

TEXAS

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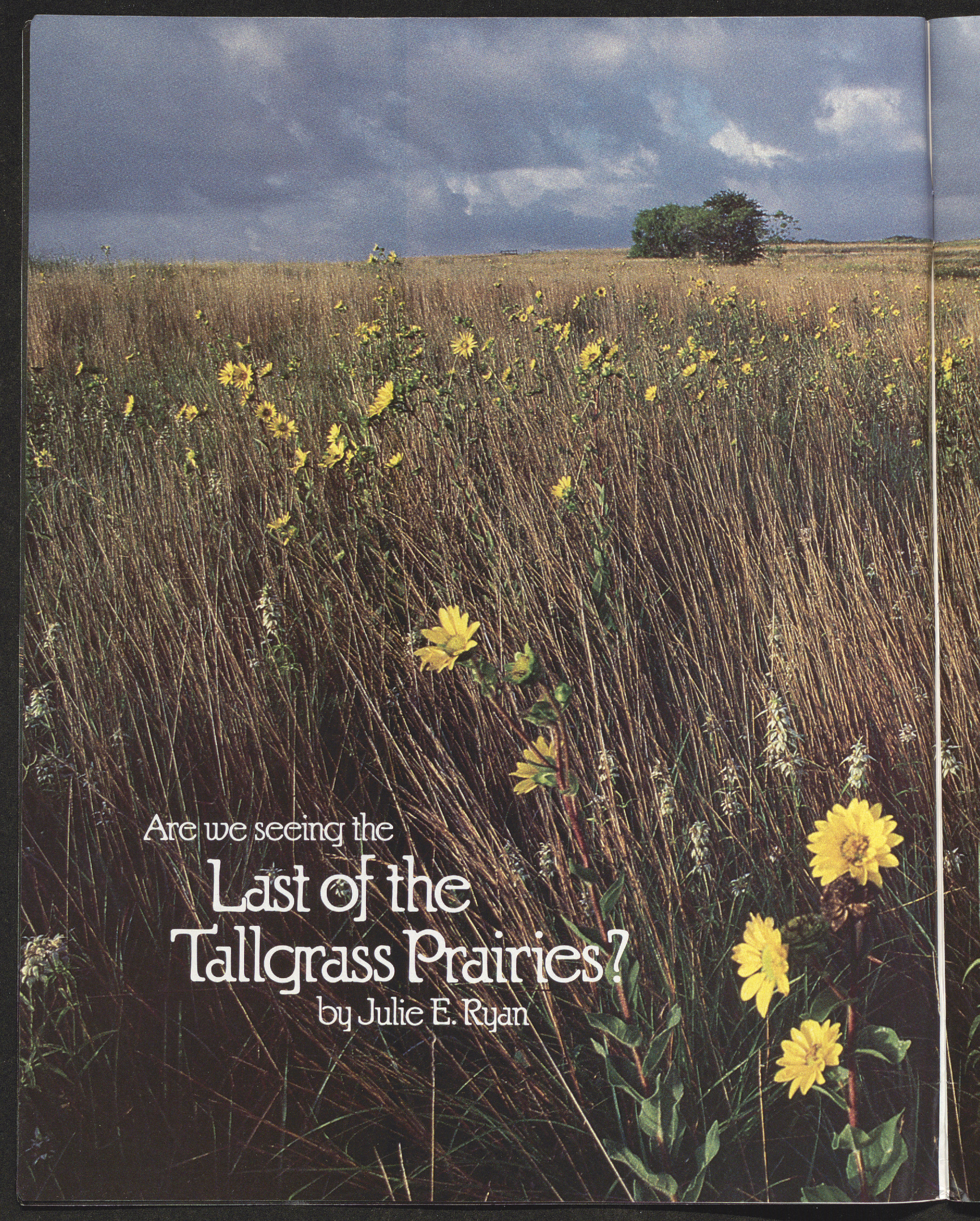


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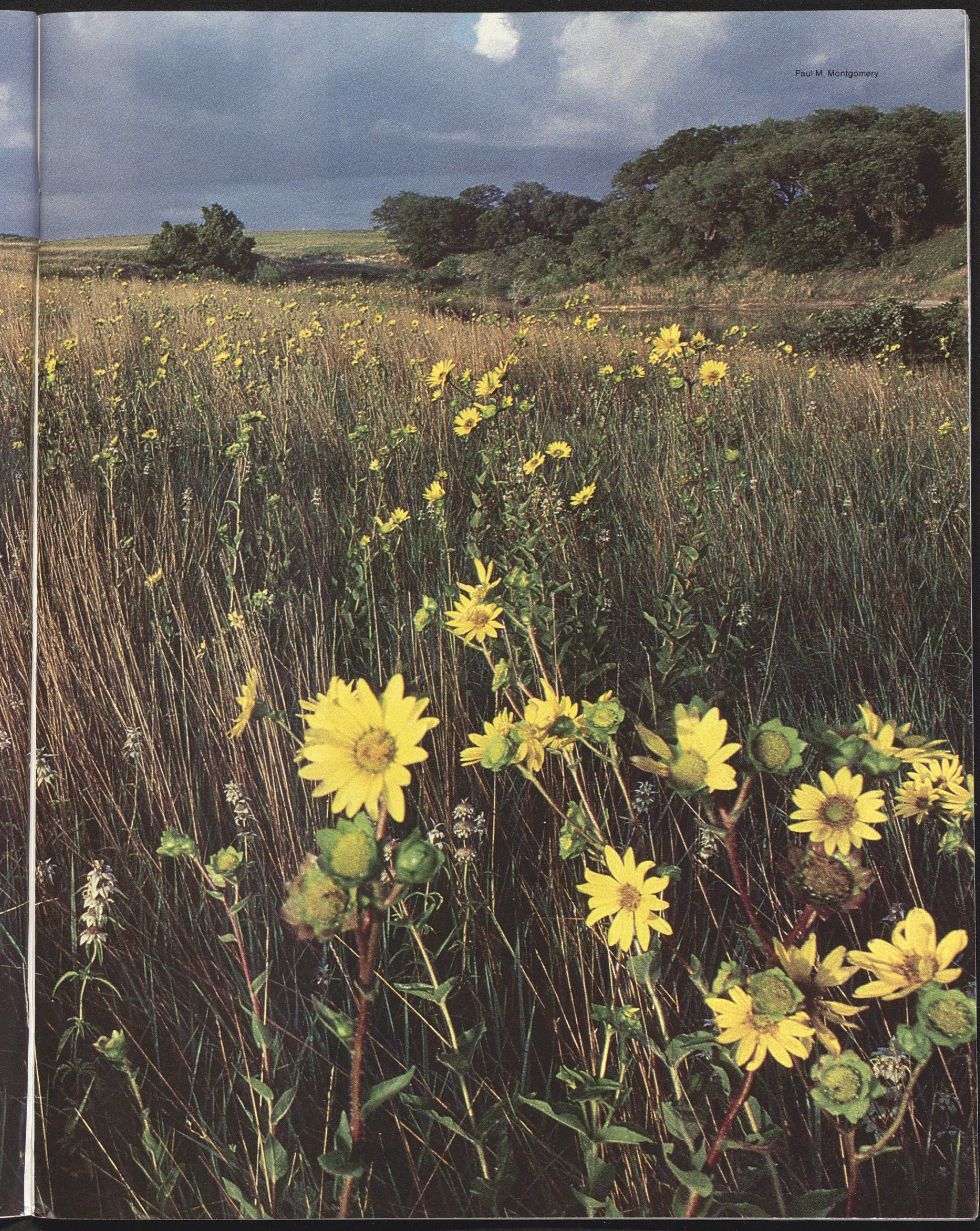


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Front and Back: A drive along the Davis Mountains Scenic Loop dispels the notion that West Texas is nothing but cactus and desert. (See story on page 24.) Photo by Leroy Williamson. **Inside Front:** Silky-haired seeds fill the pod of the green milkweed. Photo by Paul M. Montgomery.

A photograph of a tallgrass prairie. The foreground and middle ground are filled with tall, thin, golden-brown grasses. Interspersed among the grasses are numerous bright yellow wildflowers, likely black-eyed Susans, with dark centers. The field extends to a flat horizon line. In the distance, a few dark green trees are visible against a sky filled with heavy, grey clouds. The overall lighting is somewhat dim, suggesting an overcast day.

Are we seeing the
Last of the
Tallgrass Prairies?
by Julie E. Ryan

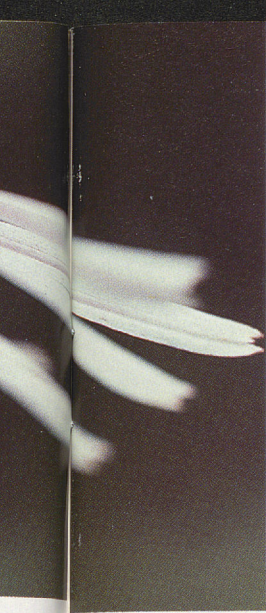


*Purple coneflowers (right) decorate
Landmark Prairie near Marlin (below).
Lakeview Park in southwest Dallas County,
(below right), a future state park, preserves
60 acres of prairie in four parcels.*



Paul M. Montgomery





Paul M. Montgomery



“Nature has nowhere presented more beautiful and lovely scenes than those of the vast prairie of the West; no nobler specimens than those who inhabit them—the Indians and the buffalo—joint and original tenants of the soil and fugitives together of civilized man . . . What a splendid contemplation, when one imagines them as they might in future be seen . . . preserved in their pristine beauty and wildness, in a magnificent park . . . A nation’s park of man and beast, in all the wild and freshness of their nature’s beauty!”

—Western artist George Catlin, c. 1832



Glen Mills

There’s a poignancy to George Catlin’s vision of a park preserving the ancient prairie as it was when he roamed and painted the American West. The buffalo and Indians were banished from their primeval home, but the world in which they lived lingers on in small areas, here and there. Despite numerous proposals for national prairie preserves, mounted by those who still cherish George Catlin’s long-ago dream, this is an accomplishment that still eludes the National Park Service. A national park is yet to be—but at least two Texas state parks preserve small parts of the prairie.

Some 600 acres of tallgrass coastal prairie is preserved in Brazos Bend State Park in Fort Bend County near Houston. And near another urban area, Texas inaugurates its first tallgrass blackland prairie state park with the recent discovery and preservation of a previously undocumented virgin prairie in southwest Dallas County. The new park, tentatively dubbed Lakeview Park, opens in 1986; of its 1,827 total acres, 60 acres of prairie in four parcels will be preserved as they were when the white man first came here, a time when a heavy fall crop of grass shaded a man’s head as he walked through it.

And until Lakeview Park opens, there are other memorable prairie preserves to visit in Texas.

No one knows firsthand what the pre-European tallgrass prairie was like that covered 750 million acres from Central Texas to Canada. What we know we have reconstructed from the accounts of early explorers and settlers and the plots of prairie that remain.



Paul M. Montgomery

The tallgrasses were the ultimate evolutionary form in the original North American Tallgrass Prairie, stretching a thousand miles wide at mid-continent. The Texas Blackland Prairie is one aspect of this ecosystem. Brooks Bradley of Alvarado, a fourth-generation rancher, calls the tallgrasses “the eagles, lions, whales and *homo sapiens* of the plant world.” Each species of grass grew in colonies where the soil and moisture suited it best. They survived drought, blizzard and fire, and sheltered a rich compost bed beneath their fountains of leaves. In the shelter of the grasses, the rich topsoil of the Blacklands slowly developed.

“Black and sticky as tar and deep as necessary,” is how Duncanville pioneer Charles Baker described the native soil in 1852. Later conservationists

called the American Prairie "the most fertile large area in the world." Lured by this fertility and federal land grants, the settlers looked for ways to tame the prairie—and succeeded. But once the plow broke the sod and bared the soil and its complex of micro-organisms to the elements, the grasses that were the matrix of all life in the prairie began to die. Overgrazing did the rest. Now less than 0.4 percent of Texas' original blackland prairie remains, amounting to fewer than 2,500 acres, half of what there was only 15 years ago. Only families who observed that their cattle wintered better and produced hardier calves on tallgrass hay saved plots of it for hay meadows—never overgrazed, only cut periodically. These hay meadows are all that



Glen Mills

remain of the original prairie.

When Lewis and Clark reached the Missouri grasslands in the summer of 1804, "undulating grasses nearly five feet high" caused them to gasp. From a moving car, the grasslands look like a field of hay. Only when you stop, come close, and walk them does their striking diversity emerge, and the spell of wilderness begins to take hold.

It happened to me on a crisp fall morning in 1983. I slipped under a roadside bois d'arc tree, camera bag in hand, and passed out of sight of the road, to the top of the hilly prairie. Penn Prairie, named for Cedar Hill's Penn family who had kept it for a century, had sent up a record crop of grass. Seed heads six and seven feet high sheltered sprays of delicate heath aster and lilac gayfeather. The hay-cushioned ground yielded to my feet

as I threaded through the towering grass. Later, standing at the bottom of the hill, I heard a sound I had never heard before, the grasses cracking and popping in the slight breeze like a sea of static electricity. It must have been the dry stems striking together . . . the voice of the prairie.

Dr. Geoffrey Stanford, director of nearby Greenhills Environmental Center, describes bygone scenes of the bisons grazing in large moving herds, eating grass, forbs and small trees—even mesquite—crushing the forage against their hard palates and moving on, leaving the prairie clean of scrub growth and ready for the next season. Controlled burning now substitutes for herbivores in maintaining the prairie.

Penn Prairie lies along a narrow road leading out of Cedar Hill, down limestone cliffs studded with cedar and Texas oak. In spring, visitors enjoy a vista of wildflowers that hide the new grass. In fall, the grasses eclipse the flowers, sending up tall, arching seed stalks, each species with its own calligraphic pattern of seed. The dormant grasses turn reddish as sugars in the plant descend to the roots for winter, giving the hills their rosy glow. The prairie at Lakeview Park is carefully guarded now and will remain closed to the general public until 1986.

Tridens Prairie, west of Paris, is owned by the Texas Nature Conservancy, a branch of the national organization that has bought and preserved more than 1.5 million acres of American wilderness with private funds. The Tridens Prairie contains 97 acres of what may have been the largest hay meadow in the world, supplying even the royal family of England. "Smiley's Meadow," old-timers call it. Wildflower Day on Tridens Prairie is celebrated in May. Dave Montgomery of Lamar County Junior College in Paris arranges tours at other times. The Lamar County Garden Club and Marshall Nichols of Paris collaborate with Montgomery to present wildflower shows, slide talks and other public programs.

Landmark Prairie near Marlin, southeast of Waco, is another Texas Nature Conservancy preserve. In spring, the meadows abound with wildflowers. Land that has been grazed lacks a diversity of these native forbs, or blooming plants, because cattle find them so

Glen Mills



Paul M. Montgomery



A wild parsley (far left) grows in Brazos Bend's 600 acres of tallgrass prairie. Lakeview (left) is a tallgrass blackland prairie and contains flowers such as the pink horsemint (below). Landmark (below center) is a Texas Nature Conservancy preserve.



