

TEXAS

PARKS & WILDLIFE



Nov. 1970

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OUTDOOR NOTEBOOK

The distinguishing feature of thirteen-lined ground squirrels, *Citellus tridecemlineatus*, is the pattern of spots and stripes on their backs. They live on grassy plains, camouflaging their burrows by spreading dirt around rather than piling it near the entrance. They eat insects, caterpillars, grass-

hoppers, cocoons, reptiles, eggs, small birds, mice and grains. In the fall extra food is stored for the spring, and through the winter they hibernate. In the spring they mate, and the young are born in May and June. At birth they are blind and hairless, but by fall they will be full grown.—Don Walden

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**TEXAS PARKS & WILDLIFE
magazine**

Dedicated to the conservation and enjoyment of Texas fish, game, parks, waters, and all outdoors.

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TEXAS PARKS & WILDLIFE

Cover: The sika deer, *Cervus nippon*, is one of Texas' exotics. They live in mixed forests and feed on grasses and small trees and bushes. Gregarious animals, they can sometimes be seen in groups of several dozen. Photo by Reagan Bradshaw.

by C. D. Stutzenbaker
Waterfowl Biologist

Space Age Duck Banding



HELIBORNE waterfowl banding crews are swooping down on the native Texas mottled duck. And a study will soon be finished, thanks to the use of helicopters equipped with floats to reach the mottled duck production areas.

Surveys are first flown with conventional (fixed wing) State aircraft to locate the ducks in late June and July. Based on these findings, a helicopter next carries retriever dogs and Department

personnel to the ducks, eliminating costly and grueling ground travel.

In the past, Parks and Wildlife biologists walked or rode heavy plywood airboats and marsh buggies to reach the immature ducks and their molting parents. Marsh buggies stuck in the mud and airboats had to be pushed across dry land—strenuous work in 90-degree weather along the humid Texas coast.

The helicopter flies at approxi-



During the late summer mottled ducks lose their primary feathers and cannot fly. A helicopter carrying a dog and bander flies over the marshy coastal habitat that mottled ducks prefer, and when a brood is sighted the helicopter forces them into the tall grass at the edge of the water. Generally the bander retrieves the ducks by hand after the dog finds them, but the dog is trained to bring them in without hurting them. The ducks

are then banded with Fish and Wildlife bands and released together. The experiment will indicate the annual population turnover and the distribution along the coast.

Space Age Duck Banding

mately a 200-foot altitude across known production areas. When the birds are sighted, the helicopter maneuvers slowly down toward them. Mottled ducks lose all primary feathers in their wings simultaneously during the molting season and they cannot fly. The approach of the helicopter forces the young birds and flightless molting adults to forsake the water in favor of heavy grass that borders the ponds. When the birds are forced from the water, the helicopter lands and the bander and retriever dog exit.

Through the clear bubble of the helicopter, the dog has continually observed the birds moving from the water into the grassy shoreline. Knowing the approximate location of the birds and finding the fresh scent left by them, the dog is able to locate the ducks quickly in the heavy grass cover.

The bander works closely with the dog, and at the slightest hint that the dog has located a bird, the bander commands the dog to stop. This enables the bander to recover the young birds from the grass by hand although many times the soft-mouthed retrievers actually catch the birds and bring them back to the bander.

As the birds are captured, they are immediately put into nylon holding sacks. When the entire brood has been captured, the birds are banded using standard

Fish and Wildlife Service leg bands and released at the exact site where they were captured. This enables the mother to locate and assemble them after the banders leave and continue her faithful care of the ducklings until they can fly.

The mottled duck banding work is being done to enable Department biologists to determine the annual population turnover through hunting mortality. It also helps determine areas of heavy kill and the distribution pattern of the birds as they filter out along the coastal range each fall and winter.

A number of interesting points are in the preliminary findings. A significant number of mottled ducks raised along the southeast Texas coast contribute heavily to



MOTTLED DUCK DRAKE



the annual harvest in the State of Louisiana. Also, many birds show a very strong resident tendency. Some birds are eventually shot one to several years later on the same pond on which they were banded as ducklings.

The mottled duck banding program will continue for one or two additional years. When sufficient reports of banded birds shot by hunters are accumulated, the distribution and mortality information will be calculated. This information will be formulated with other data into a management plan aimed at perpetuating the mottled duck as a game species important to hunters along the Texas Gulf Coast. **



Marsh Hen Hunting

by C. D. Stutzenbaker
Waterfowl Biologist

ALONG THE HEAVILY populated Gulf Coast area, one group of game birds receives little or no hunting pressure. These fine game birds are loosely referred to as marsh hens, and they include the king rail, clapper rail, Virginia rail, sora and the gallinule—all members of the same family.

Rails and gallinules are plentiful throughout the rice belt and in practically all wetland sites along the Gulf Coast. These birds are heard more than seen because of their secretive habits. Without doubt, many a person has cast a nervous glance across the darkening prairie when a rail or gallinule suddenly produced its strange calls in the dense, grassy cover.

Rails are chicken-shaped birds with short, rounded wings and short tails that they often cock upward. King rails and clapper rails have long, thin beaks and are almost identical except in color. The king rail is rusty brown, and the clapper rail is gray. The king rails are found in freshwater marshes of the interior, while clapper rails live only in salt marshes.

The Virginia rail and sora are about one-half the size of the clapper and king rails. The Virginia rail is rusty-colored with a reddish, slender bill; the sora or Carolina rail is gray-brown with a short, yellow bill. The Virginia rail, sora and their larger relatives the king and clapper rails, prefer dense grass and make brief flights. The birds fly with a labored wing-beat and dangle their legs while in flight.

Gallinules swim and resemble ducks, but their heads are smaller. When they fly, they skitter across the water for a short distance to get airborne.

Hunting rails and gallinules is hard, but enjoyable work. Heat of late summer and hordes of mosquitoes usually confront the hunter. The ideal time to try for a pot of marsh hens is during rice harvest. Rice combines drive the birds to the unharvested center of the field, and many rice farmers allow hunters to walk into the unharvested center and flush the rails. Fast and furious shooting erupts for several seconds.

Another method of hunting both rails and gallinules is also hard work since the birds are reluctant to flush and prefer to escape through the



Marsh Hen Hunting

dense grass of their choice habitat. This method involves getting into the marsh and trying to make the birds flush. Several hunters form a line and wade through the grass, either using dogs or dragging ropes with bells attached between them.

