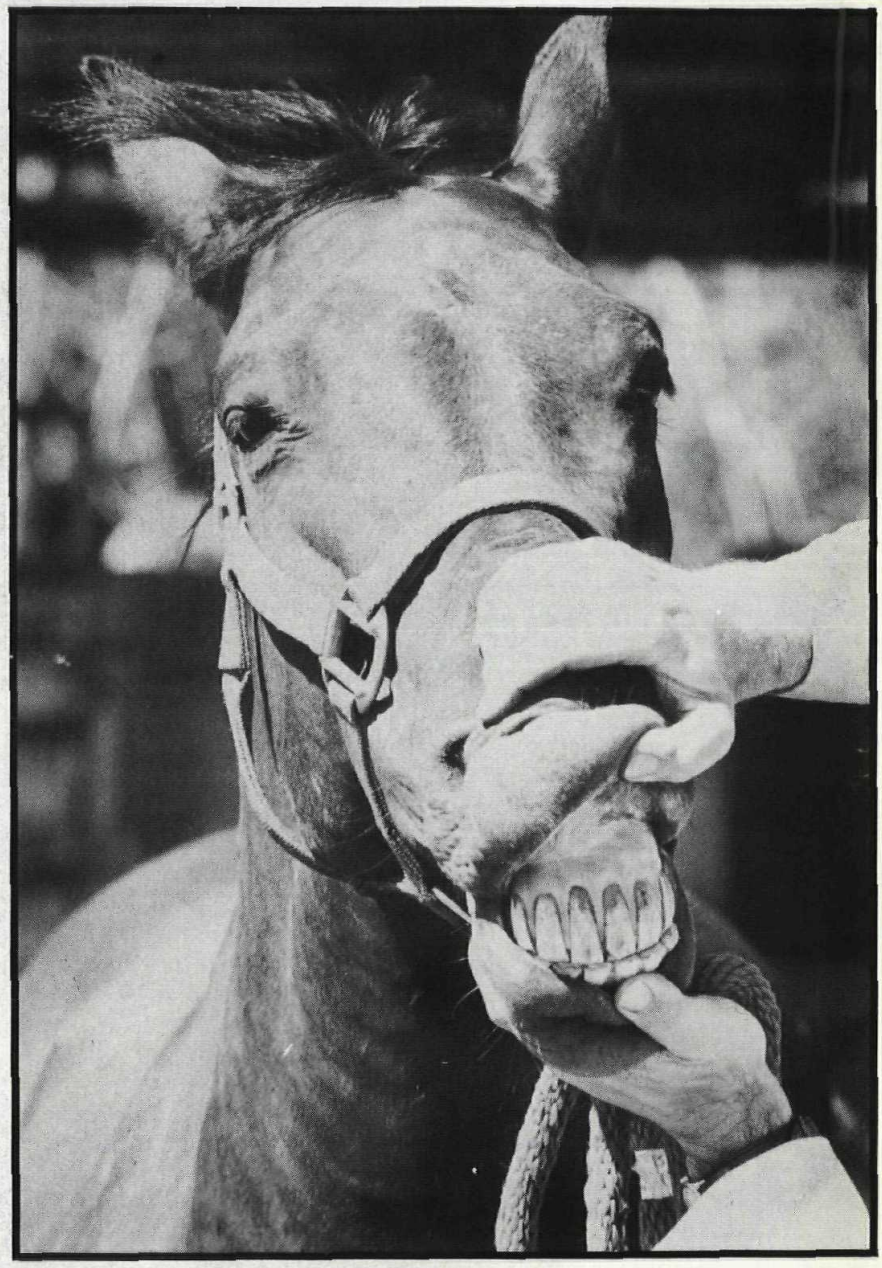


Figure 4

DENTAL PROBLE

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



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

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 jar 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

