

Texas Game and Fish

APRIL

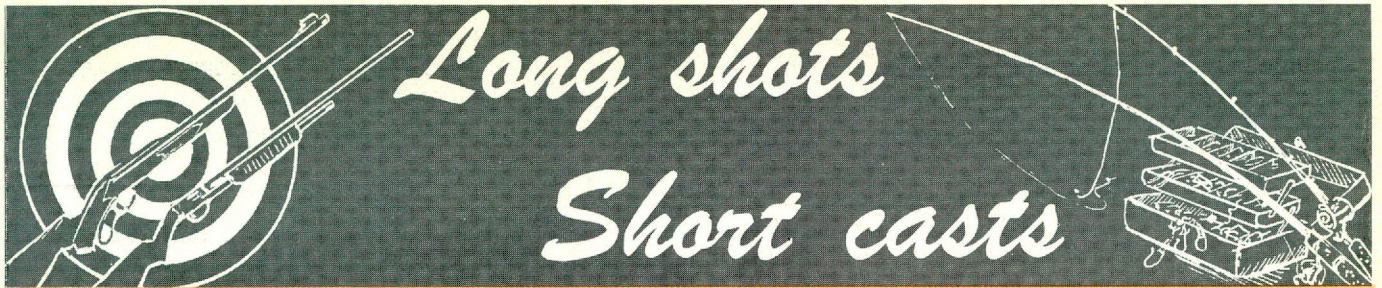
1967

20 CENTS



Delicate patterns against the sky signal the blossoming of spring, especially in East Texas.





CLEAR ADVANTAGE: The U.S. Forest Service is now engaged in building a network of helicopter touch-down spots or "helispots," throughout its western national forests. These 15-by-20 foot leveled spaces on ridge crests will help firefighters to reach spot fires with more speed. "Smoke jumpers," who parachute into wilderness areas to fight fires, will be picked up by helicopters instead of having to hike out, making the jumpers available sooner for other fires.

LOOK FOR THE LABEL: A new eye-catching emblem has been adopted by the Government agency responsible for Federal wildlife and sport fish activities. It will appear on motor vehicles, boats, fish hatcheries, wildlife refuges and other equipment and installations of this agency. The emblem is in the form of a shield. Printed across the top are the words "U.S. Department of the Interior"; "Fish and Wildlife Service" appears across the bottom. The central part of the shield is a circle with "Bureau of Sport Fisheries and Wildlife" printed around the rim. A marsh scene is depicted inside. Leaping from the water is a fish, symbolizing the Bureau's sport fisheries activities. Overhead is the familiar flying goose, symbolizing the wildlife work of the Bureau.

BEEFED-UP CATCH: A one-ton fish with the unlikely name of "cow shark" was landed recently off the Mississippi delta. The catch marks the first time a cow shark has been taken in the Gulf of Mexico and the first one seen off North America in more than 75 years. The 13-foot beast was picked up at a depth of approximately 1,300 feet. Measurements and photographs were taken and these, along with the shark's jaws and tail, will be placed in the scientific collections at the National Museum in Washington, D.C. This species of shark is probably more common than the records indicate, but it is not often seen or captured because it usually inhabits deeper waters.

A RAFT OF FUN: Objects floating free in the ocean attract large numbers of fish and other marine animals. Using a 12-foot square raft with glass viewing ports, off the coast of Hawaii, government biologists are seeking information on how this association between fish and flotsam comes about and how the various members of such an aggregation react. An unexpectedly wide variety of species have been sighted, from this observation capsule. There were rather definite changes in the makeup of the raft's following as it drifted into different locations at varying distances from shore. The fishery scientists plan to continue the studies from this unique floating lab by recording activities in still and motion pictures and collecting fish for food habit and other analysis.

POISON SENSE: A prominent conservationist suggests that everyone be especially careful with bug sprays, weed killers and other chemical poisons around his home, and that application directions should be followed closely to avoid damage to birds, fish and other wildlife as well as pets and children. A wise idea is to try using big screens instead of bug sprays, good grades of grass plus water and fertilizer rather than crab grass killer and thorough house cleaning instead of poison baits.

WELCOME ELK: Park rangers have stopped shooting elk in Yellowstone National Park except for laboratory purposes, because hunting in Montana outside the park and the acceptance of live transplants by that state and Wyoming promise a quick end to the overpopulation problem in Yellowstone. Carcasses of all elk killed in the park go to American Indian tribes to supplement their meat diets.

EAGLE EDICT: On April 1, 1963 new Federal regulations go into effect to provide full protection to the American bald eagle and golden eagle from hunting by airplanes and poison. A limited permit system will permit the killing of these birds only with advance permission of the U. S. Fish and Wildlife Service, when they are doing serious injury to wildlife, agricultural crops, or other interests, and where it can be shown that the only way to reduce the damage or injury is by direct control of the eagle population. The new regulations will also allow permits to be issued to Indians for taking bald or golden eagles for religious purposes.

Texas Game and Fish

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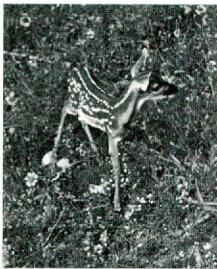
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The Cover



Spring brings sleek little spotted bundles with wobbling legs. A vulnerable creature in the early weeks of its life, the fawn is hidden by its mother for the first week or so after birth. Later, it wanders with its mother, grazing and gradually learning the quiet but alert ways of the deer world.

Photo by T. D. Carroll

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Gift of Spring

The Editor

APRIL is a month of flowers, bird nests, budding trees and spring showers. It's the time when most of us become aware of the beauty of the outdoors.

A cold, dull season is gone for another seven or eight months, and all living things take on new colors to blend with preparations for growth and reproduction. Even the insects, which for several months have vanished from the scene, return from their hiding places to act out their role in nature's mysterious but exciting performance.

This new and colorful scene is not limited to wild things existing about us. Even man, with all his troubles and busy routine, finds his way into the outdoors where he draws in great breaths of fresh, fragrant air and restores his mental attitude toward life by feasting on the splendor of spring.

Doctors of both the body and mind are quick to agree that one of the best cures for many ailments is a week in the sun and a new setting. Somewhat like the great bear, most of us hibernate in offices, factories, schools, homes and other structures during most of the winter months. For many of us, these months are the longest of all and seem to drag so slowly by.

There are some scenes outside which even the painter cannot capture on his canvas, nor the photographer on his film. Poets for centuries, with their great imagination and mastery of the language, could not describe exactly the glamour of spring.

To truly see the unaltered beauty and greatness of spring, you must wade through its fields painted with splotches of bright flowers peeking through their carpet of foliage, and listen to sweet melodies of the feathered orchestra. You have to rub elbows with nature.

If you look closely as you travel over the highways, you may glimpse a deer grazing peacefully in some meadow, or a rabbit hopping merrily through a grassy trail. You may spot a hawk circling gracefully overhead, or a flight of doves dipping and dodging swiftly just above the treetops. A snake may slither hurriedly across the scorching pavement in front of you and vanish into its wooded retreat. And, if you stop along the roadside, you'll probably hear the distinct call of a lonesome bobwhite or the unending serenade of a proud Texas soloist, the mockingbird, as it sings the songs of other birds even better than they.

On some mirrored lake, you may be entertained by dragonflies as they glide about, or an alert fish as it breaks the surface and snaps its jaws over some unsuspecting insect.

This is all a part of the show. It's ours to enjoy, appreciate and protect. It's spring all over again.

So, as you go to a favorite fishing spot, or take the family out for a ride in the country, take a discerning look at the most perfect work of art you will ever see. It's a masterpiece we frequently take for granted, and a gift we often overlook. **

THE PRODUCTION of shrimp in Texas is not the greatest in number of pounds, but it is first in value.

The shrimp fishery is the most valuable of this nation's fisheries and Texas has the largest one of any state. The fishery on the Texas coast was begun about 1920, but its potential was not realized until 1947 when Texas fishermen "discovered" the brown shrimp fishery in the Gulf. Prior to that time shrimpers sought only white shrimp found in the bays and shallow Gulf, but with the harvest of the brown shrimp came a rapid expansion of the industry.

The Texas Game and Fish Commission recognized the needs for additional information on this fishery, and in 1935 the first state marine biologist began studies on the Texas Coast. Records on the annual production of shrimp and other marine products have been kept since 1936.

During the recent years a great amount of work has been done on the biology and life history of commercial shrimps. Studies have been made by this department, similar departments in other states, the U. S. Fish and Wildlife Service, universities and private institutions.

Shrimp production in Texas reached an all time high in 1960, an outstanding year, but landings declined in 1961 and remained low in 1962. The cause of the decline in 1961 is still not fully understood, but the effects were widespread throughout the Gulf of Mexico.

The numbers of postlarval or infant brown shrimp entering bays in the spring of 1961 and 1962 were re-



dredging of harbors and filling of marshes, has limited the available habitat for shrimp growth. Hurricane Carla, which in September of 1961 wrecked boats and processing facili-

Mexico. But, man is more able to control and protect the inshore or bay nursery areas where shrimp are vulnerable to improper fishing and habitat destruction.

Shrimping Under Review

duced. This may have been caused by late cold waves or by a shift of Gulf currents which swept the relatively helpless, tiny shrimp to sea. In addition to a limited supply of small shrimp entering the bay, the continual development of the bay nursery areas into industrial and residential areas with accompanying

ties along the Texas Coast, further contributed to a decline in the annual harvest. The available supply in 1962 was about the same as that of 1961.

It is recognized that man is unable to control the great dynamic forces which influence the spawning areas of the shrimp offshore in the Gulf of

The life span of the shrimp is short, and the time lapse from egg to market is about six months. Growth is rapid, and brown shrimp spawned offshore in the Gulf of Mexico in early March spend several months in the fertile bay nursery areas and return to the Gulf in June and July. Some brown shrimp con-

tinue to exit from the bays through the summer and fall months, but the great majority of them leave in June and July. Almost all of the brown shrimp appear in the bays only in their juvenile stage and do not reach the proper size for harvest in the bays.

The brown shrimp in its juvenile stage is the preferred bait shrimp of the sport fisherman. Thus, the presence of bait size brown shrimp in the bays during the summer months coincides with the peak demand of the sport fishery.

The period during which white shrimp occupy the bay nursery areas does overlap that of the brown shrimp. White shrimp spawn in the shallow Gulf from May through August. The very small shrimp grow rapidly in the bays and the first group begins moving toward the Gulf in August, growing as they migrate. The second group leaves in September, and the third in October. The number of shrimp in these groups varies from year to year. (One year the August migration may be the most important.) Thus, *a fixed bay shrimping season has created difficulty in that by taking a few large individuals, many small shrimp may be culled and wasted.*

Juvenile shrimp grow rapidly at a rate of about one millimeter a day or one inch in 25 days. An 80-millimeter shrimp will grow to 100 millimeters, an increase in length of $\frac{3}{4}$ inch, in 20 days and would double its weight in that time. In 45 days the weight of an 80-millimeter shrimp can be expected to almost triple, increasing from a tail count of 175 to a tail count of 60 per pound. (A tail count is the weight of the number of shrimp per pound, without heads. For example, a tail count of 60 per pound indicates 60 headless shrimp constitute a pound. The minimum count refers to the smallest size at which a shrimp may be taken or in other terms, the maximum number of shrimp per pound. The present minimum count allows 65 *headless* and 39 *heads on* white shrimp per pound and 50 *headless* and 30 *heads on* brown and pink shrimp per pound.)

Thus, a two-week adjustment of the opening date of shrimping season could have a great effect on the

quality and quantity of the landings.

The Game and Fish Commission has completed its third consecutive year of intensive study of the Texas shrimp fishery. In this study the important nursery areas within each bay system are sampled twice each month, and from the information thus collected it is becoming possible to predict with some accuracy the time the shrimp will emigrate and the quantity of the harvest. Specific information for the seasonal regulations of white shrimp is available in late July.

Unless the fisherman is specifically trawling for live shrimp, a caught shrimp is a dead shrimp. Thus, during periods when small shrimp are present in the catch, the fisherman is forced either to discard and waste much of his catch or to land it in another state where a legal market exists. If Texas had more flexible seasons, closed during the period when small shrimp are in greatest abundance, the overall size of shrimp in the catch could be adjusted. The fisherman could land his entire catch.

Smaller species of shrimp, not brown, white, or pink, occur in abundance during periods when the larger species are scarce. These small shrimp for which no provisions are made in the present law could be

used to good advantage during the slack season. These small shrimp, called "broken back" or "jackass shrimp" by fishermen, do not reach the present minimum count for brown shrimp. The seabob also falls in this category.

It is recommended that the size of the shrimp harvested be regulated by flexible season and that the minimum count restrictions be withdrawn.

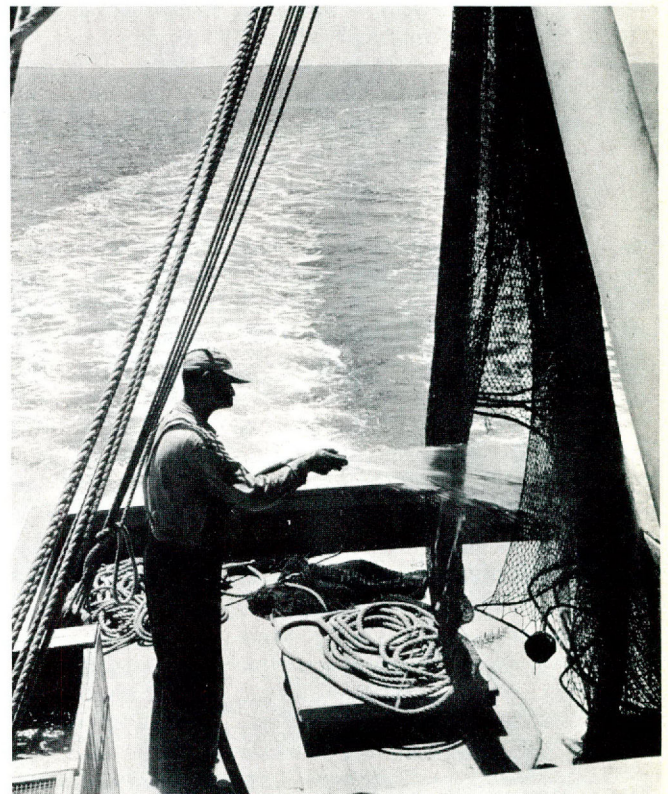
The present provision which closes the inshore Gulf to three marine leagues (approximately 10 miles) during June and July is a step in the right direction as far as it now goes. It is inadequate in that it affords only partial protection to the migrating, post juvenile brown shrimp. The length of the closed season should be flexible at both ends.

The closed Gulf season should apply to all shrimp boats regardless of the type license it has purchased or the use or market purpose intended for the catch.

