

Texas Game and Fish

JANUARY

1961

20 CENTS





Photo by Bob Waldrop

"WHO is wiser than I?" seems to be what this *Bubo virginianus* is asking. Most people know it as the great horned owl. In story book and poetry Mr. Saucer Eyes has long established a reputation for being a wise old bird. Note

the difference in his eye pupils. The shaded one at left has opened for more light while at right the other has closed considerably; proof positive that it is very much alive.



MADE AWARE BY A BEAR: For preventing forest fires, nothing quite equals the record of Smokey the Bear, whose fire prevention messages have saved an estimated \$10 billion in U.S. forest resources. Smokey is partly a figment of Forest Service imagination, but a cub rescued from a New Mexico forest fire in 1950 triggered the idea. There are now several mechanical Smokeys that talk and move, and make many guest appearances.

DUCKS NOT FOR DEALING: The Migratory Bird Treaty Act has been amended to increase the penalty for selling ducks, and now reads as follows: "Whoever takes by any manner any migratory bird with intent to sell, offer to sell, barter or offer to barter such bird shall be guilty of a felony and shall be fined not more than \$2000 or imprisoned not more than two years, or both." The Act also provides that all guns, traps, nets and other equipments, vessels, vehicles, and other means of transportation used for the purposes listed in the paragraph above "shall be forfeited to the United States and disposed of under the authority of the Secretary of the Interior."

NEW LABELS FOR FLY LINES: The Associated Tackle Manufacturers Association has approved a new system of marking fly line sizes or weights. The alphabet formula worked well when all fly lines were made of oil impregnated silk, but the advent of lighter materials forced a change. To avoid confusion, the transition will be made gradually. Diameters will be ignored, and fly lines will be divided into 12 classes by weight in grains, numbered 1 through 12. Letter designations to be used are "S" for Sinking, "F" for Floating, "I" for Intermediate, and the prefix "DT" for Double Taper. A line now designated "HCH" could become a "DT9F," a double taper, class 9, floating line.

LOVESICK FISH: A University of Texas researcher reports that differing love calls help fish keep their species straight. Individualistic noises made by female fish enable male fish to choose between their own and different species during the mating season. Also, fish have regional accents. Those studied in the Colorado River near Austin don't sound like those in the Brazos, 100 miles to the east.

SOUND THE TRUMPET: Complete protection of trumpeter swans, America's largest waterfowl, which not long ago was feared facing extinction, has led to an increase in their numbers. The Bureau of Sport Fisheries and Wildlife recently made an aerial census of the majestic birds and counted 576 of them at their centers of abundance in Idaho, Montana, and Wyoming. In the early 1930's, there were fewer than 100 trumpeter swans in the United States, outside of Alaska. Other protected species of waterfowl include Ross's goose, brant, redhead and canvasback ducks.

SAVE THE SMALLEST: Concern is mounting over the fate of the Tule elk, smallest of all elk on the North American continent. Tule elk originally occurred naturally in California, and only two small groups now are believed in existence. A movement is now gathering force to obtain sufficient area of land for a Tule elk refuge in California.

MOVIE WITH MEANING: The National Wildlife Federation and the Remington Arms Co. Inc., currently are sponsoring a conservation film, "Runways in the Wild," in cooperation with the U.S. Air Force. It is planned for release early in 1961, and will be distributed for public interest television use and showings before civic groups and schools all over the country. The film portrays how natural resources at defense installations are being managed for public recreation and other conservation goals. Many of the conservation practices outlined are applicable to both public and private lands.

Texas Game and Fish

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

January, 1961

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The Cover



The long, slender tail, fat body, slim neck, large head, small, smooth dorsal scales and double black collar readily distinguish the Collared Lizard from all other North American lizards. This month's cover by staff photographer, Bob Waldrop. For related story, see page 4.

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Conservation Moves Ahead

THIS is the time of the year when we usually think about a lot of new resolutions. We promise to begin the New Year with more sobriety, more good will and greater endeavor.

But after all, a New Year is just a change in the calendar. In living things it always is the same.

That's pretty much the way it is with the work of those of us who have the responsibility of doing something about renewable resources. We have a job of just plugging away.

Most of the work we do has been underway for a long time, in fact since creation began.

So exactly where can we say this was done yesterday, or this must be completed tomorrow?

The hands of the clock go around completely in 24 hours, but there is no end to the life span without the end of the world. We can tear the pages from our calendar, but the rings of trees are ageless. We can count the years as they roll by, on paper, but floods destroy, winds erode and fires sweep across the country in which we work.

An engineer can examine a hill and, with his slide rule, tell you how many cubic yards of dirt must be removed to build a road through the mountain.

But there is no precise way to look at a lake and say there are so many fish. Neither can one look at a pasture and tell how many deer or turkey can be harvested, or look at a forest and tell how many squirrels or birds will grow there before we change the calendar again.

So with the coming of the new year we meet no particularly new challenge, except that of man himself. We are still confronted with the age-old problem of supplying food and cover for wildlife; we are faced with destruction of habitat both on land and water.

We know what changing ecology can mean in the world of things that live but which can do so little for themselves. They are often helplessly dependent upon man.

So with this New Year we go ahead with the same old job. Perhaps we'll have a little more knowledge, and even a little more vigor. We'll try to find new ways to do things better for a greater number of people.

Atomic bombs, moon rockets, and the like are suggestive of death—conservation is suggestive of life. Surely a people who can perfect the first of these will vigorously attempt the second.

And as we go about our work, we must realize even more that the things we deal with demand our best. Nothing less will get the job done. **

by **HOWARD D. DODGEN**
Executive Secretary
Game and Fish Commission



Mountain

Each male establishes a home territory and vigorously defends it. Photo by California Academy of Science. Males are larger, more boldly marked and more brightly marked than females.

ONE OF MY INTERESTING hobbies is that of trying to figure out how the colloquial names of some of our native animals originated. Take the case of the common West Texas lizard, *Crotaphytus collaris*, for example. In the Hill Country, it is commonly referred to as "Mountain Boomer" or "Barking Lizard." Yet the lizard is voiceless! At best, the only vocal sound it can make is a low-pitched hiss produced by the expulsion of air from its lungs. How, then, did the names originate? No one knows for sure, but we can speculate.

This lizard, correctly called Collared Lizard because of the two black collar bands, is a common inhabitant of rocky areas in the Hill Country. Also living in the same area is the Barking Toad, *Eleutherodactylus latrans*, which has a peculiar bark-like call. Since both the lizard and the toad often live in the same pile of rocks, it is likely that undiscerning early settlers attributed the voice of this secretive toad to the lizard. This explanation is all the more plausible when one considers that outside the geographic range of the Barking Toad, the Collared Lizard does not carry the moniker Mountain Boomer or Barking Lizard.

The long, slender tail, fat body,

slim neck, large head, small, smooth dorsal scales and double black collar readily distinguish the Collared Lizard from all other North American lizards. It occupies a geographic range extending from the Ozark Mountains (Missouri and Arkansas) and central Texas westward to California and Oregon and southward into Mexico. Over this vast area collared lizards are usually found associated with rocky outcroppings. Cliffs and huge boulders, however, usually are not suitable habitat because these lizards are poorly equipped for climbing.

Males are larger, more boldly marked and more brightly colored than females, but the hues of green and orange seem to be controlled by the intensity of sunlight. In early morning the general background coloration above is grayish dotted with white or blue, but by mid-morning on sunny days the grays change to bright green with washes of orange on the rump and hind legs. This process is reversed in the evening. The most conspicuous markings are the two black "collars" on the shoulders. The anterior one is usually incomplete dorsally and both terminate at the insertion of the front leg. Overall length of adults is 8 to 12 inches with the tail about twice as long as

the head and body.

Most Texas lizards have the ability to cast off their tail as a defense measure if they are hard pressed or molested. But not the Collared Lizard. Perhaps this is associated with the habit this lizard has of elevating its front parts and using only the hind legs when it is running at top speed. The tail then serves as a balancing device. Lizards with tails that are easily disjunct and lost normally run with all four feet contacting the ground, and their top speed is less than that attained by those which assume a bipedal stance. Collared lizards can give a fleet-footed person a race for his money.

Although collared lizards are diurnal and conspicuous in their movements, they are shy and take refuge under rocks, in crevices or in underground burrows when danger threatens. They spend the night in similar refuges and in winter they hibernate in dens where the temperature does not drop below freezing.

The breeding season of collared lizards in Texas is unusually long. Our earliest record of enlarged eggs (8 mm. x 10 mm.) in females collected for museum specimens is March 20; the latest, September 8 (5 mm. in diameter). The peak of the laying season, however, probably falls

Boomer

by Dr. W. B. DAVIS
Texas A. & M. College

AUTHOR of this article is Dr. William B. Davis, professor and head of the department of Wildlife Management, Agricultural and Mechanical College of Texas. Dr. Davis not only is a teacher, he is a student of wildlife. And above all, he has the facility of reducing his study and knowledge in a language easily understandable by laymen. Dr. Davis is the author of *The Mammals of Texas*, listed under the title of Bulletin No. 41, published in 1960 by the Game & Fish Commission. Copies of this 252 page book are available from the Commission at 50 cents each postpaid. They are invaluable for the student, teacher or library because of the complete information they provide on all mammals found in Texas.

in the period from May to July. The number of eggs ranged from 3 to 11 in the 15 specimens I examined, but large old females have been known to lay as many as 24. Eight of the specimens contained 8 eggs each, which number is perhaps the norm. The eggs are elongate, white in color when laid, have a thin flexible shell, and measure about 21 mm. long and 12 mm. wide (25 mm. equal one inch).

The female deposits her eggs in a shallow burrow where the sun can provide the necessary heat for incubation. She takes no further interest in her eggs or the subsequent family. Dr. Henry Fitch at the University of Kansas reports the incubation period is from 8 to 12 weeks, depending on the weather. Cool, cloudy weather

delays hatching. Our earliest record of newly hatched young in Texas is July 8. The latest reported hatching date is October 20.

At hatching time young collared lizards have a head and body length of about 36 mm. If they hatch in the summer, their growth is rapid. By hibernation time in October or November the young lizards are about three-fourths grown and by the following spring they are sexually mature. Dr. Fitch found that the average life span of individuals which survived the first year of life is about three years in females and two years in males.

The social behavior of these lizards in the wild is interesting. Where several of them are living together in

suitable habitat, the individuals tend to stake out "homesteads" and keep their distance. Females resent the trespass of other females, but not of males. Males are antisocial as far as other males are concerned. And in a colony of this sort one old male is usually "lord and master." He dominates all others, goes where he wishes, and may even usurp the home of another if it strikes his fancy. The right to dominate is earned by intimidation or actual combat.

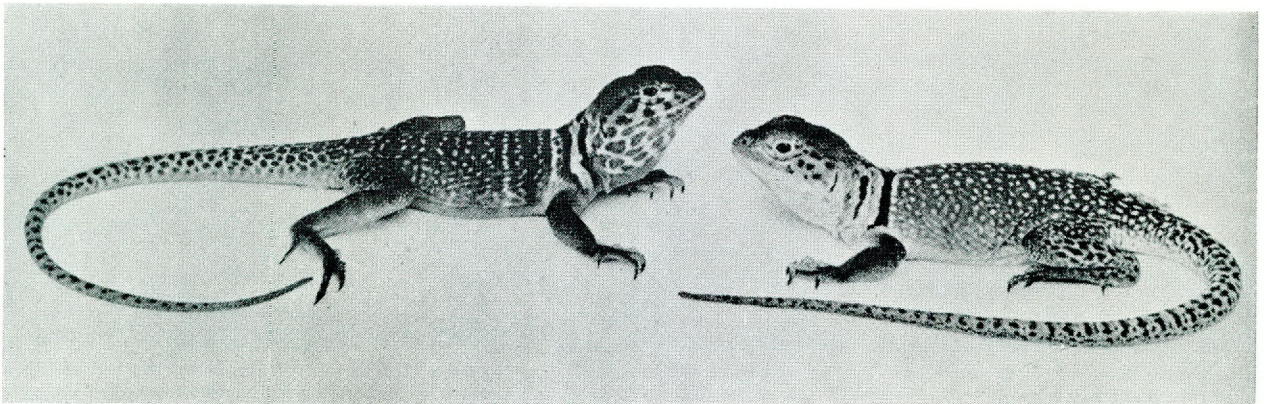
The bright colors of the males, coupled with the "push-up" bobbing behavior, are used to warn other males to keep their distance. At the bottom of the totem pole are the youngsters which must avoid their elders or suffer the consequences. Childhood in a Collared Lizard colony must be a trying experience. Not only must the young lizards find their own food, but they must also establish a place for themselves in the sun and at the same time avoid being gobbled up by predators. With all hands against them, infant mortality is high and only a few of the more alert, aggressive and fortunate ones survive to adulthood.

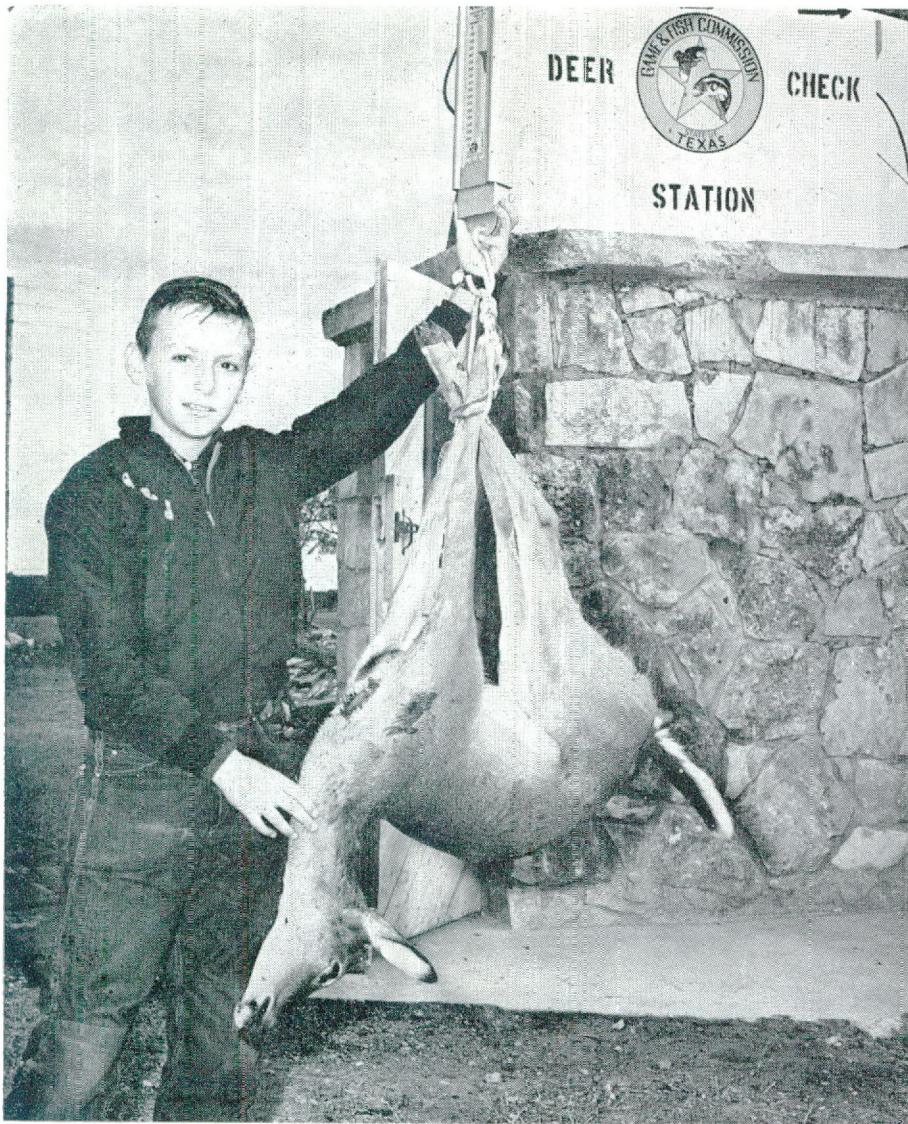
Collared lizards feed almost entirely on animal matter. Insects are the chief items in their diet, but they also eat spiders, centipedes, snails and even other species of lizards. Among the insects taken, grasshoppers rank highest, followed by beetles, bees and wasps, butterflies and moths, flies, true bugs and dragon flies.

