

# ANIMAL CAVALCADE

WINTER 1970

50¢



Francisco de Goya's "Don Manuel Osorio de Zuñiga"



## EDITOR'S NOTEBOOK

The crisis for city dogs (*see article on page 2*) is very real, but we have no doubts that our canine friends—and their owners—will emerge triumphant from that one. The charge that dogs represent a major health menace to metropolitan dwellers simply will not hold water—after all, the dog has lived intimately with man for thousands of years and man's health—and the dog's, for that matter—has never been better. And as for his special sanitation problem: Man has faced and solved a like problem for himself; he can do the same for the dog once he sets his mind to it. Any ideas?

As this is written, vast stretches of the country lie covered by a deep blanket of snow. This is the hard time for the outdoor birds, who need your daily offering of food to survive the season. It is also the time when your cat or dog needs special attention. Ice and small snowballs lodge between the pet's toes when he ventures out, and must be washed from the feet when the animal returns indoors. Salt, calcium chloride or other defrosting agents now commonly used on sidewalks must also be removed, lest skin inflammations result. Finally, check under your car for a possible pool of anti-freeze liquid. There is something in anti-freeze that holds a special attraction for cats, yet will kill them if they have an opportunity to lap at it.

There is no real peace as yet in the Middle East, but at least there is interesting news from the canine front. A Britisher, Lionel Hamilton-Renwick, became interested in the Pharaoh Hound of Egypt, a breed believed to be 5,000 years old and which for centuries has been cut off from the outside world on the small island of Gozo, and has succeeded in bringing out a group of seven of these animals. There now is a Pharaoh Hound Club in England, and fanciers there are looking forward to seeing them at dog shows. Twenty-four inches in height and with a fine, red silky coat, they hunt by scent as well as by sight, and are taken out rabbiting mostly at night.

The first of Israel's Canaan dogs, descended of a family mentioned in the Bible and with a lineage going back 3,000 years, reached U.S. shores only several years ago. When the Jews were driven out by the ancient Romans the dogs fled to the Negev, where they soon reverted to a wild state. Their redomestication was accomplished by Dr. Rudolphina Menzel, a Vienna emigre in 1934, and since then they have been used to protect settlements, and to serve in the military and as "Seeing Eye" dogs. Ranging in height from 19 to 24 inches and weighing from 35 to 50 pounds, there really are two types—one with pricked ears and smooth coat, the other with button or floppy ears and a rough coat. Their white bodies are streaked with black or red markings.

# ANIMAL CAVALCADE

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WINTER 1970

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## ARTICLES

Crisis for City Dogs, <i>Betty LeRoy</i> .....	2
The Allergic Pet, <i>Helen Claire Howes</i> .....	5
Horse History, <i>Elinor Goulding Smith</i> .....	7
Fish Taught to Play Poker, <i>Harry Miller</i> .....	10
Canine Research Today, <i>John B. Tasker, D.V.M., PhD.</i> .....	12
Feline Research Today, <i>Richard A. Griesemer, D.V.M.</i> .....	13
How I Broke into Animal Films, <i>Bill Burrud</i> .....	14
Animal Expressions .....	18
The Monkey Who Came to Lunch, <i>Eloise Keeler</i> .....	24
Caring for Kitty's Teeth, <i>W. A. Young, D.V.M.</i> .....	26
Animal Miscellany, <i>L. M. Boyd</i> .....	29

## DEPARTMENTS

Animal Health News .....	32
Doctor's Advice .....	34
Animal Fun .....	35

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## COVER PAINTING

Also known as The Red Boy, this Francisco de Goya work is from the Jules S. Bache Collection of the Metropolitan Museum of Art, which granted permission for this reproduction. It has been described as one of the most appealing child portraits ever painted—outstanding for its imagination and beauty of colors. As the cats look on, the child plays with the string attached to the foot of a magpie, a children's pet since the Middle Ages.

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# CRISIS

## *for* City Dogs

By BETTY LeROY

*Street scene, New York City. Dan Weiner— from "The Concerned Photographer."*



Victims, along with their owners, of a polluted metropolitan environment, they are also charged with contributing to a very special sanitation problem



The dog was probably the first animal to be fully domesticated. Archaeologists have found evidence indicating that as far back as 10,000 years, there were domesticated dogs in Asia, Europe, and possibly America. These ancient dogs, according to skeletons, paintings and pieces of sculptures found, were recognizable as sheepdogs, various breeds of hounds, terriers and mastiffs.

According to most of these archeological authorities, whatever may be the ancestry of the domestic dog, whether found in Europe, Japan, the Arctic, Africa or America, the dog is a sociable animal. It always has, and seemingly always will, attach itself to one person and then show the highest degree of cooperation. Domestic dogs suffer loneliness, almost instinctively, which suggests to most authorities that its ancestors also wanted and needed companionship.

Dogs have served man in many ways besides being loyal and faithful friends these hundreds of years. Sporting dogs such as pointers, retrievers, spaniels and setters have helped man find food through the struggling years. Bloodhounds and other hounds with their keen sense of smell have helped man track game and ferret out enemies. These dogs have served as police dogs in Britain since the 11th century. Greyhounds, Afghans, Whippets and Dachshunds have used their extraordinary sight to aid their masters.

Working dogs such as Dalmatians, Huskies, Great Danes, Mastiffs, Labradors, Collies and others have long performed arduous tasks of hauling sleds and serving as guard dogs, sheep dogs and guide dogs.

Dogs went to war at the side of man as sentinels, guards, rescuers, and for light transport work. The Romans used them for attacking their enemies and in the Middle Ages, particularly the rather fierce looking Mastiffs, were used against mounted knights.

For fun, fashion and companionship, men have for centuries selected Terriers, Pomeranians, Pekingese, Pugs and in later days, Poodles. Many species of dogs are status symbols of the affluent and royalty.

Throughout man's history, dogs of all sizes and specialties have made important contributions to the economy. When men became farmers and herders, dogs were there to help. As man became more and more an urban dweller, he took his dog with him to the city as a companion, a guard or a guide.

Today, as in the past, man's struggles and problems are affecting and being shared by dogs. As the human population increases, so grows the number of dogs. Man is becoming an apartment dweller surrounded by concrete, steel and glass, and is demanding that dogs likewise share this life.

In cities throughout the world the dog population is increasing at enormous rates. There are some 280,000 in Tokyo, 300,000 in Los Angeles, 400,000 in New York, 700,000 in London and over a million in Mexico City. And as their numbers increase, so increase the problems.

Urban living imposes many restrictions on dogs

as well as on people. Lack of open space greatly limits the necessary areas for exercise and creates serious sanitation problems. There are few backyards and empty lots remaining. The only open spaces are parks, many of which are off limits to dogs. This leaves the streets, sidewalks and apartment buildings.

Many apartment house owners allow renters to keep dogs, but will not allow them on the grounds around the building. Owners must walk dogs on a leash along the sidewalks and streets, thus making the existence of dog waste an irritating problem. This is a prime cause of many quarrels between dog owners and those opposed to dogs in the city.

Exercise is an enormous problem for many dogs and their owners. Dogs are affected mentally and physically by confinement, and must have proper exercise or become neurotic and ill. Unless they receive ample exercise they get rid of the excess energy built up during day-long confinement by chewing the rugs, gnawing furniture, racing around the apartment or other erratic behavior.

Many owners, unaware of this vital need for exercise, or too lazy to attend to it, give the dog a couple of quick trips out to the street and call it good.

The restrictions of apartment living cause other serious problems for dogs and owners, including irksome behavior caused from being left alone for hours in cramped quarters. Dogs have come to crave human company. They have become so attached to their owners that when left alone, they are miserable. This situation causes them to bark, howl and whine, much to the irritation of neighbors. A chronic barker brings complaints and very often threats from the landlord to either keep it quiet or get rid of it.

The prime offenders in all this, of course, are not the dogs, but their owners. The careless owners who get dogs, and don't bother to train them. When dogs become troublesome, they are left to shift for themselves. As long as the animal is cute and lovable, it gets all kinds of attention and affection, but when it becomes older and needs more space, more exercise and more concern, the owners just don't want to be bothered—even though they still love their pet.

Neglectful owners disregard the many laws and restrictions of city living, and the rights of other people living nearby. By doing so, irresponsible owners bring scorn, ill feeling and disrepute to all dogs.

Concerned dog owners' associations, the SPCA's and other organizations have mounted campaigns to help and encourage owners in the proper care and training of their dogs, are fighting tremendous battles against anti-dog legislation and are coming up with many unique solutions to the problems faced by dogs and their owners.

Efforts are being made in many cities to have suitable areas for exercise provided in public parks. These exercise areas would also contain dog toilets, where the sanitary problem could be solved through effective cleaning and policing.

Pet Shop Management magazine reports in the



November, 1969, issue, the invention of an indoor commode for dogs and cats which may be easily installed in the family bathroom. This is an 18 by 30 inch device which flushes by an electrical trip mechanism after the animal steps out. The commode was developed by two students and involves no welding problems. At least one manufacturer of plumbing fixtures seems interested in producing the item, according to the magazine article.

The pet industry and professional dog trainers are carrying on extensive information and educational programs for city dog owners. Advice is given on the selection of a suitable breed or mixed breed for urban dwelling, proper training for the dog and tips to owners on providing adequate exercises as an outlet for their pet's excessive energy.

Very large dogs, such as Great Danes, St. Bernards, Irish Wolfhounds; and sport dogs like Irish and English Setters, Pointers and Retrievers are not recommended for city living. Both types need plenty of space and exercise, usually more than the average city dweller can or will give them.

People do keep these dogs for various reasons; to scare away intruders, as status symbols, and simply because they like them. But in many cases their ownership proves bothersome at best, and often means a decision between destruction of the dog or a painful separation.

Boxers, German Shepherds, Doberman Pinschers, Collies and mixtures of these breeds are popular and seem to adapt to city living, providing they receive enough exercise and are trained to get along in their cramped quarters.

The small, medium and toy dogs make the best city pets. These dogs take up less space and don't need lengthy and vigorous exercise periods required by larger dogs. They can be paper-trained.

But regardless of breed or size, all city dogs need to be taught how to get along in the city. Every year, hundreds of people get puppies and attempt to raise them in the confinement of an apartment.

This is fine, as long as the puppy is small. But when it grows up, demands more exercise or becomes a barker, the joy of owning a dog wears off.

Dogs must have early training in obedience and good manners. When the owner does this, he and his dog are both happier, and the ammunition of many dog haters has been eliminated.

Owners should put themselves in their dog's place. The dog sleeps all night, then when his owner goes to work, has little to do all day but sleep. This sleep builds up energy, but he will get no exercise outside until evening. He tries to work off this energy by racing around the rooms or by howling.

Dog trainers say owners must start early training their dogs to stay alone without making a fuss. Tips on this training include leaving it alone in another room for an hour or so each day. When it howls or whimpers, go in and tell it to be quiet. Gradually increase the time alone, then praise it when it comes out.

It may take a long time and much patience, but the alternative is giving up the noisy, barking dog.

Owners must also take responsibility for cleaning up after their dogs, both in the streets and around the apartment and building. Proper care in these areas will keep many complaints from being voiced.

Exercise for a dog means more than a brief walk outside. Even the smallest dogs should have at least 30 minutes twice a day. Find a suitable area, a vacant lot, park, or rooftop, if nothing else. Let the dog run and jump and chase a stick or ball. If no place is available, experts say, exercise may be gotten by getting the dog to jump. Hold a stick or ball over its head and let it leap for it.

Dogs are happy to serve and be dependent on man. Man needs dogs for their companionship, comfort and help. City life makes dogs more dependent than ever on their owners. Their survival depends on the realization of this fact, and the concern and effort of each individual dog lover.



*Dog comfort station designed in 1958 by New York City's Department of Sanitation as a means of easing a special metropolitan problem. It did not prove successful.*



Antihistamines work as well  
on animals as on humans

By HELEN CLAIRE HOWES

# the allergic pet

House pets, and other animals as well, suffer allergic reactions to the same substances that cause them in human beings. They may develop asthma, hay fever, swelling of the eyes, mouth and throat, sneezing spells, hives, eczema, upset stomach and shock. The puppy with hives can be just as frustrated as his master. Some persons react to cat or horse hair or dog dander. Possibly some animals are allergic to human beings!

Because allergic disturbances in animals are caused by the same agents that cause them in humans, it is reasonable to suppose that the same drugs—the antihistamines—will relieve them. Veterinarians have found that they will. The antihistamine drugs are giving comfort (indeed,

new life) to the victims of allergy, whether human or animal.

