

Texas Game and Fish

MARCH

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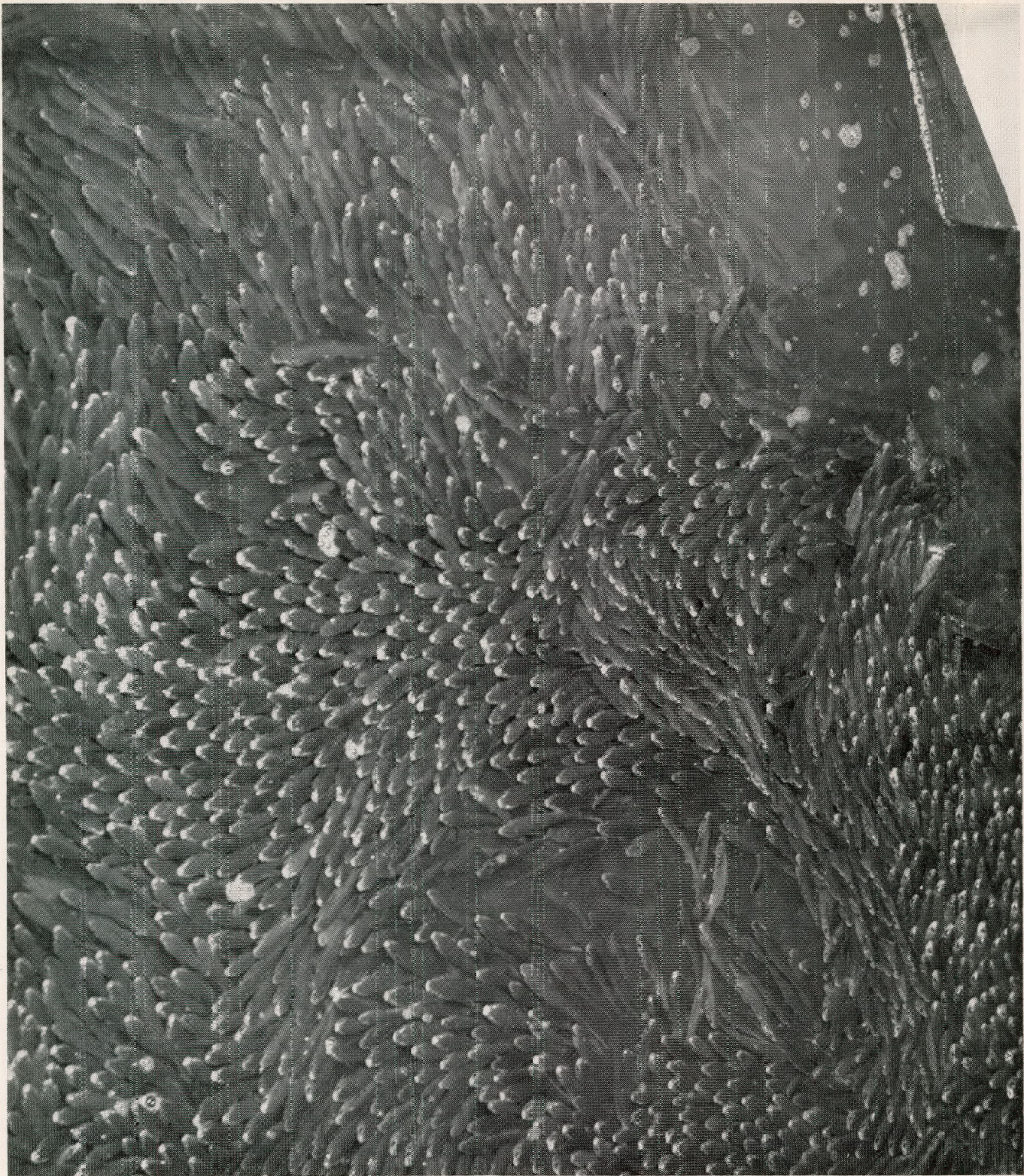
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W. C. Coker



Marine Laboratory Photo

Mullet Crowd Under Coastal Boathouse

This tremendous school of striped mullet, *Mugil cephalus*, was found under the boathouse in Toddie L. Wynne's boat basin on Mesquite Bay. They are on the surface in about three feet of water. Apparently they entered the basin to escape cold temperatures, as the basin is deeper than the surrounding bay and cools more slowly. Redfish, drum, sheepshead, and pinfish have been found in the basin,

also, since the first strong norther in January.

Mullet exist in tremendous numbers on the Texas Coast, but are utilized only for bait. Mullet are of great commercial importance in Florida, and a great fishery potential exists for these fish in Texas.

It is believed that the majority of the mullet of the region was in this one spot, due to lowered temperatures.

Texas Game and Fish

EDITOR.....Jean Richmond
 ASSISTANT EDITOR.....Janey Bell
 CIRCULATION.....Bill Hayden

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The Cover



The Harris hawk lives in South Texas brush country and makes his main meals of pack rats which plague the farmers. With a wing-span of 42 inches and length of 19 inches, the chestnut-colored Harris hawk looks quite impressive. (See related story on page 12.) Cover painting by Clay McGaughy.

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

March, 1958

Vol. XVI, No. 3

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TEXAS GAME AND FISH COMMISSION

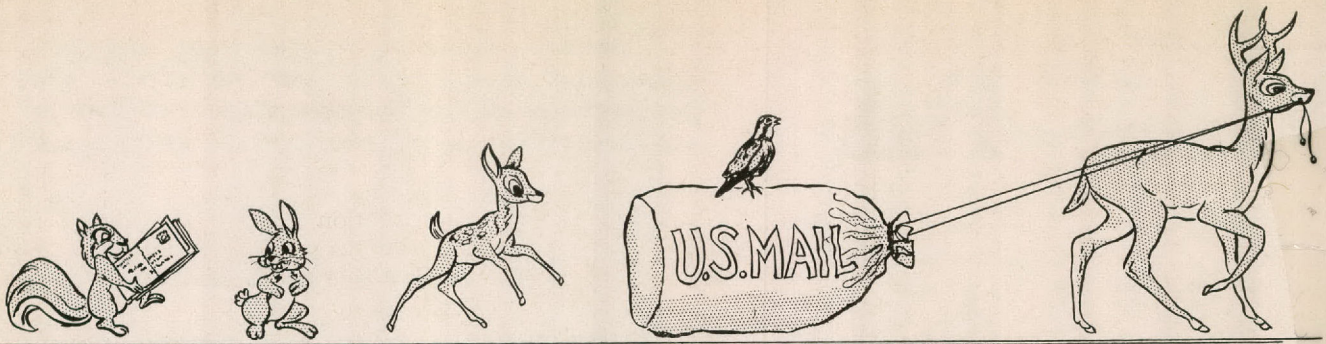
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Valley Sportsmen Pay Tribute To Game Commission Biologist

Editor:

We of the Valley Sportsman's Club would like to pay our respects to Bill Jennings, the wildlife biologist, who we just learned has passed on. We know the Game Department will have a hard time replacing Bill. We who have had the pleasure of being associated with him, and have seen how wholeheartedly he was absorbed in his work, consider him to be the greatest friend that wildlife—especially the white-wing dove—has ever known in this area.

We hope that someday when we meet Bill again in the great beyond (where I'm sure they never let the wildlife situation get so far behind as we have) that we will be able to report to him that the long-range projects that he had worked on so hard have been carried out.

I'm sure we never told Bill how we appreciated his understanding efforts when he was alive, but we know that if they are in need of a good biologist as well as a wonderful person up there—Bill will be right at home.

Ed Cooper, Past President
Valley Sportsman's Club
Harlingen

Wildlife Close-up



Editor:

Joe Grady Hill, Jr., 4, learns from his dad what a javelina looks like, close up, as the kids inspect the

West Texas Game and Fish Association exhibit. The white-tailed deer head at center is from one of my kills in Edwards County.

Highlighting the exhibit, held December 6-8, was the live fish display set up in glass aquariums under direction of Larry Campbell, Game Commission Aquatic Biologist, and Al Pettit, Biologist in charge of the No. 2 San Angelo Fish Hatchery. The exhibit was a feature of the first annual pre-Christmas San Angelo Boat Show.

Practically all of the 11,500 show visitors spent more time at the wildlife and fish exhibit than at any particular boat exhibit—largely because they wanted to check the labels and be sure of what they'd been catching. Some hot arguments ensued on the identity of various sunfish.

Grady Hill
San Angelo

Gun Questions?

Editor:

I am greatly pleased with your magazine, and as I am interested in guns and shooting, I am most particularly pleased with John Masters' articles on this subject. Enlargement of Mr. Masters' department to include some questions and answers of general interest would no doubt stimulate increased interest in the magazine. Keep up the good work.

Lawrence E. Walton
Houston

(When space, time, and opportunity permit, we may consider including some questions. Thanks for the suggestion.—Ed.)

Bass Facts

Editor:

Will you please spare a moment to answer a question or two that will help settle a controversy that has arisen in this area?

You will recall that in this area some few months ago the Striker Lake was finished and almost immediately was full of water. Then in April or May, it was stocked with several kinds of fish, one of which was bass. For the past month or so now fishermen have been catching large strings of bass that average from a pound to a pound and a half, some as large as two pounds.

These fellows contend that the bass that were put in this spring are the ones that they are catching now. I contend that a bass cannot grow to that size in seven or eight months, and must come from other streams flowing into Striker. They say the bass did grow to one or one and a half pounds in this length of time, and did not come from any other streams. Will you please give me your opinion on this?

C. E. Russell
Henderson

(Throughout Texas we have found that when bass fry are stocked in a new impoundment in May, that by November they will weigh from a pound to a pound and one-half, and occasionally attain the size of two pounds. This has happened in about 10 new lakes stocked in the last several years.

(The entire secret of attaining this growth rate is merely not to overstock a lake. We have found that when about 200 small bass fry, one-half inch long, are used per surface-acre of water this amazing growth can be achieved.

(The only time that bass fry stocking works is for such an initial stocking as we had in Striker Lake. From now on out, any further stocking will result in a survival of less than one per cent of the bass placed in the lake, whereas when bass are placed in a new body of water, you can expect about 85 per cent survival of the bass stock. All the bass that are in the lake now will have reached sexual maturity by spring so you should get a tremendous natural spawn of bass in the lake in 1958.—Marion Toole, Chief Aquatic Biologist.)

Why Waterfowl Councils?

By HOWARD D. DODGEN
Executive Secretary
Game and Fish Commission

With more than 150,000 Texans searching the skies for the appearance of ducks and geese each waterfowl season, is there any wonder that, if they could, these birds would suffer a lot of anxiety about their present and future safety, and that at the same time they pose such problems for the wildlife conservationist that their work and study can know no season.

Since waterfowl breed in the northern part of the United States, Canada, and Alaska, and come south for the winter, attempting to take up residence wherever they can find sufficient food and shelter, man's efforts to keep them flying in satisfactory numbers becomes an interstate and international problem.

When the waterfowl are moving from their breeding grounds to the wintering places they follow certain migration paths or flyways. There are four such flyways: The Pacific, the Central, the Mississippi, and the Atlantic. Ten states, Texas and nine other states make up the Central Flyway. Texas is the principal wintering ground for ducks and geese, as it is the only state in the Central Flyway situated on the coast.

Birds raised in certain breeding ground locations will follow—to a great extent—a uniform flyway pattern in their migrations. This characteristic sometimes causes it to occur that one section of the United States will have an abundance of waterfowl while there is

a scarcity in another section or flyway, depending of course, on breeding conditions and results that particular year. Because of this, it is sometimes necessary to restrict the open seasons and bag limits in flyways of low waterfowl population, while other flyways may have a normal and liberal waterfowl season. Therefore, management of waterfowl, as to seasons and bag limits, is done on a flyway basis.

In order to coordinate the waterfowl work of each state with that of the Federal Government, and with the Dominion of Canada and the Republic of Mexico, a National Waterfowl Council exists for the purpose of joint study and management of all waterfowl. In 1951 the International Association of Game, Fish and Conservation Commissioners joined with the United States Fish and Wildlife Service in setting up the National Waterfowl Council. This Council is composed of a chairman and eight members (two from each of the four flyways). The Council's primary job is to coordinate the work of professional wildlife conservationists in each of the states by bringing information and planning into a common stockpile so that the greatest waterfowl numbers may be maintained.

The accumulation of information, for those who must sit around the council table and arrive at final decisions about all phases of waterfowl management, must be done by trained field workers. Data is gathered in the field upon which decisions are made as to how many ducks and geese the hunter may shoot, how long the season shall be, and when it shall open and close. Field biologists often call upon the hunter for specific information about his own hunting experiences. It is the on-the-ground knowledge of the welfare of the birds, and the success of the hunter, which ultimately must be served.

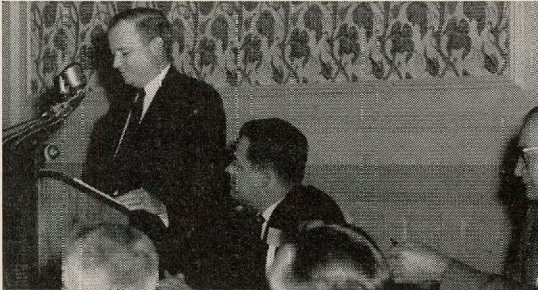
Ducks and geese cannot, of course, bear constant gun pressure in summer breeding grounds or at their wintering places. Resting sites have been provided by the Federal Government in 205 separate locations in the United States and comprise approximately 3,270,000 acres. In addition to these, there are many state-owned and privately-owned areas that give waterfowl full-time protection. In Texas there are four National Wildlife Refuges comprising little more than 103,000 acres—Aransas with 47,261 acres; Hagerman, 11,429 acres; Laguna Atascosa, 38,759 acres; and Muleshoe, 5,809 acres. The Texas Game and Fish Commission recently acquired approximately 8,000 acres in Jefferson County to be added to that total. Compared to the vast land areas needed for wintering ducks and geese that come to Texas, the total acreage now existing in refuges is relatively small and widely scattered.

As human population increases, and especially as more and more of them have guns in their hands, there is less room for waterfowl. Careful thought and good management are even more necessary than in the past. This might include more protection for waterfowl with possibly only half-day shooting during the open season.

SCOT Sets Its Pace

Sportsmen's Clubs of Texas hold biggest convention in history

By JAY VESSELS



Governor Daniel pledges continued support of conservation measures.



Hayder Head of Corpus Christi wins presidency, plunges into hard work.



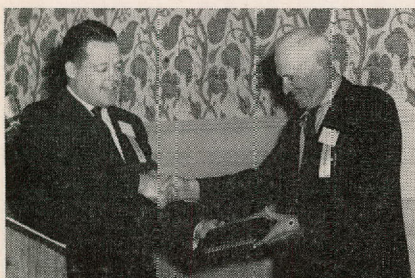
Laura Laudermilk, office secretary, checks in delegates.



H. D. Dodgen, Game Commission, chats with M. C. Raney, SCOT.



Executive Secretary Cecil Reid summarizes SCOT's 1957 activities.



President Wynne awards plaque to retired Game Warden John White.

The annual convention of Sportsmen's Clubs of Texas turned out to be a "congregation of conservationists." Over the two-day period of the convention and its preliminaries, many vital issues bearing on the future best use of Texas' natural resources were treated forcefully and intelligently.

Attending were leading state personalities devoting their full time or part time to wildlife management and to allied phases. It was the largest such gathering in SCOT's history.

Governor Price Daniel made the keynote address to the main business session on Saturday, January 18, and explained in great detail why his regime has become associated so intimately with, as he described it, the "conservation and expansion of wildlife resources."

"In the first place," said the Chief Executive, "the future growth and progress of Texas is at stake. With our population increasing so rapidly, more hunters and fishermen than ever before are enjoying the great recreational resources of our state. There has been a particularly large increase in the number of fishermen, thanks in great part to the many new lakes which have been built in Texas during the last few years. It is the responsibility of this generation of Texans to see to it that our children and their children have the same opportunity to enjoy our valuable wildlife resources."

Citing SCOT for its "grass-roots work in Texas Wildlife conservation and development," the Governor said: "As a landowner and rancher, I recognize the need for sound land practices that provide the food and cover so essential to game propagation. I believe that SCOT, through its educational program, can 'sell' the public on the work of the wildlife biologists and technicians who devote their lives to habitat improvement."

