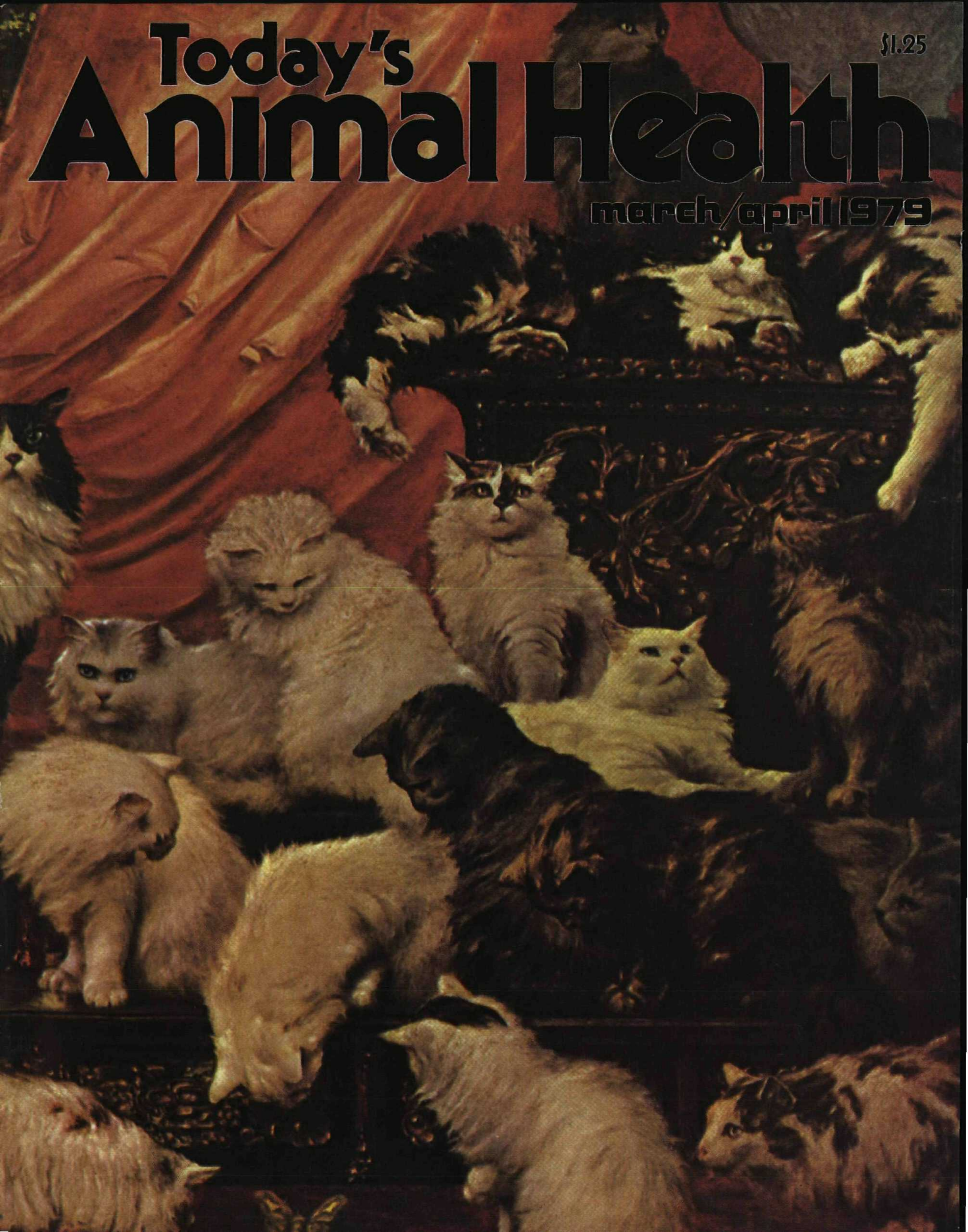


Today's **Animal Health**

\$1.25

march/april 1979



Today's Animal Health

Volume 10/Number 2

March/April 1979

Cover

"MY WIFE'S LOVERS"
Painted by Carl Kahler

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Exotic Animals Editor

ADVERTISING SALES

Will Decker, Advertising Director
22312 Kirkwood
El Toro, CA 92630
(714) 770-8050

TODAY'S ANIMAL HEALTH is published bi-monthly by the nonprofit charitable Animal Health Foundation
8338 Rosemead Boulevard
Pico Rivera, California 90660.
Single copies \$1.25. 6 issue subscription, \$4.50. Copyright, 1979 Animal Health Foundation

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

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

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dialogue

I have been very impressed with the articles in your magazine.

My parents are Saint Bernard breeders and very conscientious in their treatment of animals. I know they will value your magazine as much as I have. I am buying them a two year subscription for a Christmas present this year.

Also, I was very impressed with the December issue and was wondering if you could send me a copy. I am enclosing a self addressed stamped envelope for your reply. Thank you.

Marcia Morris
Yorba Linda, CA 92686

P.S. Keep up the good work!

Today's Animal Health is well written, highly informative and reflects the competence and compassion of everyone involved in its production.

The articles on ophthalmology are especially excellent and they helped

me quite a bit in my Vet Anatomy class.

Congratulations on a fine publication.

Phyllis Kimmelman
Columbus, Ohio

Love your magazine and just felt you might appreciate these little four lines written by a leper!

"My bitter heart grows sweet
When my small kitten
Caring not that I am blind
Is frisking at my feet."

That's it for now. *Taniguchi*

Virginia Daly
CATS OF DALAI
Berkeley, Michigan 48072

Loved your article on Mother Cecelia — could you send her address.

Luellen Malvern
Dallas, Texas

*Mother Cecelia's address is:
Good Shepherd Shelter
Trans Canada Highway RR-1-2500
Mill Bay, British Columbia
Canada VOR2PO*

Cover Photo


"MY WIFE'S LOVERS"
Painted by Carl Kahler

About 80 years ago Mrs. Kate Johnson (San Francisco millionairess) engaged the artist to paint a portrait of some of her 350 Persians and Angoras.

The artist sketched for three years among the cats at Mrs. Johnson's residence, before starting the magnificent (6-ft. x 8 1/2-ft.) original canvas portraying the forty-two feline aristocrats shown in this reproduction.

In her will, Mrs. Johnson bequeathed one-half million dollars for the care of the cats.

The painting is now owned by John and Helene Gaydon of The Old Stage Stop, Buena Park, California, and reproduced with their permission.



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ODD TIDBITS

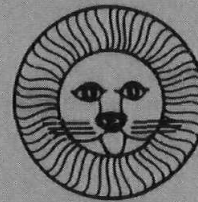


ABOUT CATS

- ☆ There are 10 breeds: Abyssinian, Burmese, Domestic Shorthair, Himalayan, Longhair, Manx, Rex, Russian Blue, Siamese and Tabby. The Longhairs, comprised of 62 varieties, including Angora, Maine Coon, and Persian, are said to have more placid and lazier temperaments than the shorthaired cats.
- ☆ Native to every continent on earth except Australia, today's modern domestic is a cross between the African and European wildcats.
- ☆ They date back thousands of years. mentioned in Sanskrit over 3,000 years ago. The ancient Egyptians worshiped them. When a cat died, its owners entered mourning. They mummified the remains and interred them in cases of wood or bronze in sacred burial grounds. The penalty for killing one was death, as a hapless Roman soldier discovered. He was lynched.
- ☆ Despite the Egyptian prohibition of exporting cats, Phoenician traders introduced them to Europe by smuggling them to Mediterranean ports, according to legend, while Julius Caesar introduced them to Britain.
- ☆ Cat worship was common in Europe until the 15th century, when Pope Innocent VIII ordered the Inquisition to hunt down cat worshipers and have them burned as witches. Consequently, thousands were burned at the stake only because they owned cats.
- ☆ Cats were also worshiped in Peru, China and Japan.
- ☆ In colonial America it became fashionable to take a cat to church on Sunday to keep oneself warm.
- ☆ They symbolize fertility in western Czechoslovakia. One buried in a field of grain guarantees a good harvest.
- ☆ In Switzerland, they became the symbol of liberty.
- ☆ A black cat is supposed to bring good luck in Britain. On the Yorkshire coast, it is believed that fishermen will return safely from the seas if their home has a black cat.
- ☆ A black cat is supposed to bring bad luck in modern Italy. When one crossed the path of a bride as she was about to enter the church, the wedding was stopped.
- ☆ The Abyssinian is considered the oldest breed of domestics. It resembles the sacred cat of ancient Egypt more closely than any other.
- ☆ The tailless Manx is the fastest of all domestic cats. It is supposed to have originated on the Isle of Man, but tailless cats have also been found in China, the Russian Crimea and Malaya.
- ☆ Siamese kittens are born white and become darker as they grow older. Considered the most intelligent of all cats, their vocal range includes a mating call. Legend has it that they were introduced to the western world in 1870, upon being brought to Britain from the Royal Palace in Siam.
- ☆ The Persian cat comes from Persia; the Angora cat from Ankara, Turkey; the Burmese cat from Burma; and the Maine coon cat is part raccoon. Right? Wrong. These, too, are legends.
- ☆ Cats are the longest lived of all small domestic animals. While their average life span is 12 to 18 years, some have lived to the mid-20's and one was reported to have lived to be 33 years and four months old.
- ☆ They usually have five toes on the front foot and four on the back, but some have six and seven toes.
- ☆ Their whiskers and eyebrows are organs of touch. It

is claimed that they have the most delicate sense of touch of all mammals.

