



Texas Game and Fish

FEBRUARY 1962 20 CENTS

WHEN FRIGID AIR moves in from northern ice packs and chills our shallow bays, tropical game fish run for deep water and refuge from the numbing cold. Fishermen who dare to brave the cutting winds, bundle up in cold weather gear and swarm the canals, basins and other known deep water. Here in the peace and quiet, chilled sportsmen tempt these desperate fish with tasty tidbits.

Generally, the stringers fill quite rapidly. In this scene, taken from the jetties jutting out from the beach at Corpus Christi, two huddle and one fishes. Beautiful Harbor Bridge stretches across the ship channel in background, outlining the tall, sleek palms.

All, silhouetted distinctly by a slowly setting sun.—
Photo by Kazuyoshi Gunji, Corpus Christi Caller-Times.





UNRECOMMENDED RODENT: The nutria swindle has made headlines again after a lapse of a few years. A federal court convicted two men for use of the mails to make fraudulent statements in the sale of nutria. The nutria is by no means the money-making furbearer that its promoters claim it to be. It is, in fact, a dreadful pest with fur of only moderate quality, in no way comparable to beaver or muskrat, much less mink. Its destructiveness includes damage to crops and irrigation ditches. It also destroys prime duck food and competes severely with the muskrat, which is a valuable furbearer.

INCENTIVE FOR INVENTORS: Prizes of \$500, \$300, and \$200 are being offered by the Frederick, Md., chapter of the Izaak Walton League for plans for a squirrel nesting box that can be marketed at a low cost. The League is looking for an aesthetic as well as utilitarian box that can be placed permanently in trees. The purpose is to encourage the propagation and maintenance of squirrels as a popular small game animal. Details are available from Squirrel Box Contest, Frederick Chapter, Izaak Walton League, F.O. Box 561, Frederick, Md. Young people in the Boy Scouts, 4-H clubs and high schools are urged to enter the contest.

DUCK STAMP EXPLANATION: A new booklet prepared by the U.S. Fish and Wildlife Service for stamp collectors should be of considerable interest to sportsmen. Entitled "Duck Stamp Data: Background and Technical Information for Collectors," the booklet pictures and gives details about each of the 23 Duck Stamps that have been issued since the program to get dollars to help buy essential wetlands for ducks and geese was initiated in 1934. The text tells the need for the program and how it began, comments on waterfowl legislation, tells how the stamp designs are selected and the stamps printed and explains how the funds are used to benefit waterfowl. Copies may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C., at 30 cents each. Ask for Circular 111.

BATTING FOR OLD BALDY: The bald eagle, which serves as our national emblem and appears on the Great Seal of the United States, is the object of an intensive study by the Audubon Society to learn why the eagle population is declining. Fewer than 5000 eagles are believed to inhabit the U.S. today. An alarming number of eagle nests are not producing the young they should. It is illegal to shoot the birds. The eagle's diet consists mainly of fish, and for that reason, they are found mainly in coastal states or those containing large rivers, lakes and reservoirs.

DYE AIDS STUDIES: The U.S. Fish and Wildlife Service has found that using dye is the most practical way of marking shrimp for biological studies on growth and migration pattern. Most of the recaptured marked shrimp are taken by commercial fishermen, and the Service has devised ways of getting them to note the time and place of capture of the dyed shrimp and to send in the information. Radio spots and posters are favorite methods of making the fishermen aware of the importance of their cooperation. Reports attest to the success of the effort.

CCC SEEKER: Travis Lafferty of 2801 Frye Street, Oakland, Calif., is collecting material for a book on the Civilian Conservation Corps, and would like to contact men who were part of the program. Veterans of the CCC should contact him at his home.

SLICK TRICK: When using eels as bait, a good tip for handling these slick individuals is first to drop them in a sack of sand. Coated with sand, one can be held long enough to put a hook through its tail.

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.

FEBRUARY, 1962

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★ In This Issue ★

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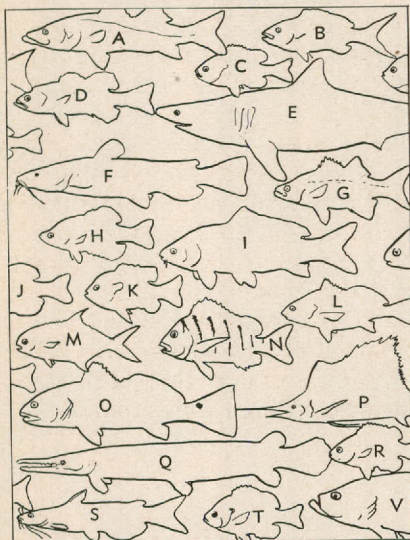
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THE COVER



An assortment of both fresh and saltwater fish is presented in this month's cover painting by Charles Beckendorf. They were not intended to be technically correct. A. snook B. yellowtail snapper C. red-breasted sunfish D. black bass E. mako shark F. flathead catfish G. white bass H. white crappie I. carp J. black crappie K. long-ear sunfish L. spot M. pompano N. sheepshead O. redfish P. sailfin Q. alligator gar R. unidentified sunfish S. channel catfish T. bluegill V. tarpon.

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Goodbye Winter,

Hello

Spring

DOCUMENTS DEPARTMENT

MAY 19 1962

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by HOWARD D. DODGEN
Executive Secretary
Game and Fish Commission

FEBRUARY IS ALWAYS an interesting month for the outdoorsman. It is the time between halves as a football fan would think of it. Or maybe the time for meetings of the sportsmen's "hot stove" league.

Many a hunting story is improved upon by its retelling in February. The old buck killed in November now has gained 20 pounds, has sprouted four additional points and is standing a full 100 yards farther away than when he was actually shot.

Old Joe, the favorite pointer, is remembered for the steady points he made, and his never-failing accuracy in picking up the dead and crippled birds. The times he busted the covey or refused to look for the downed bird, have been forgotten, at least no further mention will ever be made of it. It is a wonderful thing how soon Joe's master forgets the rabbits he chased and remembers only the points he made.

