

Texas Game and Fish

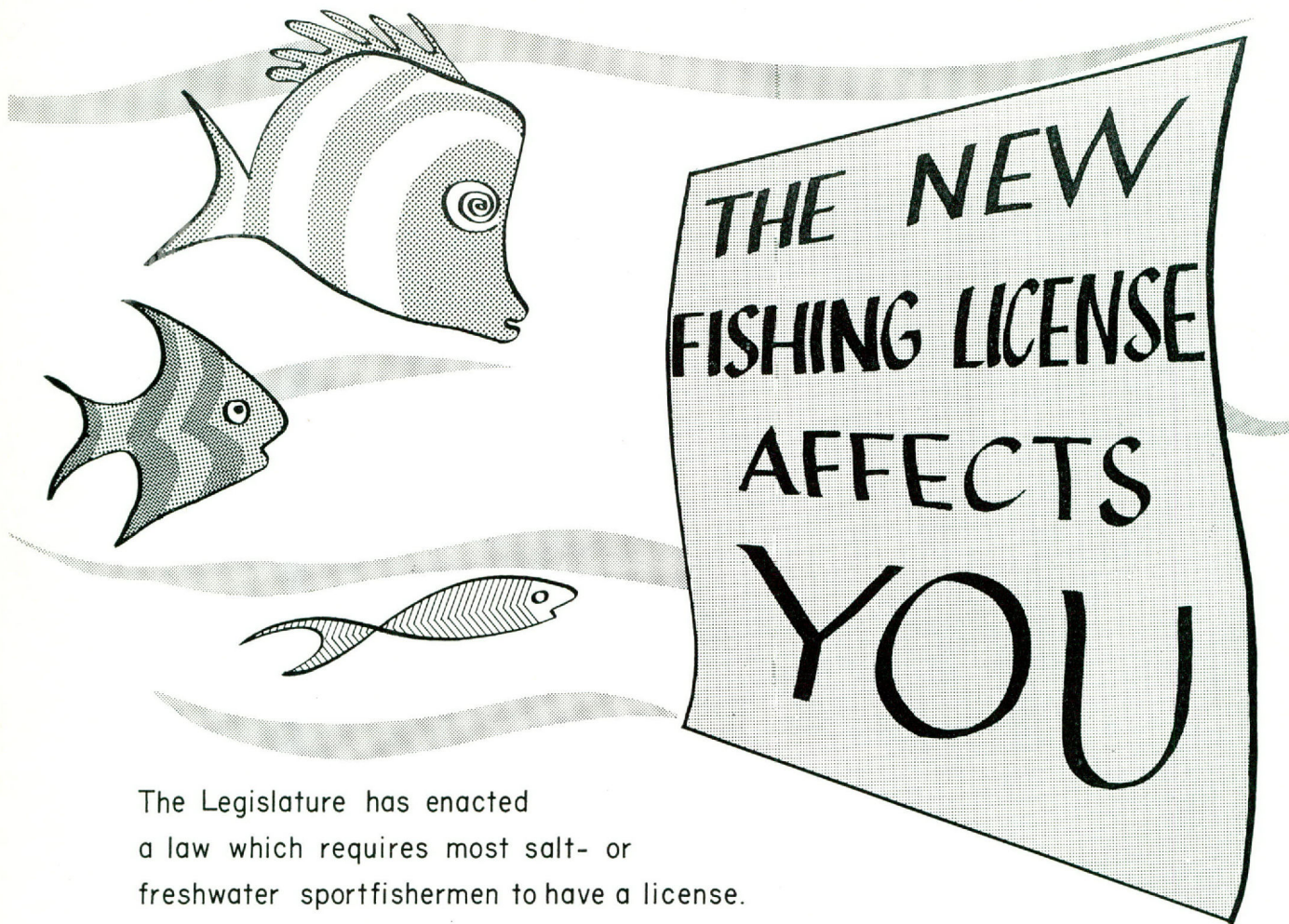
AUGUST

1957

20 CENTS



W. H. ...



The Legislature has enacted a law which requires most salt- or freshwater sportfishermen to have a license.

AFTER SEPT. 1 1957 YOU WILL NEED A LICENSE UNLESS:

1. you are under 17 or over 65 years of age
2. you fish on property which you own or upon which you reside
3. you fish with a trotline, throwline, or ordinary pole and line having no reel or other winding device attached IF you are fishing in the county in which you reside
4. you have a commercial fisherman's license. BUT, if you have a commercial license, then you must: 1. observe commercial size limits; 2. have licenses for your boat, trawl, oyster dredge, or nets of any kind (if you use them).

SEE YOUR LOCAL GAME WARDEN FOR DETAILS

Texas Game and Fish

A MONTHLY MAGAZINE DEVOTED TO THE PROTECTION AND CONSERVATION OF OUR NATIVE GAME AND FISH; AND TO THE IMPROVEMENT OF HUNTING AND FISHING IN TEXAS.

August, 1957

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In This Issue



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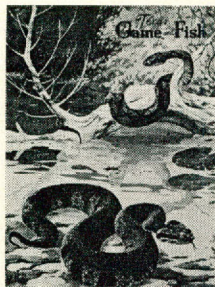
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The Cover

The cottonmouth, one of four species of poisonous snakes in Texas, feeds largely on small terrestrial animals such as mice, rats, rabbits, birds, frogs, turtles, and other snakes. The young are light tan or copper-brown in color with darker cross bands, much like the copperhead. Adults, dark olive or very dark brown in color, may reach a length of five feet or more. (Original cover painting by Clay McGaughy.)

Water Conservation

*this
important
problem
demands
serious
consideration*

By HOWARD D. DODGEN

Executive Secretary
Game and Fish Commission

At this moment Texas lakes and streams are full. Many thousands of acre feet of fresh water overflowed and found its way into the Gulf of Mexico.

Texans will not soon forget the recent drought that is thought by many to be the worst in our history. We will continue to plan for adequate control and full utilization of all our fresh water resources. Full development of our water resources not only will serve as insurance against the recurrence of water shortage that has been experienced in recent years, but realization of these plans will also serve to expand the Texas industrial economy and, with it, its recreation potential.

The ever increasing demand for water to supply our expanding industry, agriculture, and other uses will continue as long as our State's population grows and will become far greater as a result of our natural desires to improve our standard of living.

The very important and beneficial use of our fresh water resources for the production of fish and recreational use cannot be overlooked. In 1955-56, 1,418,000 Texans went fishing. Many of them went several times. It was the principal source of recreation. Fishing has become a necessary part of these individuals' physical and spiritual welfare.

Better pay, a shorter work week, and an upward trend in our living standard is the goal of each person. What purpose is there in having one's work day or one's work week shortened, except that he hopes and expects to use the extra leisure time to pursue

some pleasure of his choosing? Since nearly one and one-half million citizens turn to fishing, and an untold number picnic on the shores of the lakes and streams, go boat riding, water skiing, and swimming, it does seem worthwhile to include liberal planning to serve the recreational needs of the public in any water conservation program.

Water, to be useful for all purposes, must be kept alive and clean. Probably a good rule of thumb for appraising water for water purity for industrial and agricultural use would be to know that it is suitable for the community swimming hole and is productive of natural aquatic life. Industry already has done much to see to it that water released from their plants is suitable for re-use by their neighbor down stream. Continued careful attention is a matter of keeping the waters clean and will doubtless be an important factor in our future water conservation program.

There is no shortage of water to meet all of the needs at the present time and still have an abundance left for fish production and other recreational purposes. There is, of course, a shortage of facilities to hold and conserve the water during times of surplus so that it can be on hand and retained for use as the needs arise later.

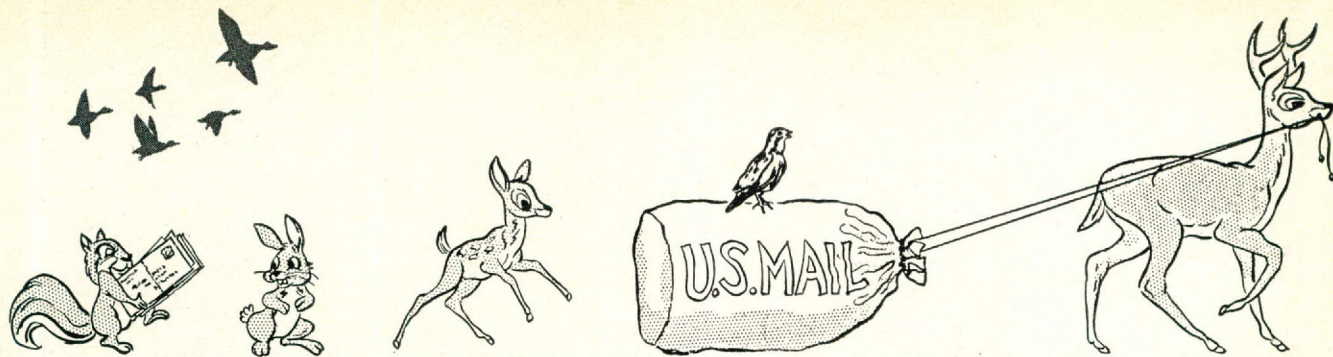
The water conservation problem is not one to concern Texas, alone; it is a National problem that needs the individual concern of each separate state and is constantly a concern of the Congress and proper Federal administration agencies. Industry and agriculture thus far have drawn first attention when water conservation measures were being considered.

Recreation is a beneficial use for water and must be declared so by Texas. There must be careful and strict adherence to such a declaration.

A dedication of a portion of this water resource for recreational purposes must be accompanied by provision of land access to the water. The access area problem is not confined to the fresh water lakes and streams of Texas. It is fast becoming a problem along the shores of our coastal waters. This problem will be overcome without conflict with private ownership, if it is properly included in the water resource conservation program.

The student in wildlife management believes that not only does the appropriation of water for wildlife and recreation seem desirable just for having wholesome fun in the out-of-doors, but it is a necessary nourishment to the social and economic welfare of everyone. This economic benefit is believed to equal any other single use that the Texas waters can be put to, from the standpoint of returns on an investment.

But above all, without the wholesome recreation afforded by our outdoor resources, a Texan's soul would wither along with his body, and he wouldn't be fit to kill.



Overseas

Editor:

Perhaps you would like to know that my work enables me to read conservation magazines from every state in the Union, and I have chosen your publication as the one which I feel will afford my father (a real sportsman) the most pleasure. He is Mr. J. L. Findlay, Middlesborough, Yorkshire, England.

Ellen P. Findlay
1625 Spruce Street
Berkeley 9, Calif.

Deer Killers



Editor:

About the first of April, Hugh Magee, manager of Galvan Ranch, reported finding evidence that a lion had killed a large 10-point buck deer. My husband, Game Warden Herbert Ward, and I drove down into the Valenzlous Country adjoining the ranch, and known lion country, some 18 miles south of Catarina.

As we approached a cave, on foot, a large lion ran out, and Herbert fired one shot at it. Unfortunately the shot was high and inflicted only a flesh wound, making it impossible to get the animal.

Later Herbert returned and set out traps, hoping to catch the animal. On May 12, just one month later, he suc-

ceeded in catching a large female lion (six feet long) that had a gun shot wound in her back.

During the time we had been after this animal, we found where she killed four additional deer, and upon examining the stomach, found deer hair and meat from a more recent kill.

A large female lion will kill from 50 to 75 deer a year, feeding her cubs. For this reason the Warden force in South Texas is always on the lookout for them.

Mrs. Herbert Ward
Catarina

P. S. Another lion, a male measuring 6 ft. 7 in., and weighing 123 pounds, has been killed, making two lions taken in the past 32 days. These lions had been making raids on deer herds.

Information Source

Editor:

Our son is a senior this year, and he had to write a twenty page theme in his Texas History class. He chose the subject Wildlife of Texas and got all of his information from TEXAS GAME AND FISH magazines, which we have saved over the years.

Joe F. Barta
1149 Kaler Dr.
Corpus Christi

Pecos Red

Editor:

Recently a local businessman, Lloyd McKinney, caught a redbfish in the Pecos River, near the bridge between McCamey and Bakersfield.

Mr. McKinney was using a light casting rod and reel and was fishing on bottom in a deep hole using a large, live tetra minnow for bait. The redbfish, measuring 17½ inches long and weighing between one and a half and two pounds, was rather light in color and was not potguttled. It put up a real fight before he landed. A few minutes later the fish was returned to the river.

We thought that its light color might be contributed to the fact the Pecos has been swollen and muddy recently. It might be possible that it lost a little weight as a result of its long swim downstream from the vicinity of Imperial where it was first introduced

to the river. The distance it traveled must have been between 35 and 60 miles.

C. C. Carll
McCamey

Huge Rack



Editor:

This is a snapshot of a nice 16-point whitetail buck. The spread is 28¾ inches; weight was approximately 165 pounds. It was killed near Cotulla in South Texas.

I mounted this deer in February for Robert Kallus of LaGrange. This is the biggest Texas rack I have seen in 13 years of hunting experience.

Glenna Prause
LaGrange

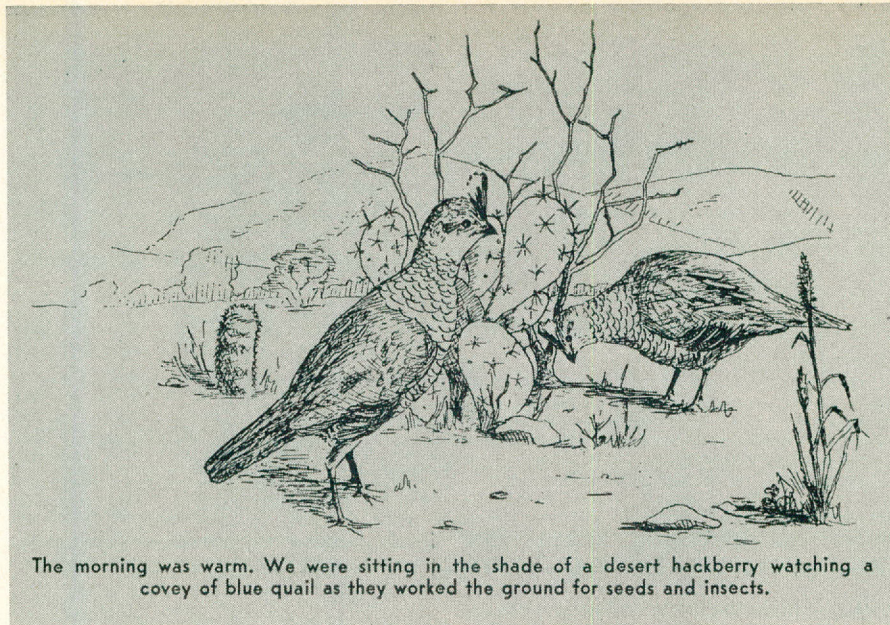
Mail Call

Editor:

When the mail clerk comes around with my copy of TEXAS GAME AND FISH, the government loses at least 15 or 20 minutes of my time, for I have to browse through it from cover to cover before putting it down. Of course I digest it thoroughly after hours.

Several of the boys here in the office have remarked that they only wished that their state had such a magazine. Keep up the good work, and I'll take out a life subscription.

Sgt. Kent C. Smith
Camp Pendleton,
California



The morning was warm. We were sitting in the shade of a desert hackberry watching a covey of blue quail as they worked the ground for seeds and insects.

A Study of Blues

By O. C. WALLMO

Illustrated by the Author

CAN YOU see yourself lounging in the shade of a desert hackberry on a warm spring morning? The air is sweet and still. You can hear the trill of a desert sparrow and the rattling call of a cactus wren. Before you in the thorny brush a covey of blue-grey quail is persistently working the ground for seeds and insects. The world is at peace.

An idyllic way to pass the time? It might be a relief from your desk or counter or delivery truck, but when it is a job to be done day after day it becomes work. You may have been sitting there motionless, cramped and sore since daybreak. Ants are tormenting your ankles and small flies are buzzing around your ears, but your job is to see and not be seen, to get data even after the idyllic setting has deteriorated into discomfort and boredom.

