

Texas Game and Fish

AUGUST

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A black and white photograph showing a large water snake, likely a blotched water snake, coiled on a muddy bank. The snake is dark with lighter blotches and is positioned in the center of the frame. The surrounding environment consists of a muddy bank with sparse, dry-looking vegetation and some small plants. The lighting is natural, creating soft shadows and highlights on the snake's body and the ground.

Men aren't the only hungry predators who seek fish. One approximately 30-inch blotched water snake was lying in wait in a rivulet below a dam when this six-inch sunfish flopped into its reach. It was a big stretch, but within three hours the snake had devoured the fish.

Photo by Nancy McGowan



A NEAT FLEET: The Outboard Boating Club of America estimates there are about 6,250,000 outboard motors now in use. New York leads in estimated motors, with 579,000, followed by Michigan, 436,000; California, 410,000; Illinois, 348,000; Texas, 327,000; Ohio, 325,000; Florida, 297,000; Minnesota, 270,000; Wisconsin, 299,000; and Washington, 212,000. The total number of pleasure craft of all types in use on the nation's waterways was placed at 7,468,000. The report noted that only 3,452,068 boats had been registered by 42 states and the U.S. Coast Guard. However, only three of the 42 states register all boats.

FEVER FEAR: Many people fear tularemia (rabbit fever) but, actually, only a very small percentage of this rather rare disease in persons results from rabbit hunting. Flies constitute the greater menace in areas where the sickness is common. Ticks carry tularemia. Many game animals and birds, besides the cottontail, can be infected. A person can eat a well-cooked rabbit that had tularemia, without risk. The main precaution for the hunter is to make sure he has no open cuts or wounds when cleaning game of any kind.

NO MESS TO CATCH A MESS: Worms will stay lively longer if fastened to hooks with small rubber bands instead of hooking them in the conventional way.

HANDY CANDLE: Take a couple of plumber's thick, heavy wax candles along on your camping trip this summer. They can be a help when starting fires, particularly with damp fuel, and they can take the morning chill from a small tent or trailer in a surprisingly short time.

TIMELY TOPIC: "The Public's Land--Our Heritage and Opportunity," is the title of a new, 16-page educational booklet, by Ernest Swift, just published by the National Wildlife Federation and available free of charge to interested citizens. It is an interesting summary of the evolution of public lands administration in the United States, which places today's public land management controversies in perspective. Single free copies, and quantity orders at 10 cents per copy, may be obtained from the Federation at 1412 Sixteenth Street, N.W., Washington 6, D.C.

PEST-DECIDED IMPROVEMENTS: A number of changes in Federal pesticide programs recommended recently by the President's Science Advisory Committee possibly would be of direct benefit to fish and wildlife. One recommendation was the eventual elimination of persistent, or long-life, toxic pesticides and the removal from the market of the more hazardous pest control compounds when equally effective and less harmful substitutes are found. It was also suggested that decisions on pesticide registrations should be made by the Dept. of Health, Education, and Welfare, with the Secretary of the Interior actively participating in the review of those that may affect fish and wildlife. These decisions are now made by the Dept. of Agriculture - the same department that promotes the use of chemical poisons. The report of the Committee, entitled "Use of Pesticides," may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C., for 15 cents.

HAPPY HOSPITALITY: An Audubon group known as "Bluebirds Unlimited" is working to provide vitally needed housing for the endangered "happiness bird," by producing inexpensive, prefabricated houses built specifically for this tiny thrush. Said to be sturdy enough to last 10 to 15 years, they can be obtained from the Grand Rapids Audubon Club, in care of the Grand Rapids Public Museum, Grand Rapids, Mich.

METER REMINDER: Advertisements are now available, for use with Pitney-Bowes postage meters, to get pesticide users to read the container labels. Special plates reading, "Before using a pesticide, STOP - Read the label," may be obtained from the National Agricultural Chemicals Association, 1145 Nineteenth St., N.W., Washington 6, D.C. Meter model must be specified.

Texas Game and Fish

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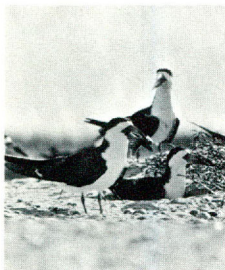
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The Cover



With bright orange mandibles of unequal length and striking suits of black and white, skimmers add color to Texas beaches. The birds live in colonies of about 100 individuals that enjoy a fidgety yet casual life. See related article in this issue.

Photo by Ron Perryman

OFFICIAL MAGAZINE OF THE GAME AND FISH COMMISSION DEDICATED TO PROTECTION AND CONSERVATION OF NATURAL RESOURCES; AND TO IMPROVEMENT OF HUNTING AND FISHING IN TEXAS.

AUGUST, 1963

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Past and Future

THIS MONTH will mark the end of the Texas Game and Fish Commission, but in name only. The nine-member (one vacancy currently exists) Commission now serving will give way to a three-member board whose responsibilities will broaden to include administration of both State parks and wildlife affairs.

Through the years many distinguished citizens like the present members have served on the Commission in the interest of wildlife. They have left their work and laid aside their private interests to serve, being rewarded only by the fact that they had a share in the development and protection of Texas' wildlife resources. The Commission members of the present and the past have earned the applause of all who appreciate the out-of-doors.

Other Texas citizens have earned a gesture of gratitude from the professional wildlife worker. Everywhere, boys and girls, parents, teachers, sportsmen and persons from all walks of life are learning about wildlife needs and then taking the trouble to do something about them. These persons can be rightfully proud of the help they are giving.

This work with wildlife will go on at the swift and successful pace at which it has moved for the last 20 or so years. The trained staff of wardens, biologists and other workers, which has found enthusiastic public demand for its services as well as support of its efforts, will continue to respond with service equal to the best expected of each.

Texans will continue to enjoy the products of good management — hunting, fishing, boating, birdwatching and simultaneously work toward a bright wildlife scene for future generations. **

HOWARD D. DODGEN
Executive Secretary
Game and Fish Commission

IN 1907 the Texas Legislature allowed the Game Department to be attached to the Fish and Oyster Commission provided it could sell enough hunting licenses to pay its own way. Later, in 1927, the first artificial lure fishing license was established. Today, the Game and Fish Commission, soon to be Parks and Wildlife Department, is not supported entirely by these two licenses, but the revenue from hunting and fishing licenses comprises a substantial percentage of the incoming game and fish dollar and therefore becomes a large part of the bill-paying dollar for wildlife and fish management affecting every Texan.

The figures for last fiscal year, 1961-62, illustrate how the hunting

the money thus provided must be appropriated by the Legislature each biennium.

According to the law, hunting license revenue can be used "for the propagation and distribution, management and protection of game animals in the State, including control of undesirable species and the dissemination of information pertaining to the conservation of game animals in this State."

In like manner, the law provides that revenue from fishing licenses can be used "for propagation, distribution, management and protection of fish in all salt waters and fresh waters within this State, and for the opening of fish passes into the Gulf of Mexico, including control of undesirable species of fish,

through the years reflect the changing needs and situations of Texas wildlife and the corresponding management practices necessitated. For example, the 1921 license gives a substantially different picture of wildlife status and management than does the 1962 license. The 1921 license provided for the following:

Three buck deer during the season from Nov. 1 to Dec. 31, inclusive, each year; three wild turkey gobblers during the season, from March 1 to April 30, inclusive, each year; 15 doves in one day, from Sept. 1 to Dec. 15, inclusive; 15 quail and Mexican pheasants (known as chacalaca), in one day, Dec. 1 to Jan. 31.

Twenty-five ducks in one day, from Oct. 16 to Jan. 31; 25 plovers,

\$PORTING DOLLAR\$

by ANN STREETMAN

and fishing license money is spent. The \$1,568,455.70 collected on hunting licenses (including resident and non-resident, duplicate, non-resident five-day migratory bird and non-resident waterfowl) was 23.8 per cent of the 1961-62 revenue dollar. Fishing license revenue, \$1,666,223.-74, accounted for 31.4 per cent of the incoming dollar. (See illustration.)

The above revenue was spent in the following percentages of the game and fish dollar: game management, 15; inland fisheries, 14.2; coastal fisheries, 7.5; law enforcement, 34.6; information and education, 6.8; refunds to cities, counties and state highway department for road building, 6.2; and administration and accounting, 15.7 per cent.

All monies received by the Game and Fish Commission are authorized by statutory law, which provides for both collection and disposition. And,

and for the dissemination of information pertaining to the conservation of fish in this State."

The Commission keeps records which completely identify money as it comes in, and spending is executed according to disposition prescribed by the above laws.

License dollars, authorized and appropriated by statutory law, make possible myriad studies and research projects in the field that directly affect outdoor pleasure of Texans. Just a few of the expenditures include those for studies of ecology, environment, die-offs, plankton, species' habits, as well as population counts, bird and wildfowl banding, fish tagging, fish kills, habitat improvement, fish stocking, trapping and transplanting of species within the state and introduction of exotic game birds to supplement existing species.

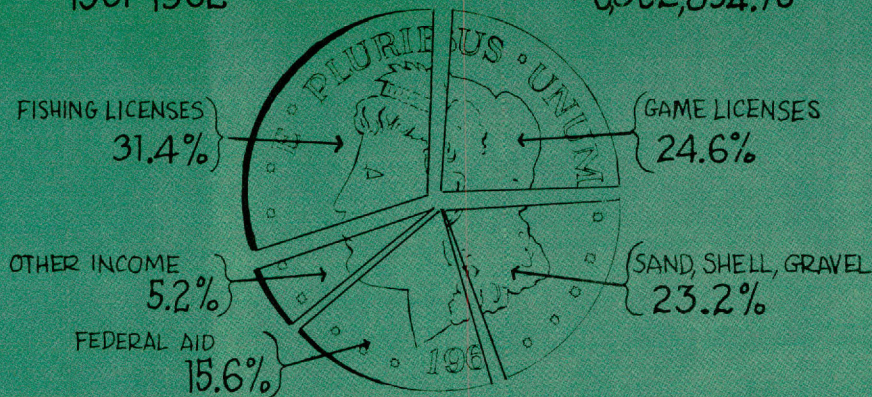
The provisions of hunting licenses

curlew, snipe or shorebirds per day, from Oct. 16 to Jan. 31; 8 geese per day, from Oct. 16 to Jan. 31; 8 brant per day, from Oct. 16 to Jan. 31; 8 sandhill cranes per day, from Oct. 16 to Jan. 31.

It also provided the following: that a hunter was not allowed to kill at any time of the year any antelope, mountain sheep, prairie chickens, pheasants (except chacalaca), woodcock, or woodduck; that a hunter could kill rabbits, hawks, crows, buzzards, owls, English sparrows, ricebirds and blackbirds in any number and all seasons; that a hunter could not buy, sell or barter any wild game or game birds; that a hunter could not catch, kill or have in his possession nor ship at any one time, more than the aggregate of 75 ducks, geese, brant and birds; that a hunter could not kill a turkey hen at any time, could not kill any doe or spotted fawn at any time, could

Where the Game and Fish Dollar Came from During Fiscal Year 1961-1962

\$6592,854.76



not catch, kill or have in his possession any wild song birds, and could not hunt any wild game or wild game birds at night with any kind of light or lantern.

Of course, the 1921 license provides numerous contrasts with the 1962 version, especially in higher bag limits than those of 1962. But another striking difference is in pronghorn antelope hunting. The season on pronghorns was closed in 1903 because of low populations. In 1944 it was re-opened after successful trapping and restocking programs. Another variance is in classification of game animals. For example, in 1921, the javelina were not classified as game animals and therefore were not subject to regulation or bag limits.

The difference in regulation on antlerless deer hunting, seen in studying the two licenses, points out a relatively new idea in game management. The bonus tag, which allows the taking of antlerless deer, is valid only when used with permits

provided by the Commission and issued by the landowners. The tag was added to the license in 1962, but the practice of taking antlerless deer was first authorized in 1953 for three counties. Now the bonus tag, which is a stub attached to the license itself, authorizes the taking of antlerless deer in Texas counties under regulatory authority where deer surplus exists.

The authority for antlerless deer harvesting using bonus tags and permits is not specifically granted by statute, but it is grounded in statute provisions. One county, Eastland, however, is granted specifically by statute the taking of does. This grant does not work under the bonus tag system.

The number of licenses, both hunting and fishing, sold each year has grown with the population and with added coverage in licensing. In 1909, the first hunting license sales totaled 5,000 and in 1962 they totaled 503,427. Fishing licensing began in 1927 with 6,644 sold that

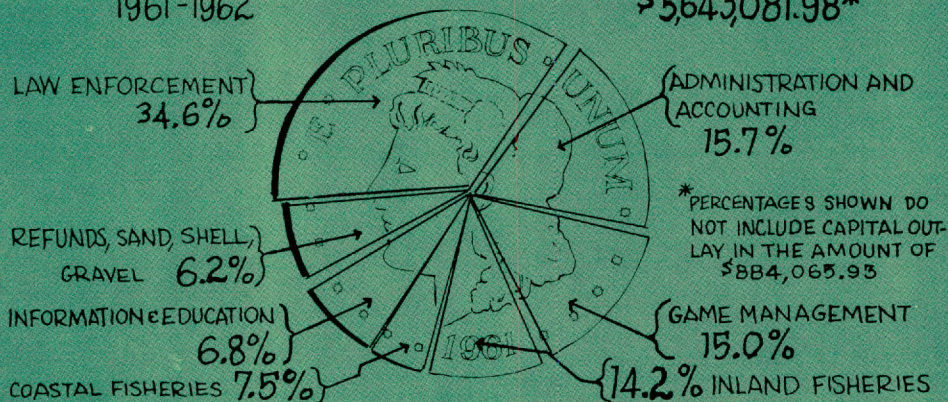
year. The sales sharply increased in 1957 when saltwater fishing was added to the theretofore freshwater license.

The prices of licenses have increased slightly over the years. The first resident fishing license was \$1. Later the license was raised to \$1.65, and in 1957 the resident fishing license with the newly added saltwater coverage rose from \$1.65 to \$2.15. There is no non-resident fishing license. Formerly, the Commission sold a non-resident and a five-day non-resident license for fishing. Also, in 1957 the hunting license was increased from \$2.15 to \$3.15. Non-resident hunting licenses are currently \$25 for big game and \$10 for migratory waterfowl.

This money spent by sportsmen for licenses, then, is ploughed back into the business of conserving and using wisely Texas' fish and wildlife resources and of providing better hunting and fishing for the 2.4 million, or one in every three, Texans who hunt or fish here each year. **

How the Game and Fish Dollar Was Spent During Fiscal Year 1961-1962

\$5,643,081.98*



* PERCENTAGES SHOWN DO NOT INCLUDE CAPITAL OUTLAY IN THE AMOUNT OF \$884,065.93

Ichabod Cranes

by T. D. CARROLL
I and E Coordinator



THREE MELODIOUS, rolling "Krooooo" pierced a windy gray dawn in the Texas High Plains. As I huddled beside an undernourished greasewood bush, I thrilled to my first hearing of a sandhill crane.

This was another "first"—sandhill cranes (lesser sandhills) had been protected birds in Texas for more than a decade. Now the season was opened from Del Rio to Western Dallam County, and I had driven half way across Texas for the opening day, November 4, 1961.

Sidney Wooldridge, a former Austinite, had called a week earlier to assure me that there were "birds aplenty" and that all arrangements had been made for Tom Diltz, a Commission photographer, Norrel Wallace, regional I&E officer, and me to join him for a hunt. We were to meet in Lubbock the day before the opener.

On our arrival, we listened to Sid's lowdown on the scouting trips he had made into crane country the past week.

