

# Texas Game and Fish

SEPTEMBER

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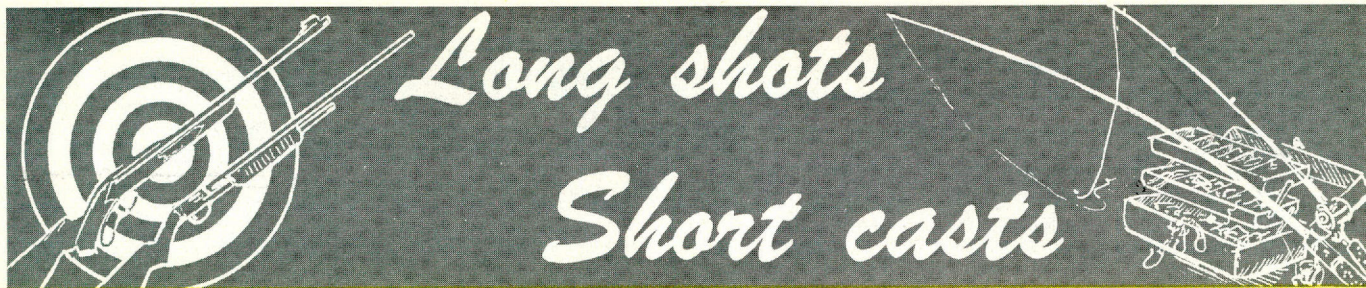
SEP 28 1964

PAN AMERICAN COLLEGE  
EDINBURG, TEXAS



An insect-eye view of a garden spider, *Argiope*, may reveal why this one is so well fed. Its circular web, almost invisible, extends two to three feet across. An insect could easily avoid the conspicuous orange and black spider but only a sharp-eyed one would spot its transparent net in time to veer away. Photo by Al Flury.





**CHECKS FOR DISEASE:** Texas has received the first installment of Federal funds, a check for \$174,198.42, for a mosquito eradication program. An annual budget of \$750,000 for five years is planned. The United States, as co-signee of a Pan American Health Organization agreement to stamp out the yellow-fever-carrying *Aedes aegypti* mosquito, is underwriting the plan in a nine-state area, as well as in Puerto Rico and the Virgin Islands. Nearly all Central and South American countries have already ridded their nations of the pest. Although there has not been a case of yellow fever in Texas for nearly 60 years, the fact that a carrier such as this mosquito exists poses a constant threat.

**HAPPY LANDING:** If you usually run your boat on the same beach when you come in from boating, lay an old auto tire flat on the sand with half of it in the water. Sink the tire to half its depth and fill it with sand. This gives an anchored landing field and helps prevent scratching the bottom of the boat.

**STAKES WELL DONE:** For a fast and simple outdoor cooking rig drive three or four steel pegs in the ground in a perimeter the size of the frying pan you'll use. Build a small fire within the stakes and you're in business.

**PLAY SAFE:** The American Red Cross advises swimmers and boaters: "Learn to swim. If you can swim, learn to swim better." This should be backed up by the following Red Cross common sense rules: Never swim alone; swim where lifeguards are on duty; recognize your limitations; don't depend on inflated innertubes and such devices to keep you afloat; take along a companion in a boat if you plan distance swimming in open water; don't swim immediately after eating, when overtired or overheated; don't swim under diving boards; stay out of the water during electrical storms; make sure the water is deep enough before you dive. When you go boating, be sure you have a life preserver, buoyant vest, ring buoy or approved buoyant cushion for each passenger in the boat. Even good swimmers have drowned when accidents threw them into the water, because they did not have these items in the boat, so this boating law should never be ignored.

**BE SHARK SHARP:** The Dept. of the Interior has put out a new booklet designed to assist marine sport and commercial fishermen, biologists and students, in the identification of sharks. Called the "Angler's Guide to Sharks," it covers 34 major species of sharks common along the Atlantic Coast, and is available from the Superintendent of Documents, Washington, D.C. 20402, at 25 cents a copy. Only guide of its kind, it contains scale drawings and a description of the species, a quick identification key based on physical characteristics, and information on the more dangerous species of sharks. Sharks are becoming increasingly important as sport fish, 800,000 being caught in a recent year.

**US-EFUL LUCRE:** Preliminary distribution of \$14,200,000 in Federal Aid funds for fish and wildlife restoration projects was available to the states July 1, an increase of \$1,600,000 over a similar distribution last year. Of this year's amount, \$10,900,000 is for wildlife restoration and \$3,300,000 for sport fishing projects. The preliminary apportionments enable states with small reserve funds to finance their Federal Aid operations from July 1 until the final apportionment for the year, which comes in the fall. The funds come from Federal excise taxes collected from manufacturers, importers, and producers of certain types of hunting and fishing equipment. Distribution is based on the number of paid license holders in a state. Under Federal Aid programs, states spend their own funds on approved projects and are then reimbursed for up to 75 percent of the cost. The preliminary apportionment for Texas is \$163,500 for fish projects, and \$543,500 for wildlife restoration.

# Texas Game and Fish

OFFICIAL PUBLICATION OF THE PARKS AND WILDLIFE DEPARTMENT, DEDICATED TO PROTECTING AND CONSERVING NATURAL RESOURCES; TO PROVIDING AND MAINTAINING AN EXCELLENT PARK SYSTEM; AND TO IMPROVING HUNTING AND FISHING IN TEXAS.

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## The Cover



Not every boy gets a chance to spend the summer months perch fishing in his favorite pond. But those who do, and even adults who have in the past, know what this boy is thinking as his summer draws to a close. Perhaps even the dog anticipates the change. He'll get only the afternoons with his master and less of the pond. *Photo courtesy Texas Highway Department.*

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# Classroom Conservation

**Y**OUNGSTERS should be the concern of all adults at this time of the year. It's the beginning of another school term—a chance for them to gain in wisdom and knowledge for the years ahead. Learning should be the objective of all youngsters as they return to the classrooms. Students need the inspiration and encouragement of adults, but they should not wait for it or use the lack of it as an excuse for not trying.

Those to whom the natural resources belong should never shy from an opportunity to learn something that will help them be better stewards of these treasures. All the people can claim ownership, so the outdoors with all its varied creatures is everyone's house to keep.

More and more, conservation education is being worked into the classrooms. Certainly, it cannot consume all the hours and minutes that are set aside for learning. But it should receive a fair allotment of this time.

The Texas Education Agency soon will make available to our public schools, "A Guide to the Teaching of Conservation in Science and Social Studies for the Elementary and Secondary Schools of Texas." It will describe the nature and importance of our State's natural resources and point up the need for their conservation, as stated in the foreword. The introduction of this long-needed


guide states, "Schools must lay the groundwork for proper feelings, appreciations, and attitudes toward our State and Nation's resources. This can be done through conservation education by (1) teaching the scientific nature of each of our resources, (2) showing how each individual depends upon his natural environment, and (3) developing the know-how to actively practice conservation."

Many of us realize and admit the seriousness of this conservation business. But, too many take too lightly the very small world we have reserved for dependent outdoor creatures. It's time Texans meet the facts headon, and look beneath the surface where the real truth lies. And, the time is ripe for us to stress again to the youth of this state the importance of conservation by letting them, too, have facts that will cause them to be serious when they discuss the future of our renewable and non-renewable resources.

Young children need to be told in a language they understand and, yet, the idea of responsibility, their responsibility, even as youngsters to all wild and natural things must not be omitted. We need to encourage every child to become "conservation conscious."

Much can be done outside the schools by parents and groups whose objectives directly or indirectly involve the outdoors. \*\*

THE EDITOR



# Boardwalk to Pleasure

by CURTIS CARPENTER

**T**HERE'S MORE to a fishing pier than just fishing. And a person can find no better way to discover this than to visit the new fishing pier which was recently completed



When the fish are hitting, fishermen line the rails hoping to fill the stringer for a fish fry.

by the Parks and Wildlife Department near Port Lavaca.

The pier, which has been tagged the world's longest fishing pier by Commission Chairman, Will Odom, doesn't seem so long at a glance. But a trip to the end and back on a hot summer day is convincing enough to kill any arguments about its length. Records reveal that it is about 3,300 feet long, not too far short of a mile.

In 1961, Hurricane Carla came roaring across Lavaca Bay and destroyed much of the 30-year-old causeway, once the only means for crossing that body of water. A new structure had been completed just west of the old causeway. All transit on Highway 35 began traveling over the new road leaving the old bridge for the fishermen. But Carla ended that, at least temporarily.

The same year Carla ripped up the Texas coast, the 58th Legislature authorized the transferring of the old causeway to the then State Parks Board to be used as a fishing pier. It

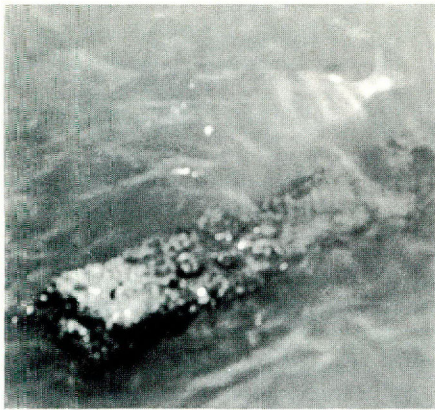
provided \$49,500 for the project.

The "Big" hurricane left more work to be done. By 1963, almost 162 feet of the pier had been rebuilt. On January 22 of this year the Parks and Wildlife Department issued a work order for the completion of the fishing pier. The job called for construction of an additional 3,166 feet of pier.

Salvaged materials from the old causeway were used to complete the pier. Much of the piling from the old structure was left standing by the hurricane.

Today, the pier angles straight out from shore on the Port Lavaca side for some 3,200 feet in a northeasterly direction. Then it takes a 90 degree turn to the northwest and extends for another 78 feet or so. A ramp leads right down to Chickenfoot Reef.

In the seabreeze-cooled hours of the early morning or evening, the planked path makes for a pleasant and scenic stroll. If you want to fish,



A sheephead lazily munches barnacles along the pier, just one of many feature attractions.

the fish quite often are there to take your bait. If you just want to stretch your legs and clear the mist from your eyes, the water around the pier has plenty of activity for viewing. This is especially true along the west side where the chunks of concrete, piling and other portions of the old causeway skeleton ornaments the bottom.

A person can actually witness a phase of the life cycle of several marine species as tiny finned specks rush about in schools like small shadows, scooping up invisible nourishment, only to become a meal for some hungry predator. A sheephead, all decked out in its jailbird attire, munches on juicy barnacles which had attached themselves midst the green sea grass to a chunk of mortar. The big fish circles about its underwater table, often surrounded by some of its smaller striped cousins, rooting for breakfast and at times breaking the surface with a splash of its tail.

An industrious trio of big-lipped mullet do a follow-the-leader as they scrape and suck a snack from the submerged garden growing at a piling's water line. And several needle fish glide through the water at the surface like one unit, searching out a tidbit or two.

From the east, as if being directed by a compass, a transparent jellyfish ripples its skirt with rhythmic timing and jets itself with surprising speed toward the west. It collides with a pier support, bounces off, weaves about for an instant and heads back into the current. After a vain attempt to move ahead, it circles around, picks up the compass signal and re-

sumes its journey westward to some distant shore.

In the early morning hours, several gulls push with their wings in the gentle breeze for the Gulf, chatting in their special way about the day's plans. Some fisherman, appearing quite lonesome, leans against the railing holding a length of cane pole staring into the depths below. And the show goes on, and on, and on, perhaps never ending even deep into the night.

"What is so exciting about the construction of a pier?" one gent was overheard commenting on a newspaper report he was reading. He should go to this pier, stretching out sturdily across Lavaca Bay. Perhaps he should talk with the hundreds of Texans and tourists who already have discovered its potential.

They will tell him about the tasty



Even the kiddies can enjoy the scenery if properly attended and provided shade and such.

meals they have experienced from the fish landed off the pier. Or, about the great tug a giant gar provided as it gulped down a chunk of cut bait, felt the steel and drove its muscled body for the open bay.

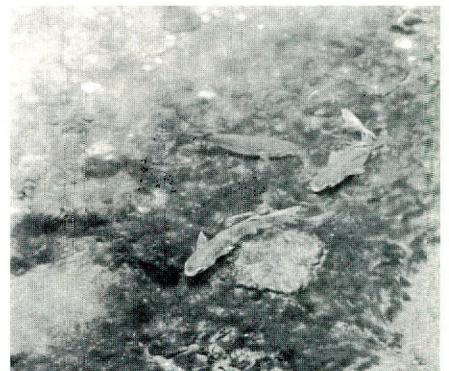
He will hear about the sand sharks, huge drum, handsome trout, spotted reds, golden croakers and grunting catfish. Before the story of the Port Lavaca pier is completely revealed, the gent who wondered will realize, too, that there's more to a pier than fishing.



The pier is a place to let your hair down and forget about your problems, like this visitor.

No doubt, he would be there now, with camera in hand to record the sights along the water's edge where the ripples lap at Chickenfoot Reef at the end of the pier. Or he would want to cast his bait at the feeding trout and reds that graze in the shelled meadows just beyond the reef. He undoubtedly would appreciate the fact that the pier belongs to the public, and that he can stroll over its planks as freely as if it were his own back yard, and keep it just as clean.

No one could possibly describe all the potential of a fishing pier. Certainly it is designed primarily to allow fishermen to walk half way across the bay without getting their feet wet and fish as they go. But, it offers much more, especially to the sightseer who has never had a chance to venture over the water and study its fascinating inhabitants. \*\*

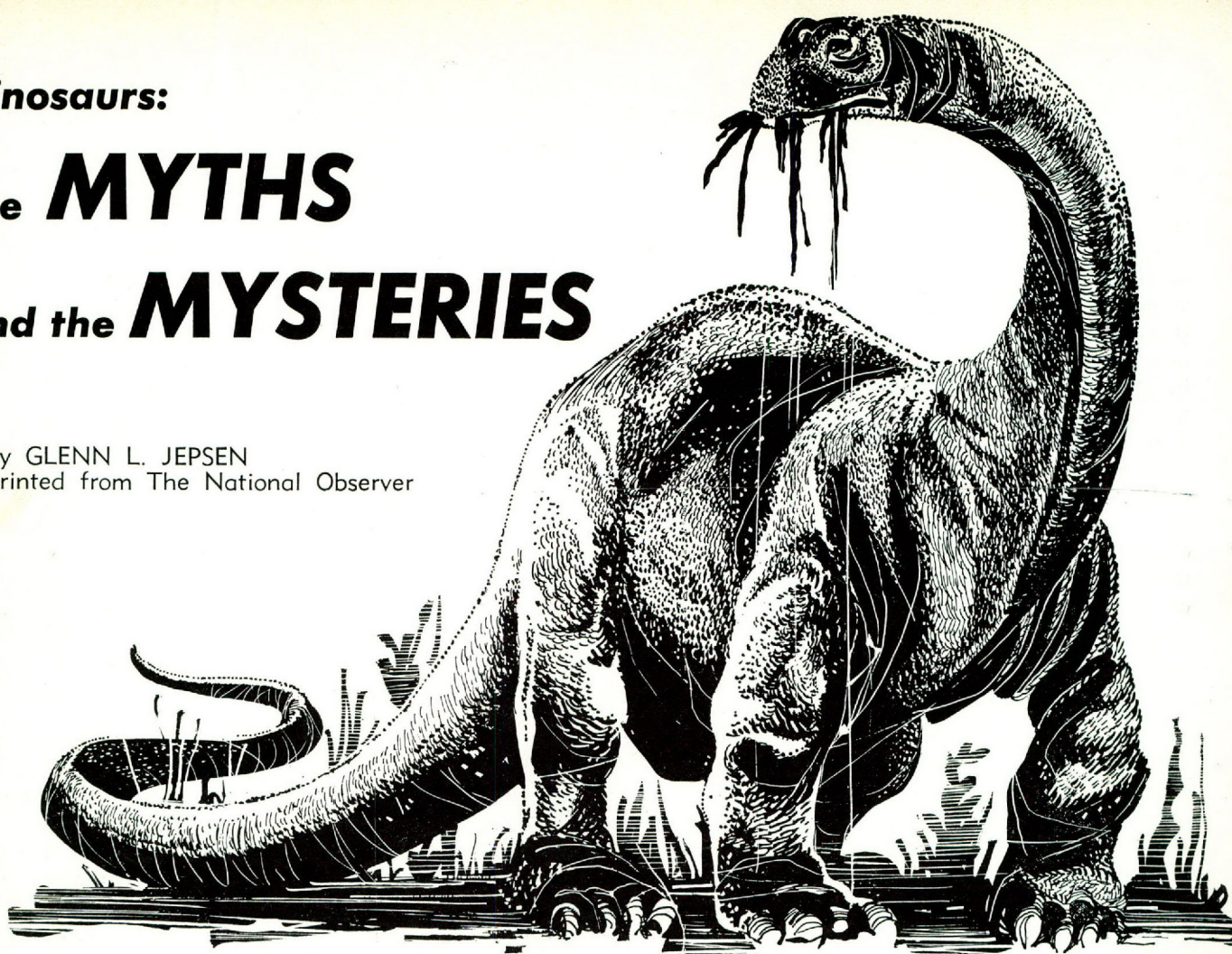


Three mullet, in follow-the-leader fashion search concrete slabs for green nourishment.