TMS IN ANIMALS

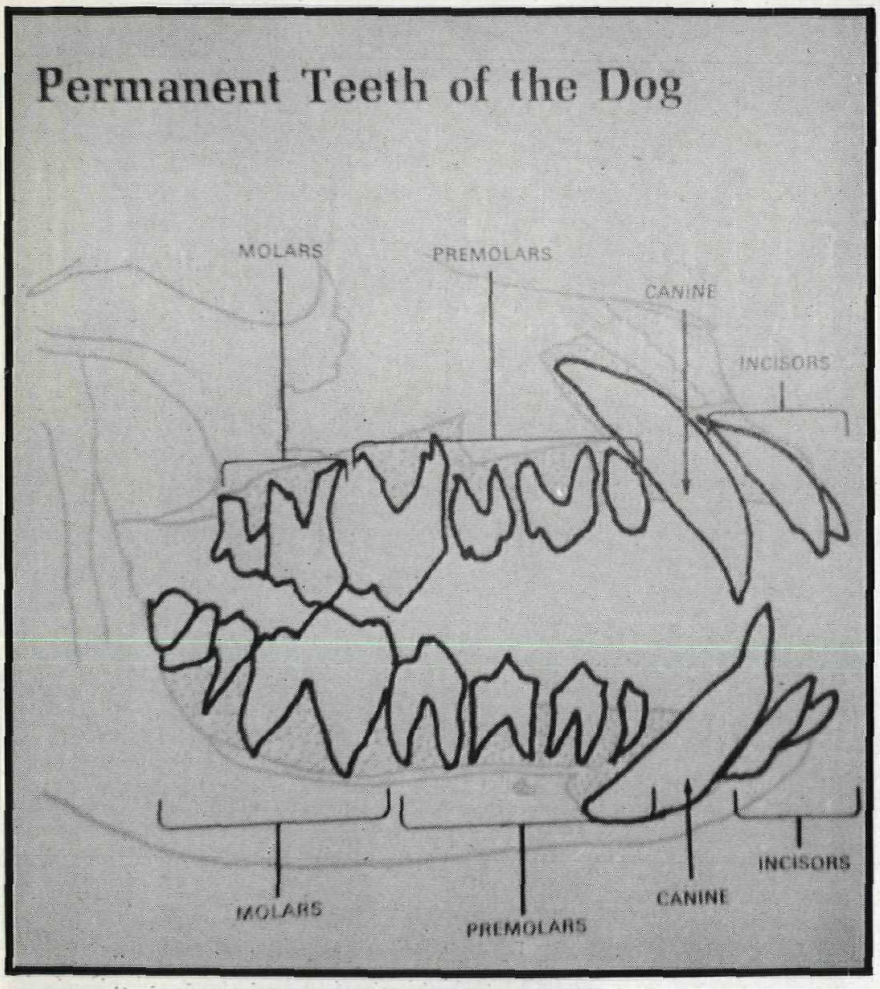


Diagram of the dog's teeth The names of the teeth in animals are the same as that in man. Adult cats have a total of 30 teeth while adult dogs have a total of 42 teeth.

Cat with abcessed tooth If you have ever had an infected tooth, you can sympathize with this poor cat whose jaw is swollen because of an abcessed 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

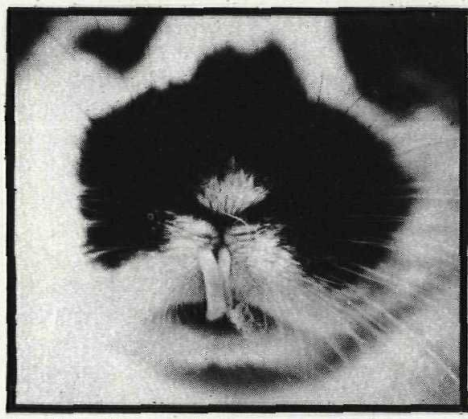
understood. The smaller breeds of dogs, such as Chihuahuas and Poodles, are notorious for failure to lose their baby teeth. Some dogs actually develop two rows of teeth with the baby teeth in front of the adult teeth. Retention of baby teeth can result in abnormal position of the adult teeth, since they 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"

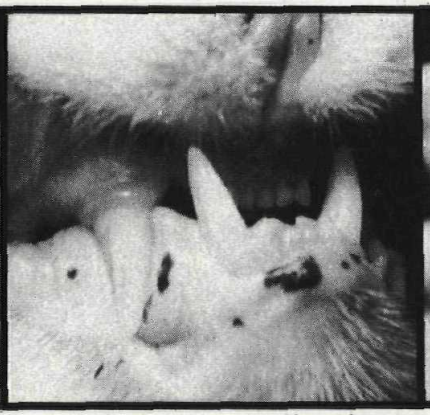
Enamel, the white outer covering of the tooth, is the hardest substance of the body and is formed only during the first months of life. If your pet has a serious debilitating illness during this time, it may interfere with enamel formation and result in permanent irregular pitting and disfigurement of 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 unsightly 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

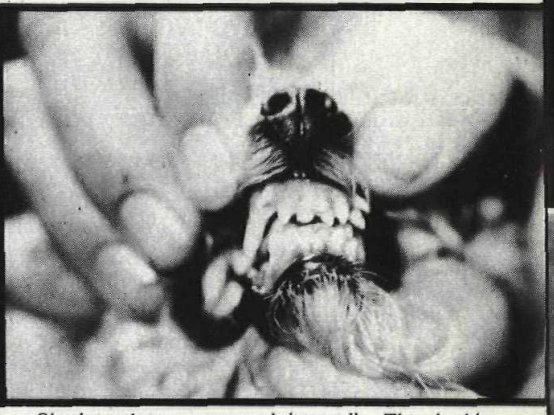
Dental caries, or decay of the teeth, is the most common disease of the primate tooth. The teeth of cats and



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.

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.

Enamel hypoplasia of teeth. Defects in the enamel covering this Laborador'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.

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

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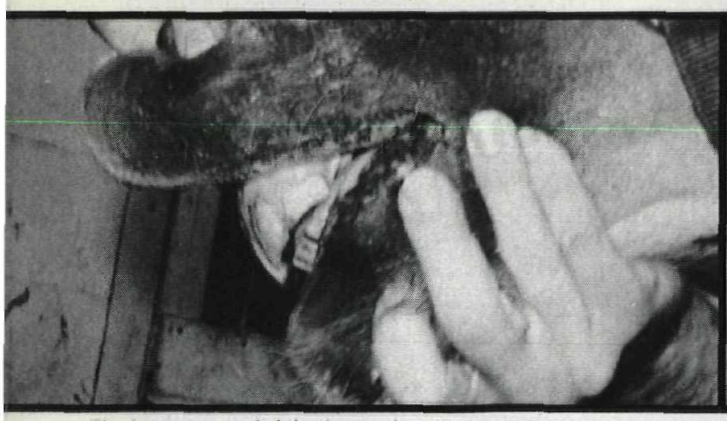
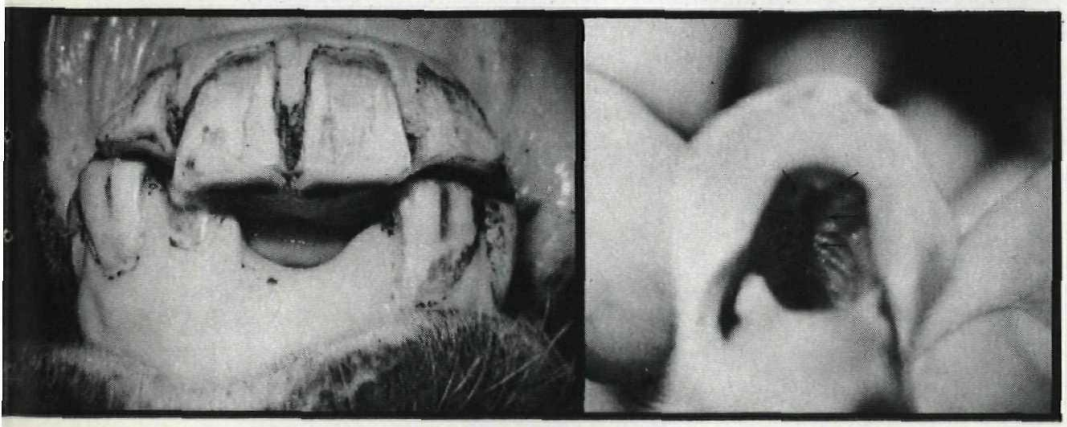
* Periodontal disease is the most common cause of infected teeth and tooth loss in cats and dogs and can be prevented by proper dental hygiene done by pet owners at home. In the absence of home care extraction of severely affected teeth is often the only method of establishing a healthy mouth.