Tasks like that are among the duties of a number of wildlife biologists in Texas. While the chemists and physicists are pursuing their objectives among test tubes and cyclotrons, the scientists digging away at our wildlife problems are finding their answers out in nature where the animals live. Along such routes the Texas

Game and Fish Commission endeavors to build its game management programs on sound foundations.

One of the projects initiated several years ago in cooperation with the Department of Wildlife Management at Texas A. and M. College was to learn more about the ecology of scaled quail in the Trans-Pecos Region. Ecology, you will recall, is a study of the ways in which animals and plants are related to their environment.

The natural environments in Texas are of many kinds. In order to exist each kind of wildlife is peculiarly adapted to its particular environment. For example, mule deer and white-tails differ not only in shape and color but also in behavior and physiology. These differences are all adjustments to environment.

There are four kinds of quail in Texas: The familiar bobwhite of the eastern half of the state; the Montezuma or Mearns quail of our wooded western mountains; the Gambel quail in the bosques along the Upper Rio Grande, and, in the most forbidding and barren habitat of all, the scaled quail. The last is a land of severity where all plants and animals have adapted through

Scaled Quail are popular game birds in West Texas

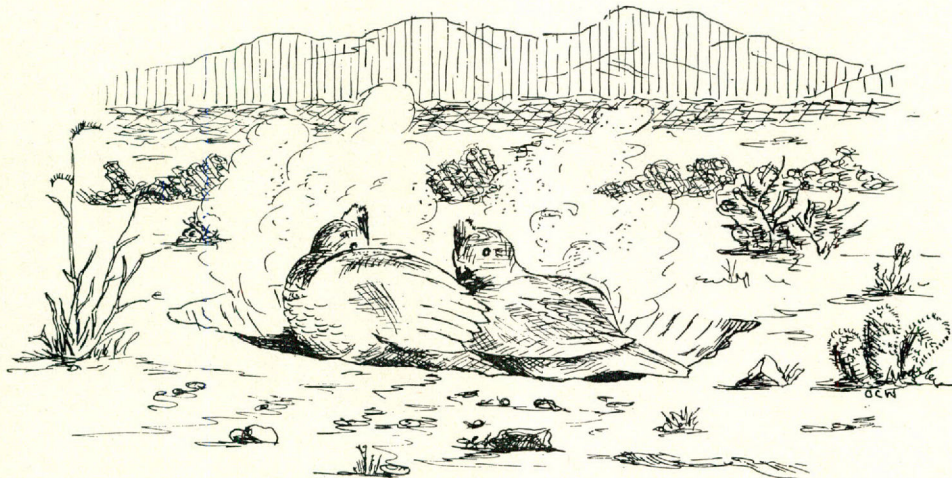
evolution to withstand searing heat and drought and, periodically, bitter cold in winter. Accordingly, scaled quail differ in many ways that must be understood by the game manager.

To get more specific answers on details of the behavior and living requirements of scaled quail in the Trans-Pecos, studies were concentrated on a small area in central Brewster County on the Catto-Gage Ranch. On this principal study area six coveys of quail were the guinea pigs. Their combined ranges included an area about three miles square. More extensive surveys were made throughout the Trans-Pecos Region to check against the information from the intensive study area.

Field operations involved an analysis of the habitat. What kinds of plants grow there; how are they distributed, on what kinds of sites; how do they vary in

winter, roughly from October to April, they gather into coveys composed of a few to many family groups. In spring and summer they are independently concerned with reproduction. The beginning of the breeding season in March and April is signaled by the single-noted whistle given by cocks calling for a mate. As this occurs, the winter coveys begin to disintegrate into pairs. Since there is usually a surplus of males in the population, the leftovers are mostly bachelors which may continue their hopeful calling throughout the summer.

Those that are successfully mated make their nests on the ground on a site that provides enough grassy or weedy cover for shade and concealment. The average clutch size is about 14 eggs. Incubation takes about three weeks after the last egg is laid, so the early hatchings are usually in May, with a spread of



During the middle of the day, the scaled quail spent much of their time in the shade dozing, or taking dust baths.

abundance from season to season? Then these facts had to be compared with knowledge gained of the quail themselves.

With various kinds of traps, quail were captured alive to be examined, marked and released. By affixing colored plastic tags to their necks we were able to observe the birds in the wild and get a better idea of individual and group movements. Numbered leg bands served as an additional check on birds retrapped or later shot by hunters.

Periodically specimens were collected for samples of the foods they ate, to see how many and what kinds of parasites they harbored, to check the seasonal changes in plumage and in their reproductive systems. Intimate observations of quail behavior were obtained by watching them from blinds.

Like most other quails, scaled quail have two distinct behavior patterns during the year. In fall and

hatching dates, varying with seasonal conditions, from May to September.

The young grow rapidly. They are able to fly in four weeks. Downy chicks begin to molt into the mottled juvenile plumage when they are only three or four weeks old, and the juvenile feathers are being rapidly exchanged for adult plumage by 10 weeks of age. In about 22 weeks the juvenile growth and molt is completed and the young birds have reached their full growth of about seven ounces.

Before this development is completed the young are becoming independent of their parents, and the parents begin to lose interest in parental duties and marital relationships. However, a different type of social urge takes over. The family groups begin to join and form mixed coveys. As more family groups are added the covey grows larger throughout the fall.

Studies of six coveys on the main study area showed

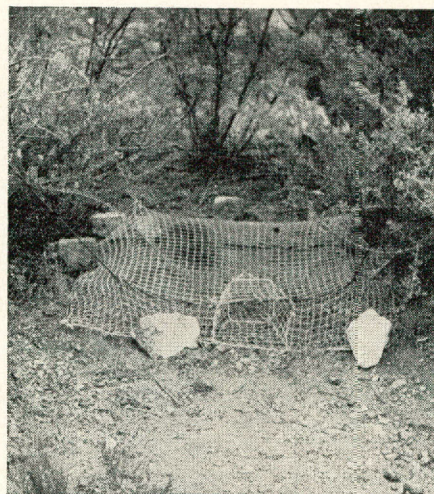
us that each has a distinct and more or less exclusive range. These covey ranges were found to average slightly less than a mile in diameter and to have various shapes depending on the distribution of cover. As a rule of thumb, it might be said that a winter covey of scaled quail occupies about a section of land. However, in any one day they usually travel over only a small portion of that area. Also, the covey may break up into several smaller groups for short periods but still remain faithful to their inherent covey range.

The term *inherent range* is used because, after live-trapping and marking the birds in six coveys for three winters, we found only two cases where individual birds of one covey range moved permanently to another covey range. Where two coveys had ranges that touched at one point, there was considerable intermixing in winter, but by the next year all of the birds, with one exception, returned "home" again.

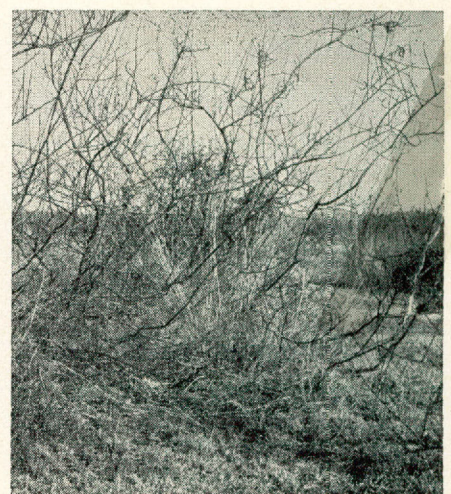
There is a popular belief that scaled quail migrate,



Various types of traps, which were used to obtain birds for study, were placed at locations such as watering places.



Traps were placed in feeding areas. Animals such as gray foxes and striped skunks became quite a menace to trapped birds.



Acacia constricta, more commonly known as catclaw, is a good seed producer and provides a staple food source for scaled quail.

the amount of green vegetation increased considerably. Hatching began in May and continued into September, and there were 3.9 young per adult in the winter. The winter birds were heavier than in the preceding winter and the vitamin A reserves in quail livers were higher throughout the year.

In this research, and in previous studies, we also learned that after an exceptionally dry winter and spring, scaled quail are slow in pairing off. The coveys may even regroup as the poorly nourished birds fail in their reproductive efforts. In fact, observations of scaled quail success in Texas have led us to realize that we can predict breeding success from the preceding rainfall conditions. Thus, we had a good quail crop in the Trans-Pecos in 1956 and may expect another one in 1957.

Because scaled quail are frequently seen around tanks and windmills it is often assumed that water is a critical factor. We know that among coveys that

or move considerable distances, when the range is unsuitable, and move back again when it recovers. Although we have heard many "eye witness" reports of such movements, no research to date supports that contention.

Our work was done during the Great Drought of the Fifties, and scaled quail populations were low. We found winter coveys as small as eight birds and as large as 70. One of the coveys later grew to 150 birds in the fall of 1955. In better times there are records of winter aggregations of several hundred birds. While these may only represent a temporary aggregation of several covey groups, nevertheless it is a strong contrast to the smaller winter coveys of bobwhites.

The effects of drought and rainfall were most interesting. One year, when total rainfall in the area was 4.5 inches, vegetation growth was limited. Hatching was restricted to a brief period in July and August, and there were only 0.3 young per adult in winter.

The next year, when rainfall totaled 11.9 inches

have watering areas within their range, activities are usually oriented about the water. In winter they usually visit the watering site in mid-morning. In the hotter seasons, water visits are earlier in the morning or late in the afternoon. However, in Big Bend National Park we found coveys 3 to 7 miles away from water. This distance is much greater than the normal cruising radius so they probably existed entirely without free water for most of the year.

In the Catto-Gage study area we discovered that some coveys stayed away from water for several weeks at a time even in dry periods. Considering how little there was on the range originally—50 or 100 years ago—and how abundant scaled quail were often reported to be then, it seems apparent that large populations went without water for long periods.

Even though free water may not be entirely essential for the survival of scaled quail, a substitute, in the form of succulent vegetation, may be necessary in its place. We learned that when succulent leaves and

fruits are available they are eaten in great quantities. The juicy cactus fruits that persist through the dry seasons can be an important factor in tiding quail over.

Cover, on the other hand, is an essential factor in determining whether an area is or is not scaled quail range. This species thrives in spite of the oven-hot summers, but in the heat of the day they are closely dependent on shade. A bird left in the direct sunlight at air temperatures above 90° F. can live less than half an hour. Mid-day loafing and shading cover is essential.

Scaled quail are also specific in their requirements for roosting cover. At night, roosting on the ground in small groups, they rely on sudden flight to escape their predators. If the brush is too high and dense their escape is impeded. If it is too small and sparse there is nothing to interfere with the attack of owls or carnivores.

During the day the only important predators, ex-

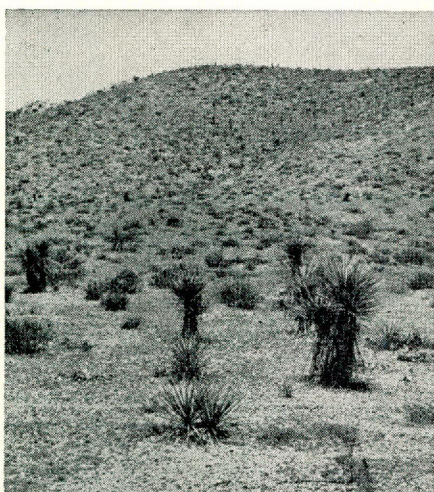
it. Water is so well distributed now on Texas ranges that further extensive water development seems unjustified.

Predators are a popular scapegoat. We can enumerate many potential predators: hawks and owls, snakes, foxes, skunks, ring-tails, coons, and so on. Perhaps they all take a few quail, but a long and sorry history of varmint control programs has given us these facts: (1) You can't control all of these species on open range; at least, no one has succeeded so far. (2) Even where controls effectively reduced some of the predators, the quail populations were found to fluctuate in responses to entirely different factors. There is considerable evidence that when quail populations are high parasites and disease increase accordingly. While quail have the advantage in their gamble with predators, there is no escape from disease, parasites, and malnutrition.

For practical management, it seems clear that the



Tassajillo (*Opuntia leptocaulis*) is an important food and cover plant. The succulent red fruits are available most of the year.



Typical feeding and traveling range for scaled quail. Due to lack of escape cover, birds seldom stay long in an area like this.



Adequate cover, such as that provided by the catclaws and mesquite bushes, provides a good roosting and nesting area.

cept nest predators, are the swifter hawks. However, a good distribution of escape cover minimizes their importance.

A single wildlife research project cannot guarantee to answer all of the management problems, but it is important to glean out all of the results that shed light on those problems. What can we glean from our results to help in scaled quail management? First, let us consider some management methods that have been used in the past. Artificial feeding in winter has been tried. Our data indicate that unless you can supply the critical nutrients to a large population prior to and during the breeding season your efforts will be wasted. Mother Nature can do this on a big scale when she provides adequate rainfall at the right periods. We haven't the resources to duplicate her efforts.

The provision of watering places has been tried by other states, and experimentally in Texas. We know only that scaled quail drink there. There is no evidence that the range produces more quail because of

major considerations should be food and cover. Any Trans-Pecos range with lots of brush of many kinds and a good sprinkling of cactus can be considered to have adequate cover. If Nature endows it with plenty of rain it will also have adequate food. But, if the range is overgrazed, especially by sheep, and there is little rain, we can expect to have few scaled quail. Favorable weather has the most beneficial effects, in terms of quail production, on ranges in fairly good condition.

The eternal search for knowledge is the human attribute that explains our progress from cave to skyscraper. Just as in other sciences progress in wildlife management depends on facts. The last word is never learned. Surveys of scaled quail range and populations are being continued by Game Commission biologists in the Trans-Pecos and Panhandle regions. As our hunting population grows there is an increasing demand even on the game of the wide open West. **

There was fun for all in San Antonio

fishing contest for **Young Anglers**

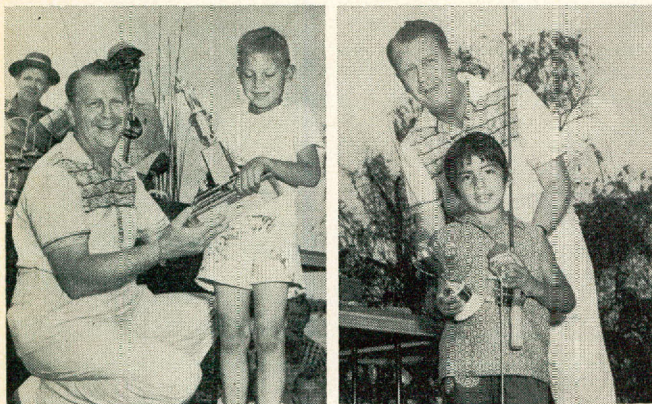
By DAN KLEPPER, San Antonio Express
Express and News Photos



Pat Zurovec, 11, holds the spinning rod and reel he won for catching the heaviest string of fish, 4 pounds, 10 ounces of sunfish and Rio Grande perch.



Over 10,000 worms and 1,000 soda pops were passed out free to approximately 1,800 youngsters who competed for prizes.



Allen Philippus, above left, caught the biggest fish. Martha Martinez, right, receives her prize—a gold cup and a casting rod and reel. Charles Ellis, below, stayed in the shade to do his fishing.



THREE YEARS AGO four San Antonio organizations sponsored the first of what immediately turned out to be highly successful fishing contests for young anglers.

Sponsored by the San Antonio Express and News, the San Antonio Anglers Club, the Junior Chamber of Commerce and the City Park and Recreation Department, the first contest, which drew almost 2,000 entries, was held in the summer of 1955 on scenic Woodlawn Lake in northwest San Antonio. Kids lined the banks of the small lake that year to pull out bluegills, redears, Rio Grande perch and even a few black bass and catfish. When it was over, the luckier anglers carried home expensive rods and reels and trophies.

Kids turned out in force again in 1956 and 1957. The third annual contest, which was held in May, boasted far more fishermen than fish.

Approximately 1,800 youngsters competed for more than \$400 in prizes. Included in those 1,800 entries were 300 contestants from Boysville and San Antonio orphanages.