"We're gonna try the Yellowhouse Ranch west of Littlefield in the morning," said Sid. "There's a shallow lake there that's had about 3 or 4,000 birds on it all week, and we should get some pretty good shooting." Inquiries directed to Sid concerning such things as "flight pat-

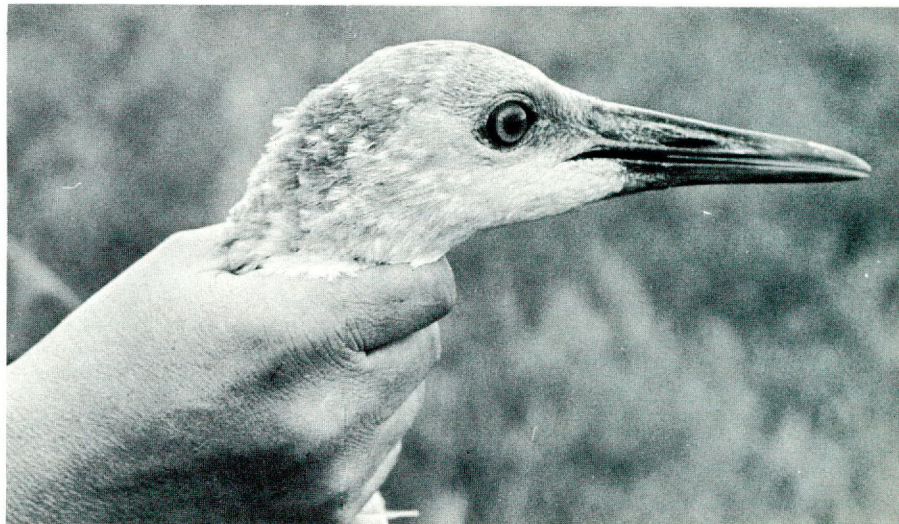
terns," use of decoys, wariness of the birds and so forth brought only the assurance, "They do what they durn please," and, "They're so wild they're scared of each other!" Norrel voiced some agreement with Sid, but a glance at Diltz proved that I was not alone with my doubts.

After all, we'd hunted ducks along the Colorado River and done all right. We figured it took a lot of patience and a certain degree of skill to lure smart mallards and pintails to a set of decoys. These birds had been shot at all the way from Canada so they should be a great deal smarter than a bunch of long-

legged, needle-beaked cranes who had nothing to do but freeload off the New Mexico and Texas grain farmers with no fear at all of hunters. Now, we would see.

Sid was right; the birds were there and I felt sure they would soon be flying—if not to feed, at least, to keep from freezing! A wavering vanguard of a dozen or so sandies was headed my way hugging the horizon. They kept coming and coming, getting higher and growing in size with each wing beat. Several times I was tempted to fire but waited till they were directly overhead, just to make sure. I led the second one

Photo courtesy of South Dakota Dept. of Game, Fish and Parks



in the near end of the line and squeezed the trigger. The load of sixes rattled up through the crisp air; then—splat! As I turned to get a lead on the bird flanking the line, I was startled by a sound that made me forget the second shot. A raucous “gleek” came from my first target, which should have been falling, but wasn't. I knew he'd been hit and instinctively I swung to finish him off. Two shots later he was still gaining altitude. It just couldn't be!

Norrel, about 40 yards to my left, pointed toward the lake where wave after wave of noisy cranes were taking to the air headed our way. I dropped behind my bush, hoping I didn't look as stupid as I felt.

The next flight was over Norrel—two shots and another loud “gleek,” but this time a crane seemed to literally disintegrate in the air. He pinwheeled down almost at Norrel's feet. As he retrieved his prize, Norrel grinned my way and yelled, “I got me a ‘gleek’ bird.”

Watching the flight over Norrel, I was convinced of one thing—these awkward looking rascals could move. I'd read that they had been clocked at 60 m.p.h. in normal flight, and, even heading into our brisk norther, these birds must have been doing at least 40. My first mistake had been an incorrect estimate of their speed, and my second had been leading the body instead of the head. I reconciled myself by saying that for a fellow taking his first shot at a bird that looked seven feet

wide and six feet long my mistakes were natural.

Sid had found a spot in a draw near the head of the lake and was getting some action. Tom was alternating his shots, one with a camera, the other with his 16 gauge—and not having too much luck with either.

Each wave of birds that came by seemed to be higher than the preceding one. Eight headed my way, pretty high, but I felt that the 30-inch full choke on my Model 12 could score. Three shots later, seven of them joined another wave and I felt better.

Sid and Norrel had their limits early. Tom and I finally got ours, but neither of us could remember how many shots he'd fired.

We returned to the car for some welcome sandwiches and coffee while we held a critique on our morning experiences and examined our game.

All our birds appeared to be in good shape, averaging about six and one-half pounds in weight. Each bird had a wingspread of at least six feet. A comparison of our prizes indicated that we had collected both adult and young cranes. Norrel, who was collecting data on sandhills, showed us the dark red bald pate which indicated an adult. The young of the year had rusty gray feathers on their lighter red bare heads and a generous motting of brown mixed with the pearl gray body plumage.

We had a couple that had characteristics of both adults and young

of the year; compromising, we called them teenagers.

The birds were returning from their feeding grounds, but they were coming in high and making their let-downs in the safety zone above the center of the shallow, alkaline lake where they roosted, safe from predators and man. We listened to their “kroos,” tinkles, squawks, honks and other combinations of sounds they made and managed to get a few long-range pictures. The cranes on the water were so nervous that the slammed door of a pick-up on a road rimming the lake a half mile from the center would put half of them in the air and all of them on alert. The three hours we spent observing the wary Ichabods were most educational and equally as entertaining as the hunt.

Sid and Norrel never once said, “I told you so.” They knew that Tom and I now shared their respect for the sandhill crane. We all agreed that, as far as the hunting was concerned, Mr. Sandhill should be classified as a game bird. But the proof, like the proverbial pudding, would be in the eating.

Back in Austin, my wife, Annette, was more impressed by the beautiful plumage of my trophies than the prospect of preparing one for dinner. However, being an excellent cook and a dutiful wife, she finally said, “If you'll clean it, I'll cook it.” So I cleaned, she cooked and my three hungry youngsters ate most of our two roasted sandies and proclaimed them “delicious.” Annette's favorite part of a fowl is, by choice, the wing; mine, by lot, is the neck. We both fared well at our crane dinner.

I can't honestly say that roasted sandhill crane is better than chicken, or quail, or rice-fed mallard, or wild turkey, but I think you'll find it palatable—and different! So Mr. Sportsman, if you've never matched wits with an eagle-eyed, runnin' scared, stilt-legged, feather-covered U-2, let me recommend a trip west. Be on the Texas High Plains when the next sandhill season opens (a decision on the season will be made in August). You'll enjoy your first encounter with the sandies whenever it is, and if you're lucky, you might get a “gleek” bird. **



Annette Carroll prepares a crane dinner for the family test.

Game bird

Texotics



by W. R. LONG and NORREL WALLACE
I and E Officers
Tyler San Angelo

AS HUMAN POPULATIONS increase and game habitats disappear, game departments must cope with a deepening responsibility of providing game for shooting sport.

With livestock, plows and fires, Americans have inundated and made vacant millions of acres of once productive habitat. Remaining areas, still suitable for wildlife, cannot adequately provide the hunting room or the game the country's population so desperately needs. Game birds are perhaps more crowded and deprived of space than other species. Since habitat restoration is slow and costly, exotic game bird introductions appear to be one answer to the immediate problem.

In the last ten years, the Texas Game and Fish Commission has experimented with four exotic bird introductions—three directly from foreign countries and one passed on from a sister state. The species are Spanish (or French) red-legged partridge, seesee partridge, gray francolin and chukar partridge.

The purpose of such introductions is to supplement rather than replace the existing game bird species. To supplement the bobwhite and other favorites, conservationists need to fill the vacant areas that generations have created. They need game birds that can live in cleanly plowed fields most of their lives or in pastures devoid of brushy cover and grazed clean by livestock. Birds that can live in areas so arid and rough that domestic stock cannot compete with them also are needed. To go a step further, this country needs game birds that can live in immediate contact with man and still provide shooting sport during hunting seasons. Perhaps this sounds farfetched, but the need is real. Real enough, in fact, that the Federal Government sponsors a world-traveling group of wildlife specialists that visits every part of the globe in search of game birds that will fit into vacant areas in the United States.

RED-LEGGED PARTRIDGE

Through extensive research this group of wildlife experts, led by Dr. Gardiner Bump of the U.S. Fish and Wildlife Service, found that areas in central Spain and Portugal were similar in many respects to the altered terrain of Texas. In Spain and Portugal, plowed fields, bordered by shortgrass prairies and scrubby brush, are the preferred habitat of Spanish red-legged partridge. In their native country, redleg males weigh about a pound and the females slightly less; they can populate to one bird per acre and fly with the speed of pheasants. The sporting qualities required in a game bird are apparent.

Spanish, or French, red-legged partridge resemble the popular chukar, except that the breast of the redleg is mottled with dark markings, whereas the chukar's breast is unmarked.

The red-legged partridge is partial to flat, rolling country and to adjacent rough hills with valleys between. The birds occur from sea level to 7000 feet, but normally in the home range, about 6000 feet is maximum. It is believed they will adapt themselves to similar terrain in Texas.

They prefer vegetable food, with some animal mate-

rial in the diet, especially in the spring. Insects, ant eggs and larvae, beetles, spiders, grasshoppers and even small snails are eaten. The principal diet, however, is grain, grass shorts, clover, leaves, vetches, knotweeds and smartweeds, and bulbs and roots. Many varieties of waste farm grains can be eaten.

The birds, which are large and heavy-bodied, seem to develop a consistent daily movement. They water in the mornings, spread out for feeding during the day, most of which is done in fields and low areas in the mornings, and on hillsides in the afternoon. By late afternoon they begin to work their way down to the roosting area in scrubland or in valleys between low hills.

A normal clutch of eggs is 10 to 16, which hatch in about 24 days. Most nesting is on the ground; occasionally, the birds nest in plowed fields or on grazed land. One brood per year is raised by the hen, and like the bobwhite, the hen sometimes renests if a nest is broken up. Some believe that if the hen is killed, the



Study indicates French red-legged partridge are suited for Panhandle.

rooster sometimes sits on the nest and hatches and rears the young.

According to Dr. Bump, French red-legged partridge are limited in their range to regions with scanty to moderate precipitation. They are, however, more able to survive in areas where there is heavy rainfall than are the chukar partridge. They are birds of warm climate and will tolerate little cold or snow.

For a beginning release of redlegs, Dr. Bump selected one site in Lipscomb County that had numerous wheatfields and the required scattering of brush on shortgrass prairies. Another site was chosen near Paducah in Cottle County, on the Pease River, with the same farmland-brushland association.

Once areas were selected for release sites in Texas,

Spanish redleg shipments began arriving in New York, but numerous delays were costly. Redlegs captured in Spain were held in confinement 60 days in Madrid for vaccinations for Newcastle's disease. On arrival in New York, another 15-day quarantine was imposed by U.S. health officials. Finally, the birds were flown from New York to Love Field in Dallas, and transported by truck to release sites. During 1955, 1956 and 1957, 398 redlegs were shipped from New York to Texas, but only 332 lived to be released. Excessive handling and long periods of confinement in shipping crates weakened the birds and subjected them to natural predation after their arrival in Texas, although biologists used every known method to protect and care for them during conditioning periods. Great horned owls, Cooper's hawks, skunks and other predators reaped a heavy harvest of expensive exotics.

Also the shipments of redlegs which were divided between the release sites in Cottle and Lipscomb counties—275 going to Cottle County and 101 to Lipscomb County—arrived during the worst Texas drought since the 30's. In addition to extremely dry, hot summer weather in 1955 and 1956, the winter of 1957 marked one of the worst Panhandle blizzards on record. Temperatures dropped to 15 degrees below zero during March with wind velocities reaching 70 miles per hour. Twenty-foot snow drifts were not uncommon, and even native game birds suffered high mortality under such conditions.

To the disappointment of all concerned, exotic redlegs, already weakened by long confinement and rough handling, could not cope with such extremes. For three years extensive checks in the vicinity of all release sites revealed only a scattered few exotics remained.

But releases continued. In March, 1959, 56 red-legged partridge were released on St. Joseph's Island on the Texas coast, and they were followed by a release of 22 birds the next year on the Sheldon Wildlife Area. Hatchery production continued, and three releases were made in 1961 in Lamar County in North Texas. Two more releases were made in 1962, also in Lamar County. More than 800 healthy birds were released then, and it was felt that they were in condition to withstand the rigors of the wild.

This year, 1963, saw the release of 250 birds in Lavaca County, in an area that had suffered the whip-lash winds of Hurricane Carla and where native bobwhite had been depleted. No conclusions on the success of these latest releases are available.

SEESSEE PARTRIDGE

To fill the game bird void within the Palo Duro Canyon, Dr. Bump recommended trial introductions of seese partridge from West Pakistan. The quail-size seese does well in the rough, rocky terrain of Pakistan which resembles areas in the Palo Duro.

As in the case of the redlegs, the seese partridge shipments arrived in New York and experienced quarantine periods and other delays before being shipped to release sites in Texas. The seese releases took place between redleg operations.

• Continued on Next Page

The 241 seese partridge released quickly disappeared from the rough Palo Duro Canyon, perhaps showing their discontent and resentment at being released in rugged canyon surroundings under scorching drought conditions. Ecological factors of unusually extreme temperatures and rainfall, as mentioned in connection with the redleg releases, were blamed for the fate of the seese partridge introductions.

GRAY FRANCOLIN

Experiments with the gray francolin have been somewhat more successful, with one release made this spring. The gray francolin is an Asian bird, native to Southern Iran and as far east as Central India. The birds prefer a dry, warm open scrub or weed desert and will tolerate weedy areas of open cultivation. The range of tolerable temperature is extreme, from 20 degrees to 120 degrees, with an equal extreme in rainfall tolerance. They need little water, but they are unable to survive much snow.

Primarily their diet consists of weed and grass seeds and little animal material.

Reproduction capability is great in the gray francolins. Two and occasionally three broods are produced each year. After the first warming rains, they begin nesting and will do so in almost any month until winter. The average clutch of eggs numbers from seven to 10.

Larger than Texas' native five-ounce bobwhite, the gray francolin weighs about nine ounces normally, but with an adequate food supply it reaches 12 ounces. It is dusty tan, or beige. In some desert terrain it is difficult to see. The hens are smaller than the males. The francolins resemble bobwhites when they flush, but they have the scaled or blue quail habit of running for long distances on the ground and flushing only when hunters are near.

The gray francolin's roosting in low trees and shrubs rather than on the ground is a factor favorable to survival. Many observers feel that this species will have less danger from predation than others because of several of the normal habits of the birds.

In April, 1959, francolins were first released in Texas. On that date 300 wild-trapped birds were released by the Fish and Wildlife Service. It was a long way from the birds' home in India to the site just north of Brady in McCulloch County, but the land and habitat conditions in that region resembled the type of land where the birds were trapped. Biologists had hopes for reproduction in significant numbers.

In May, 1963, the Tyler Quail Hatchery delivered another 192 birds, hatchery-raised, to this area to inject new blood into the populations. This release was just north of Brady, near the community of Fife.

Information was very scarce on the releases, and for that matter, still is scarce. There are unconfirmed reports of reproduction, but few accurate and proved figures. The birds were few and the release area was large. Gray francolins are apt to wander widely following their release. This is especially true of wild-trapped birds, but scientists believe that hatchery stock may have tendencies that will keep them nearer the release

site. It is still too soon to evaluate the liberations in terms of success or failure, but there is guarded optimism about the success of the species in this type of habitat.

CHUKAR PARTRIDGE

In 1958, on the heels of Panhandle release failures, 500 wild-trapped chukar partridge from Nevada were released on the Black Gap Wildlife Management Area in Brewster County. In 1959, another 200 birds from California were added to the first release. Although slight reproduction did occur, tremendous movement took place with individuals traveling many miles from release sites. Biologists now estimate not more than 20 to 25 chukars remain on the Black Gap; however, there is a possibility of populations building up in adjoining areas.

State biologists are keeping a trained eye on the unlikely possibility of exotics affecting native game bird populations, and thus far there is no reason to believe that any harm could exist, and certainly there has been no evidence to substantiate the thought.

Unknown factors concerning exotic introductions still bewilder wildlife biologists who have devoted their professional careers to finding much-needed answers. But they will not become discouraged because of initial failures. If biologists were prone to become discouraged, splendid game birds like the Hungarian partridge and the Chinese ring-necked pheasant would not be in the United States today.

Introductions of exotic game birds will continue in Texas, and in time, vacant pastures and freshly plowed farms will support game to meet our growing need for recreation. **



This gray francolin, an Asian bird, awaits release in McCulloch County.