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.

YOUR PET'S ANNUAL PHYSICAL

This ten-year-old German Shepherd sees her veterinarian for an annual physical exam and booster vaccinations. Photo by D. M. Diem

Photo by D. M. Diem

Today's veterinary hospital is so well run, quiet, and odor free that it is often found next door to a restaurant.

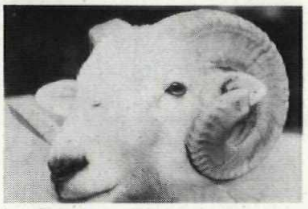


Photo by D. M. Diem

Large animal veterinary practitioners care for the nation's farm animals.

by Carl D. Nowicki

How often should your pet see a veterinarian? "Some pets, like their human masters, require more medical attention than others. Medical histories, health condition and age help to determine a health program for man or pet," said a spokesman for the American Animal Hospital Association.

Dogs, for example, generally require more dental and oral hygiene attention than cats. Some breeds of either cats or dogs are prone to certain congenital defects which require frequent attention or medication.

"Doc, I swear that this dog hears only what he wants to!" This could indeed be a sign of hearing loss or it could be a signal for some other health condition. As a rule, hearing tests are generally not a part of a human or animal physical. But actually what is covered in a physical for a pet?

Pet Physicals

What does a veterinarian look for during a complete physical examination of your pet? To find the answer to this question we surveyed over 50 members of the American Animal Hospital Association, a group of veterinarians who have a special concern for small animal medicine.

Here are some of their comments: A physical examination for a pet is similar to that given to a human. The pet may have his temperature, pulse and respiration rate taken. The general appearance and weight of the animal is carefully noted. Notes will probably be made on the pet's diet, water consumption and a host of other factors which relate to the animal's health history.

Accurate and up-to-date health records are important for both humans and animals. The American Animal Hospital Association goes so far as to include strict standards for record systems as part of its Member Hospital requirement.

Eyes/Ears/Nose/Throat

The eyes can reflect many facts about the health to a skilled observer. Anemia, infections and jaundice may be discovered by eye examinations. Some breeds of cats and dogs have eye disorders that are commmonly seen at birth, and veterinarians are trained in early detection of these conditions. Animal and human eyes are also subject to ulcers, injury and foreign bodies lodged in the eye or under the eyelids.

An instrument called an ophthalmascope is used by doctors to observe the deeper structure of the eyes, especially the lens and retina. The retinas are studied for certain eye diseases, and certain changes in the retina often lead to the detection of other health problems.

The veterinarian and physician will also look for cataracts, particularly in geriatric patients. The eyes of older dogs, however, will also be examined for cloudy lenses or nuclear sclerosis by veterinarians.

Ears

Both dogs and cats have deep, curved ear canals which provide protection to the inner ear but which, unfortunately, also provide a place of refuge for infection and diseases. Ear infection is common in pets and can often be detected by a foul odor in the ear or shaking

and scratching the head.

To examine the ear canal properly, an instrument called an otoscope is required. The veterinarian will usually check all parts of the ear and ear flap for parasites, ulcers, infection and foreign matter.

Nose

An animal's nose may be hot or cold, wet or dry, in either sickness or health. An animal's nose is not the health barometer most people believe it to be.

As part of the nose area examination, the veterinarian will check for discharges or other irregularities. He may also use a light source to examine the nasal passages for any weed seeds or awns.

Mouth

The condition of the gums, tongue and palate of a pet are closely observed. The color of the lining of the lips and gums is particularly important. The lack of a pink or red color in this area could indicate anemia. The veterinarian will also check the mouth area for any tumors, ulcers or other abnormalities.

Teeth

Oral hygiene is as important to pets as it is to humans. Although a cat's teeth may require less attention than a dog's, feline oral hygiene should not be overlooked.

Puppies and kittens many need help to remove baby or deciduous teeth. Young dogs and cats may have problems with crooked or misaligned teeth.

Many veterinarians are now recommending that you routinely "wipe" or actually brush your dog's teeth at regular intervals. Use plain water or a small amount of baking soda and a little salt on a soft toothbrush or a rough terry cloth which has been moistened. Do not use human toothpaste. It foams, and the detergents usually found in toothpaste may cause gastric or stomach irritation.

As pets mature, tartar often starts to build up on the teeth. If allowed to accumulate and thicken, tartar will break the gum seal, and this will lead to serious dental problems. Excessive tartar can loosen teeth and cause gum infections. Good oral hygiene for animals or human requires rountine dental prophylaxis.

Many veterinarians today use ultrasonic and other types of equipment which is the same as that used in human dentistry. But, unlike humans, most pets will require sedation or anesthesia for a thorough dental prophylaxis.

Throat

Many people are surprised to learn that their dogs and cats have tonsils. The tonsils, as well as the tissues in back of the throat, and the flap, or epiglottis, which protects the entrance to the windpipe, will be closely examined. At the same time the veterinarian will examine the glands found near the throat.