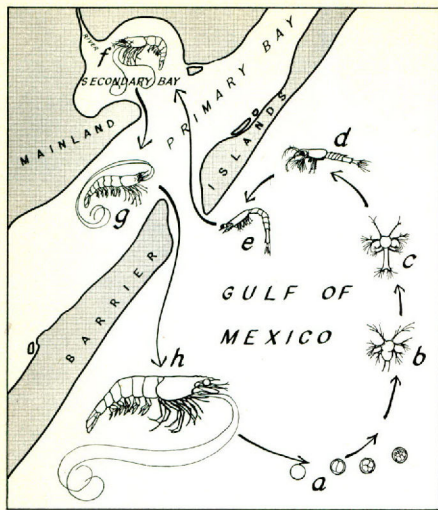
The limit of jurisdiction to three marine leagues is inadequate, for the post juvenile shrimp still under the present minimum count move quickly through this closed area to the "open" waters where they are heavily fished and culled for the few large individuals. Many tons of small

by
H. D. DODGEN

Excerpts from
a speech given
to the Texas
Shrimping As-
sociation's an-
nual conven-
tion in Corpus
Christi



An old shrimper hoses the nets—a job many of his days have seen.



This diagram shows the shrimp's life cycle as follows: a. shrimp egg; b. nauplius larva; c. protozoan; d. mysis; e. postmysis; f. juvenile shrimp; g. adolescent shrimp; h. mature adult shrimp. (a, b, c, d, e after Heegaard). It also indicates primary and secondary bays.

shrimp are wasted in this common, legal practice. The majority of the brown shrimp pass through the in-shore Gulf to the 20-fathom line before they reach the present legal count.

It is recommended that a flexible, closed Gulf shrimping season of not more than 60 days be set for a period in May, June, and July and that the period and duration of this closure be based on each year's biological data. It is further recommended that all shrimp trawling operations be closed to the 20-fathom line during that period.

The purpose of seasonal shrimping in the bay areas is to harvest the large white shrimp at a time when they are most numerous and when the brown and smaller white shrimp are not abundant. The open season now set by House Bill 12 is fixed from August 15 to December 15.

Since the time of peak emigration of white shrimp from the bay nursery areas varies each year, the fixed opening date has conflicted with the size of the majority of the shrimp.

Late swarms of small whites can be found in the shallow secondary and tertiary bays through early November. Tertiary bays are small inland bays which are third in line from barrier islands. (See illustration for location of primary and secondary bays.) The presence of these late small shrimp should not preclude

the harvest of the larger white shrimp which emigrate through the deeper bays and earlier in the fall. By limiting the bay harvest to the deeper bays and opening them only on evidence of the presence of larger shrimp, the present season could be extended and a more substantial harvest of white shrimp of a size greater than 39 count could be obtained.

Bay shrimping during the open season should be restricted to the daylight hours to place the fishing pressure on the white shrimp.

Juvenile brown shrimp which are present in the bays in spring and summer provide the basis for a sizeable bait industry. It is generally agreed that bait shrimping should be permitted throughout the year if it is a biologically sound practice.

Under the present regulations it is sound neither biologically nor economically. The difficulty lies more in problems of enforcement and loopholes in the regulations which circumvent what was probably the original intent of the present law. The 250-pound catch limit per day, the embargo on the out-of-state shipment of bait shrimp and the prevention of sale of bait shrimp to canneries have been difficult to enforce. The result has been a harvest of millions of pounds of very small brown shrimp to be sold at about a fourth of their potential value.

Since it is generally agreed that a bona fide bait shrimping industry is both biologically and economically sound, the present problem lies in restricting the closed season bay catch to use as bait.

It is recommended that during the closed bay shrimping season the bay catch and landings be restricted to live shrimp and that the bait shrimp boat must have facilities for maintaining the shrimp in a good and live condition. There would be no need to limit the daily catch.

The smaller shrimp landed during the open bay and Gulf seasons could be frozen and used as bait during the closed bay season.

The "live only" restriction should also apply to those shrimp taken by sports-bait trawls during the closed bay season. The limit of two quarts of live shrimp per person per boat should remain in effect.

Good conservation principles can be invalid if they lack popular acceptance or if they lack a means of enforcement. Due consideration should therefore be given to these other aspects of regulations.

Since May of 1959 when the Texas Shrimp Conservation Act came into effect, some real problems in enforcement have become apparent. Some of these enforcement problems would be corrected by the adoption of the biological recommendations, and other problems need additional consideration. These include:

A Shrimp House Operator is defined in The Texas Shrimp Conservation Act, Section (3g) as any person other than a Wholesale Fish Dealer who operates a shrimp house, plant, or other establishment for pay for the purpose of unloading and handling shrimp from shrimp boats.

Since the Wholesale Fish Dealer is defined as one who purchases for resale to the retailer, restaurant, or consumer, there is a category of operator which falls somewhere between these definitions.

A count limitation provision (Section 4) states that shrimp should average a certain count in their "ungraded" condition. Since no definition of "grading" is provided and since grading or culling occurs when the catch is first taken from the trawl, enforcement personnel are hard put to determine that a cargo is ungraded and undersized. Elimination of the minimum size in favor of seasonal regulation would correct this difficulty.

The limitation of the period for purchase of the Commercial Bay-Bait Shrimp Boat license to the months of January and February (Section 5) has caused hardship to numerous resident fishermen. In cases where a boat is constructed or purchased and a license cannot be obtained, this difficulty is most apparent. Non-resident fishermen are generally among the first to apply for licenses during the two-month purchase period.

It is recommended that the Bay Shrimp Boat license be available throughout the year.

It is lawful for a Commercial Bay-Bait Shrimp Boat operator to take shrimp of any size or species for use

as bait, *at any time*, within the *coastal waters* of this state (Section 6c). This clause permits the bait boat to operate at night during the open bay season which is contrary to Section 6a, which states that "During the open season in inside waters of this state *all shrimping* shall be done during the daytime only." This same clause permits the bait boat to operate in the Gulf during the closed Gulf season.

Since there is an ample supply of bait shrimp within the bays during the closed Gulf season, there is no need for the bait boats to be made exception to this provision.

It is unlawful to sell, or to contract to sell, for transportation outside the state of Texas any shrimp caught for use as bait in any of the coastal waters of this state. However, large quantities of small brown shrimp can be taken as "bait" during the closed bay season and shipped to the state line without violation. Until the load of shrimp crosses the state line, no visible violation occurs, and after that time the carrier is out of the jurisdiction of our law enforcement personnel. Whether or not a sale or a

contract to sell has been made within this state is an unknown factor. Thus, a thriving business of shipping small brown shrimp caught from the closed bay waters has persisted with ineffectual means of enforcement. The resulting loss of undersized brown shrimp to the economy and legitimate fishery has been estimated to be in the magnitude of millions of pounds.

It is unlawful to sell bait shrimp to a packer, canner, or breeder (Section 6), but a bait dealer operating on the same premises with a canner may purchase great quantities of "bait" shrimp. Once the bait shrimp enter the plant there is no control over its ultimate fate.

The landing of only live bait by bay boats during the closed bay season would eliminate the need for this restriction. With the elimination of the count law, the smaller shrimp which are now discarded could be landed for cannery use during the open season.

Summary

It is recommended that the size of the shrimp harvested be regulated by flexible season and that the mini-

imum count restrictions be withdrawn.

It is recommended that a flexible, closed Gulf shrimping season of not more than 60 days be set for a period in May, June and July and that the period and duration of this closure be based on each year's biological data. It is further recommended that all shrimp trawling operations be closed to the 20-fathom line during that period.

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Porkers with a Foreign Flavor

by CURTIS CARPENTER



date of the first Bandera Boar Hunt. Dozens of newsmen, photographers, ranchers and hunters gathered about 3:30 a.m. at the Lost Valley Resort Ranch just outside Bandera. Before the day had passed, there were hogs and dogs, wild boars and saddle sores.

From the Lost Valley Resort, the large group traveled by vehicle to Rudy Schott's ranch where a portion of the group would hunt the wild hogs. Others were to hunt on a neighboring ranch. Several ranchers and hands came with horses and dog packs to stir up an exciting time for hunters and photographers who had

the winding, rocky trails to hog land.

Our bones felt the frigid air as it raced over the cab and cut through the layers of warm clothing we were wearing. As the morning crept into breaking dawn, a heavy fog wrapped itself around the hills and muffled the echoes. A light dust floated up from the road and powdered our freshly oiled rifles. "It isn't the best morning for such a hunt," I thought. An expression on the face of a photographer piled up next to the cab told me he was thinking the same thing.

As it turned out, we were right. The dogs had trouble picking up



Although the dogs have him at bay, this hog isn't frightened.

BANDERA is a town where most people go to relax in one of many deluxe western resort ranches in the scenic area. The folks who live there call their town "Cowboy Capital of the World." But, it's also the home of the Bandera boar, better known as the wild Russian boar or European boar. The local citizens of Bandera County have declared war on this foreign aggressor, because of the hogs' bloodthirsty characteristics. These animals will tear into a flock of goats, catch up with one, rip it open from end to end with self-sharpened, razor-tipped tusks, and gorge themselves on the flesh. If one isn't enough, they'll catch another, and another until their tremendous appetites are satisfied. When they finally complete their brutal killing spree, goat is scattered for yards around and even splattered high in the trees.

Saturday, February 9, was the

driven in from all parts of Texas as well as from out of state.

Hunters were dropped off at strategic locations to await the porkers. Several areas had been baited with goat remains to attract the killer hogs. The guides were hoping their dogs could pick up fresh scent at the baits.

A deathly silence fell over the land, as if the wilds had expected us; everything crawled into holes or burrowed deep in the crevices and brush-smothered canyons. Only the whine of a motor in the distance, and an occasional bark from an anxious dog interrupted the soundless morning, as we traveled by jeep over

the scent and trailing. Not one hog was spotted. Nevertheless, it was an exciting day for most of the participants who were trying something entirely new.

As we moved slowly along, we saw on both sides of the road, ground rooted up in terrain which even a strong man with a sharp pick couldn't dent. The giant hogs had plowed through rock and concrete-like soil in search of nourishment.

The hogs aren't the easiest animals in the woods to hunt. They are smart, fast, fierce, and they make pretty nice trophies to hang on a den wall. Most of the sportsmen who have hunted them claim they are

about the most elusive animals in Texas.

Like most wild creatures, boars have no use for man. They keep out of his way, refusing to come around an area that even smells of men. Even baited areas are passed up by the porkers. Above the rank odor of decomposing flesh, the hogs can detect the unnatural scent of man, and they will skirt around the trap. The big hogs are as swift as race horses, as agile as cats and as long-winded as greyhounds.

A hunter can't go out just any day of the week and bag one. He may hunt as long as a week and never see one. Then again, he may go out the first day and stumble onto several. It depends a lot on the time of the year, the weather conditions and many other factors. Not everything is known about hunting wild boars in Texas. It's definitely a challenge.

To give the newsmen an idea of what happens when dogs and hogs

said it would take an outstanding pack of dogs to kill one of these critters.

As we bounced along the roads in our jeep, we spotted a couple of places where some granddaddy boar had rubbed its back against a tree in typical hog fashion. I could almost hear the big tusker as he rocked back and forth, grunting and groaning, pushing harder as pleasant sensations spread through his huge frame. The surprising discovery came when I measured the height of the rub. It was nearly waist high!

I asked around about the origin of the hogs in that area. Two stories prevail. Some say the hogs were released by a rancher in a neighboring county to mix with his domestic hogs. The pure-blooded European hogs escaped and rapidly increased in numbers. Quite a number of domestic hogs left their pens to roam the wilds. Today, everything from pure-

blooded to very mixed-blooded hogs can be found. The feral hogs are just as wild and blood thirsty as the imported boars.

Another story has it that a traveling wildlife show featured some of the big boars. The show closed, a rancher bought the hogs and they escaped or were released; over the years they have mixed with feral hogs, until today hundreds of them roam the woods.

When the dust of that first hunt settled and the noises of it ceased, many lessons had been learned. The Frontier News and Bandera Chamber of Commerce already were planning another hunt for next year. Between now and that time, many persons probably will journey to the ranches to enjoy a try at the boars. Some of these will get their hogs and be glad they tried. Others will go home wondering what happened!

♦♦

With dogs in pursuit, the boar is a dark streak in the woods.



come face to face, a couple of small wild boars were released in a draw near the picnic area. The show which followed proved to be worth all the time and trouble it cost the participants during the hunt.

Photographers and newsmen lined the banks of the draw, until the trees appeared decorated with human ornaments. The hogs were released at the head of the draw, and they led the dogs down the creek bed as cameras snapped and hound men yelled encouragement to their dogs. It was difficult to get a picture without getting one or two photographers in the background.

Rudy Schott, back at the ranch, had described the hogs with one word, tough. No doubt about it! He

Dogs jump their target as dust swirls.



Rudolph Schott shows three Russian boars he downed on his ranch in Medina Lake area.



ALL SPRING youngsters of the animal world touch the heart of man, but fawns, perhaps, evoke the warmest feeling, for their sleek dappled bodies and gentle brown eyes symbolize the innocent freshness of spring and summer.

Fawns of Texas' two species, whitetail and mule deer, are born after a seven-month gestation period. The time of fawning, however, varies widely with the area and the species. In coastal areas whitetail babies may arrive as early as April; in the Edwards Plateau, June and in the "brush country," July. Mule deer fawns in the Trans-Pecos and parts of the High Plains are born in June, July and August.

At birth fawns have bodies about the size of a half-grown house cat

bobcats and other predators should these enemies spot them. Fortunately the little creatures are protected by nature in two ways. The spotted coat easily slips into non-identity in a setting of sunlight and shadow patches. The other protective measure is the absence of the characteristic deer odor.

During the period of hideaway, the mothers come to their offspring at intervals during the day to allow the protected cast-aways 10-minute nursing periods.

Persons on spring and summer picnics and hikes sometimes find carefully stowed-away fawns. Immediately, they lose their hearts to the seemingly lost or abandoned animals and using this as rationale they sometimes take home the fawns for

When fawns have mastered some degree of endurance and maneuverability, they begin following their mothers in a normal deer day of quiet watchfulness and periodic foraging. Although deer graze primarily just after dawn and just before sunset, they occasionally leave their daytime beds for a daylight nibble. As the weeks pass, the youngsters join their mothers in herbivorous fare, supplementing a diet of milk.

Although fawns have been seen playing a lively variety of tag in goat-like manner, the occurrence is probably fairly uncommon. During the first three or four months of fawns' lives, doe and offspring are semi-isolated from other families since does, especially whitetails, have a small domain in which they rear their young.

Deer have much to learn in their youth. Doubtless, some deer wisdom is a gift of instinct; other, a derivation from association with adults. Whatever the origin, the lessons vary with the locality. For example, deer in East Texas' Big Thicket must know the best methods of eluding man and predator in their own particular brambled environment, which presents different problems from those arising in the Edwards Plateau and Trans-Pecos areas.

But, the deer significance of a white flag is one lesson the whitetail youngster learns quickly—probably by instinct since a very young fawn can both give and comprehend the signal. When a doe raises her tail, making the white underpart and underpatch a visible flag, her fawn knows she has said, "Danger!" And, the little one is ready to follow in the hoofprints of its fleet mother.

By the end of summer, fawns have been weaned and have lost their sign of fawnhood—the helpful spots. They are ready to take care of themselves in the fall during rut when they will be dissociated from the adults. Occasionally, a young doe, only a gangling fawn a few months before, mates and bears young the following spring. In other cases, the young ones return to their mothers after the mating season and live with them for a few more months until full adult interests and responsibilities claim them. **

Beguiling Babies

by ANN STREETMAN



with disproportionately long legs. They can stumble around a few hours after birth, but such efforts are amusing. Getting four gangling limbs to function properly is too much for hours-old fawns.