Oysters Aboard

by JIM STEVENS
Coastal Fisheries Supervisor
La Porte

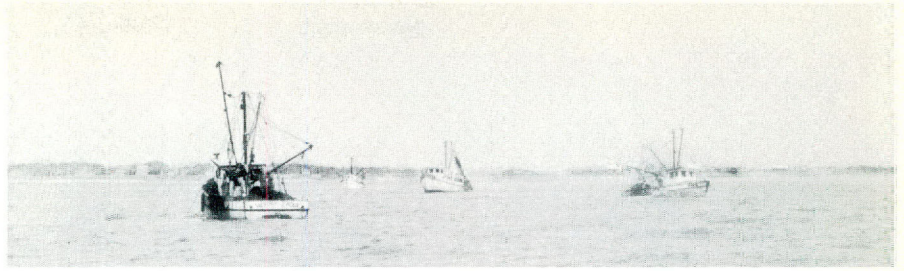
LOCAL COMMERCIAL oystermen this spring transplanted oysters from public but unsanitary reefs in Trinity and upper Galveston bays to reefs in clear water. The oysters, which were transplanted with approval of the Texas Game and Fish Commission, will have cleansed themselves and be ready for harvesting when the next season opens in November.

The reefs, in waters polluted by domestic sewage, were producing large quantities of commercial size oysters, but the State Health Department was prohibiting the dredging and sale of the oysters.

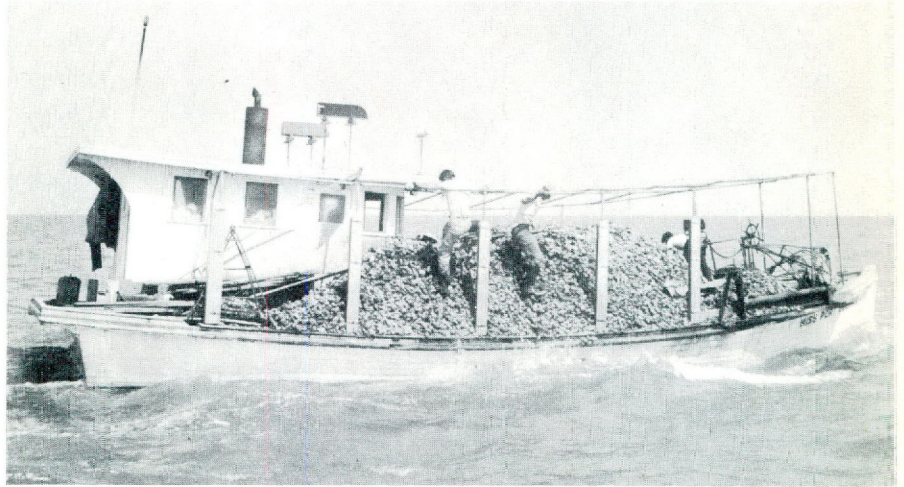
Oysters feed on plankton (microscopic plants and animals including bacteria), which they strain from their surrounding water. Pathogenic organisms (those which cause disease) can become concentrated in oysters to a degree dangerous for human consumption. But the oysters can cleanse themselves of harmful organisms in the same manner in which they acquired them. When moved to clean, sanitary waters, an oyster can cleanse itself of pollution in less than two weeks. An oyster strains from five to 30 quarts of water per hour; this flushing washes away wastes.

The Commission marked Fisher's, Beasley's, Dow, Scott's, Barrel and Bayview reefs from which the oysters were removed as well as Pasadena Reef and small reefs west of Redfish Island, where the oysters were planted.

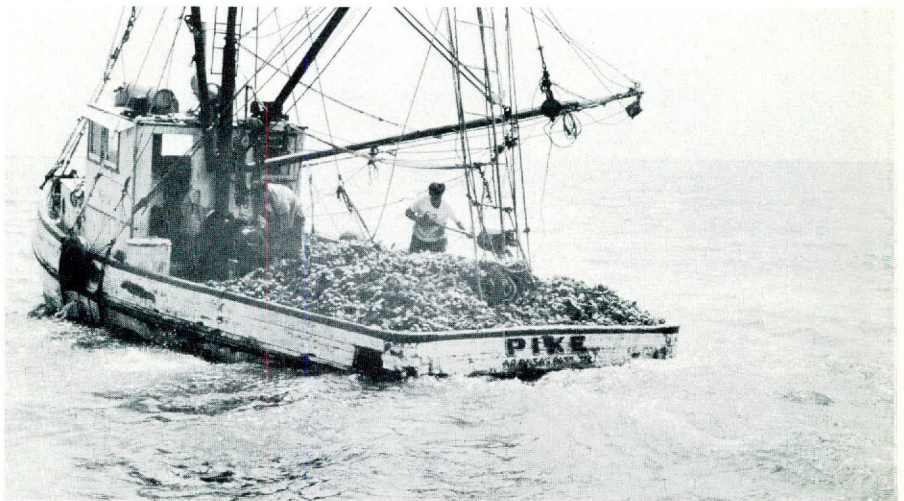
The oysters were dredged, stacked on board the boats and car-



Twenty-one oyster boats participate in the transplant from unsanitary to clean waters.



A Louisiana style boat begins unloading its valuable cargo of oysters on Pasadena Reef.



Deck hands shovel oysters overboard on Pasadena Reef, where they will cleanse themselves.

ried six to 12 miles to clean waters. No special precautions were necessary except that the transplant had to be done during cool weather.

Since the work was done April 1, 2, and 3, after the close of regular oyster season, the Commission had to issue oyster transplanting permits to the participating boats.

During the three-day period, a total of 5,486 barrels of oysters was moved. Of these, 4,731 barrels of

oysters were placed on Pasadena Reef and 755 barrels along the west side of Redfish Island. These oysters will be available next season not only to the men who did the work, but also to all commercial oystermen.

Oystermen and boats participating in the transplant were as follows: Lonnie R. Grounds, Lilla M., Deer Park; Jack Jez, Shadow, Kemah;

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Beak-niks

by ANN STREETMAN and RON PERRYMAN

The black skimmer (*Rynchops nigra*) is one of Texas' most interesting avian residents. The bird enjoys Texas beaches, salt bays and tidewater the year around. The bird is found in other sections from Massachusetts to the Strait of Magellan and winters from the Gulf of Mexico south, according to ornithologist Roger Tory Peterson.

Unfortunately, beach roamers sometimes interfere with the bird's daily life. They throw broken bottles into the skimmer colonies and otherwise harass the birds. Wildlife vandalism such as this eventually could drive the species from Texas.

A BEACHFUL of skimmers is the scene of good-natured avian activity. The bedlam of barks and grunts is matched by a variety of

neck craning, foot shuffling and wing flapping.

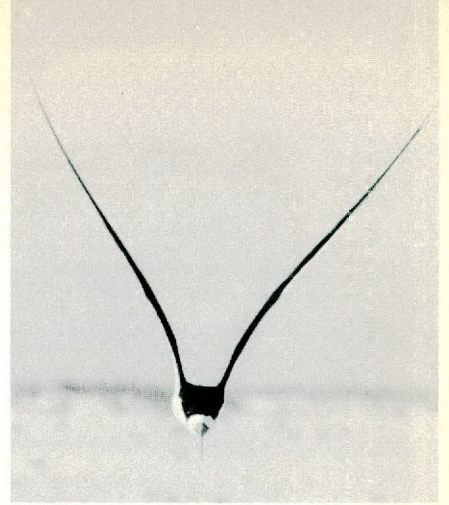
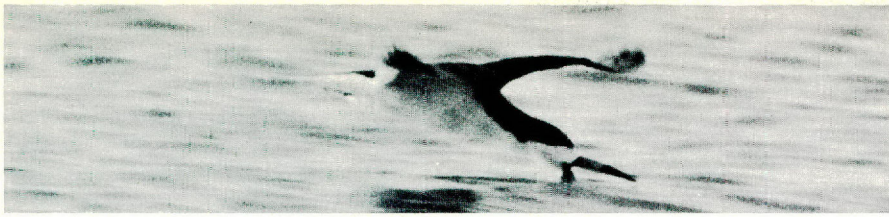
With black and white markings, orange beak, feet and legs, adult skimmers (both male and female) look like formally attired eccentric gentlemen who have a flare for color. Unequal mandibles, the lower being longer, add to the eccentric effect. The youngsters, drab little fellows by contrast, are a protective mottled buff.

Both youngsters and adults are always busy—some adults skimming low over the colony; others standing and peering alertly from side to side; youngsters importantly hurrying in a duck-like fashion from one spot to

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Photos by Ron Perryman





The birds seem to prefer late evening for their fishing. Some believe that tides affect feeding more than time.



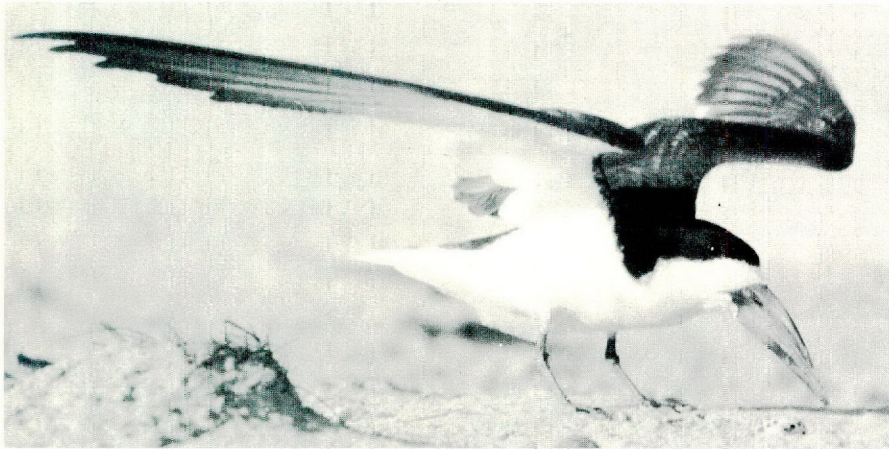
Left, the bird keeps its beak at the same depth as it skims.

Patience and precision pay off for a persistent fisherman.

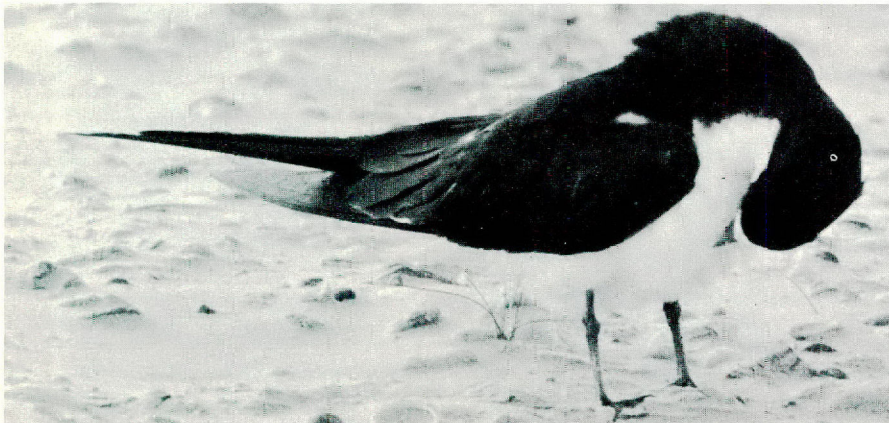
With sharp beaks and determined appearance, skimmers sometimes dive at intruders. They turn, however, at the last moment—bluffing.



A fellow always has something to yap about.



A black-jacketed fellow alights and performs rapid wing gymnastics to tuck them all in.



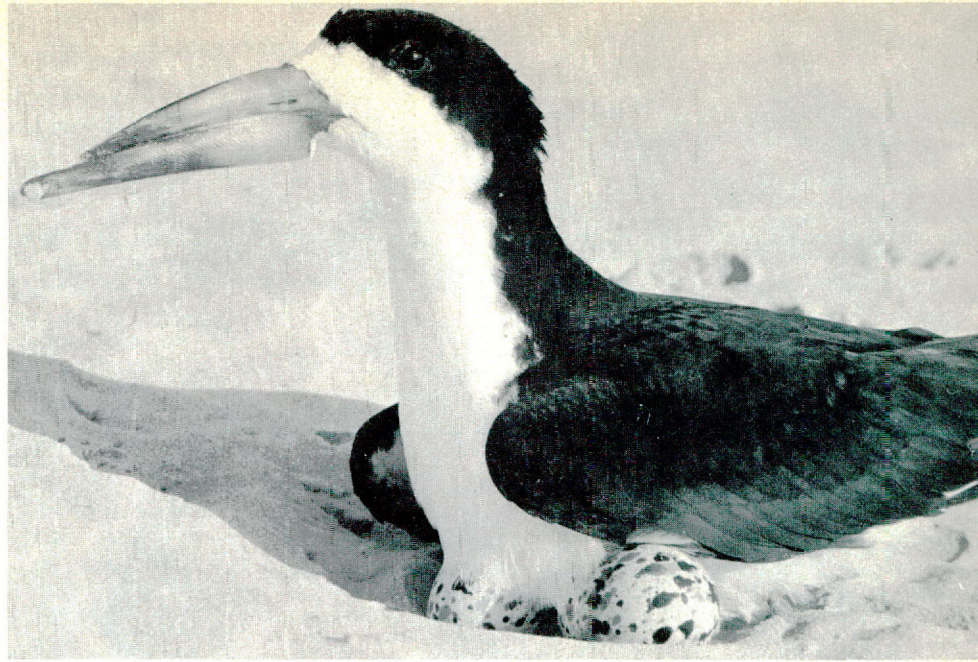
Preening requires time and neck muscles, and the skimmer has an adequate supply of each.



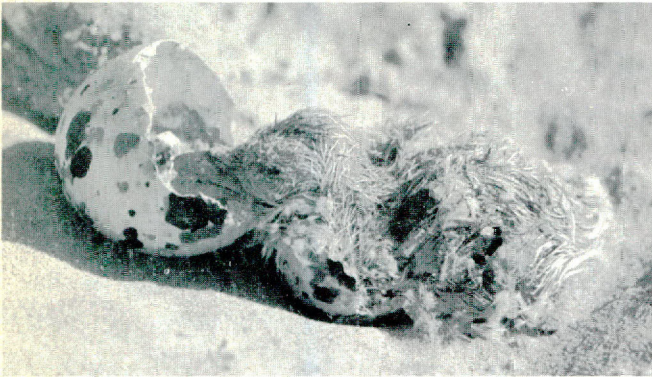
Someone's always landing or taking off while his neighbors crane to watch the activity.



Resting in a shallow, unlined depression, the speckled eggs blend with bits of beach shells.



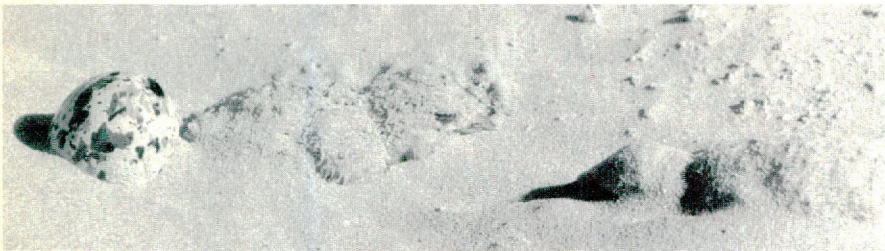
When the female returns to her nest from a brief fishing trip, she squats on her eggs and then squiggles to fit them neatly under her breast feathers, which protect them from the sun.



Only a fond skimmer mother could call this mess a bundle from heaven.



To protect themselves against predators, babies flatten in the sand.