A well-trained dog that has experience with rails is very valuable in recovering downed birds. It is almost impossible to find a wing-tipped bird without a good dog, and then the dog has a difficult time because the rail provides little scent and will run, dive and swim to escape. The cover is the hardest kind of going, and only well-trained dogs should be used.

In some areas it is possible to use the small, shallow-draft boats employed along the East Coast of the United States. Hunters wait for a high tide

and then pole or paddle their small boats through the flooded grass hoping to force the rails to fly. This technique works well along rice canals and small bayous and streams, but the average tides in Texas are not high enough for this type of hunting.

The hunting season for rails and gallinules starts September 1 and runs through November 9. For the large rails, the king and clapper, the daily bag limit is 15 and the possession limit is 30. The hunter is limited to 25 sora or Virginia rails in both the daily bag and total possession. The daily bag limit for gallinules is 15 and the possession limit is 30.

The meat of rails and gallinules is dark like that of other game birds. The French people of coastal Texas and Louisiana prepare these birds in a traditional gumbo or pot roast. The birds are tasty whether broiled a short time over an open flame or casseroleed. Use plenty of seasoning.

A favorite stew recipe from the Texas coast:



pick and clean two birds, add salt and pepper and thoroughly dredge with flour; brown in a large skillet with one-eighth pound of butter. Prepare a large pot, preferably with a heavy cover, and add the following: six egg-sized onions, five carrots (cut in one-inch sections), five diced tomatoes (peeled), a pinch of marjoram, two tablespoons of salt, one teaspoon of pepper and two bay leaves. Add one quart of water and three tablespoons of wine or cider vinegar. Bring to a simmer. Add the birds and butter gravy to the pot and simmer very slowly for about two hours.

Marsh hen hunting is excellent sport. The birds are not difficult targets for the expert and hunting them teaches the beginner alertness and quick shooting. Even poor wing shots manage to bag a few birds, and a small success is encouraging for the novice. Generous bag limits and tasty meat make rail hunting one of the most rewarding pastimes on the coast. * *

The rail's habitat is marsh, and shallow-draft boats can be used to hunt them. In Texas, they can be used best along small bayous and streams and in rice canals.

Rails are chicken-shaped birds, and both the king rail and clapper rail have long beaks. The king rail, however, is rusty brown, and the clapper rail, below, is gray.



Outdoor Books



BIG THICKET BIBLIOGRAPHY compiled by Mrs. Lois Williams Parker; Big Thicket Museum Publication Series No. 2, The Museum, Saratoga, Tex. 1970; 54 pages, \$2.00.

This annotated bibliography on East Texas' fabled Big Thicket contains 242 items drawn from books, periodicals and documents, and includes citations to theses, manuscripts and assorted films and recordings. A list of Thicket newspapers is given; however, news feature articles and columns were excluded from the bibliography. The publication is enhanced by a handsome cover picture of a sundew and by black-and-white photographs, the latter from the Fisher Collection at Lamar Tech Library.

A cursory look at the bibliography will reveal some weaknesses. Particularly regrettable is the number of geological publications missing, but the compiler anticipates that future editions will correct such omissions. The index covers primarily the names and topics cited in the annotations, which are brief and do not fully describe the content of each item. Moreover, the researcher probably would have benefited from a topical arrangement rather than one by form of publication.

Despite shortcomings, the bibliography is useful and timely. It is dedicated to Senator Ralph Yarborough, who introduced Senate Bill No. 4 to create a Big Thicket National Park. The bibliography serves well by bringing together many important items with brief but pertinent annotations, thus providing a reference tool of general interest.

The *Big Thicket Bibliography* is the second in the Museum's series. The first was a *Handbook for Members* (34pp., 50¢) of the Big Thicket Association, which sponsors the Museum. The *Handbook* contains the Association's articles of incorporation, constitution and by-laws, history and necrology. Its cover has a sketch of the late Lance Rosier, "Mr. Big Thicket," and the center spread is the Sierra Club's map of a proposed Big Thicket National Park.—*Alice Cashen*

THE CRISIS OF SURVIVAL compiled by the editors of *The Progressive* and the College Division of Scott, Foresman and Company; William Morrow & Co., New York, N. Y., 1970, 261 pages, \$6.95.

The Crisis of Survival is a collection of essays written by such people as John V. Lindsay, mayor of New York City; Ralph Nader, consumer advocate; Senator Gaylord A. Nelson of Wisconsin; and Paul Ehrlich, professor of biology at Stanford University. Each contributing author is more than qualified to sound an alarm in his respective area of concern. Each author offers his own solution for the salvation of mankind and his environment.

Compiled by members of the editorial staff of *The Progressive*—a monthly magazine that devoted the April 1970 issue to the problems of ecology—many of the essays found in *The Crisis of Survival* are to be found in this issue.

The editors are subjective in their comments on conservative politics, the South and corporate enterprise. They are disdainful of politicians who have climbed on the environmental bandwagon: "For a politician it is the safest of all issues, since conservation has no admitted enemies." The editors feel that the present political parties are incapable of action in time to solve the problems that beset the environment. And the majority of politicians will climb off a bandwagon that threatens private profit and corporate power, or dilute the issues with rhetoric and unenforceable or meaningless laws. An example of such legislation is in Pima County, Arizona where air pollution laws exempt the copper smelting industry which accounts for 90 per cent of all the waste dumped into the atmosphere.

The editors have made it plain that they look for new political alignments and new attitudes to be led by the youth. One of the more inflammatory essays is by Denis Hayes, a graduate student in the Harvard Law School and a national coordinator of Environmental Action. The essay is a rejection of everything that is not in harmony with

the environment, from ABM's and MIRV's to an economy that has not realized that infinite expansion is impossible on a finite planet.

There is strong emphasis by the authors on the links between environmental problems and other challenges facing the United States. The contributors are outspoken critics of the Vietnam war and the swollen United States military budget as major obstacles in overcoming the environmental crisis. The professional scholars advocate an interdisciplinary approach to the study of ecology instead of the traditional closed-shop disciplines such as biology and chemistry. The professors support studies that move work out of the classrooms and libraries and into the field to confront social and political problems.

Mayor Lindsay and Senator Nelson are two of the authors who are in the best positions to initiate legislative action in the field of ecology. Senator Nelson was a spokesman for conservation long before the cause became popular. He was co-chairman of the National Teach-In on the Crisis of the Environment on April 22, 1970 (Earth Day). The Senator has proposed an amendment to the United States Constitution that reads: "Every person has the inalienable right to a decent environment. The United States and every state shall guarantee this right."