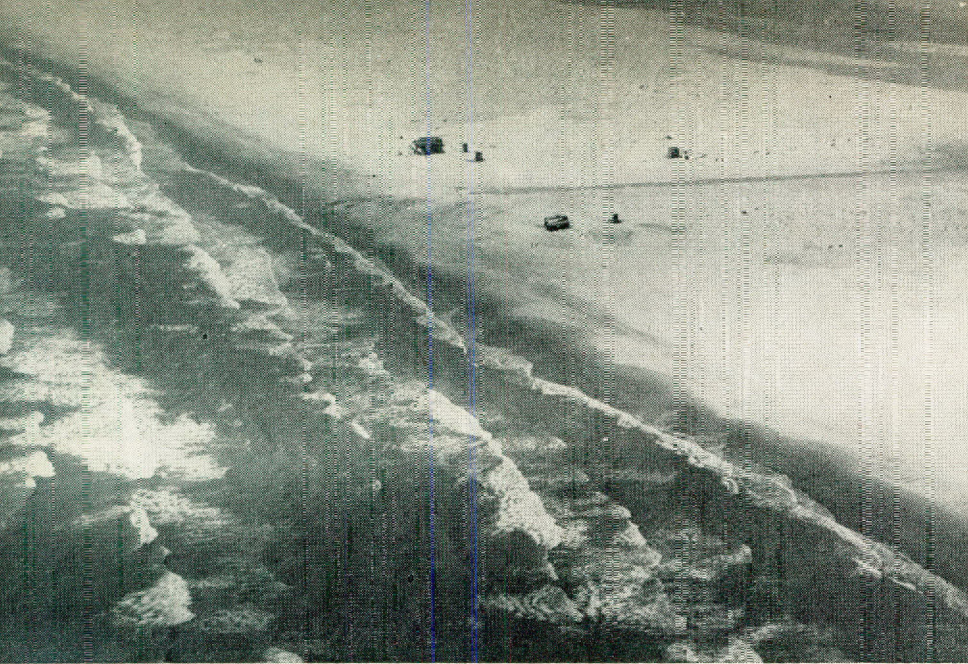
The 1957 event also marked the advent of a fifth sponsor, KENS-TV and Radio, which donated time and spot announcements prior to the contest and then filmed the presentation of awards for a television newscast.

During this year's contest, the kids dunked 10,000 worms, which were furnished free by the Alamo Worm Ranch, and drank nearly 1,000 soda pops, passed out free by the Frostie Bottling Company.

Provisions also were made to care for hooked fingers and skinned knees. The medical company of the 141st Infantry of the National Guard set up two first-aid stations on the shores of the lake and had Guardsmen patrol the area to keep check on the young fishermen.

The contest began at 8 a.m. on a Saturday morning. Contestants were allowed four hours, until noon, in

• Continued on page 30



Only a scattered handful of structures mark the terminus of State Highway 4 on the beach. The 3-mile portion of the island south of the highway is totally undeveloped.

TEXAS' NEWEST STATE PARK is a 216-acre portion of Brazos Island facing the Gulf of Mexico on Boca Chica beach. It has reported excellent fishing opportunities.

The site was made a state park by an Act of the regular session of the 1957 Texas Legislature. Funds for park development must come later. In the dedication of the area to park purposes there is a reservation that says the Act shall not be construed to prevent the Game and Fish Commission from constructing a fish pass between the Gulf of Mexico and Laguna Madre at the site.

The park site is near the tip of Texas, above the mouth of the Rio Grande. It lies about midway of the north and south dimension of the island.

Boca Chica, translated from Spanish, means "small mouth," suggesting that Boca Chica Pass, where the park site begins, was once a small outlet of the Rio Grande. The pass is now closed by sand.

Natural terraces have been created by erosion at the portion of the island set aside for a park. The beach is hard-packed sand and provides easy access by automobile. The island is terminus of State Highway 4 from Brownsville, 24 miles away. Port Isabel is only a sort distance "as the crow flies" but nearly 50 miles by car.

Brazos Island, as it is named on

maps, is not a true island. It is connected with the mainland by low sandy ridges that have been used as roadbed for Highway 4. The "island" was rated by the Seashore Recreation Survey of 1955 as one of the two most desirable stretches of undeveloped seashore along the Texas coast.

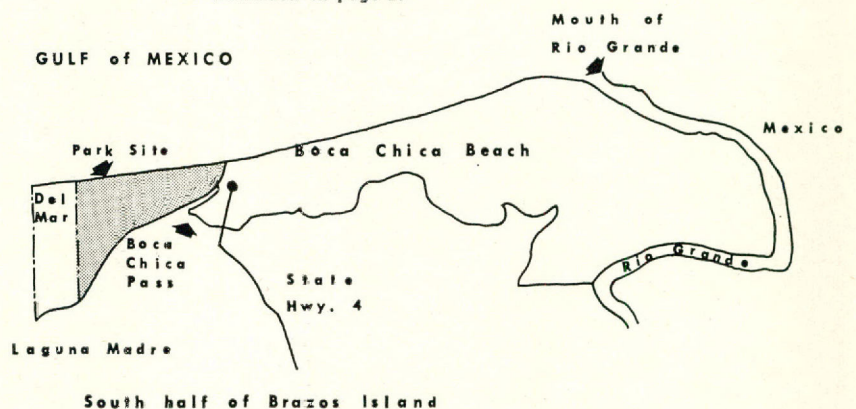
The participants in the Seashore Recreation Survey, which was made under the auspices of the U. S. Department of Interior, said that no wild animals were seen on Brazos Island, but there were indications that rodents and other small species were probably present. They found definite signs of marine life typical of the Texas Coast. Migratory geese and ducks were seen using near-by marsh areas. Birds such as the brown pelican, American and snowy egrets, long-billed curlew, willet, laughing

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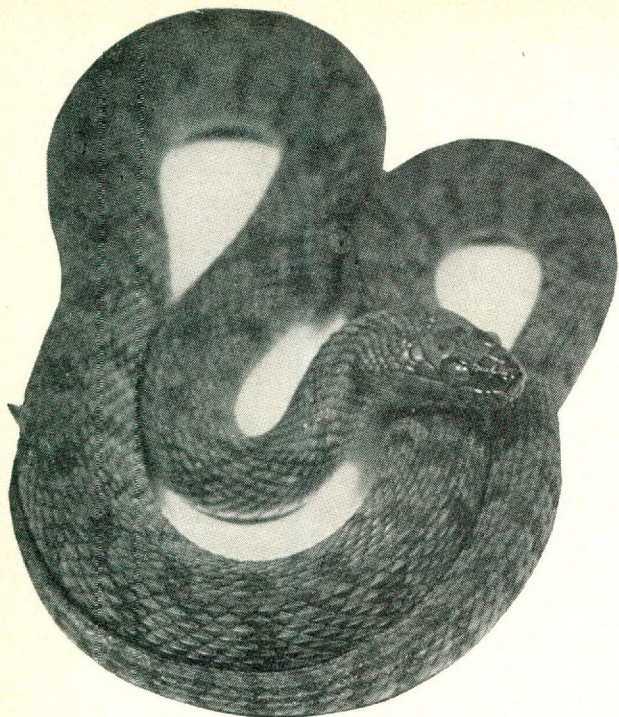
Fun and relaxation,
fishing and play
soon to be found in

Texas' New Coastal Park

By GORDON K. SHEARER



The south half of Brazos Island to the Rio Grande River. The shaded area indicates the newly designated park site.



Snake!

By AL FLURY, Biologist

The non-poisonous diamond-backed water snake, in spite of its arrow-shaped head and lighter coloration, is sometimes confused with the cottonmouth.

"EEEEK — SNAKE! Where's Bobby? Get him out of that creek and let's go home."

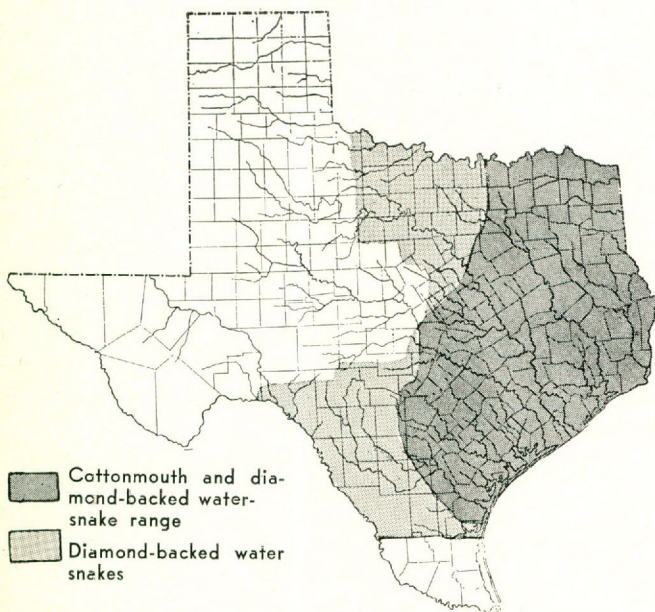
A perfectly normal, healthy reaction from a worried mother, you'd say? I'd be inclined to call it a perfectly senseless, needless waste of an enjoyable outing. Perhaps the snake *was* poisonous; the family could easily move a few yards away to a more open, weedless spot and safely continue their picnic. More than likely, the snake would be one of the more common, non-poisonous water or garter snakes, in which case there would be no need to even move.

No one can be blamed for being afraid, and a little cautious, of poisonous snakes. But rearing children calls for the use of at least a small amount of intelligence, and a small amount is all that is necessary to enable anyone to distinguish between poisonous and non-poisonous snakes.

All children from 5 to 95 want and deserve to play and relax away from the house, traffic, and TV set—just to get away for a little while from the smothering of our modern civilization. Time is increasingly becoming one of our most valuable possessions, and to waste any of it, especially our leisure moments, on needless fear is just not to our best interests. Anyone who can tell, at first glance, the difference between a yellow pencil and a green fountain pen; a car and a truck; or day and night can easily learn the difference between our common snakes. Only with the proper identification of them can we base a sensible course of action when confronted with a snake.

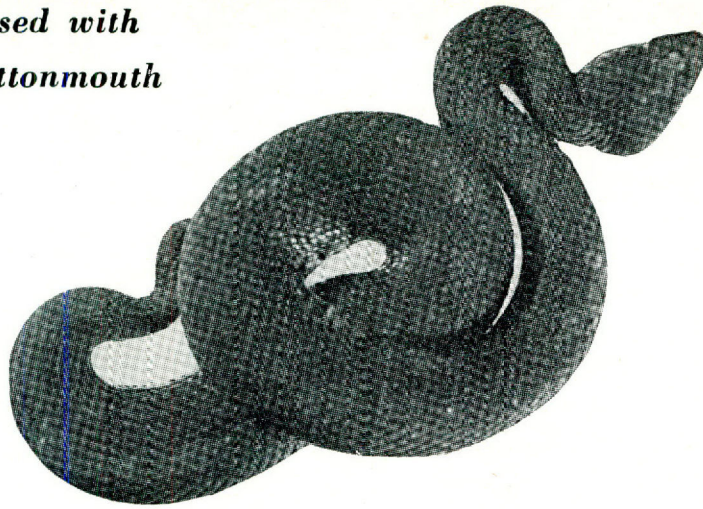
Far from promoting false courage and loss of all snake fear, I want to point out here that fear of all kinds of snakes is just as useless and dangerous as the lack of fear of any snake.

In Texas and the United States we have only four general types of poisonous snakes: the rattlesnakes, coral snakes, copperheads and cottonmouth water moc-



Cottonmouth water moccasins are found primarily in the eastern portions of the State, although they are known to occur in other areas where the habitat and food requirements meet their needs. The range of the diamond-backed water snake overlaps that of the cottonmouth in East Texas, but extends further to the West.

**Harmless water snakes
are often confused with
the poisonous cottonmouth**



DANGER! This thick, dark, heavy-set body and triangular head instantly warns the observer of the cottonmouth.

casins. Each kind has distinctive coloring, markings, body shape, habits or other characteristics which can be seen easily and used to differentiate the poisonous and non-poisonous snakes. The possibility of foreign poisonous snakes escaping from carnivals or zoos and then being found later is so remote that it deserves little consideration.

Anyone who hunts, fishes or just occasionally goes on picnics can save themselves a lot of needless worry and lost or inhibited vacation time by learning to recognize the poisonous and a few of the common non-poisonous snakes in the area. The rattlesnakes and coral snakes are exceedingly easy to recognize anywhere, one by the rattle, the other by the many red, yellow and black rings encircling the body. The copperhead, once seen, is readily remembered by the copper-brown color with several hour-glass shaped darker brown saddles across the body. The cottonmouth moccasin is most often confused with non-poisonous snakes, but it is easy to recognize, once properly identified, by its thick, heavy-set body, almost black coloration and wide head.

If you kill a water snake without completely smashing his head, you can give the head a close inspection. If you find a deep pit about the size of a kitchen match head between the eye and the nostril and two long curved teeth (fangs) inside the mouth at the forward end of the upper jaw, the snake is poisonous. Rattlesnakes, copperheads and cottonmouth moccasins all have these pits and fangs; the non-poisonous snakes do not have them. The coral snakes do not have the pits and their fangs are small and somewhat hard to tell from the smaller, normal teeth that all snakes have, but their coloration and pencil-like shape is positive identification.

I've noticed in the past that chickens are not the

only birds found in chicken yards; what about turkeys, sparrows, doves? Drive by a mule barn some time. You'll see mules, horses, cows, and even cars. It is the same principle with cottonmouth moccasins—they're not the only snakes found near the water.

Cottonmouths are restricted to a habitat in the close vicinity of permanent water: lakes, rivers, creeks, swamps and ponds. Perhaps it is this fact that causes so many people to become alarmed when they see any snake near the water. Several kinds of garter snakes and water snakes that are entirely harmless use this same habitat regularly, and even upland snakes can frequently be found near water, especially during dry weather. Given a little bit of calm, cool observation, none of the harmless snakes should be mistaken for the cottonmouth.

One of the most common snakes in Texas is the diamond-backed water snake, usually called "water moccasin." No matter what you want to call him, he is *not* poisonous. He is light brown (not black) in color, with narrow black cross-bands across the body which form a rough diamond or rectangular pattern. His body is much less robust than the cottonmouth and his head, although wide and to some extent arrow-head shaped, is not nearly so large as the cottonmouth's.

There are seven species of water snakes (*Natrix*) and of garter snakes (*Thamnophis*) that occur in Texas, mostly in the eastern half of the state but several are found in the western portion. None of them are "just snakes"—they differ from each other in color, pattern, proportions and scalation. None of them resemble a cottonmouth any more than a gun resembles a fishing rod.

The cottonmouth occurs only in the eastern half of

• Continued on next page



Corpus Christi Cutler Times photo.

After being told about a number of "water moccasins" that had been killed, the author investigated. The only dead snakes found were harmless diamond-backed water snakes which had been needlessly killed.

Texas and in most places is much less common than the non-poisonous water snakes. In a few areas in deep East Texas, the cottonmouth may be the most common snake, and utmost care must be taken by fishermen and others in the outdoors to avoid them.

I have caught many water snakes and cottonmouths alive, by hand, put them in a sack and hung them on my belt for later killing, preserving and labeling for museum specimens. In quite a few of my snake hunts there have been people on the shore watching, wanting to see the snakes (from a distance, please) and asking questions. In most cases, the dry land observers would insist, in spite of what I told them, that the common water snakes I most often caught were "deadly poisonous water moccasins." Several times I have allowed the water snakes to bite me, purposely, in front of the observers; result: "They're still poisonous, you're just plain crazy." Disregarding the insanity plea, I've often wondered how they explained my ability to walk away, a dead man to their notion.

The accompanying maps and pictures may help you to distinguish the cottonmouth from the non-poisonous water snakes and keep you from letting a harmless snake scare you out of your time afield.

One of the best ways to become accustomed to the snakes and master a fear of them is to visit a zoo where you can see several kinds of snakes side by side.

Better yet, there are competent high school and college biology teachers and amateur snake collectors in virtually every county in the state, who would be glad to show you several kinds of snakes and explain their differences. If you can talk yourself into picking up and handling one of the non-poisonous kinds for a few minutes it would do you a world of good and save you that useless, uncontrollable cold-shiver-up-the-back feeling when you happen onto a snake at the river.