Here is the case history of Paddy, an Irish terrier whose master gave a stag party. The guests thought it amusing to see the dog bolt chunks of cheese. By the next morning his mouth and throat were swollen; he couldn't see properly. His condition deteriorated and in the evening he was taken to the clinic where he was given, in all, 50 milligrams of an antihistamine drug. Paddy had been allergic to old cheese and in 24 hours was well again.

Allergy is a state of unusual sensitivity to a substance that is harmless to the majority of the same species when given in a small amount. One theory as to its cause is that histamine, nor-

mally present in human and animal tissue cells, is suddenly released into the blood stream when the cells are injured, and the cell proteins dissolve. Such an injury may be caused by the continued entry into the body of some factor "foreign" to the individual (food, drug, pollen, etc.). The first time the foreign substance invades the body, it sensitizes the individual by stimulating the formation of antibodies; these should defend the body in case the foreign substance again invades the individual's "territory."

By this same method a person or animal is immunized against a disease. A child is given a small dose of smallpox vaccine so that his system will build up antibodies to protect him in case he



gets a large dose of smallpox germs. A puppy is inoculated against distemper for the same purpose.

But when an allergy develops there are apparently not enough antibodies formed and, for some reason, they are not released into the blood stream but remain in the tissue cells. Or perhaps there are not enough antibodies to supply both blood and tissue cells.

When a further attack of the antigen, as it is called, occurs (possibly Paddy had had a little strong cheese once before) it unites with the antibodies in the cells. The latter are damaged by this union of antigen and antibodies. The cell proteins dissolve and histamine pours into the blood.

The sudden entry of this chemical into the blood can cause many types of reaction in animals as well as humans: Swelling of the mucous membranes, pain, diarrhea, muscle spasms or dermatitis. In animals, and very rarely in humans, a state of shock may occur, severe enough to cause death. No matter what allergic reaction occurs, the sudden release of histamine into the blood stream seems to be the main cause. The effect of the antihistamine drugs is to inhibit the action of the histamine.

A female fox terrier was brought into a clinic suffering from general intense pruritis. For two years her eyes and ears had been inflamed and her skin was bright red. The veterinarian said "a nastier piece of dog flesh never lived!" Given an anesthetic and an antihistamine drug by injection, she was less nervous by the next morning and by the third day both nervousness and itching had disappeared. Three subsequent attacks were cleaned up, each with a single injection of 30 milligrams of the drug. Her diet was changed and she developed an entirely new personality after learning that life could be beautiful!

Some allergies occur at only one time of the year; others at any time. A male setter was



brought into the clinic with nose and eyes inflamed and running. He was sneezing and wheezing like an asthmatic. The owner said the dog had been playing in fields overgrown with weeds; he had probably been sniffing down every rabbit hole. He was given a 25 milligram antihistamine tablet twice a day for three days. All symptoms of "hay fever" disappeared.

A three month old Persian kitten was hurried in, gasping for breath, with swollen mouth and throat, cause unknown. A half tablet of an antihistamine drug was dissolved, poured down its throat and repeated in eight hours. The kitten was normal within 12 hours.

Tests have been devised to aid in diagnosing the offending agent in humans, but owners can often, by a process of elimination, dis-

cover what food in his pet's diet is causing him distress. (An animal with skin disease may be vitamin-deficient, especially if he is expected to live on table scraps.)

Dogs are sometimes afflicted with pruritis and severe itching of the rectum caused by an infection of the anal glands. The infection must be cleared up for a permanent cure, but the itching can be relieved by the antihistamine.

Some of the antihistamine drugs make the patient very sleepy. One with a sedative effect is preferable to animal use, especially when he is beside himself (and everyone else) with itching. Your veterinarian will inject the drug to ease the patient's discomfort or prescribe tablets or capsules of a dosage scaled down to the pet's size.



The lady writes  
(with hoof in mouth)  
of the first equines in  
America . . . and in the world

By ELINOR GOULDING SMITH

# HORSE HISTORY

## A HORSE BY ANY NAME

The Latin *equus* has given us "equestrian" and "equine" and a few words like that which you could easily live without, but it's the Latin and Greek slang words for any old broken-down nag, *caballus* and *Kaballes*, that give us most of our horsey words: cavalcade, chivalry, cavalier, cavalry, and explain the French *cheval*, the Spanish *caballo*, and still leave us stuck with "horse" unexplained. But the German (*pferd*) has another word for horse, Ross, and if you throw in the old Angle-Saxon *hors* and the Old Norse *hross*, you can see how we got "horse" all right, but less obvious is that they all come from Latin *curro*, *currere*, *cucurie*, *cursum*, to run, and *cursus*, course.—Elinor Goulding Smith in "Horses, History and Havoc."

## THE FIRST HORSES

There were horses on the earth long before there were human beings, and my guess is that if horses could talk or write history books, they would consider that past their golden age. If it was, it came to an abrupt stop when human beings came on the scene, looked at horses, and yelled, "Come and get it!" This was most unfortunate for the horses, because, being herbivores, they couldn't retaliate. Otherwise, of course, people would have kept away from them—you've never seen a person saddle up a tiger, say, and ride it—and the whole course of history would have been different.

Naturally nobody today eats horses (knowingly, that is, or unless they're very hungry, or live in another part of the world). But that hasn't helped matters much for the horse—people now feed them to cats and dogs. On the whole, I'd say it was really best, all things con-

*The Tarpan is a scientific re-creation of the type of horse that was popular about 3000 BC. This short, stocky animal is the result of breeding to the known factors discovered in the study of fossil remains. Los Angeles Zoo Photo*





sidered, not to be a herbivore if you have to live on this particular planet as long as it continues to be infested with human beings. (Human beings are omnivores—some people will even eat green olives—which is one reason why they've multiplied beyond all sane limits, and you know what the other is.)

Whatever is known of the horses that existed in prehistory is the result of the study of fossil remains, and it is never definitive because paleontologists, zoologists, and embryologists are unceasing in their studies and are constantly digging up new clues that alter previously believed facts, or making more detailed studies of animal embryos that change their classifications, which confuses everything. I mean, this way you never know what to believe. If they'd leave things be, we could all hang on to a couple of absolutely wrong ideas which would give us the satisfying feeling that we knew something for certain.

However, it is established as of today (and will certainly change tomorrow) that the first equidae were small animals of the Eocene period in the Tertiary Age—oh, well, hell, a *terribly* long time ago. The first animal of this family was called *Eohippus* (Dawn Horse) and was about the size of a fox, and you can't help feeling sad that it disappeared millions of years ago, because there is something so appealing in the idea of a tiny horse with toes that you'd like to have one as a pet around the house that could sleep curled up on the foot of a child's bed. However, he probably bit and didn't smell like violets.

To trace the evolution of the equine animals to their present form, you have to go wallowing through terrible words that describe the various eras and ages, like Miocene and Oligocene and Jurassic and Triassic and Cenozoic and Mesozoic; and it doesn't help a bit to figure out that Mesozoic means something like middle-animal-period, I just can't keep them all straight in my mind. Listen, I can hardly tell

the difference between Tuesday and Wednesday. But briefly, over an unimaginably long time, that *Eohippus* evolved through many forms, finally ending up as *Equus*. Obviously these were not sudden distinct changes, like a gooey mess going into the oven and coming out in a half-hour as a chocolate souffle, but maddeningly slow, gradual changes over ghastly eons. It makes my head swim to think in terms of millions of years. (Light-years make me *sick*. I try to avoid astrophysics like athlete's foot.)

We think of ourselves as the ultimate animal and the ultimate human beings, but we can actually see evolution taking place in ourselves, if we bother to look, which we don't. You could almost say we make a real stab at refusing to see it. Still, an awful lot of us have impacted wisdom teeth because our jaws are getting smaller (oh, I wish I hadn't thought of that), and a lot of us have low back pain (I wish I hadn't thought of that, too) because we haven't quite finished evolving for real comfort in standing on our hind legs, though our front legs are now too short for us to rest on now and then to ease our aching backs. But it is inconceivable (not to mention repulsive) to most of us that we're just a stage in the development of something yet to come. (Well, it's got to be an improvement, right?) We just plain think we're *it*, with our hydrogen bombs and our space rockets and our contact lenses and our heart transplants.

There are living in the world today only six animals belonging to the genus *Equus*: *Equus hemionus*, *Equus asinus*, *Equus quagga*, *Equus zebra*, *Equus grevyi*, and *Equus caballus*.

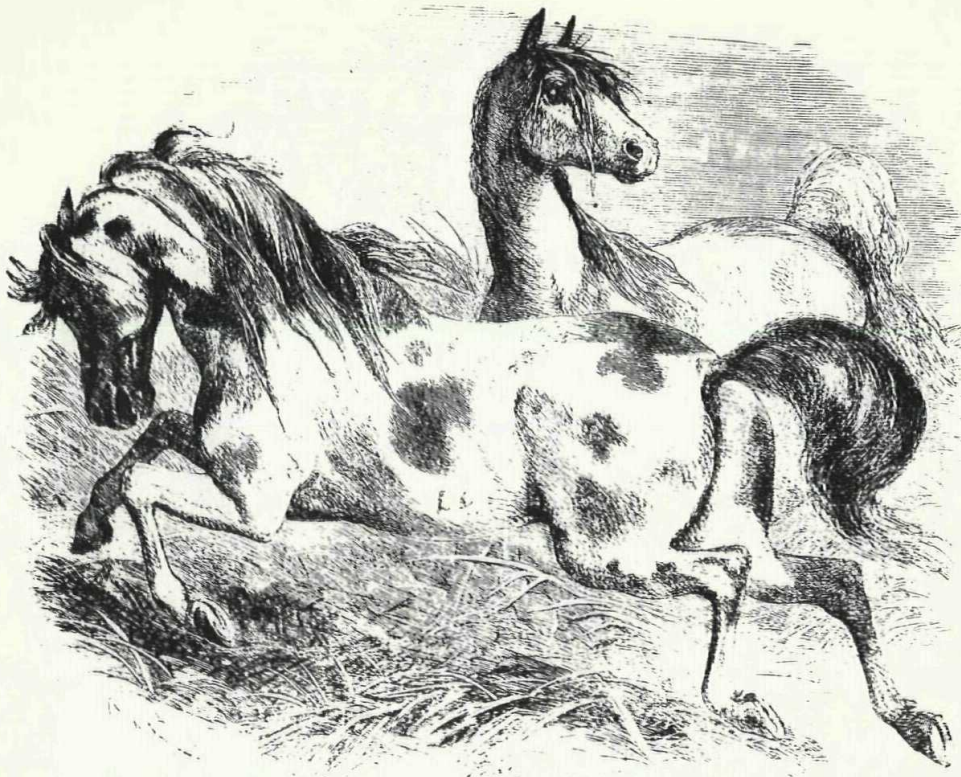
*Equus hemionus* is called the wild ass, the onager, the kiang, or the half ass (don't blame me, I didn't name him), and a long time ago he was somewhat domesticated. But when the true ass, *Equus asinus*, proved more tractable, *hemionus* was abandoned on the Asian steppes and I don't think there are many of them left anymore, because

people are taking up so much room on this planet that wild animals are disappearing like butter on hotcakes, and so will we pretty soon. *Equus quagga*, *Equus zebra*, and *Equus grevyi* are all what we call zebras, in our ignorance, when we see them at the zoo. To me they all look alike, but perhaps they don't to each other. The zebras alone have totally escaped the harness and saddle, and it is my understanding that they have done this by having horrible dispositions and a strong tendency to bite and kick. (I know people like that, too, but they're not striped and pretty.) As to whether this is a sign of greater intelligence is hard to say. All I know is that while horses and asses are dragging things around, zebras are galloping around African plains unencumbered. Still, horses and asses have their food brought to them every day by people, they have their coats and shoes brushed and polished by people, they have warm dry places to sleep nicely cleaned by people, and zebras are becoming extinct. Everything in this world has its price.

If you are wondering why I haven't mentioned burros and donkeys it is because, having looked into this question carefully, I can state absolutely and unequivocally that burros and donkeys are asses. Ponies are horses.

A mule is something else. It is the hybrid resulting from the mating of a horse and an ass. If its parents were a male ass and a mare, it is called a mule. If its parents were a female ass and a stallion, it is a hinny or a jenny. Either way, it has a reputation for being stubborn and difficult to deal with, probably from constant frustration over its failure to be a breed or a species or a genus or anything nice and classifiable. Nobody takes a mule *really seriously*. I mean, you've never heard of people dressing up and going to the *mule show*, have you? And even a person fool enough to write a whole book about horses wouldn't dream of writing a book about mules.





*The Mustang of the American prairies is a well-known example of the Wild Horse.  
(Reproduced from "Animate Creation" by the Rev. J.G. Wood.)*

## FIRST HORSES IN AMERICA

In what is probably the most incredible and fascinating exploit in history, the horse, as always, came along. Not only did he come along (though not, naturally, of his own volition—no horse really wants to cross the Atlantic on a small sailing ship with poor accommodations), but in fact the whole New World Caper could not have been accomplished without him.