**Dinosaurs:**

# the **MYTHS** and the **MYSTERIES**

by GLENN L. JEPSEN  
Reprinted from The National Observer



**M**ANY MAJOR mysteries about dinosaurs are completely unsolved. Dinosaurs are all dead, of course, and have left no direct living descendants that can be critically examined. Hence, much of the more interesting information about them is derived through analogy and not by direct observation.

Dinosaurs never intended to become extinct, of

---

Glenn L. Jepsen, whose article on dinosaurs is condensed from the Princeton Alumni Weekly, is Sinclair professor of geology at Princeton University and director of the university's Museum of Natural History.

One of the world's leading paleontologists, Dr. Jepsen, 61, has been on Princeton faculty since receiving his doctorate in geology there in 1930. He has directed several geological expeditions into the western United States, including the 1940 expedition that first discovered artifacts of the 7,000-year-old Yuma civilization near Cody, Wyo. He soon will begin further explorations.

Actually, dinosaurs are something of an avocation for Dr. Jepsen, whose special field of research is the Early Tertiary period of pre-history, about 60,000,000 years ago and after the extinction of dinosaurs.

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course, and didn't even know when their racial knells were sounding although the tolling continued for several millions of years. Even with our modern intelligence, if we lived with dinosaurs in the Age of Reptiles we probably would not have known that they were doomed until they were very near the end of existence.

All literate children now learn at an early age, but are reluctant to believe, that the friendly dinosaur fol-

lowed a well-trod trail to oblivion. Junior naturalists have heard and read numerous other tales, many of which are alluring but untrue about the monsters with long jagged names, that seem to have replaced for young imaginations the exquisitely frightful ogres and dragons in the fairy stories of earlier generations. Being extinct, dinosaurs are rather benevolent and easily tamed and yet excitingly awesome.

## Tantalizing Problems

In a recent survey sponsored by the National Science Foundation, paleontology was discovered to be the subject that grade schoolers most want to read about. The survey also found that school libraries are badly out of step with student interests. Paleontology was number three when ranked by interest of both high school and grade school readers.

Despite the great upsurge of youthful demand for knowledge about dinosaurs, far greater now than at any time since one was first described nearly a century and a half ago, many of the most interesting details about them form tantalizing problems.

By far the most baffling major question about dinosaurs is: What caused their extinction? Dozens of theories make an extensive literature of speculation on this intriguing subject.

Authors with varying competence have suggested that dinosaurs disappeared because the climate deteriorated (became too hot or cold or dry or wet), or that



the diet did (with too much food or not enough of such substances as fern oil; from poisons in water or plants or ingested minerals; by bankruptcy of calcium or other necessary elements).

Other writers have put the blame on disease, parasites, wars, anatomical or metabolic disorders (slipped vertebral discs, malfunction or imbalance of hormone and endocrine systems, dwindling brain and consequent stupidity, heat sterilization, effects of being warm-blooded in the Mesozoic world), racial old age, evolutionary drift into senescent overspecialization, changes in the pressure or composition of the atmosphere, poison gases, volcanic dust, excessive oxygen from plants, meteorites, comets, gene pool drainage by little mammalian egg-eaters, overkill capacity by predators, fluctuation of gravitational constants, development of psychotic suicidal factors, entropy, cosmic radiation, shift of earth's rotational poles, floods, continental drift, extraction of the moon from the Pacific Basin, drainage of swamp and lake environments, sunspots, God's will, mountain building, raids by little green hunters in flying saucers, lack of even standing room in Noah's Ark, and paleoweltschmerz.

### Do They Still Exist?

Another way to speculate out of the dilemma of explaining cause is to infer that dinosaurs aren't yet actually extinct—that some may be still around, possibly evolved into forms, living way off in caves in some remote and unexplored part of the world, presumably in a climate much warmer than that required by the Abominable Snowman, or by the unverified monsters that are said to lurk in the Lochs of Scotland. As remoteness dwindles, however, so does the number of people who hold this view.

The fact is no one knows how or where dinosaurs went. No single theory can support all the factors and facts of extinction; different causes eliminated different individuals and groups at different times. New research methods, however, are pressing fresh information from the bony pulps of the past.

Not every dinosaur was huge. Many dwarfy kinds were smaller than ponies or even sheep, and, of course, in a clan group or pack of any kind of dinosaur—even the giant species—there were many more small young dinosaurs (or sauridions) than big old bulls.

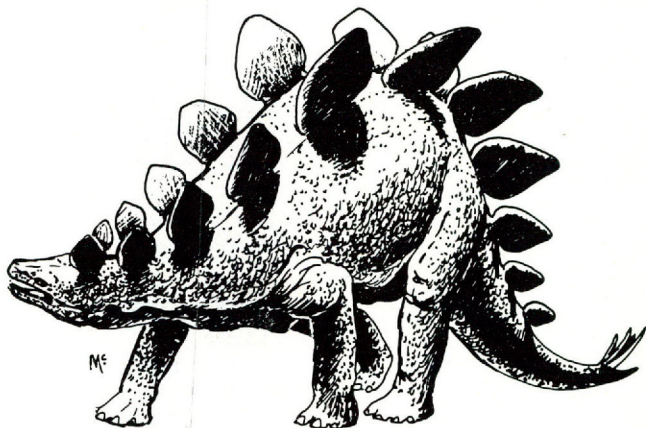
We know nothing of age-group or social structures among dinosaurs such as the ratios of hatchlings to teenagers to the mature. Dinosaur demography is an almost unexplored field, and sauridion mortality rates are not likely to be known soon because the records are fragmentary and scattered. One vague age-ratio record has puzzled dinosaur hunters through many years of careful exploration. In the rich fossil fields of Utah, Wyoming, and Tendaguru where adult dinosaurs are abundant the rocks contain only a few bones of sauridions. A common way to explain this observation or to escape from it is to state that the youngsters were kept in upland brood areas safe from the harsher forces of nature (as well as from burial and future research in museums) while the grownups foraged on plants or on each other along the shores of lowland rivers and

lakes. Senior citizens were thus readily buried after death, with consequent riparian rights to become fossils imbedded in stone.

This vision, for which the lullaby might be rephrased to "Rocks avoid baby on the hill top" is truly a hypothesis based on young dinosaurs. Some day it may be verified by positive evidence when bone diggers' picks open dinosaur nurseries strewn with the small dainty bones of sauridions. Come soon the day!

Lest the thought of these tender stony ghosts wring too much mammalian sympathy from us, it is well to remember that the family life of reptiles is thin and sharp. After mother dinosaur laid eggs she might not even remember where she did so when a hatch occurred or what it is that hatched, and if her young were born alive, they precociously took off to make their own living—almost at once, quicker than you can say Horatio Alger, Jr. And if a reptilian father was there the local infant mortality rate probably increased instantly. Thus, the pastoral scene in paintings or movies, showing members of the *Triceratops* clan peacefully dispersed in little family groups of father, mother, and the siblings is a pictorial superstition. Dinosaurs undoubtedly had many troubles but they didn't suffer from momism.

Superstitions about the size of dinosaur eggs are also common. "How did they lay those big eggs?" is a frequent question by students as they examine the rear ends of large dinosaurs. It is based, of course, upon the belief that egg size was correlated with adult size. If a Mongolian *Protoceratops* (the only known dinosaur that is well-represented by eggs, juveniles, and adults) increased in bulk about 200 times from when it was an eight-inch-long egg until it became a six-to-eight-foot-long adult, so the reasoning goes, then a brontosaurus egg and a grownup probably had comparable size ratios. In extrapolating from small to big species with this absurd analogy it may be imagined that a 50-ton adult



*Brachiosaurus* laid an egg weighing 2½ tons in a shell seven or eight feet long.

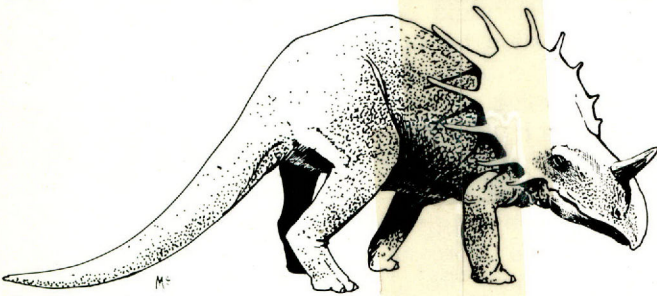
### Discovering Egg Shells

By a curious and ridiculous coincidence I once received a frantic request from Europe for me to verify a newspaper report that we had collected in Montana some whole dinosaur eggs that were eight feet long! It was a pleasure to reply that our discovery consisted of small calcareous egg-shell fragments whose curva-

ture suggested that the whole eggs had been not more than eight *inches* in greatest dimension.

Calculations indicate that the eggs of the extinct bird *Aepyornis* of Madagascar or of the French dinosaur *Hypselosaurus* may be near the top limit of size for eggs—10 to 13 inches long. In larger ones, the internal fluid pressure would be so great that the shell would either have to be held together by cross struts of such great thickness that an embryo would require a hammer and chisel to get out at hatching time.

Most people believe that all dinosaurs were excessively stupid—that they had no brain power at all and that this was probably the major cause of their downfall. This reasoning fails, not only because many other animals that lived during dinosaur times and continue to flourish to this day possess even less gray matter, but also because we don't yet have satisfactory ways of measuring comparative effectiveness or size requirements of brains for mere existence. Like many legends about animals, this one has the common anthropic overtone that permits man (whose brain is thought to be far greater than it needs to be for minimal survival in nature) to emphasize his superior intelligence. If dinosaurs were witless they had been so for 120,000,000 years before the scythe of time finally mowed them



down, and the question arises: Why did this old long-continued dumbness finally cause their doom? Brains are like purses: Contents are more important than size.

All kids know that in the central nervous system of the pelvic region in some dinosaurs (with upright sheet-bone plates along their backs and heavy long sharp spikes on their tails) there was an enlargement which exceeded the size of the animal's brain by 20 times. This kind of plexus, found in many dinosaurs in both the hip and the shoulder regions, probably made a quick motor response possible for the limbs and tail. Without these substations in the neural communications controls perhaps as much time as two seconds would be required for a nerve impulse to travel from the tip of a brontosaurus's long tail which was being nipped by a hungry predator to the brain and back with orders for action. A lot could happen in a whole thirtieth of a minute—our subject might be painfully de-tailed.

To the discomfiture of vertebrate paleontologists who have to answer endless questions about dinosaurs, the belief that "those big reptiles" and man lived at the same time on this planet is widely held, thanks in part to the comics, pseudoscience fiction, movies, puppets, toys, kits for the construction of prehistoric scenes in plastics, and television.

Dinosaurs are natural subjects for many lighthearted allegorical distortions in children's books, records, fun-

nies, and films. Few (perhaps no) other animals have served more faithfully to keep children, who know much more about dinosaurs than mother does, "out of mother's hair." These same youngsters recognize this saving as an idiomatic cliché which brands mother as a mammal. As junior is apt to explain to her, literate dinosaurs would never make such a remark because dinosaurs, being reptiles, don't have any hair to keep anything out of. To the average grownup who can take dinosaurs or leave them alone, they have become rather amiable clodpoll buffoons, not to be exactly ridiculed or censured but not to be taken very seriously, either; amusing, every ton of them. In a western "Dinosaur Park" a herd of assorted life-sized models of dinosaurs are locally called, with affectionate disdain, "those darn eyesores."

Many people who know better than to believe in the 70,000,000-year anachronism of people-dinosaur contemporaneity (either that people lived in Mesozoic time, or dinosaurs are still alive somewhere), do, however, think that all dinosaurs died in a hurry, within a period of a few, or a few thousand, years. Geologists themselves must take much of the responsibility for the dissemination of this concept because they have often defined the end of the Age of Reptiles or Mesozoic Era as the exact time that dinosaurs became extinct. Ergo, reasoning in a tight circle, dinosaurs became extinct at the end of Mesozoic time.

Paleontologists in classrooms and museums often carefully emphasize the fact that there were no races or species or genera or orders of dinosaurs that ever learned to fly and none that dwelt in or on marine (sea and ocean) water, although some did spend at least part of their time in lakes and rivers. Numerous essays of students of all ages, however, continue to repeat lurid stories of "dinosaur denizens of the deep" and "huge flapping wings of flying dinosaurs." Some years ago one of my students dutifully tried to put in a plug against this common impression by stating on an exam: "dinosaurs had no flying orders." True.

One myth about the eating and digesting habits of dinosaurs has been profitable in hundreds of Western souvenir shops where shiny "gastroliths" or "stomach stones" are sold, usually for a quarter apiece. If there were an unlimited market for these at a tenth as much, we would easily have all the funds necessary to build a new and superior geological museum on the campus of every college, because some thick and extensive gravel beds in Utah contain "gastroliths" or highly polished rounded pebbles by the billions—with not a dinosaur in sight.

Pebbles that have been found inside the collapsed rib cages of dinosaurs or in undisputed association with other extinct reptiles (such as plesiosaurs) never have a bright lustrous surface but are invariably dull or frosted in appearance, as are the small rocks and broken pieces of Coke bottles and other bits of debris that are found in zoos at autopsies of deceased crocodiles and alligators.