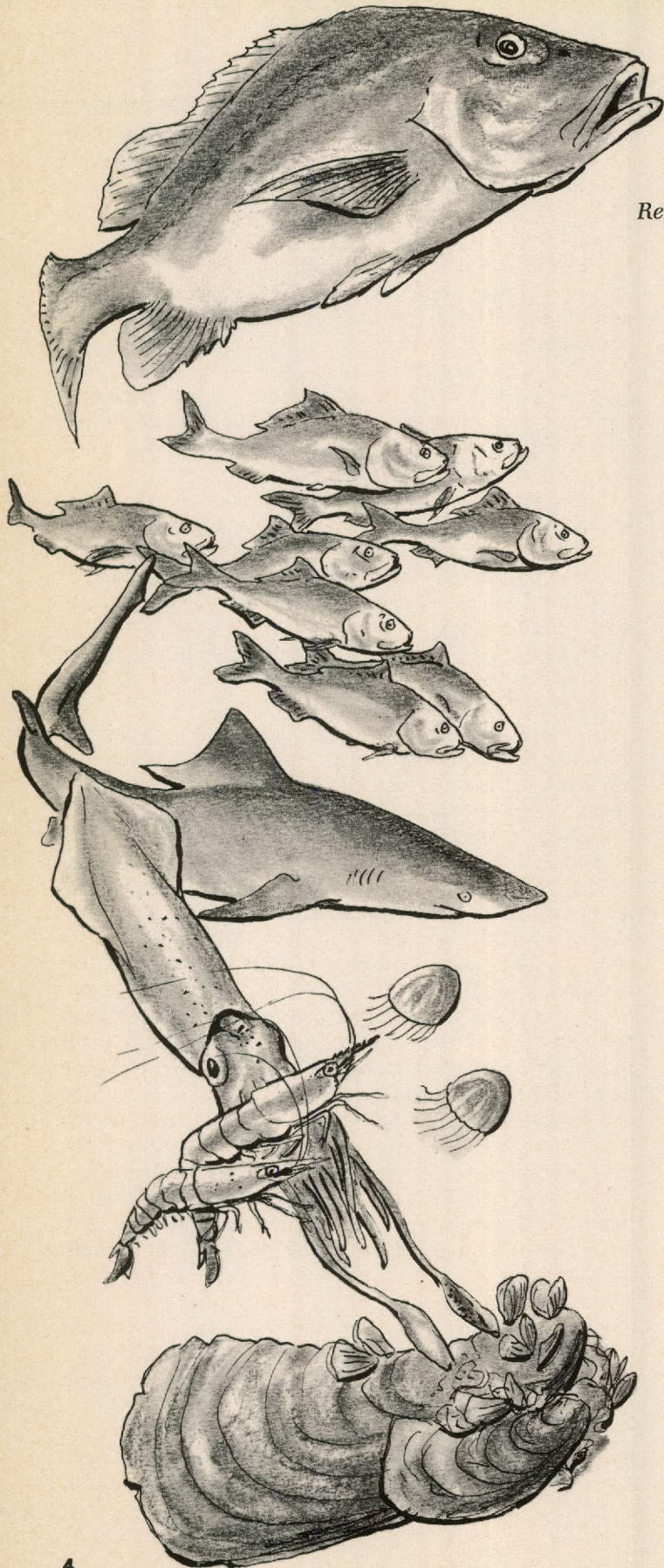
As this month wears on, the fireside conversation will turn more and more to the months to come. It is a good time to open up the tackle box, rearrange the contents, clean the rust off the hooks, take the reels apart, clean them and put them together again. There will be dropped screws and the usual trouble getting the parts back in their right places, but it's fun. All this is part of the anticipation of a fishing trip on the first warm weekend. The fellow who said "Anticipation is greater than realization," probably had something. By the way, the "hot stove" fisherman had better try his line for strength.

February is a short month. It soon fades away with the approach of the March winds which whip the air clean, dry out the wet places and sometimes spread dust from over-worked land across the face of Texas.

Yes, February is a month of exit and entrance, all rolled into 28 days of expectancy. It is the month to get rains to improve the condition of the land, to put season in the ground. These rains also can refill the streams, lakes and stock tanks over the entire area.

But we'll be glad when March rolls around. **

Natural Resources of the Sea



Reprinted from JOURNAL OF SOIL AND WATER CONSERVATION
Volume 16, Number 5, September-October, 1961

by LOUIS S. KORNICKER*

WHAT IS BEING DONE to insure that future populations will harvest from the sea the vast quantities of food that will be required? The many state and national conservation agencies and international commissions may be adequately regulating established fisheries, but these fisheries are not likely to supply more than a small part of the additional seafood requirements of a rapidly expanding population. Conservatory measures and regulating agencies are usually established after current fishing efforts have materially decreased yields. Though regulatory agencies in many instances have been able to raise the yield back to the level existing prior to the period of overfishing, and occasionally a somewhat higher yield has been obtained, one must, however, look elsewhere if the current annual 33 million ton harvest of seafood is to be doubled or tripled.

Natural-resource programming in the sea, which has more or less been restricted to the regulating of established fisheries, should be expanded to include development of new and unexploited resources. In some instances, potential resources are known, but for one reason or another have not been developed. For example, only 2 percent of the world's seafood production comes from the southern hemisphere, although the fisheries potential there is probably as great as that of the northern hemisphere. If commercial development of the fisheries is not feasible at present, adequate studies should be carried out so that when world food requirements make exploitation of southern hemisphere fisheries mandatory, it will be possible to develop them rapidly and efficiently.

Increasing Fish Yields

Just as certain geographic areas have been fished more intensively than others, certain water depths have been fished more intensively than others. Commercial fishing has generally been confined to the water surface

*Louis S. Kornicker is a geologist with the Office of Naval Research, Department of the Navy, and is headquartered at Chicago, Illinois. Views expressed in this article are those of the author and not necessarily those of the United States Navy.

This article, slightly revised, is the text of the author's presentation at the December 1960 meeting of the American Association for the Advancement of Science, Section E, Geology and Geography.

or the sea bottom. Recent trials, using a mid-water trawl, indicate that fish in sufficient quantities to support commercial fisheries live at water levels between surface and bottom. Fish life at mid-water levels certainly warrants more intensive study than it has received.

Another area that warrants accelerated study is the fisheries potential of the deep oceans. Early fisheries were developed close to the home base where water was sufficiently shallow to manipulate nets and lines by hand or with simple mechanical help. Recent fishing trials carried on in water deeper than the usual commercial fishing depths revealed a sufficient number of large tuna in one area to suggest that the deep ocean may have potential as a food source.

The food potential of the major ocean currents, especially the newly discovered currents moving below and in opposite direction to the long known surface currents, demands more intensive investigation. These currents may serve as travel lanes for migratory fish and prove to be of considerable importance to the development of fisheries for migratory species.

In addition to development of fisheries in their natural environment, it is entirely probable that in the future man will be able to exert greater control over fish. There is some indication that fish will eventually be in the same category, production-wise, as are cows, chickens, bees and the many other animals raised by man.

Fresh water fish are raised today for commercial use in ponds under controlled conditions; it takes no great leap of the imagination to conceive of a fenced-in marine lagoon or bay in which salt-water fish are raised.

Salmon spend their youth in a fresh water stream and then travel to the sea. As adults they return to the same stream at spawning time. This behavior of the salmon is used to advantage by stocking streams with fingerlings and then catching the adults when they return from the sea. Eventually it may be possible to use this technique on other species.

Some work has been done in creating artificial environments for fish. The red snapper is a commercially important fish that concentrates around reefs and rock ledges. A large number of old automobile bodies have been dumped into the sea in the Gulf of Mexico, off the Texas coast, and in other areas, in order to attract the red snapper.

