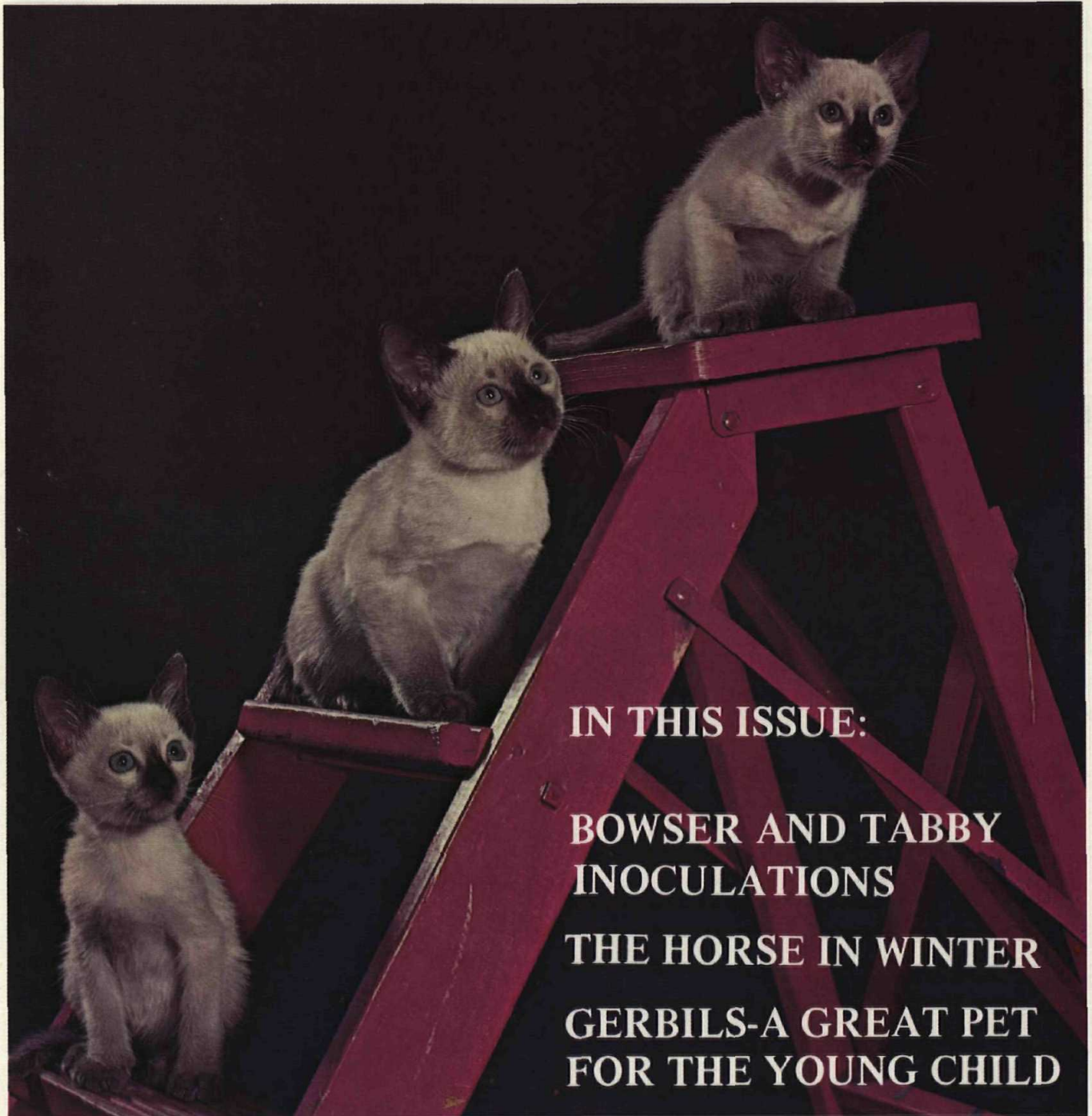


ANIMAL CAVALCADE

JAN/FEB 1975

60¢

THE ANIMAL HEALTH MAGAZINE



IN THIS ISSUE:

**BOWSER AND TABBY
INOCULATIONS**

THE HORSE IN WINTER

**GERBILS-A GREAT PET
FOR THE YOUNG CHILD**

EDITOR'S NOTEBOOK

IS ANIMAL HEALTH YOUR THING?

As I travel around making visits to distressed animal owners and their ailing animal dependents, I am impressed by the genuine deep feeling for the animal's comfort and well-being. Man's barbarism in other respects has not destroyed this human and humane quality of the people of the world. You have often heard the quip, "My dog eats better than I." Or occasionally, in private, "My husband thinks more of the dog than me!" Then, there's the quote by some (even some M.D.'s), "It must be hard to be a veterinarian because the animals can't tell you where it hurts." The M.D.'s also add, "That's good, because many of our patients have so many psychosomatic symptoms that we can't find the real problem readily."

Some clients will state to the attending veterinarian, "Do everything you can for 'Mitzie'; I don't care what it costs." This is the feeling of most animal owners, although they don't so express it.

It is with these things in mind that the ANIMAL HEALTH FOUNDATION was created by the veterinary profession. As veterinarians, we want to do whatever is possible for the animal patient. However, as with M.D.'s, there are many problems which are yet unsolved. Here is where the animal loving public is joining the animal health team. By becoming members of the ANIMAL HEALTH FOUNDATION, interested people make their wants known and the team goes to work for them. The larger the team and the larger the cheering section, the greater the success. Fortunately, this team is non-profit; the supporters and players donate their time and funds.

I believe everyone is interested in better health for animals. Why not involve yourself a little or a lot by applying for one of the many kinds of membership in THE ANIMAL HEALTH FOUNDATION? Of course you will receive the ANIMAL CAVALCADE as a bonus because it belongs to you. Probably your veterinarian is a member of the FOUNDER'S CIRCLE.

C. M. Baxter, D.V.M.
Editorial Director

Is animal health your thing? If so, you are invited to join the crowd.

ANIMAL CAVALCADE

Official Journal of the Animal Health Foundation on animal care and health.

JAN/FEB 1975

VOLUME 6 NUMBER 1

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DOCTOR'S ADVICE

Readers with health and other pet problems are invited to send in their questions to ANIMAL CAVALCADE. Those with the greatest reader interest will be handled on this page by Dr. J.F. Smithcors, D.V.M., Ph.D., who is technical editor of American Veterinary Publications, Inc.

QUESTIONS AND ANSWERS FOR ANIMAL HEALTH CARE BADGES FOR SCOUTS AND 4-H MEMBERS

Q. What is the normal temperature for a dog? Is the old idea correct that you can tell if he is sick by touching his nose?

A. Most normal dogs have a temperature of 100 to 101.5.

Excitement (which is normal at times) may raise it to 103 temporarily, but high readings are cause for concern. A hot, dry nose may mean a dog has a fever, but even a very sick dog can have a wet, cold nose.

Q. What is the normal temperature for a horse? If he is sweating, does it mean he has above average temperature?

A. The normal temperature for a horse is 99.5 to 101.3°F, or to 102.2 in foals. Normal horses will sweat during exercise or if kept in a hot, damp stable. Sweating often occurs during early stages of diseases which also cause fever, but also in many conditions without fever, e.g., those causing pain, fatigue or difficult breathing.

Q. How often should a puppy be fed? What do you suggest for his diet?

A. Right after weaning a puppy should be fed at least 4 times a day, 3 times at 3½ to 4 months, and twice daily at 6 to 8 months of age, after which once a day may be enough. Any of the good commercial puppy foods (not adult dog food) fed according to recommendations on the label, will usually be

better than trying to concoct an adequate diet at home.

Q. Do dogs need to be in the house at night?

A. No, except that they do need some form of housing (protection) against rain and cold. In most cases a small shorthaired dog is intended as a house dog, so that's the logical place for him. Many of the larger longhaired dogs may prefer to remain outdoors and are probably better off there than in an overheated house.

Q. How fast do dogs and horses breathe?

A. A normal dog at rest breathes about 10 to 30 times per minute, the higher figure being for smaller dogs and vice versa, but even moderate exercise or excitement may raise this considerably. For horses, the rate is usually 8 to 16 times per minute.

Q. What is the gestation period for: a cat; a dog; a horse; a cow; an elephant?

A. Cats 63-67 days (average 64); Dogs 58-63 days (average 60); Horse 329-346 days (average 336); Elephant 17 to 24 months (average 21).

Q. What diseases should I vaccinate my dog against? Does he need boosters for all of them?

A. All dogs should be vaccinated against distemper and hepatitis beginning at about 8 weeks of age and against rabies at 3 to 6 months, and booster vaccinations should be given annually (or every 2 to 3 years for some types of rabies vaccine). If leptospirosis is present in the area (and in most areas it is) immunization should be performed at the same time distemper vaccine is given.

Q. What are your suggestions for housebreaking a male cat that sprays the curtains?

A. Spraying is a form of territorial marking by male cats and may be difficult to discourage once developed. If the cat is intact, castration usually diminishes (but does not always eliminate) the habit, and a neutered tom makes a better pet. Some neutered toms will begin to spray when a new cat "invades" its territory or is brought into the household. Repellants may help, but punishment won't.

Q. Is there a best time of day to feed a dog or cat that is full grown?

A. No, but they get accustomed to certain times, so a regular schedule should be followed. If the animal likes dry food and doesn't overeat, it may be convenient to keep some in a dish and let it set its own eating times.

Q. Should I worm my dog regularly?

A. No, only when it needs it, as evidenced by the presence of worms, usually diagnosed by examination of a sample of feces (best done by a veterinarian). Routine worming of dogs that are not parasitized is at best an unkindness, and it may harm the dog.

Q. How should I handle an injured dog so he won't bite me?

A. First, speak to it so it will know you are there, and continue reassuring it, for several minutes if necessary, to gain its confidence. Then reach toward it cautiously with the back of your hand (not with fingers extended) to see if it will allow handling. If it is in great pain or naturally aggressive, it may be wise to drop a blanket over it before trying to pick it up. A blanket also makes a good stretcher.

COMING IN MARCH/APRIL —

ANIMAL CAVALCADE'S ANNUAL SPECIAL ISSUE ON MOTHER ANIMALS AND THEIR NEWBORN. THE PROBLEMS AND JOYS OF RAISING A PUPPY, A KITTEN, A FOAL,

AND OTHER BABY ANIMALS... IF YOU HAVE TAKEN AN EXCELLENT PHOTOGRAPH OF A MOTHER ANIMAL WITH HER BABY OR BABIES, PLEASE SUBMIT IT

TO

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COLOR TRANSPARENCIES ONLY.

DEADLINE FOR SUBMISSION — FEBRUARY 10, 1975.

CAVALCADE NEWS

NEVER ON MOTHER'S DAY

Dachshund breeder Karen Hupfer of Wickett, Wisconsin has shipped dogs all over the United States and into Canada and Mexico and never lost one. She described her procedures in a letter to *The American Dachshund*. Among them: If the dog must change flights, avoid having the transfer made in the confusion of major airports. Try various shipping services; one may be more satisfactory than others in a particular area. On the top of the crate, along with the address and health papers, put a label that reads SMALL PUPPY (or whatever is appropriate) AVOID TEMPERATURE EXTREMES — AVOID DRY ICE, all written in black ink and large block letters. Editor Sanford Roberts adds that he has learned never under any circumstances to ship a dog on Easter or Mother's Day weekends, when millions of dollars in perishable flowers are being flown all over the country. Also to be avoided are Christmas and New Year's holidays, with huge volumes of mail and extra heavy passenger traffic and accompanying baggage. All of these contingencies move dogs far down on the priority list at airports.

A VACCINE FOR CAT LEUKEMIA

There are indications that a vaccine against feline leukemia may be forthcoming. Medical scientists at the University of Glasgow have successfully immunized cats with viruses which cause cat leukemia. The vaccines have given a high degree of immunity which in some cases have lasted for 13 months.

The scientists have been working with a leukemia virus in cats which they believe causes the disease naturally. The virus, called Feline leukemia virus (FE LV), is a fairly common virus for cats. Of the normal cat population tested in Glasgow, a third of them had low, but definite, levels of antibodies to the FE LV virus, indicating that the virus commonly infects cats. When these cats were immunized with cells infected with virus, there was a significant increase of antibody production in the animals. The experiments indicate the possibility of vaccinating against leukemia using controlled doses of the vaccine. Under appropriate conditions it is possible to increase the antibody levels to a high degree without detecting live virus in the tracheal epithelium or bone marrow which are common sites where the FeLV virus invades and is propagated. The scientists have also obtained significant antibody levels by administration of inactivated vaccines.

Another cancer in cats, a feline sarcoma, is also caused by a virus and has been under investigation by the scientists for several years. There is reason to believe that in both virus cancers, the feline sarcoma and the feline leukemia, the increase in antibody production can inhibit tumor induction and can be effective in the regression of established tumors.

\$57,800 USDA CONTRACT AWARDED UGA COLLEGE OF VETERINARY MEDICINE

A \$57,800 USDA contract to investigate the effectiveness of an immunizing agent against leptospira grippotyphosa which causes abortions in sows has been awarded three University of Georgia microbiologists.

Several different bacterins have been utilized experimentally in recent years with varying degrees of success. However, no bacterin in current use is 100 percent successful. The problem has been further complicated by the lack of a thoroughly acceptable technique for testing various bacterins.

DID YOU KNOW?

The new Veterinary Science merit badge is now available to scouts. The requirements were developed by the Boy Scouts of America in cooperation with the AVMA.

Printed courtesy DVM Magazine

ORGOTEIN APPROVED

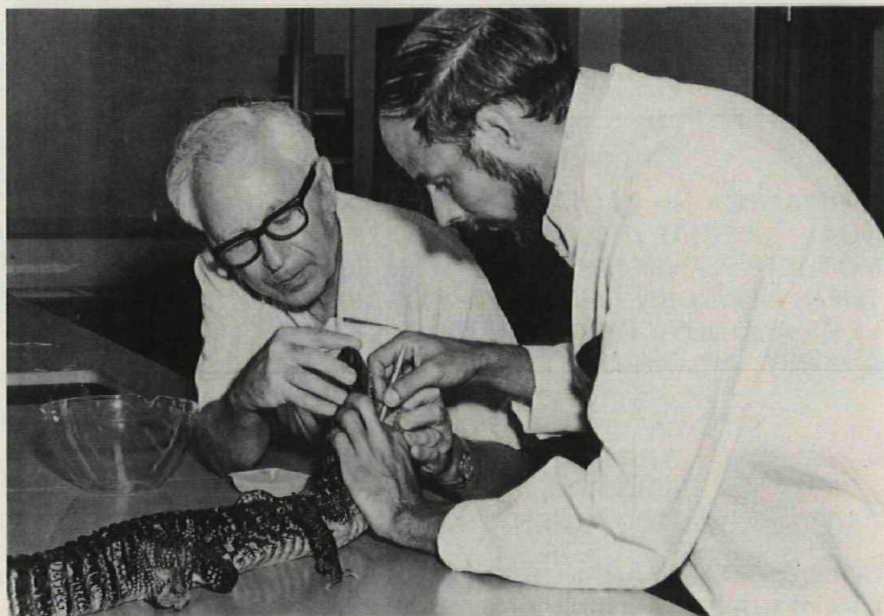
M. G. Smith, President of Diagnostic Data, Inc., announced today that the Philippines Food and Drug Administration has approved the human use of the anti-inflammatory drug Orgotein for the treatment of arthritis and urological disorders. This marks the first country to approve the drug for human use.