Governor Daniel, who is a member of a SCOT affiliate, complimented the parent organization for its support of water conservation proposals, and for its initiation of the first annual governor's firearms training-boat handling conference.

Another speaker at the main convention was Howard D. Dodgen, Executive Secretary of the Game and

• Continued on page 23



By TERRANCE LEARY
Marine Biologist



How true are tales that

REDFISH ARE VANISHING?

DISAPPOINTED fisherman would have us believe from recent reports that the redfish is about to join the ranks of the whooping crane and carrier pigeon. Sportsmen relate tales of the good old days when anyone could catch a washtub-full with a cane pole in no time at all. Times have changed if this was the case, because these days it takes a good fisherman, indeed, to bring in a good string of reds. What is the reason for the disappearance, if there is one, of this popular food and game fish?

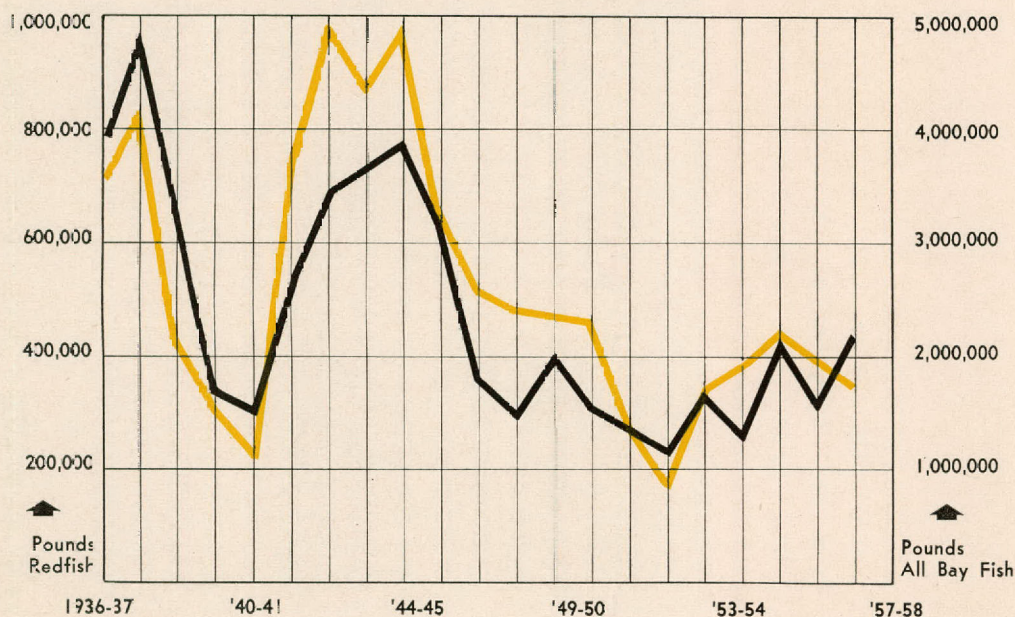
Using commercial catch figures reported to the Game and Fish Commission by wholesale fish dealers

as an index, we find that the redfish catch has fluctuated over a period of about 20 years. But the total commercial catch of fishes from our bays shows over-all trends nearly identical to that of the redfish. This information discloses the redfish status as remaining pretty much at par with that of other fishes, according to the commercial catch which by law is reported to the Commission. The catch of the sportsmen has been estimated at two to three times the commercial catch, but no figures are available.

Closure of much of our bay areas to netting in recent years has contributed to the decline of com-

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Commercial Trends of Total Bay Fish and Redfish



Comparison of annual commercial catches of bay fish and redfish shows similar proportional trends. Killing freezes in 1940, 1947, and 1951 resulted in decreased catches the following years, as did closure of bay areas to netting in 1938, 1946, and 1950. Need and price paid for fish during war years 1941-45 boosted production. Drop since then reflects a conversion of effort to shrimping.

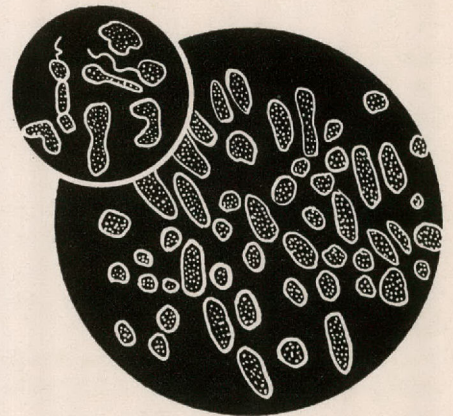


*Tularemia . . .
a constant threat to hunters
that can be avoided.*

By GRANT BURTON
Texas State Health Department
Illustrated by Carol Ham

When cleaning squirrels or rabbits, discard any animals that have unusual markings on the viscera.

Scourge of Tulare County



Pasturella tularensis as it appears under the microscope—the organism which causes tularemia.

A 28-year-old McLennan County farmer was in excellent health when he cleaned a rabbit he had shot in his pasture. At that time he had a small abrasion on his left index finger. Two days later the finger was sharply painful and swollen. Seven days later he was admitted to a hospital, with a fever of 103° and a painful, movable lump the size of a lemon under his left arm. A victim of tularemia.

A quail hunter scratched his hand on a sharp bone as he sat cleaning his kill. Within a week he was hospitalized with tularemic pneumonia.

Tularemia has been and still is prevalent over all of Texas. Hunters and outdoorsmen are more susceptible than the general population, because of greater opportunities of exposure. Well over 600 cases have been reported in this state since 1946, and that figure is undoubtedly only a small fraction of the actual number.

A U. S. Public Health Service research physician, George McCoy, was the first to recognize the tularemia germ.

The year was 1910, and Dr. McCoy had been working on the problem of plague in wild rats and squirrels. Part of his work consisted of the examination of ground squirrels which had been trapped and sent to the San Francisco laboratory.

McCoy knew the characteristics of plague as well as a hunter knows his gun, and the animals which he examined did not have the proper symptoms for plague. Even the pelts of the animals had been different, with the fur being stiff and brittle, unpleasant to touch. Particularly confounding were animals from Tulare County. McCoy had patiently inoculated laboratory hamsters with material prepared from the dead squirrels. The hamsters had sickened and died. Every laboratory test he knew was used in an effort to isolate

the plague organism, but all failed.

Something besides plague had killed the animals. McCoy hadn't the slightest notion what it was, but then neither did anyone else. If not plague, what then? McCoy visited Tulare County to observe squirrels in their natural surroundings; trapped others and watched them die in pens.

Attempt after attempt was made to isolate the killing agent—and finally success. A year after he first decided the disease wasn't plague, McCoy isolated the germ—an elongated, tailed affair which he named *Bacterium tularenses* in dubious honor of Tulare County.

Move ahead now four years to Cincinnati, where three people came down with severe eye infections. All three related a history of having handled wild rabbits, a fact which Dr. William B. Wherry of the Public Health Service found extremely interesting, as he recalled the published work of his colleague, Dr. McCoy.

Wherry solicited the cooperation of the three patients and their physicians, and, following the technique pioneered by McCoy, promptly isolated *Bacterium tularensis*, or *Pasturella tularensis* as it is now called. To clinch the relationship between the eye infections and wild rabbits the patients had handled, Wherry trapped several rabbits and found two of them infected.

As time passed, occasional reports were made of other human illness due to the California germs. One case involved two brothers, 12 and 17, who lived in a one-room shack with their dog. The dog often caught rabbits and squirrels and carried them home to eat, often sharing with the hungry boys. Both boys sickened desperately with raging fever and swollen glands. Vague medical opinion of the day held that *Pasturella tularensis* might have been responsible.

By now an odd situation had developed. Here was a disease which—as later study would show—killed seven of every 100 victims. Yet, it had no universal name. In California they called it simply "a plague-like disease of rodents." It was "gland fever" in Idaho, and "rabbit fever" in Washington, D. C. The Japanese called it "O'Hara's disease." An outbreak of "deer-fly fever" in Utah in 1920 finally led to the disease receiving a universal name.

Deer-fly fever, so called among Utah farmers and woodsmen because it was thought to be spread by the bite of a blood-sucking fly commonly found on horses and deer, was approaching epidemic proportions. The situation was so acute that, at the request of the Utah State Department of Health, the U. S. Public Health Service sent Dr. Edward Francis to investigate.

Francis lost no time. The day he arrived he called on a sick rancher, drew a blood specimen, and later, after the man died, performed an autopsy. The laboratory evidence matched that described by Dr. McCoy and Dr. Wherry. Francis named the disease "tularemia."

Today we know that tularemia is capable of infecting almost all species of Texas wildlife, from deer

to field mice. There is a broad range of insect vectors or carriers of the disease, with ticks being most important in spreading the disease from sick rodent to unwary human.

A 21-year-old Williamson County housewife found a tick embedded in her leg. Five days later her left eye and eyelid were swollen shut, and she was admitted to a hospital, weak and feverish. She could not recall having been in contact with any animals. And she was not aware of getting anything in her eye. Apparently the tick was the transmitting agent.

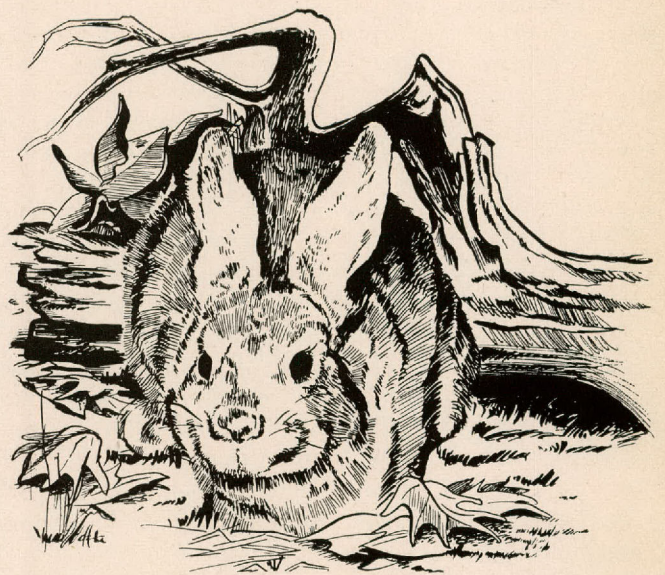
A State Health Department study conducted by entomologists R. B. Eads and J. S. Wiseman, gives a clue to the source of most infection. Case histories showed that sixty-six cases (52.4 per cent) had suffered tick bites; forty-one (32.5 per cent) gave a history of animal contact; five (4 per cent) told of both tick and animal contact; five (4 per cent) denied either tick bites or animal contact; and nine (7.1 per cent) were uncertain.

According to authorities in the field, 90 per cent of human cases of tularemia throughout the nation are acquired from rabbits—chiefly cottontails. Interestingly, domestic rabbits have never been known to develop the disease naturally. As for other domestic animals, natural infections have been found in cats, dogs, hogs, and sheep. Cows and horses apparently are immune. Susceptible wild birds include quail, chicken hawks, and horned owls—all common to Texas.

Don't be taken in by the superstition that rodents are tularemia free in winter. They are not. Weather has nothing to do with their efficiency as tularemia carriers. The Eads-Wiseman study showed that cases of tularemia develop throughout the year, although the majority occur in April, May, and June—months of greatest tick prevalence.

Our object is most certainly not to discourage hunt-

• Continued on page 25



An abnormal swelling or lump on a rabbit or squirrel may indicate the presence of tularemia. Leave these animals alone. If they must be touched, do so only with gloved hands.

By JANEY BELL

Public lands of Texas
need your protection
from subtle enemies
of conservation



a Battleground

Pride in his state and his land runs deep in every Texan. We vow our protection at all cost with the courage and sincerity which has become legendary through our State's history. But we do not always know when and where our land is threatened.

Dangers creeping upon our land, in turn affecting our wildlife, fish, and waterfowl, are unwise drainage of our wetlands and pollution—emptying unpurified waste materials into streams and rivers. These attacks on the natural resources are not always premeditated, not always launched by persons who intend to destroy portions of our Texas heritage. Destruction often is simply for the sake of "convenience." It seems easier to not build a purification plant for waste poisons of industry and personal use when a stream is available to carry them away. Yet, will the quick way out seem more worthwhile when the fish are dead, and streams and lakes unusable for any type of recreation?

When men gaze around for new land to "develop" and their eyes fall on swamps and marshlands, that seems to be the logical place to start. But when migrating waterfowl pass on to other areas, or die out altogether, won't those same "developers" feel the loss?

Falling into the same problem category is erosion, caused too often by over-zealous use of every corner of our land surface. Scorning wind-breaks and cover plants we allow the vitality of the land to blow, wash, or drain away. In 1776, the average depth of top soil

over the entire United States was approximately nine inches. Today, the top soil is about six inches deep. We cannot afford to waste more.

Big Bend National Park, Sam Houston National Forest, and Davy Crockett National Forest are among the areas which provide places for rush-weary Texans to relax and refresh themselves with the natural beauty of the country. Big Bend, for instance, covers 692,304 acres cached in the curve of the Rio Grande which heads northeast into West Texas. This park may be reached via U. S. Highway 90. Filled with contrasts, this park embraces not only the lowlands by the river but woodlands and forests of higher country, and finally desert mountain ranges. Wildlife, birds, and plants appear in breathtaking bounty and variety.

Refuges were created to preserve, study, and raise wildlife for its own preservation and for transplanting elsewhere. Aransas National Wildlife Refuge, located in South Texas on a broad peninsula between San Antonio Bay and St. Charles Bay contains 47,621 acres made famous in part by wintering whooping cranes. The acreage includes much marsh area, a tremendous attraction for waterfowl. St. Joseph's Island also furnishes natural habitat for birds of many species.

Management areas, established with the cooperation of the Federal government and supervised by biologists of Texas Game and Fish Commission, furnish facts on which later State projects are based. Some areas are opened to Texas hunters for supervised and con-

• Continued on page 30

An historically famous river receives acclaim
for its excellent
fishing lakes.

The Brazos

By L. A. WILKE

"When a government has ceased to protect the lives, liberty and property of the people . . ."

There has never been a time in the history of Texas when the Brazos River wasn't important.

It was on the banks of this river that a little band of intrepid men wrote the Texas Declaration of Independence, with the opening sentence above, on March 2, 1836. They met in a windowless blacksmith shop at Washington-on-the-Brazos. Since that time its fertile valley has produced much of the agricultural wealth of Texas, and its waters have given drink to man and beast.

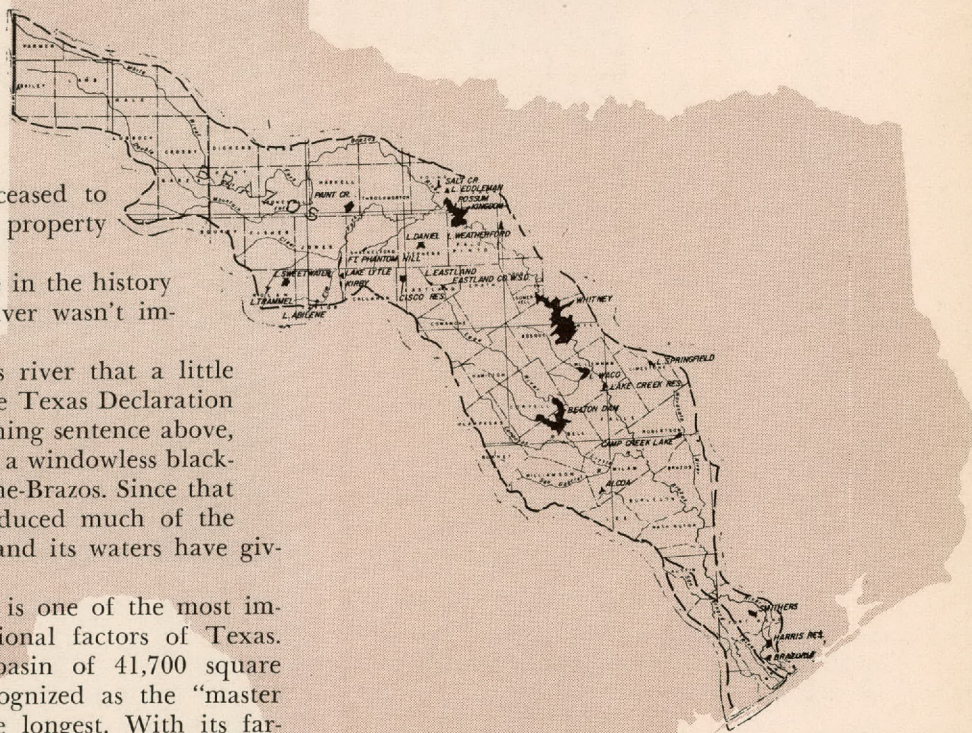
Today the harnessed Brazos is one of the most important economic and recreational factors of Texas.