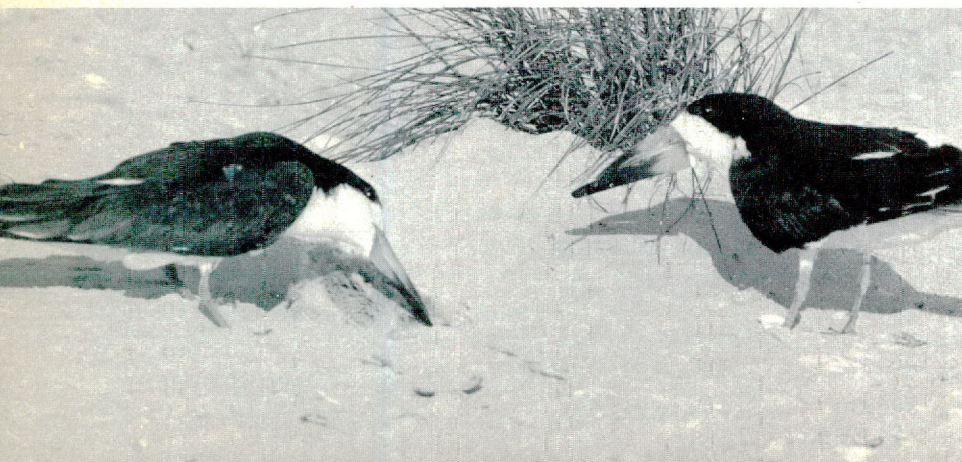


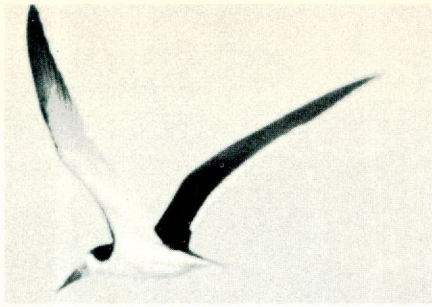
The hiding skimmer babies snuggle into the sand and lie motionless; they would let the sand bury them before they would move and give away presence to ill-wishers on the beach.



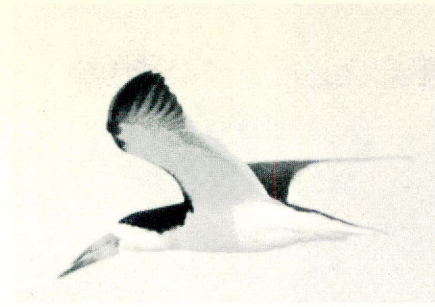
A baby nestles by its quiet mother, both awaiting the blossoming of late-hatchers.

An adult nips at a straying youngster while a curious neighbor watches the disciplining.





Although the skimmer is an awkward looking bird on the beach, it is a graceful flier.



Whether swooping down over the water to fish or just out for a pleasant flight, the bird creates a lovely scene of beauty and grace.



With airy pirouettes and comely sweeps, two skimmers enjoy an elegant frolic.

fascination to another.

Now and then a jokester in the crowd looks for a good laugh. He swoops down on a quiet fellow and the two exchange a quick beakshake.

From the air, a skimmer colony must be a careless looking settlement, for the nests of approximately 50 pairs apparently are placed haphazardly on the beach. The construction of the incubation spot, in fact, is so casual that the site can hardly be called a nest. It is merely a one- or two-inch depression in the sand made by a few revolutions of an adult body. The nest contains four to six speckled eggs.

Although nest construction and placement appear disorderly, every

fellow's nest and surrounding few feet constitute his castle. Strangely, in this easy-going atmosphere, territorial rights are respected. Adults, although on yapping terms with neighbors, do not wander around making social calls, at least not during nesting season. Even the babies, newly hatched, respect property, or they learn to do so. When a youngster adventures to sandier sand, he is promptly reprimanded with tweaking and scolding by the property owner as well as several interested neighbors.

Sometimes a fluffy little wanderer apparently sets off family and colonial feuds which are serious but short-lived. One such disturbance

was observed and interpreted in the following manner.

Young Marco Polo waddled over

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This broken wing act is calculated to distract any roaming intruders.



Mother skimmer looks protective as she lights on her shallow nest.

It looks like an awfully big, dazzling world to such a little fellow.



Rainbow Time in Texas

by CHARLES R. COLLUM

SOMETHING exciting is in the making for Texas anglers—rainbow trout fishing.

If all goes well, in about a year 10 to 20 miles of the picturesque Guadalupe River, downstream from the new Canyon Dam in Comal County, will be flowing to the whipping of fly rods and the splashing of rainbow trout reeled in by Texas fishermen.

Officials of the Texas Game and Fish Commission are not certain that the trout released in the river will survive, but chances are great and hopes are strong that they will live. They are not expected to reproduce, but, if they do at least live, the Guadalupe River will be the only state-owned waters in Texas in which rainbow trout are found; some small residue releases from boat shows have been made, however. Some trout are thriving in privately owned water and in some of these waters the trout reproduce. The best known privately owned trout water

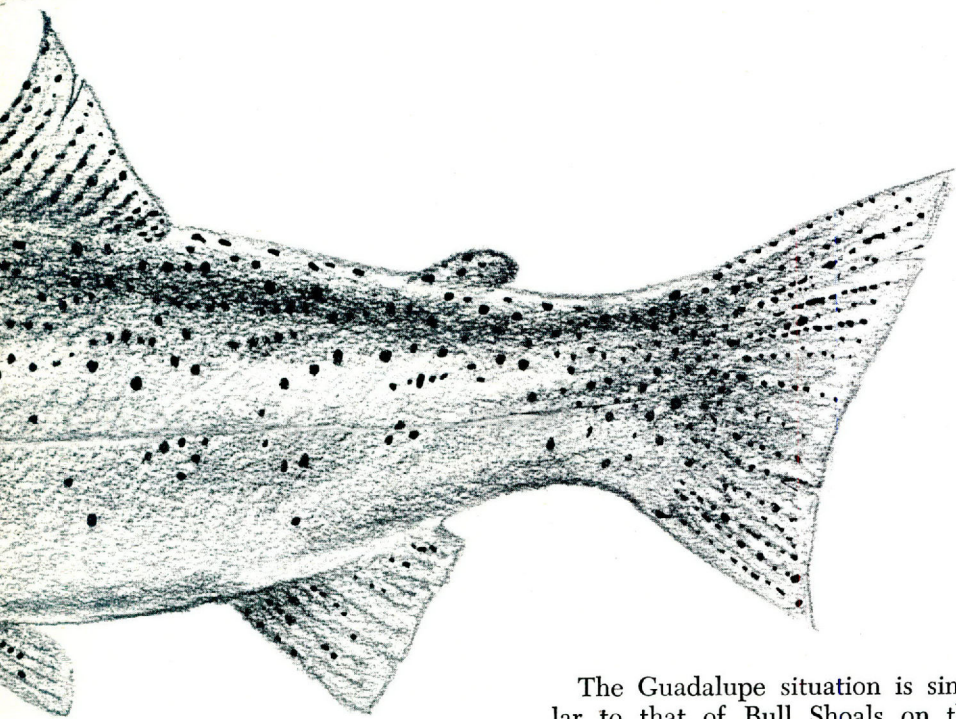
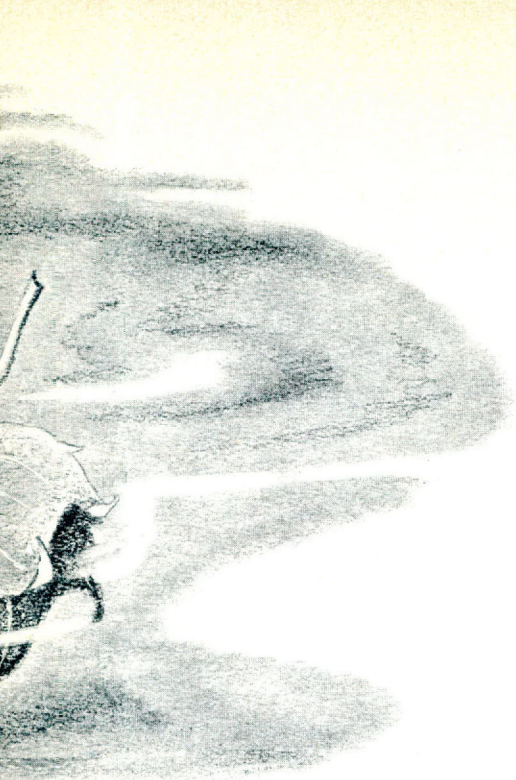
is near Pine Springs in McKittrick Canyon. It is owned by Tom C. Hunter.

Trout survival in Texas has been at a minimum because the water in

Texas rivers is not cold enough, or, if the water is cold, it is devoid of a sufficient amount of dissolved oxygen and contains too much dissolved carbon dioxide for trout.

Trout need a water temperature generally below 80° F, with the





ings were favorable but not conclusive.

The recently completed Canyon Dam will form a reservoir with cold depths. When the water is released into the Guadalupe, it will be about 54° F and will have warmed to about 75° F 10 miles downstream. The water released will have a low amount of oxygen, but as it flows over the natural course, tumbling over small waterfalls and being tossed and sprayed over a wide area of rocky river bottom, the necessary 5 ppm oxygen will become dissolved in the water. Thus, the finny transplants will have the two prime requisites for survival—cold water and a sufficient amount of dissolved oxygen.

The Guadalupe situation is similar to that of Bull Shoals on the White River in Arkansas, where a like experiment has proved successful. "We think we can duplicate what they have done there," commented Marion Toole, inland fisheries coordinator of the Commission.

The reservoir will start impounding water next fall. As soon as it is filled and the water temperatures have become adjusted, small trout will be released into the river. The release is expected to occur in the early months of 1964.

temperature not to exceed 80° F for more than two consecutive days. Five parts per million (ppm) dissolved oxygen and little dissolved carbon dioxide are needed.

The United States Department of the Interior's Fish and Wildlife Service made a study of the possibility of trout survival in the Guadalupe River below Canyon Dam. The find-

Since the trout are not expected to reproduce, the river will be stocked with trout on a put and take basis, according to Toole. Small fingerling trout furnished by the federal hatcheries in New Mexico will be *put* into the river and Texas anglers will *take* them from the river.

To maintain trout populations for anglers, a release will be needed yearly. It is expected, however, that periodically there will be years (about every 13 years) in which reservoir water storage will not be sufficient to provide summer water releases cold enough to maintain trout.

In those years, "Warmwater fish, principally spotted bass, smallmouth bass and largemouth bass, will provide a limited catch," reported the U.S. Fish and Wildlife Service.

The introduction of rainbow trout to the Guadalupe will be matched at the same time with the introduction of the walleye pike to the adjoining Canyon Reservoir. The walleye pike, a member of the perch family, grows to a weight of from 12 to 14 pounds. Some time ago the Commission gave Iowa a number of Rio Grande turkeys, which have adapted successfully; in turn, Iowa promised to supply Texas with some walleyes. Whether the walleye will adapt to Canyon Reservoir is unknown. This experiment, too, will be watched closely, for if they survive they will help in ridding the lake of undesirable species, including shad.

Together, Canyon Reservoir and the Guadalupe River will entice sportsmen to spend approximately \$2,200,000 annually through use of the new fishing areas. Most of these people probably will come from San Antonio, a city in which fishermen have long wished for nearby fishing waters.

Even though Austin has several nearby lakes and rivers, Austinites are expected to travel the 58 miles to the trout water to try their luck.

If the sporty rainbow trout can successfully be added to the Guadalupe's setting of giant cypress, cottonwood, pecan and willow trees, Texas will have a small-scale trout fishery as inviting as any state. **

A RECENT comparison of die-offs in Dimmit and Kerr counties illustrates this management principle—that given the same general condition, drought for example, deer on two different areas will not necessarily perform similarly and therefore cannot be subjected to the same management measures.

While working on a brush control project in cooperation with the Game and Fish Commission, some Texas A. & M. wildlife biologists witnessed a deer population reaction to drought in Dimmit County which apparently was quite different from the effects of a drought in Kerr County occurring at the same time.

DIMMIT COUNTY

The drought began in Dimmit County in the summer of 1961. The

good flesh. Several sick individuals were reported. The specific cause of the sickness was not determined, but the external symptoms were emaciation, listlessness and obvious intestinal disorders.

Approximately 300 deer, including cripple loss and study specimens, were taken from the entire ranch during the 1961 hunting season. One portion of the ranch, the central study area, was more heavily hunted than the river pastures area, which is several miles away from the central study area.

Removal, counting possible cripple losses, totaled approximately one deer for 50-55 acres in the central

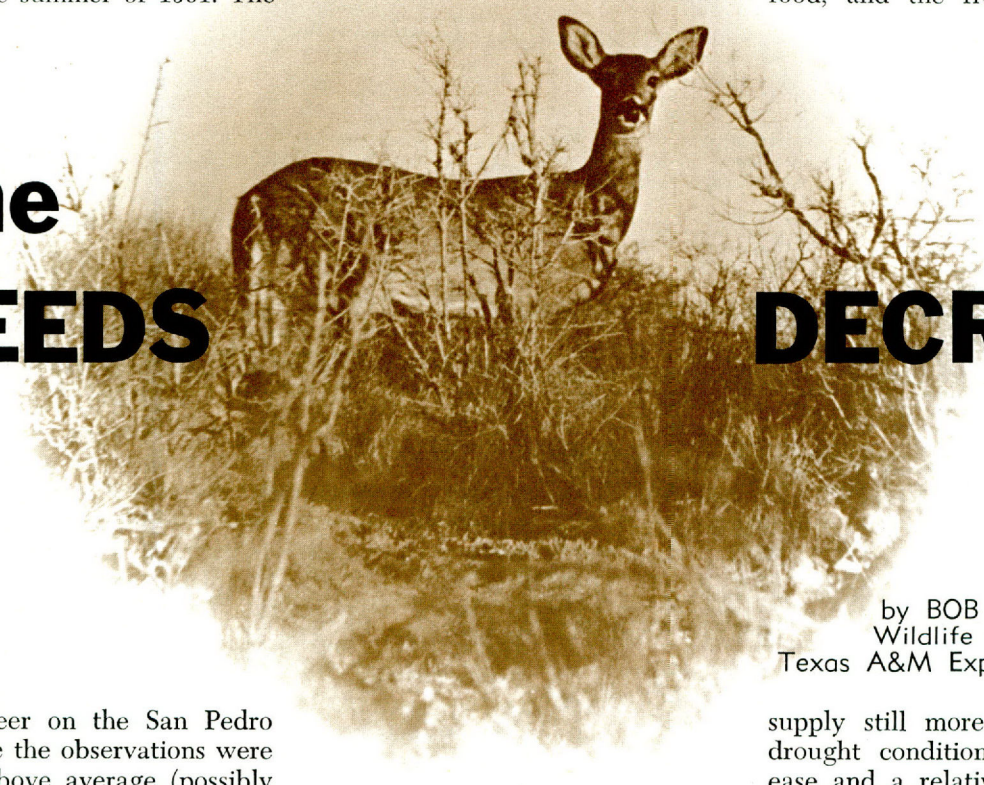
hunting may partially explain the severity of the river pastures die-off which occurred in early 1962.

Of course, another factor affecting the die-offs was that in the more heavily harvested area fewer deer were left to compete for the available food. Although the two areas of the Dimmit County ranch differed ecologically, the difference was not believed to be great enough to account for the unequal losses.

Adding to the mounting die-off conditions in Dimmit County, a prolonged, hard freeze came in early 1962 shortly after the fall hunting season. This stripped leaves from the brush, damaged tender twigs and "burned" other green forage. The drought had already cut into the quantity and quality of the deer food, and the freeze reduced the

The NEEDS

DECREE



by BOB SPICER
Wildlife Biologist
Texas A&M Experiment Station

density of deer on the San Pedro Ranch, where the observations were made, was above average (possibly one deer for every 20-25 acres) for that part of the state. The owner felt that there had been a decrease in the size of individual deer as the population had gradually increased.

An antlerless hunt was permitted on the ranch in the fall of 1960, but a good fawn crop in 1961 had replaced the deer taken by hunters as well as those lost to normal causes.

The drought was several months advanced when the 1961 hunting season began. The deer were not in

study area and one deer for 1,000 acres in the river pastures. The subsequent die-off was more severe in the lightly hunted river pastures than in the central area. It is likely that the hunters of antlerless deer harvested a substantial number of sick deer since some hunters complained about poor trophies and since sickly deer are likely to be bagged. Thus, the fact that sickly deer in the relatively lightly hunted river pastures were not taken by

supply still more. Thus, the 1961 drought conditions, cold, and disease and a relatively high population level combined to cause a not too severe die-off in early 1962.