The veterinary version of Orgotein, sold under the trade name Palosein, has been approved for sale in the United States and Canada.

Reprinted from DVM, Oct. '74.

ALLIGATOR TONGUE OIL

Delving into the mysteries of an old Cajun folk medicine derived from the tongue of an alligator are Dr. Paul M. Sacco (left) and Allen B. Staton, pharmacology researchers at Xavier University of Louisiana in New Orleans. Alligator tongue oil has been taken orally by the Louisiana bayou country folks for over 100 years for relief of "the miseries." The biomedical researchers at Xavier, working under the Minority Biomedical Support program of NIH's Division of Research Resources, have determined that the alligator tongue oil has certain chemical derivatives which produce a steroidal action in the body. The consumption of the oil causes profuse perspiration and is claimed to give temporary relief for asthma, rheumatism, and arthritis.



PARKE CHAIRS PET FOOD INSTITUTE

John S. Parke, Chairman of the Pet Food Institute, opened the 17th Annual Convention by noting that during the past six months the directors of the Institute appointed a Study Committee to make a re-examination of the Institute's objectives and organization. From this study came the decisions to place primary emphasis on governmental relations and to move headquarters from Chicago to Washington, D.C.

"The time is past," Parke said, "when the industry could calmly promote pet ownership. Global food scarcity problems affect us today and questions are raised about surplus pet populations and whether or not commercial pet foods are taking away food to feed people. We must be prepared to answer."

A 'MAYO' CLINIC FOR PETS

Manhattan's Animal Medical Center on New York's affluent East Side is featured as a Mayo Clinic for pets, in a recent article in the *Wall Street Journal*.

Near the famous scientific complex of Rockefeller University, New York Hospital and the Sloan-Kettering Memorial Cancer Center, the modern eight-story building could easily be taken for a part of the complex. The stylish lobby is quiet and the phones are manned by receptionists clad in white. There are emergency rooms, specialty clinics, operating theatres, laboratories and highly sophisticated diagnostic equipment, intensive-care facilities and ward space for 300. The patients (some 90,000 per year) are pet dogs and cats mainly, an occasional hamster or rabbit and, rarely, an exotic animal.

The Center offers veterinary internship and residency programs and conducts research programs.

During its round-the-clock, seven-days-a-week program, the Center's veterinarians regularly treat not only complex fractures, cancer, neurological, cardiovascular, eye and kidney diseases, but inoculations, spayings and neuterings are also daily tasks. These have drawn fire from area veterinarians who claim that the Center is taking valuable business from them. These critics believe that the Center should confine itself to specialized referral work.

Dr. Robert Tashian, hospital director, states that the professional staff wants to gain broad experience with a wide variety of illnesses. A private veterinarian for instance, might rarely

see an unusual disease, while doctors at the Center might see 50 or 100 cases in a year. "In private practice you don't get the kind of specialization that you get at the Animal Medical Center."

This expertise has its price. Hospitalization runs \$12 daily; \$15 for animals in intensive care; dental work, \$35; heart surgery \$150 and limb amputation, \$125. "Charity cases" are not accepted.

Because of the size and variety of its clientele, the Center is able to gather a vast amount of research data which is available to the profession. Recently the Center has been experimenting with cryosurgery. The Center maintains a special cancer-therapy unit run in conjunction with Sloan-Kettering and the American Cancer Society. Areas of study include heart disease in cats, bone tumors and scoliosis. (*The Wall Street Journal*, Aug. 20, 1974.)

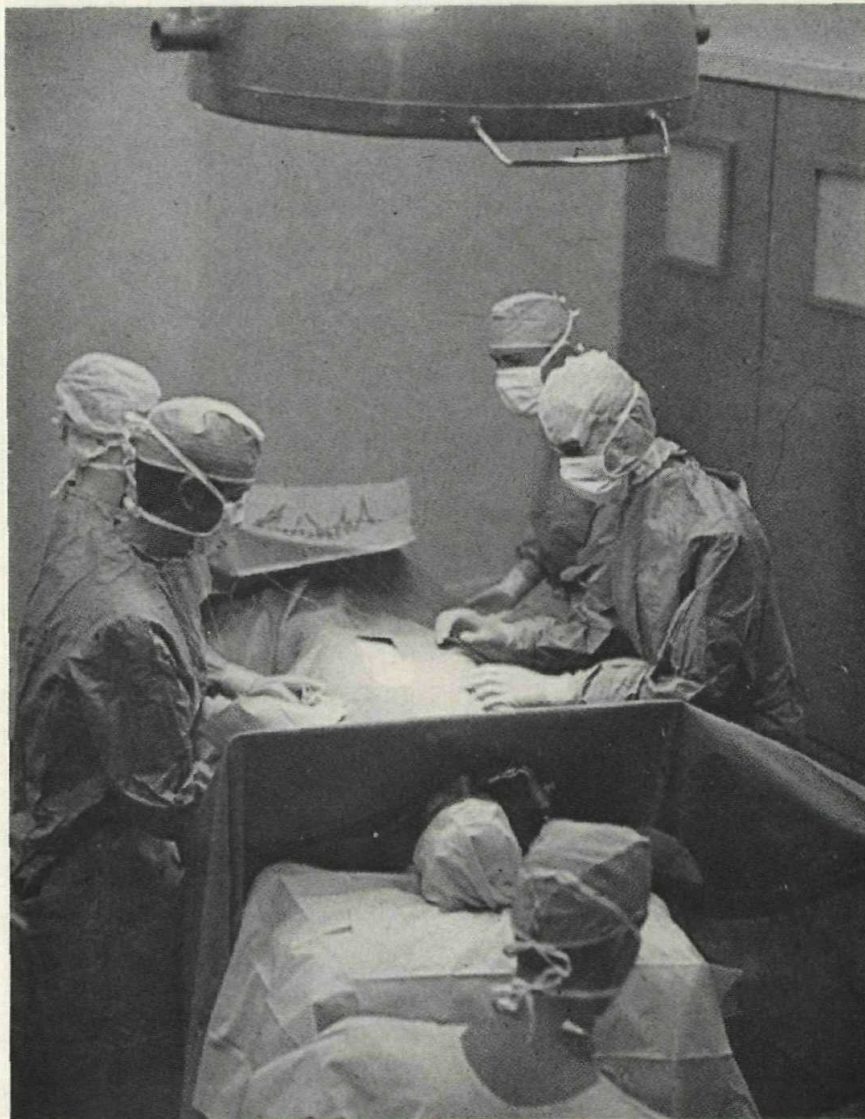
FEED LOT OPERATIONS DOWN

The USDA reported sharply reduced feed lot operations in seven leading states. There were forty percent fewer placements in May 1974 than a year before, and overall sixteen percent fewer cattle were being fed. However, it is believed that many farmers and ranchers are fattening their own cattle rather than sell them to feed lots at reduced prices. In addition, there is evidence that large numbers of young cattle have been held on grass longer than usual.

DOG'S DIET IS "ROUNDED"

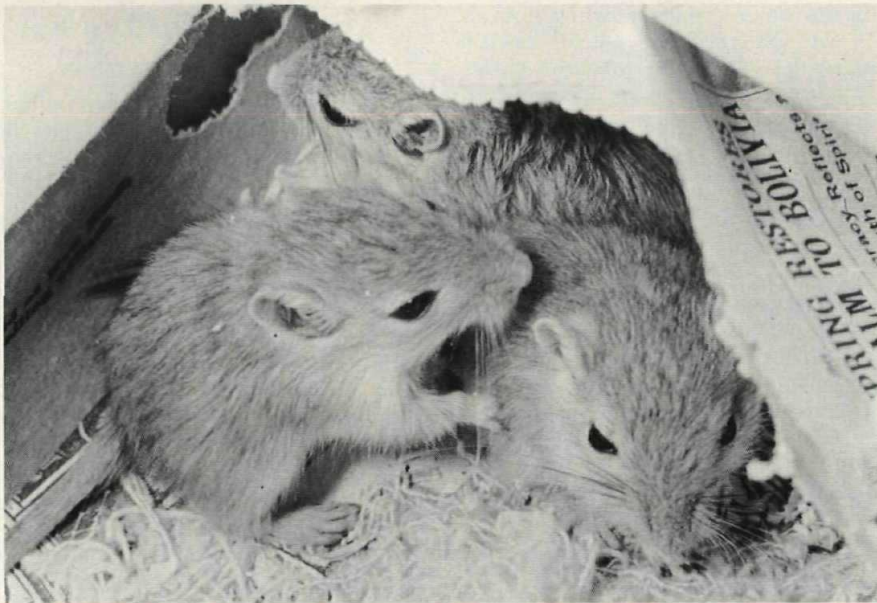
When Mrs. Arlene Higuera's pet dog seemed to be getting more sluggish every day, she took the animal to a veterinarian. He operated and removed 267 marbles from the pooch's stomach. The pet recovered quickly.

Continued on Page 20



Life-sized models, moving equipment and a pre-recorded text providing a realistic view of operating procedures will be part of the display at National Veterinary Museum in the Chicago Museum of Science and Industry.

Norden News



△ The three young gerbils in their temporary nest after being weaned. (We later found a tank for them in school.)

▽ Gerbils don't have to be held and petted to be enjoyed. In fact, your gerbil doesn't have to leave its cage. If you do hold him, however, never pick him up by his tail — he might lose it.

GERBILS ARE TO ENJOY

By
Judith M. Hinderstein

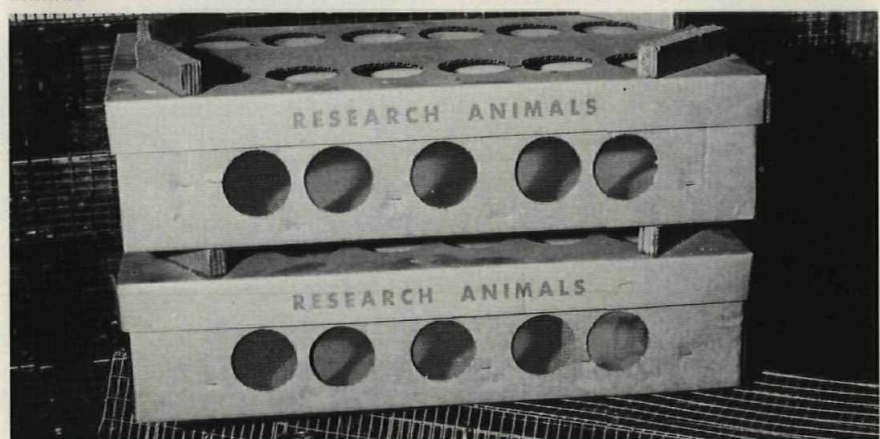
Gerbils are fun to watch. They enjoy scurrying about, digging, hopping, eating, washing and wrestling with their mates. And, they enjoy watching you as much as you do them.

Gerbils are the perfect pet for just about anyone. They are quiet, odorless, and can be kept in a small area, making them acceptable for apartment living. They cost about \$3 a pair, and are no work to care for, and require no special food. And for this reason, gerbils have become one of the most popular small pets in America today.

Unfortunately for the gerbil, however, most parents, teachers and young people know very little about them. And this lack of knowledge makes the



△ Place your hand, palm upward, into the tank and let the gerbil climb onto it. One person should do the holding, as too much handling it will frighten the animal.



△ Mailing gerbils to customers requires this gerbil-proof carton.

◁ Before removing the gerbil from the tank, be sure all exits to the room are closed. Gerbils enjoy chewing on furniture and woodwork too.

gerbil's life uncomfortable, boring and can even cause his death.

Gerbils are not native to America. They originated in Asia and have only been in this country since 1954, when Dr. Victor Schwentker imported a number for use in laboratory research. Most of the gerbils in the States today are relatives of those first immigrants.

In their wild state, gerbils live beneath the desert floor. Their nests are made from leaves and grasses, and their communities consist of nests and storerooms connected by a series of tunnels. During the growing season, gerbils eat greens and grasses, storing away roots and seeds for the winter's use. They drink little water, obtaining their moisture from roots and greens.

Most gerbils in captivity are used in laboratories, as pets and in the classroom. In the lab, they are housed in wire cages and fed dry rat pellets, supplemented with water provided in a bottle with a spout. This diet enables the researchers to keep the food factor constant during their testing.

At home, however, or in the classroom, gerbils will be much happier if they are able to simulate their natural

Continued on Page 27

CLASS PROJECT TURNS INTO BUSINESS

Mark Peterson of Stoughton, Wisconsin turned a 9th grade project into a lucrative business.

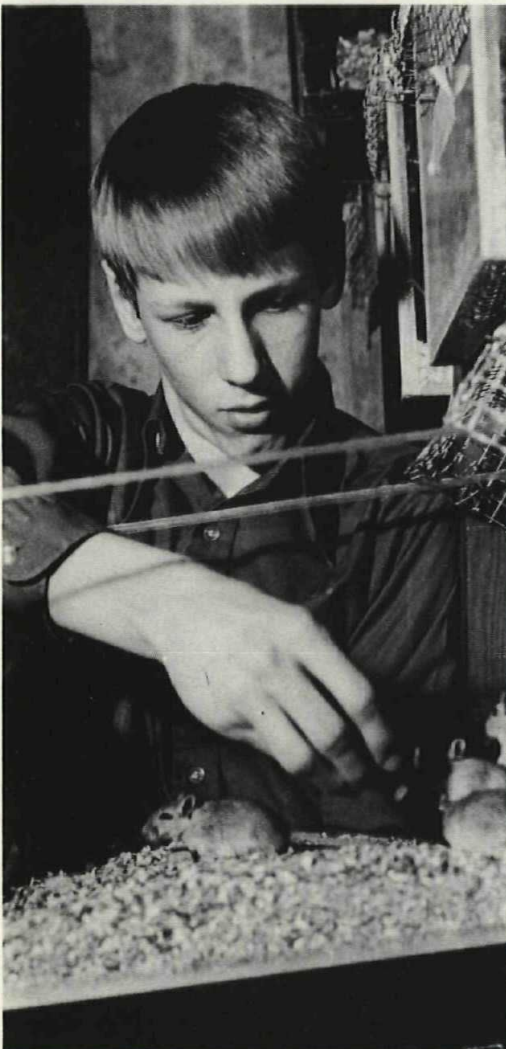
The enterprising teenager first became interested in raising gerbils through a science project. Realizing the potential sales for the animals not only within the city, but possibly to laboratories, Mark bought 8 pair of gerbils and a number of cages and was on his way. His initial investment included wood chips and rat pellets and a book on how to raise them.