Supported by a drainage basin of 41,700 square miles the Brazos easily is recognized as the "master river" of Texas. It also is the longest. With its farthest reaches extending into New Mexico, it whips across the state in the shape of a huge crescent for 840 miles to empty into the Gulf of Mexico.

Rainfall along the Brazos ranges from 15 inches annually at the headwaters to 45 inches on the coast. The average is about 25 inches. Paradoxically this stream furnishes great quantities of water for the industrial Gulf Coast and rice farming in the coastal area. This is made possible through a series of man-made dams on the upper reaches.

The main body of the Brazos is comprised of three branches, known as the Clear Fork, the Salt Fork and the Double Mountain branch. The stream also is fed by tributaries such as the Leon, Bosque, Little River, Little Brazos, Navasota, Yegua and many others. There are seasons when there is little or no flow in the river except at time of let-down for irrigation in coastal areas. This irrigation water all comes from the storage behind upstream dams.

Oldest of the larger impoundments is Possum Kingdom Lake in Palo Pinto, Stephens, and Young counties. Above Possum Kingdom are such lakes as Sweetwater, located on Bitter Creek which flows into the



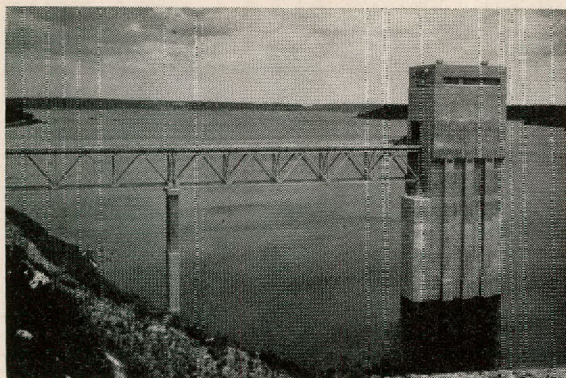
Brazos; Fort Phantom Hill at Abilene, and many other smaller lakes that help to control flood waters and provide municipal water for a score of small towns in Central West Texas.

Possum Kingdom Lake was started in the late thirties. Covering some 20,600 surface acres it is one of the outstanding recreational spots of Texas. Well stocked with bass, bream, crappie, and catfish, and in the spring and fall it is a veritable fishing paradise.

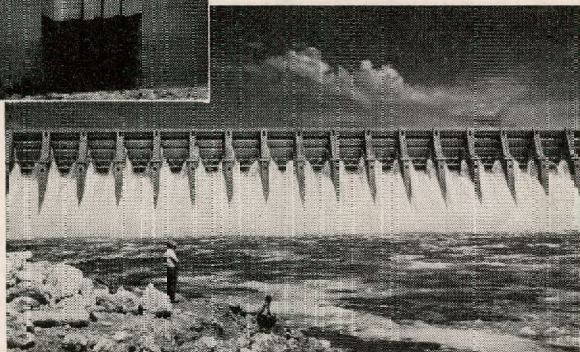
With two state parks and many privately owned facilities, it affords every accommodation and convenience for all types of recreation. Possum Kingdom Lake is the largest and closest major impoundment to the Panhandle and South Plains area.

When water is released from the Possum Kingdom reservoir it generates power which is fed into transmission lines serving thousands of square miles of the area with hydro power.

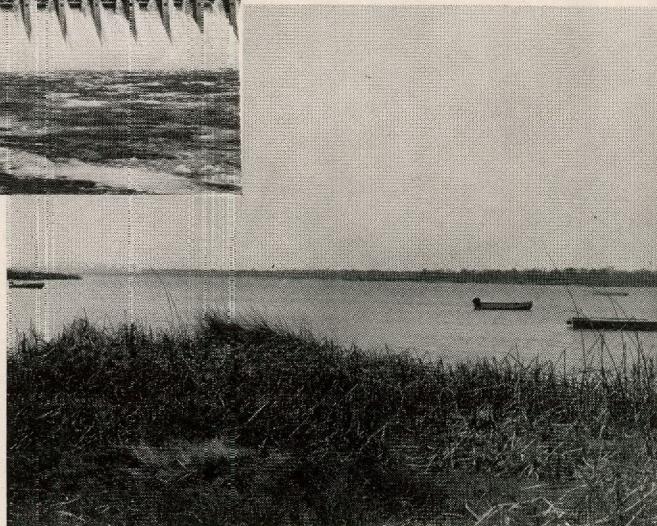
Although several other dam sites have been surveyed on the Brazos below Possum Kingdom, the nearest lake is Whitney, nearly a hundred miles down stream. Whitney was built by the Corps of Engineers in the late 40's as a flood control project. It also generates



Lake Belton, which covers 7,400 acres, is famous for bass and crappie fishing, although it was originally built as a flood control project.



Whitney Dam and Lake, left, a \$42,000 flood control project, and Alcoa Lake below, designed for industrial water storage both provide good fun.



power when the impounded waters are released.

Lake Whitney covers 49,710 surface acres, and its fishing waters are ideal. Hundreds of modern lodges around the lake are owned by residents of Fort Worth, Dallas, Waco, and nearby smaller towns. Lake Whitney also has many fine commercial facilities, making it an ideal family recreational area. Fishing tournaments and beauty contests are held throughout the year.

Like Possum Kingdom, Lake Whitney abounds in bass, crappie, catfish, and bream. Under supervision of the Corps of Engineers, facilities around the lake are kept in excellent condition.

The Brazos River below Lake Whitney provides wonderful river fishing in spots. The river, however, flows through private property. Landowner permission is needed for access.

On the North Bosque, which flows into the Brazos, the City of Waco has constructed a lake for municipal water, which affords excellent recreational facilities. Numerous smaller lakes are found on other tributaries as the river flows on to the Gulf. Many of these are private club lakes where membership or permit is required for hunting or fishing.

Another fabulous lake of the Brazos basin is Lake Belton on the Leon. This is a new lake also built by the Corps of Engineers as a flood control project. The lake covers 7,400 acres. Because much underbrush was left in the lake when it was built, it has become a top quality crappie fishing spot. Lake Belton also has some magnificent bass. This lake, almost completely surrounded by good roads, has ample facilities for boat launching and excellent picnic areas.

Below Waco and Belton in Milam County, ALCOA has built an 850-acre lake on the Little River, which

flows into the Brazos. Though this was built as an industrial water supply it was stocked from hatcheries of the Game and Fish Commission. It now is open to public fishing. Because the lake has been carefully controlled, it is recognized as one of the best crappie and bass fishing lakes in Texas.

The lower Brazos also provides additional recreational spots as it flows on to the coast at Freeport. As it nears the Gulf, numerous industrial and agricultural impoundments have been thrown up to hold flood waters against dry seasons. These lakes are all privately operated, and fishing is by permit only.

At Freeport, the entire course of the Brazos has been changed. Salt water from the Gulf backs up into the old channel of the river, which is protected by granite jetties. A wide new channel has been cut, and this channel has become a playground for tarpon. Hundreds of fishermen in small boats and on the banks get some of the most exciting tarpon fishing of the Gulf Coast in the mouth of the New Brazos during the spring and summer season. Excellent lodging facilities and party boat operations are available.

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FISHING

in '58

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With 1958 well under way and that lazy spring weather just around the corner, let's take a look at fishing prospects for the coming year.

To begin with, fishing in most sections of the state should be good during all of 1958. The waters are teeming with untold numbers of yearling white bass, black bass, crappie, channel catfish, and your favorite sunfish, all spawned and nourished in the flood waters of 1957.

To see why 1958 should be an unusual year, from the fisherman's standpoint, let's compare a typical drouth year. Say 1956. And the year of the rains, 1957. For comparative purposes we'll look at conditions in the Austin area of Central Texas, including all of the Highland Lakes, several small streams, numerous stock tanks and one major river, the Colorado.

After several years of drouth, the fish population was beginning to suffer, and 1956 was a particularly bad year for game fish species. Stock tanks dried up, and carefully nurtured fish crops were lost. Streams just ceased to be. Fish inhabitants either died or were forced into the unfamiliar habitats of the still flowing river, where they were compelled to compete with a population already crowded by the sharply reduced flow of water.

Thanks to man's foresight, Central Texas retained hundreds of thousands of acre-feet of water stored in the LCRA Highland Lakes, but here, too, the fish suffered. Throughout the spawning period (spring and early summer) of 1956, both sunfish and black bass were observed vainly attempting to spawn successfully in Lake Travis. The nests were constructed in relatively shallow water, eggs were deposited, and nests guarded and fanned in the best parental manner. Then—disaster! The continually falling water level receded to a point where the parent was forced to abandon the nest. Another day and the eggs were exposed to the sun and air. The spawn was lost. Undaunted, spawning was repeated by others, only to be foiled once more by receding water.

Of course, many young fish were successfully spawned, but they arrived into a rather unfriendly

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WHITE BASS

By JOHN TILTON, Aquatic Biologist



PERCH

Illustrated by Lee Hart



CATFISH

The Harris Hawk saves ranchers money
and crops yearly
through predation on small rodents.

Brush-Country Gentleman

By WILLIAM S. JENNINGS, Biologist

A written testimonial to a life spent in search of truth is found in the story of the Harris Hawk by the late William S. Jennings.

Bill spent several years of his career as wildlife biologist with the Game and Fish Commission in the Rio Grande Valley and South Texas Brushlands. Here, along with his assigned work on deer, whitewings, and waterfowl, Bill welcomed the opportunity to study and observe the numerous birds of prey. He actually practiced the art of falconry and trained several hawks as hunters.

A keen student of ecology, Bill was convinced that the universe must have been created for good and that it was man's job, as steward of the earth's resources, to search for the truth and good in everything. His feeling toward nature led him to adopt a philosophy toward living things similar to that held by Aldo Leopold which embraced the point of view, "The last word in ignorance is the man who says of a plant or animal, 'What good is it.'"

Bill's intelligence, training, and experience qualified him as a superior biologist. The life he led, guided always by Christian principles and ideals, qualified him as a superior man. Bill's loss will be keenly felt. But our greatest tragedy, and we know Bill would agree, would be the failure of mankind to produce more people dedicated to the search for truth and good.

THE HARRIS HAWK is the typical hawk species of the South Texas brush country. Usually he is found sitting on a dead mesquite snag or flying low over dense brushy areas known locally as "dry lagunas." Occasionally he may be seen circling high in the air like a red-tail but this is not his usual hunting method.

The brush country south of the Edwards Plateau is his principal range in Texas. It is characterized by vast stands of mesquite stretching across the rolling

Rio Grande Plain. Scattered throughout the mesquite are stream beds and low, undrained areas which provide exceptionally thick underbrush. To the west he occupies the chaparral brush as far as Southeastern California. He has been found occasionally to the north as far as Kansas and rarely in Iowa. Eastwardly he has been found in Louisiana and it seems strange to report that the only record of his occurrence in Mississippi was made by John James Audubon when he collected the first specimen for identification purposes. Since that time no other record of his occurrence as far east as Mississippi has been reported. Going southward, the Harris hawk extends his range down the western coast of South America as far as Central Chile and Argentina. Although he is known to few Texans, we can see that his vast range makes him well known over a large part of the western hemisphere.

Those who know him intimately recognize him as a chestnut shouldered and chestnut thighed gentleman of the brush country. In size he compares with the well-known red-shouldered hawk or the marsh hawk. Males average about 19 inches in length with a wing span of about 42 inches. Females are larger, as in all hawks, averaging 22 inches in length with a wing span of 45 inches. Males and females look alike and cannot be distinguished in the field.

Adults are dark sooty brown on the upper parts with a reddish brown or chestnut color on the shoulders, underwing coverts and thighs. The tail is black with a white base and a broad white band across the tip. The under parts are also dark sooty brown.

Immature birds are blackish on the upper parts with yellowish brown feather edgings. The head and neck are streaked with light brownish feathers. The tail resembles that of the adult but has a narrower white tip and the inner web feathers are barred. Like the adult, the entire base of the tail and some of the rump feathers are white. The under parts are yellowish brown, vertically striped or dusky spotted.

Sitting lazily in the sun on a mesquite snag or riding the gusty breezes over his favorite hunting spot,



Illustrated by
CLAY McGAUGHY

the Harris hawk presents a picture of striking beauty.

In nest building, incubating the eggs and caring for the young, both parents take part in bringing up the family. The nest may be built in almost any tree large enough to support it but is usually found at least 8 to 10 feet above the ground. It may be placed in a yucca, ebony, mesquite, liveoak or hackberry and some have even been found in cactus and the thorny chaparral consisting of dense thickets of huisache, catclaw, blackbrush and guajillo.

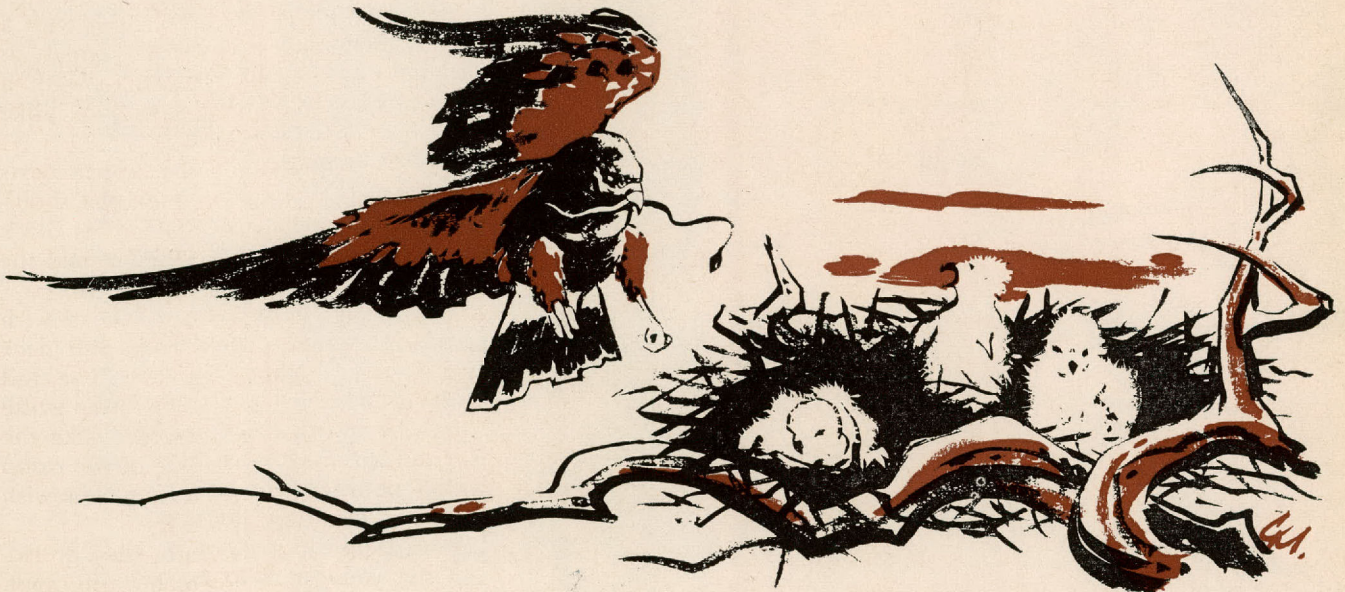
The nest is constructed of sticks, small branches and weeds and is lined with rootlets and grasses. When the eggs have been laid, green mesquite leaves are often carried to the nest and left around the edges.

Two to four eggs are laid. They are usually dull white or may have a greenish tinge. They may be unmarked or may be spotted irregularly with brown or lavender. When the young are hatched, both parents are kept busy feeding the rapidly growing youngsters.

The principal year-round food species of the Harris hawk is the wood rat who is better known to his South Texas compadres as the pack rat. During the growing up period of young Harris hawks, the pack rat's life is made miserable by constant harassment from the parent birds.