Respiratory System

The examination of the mouth area will continue with the evaluation of the larynx or "voice box" and trachea, which is the pathway to the lungs. At this point the veterinarian will switch from visual to auditory senses to examine the lungs. A stethoscope, to magnify the sounds of the lungs, will be used as part of the screening process. The results of this "screening" will determine if further examinations or tests are required.

Skin

The skin is an organ! In fact, skin is the largest organ of the body. The condition of the skin and hair coat are also important health indicators. For example, a dry, no-luster coat oftentimes signals a health problem. A veterinarian obtains many health condition facts from the feel, odor and visual appearance of the skin and hair coat.

Part of the examination of the skin will include looking for evidence of fleas, ticks and other parasites, tumors, wounds and infections. The lymph nodes under the skin will be checked.

Some skin diseases can be quickly identified. Other disease condition identification may require skin scrapings, tissue biopsies or allergy tests to identify the problem. For example, proper identification of some skin problems such as fungus or mange may require laboratory analysis. It may even be necessary to prepare cultures for bacteria and fungi to identify certain skin conditions.

Pets can become infested with external parasites such as fleas, lice and ticks, which cause skin problems. Fortunately, most are easy to detect or identify for proper treatment.

Fleas are small, reddish brown, fast-moving insects about the size of a sesame seed. Lice are small, gray insects that move very slowly. Male ticks are very small, eight-legged insects, but female ticks engorged with blood can reach the size of a housefly.

Legs

The veterinarian will use his eyes and sense of touch to examine the structure and mobility of the animal's limbs. Close attention will be paid to the animal's joints for possible deformation, inflammation or disease.

The veterinarian will also closely check the feet and foot pads for any inflammation, deformities or imbedded matter.

Spine/Musculo-Skeletal

Your pet's "gait" or walk will be observed to spot any abnormalities of the pelvis. Using his sense of touch, a veterinarian will examine the pet's neck, dorsum or backbone, and tail. The fleshy fat covering and muscle tone will be evaluated as part of the screening process.

Abdominal Cavity

The veterinarian will palpate, use his hands to feel, the abdomen for any excess fluids, gas or tumors. The spleen, bladder, kidneys, intestines and liver will also be evaluated. Abnormalities such as enlarged organs will also be detected in the initial screening. An enlarged prostate gland of the male dog or an enlarged uterus of the female may be detected as part of the abdominal cavity screening examination.

YOUR PET'S ANNUAL PHYSICAL

Cardiovascular System

A stethoscope will be used to evaluate the heart. Any abnormal sounds or beats may result in the need for additional tests. Common among these additional tests are radiographs or x-rays and electrocardiograms (ECG).

Radiographs or x-rays are helpful and important diagnostic tools. As a matter of record, the American Animal Hospital Association not only requires that a Hospital Member have a separate facility for radiology, but that they produce high quality x-ray films or radiographs. The quality is checked by a routine on-site evaluation by field representatives who also gather a sample of radiographs for review by a special AAHA board.

Anal Area

"Sleigh rides"or scooting generally indicate an anal sac problem. Fortunately, the problem is usually quickly treated by a veterinarian, who will provide the corrective therapy or recommend a treatment program.

Both dogs and cats have sacs on each side of the anal opening which may become enlarged or infected. The veterinarian will also note and evaluate any tumors which are common to this area.

Reproductive System

The reproductive system will be examined for any abnormalities. Today many pets are being spayed and neutered for reasons other than birth control. For example, neutering of male dogs and cats reduces the incidence of prostate disease and some types of cancer. Neutering may also help eliminate or modify some behavioral problems.

Spaying or an ovariohysterectomy eliminates the possibility of pyometra, a serious uterine infection. Ovariohysterectomies also vitrually eliminate the incidence of breast cancer if completed before the first "heat" period.

Common Laboratory Procedures

Laboratory tests are sometimes necessary to determine or confirm certain health threats. Common laboratory procedures performed for pets today are checks for worms or internal parasites, skin parasites, bacteria, fungi and mange mites. A multiple screening test of a single sample of the blood or urine may also be advised for certain pets.

Internal Parasites

There are five common internal parasites which can infest dogs and cats, and each produces distinctive-looking eggs. For example, by examining a specially prepared stool sample under a microscope, the eggs will identify the specific parasite which is infesting the pet. The common parasites include: hookworms, whipworms, roundworms and coccidia. Tapeworms are also common in both cats and dogs. Tapeworms pass their eggs in individual tapeworm segments which are usually easy to detect. The segments cling to the stool or to the hairs in the anal area of the dog and cat. They look like flat grains of wheat or rice. Fleas, mice and rabbits are common intermediate hosts for the tapeworm of the dog and cat.

Heartworms are a growing menace to dogs. Heartworms are now common in warm humid climates and are spreading to many areas of the United States. Your local veterinarian can tell you about the degree of severity for your area. In some heavily infested areas veterinarians routinely recommend and prescribe medication to prevent heartworms. If heartworm is prevalent, it is advisable to have your dog tested annually.

A heartworm test consists of taking a small blood sample which is carefully prepared for study. The heartworm's living larvae, called microfilariae, are usually found by microscopic examination of the blood sample.

This adult parasite does not "live" in the blood but makes its home in the heart, as its name indicates.

Blood Studies/Urine Analysis

A single sample of blood can also be used for a multiple screening process. Blood cell counts, blood chemistries and enzyme determinations can be made from the single blood sample. AAHA Member Hospitals and clinics have facilities for the routine analysis of blood samples or have fast access to special analytical laboratories as part of their membership requirement.

The type of analysis for your pet's blood can parallel the tests performed with human blood. The detail or complexity of the analysis will depend upon the amount of information required to make a diagnosis or to recommend an appropriate treatment procedure. A urine analysis can help spot bladder problems, diabetes, liver and kidney disease and other abnormalities.