Paul M. Montgomery



tasty that they eat them to the ground and kill them off, as they do the grasses if they're left to graze them indefinitely. On Marlin Prairie, as in other North and Central Texas prairies, meadow pink, gayfeather, compass plant, horse-mint, coneflower, asters, sage and scores of other wildflowers abound.

Families like the Penns of Cedar Hill, the Lawrences of Mesquite, and the Marshalls of Rockwall have tended their prairies for generations and passed them on. "It's just a matter of principle that you don't overgraze your hay meadow," says Madge Gatlin, raised on an Alabama farm and now a Sierra Club officer.



Glen Mills

"Our ignorance about native prairie before the white man came with his cattle and horses is extraordinary," says Dr. Geoffrey Stanford. "We are now going back to records of the first Spanish missionaries to Texas. They predate Linnaeus' classification of plants by genus and species. We devote great concern to preserving 150-year-old homes that could still be more or less reconstructed today. But the prairies are several *million* years old, and once destroyed, they can never be fully restored. It took the workings of nature over millennia to develop the prairie plants and animals in perfect balance with each other." Spearheading the Native Prairie Association of Texas, Stanford guides members in inventorying native relict prairies, acquiring and conserving prairie, and experimentation with tallgrasses throughout Texas.

Ranchers and naturalists maintain

that there is more good in the tallgrass prairie than history, science, education and beauty. They say it is invaluable as a baseline for agricultural experimentation in this area, because it *is* the biological baseline of Blackland ecology. "Texas prairies can teach us a great deal about better agricultural and range management practices," says Dr. Fred Smeins of Texas A&M University. Medicinal properties of some prairie plants are incompletely understood. Food and fiber uses may exist that are yet to be discovered. Rancher Brooks Bradley has restored 50 acres of his land to tallgrasses, believing that they replenish soil and provide higher cost-effective yield. "Native prairie ecosystems in undisturbed conditions are eight times as productive as the best modern husbandry can yield," contends Stanford. He is testing this on the land of Midland rancher J.H. Floyd. Bradley says that four acres of prime quality tallgrass prairie will yield spring hay to winter four cows and calves, and dormant winter grass to graze a fifth cow and calf—a savings of more than \$1,000 of commercial feed. Not to mention the quail, rabbits, foxes and other wildlife that will feed off the grasses and each other and make a home for themselves. "Alfalfa and sudan and other exotics produce big quantity yields and respond dramatically to fertilizers," says Bradley, "but gradually the soil is depleted and sterilized. The numbers look good, but the high protein content in exotic grasses is only 30 percent digestible. Tallgrass, in contrast, has a lower protein content, but that protein is 95 percent digestible. So the cattle get more good out of smaller crops. Also, the nutritious forbs that grow with the grasses keep cattle healthier because of their medicinal properties. But lending institutions get less money from financing native grass operations, so they don't encourage it," he contends.

Wayne Everett of the Soil Conservation Service's plant materials office in Fort Worth says he doesn't doubt the virtues of native grasses, which are widely tested and recommended by the S.C.S. "But to keep native meadow in prime, 'climax' condition takes a high level of understanding and specialized management practices," he points out. "Non-native monocultures are easier to manage. S.C.S. agronom-

ists can barely keep up with the demand for training in use of legume/grass mixes," he notes, commenting that he feels native meadow management is a specialty in its own right and "not for everybody."

The concerns of blackland ranchers and farmers may hit home someday at the supermarket bread rack, according to native prairie advocates. "We have

Tallgrass prairies offer a microcosm of nature's interrelationships, something that is becoming less visible in a man-made world.

made a giant glean house of the farmlands of the U.S.A.," says Bradley. "We took millions of acres of the most fertile land in the world and destroyed it in 35 years, by 1900. You have to put something back in the soil for what you take out . . . you can mine the soil, but Mother Nature won't function on your terms forever. I give agribusiness with its current methods 10 more years."

Aside from the possibility enthusiasts see in tallgrass for replenishing depleted farmland and a hope for help in a troubled farm and ranch economy, tallgrass prairies offer something more . . . a microcosm of nature's harmonious interrelationships, less and less visible in an increasingly man-made world. "Something will have gone out of us as a species if we let what remains of wilderness like the tallgrass prairie be destroyed," says Mike Kieslich of the Texas Nature Conservancy. "There will be nothing left to stop us on our headlong drive into a technological termite life."

Fortunately, for Texans that "termite" existence can still be left far behind on a hike through man-high grasses while birds call, a glimpse of the prairie as our Indian predecessors saw it, as the literary lights of 19th century America idealized it and as the cowpokes sang . . .

"Oh, bury me not
on the lone prairie . . ."
Oh, bury not the lone prairie. **



Paul M. Montgomery



Paul M. Montgomery



Glen Mills

Bluebell (top left) and sideoats grama (above) are notable plant species at Fayette Prairie near Ammannsville. Tridens Prairie (left) contains what may have been the largest hay meadow in the world, supplying even the royal family of England.



Leroy Williamson

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1984 SEASON

Hunting Gators Again

by Jim Cox

The average alligator taken during Texas' first controlled alligator hunt last September was about 7½ feet long, weighed around 180 pounds and was male.

The average gator hunter was a male Southeast Texas resident in his early to mid-30s, self-employed earner of \$30,000-plus annually. How the pursuer and the quarry got together for this history-making hunt provides fodder for the sociologist as well as the wildlife biologist. While the popular notion might be that the main motivation for hunting gators was economic, i.e., to sell their hides, a Parks and Wildlife Department survey of the 194 licensed hunters after the September 7-23, 1984, season indicated most of the gator stalkers were in it for the sport.

Alligator hides brought an average of \$20 per foot, so the successful hunter could scarcely cover expenses unless he caught several large alligators. To be sure, the season was profitable for those who had access to sufficient acreage and department-issued tags. Alligator skins had an estimated value of \$73,000 if all had been sold.

However, most respondents to the department's questionnaire indicated that the hides were tanned, or in some cases they had the entire reptile mounted.

It could be said that the most remarkable thing about the 1984 alligator season was not the rather modest total harvest of 437, or the data gleaned from the season. More remarkable is



Glen Mills

the fact that alligator populations have flourished in Texas to the point that a hunting season could be permitted.

Alligators and the habitat they occupy both were held in less esteem during Texas' early history than they are today. Marshes and swamps inhabited by alligators were considered a "no man's land" either to be avoided or drained. Alligators suffered from loss of habitat, uncontrolled hunting and the commonly held belief that they were dangerous nuisances to be eliminated wherever possible.

Alligators still won't win many popularity contests, but the species at least has come to be recognized as a valuable cog in marsh ecology. By the 1960s, state and federal biologists were becoming aware that gator populations

were severely reduced or extirpated in many parts of their ancestral range across East and Southeast Texas. The species was included under the aegis of the federal Endangered Species Act in 1967, and given full protection under Texas law in 1969.

The alligator responded to this protection by increasing in most habitat areas even faster than biologists would have predicted. Their numbers increased several-fold in many areas during the 1970s, and high populations created a growing number of nuisance calls. Wayward and sometimes belligerent alligators turned up in all manner of undesirable locations, including swimming pools, golf course ponds and duck hunters' decoy spreads. Several hunters reported having their



Grady Allen



Grady Allen



Grady Allen

prize Labrador retrievers maimed or killed by gators.

Alligators are difficult to count, but census efforts prior to the 1984 season indicated that there were at least 100,000 in prime coastal marsh habitat in the state. They are found in varying densities in approximately 500 square miles of coastal marshes and about 5,200 square miles of inland marshes, swamps, channels and impoundments, and the 100,000 population estimate might double if all habitat types could be adequately surveyed. Nevertheless, the 1984 alligator season was approached in a conservative manner in terms of numbers of tags issued. Orientation sessions were required for all licensed alligator hunters, and all harvested animals were brought in to be examined by department biologists.

How does one extract a recalcitrant gator from his watery home? The method of choice during the season was hook and line. Only 4.5 percent of the hunters interviewed said they used a hand-held snare and 5.6 percent used bow and arrow. The rest employed some form of staked-out hook. Baits reportedly used to tempt the alligators were a witch's brew of foul materials, including beef liver and kidneys, fish heads, snakes, turtles, chicken parts and various castoff items from butcher shops.

The large, one- or two-pound, bait is attached to a 9-0 or 10-0 stainless steel single hook, which is attached to a required line of at least 300-pound test. The baited hook is not fished in the water as one would rig a trotline; rather, the hook is suspended over the water's surface by using a cane pole driven into the marsh bottom. The end of the line is attached to a heavy stake to keep the gator from swimming off with the entire rig.

Bruce Thompson, alligator program leader for the department, said the

Left, top to bottom: Baited hook held 12 inches or more over the water; only after the gator took the bait could the hunter shoot it; hauling harvested gator into a boat. Right, top to bottom: Bringing the harvested gator ashore; measuring it, using a come-along to hoist it into a truck.

height of the bait over the water is a key element in catching only alligators over the four-foot minimum length limit. "If the bait is suspended about 12 inches or more over the water, the smaller animals can't reach it," Thompson explained.

It's rather thrilling, or perhaps disturbing, to approach a set in the marsh and note that the bait has been ripped down by an unseen and probably disgruntled saurian. To kill this potentially dangerous prey, most respondents to the survey indicated they used a .357 magnum pistol or buckshot-loaded 12-gauge shotgun.

The regulations specify that alligators must be taken with devices to which a 300-pound-test or stronger line is attached. "This is to insure that all alligators hooked or shot can be readily retrieved," Thompson said. Even though most hunters used ski ropes, parachute cord or braided metal cables, 21 percent reported having gators break off the lines.

This kind of power, plus the danger involved, places the alligator in the big game animal category in the eyes of some hunters. This certainly includes Jack Sprayberry of Beaumont, a veteran bowhunter who took a seven-foot alligator with a bow from a Jefferson County canal. "I really felt like a pioneer," Sprayberry said of the experience. Sprayberry and guide Jerry Norris of Port Arthur were using a trolling motor to cruise down the canal in Norris' boat when the half-submerged reptile was seen lurking near the bank.

One shot was all it took, with the arrow hitting just behind the gator's head. The 175-pound alligator rolled and sank to the bottom of the canal. "I was ready to give out line, but when I tightened up the gator was already dead," Sprayberry said.

Sprayberry said he expects more archers to try alligator hunting in the future, but he warned that some special attention must be paid to the equipment. "Conventional fishing arrows usually won't work on alligators, because the tips will pull back out," he explained. "An alligator will almost always roll and break the arrow off, and the fishing tip will pull straight back out after that happens. To solve that problem I modified a bowfin tip



Bill Reeves



Grady Allen



Grady Allen

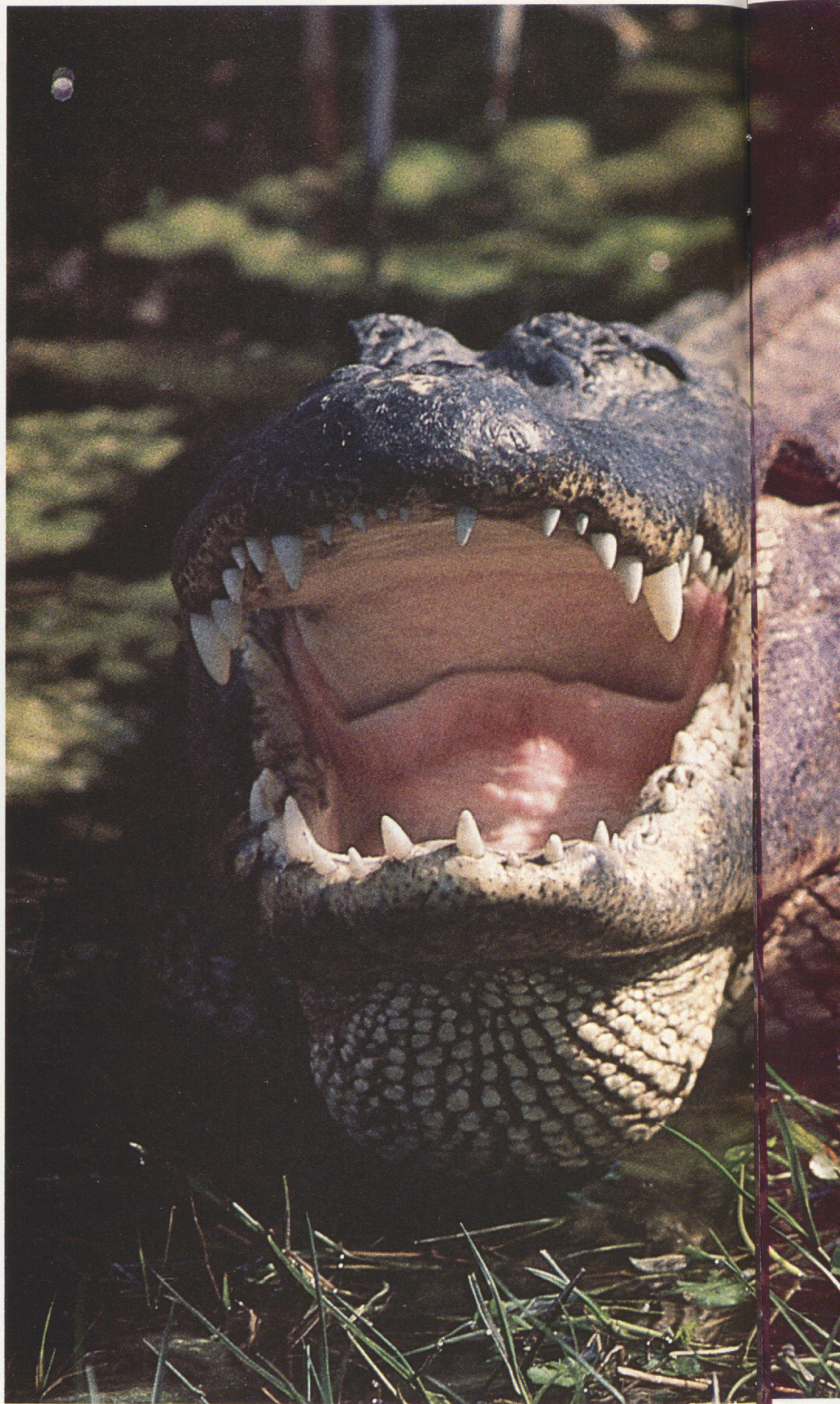
which turns sideways when the arrow shaft is broken off."