But some rains fell in April, 1962, and heavy crops of prickly pear apples and mesquite beans, which are important deer foods in South Texas, were produced. Blackbrush, though bitten by the cold, recovered as did other brush species so the deer remained in fairly good condition even though drought conditions continued. But, there was practically no fawn crop in 1962. One could

scarcely expect a rousingly good fawn crop under the circumstances, but certainly there was little reason to expect an almost total failure on this Dimmit County ranch.

Predation may have been responsible for part of the fawn mortality. Buffer species, such as rabbits, rats and mice, became scarce as the drought wore on, and hunger became a common denominator among predators. Most large hawks moved out; rattlesnakes and bobcats became thin and bony; coyotes stuffed themselves with mesquite beans and prickly pear apples; badgers turned to eating rattlesnakes; only mountain lions showed little or no ill effects.

Although predation may have contributed to the failure of the fawn crop, the only small fawn carcass reported to the author was not marked by predators. However, such small carcasses would not have been left lying around very long.

KERR COUNTY

Through the summer and fall of 1962, the A&M group watched a deer herd in Kerr County in the Hill Country for comparison. The adult deer in Kerr County were in much worse physical condition but produced a fair fawn crop of about 8 to 10 fawns for 10 does. This was not a good crop, but under the circumstances, it was not bad. Most of these fawns remained poor, ragged and stunted, and some began dying in December.

Conversely, the deer on the San Pedro in Dimmit County, which were fatter than the Kerr County deer, yielded a negligible two or

three fawns for each 100 does in the summer of 1962. These fawns were healthy and vigorous, and they grew rapidly. But the Kerr deer reared 30 to 40 times as many fawns for an equal number of does despite inferior physical condition of both fawns and adults.

Why the comparatively fat does on the San Pedro in Dimmit County produced a smaller fawn crop than the physically weaker ones on the Kerr County area is not known. The general lack of food values can be eliminated as a factor. Certain sta-

riod of time but failed to develop adequate embryos or perhaps failed to lactate.

Excessive consumption of certain plants might have produced adverse effects. The scarcity of food might have induced deer to consume items normally avoided, including some plants which produce temporary sterility and cause abortion.

As for development of fetuses of Dimmit County deer, four of five does collected in the spring were bearing single fawns and one had twins. All appeared to be normal.

Does studied in Dimmit County produced fewer offspring than comparatively weaker ones seen in Kerr.



ple foods were abundant on the San Pedro prior to and during fawning. However, vitamins, essential amino acids, trace elements or enzymes might have been absent or in short supply. Does could have remained in fair apparent condition for a pe-

This number was not adequate for conclusion, but it hints toward loss during late pregnancy, parturition, or shortly after birth.

According to antlerless deer management principles, the Game and Fish Commission did not open Dimmit County for antlerless hunting in 1962.

In short, the failure of the fawn crop in Dimmit County was related to drought and apparently involved different problems than those induced by an ostensibly similar drought in Kerr County. The facts and scientific conjectures presented are only a few involved in studying such a case. The complexity of this ecological problem is typical of wildlife biologists' work. This case points out a principle with which wildlife biologists constantly work—that each area must be studied and managed according to its peculiar needs. **

During drought conditions in Dimmit County certain food remained available.



PASTEL SHADES of early dawn were just beginning to peek over the golden dunes of near-by Padre Island as Jack Bartholomew and I drifted up to one of the spoil banks strung out along the Port Isabel-end of the Intracoastal Canal. We began the tedious job of scanning the water for fish working along the tiny shoreline. Jack was lighting up his first smoke of the day when he stopped and nudged me. Turning, I focused my attention on the spot he was watching. I saw them right away. Two big trout were slowly fanning the water in a grassy inlet that couldn't have been more than two feet deep. I also noticed a mullet giving the spot a wide berth as it went scurrying by.

Now comes the ticklish part, I thought to myself, as Jack picked up his casting rod and carefully slipped over the side of his outboard into the pea-green water.

Working his way along the bank, he approached the inlet from an

angle and then cast the chugger on the end of his line 20 feet beyond the barely moving fish. When the tiny ripples around the plug had settled, he twitched it gently. The plug gurgled back a happy reply. He twitched it again and this time the lure coyly bobbed and sputtered around a bit before it started on its wobbly return.

It never made it back.

The chugger was still struggling four feet away from the closest trout when the fish decided it was time to end the charade and charged it savagely. Coming halfway out of the water, the speckled giant pounced down on the red and white bait amid a shower of foaming water. The moment Jack set the hook, the confused fish came completely out of the water in one tremendous leap that sent sparkling drops of spray skyward. Then it headed for deeper water, leaving a muddy wake behind it. Five minutes later the six-pound trout turned over on its side

and gave up . . . but only after it had churned the surrounding water into a muddy froth.

About now some fishermen might be thinking that the taking of a six-pound trout on a topwater plug was something of a fluke. It wasn't. Surface plugs have always worked well in the southern end of Laguna Madre Bay because of the shallow water found along the spoil banks and Padre Island shoreline. If you want to surface-plug for trout, you must have water shallow enough for you to see the fish you're casting to and shallow enough for the fish to see the bait once it starts working. As most experienced fishermen will tell you, it doesn't pay to cast blindly while working a topwater plug; too many times you spook fish you probably would have seen later.

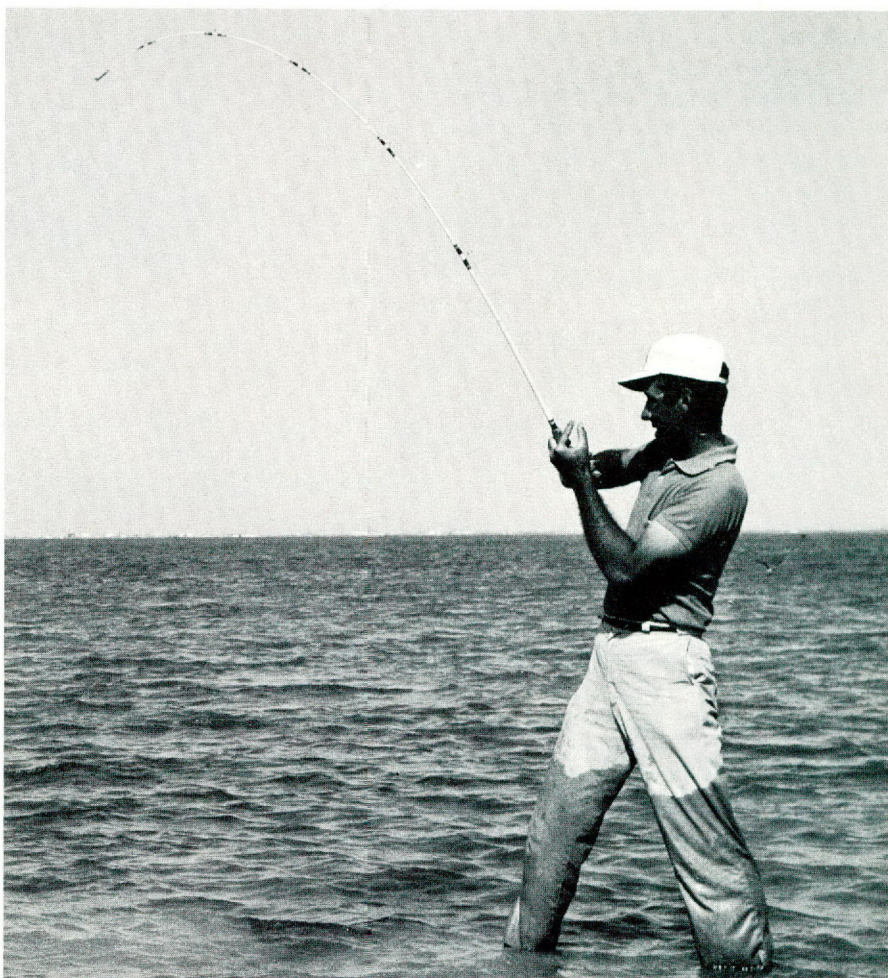
The best thing to do when fishing the flats or spoil banks is to drift along on an outboard or scooter, or wade, until you spot fish activity.

TOPWATERS

for

TROUT

by GUS GETNER



With cool feet and tense muscles, Jack Bartholomew of Port Arthur plays in an angry trout.

Although often there are fishless periods, the waiting is worth it because, much like black bass, speckled trout don't mince around when they take a topwater lure. They come up and clobber it with a wild, hair-on-the-chest type of attack that often leaves newcomers to this experience gasping for breath.

In fact, this spectacular type of trout fishing has become so spell-binding to a group of Rio Grande Valley topwater-addicted fishermen that they plug the flats at night, casting only when they hear the water swirl, mullet skittering or shrimp being popped on the surface.

Although individual fishermen have their particular preference when it comes to choosing a topwater plug, the lures can readily be broken up into three types . . . chugger, stick (jerk stick) and the darter plug. The chugger's action has been described earlier. Trout sometimes seem to become infuriated with the popping and gurgling and will often strike even when they are gorged to the bursting point. Fishermen should keep in mind that trout often will miss two or three times before they actually hook themselves. Care must be exercised not to jerk the rod before the fish takes the plug. This advice is easier to give than it is to practice because it takes a mighty big man to keep a steady hand on the rod while a big sow chops the water around the bait into tiny flakes of water.

The stick lure, and that's what it sometimes resembles, rides the surface at a 45-degree angle and pops enticingly against the water when jerked with a hard, upward sweep of the rod. The noise it produces is similar to a hungry trout's sucking down a shrimp from the surface of the water. Big trout hear the stick plunk and charge up to it, thinking it to be a tidbit another fish just missed. To most beginning fishermen the beauty of this plug is that a fisherman need never retrieve it; it can be left in one spot and popped as a fish passes by. This eliminates the pin-point casting sometimes required when surface plugging.

The favorite of the real pros is the torpedo-shaped darter which can effectively be put to use when trout have refused all other offerings. It



Taking big ones like this with topwaters is worth any veteran's fishing time and prowess.

works best when cast out and then zig-zagged before the trout, teasing it into hitting. Since a similar type of lure used in Florida waters annually takes the biggest trout in nationwide contests, it might pay to have some of our own fishermen use it

more often, even though imparting the action to it is hard on the wrist and arm.

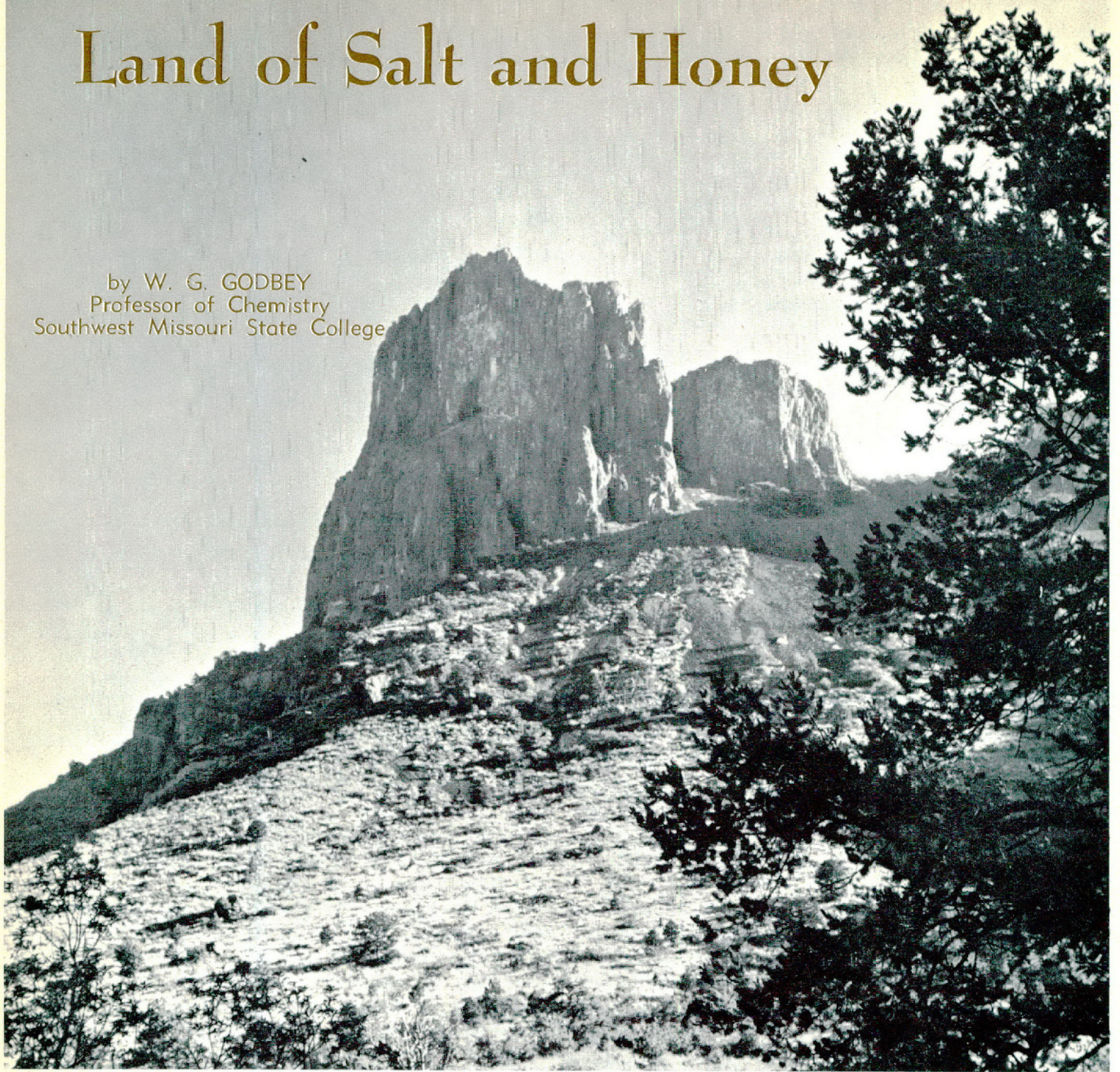
But then no one says surface plugging for trout is easy; it's hard, exacting work . . . but believe me, it's mighty rewarding. **

Fishing with topwater lures is not the easiest way to get a stringerful of speckled trout.



Land of Salt and Honey

by W. G. GODBEY
Professor of Chemistry
Southwest Missouri State College



FOR EIGHTY miles south of Alpine, the car tires had sung their tune on the lonely road. With the steady monotonous drone of the motor, the temperature of the car radiator had climbed steadily by the mile. Now it was about as hot as Billy the Kid's six shooter. The heat was bad enough, but to make it worse we had not seen a single billboard, car, roadside store or house since leaving Alpine.

Suddenly the wife came to life and pointed to a small Coca-Cola sign beside the road. She exclaimed, "Turn here, maybe we can get a Coke. I'm about to die of thirst."

This dust-covered lonely country

was to be our home for two or three weeks while I was evaluating more than 300 sections for minerals, soil classes, water and pasture. Gypsy, our German Shepherd, was to be my field companion.

Later, as we were getting settled, Helen remarked, "Sort of looks like the moon. How long did you say we were to stay here?"

Using plenty of gestures, I tried to explain this barren, mountainous country to her. "Millions of years ago the earth was restless for a decade. A section of land, some 40 miles square, with its heart only a few miles southwest of here, dropped a mile in depth. It is called the

Big Bend Sunken Block. Explosive volcanic activity shook this place. The earth cracked, faulted and folded. Igneous lava rose, cooling to form the vertical walls of many mountains. Enormous blocks of land, miles across, were tilted. Some stood on end. Some even flipped upside down. A very massive jumble of rocky mountains was formed. During the time that followed, the rains and winds carved the land, leaving it the semi-desert you now see."

"How do you plan to cover all this territory?" Helen queried.

"Well, I will start out walking. This southern part of the ranch has

the roughest terrain. There are at least 20 mountains over 3500 feet and several of these will shade 5500 feet. I'll take Gypsy with me and each day try to cover 10 miles out and back by nightfall. If the terrain is smoother on the northern part, we will get a jeep and cover it."

My first trip was up Rough Run Creek to Christmas Mountains. We had lived in Colorado and were quite familiar with mountain climbing. In addition, we had spent some time in the desert and knew its ways, we thought. I was looking forward to this *easy* hike. But, as it turned out, it came close to being my undoing.