Mayor Lindsay limits the scope of his essay, naturally, to the environmental problems of the city. Lindsay claims that technology is responsible for the crisis of the environment and that technology can end it. Professor Ehrlich is not so confident of technology and feels that a change in attitudes and national priorities is more important.

The competence of the authors has been established in their respective professions, although some will question the abilities of the statesmen. The political views of the authors and editors are left of center and avid readers of the *National Review* will take issue with several points.—*David Baxter*

POPULATION, RESOURCES, ENVIRONMENT by Paul R. Ehrlich and Anne H. Ehrlich; W. H. Freeman and Co., San Francisco, Calif., 1970; 383 pages, \$8.95.

Paul R. Ehrlich is professor of biology at Stanford University and an authority on population biology and ecology. Professor Ehrlich has become the nation's outspoken expert on the subject of overpopulation. He has lectured at major universities, appeared before congressional groups and appeared on such popular telecasts as the "Tonight Show." He has a large following of supporters for his program of voluntary male sterilization. His wife, Anne, is a biological illu-

strator and research assistant in biology at Stanford University.

Ehrlich considers the world situation to be as follows: our planet is grossly overpopulated and the large number of people and the rate of growth is a major hindrance to solving human problems. He points out that some 10 to 20 million people starve to death annually because the limits of human capability to produce food by conventional means have been reached. Any attempt to increase food production will tend to accelerate the deterioration of the environment. This will, of course, reduce the ability of the earth to produce food.

Ehrlich feels that population growth increases the chances of worldwide plague and nuclear war. The size and mobility of the population encourages the spread of an uncontrollable virus. He recalls the Nazi quest for "*Lebensraum*"—room to live—as a major reason for the invasion of the Soviet Union. Germany and the rest of the world are more crowded now than in the 1940's, and the major powers have thermonuclear devices as means to seek living space for their packed humanity.

A final aspect of the world situation is that there is no technological panacea for the crises of population, food and environment. The solutions to these problems may involve changes in the attitudes of humanity as related to reproduction, economic growth, technology and the environment.

Professor Ehrlich's attitude toward the world is a vision of a Spaceship Earth and competent crew to man her. Instead, "Thermonuclear bombs, gases and supergerms have been stockpiled by people in the few first-class compartments (of Spaceship Earth) for possible use against other first-class passengers. . . ."

The book is scary, and it should be; famine is not a thing of the past, as witnessed in Biafra, nor is the possibility of a worldwide epidemic so remote. In 1967 an unknown virus for which there was no cure was transported through the London airport by monkeys destined for a research laboratory. The resulting disease was confined to the lab and only the immediate workers were affected. Elaborate quarantine procedures after the Apollo missions are testimony to the potential of mass death from an unknown disease.

Ehrlich points out problems, and he proposes answers. Some of his answers will be repugnant to many for reasons of personal conscience, but basic solutions must involve dramatic and rapid changes in human attitudes. Abortion, contraception, an end to the exploitation of nature and unilateral disarmament will go against the grain of a lot of people in the position to make such decisions.

—David Baxter

Long Shots, Short Casts

compiled by Neal Cook

Fire Ant Farce: The National Wildlife Federation has aligned itself with U. S. Bureau of Sport Fisheries and Wildlife, the Federal Water Quality Administration and a number of local and regional conservation organizations in their opposition to the Department of Agriculture's huge plan to spend \$200 million over a 12-year period on an eradication program aimed at the fire ant in the south-eastern United States. The program aims to spread 450 million pounds of a new pesticide called Mirex over some 120 million acres of land in nine southeastern states in a new effort to eliminate fire ants. Requests for delays in the program have also come from other sources, "because of the lack of published research information on the effects of Mirex on the environment and non-target organisms." Initial research indicates that the most damaging effects of Mirex involve marine organisms, including shrimp, a vital fishery product of most of the states involved in the program. The Department of Agriculture has moved ahead on the proposed eradication program even after receiving a 1967 report by a National Research Council committee made up of 12 scientists from throughout the United States, which report states this: "After considering all available information the committee feels that an eradication of the imported fire ant is not now biologically and technically feasible. Further, in view of its conclusions as to the importance of this insect relative to other pest species, and the values to be achieved through its eradication, the committee has very grave doubts whether an attempt to eradicate it would be justified, even if it were shown to be feasible at a later date."

Glass Buy-Back: The Glass Container Manufacturers Institute announced recently that glass container manufacturers will buy glass bottles and containers for a penny a pound. The plan should do much to help in the litter problem once individuals and groups begin to earn extra money collecting their material from the sides of highways and public use areas. Glass manufacturers can use about 30 per cent old glass in making new containers and there are other uses of the old glass still in development stages. In Texas, companies which accept old bottles are: Chattanooga Glass Co., Corsicana; Anchor Hocking Corp., Houston; Owens-Illinois, Inc., Waco; Glass Containers Corp., Palestine; and Kerr Glass Manufacturing Corp., Waxahachie.

KERR

WILDLIFE MANAGEMENT

AREA

Axis Deer at Kerr Wildlife Management Area. Photo by Reagan Bradshaw.



by Frank Etheredge



SCIENTISTS AT THIS LABORATORY don't wear white smocks, and the animals they study don't bear any resemblance to white mice. But Texas Parks and Wildlife Department biologists at the Kerr Wildlife Management Area in the heartland of the Hill Country are nevertheless operating a genuine outdoor laboratory which is providing vital scientific information for Texas landowners who want to know how to combine livestock grazing and wildlife management into a profitable overall program.

The Kerr Area is a 6,493-acre tract of rolling and rugged Edwards Plateau terrain overlooking the headwaters of the Guadalupe River about 15 miles west of Hunt in Kerr County.

All of the area is enclosed in a deer-proof fence eight feet high to enable the biologists to control the number of deer. Before the completion of this fence, deer from neighboring ranches moved into the area when management practices on the area caused improved conditions. This movement of new deer into the area created problems for biologists who kept accurate counts of the population.

The acreage, however, is more than just a large deer pasture, as it has been divided into operational size pastures of varying acreages and into 10 experimental plots of 96 acres each. White-tailed deer, cattle, sheep, goats and even several species of exotic big game animals such as axis deer have been placed in the experimental plots to determine which species are winners in the competition for available forage.

This and other management areas operated by the Texas Parks and Wildlife Department fill a specific need peculiar to Texas. In states where wildlife is found on public lands, it is relatively simple for game departments to experiment with game management techniques. But most deer habitat in Texas is privately owned, making the process more difficult. Moreover, the Hill Country is a ranching center also containing extremely high concentrations of deer, making proper range management vital to rancher and hunter alike. One of the early conclusions made by Department officials after several years of experiments was that economic returns from deer compare favorably with returns from livestock when the deer are adequately harvested.