Mark sold 50 pair at \$3 a pair, and began interesting his parents as well. Though the other members of his family expressed an interest, Mark won't let anyone but his parents handle the animals, as he wants to protect his investment. His younger brother, Bryan, said, "He told me that if I took them out without permission, it would cost me 50 cents penalty." Mark means business.

Keeping accurate records of gerbils and births of new litters is part of Mark's stocktaking procedures. He records the date of birth, number born in the litter and weaning dates. He records an 80% survival rate for his operation, whereas the general survival rate among gerbils raised in laboratories is 75%.

As there is no pet shop in the area, Mark is Stoughton's main supplier. He had tentatively become involved in raising gerbils for a laboratory supplier, but realized in time that the only one making a profit would be the middle man.

Shipping gerbils across country to friends proved to be a problem initially, as gerbils generally tear and shred most materials except metal. Mark contacted Mr. Dan Rolfsmeyer, who has raised white rats for lab use, and he designed a corrugated carton with a heavy screen lining to discourage the gerbils from escaping enroute to their destinations.



△

The entire Peterson family is interested in Mark's project. Dad and mom, Reverend and Margene Peterson, take gerbils to church and nursery school for the children there. (Left to right) Bruce, Bryan, Mark, Rev. Peterson, Karen, Mrs. Peterson, and Kristen.

◁ Mark Peterson raises gerbils for sale in the Stoughton, Wisconsin area. Because he keeps a large number on hand, he feeds them dry pellets and supplements with water.

BE SURE

Bowser & Tabby

RECEIVE THESE Inoculations!



Photo courtesy Gerald Server

Pets come into the hands of new owners from many different environments. Some are received in a fat and healthy condition. Others are sick and undernourished from the start. Most pets, however, come to new owners in a physical condition somewhere between these two extremes. For this reason an *initial health examination* is suggested just as soon as the pet is acquired. Professional recommendations can thus be made based upon the particular background and problems of your pet.

At the time of the initial examination, arrangements should also be made for regularly scheduled examinations. These often nip disease and health problems in the bud. They are the most economical way to assure the health of your growing pet. Inoculations can also be given at the time these periodic examinations are conducted.

IMMUNITY IN GENERAL

One should first understand that an animal's immunity can be likened to the development of a muscle — the more a muscle is exercised the stronger the muscle will be. The same is true of an animal's immunity. The more an animal's immunity is challenged either by exposure to the disease in question or by inoculation, the greater will be

the immune response of that animal. Immunization in itself may not confer the degree of immunity that is desired. Therefore periodic booster injections are desired since they serve to stimulate further immune production on the part of the animal.

Animals today, especially dogs, tend to be confined and thus are denied what is known as natural exposure. If a dog has been immunized against distemper and exposed to a dog suffering from distemper, his immunity response is stimulated to produce anti-bodies (substances that protect the animal from disease). By contrast, if there is no natural exposure there is no challenge and over a period of time that animal loses its immunity and quickly becomes susceptible to the disease in question. The Armed Services insist on keeping their personnel's immunity at a high level by periodic booster injections; such should also be the case in animals. An ounce of prevention equals more than a pound of cure.

DISTEMPER

Of all the canine diseases, with the exception of rabies, distemper is the best known and most feared. Its appearance, especially the nervous form, in most cases means death. Successful

treatment depends on treating the disease in its early stages. Distemper in many cases predisposes the animal to other infections (such as pneumonia, tonsillitis, etc.,) which are considered as secondary diseases, but nevertheless further depress the patient's resistance.

Discharges from the eye and nose frequently are indicative of a pneumonia-distemper complex which all too often is dismissed by the owner as a "Simple Cold." Other symptoms that you should look for are: Listlessness, loss of appetite, vomiting, loss of weight, foot pads becoming hard, and diarrhea. If your dog has any of the above symptoms, it would be well to present him to a veterinary medical doctor for an examination.

One important thing to remember is that direct contact is not needed to spread the infection since it is an airborne virus. If you are in possession of a dog that has had "all its injections" find out in writing what these "injections" were. All too often it turns out the dog is in need of protection since, as most often is the case, only anti-serum was given, which protects for a short time.

It is important to give a booster vaccine each year in order to assure the best protection.

HEPATITIS

This disease, as the name implies, attacks the liver as well as other organs in the dog's body. It resembles distemper and until as late as 1947 was not recognized as a separate disease entity. Its distinguishing characteristics are its onset which in some cases develops so rapidly that some dogs die within hours. Other symptoms are cloudy, bluish eyes that are bloodshot, tenderness over the abdomen, and sometimes intense thirst. Dogs of all ages are susceptible; however, young dogs are usually hardest hit. Affected animals take a long time to recover. Annual booster vaccination is recommended.

LEPTOSPIROSIS

This disease is causing increased concern among public health officials since it is communicable to humans. Dogs and rats serve as carriers, spreading the disease through the urine. The *Leptospira* organism seeks out the kidney causing a nephritis (inflamed kidney) which is evidenced by such symptoms as extreme pain in the area of the kidneys. In the more severe cases the animal is unable to walk due to a partial or complete paralysis of the hind quarters. Such kidneys, of course, are not functioning properly and this can be detected by the presence of urine odor on the animal's breath. Bloodshot eyes, vomiting and a

brownish discoloration of the tongue and teeth may develop. The importance of this disease is understood by fact that a recent survey showed an incidence of over 26 percent infection in all dogs tested. Annual booster vaccination is recommended.

RABIES

Rabies (Hydrophobia) or mad dog disease can affect all warm-blooded animals, including man. It is caused by a virus which attacks the nervous system and is present in and spread through the saliva of infected animals usually by a bite wound. Rabies is 100 percent fatal once symptoms appear in any animal, including man. Most dogs are exposed to the disease by bites from wild animals, particularly skunks.

If an animal inflicts a bite wound upon you or a family member, contact a physician immediately. The possibility of rabies must not be overlooked. Do not destroy the biting animal. It should be confined for purposes of observation by a veterinarian. The animal may appear reasonably normal at the time of the bite; but it is essential that he be observed for any development of rabies symptoms. There is no clinic or laboratory test to diagnose rabies in a living and apparently healthy animal. Only after death and examination of the brain can positive proof of rabies be determined. Should the animal be destroyed or escape before the end of the observation time, the probability of the dis-

ease must be considered; and the human victim may have to undergo painful anti-rabies injections. In all cases, the attending physician and health officers consider the immunization history of the animal before reaching a decision.

Rabies vaccination for dogs is compulsory in many areas of California. It provides your animal with excellent immunity against rabies. All pet owners are obligated, not only to themselves and their families, but to their fellow citizens, to obtain this very important protection for pets susceptible to rabies. The vaccine is advisable for both dogs and cats.

FELINE PANLEUKOPENIA (DISTEMPER)

This feline disease is probably the most deadly of all cat diseases. It should not be confused with dog distemper since it affects only members of the cat family. The disease's sudden appearance makes the owner think his animal has been poisoned inasmuch as many sick animals will die within 24 hours. Inquiry of cat owners in the neighborhood will usually reveal similar histories of sickness in their cats. Further investigations will usually show that the affected animals are under two years of age and unvaccinated.

Prominent symptoms that one should watch for are listlessness, vomiting, lack of appetite, bloody diarrhea, and a gummy discharge from the

eyes and nose. If your cat should show some of these symptoms, rush the animal to your veterinarian — a day's delay may be too late. In many cases, without treatment, the cat usually dies within a week of taking sick. The disease is so fatal anyone purchasing or coming into ownership of a cat should have it vaccinated as soon as possible. Many doctors recommend an annual booster vaccination.

FELINE PNEUMONITIS

This disease of cats is one that is first noticed by the animal's constant sneezing, watery eyes, and stuffiness of the nose. Cats of all ages are affected. Cats that recover often act as carriers for a long time, harboring the virus in the respiratory tract. When the animal sneezes, droplets are sprayed into the air and susceptible cats are infected through inhalation. Cats, and more often kittens, take a long time to recover and with complications the disease can be fatal.

A vaccine is available which your doctor may wish to use under certain circumstances.

FELINE INFECTIOUS RHINOPNEUMONITIS

This is another respiratory disease that is very prevalent and devastating. Eyes water, sneezing, and other severe symptoms develop. It is very contagious.

There is a new vaccine available at veterinarians for this disease.

HOW BEES 'TALK' *N.Y. Times, October 12, 1973*

Three professors, famed for their research in animal behavior, were awarded this year's Nobel Prize in Physiology and Medicine, worth approximately \$121,000. Research pioneered contributions to the new science of ethology: the comparative study of animal behavior in the wild.

Dr. Nikolaas Tinbergen, age 68, professor of animal behavior, department of zoology, Oxford University, England; Dr. Konrad Lorenz, 69, of the Max Planck Institute of Behavioral Physiology in West Germany; and Dr. Karl von Frisch, formerly professor at the University of Munich, West Germany, were honored. Dr. von Frisch is now 86 and therefore was born thirteen years before the Nobel Prize began. The Nobel Committee of the Karolinska Institute in Stockholm stated that their discoveries of genetically programmed behavior showed the need for adequate stimuli during critical periods for the normal development of the animal. Their ethological research shed light on how certain

psycho-social situations can lead to serious disease.

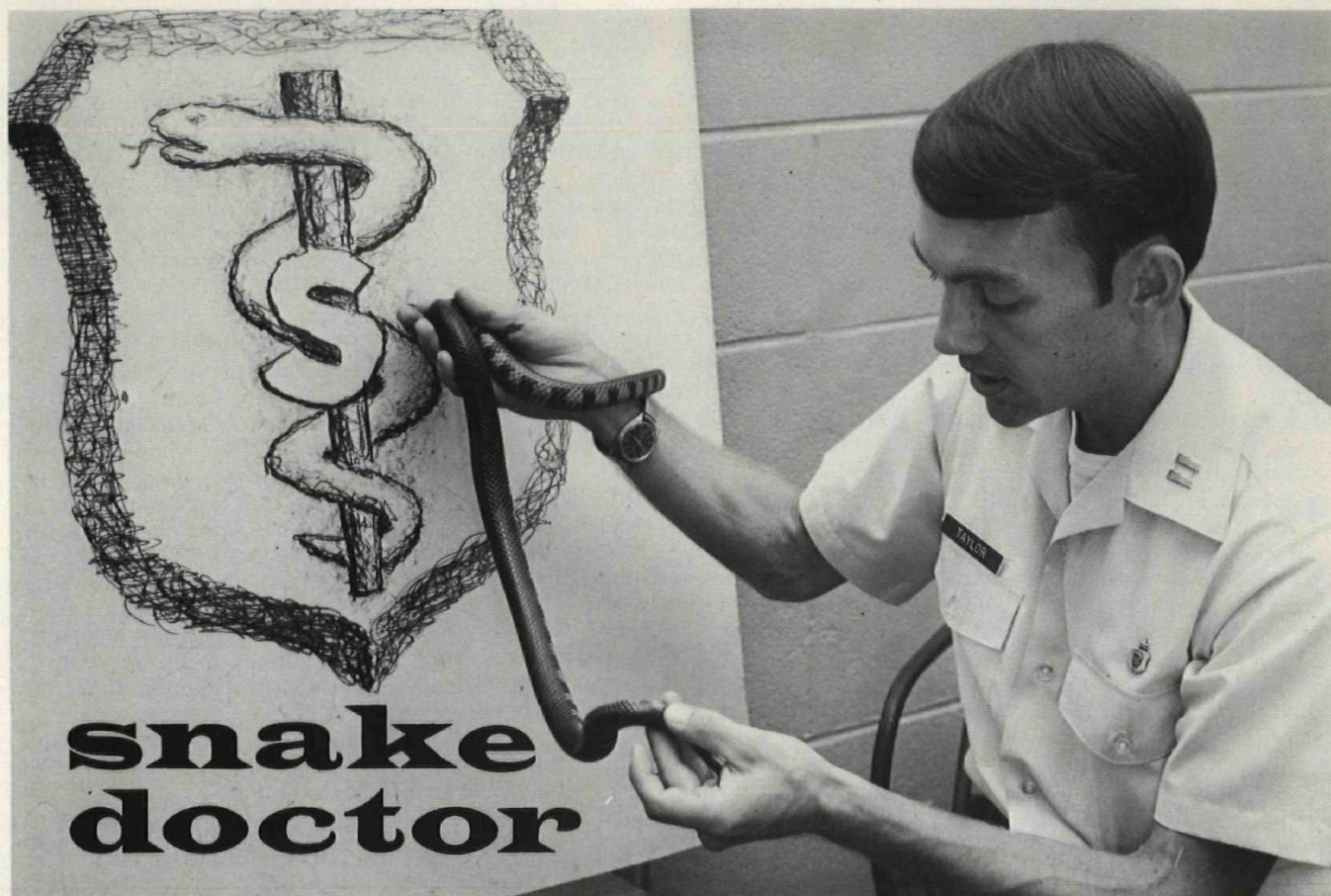
In the early part of this century studies in animal behavior were almost with their back to the wall. A large group of scientists known as vitalists believed that instincts were mystical and incapable of explanation. Other groups interpreted animal behavior as composed of a mass of reflexes. Others thought that the learning experience determined all behavior. The Nobel prize investigators found the way out of this dilemma by focusing attention on the survival value of behavior patterns. Dr. Karl von Frisch's studies of birds and bees are among the most famous. A bee that has formed honey within approximately 90 yards of the hive performs a "round" dance which may incorporate a figure eight pattern. This stimulates other bees to join the search for honey. If the honey source is farther away than 90 yards the bee performs a "tail-wagging" dance. It goes straight forward wagging its abdomen and then goes back to the

original position, and then repeats. However, one time it turns to one side to return to the original position, the next time it turns to the other side.

Dr. Lorenz studied young birds born in an incubator and proved that their fixed action patterns appeared as a reaction to key stimuli without any previous experience or learning. Dr. Lorenz's book "Studies in Animal and Human Behavior" published by Harvard University Press, is well known.

Dr. Tinbergen's studies of primates have shown how their future behavior is adversely affected if the newborn grows up in isolation. Males raised under such conditions were unable to copulate, and females would not take care of their young.

The Nobel Committee stated that serious consequences may result when the psycho-social environment is too antagonistic to the biological qualities of the species. For instance, overcrowding may lead to inadequate and destructive aggressive behavior, both in animal and man.