Usually, however, only the doting mothers know of their offsprings' terrible trials, for they wisely keep the little ones hidden for the first few days. Whitetail does hide their babies for 10 days or two weeks; mule deer, up to a week or 10 days.

This hiding period is the most precarious of fawns' lives. At this time, weakness and lack of limb coordination make them vulnerable to owls,

pets. Such action is unwise on two counts. First, fawns found in this way, except under extraordinary circumstances, have not been abandoned or orphaned. In fact, does probably are watching the whole scene nearby. Hence, there actually is no humane reason for removing the animals from their environment. Second, the docile fawns of April and June soon become large bucks and does with an ever present potential of crippling or maiming fond owners. Every year many persons are injured by deer that should be, by law and common sense, in woodlands instead of back yards.

Synopsis for '62

by CURTIS CARPENTER

LAST YEAR, we sent out a questionnaire in this magazine and most of the newspapers across the state. From the replies to it, we learned a great deal about the success of hunters, average age of most hunters, calibre of rifle used and many other interesting and significant facts about Texas hunters. This year hunters were contacted only through the newspapers. Once again we learned many interesting facts. On this page most of the information gathered and compiled is presented for the benefit of you, the readers. We hope it will be helpful as well as interesting. The first 487 replies were used in this report.

Hunters were divided into five age groups: under 12, 12-20 years, 20-35 years, 35-50 years and over 50. When the first 252 replies were compiled, the 20-35 age group ran slightly ahead of the other groups. After the 487 were counted, the 35-50 age group tied the 20-35 group with 146 hunters in each group. The over-50 group ran close behind with 98 hunters. It was surprising to learn that the 12-20 age group wasn't lagging too far behind with 61 hunters replying. Only 10 hunters replying were under 12. Female hunters were very much the minority this year with just 23 women reporting. Most of these were 35 or older.

It was surprising, also, to learn that just about as many of the hunters reporting hunted free as did those who paid. Of those checking fees for hunting, 214 hunted at no cost, 161 had season leases and 90 had day leases.

When totals were established, 289 deer were killed before the end of November, the first month of the hunt. And, 83 of them were taken on the first day of the hunt, November 16. Of all deer killed and reported on this project, 283 were bagged in the morning before noon. Of this number, 246 were taken before 10 a.m. Hunters in the report

took 202 deer after 12 noon, with 139 killed after 4 p.m.

The favorite calibre of those replying was the .30-06, with 145 hunters using it. Close behind at 94 were the .30-30 calibre hunters. The .308 was fourth at 26; fifth was the .270 with 22.

About 99 per cent of the hunters reported their deer were fat. Only a handful of the hunters reporting failed to kill their deer instantly. Most of the deer were hit in the neck, heart and lungs, according to the replies.

Most white-tailed bucks averaged more than 100 pounds while the does averaged about 65 pounds. Several nice bucks in the 125- to 170-pound class were reported. The largest whitetail, a 200-pounder, was taken in Bastrop County. The whitetail with the most points, 32, weighed 136 pounds dressed and was taken in Harris County, according to one reply. Numerous deer with 14 and 15 points were reported.

A few mule deer were reported. The largest mule deer, 240 pounds on the hoof, was killed in Pecos County. Another, dressing out at 200 pounds, was killed in Culberson County. The 240-pounder had 12 points.

The average hunter paid about \$100 for his share of a season lease, and about \$10 for day leases.

Reports this year told just about the same story as those sent in last year. However, several contrasts were noted. Out of the total 254 counties in the state, last year deer were reported killed in 138 of these. Kill reports this year included only 95 counties. This probably was caused by the great decrease in the number of questionnaires returned this year compared with last year.

Last year the reports indicated that more big deer were taken by women. This year it seems that the women killed the smallest animals. Husbands turning in their wives' re-

ports always killed bigger deer than the women.

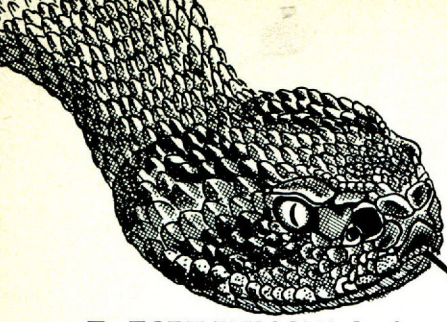
One interesting trend remained the same. Many hunters reported seeing other hunters losing, crippling and missing deer, but only a handful reported that they missed or crippled deer. Most reporting hunters dropped the deer in their tracks.

Keeping in tune with last year's reports, many hunters complained about the prices while many others felt that the prices were fair. The most frequent complaint was that some of the hunters suspected they were paying for deer by the head and according to the sex. One hunter didn't think it fair for a father to kill his deer and then take his infant sons out, getting deer for them using exempt licenses. A few lease hunters criticized the hunters on neighboring leases for walking fence lines and shooting deer over the fence and dragging the carcasses under the fence.

The tone of the hunt according to the reports was primarily quite satisfactory. Texans had a good hunt, the deer were in good shape, the majority were well pleased and all are ready to go again next season. **



Fred Dennis kneels by his eight-point buck killed in special archery season at Possum Kingdom Lake. He took the animal from 15 yards.



Reptilian Lineup

by JOHN E. WERLER

MORE PERSONS die from snake bite in Texas than in any other state of the nation. This startling fact should encourage every Texan to obtain a working knowledge of first aid treatment for snake bite as well as learn how to prevent a bite. This necessitates a person's knowing where to expect poisonous snakes, how to avoid them and how to identify on sight the venomous kinds in the region where he lives.

If a poisonous snake is discovered close by, the best protection is to remain as still as possible until the snake has moved away. A snake is quick to strike at a moving object, so to quickly step away may be disastrous. If a rattlesnake is heard nearby but cannot be located, do not begin a wild dash for safety. Location of the snake may be misjudged and by taking a step you are likely to walk into, rather than away from it. Again, remain still until the snake is sighted and, when it is certain the snake is at least five or six feet away and no others are nearby, slowly back away. If you must move away, do so as slowly as possible.

To bite, a snake does not have to strike from a coil. If picked up near the head, it may simply turn, open its mouth and bite the hand. Water moccasins *can* bite under water.

In spite of the small percentage of poisonous kinds of snakes in the state, it must be made clear that no one general rule can be used safely to identify all of them at a glance. Even the characteristic rattle is not always present to identify a rattlesnake.

THE PIT VIPER

Our poisonous Texas snakes belong to two families—the *Viperidae* crotalinae (pit vipers) and the elapidae (cobra-like snakes). The pit vipers, which include rattlesnakes, copperheads and cottonmouths, possess an opening on either side of the head, between the eye and the nostril. With these heat-sensitive pits, the snake can locate warm-blooded prey in the dark and make a direct hit upon a victim it cannot see. Pit vipers also have elliptical eye pupils, somewhat triangular-shaped heads and long movable fangs in the front of the upper jaw.

THE ELAPID SNAKES

The single representative of *Elapidae* in Texas is the coral snake, small, slender and brightly colored with rings of red, yellow and black. The head is small and rounded and eye pupils are circular. Its venom-conducting fangs, in the front of the upper jaw, are small and permanently erect; consequently, some chewing is required before the snake can inject its poison with certainty. As if to make up for its poor biting equipment, the coral snake possesses a venom of high toxicity, a venom much more potent than that of the pit vipers which are so well adapted for injecting their poison

quickly and deeply. Because this poison produces scarcely any severe local symptoms, the danger from a bite may be overlooked and treatment delayed. Although pain is present, the usual dramatic symptoms of snake poisoning, such as extensive discoloration and great swelling at the site of bite, are scarcely noticeable. This absence of conclusive symptoms may lead the victim to believe he has been bitten by a harmless snake. In all coral snake bites, prompt action is necessary.

Although there are several harmless snakes with the same colors—red, yellow and black—that may be confused with the coral, the coral may be distinguished by the fact that the yellow and red rings touch in the deadly snake; whereas, they are separated by black in the harmless mimics.

VENOMS

Generally speaking, SNAKE venoms are divided into two broad categories, neurotoxic and hemorrhagic, depending on their destructive actions. Neurotoxic poison is characteristic of cobras and coral snakes and produces considerable pain but little or no swelling and discoloration at the bite. Death from this type of poison is the result of respiratory failure and is preceded by such symptoms as headache, muscular weakness, lethargy and facial paralysis with accompanying difficulty in speech.

Hemorrhagic venom, on the other hand, affects primarily the blood cells and vessels. Local reaction is evident soon after injection of the venom and consists of pain, discoloration and swelling at the bite location. All these symptoms gradually become more extensive. Weakness, nausea, vomiting and—occasionally—diarrhea may follow in a few hours. In many cases of snake bite, shock is present. Although every snake's venom contains both the neurotoxic and hemorrhagic elements, the proportion of these components varies with each kind of poisonous snake.

FIRST AID KIT

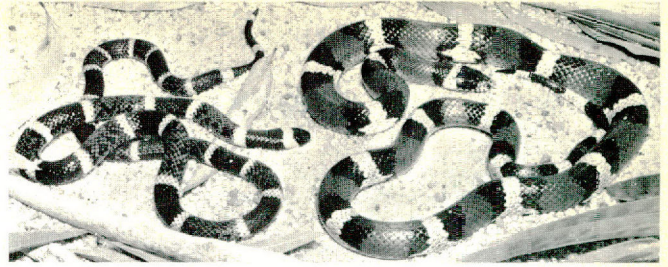
Equipment necessary for first aid treatment of snake bite includes a sharp cutting instrument such as a razor blade or sharp knife for making incisions, a constricting band to retard the flow of lymph, iodine or alcohol for sterilizing the knife and bitten area and a suction device for removing the venom-contaminated lymph. This last item is especially important if you are alone and cannot reach the wound to apply suction by mouth.

Snake bite kits containing the essential items can be purchased at most drug or sporting goods stores at a cost of from two to five dollars, depending upon the make. Anyone who spends much time outdoors should

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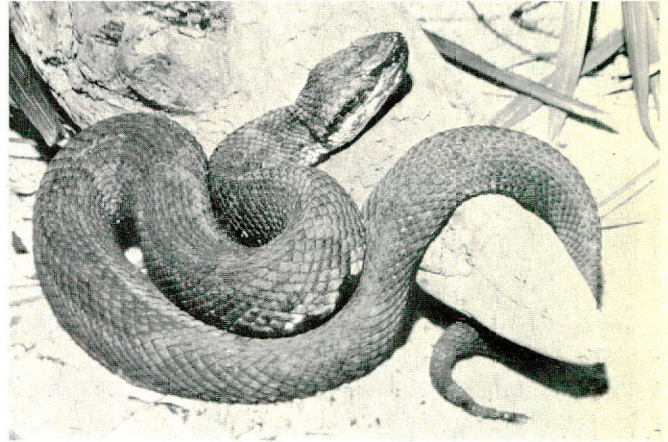
Northern Copperhead



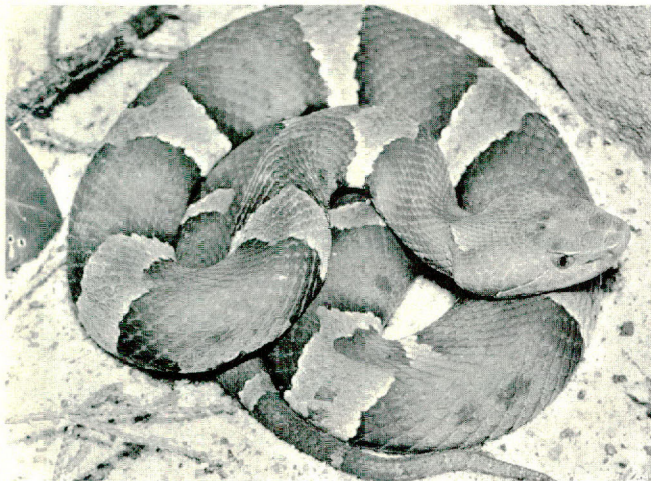
Texas Coral Snake (left)