Only a short distance up Rough Run Creek, Gypsy and I came to a seep spring. Around the spring, the earth had been blackened by long-burned-out campfires. Here and there I found an arrowhead, a piece of pottery, animal bones and part of a human leg bone. In the rock beside the spring was a basin used to grind corn. On the cliff above the spring were some Indian carvings, a sign language to tell fellow travelers the distance and direction to the next spring. As we walked along the creek, I saw on the mountain walls small caves created by lava flows.

The coyotes had become interested in Gypsy, and I could see about six of them following 100 yards to the rear. Every now and then, one would yap and another would answer about a quarter of a mile up ahead. I called Gypsy back, put her on a leash and then picked up an old mesquite root about four feet long. Every time a rock bounced down the canyon wall, our hair stood on end, for we thought sure a coyote would come flying out of space.

As we walked along, I saw a golden eagle high overhead. I saw mourning doves, white doves, Mexican ground doves and little Inca doves. Gypsy scared up leopard and tiger lizards that scurried across the blistering rocks, looking for shade. In the bottom of the creek in the sand was evidence of bobcats and mountain lions. I had really thought this to be desert country but found that around the few springs without a ranch house wildlife flourishes abundantly.

On patches of limestone rock were many well concealed star, or living rock, cactus. They were in bloom with a small, beautiful delicate pink flower; it looked as if the plants were blooming right out of the earth. The plant has a bulb-like root with pressed star leaves, all flush with the ground.

The volcanic slopes on the northwest side of the mountain were abundant with resurrection plants. The plants are only a few inches high with flat green cedar-like leaves and fine, massive root systems. When the earth is dry, the leaves turn brown and curl into a ball. A light rain unfolds the leaves, turning them bright green. When the soil dries out, the plant curls up in brown hibernation again—thus it grows from rain to rain.

The strangest of the desert plants I saw is the ocotillo (St. Joseph's candlestick) with its giant pipe-cleaner appearance. It has a cluster of 10 to 40 green spiny stalks which are one to two inches in diameter and 5 to 15 feet high. In the spring, it puts forth many six-inch scarlet blooms at its top.

Soon Gypsy and I came to a number of sotols, a member of the lily family. From spreading, reed-like, barbed leaves about two feet long, grows a towering stalk with numerous clusters of small white flowers

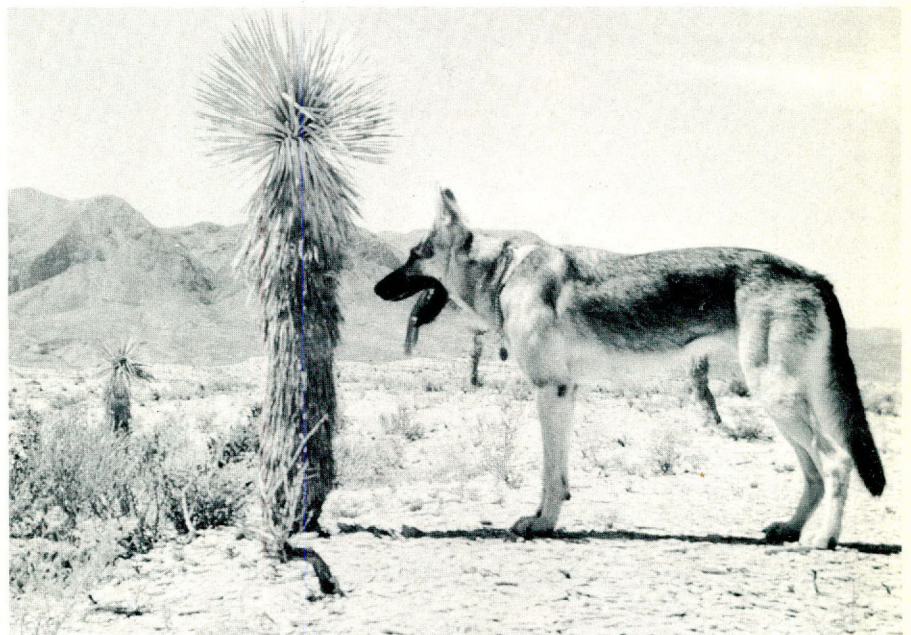
at the top. The cabbage-like heart in its base is relished by deer and is sometimes broken open for livestock feed. It also sustained the early Indians. From this heart, the fiery beverage called sotol or mescal with the "heat of the devil" is made.

I stopped and cut a stout yucca stick for a climbing cane. This plant resembles the sotol but has shorter leaves and woodier stem. Large white flowers in a loose cluster are found at the top of the stalk which rises from the middle of sprangling foliage.

All this time I had been whistling, somehow thinking that the coyotes do not molest people. But, to produce a good whistle a fellow needs to wet his whistle. Soon about half of the canteen of water was gone.

It was time to leave the creek and start the climb up Christmas Mountain. I had underestimated something in this climb. Actually many things went wrong. I was wearing heavy walking shoes, and I started the climb at high noon with the temperature near 125° F. The mountain slope consisted of a type of lava that was covered with loose aggregate which made one slide back one foot for every two gained. Rather than to work the gentle slope, I tried to scale straight up. The climb was from about 2500 to a little more

• Continued on Next Page



In the noonday heat, Gypsy artfully cools her feet in a pencil-like shade made by a yucca.

than 5500 feet, and it was still 125° F at the top.

The view at the top was wonderful so we stopped to rest and to open a can of beans and dog food. It was at this point that I discovered my water supply was exhausted.

I could see Study Butte through the glasses about eight miles to the southwest. In about two hours it would start cooling off and it was downhill from here on so I wasn't worried about the water. I carefully checked the terrain and planned my trips for the days to come. We found a ledge and lay down in the shade on the cool earth for a 30-minute nap.

Later, on our way down, Gypsy and I were treading our way across a steep lava slope. At a particularly steep part, my feet slipped away as if I were walking on marbles. Clawing for something that wasn't there as I started to slide left me with a feeling of desperation. The slope continued for about 200 feet and then it disappeared into space. Digging my hands into the lava slowed my advance, but I just couldn't bring myself to a complete stop. Gypsy had much more go and umph than I, plus four legs, so she scrambled to safety.

I had righted myself to a sitting position and was braking myself by digging my heels and palms into the loose lava. When I had slid about halfway down, I could see some cactus and creosote brush growing about 40 feet off to the left and at the edge of the empty space. This was just what I needed to stop me. How in 100 feet of downward sliding I got more than 40 feet of sideward progress I really don't know. It just seemed at the time I had to do this, so, turning up on all fours, I started climbing at a 45° angle like a ruptured duck. This resulted in my sliding down at a 45° angle and I landed right in the middle of a big strawberry pitaya cactus whose quantity of spines approached that of our national debt. Little had I ever dreamed that someday I would so welcome a cactus. I loved every little spine in this one, and I had most of them in me.

I braved a look over the cactus and sure enough, off to the right was about a 250-300-foot drop,

straight down. To the left was a volcanic spiral with about an 18-inch crevice downward for some 30 feet, forming enough base for one to climb to safety. Like a porcupine, I worked over to the crevice, cactus by cactus, and then eased down the lava chimney to the base. When I got to the bottom, Gypsy was waiting. She had circled around and had come in below. For nearly half an hour I picked at the spines in my moving joints so I could at least walk.

One afternoon Helen, Gypsy and I were exploring, off duty. As we picked our way through the cactus, mesquite, all thorn and creosote brush, we were chatting. Suddenly



Gypsy waits at the bottom of a cliff that gave the author a few bad moments. But for a lowly cactus he might have tumbled over.

a rattle knifed the air. Helen had never heard one before, but instinct made her stop. I shouted, "Stop!" and rushed forward to see where it was. I did not have a stick and I was wearing tennis shoes, but I thought I could divert its attention by jumping over it so Helen could get away. There it was, just a foot from Helen, pulling back its head to strike. It was too late, for I was still several steps away. But, from

under a low growing mesquite tree Gypsy darted like a greyhound. She had heard the rattle and my cry of alarm. She caught the rattler in the middle of its strike, and one fang buried into the side of her nose before her jaws broke the rattler's neck.

Gypsy's nose doubled in size, but a week later she had recovered.

Not long after the rattlesnake incident, we decided to drive down to Terlingua, an old ghost mercury mining town. The morning sky had not a cloud nor had it rained during the night, but when we got to Terlingua Creek it was running well.

Helen said, "What gives? Where did all this water come from?"

"It rained heavily about 80 miles north of here night before last," I answered. "Sometimes these thunderstorms dump a lot of water in a short time. It doesn't do any good to build a bridge across the creek; the torrent will wash around it and you have an isolated bridge. The creek is more than 100 feet wide here so the water can't be more than a foot deep. We shouldn't have any trouble."

With this, I very confidently eased into the water. Everything was going well until we reached the middle.

Helen, on the right side, suddenly warned, "Watch out for the log."

Too late—it rammed up against us and piled the water up. Conk went the motor. I got out into about 12 inches of water and worked the log free. A look under the hood showed that it was hopeless to try to start the motor.

Helen said, "It looks like the creek is rising."

"You durn tootin', it is, bet it's an inch a minute. We have to do something quick. Put it in second gear and move it with the starter. I'll push."

I heard a voice from the far bank saying, "Get the cable; get the cable."

Looking up, I saw a Mexican who had driven down to the bank in a truck, unnoticed in the excitement.

"The cable—what cable?" I demanded.

I saw him raise a half-inch cable

• Continued on Page 27

Regional



Roundup

Region I — San Angelo

QUAIL RESEARCH studies on the Matador Wildlife Management Area indicate bobwhite quail move much more than sportsmen realize. Movement of seven miles has been recorded with records of more than a mile occurring frequently.

Additional studies are being conducted to determine how much quail-nest mortality occurs during nesting seasons. Several dummy nests, filled with quail eggs from the State Quail Hatchery, are being placed throughout study areas so depredation can be accurately determined.

Trans-Pecos quail populations appear to be higher than last year, according to biologist and warden reports. Frequent spring rains occurring during the nesting season have provided good food and cover conditions for nesting birds west of the Pecos.

Lake J. B. Thomas near Lamesa was surveyed recently by fishery crews, and approximately 30 per cent of the fish caught in check nets were highly desirable game fish species. Many lakes that have only 15 per cent desirable game fish are considered good fishing lakes by most standards. Fishing prospects for J. B. Thomas are very good on this basis.

Region II — Waco

A RECENT REPORT by E. A. Smith, biologist, shows that Comal County continues to produce an abundant supply of deer. The census records on 290,304 acres of deer range show that the deer population for the county has increased from 23,892 in 1958 to 112,492 whitetails in 1962. The total deer kill has increased from 2,259 bucks in 1957 to 5,471 deer in 1962. The buck kill for 1962 amounted to 2,992 and the antlerless deer kill was 2,479. During the open season in 1958, the first year antlerless deer hunting permits were issued, there were 2,636 bucks and 469 antlerless deer harvested. The best hunter success during any one season was recorded during the 1961 open season when 3,921 bucks and 2,258 antlerless deer went into the game bag. This is probably due to the fact that 32.9 per cent of the antlerless deer hunting permits were used. Last season only 27 per cent of the permits were used. Also, the records show that Comal County had 5,364 hunters during the deer season of 1961 and 5,003 deer hunters in 1962.

Region III — Tyler

FISHERIES BIOLOGISTS on Dam B Reservoir are doing a mop-up operation on the water hyacinths in the area. U.S. Army Corps of Engineers sprayed the hyacinth-infested areas of the lake from a helicopter, and now the biologists are spraying 2-4-D from boats

in the places inaccessible from the air. Many fishing holes and boating areas were becoming clogged with the East Texas plant.

Six new game wardens in the Region have increased the tempo of law enforcement activities. Wardens were assigned to Canton, Newton, Hemphill, Nacogdoches, Jasper and Atlanta.

Two snapping turtles taken in Region III in the last few weeks are worthy of mention. Conservation Officer Charles Lawrence in Paris reports a 65-pound snapper taken from the Sulphur River, and another 125-pound snapper was caught in the Neches River. At least one of the turtles found a home in the Dallas Zoo.

At least three persons were convicted on "telephoning" charges and five on fish poisoning charges in Region III recently. However, most wardens are optimistic about the decreasing trend of the more typical law violations.

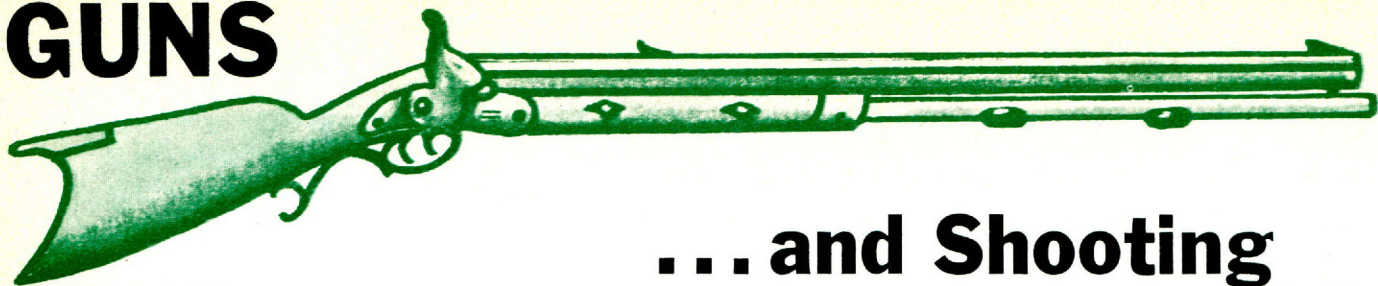
Region IV — La Porte

INFORMATION on the sports fishing catch in Galveston, Trinity and East bays has been needed so recommendations for better conservation of game fish can be made.

To collect the information, bay wardens and marine biologists stationed around these bays have begun a systematic creel census. Every eighth day Commission employees spend the day at each of three selected fishing camps. They ask fishermen coming into these camps from the bay where they are from, where and how long they fished and what kind and size of fish they caught. On the same days, the Commission airplane from Rockport flies over the bays, and a count is made of all the sports fishing boats seen. Records on the number of boats on each reef, channel or other part of the bay are made. The census will continue for a year or more and, together with other data collected on commercial landings, will furnish an estimate of the total amount of fish taken from the bays.

The 58th Legislature passed laws placing five counties in south-central Texas under the game and fish Regulatory Authority of the new Parks and Wildlife Commission. Game surveys required by the law have already begun in Austin, De Witt, Goliad, Gonzales and Guadalupe counties. Colorado and Lavaca counties will also be included in the Oak-Prairie Regulatory Area. Biologists Dennis Brown and Huey Robbinette and two wildlife technicians have been assigned to make investigations in the area and to recommend seasons, bag limits and methods of taking game to the incoming Commission. It is expected that the seasons and bag limits for these counties will be set before the fall hunting season begins.

GUNS



... and Shooting

By L. A. WILKE

This Month: **Doubles**

EVER SINCE Winchester announced a couple of years ago that the Model 21 double henceforth would be made only on special order and at a price of \$1000, there has been a new respect for double-barreled shotguns.

Whether there'll ever be a complete comeback on doubles remains to be seen. But there is evidence today the double may have many new

friends. In fact the evidence is so strong that even Winchester now is making in Japan and importing a superposed gun of high quality.

Although shooters poke a lot of fun at it as a rice shooter, it will perform both in the field and on the skeet range. Thus, a new double has been added to the market, although it is an o/u.

In the past decade doubles have had hard sledding. The present generation of shooters has grown up almost entirely on the pump and

Today only Savage is still making a double gun. It is marketed under the name of Fox and Stevens. The Fox is a deluxe gun, worthy of anyone's gun cabinet. The Stevens is a good shooting, sturdy gun at an economical price. And there, again, is the Noble, which is a streamlined beauty, also at a lower price level.

Mail order and discount houses also are offering doubles under their brand names, but these are mostly produced by either Savage or Noble. Some of them are imports.