By Bill Crowe

By closely examining one of his nonpoisonous reptiles, the mud snake, Captain Taylor is able to determine the snake's general health. Taylor says it's imperative that a snake be supported correctly while it's being held to avoid injuring the snake seriously.

Captain Bill Taylor likes snakes. Has ever since he was in the seventh grade and went on a snake hunt with a buddy so they'd have something to scare girls.

He found on that hunt that he liked the thrill of stalking in the wild, of handling the snakes and later, observing their behavior. The lark turned into a serious hobby.

Now Captain Taylor is taking that hobby to work with him—in fact, his long-time hobby is part of his work. As a physiological training instructor for student pilots at Columbus AFB, Miss., he has parlayed his knowledge of snakes into a valuable extra for his students and for area youth groups.

His regular Air Force job is to teach students the medical aspects of flight—G forces, effects of oxygen deprivation and the like. The instruction also included survival techniques—how to make it on the ground after you have ejected from a disabled aircraft.

Survival in East Mississippi's semitropical outback means, among other things, how to recognize, avoid and/or deal with snakes. Captain Taylor can speak with authority, backed by 15 years of collecting and a master's degree thesis on snake venom.

"My hobby is collecting snakes, but

since Mississippi and the Southern United States in general is rather snake infested, student pilots should be aware of the possible dangers in a survival situation. Students come into my office and learn to identify the poisonous snakes of this area and observe them in their natural surroundings," says the Clarksville, Texas, native.

Observe them in their natural surroundings? That's right. Because rimming two walls of Captain Taylor's office are specimens of the hobby he has taken to work with him. A cane-break rattler, a cottonmouth, a mud snake, speckled king snake and a copperhead, plus assorted other visitors who are dropped in from time to time.

Keeping snakes in an Air Force building is against regulations, but Captain Taylor got the permission of the base commander to maintain his unorthodox lodgers as a teaching aid. "The benefits derived outweighed any dangers," says Captain Taylor.

Such benefits mean being able to point to the second cage from the left and have the observer see a canebreak rattlesnake in his natural habitat, evil eyes beaded, rattles bussing.

"Most people are naturally jumpy around snakes. In fact, I get a little jumpy myself," notes Captain Taylor.

But his student—fledgling pilot or Brownie Scout—can see what the real thing is like, dissolve some of that fear of the unknown.

Knowing what he is doing has meant for Captain Taylor no poisonous snake bites throughout his long association with snakes. He's had "several hundred" bites from nonpoisonous snakes, but he discounts these as no more serious than, say, cat bites, so long as the wounds are cleaned and tetanus shots are up to date.

And, from his experience, he has found that when people keep snakes for pets, it's usually the snakes which come out with the short end of the bargain.

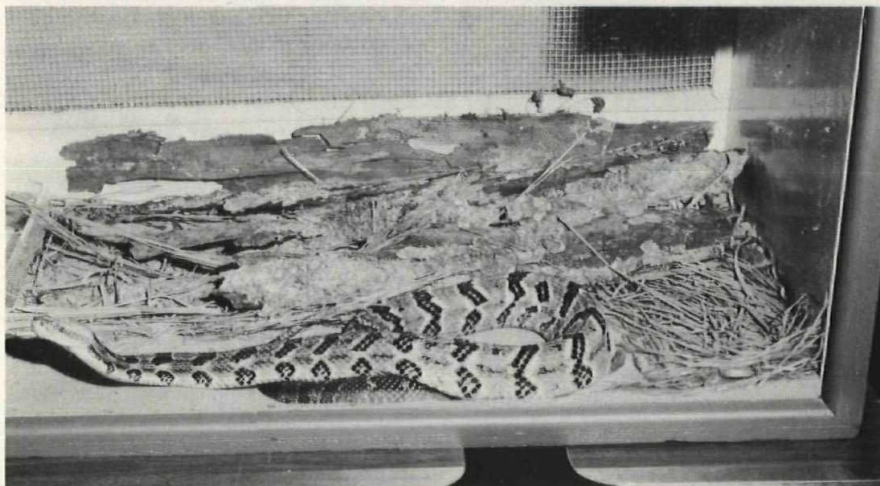
"Probably the most common problem is that people fail to support snakes properly when they are handling them," he says. Instead of giving support to the snake's midsection, people are likely to dangle them by their heads or tails.

This, according to Captain Taylor, can cause serious spinal damage. "It's like someone picking you up by the head and swinging you around," he says. "Just imagine what that would do to you!"

With a bit of support to the middle portion of his body, the snake can



Many of the snakes that make up Captain Taylor's collection are captured in the heavily wooded areas on base. Other snakes are donated by interested individuals.



The canebrake rattlesnake is shown housed in a cage equipped to match his natural surroundings. The canebrake grows to a length of 42 - 60 inches and is generally found in the southeast United States.

Photos courtesy U. S. Air Force

escape damage even if the area of support is pencil-thin. But, if there's no support to the midsection, support should be provided to either end of the animal.

Other tips to snake fanciers include:

-In building cages, the snake should be given enough room to stretch to his full length in at least one dimension. The remaining base dimension, as well as the cage height, can be about one-half the longest side.

-Good ventilation is a must, "unless you want your collection to develop a pretty powerful smell," Captain Taylor recommends screening at the top, back, and, preferably, sides of the cage.

-And the screening should be a quarter-inch mesh to prevent the snake from harming himself. "Very active snakes will rub their noses against screen until they wear down to the muscle and bone," says Captain Taylor. In housing venomous snakes, he recommends two thicknesses of screen, separated by the length of the snake's fangs at least.

-Temperature should be kept at a "temperate environment, between 70 and 90 degrees, as a rule of thumb," according to Captain Taylor. Since the snake's body temperature will be within a few degrees of his environment, the room temperature can mean life or death for the snake.

(In fact, Captain Taylor says he feels freezing is the "most humane way" of killing an unwanted snake. Activity generally decreases with lower temperature, until, in the 20-degree range, the snake will die passively.)

-Feeding should be conservative—perhaps once every week to two weeks. "It's disconcerting to find that you don't need to feed a snake that often, but that's all his body needs," says Captain Taylor. Indications of fatness can be detected by a separation of scales on the snake's posterior body; a skinny snake, in most cases, will have concave sides.

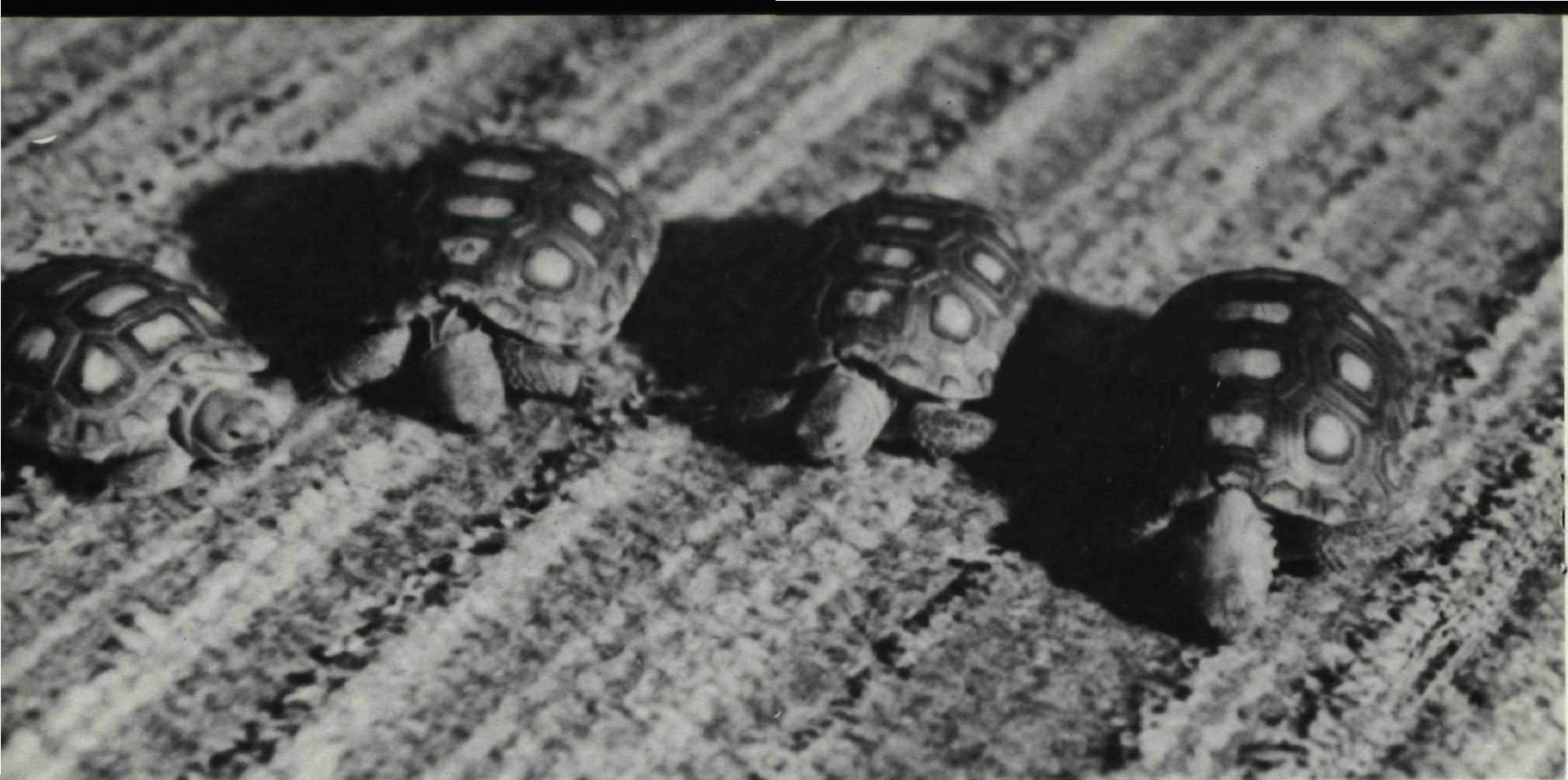
-Diet will vary according to species, and should be researched. Captain Taylor feeds his menagerie mice, rats, even guinea pigs and dead birds.

-Water should always be kept in the cage. But Captain Taylor warns that the cage should be kept generally dry. "Skin diseases develop in humid cages. Even water snakes need a place to be able to dry out."

-"Droppings should be removed at the first chance, and the cage thoroughly cleaned once every month. "The best guide here is when the place begins to smell," Captain Taylor says.

-The bottom of the cage should be covered in one to two inches of sand and furnished with as much as possible

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the desert tortoise WILL SURVIVE

by
Judy Tiger

Marvin is over 30 years old and has resided for the past nine years with Linda and Gary Roy and their 12-year old daughter Susie in the San Fernando Valley in California.

A few years ago he came down with pneumonia and was gravely ill. Linda put Vicks on his nose and kept him warm. She also gave him a few drops of Nyquil. "It says it gives uninterrupted sleep and he was so far gone, we were willing to try anything," Linda explained.

They did this for two or three nights and "the next thing we knew he was in there eating again," Linda said.

Marvin is not a relative or a human friend of the family. You see, Marvin is a desert tortoise.

The tortoise is another animal on the growing list of endangered species. Turtle is the common name for these reptiles, housed in a shell that encloses the vital organs and serves as a protection for head and limbs.

Tortoise is a secondary name given to the desert species (*Gopherus agassizi*) found in the southern parts of California, Arizona and Nevada.

Texas and New Mexico have a smaller tortoise (*Gopherus berlandieri*) not requiring an absolute desert environment.

There are protective laws in each of these states with California having the most rigid regulations, forbidding sale, purchase, needless harm, possession or shooting of a desert tortoise.

The death or removal of these animals can destroy the breeding capacity for many years. The increase in highways, off-road vehicles, agriculture and suburban development has destroyed many tortoise populations.

Recent California legislation prohibits importing or selling any North American tortoise of the genus *Gopherus*.

Although California laws are explicit, the State realizes tortoises that have been in captivity for a long period of time would not survive if returned to their original habitat.

It is not a good idea to relocate an older tortoise that has known only human surroundings for several years or babies born in captivity. The owners have provided food, shelter and general care, therefore, the tortoises cannot fend for themselves.

The desert tortoise has a brown upper shell (carapace) that is high-domed and a lower shell (plastron) that is heart shaped and provides protection at the front.

The hind feet are thick and stumpy, similar in shape to those of an elephant. The forefeet have five claws, which are long, blunt, and turn inward. There is no webbing of the feet.

Tortoises mature between twelve and eighteen years of age and may live to fifty years or more.

This animal is not as hardy as it appears. The tortoise is susceptible to pneumonia and it can be fatal. The

nose becomes runny or bubbly and there is an apparent loss of appetite.

Gasping may accompany these symptoms and a loss of weight may become obvious when the neck, which is usually thick and plump, becomes scrawny. A ravenous appetite may also be a sign of illness.

To keep a tortoise healthy, vitamin injections may be given by a veterinarian or a vitamin supplement may be sprinkled over the food.

Linda, Gary and Susie are native Californians and have lived all their lives in the San Fernando Valley. They have been taking care of tortoises for the past nine years.

They have eight tortoises ranging in age from nine to approximately thirty-five years of age.

Several years ago, Slo-Poke was the first one to become ill. He was taken to a veterinarian and given an antibiotic injection.

The veterinarian, at that time, recommended keeping him warm and putting Vicks on his nose. (It is important to keep them isolated during a respiratory ailment.)

The Roys kept him in the bathroom with the electric heater going and in a couple of days he started eating again. It wasn't long before he was well.

Josh is their favorite. He was found several years ago crossing a busy highway near the Joshua Tree Monument by Linda's Aunt and Uncle as they

were returning from the desert.

When they moved to the beach they could not keep Josh because the dampness would not be good for him. They gave him to the Roys knowing he would be well cared for.

They gave Linda special dietary instructions and a unique house they had built with shingles and a latch to close him in during the winter months.

As soon as Linda goes into the back yard, Josh follows her around. He also goes up to their huge Newfoundland dog, Smokey, and pokes at him.

Marvin and Slo-Poke eat from their owner's hands and Slo-Poke and Josh like to have their heads petted.

Sometimes while Linda is watering the yard they will come up and rest their heads on her toes. They all have different personalities, and the Roys enjoy them very much.

Feeding them is not a difficult matter. They eat vegetables and fruits and like apples, lettuce, watermelon, bananas, plums, dates and figs in particular. The blossom of the hibiscus is a delicacy.

Foods such as carrots, string beans, and corn are valuable, but should be scraped or ground. Bone meal is good for them and can be sprinkled over the food. They should be fed twice a day.

Some tortoises like raw meat and this should be finely chopped. Canned dog and cat food also can be fed to them.

Tortoises eat grass cuttings and flower petals and if they are kept in an area with flowers they should be out of reach from poisonous plants such as oleander.