When thinking of superstitions, another one comes to mind: The almost universal belief that the search for dinosaurs and the task of exhuming them from their

burial vaults of investing stone is an exciting, highly romantic, and easy occupation. Exciting it sometimes is, but the infrequent "romantic" moments occur briefly between long periods of hard work and discomfort.

Diggers, working from soon-after-dawn to dusk in rocky deserts, are usually coated with sweat-smeared earth dust, much closer to Stoic than to Roman tradition. Well worth the effort and the muscle-hurting fatigue, however, is the sensation of discovery, the burst of exhilaration at uncovering a new kind of fossil bone or tooth, a chip of the cosmos that has been sealed away in a natural treasure vault for a hundred million cycles around the sun.

This rare moment of flighty romance is likely to be interrupted by lunch, a dry solar-heated sandwich softened enough by gulps of warm water to swallow. Vertebrate paleontologists see red when someone exclaims: "What a lovely vacation it must be to hunt fossils! And a picnic lunch out in the open air every day!" A truer midday picture shows the weary excavators sprawled under the truck in the precious small shadow pool of shade it makes from the white fire disk overhead, as they try to recoup enough energy for a burning afternoon with pick and shovel.

Corollary to the myth of the simple easy holiday in the search for fossils is the fact that bone digging actually does have some rewards which are not generally mentioned or discussed by bone diggers for fear of revealing a ready sensitivity to beauty in nature. In our current cult of preoccupation with numbers, quantities, and computers and other gadgets of academic automation, it is somehow out of pace with the times to admit to esthetic pleasure in science.

Nevertheless, as the successive layers of matrix are cleaved away to expose a petrified bone of a carnivorous dinosaur, a paleontologist may thrill to see it as a beautifully formed organization of elements that have served many functions in earlier eons. Billiards of billiards of years ago the particles of substance in this gracefully contoured structure were not yet even part of a galaxy—only of diffuse matter in an endless firmament. As recently as 10 billion little years ago the elemental atoms could not have had the framework of what we know as life, but recently, only 100 million years before our moment, some of the stuffs now in this limb bone had helped build a graceful, green living plant.

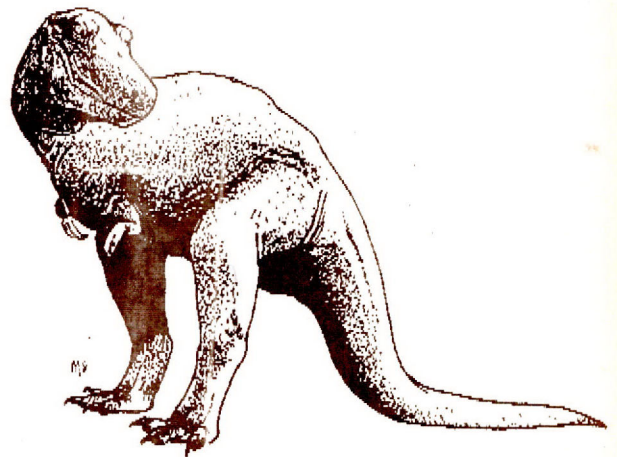
They were next consumed to become part of the intricate body architecture of a dinosaur vegetarian, only to be devoured and redesigned as another. Muscles, nerves, vibrant motion, and the intertwining strands in life's cable of continuity are all implied by this bare bone as it rises in awed hands from its planetary tomb, resurrected to help teach minds and engender new thoughts. This elegantly structured thing will briefly stay in this shape in a museum where, hopefully, muses will also come, and, perhaps, an embryonic Darwin. Later, fractions of such a temporary form as a bone will be dissociated and will flux with other shreds of the universe, constantly interforming through limitless time, from one dust to another, from unpredictable future flowing into continuous past.

## Can Evolution Backtrack?

Diggers of fossil bones, caught off guard, will firmly answer, "Yes, endlessly, forever," to the question, "Son of man, can these bones live?" Death doesn't last very long in the thin veneer of the earth's surface; materials of life are in steady demand for composing the rhythmic cycles and kaleidoscopic fluctuations of evolutionary products.

Students in search of probing questions often ask if an allosaur will ever appear again, if the necessary chemical materials can be assembled and organized by nature to recreate this specific living reptilian predator. The answer is no. Evolution cannot backtrack on such a grand scale, nor can it even appear to do so. There is far less possibility that the complexly interacting galaxy of genes which participated in the genesis of *Antrodemus* will evolve again than that someone will some day find and reassemble to original form the dust and chips that Cellini removed from a block of *lapis lazuli* to form a sparkling blue bowl. The message about conservation of the records of living and of long-gone animals and plants is obvious.

Present state and Federal laws do not adequately protect our national heritage of precious petrified dinosaur bones from destruction in Western states by ama-



teur fossil hunters who, with no knowledge of the past and no thought of the future, recklessly smash exposed bones and unearth others from their natural graves to gloat ignorantly over these "trophies." Confusion in the minds of many people, legislators included, about the difference between archeology and paleontology (which needs separate and special regulations) has hindered the development of scientific security regulations that might defend dinosaurs from the fate, off Bering Island, of the giant (30-foot-long, 4-ton) Steller's sea cow, which was unable to dive away from the harpoons of predatory "sport"-loving sailors and, victim of greed, has completely disappeared from the face of the earth. The number of earth-bound dinosaurs is likewise limited, and their exhumation should be directed only by experts who have access to the knowledge and the laboratories of trained geologists, biologists, and chemists. It is now time to stop the plundering of our irreplaceable ancient treasures that are sepulchred in stone.

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# Anatomy of a Deer Hunt

by RODNEY MARBURGER  
and JACK WARD THOMAS<sup>1</sup>  
Wildlife Biologists

**H**AVE YOU ever heard or read? "They ought to close the deer season after the first two weeks, that's when all the deer are killed anyway!"

"Buck hunting ought to be stopped after the first month. The kill of bucks that last two weeks is way too high and besides, nobody will kill does if bucks are legal."

"The season ought to be extended another two weeks, that would really up the kill."

"The deer season ought to be shorter . . . longer . . . staggered . . . bucks only . . . does only . . . etc. . ."

It is amazing how much divergence can be found in a discussion of this kind. As long as we have hunting and sportsmen and landowners that are interested, we are going to have such discussions, and it is well that we should.

So, let's discuss the deer season a bit and instead of just talking, let's look at some facts and figures and really see what makes the present 48-day deer season (November 14 - December 31) in the Hill Country tick. Let's dissect it and determine its anatomy, so to speak.

The best information of this kind comes from the "all-deer" check station operations carried on by biologists and technicians of the Parks and Wildlife Department in Llano County in 1959 and 1960. Hunters who hunt in that county may have met some of the group who have spent some mighty long hours running those stations, such as Jim Teer, "Bud" Otto, Jerry Butler, Roland Hohmann, and some others. Bill Swope, Llano County Game Warden, helped out when he got a chance. It



<sup>1</sup>A contribution of Pittman-Robertson Project W-62-R.

was a big operation and this group did a fine job.

Operating under the regulatory responsibility law concerning Llano County, (which charged the Department with establishing seasons, bag limits and means and methods of taking game birds and animals) the Department included as a part of the regulations that all deer killed in Llano County during the 1959 and 1960 deer hunting seasons had to be checked through an official checking station. It was further required that these animals be registered within 24 hours after the animal was killed.

The following information was recorded for each deer checked: (1) Date. (2) Hunter's name, address, and hunting license number. (3) The deer's sex and age (fawn or adult). (4) In the case of males, the number of antler points. (5) In the case of antlerless deer, the permit number was recorded and the permit validated.

After this information was recorded, a metal boxcar seal was attached to the deer indicating that the animal had been checked.

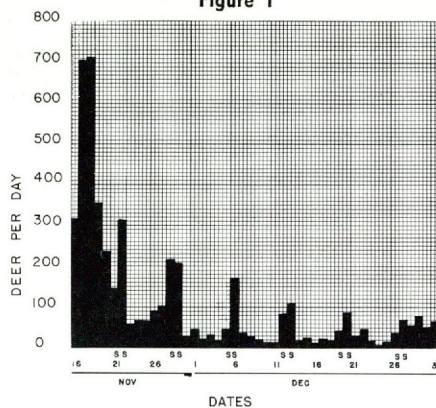
The dates recorded on which each deer was checked gave valuable insight into the workings of the deer season itself. There were 8,924 deer (4,915 bucks and 4,009 antlerless deer) checked through the station in 1959 and 10,777 deer (6,134 bucks and 4,653 antlerless deer) in 1960. A pretty good sample!

When the numbers of deer checked on each day of the season were placed on graphs, some interesting patterns were evident. The buck kill by days and the antlerless deer kill by days for the 1959 season is shown in Figures 1 and 2. The buck kill data and antlerless deer kill data for 1960 is graphed in Figures 3 and 4.

Examination of the graphs showing the buck kill by days (Figure 1 and 3) showed that kill was very high during the period from opening day (November 16) through the first Sunday of the season. The high kill during this period was common to both years in spite of the fact that the season opened on Monday in 1959 and on Wednesday in 1960. The graphs also showed that weekends were the next most popular periods for buck hunters and that few

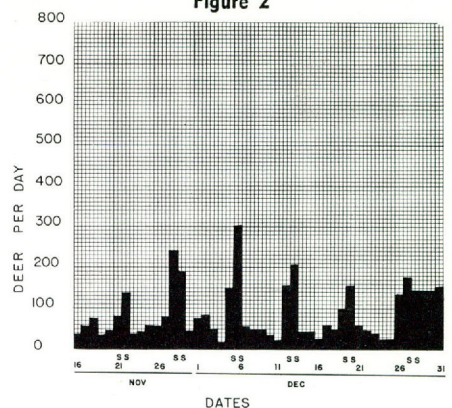
## LLANO COUNTY DEER KILL 1959-1960

Figure 1



Buck kill by days 1959

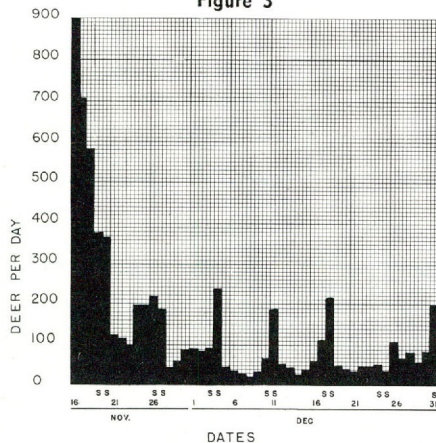
Figure 2



Antlerless kill by days 1959

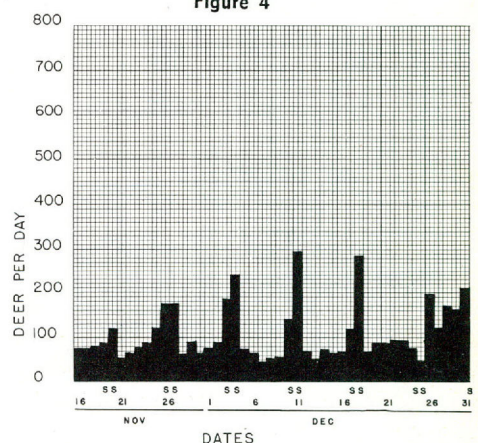
SS—Saturday and Sunday

Figure 3



Buck kill by days 1960

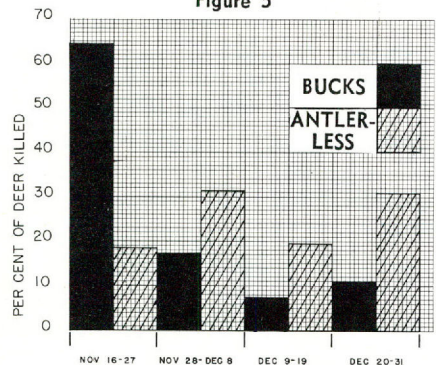
Figure 4



Antlerless kill by days 1960

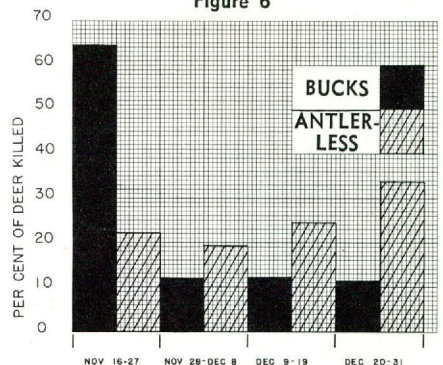
SS—Saturday and Sunday

Figure 5



Percent of kill by quarters 1959

Figure 6



Percent of kill by quarters 1960

bucks were killed during the Monday-Friday periods.

This concentration of buck hunting and kill during the period from opening day through the first Sunday and then on weekends is further examined in Table 1. This table indicates that 70.8 to 78.1 per cent of the kill of bucks was made during

this period which comprised about 35 per cent of the season.

The patterns of the antlerless deer kill were somewhat different (Figures 2 and 4). There was little hunting pressure on antlerless deer from opening day until the second Saturday in the season. From that time on, the antlerless deer kill was

consistently greater than the buck kill. It was also apparent that the hunting pressure was concentrated during the weekend periods and that the period from the day after Christmas (December 26) through the close of the season on December 31 represented consistent heavy hunting pressure.

The concentration of the kill of antlerless deer during the weekends and the period from the day after Christmas through the end of the season is further examined in Table 2. This table indicates that 64.8 to 63.2 per cent of the kill was concentrated in this period which comprised 36.5 and 39.1, respectively, per cent of the seasons.

In order to examine the available information still further, the seasons were divided into four equal parts (except that the first and last quarter had 12 days and second and third quarters had 11 days). Data available on the kill of bucks and antlerless deer during each quarter are shown in Table 3. This information is graphically illustrated in Figures 5 and 6.

Examination of the data in this table revealed that 64.3 to 64.1 per cent of the buck kill took place in the first quarter of the season. The remainder of the kill was fairly evenly distributed throughout the remaining three quarters of the season.

On the other hand, the kill of antlerless deer was distributed fairly evenly through the first three quarters of the season and then increased significantly during the last quarter.

### Management Implications

Several management implications can be derived from these data; among them are:

Table 1. Period of concentration of buck deer kill.

| Year | Portion of Hunting Season                                   | Buck Deer Killed | Per Cent |
|------|---|------------------|----------|
| 1959 | Opening day through the first Sunday and weekends (17 days) | 3,837            | 78.1     |
|      | Weekdays (29 days)  | 1,078            | 21.9     |
|      | Totals  | 4,915            | 100.0    |
| 1960 | Opening day through the first Sunday and weekends (16 days) | 4,344            | 70.8     |
|      | Weekdays (30 days)  | 1,790            | 29.2     |
|      | Totals  | 6,134            | 100.0    |

Table 2. Period of concentration of antlerless deer kill.

| Year | Portion of Hunting Season   | Antlerless Deer Killed | Per Cent |
|------|---|------------------------|----------|
| 1959 | Weekends and the period from December 26 to December 31 (16 days) | 2,599                  | 64.8     |
|      | Weekdays (30 days)  | 1,410                  | 35.2     |
|      | Totals  | 4,009                  | 100.0    |
| 1960 | Weekends and the period from December 26 to December 31 (18 days) | 2,942                  | 63.2     |
|      | Weekdays (28 days)  | 1,711                  | 36.8     |
|      | Totals  | 4,653                  | 100.0    |

1. Any addition to the season should be in the form of weekends as the kill is concentrated during these periods.

2. The long (48-day) season is justified as a tool in the harvest of antlerless deer as the pressure is not diminished as the season progresses.