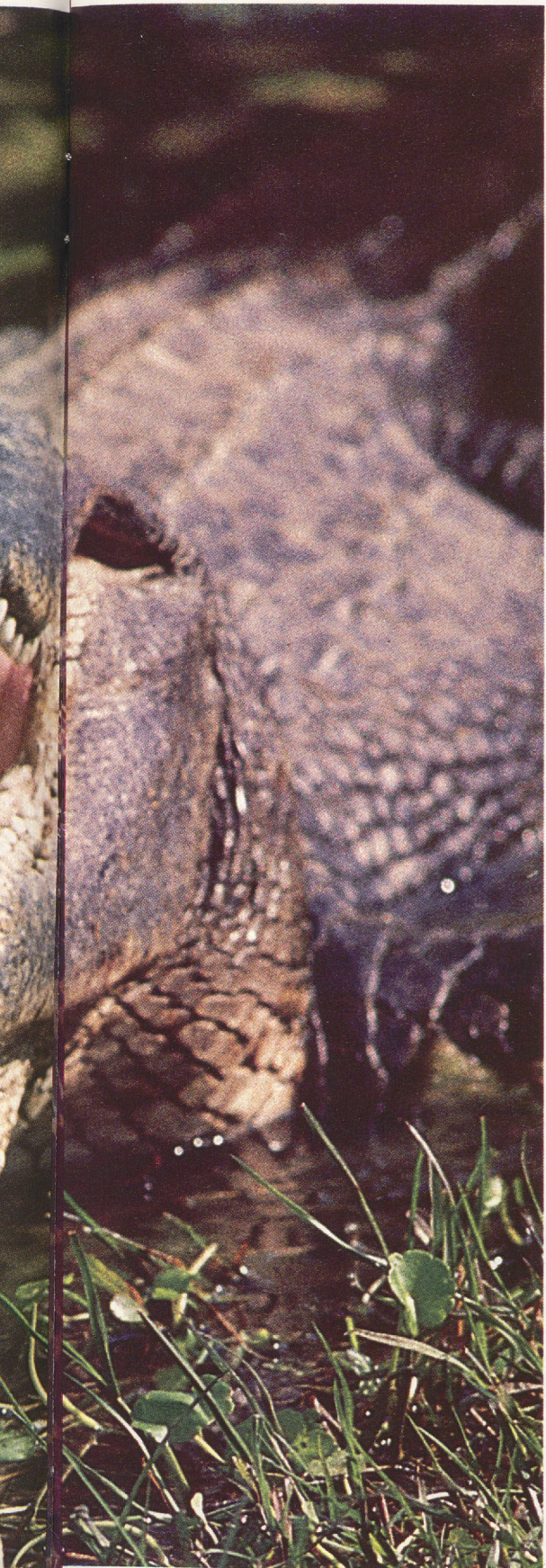
Finding the proper line also is a problem, since most lines in the 300-pound-test category are either too stiff or too large in diameter to be used on an archery spool. Sprayberry said he finally settled on 320-pound-test nylon cord normally used to attach weights to duck and goose decoys. He had to soak the line in wool-cleaning solution to make it limp enough to come off the spool properly. "Even with this softer line, your maximum range with heavy cord is about 20 feet," said Sprayberry. "I wasn't much over 10 feet from the alligator I shot."

Norris, who has a full-time refinery job but guides for duck and goose hunting during the season, said the gator season was made to order for his operation. "I knew the territory, and I pretty well knew which alligators I wanted to go after by the time the season opened," Norris said. He and his clients accounted for 10 gators harvested during the season. "When the season opened no one really knew what to expect, but as far as I'm concerned it turned out to be pretty successful."

Thompson also rated the first alligator season a success, and the questionnaire indicated that most participants agreed. Most said the season length and timing were proper. Thompson said the 1985 season, slated for September 6-22, should be very similar to the inaugural edition. "We expect the basic numbers to be about the same, including numbers of tags and the like," he added. One change that was under consideration at press time was the possibility that additional public hunting opportunities will be opened up at the department's J.D. Murphree Wildlife Management Area, where last year's gator harvest was conducted on a contract basis.

The American alligator has joined the list of Texas species that have endured a period of severe decline before being brought back to comparative abundance. Like the eastern turkey and desert bighorn sheep, the alligator's future depends upon the stewardship of individuals and government agencies who realize the reptiles deserve a future. * *





HOW TO AVOID

Close Encounters of the Wrong Kind

by John Williams

Alligators are wild animals that demand your respect. Seemingly lazy habits belie their great strength and speed, and they will defend themselves, their nests and the immediate territory when they feel threatened. All alligators should be considered potentially dangerous since they are unpredictable and will attack if cornered. However, as with other animals, they have an instinct to survive and, depending on their size, will flee from what they perceive as danger when given the opportunity.

These intelligent predators know their own strength and can "size you up," judging the threat or danger you pose to them. They make their own rules, deciding what is fair game for a meal. They do not understand human values of ownership or possession. They only want to survive, expending the least amount of energy in the search for food. A stringer of fish, left unattended, will become a free lunch.

The deliberate feeding of wild animals may seem to be a trivial act, with no important consequence, but alligators can become habituated to free food handouts in the same way a drug addict becomes habituated to a fix. And when an alligator learns to associate people with food, someday some hapless person may actually become food.

When you enter alligator country, an area that has been their home for thousands of years, keep in mind that you are the visitor and act accordingly.

Hints to avoid an encounter:

- Stay alert and think ahead.
- Keep your distance.
- Never charge or bluff.
- Know where children are and what they are doing at all times.
- Keep all pets on a leash.
- Keep stringers of fish in a bucket or an ice chest.
- Clean fish away from the water and dispose of garbage in trash cans.
- Stay out of the water.
- Use a telephoto lens when taking pictures.
- Never throw anything at an alligator or try to slap it with a stick; this could provoke an attack.
- Never feed an alligator. They soon will learn to associate people with food.

How to handle confrontations:

- Yield right-of-way with a wide detour.
- Back away slowly if you cannot detour, provided the alligator is not moving toward you, and keep your eye on the animal.
- Run only if you are being charged.
- Climb a tree if possible.
- Call for help.

How to handle an attack:

- There are no guaranteed life-saving methods of handling an aggressive alligator.
- Hold the animal's jaws shut, if it is possible to do so.
- Avoid the tail.
- Jump free, if you are able to do so.
- Under no circumstances should you accompany the alligator into the water.

Outdoor Roundup



Project WILD Initiated by TP&WD

Public school teachers and administrators who wish to include wildlife and environment in their curricula now may receive assistance through a new program administered by the Texas Parks and Wildlife Department.

Project WILD is an education program designed by and for teachers, and it includes a six-hour workshop and printed activity guides.

During the workshops, teachers will be instructed in the various activities which can be incorporated into their lesson plans. The program

is designed for elementary and secondary schools.

Project WILD is an international network of educators, wildlife professionals, youth leaders, community representatives and 32 state wildlife and resource agencies, according to Darrell Holt, coordinator for the Texas project.

More information may be obtained by writing Darrell Holt, Project WILD Coordinator, Texas Parks and Wildlife Department, 4200 Smith School Road, Austin, Texas 78744, or by calling toll-free 1-800-792-1112.

69th Legislature Addresses Parks & Wildlife Needs

Texas' natural resources were big winners during the 69th Legislative Session.

Ed Cox Jr., chairman of the Texas Parks and Wildlife Commission, noted that the State Water Plan was not the only major environmental legislation enacted this session.

"With the enactment of the Texas Parks and Wildlife Sunset legislation, including the General Appropriations Bill, the 69th Legislature continued its commitment to the wise management and conservation of the state's natural resources," Cox said.

"The Wildlife Conservation Act of 1983 and the department's Sunset Legislation are two of the most significant pieces of legislation ever enacted regarding outdoor recreational opportunities," he continued. Important measures in the Sunset Legislation include:

1. A lifetime license endowment fund.
2. Designation of the agency with the primary responsibility for protecting the state's fish and wildlife resources.
3. Important responsibilities regarding water issues.
4. Establishment of authority to increase fees.
5. Establishment of a penalty schedule for Parks and Wildlife Code violations.
6. Enhanced positive identification measures for law enforcement purposes.
7. Establishment of a civil liability for the recovery of value for certain species of wildlife.
8. Clarification and enhancement of the department's nongame responsibilities.

Cox also cited the reauthorization of funding for the Local Park Fund following a two-year absence as a very significant measure. Other important pieces of legislation enacted include:

1. Senate Bill 609—Delegates responsibility for the regulation of shrimp and oysters to the Commission.
2. Senate Bill 791—Saltwater fishing stamp and freshwater trout stamp.

3. House Bill 1656—The Sportsman's Rights Bill.

4. Senate Bill 980—Regulation of transportation and commerce of fish.

5. Senate Bill 279—Freshwater fishing tournaments.

The Parks and Wildlife Commission indicated its support for the State Water Plan developed during this Legislative Session by unanimously adopting a resolution supporting HJR 6, the constitutional amendment which will be placed before Texas voters in November.

The Parks and Wildlife Commission Chairman noted, "Governor Mark White, Lieutenant Governor Bill Hobby, House Speaker Gib Lewis, and all members of the Legislature are to be commended for addressing these important issues in a meaningful manner. The natural resources of Texas and all Texans will be the beneficiaries of legislation enacted by the 69th Legislature."

September in . . .

TEXAS PARKS & WILDLIFE

The long-awaited fall hunting season finally gets underway next month when hunters across the state take aim at mourning doves. But many dove hunters are not prepared for these tricky targets, and spend the first few hunts of the season just relearning the basics. In the September issue we'll offer some tips that will make your dove hunting trip a success in terms of bagging game. The mesquite tree has the distinction of being one of the most despised plants in Texas, due to its gluttonous appetite for water and its tendency to grow where it's not wanted. Next month we'll take a closer look at the mesquite's beneficial uses in terms of fuel, food and wood. Also in the September issue are stories on the roadrunner, nutria, techniques used by biologists to census deer and efforts by the Texas Parks and Wildlife Department to work with private landowners in acquiring land for state parks and wildlife management areas.

COMPILED BY THE PARKS AND WILDLIFE DEPARTMENT'S NEWS SERVICE

Longer Deer Season Authorized by P&W Commission

Deer hunters in many Texas counties this fall will be able to enjoy the longest hunting season and highest bag limits in decades.

The Texas Parks and Wildlife Commission has authorized the Parks and Wildlife Department to open the white-tailed deer season each year on the second Saturday in November and added another antlerless deer to the bag limit.

Opening day for the 1985 season will be November 9, and it will close on the first Sunday in January, which will be January 5, 1986.

The change creates a 58-day deer season instead of the 51-day setup that has been standard for many years. However, officials pointed out that during some years the season will be only 51 days because of calendar differences. The increase in the deer bag limit will make it potentially possible for a hunter to harvest five deer, not to include more than four whitetails (no more than two whitetail bucks) or two mule deer in a season. However, in some 92 counties hunters are limited to one buck, and antlerless permit issuance rates depend upon the findings of annual deer census surveys.

The extra deer is being allowed to encourage hunters to take advantage of the antlerless segment of the deer herd which remains overpopulated and underharvested in much of Texas' deer range.

The commission made a number of changes in turkey hunting regulations, including a new "swing" turkey tag for the hunting license. This tag would be valid for use in either the fall or spring turkey season, and would allow a hunter to take two Rio Grande turkey gobblers during the spring season in counties offering a spring season. The bag limit will be three turkeys during any one year. However, the bag limit in East Texas counties which have eastern turkeys will remain at one gobbler (spring season only).

The commission adopted a pheasant season of December 14-29 for Panhandle counties, and November 9-December 8 in Southeast Texas. A statewide bag limit of two cock

pheasants per day also was approved.

Other seasons and bag limits authorized for 1985-86 are:

—Prairie chicken in the Panhandle region, October 19-20, 1985, two per day.

—Quail, November 2, 1985, through February 23, 1986, bag limits to be set in August after summer production surveys are completed.

—Chachalacas, December 7, 1985, through January 26, 1986, five per day.

—Javelina, October 5, 1985, through February 23, 1986, in counties having a restricted javelina season, limit two javelinas.

—Squirrels, October 1, 1985, through January 15, 1986, and May 1-31, 1986, in counties having a squirrel season. Many counties have no closed season.

—Elk, by permit only in Brewster, Culberson, El Paso, Hudspeth, Jeff Davis, Pecos, Presidio, Reeves and Terrell Counties; no closed season, bag limit one elk.

—Aoudad sheep, in eight Panhandle counties, the season is November 9-22, 1985, and January 4-19, 1986, bag limit one.

—Antelope, September 28 through October 6, 1985, limit one antelope per permit.

Consult a copy of this year's Hunting Guide for specific county-by-county regulations. The guide should be available this month wherever hunting and fishing licenses are sold.

CCC Traveling Exhibit

The Civilian Conservation Corps, the first of President Franklin D. Roosevelt's New Deal recovery programs, left one of its broadest and most enduring legacies in Texas. Forestry rehabilitation, soil conservation and state park development were its three major endeavors in the state, and Texas continues to benefit from those works. Today, the most visible reminders are found in 31 state parks developed by the CCC during the Great Depression.

An exhibit interpreting this CCC heritage will open at Longhorn Cavern State Park on August 3, 1985. After a two-month stay it will tour other CCC parks for the next three years.



Increased Hunting License Fees Announced

Resident and nonresident Texas hunting licenses will cost more in 1985-86 as a result of action by the Texas Parks and Wildlife Commission in June.

The most dramatic increases were for nonresident hunting licenses, with the general nonresident license price raised from \$100.75 to \$200 and the nonresident small game license from the current \$37.75 to \$75.

All the increases will be effective September 1, 1985. Licenses for the 1985-86 seasons will be available from department offices and retail outlets by August, officials said.

Other licenses fees increased are: resident combination hunting/fishing, from \$12 to \$15; resident hunting, \$8 to \$10; resident hunting exempt, \$5 to \$6; hunting duplicate, \$5 to \$6; and temporary nonresident fishing, \$7 to \$8.

The \$8 resident fishing license fee will remain unchanged for 1985-86, as will the \$15 nonresident annual fishing license. However, staff members said additional revenue is expected from a \$5 saltwater fishing stamp and a \$5 freshwater trout stamp authorized by the Texas Legislature this year and to become effective September 1, 1986.

Texas MADE IN

"Made in Texas" Debuts This Month on TV

"Made in Texas" is a new half-hour public television series produced by the Texas Parks and Wildlife Department. The series, shot on location all over the state, will inform viewers about conservation and enjoyment of the state's wildlife, parks, historic sites, waters and all outdoors.

The first program in the series, set to air in August on most PBS stations in the state, features a ride on the Texas State Railroad; an archeology-related feature on Seminole Canyon

State Historical Park; a short feature on the sport of bowhunting; and a look at fisheries research at the John Wilson Marine Fish Hatchery.

Upcoming programs in the series will provide information on deer management, including census and stocking methods; Lost Maples State Park; the increased popularity of fly-fishing in Texas; and Texas coastal wetlands.

Individual Texas PBS stations will have details on program availability, content and scheduling.