Broadbanded Copperhead



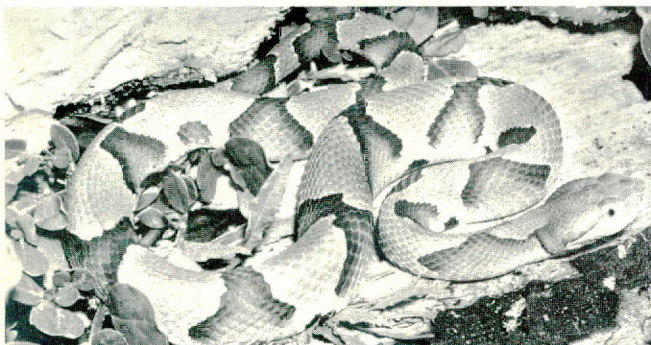
Western Cottonmouth



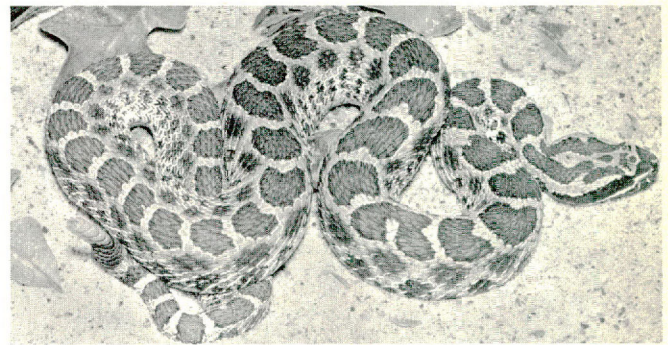
Trans-Pecos Copperhead



Western Pigmy Rattlesnake



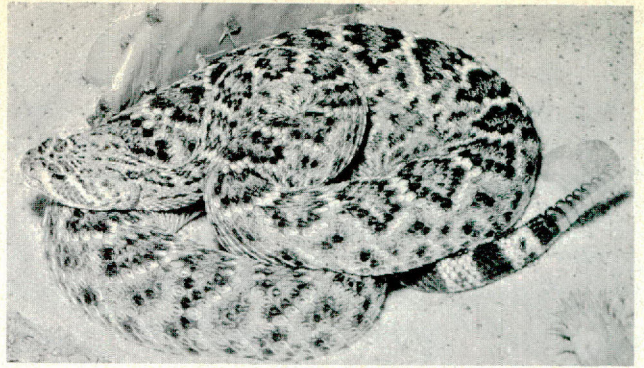
Southern Copperhead



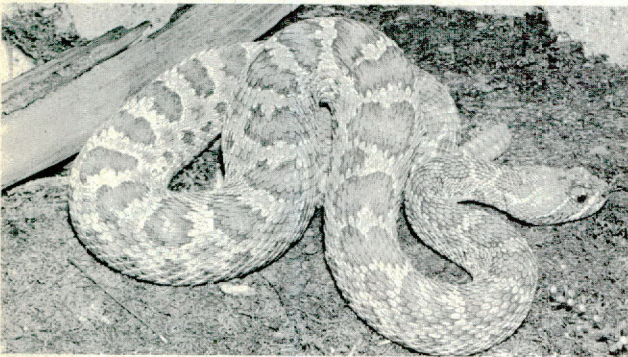
Western Massasauga



Banded Rock Rattlesnake



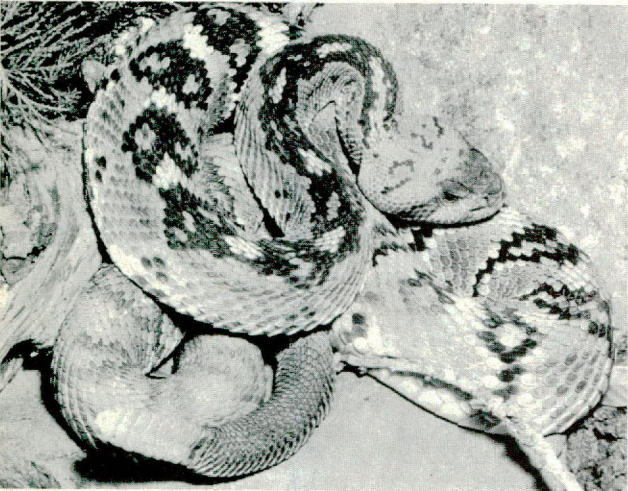
Western Diamondback Rattlesnake



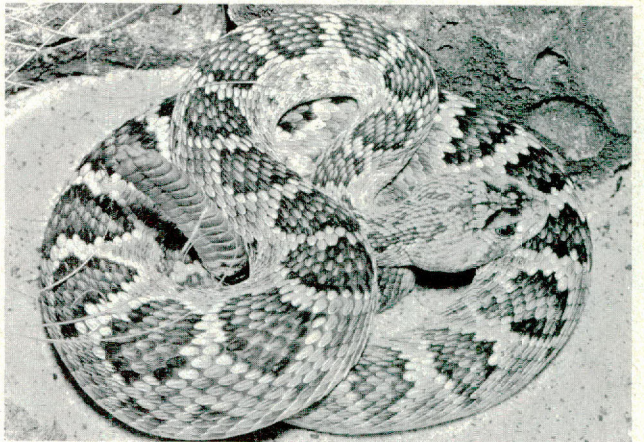
Prairie Rattlesnake



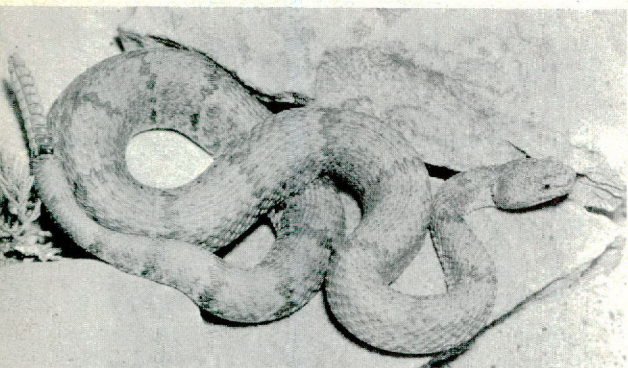
Timber Rattlesnake



Blacktailed Rattlesnake



Mojave Rattlesnake



Mottled Rock Rattlesnake



Canebrake Rattlesnake

carry a snake bite kit at all times, and he should know how to use it. A small kit can be easily carried and is unlikely to be left at home or in the car.

DIAGNOSING THE BITE

To make certain that a poisonous snake has caused the bite, first examine the wound for teeth marks. In a perfect bite by a poisonous snake (excluding the coral snake), the pattern will reveal two distinctly larger holes where the fangs have entered the flesh. There also may be two rows of smaller teeth marks between these punctures.

Furthermore, if the snake engages the lower jaw, two additional rows of small teeth impressions will be seen below the first group.

Frequently the bite pattern is not clear. For example, if the snake pulls to one side as it disengages the fangs after a strike, the result is a series of scratch marks instead of punctures. There is also the possibility that the snake will engage only a single fang; or, perhaps, during fang replacement, two fangs are temporarily in position on one or both sides of the upper jaw. Any of these conditions, as well as others, can contribute to an obscure bite pattern.

The bite of a coral snake often is difficult to diagnose by examination of the wound. Because this snake imbeds its fangs in a sort of chewing motion, the pattern created by its bite may be two groups of closely spaced punctures where the fangs have entered the flesh a number of different times.

A clearly defined harmless snake bite pattern consists of a series of uniformly small punctures (four rows made by teeth in the upper jaw, two rows by teeth in the lower), but always without the large fang holes. More typically, a non-poisonous bite produces several rows of scratches.

Pit-viper poisoning is diagnosed primarily by the presence of *local* signs and symptoms. The most important of these are:

1. *Pain* accompanies most poisonous snake bites. Generally intense and burning, it becomes more severe with time. This symptom alone is not conclusive because pain can be imagined following a non-poisonous bite. Occasionally in a severe bite, the pain is replaced by numbness and tingling.
2. *Swelling* at the bite area is present in every case of poisoning. It will appear within five to 30 minutes. In a severe case, the swelling may continue to spread for 24 hours. There will be no swelling from a bite by a non-poisonous snake or by a poisonous snake that injected no venom.
3. *Discoloration*, reddish or bruise-like, begins around the fang punctures within a half hour and becomes gradually more extensive.

Intense local pain is symptomatic of coral snake poisoning but, unlike in pit-viper poisoning, swelling and discoloration are not pronounced. Diagnosis of coral snake envenomation is difficult and must be based primarily on systemic symptoms: headaches, weakness, lethargy and facial paralysis.

SEVERITY OF THE BITE

Even after the bite has been diagnosed as venomous,

it is not immediately possible to predict the course it will follow. The severity of each case of snake poisoning is determined by the speed with which symptoms progress. Although the bite of a large snake is generally more serious than one caused by a small one, the seriousness of a bite cannot be gauged by snake size alone. Some variable factors that affect the severity of each case include:

1. Age, size and health of the victim
2. His allergy complex and sensitivity to protein poisoning
3. His emotional condition immediately after having been bitten
4. Location of bite on the victim
5. Amount of fang penetration and venom injection
6. Number of times the victim was bitten
7. Kind and size of snake that bit him
8. Whether the snake recently had eaten
9. Condition of the snake's fangs
10. How soon treatment was administered

FIRST AID TREATMENT

It is important that every snake bite victim receive first aid treatment as soon as possible. The patient must not exert himself by running, because increased circulation brought on by such physical activity will speed up absorption of the poison. For the same reason, the use of whiskey or other stimulants should be avoided.

The victim's state of mind is important; he must promptly be convinced that his chances for recovery are good—and, indeed, they are. He should not be terrified by the thought that every snake bite means certain death. Actually, a survey of case histories shows that with prompt and proper treatment, only about one or two per cent of all snake bites in this country are fatal.

There is a considerable difference of opinion about the correct first aid treatment for poisonous snake bite. The Division of Medical Sciences of the National Research Council, a section of the National Academy of Sciences, recently made a study to determine the most effective method of such treatment. It recommended immobilization of the bitten limb, application of a constricting band and prompt incision and suction.

Based on these recommendations, the following first aid treatment for poisonous snake bite is suggested:

1. **IMMOBILIZE THE AFFECTED ARM OR LEG** whenever possible. Where this is not practicable, keep movement of the bitten limb to a minimum. Muscular activity helps increase the spread of venom. Whenever feasible, transport the victim by litter to further medical aid.
2. **APPLY A CONSTRICTING BAND** from two to four inches above the bite, between the wound and the heart. This will help to limit the spread of venom until it can be removed by incision and suction or neutralized by antivenin. A piece of rubber tubing or a strap tourniquet, included with every snake bite kit, is best for this purpose. When these are not available, items of clothing may be used. A shoe lace, neckerchief or a strip of cloth-

• Continued on Page 27



Pest at a Premium

by ED HOLDER
Port Arthur News

MOST TEXANS never thought they'd see the day that someone would complain about the poor supply of nutria. But, that day has arrived.

Nutria are now scarce in most sections of the upper Gulf Coast marsh land—an area which held untold thousands only three years ago.

At that time, when they were so abundant, every effort was being made to control the nutria which were originally imported from South America to control weeds and reeds. They were being shot, poisoned and trapped.

But, as one man said, "The more I shot, the more there seemed to be."

Thousands upon thousands fell before shotgun and rifle. It was common for a group of sportsmen to take a Sunday afternoon hunt and kill several hundred nutria. Accurate numbers were seldom kept because hunters soon tired of counting.

Land owners and sportsmen were ready to push the proverbial panic button. Nutria were denuding the marsh of much of its desirable vegetation. They were burrowing into rice field and reservoir levees, causing serious damage. They were eating rice, which resulted in large monetary losses to farmers.

The Fish and Wildlife Service sent in teams of experts to conduct poisoning studies in an effort to find a way to rid the marsh land of the gnawing menace.

These efforts were even more futile than those of the sportsmen and



With characteristic rodent incisors, the nutria, imported from South America, can cut through thick stalks, including sugar beet.

their guns. Poisons were found that would do the job all right, but no method could be found to keep other animals including birds from getting the same poison.

Trapping also proved to be ineffective. Trappers simply couldn't handle enough traps to cut into the expanding nutria population.

But all that was before Hurricane Carla came along.

She was the enforcer—the killer—the answer that everyone had been seeking. When Carla sent the Gulf spreading over the marsh land in September, 1961, a method of control was finally discovered—no matter how undesirable and unavoidable it proved to be. When the Gulf receded, thousands of nutria were found dead in the marsh and along the bank of the intracoastal canal where their bodies were deposited by waves. Early estimates put the overall kill at about 50 per cent of the nutria population. But that was far too low. The figure was probably closer to 90 per cent.

The Carla destruction was the beginning of a new chapter in the story of the nutria along the upper Gulf Coast. The next chapter was soon written, however.

Just before the Hurricane blew in, a market for the animals had been found. Someone learned that the carcasses of the nutria made good mink

food. The pelts, if skinned and dried properly, brought a fair price.

After Hurricane Carla, this market became even better. The price on the carcass crept slowly upward, and the price on the furs also rose. The nutria meat price rose because better systems of handling it had been found. The market for the meat had been solidified. The price went from three cents a pound to the current six cents a pound.

Cause of the rise in fur prices could be traced to several things. For one, there were fewer nutria. They traveled less in searching for food, which resulted in less wear on the valuable stomach area of the pelt.

Because of the decreased population, nutria fought less, which resulted in more undamaged pelts. Then, too, trappers and handlers learned better ways to skin nutria and keep pelts in better condition for buyers. Cold winters probably helped to produce thicker pelts, too.

The price on the pelts went from less than a dollar to an average of \$1.75 for top pelts on last year's market. Finally, the price climbed to an average of about \$2.40 for Number One pelts this year. Some select pelts have even brought as much as \$2.75 this season.

One upper Gulf Coast area buyer, W. J. Pinell, was paying a record 75 cents for each adult nutria brought to him. The price was 50 cents last fall. He skins the animals, then sells the pelts and carcasses. Pinell processed about 3,000 nutria last season. At the end of February he had processed only slightly more than 2,000, with only a month to go. The season ended about March 31. He was hoping, however, to finish the year close to last year's figure.

"We have had far fewer nutria in the Sabine area this year than we had last year. If it weren't for the nutria I was getting from over around Winnie, I wouldn't have had nearly as many this year," Pinell said.

Rob Bailey who has also been trapping nutria for the past two years agrees with Pinell. As an example, Bailey averaged catching only about 10 nutria a day this season, with perhaps 15 on a good day. Last year, there were several days when he brought in as many as 45.

For men like Bailey and Pinell—and several others in the area—nutria made a big difference in their income this winter. They trapped muskrat in years past, but this year there weren't enough muskrats to make a trap line pay off. The nutria, then, has filled the gap.

This increased pressure on the nutria by hunters and trappers—pressure exerted on a nutria population that was already low because of the hurricane—has been one of the main reasons for the low number of nutria now found in the area. But, it hasn't been the sole reason. A long drouth helped during the past summer. And a severe cold spell last year is suspected of killing some young nutria. The fact that the first influx of nutria removed much of the desirable vegetation from the marsh also has been a factor that has kept the nutria from making a comeback since Carla.

So, it's easy to see that there have been several factors influencing the nutria population during the past two years.

It was Pinell who said that he wished there were more nutria now than there are. "I wouldn't want them to be as thick as they were a few years ago, but I would like to see more of them than there are now," he said.

Some others probably feel the same way, but the average sportsman of the area couldn't be included.

In fact, if you ask sportsmen, the most common reply you'll get is, "Good riddance." ❄️



W. J. Pinell and son, James, stand before drying racks holding more than one hundred nutria pelts basking in sun.

Aquatic Rotation

by HART STILWELL

TO THE TUNE of \$100,000 in cash, the Brazos River Club is carrying out one of the most interesting lake rebuilding programs attempted in Texas.

It might serve as a pilot operation pointing to similar developments in other parts of Texas, including some lakes open to the public.

And it is a foregone conclusion that the time is not far off when public waters will have to be "managed" by the Texas Game and Fish Commission just about the way private waters are now managed, if the public is to continue having good fishing.

That is, Texans are going to have to spend a whale of a lot more money on public lakes to guarantee good fishing.

When the Brazos River Club program is finished, the Club will be able to carry out a lake rotation program in much the same way that a ranchman alternately rests and uses his pastures. He divides a big pasture with fences and rests parts of it while letting cattle graze in other parts.

The Club will be able to rest one lake while permitting fishing in a second lake that is "brand new" and a third lake that may be showing signs of age.

While all this is going on, half of the entire lake will remain untouched—a "control" lake as scientists say in carrying out certain experiments.

I've watched closely the Brazos River Club program under the guidance of Henry Beal, Houston oil well machinery specialist and president of the Club.

In fact, I've watched the lake "die"—that is, the 500-acre part of it that has been drained and cleared of a tremendous mass of dead trees and stremounds and logs and other junk.

Watching a lake die is not a pleas-

ant undertaking. In addition to a feeling of sadness at the sight of big bass fighting hopelessly for oxygen they can't get, there is a feeling of nausea from the overwhelming stink of millions of dead fish.

The Brazos River Club lake is located on that river between the towns of Angleton and West Columbia. The lake covers 1100 acres, and it was built eight years ago by throwing up levees around a chunk of lowland and pumping in water from the river.

The original lake was divided by a levee, the so-called front lake consisting of 500 acres and the back lake, 600.

This lake followed the pattern of most of the other man-made lakes that cover the map in the coastal area of Texas.

Fishing was fantastic in the early days, as it was in the Dow reservoirs and the Tennessee Gas Company lake and others. I've had some spectacular fishing in the Brazos River Club lake with Cleve Moses, a long-time fishing companion of mine and a member of the club.

The fishing remained good long after the trees died. And for some reason the bass were always good to eat, in contrast to the situation in some other lakes, particularly the first Dow Reservoir. When fishing was at its best there, when bass would compete for the privilege of getting hooked, the fish were not good to eat because of the tannic acid from decaying tree bark. Oils from some of the blue-green algae also can impart muddy or woody odors into the skin and flesh of fishes.

Fishing held up fairly well in the Brazos River Club lake until about a year ago. Then it started fading fast.

Soon after Hurricane Carla it faded out almost entirely, mainly because the water got muddy and remained that way. Whether Carla was a factor in that change is not known. Certainly nutria were, for they cleaned out everything that might act as a windbreak.