3. The long season is not a major factor in the number of bucks harvested. It has been suggested that the buck season be stopped after the third quarter of the present hunting season. Examination of the data presented here indicates that the absolute maximum effect of such a move would be a reduction in the buck kill of 10.9 to 11.7 per cent; this would be a biologically unimportant reduction. The advantage of having all deer legal game, to

prevent waste of spikes shot for does, outweighs the small number of bucks killed during the last quarter of the season.

### Summary

One of the main points often discussed among deer hunters, landowners, and Parks and Wildlife Department personnel is manipulation of the deer season in order to satisfy various requirements or desires. Too often these discussions are based on emotion, localized experience, and lack of information on the "big picture."

The facts presented here are given in the hope that they may be the basis of informed discussion about the deer season in the Hill Country of Texas.

Table 3. Deer kill by quarters of the deer hunting season. Llano County - 1959 and 1960.

| Year | Kill Classification | 1st Quarter<br>(Nov. 16-27) |          | 2nd Quarter<br>(Nov. 28-Dec. 8) |          | 3rd Quarter<br>(Dec. 9-19) |          | 4th Quarter<br>(Dec. 20-31) |          | Totals<br>(Nov. 16-Dec. 31) |          |
|------|---------------------|-----------------------------|----------|---------------------------------|----------|----------------------------|----------|-----------------------------|----------|-----------------------------|----------|
|      |                     | Number                      | Per Cent | Number                          | Per Cent | Number                     | Per Cent | Number                      | Per Cent | Number                      | Per Cent |
| 1959 | Buck Kill           | 3,167                       | 64.3     | 844                             | 17.2     | 367                        | 7.5      | 537                         | 10.9     | 4,915                       | 99.9     |
|      | Antlerless Kill     | 736                         | 18.4     | 1,253                           | 31.3     | 780                        | 19.5     | 1,240                       | 30.9     | 4,009                       | 100.0    |
|      | Total Kill          | 3,903                       | 43.7     | 2,097                           | 23.5     | 1,147                      | 12.9     | 1,777                       | 19.9     | 8,924                       | 100.0    |
| 1960 | Buck Kill           | 3,930                       | 64.1     | 733                             | 11.9     | 754                        | 12.3     | 717                         | 11.7     | 6,134                       | 100.0    |
|      | Antlerless Kill     | 1,035                       | 22.2     | 903                             | 19.4     | 1,153                      | 24.5     | 1,562                       | 33.6     | 4,653                       | 99.7     |
|      | Total Kill          | 4,965                       | 46.0     | 1,636                           | 15.2     | 1,907                      | 17.7     | 2,279                       | 21.1     | 10,787                      | 100.0    |

# CALCULATING THE KILL

by TED L. CLARK  
Wildlife Biologist

**W**ITH THE OPENING of the current dove hunting season on the afternoon of September 5, an army of anxious, expectant hunters will begin moving into the fields and orchards of the Lower Rio Grande Valley in quest of the elusive whitewing. Along the major access roads to the favored hunting grounds many hunters will be attracted to colorful orange canvas signs hung on metal supports along the shoulder of the road. The first sign is placed to slow the fast moving automobiles and alert the hunters therein to the second sign which gives full instructions for the dispensing of small paper bags.

These signs actually are unmanned roadside check stations designed to question hunters concerning hunting success and to obtain a sample of whitewing legs for use in age determination of bagged birds. As stated above, one sign at each check station will hold a supply of paper bags on which will be printed directions requesting the hunters to record (1) the date, (2) the number of hunters in the car, (3) the number of white-

wings bagged, (4) the number of mourning doves bagged, (5) the number of whitewings wounded or killed and not retrieved and (6) to place in the bag one leg from each whitewing killed. The hunters are also instructed to drop the bags at the base of the check station as they leave the hunting area.

The check station sign which dispenses the bags instructs the hunters to take only *one* bag per car, regardless of how many hunters may be in the car. This is very important, for reasons to be brought out presently. It also is extremely important that only *one* leg from each whitewing be placed in the bag.

An integral part in accumulating whitewing kill data is the aerial survey of cars in hunting areas conducted each afternoon of the hunting season by Game Department aircraft, flown by pilot-wardens. These aerial counts, plus ground observations by personnel in the field, are considered in arriving at the total hunter-car estimate for each day of the hunting season. Without the able assistance of game wardens, both airborne and the more common terrestrial variety, it would be most difficult for wildlife biologists to collect sufficient infor-

mation to determine the whitewing harvest. Here is a fine example of the close cooperation between wardens and biologists in the management of the wildlife resources of this state.

The hunter questionnaire on the paper bags taken from the check stations is designed to collect data pertaining to the total dove kill by *all* of the hunters in each car. With a knowledge of the average number of hunters per car and the number of hunter cars in each of the hunting areas, biologists are able to calculate the total number of hunters in the field.

The answers to the question pertaining to the number of birds killed by each party allows the calculation of the average number of birds killed per hunter which is subsequently expanded to arrive at the total kill. As the basis for these calculations is dependent upon a total number of hunter cars, it is imperative that only one questionnaire per car be completed.

If each hunter were to fill out a questionnaire, biologists would be led to calculate the dove kill at a much higher figure than that actually taken by hunters. It would also be

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There's an important story to be told by this stack of whitewing feet dropped at check signs.



The author proudly displays two of his favorite targets taken in the brush country. "I'd rather hunt javelinas than deer," he reports.



# Jardy Javelina

by HAL SWIGGETT

**T**EXAS PECCARY, collared peccary, musk hog or whatever you call him, it still boils down to JAVELINA. If you will get out and hunt him in his own backyard, those dense blackbrush and whitebrush thickets of south Texas, you'll find he is strictly for "jardy junters."

Many are killed each year by "junters." One "junter" was sitting in his favorite tree, deer "junting." He grew tired from staring and soon was asleep. "Junter" is awakened by fierce squeals and grunts below. Of course, said unfortunate javelina are only feeding and those fierce squeals and grunts are the only sounds they know how to make. Nevertheless to the "junter" they are fierce and he is immediately under attack. Mighty "junter" shoulders mighty rifle and squeezes trigger, knocking a javelina, unfortunate victim 30 feet away, flat on his 35-pound "jabitat." Now, "junter" has a terrific tale to tell.

As you can see, I don't take kindly to that brand of hunting. So far as I am concerned the javelina is our finest game animal in Texas AND THE MOST NEGLECTED. For every animal taken on purpose by a man in the field specifically hunting him there are hundreds taken by riding and sitting hunters who "luck out."

I came to this state more than 20 years ago and was fascinated by the mystery tales I heard about South Texans who barely escaped with their lives following javelina attacks. I call them mystery tales because I spent a good deal of time trying to trace down the victims. It always came out the same. Each person I talked to passed the buck, rather javelina, on to someone else. In other words each one seemed to know how dangerous they were and how viciously they attacked hunters but no one could point me to a victim that had actually been attacked, treed, mauled or even scared by more than himself.

To explain that last statement let me relate a tale that happened to a party I was with many years ago. We were bow and arrow hunters. There were, as I recall, seven or eight in the party. We stumbled onto a herd of javelinas. One of the hunters, an older man, was separated from the party and in some rather heavy brush. I thought it best to get to him in case of trouble.

I was in the process of transporting my frame through a barbed wire fence and had reached the point of no return. In other words I had one foot on the ground on each side. I was straddling barbed wire with another strand over my back when a poor defenseless javelina came running, I mean charging, down the path along that fence. That little pig wanted out and the only way he knew to get there was hit a trail and keep running. Well, one of our party was in that path. In nothing flat he was on top of the strand of wire that was across my back pinning me down so I couldn't go any direction.

He swears, to this day, that the javelina was chasing him and I believe he honestly thinks he narrowly escaped with his life. That same vicious javelina passed within inches of my leg. The fact I was not touched, bothered, molested, harmed or even noticed doesn't phase him a bit. He still says he was attacked.

Don't get me wrong. I know a wounded or cornered



javelina can and usually will give a mighty good account of himself. There are lots of good, lucky hounds bearing long scars, and many more that never healed up so they could have scars. If a man's legs get in the way while this is taking place the same thing could happen to him. I say could, because I have been in a position twice, one related above, where I had more than an even chance to get chewed or slashed but didn't.

The other time came on another bow and arrow hunt. Bernie Dresden and I were on a ranch near Crystal City. We cornered a big boar javelina in a brush pile. Bernie was on one side, I was on the other. The boar kept going back and forth, up and down, but wouldn't come out. The brush was so thick we couldn't get an arrow to him. Finally I climbed on top and was going to kick him out. It turned out the brush wasn't as thick as I thought and right in the big middle I crashed through, sending legs down into that brush pile as far as my 31-inch trousers would let them go. A boar javelina, unhappy about being pestered, occupied the ground floor.

As he continued to make his way from side to side I made my way out. The big pig had plenty of opportunity to make mince meat of my legs had he been so inclined. Anyway, I got out, unharmed, and did get an arrow through a tiny opening into Mr. Peccary. He came charging out then, but went right past Bernie. As he went by, my partner got another arrow into him and the party was over.

I would rather hunt javelinas than deer. In fact, I have many times walked up on deer while trying to stalk a herd of the little pigs. I find deer much easier to get close to than a South Texas *Pecari angulatus angulatus*. In the heavy brush they call home it is next to impossible. The best chance is to hunt early in the morning while they are out feeding. Move slowly, very slowly, and do lots of looking. They can't see very well so by moving very slowly your chances of seeing them first are greatly improved. Keep the wind in your favor because their noses more than make up for their eyesight.

A musk gland on top of the rump emits a strong odor that can be picked up a hundred yards or more away if conditions are right. Many herds are found by "nosey" hunters, then stalked. Also, if you are quiet enough to stalk a herd you will be quiet enough to hear them feeding long before you are close enough to spook your quarry. Unless you live with blind luck most javelinas are first located by sound or smell, then stalked to sighting.

Most of your shots will be from 30 feet to 30 yards. Sometimes the distance is greater, but basically the terrain is such that you just can't see any farther.

Everyone you ask about javelinas will tell you something different, so let me get in my two cents worth while we are on the subject. For several years I have been using a Ruger .44 Magnum carbine. It is a whale of a lot more gun than is needed but it is short, light and pushes a heavy bullet that doesn't mind going through a pear leaf or two or even a small mesquite limb if necessary.

I have also used an old Model 92 Winchester in .32-20 caliber. In fact, it is to my way of thinking, about the most perfect caliber if javelina is the only game to be hunted.

I have killed them with .22 long rifle ammunition fired in a Smith and Wesson K22 revolver. My .222 Remington and .243 Winchester have accounted for a few.

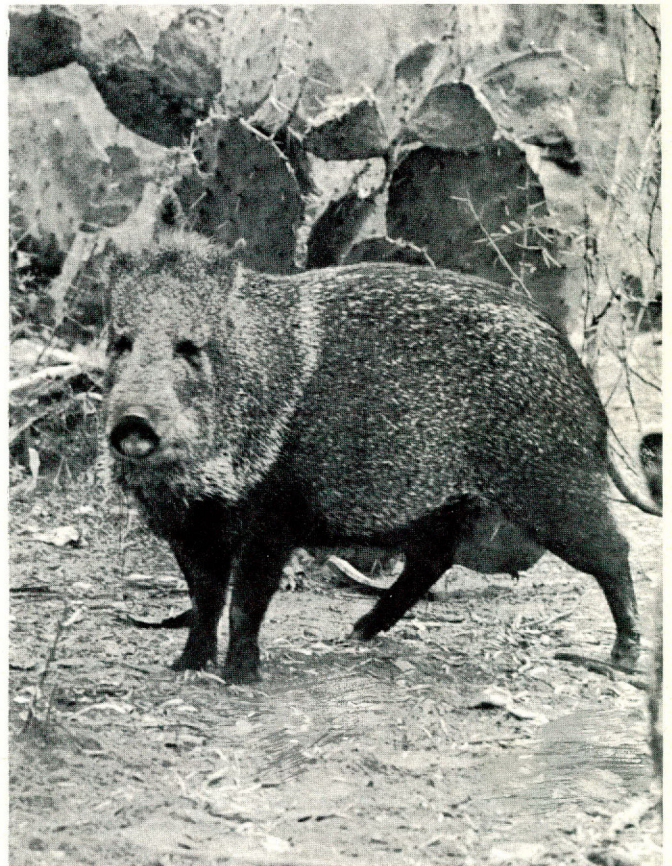
I have a Latin friend in South Texas who hunts them for food with one hound and a .410 single-shot shotgun. For him that is the perfect gun. I have also used a .45 revolver with a Bushnell scope and am about to settle down and call it my javelina gun. It is shorter and lighter than the Ruger carbine and for distances at which I seem to encounter the little rascals, it does everything I need.

In other words, use whatever rifle you have but lean towards the heavier, slower bullets if you have a choice. Javelinas are not hard to kill, it is simply a case of getting the bullet into that 30- to 40-pound carcass, which usually is standing behind a pear patch or brush of some kind.

Anybody can shoot a javelina from a deer blind in a tree. It takes a real hunter to get down on terra firma and with his own two legs walk up close enough to place a bullet in Mr. Peccary's boiler room.

If you don't believe me, go into South Texas, talk to the ranchers and get permission to hunt. Many counties, including Medina, Uvalde, Maverick, Zavala, Frio,

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Javelinas have weak eyes and sensitive snouts. Keep the wind in your favor because their noses more than make up for the poor eyesight.

# Center of Nature

Photos by Ronald Perryman



by ANN STREETMAN

**I**N A DAY when many parents push their children, willing or not, into a gamut of organizations and activities, the young patronage of Austin's Natural Science Center is more than refreshing.

Any ideas this reporter had about a forced participation were dispelled less than five minutes after she arrived at the Center. Two young naturalists, who were busy around the Center even though the first summer session was two weeks distant, epitomized the enthusiasm of the whole operation. Kathy, one of the children, appointed herself hostess with a bright, "Let me show you around." And, show she did, from the 100-plus-pound Indian python coiled in its glass cage inside the Center to the library and the many-animated menagerie outside. "Her name is Paula," she explained, and the two youngsters measured off on the floor Paula's length as they remembered it from previous see-and-touch occasions.

Begun in 1960, the Center is a joint project of the Austin Parks and Recreation Department and the Austin Natural Science Association, an educational corporation. It is a growing community project. The Center is affiliated with the Texas Natural Science for Youth Foundation and the Natural Science for Youth Foundation, the national organization.