He came, accompanied by Cortez and a cast of thousands,

to take part in the Hollywood Wide-Screen Technicolor Epic of all time.

On March 12, 1519, horses set hoof on the land of the New World for the first time since the extinction of the early horses after the last Ice Age, astounding the natives, though I feel certain the horses couldn't have cared less. I feel equally certain, though, that after all that tossing around in a ship, land must have been as welcome to them as to Cortez and his men, especially when you consider that horses, no matter how seasick they get, cannot throw up, and what is the

use of a long, rough voyage in a small and undependable sailing ship if you can't even throw up?

Cortez had sixteen horses—eleven stallions and five mares—when he started out from Havana, but by the time he reached the mainland, he had seventeen if you can count a foal as a horse.

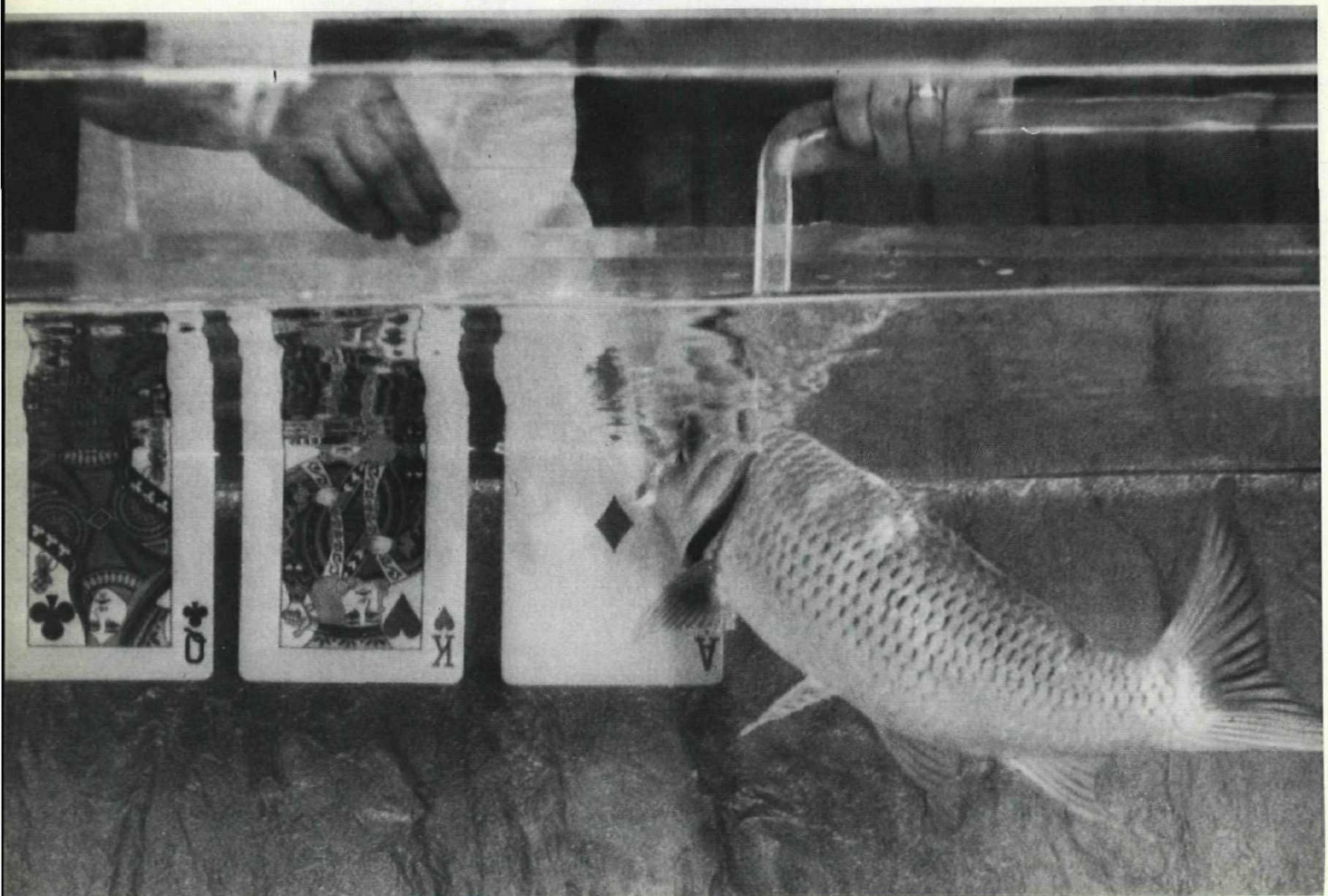
As usual, the white man arrived with lots of high-sounding talk about religion and ethics, and lots of guns and soldiers. That's what they gave to those lucky, lucky natives who had previously not known how to be really good. What the white man took back with /cont. pg. 30



Never underestimate finny intelligence,  
animal psychologist says

# FISH taught to play POKER

By HARRY MILLER



*It's not a card shark, it's the real "Mc Koi"*



The intelligence of fish has been grossly underrated. It is roughly on par with that of the wolf or dog.

This is the belief of D. Leon Smith, a psychologist who specializes in the learning processes of animals. As director of its animal conditioning laboratory, he is the man who develops the animal shows seen at the Japanese Village and Deer Park, Buena Park, California. He has worked with a variety of mammals, birds and fish, including bears, wolves, chickens, dolphins, sealions, and goldfish.

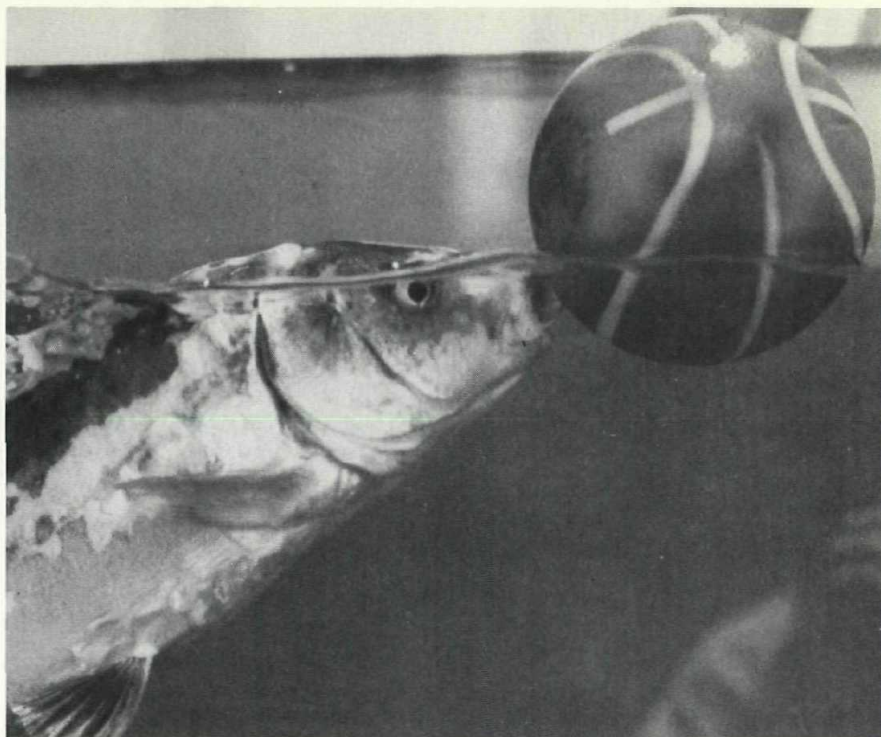
About two years ago Smith was in the midst of a series of experiments on the effects of different water additives on fish health and behavior when the thought crossed his mind, why couldn't fish also be trained (or "conditioned" as the scientists say)?

As subjects for his new study he chose the koi, a fish not nearly as trainable as the oscars or Japanese carp but having an advantage essential to public performances—they are large enough to be seen by a large audience. His chief training "prop" was a lever with a micro-switch which was connected to an automatic food dispenser and was so wired that when the lever was touched by the fish, the dispenser would drop a small portion of "reward" food into the aquarium.

(This training method is called "operant conditioning", in which the basics are immediate reward and absence of punishment for the involved creatures. Smith had learned that general behavior is determined primarily by how the animal earns a living rather than whether it operates in the air, on the ground or under water. Thus a wolf and an oscar make their livings the same way, that is, by killing game and eating it—hence would be expected to behave similarly, forming strong emotional bonds, etc.)

In the journal "Fish Life," Smith reports on the results of his special study.

Nothing much happened for some weeks. Then, quite by accident, the koi hit the lever with the sides of his body. He saw the



*This little fellow may soon join the LAKers*

food drop into the tank and ate it immediately. By the end of that day the koi had hit the lever 36 times, and the next day operated the lever some 200 times. Smith then knew that the fish could be conditioned to play their part in the fish show he had begun to visualize. Ultimately, the exhibition would include three koi performing some 12 "tricks," which include retrieving a ball, ringing a bell, swimming through a hoop, smoking a cigarette—all on cue. For the climax of the show, one of the koi plays a game of poker with a volunteer from the audience, and actually *wins* four out of five times.

Commenting on his study and the resulting fish show, Smith says:

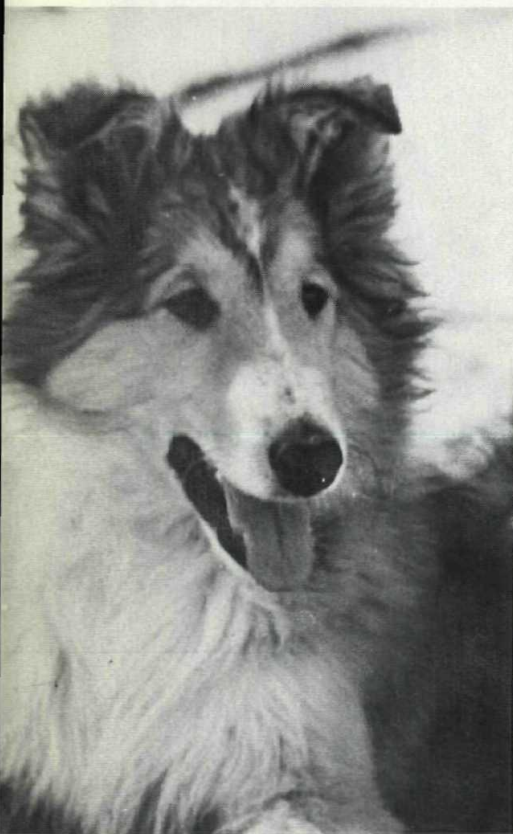
"Fish exhibit the same kinds of intelligent behavior as do mammals and birds. We have observed good abilities in both auditory and visual discriminations, and some considerable talents in problem solving. All of these abilities were necessary for the fish to learn the various tasks in the fish show. We would further guess that the intelligence level of the brightest fish conditioned would easily compare to that of dogs or wolves.

"Emotionally, these fish are apparently very similar, if not identical, to mammals and birds in their ecological niche. For example, I can see no significant difference in the emotional behavior of the oscar and the wolf. Contrary to our folklore, all of the fish that we tested are emotional. They do feel frustration, fatigue and hunger just as your pet dog might. Most interesting is the apparent ability of some species to form strong emotional attachments or bonds. This emotional attachment can be compared to what could be called 'strong affection' and can be directed toward other fish of the same or different species, and even to the human caretaker.

"In general, the behavioral differences between fish, birds and mammals are, per se, unimportant. Fish are not nearly as different from other animals as we had always assumed. The only big difference is that fish operate under water, and their physical characteristics have adapted to that environment. Because of these physical characteristics, we haven't yet been able to train the koi to shuffle and deal the cards, but then who knows?"



# CANINE RESEARCH TODAY



As we review research in general, it becomes apparent that such activity is either basic or applied. By basic, or fundamental research, I mean the study of an aspect of science for the sole purpose of understanding a natural phenomenon. In applied research, the goal is to discover how to *control* natural phenomena. In the context of the dog owner and the veterinarian, the natural phenomena with which we are concerned are diseases of the dog. And the research of most interest to us is that which has the potential for adding to our ability to control the many illnesses that plague dogs. It is often difficult to

predict which studies will contribute the most to the eventual solution of the problems which affect the animal. The more practical research is of obvious necessity. One may forget, however, that these practical studies are, in turn, based on an understanding of basic phenomena which resulted from previous, more fundamental research. Research must be encouraged at both levels—improving an understanding of the basic mechanisms which control the normal and abnormal function of the dog, and then learning how to use this information to maintain the health of dogs, preferably by improved treatment of their diseases.