Natural predators of collared lizards are mainly snakes (racers and whip snakes) and hawks.

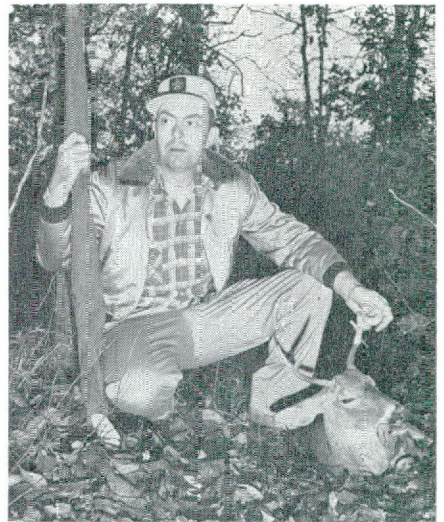
These lizards are easily kept in captivity, and they make interesting cage pets. **

Male lizard on left. Note spotted throat. Female on right. Photo by California Academy of Science.





Wayne Jones, 11, of New Braunfels killed his deer early the first day just outside the Kerr Area, but he wanted it weighed, so he carried it over to the area and used biologists scales.



Wayne Kittley, Kerens Tribune Editor, killed his nice buck the first morning of his two-day hunt on the Engeling Area and headed for home.



From left, J. W. Rodgers, Houston; C. C. Shugart, Palestine; and Charles A. Pantalion, Bryan, downed these three bucks on the Engeling Area.

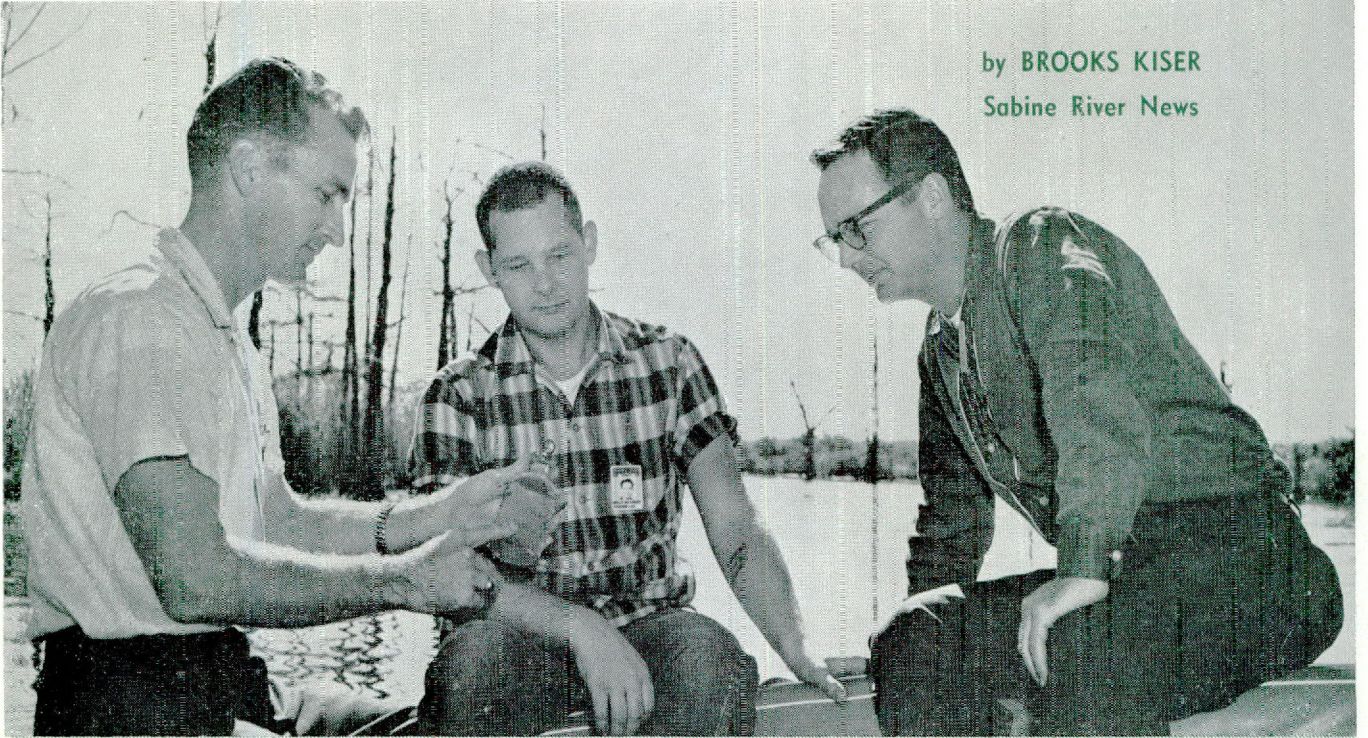


A truckload of three bucks and two does brought into the Llano check station the first night bore the tags of Charles Smith, Pecos; H. O. Beutnagel and Albert Wells of Houston.

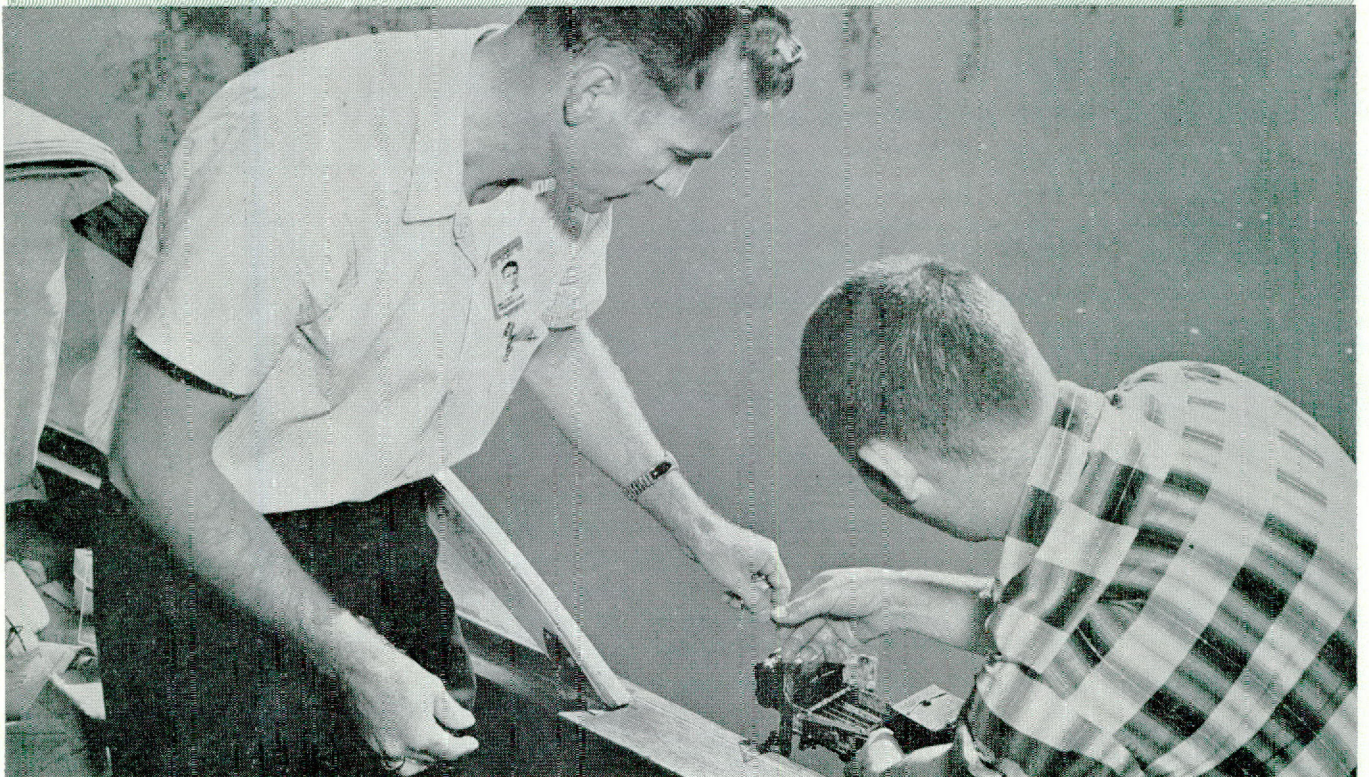


Willard Arnold, Waco, put the cross hairs on this spike buck and dropped it in its tracks.

by BROOKS KISER
Sabine River News



the Health of a River



Top photo: Val Fly and Cally McKinney explain water studies to guest, Ed Holder, at boat trip start. Bottom photo: slides are changed in diatom holder every other week, trapping a cross-sample of marine life.



Alkaline, in the form of oyster shells (left), is used to neutralize acid content of industrial wastes.



Specially constructed water can takes water samples free of air bubbles (right).



TO MOST PEOPLE, fishing is simply a sport. Basically they are looking for a day of fun outdoors or perhaps "meat for the table."

But to a few employees of the Sabine River Plant of DuPont at Orange fishing is a science. These people are not only interested in fish; they are also interested in practically all forms of marine life. And primarily they are concerned with the environment in which marine life lives. Through science they are watching—and with the help of fellow employees—they are guarding the health of the river and adjacent bayous by proper waste control and disposal.

The control of plant wastes, especially in the chemical industry, is one of the major problems of modern manufacturing methods. Industry has undertaken vast waste control projects and some \$300 million is spent annually for installation and maintenance of air pollution equipment alone.

DuPont, itself, has invested or

authorized about \$56 million to eliminate wastes and fumes. Furthermore, plans for new DuPont plant construction are not considered complete until they include proper facilities for waste disposal or treatment.

During its growth period in manufacturing, the DuPont plant experienced a growth program in waste control. First there was the plant investment in Adipic Acid to abate and neutralize fumes before releasing them to atmosphere.

Now a special water control program, started over seven years ago by an independent agency, is still being carried out by plant personnel.

This work is called a diatometer program, which provides a continuous, scientific record for measuring the health of the river. It is used as a reliable tool for gauging the effectiveness of the plant methods and procedures for protecting the bayous and streams.

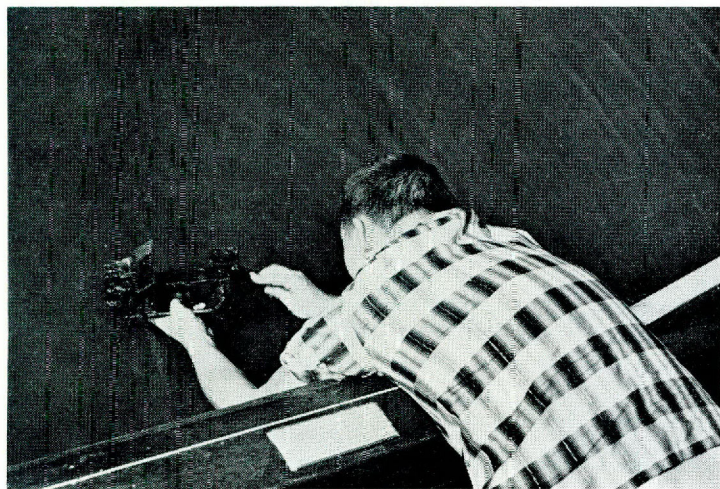
Diatoms, themselves, are simply microscopic one-celled forms of aquatic

plant life. As a basic form of marine life, near the bottom of the food chain, they are sensitive to all changes in water conditions. Changes in the number of diatoms and also the types of diatoms—there are potentially over 200 different species—reflect changes in stream conditions.

This diatometer program for Sabine was started in April, 1953, when a special team from the Academy of Natural Sciences in Philadelphia visited the plant. Since that time the program has continually been carried out by plant people.

Floating slides are placed at locations both above and below the plant. Diatoms are "caught" on these slides, which are changed when semi-weekly boat trips are made to these locations. Water samples for analysis in the lab are also taken.

The slides are not studied at the plant, but are shipped to the Academy in Philadelphia for independent study. **



Debris and barnacles (left) must be regularly cleaned from diatom holder to prevent breakage of slides.



Water samples (right) must be stabilized so it will remain in its original condition for lab analysis.



Youthful Crack-shots

"ISN'T THIS A HUNTING paradise?" said Tony. "Sure is," answered Richard. The two boys were talking about the Milroy Powell ranch in Concho County, on which they were hunting.

Tony Baird, 12, and Richard Nordling, 14, are the state and national champions of the veterans of Foreign Wars national boys rifle competition.



Mark Connell looks on as his guide, Raymond Pfluger, Eden, tags his deer. Mark, son of the national Commander-in-Chief of the V.F.W. got his deer the first afternoon.

The rifle hotshots don't look like they can wait for Newt Beauchamp to finish with the chickens. The boys, left to right, are Richard Nordling, 14, of Whippany, N.J., VFW national champion; Tony Baird, 12, Raymondville, state champion; and Mark Connell, 12, of Killeen, son of the national Commander-in-Chief.

by
JOHN
THOMPSON
Standard-Times



The grand prize was the hunting trip near Eden in November.

The national winner is from Whippany, N. J., and was escorted by his rifle coach, Joseph P. Glaab. This was Rick's first hunting trip and he bagged his deer the first day out.

Powell himself was to be Rick's guide. Shortly after Rick arrived, Powell asked if he would like to look over part of the ranch. They hadn't been gone 20 minutes before young Nordling connected with a nice eight-point buck.