Each child participating in the Center's program must be sponsored by an adult membership in the ANSA or by a group sponsorship, such as the Lions Club. The sponsorship for each child is \$5 per year, plus a \$1 materials fee for each class in which he participates. The recreation department furnishes the facilities and much of the salaried

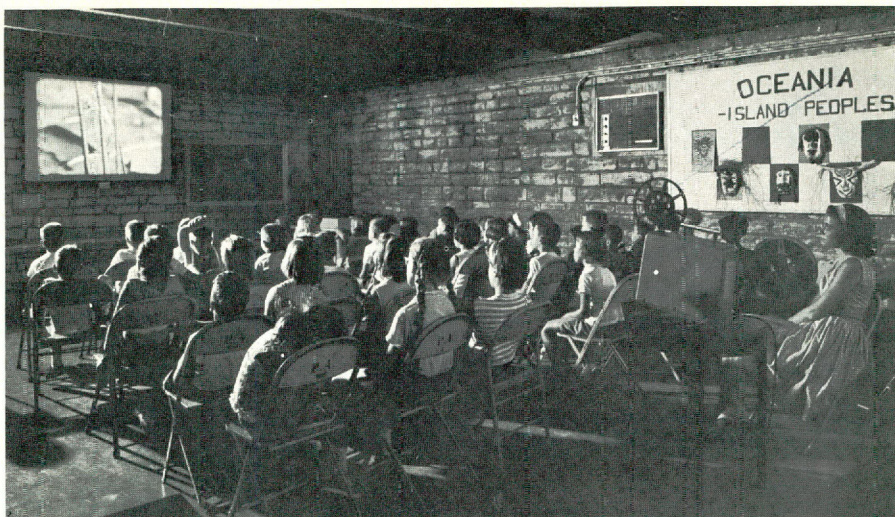
leadership. Many qualified persons, however, volunteer their time and knowledge.

Courses in the disciplines of geology, biology, archeology, chemistry, physics, and math for science and electronics are offered. Specific classes this summer, for example, have been Audubon junior trees, rock hounds, primitive craft, water life, nature lore, living things, fossil record, Audubon junior birds, lapidary, people of the world, nature observers, insect finders, and center of the earth. Miss Keith Garrett is program director for the Center.

The emphasis is on field work, although it is an integrated program in that specimens collected in the field are later discussed and studied, and in some cases preserved for exhibit, in the classroom.

"It is an educational program in a recreational setting," explained Mrs. M. T. McLean, Jr., recreation department liaison for the Center. But the students are quite serious about their learning; few discipline problems arise, even in the relatively relaxed atmosphere of the field.

Many of the field trips are made on the Brackenridge Tract just behind the Center itself. The young students, ranging in age from preschool through high school, have access to about 20 of these 100 acres



Students are treated to nature movies at the center as a part of the educational program.

which belong to The University of Texas. Occasionally, classes go outside the tract for their field trips, around Austin and sometimes out of town. For example, one group recently went to South Texas on an overnight trip to trap animals for their zoo and for skin studies. For such overnight trips the Center is dependent on parent transportation; adult supervision on these occasions is an approximate one to four ratio, depending on the age group involved.

One combination field and classroom project now underway is that of digging out and restoring a pre-

historic elephant tusk found at an Austin excavation site. The property owners have given the Center permission to remove and keep the tusk, which is an estimated 8- to 10,000 years old. Part of the project will be deciding, by scientific techniques, whether it is a mastodon or mammoth tusk. It is being removed section by section. Because the ancient tusk deteriorates upon contact with the air, each section must be preserved by a chemical solution as it is exposed. When all the pieces have been reassembled, the restored tusk is expected to be about six to eight feet long and six to eight inches in



During the course of the program the children are taken on field trips or collection trips.

Miss Keith Garrett, left, directs the loading of the vehicle with the necessary items.



Just prior to the field trips, front of the nature center is jammed with essentials.



Part of the excitement is gathering around for group discussions.

diameter. Some of the older students have been working on the tusk project during the summer session. This specimen has given them an exciting opportunity to practice proper collection and laboratory techniques.

Techniques of preparing reptile and other alcohol and formaldehyde specimens, which many students do, may be a little less dramatic than preserving a prehistoric tusk, but the satisfaction and thrill of learning and doing are the same.

The Center's zoo is a big drawing card. Housed in the renovated and customized old Deep Eddy Bathhouse shower area are Rex the Fox; Gwin the Coyote and nameless prairie dogs, a coyote pup, bobcat, skunk, raccoons, ringtails, opossum, fox squirrel, screech owl, and a number of turtles.

With nets in hand youngsters head for mysterious butterfly land.



These native animals have been donated by people who had heard about the community's nature center and wanted to help, as well as such organizations as Fort Worth Children's Museum.

The nature program operates the year around. In the summer there are four sessions of 10 class meetings; they meet for an hour and a half each day. In winter there are two sessions, with the youngsters meeting after school and on Saturdays for their 10 class periods of an hour and a half.

Registration is held just before the beginning of each term. Enrollment is somewhat limited by the facilities as well as by the age level. Per-class enrollment is limited to 15 for first and second graders; 20, third-six graders; and 10, Junior and Senior High School students. Pre-school youngsters who will be going into the first grade in the fall are accepted in summer sessions, according to the maturity of the individual child.

Besides the many students served during the regular summer and winter terms, a myriad of other Austin youngsters tour the Natural Science Center each year. The Center holds a very popular spot on the Austin Public Schools list of approved field trip places. Each month of last spring about 700 youngsters including Girl and Cub Scouts toured the Center.

As most projects, all this—the Center and its program—was only a dream at first. In this case the dream belonged to M. T. McLean, Jr., outdoor education instructor in the Austin Public Schools. It first materialized in a small garage apartment, which then was the only available home for the new program. It began with only three classes of 60 students. With the help of such persons as Margaret Louise Hill, noted Texas naturalist, and William Hassler, reg-





ional director of the Natural Science for Youth Foundation, the program has matured and grown in physical facilities, students, teachers and scope.

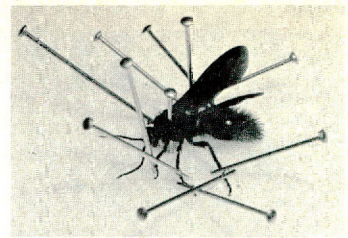
Consulting groups and individuals, furnishing resource personnel and/or funds, have been a large factor in maintenance and growth. Some of them include the science and education faculties of The University of Texas, Travis Audubon Society, Austin Gem and Mineral Society, 40 Acres Astronomy Club, UT Archeological Society, American Meteorology Society (UT chapter), Delta Kappa Gamma, Association for Childhood Education and Austin Public School personnel.

The two large goals of the Center now are a permanent professional director and a planetarium, according to Mrs. McLean. "Austin needs a planetarium; it is the only Texas city of this size without one," she noted.

The University of Texas has an observatory, not a planetarium. The persons and groups who have poured so much time and means into the program hope that someday in the not too distant future, Austin's Natural Science Center, with a planetarium, will be located in Zilker Park.

The enthusiasm of the Center's students witnesses to the success of the program—for, when children find learning as exciting as going to a movie, some achievement has been made. In this case, it is the result of the work of a few determined individuals and also of a whole community. \*\*

The insects are quickly silenced with a shot of lighter fluid.



The catches are firmly pinned to boards for drying, right. Below, a silhouette of love and friendship.



**Exit:**

**the**



**D**ISAPPEARANCE of brown pelicans from the shores of Texas and Louisiana has aroused the concern of national and area ornithologists, marine biologists—and even those engaged in tourist promotions. Not a single bird has been hatched

“Widescale use of agricultural pesticides is, no doubt, a contributing factor,” says Dr. Henry H. Hildebrandt, marine biologist of the University of Corpus Christi. “This is indicated by the number of dead birds that have been found, and

elled to leave to escape complete extermination.

“There appears to be little present danger, however, of their total extinction, because they range all along the coast of South America as far south as Brazil. We have no in-

# **Brown Pelican**

by CASH ASHER

by this species in Texas this year, and probably not one in Louisiana, according to observers who keep track of what goes on annually in the ornithological world.

The exit of this colorful, performing bird from the shores of the Gulf of Mexico has been a delayed shock to residents and tourists alike. The exit started about five or six years ago, when reports began to appear in brochures published by bird-watchers; but the shock did not really come until 1963, when checklists revealed that only a half dozen of the birds were seen that year. A decade ago, they were a common sight along the shoreline, dive-bombing for fish or soaring in V-formation over the gulf and inland waters. They were so tame along the Corpus Christi waterfront that people could get within a few feet of them.

“They were a definite tourist attraction,” says John Nugent, who was convention manager for the Chamber of Commerce. “Visitors took more pictures of them than of any other birds, except the gulls, and enjoyed watching them.”

Reasons for the exodus have not been specifically defined, but contamination of their old habitat, destruction of their rookeries by industrial and residential development projects, and an urge to leave an environment where danger threatened, are the conclusions reached by observers.

apparent failure of the eggs to hatch. Pesticides, like endrin and dieldrin, are found in the bodies of fish. Pelicans eat the fish. The poisons get into the eggs, and kill the embryonic young. Scientific data show that many species of birds are threatened by the ingestion of these toxic substances.”

Gene Blacklock, conservationist for the Corpus Christi Outdoor Club, has been gathering information about the disappearance of the pelicans for nearly a year. He has been in communication with Charles R. Shaw, supervisor of the game section of the Louisiana Wildlife and Fisheries Commission, which is conducting a study of the present status of the birds, the causes of their disappearance, and the possibility of attracting them back to the region they have abandoned.

“I keep records of the birds I see and am in the field three or four times a week,” Blacklock says. “I visit the coastal islands and adjacent areas. My records show only three brown pelicans during the last two years. Seven or eight years ago, they were so prevalent that bird-watchers who kept check lists didn’t bother to count the number they saw. I think Dr. Hildebrandt is right in his tentative analysis of the causes that have influenced these birds to take leave. I doubt if anything can be done to bring them back. Their rookeries are gone. They have been com-

formation on survival factors in South and Central America, but changes have been less rapid than in the United States, and the presumption is that the species is not seriously threatened there.”

Louis Rawalt, National Audubon Society warden for Big Bird Island in Laguna Madre, where the white pelicans have a rookery, says that this species is thriving.

“The white pelicans have a protected nesting ground,” he says. “They feed mainly in Corpus Christi Bay and Laguna Madre where there is not a large inflow of fresh water bringing a residue of pesticides. They also feed in large fish-stocked watering tanks and lakes on the King Ranch and escape the devastating effects of poison used in crop dusting and other insect control problems.”

Destruction of the brown pelicans to some extent may have been brought about by some fishermen. He says, “They sometimes shoot these big birds, even though they are protected by law, feeling that they endanger the supply of edible fish. This is not true. Studies of the food habits of this species conducted by Florida biologists showed that their food consisted largely of menhaden, mullet and other trash. Only 1.3 percent of their food intake was of the table-fish variety.”

Brown pelicans, according to Ra-

• Continued on page 27

# Surfing for Reds

by AL FLURY  
I & E Officer, La Porte

**WHEN THE BULL** reds begin to gather off the surf near Galveston, fishermen rush to the rock groins built along the city's beaches by Galveston County.

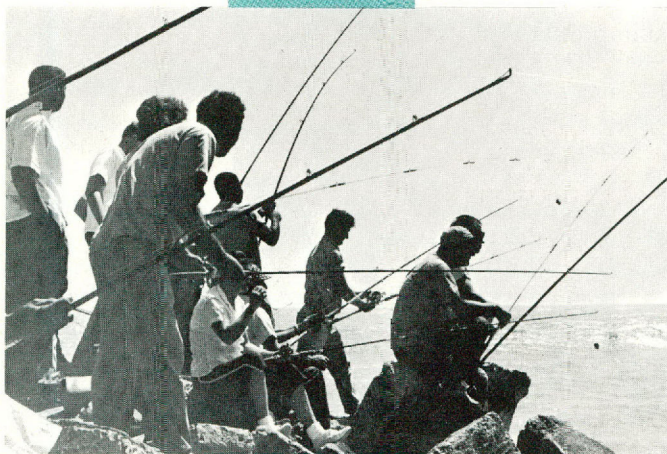
The runs usually come after cool weather hits and last from a week to two months or more. Best fishing normally is when a strong southerly wind makes the surf rough and dirty. Then fishermen toss chunks of bull shrimp, cut bait of various sorts and even spoons at the rambling bulls.

Big reds can give the fishermen some real excitement with their ability to strip off the line. Very light tackle should not be subjected to the torture that can be produced by these surf fighters. \*\*

When the surf churns brown, the rocks are packed with anxious fishermen and women.



Rods thrash the air overhead as lines are tossed to the reds.



Many anglers take home the big ones for a family feast. L. S. Bosworth took this 15-pounder last fall off Galveston rocks.





# Small Investment Big Dividends

by B. DAVID EDENS

**R**AYMOND CAMP, author of the column "Wood, Fish and Stream" for the New York Times, received a letter from a boy. It read: "Would you tell me where I could find a place to fish that is not more than five or six miles from my home in Queens? I am 14 years old and have saved up enough money to buy a rod, reel, and line, but do not know where to go fishing. My father goes almost every weekend, but he fishes with older men who do not want a boy along, so I have to find some place I can reach on my bicycle or the subway."

By resorting to the telephone directory the columnist was able to

obtain the father's name and sent him his son's letter with a brief note. He received this reply from the father: "You handed me quite a wallop in your letter, but I am sorry you did not hit me harder, and sooner. When I think of the opportunity I might have lost, it frightens me. I do not need to point out that I now have a new fishing companion, and we have already planned a busy spring and summer. I wonder how many other fathers are passing up similar opportunities?"

Twenty years from now your son probably will not remember just what you did in a business or professional capacity, and he may not even be able to recall whether you were successful or just getting by. But he will never forget that you took him hunting and fishing, and the memories of the days you shared in the field or on the stream will be sharp enough to be related in detail to his own son.

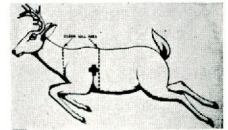
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*Calculating the Kill* ————— *From Page 13*

just as misleading if only successful hunting parties completed the bag questionnaires. Bear in mind that the check stations are designed merely to sample a portion of the hunters. It is, therefore, necessary that answers from a complete cross-section be obtained.

The submission of a leg from each whitewing killed allows biologists to determine the age ratio of bagged birds. Biologists long ago discovered

that whitewings can be classified as either young of the year or adults on the basis of leg color alone. Young birds have brownish to light pink legs compared to the purplish-red leg color of adults. This aging technique has been thoroughly checked during the September hunting season against internal examination of dead birds and found to be 99 per cent accurate.

A knowledge of the age ratio of whitewings harvested by hunters is an important bit of information in the continued management of the species. Just as it is important that

only one bag questionnaire be completed per car, it is equally important that only *one* leg from each whitewing be submitted. As biologists assume that hunters are following directions by submitting only one leg, any deviation can easily result in an erroneous determination of the age ratio.

The completed bag questionnaire containing whitewing legs should be dropped beside the road at the base of the check station upon leaving the hunting area. After all hunters have left the field, department personnel will collect the bags for tabulation of harvest data.

Sometimes these bags can contain some rather unusual items other than whitewing legs. Over the years hunters have included with their hunting information and whitewing legs such items as hair rollers, corn and potato chips, sandwiches, candy, beer cans (always empty), shot shells (both fired and unfired), messages (mostly of a complimentary nature), and sometimes whitewing bird bands. With respect to the bird bands it is much better to turn them in to a game warden, biologist, or they may be sent direct to the U. S. Fish and Wildlife Service in Washington, D. C.