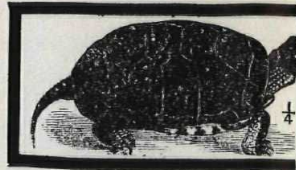
- ☆ They cannot see in complete darkness, just better than most mammals in a dim light. They are color blind, seeing all colors as shades of gray.
- ☆ They catch cold easily, get diabetes, leprosy, tuberculosis and, when excessively fat, become prone to asthma. They also are subject to cancer, especially leukemia.
- ☆ Many cats with white coats and blue eyes are deaf. Since they cannot hear themselves, they are sometimes mute, as well. One such cat used to run up and down the piano keyboard to attract his owner's attention at mealtime.
- ☆ Most cats like music. Some prefer the organ, others piano or violin. One cat would run out of her house whenever her owner played the harmonica.
- ☆ All cats can swim; some swim just for the fun of it. What they don't like is icy cold water.
- ☆ They have been known to teach themselves to ring doorbells, operate door latches, open windows, carry apples by their stems between their teeth and use the toilet.
- ☆ During World War II, they were reported to sense the approach of flying bombs as far as 50 miles away, long before the air-raid sirens sounded.
- ☆ When cats and dogs live together, the cat is often boss.
- ☆ Bottle feed a kitten before it opens its eyes, and it will call you mother for life.
- ☆ A single litter of kittens can have more than one father.
- ☆ Although seven months is normal, a cat may bear a litter as early as four and a half months. She can produce three or more litters a year.



The foregoing items were culled from the following sources:

1. **Encyclopedia Britannica**, Vols. I, II, III, and IX
2. **Cat Owners' Encyclopedia**, Brian Vesey-Fitzgerald; Pelham Books, Ltd., London, 1963
3. **Cats: History, Care, Breeds**, Christine Metcalf Grosset and Dunlap, Inc., New York, 1971 (Bantam Edition)
4. **International Encyclopedia of Cats**, P. 94
5. **The Domestic Cat**, Brian Vesey-Fitzgerald; Pelham Books, Ltd., London, 1969
6. **The Velvet Paw: A History of Cats in Life, Mythology And Art**, Jean Conger; Ivan Obolensky, New York 1963
7. **Cat Genetics**, A. C. Judd; THF Publications, Inc., Neptune City, New Jersey

CONTINUING EDUCATION VETERINARIANS



By Lela H. Edwards

On one weekend this past July, the College of Veterinary Medicine of Texas A&M University was host in College Station to the annual meetings of the American Association of Veterinary Anatomists, the American Association of Veterinary Physiologists, and the Admission Affairs Committee of the Council of Deans, American Association of Veterinary Medical Colleges. In all, some 150 academicians attended the meetings which traditionally take place on the campus of the nearest veterinary college just before the annual national conference of the American Veterinary Medical Association, which met this year in Dallas. The three prestigious meetings at Texas A&M focused attention on the year-around professional continuing education pro-

gram of that University's College of Veterinary Medicine.

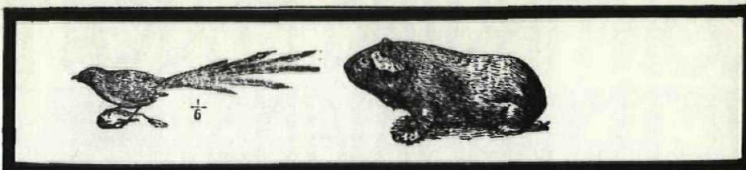
The College of Veterinary Medicine at Texas A&M, one of 23 in the nation and the only one in Texas, is also the largest in the nation. Even though enrollment is restricted — a highly selective process admits about one in five applicants — the number of students admitted is large enough to crowd facilities and test the stamina of the faculty.

A maximum enrollment of regular students creates problems for occasional students: the difficulty in finding faculty and facilities available for conducting additional courses. The only time remaining is on weekends. Fortunately, that is the best time for practicing veterinarians, so on some weekends, they become the students

in the College of Veterinary Medicine, replacing the regulars. Everything else — laboratories, classrooms, operating rooms, and the faculty — remains the same.

Two influences favoring the development of programs in continuing education for veterinarians are economic and professional. These prompt veterinarians to keep abreast of new information and skills in traditional areas of practice, as well as in new areas. One rapidly growing area concerns the relationships between human and animal health: not only are some diseases transmitted from animals to man, but the human population depends on the production of disease-free food animals in quantities sufficient to hold off starvation. Another is the ethical relationship

TION FOR



between the veterinarian, the patient and the patient's owner. In addition to satisfying a personal desire for knowledge, the veterinarian must participate in organized learning experiences in order to meet requirements for membership in the Texas Academy of Veterinary Practice.

For initial election to the Academy, the person applying for membership must have completed 50 acceptable hours of attendance in continuing education activities during the preceding year, and must complete 100 hours during the next two years. To maintain membership, the veterinarian must complete 150 acceptable hours of participation in continuing education courses during each three-year membership period.

There are 3,200 veterinarians licensed in Texas. Many of their needs for continuing professional education have been met by the one filled-to-capacity College of Veterinary Medicine at Texas A&M. The outstanding program created to meet these needs has won national recognition. The whole continuing education effort is remarkable for a fact not even noted in the acclamation: there is no state support for continuing education. The expenses of the course, including the pay for teachers, must be paid by those taking the course.

For several years prior to 1974, the principal continuing education effort of Texas A&M's Veterinary College was directed toward a week-long program, Seminars for Veterinarians, offered late each August when students were away. Responsibility for the program rested in the Veterinary Seminars Committee which was made up of faculty members. The chairman of the committee was Warren J. Kilpatrick, associate professor of veterinary large animal medicine and surgery. In late 1973, the dean of veterinary medicine, George C. Shelton, appointed Dr. Kilpatrick to represent the College of Veterinary Medicine on the

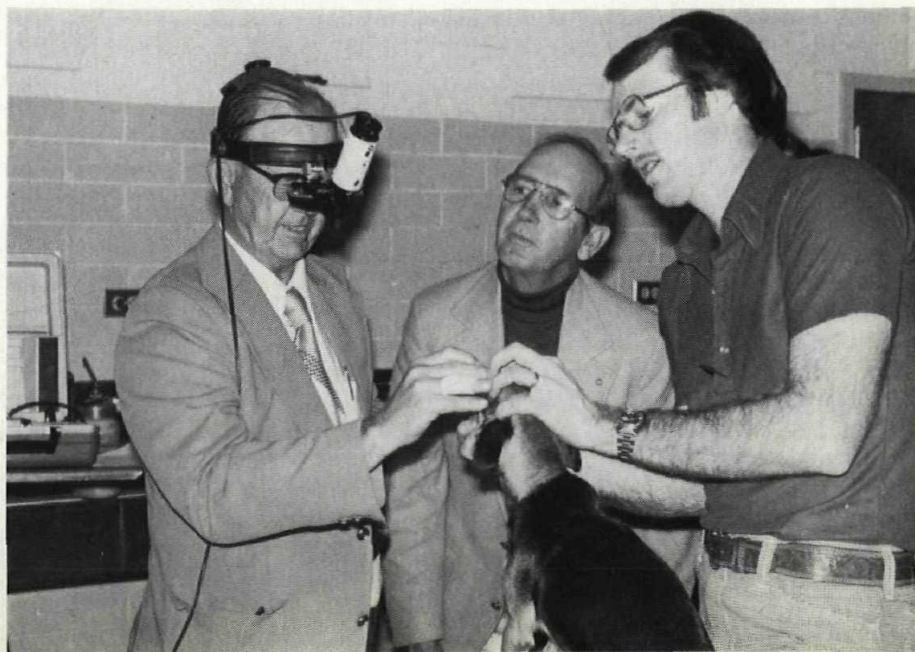
Continuing Education Advisory Council of Texas A&M's new Office of Continuing Education. Dr. Shelton later gave him an additional responsibility and title, coordinator of veterinary continuing education.

Dr. Kilpatrick writes an annual report to Dean Shelton. For the 1974 academic year, September 1, 1973, through August 31, 1974, he listed a total registration in 22 seminars and workshops of 20 veterinary assistants; 505 veterinarians, of whom 90 attended a Toxicology Workshop; and 30 wives of third-year veterinary students in each of six classes, amounting to 180. The no-charge series of six night classes for student wives primarily was involved with both veterinary practice and personal financial management, and with familiarization with office and surgery room environment and techniques. At the end of the 1975 academic year, Dr. Kilpatrick recorded a smaller registration of 31 assistants and 332 veterinarians in 16 courses, but with 184 registered in the six classes for student wives. The report for 1976 was

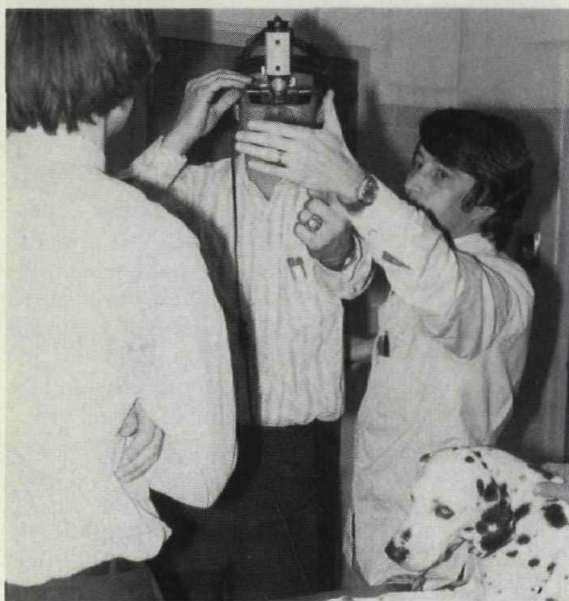
different. But then, so was that year.