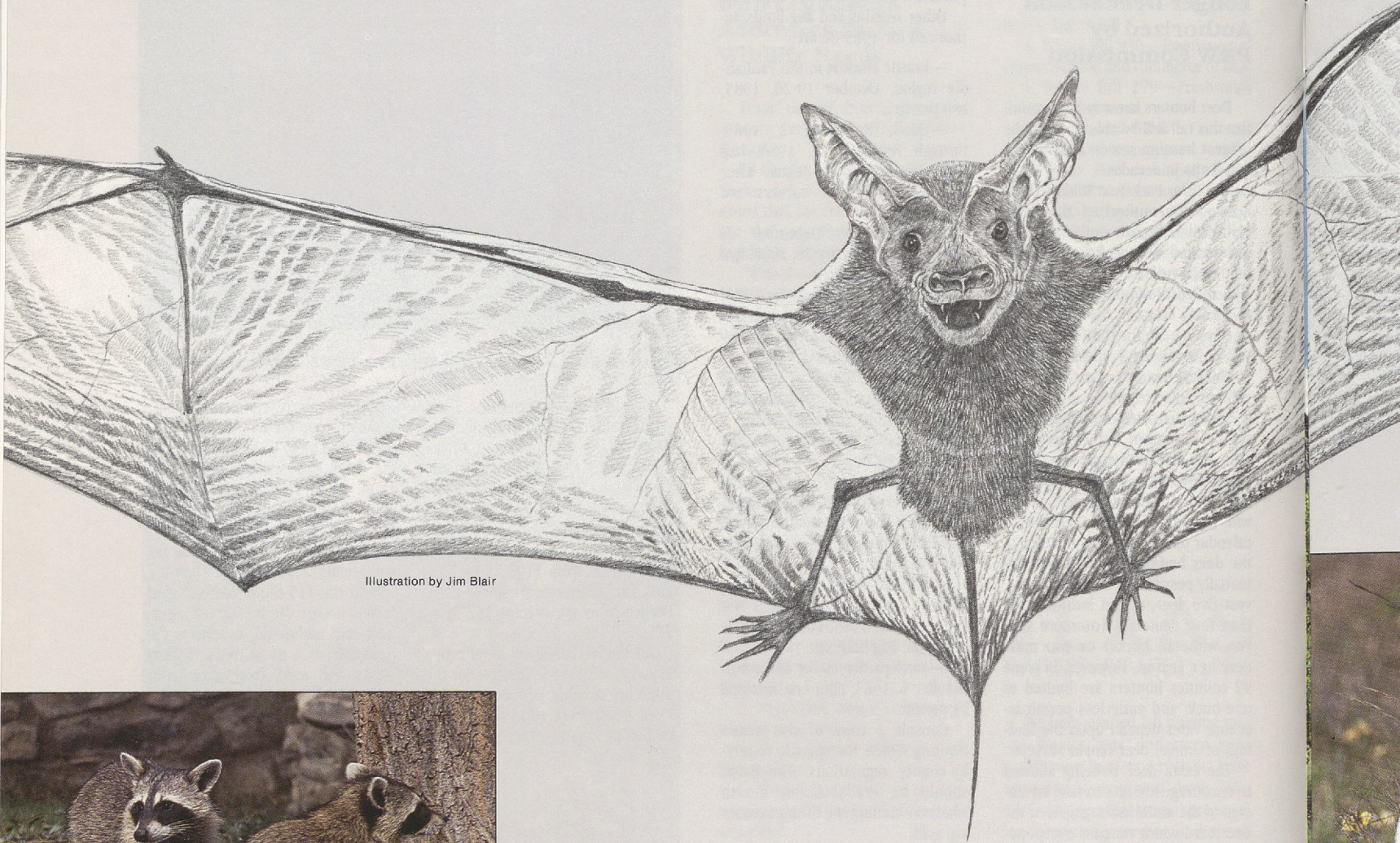


Illustration by Jim Blair

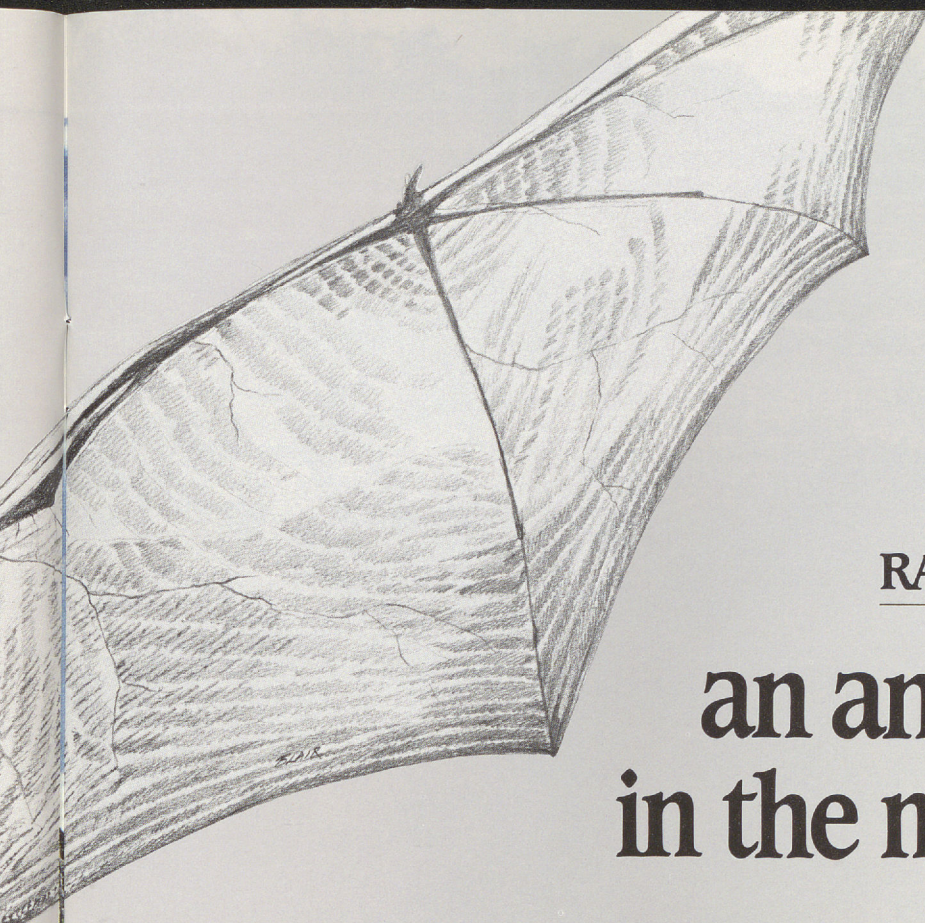


Leroy Williamson

Skunks are the number one rabies carriers in Texas, followed by bats. Domestic animals account for only about four percent of the cases, and raccoon rabies is not a problem in the state at this time.



Grady Allen



RABIES AND ITS CARRIERS

an ancient disease in the modern world

by Mary-Love Bigony

“Dogs suffer from madness which puts them in a state of fury and all animals which they bite in this condition become also attacked with madness.” Aristotle wrote those words in the 4th century B.C. to describe rabies, one of the oldest diseases known to mankind and one that has caused terror throughout history.

Fortunately, human rabies is rare in the 20th century United States, thanks to pet vaccinations and an effective course of treatment available to people who have been bitten by rabid animals. Practically no one can name even one person who has died of the disease. But even though it's rare, rabies is better known and more feared than many diseases that are fatal to far more people. Rabies inspires terror not because it is widespread,

but because it is virulent and deadly. Today, as in ancient times, there is no cure once the disease reaches the victim's brain. There have been a few reported cases of people recovering from rabies after they began showing symptoms of the disease but these either are rare enough or unsubstantiated enough to be negligible. “Once symptoms begin to show, the fatality rate, for all practical purposes, is 100 percent,” said F.V. McCasland, D.V.M., of the Texas Department of Health.

Wild animals accounted for more than 90 percent of the rabies cases confirmed in Texas last year, so hunters, hikers, anglers, campers and others who spend time outdoors should arm themselves with knowledge about the disease and know what to do if they encounter it.



Leroy Williamson



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Rabies—from the Latin word *rabere*, meaning “to rave”—is an acute viral disease of the central nervous system that can affect all warm-blooded animals. The virus concentrates in the saliva of an infected animal, and usually is transmitted to another animal or to a human by a bite. The virus cannot penetrate unbroken skin; it must get *under* the skin to invade the nervous system and begin working its way toward the brain. When a rabid animal bites another animal or a human and

research on bat rabies; the other was an engineer who was prospecting for a bat guano mining company. “The Health Department employee had an open wound on the back of his neck, and some people believe this is how he contracted rabies,” said McCasland. “Others believe the disease was transmitted as an aerosol.”

McCasland said that a 1962 experiment sought to prove the theory of airborne transmission of rabies. Several animals were secured in bat-proof

cent of the total.

Raccoon rabies, which has caused a great deal of concern on the Eastern Seaboard, apparently is negligible in Texas. Although the Health Department examined 754 raccoon heads, rabies was found in only two of them, one from Comanche County and one from Kimble County. “Rabies adapts itself to a particular species,” explained McCasland. “Once it adapts to a skunk, it will transfer to another skunk more readily than to another species.” This explains how raccoon rabies can have spread up the Eastern Seaboard while not finding a foothold in Texas. Skunk rabies, on the other hand, is prevalent in a wide area of the central United States.

Add one more case to the rabies numbers for 1984: a 12-year-old Laotian refugee who died from the disease in Harris County. It was the first human death from rabies in the United States since 1983 and the first in Texas since 1979. The child began to complain of a sore throat and headache on July 9, 1984, and was hospitalized on July 11. Her condition deteriorated, and by July 16 she was comatose. The rabies diagnosis was confirmed on July 29 by testing a section of the brain obtained by a biopsy. Doctors administered an experimental antiviral agent that had shown some effectiveness against rabies virus living outside the body, but the child died of cardiac failure on August 7, five weeks after the onset of symptoms.

The Harris County case is unusual in a number of respects. The child apparently contracted rabies before coming to the United States, as relatives said she had been bitten by a dog in Laos three years before her death, but not since then. Before this, the longest known incubation period was 18 months in a human. McCasland pointed out that slightly different strains of rabies exist in different animal species and the virus found in the Laotian girl was not like any strain endemic to Texas. As a result of the Harris County case, 185 people, including hospital employees, received post-exposure rabies vaccinations.

Some 1,200 people received post-exposure rabies vaccinations in Texas in 1984. But slightly more than a century ago there was no treatment for rabies exposure, and a bite from a

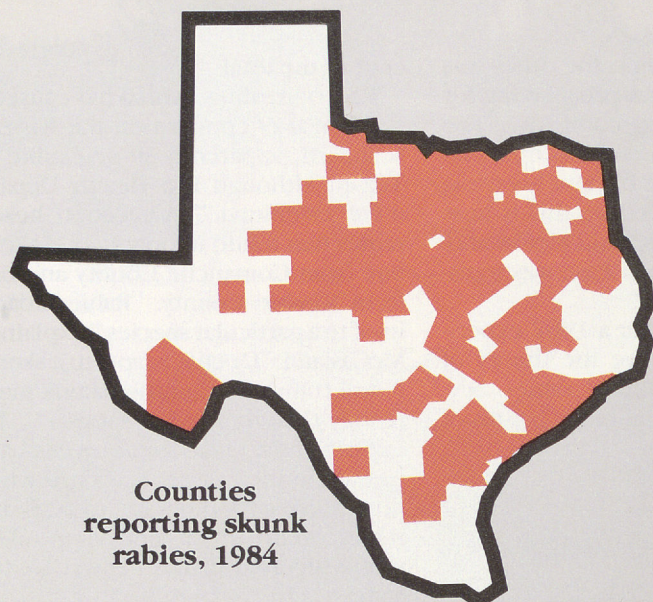
Rabies virus can penetrate the unbroken mucous membranes of the eyes, nose and mouth, so spelunkers who explore bat caves should check with their physicians about receiving pre-exposure rabies vaccinations.

breaks the outer layer of skin, rabies-laden saliva begins its invasion of the body. Exposure to the virus also can happen if a rabid animal licks a fresh scratch or abrasion, or if a trapper cleaning a rabid animal gets the animal's saliva or brain matter on a fresh scratch on his hand. Rabies sometimes can be contracted from a dead animal, depending upon the temperature. “The virus survives only a few hours in the heat,” said McCasland, “but it can live for several days in cold weather.” Once the rabies virus gets a foothold in the victim's body it travels along the nerves to the spinal cord and the brain. The location and severity of the bite are significant. A bite on the face, for example, contributes to a shorter incubation period (the time between infection and the appearance of symptoms), and the greater tissue damage in a severe bite increases the chance that the virus will enter the nerves.

Although the rabies virus cannot penetrate unbroken skin, it can penetrate the unbroken mucous membranes of the nose, mouth and eyes. McCasland said that in the 1950s, two people who had no known history of animal bites contracted rabies after working in caves inhabited by bats. One was an employee of the Texas Department of Health who was doing

cages and placed in a bat cave. “Some of the animals came down with rabies,” said McCasland. “Many people believed this proved that rabies can be transmitted by aerosols, but others said the results were not necessarily conclusive, since the test animals could have contracted rabies before they were put into the cages and not shown the symptoms until several weeks later.” McCasland added that airborne transmission of rabies was proven by accident in the Texas Department of Health laboratories when a worker who was making rabies vaccine contracted the disease after stirring up the mixture in a blender and inadvertently inhaling the aerosols.

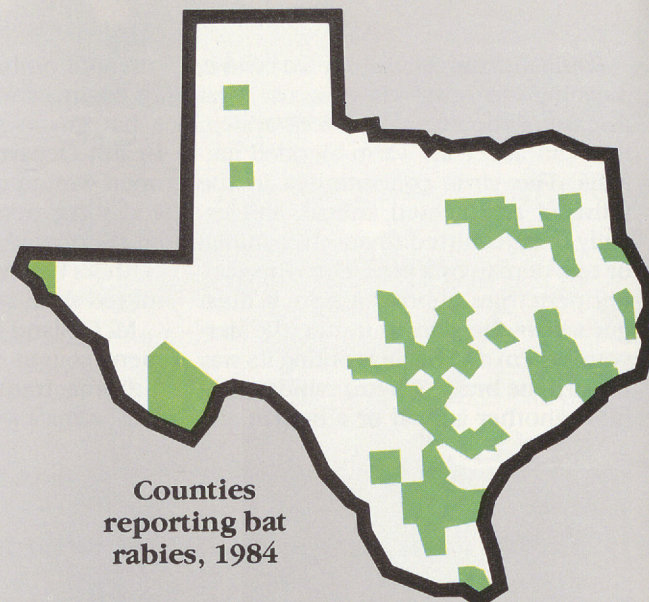
The Texas Department of Health examined 12,729 animal heads in 1984, and found rabies in 719, or six percent of them. (These represent only those that were tested in Health Department labs; there is no way of knowing how many contracted the disease and died in the wild.) Rabid animals were reported from 144 counties in all parts of the state. Skunks continued to be the primary carriers of rabies, accounting for 73 percent of the cases. Bats were a distant second, at 16 percent. Dogs and cats represented only four percent of the confirmed rabies cases, and farm animals comprised five per-



Counties reporting skunk rabies, 1984

Sixteen Texas counties, primarily in East, Southeast and Central Texas, accounted for 40 percent of the rabies cases confirmed in Texas in 1984. Nacogdoches and Fort Bend Counties had the most, with 25 cases each. Bexar and El Paso followed closely, with 23 each.