Like most hawks, the Harris hawk will catch and eat almost any animal or bird it is capable of capturing. Almost any type of small animals may be taken including rabbits and ground squirrels. Many types of lizards and snakes are also eaten as well as many insects. Any small birds that can be captured will be taken. One Harris hawk stomach examined contained the remains of a green-winged teal. Occasionally quail will be taken, if they can be captured. In short, the Harris hawk is just like any other meat-eating bird—he must kill to live, and his diet includes 'most anything he can capture.

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ALERT

By EFFIE BATHURST
and WILHELMINA HILL

Illustrated by Lee Hart

Adapted from School Life

OBSERVE, if you will, a whole generation of Americans growing up to cherish and care for the body of their country—for its soil and forests, its waters, minerals, and wildlife.

The Cloverleaf Elementary School of the Galena Park System of the Houston Public Schools in Texas has a head start on any national or state program designed to emphasize the teaching of science and the out-of-doors.

Backed by Principal D. C. Lauderdale and a competent, interested staff, the students are encouraged to contribute to the school's growing museum of natural science. The exhibit, collected primarily by the students during their summer vacations, is not a stockpiling of rocks, earth, shells, and bones to be wondered about for a day or so, then discarded.

It is a catalogued collection of analyzed soil particles from different parts of the world; rocks with identifiable mineral contents of known values; shells and other animal parts which show the youngsters some of the similarities as well as the complexity of other living components of their environment.

The specimens are neatly arranged on shelves placed in the corridors. Most of the specimens are encased in individual glass containers. Others—the more durable ones—can be studied by touch and smell as well as by sight.

Cloverleaf is located in a highly industrialized suburban area of the South's largest city. Nearby are paper pulp plants, oil refineries, shipyards, steel mills, and other heavy industries. There are also stands of pine, expanses of hardwoods, rice farms, a waterfowl refuge, and the Gulf of Mexico—practically in the children's backyard. Principal Lauderdale and his staff do not expect all of their students to be petroleum engineers, geologists, or chemists, but they do service to these future citizens by promoting and encouraging the youngsters to explore the various



to Nature's Need

Today school children learn outdoor facts and economy, then DO something about it.

wonders of science—which in turn develops individuality and inquiring minds in the children.

Against the charred slopes of Tillamook Burn, in Oregon, the school children of Portland are spending thousands of hours a year helping to make a forest grow again. Each high school of the city is responsible for a particular 40 acres. Supervised by state foresters, the students gradually grow expert in tree planting and pass their skill on to seventh and eighth graders, who serve as apprentices in the plots of the high schools they expect to attend. Someday, when the forest is tall and dark again, the men and women of Portland will use and enjoy it with special pride and respect, remembering that with their own hands they helped to make it so.

In their very own five-acre forest, the pupils of the Traverse Heights Elementary School at Traverse City, Michigan, have found spots that the birds like to visit. Quietly, one by one, or in little groups, the children go there to listen and to watch, and so learn to identify many of the local birds both by appearance and by song. They have become knowing in such matters as the habitat and favorite seeds of the ruffed grouse, or partridge, and many have lovingly gone to work to supply his wants in other places, too—in corners of fields, along fences and hedge-rows.

The school forest at Traverse Heights is not unique in Michigan. There are at least 600 others, all established as the result of an act passed by the state legislature in 1931. Some schools already have sold timber from their acreage, but most of the tracts are being developed slowly. No matter what their condition, all of them give the teachers and children a chance to plan, to plant, and to watch things grow.

When they really need help in their perennial campaign to keep their grounds beautiful, the children of Landover Hills

School in Maryland call on the experts. They have asked a state forester for assistance in clearing a woods, laying out nature trails, and building a pool. They have turned to him again on what to do about an eroded hillside; and, to build the diversion ditch he suggested, they have sought the service of their county agent and many other adults besides their teachers.

But all the work they can do themselves, that they have done. They have planted hundreds of seedling trees, and heeled in some extra ones to take the place of those that die. They have planted lespedeza as cover for the seedlings; to hold the soil while the lespedeza rooted, they thatched it with straw and twine. They have planned their gardens not only to bloom in spring, summer, and fall, but to give delight even in winter.

The beauty the children have kept in the woods, the beauty they have made—all of it speaks of their persistence and enthusiasm. Even their failures they have turned into successes: when their little dogwood trees died, they planted mimosa—and triumphed.

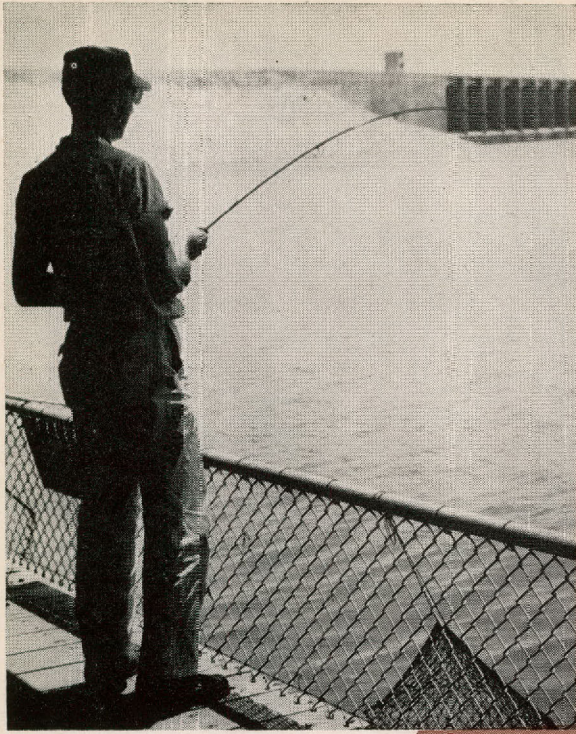
America may have had only one Johnny Appleseed, but it has thousands of Johnny Grass-Seeds, who rarely step forth without a packet of grass-seed in their pockets and the intention of scattering it on any deserving spot they see.

The Johnny Grass-Seed movement began in Mesa County, Colorado, as a means of reseeding overgrazed rangeland, and through the efforts of The Izaak Walton League it has developed also in many other parts of the United States. Several other organizations have joined to make the project a success, but the schools have always played a central role. From the very beginning many of the most ardent participants have been children.

For the children in school the project has become more than a planting exercise. It has become the reason for finding out why grasses should be planted, why soils

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By RUSSELL TINSLEY
Austin American-Statesman

Ambitious Immigrant

The controversial carp is worthless, many fishermen will lead you to believe. It is nothing more than a dim-witted scavenger, they say, which must be ground into fertilizer to be useful. It is a pest that upsets the game fish balance in any body of water. I'll go along with that last statement, but anyone who implies carp are worthless hasn't tested this scrapper on the business end of a fishing line.

Agreed, it isn't the aristocrat of the piscatorial family. To compare it with the pugnacious largemouth black bass would invite sure ridicule. Not spectacular or flashy, the carp nevertheless gives a fair account of itself with dogged underwater rushes, and it doesn't know what the word "quit" means.

Carp fishing, at its best, is a game of patience. The carp doesn't wallop a bait, just mouths it uncertainly before sucking it down. Its bite telegraphs up a fishing line in a series of short jerks. The fisherman must let the carp inspect the bait thoroughly and get it into its mouth before striking. The hasty fisherman will fail.

Fighting much like the catfish, the carp once hooked will rush for the bottom. It is a puncher rather than a boxer, and its main attribute is brute strength. But it is long on stamina, and whipping one on light tackle is a satisfying feat.

Harley Berg, supervisor of the Wildlife Exhibit for the Game and Fish Commission, is about the most enthusiastic backer of this much-scorned scavenger I've ever met.

"Carp fishing is catching on like wildfire on Texas lakes," he said. "Surprisingly, a dock owner on Lake Whitney told me a while back that most of his business now comes from carp fishermen, rather than the old standbys—bass and catfish anglers."

Why this sudden change in attitude? It appears to be a matter of education. Fishermen are just beginning to realize the carp's potential. Although it has long been recognized as a blue-ribbon battler, the carp never has been exploited on the dinner platter.

Strangely, the first state fish hatchery in Texas was set up in 1881 to propagate carp for food. Now carp infest all bodies of water of any size and propagate in astronomical numbers.

One thing can be said for the carp: there is no shortage. The lakes of Texas abound with this prolific rough fish. Main reason it flourishes is that it has had things pretty much to its liking in past years. No one bothered to fish for it, and the only ones trying to get rid of it were biologists.

The carp (*Cyprinus carpio*) is not a native American fish. It came here originally from China, by way

of Europe. As early as 1227 it was introduced into Europe. It was first brought to this country in 1876, and propagated in ponds at Washington, D. C.

This was perhaps the greatest blunder in the history of fishing. Enough small fish were obtained from the original stock of 345 to distribute throughout the United States in 1879, as part of the farm pond program of that era. The fish multiplied rapidly and today carp can be found in every state except Maine.

Carp mate in the spring, moving into shallow waters either in May or June to lay tough adhesive eggs which cling to plants or roots. Unlike many game fishes which guard their nests, the carp simply drops its eggs, then continues on its way and forgets about them. A large female, about 15 pounds, can lay up to two million eggs, and the young grow to a size of from eight to nine inches the first year, under favorable conditions.

The mating of the carp is an unusual spectacle. Males move into the shallows, thrashing and wallowing wildly. Their activity roils the water, sometimes destroying eggs of game fishes. In shallow water, carp make inviting and highly mobile targets, and it is during the mating season that bow-and-arrow fishermen can enjoy top-drawer sport. The large fish are hard to kill with arrows.

The carp is neither pretty nor appealing, although cousin to the ordinary goldfish. It can be distinguished from native Texas minnows by the strong spinous ray at the front of both the anal and the very long dorsal fin. The carp has 32 or more scales and two barbels at the corners of its mouth.

The record carp taken on rod and reel was a 47-pounder on May 9, 1940, in the Rappahannock River in Virginia. An 83-pounder, largest on record, was seined by commercial fishermen from South African waters. A 20- to 25- pound specimen is a large specimen by Texas standards.

Carp feed in the silt on the bottom of placid waters, moving aimlessly, sucking up various forms of food with their small, soft, round mouths. Their diet runs the gamut from decaying plants to minute insect larva and fish eggs. Naturally, to successfully catch carp your bait must be lying on the bottom, small and easily inhaled by the foraging fish.

A carp does not seek out the nests of game fish to feed on their eggs. While wandering in search of food, its random path may lead to a nest, where it gorges on the eggs found quite by accident.

The most popular lure for carp is dough bait. There are various ways of preparing this bait. Each dyed-in-the-wool carp fisherman swears by his own pet concoction, and each has his private method for outwitting carp.

One of the favorite baits is made by mixing one cup flour, one cup yellow cornmeal, one-half cup oatmeal, one-fourth cup grated cheese (the canned variety is best), and one teaspoon sugar. Add enough cold water to thicken the mixture and knead. Roll the dough into tiny balls about the size of a small grape and drop them into a sauce pan of boiling water in which an onion has been boiled until soft, then removed.

The dough balls should be boiled until they start

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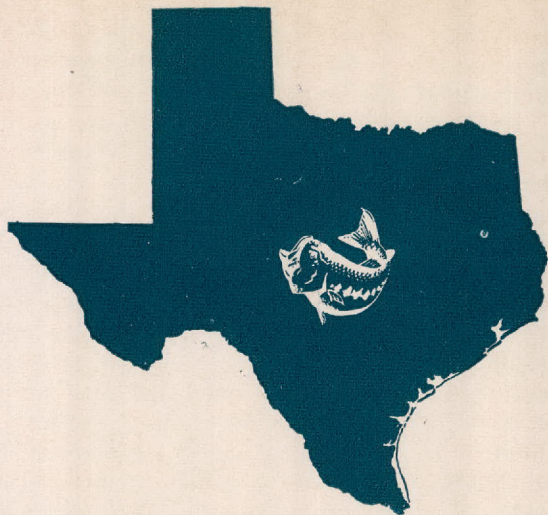
German carp head

for their share

of fishermen's bait and popularity

A Texan Talks Fishing

By CONRAD FATH



“Jigging”

The old saying that “there’s nothing new under the sun” applies very definitely to fishing. Every year a so-called “new technique” with a new lure becomes very popular and within a few weeks it’s the hottest thing out. This year’s hot tip on fishing is an excellent method which really produces good results, but it is difficult to perform properly. The new technique is a form of jigging—not with spoons, but an artificial rubber worm attached to either a bucktail jig or a 2/0 hook.

The method is not really new. This form of fishing has been in use for centuries as far as we are able to determine. Its success still holds, however, as proved by the winning bass and the winning string of bass taken at the 1957 Lake Belton Fishing Tournament by a fisherman using a bucktail jig with a worm.

This is the way it is done: On any bucktail jig or weighted weedless hook, impale a long rubber worm. Stick the hook through the end of the worm for one-half inch, and let the rest of the worm trail behind. Cast the rig and let it settle on the bottom.

The secret of this type of fishing is patience. Let the lure rest on the bottom as long as you can stand it—for the average fisherman, this is not very long (about two seconds). It would be better to let it rest at least one full minute. Then tighten up the line and gently lift the lure off the bottom; don’t jerk it. Release the tension on the line and let the lure return to its resting place on the bottom. Repeat this operation as long as you want to. You

don’t necessarily have to bring the lure all the way in and cast again. It is just as effective to let it stay on the bottom right under the boat. You can play the lure in this manner for 15 or 20 minutes without taking it out of the water.

Now comes the difficult part—how to know you are getting a strike, and when to strike the fish. This is what happens to your lure: A bass will suck the worm into his mouth straight off the bottom of the lake without jerking the line or rod tip the least bit, then he will probably spit it out. The bass might repeat this procedure two or three times. As a rule, the fisherman will not know this is taking place at all. The only way you can guess what is happening is to watch your line closely. The line will move gently, but not enough to tip or bend your rod.

Don’t jerk the line or try to move the lure once you are aware this is taking place. WAIT—wait until the line starts moving steadily away, then give out a little line. Just a few feet. When you are certain the bass is making a run with the lure, strike hard with the rod and hang on.

When there is any wind or wave action it is very difficult to fish this way because you might get a lot of strikes without realizing it. Bass generally strike or suck the worm only when it is still and resting on the bottom. Sometimes the bass will take the worm when it is being jigged slowly—as it drops, not as it rises. Many fishermen catch fish using this rig without ever letting the lure rest on the bottom.

They continuously jig the lure slowly all the way to the boat, then cast again. However, the most successful fishermen catch the largest and most bass by using the slower, bottom method.

Color seems to play a very minor part. One man will be successful with a black jig and worm while another will do just as well using red, brown, or even white. The action seems to be the main factor. You have to have a *feel* for this kind of fishing. The rod and line play an important part in the fisherman being able to feel the initial strike and wait out the final run. A long rod with a flexible tip, as well as a light line, is important.

One bad feature to this kind of fishing is that you must expect to lose a number of rigs and some line. You cannot keep from hanging up on the bottom a lot if you fish properly. Don’t try this method unless you have six or eight rigs with you.

A few years ago this same technique was used with lures referred to as “bottom hoppers.” These were weighted hooks in different shapes with bucktails or rubber skirts attached. These lures were more expensive than the rigs used today, so they were not very popular. A weedless hook, No. 4 split shot, and a rubber worm can be put together for 35 or 40 cents; other lures used in the past cost as much as \$1.35.

This worm bottom-fishing method is also very effective for trout and red fishing on the Gulf Coast. In good trout feeding grounds on the

flats in Laguna Madre, floating grass and underwater aquatic growth hinder and harass the fisherman. This forces him to fish a little faster and cast more often than he should, but the method is still deadly.