The cottonmouth feeds largely on terrestrial animals which occur along water courses. Some fish are eaten, but its diet consists mostly of mice, rats, small rabbits and birds, frogs, turtles and other snakes. One specimen killed on the Welder Wildlife Refuge in San Patricio County was 41 inches long and had completely swallowed a rat snake that was 49 inches long. Garter snakes feed largely on worms, insects, small frogs and a few small salamanders, crawfish, small birds and mammals when available. Since all of these snakes feed to some extent on fish, which they must catch underwater with the mouth and teeth, the answer to the question, "Can a snake bite you underwater?" seems rather obvious.

The main point to remember about snake bite is that unless cornered, stepped on, or otherwise restrained, almost any snake will try to escape from you much harder than you try to avoid him. About the many-times-told story of a snake dropping from overhanging limbs into a fisherman's boat, wouldn't it be easier to calmly swat the snake with an oar than to go into hysterics, jump out of the boat, raise a big fuss and still have nothing done about the snake? Consider the danger of jumping against a stump and drowning, possibly over a harmless snake.

Water snakes, garter snakes and cottonmouths, as well as copperheads and rattlesnakes, are born alive, usually in August or September. Breeding occurs in the spring. Most of our other snakes lay leathery-shelled eggs which hatch in late summer. In either case, neither the mother nor the father snake give a hang about the youngsters. Other than laying the eggs beneath a log, rock, or in a pile of leaves, or bearing the young in a thick clump of weeds, the grown snake gives the young no care or protection. There is no training period, as is found among many birds and mammals and some fish. Baby snakes possess all their faculties and are instinctively ready to hunt food, swim, take cover from enemies, bite and take any other action that becomes necessary. Not all the youngsters are successful, of course, in avoiding enemies and finding food. As in most animals, the greatest mortality rate is during the first year of life.

Cottonmouth litters range from 5 to 15 young, each one being about six inches long at birth. The young are light tan or copper-brown in color with darker cross bands much like the copperhead, but this pattern and color is soon lost. Records have been kept of one of these snakes that lived almost 19 years in captivity. Full grown adults may reach a length of five feet or slightly more.

• Continued on page 26

The sportsman spends more time in the field than the paleontologist ever could. A casual fossil hunt has saved many a fishing or hunting trip from being a water haul "Texas Game and Fish" readers are naturalists by their own choosing, and by probing just a little may make some very interesting finds that otherwise may never come to light.—
Bob Slaughter.

Ancient Footprints

By BOB SLAUGHTER

ONE MORNING in the early 1800's a young boy named Pliny Moody was working on his father's farm in Massachusetts when he uncovered some three-toed bird-like footprints in solid rock. Because of their size and apparent age, the town's folk that had come out for a look-see, dubbed them "the tracks of Noah's raven." Of course they were not tracks of some ancient bird but instead the footprints of a dinosaur—one of the bird's distant reptile cousins.

Ever since Pliny's discovery, more and more tracks in stone have been reported from all over the nation, and Texas certainly has its share.

Quite a few years ago an Abilene high school teacher, Augusta Hasslock, made two finds that proved to be not only the smallest but the oldest fossil footprints found to date in Texas. Both sets were made during the Permian period over 200,000,000 years ago. One set was found near Merkle, and the other south of Abilene. The slabs of shale also held dents made by raindrops to tell the story of how it rained lightly the day these little salamander-like amphibians with $\frac{3}{4}$ " tootsies tripped the light fantastic across the fine grained mud.

In direct contrast with the small Permian prints, Barnum Brown, while on an expedition for the American Museum of Natural History in the Big Bend area, located some monster dinosaur tracks that measured 3 feet by 4 feet. Brown also marked up another Texas biggest when he found a string of neck vertebra belonging to one of these celebrities. One single vertebra measured 42" across, 46" long and weighed over 600 pounds in its fossil state.

These remains and tracks were proved to have be-



Courtesy Roland Bird, American Museum of Natural History
Tyrannosaur tracks, left, and Diplodocus tracks, right.

longed to a sauropod (a gigantic dinosaur-type animal with a small head, long neck and tail, and 5-toed limbs) like the Brontosaur or Diplodocus.

Fossil footprints of this same age (lower Cretaceous, over 100,000,000 years ago) have also been found at a number of other locales throughout Texas. They have been reported from the bed of the Sabinal River south of Utopia in Uvalde County, near Bandera in Bandera County, in the bed of Bennett Creek in Mills County, and in the bed of the Paluxy in Somervell and Hood Counties, just to name a few.

All of these sites contain tracks of the 80-foot, 40-ton thunder lizards mentioned above, but a few also have footprints of the vicious meat eaters like the Tyrannosaur. G. R. Kerndon, for one, found a limestone shelf in an arroyo on his ranch in Kinney County, where more than a dozen prints of both varieties were exposed.

Probably one of the most interesting groups were those excavated by an American Museum expedition led by Roland Bird near Glen Rose. In the course of several months they excavated, classified, crated, and shipped around 40 tons of track bearing rocks to three different museums.

I think it is interesting to note that a set of three-toed tracks belonging to a 15 or 16-foot carnivore seem to follow the tracks of a large vegetarian, possibly get-

• *Continued on page 31*



Hunters **Fishermen**
Bowhunters **Spearfishermen**

Know Your New License Requirements



By **THERON D. CARROLL**

TEXAS SPORTSMEN, the new hunting and fishing license laws passed by the 55th Legislature become effective September 1, 1957.

Many inquiries have been received concerning these recently enacted laws. The following excerpts, taken from House Bill 907 (hunting license) and House Bill 895 (fishing license), are presented for your information:

Hunting License Laws:

SECTION 1. Resident Hunting License. No citizen of this State shall hunt any wild bird or wild animal outside the county of his residence without first having procured from the Game and Fish Commission, or one of its authorized agents, a license to hunt, for which he shall pay the sum of Three Dollars and Fifteen Cents (\$3.15).

SECTION 3. Exception. It shall be unlawful for any citizen of this State to hunt, take or kill any deer or wild turkey in this State without first having procured from the Game and Fish Commission, or one of its authorized agents, or from any county clerk in this State, a hunting license.

SECTION 8. Exemptions. No citizen of this State who is under seventeen (17) years of age or sixty-five (65) years of age or over shall be required to pay the fee prescribed for the license provided for in this Act; nor shall any citizen be required to pay said fee before taking, killing or hunting on land on which he is residing. Provided, however, that any person exempted by this Section, before hunting deer or wild turkey, shall first register with the Game and Fish Commission or one of its authorized agents, on a form to be furnished by said Commission, and receive from said Commission a hunting license which shall be in the form and signed by such exempted licensee



as prescribed herein for licenses for which a fee is charged; but in addition thereto, such exemption license shall clearly show on its face that it is an exemption license.

Fishing License Laws:



SECTION 1. Fishing License. It shall be unlawful for any person to fish in any of the waters of this State without first having procured from the Game and Fish Commission, or one (1) of its bona fide employees, or a county clerk or an authorized agent, a fishing license, the fee for which shall be Two Dollars and Fifteen Cents (\$2.15).

SECTION 2. Exceptions. No persons under seventeen years of age and no persons over sixty-five (65) years of age shall be required to possess the license provided for in this Act. No person, or member of such person's immediate family, shall be required to hold the license provided for in this Act when fishing upon property he owns or upon which he resides. No license shall be required of persons fishing with trotline, throw line, or ordinary pole and line having no reel or other winding device attached when fishing in the county of his residence. No other fishing license shall be required of a person who holds a commercial fishing license issued in this State.

Both laws contained sections repealing all laws or parts of laws which conflicted with the new regulations.

Perhaps the following questions, which are typical of those received at the Game and Fish Commission office in Austin, will be answered in such a way as to help you get a clearer picture of the new license laws requirements:

- Q:** How much will the new hunting and fishing license cost? When will I need to buy them?
A: The new fishing license will cost \$2.15 and the new hunting license will cost \$3.15. Both of these

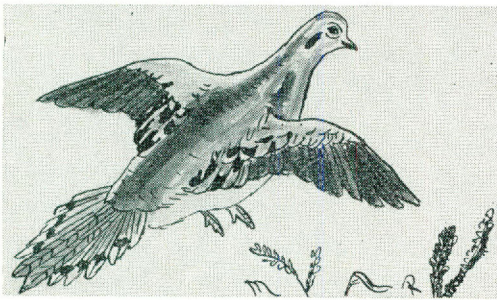
licenses will become effective September 1, 1957. Your 1956 licenses are valid through August 31, 1957.

Q: If I buy a state hunting and fishing license, may I hunt and fish anywhere in the state?

A: You may hunt or fish on public lands or waters subject to the laws governing those particular areas. However, the possession of a valid hunting or fishing license does not grant the holder the right to trespass on private property.

Q: We Louisianians appreciate your new fishing license law. Have there been any changes in your non-resident hunting license laws?

A: Thank you. Texas welcomes out-of-state sportsmen. The hunting license fee for non-residents or aliens is \$25.00. However, a special 5-day hunting license to hunt migratory *birds only* may be purchased by



non-resident or aliens who may hunt ducks, doves, jacksnipes, etc., in season, for five consecutive days. The fee for his license is \$5.00. The State of Texas also extends to “. . . non-resident citizens or to aliens who live in a state or legal domicile which affords to the State of Texas similar reciprocal privilege at the same cost . . .” a seasonal hunting license, which applies to migratory *waterfowl only*, for a fee of \$10.00



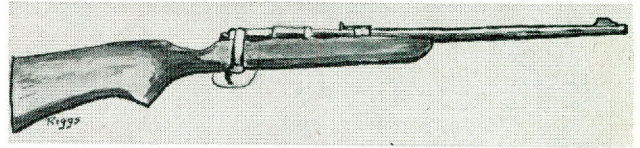
Q: The old hunting license law did not require a license of bowhunters. How are the bow and arrow fellows affected by the new law?

A: Bowhunters must buy hunting licenses. The new law states that, “No citizen of this State shall hunt any *wild Bird or wild animal* outside the county of his residence without first having procured from the Game and Fish Commission, or one of

its authorized agents, a license to hunt . . .”

Q: What does a sport fishing license for non-residents cost, under the new license law?

A: Effective September 1, 1957, the license fee for out-of-state sport fishermen will be \$2.15—the same as that for Texas residents. This license is issued for one year, just as is the license issued to Texas resident sports fishermen.

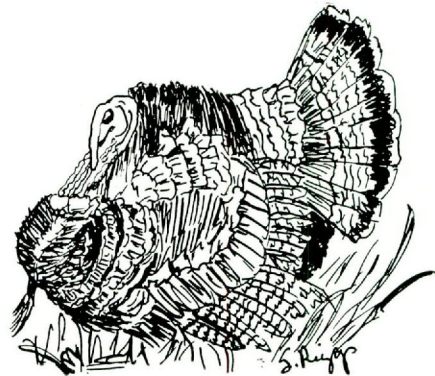


Q: I will be 65 years old on October 3, 1957. I have a 1956 hunting license, but will I need to buy another one this year?

A: You will need a hunting license if you hunt between September 1, 1957, and October 3, 1957, outside the county of your residence. Why not confine your hunting to your home county until October 3? You will then be eligible for an exempt license.

Q: On my next birthday, which is March 14, I will be seventeen. Is it necessary for me to buy a license to hunt deer this year?

A: It will not be necessary for you to *buy* a deer license, but you must procure your exempt license (which has the required deer tags) in order to hunt deer or turkey this fall.



Q: I own a small ranch in Medina County; however, I reside in Waco. Do I need a hunting and fishing license to hunt and fish on my Medina County property?

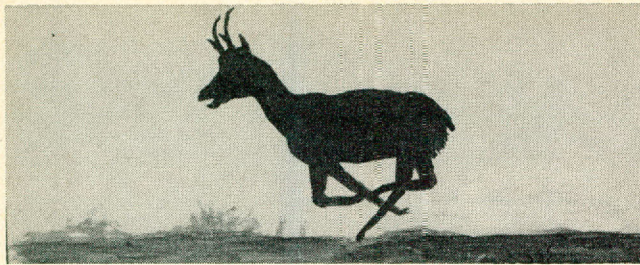
A: According to the new licenses law, you will need a hunting license but not a fishing license to hunt and fish on property you own but on which you do not reside.

Q: Am I violating the law if I fish on my own property with artificial bait and rod and reel without a license?

A: No—not if that’s all you’re doing!

Q: A friend told me that I must buy a big game hunting license before I hunted mule deer or antelope. Is he correct?

A: Texas issues no *big game* hunting license. Under



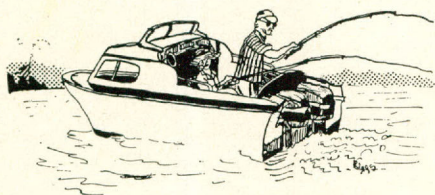
the new hunting license law, a resident hunting license, costing \$3.15 is issued. This is the only license required by the State of people hunting any wild animal in Texas. However, a special permit, costing \$5.00, must be obtained from the Game and Fish Commission before a person may lawfully hunt prong-horned antelope or wild elk.

Q: If I obtain a permit to hunt antelope, for which I pay \$5.00, do I also have to have a \$3.15 hunting license?

A: Yes. The hunting license is required of all citizens (other than those exempted, as stated) who "... hunt any wild bird or wild animal outside the county of his residence ...". The antelope permit fee applies only to those who hunt prong-horned antelope.

Q: I am a jig fisherman. For my fishing I use a long cane pole and an artificial bait, usually a top-water plug, which I jiggle up and down in the water under overhanging trees and shrubs that grow along our bayous and rivers here in Southeast Texas. Do I need a fishing license to use these artificial baits?

A: The new sports fishing license law places no re-



strictions on the use of the artificial bait. If you jig fish in your home county only with an ordinary pole and line "having no reel or other winding device attached ..." no fishing license is required.

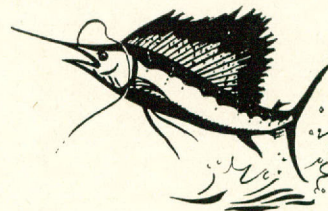
Q: My only fishing is done from the jetties at Galveston, where I live. Do I need a fishing license to fish in the Gulf?

A: Yes, if you fish with rod and reel. The State of Texas holds jurisdiction for three marine leagues (approximately 10½ miles) into the Gulf of Mexico.

Q: Why should I pay \$2.15 for a sport fishing license to fish in salt water, when I can pay \$3.00 for a commercial fisherman's license—then, if I want to, I can sell my catch?

A: It is true that a holder of a valid Texas commercial fisherman's license is not required to buy a sports fishing license. However, if you fish with

a commercial fisherman's license you must subscribe to the size limits, and other regulations placed on commercial fishermen. For example: A sport fisherman may catch, and legally keep, a 36-inch redfish, a 13-inch redfish and an 11-inch speckled trout, yet all of these fish would be considered illegal (because of maximum and minimum size limit laws) in the possession of a fish-

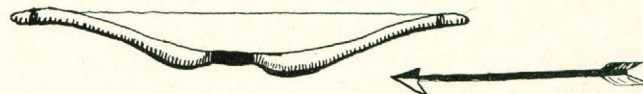


erman using a commercial fishing license—whether he intended to sell them or not!

Q: For the past three years I have been getting my exempt hunting license which the Game Department issues to deer and turkey hunters who are 65 years of age or older. Do I need an exempt fishing license to fish in Texas?

A: No sir. When a person reaches 65 years of age they no longer need procure a fishing license to fish for sport in Texas waters.

Q: I understand that, under a law recently passed by the Legislature, spear fishing and bow and arrow fishing for carp have been legalized. Do I



need a fishing license to shoot carp with bow and arrow outside the county of my residence?

A: Yes, and remember if you have a line attached to your arrows and you retrieve the line by means of a spool, reel, or any other "winding device" you will need a fishing license—even in your home county.

Q: Rabbit hunting is my favorite sport, and I often hunt in our adjoining county, on the farm of my uncle. The cottontail is not considered a game animal—do I need a hunting license?