Other counties reporting more than 10 cases of rabies in 1984 were: McLennan and Montgomery, 22 each; Wash-



Counties reporting bat rabies, 1984

ington, 20; Gregg and Travis, 18 each; Cherokee, Denton, Erath and Mason, 15 each; Panola, 13; Palo Pinto, 12; and Wharton, 11. Only three pairs of these 16 counties with a high incidence of rabies are contiguous: Wharton and Fort Bend in Southeast Texas, Cherokee and Nacogdoches in East Texas and Palo Pinto and Erath Counties in North-Central Texas.

rabid animal was a death sentence. French bacteriologist Louis Pasteur is responsible for the first breakthrough in harnessing the terrifying disease. During the 1880s, France was overrun with rabid animals and the scientist was appalled by the cruel treatment of rabies victims and their horrible deaths. And although he was never able to isolate the rabies virus, he systematically developed an effective vaccination. Pasteur injected saliva from rabid dogs into rabbits, which subsequently died. The scientist then removed the rabbits' spinal cords and allowed them to dry for 14 days, the theory being that rabies from the dried spinal cords would be too weak to infect a human but strong enough to trigger the production of rabies antibodies in the victim.

The first person to receive Pasteur's rabies vaccine was a nine-year-old boy who had been bitten by a rabid dog. Despite his own misgivings and public protest, Pasteur injected the boy with the vaccine, gradually increasing the dosage over a period of several days. The child lived, becoming the first person ever known to have survived after being bitten by a rabid animal.

Pasteur's rabies vaccination, with minor modifications, was used for many years. Subsequent development

of the duck embryo vaccine increased the procedure's safety, although allergic reactions continued to plague some patients. Today doctors use the new human diploid cell vaccine, which causes fewer side effects and produces greater immunity. The post-exposure course of treatment consists of five injections in the arm administered over 28 days. Immune globulin is given with the first injection.

People whose occupations or travels frequently expose them to wild animals can, at the discretion of their doctors, receive pre-exposure rabies vaccinations. This series of three injections does not eliminate the need for therapy after a rabies exposure, but it simplifies the post-exposure course of treatment. Candidates for the pre-exposure vaccinations might include rabies lab workers; veterinarians; animal control and wildlife workers; and spelunkers, since they run the risk of being exposed to airborne rabies in caves inhabited by bats. Certain travelers to foreign countries in which rabies is prevalent also might be candidates for the pre-exposure treatment, especially those who travel to countries where the available rabies immunizations may carry a higher risk of adverse reactions. The pre-exposure vaccinations are not recommended for the general public.

Anyone who is concerned about exposure to rabies should discuss the situation with a physician.

Anyone who spends time outdoors should know how to recognize rabies in wild animals, but people can't always depend on the "mad dog" image portrayed on television and in movies. The symptoms can be much more subtle. Many experts make a distinction between furious and dumb rabies, which can be progressive stages of the virus. These terms do not describe the severity of the disease, only the way it affects a particular animal. An animal with furious rabies will be excitable, restless and aggressive. It may snap and bite at nonexistent objects, run for miles attacking anything in its path, mutilate its own body by biting and generally display the symptoms most people associate with rabies. An animal with furious rabies is vicious and violent, but one with dumb rabies doesn't display such aggressive behavior. It may act skittish and fearful and the lower jaw, as well as other parts of its body, often become paralyzed. The animal affected in this way may act as though it has something lodged in its throat, and the owner of a cow or dog suffering this symptom might be tempted to reach into the animal's throat to investigate, exposing himself to a bite

by a rabid animal. The ancient Greeks called this horrifying disease hydrophobia, meaning "fear of water," since they believed that an aversion to water was one of the bizarre manifestations of the disease. In truth, many rabies victims cannot drink because of throat paralysis. Today, the term hydrophobia is used for human rabies victims.

Any unusual behavior by a wild or domestic animal should put a person on guard, but "unusual behavior" might be nothing more than a noc-

though skunks are the number one carriers in Texas, followed by bats. McCasland said fox squirrels and gray squirrels normally are not considered transmitters of the disease, although the flying squirrels of East Texas occasionally contract rabies since they sometimes live in the same hollow trees as bats. Rats and mice seldom get the virus, said McCasland, although a few cases of rat rabies have been confirmed. Opossums seem to be resistant to the disease.

Rabid animals were reported from 144 counties in all parts of Texas in 1984. Skunks accounted for 73 percent of the cases and bats for 16 percent. Dogs and cats represented only four percent of the total and farm animals comprised five percent.

turnal species being out in the daytime. Be wary of "friendly" wild animals, since a reliable characteristic of rabies in wildlife is a loss of fear of man. Aggressiveness and unprovoked biting, especially in an animal that appears to be sick, could very well indicate rabies. Remember, the key here is *unprovoked* biting; if an apparently healthy animal bites a human who is annoying it, handling it or trying to feed it, the attack is probably not unprovoked.

If you're bitten by an animal you suspect has rabies, capture the animal, wash the bite thoroughly with soap and hot water and notify local health authorities. A dog or cat can be held for observation for 10 days; if it does not show signs of rabies in that length of time, the bite victim is safe. Wild animals are a different matter. If an unprovoked wild animal bites a human, kill the animal and submit its head to the Department of Health for testing. The bite victim should see a physician, who will determine whether post-exposure rabies vaccinations are necessary. Children should be taught to tell a parent, teacher or police officer immediately if they are bitten by an animal.

As mentioned earlier, any warm-blooded animal can develop rabies, al-

Regular readers of *Texas Parks & Wildlife* magazine should already know a number of reasons why wild animals should not be kept as pets. McCasland added one more reason. "There is no vaccine that has been proven to be effective against rabies in wild animals such as skunks, raccoons or ferrets that are kept as pets," said the veterinarian. "This is not to say that vaccines for wild animals don't ever work, but no one has proven it. Vaccinating a wild animal for rabies gives a false sense of security. Sooner or later, the pet wild animal will bite somebody, and when that happens the only alternatives are to treat the human or kill the animal."

A case in Washington several years ago underscores the danger in keeping wildlife pets. A researcher traced the origin of a rabid pet skunk that had bitten its owner through pet shops and wholesalers to the area in Oregon where it had been caught as a weanling. The skunk under investigation was one of 69 in a shipment, all of which had mixed freely before they were delivered to their final destinations. The investigation determined that, during shipping and handling and in the owners' homes, 366 people had been exposed to the skunks and 80 of them had been bitten.

"We don't know how long a wild animal can shed the rabies virus in its saliva before showing clinical symptoms of the disease," said McCasland. In other words, an animal that appears perfectly fine when it is taken home could have contracted the disease some time before and be releasing rabies in its saliva. The incubation period varies greatly in wildlife. "Dogs and cats can be observed for 10 days, and if they show no signs of rabies after that time the bite victim is safe," said McCasland. "There is no such reliable indicator for wild animals." He said there is no test to diagnose rabies in a living animal, although research is being done.

Texas law requires that all dogs and cats receive annual rabies vaccinations, and McCasland said any other animals that are handled regularly also should be vaccinated. "Vaccinate cows, horses or other livestock that are raised as 4-H or FFA projects," he said. "There was a case of a calf that came down with rabies during a 4-H show," he said. "It had apparently tangled with a skunk. Thirty people who had handled the calf had to be vaccinated."

McCasland said the importance of pet vaccinations cannot be overstated. "Pets can be either the buffer or the transmitting link between humans and wildlife." Hunters should be especially conscientious about having their hunting dogs vaccinated by a veterinarian, since these animals are more likely than pets to encounter rabid wildlife.

Residents of the United States are indeed fortunate that human rabies is rare. This is not the case in many underdeveloped countries, and the fate of a person in whom the virus reaches the brain is certain and horrible death. But just because the disease is rare in this country doesn't mean it can't happen—the Health Department confirmed 719 rabies cases last year, so the potential for encountering a rabid animal exists, especially for those who spend time outdoors. It is extremely unlikely that rabies will ever be eradicated in wildlife populations, but keeping pets vaccinated, knowing how to recognize the virus in animals, getting prompt treatment after being bitten by a suspicious animal and never keeping wildlife as pets can sharply reduce human exposure to this dreaded, ancient disease. * *

A landscape photograph showing a lush green field of tall grasses and various shrubs in the foreground. In the background, a range of rugged, rocky mountains rises against a clear blue sky. The mountains have distinct peaks and ridges, with some areas appearing more eroded. The overall scene is a natural, outdoor setting.

A JOURNEY  THROUGH THE DAVIS M

A landscape photograph showing a mountain range in the background under a blue sky with light clouds. The foreground is filled with tall grasses and a large, flat-topped cactus. The middle ground features rolling hills covered in dense green vegetation. The text 'S MOUNTAINS' is overlaid at the bottom in a white, serif font, framed by two horizontal lines.

S MOUNTAINS

View from Mount Locke





A trip

to the top of Mount Locke pays off with dramatic mountain vistas.



Limpia Creek

Article and Photos
by Leroy Williamson

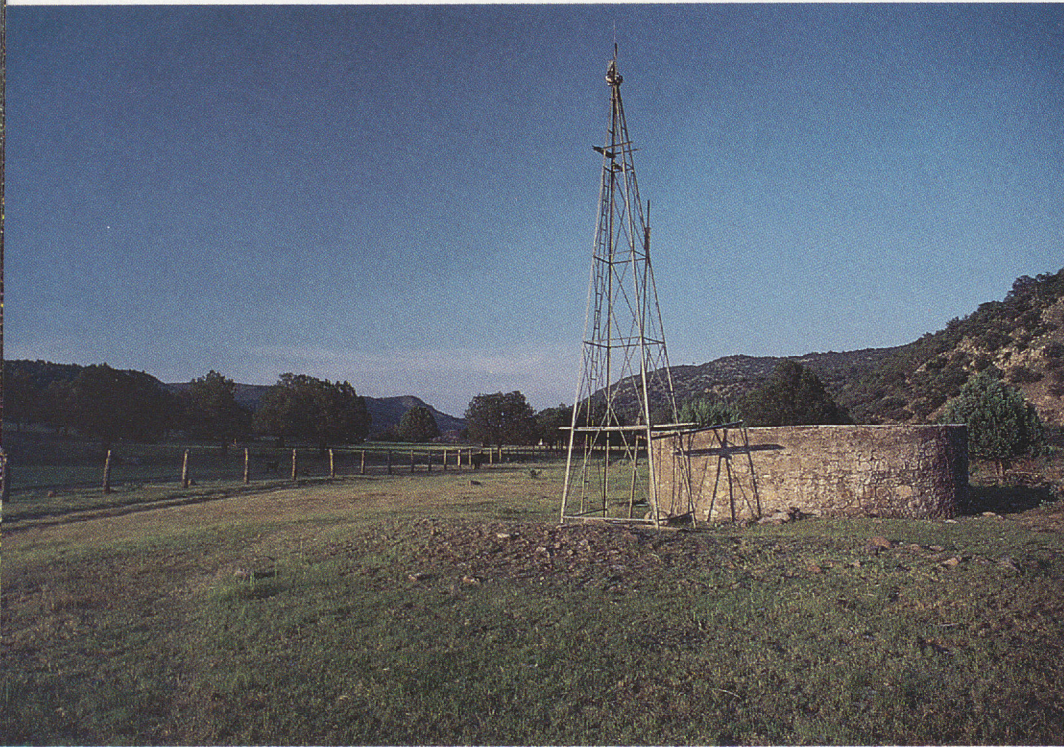
If you're one of those people who think Texas west of the Pecos River is nothing more than desert and cactus, a drive along the 74-mile scenic loop through the Davis Mountains will change your mind. Starting from the town of Fort Davis, take Highway 17 north and turn left on Highway 118. Davis Mountains State Park and Indian Lodge are on the left. The lodge is popular, so if you plan to stay

Pronghorns near Highway 166



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rive
the loop at a leisurely pace; enjoy the
beauty of Madera Canyon.