The Older Animal

Dogs and cats in the 12 to 15 year age bracket are now common. In fact, more animals in the 15 to 20 year age group are being seen today.

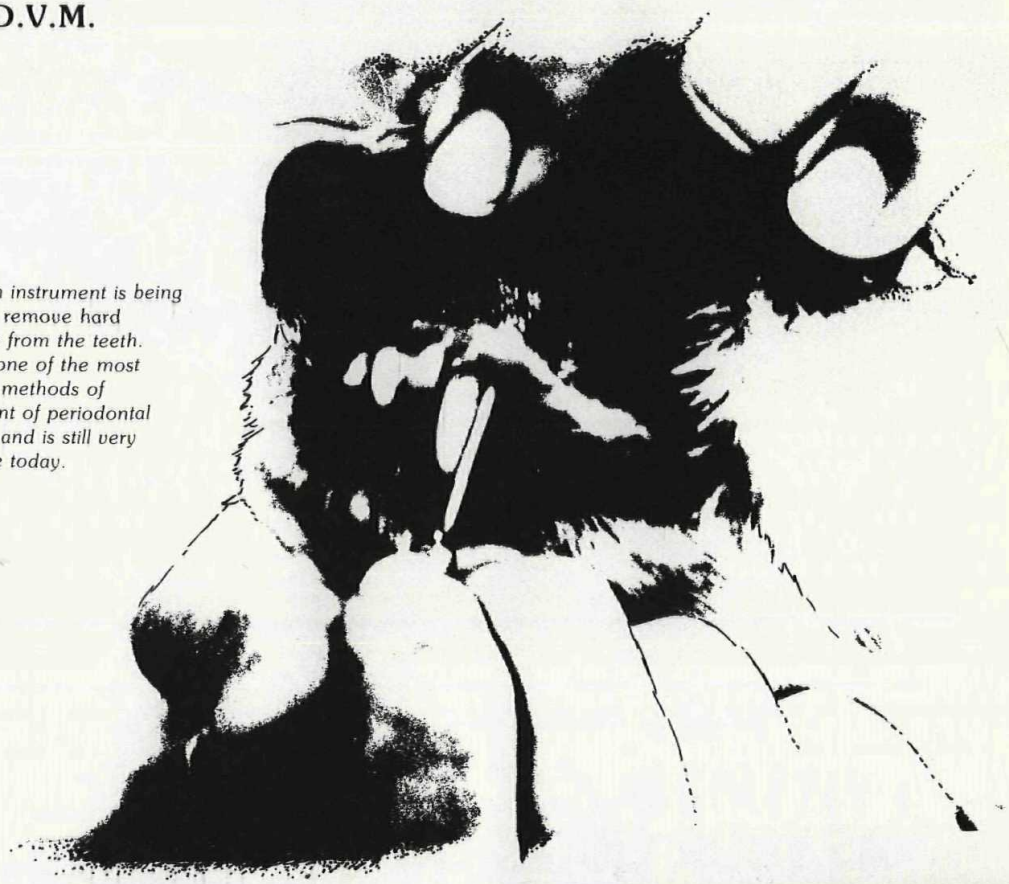
Older animals are now enjoying better health due to advance in nutrition, medical and surgical care. Leash laws are also reducing severe accident and accidental deaths.

Geriatric or "over seven years of age" cats and dogs may require more frequent screening and laboratory tests. Early detection can help to spot or detect diseases such as diabetes, heart and renal disfunction, prostate and other diesases. Both geriatric pets and humans can benefit from a planned program of health care. The sooner a program of preventive medicine is started, the better--for either man or beast.

But for either man or beast, the advice of the physician or veterinarian must be followed and medication must be administered as recommended. With the proper medication and medical treatment, both man and animals can live more comfortable and longer lives. Today animals can enjoy much of the same high caliber of medical services that are available to their human masters.

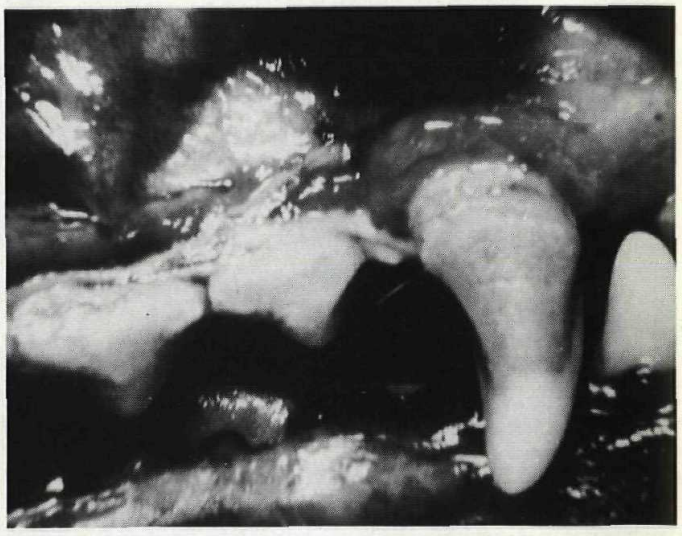
PERIODONTAL DISEASE

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



Here an instrument is being used to remove hard calculus from the teeth. This is one of the most ancient methods of treatment of periodontal disease and is still very effective today.

Sadness is having an abcessed tooth that could have been prevented by your owner. An infection in the upper last premolar tooth has eaten through the jaw bone and is draining out the hole underneath the eye (arrow). These patients are usually seen by the veterinarian because of a swelling or non-healing sore below the eye.



Neglected dental care resulted in this severe tartar build up on the teeth. Only the very tip of the canine tooth is it's normal white — the rest of the teeth are covered with a heavy layer of tartar or calculus.