A: Yes, you do. The new hunting license law applies to hunters of "... any wild bird or wild animal ...".

Remember, Mr. Sportsman, your local game warden is in your area to serve you. Be sure to check with him if you have questions concerning wildlife or game laws, or write to the Texas Game and Fish Commission, Austin, Texas.



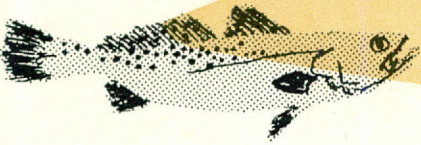


Mixed Catch

on the



Rio Grande



Down at the tip of Texas
fishermen can find
a wide selection of fishes

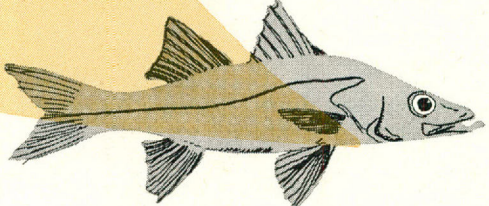
By JIM ERICKSON

TWENTY-FIVE MILES FROM BROWNSVILLE, the Rio Grande River empties into the Gulf of Mexico. At its mouth the river is no more than 75 yards wide, and from its outward appearance it is hard to imagine that it harbors some of the best salt-water fishing found anywhere.

The fertile Rio Grande Valley is often considered a fisherman's paradise; a paradise unspoiled by civilization. No \$20 a day guide is needed, and if you've got strong legs and don't mind walking, you don't need a boat. The river is clear and free of logs and snags, the bank is very accessible, and usually there are no great droves of mosquitoes to pester the angler. A cool breeze from the Gulf tends to offset the hot Texas sun.

At the mouth of the Rio Grande there is a deep channel running close to the Mexican shore, which serves as a free-way for the travelers of the deep. These travelers may be anything—porpoise, redbfish, tarpon, gar, snook or weakfish (better known as trout). There may be a school of hard-hitting jacks, or a bunch of acrobatic ladyfish. Granted, there may be bigger tarpon in the Panuco River, and bigger snook in the Canal Zone, but I'll take the Rio Grande. I like variety in my fishing, and the Rio Grande has it. Trout and snook fishing in the early morning. Give tarpon and gar a try around noon.

When making a trip to the river I always take three different fishing outfits. For trout, snook and other smaller game fish, a light bait-casting rod or a spinning outfit is just the ticket. In addition, many mornings



small tarpon are in the river in considerable numbers and may be observed leaping into the air in pursuit of mullet. Under these conditions a heavy casting outfit is the perfect instrument, and thrills aplenty can be had. Finally, for large tarpon or alligator gar you'll need a heavy salt-water rig.

I like to get my line in the water by daybreak, for usually as the sun rises, the wind comes up. It is also advisable to watch the tides, for when the tide is moving bait, fish move along with it followed by their predators. Farther up river the tide seems to have little effect—in fact gar seem to bite best when the tide is low. At the mouth, however, when the tide goes out it usually takes most of the fish with it. This, of course, does not mean that the fish have stopped feeding. It merely means that you must follow the tide downstream, and re-locate the fish.

When the tide is moving, large schools of mullet may be seen wallowing on the surface. Under these conditions tarpon can be expected to follow close behind, occasionally slashing up through the frightened school, causing considerable havoc.

When this happens it is difficult to decide whether to rig up the tarpon outfit, or to fasten a spoon to the spinning rod, and try for the trout and snook that probably are lurking below. Usually I give my spinning rod the first call, as trout and snook seem to be more particular in their feeding habits than are tarpon. Tarpon will usually feed through the morning, and sometimes all through the day.

Note: Notice that I use the word "usually" quite

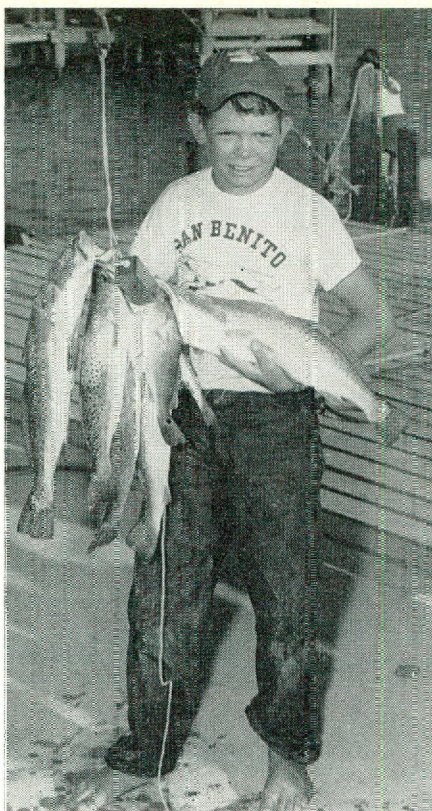
frequently. Fishermen know that you can never depend on fish.

Probably the most popular fish in the Gulf is the weakfish or trout. In the Rio Grande trout fishing is at its best during early spring, and gradually tapers off during the summer. The trout prefers a slow moving bait—in most cases the slower the better. The most popular bait, excluding live shrimp, is the spoon with a bucktail tag. Most fishermen apply a “jigging” motion when using the spoon. That is, giving the spoon a jerk and then letting it settle. The quick jerk makes the spoon flash and attracts the fish’s attention. Be prepared for a strike when the spoon is settling. At this time your rod tip is back, and it is difficult to set the hook, so reel in slack line immediately after flicking the lure. When trout are hitting, you can often catch a stringer full without moving. Where there’s one trout there are usually more, so don’t pull up stakes after catching one.

Nearly always in the early morning, ladyfish, or skip-jacks, will be in the river in considerable numbers. Most of the time they are rather small, but often some big ones come along. And then you’re in for some fun!

The ladyfish resembles a small tarpon, both in appearance and in action. He’s not fussy about what lure you throw him, although he’ll take more readily to a small spoon or spinner. Most people consider him more of a nuisance than anything else, but for those who like a real fighter with plenty of class, the ladyfish is a suitable prize. His food value, unfortunately, is very poor.

In the early morning, the moving tide often brings a real mean customer banging up the river. His official name is jack crevalle, but in Texas we call him “jack.” Here is a real battler. A tireless fighter with a savage strike. He’s not much on the dinner table, but on a six-pound monofilament line, he is real trouble! You’ll not see him do any fancy jumping like a snook or tarpon, but he’ll take out a hundred yards of line like he was out for a Sunday swim. Mr. Jack is not hard



When the trout are hitting, you can often catch a stringer full without moving.

to locate, and you need not experiment with different retrieves or lures. When the mullet begin to scramble, and you see dorsal fins cutting through the water, you’ve found Mr. Jack. The next step is simple—cast in the middle of the action and hold tight. Mr. Jack will do the rest.

Less numerous than the tarpon and trout are the snook or salt-water pike. The snook is about the closest thing to a bass found in salt-water. He hits like a bass; he fights like a bass; and he’s fine eating like a bass. It’s hard to name the best bait for snook, for they take readily to either spoon or plug. However, most of those I’ve landed have been caught on plugs. And many of them while trolling for tarpon.

Another fish I would like to mention is one that is seldom referred to as a game fish. This is the flounder. The first time I caught a flounder on light tackle, I thought that I had hooked the biggest trout in the river. When he hit, he jolted me to my toes, and tore out on a terrific run. He didn’t break water, but his sizzling runs more than

made up for any tail-walking. Up to this time I had “giggled” a number of flounder wading the bank of the river at night, but had never caught one on rod and reel. Since then I have caught a number of flounder upwards of four pounds—they’re well worth your time!

Little needs to be said about the fighting qualities of the “silver king,” for the tarpon is probably the most publicized and most sought after big-game fish in the Gulf. However, far less is written or known about the alligator gar.

Until just recently an alligator gar from the Rio Grande was the largest fresh-water fish caught on rod and reel. Gar are very capable fighters, although inferior to the flashy tarpon. However, they are a good substitute when tarpon fishing is slack.

I troll for gar using a standard tarpon plug of either red and white, or yellow and black. Gar like a slow moving bait, so I throttle the motor down and troll close to shore, letting the lure bump on the bottom. When a gar hits it is necessary to set the hook immediately, or he will clamp the plug between his hard, vicious jaws, thus making it quite impossible to set the hook. Once the hook is set, the fight begins. And often as not, the gar will win.

There are many tarpon “hot spots” throughout the world. Most of them are highly publicized. However, you seldom hear of Rio Grande tarpon fishing. My tarpon fishing has been limited to Texas and Florida, but I have never found a spot that offers any better fishing than the Rio Grande.

There haven’t been any record breakers caught in the Rio Grande, but when you consider the small number of people that fish the Rio Grande in comparison to other places, it is understandable. For the past eight years I have fished the Rio Grande steadily through the summer, and during this time I have seen only four other people really fishing for tarpon in a morning’s fishing.

Well, there you have it. A mixed catch on the Rio Grande. Fine fishing, fine country, fine people. Hope to see you soon. Adios! **

This club helps prevent unnecessary killing.



You don't have to be tough, mean or a perfect physical specimen with the stamina of a bull moose to call predatory animals. It does help, on some occasions, to have the agility of a pack horse. One such occasion occurred in the "Lost Pines" section of Texas, near the town of Bastrop.

It was one of those cold nights, so quiet that when you breathed the air would crackle. It was dark as pitch. My hunting partner, Roy Hutchins, was standing beside me, and we were located in an opening about 75 yards from the timberline on all sides. We were calling predators that had been killing a rancher's stock.

I gave the death-cry of the rabbit three times and turned the light on. Nothing was there. Off went the light and again the rabbit-cry was made.

All at once there was a hissing growl, and a ball of fur sailed past me—just missing Roy. It was a bobcat, and apparently sensed his mistake during the leap. He was just as eager to get away as we were.

In the meantime I had dropped the light. I was feeling for it on the ground when something jumped on my back. I made the timberline before I realized it was Roy. It wouldn't have been so bad, if he hadn't tried to climb a little higher. For the next month or so we called

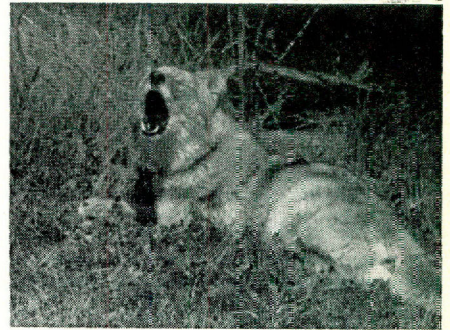
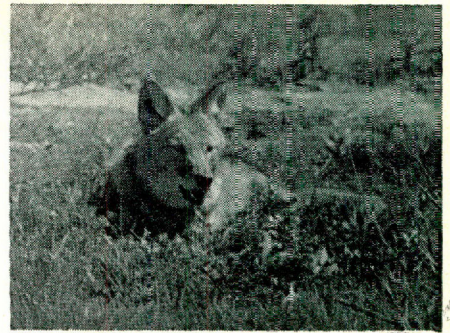
bobcats from a tree or a stepladder.

Today your chances of becoming a modern minute man for the farmers and ranchers, and at the same time have your sporting fun, is good. How? By predator calling. Using an artificial call to entice wolves, coyotes, bobcats or other predators known to have been taking toll of livestock, into shooting range.

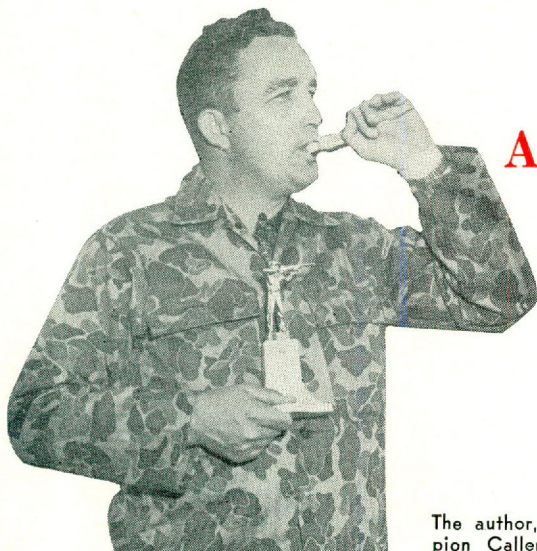
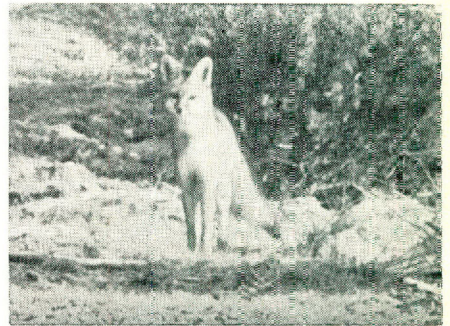
This means of elimination of predators has proved to be extremely satisfactory. When a landowner, or a group of landowners, find that predatory animals are taking a toll of their livestock, it becomes necessary to take very definite steps to halt the predators. Often this means calling in a professional trapper. He will set traps in various areas, or perhaps set out poison. Both of these methods will catch or kill many more game animals or harmless animals than it will predators. The man who decides to use the wildlife call to "catch" the predator can shoot *known* predators, thus eliminating a great deal of waste and expense.

Less than two short years ago a group of interested sportsmen conceived the idea of forming a club that would be of aid to their fellow farmers and ranchers, and at the same time provide hunting sport. They organized the first wild animal callers club.

• Continued on page 28



Wildlife calling is a good way to get animals close enough to a camera to take pictures. A wolf, above, couldn't find the rabbit and decided to take it easy—later voiced his disgust. Below, a curious fox approaches, but decides it's a trick and leaves hurriedly.



Adventures in

Wildlife Calling

By E. C. PORTERFIELD

Photos by the author

The author, State Champion Caller for 1957.

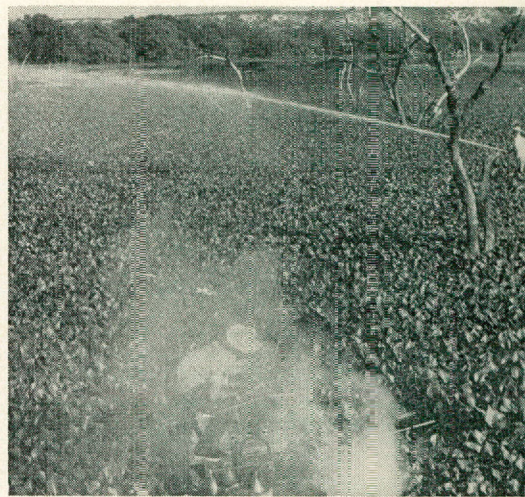
“Walk” on the



Huge mats of water hyacinths, or lily pads, in Lake Corpus Christi covered much of the fishing area.



Walking on the lily pads by means of platform floats made of inner tubes with slatted board platforms tied on top with nylon cord.



Spraying was done by means of a fire hose attached to a power spray unit in the boat at the edge of the mat of lily pads.

Lily pads ruin many good fishing areas; Game and Fish Commission biologists are trying to solve this annoying problem

OUR ANCESTORS FIRMLY BELIEVED that there were at least two things man could never do: one was fly, and the other was walk across water. Years ago the invention of the airplane shattered the first belief, and the Game and Fish biologists are doing their part to discredit the second. So if you saw some men literally “walking” across the water near Lake Corpus Christi last year it wasn’t an hallucination. This “walk” on the water hyacinths was done in an attempt to kill these aquatic plants that are such a nuisance.

For several years the water hyacinths have choked many lakes and inlet areas along the Texas coast, making small boat passage nearly impossible. One of the problem areas is Lake Corpus Christi.

At the time of the filling of Lake Corpus Christi, the trees in the lake bed were left standing, with the expectation that they would soon rot away. This did not prove to be the case, and the trees are still standing. These trees have served as “anchors” around which the large mats of water hyacinths have formed. Also, they help prevent the hyacinths from moving, aiding the formation of thick mats.