Texas A&M University first opened its doors to students on October 4, 1876. Accordingly, the University proclaimed 1976 a centennial year and planned observances and events to commemorate the anniversary. At the beginning of the centennial fiscal year, September 1975, the Veterinary Seminars Committee agreed to a tentative goal for their centennial observance: to try to offer one continuing education activity a week from September 1, 1975, through August 31, 1976. They succeeded. Under Dr. Kilpatrick's leadership, they put on 54 activities and he won a national award for outstanding contributions to an adult education program after nomination by the Office of Continuing Education.

The veterinary continuing education program took a new direction in 1976. Dr. Kilpatrick conducted 22 activities off campus. This kept him moving. One Saturday in January, he held a workshop on Equine Diagnostic Techniques at Bushland, 520 miles from College Station. The following



CONTINUING EDUCATION FOR VETERINARIANS



Saturday, he put on four workshops and seminars — Acquired and Congenital Heart Disease in Dogs, Antibiotic Therapy, Equine Reproduction, and Small Animal Neoplasms — in Galveston, 143 miles from the campus. He directed other activities during that year in Amarillo, Corpus Christi, Overton, San Angelo, Stephenville, and Victoria.

The award to Dr. Kilpatrick, the Faculty Service Award, came from the National University Extension Association. Five such national awards are presented each year to faculty members who have made outstanding contributions to continuing education programs within their colleges while engaged in major teaching and service responsibilities. Kilpatrick received his award at the 62nd annual conference of the NUEA in Tucson, Arizona, in March 1977. Dean Shelton's statement said in part: "Dr. Warren J. Kilpatrick has been instrumental in expanding the programs in continuing education for veterinarians, veterinary assistants and related scientists at Texas A&M University by 300 percent over the last three years Dedicated to the need for and promotion of continuing education, he has proven to be willing to work within a very restricted framework of support and resources in order to give the program the visibility needed for self-sustainment."

The attendance for the 54 seminars

in 1976 was 1,807 persons. They attended 202 hours of instruction for a total of 12,085 contact hours.

Evidence of participation in continuing education experiences is measured by the continuing education unit (CEU). One CEU represents ten hours of participation in an organized educational experience under responsible sponsorship, capable direction, and qualified instruction. The CEU is designed to serve as a uniform measure of attainment in noncredit educational programs. Texas A&M University was given the authority to award CEU's by the regional accreditation agency, the Southern Association of Colleges and Schools. CEU's are accepted by professional associations such as the Texas Academy of Veterinary Practice.

Short courses and workshops may originate from seven departments in the College of Veterinary Medicine at Texas A&M — Anatomy, Large Animal Medicine and Surgery, Small Animal Medicine and Surgery, Microbiology and Parasitology, Pathology, Physiology and Pharmacology, and Public Health — and from the Institute of Tropical Veterinary Medicine and the Institute of Comparative Medicine. The Veterinary Teaching Hospital and Ambulatory Clinics provide laboratories for training.

The totals for each of the past two years have not matched the centennial

effort, but the prospects are favorable for another record-setting year in 1978-79. The weekend courses scheduled for September were Care of the Critical Animal Patient and Surgical Techniques for Veterinary Technicians. October course titles are Canine Reproduction Problems for Veterinary Technicians, Cryosurgery Seminar, Small Animal Orthopedics (long bone fractures), and Small Animal Retinal Diseases. The schedule for November and the following months looks just as varied. It is full of professional improvement opportunities for veterinary practitioners and those others served by these short courses: the veterinary research scientists, technicians, ranchers, veterinary assistants, medical illustrators and photographers, wildlife specialists, wives of veterinary medical students, and veterinary medical faculty.

An innovation for 1978-79 is a series of workshops and seminars in one area of specialization. The first series, Orthopedic Surgery in Small Animals, is, in the words of the descriptive brochure, "designed to provide current information and experience to practitioners in the area of small animals orthopedic surgery. A faculty representing a variety of specialties and disciplines in orthopedic surgery, and coming from Texas and other areas of the United States, will participate in this learning experience." Each seminar is scheduled for a Saturday and is followed by a surgery workshop on Sunday. The subjects of the courses are Long Bone Fractures on October 14 and 15, Joint Surgery on January 20 and 21, Bone Plating for Complicated Fractures on March 31 and April 1, and Diseases of Bones and Joints on June 16 and 17.

The half life of a medical education is approximately five years. The continuing professional development programs that Dr. Kilpatrick has developed have been instrumental in keeping practicing veterinarians current with new developments in the field. He and his colleagues in the College of Veterinary Medicine have demonstrated their commitment to public service, in addition to teaching and research, for the people of Texas.

***They Say Elephants
Never Forget -
Let Us Hope They
Can Forgive***



When one is moved to wax eloquent on elephants, or on any animal, for that matter, there are a number of possible underlying motives. Some writers are, undoubtedly, fascinated by the sound of their own words. One widely-read book on elephants is prefaced with the statement: "Every aspect of the natural world is provocative of wonder and demands our reverence." The same book includes a chapter on elephant hunting, complete with diagrams of the "vital" target areas. One is given to wonder about the author's meaning of the word "reverence." In the case of this writer, the motive is, perhaps, wishful thinking — a yearning to save a race with a swoop of the pen.

The elephants have always stirred our awe. Their size, alone, is hard to

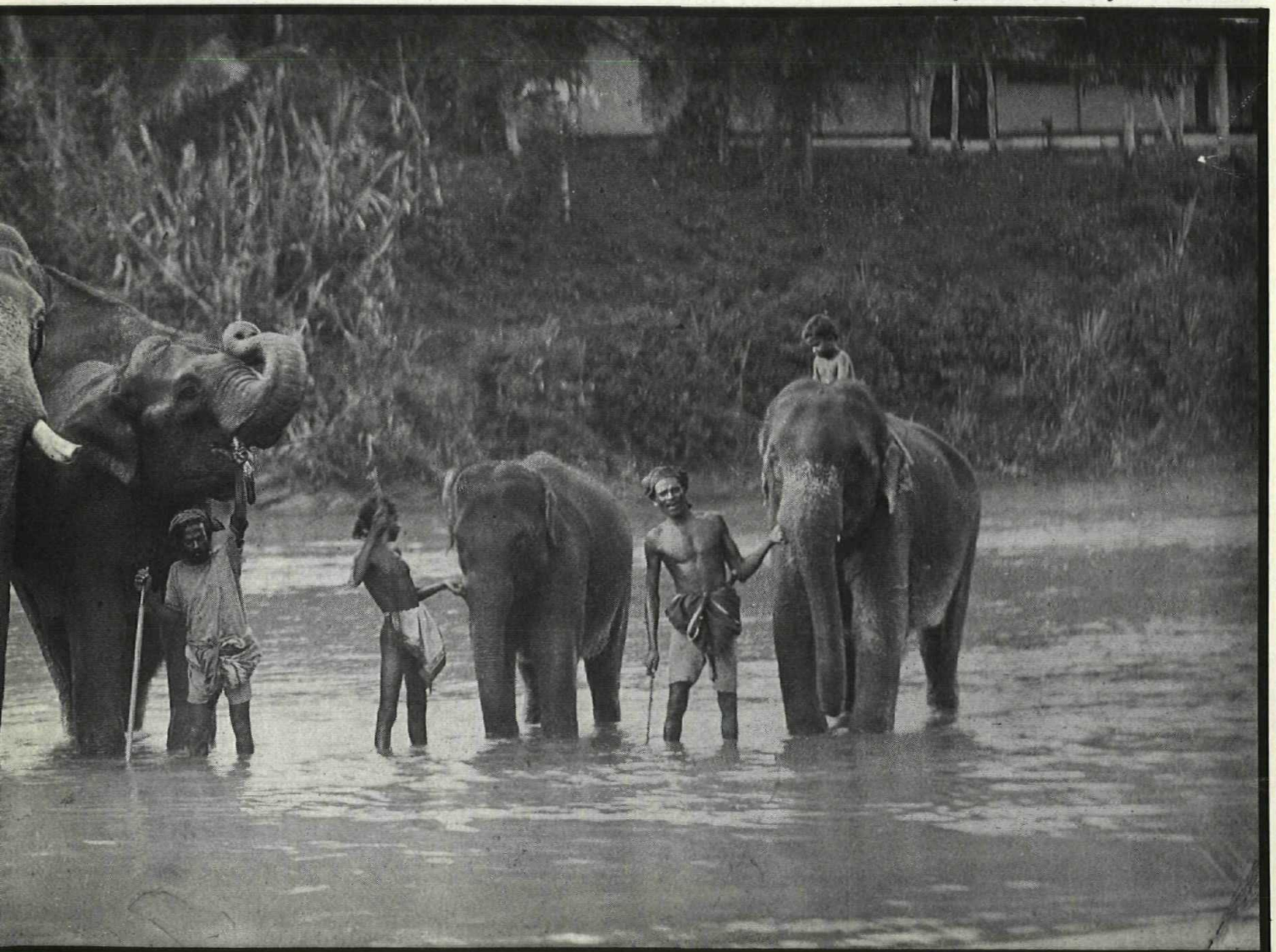
comprehend in a living being, even when viewed from the confines of a zoo. Their highly unique features, their trunks, their tusks, their huge ears, and their tall, columnar feet, make them almost a caricature of what we feel an animal ought to be. Perhaps that is their problem. We have never been able to accept elephants for what they really are: real, wild, magnificent animals that have been major elements in a vast ecosystem that once stretched across Africa, Europe, Asia, and the Americas. The two existing species of elephants are but a remnant of that great menagerie of the relatively recent past.