These are but a few examples of instances where man has been able to exert greater control over fishing through knowledge of fish behavior. As more is learned about what takes place in the sea by means of both basic and applied scientific investigations, man will come ever closer to intelligent control over the fishes. Ultimately, it should be possible to upbreed fish stocks in order to improve the yield or nutrient content.

A simple way by which existing fishery yields could be increased is by greater use of the so-called "trash" fish. These are fish that have little commercial value and are often discarded when they show up in a fisherman's net. Trash fish are being used increasingly in animal feeds and fertilizers, but many species would assume commercial importance as human food if people

would accept them. With a tightening food supply individuals will perhaps have to be less selective.

Mollusks and Crustaceans

About 16 percent of the total sea food production comes from mollusks and crustaceans. At present, it appears doubtful that yields from the harvests of these animals can be materially increased. Oysters flourish within very narrow environmental boundaries. They form reefs in shallow water close to land where the salinity is sufficiently low to discourage oyster predators, such as starfish and carnivorous snails. The closeness to land makes oyster reefs quite vulnerable to destruction by over harvesting and various factors that follow industrialization, such as dredged channels, oil spills from ships, and general pollution. Natural reefs near populated areas are dwindling, but yields are being maintained in part by oyster farming. It seems likely that as the coastlines become more populated and industrialized, the areas suitable for oyster farming will decrease, until eventually they will survive only in specially designated areas and will not be harvested in sufficient quantity to be a major food source. Unless greater effort is made to maintain bays in a natural condition, the pressure of increasing population and industry will eventually lead to the destruction of all except the more hardy forms of animal and plant life. In the southern hemisphere, oysters are not being harvested to capacity; it should be possible to maintain current world yields for many years by developing these oyster beds.

Clams are in somewhat the same position as oysters. However, they are less vulnerable in that some edible varieties flourish in the deeper offshore waters. Even these varieties could be easily wiped out with modern dredging techniques which suck clams off the bottom like a vacuum cleaner removing dust from a rug.

The harvest of mollusks could be easily increased. Many species of clams and snails that could be commercially important are not eaten; other species are eaten in some parts of the world but are not popular elsewhere. The mussel, for example, is extremely popular in Europe, but is seldom eaten in the United States. Another example of a mollusk popular in one area and not in others is the squid. The Japan squid fishery catches about 600,000 tons of squid annually, but they are eaten exclusively only in southern Europe and in the Orient. The possibility of developing squid fisheries in other areas of the world should be investigated.

Most commercial species of shrimp spend part of their life in shallow bays and lagoons; therefore they are vulnerable to destruction if the bays should become uninhabitable. The shrimp spend the early part of their life in shallow water and then migrate to deeper water where they grow to maturity and reproduce. There has been some success in fencing-in shallow areas containing young shrimp and then harvesting them after they mature. Unfortunately they do not reproduce in the shallow water area, thus it is necessary to restock the fenced-in area annually. Several laboratories have been successful in the artificial propagation of shrimp in

• Continued on Page 25



Walter Sandifer, dog trainer for the King Ranch, highly recommends cactus fences for quail cover.



Prickly pear is transferred from the range lands to the fence rows where it is scattered.

Prickly Pear Fence

by L. A. WILKE

CACTUS, GENERALLY known as prickly pear, has been put to use on the King Ranch in South Texas in more ways than one.

The first useful purpose of the pears has resulted from burning the thorns off them for feed for cattle, during drouth years.

However, on the King Ranch hundreds of miles of fence line are planted with pear pads of the common variety of South Texas; i.e. *Opuntia lindheimeri*. Experimental work also has been going on with specimens from both Mexico and Hawaii. The pears along the fence not only afford a good barrier against livestock, but provide food sources and protection for birds.

The pear "tunas," according to Val Lehmann, wildlife supervisor of the ranch, provide bobwhite and scaled quail with both food and water. They also are readily eaten by numerous other species, including white-winged doves, mourning doves, white-tailed deer, javelina, wild turkey and many varieties of song birds.

When fences are built on the ranch, especially those along highways, cactus is plowed up and planted in deep furrows along the fence line. It sprouts from the joints when covered with dirt. **



Once cactus pads are distributed along fence it grows very rapidly.



Quail find food, shade and protection from predators in spined plants.

H. C. BOEK of Victoria was wading the flats in Copano Bay, casting a spoon for redbfish. He had just whipped down a bullish five-pounder, and was preparing to slip a net under the fish. Just at that instant, the other reds on his stringer started gliding around in a wide circle. First they wrapped the stringer around both of his ankles, and then crossed over and snagged the spoon holding the redbfish. The monofilament snapped, of course, and the big red got away.

Boek looked for a long time at the fish on the stringer, the live bait box tied to the other side of his belt, the spoons and plugs clipped to his hat, and then the assorted corks, hooks, swivels and sinkers stuffed in his shirt pocket.

"There's bound to be an easier way to do this," he decided. And so he built what he calls a Wad-A-Bag.

It is a roomy sack for keeping fish, an inner sack for live bait, and a dry box big enough to hold lures, tackle, cigarettes, matches, wallet and just about anything else needed for wade fishing.

The thing resembled a toy steam boat. The bulk was made of styrene and marine plywood and weighed less than two pounds. He dropped a rust-proof plastic screen bag off the sides of the "boat" to form a sack big enough to keep 25 or 30 trout or several big reds alive and kicking.

The fish can be placed in the bag through a trap door near the "stern" of the boat. Boek installed a two-way spring hinge to hold the door closed tight. The bottom of the bag is anchored by three small sinkers, to keep the bag stretched open and also to serve as a keel.

On the opposite end, another hatch and trap door opens up into a smaller, inner bag, where a quart or more of live shrimp or mullet can be kept.

In the middle of the boat, resembling a smoke stack, is a dry compartment for storing tackle and other odds and ends. The hooks of his lures can be inserted into a ring of styrene in the four-inch tube to keep the tackle tangle-free.

Ordinarily, the whole affair is trailed easily from a short length of twine tied to Boek's belt. When Boek

What a

WAD-A-BAG

by PAT WITTE
Victoria Advocate

is through for the day and walks back to the car, he knots the twine through an eye at the stern of the boat for easy packing.

A plastic, rust-proof zipper in the bottom of the fish sack provides an easy access to the catch.

Boek also has designed special wading shoes. They're built on the order of snow-shoes, but on a smaller scale. Their width makes it easier to walk on boggy bottoms, something ideal for floundering and wade fishing.

Another Boek gadget is the Wad-A-Pail, an ordinary plastic pail converted to a fisherman's use. It has a tight fitted top, and holes drilled around the sides for a free flow of water. Plastic containers on the top keep lures dry and within handy reach.