Water is stored in a bladderlike sac underneath the top shell. When no water is available the tortoise absorbs the stored water.

Gary has built shelters for the tortoises and they use them at night and late afternoon as protection from cool evenings and hot summer days. Each evening Linda checks them out to see if they are all in their houses.

The tortoises live in a beautifully landscaped area behind a block wall, 18 inches high and three feet from the back fence. It runs the length of the backyard and protects the tortoises from falling into any gutters around the house.

As the hibernation season approaches, food should be offered until there is no further interest. When the weather turns cold, the tortoises hibernate. Linda places them in a box off the ground in the garage and covers them with several layers of newspaper.

During hibernation they should be kept out of drafts and in a cool, dry area where the temperature remains at 50°

They come out of hibernation sometime in the spring, usually in late

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These quarters are just too confining.



This is the right tortoise model --- the latest in tortoise houses.



*It's a good life -- but come Spring, I'll be pestered by those tortoises again!
This is "Smokey."*



That barn looks mighty inviting.

THE HORSE in winter

MANY PEOPLE WHO ACQUIRE A HORSE IN THE SUMMER "WHEN THE LIVIN' IS EASY" FIND THAT THERE'S MUCH MORE WORK TO BE DONE WHEN WINTER COMES. BUT THE AUTHOR FINDS IT CAN STILL BE A REWARDING EXPERIENCE.

By Jane W. Poulton

*Reprinted Courtesy
American Horseman/December 1972*

Winter in southwest Virginia is the season which separates the real horse lover from the fake. It's easy to love old Dobbin in June with pastures green in which he can romp, but feeding, watering and stall cleaning take a big slice out of your winter day.

Loving your horse becomes more difficult as winter drags on. It is a time when he is of little use and when he costs you the most. It's his season of boredom, too. Horses seem to hang around the paddock thinking up things that will bug the owner. You get fence-breaking, halter-sloughing and burr-collecting. Light switches are nosed on at night and buckets are pawed to a pulp.

Though patience is tried to the breaking point, the horse can be an

appealing creature as he looks wistfully at you over the fence. He needs you and he lets you know it. All day long he is waiting there to neigh if you stick your head out of the door to empty the garbage or to go to the mail box. I have one little mare that neighs into the barn intercom system so we can hear her in the kitchen. Another horse sticks his leg in the fence and stands there looking pained until rescued. These means of getting attention may be irritating, but there is something heart-warming about being needed.

If you don't live with your horse you miss half the fun of having one — particularly in winter when you may be only aware of the board bill. In our case the equines inhabiting the paddock under the window are our ethology laboratory. I'd like to study apes in Africa or meet with Dr. Lorenz and his geese, but failing that we study our horses.

In winter the pecking order is very obvious. The largest gelding is boss, but the second creature in line is the smallest pony, a Shetland. Four years ago we had an enormous Anglo-Arab who fell in love with this little pony, shared all his food with him, and backed him up when he terrorized the larger animals. The pony's friend left

ages ago but that hasn't changed his dominant position. He will chase a horse three times his size away from its food.

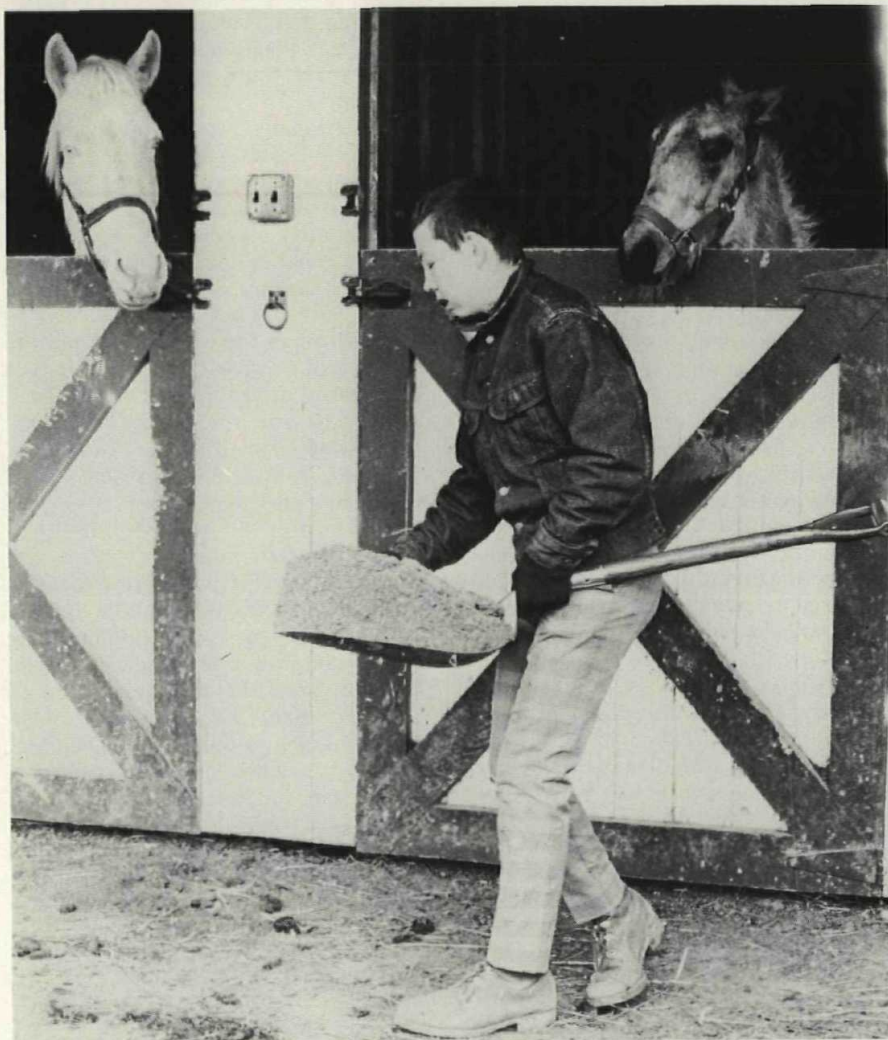
Occasionally we take a boarder or two. Our horses know which ones we own and which we don't, and boarders are isolated, kicked and scorned. They hang around together on the edge of social activities like wallflowers at a dance. Common danger unites the whole crowd. Let a hunter try to sneak through the back woods and the whole group swirls around the pasture like leaves driven in the wind. They snort and run and prance and are better watchmen than the house dogs, who are completely unaware of an invasion.

On a cold, sunny winter day they all stretch out on a south slope and sun themselves. It is a horrible sight to look out the kitchen window and see seven or eight inert, prone bodies lying in the same direction, looking for all the world as if they had been felled by a single giant hand. Often, to be reassured, we go out and get them up. Usually we have only interrupted a winter nap, but once we discovered an early case of colic.

Winter is a good time to renew shots and get rid of any parasites left over from the summer season. Horses

A few tufts of grass still survive.





The winter farm and barn routine is inexorable. Cleaning stalls becomes a challenge.

that are not to be used much usually have their shoes off, but the blacksmith comes regularly to trim and inspect them all. Winter is the time to begin feeding the brood mare her "specials" and to keep a strong feeding program going for the adolescent horses. We firmly believe in heavy winter feeding; it is much easier and cheaper in the long run to keep horses in good shape throughout the year than to try to save money by keeping an animal on a subsistence level and making him vulnerable to disease. We make hot bran mash on fierce winter nights and bring treats from the kitchen such as store-bought carrots and apples.

The winter farm and barn routine is inexorable. There's no lolling in bed because it is Saturday, Sunday or a holiday. It's up at six o'clock, and after humans, dogs and cats have been fed, it's out into the great outdoors bundled to the teeth in hooded parka and warm gloves and woolly pants. On weekday mornings Doug, our stable boy, arrives, his face concealed in a ski cap. At seven in the morning it is still a little dark and we peer at each other dimly, breath steaming from our masked and frozen faces.

We pass out bats of hay and dip into the feed barrels, trying to pick frozen horse feed into useable shape; sometimes it requires an ice pick. Watering is the worst job of all. When the temperature gets down to ten degrees or less, our frost-free spigot is



frosted. The automatic waterer, which has a heating element, is more reliable, but in stalls it does not serve. We use buckets, which may be frozen in their frames. We pry them loose and take them into the kitchen to de-frost while we are working.

Cleaning stalls is a challenge. Even the sawdust is frozen into rock-like lumps. The tamping bar helps that situation. We scatter hay on top of the sawdust and make another layer to get the horses in the barn further off the cold clay floor. We inspect for injury or illness. The horses in the back pasture spot us and hear us working around the stalls. They come galloping in, icicles clanking from manes and tails, steam pouring from nostrils. They look like creatures from another world.

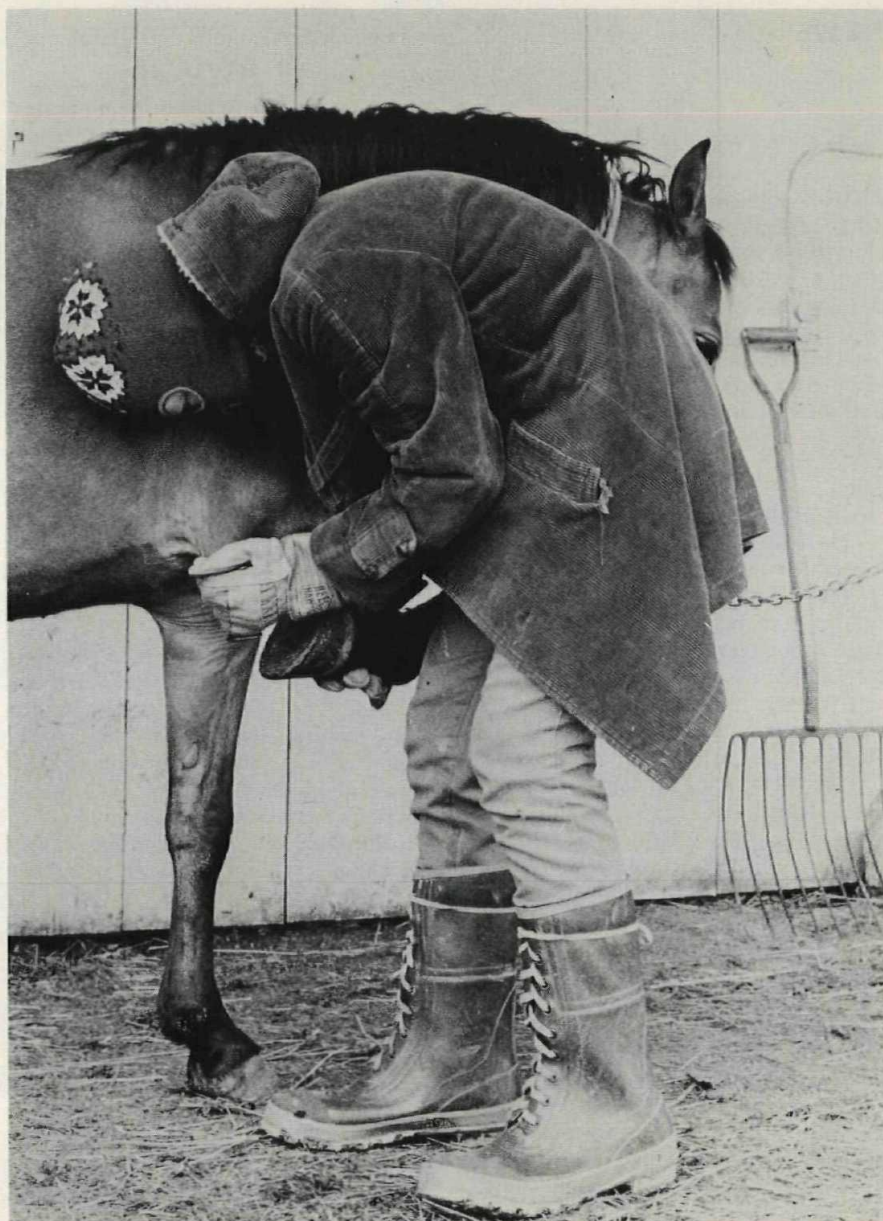
We examine the outside horses while they eat their grain. Butter-scotch, the Shetland, is missing a small piece of his hide. In the tackroom we find that all the medicines are frozen. We put the pony in a clean stall and the medicine in our pockets to thaw. The injury is slight; it will keep for a while. In the paddock where a brood mare is turned out, a piece of board is loose. This won't wait. We search for nails and hammer and then Doug goes to mend the fence. Fingers half-frozen drop more nails than are driven in, but Doug is determined and the job gets done.

We note that the barn cat caught a rat during the night. He has left us our share, which Doug throws to the garbage can. We hope the cat's feelings are not hurt. He's the best ratter we've had.

Meanwhile, back in the stalls everyone has finished his grain and heads are hanging over the dutch doors. We turn everybody out to exercise. They walk the frozen earth as if their feet hurt, but they all want to go. Geldings play in the snow. The biggest horse and the Shetland romp like a pair of dogs. The horse occasionally kneels down to be on the pony's level. They look happy. They are all happy whether they are playing or munching. In three short hours they will not be happy. They will be neighing and stretching over fences and pawing at gates wanting lunch. Anyone who thinks horses are dumb and cannot communicate doesn't know horse ethology.

Doug goes off to school to get warm and dream of owning his own horse farm. We go into the house, get a cup of coffee and turn on the electric typewriter. We have three hours before we'll be needed again. Three hours of peace and solitude.

Horses of all colors dot our landscape. The light on the fields in winter is lovely and every prospect pleases.



Bundled to the teeth in hooded parka, ski mask, warm gloves, wooly pants and heavy boots.

SET A NEIGHBORHOOD EXAMPLE

by
Marty Geyer

Here is a list of do's and don'ts that can help put our pet population under control.

1. Have your pet neutered.
2. Get your pet a name tag as soon as possible. Some dogs that are never let out, get out.
3. Support local and/or statewide animal centers that are providing services to alleviate problems of overpopulation and animal abuse. (Check with your veterinarian and local humane society to find out where a local center is located.)
4. Choose an animal with care, and with the intent of making him a member of the family, and not just a watchdog or a status symbol.
5. If a pet must be given away, don't turn him loose!
6. Stand up and correct people who are seen abusing animals, or at least, report them to the proper authorities.

STATE 4-H AWARD

Honors have been announced for 38 California 4-H members from 22 counties in the Annual California State Awards 4-H Youth Program, a part of the University of California Cooperative Extension's Youth Involvement.

San Diego County 4-H member, Mary Hillebrecht, 18, of Escondido has been named a California State Award winner in the 4-H Youth Veterinary Science Program, sponsored by the California Veterinary Medical Association.

Dr. Dan Evans, Veterinarian, from Escondido presented Mary with her Honor Certificate at the Convention site on Sunday, October 13. Dr. Evans was also Mary's Veterinary Science 4-H Project Leader for this past year, and is on the Executive Board of Governors of the California Veterinary Medical Association.