Tony Baird of Raymondville was there with his uncle, Ray Martini of Corpus Christi. Tony was the Texas champion and got his buck the first morning after the boys arrived.

The boys were chosen to represent the state and nation by the National Rifle Assn. in Washington, D. C. Targets from all over the country were sent into the NRA for judging.

The program was sponsored by the Texas V. F. W. and supported by the national V. F. W. This was the first year for the program but it is felt that it will become a yearly event because of the high amount of interest.

The program was set up to foster

more rifle clubs under V. F. W. sponsorship, and to train the young hunters of tomorrow in gun safety and good sportsmanship.

Also hunting with the two winners were Mark Connell and his father Ted. Ted Connell is Commander-in-Chief of the V. F. W. and lives in Killeen.

Mark Connell got his buck the first afternoon of the hunt and thus got out of the chore of washing dishes, as is the custom of the camp for anyone missing a buck. Mark's father wasn't so lucky, however, and took quite a ribbing from all hands after missing a shot at a large deer.

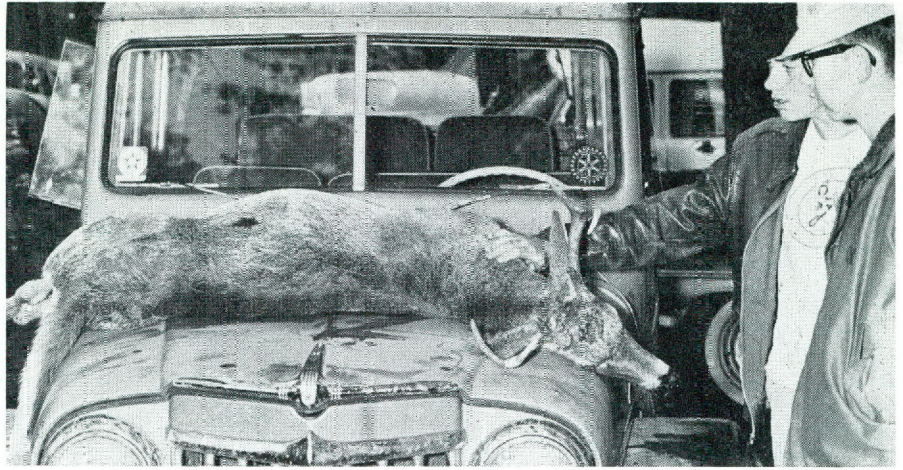
The boy's last evening meal at the camp was fixed by Newt Beauchamp, a resident of Eden and old time chuck-wagon cook. Newt fixed the boys some barbecued chicken and topped it off with sour-dough biscuits baked in a dutch oven.

Raymond Pfluger of Eden, who acted as guide for Baird, said that he didn't think they would have any trouble making a Texan out of Rick. Rick's reply was that he planned to win every year till he was 19 so he could keep coming back. **



Charley Slate, radio farm director of East Texas Radio Network, and his dog "Rinney," a son of Rin Tin Tin, made a hit with many of the scouts and scout leaders during the hunt.

by W. K. TILLER



A lucky hunter displays the first kill. Deer were full of acorns, in excellent condition with some of them classified as almost fat.

Father-Son Deer Hunt

SAFETY, SPORTSMANSHIP, and the right way to hunt deer were a few of topics stressed at the "Dad and Son Deer Hunt" conducted by the East Texas Area Council of Explorer Boy Scouts in Crockett National Forest November 18-19.

To insure a safe and fruitful hunt for the more than 320 explorers headquartered at the Ratcliff Lake Recreation area, there were representatives present from the U.S. Forest Service and the Game and Fish Commission, as well as supervisors from the Area Council.

John Cooper, Supervisor of Texas Forests for the U.S. Forest Service, welcomed the scouts to the public forest and told them that one of the

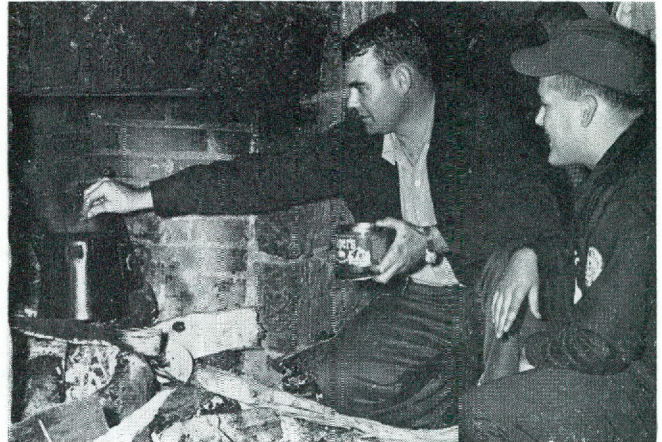
purposes of the National Forest system is to preserve public recreation areas. Later in the program, Forest Ranger Joe Giaquinto asked the scouts to help keep the area clean and prevent forest fires, and Game Wardens Allen Woolley and Robert Ogburn informed the group of the game laws that apply to the area.

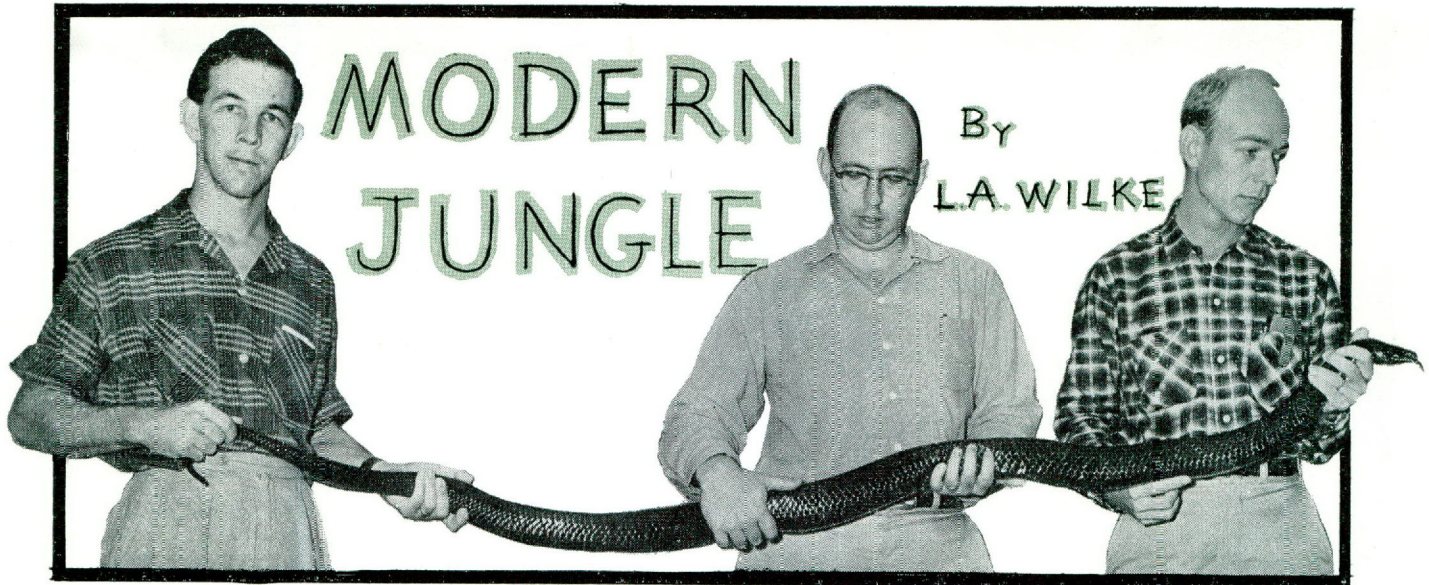
As a result of this supervised deer hunt, a number of adults learned a few pointers on how to hunt deer. All in attendance were reminded of hunting safety rules. During the two days, several deer were harvested from the forest and as a result of the event 320 boys should have a safer and more logical approach to hunting in the future. **

A quiet camp sight like this during the two-day hunt was typical when scouts scattered through the Forest to enjoy a morning close to nature waiting for that trophy buck.



An abundant supply of coffee was available throughout the hunt. A couple of cups were needed by some hunters before starting into the cold morning air for the hunt.





Three graduate student assistants hold a native Indigo snake. Left to right are Harold E. Laughlin, Bobby J. Wilks and Gerald C. Raun.

THERE is a mesquite thicket on a high hump down on the coastal plains of Texas where a coyote will be able to howl at the moon forever without fear of being shot.

Rattlesnakes can bed up in gopher holes or sun beside a prickly pear and moccasins will have comparative freedom in the wet places.

This haven for living creatures is on the Welder Wildlife Foundation area, seven miles north of Sinton. It covers almost 8000 acres of valuable land which still retains its native flora and fauna.

The Welder Wildlife area is the dream of a couple who planned their estate to provide for everlasting protection and a study of the different species.

Known as the Rob and Bessie

Welder Wildlife Foundation, it is operated by three trustees, who have employed a staff of top technicians to carry on specific research. Income from oil wells which spot the property has been dedicated to carry on the work in perpetuity.

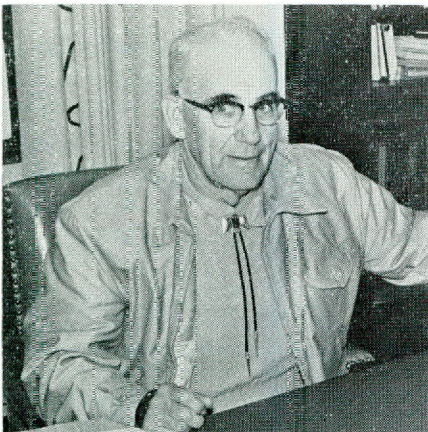
R. H. Welder was a progressive and successful rancher, born and reared in South Texas. He watched thousands of acres of the coastal plains denuded of grass and timber to be planted in row crops. Over grazing and drouth destroyed other essential habitat of wildlife.

Before he died Dec. 31, 1953, by his will he established the foundation that bares his name and that of his wife.

His will stipulates this purpose "to further the education of the people of

Texas and elsewhere throughout the world in conservation, in appreciation of the God-given blessings of our wildlife, in the knowledge of relation of wildlife to domestic animals on our ranches and farms; to perform and to foster and encourage study and scientific research related to wildlife propagation, growth and development, both associated with and dissociated from the raising of livestock and domestic animals . . ."

At the beginning Dr. Clarence Cottam, for 25 years with U.S. Fish and Wildlife Service and one of the best known conservationists in America, was employed to direct the activities of the foundation. The assistant director is Caleb Glazener, experienced in conducting research and management and for years with the



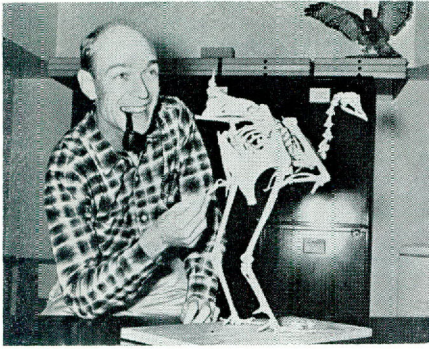
Dr. Clarence Cottam, Director



Caleb Glazener, Asst. Director



Ruby Tidwell, office secretary



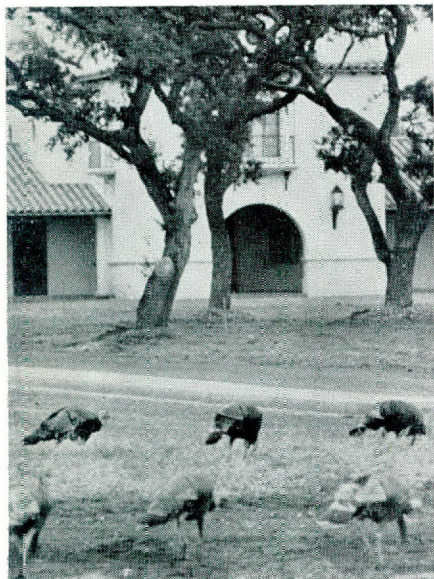
Raun puts together the skeleton of a wild turkey.

Texas Game & Fish Commission.

An extensive building program was begun immediately to provide necessary housing for workers, study rooms, library and laboratory. The buildings now have been completed, landscaping done and roads built. There will be a formal opening April 21 and 22, according to Dr. Cottam. The opening attendance will be by invitation, and will include some of the leading names in conservation work. It has not been decided as yet to what extent the general public will be invited to visit the area, because it is a wildlife workshop.

It already has been visited by a number of conservation groups and graduate students.

The project has complete laboratory equipment and is beginning an extensive library covering the southwest. Dr. Cottam also is busy writing reports of the activities of the re-



Wild turkeys find peaceful living on the lawn in front of the main building.

searchers who now are doing advance degree work at the foundation headquarters.

Studies are now being made daily on birds and reptiles that are found on the place. Much has been learned of their habits and how they live.

There is an animal house where caged snakes, rats, turtles and other wild things are kept for study under glass.

In the laboratory studies are made of the bone structure, the foods consumed and other pertinent facts concerning the species.

Research also will be done concerning the grazing habit of big game animals, especially deer and javelinas. Wild turkey are abundant on the area.

Because the land now occupied for wildlife research once was a ranch, considerable time also will be spent studying the relationship between grazing of livestock and the various species of wildlife.

It is expected that this degree of research will be helpful when passed on to other landowners. It will enable them to give more effective consideration of wildlife values, along with their ranching and farmers.

The Welder Area with its varied terrain is a haven for wildlife

Biology of the area also is under study, in both flora and fauna. More than 100 species of grasses already have been collected on the ranch. In addition there is much research to be done on insect life.

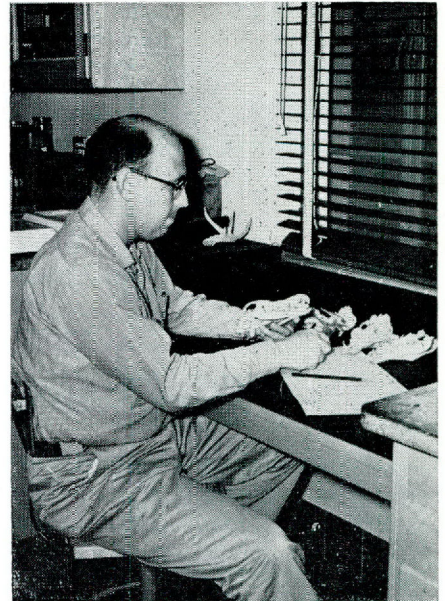
Administration and policies of the foundation are provided by a self-perpetuating board of three trustees. They include Harvey Weil, John J. Welder and Patrick H. Welder.

Both Dr. Cottam and Glazener live on the place. Wild turkey play around their back doors, and the big oak trees form a house setting similar to those seen in movies.