Texas' whitetails are primarily eaters of forbs, which are small broadleaf plants, and browse,

KERR

which consists of leaves and woody stems of various shrubs and trees. They compete with sheep for the forbs and with goats for the browse. In drought summers, when few forbs are available for Hill Country deer, competition with goats for browse becomes critical.

Ranchers, then, are advised to regulate both goats and deer if they desire a healthy deer herd. Cattle stocked moderately can be beneficial to deer populations, since they reduce dense grass cover and give forbs room to grow. But heavy or continuous grazing are sure to reduce deer herds. Experiments on the Kerr Area have shown that deer can become undernourished on land which would be considered ideal grassland for cattle.

On Texas deer ranges hunting through lease arrangements provides income for the landowner and helps keep the deer herds from outgrowing their food supply. The Department issues antlerless deer permits to supplement buck hunting where herds have outgrown available food supplies. The removal of both sexes is a prime method of preventing deer die-offs under these conditions.

The value of an adequate harvest of deer has been illustrated on the Kerr Area, where controlled hunting has been a part of the overall program since 1954. Since 1960, kills ranging in size from 18 to 45 per cent of the total herd have been recorded in the public hunts without drastic reduction of the herd. Either-sex hunts have been conducted during the last 12 years.

Annual deer kill on the area has been generally increasing since hunting started in 1954. There were 75 permits issued for the first hunt and 70 hunters reported to harvest 37 deer. As the deer population increased, more hunting permits were drawn in the annual lottery and an either-sex hunt was started in 1956.

During the 1969 hunting season a total of 758 permits was issued by the Department, and 567 hunters harvested 226 deer. The largest kill, however, was in 1968 when 761 hunters took 369 deer. In the past 16 years of hunting, permits have been

issued to 7,873 persons, and 6,101 reported to hunt. They harvested a total of 3,017 surplus animals—1,363 does and 1,654 bucks.

The 1950 pre-season population estimate of deer on the Kerr Area indicated a density of one deer for each 9.7 acres. Prior to the 1969 season the density had increased to one deer for each 5.3 acres. The turkey population also has shown a gradual increase due to range control and improvements. The first spring season on turkey gobblers was held this year from April 25 through May 2. A total of 52 persons killed 17 birds during the experimental hunt.

When the Kerr Area was acquired in 1951, it was covered with dense growths of cedar. A study to determine the value of cedar to wildlife was made by clearing certain areas and comparing the amount of deer and turkey food produced in each type. It was found that the cleared areas produced more food if desirable species of plants such as forbs, sumacs and various oaks replaced the cedar. The cedar was found to be a poor deer food, with foliage and fruit utilized only during times of extreme food shortage.

Biologists concluded that a chain dragged between two bulldozers over clumps of low cedars produced the best results. It cleared the land for the growth of grasses and forbs, but left a con-



Kerr Wildlife Management is in the hills of Central Texas overlooking the headwaters of the Guadalupe River. There is excellent forage and cover for deer, and studies have been conducted to determine how white-tailed deer, exotics, cattle, sheep and goats compete for available food.

Cattle and deer thrive together when managed properly. Goats compete with deer for available forbs.

Tagging of game species including the whitetails and exotics gives biologists information on the movement of these animals. The feeding habits of exotics are also closely studied.

siderable amount of cover as well. A study also was made of the economic value of cedar posts as a crop, but biologists found that the slow rate of growth made them unprofitable. During the study, the cedar trees grew at a rate of only one-tenth of an inch per year, which meant it would take 40 years to grow a post four inches in diameter.

Oak woodland in the Hill Country can support three times more livestock than can cedar brakes. However, in parts of the range where the more desirable species of browse won't grow, it is wise to leave the cedar. Areas such as draws, canyons, steep hillsides and old burned areas often have shallow soil. Cedar can find sufficient nourishment to grow in these unproductive areas and can be a valuable asset to wildlife by providing security, nesting cover and shade.

On the management area, certain pastures have been set aside for preservation of the cedar brakes. These dense thickets provide breeding habitat for the golden-cheeked warbler, a rare songbird.

Some of the more recent studies conducted on the area have dealt with exotic game animals. The number and variety of exotic big-game animals which have been released in Texas in the past decade is tremendous, and biologists have been working to determine what impact the exotics' food habits have on native game populations. The influx began

with the importation of nilgai antelope to South Texas in 1930. Now there are more than 30,000 head of exotics in Texas, including such species as eland, oryx, blackbuck antelope, aoudad sheep, zebra, axis deer, sika deer and fallow deer.

A current study nearing completion at the Kerr Area involves the feeding habits of blackbuck antelope, axis deer, sika deer and aoudad sheep. To gather this information, biologists follow tamed animals to record the types of plants which they eat.

Research on exotic animals probably will increase in the years to come so that all wildlife, vegetation and domestic animals can be sensibly managed by landowners. This management hopefully will produce habitats where exotics, native wildlife and domestic animals can blend harmoniously and provide benefits for hunters as well as landowners.

Principles of good deer management are the same as for good livestock management and good range management. Requirements for each class of animal are somewhat different, but the art of grazing land management is the ability to match these requirements with the potential which the range has to offer. The Kerr Area, and the other State wildlife management areas, have more than proved their value as workshops to point the way to achieving this objective. * *



This land was cleared by dragging a chain over low cedar. Some cedar brakes were left to provide shade, escape cover for game animals and a nesting area for the rare golden-cheeked warbler.