The Veterinary Science Award provided Mary with the opportunity to attend the 1974 National 4-H Club Congress in Chicago on November 30 to December 5. While at the Congress, Mary had the additional opportunity to be considered for one of six National Scholarships worth \$700 each.

Eight-year 4-H member Mary is currently a freshman at California Polytechnic University, San Luis Obispo. She was president of the Escondido 4-H Club this past year and has carried projects in Citizenship, Beef, Foods, Swine, Recreation, Clothing, Horse and Junior Leadership.

Mary is the daughter of Mr. and Mrs. Ben Hillebrecht of Escondido.

The 4-H Youth Program is available to all youth regardless of race, color or national origin.

15 YEAR-OLD BEAGLE, JEFF, LEADS "DOC'S LIFE" WITH HUMAN-TYPE HEART PACEMAKER; GIVEN HIM AT THE UNIVERSITY OF GEORGIA



Reprinted by
Gaines Dog Research Center

WM. DALY PRESIDENT OF RIVIANA

William G. Daly has been appointed President of Riviana Foods, Inc. effective October 1st. He formerly was Vice President of Operations, Grocery Products Division. Before that he was with Heublein, Inc. and Proctor and Gamble. Mr. Daly intends to concentrate much effort to the Hills Division and their prescription diets for pets.

2063 ATTEND 86th ANNUAL MEETING OF CALIFORNIA VETERINARY MEDICAL ASSOCIATION.

The California Veterinary Medical Association met in San Diego in October, 1974, featuring wet labs, technician seminars and a debate on acupuncture in animals.

Over 2000 veterinarians, their families, and staff technicians attended the four day program of scientific seminars, lectures, demonstrations and exhibits. This is the 86th meeting of the Association, the oldest state veterinary society in the United States.

Presiding over the organization was Dr. Blaine McGowan, Jr., a professor of Ovine medicine at the University of California, School of Veterinary Medicine, Davis. He is the first veterinarian from the teaching profession to head the 2500 member California organization.

Chairman of the convention was Dr. Richard B. Fink, a small animal practitioner from Whittier, and member of the Board of Trustees and former President of Animal Health Foundation. Dr. Fink is also Chairman of the ANIMAL CAVALCADE Committee for the Animal Health Foundation. Twelve speakers attended from throughout the United States, including the noted animal cancer specialist, Dr. William Hardy, Jr., of the Memorial Sloan-Kettering Cancer Center of New York.

There were a total of 84 separate seminars, some 100 medical exhibits, and 15 other special programs and meetings. More than 65 speakers and lecturers attended the convention that covered subjects in small and large animal medicine, in research and specialty medicine, and in business administration.

Also attending the sessions was the National President of the American Veterinary Medical Association, Dr. John Carricaburu, a large animal practitioner from Santa Ynez, California.

His recent remarks to the American Veterinary Medical Association set the theme for the 1974 California meeting: *PREVENTATIVE MEDICINE, THE WAY TO ANIMAL HEALTH.*

Ed. Comment: This is the whole idea

of the Animal Health Foundation and its publication — ANIMAL CAVALCADE.

Stressing this concept, the profession has pushed hard for responsible pet ownership, research in birth control for animals, the development of specialty and group practices, and an extensive program of advanced education.

In addition to education and research, the California Veterinary Medical Association was the leader in establishing the new "Animal Health Technician Act" (SB-1811) that will provide new standards and guidelines for veterinary technicians. Other programs sponsored by the profession in 1974 included the making of an educational film on animal health care, "Love Means Caring," of the establishment of the Academy of Veterinary Medicine to honor practitioners who have taken advanced training and won approval of Board Certified Specialties for DVMs.

Some highlights of the program included:

Acupuncture Ophthalmology and diseases of the eye; the new *Animal Health Technician* program in California; *Abnormal Behavior Patterns* in animals; *Infertility in Mares*; Lectures on *Food Animal Production*. *Feline Leukemia* was discussed in a special fee seminar.

The California Association, founded in 1889 in San Francisco, is the largest and oldest State Veterinary Association in the United States. The 2500 members in California represent 10% of all practicing veterinarians in the United States. Approximately 65% of the membership is in small (pets) animal practice, and advanced specialty medicine such as radiology, cardiology, and ophthalmology. Californians in large animal practice (farm animals, food producing animals, horses and other livestock) represent one in seven of all veterinarians serving the state. There are also more than 500 Doctors of Veterinary Medicine serving zoos, public service, research, education and government service in California.

California has one of the 20 veterinary schools in the United States and Canada, located on the University of California campus in Davis, California. It has been rated as a top veterinary school in the nation by the National Science Foundation. With a new class enrollment of only 94, all but two from California, the school is the most difficult medical facility to enter in the State. (Only one qualified student in ten is admitted). About 30% of incoming students are women. At this time, it takes between 8 and 10 years to complete the program requirements for a degree of Doctor of Veterinary Medicine (D.V.M.)

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LYMPHOCYTIC CHORIOMENINGITIS ASSOCIATED WITH PET HAMSTERS

Infectious Disease Section and
Veterinary Section,
California State Dept. of Health

Background

Lymphocytic choriomeningitis (L.C.M.) virus was first described in 1934, during studies of encephalitis in St. Louis, Missouri. The disease in man was first described in 1935. Subsequent studies showed that the common grey house mouse, *Mus musculus*, is the normal host of the virus, usually carrying it asymptomatically and transmitting it occasionally to man via the respiratory route or urine-contaminated food. Other animal species have since been found to be infected sporadically with the virus, including various laboratory animals. The virus is particularly troublesome as a contaminant of laboratory animal breeding colonies, and of cell cultures in research laboratories.

Although it had been known since 1942 that hamsters could be infected experimentally with L.C.M. virus (apparently without showing signs of illness), infections in hamster colonies and transmission to man from this source were not reported until 1965. Several reports of such incidents have appeared since then, with concern expressed that the problem might spread to pet hamsters, but with no documented occurrences until the present situation.

The Present Problem

The present problem was recognized first in New York State in late January, 1974, when human cases of L.C.M. were traced to pet hamsters acquired from the Aquarium Supply Company (Hartz Mountain), which obtains hamsters through Tampa Livestock Distributors, Inc., Tampa, Florida. The company estimates that it distributes approximately 1/4 of the pet hamsters sold in the U.S., and that California receives about 8% of their distribution. Approximately 24,000 hamsters were sold by this company in California during December/January. The problem has apparently been traced to one of the breeders, who first began supplying golden hamsters to Tampa Livestock Distributors on December 4, 1973. The long-haired variety (angora, or "Teddy-Bear") were *not* produced in this colony. This breeding colony has now been closed



down. The last hamsters supplied by this breeder were on March 20, 1974. As of April 5, 1974, the company agreed to cease shipping hamsters to California, and to remove remaining hamsters from sale, until final assurance can be given that all their remaining breeding colonies (approximately 15) are free of the virus as well. Thus far, 29 human cases of L.C.M. have been found in California.

The Disease in Man

The virus can cause a spectrum of disease, including meningitis, meningo-encephalitis, influenza-like illness, various other complications involving heart, kidneys, or other organ systems, and probably asymptomatic infection, although the latter is not common. Fatalities are rare, but have been well documented. Typically, the illness begins after a 1-2 week incubation period, as fever, headache, malaise, myalgias, and coryza or cough. There may be a remittant course with up to three recurrences of symptoms. The recurrent meningeal phase consists of stiff neck, fever, severe headache, malaise and prostration. Permanent sequelae are rare, but convalescence is often prolonged. The spinal fluid usually shows a lymphocytosis and increased protein.

Conclusions and Recommendations

An attempt has previously been made via news media to advise the public to dispose of hamsters supplied by the Aquarium Supply Company for purchase in California's retail outlets in December, 1973. The evidence thus far has shown that the major problem in California was in this time period. Some infected hamsters may have been supplied subsequently by this Company to their regional distributors and retail pet stores in California, up until March 20. However, there has not been evidence of a continuing disease hazard sufficient to require disposing of *all* hamsters bought from *any* and *all* of the stores supplied by the Aquarium Supply Company from January, 1974, up to the present time. The problem is greatly compounded by the subsequent breeding, resale,

trading, and gifts of hamsters, and the difficulty or impossibility of tracing back each hamster to its original source. Surveillance should be continued for L.C.M.-like disease in persons associated with *any* hamster, to assess the full scope of the problem.

Hamsters known to be from the Aquarium Supply Company source or their progeny or cage mates may be disposed of at local animal shelters. The bedding should be burned or buried and cages well cleaned.

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FACTS YOU MAY NOT KNOW

- **IT IS COSTING YOU, THE AMERICAN TAXPAYER, \$230 MILLION A YEAR** for animal control agencies to try to cope with the problem of surplus cats and dogs—mainly by killing. The reason: uncontrolled breeding of pets.
- **"JUST ONE LITTER" IS NOT NECESSARY FOR YOUR PET'S HEALTH AND WELL-BEING.** The joys of motherhood are *not* part of your pet's goals in life.
- **THE CHEAPEST FORM OF BIRTH CONTROL FOR A DOG COSTS \$1.98 — THE PRICE OF A LEASH.** Obey the leash law. Do not let your pet roam unsupervised, day or night, with or without a tag.
- **UNWANTED PET PREGNANCY CAN BE TERMINATED.**
If your pet becomes pregnant before you have had a chance to get her spayed, you can
 - Have the pregnancy terminated with an injection of stilbestrol within 24 hours, or
 - Have her spayed while pregnant. Ask your veterinarian.
- **HANDING OUT PUPPIES AND KITTENS ON PUBLIC SIDEWALKS IS NOT ONLY ILLEGAL; IT ALSO CONTRIBUTES TO THE PROBLEM OF UNWANTED PETS.** The person who takes your puppy or kitten today often abandons it tomorrow.
- **THE THOUSANDS OF UNWANTED OR UNCARED-FOR STRAY DOGS AND CATS—OWNED AND UNOWNED—THAT ROAM OUR CITIES LOWER THE QUALITY OF LIFE FOR ALL HUMANS:**
 - They are run over by cars and trucks and often cause traffic accidents.
 - They increase the danger of animal bites—especially among children and senior citizens—and are a menace to persons in parks, other recreation areas and school yards.

EACH ANIMAL THAT GOES THROUGH A PUBLIC SHELTER COSTS YOU, THE TAXPAYER, \$20!

Excerpted from Zero Pet Population Growth Booklet.

IS THE HORSE'S TAIL A BRAIN ?

By James R. Rooney, D.V.M.
University of Pennsylvania
School of Veterinary Medicine

I should like to have a bit of fun with you — a bit of frivolity in a sea of serious problems. One of the essential aspects of comedy, however, is that it must be based on something serious. See what you think.

I have an idea that the tail of the horse is of more importance than generally realized. We know that it is useful for swatting flies, and human faces, but there may well be more. I remember clearly a big trotter who, though a powerful, steady kind of horse, was very rough-gaited behind. The trainer for whom I was working at the time had been around a long time and knew his horses. He had me braid a bandage into the horse's tail and tie it to the sulky or cart whenever the horse worked. The rough gait disappeared.

Second point: it has long been known that one can inhibit or prevent a horse or cow from kicking by elevating the tail. It works much better with the cow but can be used with some horses, as well.

Third point: if a horse breaks his tail near the root, close to its attachment to the croup, he may well be uncoordinated (ataxic) in the rear legs from that time on.

What does all that add up to? Though it is very difficult to detect, elevating the tail causes a reflex extension of the rear legs; that is, the legs tend to be straighter or held straighter. Conversely, tying the tail down tends to cause the legs to flex, a slight tendency to squat down. The big trotter was going stiff-legged behind. Tying his tail down enhanced flexion of the rear legs which smoothed out the gait. When you hold the cow's tail up, the rear legs are extended, and the cow cannot kick because she cannot flex the legs, and she cannot kick without flexing the leg first.

To test this idea further we rigged up a little harness to hold a horse's tail up while he walked and trotted slowly. Several of the animals tested tended to stub their toes when walked or trotted with the tail held up, evidence that the

rear legs were either over-extended or (the same difference) not flexing as much as normal. Going further we tied the tail around to one side: the horse stubbed his toe on that side; tied around to the other side, he stubbed the toe on that side.

That's all very interesting, but what practical significance does it have? We shall use the example of the galloping horse. The horse is galloping along, flying through the air with all four feet off the ground. The rear legs are being brought forward, flexed, preparing to contact the ground. The rear legs next begin to extend, reaching down for the ground. At the same time the tail elevates. There is no difficulty in seeing this in movies, still pictures, or even just watching horses galloping. It is a real phenomenon and not simply an illusion created by the fact that the rear legs are moving forward. Once the legs are on the ground and bearing weight, the tail moves down again, and the legs are flexing under the weight.

It seems possible, then, that the horse is, in some way, using his tail as a small "brain" to assist the coordinated movement of his rear legs. You have all noticed how many horses' tails sway back and forth, from side to side, as they walk. I suppose you have assumed, as I used to, that this is simply a result of the swaying of the croup. It may be, but I should like to suggest, again, that the tail *may* be coming first, helping the legs to know what to do. The tail sways to the right and the right leg is extending. It sways to the left and the right leg flexes and the left leg extends.

I really cannot say, at this point, with any certainty, that the tail is of primary importance in the movements of the rear legs, but the possibilities certainly appear very interesting. One thinks, for example of the set, elevated, tails of the show horses, and the exaggerated gait of the show horse. I should be most interested to hear from anyone with observations or ideas on this subject. Perhaps, someday, we can pursue it farther.



Three canine members of the Gregory Clan. Two are muts, the other cost \$150.00.

A NEW BREED...**"the MUT"**

by
Diana Gregory

There's a new breed of dog afoot . . . no, it's not some fancy cross, it's a lot of fancy crosses. The mut has been with us for some time, but he's never been a MUT before.

MUT (Mongrels United Together) is a new organization dedicated to all muts and their proud owners everywhere. There's a lot of them out there. They (the muts, not the owners) are sometimes handsomer, smarter, and a lot more dog than those that have papers attached to them. Yet, they are not taken seriously by anyone but their owners.

The beginnings of MUT were founded in an incident that involved a youth organization. The founder of MUT was a volunteer leader for a dog care project in which the kids worked with their dogs in obedience training for one year. However, at the end of the year ONLY those with registered dogs could compete at the County Fair, the culmination of the year's work. Where did that leave the rest? With some mighty fine trained animals and some pretty hurt feelings.

MUT is trying to change this state of affairs. They are not out to compete with the American Kennel Club or any other dog registry. Nor are they trying to populate the earth with unwanted animals. In fact, just about the opposite is true. They would like to get the word out about how to locate low cost spaying and neutering clinics and to spread more knowledge about population control and proper immunization programs. Their goals also include setting up sanctioned obedience trials with standardized rules and regulations just for MUTS.