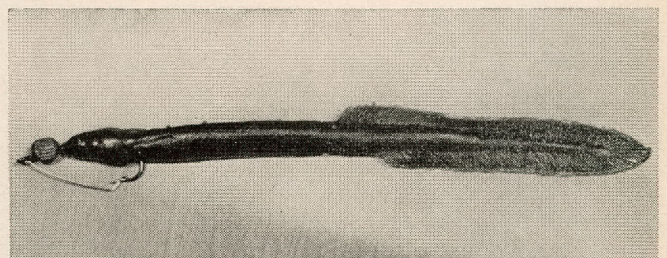
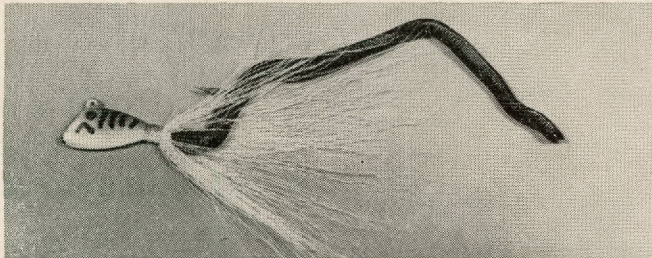
In most freshwater lakes in Texas you won't have the grass or growth to bother with, but you will have rock, stumps, and brush to give trouble. When bass fishing, pick points where the bottom is gravel or sand, maybe along a sand beach. Don't be afraid to fish in water up to 30 feet deep. It takes the lure

the hook sharply. Now you see the difference in setting the hook when using the spoon instead of the worm.

These methods should only be tried when the boat is drifting very slowly, or when it is anchored or tied. I prefer the latter. When I catch ONE fish, I don't move the boat any more—just stay right there and fish for at least an hour. Once you locate a fish, don't move. You can usually stay right in one spot and catch your limit of white bass. With black bass I have caught as many as nine in one spot after fish-

ging techniques. The only trouble is that the lure sinks very slowly, and in deep water it seems to take forever to reach the bottom. Single-hook lures are better than treble-hook lures because they sink faster and don't hang up as easily. Although treble-hook lures have a better action when moved slightly, you will lose them more often.

King of the sport fish—the tarpon—can easily be taken with this technique. When fishing in rivers near the passes into the Gulf, we have used tarpon lures called wiggle divers, kingfish size. Fish this lure



Two of the commonly used jigs are the bucktail jig with a rubber worm attached, left, and the black rubber eel, right.

longer to sink and it is slower fishing, but the bass will probably be bigger.

Jigging with spoons has long been a popular method for catching white bass. The technique is exactly the same, but a little bit faster. The lure should only touch the bottom on the cast. From then on it should be jigged just off the bottom as slowly as possible. Never jerk the spoon, but always lift it slowly, then let it sink while keeping tension on the line. The strike will usually come as the lure reaches the bottom and starts up again. The strike here, too, will be gentle rather than a sudden jerk. You must be able to feel the slightest touch on the spoon and, when it comes, you must set

ing two hours and not moving the boat.

If you spot a school of white bass working the top of the water, try to drift up close to them. Then anchor the boat quietly and start jigging. Easily scared by a boat, white bass will dive deep and come up a long way off if you aren't careful. You might try jigging very slowly at different depths directly under the boat, rather than letting the lure sink to the bottom. Don't even cast the spoon. Just let your line out and try jigging at different depths until you get a strike. When you do, fish the same depth from then on.

Nearly any sinking underwater lure will work well with these jig-

exactly the same way you jig a spoon for white bass—BUT use extreme caution. Cast the wiggle diver as far away from you as possible and play it on the bottom the same way you jig a spoon. Don't jig for tarpon close to the boat.

When the angle of the line in the water shows that the lure is getting close to the boat, reel the lure in and get it out of the water as fast as possible. If a tarpon hits the lure when it is close to the boat, the first thing he will do is jump—and he might land in your boat. When tarpon picks the lure off the bottom, you will feel a bump or slight jerk. The instant this happens, strike the fish as hard as you possibly can. A tarpon has a very tough and hard mouth, and you will have trouble sinking a hook home unless you hit him with everything you have. This is a good way to catch tarpon near the jetties, but watch out for the rocks or you will lose a lot of tackle.

Although there are many variations, these three fundamental styles are the basis for all techniques of jigging.

We welcome any questions on fishing, and will try to answer as many as space permits in the next issue of *Texas Game and Fish*.

Fishing on Lake Sheldon to Start May 1

Public fishing will open on waters of the Lake Sheldon Wildlife Management Area on May 1, 1958, Howard Dodgen, Executive Secretary of the Game and Fish Commission, has announced. Fishing may begin at 30 minutes before sunrise and continue until 30 minutes after sunset, except when waters are closed for special research projects.

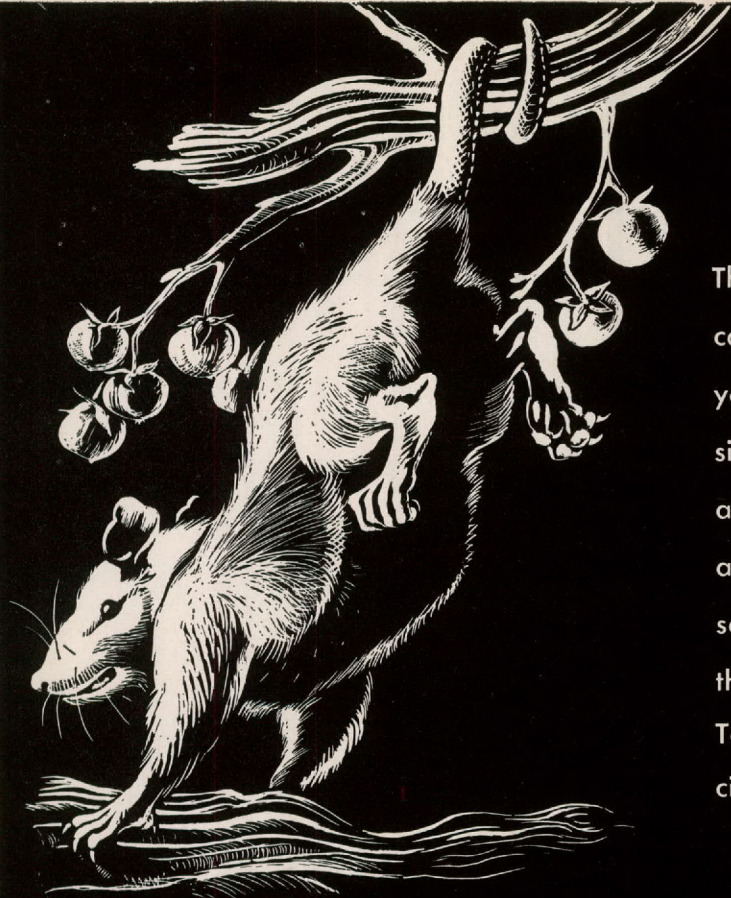
Limits set are five black bass, 25

crappie, and 25 channel cat, with no limitation on sizes. Fishing with rod and reel, pole, or hand line will be permitted. Wade fishing will be permitted except during waterfowl season.

Boat launching ramps have been provided at the lake for unloading of boats by the daily fisherman. Each boat must be equipped with a life preserver for each occupant.

Opossum

The opossum belongs to a group of animals called marsupials—animals that carry their young in a pouch. Their long, scaly, prehensile tail is used to grasp branches and as an aid in climbing. Opossums will eat almost anything, including carrion, berries, crayfish, seeds, and snails. The animals are found throughout most of Texas, except in far West Texas. They are widely used for food, especially in East Texas.

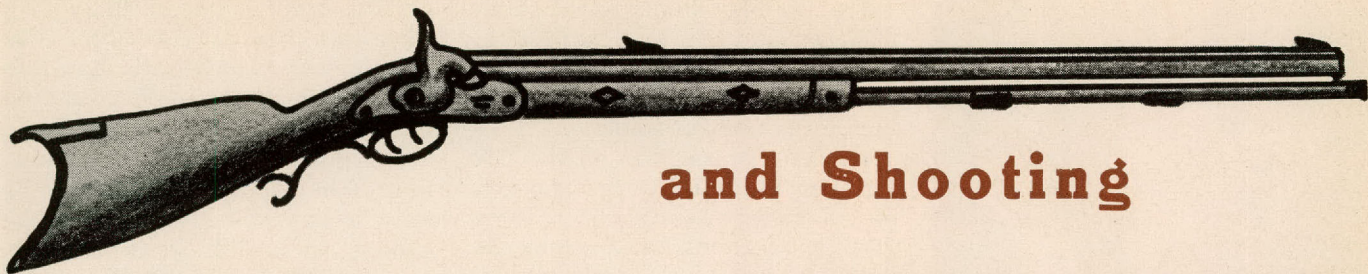


W. Cude

An interesting fact concerns the birth of opossums. After a short gestation period of 11 or 12 days, the young are born. Normally no more than 13 of the 5-21 born will survive. Baby opossums about the size of a honeybee, make their way into the mother's pouch, where each becomes attached to one of the 13 nipples. About two months are spent in the pouch. Two or three litters may be produced a year.



GUNS...



and Shooting

By JOHN A. MASTERS

This Month: New Remington Guns

It may look like collusion, but as a matter of fact, I didn't know when I wrote last month's column that Remington was coming out with a couple of new .22 rifles. These fancy little dudes are really different.

It has been known for a long time that aluminum can be made strong enough for use in many gun parts. The fact that the new guns make generous use of the light metal is nothing new, but the way it is used is new to some extent.

First, Remington has made use of aluminum's ability to take on color. And, I might add that the result is very pretty indeed. The two new rifles furnished me are done in what Remington calls Buckskin Tan and Crow Wing Black. The stocks and fore-ends are made of a very light brown walnut, and believe me, the result is something.

Extensive use of aluminum, even to a jacket on the barrel itself, results in a rifle that weighs only four pounds. Yet you get the feeling that the gun is exceptionally sturdy. Despite its light weight, there is no lack of ruggedness.

Designated the Model 572 "Fieldmaster," the gun is built around the slide or trombone action, commonly called a pump. The stroke is short and light, and the gun can be fired quite rapidly—as fast as the shots can be aimed well. In common

with all Remington pump guns, you cannot hold the trigger down while closing the action and fire the gun. The trigger must be released before each shot. This is a very desirable safety feature.

The gun features a straight line feed that utilizes a special channel in the barrel extension. This system eliminates the "shaved" bullet that is often detrimental to accuracy.

The safety is of the cross-bolt type and located at the rear of the trigger guard. The head of the bolt goes in behind a flange on the receiver, a good safety feature should a brass case let go when the rifle is fired.

The rifle is easily loaded for single-shot shooting through the ejection port—a highly desirable feature when teaching beginning shooters.

The receiver is grooved for the tipoff scope mounts, permitting easy home installation of a scope, if desired. Factory sights are the typical open rear and post front type. Here I think Remington flubbed. The rear sight is chrome plated and is polished to mirror brightness. I can't imagine a worse situation when shooting in good light. The front sight is gold plated. Again a poor selection for ordinary shooting conditions. I think the conventional dull black would have been a better selection, but I have to admit it makes the gun look very dressy in-

deed, which is likely what Remington was after.

Trigger pull on both my sample guns leaves nothing to be desired. While the trigger is not adjustable, some thought obviously went into its design. There is none of the side-to-side slap common to many .22 rifles.

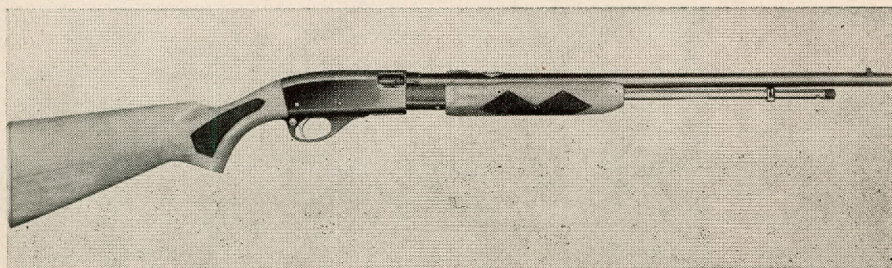
The tubular magazine holds 20 short, 17 long or 15 long rifle cartridges. The gun handles any combination of these without adjustment.

Just about every exposed steel part on the rifle is chrome plated. Since most of the exposed metal parts are aluminum, this relieves the shooter of any real worry about rust.

The butt plate is of deeply checkered aluminum, a very practical additional feature. I have always found the composition or rubber butt plates rather fragile, and have often chipped such butt plates in normal usage.

Remington has pioneered in many respects with this gun. I am sure that many gun enthusiasts will feel that abandoning the conventional use of steel will result in an inferior gun. Such ideas should be abandoned. There is little doubt that aluminum is a satisfactory gun material. The use of aluminum has been proved over a long period of time in many different guns and is bound to increase. In the Model 572, I find no place that its use has sacrificed any strength or utility.

The overall weight of this little piece makes it a noteworthy addition to the Remington family of fine guns. It will be a pleasant piece to carry during a day's squirrel hunt. For the young marksman and

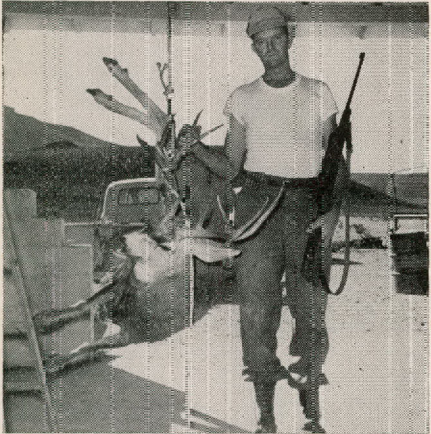


New Remington Model 572 features aluminum parts in buckskin tan and crow-wing black.

• Continued on page 22



First bucks were taken by O. O. Mattiza of Pt. Arthur on the Kerr area hunt, above left, and by John W. Jones of Kenedy, below, on Black Gap. O. F. Ethridge is Kerr weigher.



Guns and Shooting

• Continued from page 21

many of the ladies, this one will be pleasant to shoot.

And I look for other colors to be added to the line. Perhaps soon milady can match her rifle to her hunting costume. I'm in favor of anything that will persuade more of the fair sex to invade the shooting game.

Remington has dared to be un-

State's Area Hunts Draw 482 Sportsmen

Free public hunts on wildlife management areas in Texas for the 1957 season harvested 102 deer, Al Springs, Assistant Director of Wildlife Restoration announced.

Harvest hunting was on the Gus Engeling Wildlife Management area in Anderson County. There were 3,301 applications for this hunt. In public drawings 241 permits were issued and 200 permit holders actually showed for the hunt. They killed 45 deer; 21 antlered and 24 antlerless.

There were 2,291 applicants for the Black Gap area in Brewster County. Names of 200 hunters were drawn but only 150 hunters showed up. These hunters killed 32 buck deer with an average weight of 114 pounds, and 18 peccary with an average weight of 28 pounds.

The Kerr area in Kerr County produced 3,301 applications. There were 150 permits issued, with 132 showing up for the hunt. They killed 25 bucks with an average weight of 77.76 pounds.

Weather conditions for the Kerr and Engeling areas were excellent.

On the opening day at Black Gap there was beautiful weather. The second day was cold, with snow falling all over the trans-Pecos region on the second night.

No hunting accidents or violations were reported on any of the areas. Hunters were assigned to locations where deer were known to run. At Black Gap camping was permitted because hunters had two days each, in which to get their deer.

It Happened This Way . . .

To at least one disgusted but enterprising hunter, there is no such thing as being "up the creek without a paddle." In a recent lake patrol I came across a duck hunter who had a conked-out motor on his boat, no oars and no paddle. Evidently he didn't want to sit out in the cold all day, for he was quite energetically rowing his way to shore, using the stock of a 16 gauge shotgun for a paddle. When I seemed surprised he said that it was a bit heavier than a regulation paddle, but served the same purpose.

Last fall I arrested a man under the following unusual circumstances: He had a number of five- and six-inch black bass on his stringer. I told him that the fish were under the legal size limit, and he admitted it. But he said he figured if he could catch enough of them, he would have a nice mess of fish.

Then I asked him why he had the tails cut off of all of them. He said he was using them for bait to catch more bass. When I advised him that using game fish for bait was another violation, he said he knew it, but it sure made good bait.

I finally got around to asking him for his fishing license, to which he replied, "My, my! I knew I should have bought one of those things before I came out here."

(This report can be confirmed on the arrest report.)

Shootin' Shorts

Savage has announced a newly designed bolt-action rifle designated the Model 110. The gun represents the first new Savage bolt action in some time, and the advance dope looks real good.

It features such things as a tang safety, a trigger adjustable without removing the piece from the stock, and several tricky new ideas that look pretty good in the pictures. I'll report further after testing a sample gun.