There are several small lakes on the property, which is split by the Aransas River, which flows into Aransas Bay not too far away. The river water at this point is brackish and red fish from the bay work their way up the river. The lakes provide ample water for bass, perch and catfish.



Gophers are studied in burrows by the student assistants.



Wilks measures the skulls of mammals during his studies at Welder.



It's the hand of Laughlin holding a rattler, with great care.

Rotenone and Domestic Water

Tests are carried out to safeguard municipal supplies.

by ED W. BONN
Aquatic Biologist

DURING the past decade the use of various chemicals has become a standard tool in fisheries management. Chemicals are being used to control aquatic plants, reduce turbidity and increase fertility of the water. One group, known as fish toxicants, is used to kill undesirable fish species or entire unwanted fish populations. Numerous lakes and streams in Texas have been treated with various toxicants, most of which contained rotenone, or a combination of rotenone bearing ingredients. Some of these treatments include waters of Ascarate (El Paso Co.), Possum Kingdom (Palo Pinto Co.), Campacuas (Hidalgo Co.), Bonham Park (Fannin Co.), Fort Parker (Limestone Co.), Buffalo Springs (Lubbock Co.), Murval Bayou (Panola Co.) and numerous others.

In almost all cases this work in Texas has been limited to waters not used for human consumption. The State Health Department, being cautious, and rightly so, believed that such treatments would result in the contamination of the water with harmful, as well as taste and odor producing organisms.

The Game and Fish Commission, while respecting the opinions and policies of the Health Department, felt some work should be done and data collected to prove or disprove the belief that various rotenone compounds could be safely used in drinking water supplies. It was already known that rotenone is not a poison and has little effect on animals, other than those that breathe with gills.

A conference was called of interested agencies to set up the study. In addition to the works of the Health Department and the Game and Fish Commission, representatives of the North Texas Municipal Water District and the Lavon Project, U.S. Corps of Engineers were present. The Water District agreed to do the laboratory work and experimental treatment plots were selected at nearby Lake Lavon in Collin County.

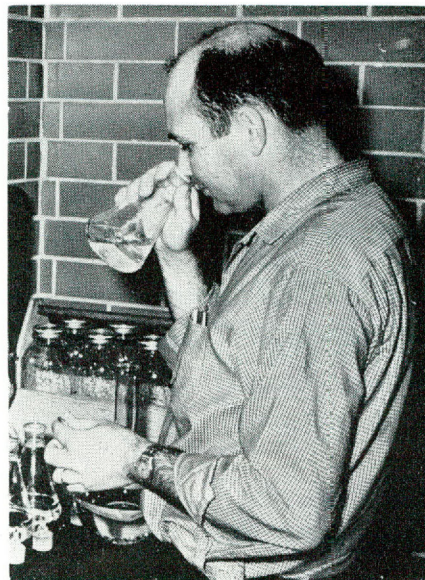
A series of 18 water tests were agreed upon and these were run before, during and for many days after the application of various rotenone chemicals at five Lavon treatments and at Bonham State Park Lake. These tests included temperature, turbidity, oxygen, carbon dioxide,

pH, total alkalinity, total hardness, calcium, ammonia nitrogen, organic nitrogen, total nitrogen, phosphorus, potash, plankton type, total plankton, odor number, most probable number of coliform organisms and bacteria colony counts.

Five different rotenone products were applied at various concentrations in these experiments during different seasons of the year. Fish affected by the chemical were allowed to die and decompose in the work area to create as natural a condition following a treatment as possible. Before field use, these products were tested in the laboratory to predetermine conditions that might arise. These lab tests were especially valuable in determining the types and intensities of odors produced, the length of time these odors remained in the water and their possible reduction with various odor control chemicals.

Of the 18 different physical, chemical, bacteriological and biological determinations made during this study, only four showed any significant change after the addition of the rotenone products. The changes found in the remaining 14 tests were either slight or seasonal and considered to be insignificant. There was an indication of a slight increase in total organic nitrogen believed due to the decaying fish.

Usually within two or three days after the application of rotenone products there was a tendency for the turbidity to decrease. This was due mainly to the eradication of bottom feeding fishes which stir or roil



Here a water district lab assistant makes the odor test.

the silt deposits.

This decrease in turbidity, the reduction of plankton feeding fishes and the increased food (nitrogen) made available by decaying organic matter, supported an increase in the numbers of plankton. Many of these small, one-celled organisms are disliked by water treatment plants because some give bad tastes and odors to the drinking water and others clog the water plant filters.

There was an increase in the number of bacteria per milliliter of water, but these were not the disease producing bacteria, known as coliform organisms, and unless this buildup was extremely great, most of today's water treatment plants could cope with it without alarm.

From a municipal usage standpoint, of all the tests made, it was felt that the greatest problem in this work was the change in taste and odor of the water treated. Liquid rotenone products, such as Chem Fish, Noxfish and Pro-Noxfish produced a strong kerosene odor which lasted three or four days. Later, as the dead fish began to decay, a moderate fishy odor was detected in the water. When powdered rotenone was used, the odor changed directly to fishy without the added kerosene step. Water customers associate fish with water, but become alarmed when chemicals or oils are tasted or smelled in drinking water. Therefore powdered rotenone causes less taste and odor change and is the number one choice of water plant workers.

The lower cost of this type of chemical and the improved method of application, developed by personnel of the Texas Game and Fish Commission, also makes powdered rotenone the best material for fisheries workers when treating municipal waters.

Consideration also was given to the seasons most suitable for this type of management. Summer months are bad because of heavy water usage. The least water demand occurs in the cold months, but spring and fall are not abnormally high. These are the seasons when the public is more likely to accept unusual tastes and odors because of seasonal lake changes.

Since improved fishing is the ultimate goal of all lake management,

thought was given concerning the availability of hatchery fish to replace those removed when a complete kill is attempted. Fisheries workers have found that the best fish kills can be expected when water temperatures are warm and fish activity is highest. Total kills, or 100 percent removal of fish in lakes 50 acres or larger, even though desired, are impossible to obtain with rotenone. The plan is to release large numbers of game fish soon after most of the undesirable ones have been killed.

Lakes over 10 acres in Texas ordinarily are stocked with advanced largemouth bass fry in the spring. Channel catfish and crappie are available as fall fingerlings. From this standpoint, it is best to treat bass lakes in the spring as late as possible to allow the water to warm, but not too late to obtain bass fry from the hatchery. If catfish and crappie fishing are most important, the chemical should be applied in September or October before the lakes begin to cool.

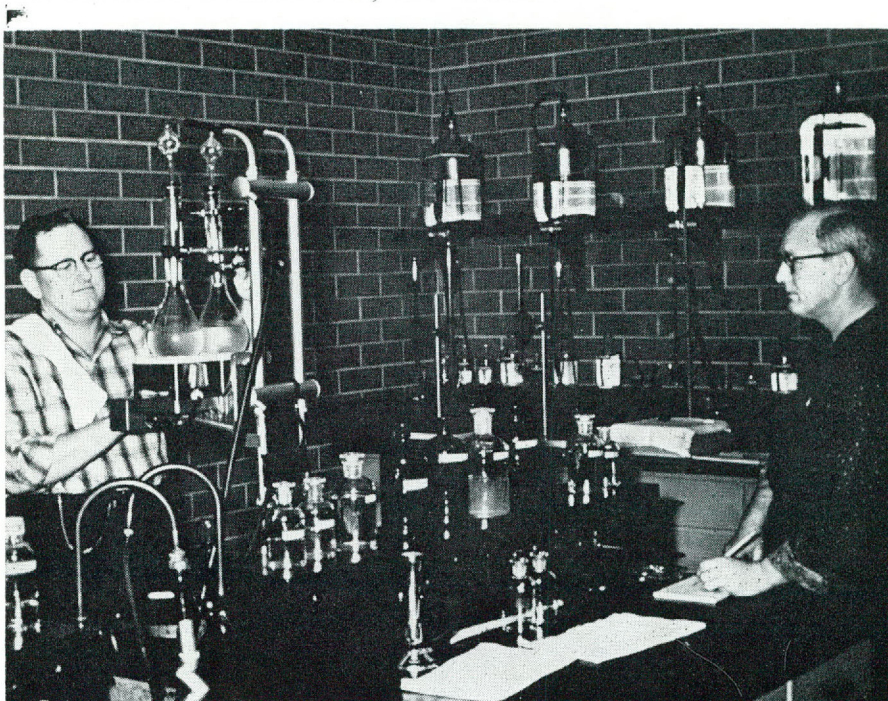
Selective treatment for shad has been most successful when water temperatures are about 55° F. Depending on the location in the state and the depth of the lake, this usually occurs in February and March and again in November and December. Normally, stocking with hatchery fish does not follow a selective kill, but

competition is reduced and the game fish already present benefit by the treatment.

Thus it appeared that spring or fall are the seasons best suited for municipal lake renovation from the standpoint of both water treatment plants and fisheries workers in Texas.

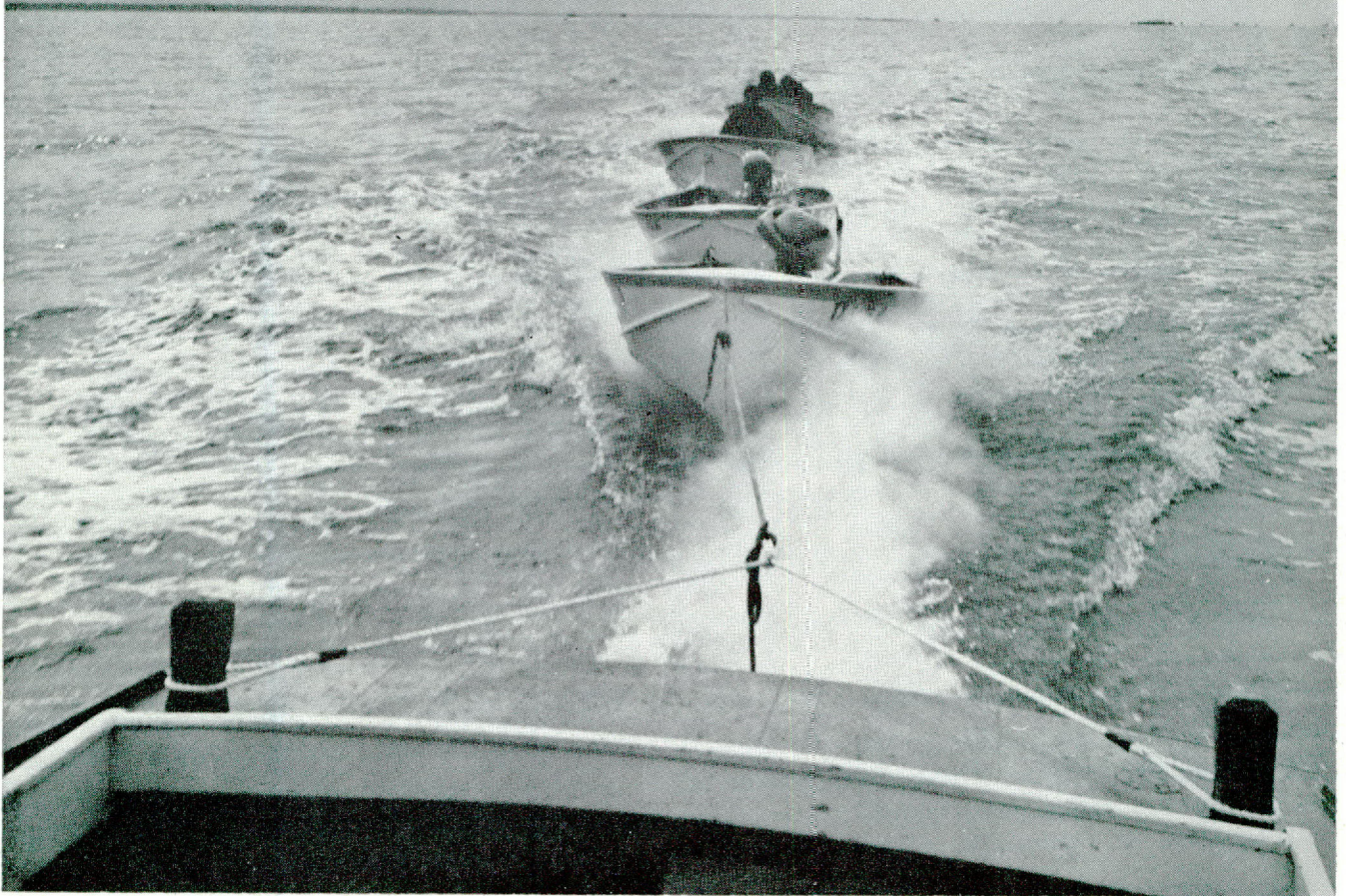
When this type of work is done on waters used for human consumption there is likely to be a slight increase in water production costs. The laboratory tests mentioned earlier found activated carbon to be the best substance to reduce offensive water tastes and odors. Depending whether bulk carbon, or the more costly sacked material, is used, a cost of about \$60 to \$95 would be added to production costs at plants treating one million gallons of water daily. This increase can be expected for two or three days until the fishy condition subsides.

As a part of its service to the fishermen of the state, the Texas Game and Fish Commission, supported by its Federal Aid to Fisheries program, will furnish the chemical, equipment, and manpower to treat city lakes in an effort to restore and improve angling. The cities must furnish and apply the carbon used to correct the water's taste and odor if the need arises. But for an investment of \$200 to \$300, what Texas city can afford not to provide better fishing for its citizens? **



Water samples were analyzed at the North Texas Municipal Water District Laboratory.

Just Four a Day



The small boats are towed to the blind areas. Then hunters run them in the blinds. After the hunt they are picked up by the big boat.



At left, H. E. Eaglebarger of Kerrville, left, and Bill Irby of San Antonio display their nice duck kills.



At right, W. W. Altgelt, left, and Bunny Waggoner of San Antonio had a pretty good day in the blinds.



and limits came easy

MOST SERIOUS DUCK HUNTERS in Texas had little difficulty in getting their limit of four birds per day in the 1960 season just closed, according to reports from the field.

Warm weather prevailed during much of the first half of the season, which meant the ducks were well scattered,

not only along the coast, but on lakes, tanks and ponds throughout the state.

All hunters reported the ducks in good condition. They also said that Texas will send a good seed crop back north again this spring. **



Joe Irby, left, J. T. Montalbano, center, and Dr. L. M. Bukowski, all of Houston had lots of fun scattering shot at the ducks. They killed enough for roast duck and dumplings.



Harry L. Mills, left, and his son Harry, Jr., of Rockport, managed to get in some exciting shooting. Some of their shots hit the mark, and there will be duck stew for supper.



R. A. Posther, left, and Jack C. Calhoun, both of San Antonio, four ducks apiece and a big smile to express the fun they had. Most hunters who worked at it in all seriousness got their limits of ducks.