The Club members held conferences with fish management men of the Game and Fish Commission and decided on a program that Commis-



This mess is a sample of the big ones taken during the "youth" of Brazos River Club Lake.

sion biologists recommended. Commission personnel explained that if the club were to do some levee repairing it should dispose of some of the dead trees and eliminate the standing fish population and time work so the lake would be full of water and ready to receive hatchery fish in April and May 1963.

Cuts in the levees dividing the lake were plugged, and the 500-acre front lake was drained. As the water level was lowered until there was no water left except in the narrow pits along the levees, all the surviving fish crowded into those little ditches.

Club members worked heroically, even calling in commercial fishermen, to save all the game fish they could, moving them to the back lake.



They moved fish in rather odd ways. Some were actually caught in dip nets, a few were taken on lures, using barbless hooks and a fair number were caught by the goony proce-

dure of simply running a boat along the narrow ditch and banging on the bottom of the boat with a pole.

That caused bass to start jumping and plenty jumped into the boat. Beal took me out and gave me a demonstration.

But the number saved was small compared to what died—millions of fish, if you count them all, minnows, shad, etc.

One of the strange sights during that period was that of thousands of crayfish crowding together, some just resting on a bank or a log, slowly waving their claws, some eating on rotting fish.

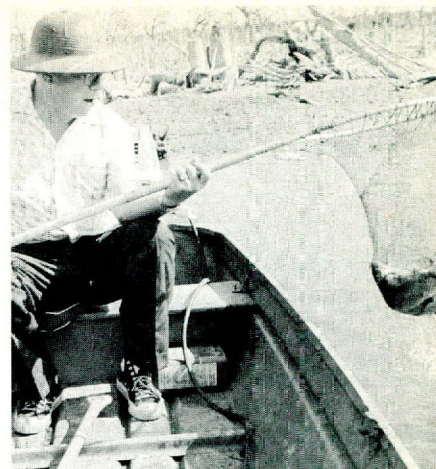
Nobody seems to know what percentage of the crayfish survived. Maybe there is plenty of seed left.

Then came the new program, that of rebuilding so that this 500-acre lake can be handled the way a cattleman handles a pasture—rotating the fishing.

Two levees were constructed paralleling the levee that divides the entire lake. Each of the three new lakes thus created has drain pipes.

So after the entire new lake has been fished for a year or two and is showing signs of growing old, one of the three smaller lakes within it will be drained and given a rest period. It will be planted to millet, just as the entire 500 acres were originally cleared and planted to millet, on the advice of aquatic biologists.

The front lake is filled again, awaiting all the bass that members can catch out of the back lake in addition to the proper number of small



During draining, Henry Beal dips some fish.

bass and channel cats and whatever other fish biologists recommend.

This will include some prey fish for bass—but definitely *not* bluegills, for many a good man-made lake in Texas was messed up during the years that the old bluegill-bass theory was riding high. Biologists finally found out that the bluegills not only starved out small bass but proceeded to starve out and stunt their fellow bluegills.

I asked Beal if he would miss all those old dead trees and exposed stumps to cast at, for in bass fishing most anglers love to cast at something they can see above water.

“We’ll have deep ditches running along each side of the new levees, and, of course, along the old levees,” he said. “There will be plenty of shoreline to cast at, and the fish will frequently congregate in those deep ditches.

“Then, of course, the moss will grow back, and we can cast at the edge of mossbeds. There will be something to cast at, all right. And, for improvement, there will be *fish* to cast at.”

So after things get leveled off, at all times there will be within the front new lake one lake resting, one just getting its growth and one moving toward old age.

And, there will be the back 600-acre lake remaining untouched, filled with stumps and logs and the still-standing skeletons of once big trees.

If, however, the back lake remains as it is now, offering very poor fishing, eventually it will be given the treatment now being given the front lake. **



Thousands of crayfish search for a home as a portion of the Brazos River Club Lake drains.

OF ALL the pets I've owned, it was unique. It was given to me after leaving serrated tooth prints on six successive thumbs of the same number of persons. A biologist, its last owner, who was aware of the company I keep, namely animals, deposited the lizard on my desk.

I'd never seen such a critter. We gazed at each other. It glared; I stared. The lizard's tan scaly length was speckled with brown, much like the pattern of a diamondback rattler. Its regenerated tail was a stumpy shadow of its former length. The reptile's eyes, tan also, shone defiance. It resembled a miniature alligator, or cayman of South America.

My close inspection caused the lizard to flip out its tongue to taste my scent. The organ was forked and cobalt blue. The reptile made no attempt to run away, which emphasized the absurdity of the heavy cord knotted around its neck. Having completed its evaluation of me, it slowly stepped under a fold of paper and arranged all 10 inches of itself into a tidy coil, with only its head visible. One eye closed in sleep; the other kept an attentive account of the surroundings. The eyes were disconcerting; they worked independently. One could scan the sky while the other focused on ground level, both alert to possible delicacies or dangers. A biologist in the office settled a burning question; an examination proved the lizard was a she.

I took her to the office for a week, not knowing where to keep her in my apartment. She rode in my pocket without protest. We'd come to an agreement about that cord. She'd ride unleashed in my pocket if her snout and one eye were allowed to peer out. At one time or another, nearly every secretary in the office discovered Cayman coiled in or around her typewriter. After a while, the shock value of the lizard wore thin and I had to decide what to do with her.

What did she eat? How would I keep her? Little is known of *Gerhonorhynchus liocephalus infernalis* but this just sparked my curiosity. The food problem was a big one. I tried to force-feed her hamburger once, but the indignant lizard bit me. This stern act of discipline taught me to

Something in Scales

by NANCY MCGOWAN

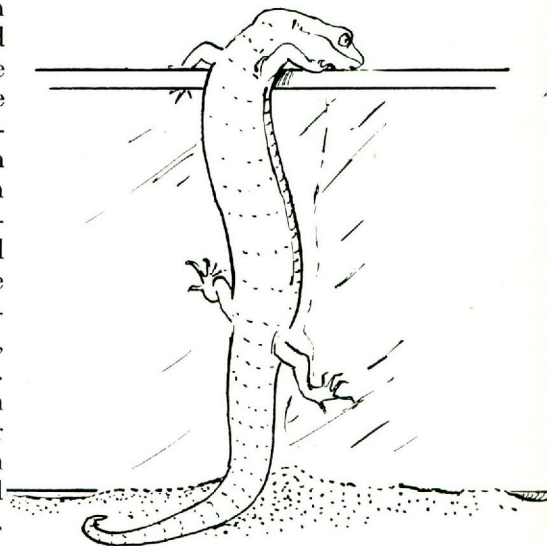
handle her gently and with respect.

The last day I took her to the office, the food problem was solved. Bob, our photographer, came in gripping a robust specimen of the roach population. The struggling insect had been temporarily stunned by the photographer's heavy shoe. He waved it enticingly in front of Cayman's mouth. She suffered this with no change of expression. Bob had an idea. He turned to Curtis, the present editor. "You hold the lizard and pry her mouth open, and I'll shove the roach in." Curtis held her as directed and levered her jaws apart, while Bob aimed the angry roach. There was a sudden flurry of action with yells from Curtis and laughter from Bob plus a *plonk* as Cayman hit the floor. The roach protruded from the side of Cayman's mouth. Curtis nursed a bleeding finger bearing Cayman's dental formula. Bob left in hope of catching another roach. The lizard gulped down the roach and licked her lips clean in the manner of a dog.

For exercise, she had the run of my apartment during the day. She enjoyed this since her tank was only two inches more than her length. She had favorite hidey-holes around the room and was seldom hard to find. A dusty, dark runway behind a cabinet was where I usually found her. Cayman wouldn't move until I picked her up; then she exhibited surprise that her camouflage hadn't worked. Maybe the lizard was too colorblind to notice her color wouldn't blend with the bright green floor. Sometimes Cayman would feel adventurous; I'd finally spot her on the curtain rod 10 feet up, dispassionately observing my frantic searching. Sharp claws lent her the ability to climb window screens and curtains—anything rough.

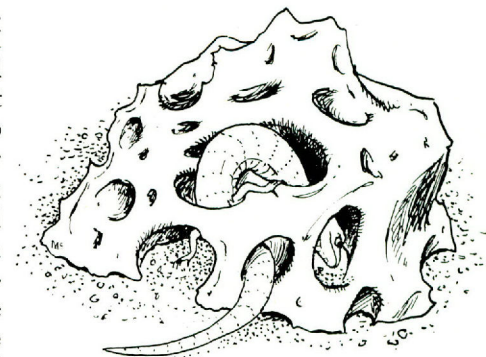
Her original tail, twice her length, had been broken off in some crisis, and I always hoped the abbreviated stump would grow to its former glory. She didn't seem to miss it. The

second tail was muscular and almost prehensile. By using it as a prop, kangaroo fashion, she made many an escape from the small tank. She be-

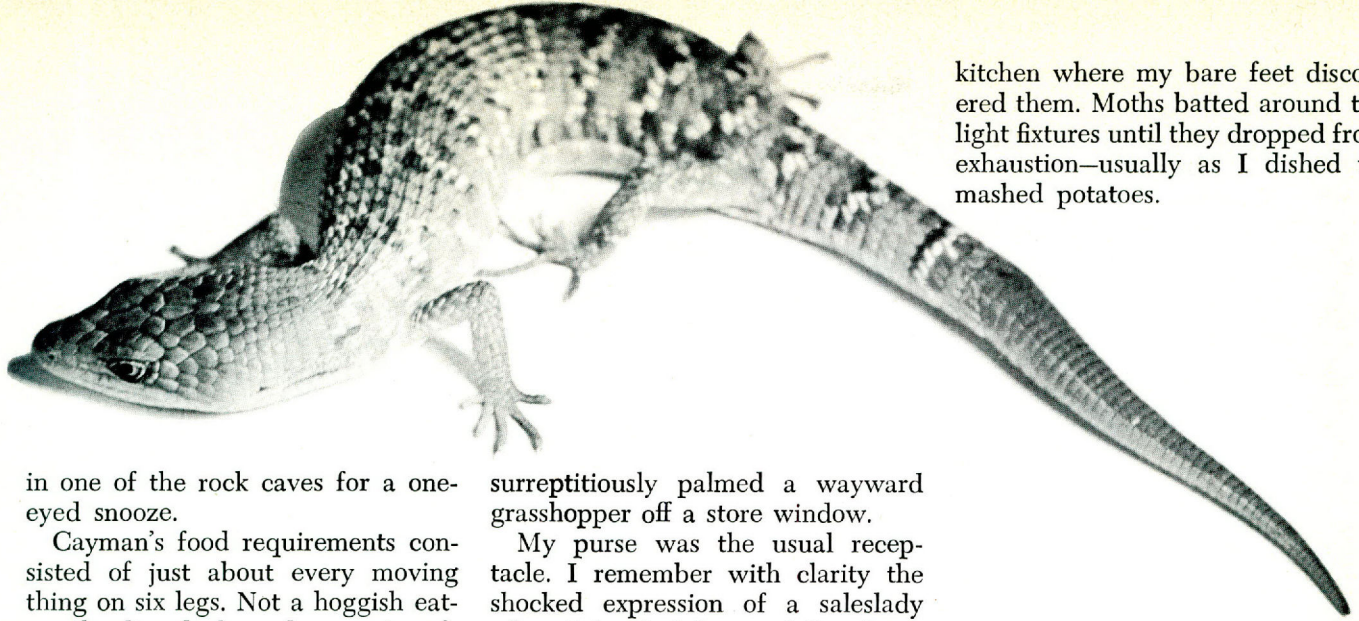


came so adept at getaways that I was forced to buy her a palatial 15-gallon aquarium. Even the furnishings were regal. A sun deck in the form of a twisted branch of driftwood arose from a clean lawn of tan sand which terminated in black loam at the far end. A many-roomed honeycomb rock graced one side.

Cayman toured her new home with alacrity. Her body formed incredible curves and loops, as she inspected



the holes of the rock. She rooted eagerly in the dirt, blackening her snout. Up on the driftwood, she draped herself in a dozen experimental positions. She poured herself off the limb and curled up wearily



kitchen where my bare feet discovered them. Moths batted around the light fixtures until they dropped from exhaustion—usually as I dished up mashed potatoes.

in one of the rock caves for a one-eyed snooze.

Cayman's food requirements consisted of just about every moving thing on six legs. Not a hoggish eater, the lizard showed an epicure's taste toward insects offered her. Psnickety is a better word. When North winds blew, she liked June bugs; grubworms were most delectable during drouth months; crickets were prized in the icy bleakness of late winter. In short, any scarce insect exactly suited her palate, although she often had to condescend to lesser delicacies which were available.

Two kinds of insects Cayman would snap up any time were moths and roaches. The local laundromat was a convention area for moths at night, and I regularly bug-hunted there. The customers either stared warily or forsook the premises entirely. I suppose it did look a bit frightening—maybe the moths I stalked weren't visible to the people present.

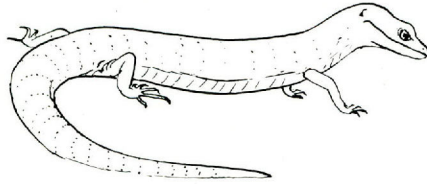
Joining her back and stomach was a line of loose skin dotted with tiny scales. This acted as an expansion joint which allowed her to feast until the seam was taut. She became electrified with excitement whenever I gave her a roach. This insect repulses me so she didn't get this treat often. Roaches may have been her natural food. Or perhaps she remembered the one she ate, thumb-flavored and hoped the next roach would taste the same.

Gardening acquaintances contributed pounds of grubworms during the summer. Sympathetic and long-suffering friends helped to collect bugs under street lights. Downtown, my companions looked the other way or pretended not to know me as I

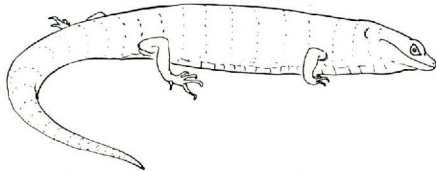
surreptitiously palmed a wayward grasshopper off a store window.

My purse was the usual receptacle. I remember with clarity the shocked expression of a saleslady when I handed her a dollar for a purchase. Clutching precariously to one corner of the bill was a June bug.

Actually, Cayman didn't need regular meals. I purposely alternated periods of fast with feast, to approximate her life in the wild. She was disinterested in food during cold spells of the winter. Once she placidly endured a 12-week fast. When her ribs stood out plainly, I couldn't put



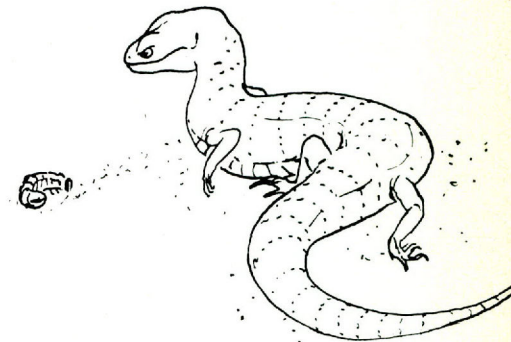
off feeding another day. I scoured the neighborhood for insect groceries and ended up buying a carton of meal worms from a bait store. She ate with zest, tidily running her blue tongue around her lips after each one. The sixty-first and sixty-second worms went down more slowly than the preceding ones. Cayman stared at the sixty-third, nudged it and de-



cided she'd had enough. I kept a supply handy in the refrigerator for the next time there was a dearth of insects.