I guess the gun designers are

conventional with this one, but I seriously doubt that their move is a gamble. I look for the 572 to be very popular, and I think the popularity will be justified. Everything new from round wheels to atomic power has had to convince the skeptics. I think the gun will find wide acceptance.

burning the midnight oil. Hard on the heels of the Savage announcement comes one from Remington plugging the new Model 725 high-power, bolt action. This one is really good looking. Remington has at last abandoned the cheap looking stamped trigger guard and floor plate, and the safety is of a new design that leaves a feeling of solid security. A dolled-up, beautifully checkered stock finishes the gun off nicely. Again, I'll have to look and report.

Sportsmen of Texas plan for the future.

SCOT Sets Its Pace

• Continued from page 4

Fish Commission, who noted SCOT's accomplishments during the last year. He emphasized the organization's further opportunity for public service, pointing out mutual goals held by SCOT and the Game Commission.

SCOT's official report was made by Executive Secretary Cecil Reid who described results of Legislative liaison, King Ranch proposals for stocking SCOT-sponsored public hunting areas, and distribution of awards and scholarships. He outlined progress toward the coming Governor's conference slanted at persons and groups interested in enhancing better usage of hunting and water sports opportunities.

A convention highlight was presentation by President Toddie Lee Wynne, Jr., of Dallas, of a SCOT plaque citing Delegate John J. White of San Angelo for his meritorious service as a State game warden. Similar plaques have been presented other recently retired Game Commission veterans.

Meeting the day before the regu-

lar convention opened, SCOT's technical committee conferred with many leaders, including Game Commission officials, on vital subjects—brush control, fresh water fisheries survey, proposed expanded winter quarters for whooping cranes and comparative figures showing that the Game Commission pay scale is far below the national average.

A stirring convention climax came when the new president, Hayden Head of Corpus Christi, read a telegram announcing the Internal Revenue Service had listed SCOT as a public service organization. This action qualifies financial supporters for income tax deductions equivalent to their contributions.

Then, Head, a 43-year-old lawyer, hung out the "Men at Work" sign in an acceptance speech stressing that swivel chair calisthenics won't get the job done. A decorated World War II fighter pilot, Head indicated he expected to set the pace in his Beechcraft Twin by personally contacting affiliated clubs and SCOT officials in their hometown areas. **

It takes a skilled fisherman to catch the "Reds."

Redfish Are Vanishing?

• Continued from page 5

mercial production. But most important were the catastrophic freezes which again and again struck fish populations. In 1940, 1947, 1949, and 1951 northers chilled water temperatures to the point that fish could not live. Biologists have estimated that 60 to 90 million pounds were killed by the freeze of 1951 alone.

Classifying the redfish as a vanishing species, therefore, would defeat our purpose. This additional protection from the fisherman would stockpile a useless redfish population for harvest by only the next killing freeze.

Redfish are not idle between these periods of depletion, and they with other fish gradually rebuild their populations. Dr. Gordon Gunter, a leading authority on the biology of Texas waters, said: "There is evidently a build-up of the commercial fishery stock between the hard freeze years, indicating that the combined sports and commercial fishery is not

very intense. This stock or surplus is rigidly protected and thus underfished until such time as the next hard freeze removes a large part of it." This, then, indicates that fishing pressure is light, even though the emphasis has changed to the sport fishermen by sheer weight of numbers combined with legal restrictions on commercial fishing.

Fishery statistics can be misleading, and must be cautiously interpreted. Many factors enter into fluctuations of the catches through the years. For example, any restricting regulations for the commercial fisherman, such as limiting length or size of nets or declaring some areas "off limits" to netting, of course, drop the yield. Man hours spent in reaping the harvest varies also with weather conditions and the market price of the catch.

It is only logical to expect the commercial yield to dwindle with ever-increasing restrictions on the commercial fishery. The harvest



We Erred

The very excellent cover painting of the boat-tailed grackle by DON HAGUE which appeared on the February cover of *Texas Game and Fish* was incorrectly credited to another artist. The credit line on the cover explanation on the masthead should have read: Cover painting by Don Hague.

Hague's excellent paintings are familiar to all subscribers of *Texas Game and Fish*, and we feel that his illustration of the grackle will rank favorably with other favorites, such as the painted bunting (May, 1957), the free-tailed bat (January, 1957) and the collared lizard (July, 1956).

made by the growing number of sportfishermen is unknown. We might assume that it is increasing because of the increase in effort. In the near future we hope a program can be undertaken which will enable us to estimate the take of the sportsmen to complete the picture of the over-all trend.

Redfish are wary creatures, and a consistently successful fisherman must be a skilled artist. One does not catch redfish (except rats or smaller ones) by accident, and one does not usually catch reds from a boat. Much wading and the tire-some casting involved create more hard work than the average sport fisherman is willing to devote. With the onslaught of the outboard age the sportsman who expects to ride in style and fish in comfort often finds the redfish extremely scarce. The nostalgic fisherman rarely remembers some of the leaner yester-years when he spent more effort with slower results—better in the long run when you want redfish. **

Location Set on Artificial Snapper Reef

The first artificial reef off the Texas coast has been tentatively planned for a site near the 10-fathom curve off Port Aransas, near the whistling buoy. Howard Lee, Director of the Coastal Division, Rockport, said the Coast Guard must still give formal approval of the exact location. Verbal agreement to the site has already been obtained.

Two hundred old automobile bodies, obtained by bid at the Austin office, will be delivered in Port Aransas. The old autos will be tied together and properly anchored to form the artificial reef, so they will not be subject to tide movements,

said Lee. Otherwise, they would become a navigation hazard.

While these plans are going on, biologists are studying ways of utilizing information on catches made in the vicinity of the artificial reef. Very few snapper have been tagged, so not much is known about the source of this pan fish from the Gulf. Many small snapper are now caught around the jetties and offshore oil rigs. It is not known, however, whether these snapper are spawned nearby or come from somewhere else. If the proposed snapper reef proves successful, it is possible others will be built along the coast line.

It's the do-it-yourself plan that really works.

Alert to Nature's Need

• Continued from page 15

blow away, what role wildlife plays in the problem. It has given the children a real reason for having some part or interest in demonstration plots, seed farms, and the campaign to put seed packets into the hand of everyone who buys a hunting or fishing license.

Every sixth-grader in the Highline, Washington, schools gets to spend a week at Camp Waskowitz, high in the Cascade Mountains. The week flies by on wings, for the children have never been busier. They build nature trails, tagging the trees and shrubs; they collect specimens of all kinds and label them for the camp museum. They visit a fish hatchery, have an "experiment" of their own to study eggs, fingerlings, and larger fish. In between times they take turns caring for the orphan fawns and bear cubs the camp has adopted, some so small that they must be tenderly fed from a bottle.

The children watch demonstrations, too—of good forestry practices, of fire-fighting equipment. As the days pass they show signs of growing initiative and resources and are gradually weaned from their first heavy dependence on the teachers, parents, and technical experts who accompany them. Each child plants a tree, and the seedling tree he takes home at week's end becomes a lifetime reminder of the

useful lore he has gained directly from nature.

Washington is not the only state in which schools are using camps to give children firsthand experiences with nature's resources. Among others are Arkansas, California, Indiana, Kentucky, Pennsylvania, Michigan, North Carolina, Ohio, Tennessee, West Virginia, and Wisconsin. In some, the conservation camp is already a well-established institution; in others it is still in pilot-plant stage. From camp to camp the activities and programs vary widely, yet are alike in that they introduce children to local conservation problems.

In other states, children are just as active. In Kansas, a fourth grade puts wildlife programs on the air. In Wisconsin, all grades are helping to remodel and equip a camp in a school forest. In Nebraska, children of a one-room school, with cooperation from the entire community, resodded and beautified an eroded ground. In Tennessee, children gave the school board a diagram showing "paths where most of us walk," to help the board decide where to lay new walks that really protect the grass.

In ways like these—and there are hundreds more just as appealing—American children are learning about the resources in their communities. These are the ways that

No Hurdle too High For an Outdoorsman

The other night at a civic club meeting, I was particularly aware of the presence of one of the members. I didn't have the pleasure of meeting him before the program for the evening, but was happy to do so immediately after the entertainment and business was over. We shook hands, and I felt better for it. Then he asked me a question that shocked me for a minute, but I think I managed an answer of sorts.

He is very interested in the quail population of Denton County, and he told me that he had never shot quail in his life, but that he wanted to do so. He asked for the location of some birds that he might try his hand at it. He did make it quite plain that he wasn't going to trade his dog for a bird dog.

I'm going to help him with his plan, and I don't blame him for wanting to keep his seeing-eye dog. He wants to learn to shoot quail by sound. He is totally blind.—*W. R. Long.*

state departments of education call "good ways" of teaching conservation.

What is it, precisely, that makes them good?

IN THE FIRST PLACE, THEY ARE REAL EXPERIENCES. Realness has its own vivid appeal. It's one thing to read in a textbook about "balance of nature" and quite another to help the game warden count the deer so that he can determine hunting season limits. It's one thing to discuss erosion as a national problem, and quite another to tackle it as a threat to one's own dooryard.

The realness carries over to associated school activities. The child eagerly searches his textbooks and references for the answers to his real problems, or to questions arising out of real experiences; he makes other inquiry for the same reason. If he is soon to go off to camp, his studies in preparation have real purpose. He writes enthusiastically about his experiences because their realness grips his imagination. When he wants to win other people over to

• Continued on next page

Children awaken to all that's best and needed in the out-of-doors.

Alert to Nature's Need

• Continued from page 24

his particular conservation cause—the protection of quail, for instance, or the control of brush fires—he makes a poster or writes a letter; and his motivation towers above the artificial stimulation of a poster or composition contest.

THEY DEVELOP CONCEPTS THAT CAN FIND ROOM ANYWHERE IN THE EDUCATIONAL PROGRAM. This virtue ties in closely with realness, for it is the realness of these activities that make them valuable in almost every teaching situation. They can make use of any or all of the school subjects. No child is too young; no child is too old; conservation experiences like these can extend from kindergarten all the way through the elementary grades.

THEY PROVIDE KNOWLEDGE CHILDREN CAN PUT INTO USE OUTSIDE OF SCHOOL. When children

live conservation, it becomes a way of life, to be followed both in school and out. They plant their flowers and gardens at home, pause in their play to listen to a bird or watch it swoop by, put out their picnic fires with special care, even fish in conservation-wise ways. If they are old enough, they have good reason for joining their parents or neighbors to set out windbreaks, plow the hills along the contours, plant the cultivated crops in strips. Even before they are old enough to do the work, they understand the why of it.

THEY INVITE COMMUNITY COOPERATION. Not many of the activities described here can be carried out by the school alone. They need the help of parents and friends. They draw on the technical experts provided by State and Federal governments, as well as private conser-

vation organizations. By attracting everyone's support, these activities not only become more zestful and satisfying for the participating child but advance the cause of conservation itself throughout the nation.

THEY GROW OUT OF PLANNING BY BOTH TEACHERS AND PUPILS. There's no room for a hit-or-miss approach to any of these activities. Their value, educators agree, is closely related to the teacher-pupil planning that goes into them.

When teachers and children plan together they share experiences and knowledge and cut down on trial-and-error and wasted effort. They fit each child's wishes and projects into a big plan so that all children can gain perspective and the end result will be the best for the whole school. Teachers and students work together and resolve their differences of opinion.

THEY BRING OUT INTERRELATIONSHIPS. Every natural resource is bound to other resources, and experiences that reveal these interrelationships are well worth having. The beaver's dam restrains the stream; a tree's roots hold the soil and its leaves give off water; the birds carry seeds and prey on harmful insects—on and on goes the story, and in the center of it all stands man. It's a wise child that feels himself a part of the great cooperating processes of nature. It's a wise teacher who can show him that he is. **

Just be careful; no need to stay home.

Scourge of Tulare County

• Continued from page 7

ing, fishing, or hiking. A theme of soul-satisfying beauty runs throughout the whole, intricate, infinite realm of nature; a balm for jangled nerves compared to which the threat of tularemia seems insignificant. To forego the pleasures of the field through fear of contracting tularemia is as absurd as foregoing a shower in fear of slipping in the tub.

You need only normal caution to avoid tularemia. Here are some things to keep in mind:

1. Tularemia robs rodents of their natural vigor, so when hunting, don't shoot animals which don't act in a normal manner.

2. Be extra careful to avoid cuts and abrasions when cleaning and handling game, especially rabbits and squirrels.

3. If you do have a cut or abrasion on your hands, it is preferable to wear gloves when cleaning any game.

4. Disinfect all bites, scratches, and similar wounds as soon as possible.

5. Destroy all animals whose internal organs are spotted with white areas, or animals which do not appear completely healthy.

Perhaps the most important precaution of all is to avoid bites of

ticks and flies. Granted, no one likes to be bitten, but there are certain measures that can be taken to repel the insects. Insect repellants in general are not as effective against ticks as against other insects, according to Dr. R. B. Eads, entomologist. Commercially available products containing indalone, benzyl benzoate, diethyltoluamide, or dimethyl carbate are very helpful. Study the label on the insecticides you buy to be sure they contain any of these ingredients. **

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Fish Hatchery Improvements Get Underway

Improvements costing \$200,000 for Dundee fish hatchery near Wichita Falls were approved at a special meeting of the Game Commission recently in Wichita Falls. Bids for enlarging and rebuilding the hatchery will be sought immediately, Joe Marks, Director of Hatcheries, has announced.

The hatchery will continue to operate through the coming season, and plans for the new work have been laid out so that there will be a minimum of interference with the daily routine. The improvements are expected to take from six months to a year.

Dundee hatchery was built orig-

inally in 1928 and contained 14 ponds. Through the years, Wichita Falls citizens donated second-hand oil field pipe and valves and other additions were made, until today the hatchery has 50 ponds covering 35 acres.

Under the new program the entire hatchery will be almost completely rebuilt. New water lines will be established so that fish production can be materially increased. Some levees and roads will be rebuilt and all new concrete boxes will be provided. Cost estimates break down to \$75,000 of earth work; \$35,000, concrete; \$10,000, ditch repairs; \$8,000, road work, and \$62,000, water and drain lines.

Harris hawks help save feed for cattle and deer.

Brush-Country Gentleman

• Continued from page 13

The pack rat, principal food species of the Harris hawk, is found in abundance throughout the rolling Rio Grande Plain. It is this abundance which makes him the chief item in the Harris hawk's diet.

From the viewpoint of South Texas ranchmen, this same abundance makes the pack rat one of the worst destroyers of range land. With so many of these rodents occupying the range, a tremendous amount of damage is done to the range species each year. The pack rat eats a wide variety of grasses and grass seeds utilized by cattle. He also robs the upland game birds of much of their winter food supply by eating or storing weed and grass seeds they need to carry them through the critical period of the winter. Both bobwhite and scaled quail populations are

thus held down by the feeding activities of this rodent.

The prickly pear cactus also is used extensively by the pack rat as a food item. Both the fruit and the cladophylls are eaten. Every ranchman knows the tremendous importance of prickly pear as a carry-over diet for cattle during drouth. Destruction of prickly pear by pack rats robs the rancher of thousands of dollars worth of emergency cow food each year.

Deer also use prickly pear during drier periods as a large part of their diet, and the wily brush hog, the javelina, makes up about ninety per cent of his normal diet from prickly pear. Thus, the heavy use of prickly pear by the pack rat is reducing the food supply for wildlife as well as robbing the rancher of a valuable source of cattle food.

Mesquite beans are eaten by almost every species of wildlife and are very valuable in carrying them through the winter. But the pack rat also likes mesquite beans and through his great numbers countless tons of them are devoured each year.

Studies are now under way in parts of Texas which ultimately will determine the exact destruction to range plants by rodents. At present the exact amount of damage done by rodents in South Texas is

Better Habitat Planned Around Lake Texarkana

A program of wildlife management is planned for 79,400 acres of Federal land surrounding Lake Texarkana on the Sulphur River. Permissive rights have been given to the Game and Fish Commission for the next 10 years, according to E. A. Walker, Director of Wildlife Restoration. The Secretary of the Army has the power to revoke the license any time he feels it is necessary.

The state will improve habitat around the lake, with special emphasis on attracting upland game and waterfowl. Included in the program may be the construction of fences, buildings or signs, and the planting of shrubs, plants, and grasses.