Photos by Bill Reaves

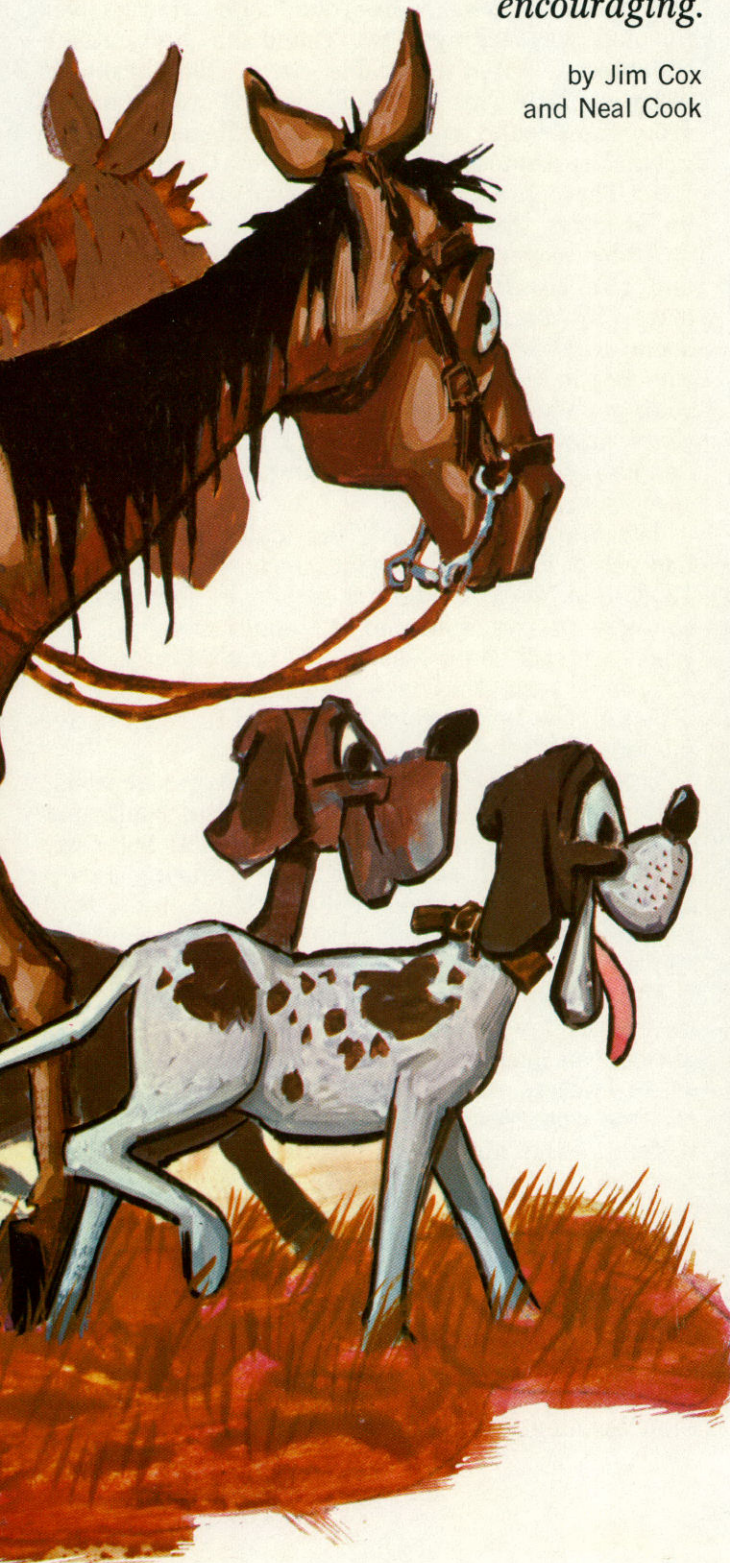


Marko Sham

A Lesson in Cooperation

When sportsmen, land-owners and government agencies get together the results are encouraging.

by Jim Cox
and Neal Cook

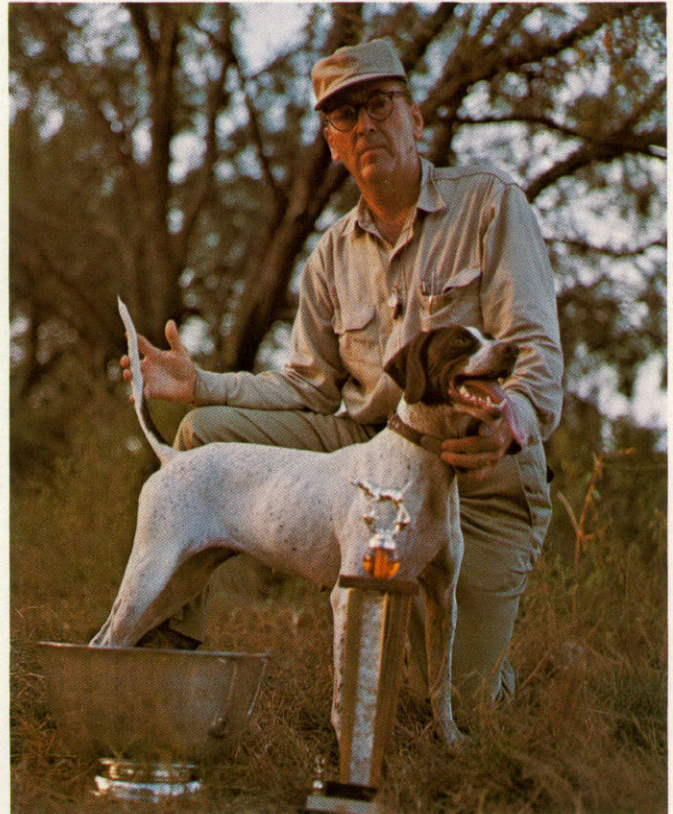


BOBWHITE QUAIL—the gentleman of Texas game birds—has found Wilson County a good place to live, thanks to a program begun over 20 years ago.

Quail have brought joy to the hearts of hunters and “bird dog” men through the ages, but unfortunately the happy blend of good quail habitat and other land usage is not always found. When good habitat is not available, there are no quail, and this was the problem before a unique restoration program began in Wilson County.

After World War II, the San Antonio Bird Dog and Quail Club began to look for an area on which they could hold their yearly field trials to judge the performance of their dogs. For these trials, they needed access to a large amount of land on which there were large populations of quail. Southeast of San Antonio is an area that historically had high numbers of bobwhite quail, but as increasing amounts of land were put into cultivation, the amount of suitable cover and food for quail diminished and so did the numbers of quail.

Hoping to get the cooperation of the Texas Parks and Wildlife Department—then known as the Texas Game, Fish and Oyster Commission—representatives of the San Antonio club came to Austin. The Commission had just begun a series of quail studies throughout the State, and they were pleased to have the cooperation of the bird dog club in their work. It was agreed that an area between Stockdale



Bradford Miller and 'Stokely's Sue' with the first place trophies in the Amateur Shooting Dog stake.



In field trials no birds are shot. When a dog points a covey, the handler dismounts from his horse, flushes the birds and fires a blank pistol to demonstrate the dog's steadiness.

and Nixon near Pandora in northeastern Wilson County would be a good place to study methods of land management which would be favorable for quail production.

Robert G. Mauermann, then a biologist and now deputy director of the Department, was assigned to work on the Pandora project with members of the Bird Dog and Quail Club and local landowners. He was in charge of coordinating the project with county agricultural agents, soil conservation groups and federal agencies. Money for the project was furnished by members of the bird dog group, and a project began under the terms of the federal Pittman-Robinson Act.