Escaped insects were a bother. Crickets grouped up in my bedroom and sang a piercing chorus with unrelenting intensity. Grubworms invariably inched their way into the

Watching my lizard eat was not the least bit nauseating; on the contrary, it was spellbinding. She was not messy or cruel. Cayman's jaws could snap as quickly as a mousetrap or close as gently as a soap bubble landing. Once she had captured her prey, she maneuvered it with lips and tongue so as to swallow it head first. While her outer lips were pliable, her teeth were rigid; they pointed the way to her throat. The combination of lips, teeth and muscular tongue prevented even the wiggliest victim's escape. Her method of attack was fascinating. Basically, it was a slow stalk, a curling of the body into a tight spring coil and a



final lunge. Like a cat, she couldn't keep her tail from lashing with excitement. There were endless variations of the stalk and I never tired of experimenting with my patient pet. She delighted in the game of hunting no matter how tough the course.

My preparations for feeding were watched with avid interest. I'd drop the bug some distance away, or right at her side, high up on the driftwood

limb or deep in her honeycomb rock. She formed sinuous curves and snakey loops as she flowed slowly



over and around the obstacle course between her and the bug. How she kept from starving in the wild will always be a mystery to me, for often in the middle of her approach the target ambled off to explore its new surroundings and she would have to plot her stalk all over again. Only roaches rated an all-out chase. She relied on her coloring and stealthy advance for lesser insects.

Cayman's IQ may not have been measurable but she did have some intelligence. She knew me; whether by smell or sight, I never was sure. If a stranger picked the lizard up, her blue tongue flickered out repeatedly in her process of sniffing. Her memory was excellent—when I brought her to the office five months after her first visit there, her behavior was above reproach, until Curtis picked her up. Remembering her earlier bout with him, she resorted to defensive action—she gave him an odorous dousing although he handled her gently. Each of the three reunions between him and Cayman thereafter triggered the same reaction, until he indignantly refused to pick her up any more.

Eyesight and hearing were well developed. She followed the movement of birds swooping by the window near her tank. If an airplane flew over, she cocked her head and squinted into the sky to watch it. Nothing in the room her tank was in escaped her notice. With her eyes working independently, she could reconnoiter the world outside the window as well as the room. More than once, Cayman alerted me to the pres-

ence of a roach. Her attitude of rigid attention, snout pressed against the glass, clearly told me. I only had to follow the line of her intent gaze to find the pest. Her excitement increased as she watched me chase it down, for she knew if I could stun it, she would have a treat.

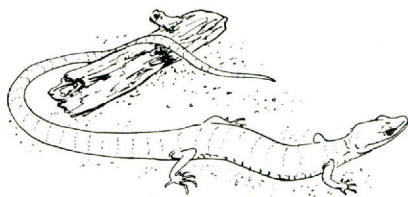
Cayman's ears were modest holes in a fold of scales back of her mouth. When she was held up to a light, one could see the light bulb and all of the room on that side through her ear holes.

If Cayman was loose in the room and felt endangered, she would head for shelter. A cat or dog caused a different reaction. She inflated herself, drew into a tight coil and kept up a fierce hissing. Lethargic most of the time, Cayman could strike with rattlesnake rapidity when the need arose. These four-legged threats left hastily with lacerated noses.

Cayman's daily life was uncomplicated. Mornings would find her curled in a dim recess under the honeycomb rock. She would undulate out to supervise as I got ready for work. Later she would ascend the driftwood branch to absorb some sunshine. Then she'd amble down to while away a few hours vigorously digging in the black dirt. The rest of the day was spent napping with one eye open.

The lizard's terrarium was easy to keep sanitary. Periodically I removed her sundried lozenges and planted them in my ivy.

A year passed, and I began to hunt for a mate for her. Alligator lizards are scarce. Several months elapsed before I located one. I presented my new lizard to the biologist to ascertain its sex. It was a he all right. He was a slender 13 inches with tail intact. His length required



a name to match, so he was dubbed Epaminandus. I had fond hopes of raising lizards from egg to adult.

Spinster though she was, Cayman felt definite territorial rights. When the new lizard was put into her tank,

she slithered over and bashed him in the ribs. He was still bewildered by captivity and fled to a far corner without giving fight.

I kept a tense vigil over the two for weeks, ready to issue bulletins to interested friends but nothing biological happened. There was not the faintest spark in Epaminandus' eye. Cayman ignored him. They stayed as far apart as the tank allowed. Their aloofness disappeared at meal time over competition for grub worms, but this was temporary and they retired to their corners afterward.

Epaminandus didn't have the personality that Cayman had. He was skinny, neurotic and bad-tempered. Also he had bugs. Had I known what they were, when first I noticed them, I might have saved him. They were busy points of black, a few at first, but soon they multiplied and spread to Cayman. She also grew irritable. A herpetologist friend told me the bugs were bloodsuckers which would eventually drain the life from the lizards. The only cure was to wash the lizards in soap and scald their tank daily, until no bugs were left. The day I learned this, I rushed home as soon as I could and lathered up Cayman. I went to get Epaminandus for the same treatment, but he had died while I sudsed Cayman. She received her bubble bath daily for two weeks before I pronounced her cured. By then she was an accomplished swimmer, although her



style was eccentric. She forged through the water, with arms tight to her sides and legs trailing. Her rapidly rotating tail provided motive power.

Like any other reptile, Cayman shed her skin periodically. The first time it happened I was amazed to find two lizards in the tank. The gauzy skin which she had outgrown was an exact replica of herself. Later I was able to forecast a moulting. A few days before, her color darkened and she acted antisocial. She sulked beneath her rock until the pressures of her epidermis became unbearable.

• Continued on Page 27



With careful settings and much patience, a hunter fills his lens with a one-inch spider.

Now say... "Cheese"

by J. D. BALL

A YEAR-ROUND open season, a great game variety, no bag limits and a real challenge for the hunter sound interesting? All this may be as close as your own backyard. Insects, spiders and lizards are the game, and a camera, your weapon. The object is to meet your prey on his own ground and shoot his picture. Since the largest of this game may be only a few inches long, the trick is to get close enough with your camera to fill an entire frame with his image.

The usual camera lens will focus to within two or three feet of the camera; at this distance a common grass spider as shown in the accompanying pictures would be lost in the background. A combination of special lens and bellows attachment for a single-lens reflex camera solves this problem. A single-lens reflex camera is one in which the image seen in the view finder passes through the camera lens and any auxiliary attachments connected to the lens, and is therefore the same

as recorded on the film. When such a combination is used, the camera becomes a low power microscope providing direct magnification on the film of from one to three times the actual subject size.

With the weapon described, there are still numerous problems to be solved. One of these is that even with fast film, the light required for such photography is somewhat more intense than for ordinary snapshots. Flash attachments, spotlights and reflectors are used to overcome these drawbacks. The lens must be only a few inches from the subject, and the focus will be sharp if the subject is less than one inch away.

As you can well imagine, most "game" will be uncooperative while you are setting up lights, focusing, jamming lens into their dens and otherwise disturbing nature. And, you feel a little outnumbered as eight eyes, in the spider's case, watch the proceedings.

The spider used for this series measured one inch across with legs outstretched. Magnification on the film is three times on the extreme closeup. The remainder of magnification was achieved in printing and enlarging. The spider was anesthetized and posed for these shots. A small wad of cotton saturated with chloroform was dropped into the jar with the specimen. This rendered it helpless in a few seconds and prevented damage to such portions as the eyes and hair on the body.

While the spider was limp, it was

• Continued on Page 28

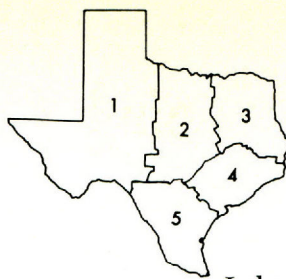


With eight eyes staring at him, the hunter gets another shot of his backyard big game.



The spider's huge chelicerae (middle) bear a fleeting and slight resemblance to tusks of real big game.

Regional



Roundup

Region I—San Angelo

BARBARY SHEEP populations in the Palo Duro Canyon near Amarillo are still increasing, according to latest reports. Landowners near the Silverton and Claude release sites report increasing numbers each year. Forty-one head were released in 1957, and if normal reproduction and deaths have occurred, 250 head should exist. This estimate doesn't sound high when compared to New Mexico's barbary sheep herd. Fifty-seven head were released in 1950 and totaled more than 1,000 head in 1959.

Several SCS watershed control programs on creeks and rivers in Region I are nearing completion and will not only conserve valuable soil, but also will provide more fishing room for growing populations. Several lakes have been created in the eastern portion of Hemphill and Wheeler counties in the Texas Panhandle, and more are destined to be completed in other West Texas areas. The Game and Fish Commission has stocked many of the lakes and good fishing should be available by late 1963.

Region II—Waco

GAME AND FISH Commission biologists in the Edwards Plateau district are placing numbered bells and tags with various colored collars on velvet-antlered deer in the Hill Country. At least 10 deer were wearing them in a 700-acre deer proof pasture in Llano County by the end of January. It is expected that valuable information about movements, changes, breeding capability, losses, etc. of deer will be accumulated. It is important to have information on these deer when recommending harvest seasons, regulations, etc.

The State Fish Hatchery at San Marcos is experimenting with a hybrid sunfish which may prove profitable for use in stocking small lakes. If a hybrid can be produced which does not spawn two or three times a year as sunfish usually do, it would be a desirable fish for release in private waters as well as public lakes. Most sunfish reproduce when still very small and in great numbers for about eleven months each year. Ten hybrids recently examined at the hatchery were males and no females were found in this hatch of fish. These hybrids grow fast and reach extra good catching size the first year. However, before definite conclusions can be reached additional experiments must be made.

Region III—Tyler

HERE'S the outlook for some lakes in East Texas. Lake Tawakoni, known to many as Iron Bridge Reservoir, has 36,700 acres of water 55 miles from Dallas and 8 miles from Wills Point. It is a hot-spot for bass and crappie.

Lake o' the Pines, 18,000 acres of northeast Texas fertile-acid waters, is beyond doubt proving to be one of the finest lakes in the nation for casting rod, spinning rod and fly rod purist. Bass, crappie and other panfish are abundant and cooperative. The nearby city of Jefferson and concessions on the lake are seeing many visitors from far West Texas, Arkansas and Louisiana.

Another two-state lake, Texoma, near Denison, needs no introduction to most regional anglers, and it's as American as the name itself. Word of caution: Texas and Oklahoma fishing laws are not necessarily in agreement. If you fish in both parts of the lake and need a license, be sure to buy it before you get your line in the water.

Lake Texarkana, with 20,300 acres in Bowie, Cass and Morris counties; the new Lake Palestine with even more water in Smith, Anderson and Henderson counties and Dam B Reservoir holding 16,000 watery acres offer fishermen a promising spring.

Region IV—Houston

WILDLIFE Biologists Charles Stutzenbacker at Big Hill Management Area west of Port Arthur and Clarence Beezley at Sheldon Reservoir Area east of Houston were trapping and banding ducks during the winter. This federal-aid job, carried out annually following duck season and continuing through March, is designed to band ducks in their wintering grounds. Band returns, both from this summer's trapping work in the Canadian marshes and from next fall's hunt, will help biologists estimate duck numbers available to hunters in the Central Flyway.

Besides the method of trapping, two interesting related factors were explained to me by Beezley. One reason trapping is done late in winter is that duck foods are scarce and the birds come readily to maize, rice, oats or other small grains. Some birds are hungry (or stupid) enough to return several times to the same trap after being banded the first time. They are called "trap bums" and serve to lure unbanded birds to the trap.

The other factor is more serious: mink or raccoons have gotten into one trap on each area and killed more than two dozen ducks and coots.

Region V—Rockport

ERNEST SIMMONS, coastal fisheries supervisor, reports the contract drum removal season has been extended in Cameron County. The present season of December through February was changed to November through March. It is also possible that Cameron County may go under regulatory authority. If so, it will be the first coastal county in the region to do so.

• Continued on Page 28

What Others Are Doing

by JOAN PEARSALL

THE HOOKER'S HOOKED: In Idaho, a salmon or steelhead angler is presumed to be "reducing a fish to possession" as soon as the hook is set, and it must be counted in his bag and possession limit regardless of who actually lands it. If an angler hooks one of these fish and then hands the pole to his wife or buddy, he still is charged with taking the fish if it is landed. In the case of steelhead fishing, in Idaho the person who hooks the fish must also punch a steelhead punch card as soon as it is landed, regardless of who actually brings it in.

POLLUTION ATTENTION: Tennessee held a pollution school of two 2-day sessions, early this year, to train its game and fish officers to make adequate investigations of water pollution in Tennessee streams and resulting fish kills.

HUNTERS BLIND: One deer hunter who filled out the Arizona Game and Fish Dept.'s hunter success questionnaire reported that he fired his gun at at least 10 individual deer 27 times and missed all of them. His wife shot at least 8 times and missed all of them, also. A P.S. added that he and his wife both went to an oculist and had their eyes checked and are now wearing bi-focals.

REFLECT ON THIS: On the wall of a British museum there is a bold sign which reads: "The animal you see here is the most dangerous and destructive creature on earth." Below these words hangs a large mirror.

MOVE OVER, MONKEY: Gorillas or people? That is the controversial question in a mountainous section of Uganda, which is the home of the world-famed mountain gorilla. It also has many farms and is the most densely

populated section of the country. The Uganda Parliament has been discussing whether parts of the game sanctuary allotted to the gorillas should be taken away from them, some saying the gorillas were getting preferential treatment over people. It was asked that the land not actually occupied by the gorillas be given to the people.

TREES PLEASE: The days of the slatted snow fence along Minnesota highways may be numbered. The first "living snow fence" of coniferous trees was planted in Minnesota in 1939. Last year, the state's highway department planted one million trees along its highways, for beautification as well as snow control. The state furnishes trees without charge to public, nonprofit groups for conservation purposes.

A HINT IN TIME: An enterprising county in Arkansas has placed a conservation bookshelf in each of its 17 schools, with books selected for the different age groups at each school. Might be a good project for sportsmen's and service clubs to copy.

PESTI-SIDEEFFECTS: A new \$65,000-laboratory to study the presence of pesticides in soil and water is now in full operation by the Public Health Service in Atlanta, Ga. It will provide analytical facilities to supplement national field studies and includes 10 scientists on the staff. The Atlanta lab is part of a full-scale investigation of water pollution by pesticides which was begun in 1959 in the southeastern states. The studies are directed both to measuring amounts of insecticides now reaching waterways and assessing possible damage to stream and other life, particularly in cases where the insecticides are presently at low levels.



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GUNS



... and Shooting

By L. A. WILKE

This Month: **Ballistics**

IF YOU WANT to get into a heated argument around a hunting camp, just express an opinion about an all-purpose gun. Every once in a while a manufacturer comes out with one that is supposed to do everything but wash your socks.

Now it is Winchester again. And, who can argue with Winchester? This company has been making good guns now for something like a century. Furthermore, it takes leadership in the field of both guns and ammunition.

For that reason when W. R. Kelty Jr., vice president for marketing, offers a model 70 in a new .300 Magnum cartridge and says it is a gun

that will please perfectionists, it must be something.