If you are one of the many whitewing hunters to invade the Rio Grande Valley this year, watch for the orange signs, take a bag and follow the directions carefully. In this way you take an active part in assisting the Parks and Wildlife Department in its efforts to assure hunts for the future. Remember, the orange signs are actually signs of management. \*\*

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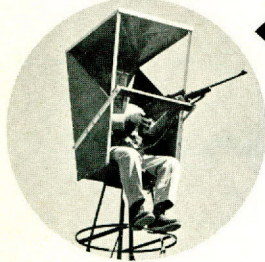
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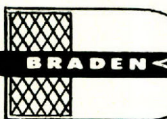


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# Longhorn Reinforcement

**T**HE PARKS and Wildlife Commission gratefully acknowledged the gift of a genuine Texas Longhorn bull to the State's herd at historic Fort Griffin State Park, near the beginning of the Old Chisholm Trail. The youngster, now a yearling, replaces the herd's "Papa Cow" sold last fall along with 41 other surplus Longhorns.

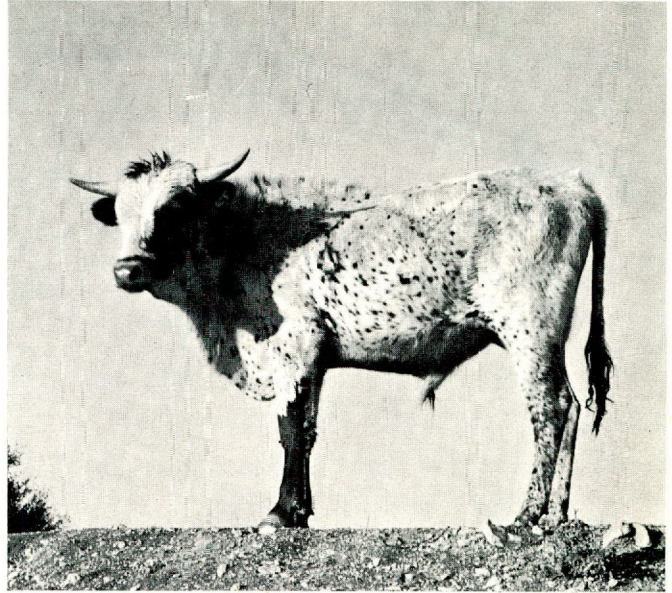
Donor of the prize Longhorn was Charles Schreiner, III, owner of the famed Y-O Ranch near Mountain Home in Kerr County.

The Commission in a formal resolution, described the Texas Longhorn "as a living symbol of the courage, resourcefulness, tenacity and perseverance of our Texas forebearers."

The Commission expressed its "sincere appreciation" to Mr. Schreiner for helping "assure the continuance of this magnificent strain of cattle for posterity."

Addition of the yearling brings the park's herd to 19 head which occupy a 503-acre pasture easily accessible

Photo by Ronald Perryman



just off Highway 283. It is across the road from the ruins of the original Fort Griffin, a favorite early day rendezvous of trail drivers, buffalo hunters, settlers and United States Cavalrymen needed to curb marauding Indians.—*Jay Vessels.* \*\*

## A javelina head, properly mounted, makes an outstanding trophy.

Jardy Javelina

From Page 15

Dimmit, Webb, Zapata, Jim Hogg and Brooks are open the year 'round. Some of these counties have a bag limit of two, others no limit.

When you have walked up to your

first collared peccary you can call yourself a hunter. A javelina head, properly mounted, makes an outstanding trophy. With his tusks sticking out and the lips pulled back he looks mean, real mean.

I only suggest one thing. Be careful, very careful, or you might discover yourself telling about how you dropped him as he attacked and was about to tear you limb from the truth. \*\*

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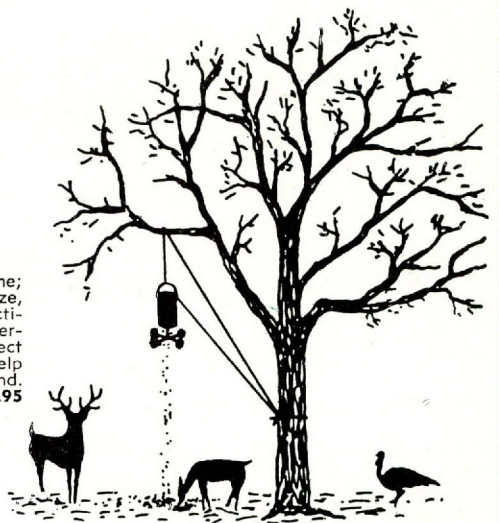
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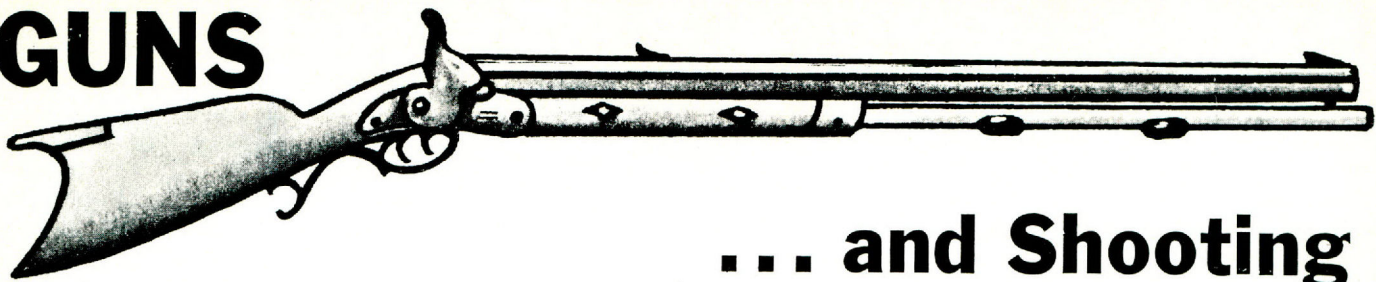
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# GUNS



By L. A. WILKE

**M**OST TEXANS already have limbered up their shotguns and have sore shoulders, with the opening of dove season. But now comes the important time for those who plan to take advantage of season changes for big game.

There is no better time than September for getting the rifle ready and zeroed in for those long shots come November.

Of course, a few smart shooters bust caps throughout the year. And some are not so smart. These never zero in their rifles before they go out after a buck or turkey.

Many hunters who do not own a big game rifle depend on a borrowed friend's gun, and many times wind up with bitter tears after missing a big buck.

A hunter usually takes enough chances on getting a trophy specimen with conditions at best, but when he goes out without first sighting in his rifle, the odds against him

will naturally be much greater.

Many ways can be used for sighting in a rifle. Unfortunately most shooters are satisfied with shooting at a big rock on the side of a hill. They gauge their next shot on where the dust flies. If they pulverize the rock, they are pretty well satisfied.

Others like plinking at beverage cans. If they knock a hole in the can, so far as they are concerned, the gun is hitting where they want.

Then some hunters go to a selected range. They take enough ammo along to not only zero their gun, but to get the feel of it. First they will lay their rifle over a sandbag on a bench and get it set. Then they will take a few offhand shots. Perhaps they will practice throwing the gun to the shoulder for a fast one.

This naturally will depend upon the gun they are shooting and its equipment. Snap shooting for the man with a .30-30 naturally is a very worthwhile practice. For the man who shoots with a scope, snap practice is important, too. Some hunters, until they get acquainted with the use of a scope and their eyes get accustomed to quickly finding the reticule, shy away from snap shooting.

Then the scope shooter also has another advantage. He can take on longer shots with greater assurance.

Some shooters are going to blast a buck's ham in spite of all they can do. But there are as many or more

## ... and Shooting

This Month: Sighting

who have learned to put a high speed bullet through the neck, or at least back of the shoulder, with a degree of certainty.

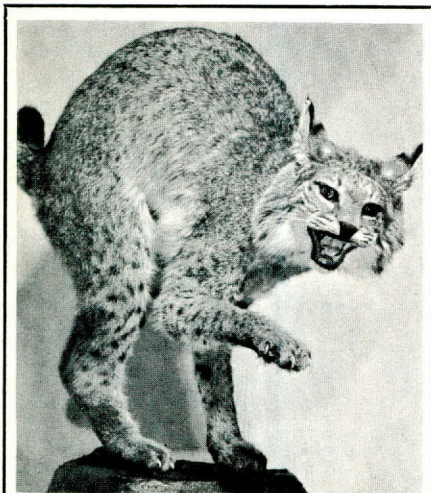
I know a young fellow, although only 16 years of age, who has killed four deer. Each one was shot through the neck. It has become such a habit with him, he'll probably keep it up. But when he puts that scope on a deer's neck and squeezes off the trigger, he knows exactly where the bullet will hit.

He shoots with one of those Weaver V-8 scopes. It is a little on the heavy side, but the accuracy he has gained on distance shots pays off.

For the benefit of those who have not shot in their guns as yet, we'll repeat a trick that saves a lot of ammunition: Shoot the gun in first at 25 yards. This is at such close range it adds confidence for the first few shots. And with today's fast ammunition most guns shot in at 25 yards will not be more than an inch off at 100 yards. And after you have sighted on the 25-yard range, it is much easier and simpler to shoot in at 100 yards.

Depending upon the area in which you are hunting, set your sights for either 100 or 200 yards. My own favorite deer rifle is set at 150 yards. I never need to worry about getting a buck then at 25 yards or 300 yards. And I am one who doesn't like to try for one at more than 300 yards. Perhaps I would if I thought the trophy would justify it, but I'd prefer not to take a chance on wounding a deer beyond 300 yards. Besides that is too far for an old man to walk!

So tighten down the screws on your scope mount and get out to the range. If you are doubtful about ballistics and setting your sight, you might try writing W. R. Weaver Company, El Paso, Texas, scope makers. They have a free booklet which gives a lot of information about sighting in guns. \*\*



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## It is time to stop the plundering of ancient treasures.

*Dinosaurs: the Myths and the Mysteries* ————— From Page 9

Some people cherish the fancy the trained fossil-bone collectors are curious and obscure kinds of morticians or grave diggers in a macabre occupation. Paleontologists themselves, however, are much more concerned with the fact that ancient vertebrates once lived than that they died; the effort in the discipline of studying fossil vertebrates is to resurrect and revive the living part of the past, not to bury it.

Additional cherished bits of misinformation cluster around dinosaur's names, many of which are now almost common household words, but are regarded, especially, by awed parents, as unnecessarily long jawbreakers with unpleasant sounds, whimsically bestowed by academicians who are as dry as the bones of the species being named. Many of the names are indeed ugly, and hard to say—*Szechuanosaurus* and *Psittacosaurus*, for bad example, although they are no less mellifluous than some of the names in almost any football program. Other names of dinosaurs can be pronounced, in accord with

Hamlet's instructions to the players, trippingly on the tongue; such are *Tornieria*, *Coelurosaurus*, and *Manospondylus*.

Dinosaur names are among the best of pawns for playing one-upmanship in grammar schools and junior museums. Any child can intimidate almost any parent by remarking that *Saurolophus osborni* is a species of dinosaur from Alberta that was named in honor of Henry Fairfield Osborn, Princeton 1877.

"Saur" is rooted in the Greek word for "lizard"; and "dino" means "terrible," a fact apparently overlooked when people are urged to buy "dinofuel" for their automobiles and thus subscribe to the common belief or superstition that all dinosaurs were swift and powerful. Further, "fuel," from Middle English sources, indicates a means of sustaining extreme fondness or passion for anything. Hence "dinosaurfuel" could mean, if you don't insist upon etymologic purity, "great enthusiasm for the terrible reptiles," and an increasing number of people confess to having this passion in natural history. \*\*

## The pelican has sought refuge along the wild coast of South America.

*Exit: the Brown Pelican* —————

From Page 21

walt, are exceptionally sensitive to the behavior of human beings. "They shy away from anything unusual," he says. During the 25 years he spent on Padre Island, he observed them by the thousands. "They were as common as laughing gulls back in the 30's," he says.

This evaluation is confirmed by Arthur H. Howell in his book, "Florida Bird Life," in which he tells of a colony that deserted an island after the National Audubon Society erected a large sign there, warning people that the island was a sanctuary. After the sign was removed, the birds returned and re-established their rookery.

With so many survival forces massed against it, the hope of bringing the species back to Texas and Louisiana appears fragile. Motivated by inherent wisdom and frightened by the complex influences of civilization, this fascinating bird—sometimes called the clown of the sea-coast—has apparently sought refuge along the wild and rugged coastline of South America. \*\*

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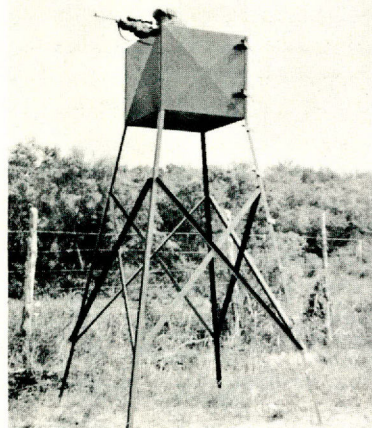
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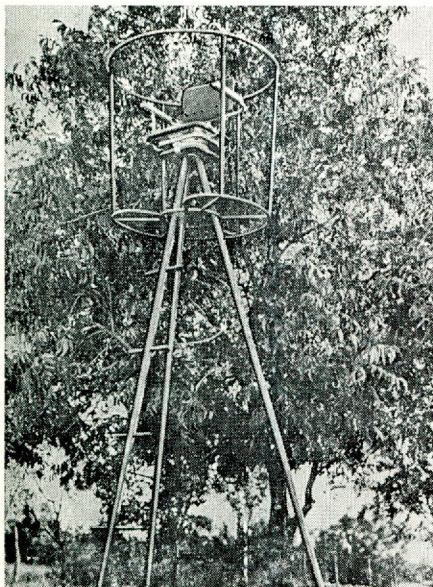
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# What Others Are Doing

by JOAN PEARSALL

**HATCHED AN IDEA:** In raising fish, cleanliness is essential to reduce contamination and prevent disease. For years, hatchery workers have scrubbed the pools with heavy weighted fiber and wire brushes to remove algae and dirt—very hard and time consuming work. Last winter, some New Hampshire hatchery men designed a machine to do the job, using a 2½ H.P. vertical shaft rotary motor from a lawn mower, some pulleys, circular brush, and other parts. The finished product is very simple and does an excellent job of cleaning a pool in only one hour. It takes one man four hours to clean a pool by hand, not nearly so well. After machine cleaning the pool is *really* clean, and stays clean longer. Also, the second cleaning by machines takes only one-half the time required for the first cleaning.

**PLAINES SPEAKING:** Two citizen groups in Des Plaines, Illinois, are starting a national public education program regarding pesticides, with the slogan "HELP" (Help Eliminate Long-lasting Poisons where unnecessary). Foreseeing the pollution of rivers, and hazards from stable insecticides in the atmosphere, the Des Plaines Safety Council and National Citizens Committee on Pesticides and Environmental Health have called on state and federal officials to eliminate unnecessary uses of such pesticides. The Council is citing its experience in halting the use of DDT for the control of Dutch Elm Disease in Des Plaines since 1960. It asked for a continuous, year-round sanitation program instead, including pruning, removal of dead and dying trees (including stumps), and observation. The city has since maintained seven-tenths of one per cent loss of elms, far below the national average despite heavy use of DDT elsewhere.