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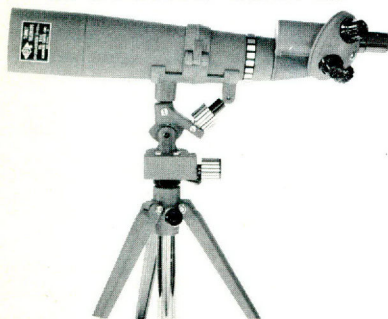
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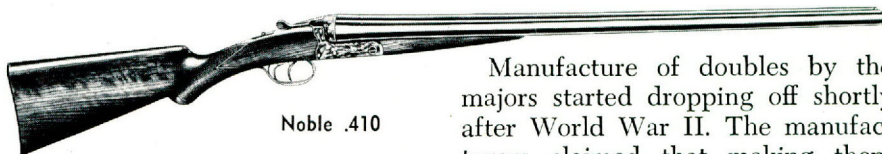


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semi-automatic. However, there are many old-timers left who still like sighting down the side-by-side barrels of a true double.

We used to have a lot of fine doubles made in this country. Tops among them were the Ithaca, L. C. Smith, Parker, Fox, Savage, Winchester, Remington and a few others under brand names. In recent years Noble had added another double, which still is on the market.

Manufacture of doubles by the majors started dropping off shortly after World War II. The manufacturers claimed that making them was too expensive. They required too much hand tooling, and hand work comes high in this country. They could make the pump and automatic more cheaply. A lot of people wonder about this added cost because to look at an automatic and a double it is hard to believe there would be such a price difference. But the makers have their cost sheets.

There is a lot to be said about double-tube guns. They've been with us a long time, and for a century proved to be our best and most effective scatter guns. Actually the repeater has been with us but a short time. Now that magazines must be plugged to three-shots it doesn't offer too much of an advantage in firepower. And it can waste more ammunition.

Many hunters say they want a double or nothing. But every shooter now has his choice. And the chances are that choice will be widened as time goes on. There is strong indication at least two of the present old-line companies will be coming out again with doubles, although it is expected they will be o/u guns, which have a great popularity. **

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from the water. He said, "The other end of this cable is hooked to the tree on the other bank. Get it and I'll pull the end of it across to the jeep; hook it on and I'll pull you out."

Quickly I started a high-step prance to the other bank. By the time I unhooked the cable, I saw he had it on the truck and was starting the motor. The water was 16 inches deep now and was running through the floorboards of the jeep. The guy in the truck was going too fast and headlong - I fell into the water. I couldn't let go of the cable so I bobbed up for air every time possible and clung to the cord. Suddenly the cable stopped and I heard Helen say, "Hurry, the current is moving the jeep."

The cable had a short stout chain and hook on the end, and with a double wrap the chain was hooked to the bumper. Before I could get into the jeep the truck was moving.

Helen said, "What's all that noise?"

"I don't know. Sounds like a freight train," I replied.

I couldn't say anything more for it seemed that the truck driver was a retired drag racer or something. "If he pulls us any faster we'll skim on the water," shouted Helen.

Already my hands were blue from gripping the wheel, trying to cut into the current and stay upright. We made the bank. It was then that I

noticed the jeep was still in gear. The truck driver had unhooked the cable and had backed down to us. I saw he was an American, not a Mexican.

He said, "Durn yankees, can't you hear that noise? There is a wall of water more than two feet high coming down. It'll be here in less than a minute now. The creek will be down in about three hours. See to it that you have the cable back where it was—durn yankees."

With that our friend gunned the motor and roared away in the dust.

While I was sputtering out thanks and waving goodbye, Helen screamed, "Look!!"

Around the bend in the creek came a wall of water. It hit the far bank and tons of dirt and desert plants fell 30 feet into the muddy water.

I pointed a shaking finger at the middle of the river and said, "Yep, that's where we were only a few minutes ago."

After experiencing a couple of weeks of the country's unpredictable ruggedness, I began a piece of work that required an overnight campout for Gypsy and me. We camped near a small water hole. When the fire died down that night, I lay down on the canvas. In about half an hour, the desert seemed to come to life. I could hear birds and all kinds of animals. I just supposed that they wouldn't come to the waterhole as

long as I was there by the fire.

Gypsy cocked her ear and raised up. I saw a mountain lion glide down to the water so I grabbed Gypsy's collar and pulled her around the other way. Very quickly it disappeared, but I just wasn't sleepy any more.

Another half hour passed. Then I could hear something grunting out in the brush. On some impulse I let out a loud mocking grunt or two. Gypsy suddenly leaped away, and I looked up just in time to see a dark shape hurtling toward me. The only thing I could do was roll in the canvas and I did so, covering my head with my hands. A gosh-awful squeal gave the dark missile away. It was a javelina. The animal landed in the middle of my back, and I could feel sharp hooves and hear the canvas rip. Then I heard it heading for the water, squealing. Thank goodness, I thought, and had just raised my head when suddenly another appeared. As I ducked under the canvas, I could see it was only about half grown. Whomp, he hit me and noisily climbed over me. Before I could get up, another came.

To this day, I don't know how many little pigs ran over me, one by one. I had 12 good bruises, as a start on counting. I don't remember mama javelina; maybe she was big enough to sail over. Gypsy took it all in, and for some reason she just

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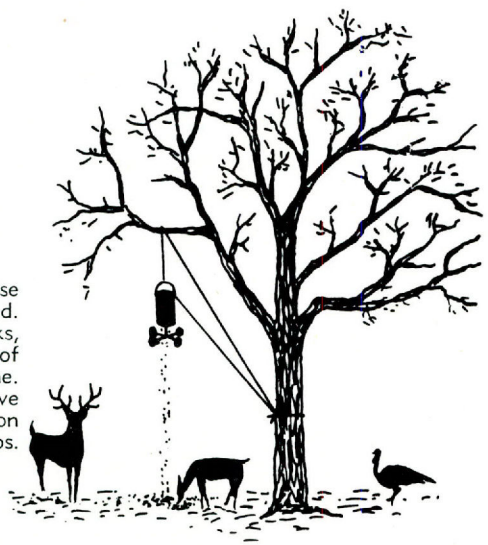
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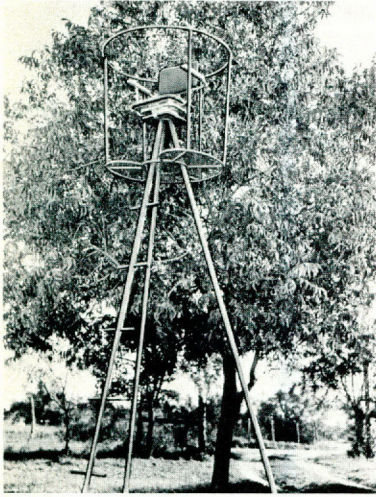
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Dealers Wanted

What Others Are Doing

by JOAN PEARSALL

PUTTING ON AIRS: Ever hear of scented sewage? It's a fact in the city of Ventura, Calif., which is spending \$1,500 on machinery to spray mint-scented perfume downwind of its sewage sump. Complaints of residents in the area led to tests with the perfumery apparatus. The tests showed the mint scent effectively screened the objectionable odors from the sump. It is the same principle as the bomb-sprays used to cover up household cooking odors.

SAFETY IN STYLE: Kansas requires that the operator of any boat have aboard life preserving equipment of the type approved by the U.S. Coast Guard, for each person on board. The law applies to all watercraft, whether it be canoe, sailboat, fishing boat or pleasure craft. Ski belts are not Coast Guard approved life preserving equipment.

THEY'RE TAKING A POWDER: In Brazil, an all-out fight is being waged by government fishery biologists against the vicious piranha, using rotenone-bearing timbo powder. Very extensive treatment of river basins is going on throughout Brazil. Timbo powder proved to be highly selective for piranhas (eggs, young and adult alike). Between 1957 and 1961 the piranhas were exterminated in 10 "dams" having a total hydrographic basin area of 18,533 square miles in northeastern Brazil. The economic returns in terms of increased fishing revenues have been several times the cost of the work of eradication. Beyond this, however, the advantage of freeing livestock and the people of the region from the carnivorous piranhas is fully sufficient to justify the cost.

OIL MAKES TROUBLED WATERS: Millions of gallons of soy bean and crude oils, from rup-

tured storage tanks in Minnesota, recently flowed into the Minnesota River and down into a lake on the Mississippi River, causing untold damage to wildlife, fish, beaches and other recreation facilities. More than 40 miles of the rivers were contaminated. Minnesota lacks adequate laws to protect streams from such pollution. At least 3,000 ducks got into the oil. About 2,000 were dead on discovery and another 1,000 were rescued by residents along the streams, who tried to wash the oil from their feathers with detergents. Soy bean oil is organically degradable, but how long it will take for such a large amount to disappear is unknown. A mop-up operation of skimming and pumping would be very costly, authorities say.

BROTHERLY BOATING: A recent New Hampshire law permits residents of Maine, Massachusetts or Vermont to operate power boats on bodies of water which are partially in New Hampshire and their own states, without having to register the motors in New Hampshire. This applies to all waters not under the jurisdiction of the U.S. Coast Guard and applies only when a motor is duly registered in the non-resident's own state and if the other state grants similar reciprocity.

GAME SALTSHAKER: This spring, 30 salt blocks weighing a total of 1500 pounds were dropped in the Gila Wilderness from a plane, in the annual distribution for game animals by the New Mexico Dept. of Game and Fish. Two biologists first plotted their course on a map, determining where to drop the salt blocks. In three to four hours they had the job completed. It would have taken at least a week if done by mule power, in this area where vehicular traffic is forbidden.

Texas

Tackle Talk

by CURTIS CARPENTER



IT'S TOO HOT to fish in my favorite lakes these days, so let's take a trip to the coast and try some cool seabreeze sampling. Letters coming in indicate that many readers would like to know how to catch speckled trout at night under the lights. So—that's what we'll do this month.

There are so many variations in the use of lights for night time trout fishing, that I'm just going to describe a couple of my favorites. All you need is a good filament type lantern or two, live-bait shrimp, a small-meshed dip net, your favorite trout rig and, a boat. If you don't have a boat, try the channel bank or a pier.

The main idea is to get where the fish will come to the light. If you have a boat, tie it to the piling of a pier or causeway. Hang the lantern over the side and tie it on so it doesn't dip in the water. This attracts small fish, which in turn attract the trout.

With the live shrimp I like to "free shrimp" or simply hook the shrimp through the meaty back so it can snap freely about in the water. Without a sinker or float, cast the bait and then pay out line and allow the shrimp to drift with the current. Keep the line just taut enough so you can feel the bait move off as the trout takes it and swims away. Now set the hook! You'll catch some big ones this way.

Look around the light. Usually

small fish, and often shrimp, will come to bright lights over the water. If you spot an unusual pencil-like fish with a needle for a lower lip and just a tiny chip for an upper lip, get your net out and scoop it up. This is one of the speckled trout's favorite deserts. They are called everything from ballyhoos to halfbeaks.

Hook one of these through the tail behind the dorsal fin and let it fly. Pay out line; let it drift. Give the trout plenty of time to take this bait, especially if it is a large halfbeak. Wait until you think the trout has it nearly digested before you set the hook. Otherwise you'll jerk the bait and all right out of a big sow's mouth. This is a game of "guess what" and quite often the big ones are the prize.

"It's easy to write about this," I can hear some of you mumble. That's right! "You can't catch trout this way just any time," others will say. You're right again! This brings up my final suggestion—try it first with someone who has fished at night as I have attempted to describe it.

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for information and appointments.

One more reminder, keep the noise down—especially banging the boat.

It's next to impossible to explain thoroughly on paper any kind of fishing. If there are questions about a particular type of fishing, tackle or baits, drop me a line and I'll try to give you the answer by return mail.

Smooth sailing and good luck. **

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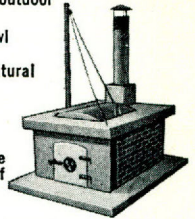
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Dealers' Inquiries Invited

We were to walk over ground only the red man had trod.

Land of Salt and Honey ————— *From Page 27*

stayed at a safe distance.

After the assault abated, Gypsy and I climbed up on rocky ground to a point about a quarter of a mile away, set fire to two big dry sotols and spent a sleepless night.

But we decided that night to return to the rugged southern mountain section which we had first worked. By now, we were seasoned

to the ways of the desert. We had tasted its salt; now we were to taste its honey—to walk over ground only the redman had trod, to gaze 1000 feet up into canyon walls, to find water holes deep in crevices in this land of thorns and heat and reptiles, of mountains and deserts and valleys with a different beauty and a surprise on every turn. **

Fishing is serious, requiring skill and perseverance.

Beak-niks ————— *From Page 15*

to a neighbor's nest and there received a severe scolding from the occupant. After some menacing tweaks and much uproar, father skimmer arrived to take charge of his wandering offspring and to fuss at the grouchy neighbor. As father and son returned to their own territory, mother alighted from a fishing flight in time to notice the disturbance. She soundly scolded hubby for allowing the little one to stray.

In contrast to most of the skim-

mers' rather casual life, fishing is serious, requiring skill and perseverance. The bird has both, plus unique equipment.

When a skimmer needs a meal, he wings out to the shallows along the shore, dips about two-thirds of his lower mandible into the water and skims the surface parallel to an incoming wave. Expertly, he skims along the surf and bays, riding the swells and ingeniously keeping his mandible at the same cutting depth.

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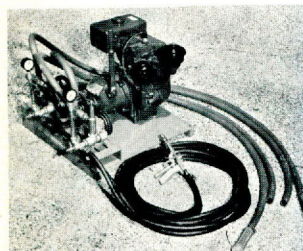
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A slip would mean a mouthful of salt water.

When he hits a fish, the skimmer's head snaps down and up again, making, for an instant, a graceful arc. The fish is held crosswise between the long mandibles.

Most authorities believe that the bird simply works and reworks his course, picking up fish that happen to be in grasp on each trip. Others contend that the bird first cuts through the water to cause a disturbance and then picks up attracted fish as he retraces his flight pattern.

At any rate, when the meal is in mouth, the bird takes his prey back to the colony to eat it or to give it to the young.

Sometimes he's in no hurry to eat the fish and just stands on the sand, looking around and shuffling about, with fish in beak. Then a relative or



neighbor who has spotted this procrastination of several minutes arrives with the attitude, "Hey, Mac, if you don't want that fish, I do." Then a good-natured chase begins. They spiral, circle, coast over the colony and out over the waves until suddenly the game dissolves and the two gracefully wing back to their respective beach business. With the fun over, the original owner finally eats his catch made tastier by demand.

The actual eating of a fish longer than the diner's beak is somewhat comical, at least to a human bystander. First, he skillfully tosses the fish until its head is maneuvered into the throat. And, in a short series of gulps and neck stretches, the skimmer devours his catch.

Then with a full gullet, the bird turns his attention to the yapping, flapping pastimes of the skimmer world. **

Outdoor Books



INSECT LIFE AND INSECT NATURAL HISTORY, by S. W. Frost. Published by Dover Publications, Inc., 180 Varick St., New York 14, N. Y., 526 pages, \$2.45.

For the mother of a bug-loving, question-asking youngster, this book is an asset. Of course, the information would need to be digested and re-phrased for a very young entomologist, but it does provide an alternative for, "Ask your father."

The usefulness of the book, of course, is not confined to helping modern mothers. Rather, its range varies from a supplementary reference for a serious student of entomology to the casual reference for any family.

Although the subject matter and style are technical, a layman who is genuinely interested in the insect world can successfully use the book. The aim is to inform, but now and then a cleverly written passage does more. For example, after a rather technical account of insect habits and body processes, Frost summarizes, "Finally we may say that insects have neither birth

control nor old-age problems. When work is over or their functions cease, they die. They can eke out a living where man would fail miserably. They can feed on materials most unpalatable to human beings, withstand extreme temperatures, and in some cases endure severe desiccation. They are, in short, not easily restrained when trying to get a living under most unfavorable circumstances."

The book does not present an insect by insect description, as a field guide would, but rather it describes the major orders of insects and discusses topics such as origin and distribution, position of insects in animal world, color, metamorphosis, sonification and behavior. It also includes chapters on special types of insects such as leaf-mining, leaf-rolling, boring, aquatic, subterranean and casemaking species.

If, perchance, a bewildered mom is using the book and finds her youngster isn't satisfied with her rendition of Frost, she can find comfort in the excellent bibliographies at the end of each chapter.