Historically, the greatest emphasis in research on canine disease has been in the area of contagious diseases, and this has been necessary. These diseases, of which canine distemper is the most notorious, can spread rapidly in severe epidemics, and cause illness and death of large numbers of animals. As a result of hundreds of research projects in the past twenty to thirty years the cause and natural history of most of the common contagious diseases of the dog have been studied and described. Considerable progress has been made in the prevention and treatment of these diseases. Good vaccines have been developed which can prevent these diseases in most dogs to which they are given. These vaccines are not 100% effective, however, so additional work remains to be done in this area. Furthermore, new diseases of this type appear from time to time. Although they may not be widespread initially, an effort must be made to understand

them before they become serious problems. Studies on canine babesiosis are but one example of work in this area.

The next most important area for canine medicine research is the group of diseases that appear to be inherited. These diseases do not spread rapidly due to contagion. However, the potential is great for the dissemination of these problems very quickly to large numbers of dogs through careless or uninformed selection of breeding stock. It is important that diseases suspected of being inherited be investigated thoroughly with four questions in mind:

1. What is the nature of the disease?
2. Is the disease truly inherited?
3. Can carriers of the undesirable trait be identified?
4. Can the disease be treated successfully?

At the present time we are studying a disease in this group. Several years ago we observed several Basenji dogs that had a very peculiar type of anemia. Since this disease had not been reported in other breeds of dog and since two of those we had examined were littermates, we became suspicious that this was an inherited disease. Since that time we have studied several more Basenjis with the same disorder and we have acquired more evidence to indicate that it is inherited. Our principal purpose, in the research we are doing at the present time, is to find out what the basic nature of the defect is. If this can be identified, it may make possible a means of recognizing carrier individuals and in /cont. pg. 16



# FELINE RESEARCH TODAY

Those of us engaged in research on feline diseases are forced to decide each day which diseases are most important. To the owner of a sick cat, the most important disease is the one his cat has at the moment. The raisers of cats might think first of those diseases with a high mortality which threaten the feline population. The veterinarian often considers the most important diseases to be those for which there is no diagnostic test or as yet no satisfactory treatment.

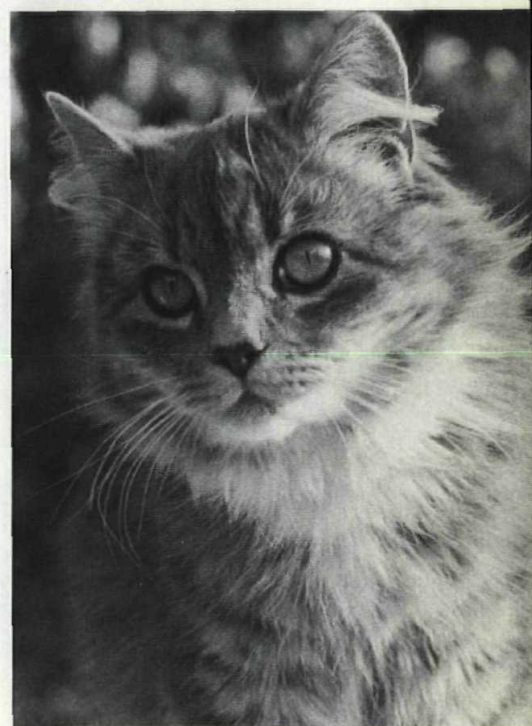
As our knowledge of diseases increases, our ideas about which diseases are important change. In every animal species (including man), the initial problems historically have been contagious diseases which threaten the animal population. Remember a few years ago when we feared human epidemics of diseases such as typhoid, diphtheria and poliomyelitis? Now that vaccines are available we have been able to turn our attention to other medical problems such as cancer, stroke, and heart disease. Among the feline diseases, however, we are still in the early stages of research and the contagious diseases such as panleukopenia and the viral respiratory diseases, therefore, are still the most important problems.

My colleagues and I have succeeded in raising germfree cats, cats raised in a completely sterile environment. Since germfree cats are uniformly susceptible to panleukopenia virus and are free of

other microorganisms, we have been able to learn for the first time the effects of the virus alone on the cat. The most striking discovery was that in the absence of other organisms, panleukopenia virus does not cause enteritis which had previously been considered to be the major effect of the virus and which had led to the synonym for panleukopenia, feline infectious enteritis. We learned that the effect of the virus was to lower the resistance of the cat to other infections through an effect on the white blood cells. This discovery has formed the basis for a new kind of treatment which appears to be highly effective.

Although panleukopenia vaccine is highly effective, it must be given to kittens when the immunity they acquire from their queen's milk has disappeared and before they are exposed to other cats that may be spreading the virus. Most vaccination failures have been due to the lack of a test for when to vaccinate. Fortunately veterinarians at the New York State Veterinary College have developed such a test in which the degree of immunity can be determined from a blood sample. Hopefully, the test will soon be available commercially.

Another recent discovery is that panleukopenia virus has been found to be the cause of a disease of kittens called cerebellar ataxia. This disease, which is characterized by difficulty in walking, had previously been considered to be inherited. It is



now known to be caused by the effects of panleukopenia virus on the brains of kittens before they are born.

All of the viruses that are known to cause respiratory diseases in cats have been discovered in the last twelve years. The major limiting factor in solving these disease problems has been lack of research funds to enable scientists to work on them. The half-dozen scientists working on these problems at the moment are trying to discover which of the viruses already isolated cause what kind of disease. There are many viruses not yet associated with specific */cont. pg. 21*



Child actor and long-time producer of travel-adventure pictures, Bill Burrud appears to have found a special career niche for himself



# How

By BILL BURRUD

I know it's somewhat of a cliché to say: "I love animals." In my case, it not only happens to be true but I can go a step further.

I not only love animals, I'm *indebted* to them. They have accomplished things for me both materially and yes, spiritually, which I never thought possible. Allow me to explain:

Although I was born and raised in and around the Hollywood-Los Angeles area, I have never considered myself a city boy *per se*. That is, a city boy—such as a typical New Yorker or kid from Chicago—who never gets beyond the jungle of concrete and steel and city traffic that surrounds him every waking and sleeping moment.

Southern California, as has often been said, is really a combination of 50 small towns. Within 30 minutes, you can ride to an entirely different world of the open sea, the high mountains, the sprawling desert. That's why, Californians have always had that fresh country-outlook in their appearance and mannerisms.

My home was (and still is) a miniature zoo. We've always had a number of dogs, cats, turtles, hamsters and fish around. At times, we've also had possums, snakes and even an iguana as a permanent member of the family.



# *I Broke Into* **ANIMAL FILMS**

In my case, I had something else going for me: a wonderful father who truly loved the great outdoors.

Every chance my father got, he took me, and my late brother, Jack, on hiking, hunting and fishing trips into the mountain and lake regions around Los Angeles and of course, to the incomparable High Sierra country. In looking back, it seems I had the sky as my roof as much as my bedroom ceiling.

Under these circumstances, I understandably became attuned to the world of nature—and to the animals who call it home. Although I always enjoyed all kinds of athletics, when it came down to a choice I much preferred to have a fishing pole in my hand, rather than a baseball bat.

As much as I liked the roar of the crowd (and what “ham” in television can truly say he doesn’t) I found the sights and sounds of nature just as delightful and rewarding. Birds chirping. A deer or racoon rustling in the brush. Maybe in the distance, the cry of a coyote. All of it, suddenly broken by the sharp tug on the end of your fishing line. And then the battle begins, as you try to outmaneuver *and* outthink a fast-moving, stouthearted salmon. Now that’s a real athletic contest!

When I married and had two sons of my own (Bobby and Johnny), I tried to instill in them the same inspiration /cont. pg. 28

## ABOUT BILL BURRUD

*Long before he produced animal films, Bill Burrud was doing travel-adventure pictures and before that he was a child actor with such companies as Universal Pictures, Fox, Columbia and MGM. As a child actor “Young Billy Burrud” appeared with some of the renowned names in the movie industry: May Robson in “Three Kids and a Queen;” Spencer Tracy in “Captains Courageous;” Charles Bickford in “The Pride of the Marines;” and Victor McLaglen in “The Magnificent Brute.”*

*When ANIMAL CAVALCADE asked him how he happened to break into animal pictures, Bill sent us this.*





## CANINE RESEARCH TODAY continued

from pg. 12/ this or some other way, result in the prevention or elimination of this problem.

Numerous other studies are in progress on diseases of the dog which have been considered genetic in origin. Hip dysplasia, elbow dysplasia, and ocular abnormalities of several types are a few of the problems of this type which are being studied.

The third group of diseases which merits considerable research is composed of those problems which, although not transmissible from one dog to another, are such common afflictions of the dog that they are a constant concern of the veterinarian and a constant threat to the animal and to its owner. Skin disease is one example of this kind of problem. Diseases of the skin are more common in the dog than in other domestic animals. It has been said of the human dermatologist: "His practice is ideal; the patients never die and they never recover, they just keep coming back for treatment." A similar comment might be said about canine dermatology. However, it is certainly not an ideal practice. It is very discouraging for all three parties involved: The patient, the owner, and the veterinarian. Skin disease is a serious problem. Although some work is being done on it at the present time there is a long way to go yet.

Gastro-intestinal disturbances are also common problems in dogs. The cause of some of these have been studied quite thoroughly—others remain very poorly understood. Dr. Van Kruiningen's work on diarrhea in German Shepherd dogs should be as rewarding as his previous work on another gastrointestinal problem in Boxers has been.

A fourth large area for investigation is the subject of reproduction in the dog. It is a matter of great disappointment and loss when a breeder, either an experienced professional or an individual with a family dog, who wants

to raise a litter of puppies, cannot do so. The possible reasons for failure in this venture are many, and each of them is worthy of careful study. Infertility in the male may be associated with various abnormalities in the semen or with physical or psychological abnormalities which prevent normal breeding from occurring. Infertility in the bitch may be related to abnormalities in ovulation, abnormalities in the estrus cycle, behavioral idiosyncrasies, or abortion.

Even when conception and pregnancy have been normal, the breeding program cannot be considered successful unless a normal litter is raised to weaning age. The problem of death in newborn puppies has been a serious one. One specific disease problem has only recently been identified, herpes virus infection. More work must be done to recognize other causes of infant puppy disease.

The fifth area for special study is canine geriatrics. The most distressing losses of all are those of dogs who have been companions and members of a family for a long period of time. In a typical case it is an eighty-year-old person whose sole companion is a twelve-year-old dog. When this dog develops a disease of old age it is heartbreaking for the veterinarian to suggest that "since there is no cure for this disease, perhaps the dog should be put out of his misery." The diseases of the aged are a challenge to the veterinarian as much as to the physician. Much more knowledge is needed concerning the fundamental nature of some of these diseases as well as improved methods of treatment. Such diseases as chronic kidney failure, heart diseases, and malignant tumors, have been studied in the past but they are difficult problems—there is still much more to be done.

You will have noticed that many of the challenging problems in canine medicine are areas of active research in human medicine as well. This common interest is fortunate for man as well as for the dog. The information

gained by veterinary research often contributes to improved understanding of human disease. More importantly, the vigorous efforts being made to solve these problems in man will, inevitably, result in rewards of improved understanding of canine diseases.

Although much can be learned about disease in the dog from studying similar diseases in man or any other species in which a specific disease is better understood, extrapolation of knowledge from one species to another is fraught with many potential errors. No two species are exactly alike. Even the body temperature, the heart rate, and the hemoglobin vary greatly among the different species. While the previous research in another species often suggests an explanation for phenomena observed in the dog, and at least suggests a useful approach to the study of the problem, one can only be confident of his knowledge of canine disease when the experimental evidence on which his conclusions are based has been obtained from canine studies. Thus, each advance in human medicine which may be applicable to the dog, instead of making corresponding canine research unnecessary, often opens new and especially rewarding areas for research by those who are interested in canine health.

One of the many revelations that came to me as I became acquainted with the nature of research was that it is an expensive undertaking. When a seemingly tiny problem is to be solved, it may necessitate years of work by one or more persons and the use of expensive equipment or supplies. No one knows at the beginning which research efforts will be rewarding and which will contribute little. Fortunately, research is being done on canine diseases and improvement in the health of dogs is resulting.

My principle occupation is diagnosis of the nature of an animal's illness through the use of laboratory tests. It has been a continually stimulating occupation because

/cont. pg. 21



from pg. 16/ I can see the changes in the quality of medicine we practice with each new year. New laboratory tests have been devised to permit quicker, more economical or more accurate diagnoses of the diseases which have troubled us for years; as more laboratory tests are used in the difficult diagnostic problems, new diseases are recognized; new treatments also are developed which improve the prognosis for recovery. As each of these developments becomes a part of everyday practice, the health of dogs is improved—some diseases are prevented by new control measures, some deaths are prevented by new treatments, some perplexities are removed by improved understanding.