The license agreement was signed by Howard D. Dodgen, Executive Secretary of the Game Commission, and Edward A. Bacon, Deputy Assistant Secretary of the Army. Arkansas already has begun a waterfowl program to improve habitat around the lake.

unknown but by knowing the food habits of rodents and observing the damage they do a fairly good idea of the damage done can be estimated. In South Texas alone it will run into the millions of dollars from the standpoint of loss of livestock feed alone. When the importance of wildlife is considered, the loss due to rodent damage is increased even more.

The Harris hawk, by making the pack rat his principal food item, plays a vital role in protecting the food plants of cattle and wildlife. Thousands of these rodents are eaten by Harris hawks. Other meat eaters of the brush country also help the Harris hawk hold down the pack rat population. The bobcat and coyote often may eat several a day, if they can be caught. One bobcat, trapped as a predator, was found to have eight pack rats in its stomach. Rattlesnakes, indigo snakes and bull snakes also help out in pack rat control. A six-foot rattle-snake can easily take on seven or eight pack rats at one feeding.

Harris hawks will often follow a

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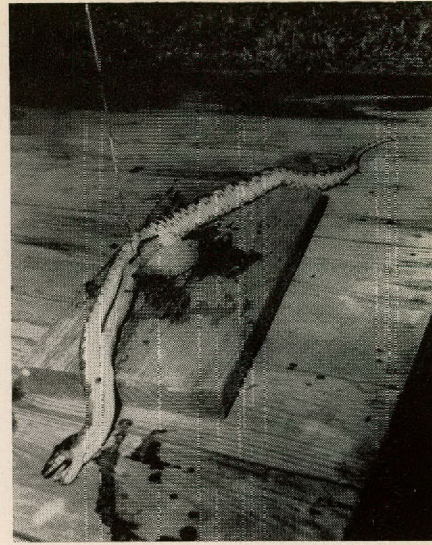
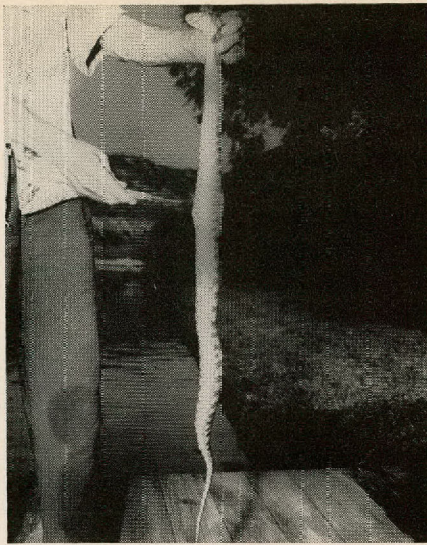
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SCOT Photos

SNAKE LASSO—Here's what happened to a big diamond back water snake that bit on a Lake Austin trotline. Left, the reptile is coated by Hugh McGlamery. The snake had swallowed the hook, leader and all, and in trying to escape had entwined its body around the line,

forming a loop so complete that its tail was in its mouth when landed. Center, McGlamery points a knife blade toward location of the large perch the snake had swallowed. Right, the post mortem outcome, with the liberated perch still on the hook.—Jay Vassels.

Goose Hunts, Pass Construction Debated

Improvement of waterfowl shooting and coastal fishing was brought up at the January meeting of the Game and Fish Commission at Lubbock.

The possibility of constructing Cedar Bayou Pass near Fulton Beach was explored, and the price estimate given by engineers was approximately \$2 million. This pass would be built through an entirely new cut with sufficient jetties to give it full protection, although a natural pass exists between St. Joseph and Matagorda Islands. The natural

pass has been opened several times but has refilled because of action of tide and winds. The Commission plans to investigate development of an efficient alternate at lower cost.

The half-day shooting period for waterfowl hunters was suggested as the solution to increased gun pressure driving geese and ducks from the coast. Commissioner Henry LeBlanc of Port Arthur said, "Our waterfowl must have some place to feed and rest. If we are shooting at them from before sun-up until sunset, we'll be driving them away."

Panhandle residents asked the Commissioners to set up North and South Zones for hunting geese during open season, since geese are plentiful in their area just before hunting season and again as the season closes. They recommended that goose shooting be permitted until the middle of January, the same as duck shooting, or that a split season be ordered.

The construction of Cedar Bayou Pass will be discussed again as a special meeting of the Commissioners at Rockport in the spring. The goose hunting seasons will be taken up by the Central Flyways Committee meeting in Corpus Christi in June.

Brush-Country Gentleman

Continued from page 26

large indigo snake when he is pack rat hunting. The snake crawls from one pack rat house to another searching for rats. As he enters one of the many entrances, rats scatter out the others. At times I have seen as many as five Harris hawks following one indigo snake and picking off terrified pack rats as they poured out of their houses. A team like this is very beneficial in controlling rodent populations.

Teams of Harris hawks consisting of three or more individuals often may be seen assaulting a pack rat nest in an effort to reach the rats inside. Squealing almost like an injured rat and tearing at the entrances one or two hawks will assault the nest while the others perch

nearby to capture any rats that run out. These forays are not always successful but the Hawks seem to enjoy them. Perhaps these raiding parties are made up of family groups and the parents are teaching the young tricks of the hunt.

The beneficial nature of the Harris Hawk makes it of great importance to the economy of South Texas. Every person should make it a point to become acquainted with the characteristics of this gaily colored citizen of the brush country and should do all he can to protect him. Ranchmen should be especially interested in having him around since he means more food for cattle and wildlife through a greater abundance of range plants. **

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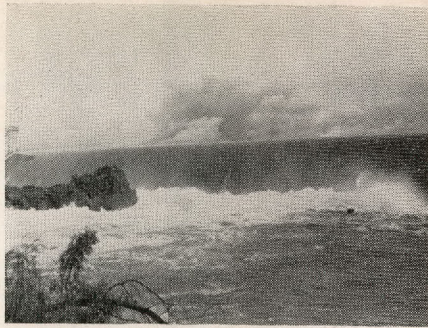
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During flood stage, Inks Lake overflowed into the surrounding area of state park land.



A six-foot wall of water tumbles over Inks Dam into Lake Granite Shoals.

Problems gang up on game fish.

Fishing in '58

• Continued from page 11

environment. Food was scarce. Lack of rainfall and the resulting lack of washed-in organic matter caused low lake fertility. The water was beautiful—clear as crystal. But from a fish's viewpoint, unsatisfactory, since lack of color was due to lack of microscopic organisms—so important as food to the very young game fishes.

White bass, another important game species, also had problems in 1956. This sporty anglers' friend prefers running water for a successful spawn. But in Central Texas during this year of drouth, running water was only a memory. The bass schooled, as usual, prior to spawning and began a search for moving water. With one or two exceptions, running water was to be found only

below the generators of our bigger dams, and then was available only when man's need for electrical power forced the generators into operation. Again, many white bass were undoubtedly spawned, but in all probability, only a fraction of the number necessary to replace the loss from the existing population.

In addition to spawning difficulties, other problems were apparent. Falling lake levels kept fish populations on the move. Safe habitats

had to be deserted and new areas with suitable food and cover had to be found. This forced movement resulted in high predation, as young fish, frantically seeking new shelter, were easy prey for hungry predators.

And then, 1957. With spring and the spawning season (when next year's fishing is born) came rain. Gentle showers and downpours, all helped the fishing prospects for 1958. Small streams began to run; stock tanks filled; lakes rose until full and literally running over. The river was full and kept from overflowing only by man's manipulation of dam gates and spillways. The human population lost and gained with the abundant water. But what about the fish? Of course, many were lost—some beaten to death by the force of currents, many killed by rapidly changing temperatures, heavy silt loads, and water quality. But, the overall effects were beneficial. Black bass and sunfish had constant or slightly rising water levels for spawning, and running water

• Continued on next page

Landowners Combine Efforts in Program To Promote Quail Population in Texas

Landowners will soon be encouraged to join in the State's quail rehabilitation program, announces W. J. Cutbirth, Assistant Secretary of the Game and Fish Commission. Members of the Commission's quail development committee are Frank Wood of Wichita Falls, Robert Carr of San Angelo, Howard Carney of Atlanta, and J. W. Elliott of Mexia.

The committee's campaign stresses the need for providing cover and

feed for quail, Cutbirth said. He added, "The solution of the quail problem depends more upon the landowner than on anyone else.

"These birds require proper cover conditions, and assurance of a good food supply. Through efforts of Game Commission workers, thousands of Multiflora roses have been planted, as well as partridge pea, dove weed, Kobe lespedeza, and other seed-producing varieties of plants."

Nearly 35,000 bobwhites and some 10,000 coturnix quail were produced at the State Quail Hatchery at Tyler during 1957. These birds were sold to landowners at 50 cents each, about half the cost of production.

Landowners may make early applications for birds. Their land will be inspected by Game Commission workers, who may give them helpful information on cover condition requirements. No birds will be authorized for land that does not contain suitable cover and sufficient feed possibilities.

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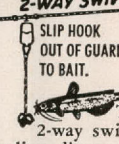
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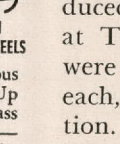
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was available to gratify the mating instinct of the white bass.

And the young were born into a fish's land of milk and honey. Tons and tons of rich organic material was washed into the waters of Central Texas. Leaves, wood, and tons of manure, which had been rotting for months on the land of the watershed were swept into the streams and lakes. Insects, seeds and other foods also flowed in, to provide a varied diet for aquatic inhabitants.

The water bloomed with myriads of microscopic organisms — and turned a lush green, as a result. The water inundated many acres of vegetation rich land, providing excellent cover for young fish in the first and most precarious days of their life.

By the fall of 1957, the weather settled, and we began to take stock

of the situation. Just what were the results of a wet year?

Fish were extremely plentiful in the waters of Central Texas. Fishermen were forced to be agile on Lake Travis, just to get bait past the hordes of small white and black bass and down to a point where the big ones congregated. The accepted technique was to bait a hook, weight it good, and then beat the water vigorously with the rod tip to drive the surface-feeding small blacks away. Then quickly drop bait and weight to the bottom. The small whites were concentrated about ten feet below the surface, and the bait had to pass this obstacle in a hurry or be swallowed by a hungry white.

This was October, and already the six-to-eight-month-old fish were "keepers," although not large enough to satisfy a hungry angler. The blacks averaged 7-9 inches in length, and about 3-5 ounces in

weight. The whites were slightly smaller, but all species were fat, vigorous and healthy.

Whites were so plentiful that a limit could be taken in 30 minutes fishing with any small lure in the tackle box. Of course they were small, but nevertheless provided a prelude of things to come.

Barring natural catastrophes, the blacks should be 12 to 14 inches in length and weigh from ¾ pound to over one pound by spring of 1958. The whites should also grow and provide good fishing during the coming year.

When the sportsman packs his bag, grabs his tackle and goes fishing this year, the fish will be there. Not all tackle busters, of course, but healthy, plump fish, ready and waiting.

The fish will be there. But as always, fishing success depends a great deal on the skill of the angler. **

Game Representatives Attend Wildlife Meet

The 23rd North American Wildlife Conference was attended by Howard D. Dodgen and W. J. Cutbirth, Executive Secretary and Assistant Executive Secretary, respectively, of the Texas Game and Fish Commission, March 3-5 at St. Louis. Sponsored by the Wildlife Management Institute, the conference attracted administrators and technical workers in the field from the federal governments of the United States, Canada, Mexico, and State and Provincial agencies.

The conference followed a three-day convention of the National Wildlife Federation, at which Fred A. Seaton, Secretary of the Interior, was principal speaker. The Federation was organized after the first North American Wildlife Conference, called by President Franklin D. Roosevelt in 1936. The Federation's first president and head organizer was J. N. ("Ding") Darling, former newspaper cartoonist, now retired, and one-time chief of the U. S. Biological Survey. During the past two decades it has grown to become the largest non-government organization in the world devoted exclusively to natural resources conservation.

Dangers Cited in Unwise Lake Stocking

Stocking of many Texas lakes and streams from fish hatcheries is a waste of time and money, according to Marion Toole, Director of Inland Fisheries of the Game and Fish Commission.

"They just simply do not need hatchery restocking," Toole said. "We have known this for a long time. It was brought out again early this month when we did a complete kill on Lake Fort Brown near Brownsville."

This is a lake that had been restocked from hatcheries for the past three years. More than 7,000 bass had been released in the lake during that period. When the lake was treated early in February only 38 large bass were brought out and about 10 bass which might have been from the 2,000 fingerlings released into the lake last year.

"Hatcheries can't hope to duplicate natural breeding," Toole stated. "Where new lakes or rehabilitated lakes are in need of stocking, hatcheries serve a wonderful purpose. We must have them. On the other hand, one pair of 3-pound brood bass to the acre of water in a lake will produce some 25,000 offsprings in comparison to 200 per

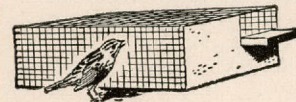
acre under restocking.

"When we restock impoundments that contain other fish, all we are doing is to pour in rather high-priced fish food for the rough fish already in the lakes."

Toole pointed out that biologists long have been accumulating data showing the fallacy of random restocking. Public demands, however, have been so insistent that many times hatchery fish were placed in lakes against the best interests of the lake.

Almost every major lake in Texas had an excessive and successful natural spawn last year, Toole stated, which means plenty of catchable fish for the next several years.

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Private interests vie with the people for public lands.

A Battleground

• Continued from page 8

trolled harvest of game, with exacting limits based on the wildlife's numbers. Included in this group are Engeling Management Area covering 10,681.10 acres in Anderson County; Kerr, 6,493.25 acres in Kerr County; Gene Howe, 5,821.24 acres in Hemphill County; Sierra Diablo, 5,335.33 acres in Culberson County; Black Gap, 36,624 acres in Brewster County; Sheldon, 2,446.56 acres in Harris County, and Las Palomas, 200.53 acres in Cameron County.

Not idle in this program to save land for Texans, the state established 35 State parks for various types of recreation, and set aside 13 historic sites. A few of these parks, the towns near which they are located, and the highways by which they are reached are:

Caddo Lake, Karnack, Texas Highway 43; Garner State Park, Uvalde, U. S. Highway 83; Goose Island, Rockport, Texas Highway 35; Huntsville State Park, Huntsville, U. S. Highway 75; Inks Lake, Burnet, Texas Highway 29; Lake Whitney, Whitney, Texas Highway 22, and Palo Duro Canyon, Canyon, Texas Highway 217.

Threats to our public lands are always with us. Again, private interests want to "develop" it, drill for oil and gas, or produce lumber from the forests. Fire—when careless campers leave their campfires untended—eats up valuable acreage. We may not mean to destroy. But there will come a time,

unless Texans rise to defend their land, when the only pride we can claim is in the beautiful Texas that "used to be."

Governor Price Daniel has proclaimed March 16-22 National Wildlife Week in Texas, with the theme, "Protect Our Public Lands," in cooperation with the National Federation of Wildlife Sportsmen's Clubs of Texas are backing the program, state-wide. Heading the observance here is Harry L. Tennison, Fort Worth, and serving as regional directors are SCOT directors Lawrence A. Hagy, Amarillo; Don Maxwell, Odessa; Homer Nickel, San Angelo; M. C. Raney, Lake Jackson; Bob Young, Houston; Harvey Ratliff, Breckenridge; Bob Rogus, Graford; Bob Leonard, Fort Worth; Ross Sport, Marshall; Chandler Lloyd, Dallas; O. R. Mitchell and Ed Harper, San Antonio; S. L. Craft, Palestine; C. T. Lawson, Meridian; W. B. Wood, Jr., Port Arthur; H.

M. Cole, Beaumont; Fred Proctor, Victoria, and T. S. Scibienski, Corpus Christi.

"Our public lands in Texas," said Chairman Harry L. Tennison, "are our best bet as a natural place to start a program for conservation. If we make sure our public lands are unspoiled by overgrazing and timber cutting, we as citizens first, and sportsmen secondly, can make sure we will have ground reservoirs of both water and game.

"Basically, the theme of 'Protect Our Public Lands' has to do with the conservation of water. We know that all life depends on water, and we cannot have good grazing, good crops, good hunting, and fishing unless we take care of the water-holding ability of our lands. We must plan for the future and certainly be concerned about it, for there is where we are going to spend the rest of our lives." **

The Brazos

• Continued from page 10

There still is a great deal of work to completely harness the Brazos. Its flood control program has saved millions in property damage and the lives of humans and livestock. A number of other important projects remain to be completed, particularly those launched by the Brazos River Authority to construct a number of additional dams.