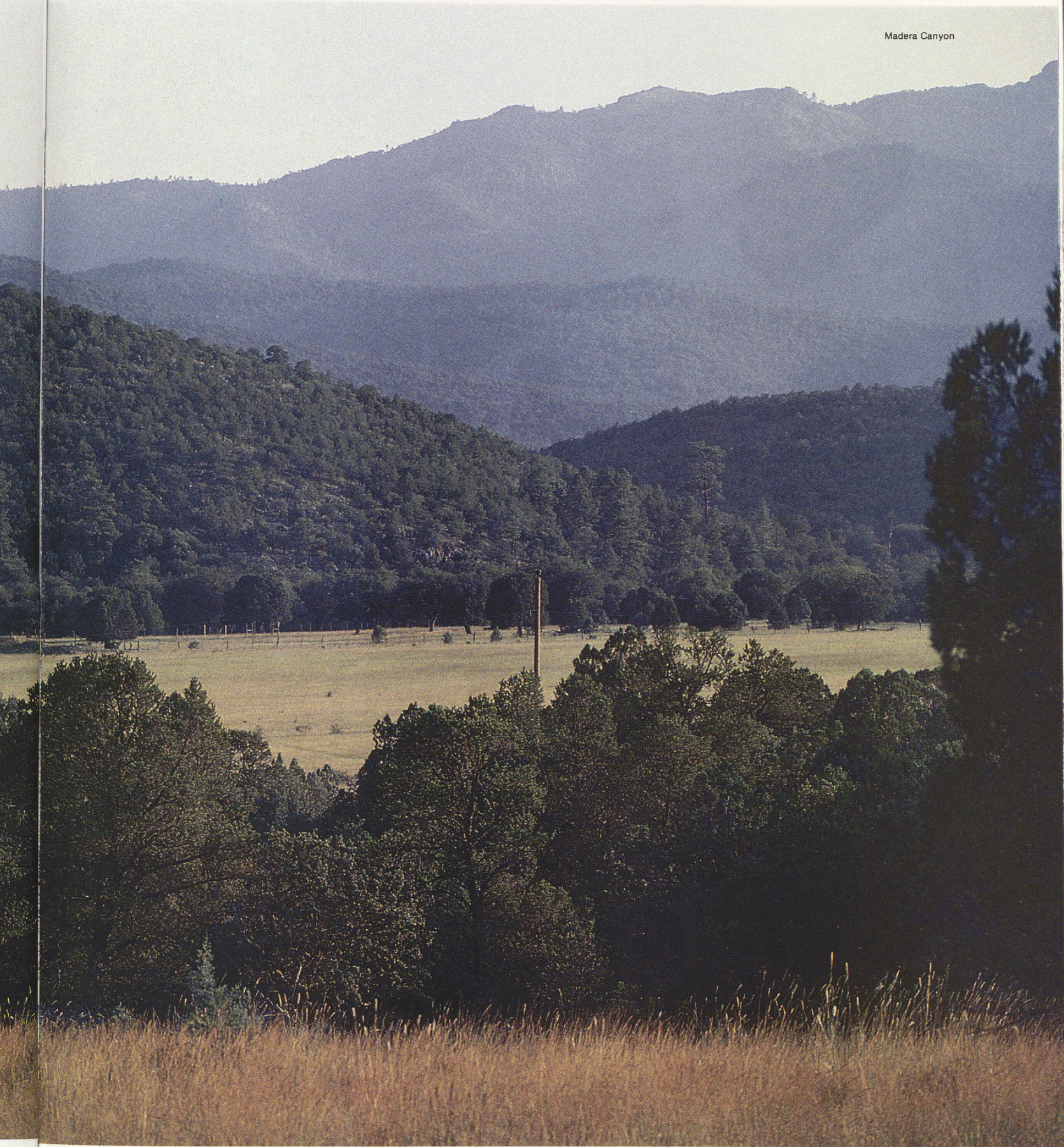
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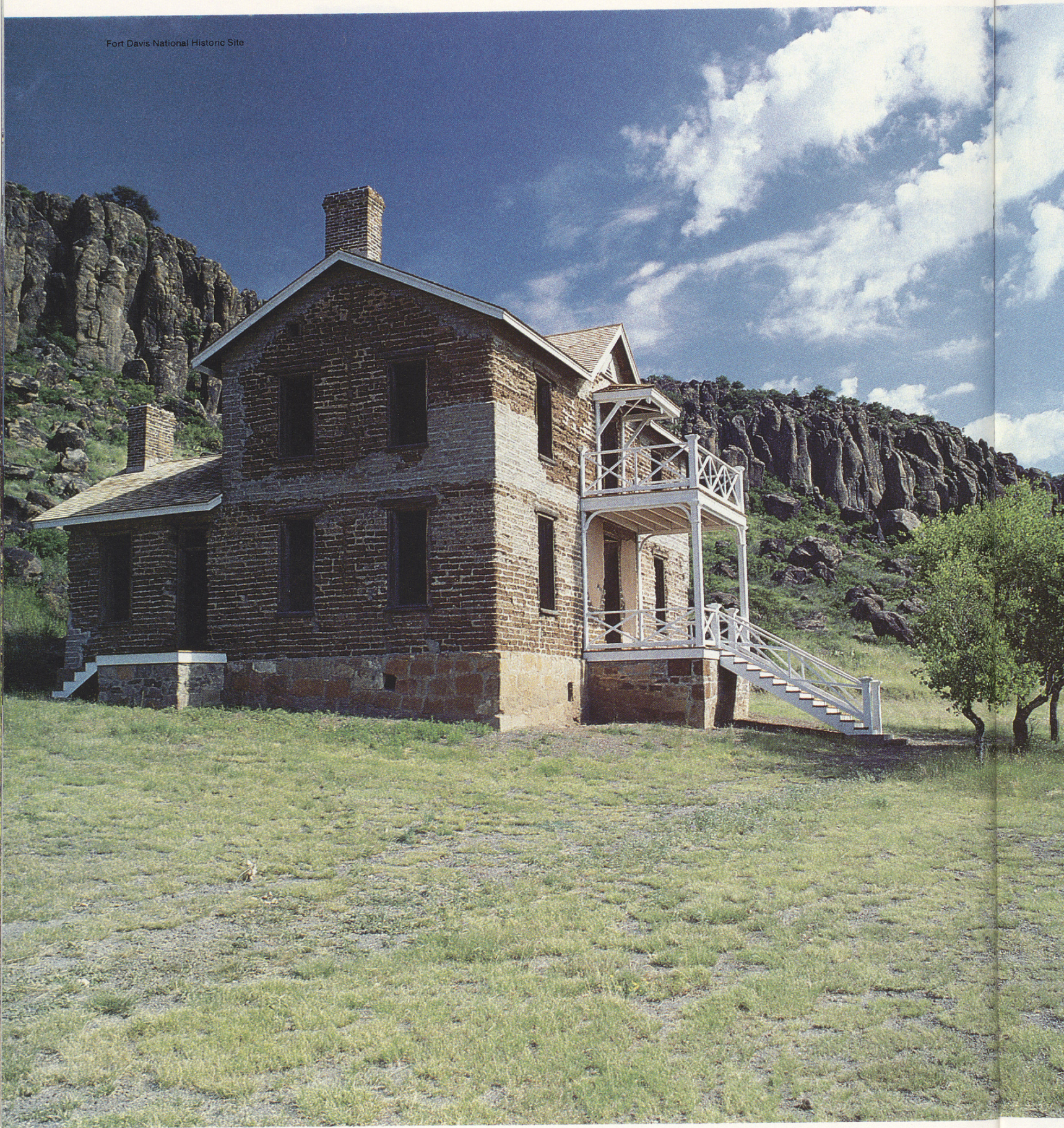


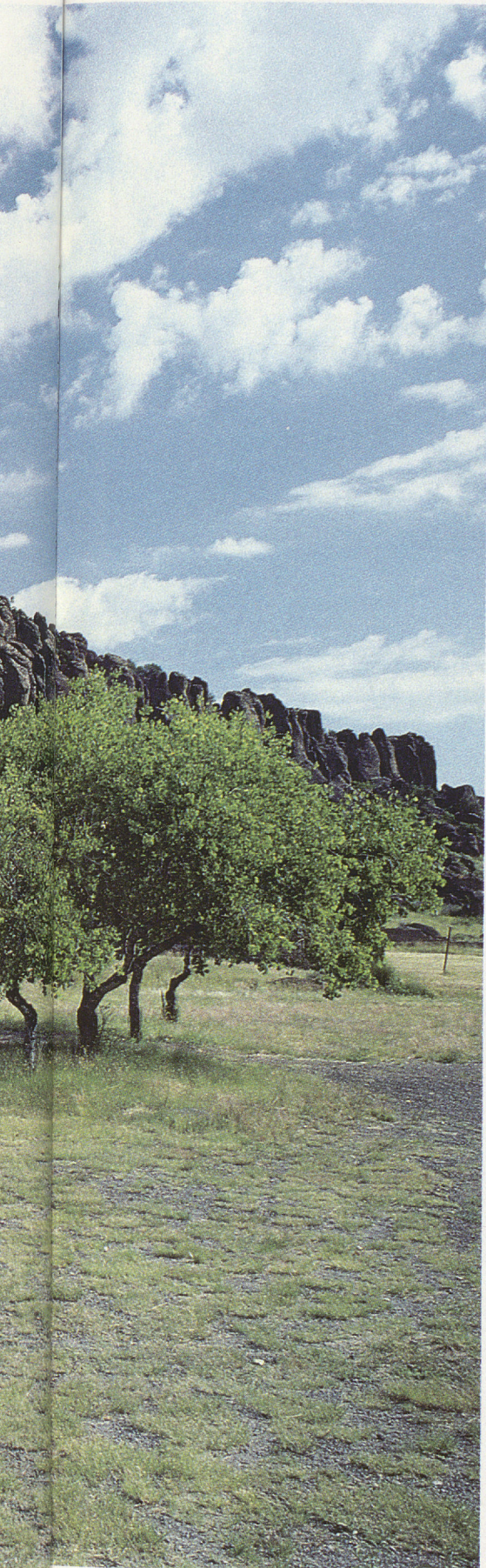
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overnight be sure to make reservations. Continue along Highway 118 to Mount Locke, site of the University of Texas' McDonald Observatory. A side trip to the top of Mount Locke pays off with some of West Texas' most striking mountain vistas. Back on Highway 118, Madera Canyon looms ahead, offering a change of scenery. Turn left on Highway 166 for a view of Sawtooth Mountain, seemingly sitting dead center on the highway. Notice the interesting rock formations nearby. Mountains continue to dominate the scenery for the next few miles, then









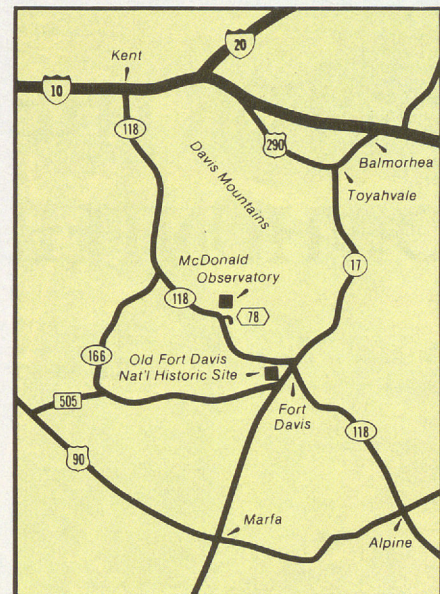
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mid-1800s army post at Fort Davis
National Historic Site.



Fort Davis National Historic Site

the drive levels off for yet another change. A range called the Blue Mountains is on the left, with desert on the right. Pronghorns often are seen grazing in the desert. At the intersection of Highway 166 and Highway 17, turn left and return to Fort Davis. Enjoy the quiet quaintness of that Old West town, and lose yourself in the past at Fort Davis National Historic Site. Tomorrow, or the next time you're in the area, drive the scenic loop again, this time in the opposite direction for a different perspective.





Wyman P. Meinzer

SOME BASICS FOR THE BOWHUNTER

by Ray Sasser

O.J. Barnes knew the whitetail buck strolling casually past his stand at 20 yards would make the Pope and Young archery record book. Inwardly smiling because he knew his 10-year quest for a "book" deer had finally come to an end, Barnes, a tournament-class bowshot, drew his compound bow and released the arrow.

It's hard to say who was more surprised, Barnes or the big buck, when the arrow sailed low, barely missing the deer. "I don't know what happened," the San Antonio archery pro later remarked. "I just knew I had that deer dead to rights. It was a case of counting your chickens before they hatch."

Most archers would have been so frustrated at having missed the deer of their dreams at point-blank range that they would have been sorely tempted to give up the demanding sport, at least for the day. Barnes stayed mad at

himself for about three minutes, which gave him 12 minutes of lee time before the next trophy buck came strolling past.

This time the bowhunter connected on a much longer shot at a deer smaller than the one he'd previously missed.

Still, the animal was quite a consolation prize. It sported 12 long tines and netted 145 on the Pope and Young scoring system, easily placing Barnes' trophy in the record book. Under the Burkett scoring system, which measures antler mass, the buck ranked number one among Texas archery kills in 1984-85 and number two all-time.

O.J. Barnes took that deer on a Hill Country high-dollar dream ranch that is intensively managed for trophy deer, but for most Texas bowhunters any white-tailed deer is a trophy.

"That's what I stress in my bowhunting seminars," explained the archer. "The superbowl of bowhunting is



taking a whitetail, any whitetail.”

While record book deer are so rare that they're not even a factor for most Texas hunters, this idea of elevating any whitetail to trophy status by greatly increasing demands upon the hunter is one that appeals to more and more Lone Star sportsmen with each passing year.

Aside from the obvious challenge, bowhunting is attractive because it provides deer hunters with an extra season. Bowhunters have white-tailed deer to themselves during the special archery season that begins October 5 and runs through November 3, 1985.

Since Texas Parks and Wildlife first required a special stamp for the early season (at the prompting of the state's bowhunters), the number of archers who purchased the stamp has risen from 15,000 in 1975 to more than 45,000 last season. In 1980 alone, the number of bowhunters buying archery stamps increased by 30 percent, a figure that indicates bowhunting may be the fastest growing sport in Texas.

That's despite the fact that only one bowhunter in 10 actually kills a deer.

“Challenge is a big part of bowhunting,” noted Glenn Boydston, a Texas Parks and Wildlife research analyst who is himself a bowhunter. “Killing a deer with a rifle is pretty easy in certain parts of Texas. Killing a deer with a bow is not easy anywhere.

“A lot of hunters seem to get into bowhunting because it allows them to hunt deer in October. Our figures indicate that 85 percent of Texas bowhunters also hunt with a gun during the regular season.”

It was a combination of challenge and extended hunting season that lured Jim Lewis into bowhunting. Lewis, of Dallas, is current president of the Lone Star Bowhunters Association, the group that effectively lobbied for the special archery season and the archery stamp.

Since 1966, Lewis has bowhunted for antelope, mountain lion, elk and mule deer, but he finds the whitetail by far the most challenging game.

“The name of the game is bowhunting, not bowshooting,” Lewis said. “You've got to put yourself in a whitetail's backpocket, then go through the gyrations of getting off a shot without the deer sensing your presence.

“Bowhunting is a sport that obvious-

ly isn't designed for everyone. It's fairly common for novices who take up bowhunting to go five or six years without killing a deer.”

Seasoned bowhunters prefer shots in the 15- to 20-yard range. A 40-yard shot is generally considered maximum range, to be attempted only under unusual circumstances. Getting within 20 yards of a wary whitetail requires a great deal of stealth, scouting, planning and an intimate knowledge of the target animal's habits.

Using every possible trick to gain an advantage, bowhunters don full camouflage, including facepaint. They hunt from elevated tree stands to get their scent and movements above ground level. They use skunk odor to cover their own human scent and sex scents to attract rutting bucks within bow range.

While the mechanics of getting within good bow range of a wily whitetail are not apt to get any easier, the development of the compound bow and the acceptance of the bow-sight as a legitimate tool have made it easier for novice archers to become proficient.

Compound bows incorporate mechanical advantage. For instance, once a 50-pound-class compound is fully drawn, the shooter is holding back the equivalent of a 25-pound bow. Yet the compound shoots faster than a recurve or longbow, providing a flatter arrow trajectory.

Shooting a compound with a properly aligned sight is a matter of being able to estimate range and align the proper sight pin with the target, then practice a good release.

It's really not as easy as it sounds but it is considerably easier for a beginning shooter than instinctive shooting with a recurve bow.

Getting set up to bowhunt for white-tails is relatively inexpensive. “I believe you can still buy a good compound bow and all the equipment you need in deer hunting for \$200 or less,” said Lewis. “If you really go the economy route, you can probably get your gear for \$150.”

Buying a modern bow is not, however, as simple as buying a firearm. That's why it's a good idea for beginners to buy gear from an archery specialty shop where salesmen who shoot bows can offer qualified advice.



Wyman P. Meinzer



And, despite the relative ease of shooting a modern compound, shooting tips from experienced archers can help solve a lot of problems before they ever arise.

"There are a lot of sports where a novice can teach himself and improve as he goes along but bowhunting is not one of them," Lewis continued. "Getting qualified help in learning the shooting basics is an absolute must."

One of the state's most qualified instructors is Bear Archery Clinic Specialist Von Evans of Orangefield. Evans, who has made an intensive study of



Glen Mills

archery mechanics and has taught hundreds of novices how to shoot, operates an archery shop from his home.

"One thing that scares people away from archery these days is the compound bow," he said. "It looks complicated but it's not. The compound bow is the best thing that's ever happened to archery, especially for beginners."

"A compound shoots faster than a recurve and, at full draw, it provides a mechanical advantage to reduce the amount of string tension by 33 to 50 percent. A good compound bow, adjustable from 35 to 65 pounds, is a bow you can use to hunt any North American big game. Your wife can shoot it; your kids can shoot it."

They can shoot it, that is, if they learn to shoot correctly. Evans has taught children as young as seven how to shoot. His standard boast is that he can teach you in 15 minutes to shoot a bow well enough to kill a deer. Here

are the basics according to Evans:

"The first mistake a beginning archer makes is to grab the handle of the bow and hold it tightly. Heck, he doesn't want to drop his brand new bow and he sure doesn't want to drop it if it belongs to someone else.