The African elephant, *Loxodonta africana*, occurs over most of Africa south of the Sahara. The technical name, *Loxodonta*, means "slanting

tooth" and refers to the slope of the surface of the elephant's molars. The Asiatic elephant, *Elephas maximus*, as the name implies, is very large, although not as large as its African cousin. Although record sizes are a matter of some dispute, the maximum height of African elephants is approximately 12 feet 6 inches at the shoulders, and of Asiatic elephants, approximately 10 feet 8 inches.

Elephant teeth are marvels of engineering. On each side of each jaw, six molars occur during an elephant's lifetime. They arise four at a time, and as each set of four wears down, it is pushed forward by a new set of four emerging from behind and then shed. Each new set is larger than the last, and a single molar may measure more than a foot in length and weigh up to nine pounds. The

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They Say Elephants Never Forget— Let Us Hope They Can Forgive

tusks correspond to the incisors, or front teeth, in other mammals. The tusks of Asiatic elephants can approach 9 feet in length and weigh over 150 pounds each. The record tusk from an African elephant measured over 11 feet long and weighed 293 pounds. Many tusks of extinct mammoths have been dug out of the frozen tundra and these are much larger than those of the living elephants.

Another feature of elephant anatomy of interest, at least to biologists, is the structure of their legs and feet. From the point of view of bone structure, the elephant walks on his toes, whereas we walk on our "soles." Their forward-bending knees are in the same relative position as human knees, while the apparent backward-bending knees of horses and other quadrupeds are actually their ankles.

One could go on and on about the interesting physical features of elephants, but what is at issue today is the relationship between elephants and humans. We have a long history of interaction with elephants, and it has taken many turns, usually at the expense of elephant welfare. To be sure, circuses and zoos have done much to feed children's native curiosity about exotic animals. Elephants are probably the favorite "zoo animal" among children. The positive feelings about elephants that can be generated by early childhood visits to zoos and circuses are but a part of the story. The fact remains, we are taking these animals from where they belong. A considerable percentage have been injured or killed in transport; and for an animal with such a strong wanderlust to spend its years in a cage, begging for peanuts, is ironic at best, and probably tragic from the point of view of the elephant.

Elephants have been work animals,

and transportation for warriors, for centuries. They are still used to drag teak logs through forests in northern Thailand. Asiatic elephants are so easily trainable for riding and for doing various kinds of work, that they have been symbols of wisdom, even of divine wisdom, for thousands of years. Since Hannibal's amazing excursion across the Alps with 15,000 foot-soldiers and 37 elephants, the elephants have symbolized triumph in warfare, even though Hannibal lost!

Elephants have also been symbols of continence. Their courtship rituals extend over a considerable period of time, and they seek seclusion in the final stages. The gestation period averages 20 months. The "mothering" instincts are quite strong, and stories of mother elephants risking their own lives to save a calf from drowning in a river or water hole are quite common, and substantiated. In some respects, the family lives of elephants seem to resemble historical ideals for human families — the relatively late (for mammals) onset of puberty, the long courtship, the dedicated "mothering." Thus, the complex history of symbolism associated with elephants includes many references to their continence and benignity.

Sadly, while all the foregoing discussion shows possibilities for a general reverence for elephants, they also are the source of commercially valuable products, most of which are clearly in the "luxury" category. True, the elephant once played a part in the subsistence economy, food being the most important commodity sought from them. However, today, it is the ivory which is sought world-wide, and which may result in the elephant joining the *Mastodon* as a relic in natural history museums and curio shops. The ivory is in demand for carvings. It was once used to produce black pigment

for paints. Today, the "ivory black" in the artist's palette is usually made from the bones of cattle. The hides of elephants are still used to make shields and household furniture. The hairs of the tail are made into bracelets and other ornaments. The feet have been made into table legs, wastepaper baskets, and umbrella stands. Some of the "native" uses of the elephant are understandable, and perhaps excusable, considering their historical roots and the relative isolation of some people from 20th century considerations. However, the ivory trade to supply a worldwide market is the basis of the elephant's present endangerment.

Big game hunting was recently banned in Kenya, an apparent boon for the elephant. However, the actual effect has been an explosion of poaching. Each effort to protect the elephant is met with a shift in the supply-and-demand situation which increases the incentive to poach. Ivory prices have increased 10-fold since 1970. In a recent year, Hong Kong imported 710 tons of ivory, representing 71,000 African elephants. While we praise Kenya's decision to ban big game hunting, the difficulty of enforcement remains. The only hope for the elephants would seem to be elimination of the market.

Congressman Beilenson, of California, has introduced HR 10083 which would ban imports and sales of elephant products in the United States and also require the government to seek an international ban on elephant trade. Beyond import bans and other economic sanctions, what is needed is a massive educational effort. That affection for elephants so easily aroused in young children must be preserved and expanded, not subverted in such a way that they can later accept the killing of elephants in the same breath with which they revere them.

By
Stuart
Earle Bazarsky

Photography by Stuart Earle Bazarsky

CARING FOR YOUR PARAKEET

Parakeets are fascinating pets to own. Unfortunately most people fail to understand the proper measures to take for their new pet.

The first step, of course, is to purchase a healthy bird. This can easily be done by examining the birds in the cage at the store from which you are planning to make your purchase. Look for a bird that shows keen alertness and has normal looking skin, beak and feathers. Ask the pet store owner if you can have the bird examined by your veterinarian before the sale is final.



Make sure the cage you select is large enough. Here, two parakeets are sharing a cage which is large enough to allow them ample room for movement.

You should next select a cage large enough for your new pet. The size will depend upon whether you have chosen to keep one or two birds in a single cage. The cage should be large enough to allow the bird, or birds freedom of movement. This is an essential need for the continuing good health of your pet.

Once home you should place the cage in a place free from all drafts. You should also make sure that the area you choose is not in direct contact with an air conditioner or fan. Any sudden temperature changes could result in giving your pet a respiratory infection. It is possible that even if you have taken every precaution for your pet, a cold may suddenly develop. Don't be alarmed, for there are many simple treatments to remedy this. A well heated room will work wonders, but it is best to take your bird to a veterinarian who treats birds. He will probably put your bird on an antibiotic that can be put in the bird's drinking water. If your bird is seriously ill the doctor may want to hospitalize him.

Next, and probably most important of all, is to feed a well-balanced diet. The proper diet will ensure the continued good health and long life of your parakeet. You should use a large variety of food for each daily feeding. There are many different types of seeds. Parakeets should be given a variety.

Generally it is suggested that a separate seed cup be used for the special food, such as, condition food, oats and groats, woodland mix, and any of the other special treats. You could fill the treat cup with a different treat each daily feeding. In this way you can be sure of giving your parakeet the proper diet necessary for good health.

It is a good idea to add other supplements to the diet. Check with your veterinarian to see what he recommends. Many supplements can be put in your parakeet's food. Be sure you read the directions carefully for each supplement. Some are to be used on seeds only, while others may be used in the drinking water.

The seed cups should be filled with fresh seed daily. The drinking cup should also be refilled with clean fresh water. If for some reason you cannot change the seed cups or the drinking water daily, the best thing to do is to purchase at least two weekend feeders. Weekend feeders are large cups that hold more seed or water than do the standard sized cups. By using these large cups, your pet should be well supplied for several days.



A parakeet can be taught many tricks. This healthy parakeet is enjoying his freedom on the top of his cage, following a brief flight.

For sanitation purposes, it is suggested that your pet's cage be cleaned at least once a week. Of course, from time to time this may vary. You will have to use your own discretion.

And now that you have the essential needs for your parakeet, you will be amazed at the enjoyment he will bring you. A healthy parakeet can learn to do tricks, and sometimes even learn to talk. If you wish to teach your parakeet to talk, then it is best to have only one bird in the same cage. Other birds will only cause unnecessary distractions.

With the proper care and attention your parakeet will live happily for at least 10 to 12 years. Be good to your pet, and in the end you will be well rewarded.

A lot and quickly, at the first sign of illness. To save them from certain death from pneumonia, malnutrition or a cracked shell, to name a few maladies, one seeks out a veterinarian who has knowledge of these creatures who do not give clues to pain, vital sign change or audible cries. Believe me, it's much easier to keep any animal well than to try to restore health. We lost our three adult tortoises after 18 months of treatment and the anguish of watching their end come in spite of in-hospital care and trips to the professor teaching the studies of Chelonia (Chelone is Greek for "tortoise.") to veterinary students.

Pneumonia was the villain. Unlike mammals who have a diaphragm to help cough and expectorate excess fluid, the silent, gentle tortoise must rely on passive respiration, using special muscles in the abdomen to breathe, and then the system only works if there is no blockage or embarrassment to the lungs.

Land tortoises are terrestrial and thrive in the driest regions of Southern California, Southern Nevada, extreme southwestern Utah and Southwestern Arizona into northern Mexico.