In the summer of 1954, aquatic biologists for the Game and Fish Commission began searching for a means of spraying large mats of the water hyacinths with 2,4-D in hopes of remedying the situation. This

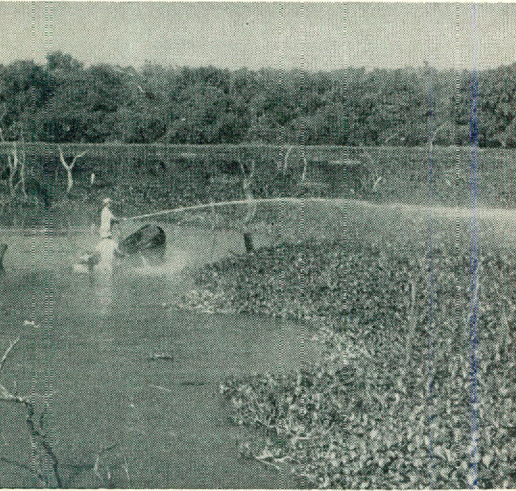
work was taken on as part of the fisheries investigations and surveys of the waters of Region 8-B, which includes most of south Texas and the Rio Grande Valley.

The “walking” on water idea was conceived after three unsuccessful attempts had been made with other spraying techniques. The first attempt was made in 1954, when biologists tried to kill the hyacinths by cruising alongside the edges of the hyacinth mats and spraying them with 2,4-D and water. This plan proved ineffective because it took 30 days or more for the hyacinths to die and sink and during that interval the unsprayed hyacinths nearer the shoreline grew out into the sprayed area before the spray crew could get back to re-treat the area.

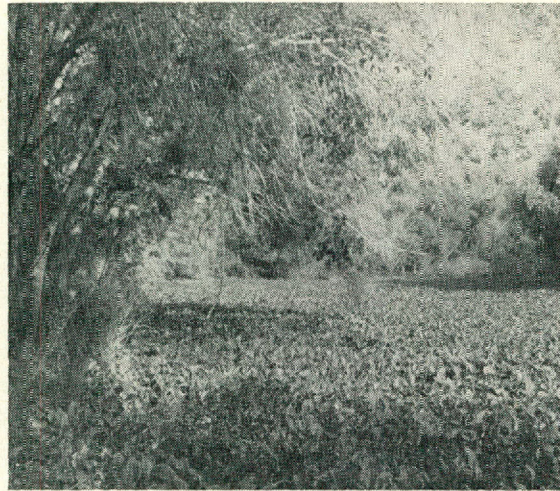
The second attempt, in the summer of 1955, involved the use of vertically mounted knife blades and a motor driven circular saw mounted on the bow of a boat. Unfortunately attempts to force an opening for the spray boat with this equipment failed. Next, a vertically mounted weed-mower, powered by a large motor, failed to open a satisfactory path for the spray boat. The greatest penetration into the hyacinth mats was not more than 30 feet.

Because of the danger of wind-drift of 2,4-D onto shoreline trees and local crops which must not be destroyed, the original plan of using an airplane to

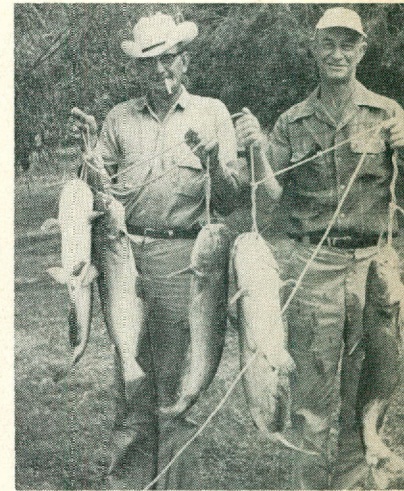
Water Hyacinths



After spraying the interior of the mat by means of the "walking" process, the edge of the mat was sprayed directly from the boat.



The mouth of the river, where it emptied into the lake, was completely choked with the mats of lily pads. Portions of these mats would break loose periodically.



Fine strings of catfish have been taken by fishermen, from areas which have been cleared.

By **AL FLURY, Aquatic Biologist**

spray the hyacinth mats was abandoned at the outset.

The marsh buggy and air boats were also considered for use in spraying the mats, but the cost of the former, and the impossibility of moving the air boat over the hyacinths because of the trees and stumps, made them impractical.

Since airplanes could not be used, and since attempts to force a path for a spray boat into the matted hyacinths met with failure, it was necessary to find some way to get over rather than through the mats at the surface of the water.

Operation "water walk" began early in 1956 using platform floats made with inner tubes, with slatted board platforms tied on top with nylon cord. By alternately throwing a platform forward over the hyacinths, while standing on another, the technician could "walk" his way across the mats until he reached a distance determined by the length of the fire hose attached to the power spray unit in the boat at the edge of the mat. The nozzle end of the hose was pulled to the technician by means of a rope tied around his waist which he pulled while he was "walking" the platforms into the mats.

Thus, they could spray a circle of about 150 to 200 feet in diameter around the operator at the nozzle end of the hose and then the operator "walked" back to the boat. When he reached the boat, a semi-circle of hyacinths was sprayed directly from the boat. In this

manner, a "cut" into the hyacinths about 150 feet wide by from 200 to 250 feet long was made.

The whole operation usually took about 15 minutes but because of the back-breaking labor involved in throwing the platforms and pulling the fire hose to and from the nozzle operator, it required three men, who alternated in "walking" out on the platforms. In all, a maximum of only eight cuts could be made during a day in this way.

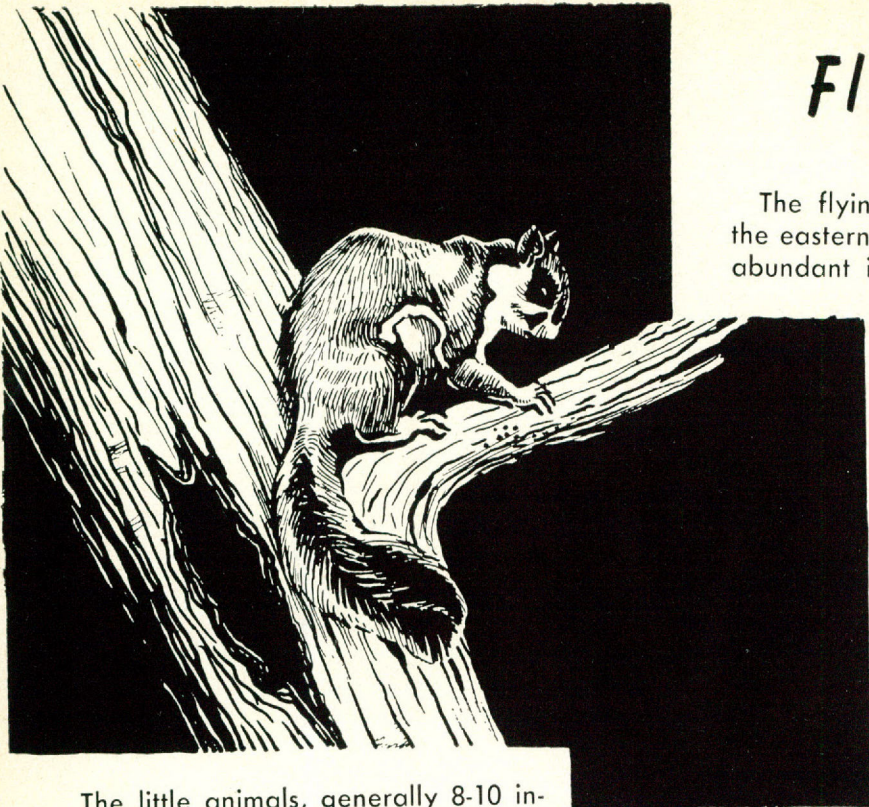
Once a "cut" was made it was planned to extend it to the shoreline as soon as the hyacinths had died and sunk enough to allow boat passage. Thus with cuts spaced about 200 feet apart along the edge of the mats it would be possible to spray the intervening space between from the boat.

This method proved effective in penetrating the hyacinth mats but flood waters brought large numbers of hyacinths into the treated area from upstream areas and the wind drifted them into the cuts and the progress which had been made in penetrating this hyacinth mat was undone.

This experience has led to the conclusion that, even though full success was not obtained because of the drift of new plants into the treated areas, the method of "walking" over the mats has merit. Now labor has been doubled so that larger numbers of cuts can be made into the hyacinth mats, it is felt the work will be much more effective and a control over the unwanted hyacinths in Lake Corpus Christi can be achieved.

Flying Squirrel

The flying squirrel is generally found in the eastern half of Texas, and may be quite abundant in areas where it is seldom noticed. It has soft, silky brown fur which shades to buff on the under parts. A "flying" membrane attached to the fore and hind feet forms a planing surface when the squirrel leaps, so that he actually glides rather than flies.



The little animals, generally 8-10 inches long, belong to the world of night creatures and are seldom seen in the daytime. The squirrel's tail, measuring at least half the total length of the animal, serves as a rudder to guide its flight. They feed mainly on nuts, buds and tender shoots of trees, and occasionally insects.



Flying squirrels usually make their nests in hollow trees or deserted woodpeckers' nests. The nest is often lined with shreds of bark, moss, fur and other soft materials. The young, usually in litters of three to six, are born in March. They grow rapidly and soon learn to travel by air.

OPEN SEASON

all year round

By BILL LEWIS



Adapted from *Arizona Wildlife News*

SPRING HAS SPRUNG. The desert is in full bloom. Guns and ammunition have been safely locked away from the experimental hands of the young'uns . . . or at least they should have been. Many of our sportsmen are either fishing or looking forward eagerly to a jaunt to the spot where the big ones are lurking.

Me? I'm going hunting. I'm going to shoot some deer. If I'm lucky, I'll even manage to shoot some turkeys, a few antelope and, as a matter of fact, anything I can get my sights on.

The best part of it all is that I'll not have to worry about hiding from the sharp eyes of the Game Wardens. My system makes me immune to any legal action, and they usually leave me alone unless I ask them for help. I've found that they usually know where the real trophies are hiding, and I love to shoot trophies.

I've found that I usually have some of my best luck shooting big game with a .22, although the pattern produced by a .16 does a pretty good job under certain conditions.

I plan to take my young sons with me on at least a few of my shooting sprees. I feel that they should have an opportunity to learn the tricks of this so-called "out-of-season shooting." I want them to feel the thrill of a perfect shot into the midst of a herd of antelope. Who knows—when you shoot into a herd that way, you are sure to get at least one animal and you might, with a little luck, bag the whole bunch.

No matter where you live, there is wildlife within a few minutes drive, just waiting to be shot. Hunting for it is just as much fun as actually shooting it, but then I'm sure all of you fellow hunters know that, already.

During periods of prolonged drought, or for that matter just about any time, you will find some of your best shooting at waterholes. I usually prefer to drag up some fallen branches and make a little blind for myself. A camouflaged-type set of clothes which will help you blend into the scenery is almost a must, if you are to be really successful.

Patience, at this point, is an absolute must. One who is adept enough at animal calling may even enhance his chances of getting some good shots by attempting to lure his targets into range.

In the case of more energetic hunters, crafty tracking and standard hunting procedures used during the regular fall seasons should allow the shooter to get

within easy range for some good shots. Out-of-season hunting has a big advantage over the in-season variety, for the animals are not as wary of humans as they are when several thousand riflemen are stalking the woods, spraying lead in all directions.

Oh yes, according to the title, I was going to tell you how to get in on this sport and yet get away with it. You've probably guessed by now, but in case you haven't, I won't keep you in the dark any longer. I'm going hunting with my camera.

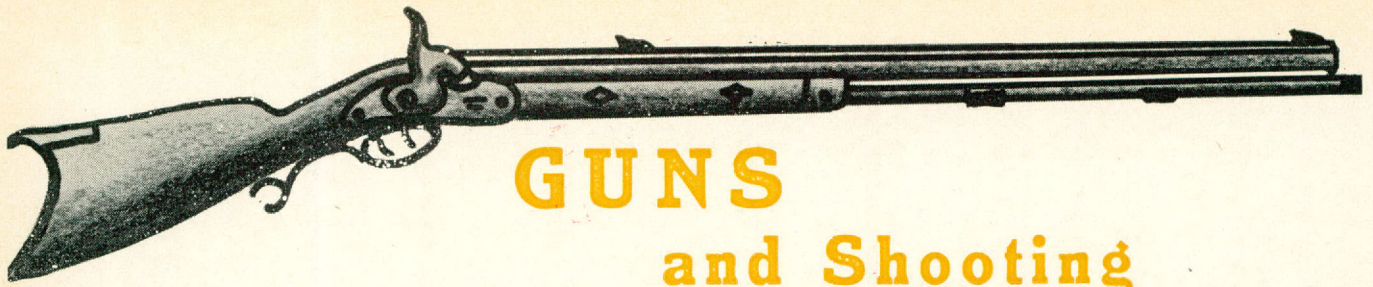
The .22 I mentioned is, of course, f.22, a lens opening on my camera, and the .16 is not a shotgun at all. It is another lens setting.

All you need to enjoy this rewarding sport is the desire to get into the outdoors, a camera of any size or description, as long as it is in working order, and some film. You don't even need a license.

Why don't you try it soon? I think you'll enjoy it just as much as I do.



Nancy Elligson



GUNS

and Shooting

By JOHN A. MASTERS

This Month: A New Cartridge

In a column I wrote a few months back, I said that it appeared that gunmakers were sort of like car manufacturers in that they appeared to be bringing out a new model gun every year. It now seems that the same thing can be said about new cartridges. In recent years Winchester introduced a whole series of new cartridges based on the 7.62 Nato, or T-65 military case. Among these were the .243 Winchester, the .308 Winchester, and the .358 Winchester.

Remington pretty well kept pace by introducing the .222 Remington, which, in addition to being a fine varmint cartridge, has become the darling of the bench rest boys, and more recently, the .244 Remington, which bids fair to challenge the .243 Winchester as a combination deer-varmint cartridge.

The .308 Winchester has been widely touted as the replacement to the venerable 30-06. My opinion is

that it more nearly resembles the fine .300 Savage, and aside from the fact it has a longer neck, permitting easier handloading, I see little that it will do that the .300 Savage will not do equally well. It will not, in my opinion, quite reach up to the 30-06, although I will concede that it gets close.

My purpose in making the foregoing remarks has not been to attack the .308, or Winchester, its originator. It must be said in Winchester's defense that they did not do most of the touting. Their claims for the .308 have been reasonable and truthful. What I really sought to point out is that in the big bores, nothing really new has come along recently that adds a great deal to existing sporting cartridges.

In my opinion, the new .280 Remington, the latest "new" big bore case, has added something. While I do not propose that the "something" will revolutionize shooting, I do feel

that a slot has been filled with a cartridge that I, for one, am going to use widely.

First, let's examine the cartridge itself. Basically, it looks like the 30-06 necked down to 7 MM. I have no measurements on the case, and this conclusion was drawn from a simple "eyeball" inspection of the case. If this is true, then it is more or less the wildcat 7MM '06 which handloaders have been using for years.

The gun I have for the case is the 740 Remington gas operated semi-auto that was introduced earlier in 30-06. Thus far, I have not tried to obtain true bench rest groups from the rifle, but in casual shooting, with the new Weaver K-4 scope, I have been able to get 2" groups with the 150 grain pointed bullet, and even better with the 165 round nose bullet. Remington is also loading a 125 grain pointed bullet, which together with the 165 round nose, makes the rifle fit a place that I have long wanted a rifle for.

I have long thought that the .270 with the 130 grain bullet was a fine long range big game load, and I have taken my share of game with the load. Sad to relate, due to factors I cannot completely evaluate, I have never owned a .270 that would group to suit me with 150 or 160 grain bullets, and I have also run into pressure problems trying to move the heavier bullets as fast as I would like.

On the other hand, the 30-06 with the 180 grain bullet has long been known as a fine big game load, and a good round nose bullet in this weight is a good choice for a brush gun. I have had trouble getting the 30-06 to group to suit me with the

Shootin' Shorts

Bill Weaver has changed the design on his K line of scopes. The new glass features a fixed reticle, which means that the cross hair will always be in the center regardless of where the glass is sighted in. This will be good news for the shooter whose mounting job isn't absolutely perfect. My sample got damaged in shipment, so I haven't had a chance to give the glass a real good workout, but I will report more when I get the glass run through the usual checks.