Willie Farris, Rockport, just picked away as long as the hunters brought in more ducks.

CUBAN SNAPPER

Photos by
Ed Holder
Port Arthur News



Rusty Goates tries out this 70 pound snapper for size.

HOW BIG is a snapper? That depends upon the kind it is. Bruce Goates, 5520 Grant Ave., Groves, was a member aboard the party boat Watty, operated by Capt. Gene Meeks, out of Sabine Pass.

He dropped a hand line, baited with a 12 ounce snapper, over the side of the boat. They were some 60

miles offshore and fishing had been fair. Then suddenly Goates had a tug that felt like a good one.

Hand over hand he struggled in with the line, almost losing it at times. Finally he brought the fish to gaff and it was pulled aboard. Those who saw it could hardly believe it. There was no doubt about its being

a snapper, but what kind? It was 46½ inches long, and had a girth of 32 inches. Its tail was 11 inches in circumference, weight: 70 pounds.

Photographs were taken by Ed Holder, outdoors editor of the Port Arthur News. They were sent to Terrence Leary, assistant director of the Marine Fisheries division, who had this to say:

“Although we cannot tell the exact species of the fish in the photographs, it appears to be a Cuban snapper (*Lutianus cyanopterus*) which is the largest of the snappers. It reaches 100 pounds or more. The way to tell it from the other snappers is that it has a crescent shaped patch of fine sandpaper-like teeth in the roof of its mouth. Other snappers have this same crescent shaped patch but also have a distinct median projection which gives this patch of teeth an anchor shape. I feel certain, however, that that is what the fish is.” **



Bruce Goates of Groves, and his young son, Rusty, had about all the fish they could handle.

COLD WEATHER BASS

by RUSSELL TINSLEY
Austin American-Statesman

IT WAS a miserable winter day—an ice-edged north wind whipping through a steady drizzle which occasionally turned to fine sleet. An angry overcast hung low over the lake, promising an early nightfall. It was hardly the kind of day a person would want for bass fishing, but evidently the weather was to the liking of the fish. They were on a furious feeding spree.

The month was February. Last week fishing had been dead, but in the meanwhile something had triggered the bass into action. A fresh norther had come whistling down from the Panhandle, bringing with it sleet and rain and plunging temperatures. Here on Granite Shoals Lake in central Texas the bass suddenly started hitting in the face of the norther. Even after it hit they didn't let up. Anglers wrapped in wool jackets and rain coats and carrying hand warmers in their pockets braved the nasty elements to comb the shallows with quivering-type artificial plugs. A little white perch-like job with black pin stripes along its sides proved to be the key that unlocked this wintertime fishing spree. Big catches of bass were the rule rather than the exception, and some of the fish were truly of bragging size.

That's the way it is at times in late winter. The fish, getting ready for the spawn, move into the shallows along shore to feast and prepare for the famine ahead. Earlier in the winter anglers had to go along the bottom with baits like jigs and plastic worms to dredge up the bass; but now shallow-running plugs are on the menu.

This sudden eruption of bass fishing traditionally comes sometime between late January and mid-March. Many intangible factors contribute to this fishing spree, but the controlling key is weather. When conditions for the spawn are fast approaching, it prompts the bass to migrate shoreward. During a mild winter this may come as early as late January or early February; in a severe winter it may

be postponed until sometime in March.

This phenomena isn't something which happens only on our man-made lakes. It occurs in streams, too. On rivers like the Llano, Pedernales, Devil's and Guadalupe the bass began stuffing their bellies. Here a stomach autopsy will reveal that the bass are feeding almost exclusively on crawfish, and a slow-moving plug which digs along the bottom is almost sure-fire medicine to put fish on the stringer.

Naturally, bass in our southernmost lakes and streams will start their feeding earlier than those in north Texas and the Panhandle. Down along the Texas-Mexico border, on lakes like Falcon, the action may start as early as January, yet it might be two weeks later before bass to the north start moving.

But even before this sudden spree which signals the start of the spring fishing there are fish to be caught. Wintertime bass angling can be very productive at times, particularly on a warming sunshine-sparkling January day when bottom-bumping lures tempt the bass into stealing a quick bite to eat.

The fish are there to be caught, all right, but usually there are no fishermen to catch them. The winter bass angler has to be an intrepid sort of person, willing to sacrifice comfort for productivity. Normally only the inveterate bass anglers will make this sacrifice, and other persons wonder why these select few fishermen can catch bass when they can't.

Paradoxically, the biggest peak for fishermen comes at a time when it is the lowest peak for fish. Summertime is for the bass fishermen; wintertime is for the bass catchers.

Here in my central Texas bailiwick the peak months for bass fishing are November, December, January, February and March, with October and April being marginal months. Of all, however, February and March are traditionally the best.

Billy Disch, a well-known Austin fishing personality, is a staunch believer in this November-to-March fishing.

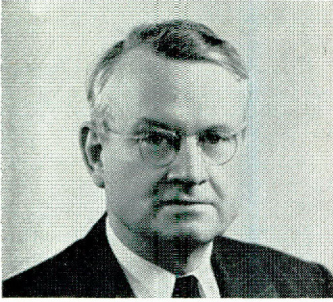
"I go fishing when the other guys are camped at home in a warm room watching television," he explains. "I may freeze to death at times, and may get an occasional soaking, and even a cold bordering on pneumonia at times, but I catch the bass—and how! And to me that's all that matters." **



Jimmy Shipwash, Austin taxidermist, enjoys catching bass on sunny days between northers.



Kenneth Gumm, Granite Shoal Lodges, fights the cold weather but catches nice strings.



A Boy and His River

By JUDGE JOHN A. FUCHS

District Court, 22nd Judicial District

TO THE outside world the Pedernales River in Texas is not well known. In recent years this little river has had some mention in the press, as it is connected with some famous people. It flows near the town of Fredericksburg, where Admiral Chester Nimitz was born. And about thirty miles below, in Blanco County, Vice President-elect Lyndon Johnson has his ranch and home on its banks. It furnished a playground for both these men in their boyhood days.

In Blanco County it winds its way through the "Hills of Home" made famous by the song of that title composed by Oscar Fox, who roamed these hills in his young days and still

spends many of his vacations there.

Where the Pedernales runs through my father's ranch, its bluffs are high and its bed rough with solid rock and many large boulders. Its name, meaning "Rocky River," was given to it by the early Spaniards. Every few hundred yards there are falls, ranging from a few feet to nearly 50 feet in height.

To me, the river was always a dear friend, and still is. Swimming, fishing, hunting, trapping and boating, all these the river gave us. Is it any wonder that my older brothers and I loved the river? We loved everything about it: the high and rugged bluffs, the deep water holes, the many water-

falls, large and small; the stalwart cypress trees that in places lined its banks and turned to golden yellow in the fall; the caves found on the sides of the bluffs. One of these had a particular fascination for us because of the red paintings on its walls made by the Indians. These paintings consisted of crude drawings of buffaloes, bears, and many figures of Indians.

Our ranch home was about one-half mile from the river, on its north side. In the evening, when the wind was right, we could hear the song of the river—a low murmur when at normal flow. It was a sweet lullaby that often sang me to sleep. But in the springtime when the heavy rains



fell on its watershed, and the barren hills emptied their waters into the parent stream, the rushing high waves dashed from rock wall to rock wall, creating a thunderous roar like the sound of hundreds of cannons.

We were often warned not to be in or near the river after a rain. However, a rise in our river was always welcomed by us. It presented a great spectacle because of the many formations in the bed of the river. In one place the onrushing water was thrown high into the air as it dashed against a boulder 30 or 40 feet high. In another it boiled and churned as if a whole city were on fire beneath its bottom. Far from its banks a spray of water fell, resembling at times a mist and at others a heavy rain.

As a boy, I never really knew how much this river meant to me. But now, when I have reached three score and ten, I do know. In my boyhood days I took the dear old river and everything it afforded us for granted. How could a boy be happy without a river? Why, it was his due.

There was, however, an experience in my young days which somewhat opened my eyes. My parents took me along on a trip to the prairie country, near the City of Houston, to visit some uncles and aunts. After we had been there a few days and the new-

ness of these surroundings had worn off, I asked my cousins, who were about my age, "Where is your river?" How astounded I was when they informed me that there wasn't one in the area. How could anyone live without a river? Silently I lamented what I considered the emptiness of their lives.

We never held anything against our river. Its high waters tore down some of our fences. We gladly rebuilt them. It gave us a chance to be near the river. Boats which we had tied to a tree, and lines which we had set, were torn loose and washed away. Oh, well! We shrugged our shoulders. They were getting old anyway and we needed new ones. And even if I had to run a race with the river, it was not the river that was to blame.

But what about the race with the river? It came about in this way. Of all time, on a Saturday afternoon, when people either went to town or fishing, I had to work. My father was one of those stern men who did not believe in putting things off until *manaña*. April showers had been falling every few days. It was too wet to plow the watermelon patch. And now the melon vines had spread and weeds had grown in competition. My father had said: "Son, if you want to eat melons you must protect the plants." All my pleading to let me go fishing with my young friends and cousins was of no avail. The work must be done today, for tomorrow it might rain again.

The monotony and burden of the work was alleviated to some extent by my imagination. I was in my early teens and fairy tales fascinated me. Tall sunflowers, careless weeds and Johnson grass were the evil giants and I was the Giant Killer. My friends, the watermelon plants, had to be protected and I was proud to be their protector. With a vengeance I attacked the enemies of my helpless wards. By their roots I pulled them up and threw them on the ground in a large pile, there to rot.

The field was located north of our home, further away from the river, on an elevation which formerly had been a sandy Post Oak grove. It was particularly well adapted to the culture of melons.



As much as I liked watermelons it was hard for me to keep my mind on my work. From the elevated ground I could see the river and it urged me on. All the strength and speed that I possessed I applied to my work, with the hope that I might finish in time to join my friends in at least a cleansing swim before the end of the day.

It was about midafternoon, but the sun was still bearing down as only the Texas sun can do. Although I too was bearing down, the weed patch seemed to be growing larger. I was comparing myself with Hercules cleaning the Aegean stables. While thus my mind and body were both engaged, I suddenly heard a rumble like distant thunder. I glanced at the sky but not a cloud was in sight. In a second I was back at work, but immediately the rumbling became a thunderous roaring. A light breeze brought the sound very near and now there was no mistaking. It was the roar I knew so well. I stood up and to my horror saw the brown waters of the river coming in high waves, rushing onward as if driven by the devil himself. In a flash there came to my mind the boys fishing at the falls behind the large boulders, where they could neither hear nor see the oncoming flood. Like the proverbial shot from the gun I was off. The first wire fence I hurdled like a pole vaulter, using a fence post as a pole. Next I came to a rock fence which I cleared easily, and I landed within a few feet of a large rattlesnake. Lucky at that. But

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Forest Riches

by JOHN W. COOPER

U. S. Forest Service

MULTIPLE use of National Forests means many things to many people. The family may camp or picnic, the fisherman may try his luck in a lake or stream, the hunter may bring in his deer or bag of squirrels, the logger may cut trees, and the prospector may seek a rich strike; anyone can look over the forest scene and be inspired.

Obviously, all these people can't do these things on a single spot, but they can on a large area if all the things they seek are there and can be used or taken without damaging the area.

The logger may be called on to cut trees in recreation, natural, and scenic areas, and along recreation roads and streams when fire, insects, diseases, and storms damage the beautiful forest scene. In campgrounds, the logger will cut down only those trees which are dead or dying—a hazard to life and property. He will do this work so that stumps are low and the limbs are cleaned up. He will not leave trash in the streams nor skid logs through the campground. The hunter will not shoot a gun near people and endanger their lives. Camping areas will be posted so the miner won't dig them up.

Throughout the rest of the forest, the logger may cut trees and at the same time do those things which will be helpful to all the other people wanting to use the area. The logger will skid and truck logs out in a way which prevents the washing of soil into streams in which fish live and from which drinking water is taken by people downstream. He will leave certain kinds of hardwoods and shrubs which furnish food and shelter for squirrels, turkeys, deer, birdlife, and other wild species. He will leave more



trees along the better roads to preserve the scenic beauty for the enjoyment of visitors. When occasional trees are cut along these roads, the logger will clean up these spots so that piles of limbs and trash are not an eyesore to travelers.

These examples bring out what the Forest Service means when the phrase "multiple use" is used. It serves more people in the long run. Multiple use of National Forests is the best way to meet the growing needs of more and more people. **

Beautiful Scenery

EAST HAMILTON Scenic Area consisting of 105 acres, is located on the banks of the Sabine River on the Sabine National Forest around the old townsite of East Hamilton, and was established to preserve the history and beauty of the area. The site contains some of the largest, if not the largest, cypress trees in the State of Texas. One large tree is 15 feet in diameter at ground level and more than 8 feet in diameter above the swell—approximately 6 feet above ground level—and reaches a height of over 100 feet.

East Hamilton was the site of Hamilton's Trading Post, established about 1828. This was followed later by the town of Hamilton which was incorporated in 1839 by Sam Houston, William Kerr, the Subletts, and the Sharps. In 1847 the first United States Post Office in Texas was established at Hamilton with Charles H. Alexander as Postmaster.

Visitors may reach this area by traveling to Patroon, on State Highway 87 and then east on FM 2261.

The Yellowpine Scenic Area on the Sabine National Forest in Sabine

County is small, containing only 7 acres, but has more than 25,000 board feet of timber per acre of mature, virgin, shortleaf timber with an average diameter of 24 inches and an average height of 100 feet.

Shepherd Creek Scenic Area on the Sam Houston National Forest consists of 75 acres about 4 miles southeast of Huntsville. The stand is predominantly shortleaf and loblolly pine with an average volume of more than seven thousand board feet per acre. The average tree is 16 inches in diameter at breast height but many trees are above 30 inches.

Several new areas in Texas are in the process of being established to preserve the historical, scenic, and biological aspects of the present pine and hardwood forests of East Texas. **

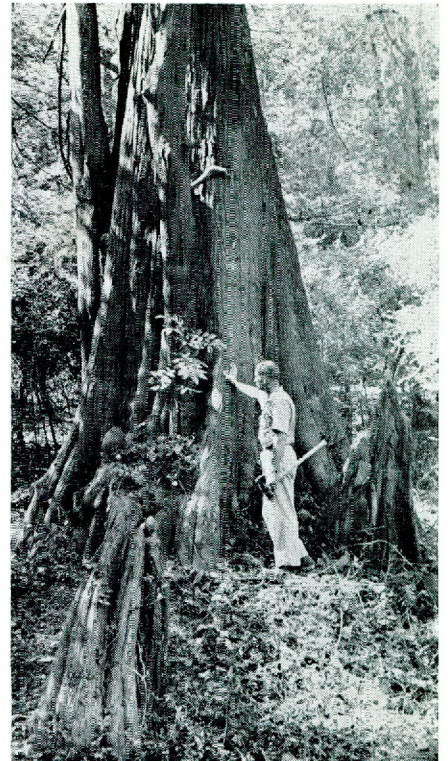
Recreational Privileges

IN ADDITION to public forest lands, the industry owned land of the nation also provides recreational areas for the general public, according to a survey just completed by the American Forest Products Industries.