"When you close your hand around the handle of the bow, you're in effect holding back the force of the bow and not allowing it to do its job. If you're holding onto the bow, the torque generated by the string release causes that bow to turn one way or another, affecting arrow flight.

"Keep your bow hand open. As you draw the bow, it's pulled back into the webbing of your open hand."

To avoid dropping the bow when the shot is made and the bow springs forward, Evans recommends using a bow sling, which loops around the wrist of the bow hand. Although commercially designed bow slings are available, Evans finds an appropriate length of bootlace or cord works just as well.

"Most people who've never shot a bow think they can grab the string with two fingers. A two-finger grip causes too much tension on the string and results in arrow torque. Use the three-finger grip, two fingers below the arrow nock and one finger above.

"When you address the target, raise your bow arm until it's at a perfect right angle to the upper body. Always keep the bow arm at that 90-degree angle. From an elevated stand, hunters have a tendency to lower their bow arm to put the sight on a deer directly under the stand.

"If you lower your arm, you change your rear sight picture. That's why so many archers miss animals by shooting high. To aim down or up, bend at the waist.

"If the string hits your bow arm, it's going to hurt and it's also going to affect arrow flight. That won't happen if the elbow of your bow hand is turned in. To make sure your elbow is in the proper position, hold the bow out in front of you, then bend the elbow and fold your arm to your chest until you can touch the bow with your string hand. Maintaining the same elbow position, swing the bow back to the shooting position. That's how the elbow should remain during the shot.

"A lot of beginners, when they draw, pull the arrow off the arrow rest.

They'll fumble around with the index finger of their bow hand, trying to put the arrow back on the rest.

"When you pull the arrow off the rest, it means you're rotating the string with your fingers. To avoid that problem, flex the palm of your string hand inward before you start the draw. In that position, you can't rotate the string.

"You must draw to exactly the same spot on your face every time. That spot is called your anchor point. If you change the anchor point, you change your sight picture. You also change the distance you're drawing the arrow. That's like underloading or overloading a bullet. It changes the flight."

To ensure that he draws to the same spot each time, Evans uses the "triangle anchor point." At full draw, his



Ray Sasser

index finger touches the corner of his mouth, his thumb hooks under his jaw and his eyebrow actually touches the bow string.

Since the triangle is a rigid geometric design, Evans knows that when any one point of the triangle is not in the right place, his anchor point is not right.

The triangle anchor point is particularly important for bowhunters who hunt from an elevated stand. If they should lower their bow arm in the excitement of shooting at game, the bow string will not touch the eyebrow and they will realize before releasing the shot that something is wrong.

Evans recommends using a bowsight rather than trying to shoot the bow "instinctively." The sight mounts on

the bow itself and becomes to the bowhunter what the bead on a rifle is to the rifleman using iron sights.

"Too many hunters who shoot instinctively tend to look at the entire deer," Evans explained. "The bowsight forces you to concentrate on the spot you're trying to hit. Just as in shooting a rifle, you hold that sight pin right in the middle of the target. The sight pin is the front sight, the bowstring at your anchor point is the rear sight."

The effective use of a bowsight is predicated on the archer's ability to judge distance. Most bowsights have sight pins set at 10-yard intervals, a good idea, Evans thinks, since most deer are shot at close range.

A new bowsight must be sighted in, just as telescopic sights on a rifle must be zeroed. While most bowhunters and archery experts recommend setting the top sight pin to hit on the money at 10 yards, Evans disagrees.

"In every case I've seen, a hunting bow with properly matched arrows will shoot a flat trajectory at 14 to 16 yards," he said. "I set my first pin for 15 yards, then proceed with 10-yard increments."

While Evans aims his bow with both eyes open (the off-eye lends depth perception) he says it's not a cardinal sin to close the off-eye and sight with just the string eye. In fact, the rare individual whose master eye does not correspond with his master hand must shut the off-eye to shoot accurately. Shotgunners have the same problem.

To determine your master eye, keep both eyes open and point your index finger at a distant spot. Maintaining the point, shut each eye in turn. The dominant eye is the one which lines up with the target.

"The arrow release is a crucial part of archery," Evans added. "Once you're at full draw and you've got everything locked in on that target, concentrate your full attention on where you want the arrow to hit, center your proper sight pin on the spot and just relax your fingers.

"A good release occurs as though someone just cut your fingers off. If everything else is perfect and the release is bad, it can throw your shot off. Practice to achieve a smooth release technique.

"After the shot, don't do anything. Just try to hold your form as if you're



Wyman P. Meinzer



Glen Mills

Using every possible trick to gain an advantage, bowhunters don full camouflage, including facepaint. They hunt from stands to get their scent and movements above ground level. They use skunk odor to cover their own scent and sex scents to attract rutting bucks. The compound bow has made it easier for novice archers to become proficient.



Glen Mills

carved out of marble. Continue the aiming process until the arrow hits the target. This is where a lot of people go wrong. They think the arrow is gone as soon as the release is made. They cave in, push forward to 'help' the arrow, cut away, fall apart, or peek around the bow to try to watch the arrow's flight.

"All those things have a definite effect on accuracy. Just try to hold your form until the arrow hits the target."

Evans starts novice archers shooting at a target just five yards away. Concentrating on the technique steps he's just explained, he knows the short range will build confidence.

"Stay close until you're shooting tight groups, busting nocks, even. Then you can move back to 10 yards and go through the same process. Concentrate on technique. When the groups are tight, move back to 20 yards. If your groups get sloppy, move back to the closer range and shoot some more. Just don't practice too much. When you get tired, your form and technique suffer and you develop bad habits that are hard to break.

"Technique is the key," the pro emphasized. "I like to tell people that if they're so simple-minded they can only do things one way, they'll make great archers. It's all based on doing the same things, exactly the same way, time after time."

Evans, a natural teacher, has made an unusual study of archery mechanics. Qualified help, either in shooting a bow or in getting within range of a whitetail, can be found through local archery organizations found in most Texas cities.

Locate such groups through archery specialty shops. Lone Star Bowhunters Association memberships cost \$12.50 per year and the cost includes a bi-monthly newsletter. Most archery pro shops can provide LSBA membership applications or you can write Jim Lewis, 8700 Ambassador Row, Dallas, Texas 75247.

Even if you don't kill a deer with your archery tackle, bowhunting is a perfect excuse for being afield in October, one of the nicest months in Texas. Another benefit is that the very nature of bowhunting forces the hunter to learn more about whitetails. Even unsuccessful bowhunters invariably become better gunhunters. * *

Young Naturalist

Hunting Safety

by Ilo Hiller

Shooting accidents are not confined to hunters or the hunting season, but firearm safety is a subject we strongly emphasize at this time of year because many of you soon will be going hunting for the first time.

If you are one of these first-time hunters, we hope you are taking more into the field with you than a loaded firearm and your enthusiasm. For your own safety and the safety of those who will be going with you, you also should be taking along knowledge of safe gun handling. The hunting firearm you will be carrying has been designed to kill, and the ammunition it shoots cannot tell the difference between a game animal and a human.

No one wants to have an accident, but safe gun handling is not something the beginner does automatically—it must be learned. And how you carry your loaded firearm in the field will quickly tell your hunting companions whether or not you are a safe hunter. There are several safe carrying positions, but you must be able to select the proper one for each field situation.

When walking single file, the *double-hand* or *ready carry* gives you control of the direction in which the muzzle is pointing and keeps the gun ready for instant use. The small of the stock is gripped with the trigger hand and the forearm of the gun with the other hand. The muzzle points to the left for a right-handed hunter. When hunters walk side-by-side, only a right-handed hunter on the left or a left-handed hunter on the right can use this carrying position safely. Their guns will be the only ones with muzzles not pointing at another hunter.

In the *cradle carry*, the trigger hand

again grips the small of the stock, but the barrel of the gun is cradled in the crook of the other arm, and the other hand helps support the gun. As in the double-hand carry, only a right-handed hunter on the left or a left-handed hunter on the right can safely use this carry when the hunters walk side-by-side.

The *elbow carry* should never be used when walking behind another hunter, but it is an excellent one to use when walking beside another hunter. For it, the gun is hooked over the elbow of the trigger arm and the muzzle is pointed toward the ground.

Another good carry to use when walking side-by-side is the *shoulder carry*; however it should never be used when walking in front of another hunter. For it, the gun is held at the small of the stock and rests on the shoulder with the muzzle pointing into the air.

Some hunters prefer the *trail carry*. The gun hangs along one side, muzzle down, held by a hand around the small of the stock. This carry should not be used when walking behind another hunter, but is considered safe when walking side-by-side.

The *sling carry* allows you to hang the gun on your shoulder by a sling with the muzzle pointing into the air. Although this is considered a safe carrying position, the gun should never be carried in this way when crossing an obstacle such as a fence. Another disadvantage to this type of carry is the fact that the gun is not considered ready for use when game is spotted.

However you carry your gun, the safety should remain on until you are ready to shoot and the trigger finger should remain outside the trigger



guard. You must be doubly alert when carrying a loaded gun over rough country since it is so easy to slip, trip or fall. *Be sure you can control the muzzle direction at all times.* To be extra safe do not put a shell into the chamber until you see game or are on a stand.

An especially dangerous time is when you first spot game. As you bring your gun into shooting position, make sure the muzzle never points at a hunting companion and make sure the target is really game, not another hunter. Take time to check your backstop so if you do fire and miss the bullet will land harmlessly.

The end of the day, when you are tired and your reflexes may be a bit dull, also is potentially dangerous. If you are too tired to carry your gun safely, unload it before taking another step.

As you can see, there is a lot more to hunting than just going into the field with a gun. To help you develop the basic safety techniques and learn how to handle a loaded gun properly, the Parks and Wildlife Department offers a course in hunter education. This course has been taught by volunteer



Steve Hill

Being able to hit a target accurately is something that should be mastered before you start shooting afield. Shooting clay targets will teach you how to aim at and hit moving objects, such as game birds.

safe hunter patch to sew on your hunting jacket, a safe hunter decal and a safe hunter certification card to carry in your billfold. You also may keep your classroom handbook for future reference and study.

Being certified as a safe hunter through the completion of a hunter education course is not a requirement for hunting in Texas at the present time. However, many other states do require hunters to take such a course before they are allowed to purchase a hunting license. If you or members of your family plan to hunt in another state that requires this course, enroll in a class as soon as possible so there will be time to be certified before the hunting season begins. Contact your local game warden or the department's Hunter Education Section, 4200 Smith School Road, Austin, Texas 78744, 512/479-4999 for the name of an instructor in your area.

Another way to make your hunting safer is to wear blaze orange, a color that does not occur naturally in nature. It immediately distinguishes its wearer from the natural surroundings, and should make it impossible for anyone to mistake the wearer for a game animal. Blaze orange is the most visible color to persons with normal vision, and vision experts have found that even the eight percent of males with color blindness could see blaze orange. Red, which for years has been considered a safe color for hunters to wear, is not visible to those who cannot distinguish color properly. And in poor light, red becomes difficult for most people to distinguish from shades of brown.

instructors for the past 14 years with more than 130,000 students being certified as "safe hunters."

The course is divided into four main parts—Hunter Responsibility; Firearms and Bows and Arrows; Wildlife Identification, Management and Game Care; and Survival and First Aid.

During the first session your instructor will discuss the importance of the hunter education class, your responsibilities as a hunter and the history of firearms. The subject of hunter ethics (the code each individual hunter lives by) also is covered in this session.

Ethics are a personal thing and may vary from hunter to hunter. It is possible to be a legal hunter, yet still be considered unethical. For example, the law establishes a daily bag limit for game. Legally the hunter can take the full limit, but isn't it more ethical to take only the game you will use even if it is less than the bag limit? The future of hunting may depend upon sportsmen who develop a strict code of ethics and are willing to take only their share. They obey the unwritten or moral laws as well as the written ones.

In the second session you should learn a bit about rifles, shotguns, handguns and ammunition.

The third session is devoted to black powder and muzzleloading firearms, gun handling, marksmanship, becoming a bowhunter and bowhunting equipment. Although marksmanship is one of the subjects discussed in this session, don't sign up for the course expecting to spend all your time on a target range improving your shooting skills. Being able to hit your target accurately is something you should master before you start shooting afield, but unless the instructor has the facilities and equipment, no actual shooting is done during this course.

The fourth session covers wildlife identification, the principles of wildlife management and game care. Session five goes into vision and hearing protection; basic survival rules; food, water and rescue; and shelter and fires. Water safety, hypothermia and first aid are covered in session six. The last session is devoted to review, examination and graduation.

When you successfully complete the course, you will receive an attractive

Ten Commandments of Firearm Safety

1. *Treat every gun with the respect due a loaded gun.*
2. *Watch that muzzle.* Be able to control the direction of the muzzle even if you should stumble.
3. *Be sure the barrel and action are clear of obstructions* and that you have only ammunition of the proper size for the gun you are carrying.
4. *Be sure of your target before you pull the trigger;* know identifying features of the game you hunt.
5. *Unload guns when not in use.* Take down or have actions open; guns should be carried in cases to the shooting area.
6. *Never point a gun at anything you do not want to shoot;* avoid all horseplay with a firearm.
7. *Never climb a fence or tree or jump a ditch with a loaded gun;* never pull a gun toward you by the muzzle.
8. *Never shoot at a bullet a flat, hard surface or water;* at target practice be sure your backstop is adequate.
9. *Store guns and ammunition separately* beyond the reach of children and careless adults.
10. *Avoid alcoholic beverages and other-mood altering drugs before and during shooting.*

Suggested Rules for the Hunter's Code of Ethics

1. I will consider myself an invited guest of the landowner, seeking his permission and so conducting myself that I may be welcome in the future.
2. I will obey the rules of safe gun handling and will courteously but firmly insist that others who hunt with me do the same.
3. I will obey all game laws and regulations and will insist that my companions do likewise.
4. I will do my best to acquire those marksmanship and hunting skills which will assure clean, sportsmanlike kills.
5. I will support conservation efforts which can assure good hunting for future generations of Americans.
6. I will pass along to younger hunters the attitudes and skills essential to a true outdoor sportsman.

Presently, the only blaze-orange requirements in Texas are those enforced on the Texas Parks and Wildlife Department's wildlife management areas. Since 1973 management area hunters have been required to wear a minimum of 400 square inches of daylight fluorescent orange material, with .144 inches appearing on both the chest and back, while hunting all game species except migratory birds and turkeys.

Safety records in states that require hunters to wear blaze orange are so outstanding that more and more states are adopting blaze orange requirements. Results from studies in more than 40 states have shown that wearing blaze orange can reduce hunting accidents. Of course, it will not prevent those accidents caused by careless gun handling, self-inflicted wounds and defective firearms, but blaze orange does reduce vision-related accidents. The most significant reduction occurs in the category where a hunter is mistaken for game.

Some hunters will never voluntarily wear blaze orange because they feel it will hurt their hunting success. It is true that birds can detect this color; however, surveys in states requiring blaze orange have shown no reduction in the big game harvest after blaze orange clothing was required.

At the present time, and until legislation is passed requiring it, the wearing of blaze orange remains a personal choice in Texas. However, your life might be the one saved if you wear it.