To get this all out, they have a monthly publication, BARKINGS, filled with news, training tips, pen pal clubs, and other tidbits of interest to owners of MUTS.

So, if you'd like to find out more about MUT, contact: Diana Gregory at Johana Farms, 2067 Lakehills Drive, Folsom, CA 95630. Cost of membership is \$3.00 per year.

NEW DISCOVERIES MADE . . .

HOW BIRDS NAVIGATE

Reprinted from *Cornell Reports*
May 1974

Cornell researchers have found a partial answer to a question that has baffled scientists for years. What subtle sensory cues enable a bird to navigate its way to an unseen site and then home in with spectacular accuracy?

Researchers at the New York State College of Agriculture and Life Sciences have found for the first time that birds can sense small changes in air pressure, equivalent to a drop in altitude of less than 20 feet, and can "see" polarized light. (Polarized light is characterized by having all its energy waves vibrating in one direction).

William W. Keeton, professor of neurobiology and behavior, and Melvin L. Kreithen, a post-doctoral associate, also stressed that their work adds evidence to the idea that birds live in a sensory world unknown to man.

Although Kreithen and Keeton have not yet determined to what extent birds use their newly discovered sensory powers, they speculate that the ability to sense polarized light and barometric pressure changes would be of major value to birds, both when flying and on the ground.

They explained that migration takes place on relatively few nights of each season. In general, a falling barometer reading, indicating dropping pressure, implies favorable winds for all migration, and a rising barometer is a sign of winds suitable for northward migration in the spring.

If birds can detect changes in barometric pressure while still on the ground, they can judge the best time for committing themselves to marathon migration flights.

"Barometric information could also be of value to birds for predicting a night's weather, such as the passage of a cold front," Keeton and Kreithen said.

The Cornell researchers also said that the ability to sense polarized light would be a prime navigation aid to birds, since the plane of polarized light in blue sky is related to the position of the sun. The detection of sky polarization could be used as a navigation cue when the sun, which provides compass cues, is obscured by clouds.



CHILDRENS page...

Name the Dog...

By
Linda Bosson

These definitions should give you
a clue to the names of six types
of dog. What are they?

Answers on Page 27

- | | |
|----------------------|------------------|
| 1. Fighter | 4. Hoarse |
| 2. Canadian province | 5. Mexican state |
| 3. Useful suggestion | 6. Pickle relish |

Smokey the Cat!

Photo courtesy D. E. Boyd



David Drake of Edgewood, Md., holds "Smokey," the "posing cat!" Every time a picture is snapped "Smokey" poses just right. In this one David said, "Smokey, don't look at the camera — just be natural!" This was the result!

NEWS

Continued from Page 20

DEFINING AGE

The geriatric dog is the animal the latter two-fifths of his breed's life expectancy, says Dr. Gerald Rubin of the College of Veterinary Medicine at Oklahoma State University. In an article on canine and feline geriatric patients, in *The Oklahoma Veterinarian*, he gives as an example the Cocker Spaniel whose life expectancy is 15 years. This dog is a geriatric patient after 9 years of age. But another example is the Great Dane with a life expectancy of 10 years and a geriatric patient after age 6. The article outlines in-depth examination procedures to detect changes in the organ functioning of geriatric dogs before such changes become irreversible.

Courtesy Dog Progress Digest

AGRICULTURAL WASTE MAJOR PROBLEM

Agricultural crops and products are among the first to suffer from agricultural waste. Contaminated waters make the watering of livestock or the irrigation of crops more difficult. Houseflies and stable flies bred in feedlot manure or in peanut litter, rotting straw or other crop residues, may worry livestock to the point where there are material losses in beef production and a 25% decline in milk production.

American agriculture each year generates nearly 10 times as much solid waste as all our cities, towns, suburbs, and communities combined. Some of the feedlots have sewage problems the equivalent of one million people living on 320 acres, a population density 26 times that of Calcutta.

Each year agricultural activities generate 2.5 billion tons of solid wastes, more than half of all solid wastes from all sources. Included are manure and other animal wastes, crop residues and timber slash, and food processing wastes.

Animal wastes constitute the biggest share and the biggest problem: 1.1 billion tons of fecal waste, 435 million tons of commingled liquid waste, and another 200 to 400 million tons of used bedding, paunch manure from slaughtered cattle, and carcasses. In all, waste production by domestic animals in the U.S. is equivalent to that of a human population of 1.9 billion.

The environmental problems of ani-

mal wastes stem principally from their concentration and the manner of handling. When animals were raised on family farms, each farmer had only a manageable amount of waste to handle and he generally used it as fertilizer. Today beef cattle, dairy cows, hogs, and chickens are raised in high-density feedlots and poultry houses. The USDA estimates that more than half of the 600 million domestic animals are raised under concentrated conditions.

Dangers to Human Health

Farmyard and feedlot runoff waters are a major cause of stream and lake pollution. They are a major source of nitrate contamination in nearby wells and groundwater supplies. This is a health hazard because nitrates in drinking water can cause methemoglobinemia (blue babies) in infants. In hog pens and other areas where the wastes are acid, secondary amines may be produced and combine with nitrite to form carcinogenic nitrosamines. A large but indeterminate number of diseases that may be transmissible from farm animals to people further complicate the environmental health question. Histoplasmosis is a human disease, most often affecting the lungs, caused by a fungus that thrives on poultry droppings. Other diseases transmitted through animal wastes include liver necrosis (listeriosis), and infectious jaundice (leptospirosis), cholera, parrot fever (psittacosis), about 30 enteroviruses, including poliomyelitis and Cocksackie, infectious hepatitis, brucellosis, many fungal infections, including thrush and cryptococcus, salmonellosis, trichinosis, and many worm infections.

Some pollutants from animal wastes are airborne. About 90% of the ammonia in urine and manure quickly volatilizes into the air, where it is easily trapped by plants and water surfaces. Odor is generally regarded as the toughest problem facing livestock and poultry producers.

Manure vs. Chemical Fertilizer

Land disposal of one sort or another is the dominant method of handling animal wastes. In some areas a substantial portion of animal manure is still used as fertilizer; however, this is not very popular with today's farmer. It takes a ton of high-quality feedlot manure to supply as much nitrogen as 22 pounds of ammonium nitrate fertilizer. Handling costs are high, storage problems severe, and the manure must be worked into the soil. Farmers can buy and apply chemical fertilizer cheaper than they can apply compost obtained without cost.

Reprinted from dvm/November 1973

"SNAKE DOCTOR"

Continued from Page 13

of the snake's natural surroundings—pine straw, branches, grass. Especially important is to give the snake a dark place "to get away from it all." Since the snake's eyes will not close, he needs darkness to sleep.

—You should be careful of mixing species in the same cage. Another sort of over-feeding could be the result for one of them.

—Cages should be built sturdily, with several coats of paint and joints screwed and glued. The front viewing glass should be either safety glass or double-thickness standard glass.

—And, lastly, the cage should open from the top. "I learned this the hard way, after I found you can't handle two snakes at one time when you have a side opening," Captain Taylor says with a smile.

So, what's the use of keeping snakes, unless you can make them part of your work, as Captain Taylor does? "Snakes won't show affection like cats or dogs," he agrees, "but they are fascinating to watch."

"And they do develop personalities. My wife swears the rattler is neurotic because of the way he prowls around his cage." Some snakes adapt well to captivity; some, even among the same species, do not.

And, for the prospective snake fancier, another consideration should be other family members. Captain Taylor says his wife has become accustomed to having them around. Most of the time, that is.

"When I was still in graduate school, and I had several dozen rattlesnakes at home," he remembers, "I was taking them to school the next day, but had to find a place for them overnight. I decided to put them in the shower but forgot to mention this to my wife. She came home while I was out of the house and decided to take a shower. Needless to say, she didn't complete her shower."

Captain Taylor will soon be moving to new Air Force duties at Brooks AFB, Texas, but plans on taking at least some of his collection along.

"The mud snake is something of a rarity in the San Antonio area," he muses, in contemplation of getting a whole new collection started.

IF YOU HAVEN'T SUBSCRIBED TO ANIMAL CAVALCADE — ASK YOUR VETERINARIAN FOR A COPY TO READ.

GERBILS *continued from page 9*
environment. The best way to do this is by utilizing a fish tank or plexiglas panels taped together in a similar manner. Fitted with a cover of heavy mesh hardware cloth, the fish tank makes an ideal home — you can see in, and they can see out.

Since gerbils enjoy digging, provide your pets with a bedding that is easily moved around. Begin by putting in a total of 2 inches of crushed corn cobs, dry sand, straw, leaves or newspaper. Add a few clean rocks or seashells and watch what happens.

After a few days, add a few tubes for him to run through and chew on — toilet paper tubes, frozen juice containers, empty milk cartons, cereal or cracker boxes, and see how excited and curious the gerbil can be with this "furniture." The activity will be fast and furious as he investigates and then demolishes these items.

Even a gerbil needs a few "toys" — but the kind you provide can be of service to him too. Since his teeth grow constantly throughout his lifetime, he'd starve to death if they grew unchecked. Given metal or wood (even hard plastic) objects to chew on, his teeth will stay short and healthy. He's his own dentist.

Feeding your gerbil is fun and allows you to be a gourmet chef. Remember, if you feed fresh roots and vegetables as well as seeds and dried foods, your gerbil will be healthier and more active than if fed pellets and water from a bottle. Bottled water is unnecessary. Gerbils are desert creatures. Be sure to remove uneaten fresh vegetables daily to avoid a smelly tank.

Be gentle with your gerbil if you remove him from the tank. He's so tiny and fragile and easily startled. Place your hand in slowly, palm up, and allow him to climb into it before gradually removing him from the tank. Be sure he can't escape from the room if he gets away. Gerbils enjoy chewing up furniture and woodwork as much as those "toys" you put in the tank. And, please don't take him outside. He might be injured or lost.

One gerbil can be fascinating, but two are twice as much fun. If you get a compatible pair, you may end up with litter after litter — which may lead you into a lucrative business among your friends, or even with reputable laboratories that buy them for research purposes. Before you get that far, however, investigate carefully, for some youngsters have been led into costly hoaxes in this area.

Gerbils are truly family pets, and can provide years of enjoyment and entertainment for adults and children alike. Shut-ins and disabled or elderly persons would find a gerbil a fine companion. How about getting grandma or grandpa a gerbil for a pet?

TORTOISE *continued from page 15*
March or early April. They appear very sluggish at first, but as the weather warms up, their interest and appetite improve.

Tortoises mate during the summer months. The female must be five years old before she can lay eggs. She digs a hole with her back feet, slowly and deliberately. It is tedious work and takes hours.

After laying the eggs she has no interest in the clutch or in the young when hatched.

After the eggs have been laid they should be removed from the nest and the top marked with a pencil to insure that it is kept in the same position. According to Linda, "The minute the egg is laid, the embryo is established, and if you move it, it gets damaged."

There is a strong possibility, even with ideal conditions, the entire clutch of eggs will be infertile and not capable of hatching.

The eggs should be placed in an incubator. The Roys used an aquarium and filled it with one inch of dirt. The temperature was kept at a constant 85° and a small dish of water was placed in it for moisture.

Linda explained, "After one month you can hold the eggs up to the light," providing you don't move them around, "and see the red blood vessels inside."

Desert tortoise eggs hatch anywhere between 76 and 120 days. The average time is usually 85 to 90 days.

Lulu, who is over 25 years old, was the first tortoise to lay eggs at the Roy home. She laid 10 eggs on July 9, 1973. (Six is the usual number of eggs laid, and 11 is a record.)

On August 9, 1973, Charlie (they thought she was a male!) laid one egg and a second one on August 13.

Only 73 days later, on September 19, at 10:30 p.m., Linda looked at the aquarium and to her amazement and joy, one of Lulu's eggs had cracked and as she looked closer, there was a leg sticking out and wiggling around.

She could hardly contain her excitement, but she knew she had to wait 24 hours to see if the tortoise would be able to hatch by itself.

The 24 hours came and went, and Linda realized she would have to assist. She took tweezers and a cotton swab and removed the outer shell, piece by piece.

Finally, the tortoise pushed its way through the remaining membrane. "I had to do this for every one except the last one!" Linda exclaimed. Only six of Lulu's 10 eggs hatched.

Each baby tortoise had a white membrane layer over its eyes. Gary took a wet cotton swab and worked nearly an hour on each hatchling, removing it.

Hatchlings have an egg yolk sac that

usually protrudes for the first few days. There is enough nourishment in this sac to sustain the tortoise for a couple of days. It is imperative that this sac does not rupture because the hatchling could bleed to death.

To avoid this, Linda put vaseline on the sac. This outer sac dried up in one day.

The sacs on the last two were very large, and the hatchlings were deformed in shape. Linda said, "I wasn't sure they were going to make it." (They all survived and are doing well.)

The sixth tortoise, and the last one hatched, was found walking around in the dirt.

As soon as they are hatched, baby tortoises should be offered water, but the sac must be kept dry. "They need to get their heads in the water, but as soon as they were through, I dried them with a paper towel," Linda explained.

Hatchlings enjoy soaking in shallow water. A saucer of water should be available throughout their development. They are fed the same food as the adults but it must be finely chopped or minced.

The shells on these baby tortoises remain flexible for several months, but harden as they grow.

Linda provided a large aquarium for the six baby tortoises. Natural unfiltered light is needed for proper growth and shell hardness, and this was provided with an aquarium light.

A cardboard box was inserted to provide shade so they would not dehydrate from the heat of the light.

Lulu's four remaining eggs and Charlie's two eggs never did hatch.

The baby tortoises must be protected and kept warm for two years before allowing them to remain outside at night. However, on warm days, they can be outside for short periods of time.

Hibernation only begins after the tortoises remain outdoors day and evening.

Whether roaming their natural habitat or living in captivity, the tortoises will be protected in the future.

The Bureau of Land Management is considering establishing a large parcel of land in the low desert of the western Mohave Desert as a reserve where tortoises and other wildlife can roam unmolested.

NAME THE DOG SOLUTION

from page 24

1. BOXER
2. NEWFOUNDLAND
3. POINTER
4. HUSKY
5. CHIHUAHUA
6. CHOW CHOW

CURRENT STATUS OF EQUINE ARTIFICIAL INSEMINATION IN THE U.S.

By
B. W. Pickett and J. L. Voss*

**Dr. B. W. Pickett is Director of the Animal Reproduction Laboratory and Professor of Physiology and Biophysics, and Dr. J. L. Voss is Professor of Veterinary Medicine and Assistant Head, Department of Clinical Sciences, College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins 80521.*

Reproductive efficiency is lower in the equine than any other species of farm animal. This is true primarily because the equine industry has not incorporated the benefits of modern scientific technology, such as artificial insemination (A.I.), into on-the-farm management.