While Alhambra, CA residents, we took tortoises other people didn't want, couldn't continue to keep or had lost interest in. Actually, we didn't pay too much attention to the several we had in succession, for we would pass them on to other families who found delight in these "tanks on legs" who required minimal care. Sometime in the late 1950s, our longest tortoise boarder moved in, named Ichabod, the gift of a moving-away-neighbor. He looked the same to us all the years we had him, even after moving to Sacramento, 400 miles north. The climate was different and we had to protect our desert inhabitant better. It was not against the law to own unregistered tortoises then, but it was against the law to take them from their natural habitat. Some of the high desert towns would have "Turtle Races" and other forms of entertainment, which fortunately have been

By Doris A. Pichly

WHAT DO YOU DO WITH SICK TORTOISES?

curtailed. Urbanization does more than relocate people and the building boom in the deserts has played havoc with the ecology of many creatures.

Ichabod weighed 12 pounds and we estimated him to be in the 40th year, at least. We had him over 15 years and enjoyed all the aspects about this reptile. The encyclopedia says turtles are the most popular of reptile pets, tortoise included. "Pet" is stretching it, when you consider the warm response of your dog when you call, or the kitty rubbing against your legs. Slow, almost all hard shell and relatively dinosaurian, but still a pet, otherwise how could one forgive so readily the plowing over of newly planted flowers and digging tunnels under the fence?

How much we take for granted! We assumed good health would be automatic. Our care was minimal and had been satisfactory. Ichabod helped himself to certain flowers and plants, drank from the sprinkler pools and sunned himself on the patio about the same time each day, sleeping in the corner by the aviary at night. Hibernation during the colder months was always indoors.

Trouble began in June, 1975. Our animal-oriented friends began a vacation north, and found two wandering tortoises near the camper the night before they crossed the Tehachapi Mountains. No one in the vicinity would claim the female weighing 4 pounds and the 8 pound male. He had mucus dripping from the nose, with an occasional bubble forming. This was unrecognized bad news indeed. The new male was put in a fenced garden area, supposedly in isolation, but Ichabod predictably defended his Sacramento home against the intruder, ramming the sick male through the wire fence, with the presence of the female probably intensifying the war. Head met butting head, as our friends went on their way. They felt the reptiles were in good hands and a trip to the veterinarian was to be done the next day.





Pictured is 24 pounds of land tortoises (commonly called Gopher tortoises or the correct name of *Gopherus agassizi*) held by J. Heaton, D.V.M., who formerly practiced in the North Area. He took special interest in these sick tortoises, treating them the same as humans who have an overwhelming infection and are unable to eat and need large doses of antibiotics. The bottom male is Ichabod, a long time pet in our family. The middle one is an adopted male who had pneumonia, the disease finally killing all three, but after months of treatment. The top is a female, 4 pounds. All were nice specimens who should have lived decades longer.



The 8 pound male tortoise is being fed by a tube put directly into his stomach. The wire prevents him from using his beak-like mouth to sever the plastic tubing. It definitely is a two-man job.



The 12 pound male is receiving an antibiotic injection in basically the same place humans get theirs. Only these animals don't say "ouch" or even show signs of discomfort or pain.

WHAT DO YOU DO WITH SICK TORTOISES?

The sad truth was to be learned, and that was the male was far advanced with pneumonia, the female was infected, too, and the chance that Ichabod would be a victim, more than a possibility. Mother Nature runs a strict business and once a respiratory disease begins and is untreated for any length of time, as in the case of the newly-acquired male, the tortoise is surely doomed. Antibiotics were given, along with forced fluids since the sick male had not eaten or drunk. Oral vitamins, then powdered nourishment directly into the stomach via a tube were to no avail. Injections through the horny skin of the back legs helped combat the bacteria causing the fragile respiratory system of these gopher tortoises to clog with mucus and pus. The new male died in 12 months, the female in 16 months and our Ichabod expired in 18 months after intensive treatment. As they live slowly, so they die.

Gopher Tortoise (*Gopherus agassizi*) is the official California state reptile and is protected by law. The Department of Fish and Game estimates more of these tortoises are in captivity than in their natural habitat. Well over 4,000 of these animals have been registered by their owners with no-cost light-reflective stickers which are placed on the tortoise's rear shell.

The happy note is the organizations banding together for the protection, adoption and shared knowledge of these (and kindred) turtles. Two I will mention are "California Turtle and Tortoise Club" located in Westchester, CA. This club had placed over 300 abandoned, abused or otherwise homeless desert tortoises since March, 1976. "The Bay Area Turtle and Tortoise Society" in Berkeley sponsors an annual show. Hopefully, one member will bring their elderly tortoise named "Needles" who hatched in 1887. She was a 1932 wedding present with her owners commenting, "Needles doesn't get around like she used to."

For anyone having questions about tortoises, The Resources Agency of the California Department of Fish and Game, 1416 Ninth Street, Sacramento, CA 95814, has excellent information in pamphlets and diagrams for identifying tortoises found in the Southwest.

Tortoise owners can learn much from their local

veterinarian if the practice includes reptiles and the doctor is interested, or perhaps has the reptile nutrition supplement text from Davis School of Veterinary Medicine authored by Fredric L. Frye, D.V.M. As his associate, Dr. Alan Shriro, of the Berkeley Pet Hospital explained, "We rarely see a well tortoise. Few owners bring them in for check-ups."

True in our case, and when illness struck, we went scurrying. But too late.

DESERT TORTOISE CHARACTERISTICS

Adult

top shell — 9-14 inches long, neck to tail (juveniles grow rapidly and it is unlikely they would be found wandering)

bottom shell — flat with a front "skid-like" projection called the shield, which often can be broken off or worn down. The male bottom shell is flat, the female has a shallow indentation. On both animals, the top shell is about twice maximum shell height.

head — narrow with a rounded nose

legs — large "elephantine" hind legs; flipper-like front legs, all have claws. Can pull in head and press front legs to shell tightly. Unlike a box turtle. Both sexes have a tail-like appendage.

Hibernation — the colder months. Usually October to April or May. They do not eat or excrete during hibernation, and move just a little. Will respond if touched, usually by an audible expiration as they draw in their head, a reflex protective mechanism.

Habits — these tortoises (or any true tortoise) do not go in water but drink periodically for many minutes. To do so, they hold up the rear shell with head downward with the swallows quite visible rippling along the outstretched neck.

Food — plant eaters. Some prefer one plant or color of flower, while the next passes it up. Favorites of ours were mulberry leaves, winter pea plants, dandelions, scotch broom, hen and chickens, plums, melons, apricots. Lettuce is acceptable. Thawed frozen mixed vegetables o.k. Small amounts of bread, meaty dog food.

If a tortoise is found wandering, you should:

Take it to a protected area, fenced, away from roads, with shade on sunny days. Shield from cold if temperature is low. Temporarily a cardboard box will do nicely.

Look for a state tag, which is a reflective gummed label placed over the tail area on the top shell, or, if a large tortoise, under shell flare above right hind leg.

Call or notify Department of Fish and Game with tag information, or, if you are going to keep an unregistered tortoise, find out how to get a cost-free tag.

For information on health, locate a veterinarian; to join a club, a pet store, your pet doctor or the yellow pages may put you in contact with your local reptile society. Zoos sometimes have qualified reptile experts who can give much information.

Feed your pet well, watch out for these fascinating creatures and Enjoy!

WORKING ANIMALS' DIETS....

FORT COLLINS, Sept. 5 — Entering horses and dogs in organized sport endurance events is growing in popularity, so animal owners should be aware of research results which show that feeding high levels of protein to working animals may decrease their endurance, and in some cases, be harmful.

Recent research results indicate that a high fat diet during endurance training is probably much more beneficial than feeding working animals high levels of protein, that is, levels that are more than double an animal's normal requirements.

Dr. Lon Lewis, a Colorado State University veterinarian whose specialty is animal nutrition, said there appears to be a common misconception that high protein diets are good for animals or humans who take part in endurance events.

"This isn't true for either animals or humans. At best, a high protein diet in animals will have no effect. On the other hand, it may lower endurance potential and can have unwanted side effects," he said.

Lewis said CSU's test results and those from other universities suggest that the endurance of horses and dogs can be increased with high fat diets. Lewis explained that fat appears to help prevent dehydration and also lowers the rate of some mineral losses which accompanies heavy exercise.

Lewis is part of a CSU research team that has been conducting diet studies in working horses. Other members of the group are Larry Salde from the department of animal sciences and two graduate students, Connie Quinn and Pete Hambleton.

Lewis said the reason for the experiments is to find out if animals can prepare for endurance activities with nutritional conditioning as do human athletes and to find out more about animal nutrition in general.

He pointed out that much of the work done by horses, including farm animals, is "endurance activity" in that work is spread over a period of hours and there is little or no chance to feed the animal.

Dogs also participate in endurance events such as field trials, sled racing and hunting.

The CSU veterinarian explained that a mature, non-lactating horse needs about 8 to 12 percent protein in its daily diet. Most grasses and hay will provide this level of protein as will cereal grains.

Alfalfa is 18 to 20 percent protein and some supplements contain 40 to 50 percent protein, Lewis said. Thus, combining alfalfa with a supplement could give a horse a diet of 25 percent protein which Lewis describes as "too much" for endurance activities or for growth.

WORKING ANIMALS' DIETS....

"The greatest potential problem with a high protein diet — or any excess energy diet — is when it's used in growing animals. The animal often develops too quickly for sound bone development which may contribute to such ailments as enlarged joints and hip dysplasia," he said.

In addition, feeding high protein levels to growing animals can cause them to lose calcium; losses which can get so great that even massive doses of the mineral won't be able to supply a growing animal's needs, he said.