Periodontal disease results in the loss of more adult teeth in cats and dogs than any other disease. The tragic thing is that the causes of periodontal disease are largely known and are preventable.

The primary reason for loss of the permanent teeth in cats and dogs is dental tartar or calculus which results in gum infection. In time the infection works into the root of the tooth and results in a loose and infected tooth. Tartar accumulation is a major factor in the development of halitosis or bad breath in pets. The process by which tartar develops and causes such serious dental problems is, medically speaking, periodontal disease. Periodontal disease refers to the inflammation and infection occurring around the teeth. Anatomically the periodontium consists of the tissues investing and supporting the teeth, including the gums and bone. It is estimated periodontal disease is probably associated with 95 percent of all cases of bad breath in dogs. 75 percent of all dental problems serious enough to be seen are the result of periodontal disease.

FAR REACHING EFFECTS

Periodontal disease can also have far reaching effects on an animal's over-all health. For example it is known that in cases of moderate periodontal disease, oral bacteria can be cultured from the blood after eating, scaling of the teeth or extractions. In people and some laboratory animals, there is a marked correlation between periodontal disease and bacterial heart disease. Periodontal disease can also be a problem in horses. People often report an improvement in their pet's general health, appetite and vitality after the elimination of infected teeth and the control of periodontal disease.

PYORRHEA

Pyorrhea is a term frequently used when periodontal disease is severe and often a discharge of pus is present around the affected teeth. Pyorrhea is more common in middle-aged and older animals. It is also more common in animals fed soft and semi-moist diets and in the smaller breeds of dogs. In people pyorrhea accounts for the loss of nearly 80 percent of the teeth after age 45. Pets with pyorrhea have difficulty chewing hard foods because of the looseness of the teeth and may have a putrescent breath odor. People with pyorrhea often report a foul taste in their mouth.

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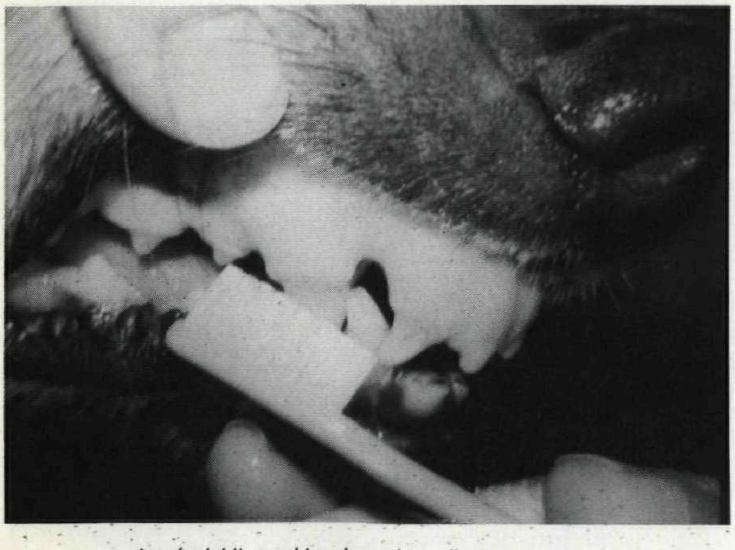


A soft child's toothbrush works well in removing dental plaque in the early stages. Actually plaque is composed primarily (90%) of bacteria embedded in an organic matrix and requires little effort to remove in the early stage of formation.

In pets who object to a toothbrush a gauze strip can be wrapped around the index finger and be used to remove dental plaque which is firmly adherent to the tooth surface.

PERIODONTAL DISEASE

HOW DOES PERIODONTAL DISEASE START?

The problem begins when food material mixed with saliva and normal bacteria in the mouth accumulates between the gums and teeth. This soft material sticks to the surface of the tooth and is called plaque. Actually anything that contributes to unclean teeth is a potential cause of periodontal disease. When first formed, plaque adheres lightly to the teeth and can be removed easily by mechanical means such as brushing. The time required to reestablish plaque completely following removal is about two weeks. Even chewing hard food or biscuits will help in removing the soft plaque in the early stages. If the plaque is not removed, the bacteria multiply within the food material and invade the gums surrounding the tooth, setting up inflammation and swelling. In time the plaque becomes mineralized and hardens. This mineralized hard mass that builds up on the teeth is called dental tartar or dental calculus. The rate of tartar formation varies from individual to individual. In some individuals, plaque almost never calcifies while in others calcification starts within a few days after plaque has formed. What causes this variation in tartar formation among individuals is not known.

Tartar on the teeth creates serious problems and can be very difficult to remove often requiring veterinary services. It is similar to cement — easy to remove when wet and soft but once hardened it can be difficult to dislodge. Interestingly tartar can also form on dentures and artificial teeth as people with these appliances can tell you. Unfortunately animal patients are not as cooperative as human patients when it comes to holding their mouths open for a thorough dental cleaning and scaling of the mouth. This makes general anesthetic by the animal doctor necessary in many cases.

WHAT CAN PET OWNERS DO?

The first step in keeping your pet's teeth healthy is *awareness*. **Have you ever looked at your pet's teeth?** Open your pet's mouth and see for yourself what the teeth look like. If anything looks abnormal, have your veterinarian examine your pet and plan a proper dental hygiene program. Don't wait and see if the teeth will improve on their own because they will not. The longer you wait the more damage is done. If the teeth are clean and healthy, keep them that way. The aim of a dental hygiene program is to remove dental plaque and to keep it from damaging the oral tissues. In the early stage of tartar build-up, usually a good cleaning by your veterinarian is required. In more advanced cases, intensive dental surgery, extraction of abcessed teeth, and cutting away of swollen gums may be required. How extensive the treatment will be depends on how long dental care has been neglected. If animal owners would become more aware of dental health and care and begin oral hygiene at home when their pets are young, most periodontal disease could be eliminated.