Besides being the birthplace of Texas independence the Brazos also is a part of other early history of Texas. The upper reaches provided happy hunting grounds for early Texas Indians. The first Texas Navy took refuge in the mouth of the Brazos, where later the famous Velasco treaty was written.

That's the Brazos, its headwaters starting as a trickle in New Mexico, moving downstream to spill two million acre-feet of water into the Gulf of Mexico each year.

Major lakes of the Brazos watershed:

LAKE ABILENE: Taylor county, covering 635 surface acres. Hunting and fishing permitted. Public access but no launching ramps. No public facilities.

ALCOA: Milam county, covering 850 surface acres. Fishing permitted.

Boat ramp and public facilities. Also boats for rent.

BAIRD LAKE: Callahan county, covering 147 acres. Fishing and hunting permitted. Boat ramps but no public facilities and no cabins for rent.

BENJAMIN RESERVOIR: Knox county, covering 100 surface acres. Hunting and fishing. Boats permitted but no launching ramps and no public facilities.

BELTON RESERVOIR: Bell and Coryell counties, covering 7400 acres. Hunting and fishing permitted. Boat ramps, public facilities, cabins and boats for rent.

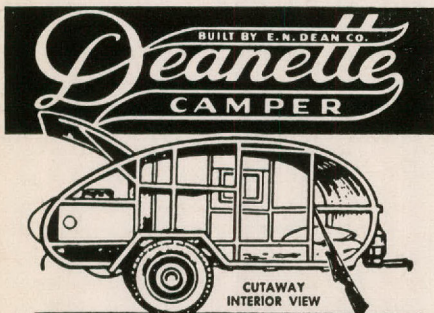
BUFFALO LAKE: Lubbock county, covering approximately 100 surface acres. Fishing but no hunting. Public facilities now being improved. Boats for rent, no cabins.

CLEARFORK RESERVOIR: Stephens county, covering 200 surface acres; fishing by permit. No public facilities.

DANIEL LAKE: Stephens county, covering 1000 surface acres. Hunting and fishing permitted but no public facilities.

EDDLEMEN LAKE: Young county, covering 420 surface acres. Hunting and fishing permitted but no public facilities. (Dam is being raised to double capacity of lake.)

FORT PHANTOM HILL: Jones county, covering 3950 acres. Hunting and fishing permitted. Boat ramps, public facilities and boats and cabins for rent.



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Ambitious Immigrant

• Continued from page 17

to float, then removed and placed on a plate to cool and harden. This bait will keep for several days and may be freshened by placing a dampened cloth on top of the balls.

"This bait really works on channel catfish, too," said Berg. "Many times you'll catch cats while fishing for carp."

This recipe and other time-honored concoctions are contained in the Game and Fish Commission brochure entitled, "What the Experts Say About Carp Fishing," which may be obtained free by writing the Game Commission, Walton State Building, Austin.

Preparation of the fishing ground is as important as the bait itself testifies the Commission's bulletin. Game Warden Ed Marth of Victoria, a veteran carp fisherman, baits a hole with a mixture including one part cottonseed meal, two parts soaked corn (saturated for two or three days in advance), one part old and stale white cornmeal, mixed with a small box of anise seed and one cup sugar.

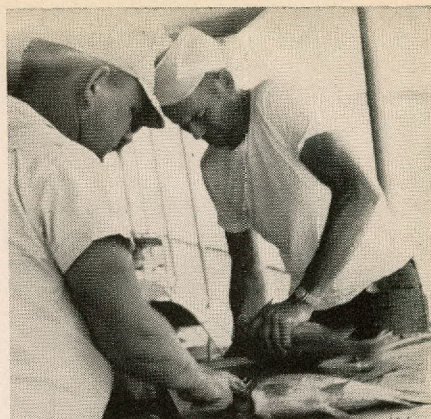
"First, select a pool that is somewhat calm and secluded, not necessarily very deep," Marth explains. "This is baited with the special bait which is placed in a wire screen

sack and weighted to keep it on bottom. The screen mesh should be small enough to prevent turtles and fish from stealing the bait. You can start fishing the baited spot any time after two or three days."

The best rig for carp is a light-to-medium casting or spinning rod, a small single or treble hook, and a non-clinking sinker. A matchstick is tied about a foot above the hook to prevent the sinker from sliding any farther down the line. An oblong sinker is important, for many times a carp will drop the bait quickly if it detects any resistance. Dough bait should be molded around the hook until the shank and barb are completely obscured.

"Few people realize that carp is good eating," Berg explained. "If you like salmon, you'll like carp. They taste a lot alike."

After skinning the fish and removing the dark meat on both sides, along with the feather-like bones near the head, fillet the meat into chunks of one and one-half inches thick and two inches square. Soak the pieces for three hours in milk to which salt and pepper have been added. Then roll the chunks in yellow cornmeal spiced with both red and black pepper, and fry them



Carp are good eating when well cleaned and soaked properly. Here men prepare to skin the fish and remove dark meat at its sides.

to a rich, golden brown in a deep skillet brimming with bacon drippings and lard.

Berg's favorite way of preparing carp is to can them. After cutting off the fins and tail, saturate the cut chunks in a mixture of one teaspoon of salt in a pint jar of water. Then cook carp in this salted water for two hours under two pounds of pressure.

A nice aspect of carp fishing is that the more fish you catch, the better it is for conservation.

"A person can have loads of fun and help the balance of nature by fishing for carp," Berg pointed out. "We've got the darn thing, and we may as well accept the fact and start enjoying his companionship." **

• Continued from page 30

The Brazos

GRAHAM LAKE: Young county, covering 400 acres. Hunting and fishing permitted. Public facilities but no cabins or boats for rent.

HAMLIN SOUTH: Jones county, covering 500 surface acres. Fishing is permitted but public facilities are limited. No cabins or boats for rent.

HAMLIN RESERVOIR: Fisher county, covering 200 surface acres. Fishing permitted but limited public facilities. No cabins or boats for rent.

KIRBY LAKE: Taylor county, covering 800 surface acres. Hunting and fishing but no public facilities available. No boats or cabins for rent.

MINERAL WELLS LAKE: Palo Pinto county, covering 8140 surface acres. Fishing permitted. No public facilities but has boats for rent.

McCARTY LAKE: Shackelford county, covering 254 acres. Fishing permitted. No public facilities.

MARLIN NEW RESERVOIR: Falls county, covering 300 surface acres. Hunting and fishing permitted but no public facilities. No cabins or boats for rent.

POSSUM KINGDOM: Palo Pinto, Young and Graham counties, covering 20,600 surface acres. Hunting and fishing, with two state parks, public facilities, cabins and boats.

SALT CREEK RESERVOIR: Young county, covering 2300 surface acres. Hunting and fishing permitted. Has public facilities and boat ramp.

SWEETWATER LAKE: Nolan county, covering 800 surface acres. Hunting and fishing. Public facilities, boat ramps and boats for rent.

SANDY CREEK: Stephens county, 1000 surface acres. Privately owned and limited fishing is permitted by owner.

LAKE TUCKER: Palo Pinto county, covering 185 acres. Hunting and fishing for Strawn Recreation club members.

STAMFORD LAKE: Haskell county, covering 5075 acres. Hunting and fishing permitted, with all public facilities.

TRAMMELL LAKE: Nolan county, covering 500 surface acres. Hunting and fishing but no public facilities available.

WACO LAKE: McLennan county, with 2400 surface acres. Hunting and fishing permitted with boat ramps and all public facilities. Cabins and boats for rent.

WHITNEY RESERVOIR: Bosque, Hill and Johnson counties, with 49,710 surface acres. (Largest lake entirely in Texas.) Hunting and fishing permitted, with all public facilities. Cabins and boats for rent.

WEATHERFORD RESERVOIR: Parker county, covering 1200 surface acres. Hunting and fishing permitted with all public facilities. Boats for rent but no cabins.

BRAZOS RIVER: The river bed affords wonderful hunting and fishing in places. Public access is very limited, however and land owner permission is necessary, except when fishing in the bed of the stream from boat or wading.

BRAZOS MOUTH: Some of the best fishing on the Texas coast is from the banks and in the mouth of the New Brazos river, where it flows into the Gulf at Freeport. Boats are available for rent. **

Outdoor Books

JOHN & WILLIAM BARTRAM'S AMERICA edited by Helen G. Cruickshank. 408 pages, including glossary and index. Illustrated by Francis Lee Jaques. Published 1957 by The Devin-Adair Company, 23 East 26th Street, New York 10, N. Y. \$5.

Unspoiled abundance graced the lands of Georgia and Florida in 1773 when William Bartram traveled the area for study. Primitive Indian life, new plants, and animals he had never before observed were recorded in his journal or in letters to his botanist father, John Bartram. From the correspondence and records of both men, travelers and nature lovers, were gleaned the most pertinent and interesting accounts and opinions for **JOHN & WILLIAM BARTRAM'S AMERICA**.

Earlier publications by the Bartrams were read avidly in Europe where many of the plants and animals were unknown. To the reader today, even the authors' unfamiliarity and fascination with the life they found add excitement to the book.

Camping experiences, scenery, and occasional Indian ruins create the interesting background of the trips. Descriptions of plants, reptiles, insects, and

birds—some now extinct—are given careful discussion. The book turns back the pages of nature, and gives readers a glimpse to be cherished.—J.B.

THE NORTH AMERICAN DESERTS by Edmund C. Jaeger. 308 pages, generously illustrated with black and white photographs, line drawings, and maps. Published 1957 by Stanford University Press, Stanford, Calif. \$5.95.

An armchair journey into the strange, arid beauty of five deserts in the United States and Mexico is a rewarding experience to the reader when guided by the expert observations of Edmund Jaeger, former head of the Department of Zoology and Professor Emeritus of Riverside College, California. The verbal trip covers:

Chihuahuan Desert, the one farthest south, which has its roots of volcanic soils deep in Mexico and extends into the Big Bend National Park of Texas and into New Mexico. **Sonoran Desert**, the "tree desert," which spreads over the western half of the Mexican state of Sonora and heads north into southern Arizona, southeast California, and much of Baja California; divided into Plains and Foothills, **Sahuaro Desert** (Arizona Upland), **Yuman Desert**, **Colorado Des-**

ert of California, **Vizcaino-Magdalena Desert of Baja California**, and **Gulf Coast Desert**.

Mohave Desert, a small, shrubby area in between the Sonoran Desert on the south and the Great Basin Sagebrush Desert on the north. **Great Basin Desert**, largest and possibly the most desolate of all American deserts. **Painted Desert**, in reality a picturesque semi-desert east of the Mohave and south of the Great Basin.

Besides capsuled history and graphic descriptions of each region, Jaeger depicts and gives brief summaries of the habits of insects, reptiles, birds, mammals, and plants found on the deserts. **NORTH AMERICAN DESERTS** is sure to be enjoyed by nature lovers.—J.B.

GIFFORD PINCHOT—The Man Who Saved the Forests by Dale White. 192 pages. Published 1957 by Julian Messner, Inc., 8 West 40 Street, New York 18, N. Y. \$2.95.

When plunder in America's forests met head-on with consuming love of a young man for trees, the road was paved for a fight. The young man—Gifford Pinchot—armed himself with strenuous physical exercise, extensive forestry education, and first-hand studies of the waste and greed that were destroying huge tracts of the nation's trees. And the fight lasted for many years.

First came education. Forests can be used and saved at the same time, Pinchot insisted. Then came proof. Pinchot worked tirelessly to put the facts into practice, and from there into print for all to see. He had his enemies and his defeats, but he sent down roots for conservation that are still alive today.

Written for teenagers, the story of Pinchot's dream for saving America's trees and the way he shook the dream into life makes exciting reading. It should be an inspiration to put one's beliefs into dynamic practice.—J.B.

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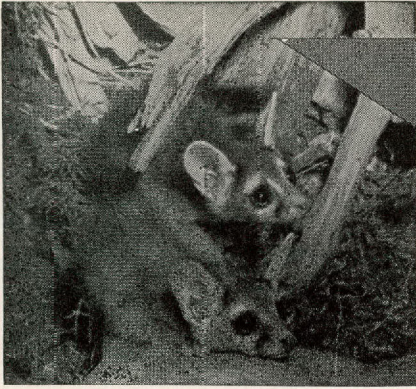


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LETTER OF THE MONTH

Here's Your Question:

How old do little possums have to get before they come out of their mama's pocket?

Kenneth Heard
Omaha, Texas

Baby opossums stay in the pouch from 50 to 60 days before they are big enough to ride on their mother's back. When they are first born, they are so small that almost 20 of them could fit into a teaspoon. At that time, they have no fur, and are almost completely helpless. One study of baby possums showed that they could balance themselves when they were 41 days old, and could walk a few steps. At 62 days, the possums were the size of mice, and had opened their eyes. They were ready to leave the pouch for good when they were 67 days old.

Getting Acquainted

It's fun to run and shout outdoors when you want to, but there's something else to do out there you will like just as well. Walk out near the trees and bushes just as quietly as you can. Watch for birds and animals. When you find one, try to get close enough to see his coloring and actions without scaring him.

When you can see him well, be still. As he dashes about his every-day jobs and makes his natural noises, you can learn a lot about him. Keep notes on what you learn. Soon you will know the best place to look for a certain animal. You will know what he eats and how he sounds. Then you can say you are really getting acquainted with the outdoors.

To Junior Sportsmen Only:

This is your page of wildlife questions and pictures you are proud of. Ask us what you want to know and send us pictures of you and your fish catches and hunting kills. Other junior sportsmen want to know about it, too.

A LIVING PROJECT for March

An easy, living exhibit to keep in your home is a terrarium—a collection of small plants that don't have to be watered. Ferns, mosses, or fungi are the best plants for you to collect for your terrarium. You might want to include:



Sensitive Fern



Southern Lady Fern

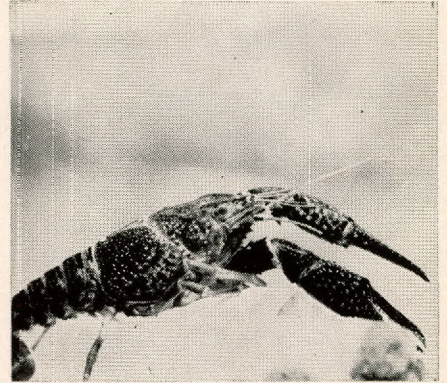


Common Fern Moss

Look for fern-moss on stones in flowing streams or on roots and trunks of trees. The two ferns are found in damp places.

Find a very large glass jar with a lid. (Your school cafeteria may have one.) Place a couple inches of damp soil in the bottom, and carefully plant your moss and fern in it. Cover the jar. The ferns and moss will last most of the year with very little attention.

WILDLIFE QUIZ:



I live in fresh water, in streams or ponds, and I like to hide under stones and water plants. Sometimes I live in holes in the ground if the water is close to the surface. I have two large front claws which I use to catch small animals and clip small plants to eat. I walk on eight legs. I can grow up to five inches long, shedding my hard outside shell as soon as I outgrow it. If I lose a claw or leg, I can grow another one. WHO AM I?

True or False:

1. Skunks eat insects, many of which harm crops.
2. Cobras which sway to and fro to certain music without attacking the player have been hypnotized by the flute melody.
3. Carp, which live in lakes and slow streams, are related to goldfish, the dainty tropical fish you raise in aquariums.
4. The brown-headed cowbird, which is our smallest blackbird, lays all its eggs in the nests of other birds.
5. Trout prefer warm water.

ANSWERS:

1. True.
 2. False. The cobra can feel vibrations, but it has no ears to hear sounds through the air.
 3. True.
 4. True.
 5. False. They like cold water, because it contains more oxygen.
- WHO AM I? Crayfish.

SNAPPING TURTLE



The common snapping turtle is an ill-natured brute of a turtle whose name is derived from its method of defense and feeding. It is one of several varieties of snapping turtles found in Texas lakes and ponds containing muddy bottoms and submerged timber. Snapping turtles are entirely

carniverous, and do much of their feeding underwater. The diet includes crayfish, snails, insects, fish, frogs, and even birds. Scavenger tendencies have often been observed. An outstanding trait of the snapping turtle is a willingness when on land to not only defend itself, but even attack.

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