A fact animal owners should keep in mind, Lewis said, is that in controlled experiments, high protein levels never have been proven beneficial.

He stressed, however, that it is important for animals to get enough protein to meet their needs.

"For instance, growing horses need 16 to 18 percent protein in their diet. Grass, hay and cereal grains won't provide this level.

"Basically, the amount of protein in an animal's diet should meet, but not greatly exceed, its needs," he said.

Lewis said he suggests giving a working horse a normal protein ration, then supplementing with a fat source like corn oil. As an example, he said a 1,100-pound horse might be given 10 pounds of hay, 10 pounds of grain and four cups of oil.

A dog needs about 22 to 25 percent protein which most commercial dry dog foods will provide. Lewis said dogs normally need no other protein supplements.

Rations high in protein and energy, such as all meat rations which can be more than 50 percent protein, or dry dog foods and large amounts of meat should not be fed to dogs that are on a free choice system (allowing a dog to eat all it wants throughout the day).

"The only time a dog needs all meat or meat in addition to dry food is if the animal is sick or injured and hasn't been eating or needs some persuading to eat," Lewis said.

He said for owners who want to supplement their dogs with fat, he suggests adding two teaspoons of fat (cooking oils, lard, bacon grease) per cup of dry dog food.

Lewis cautioned owners not to keep animals on a high fat diet for extended periods of time but rather to use the diet only in conjunction with heavy training leading up to endurance activities.

Also, he pointed out that some dogs may not be able to tolerate such a diet or will have to be put on the diet gradually to prevent diarrhea.

He said owners also should not feed their animals high levels of vitamins A and D because toxicities may result and added that little is known about the effects of high levels of other vitamins on endurance activities.

"We've identified minimum vitamin levels and what happens if animals don't receive these levels. But we know very little about using huge doses of vitamins in animals and whether they're beneficial, or if they have an effect at all or if some vitamin overdoses might be harmful to health," he said.

The famous Canadian physician and teacher Sir William Osler said, "The desire to take medicine is perhaps the greatest feature which distinguishes man from animals."

Well-meaning people may tell you to "give your sick cat a 5-grain aspirin tablet every four hours for a couple of days. If it isn't better, see your veterinarian."

If you follow this advice your cat will probably be dead before the 48 hours is up. To be precise, such a dose of aspirin to an 11-pound cat is lethal within 32 hours.

The proper dose of aspirin for an 11-pound cat is about one baby aspirin (1.25 grains) per day. Thus a 5- or 6-pound cat would get no more than half a baby aspirin daily. Larger doses may cause erosions of the stomach lining, anemia or various liver disorders. These less toxic stages of aspirin poisoning are treatable.

But why take a chance? Other products (so-called aspirin substitutes) are available. Your veterinarian may wish to prescribe them.

There are other drugs to which cats are sensitive. For example, veterinarians must use very low doses of morphine. It was formerly believed that even very small amounts would cause convulsions. Today we know that analgesia may be obtained using about 0.1-0.2 mg/kg.

One mg/kg. causes salivation and widening (dilation) of the pupils. Two mg/kg. causes convulsions.

Certain antibiotics (such as chloramphenicol) will extend the sleeping time of anesthetic agents like phenobarbital.

Be safe. Do not use any drugs for your cat without first getting professional advice. And even then, see to it that the doctor is promptly alerted to any apparent reactions.

Play It Safe When Giving Cats Drugs

BY BRUCE KAPLAN, D.V.M.



ANIMAL BEHAVIOR

THE ANIMAL HEALTH FOUNDATION is sponsoring a series of articles on the behavior of domestic animals to give readers a glimpse into this very practical and interesting field.

PART I

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

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

People have always found the customs and habits of animals fascinating. Often by studying animal behavior we can gain insight into our own behavior. Veterinarians have found over the years that understanding of the behavior of their patients is often required to be successful in treatment. Physicians have also found that the customs and habits of people play a tremendous role in the development of disease in humans. The vast majority of a veterinarian's patients are domestic animals; cats, dogs, horses, cattle, sheep, goats, pigs and chickens.

KNOW NORMAL BEHAVIOR

At times the veterinarian is presented with a 6 to 9 month old female cat which the anxious owner feels has been injured or is sick, but examination reveals the cat to be displaying normal estrus behavior. When a female cat comes into heat, or estrus, she will roll on the ground, vocalize frequently, tread with her feet and crouch. In order to do a good job of caring for animals, pet owners, animal breeders, ranchers and others who deal daily with animals must have some understanding of animal behavior. Experience has taught horse people that when feeding several horses in a single pen, it is best to have several different feeders, otherwise the more aggressive horses may take control of a single feeder and not let the more timid horses eat. Inexperienced horse people may not realize this and feel they have a disease problem, since some of their horses are in excellent health while others in the same pen lose weight even when the amount of feed in the single feeder is increased.



TWO HORSES. Although no words are spoken, the affection and caring between mother and her son are clearly evident. The mother is on the left and her son is on the right.

DOMESTIC ANIMALS PRESENT FOR THOUSANDS OF YEARS

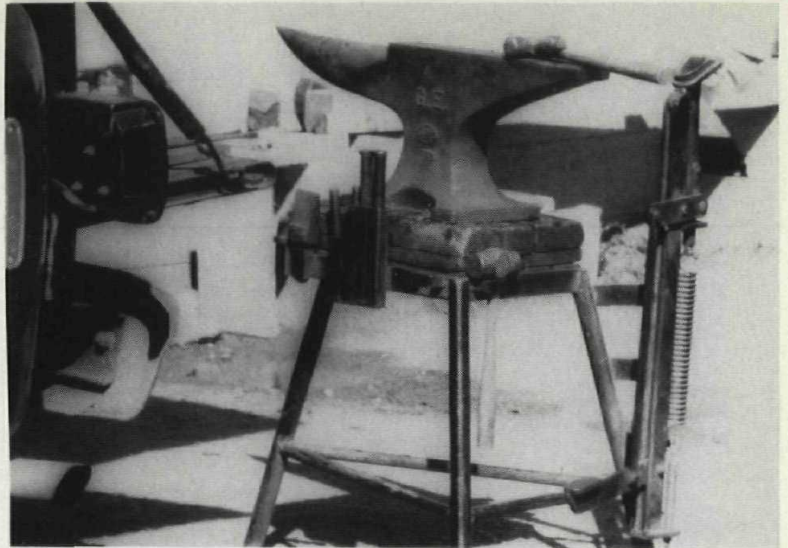
Domestication refers to changing an animal from a wild state to a tame state so that the animal will live and breed in a tame condition and this generally takes several generations of breeding. There are over 100 different animals mentioned in the Bible. Pet keeping may have been the first instance of domestication, and it is thought by some that the domestic dog, which is one of the most popular pets today, may have been the first example of domestication occurring at the latest by about 6000 B.C. Findings dating from around 10,000 years ago in-

dicate that wherever man traveled dogs went with him. It is generally felt that the wolf was the ancestor of the dog. Pets are domestic animals kept for pleasure rather than utility. Pets can vary from a small cat kept as a favorite and treated with daily affection to a large thousand pound horse.

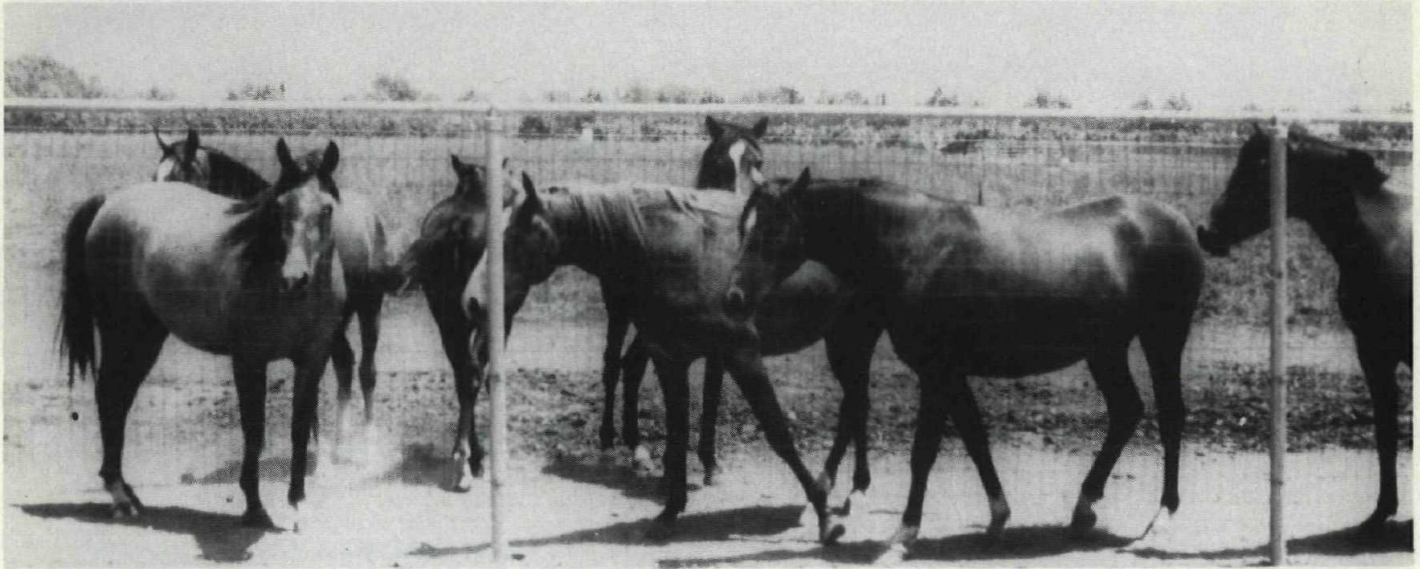
Some kinds of domesticated animals are not as well known to us as dogs, cats and horses. Reports of domestication of the dromedary camel begin about 1800 B.C., and taming of camels proceeded quickly and widely. Tame camels have several advantages in a hot, arid environment. They can survive on poor pasture from salty soils and they use little water. Camels



CAT. Body language is an essential component of communication. Studies have revealed that facial expression, carriage of the head and position of the limbs all play a part in transmitting information between individuals. Without speaking a word this cat is communicating.