While we are discussing colors, it might be wise to point out that deer hunters should avoid wearing white. Other hunters can mistake a white shirt, jacket or even a handkerchief for a deer's white rump patch. Wearing such spots of white could cause someone to fire at you.

Each year lives are touched by tragedy when hunting accidents occur. We may not be able to eliminate all of them, but when we take a basic knowledge of hunting safety along as a hunting companion, we will be doing our part to make hunting a safer sport for everyone.

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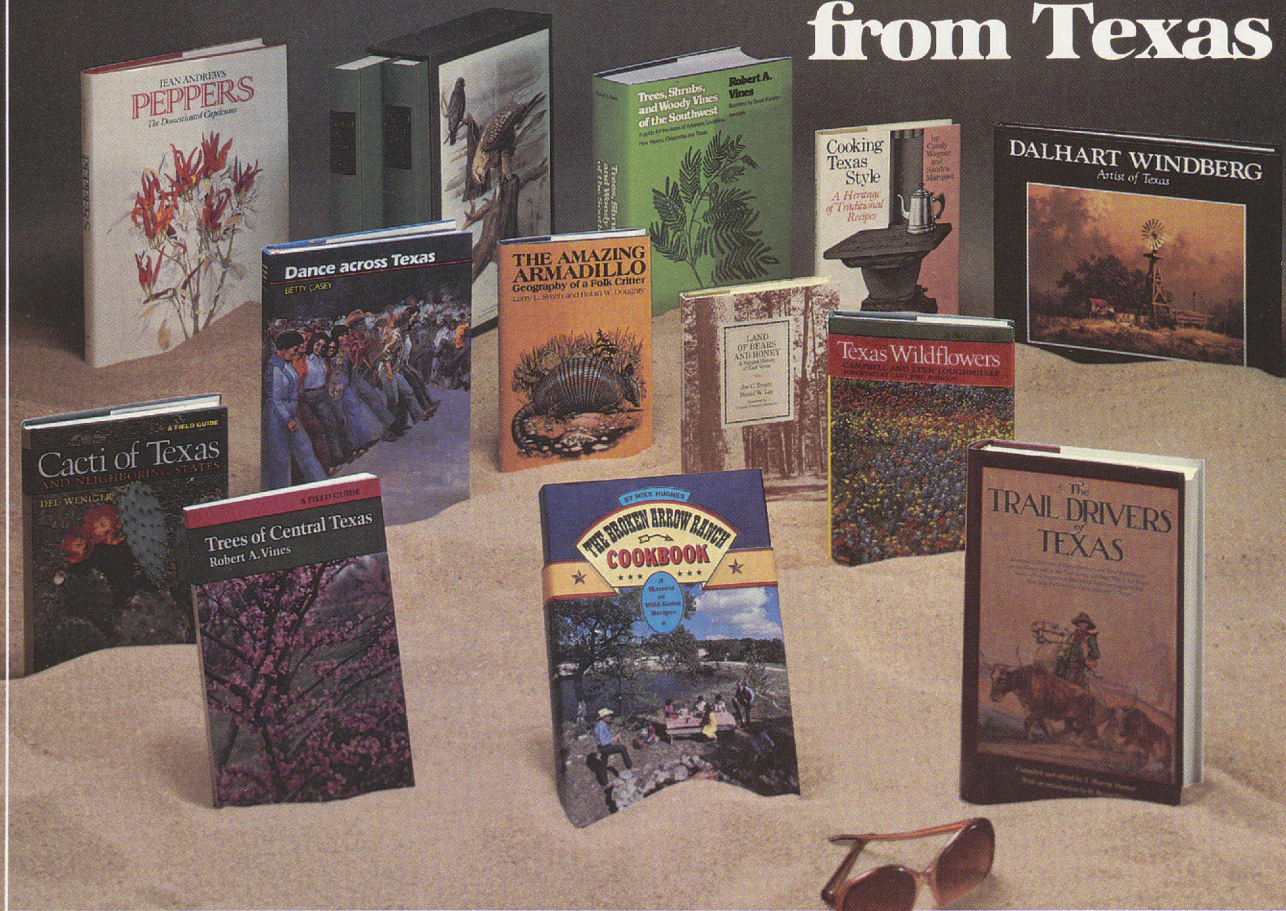
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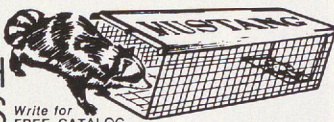
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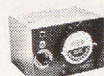


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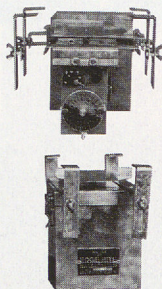
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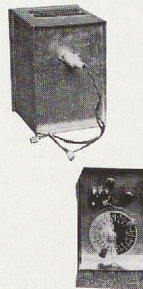
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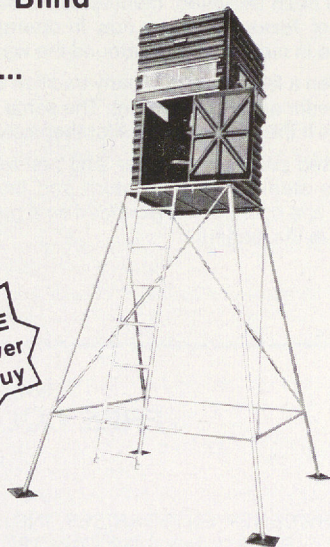
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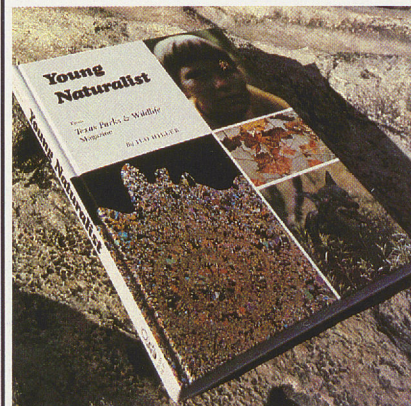


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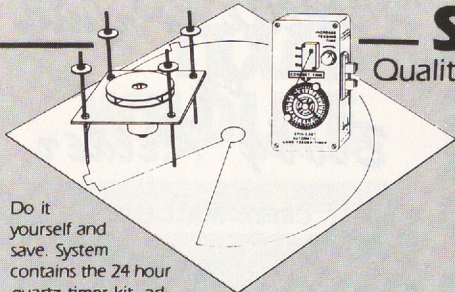
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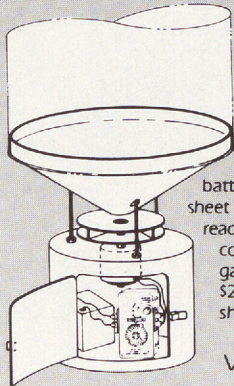
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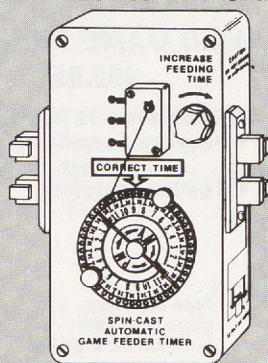
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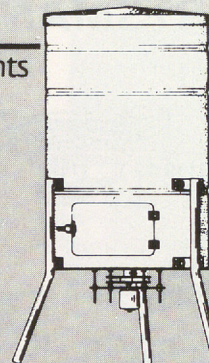


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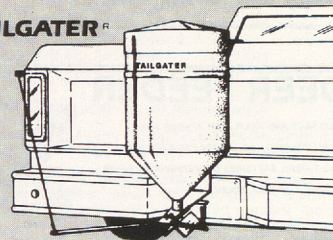
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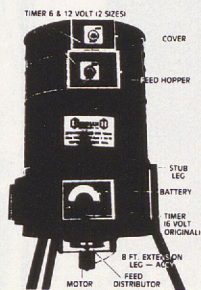
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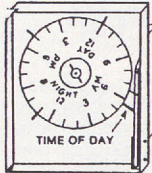
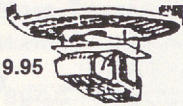


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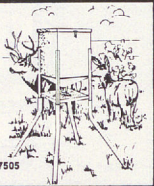
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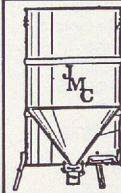
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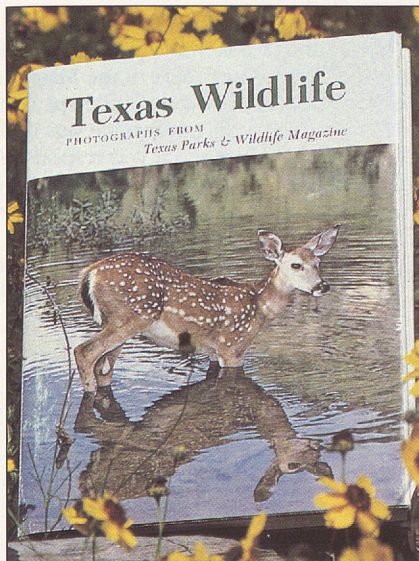
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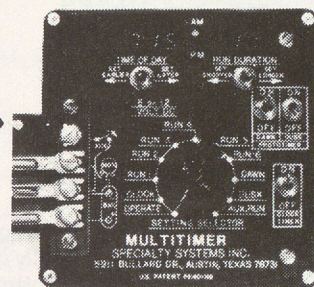
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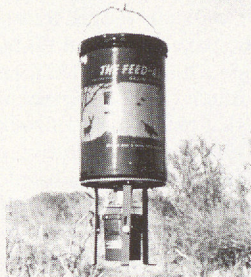
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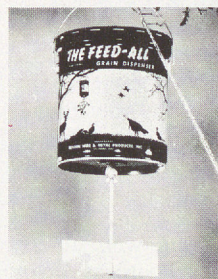


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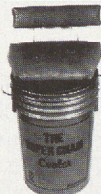
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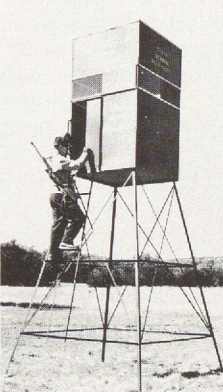


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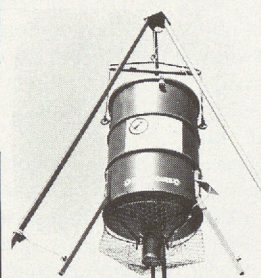
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Letters

Cedar Increase

The article in the June issue on cedar, alias *Juniperus ashei*, is generally on target, although the poor maligned plant continues to be anthropomorphized to ridiculous extremes. It does not "invade." It simply colonizes available habitat.

The authors attribute much, indeed the majority of this colonization to the cessation of periodic fires, yet they fail to point out the real reason for the tremendous increase in cedar density and extent. Simply put, this factor is the largely man-caused landscape modification that continues to create desirable habitat for cedar. The loss of grasslands through poor conservation practices (to put it mildly) is the primary cause. This fact and the patchwork of roads, fields, settlements, etc. prevent the recurrent fires that are the life-blood of many of the world's grasslands.

David H. Riskind
Austin

Memories

I now live in the Dominican Republic, which is beautiful, but not like the Texas I've grown to love through *Texas Parks & Wildlife* magazine. Years ago, every vacation to Carmine, Texas, included a lazy afternoon in Grandpa's store with a soda water and a stack of back issues. Thanks for an excellent magazine that brings back memories (and impresses a lot of my northern co-workers).

Pat Devillier
Jarabacoa, Dominican Republic

Wild Animals As Pets

While I was renewing my subscription, I thought this would be a good opportunity to pass along the following observations.

The American Association of Zoo Veterinarians and the Texas Veterinary Medical Association both recommend that wild animals not be kept as pets. Veterinarians who are knowledgeable and experienced wildlife and exotic practitioners do not recommend that these animals be maintained as pets either.

Most of the babies are cute, little, cuddly, loveable individuals. However, most change considerably when they grow up and reach puberty and maturity. Many have been declawed, defanged and neutered and thus, cannot be released back into their natural

habitat to fend for themselves. Neither is there any efficient rabies vaccine for most of these animals (see story on page 18).

These are just a few examples of some of the problems involved. There also are many instances in which these mature animals have seriously injured people.

Let's leave these animals in the wild or in the more natural environments of zoos and wildlife ranches. We, the human animal, would rebel and reject anyone attempting to place us in a small cage or pen. I am sure that we would not like the food or the regulation of our social life and our environment.

Mason Matthews, DVM
San Antonio

Wildflower Sources

The "Pineywoods Wildflowers" article in the June issue showed a photo of the passion flower. Please let me know where seeds or plants are available for sale.

H.F. Cerwinski
Houston

I recently had the privilege of browsing through some 1980 copies of *Texas Parks & Wildlife*. The June 1980 cover featured a photo of cacti, and there was an article on cactus flowers.

I'm wondering if it is possible to purchase plants or seeds for any or all of the many colorful cacti pictured in the article. I've never seen that many blooming cacti.

Catherine Vita
San Antonio

■ The National Wildflower Research Center in Austin has a list of sources for native plants and seeds in Texas. However, they do not have information about what types of seeds each company has available. To receive the list, send a self-addressed, stamped envelope to the National Wildflower Research Center, 2600 FM 973 North, Austin 78725.

Apologies to the Garden Club

I want to apologize to you for the error I made regarding the Magnolia Garden Club of Beaumont in the article about the Wild Azalea Canyons (April 1985). The sign over the canyons states only that the area was preserved by Temple-Eastex and the Magnolia Garden Club. As Newton, Texas, also has a Magnolia Garden Club, the town

of Beaumont never entered my mind.

My contacts for the story all live in Newton and are members of the Magnolia Garden Club of Newton. While speaking with them by phone, never once was I told that the club in Beaumont was responsible for saving the canyons. My apologies to you, your readers and the Magnolia Garden Club of Beaumont.

Paul Montgomery
Austin

Geology

I was glad to see an article about geology in the June issue. I taught geology for 28 years at St. Mary's University in San Antonio and led some 50 field trips into state and national parks and other scenic places to demonstrate to students the stratigraphy, geomorphology and paleontology of Texas. It was a labor of love as well as my livelihood, so much so that I wrote a book about my life and the 52 field trips from a personal as well as a natural history standpoint.

It seems to me that geology, being the basis of the physical world's biology, chemistry, physics and botany, would get more attention in magazines such as *Texas Parks & Wildlife*. I recently heard a park ranger give a wrong identity to the rocks on which the tourists were walking. It was treated with a shrug at the park office, but I'll bet if he had misnamed a flower or bird there would have been much to-do. There seems to be an attitude that the identity of rocks and the origin of hills and the evolution of valleys is just too petty to be considered. I overreact, it's true, but it seems such a pity to learn all about azaleas in East Texas and never mention why they grow there and not near San Antonio.

Sybil Lightfoot
Spring Branch

INSIDE BACK COVER

Its large size and bright coloring make the common garden spider one of the most conspicuous and widely known arachnids. These members of the orb weaver family build their webs in open, sunny places, such as gardens around houses or in tall grass, then sit in the middle of the web quietly awaiting their prey. Photo by Leroy Williamson.

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