The model 70 needs no particular introduction. It has been around now for something like 30 years, a very worthy successor to the old and reliable model 54. The cartridge really is the subject for discussion at this time.

The gun was designed for medium and heavy game. For deer, antelope, black bear and other of the smaller species there is a 150-grain bullet. For larger species of Canada, Alaska, Africa and Asia, there is a 180-grain bullet, which has enough power for anything that walks.

The new Winchester .300 magnum

the muzzle at 3070 fs with 3770 pounds knockdown, reaches 200 yards at 2640 fs and 2790 kd, with mid-range of 2.1 inches.

You may want to compare these with some other figures of short magnum cartridges. They follow:

.264 Win-Mag 100 gr.: 3700 fs at muzzle, 2030 at 500 yards; 3040 kd at muzzle, 915 at 500 yards; mid-range 0.4 inches at 100 yards, 14.05 at 500.

7mm Rem. Mag: 150 gr.: 3260 fs at muzzle, 2010 at 500; 3540 kd at muzzle, 1350 at 500; mid-range 0.5 at 100, 17 at 500.

.300 H&H 150 gr.: 3190 fs at muzzle, 1810 at 500; 3390 kd at muzzle, 1090 at 500 yards; mid-range 0.5 at 100, 18 at 500.

.338 WM 200 gr.: 3000 fs at muzzle, 1770 at 500 yards; 4000 kd at muzzle, 1390 at 500; mid-range 0.5 at 100, 26 at 500.

Thus it can be seen that at 100 mid-range the bullets all have the same trajectory. Beyond that, the .264 has the best trajectory, the .338 the highest.

Generally, ballistics are developed mathematically but the above ballistics were based on actual deceleration tests, according to the Winchester announcement.

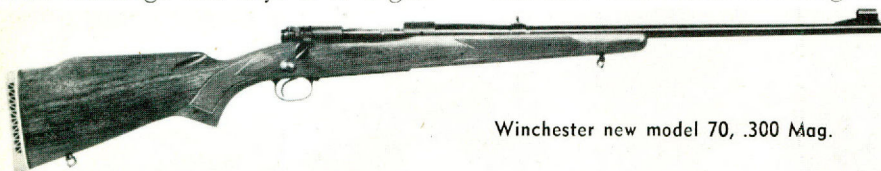
Thus, if you are in the market for a new gun this fall, you may want to look over this new Winchester, especially if you plan a trip for something bigger than Hill Country deer.

Or perhaps before that time some other manufacturer will be out with another all-around gun. **



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is chiefly competitive with the .300 H&H magnum, which has a longer case, but slightly less speed and knockdown.

For instance the .300 WM 150-grain bullet delivers 3400 feet second muzzle energy against 3200 feet of the H&H. The 150-grain bullet gives 3850 knockdown at the muzzle; at 200 yards the kd is 2480 pounds, with a mid-range of 1.9.

The 180-grain bullet, which leaves

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Do not restrict the deeper blood circulation by applying the constricting band too tightly.

Reptilian Lineup

From Page 15

ing torn from shirt or trousers will do. The poison, unless injected directly into a major blood vessel or deeply into a muscle, is absorbed slowly by the lymphatics below the skin. Therefore, do not restrict the deeper blood circulation by applying the constricting band too tightly. It should be loose enough for a finger to be slipped under it with little difficulty. Remember that during first aid treatment the constricting band must be loosened every 15 minutes for about two minutes. This precaution may prevent gangrene. If the bite is on the hand or forearm, take off rings, bracelets or other jewelry because subsequent swelling may make their removal difficult.

3. **MAKE INCISIONS** after sterilizing the cutting instrument and the bite area with iodine or alcohol. If no antiseptic is available, the blade of the cutting instrument can be sterilized by holding it over a flame (a match will do). Make *one* cut over each fang mark parallel with the long axis of the bitten limb, not across it. Incisions should be one-quarter inch long and one-eighth to one-quarter inch deep, but definitely no longer than the diameter of the suction apparatus being used. This would allow air to enter the suction bulb from the outside and the device would then not work. Incisions are of the utmost importance to first aid treatment; without them little or no poison can be withdrawn from the wound by suction. However, making even a small incision involves some risk and this operation should be done with considerable care. Improper or carelessly applied first aid may actually do more harm than good. Although a physician

may later decide to make additional incisions to relieve the pressure of swelling, only the cuts over the fang marks are recommended for first aid.

4. **APPLY SUCTION** to the cuts. This can best be done with one of the suction devices manufactured for that purpose, but, if none is available, suction can be applied by mouth. There is little danger in oral suction unless the lips or inside of the mouth have cuts or abrasions. Contrary to popular opinion, a tooth cavity will not permit passage of venom into the blood. Moreover, snake venom is destroyed by the stomach's digestive juices, so if some is accidentally swallowed, there is little need to worry if you have a healthy system. *Only during the first 30 minutes following a bite can much venom be removed by incision and suction.*
5. **GET TO MEDICAL AID** as soon as possible—but keep in mind that unnecessary physical exertion is harmful. Antivenin may be administered soon after first aid has been started, but this is best left to a doctor. The North American Antisnakebite Serum made by Wyeth, Inc., of Philadelphia 3, Pennsylvania, is effective against pit viper bites but is of less value in the treatment of coral snake poisoning. Because coral snakes cause so few bites in the United States, no serum to neutralize their venom is prepared in this country. In South America, where these snakes are common and may reach a length of five feet, a serum against their poison is being produced by the Instituto Butantan at Sao Paulo, Brazil. It and other foreign snake bite serums often are available at large zoos where exotic poisonous species are exhibited. **

She was a creature of curves and measurement was a trial.

Something in Scales

From Page 22

When she crawled forth, the normal noises of life outside the window made her nervous and suspicious. She scraped her snout on a sharp rock. This loosened the head portion, which she snagged on a rocky projection. Only when she was sure it was securely caught did she squirm free. Cayman emerged a bright beige and brown lizard, every scale sparkling as if waxed. She slid into a few S turns and figure eights to show off her suppleness. Her sweet temper and friendly nature returned with her new pliancy.

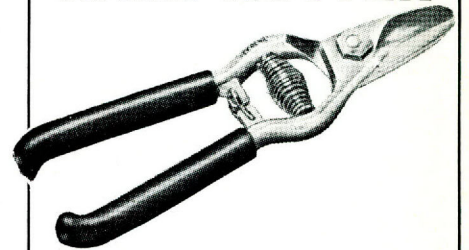
She was a creature of curves and crooks, and measurement was a trial to both of us. The last time I strong-armed her into a straightish line she measured 12¼ inches, plus or minus a few kinks.

Cayman lapped water like a dog and almost as noisily. She would

drink from a bowl but preferred tonguing a dampened rock which was more akin to her native environment of limestone cliffs where seepage keeps some rocks damp.

Last summer a heat wave held sway for five blazing days. Cayman took refuge in her honeycomb rock. Normally her cave was cool enough, since on hot days I soaked the rock, producing, in effect, an air conditioned cave. But, the extra heat went far beyond my preparations for her comfort. A lethal shaft of sunlight bored through a crack in the curtains and the light sand reflected the searing heat into the rock cave. Cayman deserted her dried-out rock and prowled in search of damp shade. There was none. I found her when I came home from work. It was the first time I ever saw my vigilant lizard with both eyes closed. **

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The stage was set in advance.

"Cheese" ————— From Page 23 stretched out on a block of styrofoam. The natural contraction of the legs aided by the claws hanging on



the styrofoam, made the pose natural.

Technical data for the spider series includes camera, 33 mm Exata; lens, 50 mm plus 150 mm bellows extension; exposure, one second at a lens opening of f/22; film, Eastman Plus X.

The problem of lights and exposure are variables depending upon the subject. In the case of the spider, the styrofoam "stage" was set in advance of the "actor's" arrival. That is, all light measurements and reflector positions were made with a dummy subject. The lights used for the exposure were two 25-watt household lamps in small reflectors at a distance of one foot on either side and slightly toward the front of the styrofoam block. A reflected light reading taken from a 25 per cent gray card was corrected for the bellows extension. Three exposures of each pose were made bracketing the calculated exposure by one f stop.

The problem of shadows is strange. If there are no shadows, the picture is flat, without life. On the other hand, a shadow at the wrong place may blot out desired features. This problem was solved by using small cardboard discs covered with crinkled aluminum foil for reflectors. Anywhere from one to three reflectors were used in the shots. The placement was determined by studying the subject on the ground glass viewer of the single-lens reflex. This took only a few seconds prior to each exposure. The small size of lamps and short duration of use prevented damage to the subject.

The solution to all the problems includes patience and a good share of luck as well as equipment. Maybe that's why the operation is so interesting. **

Roast Javelina

Soak javelina meat overnight in vinegar water. (Four tablespoons of vinegar to each cup of water.)

Use enough water to completely cover the meat.

Drain off vinegar water.

Put meat into covered roaster and cook at 350-400 degrees until white curd accumulates on the roaster.

Take meat out and wash roaster.

Put meat back in and add:

2 medium sliced onions

2 garlic buds chopped fine

Sprinkle with poultry seasoning, savory, rosemary, paprika, pepper and bay leaves.

Place three or four slices of bacon or salt pork on the roast.

Cook until well done.

Arizona Wildlife & Travelogue

Dove habitat is in short supply.

Regional Roundup ————— From Page 24

Five acres of the Voshell Tract in Cameron County have been planted with seedlings of ebony, anaqua, brasil and desert hackberry trees, according to Tom Moore, wildlife restoration supervisor. It is hoped that this study will provide information on how to grow the preferred native white-winged dove habitat which is in short supply.

Aerial surveys over brush type habitat are being made in Uvalde and Frio counties in an effort to develop a suitable method for counting deer in South Texas. Results of these counts and accumulated data obtained by these flights will be used to compare counts made during periods when the trees are bare of foliage and when the foliage is heavy, as in the summer and early fall. Personnel expect this study to give information on the best time of year for conducting deer population counts.

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Texas

Tackle Talk

by CURTIS CARPENTER

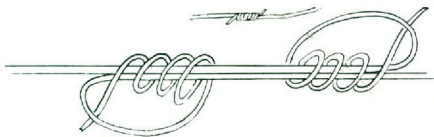


TAKE A KNOT, not just any knot but one particular knot. Learn to tie it properly and quickly and you can use it in a dozen different places when fishing. I call it "Hawk's Knot" because Dave Hawk, that top Granite Shoals fishing guide, showed it to me. It's easy to tie and reduces the line strength only a fraction—less than any other knot I have ever tried.

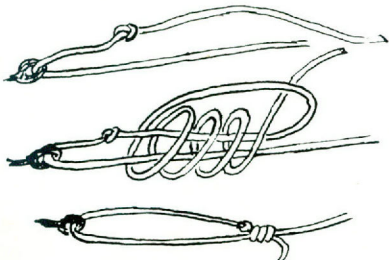
Pass the line through the eye (either hook, lure line or leader) coming up from the bottom, make a loop and bring the line alongside the end going to the reel; hold both parts in fingers and circle short end through loop three or four times. Pull on both ends, causing knot to slip against eye. Cut short end off, and you're ready to fish. See the illustration for the exact procedure.



This knot can be used to tie two lines together or a line to the leader, simply by tying one on the end of each line as shown in the art. If you



want a loop knot for tying line to wiggling lures such as a Pico, first tie a simple knot in the line, and tie the Hawk's Knot behind it. When the Hawk's Knot slips on the line it



will be stopped by the simple knot, leaving a loop which allows a full action of the lure.

More Books

Here are some more good fishing manuals: *Fishing the Nymph*, by Jim Quick, \$4.00, and *Surf Fishing*, by Vlad Evanoff, \$2.95, both published by the Ronald Press Co., 15 E. 26th St., New York, N.Y. *America's Best Bay, Surf and Shoreline Fishing*, by Heinz Ulrich, \$5.00, A. S. Barnes & Co., 11 E. 36th St., New York, N.Y. *Fishing Flies and Fly Tying*, by William F. Blades, \$8.50, The Stackpole Co., Harrisburg, Penn. *Fishing Secrets of the Experts*, \$4.95, Doubleday & Co., Inc., 575 Madison Ave., New York 22, N.Y. *Southern Angler's and Hunter's Guide*, Don Fuelsch, 50 cents, P. O. Box 117, Albert Pike Station, Hot Springs, Ark.

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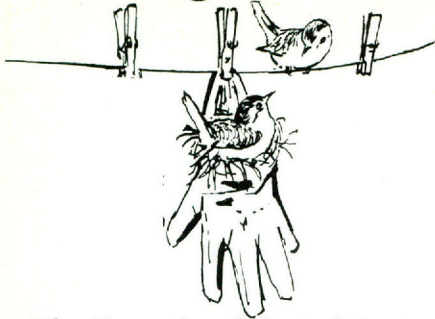
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Nesting Studied



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to be used in papers presented to Society members and other interested persons. With the help of the public, 136 species have been reported in the past year.

The details needed for each species observed include name, date of observation, locality and county of observation, name and address of observer and answers to the following questions: Was bird building a nest; were eggs in the nest; were young in nest; how many of each were in nest; could observer determine that birds were nesting; could observer ascertain nest contents; were young birds seen out of nest; were young birds being tended by parents; what was the nest site (cavity, fork, crotch); and what was the name of plant in which nest was placed, height from ground or water to bottom of nest, and dominant plants of the habitat?

This information may be contributed in a letter, or, preferably, on forms with instructions obtained from David J. Slavik, 3426 Texas Drive, Dallas 11, Texas. **

Conservation Award



GEOERGE JAMBERS JR. chairman of the wildlife committee of the South Texas Chamber of Commerce, was the recipient of the Chamber's 1962 award for his leadership in the wildlife field.

Jambers, who lives on a ranch near Whitset in South Texas, for years has been a conservationist both in practice and in working with other individuals and agencies for the cause of conservation.

As chairman of the South Texas Chamber of Commerce committee, he has been helpful in bringing about many conservation reforms in that area.

Previous awards made by the Chamber were to Dr. Clarence Cottam of the Welder Wildlife Foundation and to Val Lehmann, wildlife director of the King ranch. **



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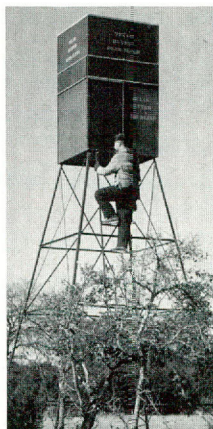
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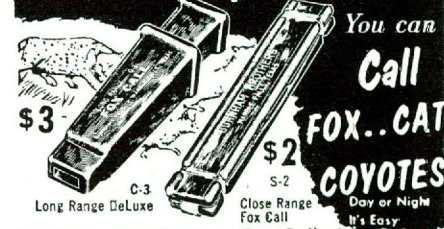
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LAND ALIVE, by Ronald N. Rood and illustrated by Edward J. Brundage. Published by The Stephen Greene Press, Brattleboro, Vermont, 142 pages, \$4.50.

Delightfully disarming and factual is this little book describing "the world of nature at one family's door."

Each page dances with well written personal experiences and impressions of the author and his family.

The author, who is a zoologist as well as a naturalist, in his telling manages to capture the charm of wild creatures, yet does so in a tasteful, unsentimental manner. Across the pages tumble a montage of wildlife including deer, mink, porcupines, moths, to name a very small representation. Also included are chapters on wild greens, mushrooms and streams.