ANVIL AND HAMMER OF FARRIER.
The farrier or horseshoer often uses a steel anvil and hammer to adjust the shoe to fit properly but without a basic understanding of how a horse behaves, it would be impossible to apply the shoe.



GROUP OF HORSES. Unknown to the casual observer, animals in groups have a definite social order and established territories very similar to those established by man.

can move on soft soils and carry heavy loads. Camels will pull ploughs harnessed behind them. Camels have been used as pack animals since early times and can carry a load of about 400 pounds. Interestingly the camel was one of the first domestic animals mentioned in the Bible, and they are often referred to as ships of the desert.

The Japanese and Chinese domesticated large fishing birds called cormorants as early as 500 A.D., and the fish-seeking behavior of the birds were used. The birds were trained to plunge on signal into the water for fish. Leather collars were used to prevent the birds from swallowing their catch. They returned with the fish to their

owners and were rewarded with a mashed bean mixture.

These are just two examples of unusual animals that have been domesticated.

ANCIENT VETERINARIANS

Man has had an interest in animals and their welfare as long as he has co-existed with them. The science and art of veterinary medicine, as well as the profession of veterinarian, date back to antiquity, many years before the birth of Christ. The first treatises on the medicine of man and beast were written in Sanskrit by a Hindu veterinarian, Salihotra, almost 3,800 years

ago. It is in ancient India that we find the first records of veterinary hospitals. These hospitals were established by the state and staffed with veterinarians paid by the state. Evidence of these hospitals still exists and one inscription carved on stone reads: "Everywhere the King Priyadarschin, beloved of God, erected two kinds of hospitals, hospitals for men and hospitals for animals. Wherever there were no healing herbs, either for man or for animals, he commanded they be brought and planted." Evidence exists that some 700 medicinal plants were known and used in ancient India and over a hundred surgical instruments had been developed.

ANIMAL BEHAVIOR



CHILD LOOKING AT KITTEN.

The positive psychological value of owning a pet has been proven in many scientific studies. Social isolation and lack of companionship have been shown to increase susceptibility to mental and physical illness and having a pet can improve the mental outlook of many people.



LADY WITH CHICKEN.

A chicken may seem like a strange pet to many but basically any adored animal kept as an object of affection can be a pet. The term "henpecked" originates from observing the dominance order of chickens.



ANCIENT DRAWING (courtesy of Pet Food Institute).

Drawings and remains of domesticated dogs have been recovered from many archeological sites throughout the world. The dog is still one of the most popular pets today.



DROMEDARY CAMEL.

This dromedary camel is the type used for riding and can travel up to 100 miles a day in the desert. In a sandstorm the nostrils can be closed and the long eyelashes help protect the eyes. Camels unfortunately are known for their bad tempers, and if they get angry, watch out as they can spit saliva long distances and their bite can be vicious.

Ancient Hindu scholars wrote the Vedas as an ethical guide for all people. According to the Vedas, medicine was developed by man's observation of animal life, and all of medical science originated with veterinary medicine. Ancient Indian veterinarians dealt with all species; horses, cattle, elephants, game birds and even fish. There were some veterinarians who specialized in different species of animals. Ancient India was a society in which man and animals were thought to have the same destiny. It is understandable that a civilization that believed in reincarnation would hold those entrusted with the health care of animals in the highest esteem.

Although veneration of animal life

was a major part of Hindu religion, ancient India did not confuse science and religion, as so often happened in other early civilizations. While religious ceremony accompanied many aspects of the care of animals, the health of animals was not left to incantations. The historian and veterinarian Dr. Smithcors, points out that although horses of a royal entourage were blessed by priests before journeying a long distance, veterinarians always traveled with them to guarantee their soundness and health.

DID YOU KNOW

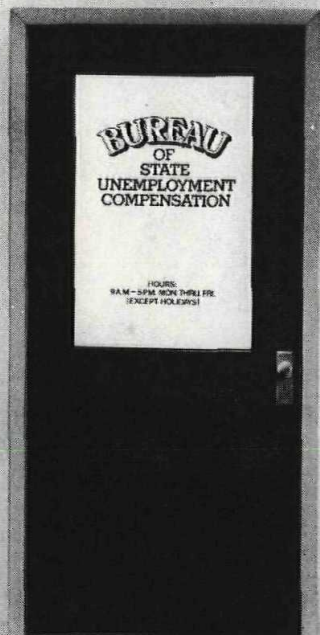
Many of the phrases used daily by us come from observing the behavior

of animals: "busy as a bee," "pecking order," "eats like a pig," "sly as a fox," and others. We eat three meals a day while many domestic animals spend most of their waking hours eating. Baby chickens communicate with each other in the nest even before they are hatched, which allows them to hatch all on the same day even though some of the eggs were laid several days apart. Did you know that animals have an elaborate chemical language that we are not even aware of since we can't smell the chemical messengers?

In the following series we will examine some of the interesting aspects of behavior of domestic animals, including cats, dogs, horses, birds and others.

**My doctor
pronounced
me cured
of cancer.**

**My boss
didn't.**



My boss didn't understand that I was healthy again.

So I was let go.

A lot of people are like my boss. They think that everyone dies of cancer. I thought so, too. Until the American Cancer Society, through one of its service and rehabilitation programs, helped me return to a normal life.

The ACS also has local Units that help Americans who've never had cancer understand it better.

Today, more and more, cancer is a curable disease. Ignorance about cancer is curable, too.

American Cancer Society

THIS SPACE CONTRIBUTED BY THE PUBLISHER AS A PUBLIC SERVICE.

in the NEWS

Cornell University

ITHACA, N.Y.-- The New York State College of Veterinary Medicine at Cornell University is sponsoring two concurrent, day-long symposia for dog and cat owners and breeders from the Northeast on Saturday, April 7, at the Sheraton Rolling Green Motor Inn, Andover, Mass.

The symposia will deal with such topics as first aid, disease recognition, care during pregnancy and whelping or queening and eye problems.

The canine health symposium, sponsored by the Merrimack Valley Kennel Club and the Rockingham County Kennel Club, will feature a section on two diseases, infectious canine enteritis and canine brucellosis, that are of particular interest to dog breeders. The discussion will be led by Dr. Roy V.H. Pollock, a researcher at the college's Baker Institute for Animal Health.

The feline health symposium, sponsored by the Seacoast Cat Club, Inc., will feature a discussion of feline infectious peritonitis, a viral disease recently recognized as a widespread and potentially serious feline health problem that may be associated with the kitten mortality complex. The session will be led by Dr. Frederic W. Scott, associate professor of microbiology and director of the Cornell Feline Research Laboratory.

Dr. Robert W. Kirk, professor in the Department of Clinical Sciences and author of "First Aid for Pets," will discuss what the owner can do to aid an injured pet until it can be taken to a veterinarian. His talks, to be given at both symposia, will include such life saving information as how to treat a pet that is choking on food; stop bleeding and prevent contamination of a wound when the animal steps on a nail or piece of glass and how to handle many other emergencies.

In the canine symposium, Dr. Ronald C. Riis, assistant professor in the Department of Clinical Sciences, will discuss eye problems that affect specific breeds of dogs and criteria us-

ed to certify that individual dogs do not have the problem. He also will discuss how directional planning by breeders can help eliminate hereditary eye disorders.

In the feline symposium, he will discuss eye problems that are particularly stubborn in cats. His talk will include disease, trauma, nutrition and developmental eye conditions.

Dr. Rocky DiFruscia, resident in medicine in the Department of Clinical Sciences, will discuss at both symposia how to recognize disease through careful observation and how symptoms are interpreted to diagnose specific problems.

Dr. Donald H. Lein, associate professor of pathology, will discuss the normal physiology of pregnancy and whelping in the canine symposium and of pregnancy and queening in the feline symposium. He will speak to both groups about precautions, preventive measures and practical solutions to problems that may occur during these times.

Ample time will be reserved in each session for participants to ask questions, and a reception will be held after the formal symposia at which participants can meet informally with the Cornell speakers.

Each symposium is limited to 300, and advance registration is encouraged. The cost of either symposium, for those who register by March 23, is \$15, which includes lunch and a copy of the proceedings. The fee after that date is \$20.

Additional information and registration forms are available through the Public Affairs Office, NYS College of Veterinary Medicine, Cornell University, Ithaca, N.Y. 14853.

The symposia are viewed as a way to fulfill the responsibility that Cornell shares with the University of Pennsylvania's College of Veterinary Medicine to provide instruction, research and public service to the Northeast, according to Dr. Edward C. Melby Jr., the Cornell College dean.

A BETTER MARK

Reprinted Courtesy of Agriculture Research

Photos: Texas A & M University

FREEZE BRANDING

If everyone on this planet spoke a different language, communications would be chaotic to say the least. Yet this is the sort of situation animal owners throughout the world face. There is at present no universal system for identifying animals, but if a recently-proposed numeral system is adopted, there soon might be.