A special agreement was drawn, outlining the responsibilities of the club, the landowners and the Department. Part of the agreement allowed for free access to the land for club members and Department biologists—a touchy subject. Twenty-six landowners were involved in the 9,000-acre area and all of them agreed to the terms for a period of 10 years.

The document asked each landowner to allow biologists to study his land and conduct whatever research was necessary to determine changes which would benefit quail. Landowners were also asked to cooperate by following recommendations made by the biologists and to enforce a ban on quail shooting during the project's early years. Club members have continued to observe this ban.

The Department's side of the agreement called for a survey of quail populations and habitat and notification of landowners about suggested improvements.

San Antonio Bird Dog and Quail Club members agreed to contribute funds, hire a special game warden for the area, post signs, construct gates and pay landowners for any damages caused during field trials.

Club members and the Department further agreed to plant grasses for both quail food and cover; supply at no cost to the landowner commercial fertilizers to help develop native vegetation; fence off waste areas which were unproductive but which would become valuable quail habitat and coordinate the work among the various agencies involved.

In part of the area where scattered mesquite and huisache trees were found and where cover for quail was lacking, it was found that half-cutting the trees created favorable cover. The branches were cut half-way through about 20 to 30 inches from the ground and allowed to fall gently to the ground so that they would still be attached to the tree. These branches continued to grow and provided cover throughout the year.

Added cover afforded by these half-cut trees and the development of native food producing plants by discing and fertilizing in the area soon began to show beneficial results. When the project was begun in 1946, a census showed an average quail population of one bird for every 25 acres. Two years later when the first field trial was held at Pandora, the population had climbed to one bird for every six acres.

The San Antonio Bird Dog and Quail Club has had field trials in the Pandora area every year since 1948, and even though there have been several changes in ownership of the land involved, the trials are still being held in the original area. Now 23 years later they are continuing to cooperate although the Department has ceased to be an active partner.

This study was important for several reasons: it demonstrated methods by which the landowner can economically increase the number of bobwhite quail on his land, and it led to an enduring agreement from which members of the San Antonio Bird Dog and Quail Club have been able to hold their annual field trials.

Most important, it showed that cooperation between the landowner and the sportsman is not a difficult problem. Landowners object, and rightly so, to hunters who shoot coveys of quail along the road or who trespass on their land with no regard to fences. But hunters or bird dog enthusiasts who cooperate with the landowner and assume respect for the land will generally find landowners willing to let them pursue their sports.

Thoughtful hunters who remember their responsibilities to leave the land in the same or better condition than they found it can expect to have a place to continue their sport each season. It's been working for the San Antonio Bird Dog and Quail Club for almost a quarter of a century.

* *

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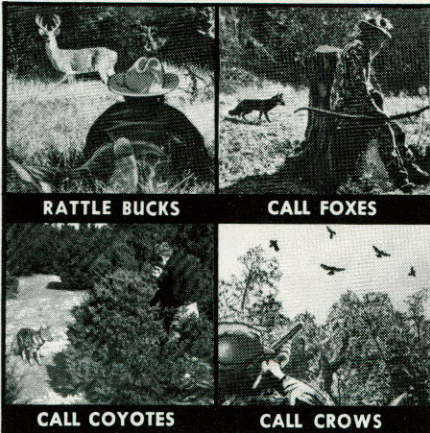
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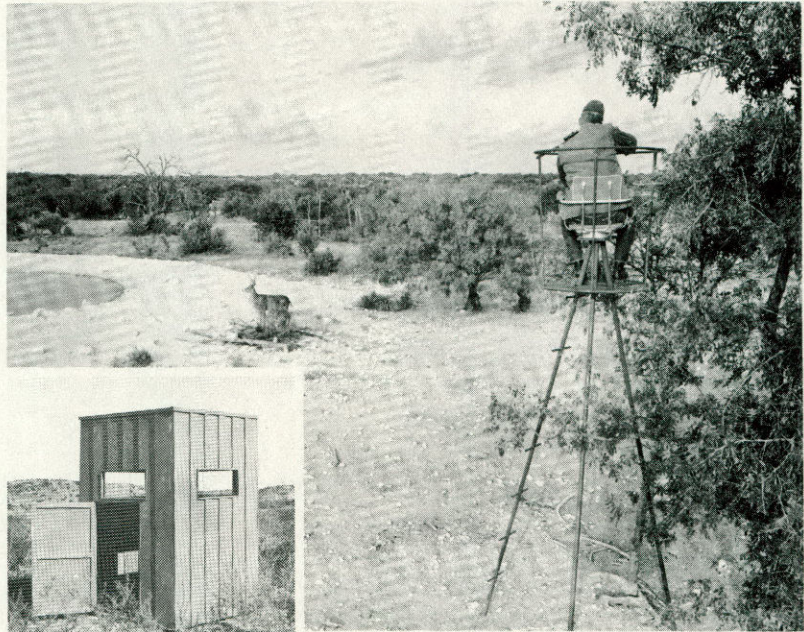
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VIVID VOCALIST

by Norrel Wallace

A MALE CARDINAL cannot be mistaken for any other bird in North America. It is a flaming red bird with a distinct crest, a black throat patch that encompasses the eye and a short, heavy red bill.

Female and young cardinals are less gaudy, but both have the distinctive crest, red bill and more than a casual tint of red in their cinnamon plumage to identify them as the mate and offspring of the more brilliantly colored male.

The cardinal is a member of the family Fringillidae, the distinguishing characteristic of which is the short, heavy bill used for cracking seeds. There are some 400 species around the world, including the buntings, "sparrows," towhees and juncos. There is a dispute now over whether the cardinal should be classified in the genus *Richmondena*, where it has been for many years, or in the genus *Pyrrhuloxia*. No matter what is the outcome of this dispute, it will still be the species *cardinalis*.

A close relative of the cardinal is the *Pyrrhuloxia sinuata*, commonly called by its scientific name pyrrhuloxia. It has the same conspicuous crest but has a yellow

bill and grayish-red plumage. It is generally confined to the cactus and mesquite regions of the southwestern United States.

The cardinal is the common, welcome resident of most of the United States from the Canadian border to the Gulf Coast and from the Atlantic Ocean to the 100th meridian. It is uncommon in the New England states, and there is an isolated population in southern New Mexico, Arizona and California. It is abundant enough in several states to be called the state bird: Illinois, Indiana, Kentucky, North Carolina, Ohio, Virginia and West Virginia.