Removal of all hard deposit with a metal instrument called a tartar scraper or scaler is an objective of periodontal treatment unchanged for centuries.

Tooth after removal of deposits.

HOME CARE MOST IMPORTANT

Perhaps the most important part of any dental care program is the ability of the owner to provide effective oral hygiene at home. If animal owners are not capable of helping at home, control of periodontal disease is almost impossible. The most successful method of cleaning your dog's teeth is brushing. A small, soft bristle, child's toothbrush works best for this. The owner should brush his animal's teeth as he brushes his own teeth. Human toothpastes have detergent-base formulations and can not be recommended for all pets. The foaming that results from brushing with these toothpastes is often upsetting to the pet. A beef-flavored doggy toothpaste that is completely digestible has been developed and is on the market. The most commonly used cleaning agents for pets are hydrogen peroxide and water or baking soda and water. Some owners also use a water pic to aid in removal of food particles between the teeth. If you don't have a water pic, use a child's water pistol. Water irrigation can be used to remove food particles, but it does not replace brushing. For pets that will not adjust to a toothbrush, the owner will usually be able to wrap a soft piece of gauze around a forefinger and wipe off the debris from the tooth surfaces. In the final analysis it is the owner's motivation that is of prime importance for the success of a dental hygiene program and not the gadgets used in carrying out such a program.

DIET IMPORTANT

The diet also plays an important role in the control of dental tartar. Soft foods (canned and semi-moist) produce more tartar, more rapidly, than do hard dry foods. The use of some dry food or dog biscuits provides valuable chewing exercise and reduces plaque formation. A study done recently at the Carnation Feline Research Center showed that cats in confinement fed exclusively dry food had much healthier gums and teeth than cats fed exclusively a soft moist diet. Do not feed your pet sweet foods as snacks, especially those that cling to the teeth as sugar, favor tooth decay and bacterial growth. A dry dog biscuit is the best type of snack to feed your dog. Cats like the dry biscuit treats also. Chewing bones will not control the formation and accumulation of plaque. Besides being ineffective in dental care, bones present various other hazards. Veterinarians are frequently being called upon to remove bones wedged in cat's and dog's mouths. Bones are not digestible, and fragments can become lodged anywhere in the digestive tract requiring surgical removal at times.

FREQUENCY OF CLEANING

How often should your pet's teeth be cleaned? This depends on how fast plaque and tartar build up on the teeth. Home care can vary from daily cleaning for those individual animals with severe periodontal disease to weekly cleaning for those with mild problems. The onset of tartar accumulation may begin at one or two years of age. There is a direct relationship between the amount of tartar build-up and the smallness of the dog. The smaller the dog the more periodontal disease. Whether your pet has some dry food also plays a role in the amount of tartar build-up.

Put this article down and go look at your pet's teeth. What do you see?

A severe case of pyorrhea. White matter can be seen loosely adherent about the gums and smaller teeth (arrows). This grayish white deposit consists of: body cells, bacteria, and food material and is one of the causes of bad breath.

Patient having the teeth scaled and cleaned with an ultrasonic dental unit. A water jet cools the tip of the instrument which vibrates at high frequencies and removes the dental plaque and tartar. These units are being used more and more by veterinarians because of the ease and speed with which the teeth can be cleaned which shortens the time the animal must be anesthetized.

worth reading

Reviews by Jane Wright

We have received a number of excellent books for dog breeders and those interested in showing dogs.

Handling Your Own Dog
By: Martha Covington Thorne
New York: Doubleday & Co.
$17.50: 1979

An encyclopedic manual written by a lady who is one of the top professional handlers in the United States, this book starts you out selecting your puppy and then shows you how to train for show, obedience and field trials. The author is a warm knowledgeable lover of dogs and her nine basic principles stated at the beginning of the book, should be memorized. Even though this reviewer doesn't show dogs, she enjoyed the book as a reading experience. Lots of very practical advice, frequently left out of the more dry-as-dust-how-to manuals.

Genetics for Dog Breeders
By: Frederick B. Hutt
San Francisco: W. H. Freeman and Co.
$15.00: 1979

A technical and excellent manual which covers the principles of genetics, genetic variations in dogs with special reference to abnormalities and defects, breeds and breeding in a clear, well organized way. There are many charts and illustrations and the latest information on the processes of selection to insure non-transmission of hereditary defects. A valuable book.

The New Complete Basset Hound
By: Mercedes Braun
New York: Howell Book House
$12.95: 1979

The Complete Pembroke Welsh Corgi
By: Mary Gay Sargent and Deborah S. Harper
New York: Howell Book House
$12.95: 1979

Two great books for the afficionados of these two breeds. Lots of pictures and history and information in well-written authoritative vehicles.

The Nicholas Guide to Dog Judging
By: Anna Katherine Nicholas
New York: Howell Book House
$10.95: 1979

This is the classic book on judging and is now revised and updated. New features have been added and it is profusely illustrated. This is the book for exhibitors as well as judges.

NEW IMPORT RULES FOR PET BIRDS

Beginning January 15, 1980, the U.S. Department of Agriculture tightened the import rules for most personally owned pet birds.

Owners will have to quarantine their incoming birds for at least 30 days in department facilities, said Pierre A. Chaloux, deputy administrator of the department's Animal and Plant Health Inspection Service. In addition, a health certificate, signed by a national government veterinarian in the country of the bird's origin, would be required.

Bird owners would now have to request quarantine space in advance, along with depositing $40 to be applied to the costs of the quarantine service. The costs are expected to be $80 per bird or $100 per isolation cage if an owner has several birds in one cage.

If bird owners have not made reservations, their birds will be accepted only when space is available, Chaloux said. Owners also will have to arrange for shipping the birds to their final destination when they are released from quarantine.

Only two psittacine birds—parrots, parakeets and hookbills—per family can be imported in any one year. There is no limit on the number of other types of pet birds.