More than 6 million persons a year enjoy the recreational privileges of industry owned lands. A survey showed that 58,140,936 acres representing 86.2 per cent of industry owned land has been made available for public recreation use.

In Texas down through the years it has been traditional for those persons living in forest areas to use the unfenced lands for many purposes. In fact this unfenced and uncontrolled land furnished the ground for many violations of the game laws.

They also presented many fire haz-



Ranger Walter Fox of Tenaha Ranger District, Sabine National Forest, admires a huge cypress "knee" more than 6 feet tall. The tree in background rises over 100 feet and is estimated to be over 1000 years old.

ards and numerous forest fires have been recorded as started by irresponsible persons using the lands for recreation.

In recent years, however, there has been a change of attitude and now controls have been established by owners in turning their holdings over to the Game & Fish Commission for wildlife management, and through the aid of private clubs.

The tendency toward the multiple use of the lands is indicated in the industry report, which classifies the use. Comparative results for the years

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Two rangers inspect a wildlife food plot established by the Game and Fish Commission on the Alabama Creek Wildlife Management Area of the Davy Crockett National Forest in cooperation with the U.S. Forest Service.

Part of the 75-acre Shepherd Creek Scenic Area located 4 miles southeast of Huntsville. The standing timber composed of shortleaf and loblolly pine averages over 7,000 board feet per acre. Some trees reach diameters greater than 30 inches.





This coon wanted no part of the hounds. A tree seemed the safest place to be.

WHEN the coon hunters of a half-dozen states come into Texas for their annual meeting it's hard to tell which will make the most noise—dogs or the hunters.

But with 130 dogs covering some 90 square miles of terrain on a cold, rainy night in November it was a busy one for the coons and a noisy one for the neighbors.

This was the seventh annual coon hunt held at Fort Parker State Park, near Mexia in early November. It was sponsored by the Texas State Coon Hunters' Association, and sanctioned by the United Kennel Club and is cataloged as one of the largest state-level coon hunts ever staged in the United States. In the hunt last fall there were 10 entrants from Oklahoma, 4 from Louisiana and 2 from Arkansas.

It was estimated that more than

3000 persons attended the three-day show. Many were dog trainers, kennel owners and dog food company representatives.

Heavy rains failed to stop the flap-eared hounds in hours of stiff competition. Dr. H. R. Martin of Mexia, president of the association, said this was the second largest hunt held since organization in 1953.

The Texas State Coon Hunting Championships were originated in 1953 by James Broom, Alvin Lueck and W. N. Wittie. At the time there was not any well organized coon hunting club on a state level and it was felt that a state wide system of rules and leadership was needed. The men chose Fort Parker for its central location, good hunting and for its excellent group camping facilities.

The Coon hunters rented and re-

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Flop-ear Fandangle



by JAMES M. THOMAS
Staff Member
Texas State Parks Board



"Down, boy," that coon is trapped. And a reassuring hand tells this blue tick he did a fine job. The feeling an owner has for a good hound is difficult to describe.



This young lad came to the hunt with his father. The other youngster in his arms may grow up to be a fine coon dog. Neither seems worried.



Kenneth Harrington has complete control over his female walker as Judge W. L. Santerre with back to camera prepares to look her over.



The crowd gathered around the bench trials to watch the K-9's show their stuff.

Winners of the registered class line up with dogs and trophies. From left to right are: Lovvorn's Tex, owned by E. E. Lovvorn, Wills Point; Second, Mitchell's Red Major, owned by Maurice Mitchell, Mexia; Third, Glasscock's Toby Twain, owned by H. O. Glasscock, Dallas; and Fourth, Lovvorn's Andy, owned by Pete Lovvorn, Wills Point.



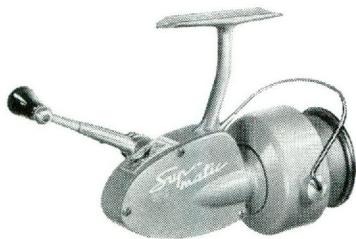
Jack McClaran, Mexia, congratulates James T. Bowlin of Shreveport with his Champion of Champions, Nite CH, "PR" Imperial Blue Star, a blue tick that scored +412½.



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NAME _____
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What Others Are Doing

by JOAN PEARSALL

BONUS FOR BOATERS: Nebraska's boating law provides that income from registration of boats not used for administration and enforcement shall be used for the safety and convenience of the boating public. The first facilities to be paid for by this state boating fund are now in operation at a lake which has long been a favorite of boaters in Nebraska. The installations are two new concrete boat ramps. Until this money became available, there were no funds to put in the ramps, which were badly needed.

DRESSED-UP MINK: Trappers in the north-central part of South Dakota have been asked to be on the lookout for mink wearing "earrings." As part of a research project to study the movements of mink, they have been live-trapped and a number of them marked with metal ear-tags. When the tags are returned by trappers, along with date and location the mink was taken, something will be discovered on how long mink live, and what effect trapping pressure has on certain mink populations.

PUTTING ON THE BRAKES: In Tennessee the Highway Patrol and Game and Fish Commission cooperated in November in setting up roadblocks in various parts of the state. Drivers' licenses were checked by State Troopers. Those drivers or passengers who were hunting were checked by Game and Fish officers, to see that bag limits and other provisions of the game laws were being complied with throughout the state.

LEAPER STILL LOSER: Leaping ability did not save an illegal hunter from a hefty fine in New Mexico. A deer spotlifter and a companion were so intent upon making an illegal kill that they did not notice the arrival of a conservation officer. When the officer flashed his light, one of the poachers leaped clear over the hood of his car from a standing start! Each of the men was fined \$205.

SCYTHIST SEIZED: Flood waters at a state fish farm in Ohio

permitted several big breeder muskies to swim free. One swam along a highway right-of-way, where a man was using a hand scythe. Spotting the fish, he used the tool to take it, was observed by an enforcement officer, and arrested for using an illegal method.

BRUIN RUIN: The Pennsylvania bear population increased over the past year, and an unusual amount of damage has been done by these animals. The bears apparently went corn crazy, and complaints have been made almost daily of damage to cornfields. Bear hunters in Pennsylvania should have an extra good season this year.

FREE TREES FOR WILDLIFE NEEDS: During 1960 the North Dakota Game and Fish Dept. planted 800,000 trees and shrubs for use by wildlife. The number was reduced this season to allow more time and money for habitat evaluation and work on state game management area projects. In a cooperative program, the department furnishes the trees and pays for their planting on land furnished by landowners. After that, the landowners must care for the plants under terms of an agreement whereby wildlife will benefit.

DUCKS DRAINED OUT: The rain-water basin in south-central Nebraska originally contained 831 wetlands. A survey conducted this summer shows that 77 per cent of the area has been lost or impaired for future duck production, having been affected by complete or partial drainage. Much of the drained land is "hard pan" and cannot be planted to crops more than one of each five years.

AUTOS ACCOUNT FOR MORE THAN ARCHERS: Motorists kill more deer in North Dakota than do bowhunters. During the past four years motorists have killed 1,002 deer on the highways of North Dakota. In these same years, each of which has had lengthy bow seasons, bowhunters bagged only 981 deer.

AN EXPANDED MARINE RESEARCH effort now is being made to determine the magnitude of sport fishing, according to Ross Leffler, assistant secretary of the Department of Interior. He outlined a survey program now being carried out in all American waters, to the Anglers' Award dinner in connection with the Fifth International Game Fish conference held recently in Florida.

"Marine fisheries conservation can make progress only through research," Leffler told the group. "It's the foundation on which future management must be built.

"This year our Bureau of Sport Fisheries and Wildlife has begun a program of research specifically dedicated to the accumulation of knowledge about migratory game fish of the U.S. waters.

"Our salt water sport fishing involves a lot of territory. There are some 90,000 miles of tidal shoreline for the 50 States and islands of our country. And there are about 220 species of fish involved too, the ones which are described as marine game fish because they are taken by hook and line for recreation.

"As one of our Bureau of Sport Fisheries and Wildlife people said: 'Putting a dollar sign on hunting and fishing is as much out of order as estimating the money value of a beautiful sunset or appraising the net worth of Old Faithful geyser.' However, fishing and hunting are not only rich human values in terms of happiness and spiritual peace, they also add up to substantial totals dollars and cents-wise in our economy. As such, constant concern for them in present and future human planning is certainly justified.

"Our 1955 National Survey of Hunting and Fishing revealed that 4½ million salt water anglers spent nearly a half billion dollars in 58 million days of this kind of recreation. I'm convinced that salt water angling will become even more important in our sport fishing efforts of the future. I say that because there is such a vast reservoir of marine sport fishes available for salt water angling effort.

"The 1955 Survey will be repeated. In January and February of 1961 in-

Fish Count

Census Bureau begins study of marine resources.

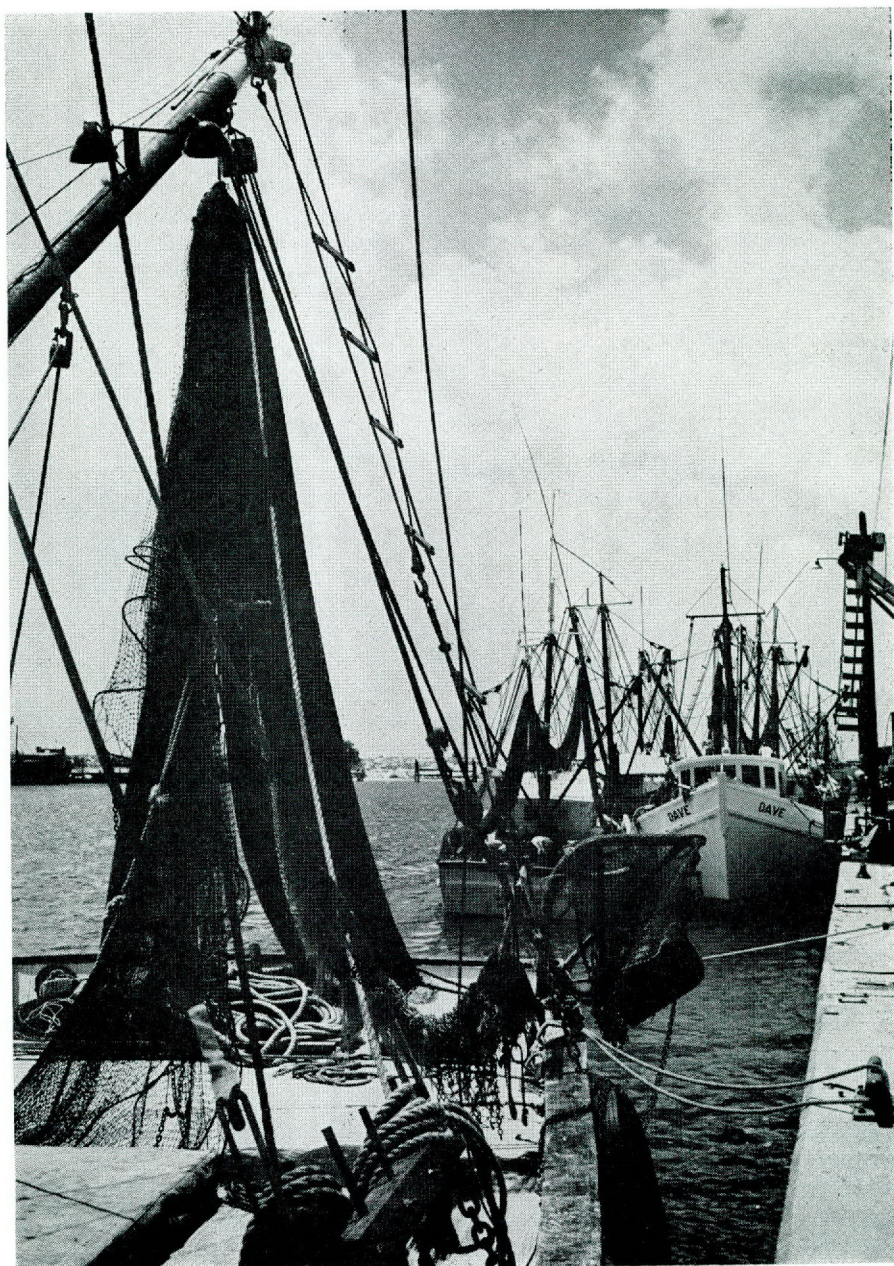
terviews will be conducted by the Bureau of the Census which is handling the Survey. The interviewers will ask questions on hunting and fishing experiences and expenditures for calendar year 1960.

"The Census Bureau will collect and tabulate data on catches of ma-

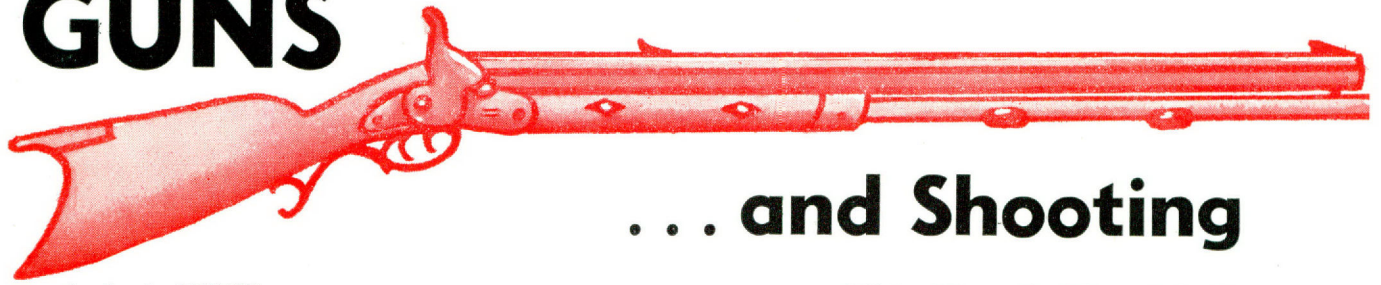
rine game fish by areas and species for the whole country. For this purpose, the coasts have been divided into the following areas:

"Atlantic: Maine to New York, New Jersey to Cape Hatteras, Cape Hatteras to Florida Keys.

• Continued on Page 30



GUNS



... and Shooting

by L. A. WILKE

This Month: The .22 Magnum

AFTER TWO SEASONS of shooting the .22 Winchester Magnum rimfire cartridge has been pretty well established as a superior low cost varmint killer.