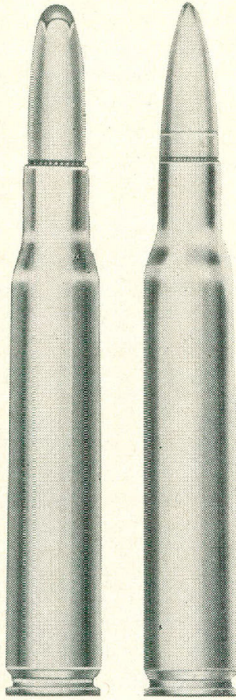
Mossberg has announced a new rifle scope that looks interesting. Called the Model 1A25, it is a variable power glass that may be

changed from 2.5X to 5X by a revolving sleeve on the eyepiece. It is made of high tensile strength aluminum alloy, and comes complete with a tipoff style mount that fits all grooved receiver .22 rifles.

The adjustments are coin slotted click type, and the clicks are 1/2" on both elevation and windage. Scope and mount retail for \$24.95.

Word reaches me that Remington is going to chamber the 760 trombone action to .222 Remington. Remington claims target rifle accuracy from the arrangement. Be interesting to see how this works out, since the trombone action is fast-firing.—J.M.

125 grain bullets, however, and this is my idea of the equivalent load to the 130 grain 270 bullet.



Left, 165 grain Soft Point Core-Lokt; right, 125 grain Pointed Soft Point Core-Lokt.

This new .280, however, looks like my meat. The 125 grain bullet will for all practical purposes duplicate the 130 grain, 270 load, and the 165 roundnose will substitute well for the 180 30-06. This is so obvious as to be trite, but here is the real payoff. In my rifle, at 100 yards, either load prints at about the same place. That means that on close brush hunting or in the wide open spaces, I will be able to use the same sight setting, something I have not been able to do with either the .270 or 30-06.

Velocity-wise, the 125 grain bullet turns up near 3200, while the 165 will exceed 2900. That supplies energy to spare, and I see no reason why one would need anything better for any game on the North American continent. Normally, I will use the 165 roundnose hunting in brush, and will probably load the last two rounds in the magazine with 125 pointed soft point for picking off a buck after he has put some distance between us. I have always made a practice of carrying a rifle with a round in the chamber and two in the magazine, and have yet

Favorable Conditions, Early Hatch Promise Good Waterfowl Crop

A good first hatch by waterfowl, comparable to that of 1952, is now coming off in the prairie provinces of Western Canada. Mallards and pintails are showing fine broods in daily increasing numbers, and some Canada goose broods have been observed, according to a report from Ducks Unlimited.

The report reveals that this year the birds arrived on the breeding grounds some one to two weeks earlier than usual.

Surface water conditions have continued to deteriorate in the southern sections of all provinces but the birds largely by-passed the dangerous areas to concentrate in the safer, well-watered central and parkland areas.

Returned waterfowl population is at least as good as that of last year. The season is developing very satisfactorily.

to need more than the three rounds. With a 165 grain in the chamber, I will be set for anything close, and if I need to reach out, it will be a simple thing to eject the 165 grain and slip in a 125.

Like I said earlier, the case isn't going to revolutionize shooting, but I for one am glad to see it. With a variety of good 7MM bullets available, it should prove to be quite popular.

I do not have the word yet, but I suspect Remington will chamber the 721 and the 760 for the case. Being a bolt action aficionado, I will likely lean a little toward the bolt action when available, even though my 740 certainly is a fine hunting weapon.

The Powermatic piston design is now well proven in the 740 as well as the Sportsman 58 series shotguns, and aside from a few difficulties encountered when handloading for the rifle, I regard it as a fine weapon for those preferring a semi-auto action. **



It Happened This Way . . .

In an area where there is very little game and arrests are few, a warden was being kidded about his "easy" job. Finally he challenged the other wardens to compare arrest records after a given length of time.

A game law violator had been netting fish for several years. It was well known in the area, but no game warden had been able to catch the netter. The new warden decided to "go fishing" in an attempt to catch the violator. He got a boat and drifted downstream, pretending to fish as he went. As he rounded the bend in the river he noticed the netter, but proceeded slowly so as not to alarm him. When the warden's boat was alongside, the netter, suddenly recognizing the warden, said, "Well, I never thought you'd catch me!"

"You never can tell about areas where things seem quiet. There may be something or someone that has been overlooked."

* * *

Some hunters in the piney woods in East Texas killed a fine big buck. They were excited over their kill, and in their hurry to load it into the back of the pick-up, failed to "stick" it. Back down the road the hunters ran into a couple of warden friends of theirs, and they stopped to show them the prize kill.

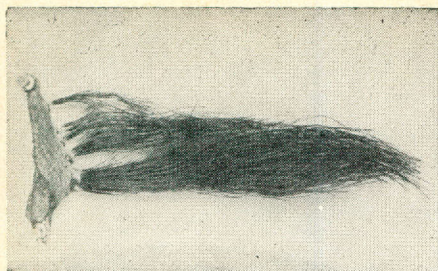
While they were displaying their deer, it regained consciousness and made a sudden bid for freedom. Only some quick thinking and a great deal of manhandling saved the day . . . and the deer for the hunters.

JUNGMICHEL GUN SHOP

Box 345

Boerne, Tex.

Dealer in Guns and Accessories, building Bench Rest, Target and Sporting Rifles, using Douglas Barrels. Sure I trade.



Occasionally a wild turkey gobbler turns up with twin beards. Three-bearded gobblers are rare. One with four beards is practically unheard of, however Claude Jacks of Belton killed one that was pictured in TEXAS GAME AND FISH. But a real barber's delight is pictured above. This is a five-bearded tom that was killed several years ago, by Freeman Mears on the E. S. Mayer Ranch in Sutton County. It is more than unusual, but rather comes in the category of "unbelievable." Bob Ramsey sent the "rare specimen" in to the game commission office.

NWF to Award Conservation Fellowships

The National Wildlife Federation has announced a number of fellowships in conservation will be awarded to qualified individuals for 1958-59. Awards are for work in the field of conservation or conservation education.

These fellowships are divided into three categories: graduate students may apply for grants up to \$1,000; special (non-academic) students may also apply for grants up to \$1,000; and undergraduate students may apply for grants up to \$500.

Activities that might be considered appropriate include: teacher

training, radio and television, scouting and conservation, curricular problems, state programs, farmer-sportsmen relationships, conservation workshop techniques, textbook development, and journalism. However, the fellowships will not be restricted to these categories.

Applicants need not necessarily be enrolled at an institution of higher learning if his project or proposal has merit in the cause of conservation. The fellowships will underwrite work in the field on conservation and may be used for any normal expense connected with the project or study.

Completed application forms must be postmarked on or before December 31, 1957. These application blanks and further information may be obtained from:

Ernest Swift, Executive Director
National Wildlife Federation
232 Carroll Street, N. W.
Washington 12, D. C.

Learn to know the snakes and really enjoy the outdoors

Snake! _____ • Continued from page 12

The diamond-back water snake, on the other hand, reaches a maximum length of about five and a half feet, but because of the less robust body, they do not approach the over-all size and weight of the cottonmouth. The young are about six inches long at birth and 40 or more may be born in one litter. Can you even imagine what a squirmy, wiggling mass of snakes that would make? No records are now available for water snakes that have lived in captivity for 10 years or more.

Garter snakes are much smaller, few kinds reaching three feet in length. The young are about four to six inches long at birth, and large litters of 20 to 40 young snakes are

common. Raymond Ditmars reported that he had kept a garter snake alive in a small box for over 12 years, feeding it frogs and minnows.

Among these three kinds of snakes, the water snake is the most vicious. When caught they almost invariably bite repeatedly and thrash about wildly. They seldom become tame in captivity. The cottonmouth is not docile, but because of its heavy body and reliance on its poison apparatus, is not as belligerent as the water snake. When first approached, many of them will gap the mouth wide open exposing the white lining which gives them their name. Most garter snakes are gentle, seldom offer to bite and seem interested only in making the quickest get-away possible. All three kinds habitually emit a foul smelling musk from anal glands when caught.

The proper treatment of snake bite is important to know and can be found in many first aid pam-

phlets. Prevention of snake bite is more important yet, and can best be accomplished by learning to control your fear of snakes by recognizing poisonous and harmless species.

For those who own lakeside lots or cabins in the country, the best protection against snakes is in keeping grass, weeds and underbrush cleared so that any snake in the area can be easily seen and identified at a safe distance. Fire wood, scrap lumber and other odds and ends stored out of doors should be stacked off the ground so that snakes cannot hide under cool, covered spots on the ground. Ten- or 12-inch leather boots with the pants legs on the outside give good protection to the legs. Refraining from putting your hands on ledges or under bushes where you cannot first see the surrounding ground will prevent many snake bites on the hands and arms.

Learn to tell which snakes are dangerous and which are not. With a little practice even *you* can control your fear of snakes, increase your confidence and security in the woods, and enjoy your outing a thousand times more. **

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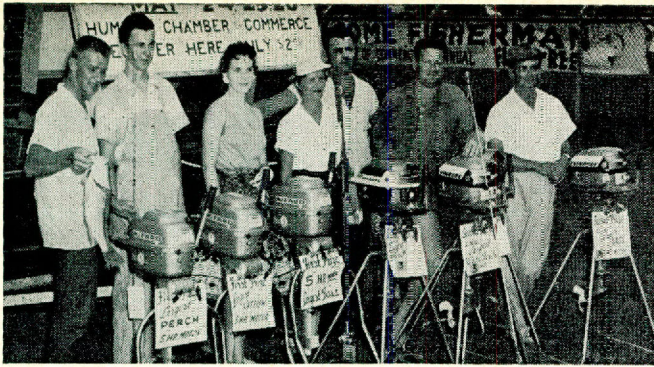
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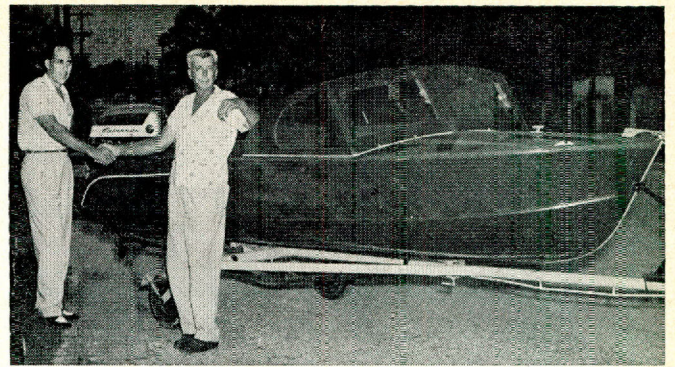
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Left to right, Bill Leonard, Tom Tuttle, Jeanine Surratt (tournament's cover girl), Mrs. Larry Hearne, Edward McFarland, Buster Bayer, and A. W. Bunting stand behind prizes of outboard motors.



W. R. Kirkland, President, Humble Chamber of Commerce, congratulates Jack Hamel of New Caney, Grand Prize winner of the boat and motor. (Photos by Richard Warrendorf, Humble.)

Lake Houston Fish-O-Ree "A Real Fisherman's Ball"

"The weather was fine and everybody seemed to have fun at the Lake Houston Fish-O-Ree," reports Warden Martin A. Peterson of Humble.

Twenty-two hundred fishermen registered for the three-day event sponsored by the Humble Chamber of Commerce, May 24-26.

First and second prizes were awarded daily to the fishermen who landed the largest bass, catfish, crappie, or perch. In addition to the daily prizes, championship prizes of outboard motors were awarded to

the first- and second-place winners in each division.

The first day of angling effort at the Fish-O-Ree produced two catfish, each weighing better than ten pounds, which copped top honors in their division. The second-place winner in the perch division, a nine-ounce beauty, was caught opening day, as was a one-pound, nine and one-half ounce crappie, which was first for the meet in its division.

Big bass bit better the second day of the tournament and the first- and second-place winners, each

weighing more than five pounds, were caught. A nine and one-half ounce championship perch and a one-pound, eight-ounce second-place winning crappie came from Lake Houston the final day.

Perhaps the luckiest fisherman of the Fish-O-Ree was Mr. Jack Hamel, of New Caney. He held the winning number drawn for the grand prize—a trailer, boat, and motor!

The Humble Chamber of Commerce received excellent cooperation from the other local civic organizations, merchants, and outstanding camp operators along the shores of the 14,000-acre Lake Houston which helped make the second annual Fish-O-Ree a real fisherman's ball.

The moderate climate invites year-round visitors

Texas' New Coastal Park

Continued from page 9

gull, royal tern, black skimmer and red-winged blackbird were common.

A report on the survey prepared by the investigators, said: "The waters off Brazos Island provide excellent opportunities for both sport and commercial fishermen. Bottlenosed dolphins (porpoises) are often seen frolicking off shore, and sand crabs and hermit crabs frequent the beach. Channel cat, pompano and snook are among the many fish taken by surf casters.

"Geographically the Brazos Island area is fortunately situated for outdoor recreation. Excepting only the lower tip of Florida, it is the most southern part of the United States. The cooling Gulf breezes in summer and warm sunshine in winter

permit year-round recreation activities."

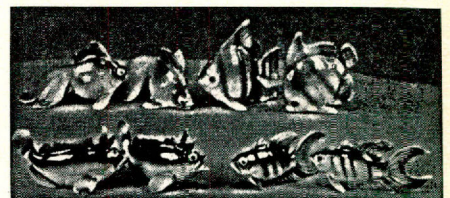
The Seashore Recreation Survey also showed the average annual temperature of the park site is 73 degrees. The average January temperature is 60 degrees; the average July temperature is 84. Sunshine is plentiful. Rainfall is somewhat less than the Texas average. Freezing is seldom experienced. And again quoting the survey: "A number of factors enhance the recreation potential of the Brazos Island area. Its pleas-

ant climate invites winter as well as spring, summer and fall use. It is ideally located to serve the needs of the near-by Lower Rio Grande Valley center of population, and is easily accessible."

For some excellent fishing, swimming, and just plain fun why don't you plan a trip to Texas' newest state park? **

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Traveling Bass Caught in Bay

A 12-inch tagged bass was recently caught in Burnett Bay off the Houston Ship Channel. The angler was S. N. McGuffin, Jr., of Baytown. This particular bass was seven and a half inches long when tagged last December by Game Commission Biologist Billy Cooper. At that time the fish was released in Sheldon Reservoir near Houston. It seems as though Mr. Bass has been doing some traveling since the time he was tagged, from freshwater lake to salt water by.—*Fee Cogburn.*

New club for wildlife callers

Adventures in Wildlife Calling—

• *Continued from page 19*

This club is officially called The Texas Wild Animal Callers Association. Its by-laws and constitution were written by sportsmen with conservation uppermost in their minds. The members of the club must agree to hunt predators only on the invitation of the rancher or farmer who is suffering losses. No club member is allowed to shoot any animal unless specifically requested to do so. Fox hunters or hound men will find very few foxes where wolves are

known to range. The wildlife caller can eliminate harmful wolves without damaging other populations.

On one hunt, recently, we were accompanied by a very skeptical rancher. He had been losing stock to a bobcat, and was anxious to have the predator killed. We went out and took our places. On the first and second calls nothing happened. On the third call the amazed rancher, with no other comment than, "I'll be durned" repeated over and over with the consistency of a broken record, watched a 35-pound bobcat move to within 50 feet of the callers. The next day ranchers from 20 miles around came over to extend an invitation to hunt on their ranches.

If you decide you would like to try wildlife calling, there are a few things to remember. First, be sure you are not violating any local

than 50 tons of gizzard shad were destroyed.

"Ken Jurgens, biologist in charge of this program, visited Lake Inks," Toole said. "Just below Buchanan dam he saw millions of small shad. Apparently these shad had come through the gates from Buchanan."

Inks will be comparatively easy to check, it was pointed out. For more than a year regular nettings were taken as specified points. These nettings showed the fish population before the poisoning program and afterwards. When additional samples are taken at the same places it will be possible to make new estimates of the situation.