Throughout its range, the cardinal often sings loudly and clearly from a perch on a telephone line, fence or the highest branch of a tree, sounding very much like a boy whistling sharply for his dog. The rapid *hip-ip-ip-ip-ip-ip-ip*, uttered without any loss of power at the end, rings out clearly from the tops of the trees and seems to rouse the echoes. The female sometimes joins in the singing, which is uncommon among birds, and her call is a crisp *tsik*, especially during hatching time.

Another sound is a rich and rounded *cue-cue* that often brings

an answering *cue-cue* from another bird far away. Then there is the long-drawn-out *e-eee* and the *cheer, cheer, cheer* that makes one feel a joy in having such a bird in the neighborhood.

Since the cardinal does not migrate, it is a favorite bird to feed from a windowsill or backyard feeder during winter snows and cold weather. Bread and small grain are readily accepted. Few sights in nature are more beautiful than a cardinal perched on a limb with a snowy background.

The cardinal is beneficial to man as well as being friendly and beautiful. It eats many undesirable weed seeds in addition to a host of small insects.

Females and young cardinals

are secretive in their habits. Most of their time is spent in thick tangles of brush in search of food. The male prefers an open perch high above the ground where he may sing when he is not looking for food.

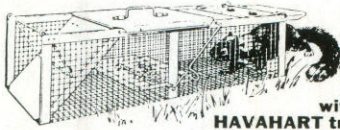
In the spring, cardinals make a nest of twigs, leaves and grass, usually in a dense tangle of vegetation not too high above the ground. Here the female lays three to four eggs. During the 12-day incubation period, the male brings food to the setting female, and he proves to be a good parent by rearing the young and feeding them after the female hatches the eggs.

While the male is busy with household chores, the female be-

gins to hatch a second brood for the male to care for. Occasionally, a pair of cardinals raise as many as three broods in one nesting season. In this way nature assures that some young cardinals will become adults despite heavy predation from snakes, other birds—such as the grackle and crow—and humans who thoughtlessly rob their nests.

Not too many years ago the cardinal was trapped in large numbers and sold to pet shops. This practice stopped when the cardinal became a protected species. Granted, a cardinal was delightful to watch in a cage, but he is much more beautiful high on a limb singing his song for all to hear. **

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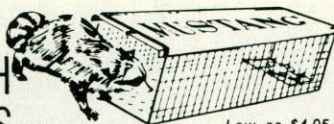
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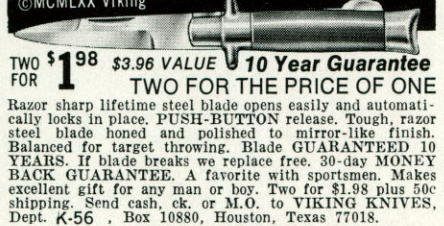
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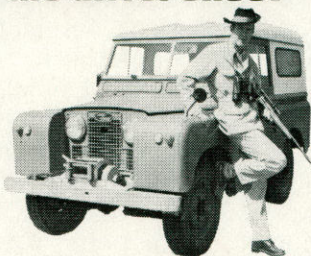
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Junior Sportsmen

by Joe Stevens

Wildlife Biologist

PREDATION in the natural realm is simply the killing and eating of one animal by another. It is a way of life for countless species from the microscopic one-celled protozoa to the giant whales.

For modern man to misjudge this fascinating natural phenomenon from a standpoint of morals is most unfortunate. A coyote killing a rabbit is seen by many as treacherous, calculated and cruel when in reality the resourceful animal is only satisfying its physical needs from the source most readily available. The proper perspective of this equation of life can be realized from the predator's point of view. Actually it is no more an act of cruelty for a hungry bobcat to catch and eat a young lamb than it is for man to satisfy his appetite by catching a fat young chicken from a flock, wringing its neck and frying it for dinner. The activity of relieving hunger is a vital part of life and occurs in routine animal behavior.

Even though the large predators dominate our thinking when the subject arises, the fact is that all of nature is based on the predation of lower forms by the higher ones. The preyed-upon species far outnumber their predators, and unless the ecology of an area is drastically changed, the predators tend to help maintain a balance that is essential to the existence of the community. Each species with its specific adaptations for existence occupies an important niche.

This is true in the microscopic world as well as in the world

visible to the naked eye. The one-celled protozoa in the pond, lake or ocean capture and eat other minute animals. Even the sponge, often used to wash the car, is a predator. Its digestive cells are equipped with whip-like flagella which set up currents, sweeping microscopic animals into a central chamber where they are digested for food. The "doodlebug" or antlion excavates a cone-like trap by pitching dirt out with its flat head and waits for a passing ant to fall into the den. When a careless victim slides to the bottom, it is quickly seized by the doodlebug's strong jaws and given an injection of poisonous fluid that insures a quick death. The prey is then pulled under the surface where the doodlebug sucks the nourishing body fluids. When the meal is finished, the skeleton of the ant is thrown out of the hole and the house is tidied up for another victim. The praying mantis, mud dauber wasp and ladybug beetle are other examples of predators in the insect world, and their activities are a fascinating story.

These and most other insects fall prey to spiders, frogs, fish, lizards, snakes, birds and mammals. If this were not true, great swarms of insects would probably cover the earth and threaten the existence of all living things, including man. Some scientists speculate that this will eventually happen as a result of human interference with the ecological balance of the world.

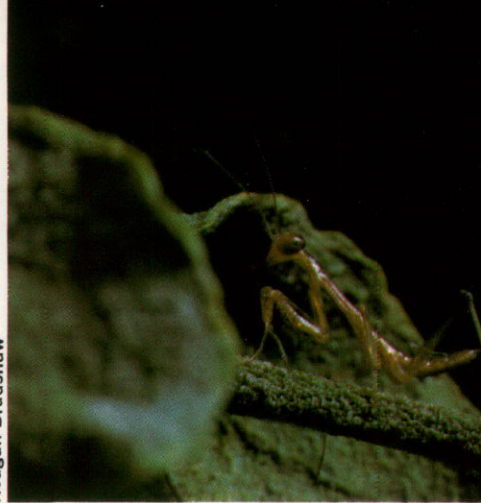
As a result of their predation on domestic animals and game

species, the larger predators such as hawks, owls, foxes, coyotes, bobcats, wolves and mountain lions have wrongfully been assigned the villain's role when the subject of predation arises. The timber or lobo wolf, black bear and mountain lion were practically exterminated in the wake of the expanded livestock industry, but they can be beneficial in the wild by keeping game herds in a healthy state of balance. Intensive local control measures may become necessary where coyote, bobcat and raccoon depredation flares out of hand, but care must be taken not to exterminate them. They have their place in nature's scheme and are essential if any kind of balance is to be maintained.