Each of these changes is the result of research.

## FELINE RESEARCH TODAY continued

from pg. 13/ diseases and it is safe to predict that there are many viruses yet to be discovered.

Among the recent findings by Dr. Hoover and associates is that rhinotracheitis virus causes severe illness in germfree cats and even directly affects the bones of the skeleton. Pneumonitis organisms, on the other hand, cause very mild disease that is easily cured. Other scientists have recently isolated a virus that causes conjunctivitis in cats. In England and the United States, a large number of rhinoviruses which cause mild respiratory disease resembling the common cold have been isolated from cats.

A great deal of research will be required to determine which of the respiratory viruses cause the most severe disease and how cats develop immunity to respiratory viruses before vaccines can be developed.

A new infectious disease of cats is named *feline infectious peritonitis*. It is characterized by inflammation of the abdominal cavity with distension of the abdomen by large accumulations of fluid. Several groups of inves-

tigators have reported evidence for a viral etiology and it is hoped that the causative agent will soon be identified. This disease is easy to diagnose but no satisfactory treatment exists and most affected cats have died.

Among cats that are less exposed to viral diseases such as those raised in apartments, the major disease problems are obstruction of the urethra by stones (calculi) and inflammation of the bladder (cystitis). The most significant research in the last year has been conducted by Dr. Rich and his associates. These scientists, investigating the causes of urinary diseases, have found that cystitis can be caused by a virus. They have also analyzed the minerals and proteins in calculi which help us to understand how they form and may lead the way to a method to dissolve them. Another investigator found that cystitis in some cats is caused by bacteria and could be successfully treated. While there is considerable speculation about the importance of drinking water, diet, and frequency of urination in the development of calculi, I know of no research in progress on these factors. Still to be studied is the possible role of mycoplasma in urinary infections. These microorganisms which are natural inhabitants of the urinary tract of cats resemble those that produce disease in other animal species.

The most frequently occurring type of cancer in cats is leukemia which accounts for 7.5 per cent of the deaths of cats in the United States. Recent research on the cause and transmission of leukemia in cats has revealed that leukemia is caused by a virus or a group of viruses and that newborn cats are very susceptible. The possibility that the leukemia virus is transmitted to cats from mice is being studied. Unfortunately, there is as yet no method to prevent or cure the disease. New methods of treatment prolong life and alleviate suffering but the disease is invariably fatal.

The mechanism of action of drugs on cats is almost totally unknown. • Unfortunately, be-

cause of lack of information we are forced to apply what is known about the effects of drugs in other species to the cat. Anyone who has worked with cats doesn't have to be told that cats are different from other animals. Cats, for example, are unusually sensitive to the toxic effects of hydrocarbons. Uninformed individuals who give cats aspirin may kill them because ordinary 5gr. tablets twice a day constitute a fatal dose. Urgently needed is research on the fate, metabolism, and excretion of drugs in cats. Once it is known how cats differ from other animals in their response to drugs a scientific basis will have been established for recommending effective but safe treatment of feline diseases.

Cats also differ in the types of poisoning to which they are likely to be exposed. Their natural curiosity and hunting instinct expose them to a variety of chemical substances yet their eating habit of thoroughly masticating gives them an opportunity to taste and reject unfamiliar substances. Through frequent grooming, cats are more likely than other animals to swallow significant amounts of externally applied medications and such materials as tar, paint, or insecticides.

Now that many contagious diseases can be prevented or eliminated and with the availability of germfree cats it is possible for the first time to establish the *nutritional requirements of cats*. Why do cats require so much protein in their diet? What diet should be offered to cats that have various diseases?

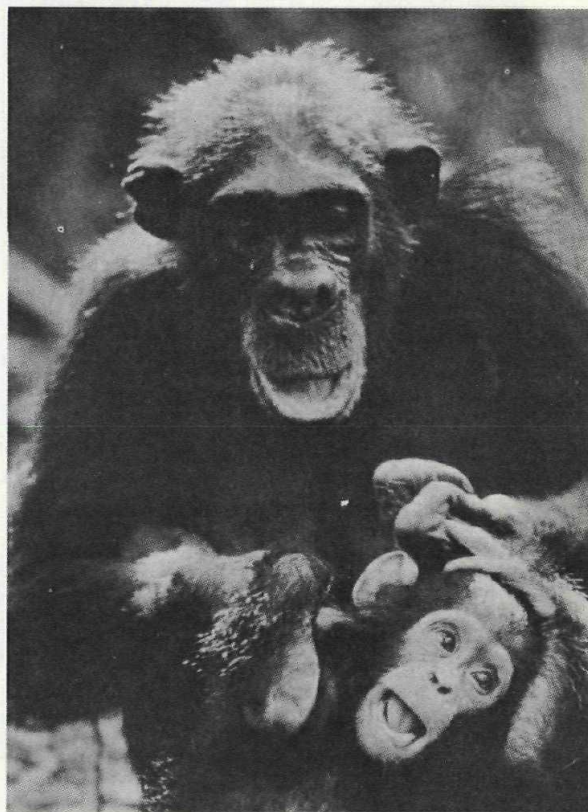
Research by Dr. Rowland and his associates at Ohio State University revealed that high protein diets such as beef heart which are low in calcium but contain normal amounts of phosphorous result in thin, fragile bones in young cats. They established the sequential changes in blood constituents and correlated these findings with structural alterations in the tissues including the endocrine glands and bones which led to a clear understanding of the disease mechanisms.



# ANIMAL

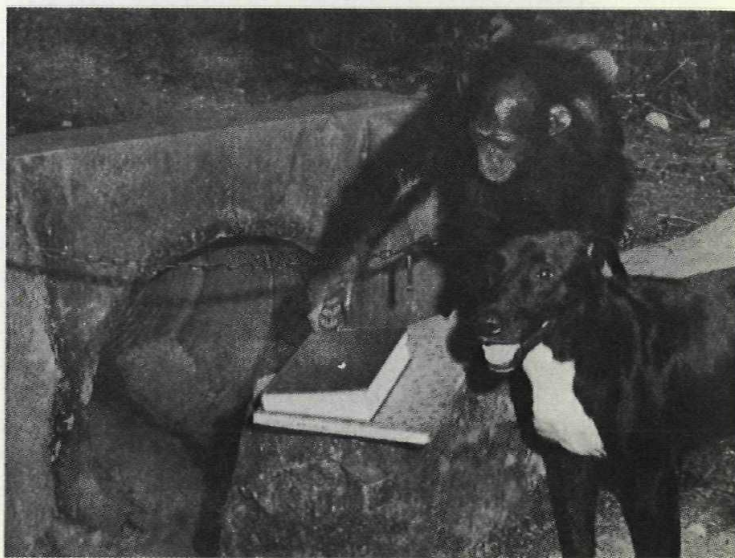


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Photo by Baron Hugo van Lawick (c) National Geographic Society



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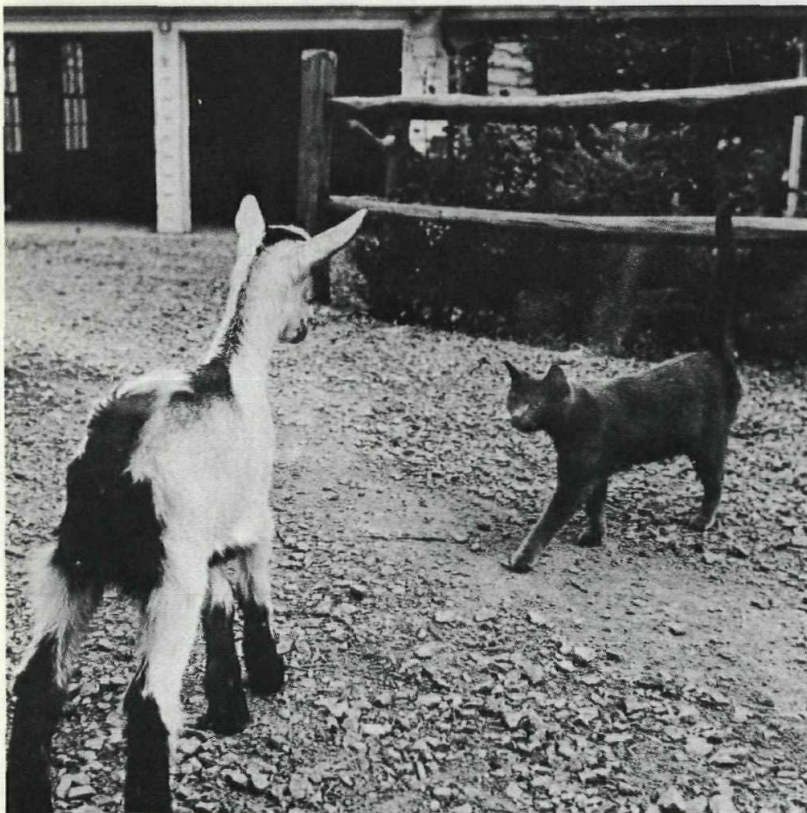


# expressions

Relatively few people who are familiar with Charles Darwin's *Origin of Species* are aware that he also authored a work titled *Expressions of the Emotions in Man and Animals*. Darwin was particularly perceptive of the inward feelings of the higher mammals, and in the latter work discussed the following "special expressions of animals": Joy, affection, pain, anger, astonishment and terror.

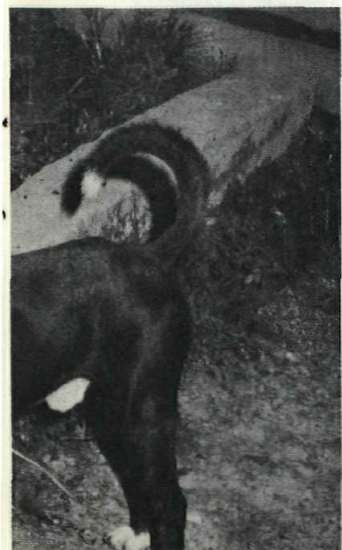
The Animal Welfare Institute (P.O. Box 3492, Grand Central Station, New York, N.Y., 10017) has performed a valuable service for animal lovers everywhere by bringing out an unusual publication, *Animal Expressions*, which is essentially a photographic footnote to Darwin's *Expression of the Emotions*. The publication is available at 75 cents a copy from the Institute at the address given.

On these pages we reproduce a group of photographs from the Institute's publication—each the work of a gifted animal photographer and each illustrating an animal expression. We are grateful to the Animal Welfare Institute, the contributing photographers and all others concerned as credited under the photographs.



Photograph by Stan Wayman—Life

- 1 JOY. Even at the age of 15, this New York City pet becomes excited at the prospect of going for a walk.
- 2 AFFECTION. Wild chimpanzees in Africa show a completely natural expression of affection between mother and infant.
- 3 CONTENTMENT. The dog has a typical confident stance with tail up and feet firmly planted; the young gorilla's casual attitude demonstrates how much at home he is.
- 4 ASTONISHMENT. A cat and a kid meet for the first time. The kid, never having seen a cat before, stops dead in its tracks. The cat advances, tail erect with a slight double curve at the tip indicating tenseness.
- 5 TERROR. Terror is plainly expressed on the face of this Howler Monkey being rescued from starvation as the waters rise in the rain forest of Surinam. The monkey fell into the water and barely managed to climb out.