It also is a splendid turkey load, with its 40 grain jacketed bullet at 2000 feet per second. Some shooters also reported deer shot in the head with it were killed instantly. However, it definitely is not a deer load and should not be used as such.

The .22 WMR is the strongest of all rim fire fodder and fills well a place between the .22 LR and the .22 hornet.

for tipoff scope mounts.

Mossberg also sells it with a 5 power variable scope and you can get a sling for it, which will probably make this gun one of the most accurate on the market for pinpointing shots.

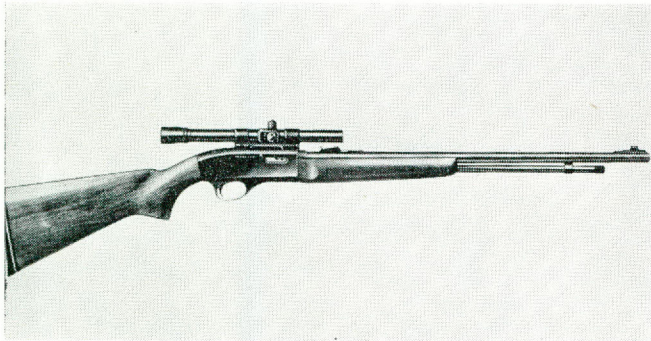
It wasn't long then until Marlin announced its 57-Levermatic for the .22 magnum. It is a dressed-up gun with a 15 shot capacity. It is equipped with an adapter base for scope and can be bought with scope as optional equipment.

Early last summer, a year after the cartridge had been announced Win-

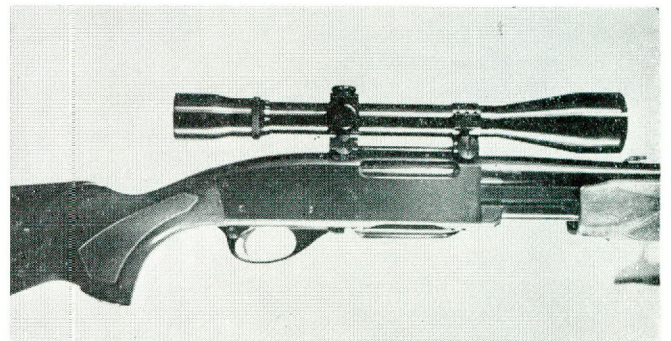
replicas of manufacturer guns, since the big arms companies make most of the mail order guns.

For a person who started out shooting a .22 short, going from that to the long rifle, the new souped up .22 is a marvel. It has a very disastrous effect on small game, and is an excellent predator gun. Again, however, hunters should be cautioned it is too light for deer. Neither is it a toy gun or for ordinary plinking purposes.

No doubt within a few more months all manufacturers will be producing the .22 magnum, because the market definitely is growing. **



The New Jefferson .22WMR



Weaver V8 on a 760 Remington

It has the unusual distinction of being a cartridge developed before there was a gun made to shoot it. In fact the cartridge had been manufactured by Winchester a year before that firm produced a gun for it.

A few pistols came out immediately after the cartridge was announced. Then Savage jumped in and rechambered its .22-410 combination over/under for the .22 magnum. Almost immediately Mossberg hit the market with its single shot Chukster model bolt action, to be followed a few months later by the 5-shot bolt action repeater.

This Mossberg is a lot of gun for the money in the hands of any bolt action shooter. The receiver is grooved

chester came out with a modification of its model 61 slide action. This rifle has been made for the conventional .22 since 1932.

Now the Jefferson Arms Corp., has announced an entirely new rifle chambered for the .22WMR. It is the model 260, a fast shooting auto loader. It is an entirely new concept in a varmint hunting rifle and will spit out 12 of these 40 grain fast moving slugs as fast as you can pull the trigger. It has a 22-inch barrel and tubular magazine and also comes with a scope as optional equipment.

Various mail order houses also are producing an assortment of guns for this caliber, under their own brand names. These guns usually are exact

The V8 Scope

Weaver, the El Paso scope sight maker, now has a new V8 scope on the market that tops anything in the field. This V stands for variable and it ranges in power from 2½ to 8X. All you need to do is to rotate the eye-piece ⅓ turn to change the power.

Because of this great range in power the one scope can be used very successfully at low power in brush country. Then if you get into the mountains where long shots are necessary it can be turned up to the maximum. This 8X also is valuable for knocking the bulls eye out of targets at any range. **

I could not stop for a snake now. I had lives to save. As I came to the bluff opposite where the boys were fishing, I yelled to them at the top of my voice—and no Comanche ever yelled louder. They did not hear. It was several hundred yards to the trail that led down the bluff. Instead of taking the roundabout way I jumped into a large pecan tree, catching a good strong limb, and from there I swung from limb to limb until I reached the ground and ran another hundred yards to the boys. Not a moment too early had I come to warn them, for just as we reached safety a wall of water 10 feet high came rushing by.

My mother and many others were high in praise of my marathon. Personally I thought very little of it, and if I hadn't, my father's attitude would quickly have set me right. He said to my mother, "Why, the boy did just what he should have done." However, my father gave me a great reward. He promised me that just as soon as the river was down and cleared sufficiently, I could go fishing. Fishing was always best after a big rise, and therefore no other recognition could have pleased me more. In the meantime, I could finish my job in peace. **

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 or remailed from this office. Allow six weeks for processing.

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City....., State.....

Please look on the mailing label of your magazine, find the number which appears on the right hand side, and copy it here:.....

New Address.....

City....., State.....

of 1956 and 1960 were given in the report.

In the 1956 report 370 areas were surveyed, while the survey was made on 518 areas in 1960. The acreage jumped from 46 million to 58 million. A majority of the industry owned land was shown available for public use on a permit basis. The acreage opened to the public without permit last year totaled only 11.7 per cent.

There was extremely heavy hunting and fishing pressure on much of the land. For instance in 1956 there were 42 million acres open to hunters and 44 million open to fishermen.

In 1960 hunters had access to 53 million acres, while fishermen had available 56 million acres of land, representing 97.4 per cent.

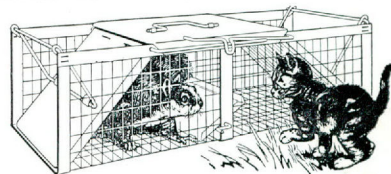
Berry pickers also used a great deal of the land, according to the survey. A break down of the available areas was given as follows:

Percentage of acreage open to:	
Berry picking.....	87.6 83.0

Picnicking	86.7	88.3
Hiking	90.4	90.2
Swimming	87.0	85.5
Camping	81.5	86.2
Winter Sports	44.4	37.6

Facilities on the areas have been provided by 20 per cent of the companies. There also was evidence that much of the land is being devoted to game management practices as a part of the state programs. **

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Fandangle—Continued from Page 24

served all the group camps' facilities for the period of the hunt. All the organizational work for the hunt was arranged by the Texas State Coon Hunters Association, which also handled and ran the camp restaurant during the whole meet.

Although considerably dampened by more than an inch of rain, the opening night's hunt drew 164 starters. Planned events for the next morning included coon-in-a-log and coon-in-a-hole contests. The dog winning the coon-in-a-log event was "Sandburr," owned by Floyd Spradley of Leander. The coon-in-a-hole winner was "Pete," owned by Bill Bivens of Sulphur, Okla. Winning times for both events were 3 seconds each.

Bench trials for the judging of the registered and grade dogs took up that afternoon. Judging consisted of six breeds of registered and grade dogs with three division classes for

Fish Count—Continued from Page 27

"Gulf: West Coast of Florida to Texas.

"Pacific: North Pacific Coast, South Pacific Coast.

"For each area, lists of major game fish groups have been given the Bureau of the Census. Special sampling techniques will be used to secure information on kinds of fish caught, numbers or weights, method used in angling and the area of capture.

"This is the first time such a comprehensive study of this kind has been undertaken. It will give us a good estimate of the marine game fish catches by species, year and area of capture. Of course, as in the 1955 Survey, the main investigation will provide information on the economics of the marine sport fishing in 1960.

"I might add that in the general survey we are planning to secure a breakdown of salt water fishermen to show the number fishing in the surf, in the bays and sounds, in tidal rivers and streams and in the deep sea. For fresh water fishermen, we will get the number fishing in man-made ponds, in reservoirs, in natural lakes and ponds and in rivers and streams.

"One of the improvements in the current survey will be with respect to data on occupations and incomes. This should show whether fishermen

• Continued on Page 32

each sex of each breed. The show was officiated by Jack McClarion of Mexia, and the judging done by W. L. Santeere, licensed United Kennel Club judge of Dallas.

All actual hunting was done outside the park area and no guns were carried with the purpose of killing the treed coons. Many coon hunters prefer to enjoy the thrill of the actual pursuit and let the coons live for another exciting hunt. The trophies, valued at \$1,000, were awarded early the closing morning about 4:30 a.m.

Already the largest event of its kind in the country and growing each year, this show will become the biggest coon hunting competition in the county as a regular thing. **

GAME AND FISH COMMISSION

City	Address	Phone
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Brownsville	934 E. Levee	LI 6-1952
Corpus Christi	1220 S. Staples St., Rm. 222	TU 2-4992
Dallas	1st Floor, Courthouse	RI 2-4817
El Paso	206 San Francisco Ave., Rm. A-6	KE 2-3541
Fort Worth	3rd Floor, Courthouse	ED 6-5812
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Houston	2307 Rice Blvd., Rm. 212	JA 8-0516
Rockport	Marine Laboratory	SO 4-2472
San Angelo	State Fish Hatchery	2-1930
San Antonio	535 S. Main	CA 3-2722 CA 2-1661
Seabrook	Field Laboratory	
Tyler	La Porte, Courthouse Rm. 105	LE 9-2341 LY 3-4625

—Favorite Recipe— BLOCK CHILI

5 lb. chili meat (deer meat)
5 chili pods
2 tsp. chopped garlic
2 tsp. red pepper
1 small onion, chopped
1 tsp. cumin seed
2½ oz. chili powder
3 cups melted beef tallow
3 tbs. flour in small amount of water

Soak chili pods in boiling water, remove seeds and grind in food chopper, also grind garlic and onion. Render tallow, strain and measure 3 cups. Put in a large pot, add chili meat and cook until meat turns and tallow comes the top. Add chili pods, onion, garlic, pepper, cumin, and chili powder. Stir frequently and cook for about 3 hours. Add flour and salt to taste. Block when cold. wrap and store in deep freeze. If pinto beans are added, cook, separate, and add to chili when done. Add water when preparing chili block, to make it right consistency. Bring to a boil before serving—Mrs. R. W. Bonhom, Pasadena, Texas.

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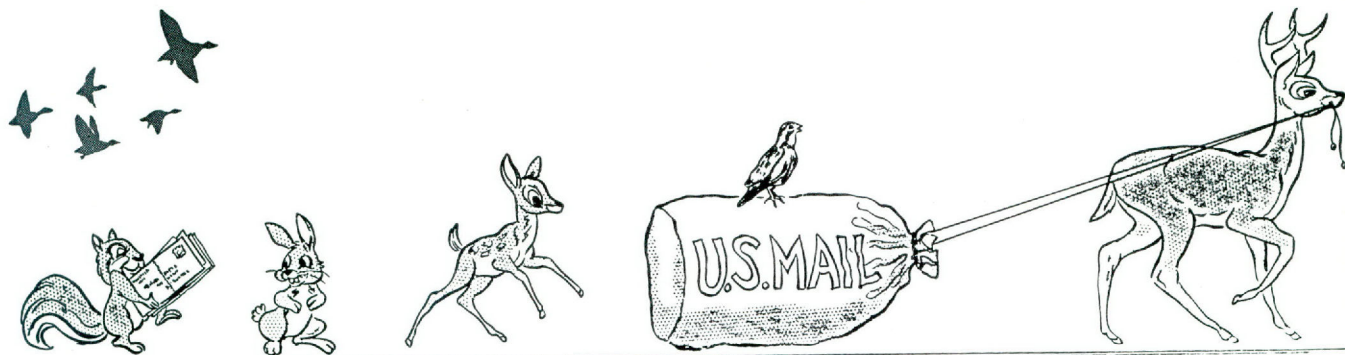
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Llano, Texas Phone 2012



The Governor Answers

Recently we were in Texas to visit with our only daughter and her family. We enjoyed ourselves very much and got a most pleasant surprise when we stopped in with the hospitable folks at the Seabrook station of the Game and Fish Commission.

Our mission was to secure a fishing license and were prepared to pay a more or less exorbitant fee by reason of the fact that we were out-of-staters. The lady asked my name and wrote it on the license and then asked my age.

When informed that it was somewhere over 65, she marked the license void and told me that I did not need a license! May I thank you all (that's Texas stuff, pardner) for your consideration for senior citizens who wish to do a little fishing. I'll be back and that's a promise.

She loaded me up with some very fine bulletins and a copy of your TEXAS GAME AND FISH magazine. I was surely treated much better than had one of you Texas folks applied for a license here.

She did compliment me by questioning my age (it's 68) and I countered with my Pennsylvania driver's license, which carries my birth date. After all, I am a grandfather of ten grandchildren, and you don't get them overnight.

Bernard Hetrick
Slippery Rock, Pa.

("Thanks for your letter commending the work of the Texas Game and Fish Commission and the laws governing fishing licenses.

("I appreciate your thoughtfulness in writing me about the fine treatment you received from this agency. It is most gratifying and encouraging when the operations of our State government are so highly praised. I am taking the liberty of sharing your letter with Hon. H. D. Dodgen, Executive Secretary of that Commission, as I know he will also be grateful to hear of your kind remarks."—Price Daniel, Governor of Texas)

Big Mystery

Editor:

Thanks a million for your thoughtfulness in sending me the magazine with the picture of the paisano and the article by J. Frank Dobie.

I suppose you know you are turning out a darned good magazine.

Erle Stanley Gardner
Rancho Del Paisano
Temecula, California

Constructive Criticism

Editor:

I have been a subscriber of TEXAS GAME AND FISH for many, many years and thoroughly enjoy receiving it each month. However, for a long time I have had some suggestions which I think would make it even better.

Just for example, let's take the November, 1960, issue:

1. The Big Game Season opens in Texas November 16. It seems to me that this would be a wonderful time to have something about the season; something about the white tail; something about the turkey; etc. However, I find the November issue silent on this matter. You do have a turkey on the cover, but this is it.

2. I have noticed from year to year that the little dope that you publish in TEXAS GAME AND FISH concerning the October hunt for antelope comes out in the magazine after the hunt is already over. I think it should come out before the hunt begins.