Boek says he gets most of his ideas while he's out fishing. All of us at

one time or other find ourselves in some involved task and wonder why someone doesn't invent a gadget that would make the job easier. The only difference is, Boek does something about it.

Some of his ideas carry over into the field of photography. Once several years ago his photo dryer went out, and he rigged up a device of his own that made the machine work better than it had originally. A salesman for the company making the dryer admitted as much.

Shortly afterward, on his next trip through Victoria, the salesman offered to take Boek out to dinner and buy him "the biggest steak in town."

Boek was more than willing, but couldn't help wondering why.

"Well," the salesman admitted, "it's the least I can do. The company gave me a \$1,000 bonus for that idea of yours." **

The Wad-A-Bag is a combination fish sack, bait box and tackle box, designed especially for wade fishermen. Fish go in the trap door at right, fall through the plastic screen sack below. Hatch at left opens into an inner sack for live bait. Tackle goes in dry box in center.



IT IS GENERALLY BELIEVED that insects appeared during the Carboniferous period and that roaches reached the peak of their development many centuries ago. Beetles are, perhaps, only coming into their prominence during this jet age. No doubt, insects greatly exceed the number of all other living animals. This is easy to believe for those who have tried to fish or hunt in an area heavily infested with mosquitos or chiggers. Approximately 650,000 species of insects already have been named. Probably a million species are yet to be described.

In connection with this the Department of Entomology at Texas A&M College has an outstanding collection of insects. More than 300,000 specimens in the collection came from right here in the state. This number represents 11,000 species and 3,000 genera.

Local workers of the past and present have contributed to an accumulation of insect specimens which now constitute the present collection. Gathering these has developed over a period of 40 years under the direction of H. J. Reinhard, now professor emeritus. The entire staff, including graduate and undergraduate students, contributes by collecting insects and recording data on location. H. R. Burks, assistant professor of entomology, now is in charge of the collection.

The primary function of a taxonomist in the field of entomology is to name, describe or identify an insect which has become a subject of

interest. All basic research in entomology at the outset requires an accurate determination of the species under consideration, which means the application of a binomial, or scientific name. This name is the key which opens the door to all previously recorded information concerning the insect. Some have common names which may be good for a local area, but have no world-wide meaning.

Many insects have been studied, described and named by "hobby" or amateur entomologists. Numerous doctors and lawyers, as well as mem-

bers of other professions, have become interested in a study of insects as a hobby and have greatly increased present knowledge concerning the habits, life history and relationships of many economically important forms.

One of the main purposes for the insect collection is to assist researchers in identifying the many specimens sent to the department. The collection affords an opportunity for both staff members and graduate students to do research in insect taxonomy and is a valuable tool used in



Calling All Insects

by J. C. GAINES
Head, A&M Dept. of Entomology

Praying Mantids are predacious, feeding principally on different forms of other insects.

teaching various courses in the field of systematic entomology. Also, it is used by researchers to study the distribution of various groups and the relationships between species.

An assortment of insects is sent to the department or its staff, by planters, ranchers, home owners and county agricultural agents for identification and suggestions for control. All specimens are referred to the taxonomy section of the department for identification. The information then is reported to a specialist, who in turn answers the inquiry and suggests control measures. This enables us to furnish correct names for insects without delay. Knowing the correct name of the insect, the entomologist can search literature for current research on the control of the pest.

Insects have an enormous reproductive capacity. However, this capacity is dependent upon an array of factors such as the number of eggs or young produced, duration of life cycle, weather, etc. Some authors have estimated that if one pair of flies was permitted to reproduce without any check, enough flies would be produced in one season to cover the earth 47 feet deep. Also, it has been estimated that 12 generations of aphids, from early spring to fall, would produce over 800 million tons. Some species of insects produce living young without the necessity of mating, while in other species, hundreds of individuals may develop from one egg.

Insects have the ability to eke out a living where man would fail and they can withstand extreme cold

temperatures, even endure severe desiccation.

The size of insects varies considerably. Some species are so small that it is difficult to see them with the naked eye while a few species of beetles found in the tropics measure 6 to 8 inches with legs and antennae outstretched. One species of moth found in Brazil has a wing expanse of 11 inches.

Parts of certain insects are often enormously developed, even to such an extent as to be a hindrance to the animal. Jaws of the dobson fly are exceedingly long. It is a dangerous appearing insect even though it is quite harmless. The immature stage makes excellent fish bait.

The study of beneficial and injurious insects is known as economic entomology, and would include seasonal history, control, reduction and possible elimination of destructive species as well as the propagation of the beneficial and appreciation of the beautiful and harmless species.

The damage caused by some insects to plants and animals is generally recognized by farmers and ranchmen, creating a demand for adequate control measures. However, many people do not realize the importance of beneficial insects.

Such insects are important to man and can be divided into several groups: (1) those yielding useful products, such as honey bees; (2) parasites and predators useful in the control of unwanted species; (3) those that pollinate crops; (4) those with an aesthetic value; (5) and those

which constitute an important source of wildlife food.

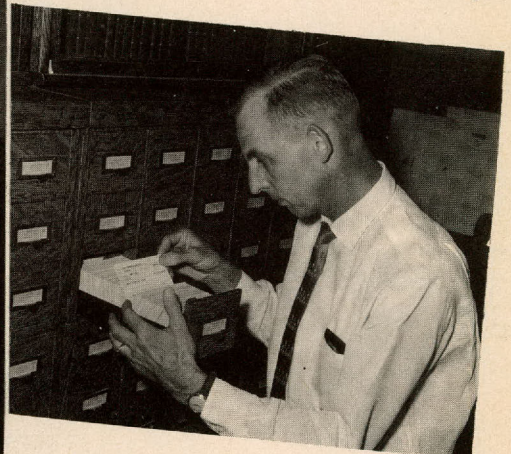
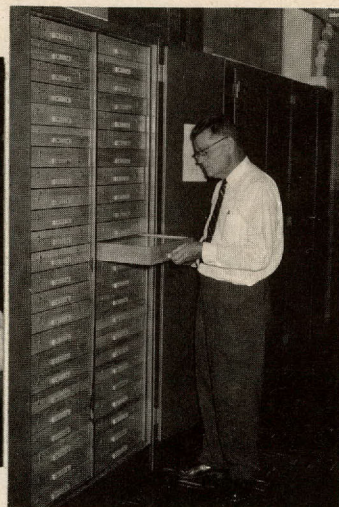
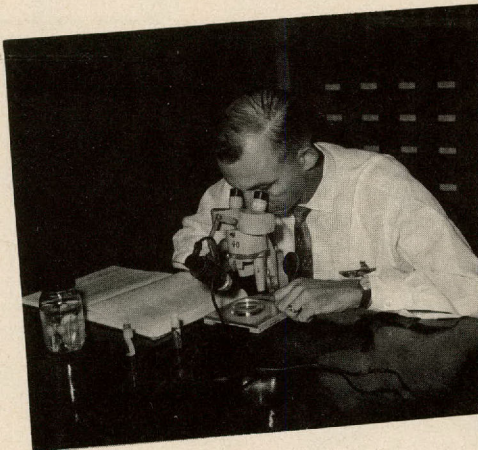
Parasites and predators help secure a balance in nature and assist in checking outbreaks of harmful insects. Since they are beneficial, all efforts should be taken to protect them in any chemical insect control program. Records indicate that over 100 important species of injurious insects have been introduced free from their natural enemies, into this country from foreign countries. In some cases the importation of their natural enemies has proved very successful in reducing the numbers of the pests. As early as 1888, Riley was responsible for introducing the vedalia beetle (lady beetle) from Australia to control the cottony-cushion scale in California citrus groves. Since that time hundreds of parasites or predators have been imported. Perhaps in 100 instances beneficial insects have been able to assist in reducing (in numerous instances completely controlling) infestations.