Photograph by Erica Anderson

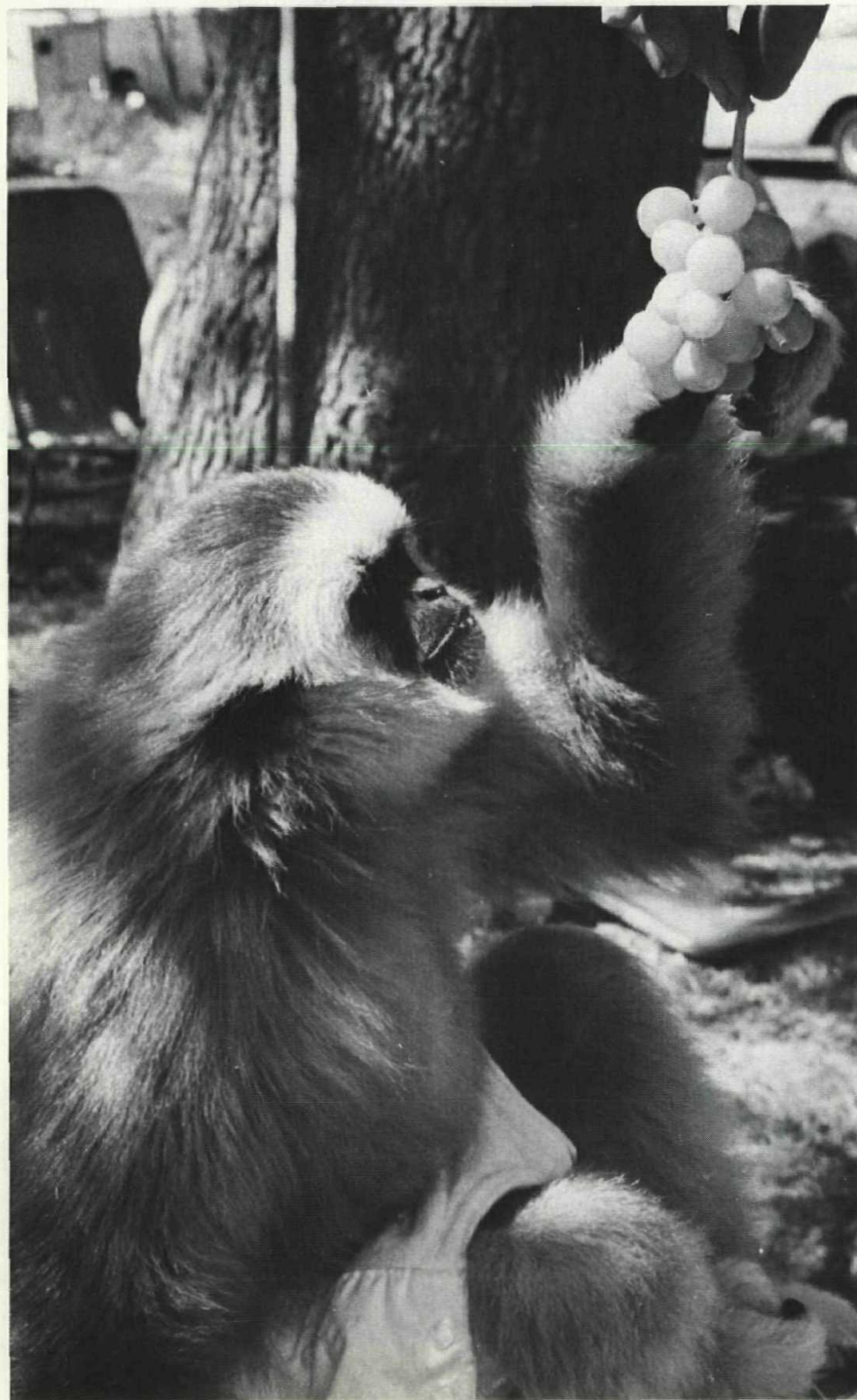


Photograph by Stan Wayman—Life



# the monkey who came to lunch

By ELOISE KEELER



*Delilah reaches out for grapes offered by luncheon hostess.*

When I telephoned my friend Pat Buehler to invite her and Delilah for lunch, I asked, "What would Delilah like to eat?"

"Oh, anything you have," Pat replied.

For days I stewed. What would a three and a half year old Woolly monkey most enjoy? Should I set a place for her? Serve lunch indoors or outside? Use the silver . . .

But I needn't have worried. By her astonishing and delightful behavior, Delilah let me know exactly what she did and didn't want. And during that memorable afternoon I caught a thrilling glimpse into the mysterious mentality of a pet monkey.

I also learned it was the owner who had to adjust to the monkey. For, as Pat explained, "A monkey won't adjust to you."

Delilah's entrance was dramatic. My home is on a wooded hillside with wire fence surrounding the property. Standing at the foot of the steps leading to the road, I greeted Pat and what appeared to be a tiny child standing beside her outside the gate. Suddenly the "child" leaped up and was over the gate walking jauntily with outstretched arms, down the wooden hand rail. At the end of the rail she plunked herself to a sitting position as though to announce, "Here I am!"

Wearing only a jacket which matched Pat's, Delilah was attached to a leash fastened around her waist. Holding the other end of the 20 foot, looped up leash, Pat followed her down the steps—and the fun began.

First I took them on a tour of my property. Entranced by all the trees, Delilah climbed part way up one, then another. And Pat, moving slowly along with her, speaking softly, never jerking the leash, gave her all possible freedom.

The monkey's keen eyes took in everything. She felt and investigated whatever intrigued her. On the way through the house to



the deck she climbed a chair, swung on a curtain and grabbed at a lamp.

Outside, she ran along the deck railing on all fours, munched on pelargoniums in the planter boxes, peeked through the windows and climbed to the top of the open door.

And how she loved the bunch of grapes I gave her! Lolling on the picnic table holding the grapes over her head, she looked like Bacchus. As she ate them, she spit out skins and seeds.

Yellow-jackets forced Pat and me to have our lunch indoors while Delilah, tied, chewed contentedly on a drumstick outside. Later we gave her peas, rice, fresh plums and marshmallow filled cookies. Pat explained her monkeys don't have set meal times. "They eat a little all the time as they would in the jungle. And they never over-eat."

Later, weary from all her activity, Delilah cuddled on the lounge beside me with her head on my lap—a great compliment, although within minutes she'd leaped to the greater security of Pat's lap.

"Monkeys need a varied, balanced diet," Pat continued. She feeds fruit, some fresh but mostly canned which they digest better. They recognize favorites such as strawberries by pictures on the labels and take the cans off the shelf for Pat to open.

She also feeds cooked and raw vegetables, roughage such as cat kibble, meal worms (but not too many), eggs, cheese and diluted, sweetened canned milk. Some owners feed, also, small amounts of hamburger, wholewheat bread, peanuts and other foods. "Not all monkeys thrive on the same diet. Owners should experiment to find out which foods they like and are best for them."

When Pat bought her first monkey, Junior, a charcoal-colored Woolly, now 10, he was a cuddly, almost human baby. And she thought she could just leave him loose in her attractively furnished apartment in a building she owns.

But she was quickly disillusioned. In a flash Junior would leap, grab pictures, books and

knickknacks, swing on draperies, open drawers and cupboards, even unscrew light bulbs. It was chaos. And Pat had to decide whether to keep Junior in a cage or monkey-proof her apartment.

She decided on the latter. Now her floors are linoleum, divans and beds covered with plastic, curtains are made of washable plastic and all loose articles including the telephone (the monkeys chew the cord) are locked up.

For several years Junior had a room of his own (which he now shares with three other monkeys), equipped with swing, acting bar, small trampoline, bed and chest of toys. His favorite toys were two plastic squeeze dolls.

Most of the time Junior was diapered and dressed in handsome outfits Pat made for him for all occasions. He rode with her in the car, entertained youngsters at schools and hospitals, posed for advertisements, appeared on TV and in little theatre productions including "Inherit the Wind" about the Scopes "monkey trial." And Pat had the time of her life with him.

But at around six years of age, Junior started sulking. He still cared for Pat but resented other people. And finally he became so moody and unpredictable, Pat could no longer take him places except for occasional walks on leash. Now he spends most of the time in his room, and luckily, gets along pretty well with the other monkeys.

Some monkeys become mean and unmanageable because they've been mistreated, teased or kept in too cramped quarters (which often results in cage paralysis). But some, like Junior, who has always been kindly treated, become difficult simply because, as they mature, they can't live normal lives as they would in the jungle.

After what she's been through with Junior and because of certain unhappy experiences of monkey-owning friends, Pat believes monkeys should no longer be imported as pets. They should be left in the jungle. But the pet monkeys that are here should be

kept as healthy and happy as possible.

Delilah and Pat's other two monkeys, Jezebel, also a Woolly, and Joey, a squirrel, were given to Pat by owners who could no longer keep them. Most of the time they have the freedom of the apartment. Pat takes the two young Woollys for rides, walks and on bug hunting and tree climbing expeditions. But she doesn't diaper or dress them (except for jackets on special occasions), teach them tricks or expect them to do anything against their natures.

At my house, when Delilah was thirsty, Pat let her turn on the faucet in the kitchen sink and drink from it. But afterwards, the monkey didn't turn off the faucet and Pat didn't expect her to.

While eating plums, Delilah dropped the pits in the bag of whole plums. And wherever she went, she left a trail of litter—torn paper, bits of cookie, flower petals....

Some owners claim their monkeys are housebroken, but Pat is skeptical. At my house Delilah went outside, but I gathered this was purely accidental. One of the great chores of monkey-keeping is cleaning up after them. Pat uses disinfectants and deodorants daily, "But they should not be used full strength," she says. "Monkeys are particularly sensitive to strong odors."

Pat's monkeys groom each other, picking little particles out of the fur, but they also need regular brushing. If monkeys are bathed, it's important to keep them warm afterwards.

A warm, even temperature day and night is essential for most pet monkeys. Pat keeps her furnace on low 24 hours a day. But most dangerous for them are sudden changes in temperature and draughts, as they're extremely susceptible to respiratory ailments. And never let your pet monkey get near anyone with a cold or childrens' disease such as chicken pox or measles.

Other common ailments of monkeys are malnutrition and hookworm. Pat /cont. pg. 28



Used relatively little  
under today's civilized conditions,  
they present special problems

# caring for kitty's teeth

*Feline's mouth evaluated by veterinarian. Cat bag serves to restrain cat during examination.*





By W. A. YOUNG, D.V.M.

Cats can and do live healthfully without any teeth.

The domestic feline adapts to a protected life with human beings so much that some of its physical equipment with which it is endowed by nature becomes unnecessary . . . almost useless.

The wild feline needs all of its weapons and tools in order to capture, kill and tear apart its food. The toothless tiger in the wild will soon be killed by another tiger which does so to take away food in territory of the weaker one. Man-killing tigers are usually ones which have been physically handicapped by broken or missing teeth, a broken leg, or some other debilitating condition or disease.

Cat owners do a multitude of things for their pets which enables them to live easily, though handicapped. Thus they do not need, really need, such things as teeth. This lack of need often leads to ill health due to unhealthy dental conditions often brought about by neglect or disuse of the organs.

Today, we feed felines on pre-

pared foods which can be gulped down without any use of teeth and little or no stimulation to digestion that would come from the excitement and thrill of the hunt, capture, kill, and tearing into shreds of the live game that is nature's feline food. These easy foods have plenty of nourishment, too much sometimes, as witness overfed or fat cats.

Since the cat's teeth are so little needed or used in our civilized way of life, there is a predisposition to oral deficiencies. These come in part from lack of exercise of the teeth themselves and in part from the lack of mechanical cleaning of the teeth during the hard work of capture, kill and tear apart. Then too, easy living gives rise to obesity, overeating, "finicky eating," leading to general poor physical condition of the cat's entire system, including the teeth.

All cat owners should take their pet to their dentist regularly. Kittens often fail to shed their deciduous teeth, especially the canines, as the permanents erupt. This should be expected between four and eight months of age. A few persistent, deciduous canines may be present even up to one year of age. Generally, these lingering baby teeth set up some irritation of the gums and sometimes lead to severe mouth disorders. Such teeth should be extracted in order to permit the permanent ones to erupt properly and avoid possible infection.

The tiny incisors are the first to change and seldom cause serious trouble. The baby jaw teeth are quite often found sitting precariously on top of the partially-erupted permanent ones. Chewing or tearing food is a painful experience for the kitten at such a time and drooling of saliva is a common symptom. Also, the kitten will be seen trying to eat, but will repeatedly drop considerable food in the process, due to pain. The doubled canines are the most persistent and are quite apt to splinter during extraction. These splinters and any root parts will

have to be removed to avoid the risk of infection.

Pyorrhea is one of the most often seen dental disorders in the cat. It follows along with the easy life and lack of dental cleaning which first causes masses of tartar to collect on the animal's teeth. The jaw teeth are sometimes completely encased in a cement-like mass of tartar. The canines will first show small collections of tartar at the gum line. These encrustations should be removed by scaling as often as necessary, probably once or twice a year after the cat is two or three years old. Considerable tartar can be removed by the use of a blunt instrument. If the tartar is not cleaned away, the gums will become irritated and slowly but surely there will be a separation of gum from the tooth with the accompanying low grade infection . . . pyorrhea. Since cats do not expectorate, all the toxic matter from such a dental condition is swallowed, only to upset the animal's digestion, and encourage kidney disorders and general poor health.

Extraction of a badly involved tooth is a good answer in those cases where tartar removal is not sufficient or had been delayed so long that the tooth is simply wobbling about in a loose alveolus swimming with pus and dead tissue. It is usually amazing to see the improvement in a cat's health and well-being after the removal of masses of tartar and the extraction of the badly involved teeth. It is a revitalization almost akin to rebirth in many cases.

Cleaning the feline mouth is readily accomplished with any common liquid mouth wash. Hydrogen peroxide and water in equal parts or milk of magnesia, either by brush or gauze over your finger, serves well. Oral cleaning will delay tartar formations and do much to overcome infection, foul odors, drooling, and loss of teeth.