**RHINO IRONY:** The demand for Asian rhinoceros horn has driven the black market price up to as much as \$2,000 for a single horn. Chinese herb doctors sell powdered rhino horn as an aphrodisiac. In one Indonesian museum, thieves made off with the horns from three mounted specimens. Plaster horns were made to restore the exhibits—and nine of the plaster substitutes have also been stolen!

**REDEEMING FEATURE:** Private landowners in Wyoming were paid \$106,454 by their Game and Fish Dept. last year for redemption of landowner antelope coupons. The number of coupons redeemed was 24,088, about 63 per cent of all issued. Landowners may redeem resident coupons for \$3 each and nonresident coupons for \$5 when hunters take antelope on their property.

**MORE WAYS THAN ONE TO REMOVE A MOTH:** Earlier this year, the New Jersey Department of Agriculture announced no more DDT would be used in the state's gypsy moth control program. A less toxic and less persistent insecticide, carbaryl, also known as sevin, was sprayed on 42,000 acres of northern New Jersey woodlands. In addition, traps baited with a synthetic sex-attractant were aerial dropped on 75,000 acres to ensnare the male moths. Later, a biological attack was launched with the release of various parasites that prey on gypsy moth eggs and caterpillars.

**GRIN AND BEAR IT:** Game and fish departments often receive odd requests for information. A letter from Australia to the California department contained a long list of questions pertinent to several fish and animal species, closing with: ". . . and what is a Yogi bear?"

# Texas

# Tackle Talk

by CURTIS CARPENTER



**A**N INTERESTING question that keeps meeting me headon each time I take my three boys fishing is, "How in the world did you teach them to handle the rods and reels and artificial lures so expertly at such a young age?" All I can say is, it wasn't easy!

I live by a rule that if a person wants to do something well, he must work earnestly and constantly until he has it perfected. By following this rule, I taught my sons the secrets of fishing. The process was well organized and each step was planned in advance. I followed the same rule in teaching them to swim, roller skate, hunt and other activities. By sticking to the outline of steps, I was able to advance them through the learning process without any wasted time.

A youngster usually is a willing student if he shows an interest in the subject matter. This is an advantage. But, he always expects to make a big splash at the very first instead of learning the fundamentals. This is the most serious problem in teaching. They want to run before they walk or crawl. A serious but interesting (to them) chat is in order at the very first.

Point out the importance of learning this and that. Don't pass up the "little things" which may not seem important to one who knows fishing. Remember, the average youth knows very little about automatic equipment and artificial lures.

Use a closed-face reel and a light rod to start with. My boys were weaned on Zeberos, as good a train-

ing machine as is produced. I never let up on the boys once the training began, and I continue to hit them with advice—and criticism. Don't let the pupil make a mistake without being reminded of it.

A spin casting rig is very easy to handle. You show a beginner how the reel functions with simple demonstrations. Then you flip the rod a few times to show him how it provides the spring to propel the lure and fight a fish. Use a practice plug or a lure without hooks, preferably on the water's edge.

Don't allow him to get silly or play around with the equipment. He should always be encouraged to respect his equipment. It's not a toy! Also, keep him aware of the dangers of a lure with very sharp treble hooks. I even illustrated this with the hooks just to show my little fishermen how they can penetrate and then how the barbs will resist removal. This can be done with a piece of cloth or other material. Make the youngster safety conscious from the beginning and you will enjoy his company later when together in a small boat. Nothing takes the fun out of fishing like dodging flying lures tossed by careless fishermen.

Now, the topwater lure is the most dangerous. And, it's a tough one for the youngster to master. If he learns how to spot cast with the practice plug, that problem is solved. Using topwater plugs calls for accuracy casting.

Each topwater plug has to be worked differently. Some must be jerked rapidly, others more slowly.

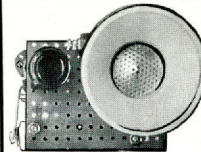
Some dart and dive, others pop and plunk. If you know how they should be worked, teach the student. Explain that the action resembles that of one kind of creature or another so he'll have a reason to give the lure action other than simply because you say it should be worked this or that way.

Show the pupil how to land a fish on a rod. He shouldn't reel the lure and fish up against the tip. Let it stop when there is just enough line out to swing it in the boat or reach out and grab it in a net or by hand.

How did I teach my boys to use modern equipment? I worked at it! My motive was to help them learn young so they could enjoy the wonderful sport of fishing. I had to give up some of my fun to train them properly, but it is worth all the fishing I missed. After all—that's what dads are for, so I've been taught. \*\*

## CORRECTION

Some errors appeared in the article "Interstate Fish Fly" in the August issue. The first paragraph read in part "... Lake Powell, in western Colorado on the Arizona-Utah border." One of the picture captions read "It's raining fish on Lake Powell, Colorado . . ." The Chief of Information and Education in the Utah Department of Fish and Game in a letter reports that the nearest point from Lake Powell to Colorado is a distance of some 75 miles! Lake Powell is backed up by Glen Canyon Dam which is located in Arizona about 12½ miles below the Utah border. The lake extends into Utah approximately 175 miles. Sorry. \*\*



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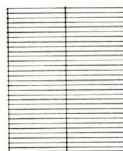
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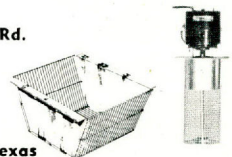
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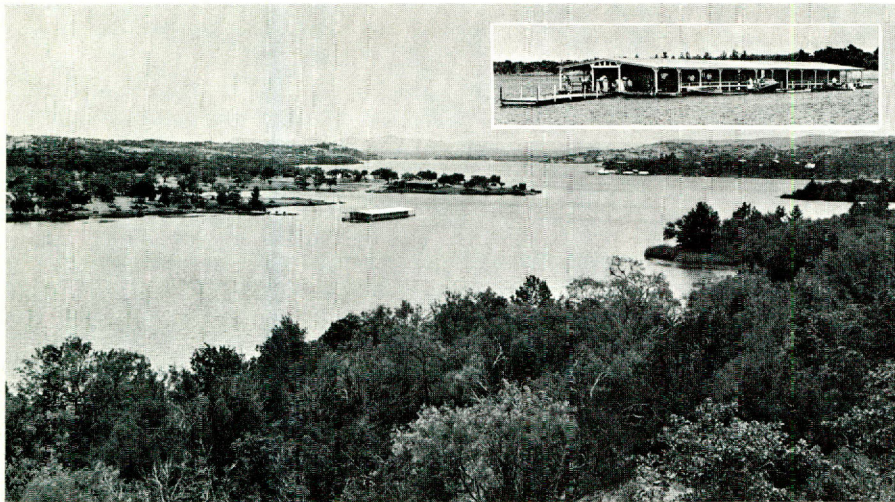
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"I'LL NEVER FLY," quirked a bystander as he watched the partially completed fishing marina being towed into position at Inks Lake State Park on a typically warm August 20 morning.

Maybe it didn't fly, but it sailed pretty good! A light but steady south-

west breeze had stolen the covered fishing platform from workmen and blown it completely across the lake. Now, motor boats of varied description and horsepower were retrieving it to pre-set anchored cables which would hold it into position. The selected anchoring site was in a twenty foot deep channel—a spot that should be ideal for channel catfish and crappie fishing.

Inks Lake, sometimes called the "little Jewel" of the Highland chain, is a constant level lake well known for its recreational facilities.

The State Park at Inks contains many beautiful campsites, picnic tables, outdoor grills, screened shelters, clean restrooms, a boat launching ramp and 1,200 acres of hill country scenery for the accommodation of campers, picnickers, swimmers and boaters. The new fishing marina will be operated as a park concession specifically designed to serve the fisherman.

Billy Joe Fox of Burnet will operate the concession. "We plan to operate year-round and 24 hours a day if the fishermen want it," said Fox. "There will be live bait, fishing tackle, cold drinks and other supplies for the fishermen and we'll even have a T.V. room for our guests," he explained.

Fox said that there would be 5,200 square feet of enclosed air-conditioned area on the main barge, which is 130 feet long and 40 feet wide. Two additional wings, each 100 feet long, will give the marina an overall length of 330 feet. "It'll be the largest fishing marina on the entire Highland Lake chain," Fox boasted.

A unique feature of the marina is the pad of styrofoam used for buoyancy. It is so efficient that, according to Fox, more than 400 fishermen can use the floating platform at one time. In addition to the standardized practice of baiting to attract fish to the marina, Fox plans a special application of brush shelters which will serve to attract fish without being a hook-snagging hazard to the angler.

The Inks Lake State Park fishing marina concession should be open for business and in full operation by Labor Day. While it is established by now that the marina will "never fly," the marina guests will find that time will.—T. D. Carroll \*\*

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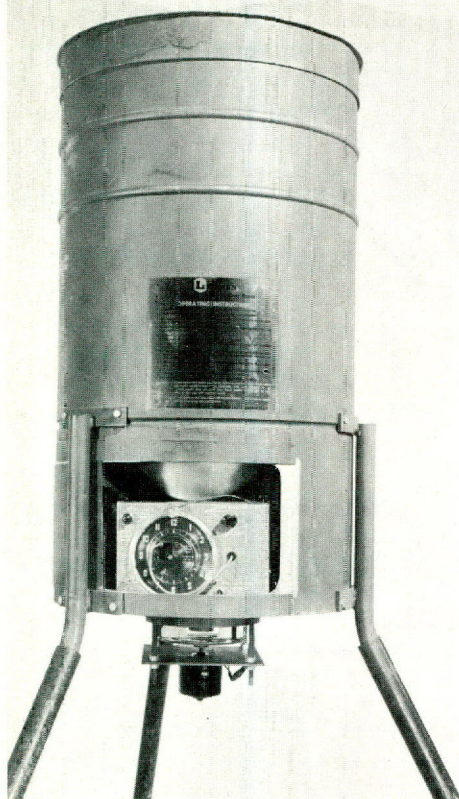
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# Outdoor Books



**BOWHUNTING FOR DEER**, by H. R. "Dutch" Wambold, 160 pages, illustrated with line drawings. Published by The Stackpole Company, Harrisburg, Penn. \$5.95.

**SMALL GAME HUNTING**, by Francis E. Sell, 158 pages, The Stackpole Company, Harrisburg, Penn. \$5.00.

**THE AMERICAN SHOTGUNNER**, by Francis E. Sell, 300 pages, well illustrated with black and white photos and charts. Published by The Stackpole Company, Harrisburg, Penn. \$6.95.

Every hunter should be glad there's a Stackpole Company. Some of the finest books and guides to come off the presses about the art of hunting are printed by this friend of the hunter. An example of Stackpole's interest was shown recently when three very interesting and helpful books came off the presses in rapid order. If you are a bowhunter, or plan to be one, **BOWHUNTING FOR DEER** certainly will help you. It's written by a true bowhunter, "Dutch" Wambold. He leaves little unsaid about this challenging sport. Everything from choosing your bow to butchering your deer is covered in Wambold's new book. You will surely want it added to the list of hunting guides already on the bookshelves.

Not only the bowhunter, but the rifle hunter as well, will want to study the pages of Francis Sell's new book, **SMALL GAME HUNTING**. He talks with authority about field shooting and basic hunting. The author points out some interesting facts about small game hunting rifles, sights and sighting in, small game hunting with handguns and many other subjects. It's a book well worth reading.

Evidently once Sell gets the writing bug he's hard to stop. The shotgunner is the subject of his next book. **THE AMERICAN SHOTGUNNER** is a very well written publication and is nicely illustrated with numerous photographs. It would be interesting to know what inspires an author to pick one topic or another for a book.

In Sell's book on Shotgunning he discusses our shotgun heritage. He talks about range finding wildfowl, the 12-and 10-gauge magnum shotguns and the standards. If you have a 20-gauge, 28 or 410, there's some valuable information in this book for you. It's a good book, and one which I recommend for every hunter's den.

—Curtis Carpenter

**THE MODERN HUNTING RIFLE**, by Tom Hayes, 304 pages well illustrated. Published by A. S. Barnes and Company, Eight E. 36th Street, New York 16, N.Y. \$7.50.

Tom Hayes was in my office just a few days back. I asked him why he decided to write a guide concerning today's hunting rifle. He said, "Folks have been asking me how to purchase a new hunting rifle, and then how to get the thing ready for the field. I decided it was time to write up a book in a language all could understand and try to present some information that would enable the average person to buy the right rifle and then help him set it up for hunting."

I can still remember when I first purchased a rifle. It wasn't an easy task because I wanted to be certain I ended up with one that would satisfy my needs.

How in the world could I choose properly when I knew so little about all the rifles available? My out was my ballistic-minded buddies who knew rifles.

However, the average individual doesn't have access to the experts. So where does he turn? To someone like Tom Hayes who takes the needs of hunters to heart by getting concerned about their problems enough to write a guide solely for them.

Hayes includes the following chapters in his new guide: Small Game Hunting Rifle; Modern Factory Built Rifle; Modern Hunting Loads and Calibres; Bullets for Game Shooting; Accuracy and Killing Power; Sights for Rifles; Selecting Big Game Rifles; Varmint Rifle; Shooting Accessories; and Sighting in Rifles. He goes into detail, revealing some very interesting facts that not only help a person decide on a rifle, but know what happens inside the new rifle as the trigger snaps.

I have read many guides on hunting rifles, but Texan Tom Hayes really does a bang-up job in his new **THE MODERN HUNTING RIFLE**. I suggest that new, as well as experienced hunters, add this fine book to their library.—Curtis Carpenter.