It has been estimated that insects furnish about 40 per cent of the food of adult fresh water fishes. Since Texas game fish feed at intervals on insects, artificial lures resembling this natural food have been developed as a means of catching them.

Other animals such as lizards, frogs, toads, moles, field mice and prairie squirrels are insectivorous and destroy great quantities of injurious insects. It is rather common to see toads under lights catching insects which fall within their reach.

The relation between birds and insects is important. The popular

• Continued on Page 27



Left, H. R. Burke identifying insect larvae. Center, H. J. Reinhard examines insects stored in steel cabinets containing 48 glass-topped cases with identified insects arranged in trays for comparative study. At right, Burke goes through card file on Texas insects.

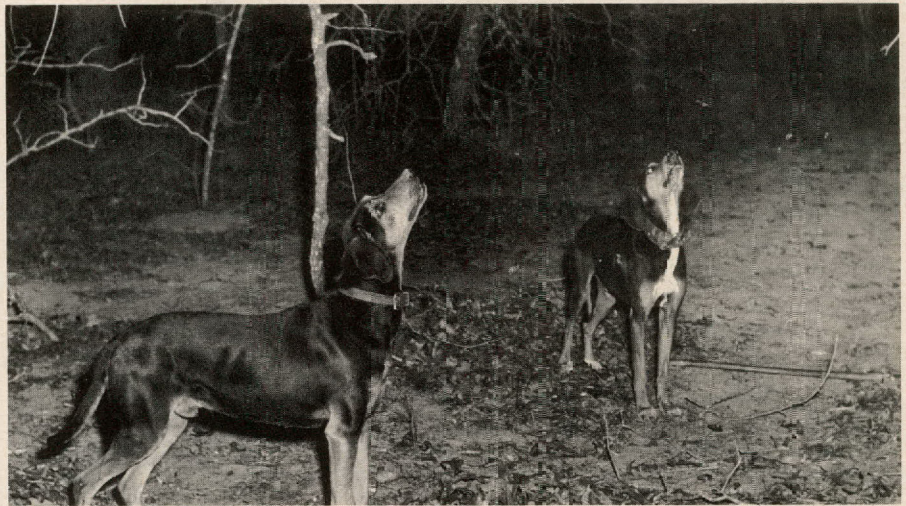
COON in ORBIT



1. From left, J. W. Chandler, Cecil Coleman and Lawrence Melenesk load dogs in pickup for trip to hunting area.

by HAL SWIGGETT
San Antonio Express-News

TAKE ONE PHOTOGRAPHER, one camera, one flashgun, several rolls of film and all the flashbulbs that can be stuffed into the coat and trousers pockets of that one photographer. Pour him gently in with five hunters, then while stirring slowly, add seven coon hounds. When the conglomeration is thoroughly mixed you have a photogenic coon hunt on the fire. As soon as the mixture starts to boil place in a river bottom. Now sit back and feast your eyes on the results. **



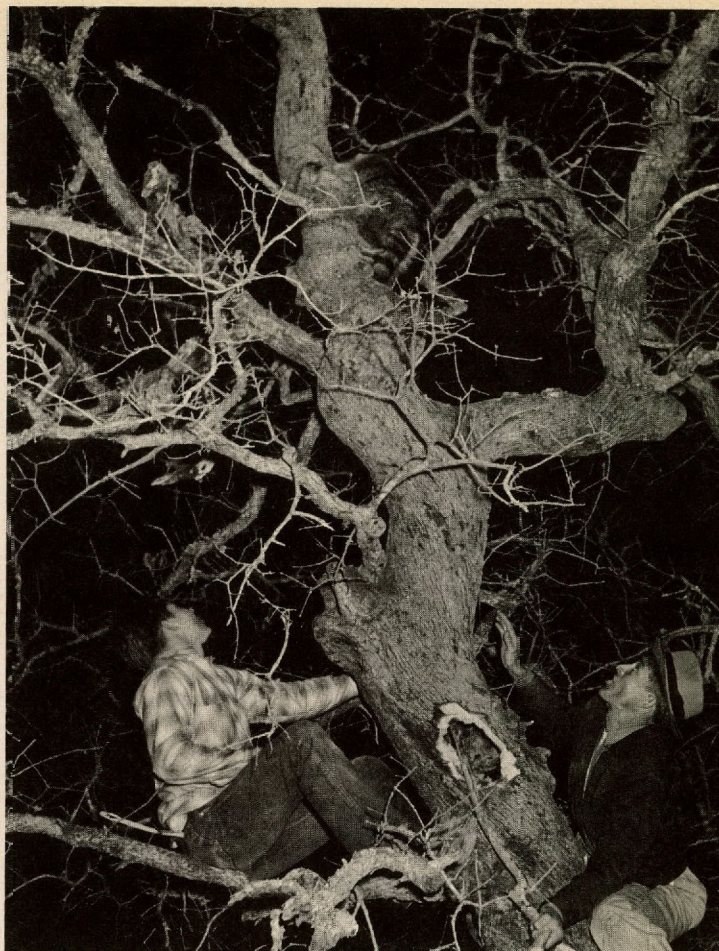
2. Two coon dogs halt beneath a tall tree and let the world know that there's a coon hiding somewhere among the branches. Now it's up to the hunter to get him out.