With a clean, sweet-smelling mouth, devoid of pain and infection, a cat will be able to live longer, more comfortably, and will be much happier!



## HOW I BROKE INTO ANIMAL FILMS continued

from pg. 15/ and love of nature and animals which my father gave to me.

As a teenager, I was thrilled to travel to the High Sierra country. Africa, with its unlimited wildlife, was a story-book existence for me.

Since then, the world, travel-wise has shrunk considerably. By the time my son John reached his teens, he had more global goals in mind.

Whereas, Africa was merely a dream to me, for John a safari to the Dark Continent was very real.

It was something, he said, he wanted to do. He *had* to do. I gave the venture considerable thought. Why not! I finally decided.

After all, for some 15 years I had been roaming the world filming my own shows for such series as "Wanderlust," "Vagabond," "True Adventure," "Islands in the Sun" and "Treasure."

Why not take the boy with me this time? Africa, time-wise by jet was no further away than the High Sierra by car.

That was almost four years ago, when I made the decision to take John with me. It literally changed my life—and my television career.

We did a half-hour program called "The Last Safari" during which we concentrated on lions and leopards in action, thousands of flamingos in flight and other close-up studies of African animal life.

The end result was that Kal Kan Pet Foods, not only liked the single program but wanted to do an entire *series* based on animals.

Thus, "Animal World" was born. For three seasons now we have aired our show on network television. And Kal Kan has already agreed to sponsor us for the 1971 season.

Public acceptance of our program, and our sponsor, has been

tremendous. It has also changed my own public, and private life considerably.

I once considered the animals to be my friends. Now, it appears I have turned into their spokesman.

It's not enough for me to like animals. I now have to understand them; to know them far more intimately and expertly than ever before.

As a result, I have done a tremendous amount of reading and research in the past three years. It has been more than an education for me; it's been a wonderful experience.

I am no longer an impartial observer of animal life. What affects them, now affects me! (Isn't that what real humanitarianism is all about?) No man, or animal, is an island, or an entity, entirely unto itself. We must *all*—animal and man—depend upon one another for our very existence.

That's why I have been campaigning, and have been worried, these past few years about our vanishing wildlife.

One of our recent programs with that exact title ("Our Vanishing Wildlife") demonstrated how certain animals, on land, sea and in the air, are on the verge of total extinction. Current figures list 835 different species that are presently endangered. In fact, if the current rate of carnage continues, in about 30 years, *all* of the 4062 species of mammals still on earth will disappear entirely.

The final dramatic shot on that particular program showed me standing in a completely barren wasteland, where not a living animal—except myself—could be seen by the naked eye.

What good would the whole world be to any man, who stands in the center of it, surrounded by silence? He would be the Master of Nothing; the King of Emptiness.

The animals of the world have given me a new outlook, and new appreciation of my own life. By stretching out my hand to them, I am only returning *their* gift to me—their natural God-given heritage.

## THE MONKEY WHO CAME TO LUNCH continued

from pg. 25/ warns, "Once a monkey starts going downhill he goes very rapidly. If he gets worse each day, you have lost your monkey."

While most veterinarians have some knowledge of monkey ailments, Pat believes in choosing one with both knowledge and experience. He must also be willing to take on a monkey patient. She points out monkeys are not humans and should not be treated like humans. They don't take medicine very well, and care should be taken not to over-medicate.

Pat is fortunate in having found a veterinarian who is an expert on monkeys.

If properly cared for and given the right psychological environment—just loving them is not enough—they may live 15 to 20 years. Pat knows of one who lived to be 35.

There are many species of monkeys and apes. Around a dozen are popular as pets in the U.S. These include five varieties of Capuchins (handorgan grinder monkeys), Rhesus (from Asia, with cheek pouches for storing food), spider, squirrel (tiny, with long tail), Woollys (some consider them the most human) and long-armed, acrobatic Gibbons, smallest of the great apes. They need lots of space and trees or bars for swinging.

Baby chimpanzees make fascinating pets up till five or six years of age. Then, except in rare cases, they revert to jungle ways and must be sent to a zoo (if one will take them), a heart-breaking experience for a once-loved pet who probably thinks he's a human.

Before Pat and Delilah left that afternoon, I offered them candy from a box I'd received as a gift. Delilah looked over each piece, then delicately picked out the one she wanted.

Yes, that afternoon was truly memorable—when the monkey came for lunch.



## HORSE HISTORY continued

from pg. 9/ him to Europe, in return for all the *goodness* he handed around to the fortunate Indians, was gold, silver, rubber, tobacco, potatoes, chocolate, and all spiritual things like that. What a nice swap, and everybody was happy, except possibly the Indians, and nobody bothered to ask them, especially as many of them had now come down with measles, chicken pox, tuberculosis, syphilis, and other *good civilized* diseases. As to the horses, nobody asked them, either. Their help in the conquest was purely involuntary. A horse with a bit in his mouth, a man on his back, and spurs digging into his sides probably doesn't care a whole lot about where he is, or where he's going, or who's doing what to who.

After that, lots and lots of Spaniards came and went, practically on a commuting basis, and naturally when the other Europeans found out about all that gold, *they* got in on it, too, so although the first horses were Spanish, the English and French later brought *their* horses, and nature taking its usual course, the American breeds got started.

In the meantime, as the conquest spread itself all over the entire New World, from Hudson's Bay to the Strait of Magellan and from the Atlantic to the Pacific, the Indians, too, knew a good thing when they saw it, and along with the missions, the crosses, and all that good advice about being nice and not caring about material things (which they didn't really need anyway, because they didn't appreciate its value the way sophisticated Europeans did), they did get to see, ride, and learn the value of a good horse (not to mention a good musket). Presently, missionaries notwithstanding, horses came into the possession of the Indians probably the way the gold came into the possession of the Spanish. One doesn't like to call it stealing, exactly. Let's just say they all acquired these

things. Indians took to horses the way children take to peanut butter; the horses didn't practice birth control, and before long they (the Indians, that is) had lots and lots of horses of their own, and started galloping around the plains and prairies just the way one thinks of them as having always done, and still later they galloped around making like in Western movies, attacking stage coaches and mule trains and wagon trains and generally carrying on like wild Indians instead of cultured European gentlefolk, and in the most uncivilized way made a last-ditch attempt, on horseback, to protect their land from the good, cultured Christian white invaders, who had demonstrated their kindness, morality, and culture with muskets.

Oh, well. I'm not saying that either side was really right or really wrong. They never are. The whole trouble was simply that they were all human beings, and you know what *they're* like.

Now you never heard of a horse doing a thing like that. When the horses got in the way, as arrows and musket balls flew, they died without so much as an indignant complaint.

Unfortunately I haven't seen many Western movies, so most of my intimate knowledge of this part of history comes from Mae West and W. C. Fields in *My Little Chickadee*, which might possibly have lacked something in absolute authenticity. (But it was *good*. I've seen it at least eight times, so quantity may make up for lack of historical accuracy.)

It was mainly the Plains Indians whose way of life came to depend on horses. The plains provided forage, which was lucky because the horses were expected to find their own food, the Indians having enough trouble as it was finding food for themselves. By means of horses they could hunt buffalo, and they could live a completely nomadic life, like the Arabs and the Mongols of earlier times, if they had enough horses to carry their families and household goods around, and

they didn't have too much in the way of household goods—a few poles and hides was about it. The men rode with only a folded blanket and a girth, and the horse had no bit, but merely a halter and a rein. (Or, to put it into more correct terms, a thing and a thing.) Only women used saddles, and junk was carted around on the Indian travois, which was simply two long poles lashed together with thongs (not things), crossed above the horse's neck, and dragging along behind him. On the part dragging behind him, you could lash some hides, and then tie your stuff, including a wife or children on, and you could then ride the horse, and there you were, your entire household in one neat package, ready to go anywhere. You didn't have to phone a moving company for an estimate, or stand around for three days packing china and glassware in barrels and jamming books into cartons, or bite your nails and fret about whether or not the carpets were going to fit.

It wasn't anything like Queen Elizabeth's royal coach, and I do think wheels, even with no roads, are less bumpy than poles dragging over stones and clumps of grass. Still, I've never ridden in a royal coach *or* on an Indian travois, so you can't go by me. (I've ridden economy in some pretty cramped and bumpy airplanes, though, if anyone cares, and I will say that on a travois you didn't have to stand on line to get into the lavatory.) (I've also ridden on the backs of horses, donkeys, and camels, and for sheer misery, I give the camel top honors.) (I'll tell you, I used to ride across the country during the Great Depression in tattered and moribund old buses with clanking motors and treadless tires, and I couldn't give that much, either.) (I've also traveled third class on some very tiny ships in some very rough seas, too, and that's worse than the camel.) (Sometimes I think it's best, after all, to stay home, provided the plumbing is functioning and the cat is not having a litter.)



# ANIMAL HEALTH NEWS

## "SUBSTITUTE BABY" ROLE ATTRIBUTED TO PETS

A pet in the home helps the more introspective of adolescents to move away from self-concern, self-pity or even suicide, according to Michael Young, a British veterinary surgeon.

He told the congress of the Royal Society of Health that it was common for young couples, delaying the conception of a child, to acquire a puppy or kitten, seemingly as a substitute baby. Often the puppy becomes the friend and protector of the human baby, Dr. Young said, transferring its allegiance from the parents as the child grows.

He asserted that a pet might also be a replacement for the baby that is never born, and many owners adopt the role of "parents" quite openly.

## EGYPTIAN ARCHEOLOGISTS UNCOVER CAT CEMETERY

Egyptian archeologists have discovered a cemetery for cats, considered sacred by the ancient Egyptians of the old and middle kingdoms of the Pharaohs, Al Ahram, a newspaper has reported.

The cats, worshipped as incarnations of the god Bastat about 2,000 B.C., were buried in earthenware jars.

## U.S. MONKEY POPULATION PUT AT ABOVE 750,000

Although there is no official monkey census, an expert says the treetop count is now 750,000 in the United States, with 40,000 more swinging into the country each year.

Mike Corradino, director of the Florida Monkey Sanctuary, Venice, Fla., says monkeys make fine pets, but that some humans do inhumane things after tiring of the animals.

Mr. Corradino's nonprofit sanctuary cares for homeless monkeys.

## NEW WAY TO PURIFY WATER IN AQUARIUM

An electronics engineer who has a home aquarium has found a way to purify the water without injuring his tropical fish.

Glenn M. Kassing of Alexandria, Va., was granted Patent 3,500,041 for apparatus that exposes the water to ultraviolet light. A small germicidal lamp that can be plugged into the wall is fitted in the upper part of a perforated housing.

The housing, whose holes are too small to admit fish, is lowered into the tank. Mr. Kassing has found his light highly effective against bacteria, floating algae and viruses.

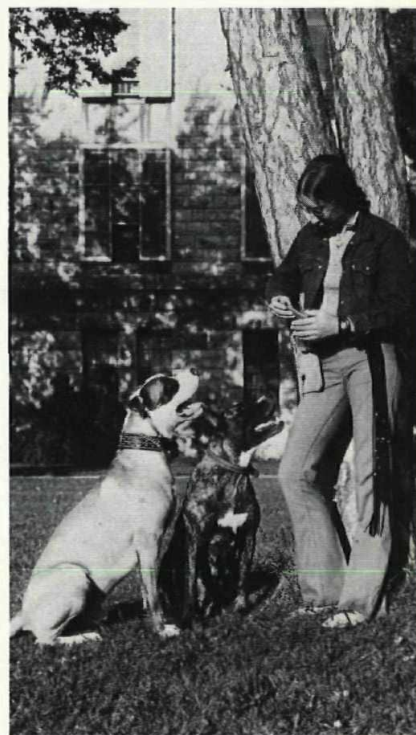
## VETERINARY SCHOLAR AIDS IN DEVELOPING NEW DOG BREED

Joanne Baldwin, a veterinary student at Kansas State University, owns four of the most unusual canines in the world.

They are Swinford Bandogges, of which there are only 90 to 100 in existence, most of them in the New York metropolitan area.

A cross between an American Pit-bull and several Mastiff-like breeds, the Swinford Bandogge was developed about eight years ago by Dr. John Swinford, staff-veterinarian for the American Society for the Prevention of Cruelty to Animals. He is also veterinarian at Central Park zoo, New York. The dogs were bred for temperament and because he felt there was a

need for a large, powerful natural guard dog that was very agile but not plagued with physical and mental defects, such as hip dysplasia and excitability. Mrs. Baldwin met Dr. Swinford on New York's Long Island, where her parents have a home in Melville. He presented her with an early Swinford Bandogge puppy and she actively assisted him in developing the breed.