It is easy to understand the importance of predators in certain situations. Since plant eating animals reproduce in such great numbers, they can quickly ruin a garden or farm crop or deplete vast areas of rangeland. As a result of intensive predator control in the lower rolling plains of Texas, rats and rabbits have been known to eat the food and cover desperately needed by quail and other game species. Predators would have kept the rats and rabbits under control.

Competent studies continue to reveal that the availability of food governs predators' feeding habits as it does those of all other forms. When natural foods such as rabbits, mice, rats and insects are abundant, other species are not so severely harassed. However, unattended domestic animals and

Reagan Bradshaw





A predator is an animal that lives by eating other animals, and most of them destroy animals that harm man. Mantids eat small insects such as mosquitos and flies, and most spider webs are adapted to ensnare small insects. The ringtail eats rodents and small birds. Mountain lions live off larger mammals. Man is also a predator.

John Suhrstedt

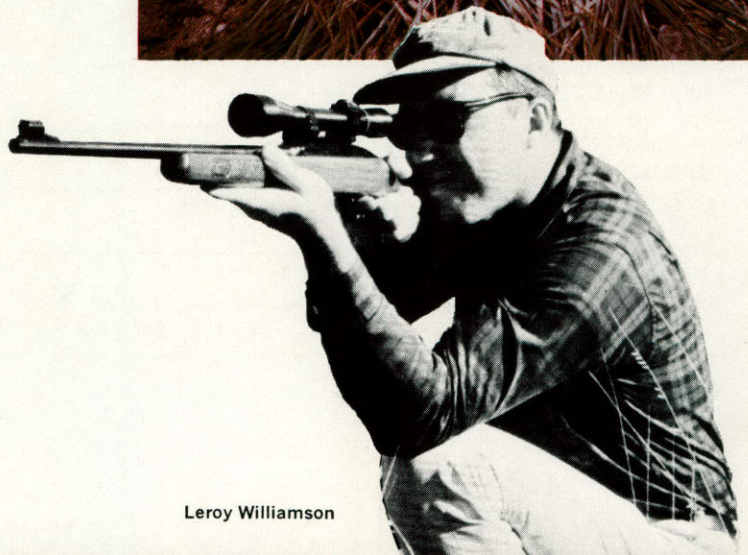


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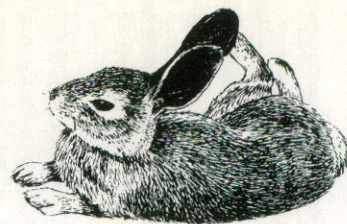
overpopulated game species are relished when their teaming presence makes them more readily available than the usual diet.

The place of predators in the ecology of our State is sound, and their protection should be encouraged. Some of them are the most beautiful and exciting of all our wild animals. Through the years they have provided high quality recreation and have the potential for much more. Hopefully through modern educational opportunities man's philosophy about these wily creatures will turn the corner of negativism and lead toward a more positive attitude for the benefit of all. **



Leroy Williamson

Letters to the Editor



Duck Stamp

How old do you have to be before you need a duck stamp?

David Pavelka
Houston

Anyone who has passed his 16th birthday needs a Migratory Bird Hunting Stamp. In addition, anyone who has passed his 17th birthday needs a Texas Hunting License.

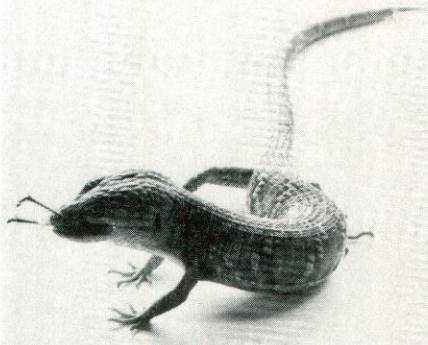
Alligator Lizard

I enjoyed the recent article by W. R. Long in your fine magazine about Texas alligator lizards, even though it meant that I was scooped in the process.

In October 1969, I caught one of these lizards near Austin between Oak Hill and Barton Creek and have been able to keep it alive and healthy up to the present time. In fact he is sunning himself on the windowsill right now, having dined recently on some savory grasshoppers and crickets.

When first caught, Albert (the alligator lizard) was in a ferocious mood, attempting to bite anybody and anything within reach. Very gingerly and carefully, I carried him the six miles

back to St. Edward's University. His struggles to escape became less and less vigorous during the walk until he finally became completely relaxed. Upon reaching the campus, Albert, for all



intents and purposes, was quite tame and has not maliciously bitten anyone since. He sometimes will inadvertently seize a finger along with an insect being offered by hand, but that is strictly an accident. The tendency of these lizards to eat readily in captivity is in sharp contrast to many other lizard species which usually have to be force-fed at times.

During the past 10 months, Albert has shed his skin twice without being observed either time. He apparently

does not mind being handled and will hold on not only with his feet but also with his tail which is a surprisingly good grasping appendage. When placed back in his cage, he will slither into a pile of rags with his rear legs placed straight back along his tail looking very much like a snake.

In spite of docile disposition and good eating habits, these lizards have one defect as a pet: a perpetual malevolent stare. Albert appears to be as mean as he was at the moment of capture. Evidently you can't judge an alligator lizard by his expression.

This photo of Albert was taken by Brother Simon Scribner.

Brother Thomas
McCullough, CSC.
St. Edward's University
Austin

Arsenic

Do you have any scientific evidence that cottontail rabbits accumulate the arsenic contained in the insecticides sprayed on cotton plants?

D. Cary Carman
Commerce

Elemental arsenic is one of the most poisonous substances to mammals that exists. We can find no evidence on any members of the Lagomorphs (rabbit family); however, white rats, which are closely related Rodentia, are killed by arsenic with doses as small as 10 milligrams per kilogram.

Arsenic does not readily break down and tends to accumulate in the bones of animals. It remains almost forever. For this reason, it is often possible to tell an arsenic poisoning victim years after death if the bones are available.

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BACK COVERS

Inside: On the Murphree Wildlife Management Area the age-old method of hunting with dogs is being combined with a space age method of transportation to catch and band mottled ducks during the molting period when they cannot fly. Photo by C. D. Stutzenbaker.

Outside: Bobcats, *Lynx rufus*, are very adaptable animals, but they prefer to live around rocky canyons or outcroppings. Their food consists mostly of rodents, which they hunt from late afternoon through the night. Photo by Reagan Bradshaw.