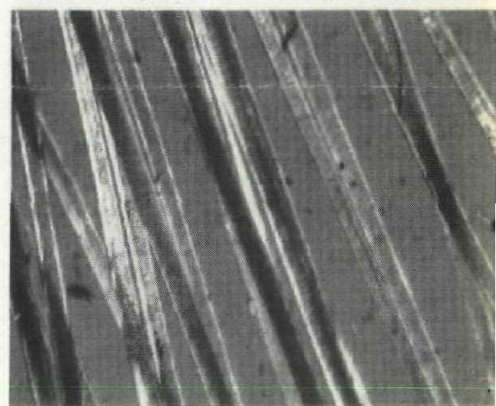
ARS veterinarian R. Keith Farrell, Pullman, Wash., believes his numeral system, called the Angle System, is capable of providing a universal animal identification code. Derived from the ancient Arabic numeral system, the Angle System follows the basic principle that straight lines are easy to make with crude instruments. It offers simplicity, preciseness and universal application; readily lends itself to a computerized data retrieval system; and above all, provides good visual communication.

Good visual communication is necessary to make the information useful to large and diverse audiences, and for recording such information for history. Present animal identification symbols are often repetitious, confusing and easily reproduced. Symbols used in one state might be unintelligible in another state, let alone another country. Clearly, a single identification system that will be accepted internationally would be worth untold millions to those involved in livestock production.



A BETTER MARK

Below: An Appaloosa mare and her colt gambol on the Palouse country of Washington. The Appaloosa was prized and bred by the Nez Perce Indians for its distinctive white and patterned markings (Brand-0-4). Upon the advent of freeze-marking, a few dishonest horse dealers learned that the technique could be employed to "counterfeit" Appaloosa horses. This practice came to a halt when researcher Thomas Bell discovered that, under a microscope, freeze altered horse hair would show rainbow hues (above right) when subjected to polarized light (Brand-0-7). The silvery sample of true Appaloosa hair (below right) defracts or bends less light under the same polarized light source (Brand-0-8).



The Angle System is easily understood and remembered. Visualize a basic square: this represents the even numbers in the system. The number 2 occurs in the upper-left-hand corner of the square. Numbers 4, 6, and 8 occur in the square's right angles revolving clockwise from the number 2.

Next, rotate the basic square 45 degrees. Odd numbers will now occur at the right angles between the even-numbered corners of the original basic square. For example, 3 falls between 2 and 4. The number 1 is represented by two vertical lines, and zero is formed by two horizontal lines.

With very little practice the Angle System becomes more logical than the original Arabic System. In fact, Dr. Farrell's method requires only a single marking rod with a right angle engraved on one end, and a straight line at the other, to be fully operable.

Dr. Farrell has also developed two marking techniques — freeze-marking and laser beam marking — to accompany his Angle System. Together with the Angle System these two techni-

ques could conceivably reshape animal identification practices throughout the world.

FREEZE MARKING

A struggling animal's pain-filled shrieks, burnt flesh's acrid smell and the terrible sight of an iron branding rod, glowing red from the heat, should hopefully soon be shunted into history, thanks to the technique called "freeze-marking."

Branding as a means of identification dates back to early civilization when people were branded as slaves or thieves. Despite popular notions of branding and the "Old West," people have been reluctant to brand animals. Besides inflicting extreme pain, hot branding damages the animal's hide, and leaves open wounds that are susceptible to insect infestation and infection.

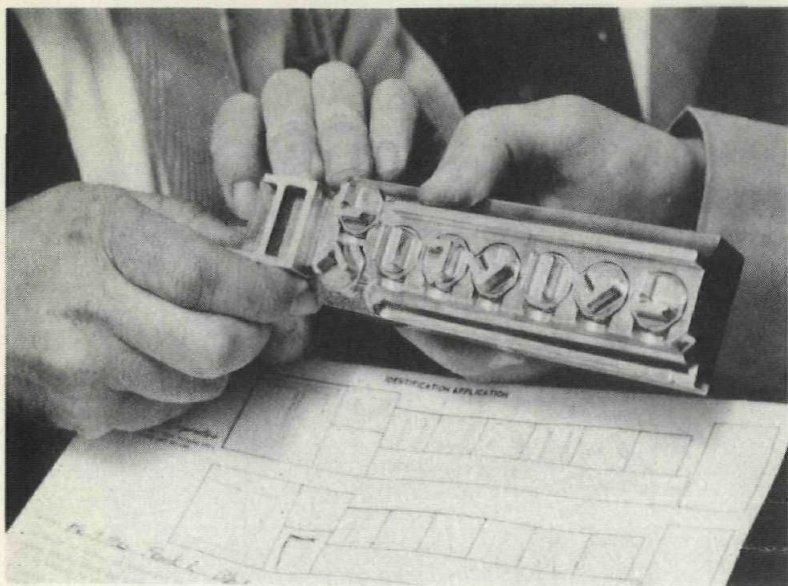
Noting that these drawbacks — coupled with fire branding's blurred, runny and general poor quality — make for a sorry identification technique, Dr. Farrell proposed freeze-

marking as a desirable alternative.

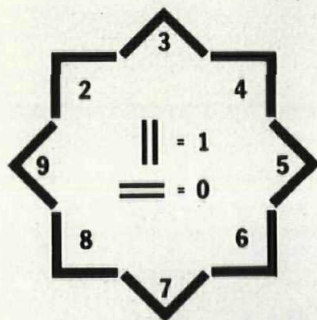
Called freeze-marking to escape painful associations with the term "branding," the technique utilizes heavy copper stamps, or marking rods, chilled in either liquid nitrogen or dry ice, and 95 percent alcohol wetting solution to aid in conducting the intense cold and to withdraw body heat.

Placing the copper stamp against the animal's body for 10 to 20 seconds destroys pigment producing cells (melanocytes) to produce a pigment-free skin area. Hairs growing back in this area will be white. Longer application times result in more balding, a condition necessary for producing legible marks on white or light-colored animals.

A freeze-mark that produces white hair, causes only minimal changes in the hide and does not seriously impair leather properties. Freeze marks that produce baldness cause some permanent scarring and hide damage. Severe freeze-mark damage, however, is minimal compared to fire brand damage.



Horse registries and associations adopting the alpha-angle system of freeze-marking use a code composed of an initial alpha character identifying the association and a series of angles designating the horse's birth date and identification number. According to the code (diagramed at right) the marking stamp above represents a horse of Appaloosa registry, born in 1972, with identification number 163132. Applied to the registry form with ink and on the animal by freeze-marking, the symbols become the horse's lifetime identification. (Brand-0-9).



Freeze-marked just minutes before, this horse grazes contentedly. The welts, caused by the intense cold, are painless and will disappear in a few hours (Brand-0-5).

Freeze-marking is more legible than fire branding. Marks are much more distinct, and last just as long. No open wound is produced, which cuts out disease and insect infestations, and freeze-marking is relatively painless. Once, to demonstrate the painlessness of the operation, Dr. Farrell freeze-marked himself!

IDENTIFICATION UNIVERSAL ANIMAL

The Angle System, along with fast and efficient marking techniques such as freeze-marking and lasers, will vastly improve recordkeeping and registration of animals and fish. This in turn will improve disease prevention by enabling veterinarians to trace disease origins. Eliminating variations in State and national identification procedures will cut out costly and time-consuming efforts to coordinate such different registrations. Animal theft will become less profitable, for the chances of a stolen animal being identified and returned to its owner will be far greater if a universal identification system is adopted.



A technician's electric clippers reveal a perfect and unalterable Angle System freeze-mark applied to this pony six months before by Dr. Farrell (right). Mrs. Farrell looks on (Brand-0-3).

When is a chest pain a heart attack?


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What's Happening To Our Wilderness?

Save Wildlife — Act Now

By Patricia Martz

We have a great opportunity to help preserve the last remaining wilderness homes of many wildlife species.

The Federal Bureau of Land Management (B.L.M.) wants your help in deciding the fate of millions of acres of public land which they are inventorying and reviewing. You can help preserve wildlife habitat by writing letters to B.L.M. urging them to recommend wilderness classification for many of their roadless areas.

Information and a map of the roadless areas can be obtained from —

Wilderness Staff
Bureau of Land Management
1695 Spruce Street
Riverside, California 92507
Telephone: (714) 787-1462

Information and maps for other states can be obtained from —

Wilderness Staff
Bureau of Land Management
Washington, D.C., 20240


If you live in California write your letters now. California is the first state to begin this roadless area inventory and review; other states will follow. The California public comment period for the final identification of roadless areas started Nov. 1, 1978 and ended January 31, 1979. After the final in-

ventory the B.L.M. will choose wilderness study areas to be recommended to Congress. There will be another public comment period during which time you can review their final decisions and write encouraging additions or changes. This public comment period and formal hearings will take place between March 1, 1979 and February, 1980. Since Congress will make the final decision on which areas will be included in the Wilderness System it would be helpful to send copies of your letters to your Congressman.

To have the greatest impact on the B.L.M. a separate letter should be written for each roadless area you recommend. Include in your letters —

1. The name and number of the roadless areas (numbers are on the B.L.M. maps you can obtain from the above address.
2. As many reasons as possible about why an area should be wilderness.
3. Any specific information you may have about an area that adds to its wilderness quality.

You do not have to be an expert or even have visited the areas to write letters of support for them. Your letters will help determine which areas get permanent wilderness protection.



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