*Mrs. Baldwin with two of her Swinford Bandogges.*

## NEW VACCINE MAY STOP PET POPULATION EXPLOSION

A grant by the American Humane Association to Colorado State University will enable that institution to continue studies for the development of techniques for immunological control of the reproductive functions in dogs.

Preliminary studies have resulted in development of an experimental vaccine which has been successfully employed to inhibit the reproductive function of male dogs. Ultimately, it may be possible to have such sterilization vaccines for both male and female pets, and vaccines of both a permanent and temporary nature. A temporary vaccine would permit female show dogs to skip one or more seasons and be bred at a future time, if a litter is wanted.

Vaccination offers promise as the best solution, one which would be safe



for animals of any age, and effective either from year to year, or permanently, according to the A.H.A. In many communities, such a program could be easily combined with other required injections, licensing and veterinary examinations, it states.

### **SPREAD OF RABIES LAID CHIEFLY TO WILD CREATURES**

Rabies is now reported about twice as often in wild animals as in domestic animals. The U.S. Center for Disease Control reports that skunks last year accounted for 43 per cent of the 2,672 reported cases of rabies in wildlife; foxes and bats ranked second and third. Though only 11 cases of rabies are known to have developed in humans over the past seven years, some 30,000 persons each year take painful antirabies treatment following bites or scratches by known or suspected animals.

### **PIRANHAS NO LONGER MAY BE KEPT IN NEW YORK STATE**

As of January 1, piranhas, the blood-thirsty tropical fish, may no longer be kept by residents of New York state. Owners were warned by Albert G. Hall, director of the state department's Division of Fish and Wild Life, that they had until December 31, to dispose of them legally.

The directive followed legislation aimed at preventing any of the vicious fish from getting into state waters, "although the chance of these fish surviving in our waters is considered remote, since they are native to tropical waters," Mr. Hall said.

### **PIGEONS SAID TO BE GOOD AIR POLLUTION BAROMETERS**

Pigeons are good barometers of long-term effects of air pollution, says a Temple University physiologist, who recently determined that lead levels in city pigeons are much higher than their country cousins. Instruments now in use, says this researcher, measure pollutants in the air but do not indicate amounts absorbed by animals. Tests of urine, saliva or blood show up acute levels of pollutants, he adds, so don't regard the pigeon as a pesky bird but as a feathery long-range health gauge.

### **OHIO COMMUNITY REQUIRES IDENTIFICATION OF CATS**

Identification for cats is now required in Kettering, Ohio. They are also prohibited from running at large to create an annoyance. If they do they

are subject to entrapment, the ordinance notes.

Action by the City Council came after a 6 month study of how to handle roving cats which have become a problem in the city. The identification system was a compromise to a proposed licensing arrangement. The identification, which must be supplied by the owner can be in the form of a tag, or presumably a tattooed number.

### **CONTROL TIGHTENED FOR DOG VACCINES**

A more accurate, but less expensive quality control procedure for two key dog vaccines is now mandatory, according to the U.S. Department of Agriculture.

Vaccines involved protect dogs against canine distemper and hepatitis, said Dr. Marvin T. Goff, regulatory veterinarian in USDA's Agricultural Research Service.

Manufacturers are completing a year of grace allowed for the switch-over by the ARS Veterinary Biologics Division, he said. The improved procedure changes the timing of testing. Quality will now be controlled mainly at the start rather than at the end of manufacturing.

Target of testing at the start of manufacturing is the master seed stock of viruses from which vaccine viruses are propagated. Seed stock testing is more thorough. For example, seed stock potency tests will be done with a greater number of dogs than are used for final product testing. The number of dogs needed is determined statistically to restrict sampling error and make test results statistically valid, Dr. Goff said.

### **GAIN REPORTED IN PSITTACOSIS CASES**

Sixteen states reported a total of 56 cases of human psittacosis in 1969, 11 more than were reported the year before, according to the National Communicable Disease Center Zoonoses Surveillance, Psittacosis. Parakeets were associated with 13 of the 46 cases in which epidemiological cases were reported. Parrots were involved in 8 cases; 17 of the cases were associated with pigeons; and 5 cases were most likely due to chickens or turkeys. The majority of cases were exposed in homes, states the Center.

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# DOCTOR'S ADVICE

Readers with health and other pet problems are invited to send their questions to ANIMAL CAV-ALCADE. Those with the greatest reader interest will be handled on this page. The material below has been adapted from "Progress in Veterinary Medicine" by permission of American Veterinary Publications, Inc.

## Best Time For Spaying

**Q:** *What is your opinion concerning the best time to spay dogs?*—W., Michigan

**A:** From a poll of practitioners, it was learned that the majority prefer to delay ovariectomy in the dog until shortly before the first estrus period. They specified 6 months of age for small breeds, 7 months for medium-sized dogs, and 8 months for larger breeds. It was their opinion that urinary incontinence due to sphincter muscle underdevelopment and other undesirable effects occurred more frequently in animals spayed earlier.—E.J. Catcott, DVM, PhD

## Cats' Water Requirement

**Q:** *Is it possible for a cat to live without drinking water?*—B., Florida

**A:** Absolutely! Many cats do. This does not mean that cats live without water, however. Remember that cats, like most mammals, obtain their

needed daily water from not just one source but 3: drinking water, foods, and nutrient metabolism. To be safe, every cat should have continuous access to clean, fresh water. Water is not only the most vital nutrient a cat requires but it also is the cheapest.—Donald R. Collins, DVM

## Grass Eating By Dogs

**Q:** *Why do dogs eat grass and why is it that a gastrointestinal upset frequently precedes grass eating?*—S., Pennsylvania

**A:** I suspect that dogs eat grass for more than one reason. Among the possibilities that seem likely is that they enjoy eating grass. The fact that dogs often appear to prefer a particular type of grass lends some support to this. Some observers hold that grass eating is instinctive, and that dogs do so to induce vomiting. More likely, this is a learned response that is made without their associating the vomiting with relief of discomfort.—E.J. Catcott, DVM, PhD

## Tomcat Spraying

**Q:** *How do tomcats spray, and what is the source of the characteristic odor of this urine?*—M., Virginia

**A:** Most psychologists and others studying behavior attribute the act of spraying in male cats to the function of "territorial marking." From observation, however, it appears that tomcats will often spray as the result of psychic disturbances, and particularly when frustrated. Cats castrated late in life may continue to spray in the characteristic manner, so it is believed to be a learned habit. The urine, however, no longer has the odor of the noncastrate, which may indicate that orchic substances, probably testosterone, are involved.—J.E. Whitehead, VMD

## New Dog In Sick House

**Q:** *How long a period should elapse before one should bring a new dog (or pup) into a house where one had died from distemper?*—W., Delaware

**A:** While no data is available as to the exact longevity of the virus under the usual atmospheric and temperature conditions in the home, it seems unlikely that it will persist in the home any longer than a week or two. From two to three weeks would, therefore, appear to be an adequate length of time to elapse before bringing a susceptible dog into a home in which an animal had died of distemper. In any event, it would be advisable to administer a suitable dose of immune serum as an added protection.—Frank Bloom, DVM

## Red Tuna For Cats

**Q:** *Since it is known that oils in red tuna prevent absorption of vitamin E, with the result that cats develop steatitis, what has changed that red tuna is now a safe food for cats?*—E. Washington

**A:** It is only during the process of becoming rancid that oxidation of the vitamin E occurs. Now stabilized tuna can be fed to cats with safety. Both vitamin E and other highly efficient antioxidants are added to tuna to help prevent the development of rancidity. The added vitamin E also helps ensure that ample quantities of vitamin E are available to meet the nutritional requirements of cats.—James E. Corbin, PhD

## Filly In Frequent Estrus

**Q:** *A 2-year-old riding filly has been showing signs of heat every 10 to 14 days. What would be a sensible treatment?*—M., Ohio

**A:** A safe and sensible treatment for nymphomania in the horse would be similar, in my opinion, to that which is employed in cattle. I would suggest that hormone therapy be tried.—J.F. Bone, DVM

## Non-Singing Canary

**Q:** *A canary was bought at the age of one year, in October. At that time he was an extremely good singer, singing lustily and constantly. In January he went into a long winter molt and has never really recovered. He does not sing, and he sleeps too much. He is lively when not sleeping, and eats well. His droppings are normal.*—K., Illinois

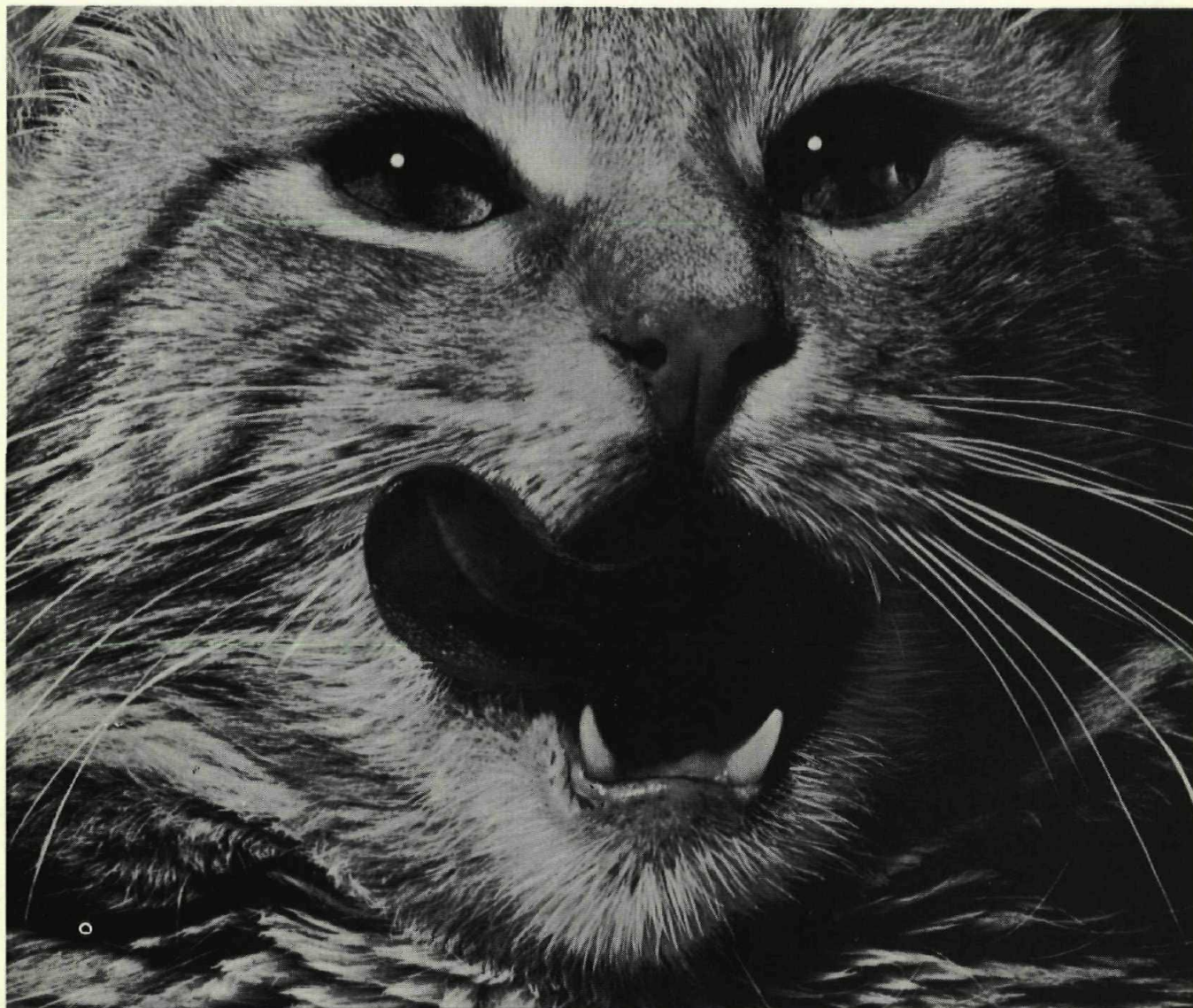
**A:** These clinical signs are almost typical of the condition known to canary breeders as "soft molt". In such cases a few feathers are molted almost continuously and therefore have to be constantly replaced, resulting in a bird which is always a little debilitated. The bird is not actually ill but a little listless and fatigued and therefore it sleeps more and sings less. Occasionally, however, a chronic infection of some kind may be present. Soft molt is usually seen in pet birds kept under unnatural conditions, such as constant changing of temperature, lack of bathing facilities, and varying exposure to artificial light—especially if it varies in intensity and length of duration—which interferes with the normal functioning of the gonads in birds and may cause hormonal disturbances. The presence of another cock canary in the same room, but in a different cage, might stimulate the bird to sing.—I.F.

Keymer, MRCVS



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