5. The coon hit the ground running with the dogs right on his tail. Some hunters prefer to let the coon escape.

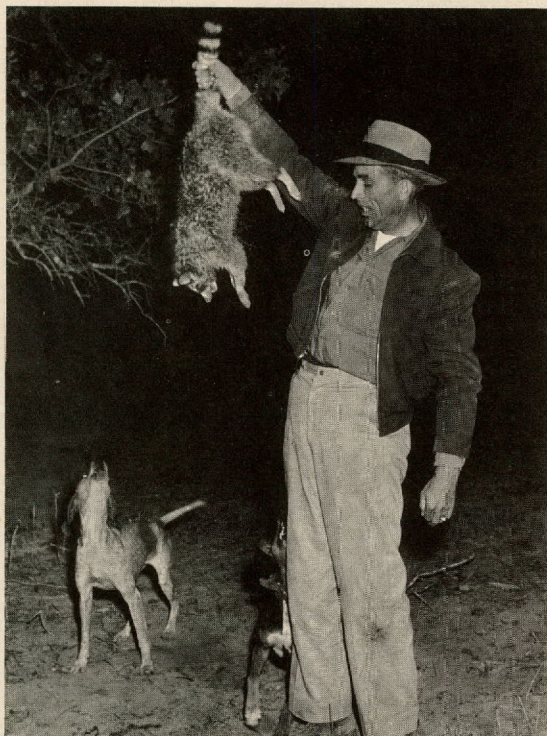




3. This is a case of coon in a hollow. The hunters were forced to chop a hole in the tree to get to the animal.



4. A long stick is used to poke the coon and force him to leave the hollow. This one leaped out of the tree onto the ground.



6. This time the dogs caught the coon, but not before a good race and a rugged fight. One coon can handle several dogs.



7. Most coon dogs have battle scars to show for their efforts. Old Blue had his ear ripped and mouth torn in a scrap.

Bayou Bandit

by ED HOLDER
Port Arthur News

DOWN AMONG the winding black waters of the bayous and creeks of Southeast Texas swims an outlaw fish that makes a habit of robbing lures, breaking lines, snapping cane poles, and leaving fishermen

gaping with open mouths and telling wild stories.

He's a snub-nosed bully that's known by more aliases than a character on the post office bulletin board.

He's called names like "cypress bass" and "cottonfish" . . . "speckled cat" and "mudfish." In neighboring Louisiana, he's called "choupique" (pronounced shoe-pick). Most Texans call him the "grindle."





H. M. Cross, Port Arthur, digs in the moss for fish hooked on line of Ray Fisher, Port Acres.

His real name is bowfin. But no matter what name you give him, and no matter where you meet him, he's always a pugnacious critter with a disposition that makes a black bass look like a baby nursery attendant.

His favorite haunt is the backwaters of bayous, stagnant sloughs, and shallow reservoirs. And his favorite trick is to smash into a bass lure, then dash off on a blistering run that snaps the line as if it were thread and leaves the hapless angler mumbling about his "record bass that got away."

It would be impossible to estimate how many of these "lunker bass" actually were bowfins. But it's safe to assume the figure would be high,

because a bowfin actually looks like a bass at first glance.

He's about the same color as a bass—olive green on the back, shading lighter on the sides to yellow-white on the belly, with back and sides slightly mottled.

And when he first strikes a lure, he fights a great deal like a bass, adding further to the deception. His first few runs, in fact, would actually put to shame a bass of equal size.

The average size bowfin caught in Texas would probably weigh only about two pounds. But five and six pounders are fairly common, and eight pounders are caught occasionally. There have been unconfirmed reports of 12 pounders.

The bowfin's speed and exceptional power are deceptive. You'd think by looking at him that he would have a difficult time getting off the bottom. He's shaped much like a catfish, with a flat head and round nose, and rounded body. And his tail is rounded. There isn't a sharp line in his design which would indicate speed.

Even his dorsal fin is merely one long line of fins which extend about half the length of his body. (This fin, by the way, is the most easily identifiable characteristic of the fish.)

In spite of his sluggish appearance, he can move fast. The fact that he feeds almost entirely on minnows and other fish helps explain the source of his speed. It also helps



Fisher holds up his six-pound bowfin.

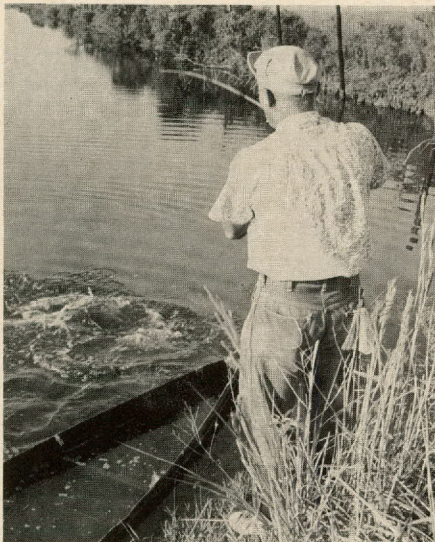
explain why he often hits bass lures.

He'll smash a spinner and skirt lure as viciously as a bass, and gobble up a plastic worm in the blink of an eye. But he'll rarely take a top-water lure.

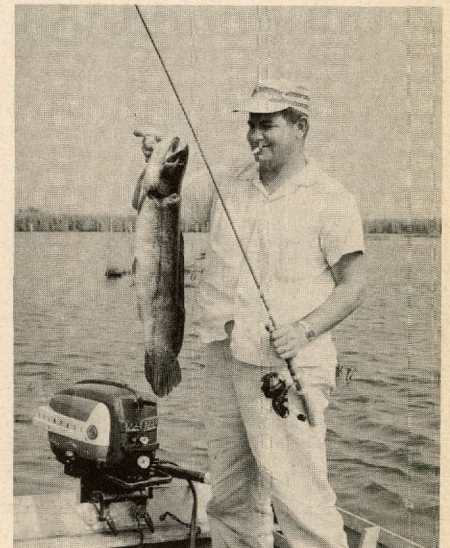
The bowfin has small teeth which closely resemble those found in most other fresh water fish. They're small, but numerous, and are located on the upper and lower jaws.

The tiny teeth are dangerous, however. Their tips are needle-sharp, and when scraped across skin under the pressure of the unusually powerful jaws of a bowfin, they can inflict a painful wound. Pliers, or a knife, should always be used to remove