Some of the advantages of A.I. in the equine are as follows:

1. Permits disease control.
2. Reduces the possibility of injury to small, shy, or nervous mares and/or stallions.
3. Stallions that have developed poor breeding habits or have been injured may be used in an A.I. program when natural service is not possible.
4. Semen is evaluated at each collection, thus minor changes in seminal quality are observed immediately.
5. Aids in identification of reproductive problems.
6. Prevents overuse of a stallion, particularly early in the breeding season.
7. Permits more effective use of older, more valuable stallions.
8. Mares can be bred at the most opportune time for maximum chances of conception.
9. Encourages an accurate record-keeping system.

Two of the most important advantages have to be "disease control" and "mares can be bred at the most opportune time for maximum chances of conception." To the best of our knowledge, the treatment of venereal disease in the stallion is ineffective. However, in most instances, the semen can be collected with an artificial vagina placed in an extender (a solution that is compatible with the spermatozoa, containing antibiotics, and then mares can be bred without becoming infected because the antibiotics in the extender killed or rendered the pathogenic organisms noninfective.

The advantage of having semen available when needed is obvious to anyone who has had five mares in heat that needed to be bred and only one stallion to do the job. If the semen from a normal stallion is collected every other day, he will produce enough spermatozoa to breed approximately 17 mares.

It has definitely been proven that A.I. will provide a higher conception rate than natural service. This information represents 2,371 mares bred over an 11-year period. There was a marked difference in favor of A.I. with respect to conception rate and live foals.

In 1967 Colorado State University's College of Veterinary Medicine & Biomedical Sciences initiated a program in equine reproduction.

Summary and Conclusions

1. Tris extenders, in concentrations utilized in these studies, depressed fertility.
2. The fertility of spermatozoa in a cream-gel extender appeared to be equal to the fertility obtained with an equal number of spermatozoa in raw semen.
3. Insemination of mares with as little as 0.6 ml of semen resulted in acceptable pregnancy rates.
4. There was no difference in pregnancy rate between 100 and 500 million motile spermatozoa per insemination when raw semen was used. When Tris-extended semen containing 100 or 500 million motile spermatozoa was employed, the effect of low spermatozoal numbers and a poor extender was additive and resulted in depressed fertility.
5. For maximum use of the stallion and minimum labor in the breeding program, semen should be collected every other day and all mares be bred that have been in heat two days or longer.
6. It appears that the inherent fertility of mares is much higher than originally anticipated.

Acknowledgements

These investigations were supported in part by grants-in-aid from American Breeders Service, National Association of Animal Breeders and the Arabian Horse Registry of America, Inc. through the Morris Animal Foundation. Appreciation is expressed to Mr. John McLemore, Diamond Laboratories, for a generous supply of MIP-TESTS for pregnancy determination. Portions of these data were presented at the 18th Annual meeting of the A.A.E.P.

Editors Note:

Dr.'s Voss and Pickett provided Animal Cavalcade with data on these studies which is available to our readers who may want to explore the subject more fully.

Readers interested in assisting in further studies by these men may do so by contributing funds to the Animal Health Foundation, 8338 Rosemead Blvd., Pico Rivera, CA 90660.

Date _____

I AM INTERESTED IN MAKING A BEQUEST TO THE ANIMAL HEALTH FOUNDATION. PLEASE SEND ME INFORMATION ABOUT THE PROCEDURE AND POSSIBLE TAX ADVANTAGES. I UNDERSTAND THAT THE GIFT MAY BE IN MY NAME FOR A SPECIFIC PURPOSE.

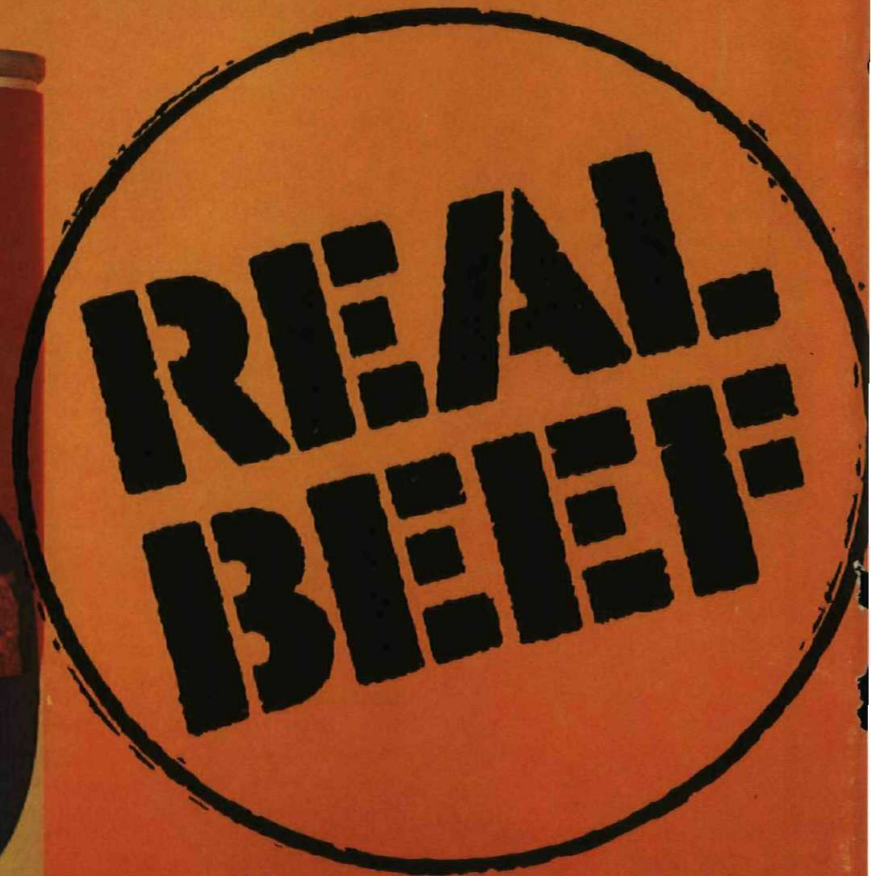
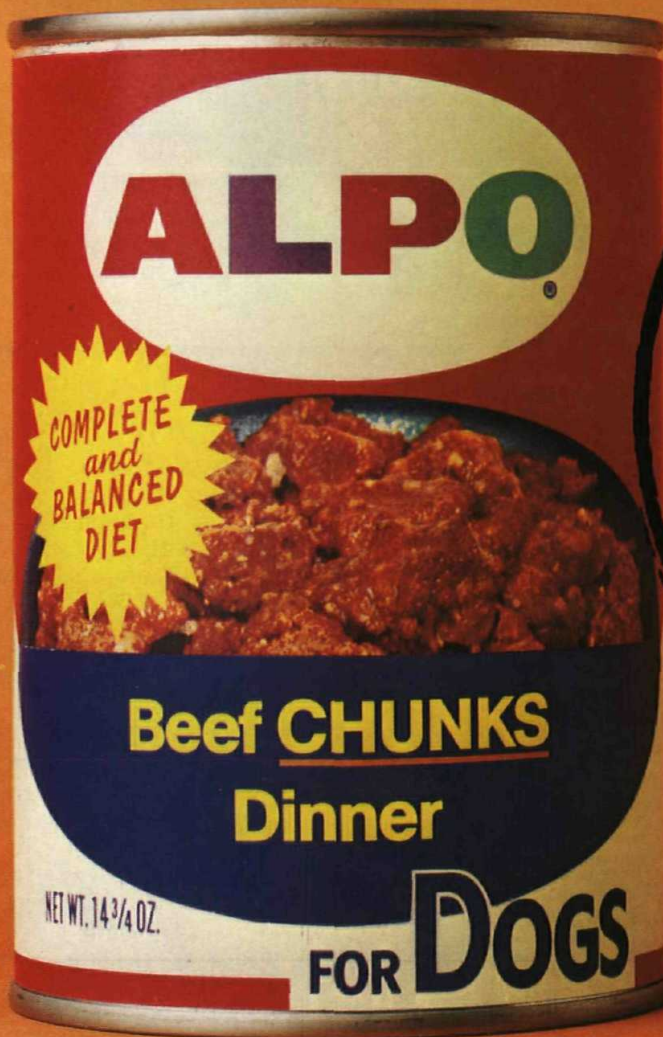
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ANIMAL HEALTH
FOUNDATION
NEEDS YOU!

The best reason to feed your dog ALPO®: lots of real beef.



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Just because a dog food comes in a can doesn't mean it contains any real beef. ALPO Beef Chunks Dinner does!

You'll find lots of real beef and meat by-products in an ALPO can. That's what makes ALPO different from other leading canned dog foods. Most other leading brands don't even come close to the amount of beef that ALPO has. In fact, some of them have no beef at all! But ALPO is famous for its beef. Big, thick, juicy chunks of it.

The kind of beef dogs love gives ALPO Beef Chunks Dinner a difference a dog can taste. So, if you want real beef for your dog—you'll find it in a can of ALPO. Oh, ALPO may cost a little more (you're getting more real beef), but—after all—

doesn't your dog deserve ALPO?

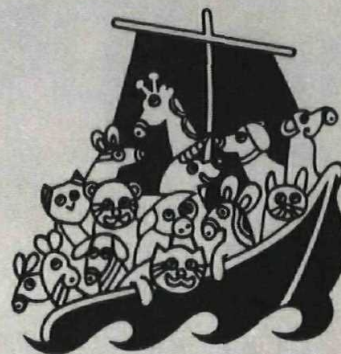
toward a world of HEALTHIER ANIMALS (and happier owners)

That's the whole idea behind ANIMAL CAVALCADE, a creation of the charitable, non-profit Animal Health Foundation, which also is involved in scientific studies of basic animal illnesses and a program that seeks to provide veterinary treatment for sick and injured animals of families with low incomes.

Our deepest thanks to the veterinarians of our Founders Circle, who made possible the launching and (now) the funding of ANIMAL CAVALCADE Magazine. Lists like the one below will follow from time to time. And sincerest appreciation to those animal owners and lovers who are supporting ANIMAL CAVALCADE with their contributions and subscriptions.

Gifts or bequests are tax deductible, of course.

ANIMAL CAVALCADE



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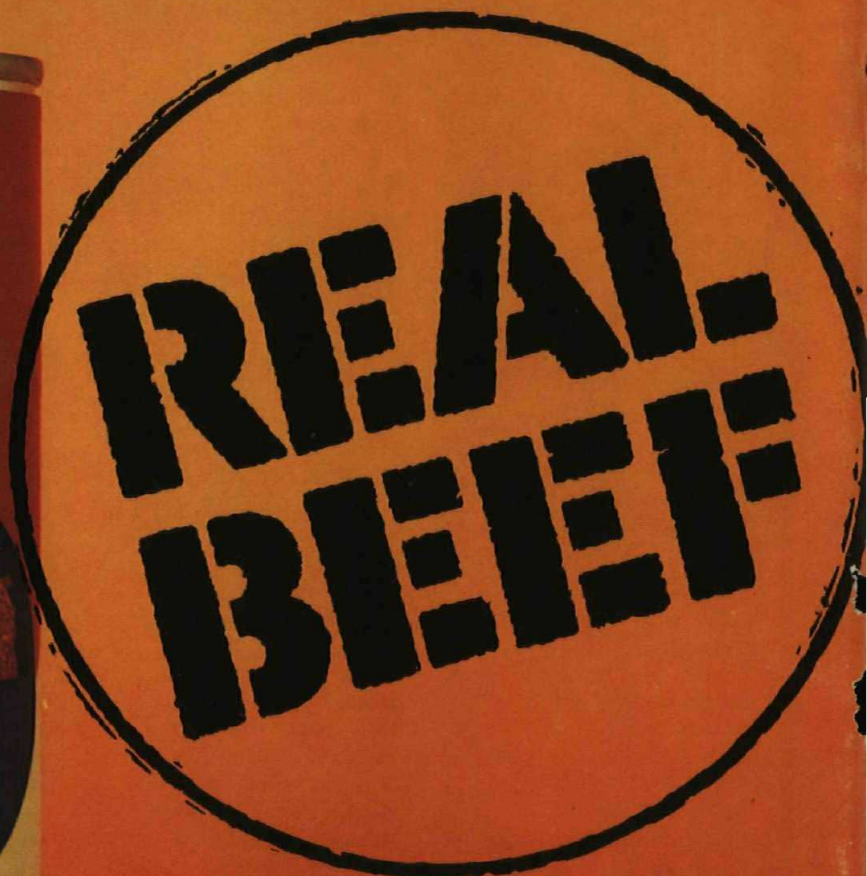
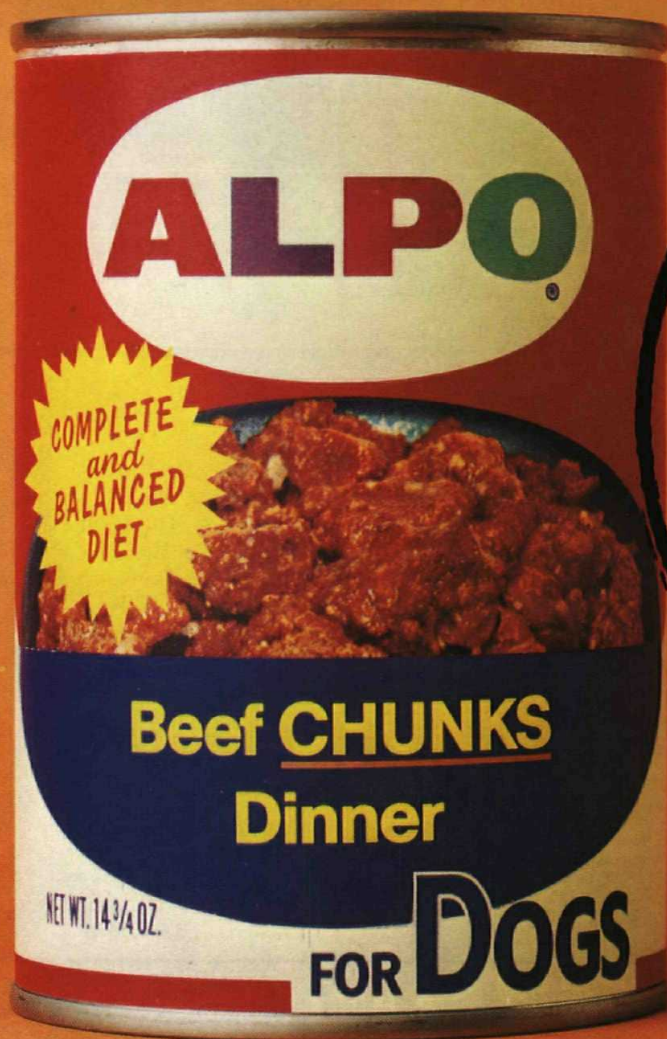
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