Many fact-laden passages twinkle with humor because of a good insight into the world of creatures and an artfully used vocabulary. The following excerpt about a starling-bluebird quarrel over housing is typical. The hole in a birdhouse had been narrowed so a bluebird could enter but a larger starling was barred. "The bluebirds had their doubts about the new object. But the starling did not. He flew straight to the box, a big chunk of grass in his yellow bill. The bluebirds forgot their suspicions and dived at him again.

"Full of self-confidence, he poked his head into the box. But his shoulders wouldn't fit. Back out again, he tried it once more. Then he hopped up on top of the birdhouse and looked down accusingly.

"After he had the hole thoroughly cowed, he tried again. Still it wouldn't work. So once again he sat on top and glared at it. Finally he flew off in disgust, still clutching his grass. The triumphant bluebirds chased him all the way to the street."

But the book rings with reality, including the sober as well as the humorous and charming sides of being something other than a human being. For example, speaking of a chickadee family Rood comments, "Now I could see how hard she had worked as I compared her to her overstuffed offspring. And the difficulty of being a chickadee came to me further as I looked in vain for her spouse. Caught perhaps by a lucky sweep of a hawk or owl, he never appeared again. But I didn't begrudge the hawk too much. I know that

it, too, had hungry mouths to feed."

The author also describes the good and bad sides of a species' ledger. After passages about the destructiveness of rats, comes this praise, "Without the white rat, biologists would know vastly less about disease control, nutrition, genetics. *Rattus (Rattus norvegicus)*, in his scavenger's cloak, spread the horror of Plague; *Rattus*, in his laboratory smock, may soon help us defeat cancer."

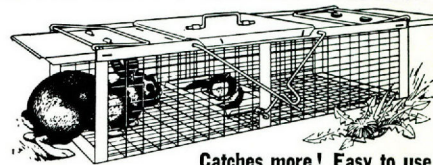
Episodes of tracking fun remind the reader how much the trained eye can see while following a pattern in the snow. The author can reconstruct a wildlife drama by studying tiny prints. Rood recalls, "Once I followed a mouse trail along our fence. It ended suddenly. To either side were a few parallel lines on the snow. A few feet further, I understood. A little tuft of gray fur lay on the snow. A hawk or owl, with perfect timing, had found its dinner. The parallel lines at the end of the trail were marks of its wing feathers as it flapped upward with its prey."

Although this book has its setting in snowy, icy Vermont, Texans of all ages can enjoy it. Advanced young persons can read it for themselves. Younger children would doubtless be delighted with hearing some chapters read aloud since the author's children are often brought into wildlife stories. Adults cannot help but be impressed with Rood's wit, pleasing prose and store of knowledge.

—Ann Streetman

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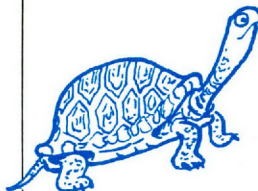
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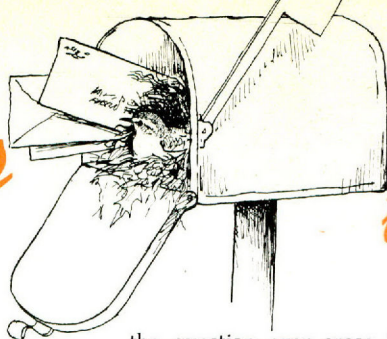
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Letters



to the Editor

Wardens Watch

Editor:

I am writing you in regard to a fine I paid in this state while on a recent duck hunting trip. I am writing merely to show my appreciation to the Texas Game and Fish Commission for its excellent choice of conservation officers.

It was early in the morning. The air was cold and damp and a slight fog was prevailing above the tall cypress trees that encircled the little clearing where we had our six mallard decoys spread out before us. The shooting was slow, but we had managed to knock down a black mallard and a wood duck hen.

Suddenly the beating of wings broke the silence behind us. I swung my gun onto the lead snow goose that broke through the clearing of tall cypress. I fired and it fell with a loud commotion. The rest of the geese stopped beating their wings and began to glide. Then I realized my mistake and shot no more. Since it was such a beautiful bird, and rather than see it waste, we decided to include it in our bag with the thought in mind of discarding it if we ran into trouble.

However, two of our conservation officers had left the warmth of their car and were roughing it in the swamp the hard way. They took us entirely by surprise. They informed us that the bird we had killed (a "common ibis") was at one time very scarce and was still protected by law.

We appreciate the fine treatment we received in the field by these two officers and the efficient manner in which they carried out their duties. They demonstrated a keen knowledge of their work; they were very tactful in their dealings with us, and they showed dependability, decisiveness and a deep sense of justice in dealing impartially with us.

Working with the public quite often, I realize that you cannot please everyone; however, I am unable to see how any person could ever make a valid complaint against your department.

Berlin Cassidy
Beaumont

(Thank you for your kind and thoughtful letter.—Editor)

Long Shots

Editor:

After many years afield with a shotgun and after many and varied experiences, I have asked myself this question—how far will a shotgun shoot? The first time

the question ever arose in my mind was many years ago when I was hunting blue quail with a friend of mine on his ranch south of Toyah. We had our guns loaded with No. 6 shot, when we noticed a bunch of wild duck come into a big dirt tank about a half-mile east of us. The duck season being open, we decided to try to get some of them. So we re-loaded our guns with No. 2 shot and started for the tank. We were going down a cattle trail that led to the tank, with my friend in the lead when we flushed a bunch of blue quail. He shot one directly ahead of him, and when he shot, I saw one that he had not seen drop quite a way ahead. It was flying about four feet above the ground and was well over 100 yards ahead of us. When we reached it and examined it, we found that only one of the No. 2's had hit it, directly in the back of the head.

A few years ago Texas Ranger Earl Stewart and I were shooting dove at a small lake in Loving County. He was using a 12-gauge automatic with a full choke barrel and was stationed on the west side of the lake. I was on the east side well over 150 yards from his stand, using a 20-gauge automatic. I saw three doves coming in from the northeast, flying in tandem and was waiting for them to get well within range, when he shot a dove coming in on his side. When he fired, the dove in the middle of the tandem dropped dead. I could hardly believe it had been hit, but when I picked it up, I found that one of the No. 6 shots had passed through its head from the side. This shot had traveled more than 150 yards, and he did not even see the dove he killed.

Last summer I was rabbit hunting with a 20-gauge automatic with a full choke 26" and No. 6 shot. I noticed one but thought it was well out of range. I took a shot at it anyway. At the crack of the gun the rabbit leaped high into the air and fell back stone dead. When I examined it, I found two shots had struck it in the side, one going all the way into the heart. I stepped the distance and it was 107 long steps.

I believe there must be a few shot in every load that carry much farther than the bulk of the load. They come out as though they had been shot from a rifle and have a much greater range than the remainder of the load. It would be interesting to hear from other hunters who have had similar experiences.

R. V. Nabers
Pecos

(These freak shots do occur. Forty yards, however, is the most consistent killing distance.—Editor.)

Record Tarpon

Editor:

In reading my dad's December 1962 issue of *Texas Game and Fish*, I saw Mr. A. D. Stenger's picture with his 189½-pound tarpon. This was a very large fish

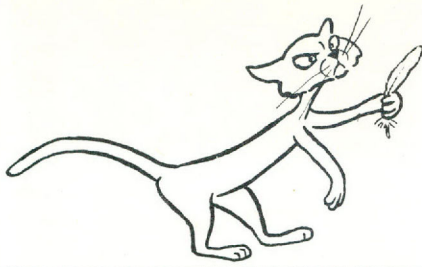


and Mr. Stenger should be very proud, but it is not the largest caught in Texas. My dad caught a tarpon in Galveston that measured seven feet, four inches and weighed 192 pounds six and a half hours after it was taken from the water. This fish was caught August 30, 1961 and placed second in the 1961 *Field and Stream* fishing contest. I am enclosing a picture of my Dad, Dave Huddleston Sr., and his tarpon.

We both enjoy reading *Texas Game and Fish* very much.

David Huddleston, Jr.
Galveston

(Thanks for correcting our magazine statement about the largest tarpon. This one is a whopper.—Editor)



Junior Sportsmen

The Well-Dressed Bird

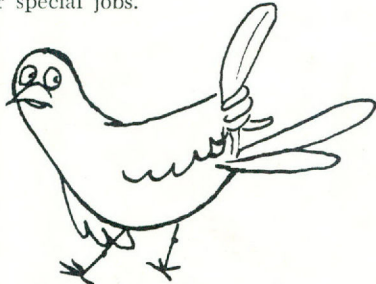
by ANN STREETMAN

FEATHERS provide a bird with flight equipment and insulated clothing.

They give the bird's body a stream-lined contour and they increase the surface of the wings and tail, enabling the creature to fly.

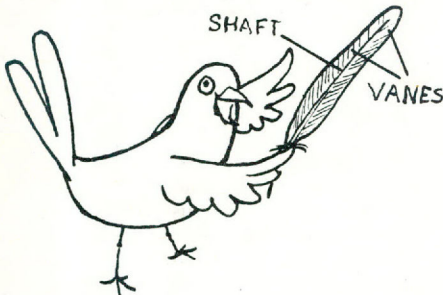
To let the bird go about its daily business in spite of the North wind, feathers provide a warm cloak. Feeling a chilling blast, a bird fluffs its feathers until it appears to be about one-third larger than its usual size. Thus, air pockets are formed among the feathers, reducing the loss of body heat.

Although feathers seem as light as snow flakes, they are sturdily built to perform their special jobs.



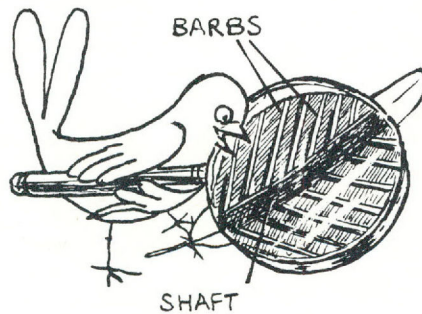
The units which form a feather, many of them hidden from the casual eye, number in the millions; each has a special function.

The most easily noticed portion is the *shaft* which is merely a stem from which

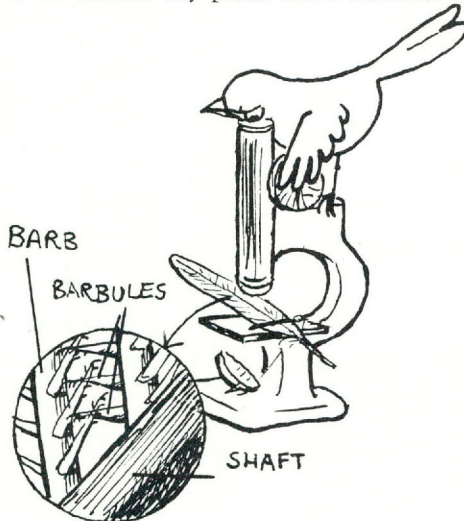


the fibers extend. Two diagonal fiber masses on each side of the main shaft are called *vanes*. These two masses of fibers rooted

in the stem appear to be almost solid. But a closer look with the naked eye shows that these apparently flat surfaces are made of many tiny plates which are called *barbs*.



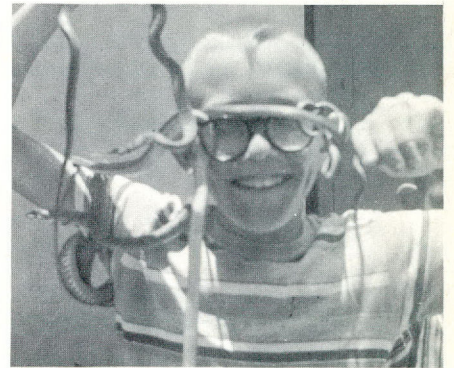
At this point, the feather construction reminds one of a Christmas gift joke—a box within a box—for under a magnifying glass, each barb appears to be a miniature feather within a large feather. Each miniature feather (barb) has a main stem from which extends tiny plates called *barbules*.



The barbules of one barb crisscross with the barbules of nearby barbs and interlock by tiny hooks.

This intricate interlocking system gives the whole feather a self-repairable quality. With a nudge from the bird's beak, gapped fibers spring together and the tiny hooking system makes its clothes sturdy and smooth again.

Snake Charmer



Twelve-year-old Bob McDonough of Brady has no qualms about reptiles, and he even enjoys playing with them—the harmless ones, that is. In the picture above Bob demonstrates his love of snakes with his pets, two racers, a green snake and a ribbon (garter) snake. Bob, who is the son of Mr. and Mrs. Joe McDonough of Brady, hopes to become a herpetologist.

Sporty Tales

Editor:

I would like to tell you that I enjoy your magazine very much. I am 12 years old. I think I am a junior sportsman because this Saturday we (my father, friend, and I) killed six squirrels and a coon. One day we (my father and I) killed 16 doves.

This summer my friend and I caught 10 catfish, one two-pound and two five-and-a-half-pound bass. And one time my father told me to fish at the back of the boat on a rough day in the Gulf, and I caught a six-pound flounder. We hunt about every other week end.

But the true tale I remember most happened one August morning about 6:30 on a private lake near Marshall. I was standing on the pier, and I cast straight out into the lake with a tiny runt with glitter on the bottom. Well I started reeling in when I foul-hooked a seven-and-a-half-pound bass with both hooks under the chin.

Bill Munro
Beaumont

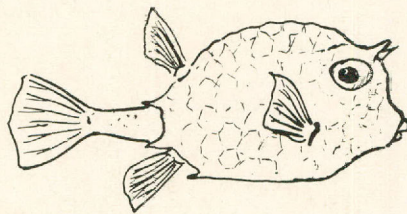
(You surely are a junior sportsman. Good luck in your future outdoor activities.—A.S.)

What are you doing? Other Junior Sportsmen would like to know. Write us about your wildlife experiences today! A. S.



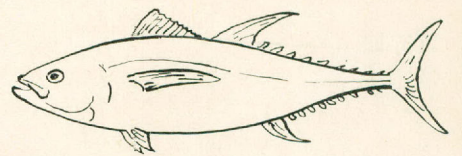
Aquanauts

Alternate body strokes, not fin activity, move a fish through water. A fish pushes against the water first on the left, then on the right. The process is simplified by a streamlined contour coated with a slime which reduces friction. A fish has no gravity problems; its body is supported on all sides by water, thus, little energy is required for motion. Although fins and tail in most species except the cow fish



are not necessary to propulsion, fins do make swimming easier and they are important in accomplishing precise movements. With the use of fins, a fish can hover, spurt up or down, forward or backward. While it is swimming forward, fins are laid flat and the tail is slightly

folded for maximum trimness. The last word in streamlining is the speedy tuna which has grooves to



fit its fins into while swimming. Fish can effect sudden stop or pivot by spreading all or one of the pectoral and ventral fins. A trout is not as skilled at maneuvering as most fish since its ventrals are placed far back on the body; a shark is even less able.

The breathing of a fish depends on its forcing water over the gills and out the gill openings. The current of water produced is a disadvantage if the fish wants to hover, and it must scull with the fins to offset it. But the water current is advantageous too; by forcing a jet of water from the gill openings, the creature is launched on its way in a hurry.