Foreign, pet and exotic birds can introduce costly diseases of poultry, Chaloux said. Commercial shipments of exotic birds brought into this country are already subject to quarantine restrictions. He said one outbreak of exotic Newcastle disease cost $56 million to eradicate during a 1971-74 outbreak in Southern California. Animal health officials now estimate that if the disease became established in poultry today, it would cost the nation $230 million annually.

Chaloux said stricter rules governing the entry of personally-owned birds were needed because current regulations have proved difficult to enforce. Travelers have disregarded post-entry requirements for birds, frequently failing to keep their birds isolated from other birds for 30 days or selling them before an APHIS veterinarian could release them from isolation.

Sometimes, he said, owners have given fictitious names and addresses or have failed to report sick or dead birds.

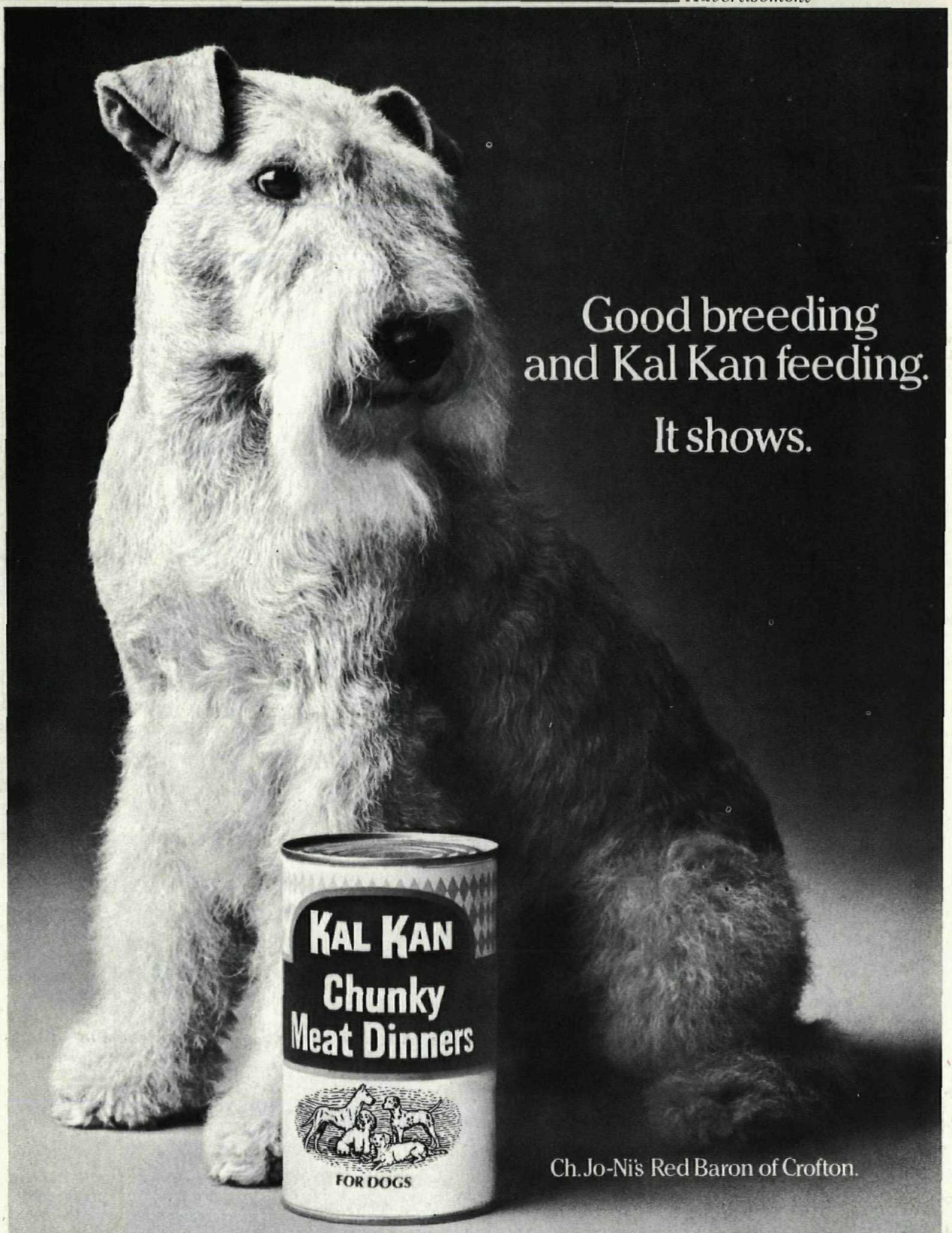
Under the new regulations, those who travel with their pet birds are able to take them out of the U.S. and return within 60 days without having to quarantine the birds, Chaloux said. However, the two-bird limitation still applies to psittacine birds. Owners have to get veterinary health certificates before the birds leave the country and the birds have to be identified by a leg band or tattoo.

Import rules for birds from Canada remain much the same, except for a limitation of two psittacine birds per family per year. Birds may enter on the owner's signed statement that they have been in his possession for at least 90 days, were kept separate from other birds, and are healthy. An APHIS veterinarian examination is required at the port of entry.

Chaloux said establishment of port-of-entry quarantine facilities permits APHIS veterinarians to schedule examination of pet birds and to observe the birds for evidence of exotic Newcastle disease.

Chaloux said the department has facilities equipped with special isolation cages at New York, N.Y.; Miami, Fla.; Brownsville, Laredo, and El Paso, Texas; Nogales, Arizona; San Ysidro and Los Angeles, California; and Honolulu, Hawaii.

A new phamplet, "Importing a Pet Bird," explains the rules in detail and is available to the public free of charge. Interested persons should write "Pet Bird Pamphlet," APHIS, Room 710A, 6505 Belcrest Road, Hyattsville, MD 20782.



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