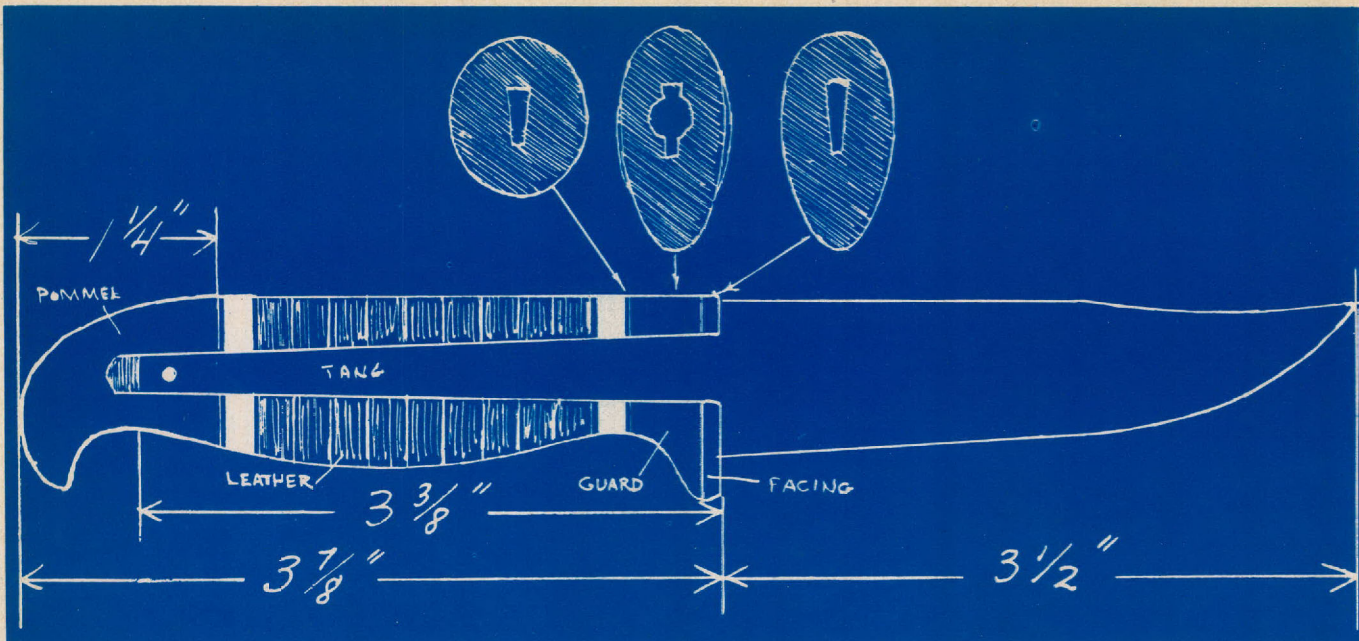
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Leon Laurentz, Beaumont, hangs on as his 3-pounder thrashes the water to a froth.



Bill Grisham, Port Acres, holds his king-size 9-pound fish caught in Big Hill Bayou.



Make Your Own Hunting Knife

by E. STANLEY SMITH

Reprinted from Nov. 1949 T. G. & F.

MAKING YOUR OWN hunting knife gives you the advantage of owning a knife fashioned from the finest steel and built to your own specifications. The handmade knife is always perfect for the guy who made it—or, at least he'll never admit it isn't.

Knives aren't costly to make. The material used can be obtained from scraps and odds and ends. Only a few tools are required:

1. power-driven grinder
2. assorted files
3. hand drill
4. hacksaw
5. knife
6. emery and sand paper
7. stove burner
8. vise

9. small piece 1/8-inch aluminum
10. piece of deer antler
11. bark tanned sole leather
12. Du Pont cement

Follow these steps:

1. Decide what kind of knife you want, determining the length and shape of blade and handle.

2. Cut a cardboard pattern, as in Figure 2, showing the outline of the blade and tang. The tang tapers in width from 1/16 inch to 7/32 inch and is 1/2 inch shorter than the hilt. The illustrated knife has a 3 3/8 inch hilt and a tang of 3 3/8 inches.

3. Choose a carbon steel file (this may be a worn out, broken one) that is as near as possible to the desired size and shape of the pattern. A knife file is best for this, but a flat file will do.

4. Grind file to shape indicated by the pattern, cooling your file occasionally in water. Excessive heat from the grinding will ruin the temper of your knife. Color marks the changing temperature: the steel turns yellow, brown, purple, blue, gray, and then red. Do not allow your knife to become more than brown, for if it becomes any hotter, it will be ruined. The tang end may turn to purple without harming the knife.

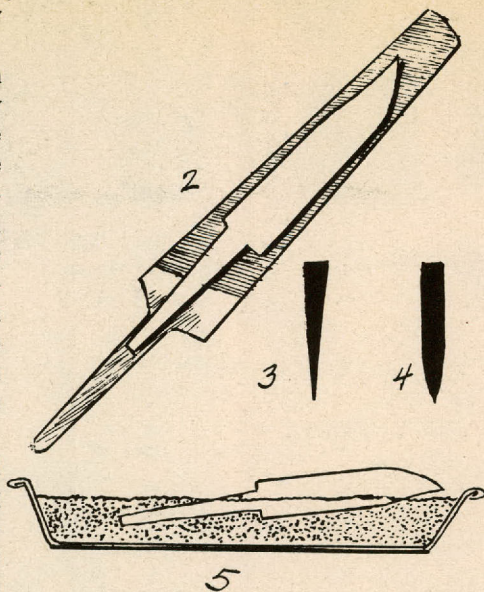
Now the sides of the file are beveled to form a sharp edge as shown in Figure 3. Don't round the sides as in Figure 4; this makes sharpening difficult and cutting a test of strength. After the first hour of grinding you will see why a knife file is best for this, but a flat file should be used. The grinding business is painfully slow, but when

it's finished the rest seems easy by comparison.

5. Remove grinding marks from blade with carborundum or emery paper. Tack the paper near the edge of the work table, then, holding the tang in one hand and applying pressure on the blade with the other, rub the knife vigorously over the abrasive. When scratches are removed, change to a fine paper, then to a finer one to bring the shine. The tang should be polished some so you can distinguish the color during the heat treatment.

Both the coarse sharpening and the preliminary fine sharpening should be done with a rotary motion of the blade and with the blade slanted away from the stone enough to give a long, tapering cross section to the blade. Begin at the blade tip and work slowly back toward the handle, always with the same constant, circular grinding motion. The final fine sharpening stroke should be in one direction, away from the cutting edge, in order to avoid a wiry or fuzzy edge. The two essentials, of course, are to keep the edge bevel angle small and to finish the sharpening on a fine oil stone or on leather.

6. To counteract the brittleness of the file, the temper must be drawn by heating it. To temper your knife blade, spread dry sand about an inch deep in an old pie pan, then place the knife in the sand on its back, cutting edge uppermost. Press the tang well into the sand and allow the tip of the blade to protrude slightly, as shown in Figure 5. This will cause the heat to be greater at the tang than at the other end. Place on stove burner. Watch the coloration—ideally, the end of the tang should become gray, varying into blue at the tang's center. The point where the tang and blade join should be purple and the entire blade brown, with a trace of purple at the tip. When these colors are achieved, remove the blade and allow it to cool gradually. It will continue to draw a little after being taken from the fire, acquiring a few purple streaks, but if it draws excessively, this action should be halted by immersing it in water. For maximum toughness, do not resort to this treatment unless necessary.



The normal purple markings that appear show the correct temper has been reached.

7. If the blade does draw too much, ruining its temper, you may salvage it by hardening it and drawing the temper again. Heat it to a cherry red, then drop it into water that has a thin oil coating floating on it. This may, or may not, work; the thing may warp to the shape of a long bow when you quench it.