—Ann Streetman

Oystermen who took part show an unselfish interest in their industry.

Oysters Aboard

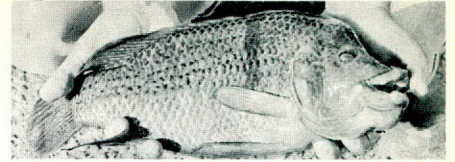
From Page 11

J. C. Allen, Clipper, Pearland; Jack Rouse, Gulf Trawler, Seabrook; Phil Darder, Captain Phil, Kemah; Merle Pretty, Sadie Green, Seabrook; B. F. Pope, Mose & Buck, Port Lavaca; Domingo Gonzales, Saint Jude, Kemah; J. C. Allen, Robert E. Lee, Pearland; Joe Johnson, C & C, Kemah; Richard Webb, Sweet Lilli, Seabrook; Floyd Eades, Captain John, Kemah; Joe M. Garza, Captain Frank, Port Lavaca; Fred Cantu, Correen, Port Lavaca; Lee Sanders, Victory Leader, Kemah; Beck Steiner, Newport, Kemah; Henry Cook, Pike, Kemah; K. W. Muecke, Prawn, Houston; Frank Bailey, Karol Lee, Kemah; G. W. Blume, Miss Port Bolivar, Port Bolivar; L. A. Otter, Evening, Anahuac.

Through their initiative and work,

the oystermen who took part in this transplanting project have shown a sincere, unselfish interest in the development and continued prosperity of their industry. **

Mouth-breeder Found



An unheralded distinction for San Marcos was discovered recently when a fisherman caught an African mouth-breeder, *Tilapia-mossambica* in the San Marcos River. Thus, the San Marcos River now shares with the San Antonio River the distinction of being the only two rivers in North America in which this rare fish lives.

The species got into the San Antonio River via the Brackenridge Zoo several years ago, and into the San Marcos River when a State Fish Hatchery pond was drained. **

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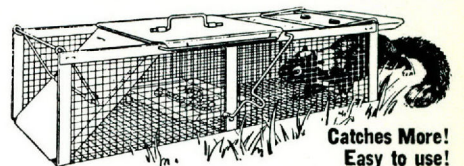
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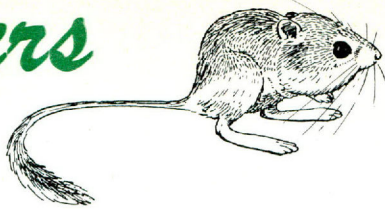
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Letters



to the Editor

Chill Kill

Editor:

We have a question: why do hail storms kill fish in farm ponds? What could be in the hail that would be toxic or, does temperature change cause fish to die?

James H. Doughty
Evant

(When a large amount of hail falls into a lake, pond or stream, it rapidly changes the temperature of the water and will usually cause a fish kill. The larger fish will be the ones killed, leaving the younger fish. Most fish in Texas live an accelerated life because they do not have a dormant winter period. As an example, fish that might live for 14 years in other northern states' waters might live only 5 or 6 years in Texas. White bass seldom will live to be four years old in our waters. Large numbers of our fish die from old age and apparently the old fish cannot stand abrupt changes as well as can the younger and more hardy fish.—Editor)

In Touch With Texas

Editor:

I enjoy the magazine very much, and it is a good way to keep in touch with fishing in Texas while I am stationed so far away.

My folks in Temple sent me a clipping of a large yellow cat caught in Lake Belton. This lake is a young man-made lake and, from what I understand, they are planning to raise the water level 25 feet within the next couple of years. It is good for crappie, all kinds of bass and catfish and perch.

A2c Ralph W. Counts
Tacoma, Washington

(We are glad to have a part in bringing Texas fishing news to you. Thanks for writing.—Editor)

Topwaters For Owls

Editor:

After reading about John Bower's experience in the December issue and then "New Bass Lure Discovered," in the May issue, I decided to pass on my recent experience.

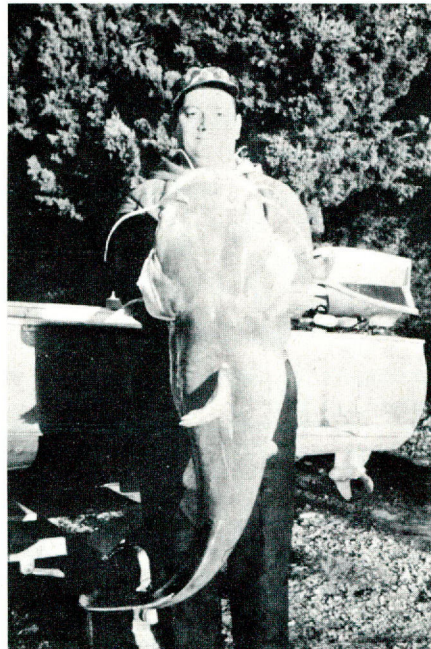
It happened while I was fishing at night on Pecan Bayou near Brownwood. The bass had started feeding on top, so I put on a topwater lure. I cast next to the far bank and had retrieved only a few feet when out of nowhere a monkey-faced owl (barn owl) dived down and picked up the lure. To my surprise he carried it about 10 feet above the water before he decided it wasn't good to eat and let it go.

This was the first time anything like this had ever happened to me, and I'll never forget it.

Robert J. Curlo
Brownwood

(Thanks for sharing your unusual owl tale with our readers.—Editor)

Whale of a Cat



Editor:

Since I mailed you the snapshot of my recent catch, I have caught another yellow catfish which weighed 80½ pounds. This is the record holder for Lake Belton.

Bill Tomecek
Belton

(It's a beauty! We wish you more good fishing.—Editor)

Beyond the Call

Editor:

While traveling on Interstate 20 in the vicinity of Colorado City, Texas, a member of your department was observed removing a large piece of pipe from the highway. The pipe was certainly a hazard to traffic, and it is felt he was giving an extra service to the people of that area.

If you can figure out who in your department was in the Colorado City vicinity at approximately 7 p.m. this date, I would appreciate it if you would extend to him a thank you in my behalf.

D. M. Norman
Midland

(Thank you for taking time to bring this occurrence to our attention. We shall make every effort to convey your thanks to the proper person.—Editor)

Harmless Javelinas

Editor:

I enjoyed very much reading Mr. Donald Mitchell's story about his experience with those ferocious javelina in Sutton County. We also hunt in Sonora, on the Henry Wyatt Ranch 14 miles out of Sonora.

I am not disputing Mr. Mitchell's story ("Hunting with a Twang," June 1963), but until I see it then I will believe it. I have wounded a lot of hogs in the past years, and I have yet to have one attack me. Certainly they may run toward you, snapping their teeth and grunting, but that is because they are almost totally blind. The moment they get a scent of you, they will stop and be real quiet and then hi-tail it for the brush. I have had them stop within 10 feet of me. Of course I would be behind a tree.

Ed Mashek
West

(Thanks for sharing your observations.—Editor)

TAX NOTICE

The sales tax law was amended by the 58th Legislature. The Comptroller of Public Accounts has ruled that no sales tax need be collected for the publication, *Texas Game and Fish*.

Junior Sportsmen



Nature's Jigsaw Puzzle

by ANN STREETMAN

CONSERVATION is bunnies and deer, nature trails and Sunday strolls, catching lightning bugs and watching birds and much more.

Conservation, wildlife conservation that is, means, first, being interested in creatures. The next steps are understanding what they do and what they need and then helping them. And yet it's much bigger than even that.

To understand conservation, we have to understand nature and how it works. In nature we find that the lives of all wild

creatures plus the elements of water and soil fit together like the pieces of a giant jigsaw puzzle.

For example, a burrowing owl living in a hot West Texas area uses a vacant prairie dog hole for his home. The owl eats rattlesnakes which are enemies of the prairie dog. So, the prairie dog and the burrowing owl help each other.

Sometimes nature seems cruel. A darling baby bunny is eaten by a fox. But if that bunny and many others weren't eaten, the area would soon have so many rabbits that

other animals would not have a chance to live. The balance of nature would be disturbed.

Young and old animals that die fit into the puzzle, for their bodies become rich soil to nourish fresh green grass and the grass feeds another generation of animals.

Right now, doing your part in wildlife conservation mostly means learning how the pieces of nature fit together. You can read about a raccoon's nighttime adventures and watch a mockingbird family. But later, you will learn another term, "wildlife management," which goes with conservation and nature. Management, which is the wise use of wild creatures for man's pleasure and good, is carried on by adults through state and private organizations, such as the Game and Fish Commission. In wildlife management, adults work with the pieces of the nature puzzle.

Perhaps you'll never be a game warden or a biologist, but if you learn to love and understand wild creatures now, you'll be an adult wildlife conservationist regardless of the kind of work you choose. **

Youth Organization

Editor:

Every month I read your magazine. The part I like the most is the Junior Sportsmen section.

I am not trying to tell you what to do; I am suggesting that maybe you could start a Junior Texas Game and Fish Commission for boys from 11 to 14.

Perry Sullivan
San Antonio

Editor:

I always read your *Texas Game and Fish* magazine and I think it is very exciting, especially your Junior Sportsmen. I don't want to sound like I'm telling you what to do, but I think, and so do many other boys around here, that you might begin a Junior Division Club for boys 11-14 years of age. A kit consisting of two patches to wear on my shirt just like your employees wear; I. D. card making me a member and certificate for my wall.

Bunky Yates
San Antonio

(We understand that some states' conservation agencies have such organizations and kits for youngsters interested in wildlife. Although we do not have a specific organization for you, we are interested in you and all the other Junior Sportsmen of Texas. We are eager to hear about your outdoor activities and to help you understand and appreciate Texas' fish and wildlife resources.—A. S.)

Cover Sketch



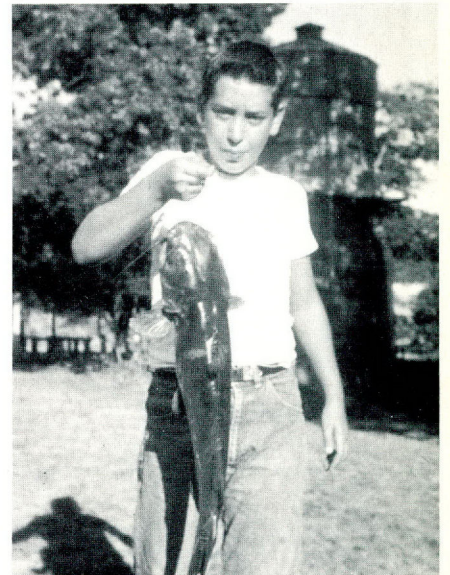
Editor:

I drew this picture from the June issue of *Texas Game and Fish*. I am a girl, but I like to go hunting, and I especially enjoy fishing. My father and I go together a lot. I am 15 years old.

Katy Jucik
Cleveland

(We are glad to learn that you enjoy hunting and fishing. The number of ladies, young and old, who enjoy these outdoor activities is increasing annually. Thank you for sharing your drawing with other readers. It is well done.—A. S.)

Whiskery Catch



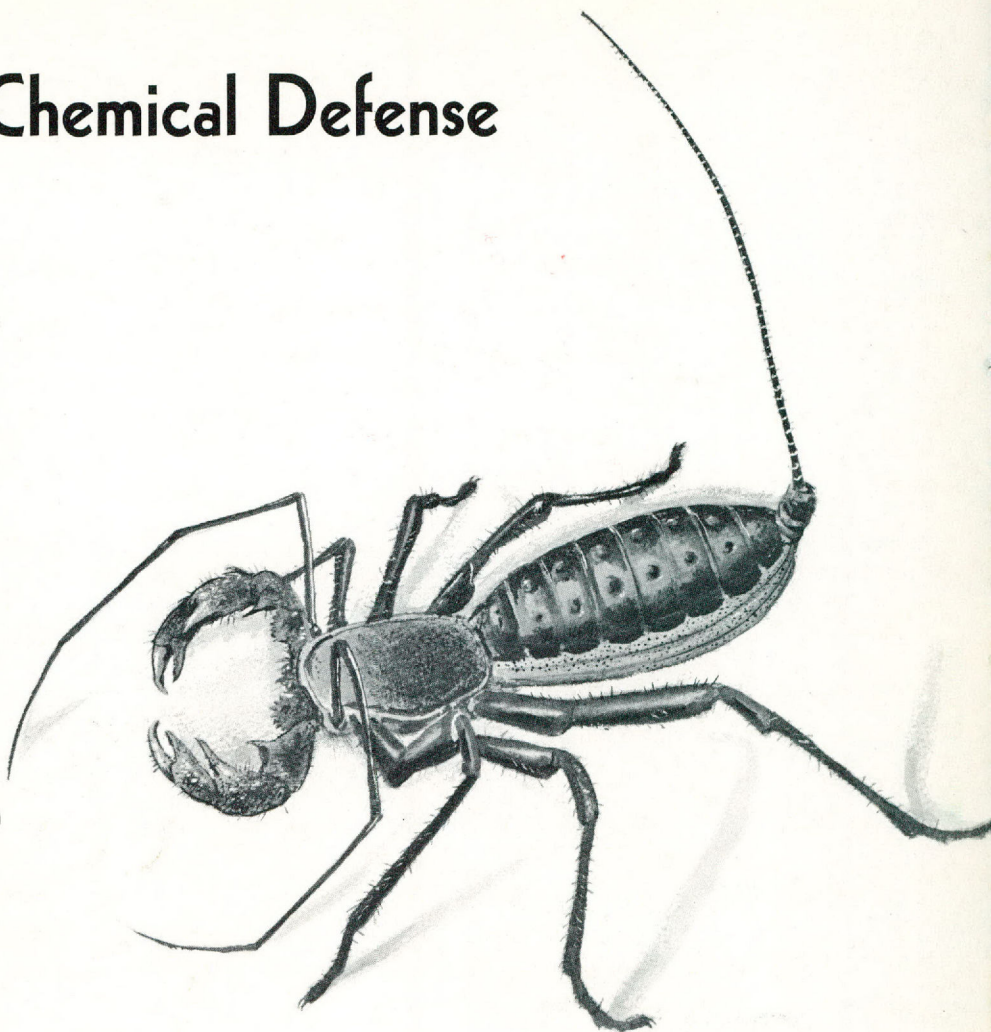
Wayne Ross, age 12, displays his 6½-pound catfish caught in a private lake near Kerrville. He was using a throw line and a live perch.

Chemical Defense

A resident of West Texas, the vinegaroon, is as unusual as the country it calls home. It looks like the result of an amorous episode between a scorpion and a tarantula. Chemical defense, in the form of insect spray, is the vinegaroon's specialty. The source of the spray is a bump perched on its posterior and sportily topped with an aerial. The bump (or postabdominal knob) contains a pair of slits which open and fire at will. The knob can revolve like a turret on a tank to point directly at its target. The vinegaroon seldom fires unless its body is touched, and it aims its gunnery at the portion under attack. The aerial, or flagellum, moves with the knob so as to point at or even touch the attacker. A vinegaroon minus its aerial is no less accurate in marksmanship. Aiming is superior to a stationary shower, as the latter might miss as well as waste the supply.

This ten-legged atomizer is faced with an alarming array of predators. Reptiles, rodents, animals, birds, insects and other arthropods would include it on their menu were it not for its defense. A mouse with a full charge in the face will plow and roll in the sand to ease the pain in its watering eyes. Ants attacking in a swarm flee in disorder, stopping frequently to clean their drenched anatomy. Only a few creatures can return the attack vigorously enough to overcome the vinegaroon.

The spray consists mainly of acetic



acid, a little water and a small amount of caprylic acid. The vinegar odor gives the creature its name. Acetic acid by itself would act as a predator repellent. The caprylic acid, however, penetrates the protective waxy coating of insects, allowing the acetic acid to soak through. A vinegaroon's reservoirs contain a voluminous supply of the secretion. Ten to 19 rounds can be fired before its tanks run dry. The glands work swiftly to

produce more, and it is able to defend itself again within a day. The vinegaroon is unaffected by the chemicals in the spray, and the glands producing and storing it are tough indeed to tolerate acetic acid in toxic concentration. While it is harmless to man, it would be wise to keep it at arm's length. Its squirting range is approximately two feet, and the eyes would suffer a burning irritation if they received a dose of the spray.