3. Now let's take one of the articles in the November issue, and it will be typical of most of the other articles—"Elk Census": You really had the chance here for a wonderful story and one that all hunters are interested in. However, you devoted only six paragraphs to it. Mr. Tiller stopped his writing before he had hardly finished his introduction. I think it would have been nice to have let him finish the story. He calls the story "Elk Census." However, in none of the six paragraphs does he tell how many elk are estimated to be in the area. How long have the elk been there? Where did the original elk come from? How are they doing? He states that there is to be a season December 1-8. How are the permits to be issued? How does an interested hunter get in on the deal? How many elk are going to be killed? These are some of the questions that immediately run through my mind.

Maybe in writing these very short stories, space is a factor. For my part, I had rather have one really good story and have it complete, than to have merely the introduction to three or four.

I for one would like to see a good story

concerning the mountain sheep located near Van Horn. Also, I would like a good story on the Barbary sheep that were placed in Palo Duro Canyon about two years ago.

As previously stated, I certainly like TEXAS GAME AND FISH and merely offer the above thoughts for what they may be worth.

Rob O'Hair
Coleman, Texas

(Believe it or not, we like to get a letter once in a while like yours. We get hundreds of letters telling us how good the magazine is, and sometimes we might get to believing it so thoroughly ourselves that we overlook some basic things we should do. For this reason, your criticism was well taken; I have discussed this matter with the staff, and we will try to analyze each story more thoroughly as a result.

(It isn't much of an alibi that we have more than twice as much work as we can take care of, but that shouldn't stop us from constantly attempting to improve the quality of the magazine.—The Editor)

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are broadly distributed among all occupations or whether they are predominantly made up of outdoor workers, office workers or some other classification.

"The complete final report in the Survey is expected to be released in September.

"As I mentioned earlier, a tremendous resource supports our salt water angling activities. But if it is to be maintained in a healthy condition, we're going to have to better understand the resource, its requirements and the threats which face any segment.

"With respect to the last, you are aware of the estuarine problem. Many important commercial and sport species are threatened by man's activities in this portion of the marine environment. Investigations to appraise the causes and scope of this problem and to develop means to control them are of great importance and are now receiving attention.

"But this is only one phase of our marine research task. We must develop a system of collecting and reporting marine game fish catches on a current basis. We must produce methods of sampling to measure abundance. We must know details of life histories for the most important species. We must be able to define the populations and subpopulations of these species as well their patterns of distribution. We must come up with knowledge which will permit us to introduce species in areas where they will add to the local sport fishery without conflict with those species already present.

"And if we are going to manage the coastal marine sport fisheries most effectively, we must learn how to improve habitat wherever it is economically feasible.

"We also must learn how abundance and occurrence of desirable species are affected by temperature, rate of food production, abundance of predators and competitors, and changing patterns of sea currents, and to establish systems of gathering necessary data bearing on these factors.

"We must enlarge our knowledge of the ecology of fish at early stages, including the factors influencing their survival, by working with experimental culture of eggs and larvae and of small plants and animals of the plankton.

"There is also an urgent need for toxicologists and pathologists to study marine environments to learn the effects of waste products, determine the causes of poisonings of fishes and secure an understanding of the diseases and parasites involved in different situations.

"An informed public which understands these needs and vigorously supports the research required to solve the various problems is the essential ingredient in the conservation formula.


"By working together—all of us—angler, scientist, government worker, industrialist—we will get the important research effort where all resource management begins." **

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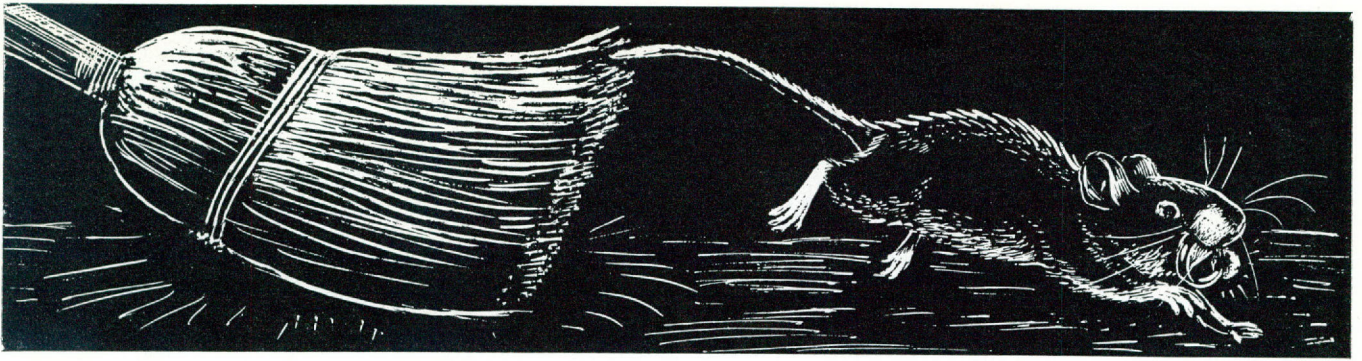
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Pack Rat Pete

by CAROLYN McWILLIAMS

The sun was making long, finger-like shadows across the pasture when Andrew finally started back toward the cabin.

A sudden rustling in the leaves near the base of an oak tree caught his ear. "A snake!" Andrew thought. "No, it's too small for a snake," he decided as he took a cautious step forward.

"A baby rat! That's what it is," and with that, Andrew ran to the tree. Sure enough, snuggling into the deep leaves was a tiny baby rat. Andrew knelt and picked it up gently. "Little fellow, I'll bet you're cold out here all alone. Where did your mother go?" Andrew crooned as he stroked the tiny animal.

At that moment, the cabin door opened and Uncle George stepped out into the twilight, calling, "Andrew, time to come in now."

"Hey, Uncle George, look what I found. It's a little rat and I'm going to raise him as a pet and he was all alone and cold and I've named him Pete and . . ." Andrew's words and ideas tumbled over each other in his excitement.

"Hold on now, boy. Slow down and start over again," his uncle laughed. Hearing Andrew's story and seeing the small rodent that now occupied the boy's jacket pocket, Uncle George's smile faded. "Your mother isn't going to like the idea, I'm afraid. She isn't on speaking terms with many rats, you know. Maybe we had better rig up a cage out in the woodshed and keep him a secret for a while," Uncle George said slowly.

For the next six weeks, Andrew kept Pete out of sight. This in itself was a feat, for the lively rodent grew quite rapidly; and as he grew, he developed a number of mischievous habits. Hearing Andrew approaching with his evening meal of seeds, lettuce leaves, and carrots, Pete would hide above the door. When Andrew entered the woodshed, Pete would immediately pounce on his back. Andrew was surprised the first time this happened but now he was used to this unusual

greeting from his little friend.

Another habit Pete had was hiding things—his water dish, bits of string, chips of wood. Once when Andrew had left his pocket knife on the window ledge, Pete had even hidden that.

Uncle George laughed when Andrew told him of finding his pocket knife on top of a rafter in the woodshed. "That's because Pete is a pack rat," he explained to his nephew. "He will hide about anything he gets his paws on."

One night Andrew decided he would let Pete spend the night in the house. But instead of curling up and going to sleep, as Andrew had seen him do many times before, Pete became more and more lively as the night wore on. Andrew finally dropped off to sleep from exhaustion.

Next morning, Mother discovered her diamond ring was missing. Andrew nearly choked on his oatmeal, as he and Uncle George exchanged uneasy glances. "I'm sure I left it in my jewelry box," she declared.

At that inopportune moment, Pete gamboled across the room and hopped onto the shelf that held the cookie jar.

Mother let out a shriek and grabbed the broom to swat him.

"Stop, mother, he's my pet. My pet!" Andrew yelled. But the chase was on. Around and around mother swooped, chasing bewildered Pete until he finally sought refuge under the sofa.

Mother insisted on turning the couch over to get to him, but Andrew did have an opportunity to explain about him.

"So he's a pack rat, huh. Well, now he's packed off my ring, and he's going to pay for it," she said as she upended the sofa.

Poor Pete cowered in the corner. Just as Mother lifted her broom above her head, something bright and sparkling caught her eye. "My ring," she cried, forgetting Pete momentarily. "There's my ring caught in the springs of the couch. I see it glittering."

She tried in vain to reach the place where it was lodged, but the springs were too close together and she could not get to it. "Come here, Andrew, your hand is smaller than mine. See if you can reach it." But he couldn't either.

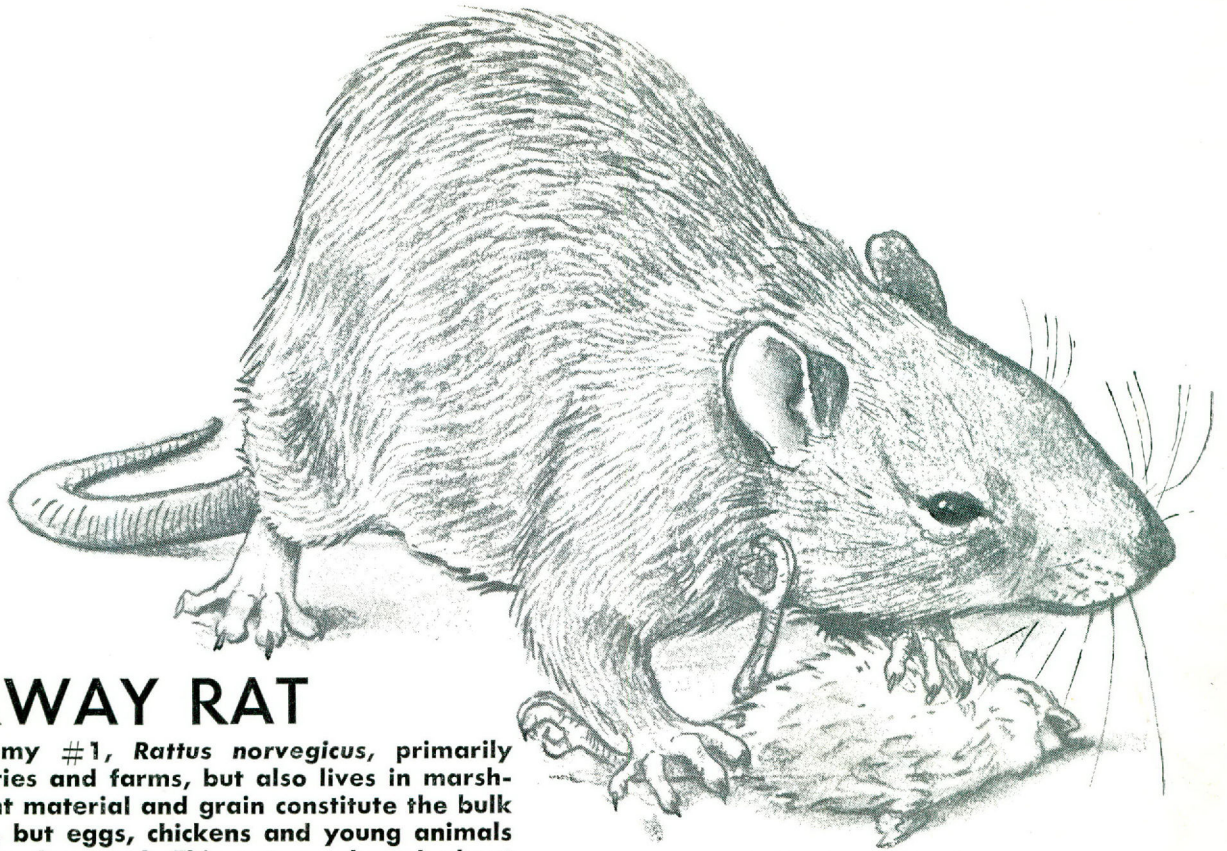
By this time Pete was becoming curious. Cautiously he approached the couch. Seeing the sparkle deep in the recess of the springs, he dove into the coils and brought out the shiny ring for closer inspection.

Mother took the ring from him, and petted the little black rodent on the head, saying, "Pete, you're the nicest rat I've ever met. You are welcome to be Andrew's pet as long as you live."

**Junior Sportsman
of the month
DICK STANDEFER**



Eight-year-old Dick Standefer of La Marque caught this eight pound, two ounce speckled trout in Galveston Bay, to win the 1960 Texas City Jaycee Tackle Time contest. As the ruler indicates, the fish measured 27 inches.

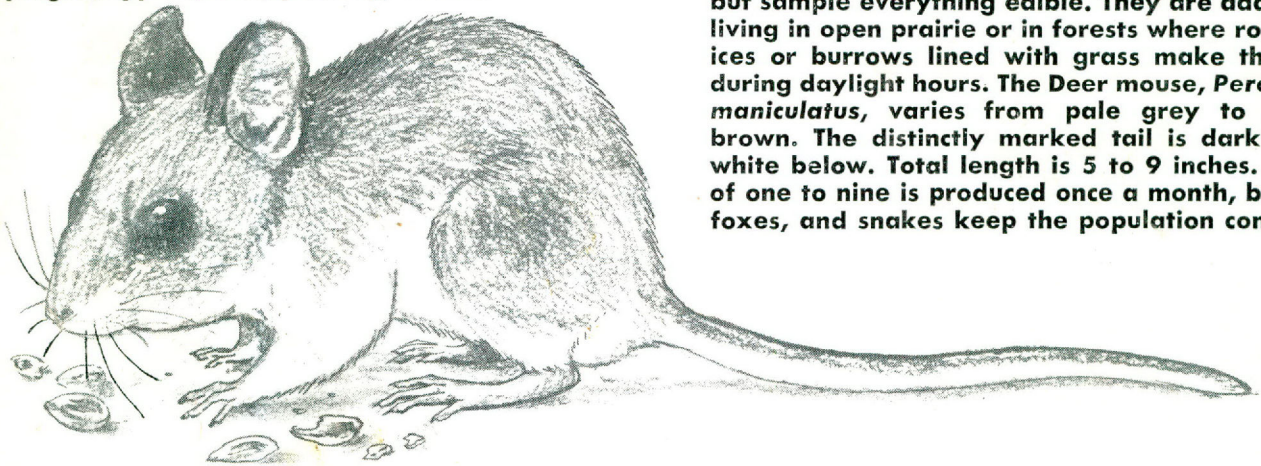


NORWAY RAT

Public enemy #1, *Rattus norvegicus*, primarily inhabits cities and farms, but also lives in marshlands. Plant material and grain constitute the bulk of its diet, but eggs, chickens and young animals are readily devoured. This rat can breed about every two months, with up to 14 babies in a litter. Its life span is about three years. Some diseases communicable to man from this rat are bubonic plague, typhus, and, possibly, rabies.

DEER MOUSE

These little camp pests do not believe in sticking to the regular mouse diet of seeds, bark and grass, but sample everything edible. They are adapted to living in open prairie or in forests where rock crevices or burrows lined with grass make their bed during daylight hours. The Deer mouse, *Peromyscus maniculatus*, varies from pale grey to reddish brown. The distinctly marked tail is dark above, white below. Total length is 5 to 9 inches. A litter of one to nine is produced once a month, but owls, foxes, and snakes keep the population controlled.



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