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| CADDO LAKE                                      | KARNACK                              | X                             |          | X          | X             | X                    |        |         |           |             | X       | X        |      |      |              |        |               | X      |
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| INKS LAKE                                       | BURNET                               | X                             | X        |            | X             | X                    |        |         |           | X           |         | X        |      |      | X            |        |               | X      |
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| MERIDIAN  | MERIDIAN                             | X                             |          |            | X             | X                    |        |         |           |             | X       | X        |      |      |              |        |               | X      |
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| MOTHER NEFF                                     | MOODY                                |                               |          |            | X             | X                    |        |         |           |             |         |          |      |      |              |        |               | X      |
| PALMETO   | LULING                               | X                             |          |            | X             | X                    |        |         |           |             |         |          |      |      |              |        |               | X      |
| PALO DURO CANYON                                | CANYON                               | X                             |          |            | X             | X                    |        |         |           |             |         |          |      |      |              |        |               | X      |
| POSSUM KINGDOM                                  | CADDO                                | X                             |          |            | X             | X                    | X      | X       |           |             |         | X        | X    | X    |              |        |               | X      |
| TYLER   | TYLER                                | X                             | X        |            | X             | X                    |        |         |           | X           |         |          |      |      |              |        |               | X      |
| VELASCO (Open Gulf Beach)                       | FREEPORT                             | X                             |          |            | X             |                      |        |         |           | X           |         | X        | X    |      |              |        |               | X      |
| <b>HISTORICAL PARKS</b>                         |                                      |                               |          |            |               |                      |        |         |           |             |         |          |      |      |              |        |               |        |
| FT. GRIFFIN (Texas Longhorn Herd)               | ALBANY                               | X                             |          |            | X             |                      | X      |         | X         |             | X       |          |      |      |              | X      | X             |        |
| GOLIAD  | GOLIAD                               |                               |          |            |               |                      | X      |         |           |             | X       |          |      |      |              |        |               | X      |
| GOV. HOGG SHRINE                                | QUITMAN                              |                               |          |            |               |                      | X      |         |           |             |         |          |      |      |              |        |               | X      |
| INDIANOLA                                       | PORT LAVACA                          | X                             |          |            | X             |                      |        |         |           |             | X       | X        |      |      |              | X      | X             |        |
| JIM HOGG  | RUSK                                 |                               |          |            |               |                      | X      |         |           |             |         |          |      |      |              |        |               | X      |
| MISSION TEJAS                                   | WECHES                               | X                             |          |            | X             |                      |        |         |           |             |         |          |      |      |              | X      | X             |        |
| MONUMENT HILL                                   | LA GRANGE                            |                               |          |            |               |                      | X      |         |           |             |         |          |      |      |              |        |               | X      |
| *SAN JACINTO                                    | DEER PARK                            |                               |          |            |               |                      | X      |         |           |             |         |          |      |      |              |        |               | X      |
| STEPHEN F. AUSTIN                               | SAN FELIPE                           | X                             |          |            | X             |                      | X      |         |           |             |         |          |      |      | X            | X      | X             |        |
| *VARNER-HOGG PLANTATION                         | WEST COLUMBIA                        |                               |          |            |               |                      | X      |         |           |             |         |          |      |      |              |        |               | X      |
| WASHINGTON                                      | WASHINGTON                           | X                             |          |            | X             | X                    |        | X       |           |             |         |          |      |      |              |        |               | X      |
| <b>HISTORIC SITES</b>                           |                                      |                               |          |            |               |                      |        |         |           |             |         |          |      |      |              |        |               |        |
| ACTION  | GRANBURY                             | (Burial Site Only)            |          |            |               |                      |        |         |           |             |         |          |      |      |              |        |               |        |
| *ALVARO   | SAN ANTONIO                          |                               |          |            |               |                      |        |         |           |             |         |          |      |      |              |        |               |        |
| EISENHOWER BIRTHPLACE                           | DENISON                              |                               |          |            |               |                      |        |         |           |             |         |          |      |      |              |        |               |        |
| *FANNIN   | FANNIN                               |                               |          |            |               |                      |        |         |           |             |         |          |      |      |              |        |               |        |
| GEN. ZARAGOZA BIRTHPLACE                        | GOLIAD                               | (International Historic Site) |          |            |               |                      |        |         |           |             |         |          |      |      |              |        |               |        |
| OLD FT. PARKER (Fort Restoration)               | GROESBECK                            |                               |          |            |               |                      |        |         |           |             |         |          |      |      |              |        |               |        |
| PORT ISABEL LIGHTHOUSE                          | PORT ISABEL                          |                               |          |            |               |                      |        |         |           |             |         |          |      |      |              |        |               |        |
| SAN JOSE MISSION (Historical Drama - July-Aug.) | SAN ANTONIO                          | (National Historic Site)      |          |            |               |                      |        |         |           |             |         |          |      |      |              |        |               |        |
| SAN SABA MISSION                                | MENARD                               |                               |          |            |               |                      |        |         |           |             |         |          |      |      |              |        |               |        |

\*Facilities not operated by Parks and Wildlife Dept.

# Letters



# to the Editor

## Bass Hits Cat Bait



Editor:

I read in your magazine once where coach Bob Jenkins of Kirbyville caught an 8½ lb. bass. The picture enclosed is a black bass 8 lb. 9 oz. caught on large tackle while fishing for catfish with live perch, by Harold Ammons of Mathis, Texas, Lake Corpus Christi.

We enjoy your magazine very much and hope you continue your wonderful work.

Marie Ammons  
Mathis

(It was no doubt worth missing a catfish that once to pull in such a beauty. Thank you for your kind remarks about the magazine.—Editor)

## Polka Dotted Perch

Editor:

If available, please give me all information possible on the so-called Rio Grande perch. I understand this is a "humpback" perch with polka-dots, and is being taken from the Falcon Lake, near Laredo.

This perch appears to be quite a curiosity and I would like to purchase about a dozen to place in my ponds. I am willing to pay a reasonable price for them, plus transportation. Could you tell me where I may be able to buy a few? Would greatly appreciate your assistance in obtaining a few of the Rio Grande perch.

E. J. Hoffer  
Yoakum

(Rio Grande perch are members of the Cichlid family and they, along with another import, the Tilapia, are the only members of this family that occur in the United States outside aquariums. Rio Grande perch and the Tilapia are tropical

fish and will die if the water temperature stays below about 49 degrees F. for several days. Rio Grande perch have been moved into the Comal River in New Braunfels, the San Marcos River in San Marcos, and Lake Travis, and some have been placed in the springs at Barton Springs in Austin. A large population of these fish exists in all these waters, and while some of them that get far away from the Edwards Plateau springs are killed by freezes, enough of them stay in the spring areas, which usually have about 71 degrees F. the year-round, to survive. The only place where Tilapia have been introduced is into the San Marcos and San Antonio Rivers. Again, these were placed where springs were available. We have found that Rio Grande perch are detrimental to other populations of fish and we have unsuccessfully tried to kill them out in many of the spring areas in which they occur. Were I a lake or pond owner, I would not place these fish into my waters.—Marion Toole, Coordinator, Inland Fisheries)

## Bow Trophies



Editor:

The buck in the picture was killed by Carl Cole, U.S. Custom Inspector of Brownsville, Texas. The equipment he used was a 70-pound Perry bow, Comanche arrows tipped with Bear Razorhead blades. The deer was brought in with horns and shot from a distance of 16 yards and traveled approximately 75 yards after being hit. The arrow penetrated the lungs close to the heart. Mr. Tipton Jones, official measurer for the Pope & Young Club says it's the largest head he has seen for the State, taken with a bow, and may place fairly high in this National Club.

On the same hunt with Cole, Fausto Yturris, Jr., killed a wild hog and I got



my 19th javelina. We did not get a picture of the wild hog but I am enclosing a picture of my javelina.

Phil Amsler  
Floresville

(We don't often hear or receive such pictures from our archery enthusiasts, and these are especially interesting. Keep those well-directed arrows flying.—Editor)

## Geese Galore

Editor:

In your publication a few months ago I read an interesting article on a goose hunt. I really enjoyed the article but in the picture there were only three geese. Only three?

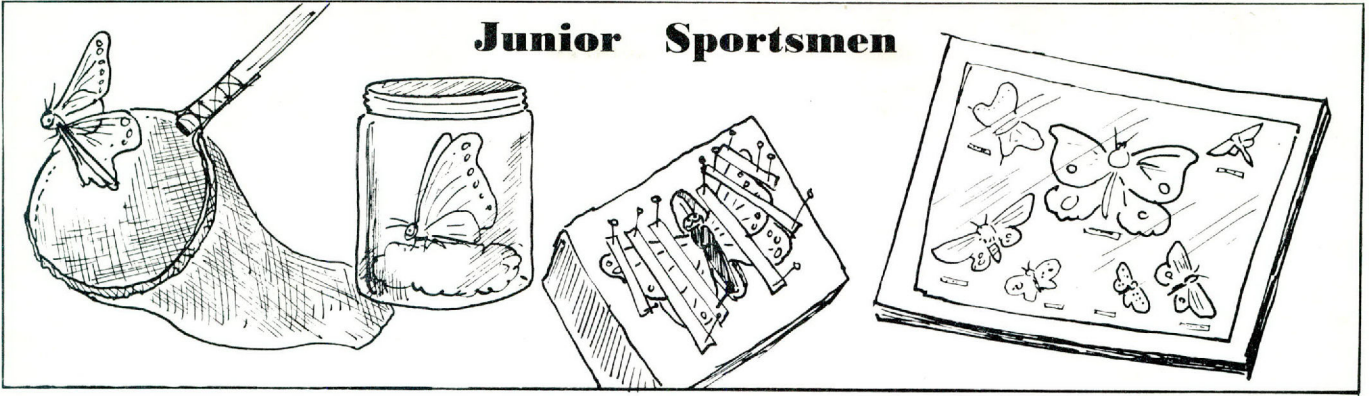
Now I'll tell you about a couple of our South Texas goose hunts. The first time I ever went goose hunting (Dec. 1963), I went with a party of six other boys. Without the help of decoys or calls we bagged 14 geese. I, myself, got four. All were White-Fronted and Lesser Canadians. Several days later nine boys I know got a grand total of 29 geese together. Man, we really felt like bragging after these hunts. Our hunts were about twelve miles north of Mercedes, Texas.

I really like to read your magazine. I find it very interesting.

Chip Sparrow  
Mercedes

(That is something to brag about, to become such seasoned geese hunters, in just one season! Congratulations to all of you, and thanks for telling us where to come for some good goose hunting.—Editor)

## Junior Sportsmen



## Try Lepidoptery

by JOAN PEARSALL

**M**ANY YOUNG people find collecting moths and butterflies a very fascinating hobby. These beautiful scaly-winged insects can be mounted quite simply with materials that are easily obtainable and that you may already have at home. The whole procedure can be divided into four stages: 1) catching; 2) killing; 3) pinning, or spreading; 4) mounting or storing.

To catch the moth or butterfly, you need a net. You can make an effective one yourself, from an old broom handle, a wire clothes hanger and some cheesecloth. Be very careful not to damage the wings, as the scales come off easily.

The killing should be done quickly, as it is merciful and preserves the beauty of the wings. For this you will need a wide-mouthed jar with a screw lid, that is airtight. Put an inch or so of cotton in the bottom of the jar, and cover this with one or more pieces of blotting paper, cut to fit snugly. About a teaspoonful of killing fluid will be needed on the cotton. This should be renewed before each collecting trip, but there should not be enough to make the sides of the jar wet, or the insects' wings will stick to it. Ethyl acetate (Duco cement thinner) can be used for this. Nail polish thinner or remover also works. Put the insect in the jar, with the lid screwed on tightly, and leave for at least half an hour.

The pinning or spreading can be done using a block of plastic foam, which you can get at the dime store, covered with paper if the foam is rough. With the point of a knife, cut a hole big enough for the body of the insect. Push a pin between the bases of the front wings, to hold the insect's body in the hole, or use crossed pins, if necessary, to hold down the back of the body. There are special insect pins, which are thinner and longer than others; however, common pins can be used, preferably the No. 1 or 2 kind. Arrange the wings, lightly using a pin point or tweezers, making sure that the back edges of the front wings form a straight line at right angles to the body. The rear wings should underlap the front ones a little. Flatten the wings by means of pinned-down paper

strips, the pins going through the paper only, not the wings.

If you do not want to use plastic foam for this stage, the specimens can be pinned upside down on a single sheet of softwood or cardboard, or right side up, which is better, over a groove for the body. To do this, cut two strips about 10 inches long and 5 inches wide, of cardboard or softwood, and glue them to a flat board. Leave a space about  $\frac{1}{8}$  inch between them at one end, widening to  $\frac{1}{2}$  inch at the other.

When the insect has dried all the way through, which takes from two days to a week, depending on its size, it can then be mounted, or stored. Put it on a bed of white, absorbent cotton in a glass-topped box or frame. A good display case can also be made from a shallow cardboard box with a lid, such as the kind used for women's hose. Cut out the middle of the lid, leaving a half-inch edge, then fit stiff, clear plastic inside it to form a window. Seal the box with adhesive tape, to keep other insects from getting in and damaging the display.

Label your specimen, of course, and find out all you can about it. You have now become a budding lepidopterist—a person who studies moths and butterflies—and you may find you have not only started an enviable collection, but opened the door to an intriguing new world.

## First Bucks



Editor:

Enclosed you will find a picture of our two boys, Robert on the left and Wesley on the right. Robert, who is 13 years old, got his first buck (8 points), at about 200 yards

with an 8 mm. rifle. Wesley is 12 years old and he got his first buck (8 points) at about 75 yards with a 6.5 rifle. These are the first deer that the boys have killed. Boy, were they proud. But so were we. The deer in the background I killed with a .30-06 rifle at 120 yards.

Thought you might enjoy looking at the picture of the boys and might want to put it in the *Texas Game and Fish* magazine. We certainly do enjoy the magazine an awful lot.

Mrs. A. G. Ruder  
Houston

(We can well imagine what a happy and proud family you were after that successful hunting trip. We are glad you have this pictorial memento of the occasion, and that you shared it with us.—Editor)

## Out of the Seine



Editor:

*Pat Montgomery*

Enclosed is a picture of a minnow that we have caught in our seine at Granite Shoals, one of the Highland Lakes. They are yellow with black stripes.

Pat Montgomery  
San Antonio

(Thank you for the minnow picture, Pat. We also appreciated hearing from your younger sister, Kathleen Ellen, and seeing the nice tracing she made of a prairie dog. We do not print tracings in the magazine, but we did enjoy seeing it.—Editor)

## Hatchery Fan

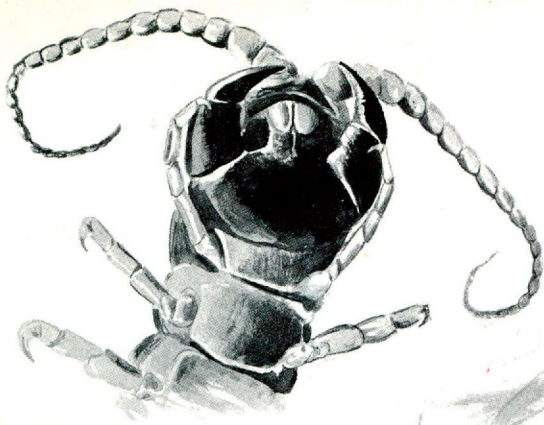
Editor:

I enjoy reading *Game and Fish* magazine. I hope the magazine increases during the years. I went to the Quail Hatchery. The interesting part of the quails is the hatching of the egg.

Carol Hamblet  
Houston

(Thank you, Carol. We liked hearing from you, and are glad you enjoy the magazine, and were so interested in the quails.—Editor)

# 42 Feet of Trouble



The appearance of a six-inch "hundred-legger" in camp bedding might provoke insomnia if the camper believes all the tales about centipedes. Some claim they possess venomous fangs fore and aft, and 100 legs with a poison tipped claw on each. Actually the only poison owned by centipedes of the **Scolopendra** species is carried in glands under the head. Sturdy fangs, which are modified legs, deliver the paralyzing bite necessary to subdue their prey of insects, lizards and spiders. They actually have only 42 legs terminating in sharp claws, which can puncture tender human skin; if slapped or brushed away, the brittle tips may break off in the skin. Infection will set in if the wounds are not treated with antiseptic.

Centipedes know how to use their fangs and are swift to retaliate when annoyed. A bite will cause temporary local pain and swelling much like a hornet sting. Application of ammonia or hot Epsom salts to the area will bring some relief. Fatalities are rare. Only two deaths have been reported, one from Arizona and one from the Philippines.

The weird creatures are at home in tight places. When on the prowl they will investigate ground litter. Their burnished bodies slither easily under damp

leaves and rotting logs. If shoes and bedding are left on the ground, they may receive the attention of centipedes in search of a meal. Experienced campers shake out shoes and sheets before getting into them. Small centipedes of the **Scutigera** species occasionally move indoors. These petite centipedes' fangs and poison are too weak to pose a threat to humans. They seldom grow longer than an inch and make themselves useful by their taste for cockroaches.

—Nancy McGowan