Other lakes similarly affected are the Lake Walk on the Devil's River, Medina Lake near San Antonio and Diversion Lake near Wichita Falls.

game laws. If you call at night with a light, be sure you have clearance to use a light. And *never* call in any area without first obtaining permission from the landowner, farmer, or rancher.

There are no two callers that sound exactly alike, although everyone tries to imitate the dying cry of a rabbit to the best of his ability. The sound raises goosepimples the first time you hear it in the woods. It is a moaning, groaning, shrieking cry that would lead you to believe the Indians had returned on a scalping party. It is said, "If'n you aim to call good, just turn yourself into a rabbit with his hind quarters caught in a sheep proof fence."

You will probably do your most

• *Continued on page 29*

Are You Changing Your Address?

Then please fill out the following form and send to TEXAS GAME AND FISH, Walton Bldg., Austin, Texas, so that you will continue to receive your copies of the magazine. The magazine is sent second-class mail and cannot be forwarded by the post office nor remailed from this office. Allow six weeks for processing.

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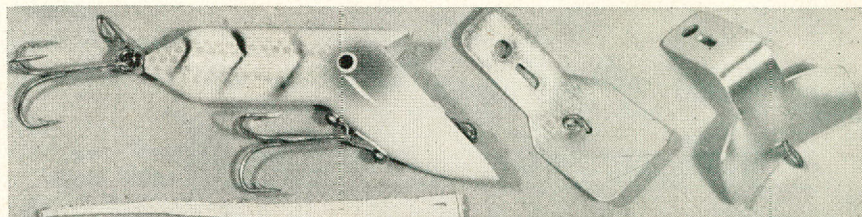
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Wildlife Calling

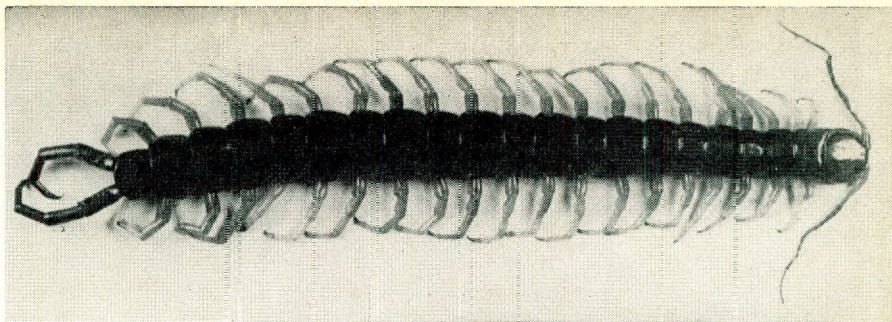
• Continued from page 28

successful calling from a blind. Conceal yourself with brush at your back, and face down-wind. All animals will circle down-wind from the call. Start your series of calls. (Most callers never call for more than 20-30 seconds at a time.) Don't try to call animals across too wide an open area. Call for a period of two minutes and then wait three minutes before resuming. If no animal appears in ten minutes, move on to another area.

When you are calling at night with a light, never search for eyes with the direct beam, but use the outer circle of light which is formed when you point the light skyward at a 45-degree angle.

If an animal appears at too great a distance, muffle your call down--turn it crosswise, "mouth" it, and make a noise with your lips like an animal devouring a bone. Kick your feet around to make noise, for this gives the impression that a rabbit has been caught. The curious animal will probably move in to take over. And watch out! He may even try to move up your pants leg.

Howard Casey met two Army sergeants and agreed to take them animal calling. They motored from Kil-



Unwelcome Office Visitor

Joe Strongbow, Game and Fish Commission multilith operator, was concentrating on some layout work at his drawing table when an unusual scratching noise attracted his attention to a pile of papers near his right hand.

Beneath the first paper Joe found the Texas-size centipede pictured above.

leen to a ranch near Copperas Cove. The rancher got out of bed and dressed to go with them, all the time telling them of seeing a mountain lion in his pasture the day before. By the time they were ready to go everyone was excited. The rancher directed them through the pasture for a couple of miles. They stopped and started calling.

Within 15 seconds after the first call, a large animal broke from the

Forceps were used to place the unwelcomed visitor into a handy beaker of perchlorethylene (a solvent) which soon made him harmless and also a safe photographic subject.

Joe said this one, which measured a mere six inches in length, was just a "regular one." He's now on the lookout for the "giant-economy" size.

brush about 25 yards from them and bounded in their direction. When the dust cleared, a large collie dog was patiently waiting to be let inside the car. The dog belonged to the rancher and had followed the car down through the pasture. For the next two months Casey drove the only car in Central Texas with four missing door handles. **

Popular Carp Fishing Bulletin Available

A publication entitled What the Experts Say About "Carp Fishing" has recently been released by the Information-Education Division of the Game and Fish Commission.

The handy pocket-sized pamphlet is a compilation of facts and fishing methods for catching carp. Recommended types of tackle, how to find the fish, and what to expect when you get one on a line are all included.

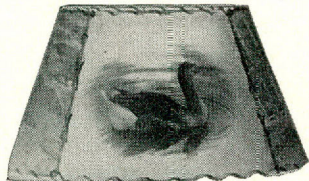
Perhaps of most interest to the carp fisherman will be the many recipes for preparing various dough baits and other baits which, accord-

ing to the "authorities of carp fishing" are highly successful.

An excellent recipe for preparing and canning carp is included.

These pamphlets are available free of charge from the Game and Fish Commission, Austin.

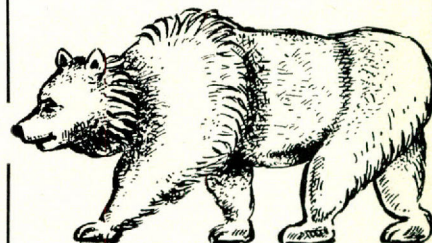
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Formidable Alligators Receive Protection

Although alligators remain formidable creatures, they no longer are growing to their former massive proportions, according to United States Fish and Wildlife Service records.

A century ago, 15-foot alligators were pretty much run-of-the-mill, but today a 12-foot specimen is regarded as near the maximum.

That is why an alligator measuring 13 $\frac{1}{4}$ feet caused a stir when hauled out of the water at the Delta National Wildlife Refuge in Louisiana. He was promptly dubbed "Ol' Gram'pa" and entered in the records as the biggest alligator ever taken on Delta Refuge.

Like the buffalo, the alligator has been subjected to heavy hunting in years gone by. Because of the inaccessibility of some of its habitat, however, the alligator has been able to survive in large numbers despite greatly decreased living space and a century of extremely heavy harvesting. The "harvest" varies from year to year and from refuge to refuge. "Ol' Gram'pa" was one of 400 taken last year on Delta Refuge. But on the Sabine National Wildlife Refuge, also in Louisiana, the harvest has been as great as 1,300 in a year.

In Texas, harvesting has not been as heavy, with the exception of one county. Alligators were nearing the extinction stage in Chambers Coun-

ty. For that reason an Act was passed by the Legislature closing the season for hunting alligators in Chambers County for five years. Under provisions of this Act it is unlawful to take, hunt, shoot, trap, or kill alligators, or attempt to do so in Chambers County for five years. Any person who violates any of the provisions of this Act is guilty of a misdemeanor and upon conviction may be punished by a fine of not less than \$25 nor more than \$250.

Fishermen Subject Of Panama Warning

Whether proper recognition for sport fishing is being given by the Panama Canal Zone may be cause for argument. Judging by a photograph in the *Christian Science Monitor* (Boston), anglers are at least officially recognized!

The photo showed a permanent metal highway marker mounted on a reinforced concrete post on a Panama Canal Zone causeway. It indicated a degree of interest, at least. The notice reads:

MOTORISTS
LOOK OUT FOR
CRAZY FISHERMEN

There were prizes galore

Young Anglers

Continued from page 8

which to catch fish. Catches were then weighed and prizes awarded on a weight basis.

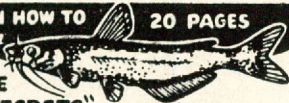
The heaviest fish won the angler the San Antonio Express and News trophy. This year, six-year-old Allen Philippus, who hauled in only one fish, a 13-ounce Rio Grande perch walked off with the big engraved trophy.

The heaviest string of fish netted a young angler a spinning rod and reel donated by the Anglers Club. It was won by 11-year-old Pat Zarovec, who caught 4 pounds and 10 ounces of sunfish and Rio Grandes.

In addition to these prizes, first-second-, and third-place winners in five age classifications—6-7, 8-9, 10-11, 12-13, and 14-16—won merchandise donated by Otto Koehler, president of the Pearl Brewing Company.

First place in each age division won a casting rod and reel. Second place in each age division also won a casting rod and reel, and third-place winners were awarded miscellaneous camping and fishing gear such as gasoline lanterns, a gasoline stove, flashlights, thermos bottles, minnow buckets, and fishing tackle.

First-place winners in each division also were awarded small gold cups donated by the Jaycees. **

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Things You May Not Know

The hermit crab lives in someone else's shell, moving each time the apartment becomes too small.

* * *

The road runner, one of the most familiar birds of the southwestern

and Western United States, takes its name from its habit of running along the road in front of wagons or any other slow vehicle.

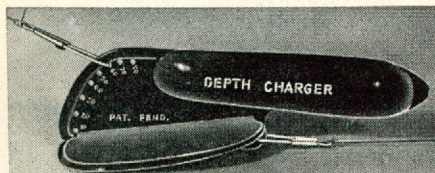
* * *

Bighorn sheep can lie in the snow for hours and stay warm. Their winter coat of matted hair (not wool) doesn't let enough body heat escape to melt a single snowflake.

* * *

Deprived of its food, a mole will die in about a day.

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'Rifling' and 'Twist' Two Strange Words Expertly Explained

Newcomers to the sport of shooting frequently ask the question, "Why is the barrel of a rifle 'rifled' or grooved? What is meant by 'twist'?"

The answers are simple enough to the experienced shooter. But because the rifles in a gun barrel are not easily observed, their importance to satisfactory performance is sometimes not fully understood by the novice. Superior and accurate results of bullet flight depend in a large measure upon rifling.

It is not necessary or proper to 'rifle' shotgun barrels because the shot charge is made up of a large number of pellets and rotation is not needed. But a rifle barrel accommodates only one bullet at a time and that bullet must rotate if it is to travel accurately.

In a rifle barrel manufacture, rifling grooves are cut in a helical manner. There usually are four or six such grooves, the depth being three or four thousandths of an inch. When a cartridge is fired, the bullet enters the barrel from its case which rests in the chamber, and is forced into the lands and grooves of the rifling, forming a gas seal and causing the bullet to rotate.

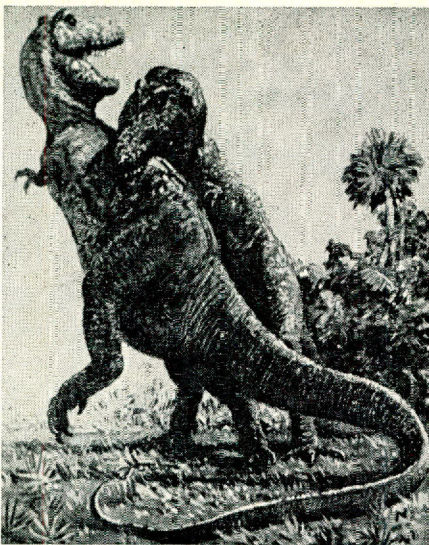
This rifling causes the bullet to spin in its course of flight and, thereby, the projectile attains stability and accuracy. The principle is similar to that of a spinning top. When the top is rotating rapidly, it stands up. When it slows down, it begins to wobble. Spinning rapidly the bullet travels accurately.

'Twist' refers to the turn in ri-

130,000,000 years ago giant creatures battled

Ancient Footprints

Continued from page 13



Huge tyrannosaurs pictured as they might have battled 130-million years ago.

fling. The rate of 'twist' for any given caliber is determined by velocity and by the relation of the diameter of the bullet to its length. A long thin bullet must spin rapidly to remain stable in flight and 'twist' is therefore, fast. A short, heavy bullet need not spin as rapidly and 'twist' is, therefore, slower.

For example, a 'twist' of one turn in 16 inches is used for a 35 Remington caliber barrel. This 'twist' is sufficient to give proper spin and fine accuracy to this bullet of comparatively large diameter. A 'twist' of one turn in 10 inches, however, is used in a barrel of 257 Roberts caliber. Here the bullet is smaller in diameter but fairly long from nose to heel.

ting ready to attack. We shall never know the outcome (note photograph). It was deduced from the lack of tail drags, that both beasts were wading in a shallow lagoon.

A humorous incident was recorded in Bird's report along with the tales of much hard work. The group was preparing to remove a layer of limestone under which the tracks disappeared when a bystander mentioned that it seemed very unlikely to him that a creature capable of making such large tracks could have crawled under such a low hanging rock. Of course sediments were deposited over the tracks during the thousands of years since then.

This brings to mind a time when I was proudly displaying one of my dinosaur tracks when a gentleman ventured his opinion that it must have been a mighty heavy animal to mash down the rock that way.

Many communities have these interesting fossils nearby and the people are hardly aware of their presence, but not so at Glen Rose. The town displays a fine specimen on the courthouse lawn along with a wooden replica of the dinosaur responsible.

Fossil footprints have always been among my favorites as they depict a single instant in the vast geologic past. I certainly urge if you find such a location, to report the site to the University of Texas or some other authority. It is possible that you may be the first to make an important scientific find. **

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Note: Any above Trotline mounted on Roll-up Reel, \$1.00 extra.

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Outdoor Books

Walt Disney's **SECRETS OF LIFE** by Rutherford Platt. 124 pages with more than 100 color photographs, plus black-and-white drawings. Published 1957 by Simon and Schuster, 630 Fifth Street, Rockefeller Center, New York 20, N. Y. \$2.95.

Have you ever wondered what secrets are hidden in rocks? What happened to that tiny seed you planted during the long months it lay hidden under its covering of soil? Rutherford Platt has traveled in North America, Europe, and Asia and has experienced two north polar expeditions to find the answers to these and many more questions that the wonders of nature present.

No doubt everyone is acquainted with Walt Disney's True-Life Adventure films. Based on the superb documentary films of nature's wild creatures, this book is certainly no exception to the fine work Walt Disney has done to present the secrets of so many curious and exciting creatures as the bees, ants, flowers, seeds, rocks, and aquatic life. The mysteries of these hidden worlds have been carefully studied by the production staff of Walt Disney and presented in such a way that young and old could spend a most delightful eve-

ning enjoying this excellent book so beautifully illustrated with fascinating color photographs.

Other books in this True-Life Adventure series include **THE LIVING DESERT** and **THE VANISHING PRAIRIE**, both of which have been based on film narration.—A.F.

PLANT PHYSIOLOGY by Meirion Thomas. (Fourth edition, revised.) 692 pages illustrated with 89 line drawings, diagrams and charts. Published 1956 by Philosophical Library, Inc., 15 East 40th Street, New York 16, N. Y. \$12.00.

"On all great subjects, much remains to be said." This is in several senses applicable to the study of the functional processes that occur in plants, and no apology is necessary for the publication of a new book on this great subject." Thus Meirion Thomas, Professor of Botany, King's College, begins his Preface to an excellent book on plant physiology.

This particular edition of the book is an edited and enlarged version which includes chapters on various plant phases which were covered only briefly in the first edition, due to lack of scientific data at that time and the great amount of research that has been done in recent years.

Designed as a textbook for the more advanced student of botany, the book has been written, ". . . to assist students who wish to develop the knowledge of plant physiology that they have acquired in general courses on botany" offered in higher schools of learning.—J.R.

MAMMALS by Herbert S. Zim and Donald F. Hoffmeister. 160 pages filled with excellent color illustrations by James Gordon Irving. One of the Golden Nature Guide series published by Simon and Schuster, Rockefeller Center, New York 20, N. Y. \$1.95.

There are approximately 350 species of mammals occurring in the United States and Canada, and of this number 218 are depicted and discussed in this excellent little handbook on North American Mammals.

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