8. The end of the tang must now be softened so that it can be drilled later. Wrap a wet rag around the center of the tang to protect the rest of the knife, heating the tip of the tang to a bright red color and allowing it to cool slowly.

9. Polish the entire knife with fine abrasive paper or cloth.

10. Select material for hilt. This may be leather, hard rubber, brass, copper, deer antler, aluminum, ivory, plastics, fiber or hardwood. The one illustrated is of aluminum, brass, hard rubber, deer antler and leather, but other combinations work as well.

11. Cut facing for the guard from a scrap of $\frac{1}{8}$ -inch aluminum. (Old radios are a good source here.)

12. Drill a row of holes in its center, then chisel out the connecting bits of metal between holes. This will form a rough slot, which *must* be perfectly fitted to the tang by the use of a needle file.

13. Cut a piece of deer antler to form the guard. If possible, cut this piece near the tip of the point where the pores are small. Shape it roughly,

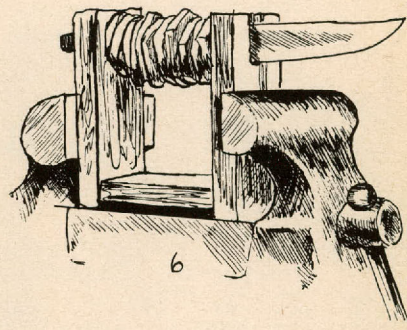
drill a $\frac{1}{4}$ -inch hole completely through it, and with a needle file cut a groove in both sides of the hole to fit the tang snugly.

14. Fashion a punch from a piece of steel with a cutting end the same size and shape as the end of the tang. This will be used to punch holes in the discs of leather and thin metal that form the hilt. Snip out a disc of thin aluminum (source—an old kettle), and lay it on a dead block or on the end-grain of a piece of hardwood. Place the punch on its center and rap it sharply with a hammer, knocking out a rectangular slug. By moving the punch to the end of the slot and striking it again the cut should be sufficiently lengthened to accommodate the tang.

15. Now, from a broken shotgun butt plate or some other source make a hard rubber disc by the same method used in fashioning the guard, and follow this with a thin brass disc.

16. The center portion of the hilt is built up of bark tanned sole leather. Do not use leather belting or chrome tanned leather. These discs are punched the same as the thin metal ones.

17. Top the leather with a disc of brass, then one of hard rubber and finally one of aluminum. All burrs should be removed from the various discs so that each lies perfectly flat against the next.



18. With a vise, compress the hilt and see exactly how many discs will be required. The tang must be filled to within $\frac{1}{2}$ -inch of the end, leaving room for the pommel or end of the hilt. (Figure 6)

19. Remove all discs except the first one and replace them in the proper sequence with a heavy coat of DuPont cement on the face of

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BB'S FOR

by CURTIS CARPENTER

HOW OLD should a youngster be before he is taught how to handle firearms correctly and safely? This is a question that many parents face at least one time each year. Don't get it confused with another question which concerns the proper age for a boy or girl to go on their first hunt.

Actually, it is a simple one to answer if parents are willing to invest just a little time and money. The equipment needed for the instructions are inexpensive and safe. I taught my two oldest boys the fundamentals of handling rifles in one afternoon. Just 30 minutes after they fired their first BB at the target, they were hitting the bull's eye. The oldest is seven and the other is five. I had about \$15 invested in the operation.

It all began when I decided it would be much easier to teach the boys how to handle a rifle than to explain repeatedly why it would be best for them to wait.

So, after some thought, I bought

a Daisy Air Rifle similar to the one I owned when a boy. It was light, had a hammer and a lever just like a regular Model 94 deer rifle. I decided to teach them safety and follow up with aiming and firing.

Youngsters are always anxious to shoot a BB Gun. They had rather forget about safety. Consequently, the most difficult phase of the training is convincing them that gun safety is very important. Once they accept this, don't ever allow them to forget it.

Throughout the training, keep them on their toes. Point out their mistakes, and explain why they are wrong. Don't ever let them get by with an error. If they get by once, they will do it again. Hunting safety is one habit every new hunter should have. And if he gets the habit at the very first, it will be hard to "kick."

I started out by introducing the rifle to the boys. I showed them all visible parts and explained their functions in the total purpose and

operation of the gun. While handling the BB Gun, be certain it is unloaded and relaxed, or uncocked. Explain the hammer, the sights, the lever and the safety latch. The air rifle we had was without a latch. Nevertheless, I pointed out that regular hunting rifles do have them and explained why. Don't miss anything, because I assure you they will remember more than some adults.

When the students pass a little verbal test and you are satisfied that they know the rifle, show them some safety measures. "Always keep the barrel up unless on the firing line; don't point the rifle at anyone anytime; be certain the chamber is empty and rifle unloaded before placing on the rack; keep the safety on until ready to fire," and a dozen other precautions. I made some unsafe moves later, when we were shooting, just to see if they would notice them. They did!

Once the rules of safety are deeply implanted in their minds, show them how to hold a rifle correctly.



Let the students become well acquainted with the rifle before teaching them anything else.



If they assist in the preparations beginners will show more interest and determination.

BEGINNERS

Then show them how to aim. This can be difficult with some youngsters.

In the first place, it isn't simple for them to understand how to get the front sight lined up in the rear sight and balance the bull's eye on the front sight all at the same time. Get some paper out and draw them a picture. Let them draw you a picture. If they get the ball on the sight and frame it with the rear sight correctly, they're ready for the first shot.

Get down beside them, on the right side if they are right handed and on the left if not. Watch their movements. Most kids will close the wrong eye, and, they will squeeze the trigger with a jerk. Correct this at once, but don't get loud with them. Be a patient coach. Brag a little if they are trying. Don't kill their interest, whatever you do.

"Can you see the bull's eye?" I asked.

"Uh huh," came the answer.

"Good—then squeeze the trigger slowly—wait a minute, get your

cheek down. Don't worry, if you miss we'll try again. It just takes practice. Now, go ahead and shoot."

He missed it, but he hit the white. "Say, that was real fine for the first time!" And I gave him a pat on the back.

Before the sun dropped behind the hills, both boys were hitting the bull regularly, and they were two happy beginners.

I let them help in all the preparations. For the targets we simply used 8x11 white paper with a black 3 inch eye in the middle. The boys drew the bulls with a crayon. For added fun another circle was drawn around the bull, and we kept score.

To add a little conservatism to the operation, we used the box in which the rifle came as a backstop. I stuffed it with old towels to catch the BB's so we could use them again.

I measured off about 20 feet from the target and placed a saw horse there for a rest. I found out that it is best to let beginners have a rest to prop their rifles. It helps them

get the right sight picture, hold the rifle still and hit the target from the beginning. Until they get accustomed to shooting, it's best to make things easy for them, especially for very small children. If they start off missing, it may cost the loss of interest, and keeping their interest up

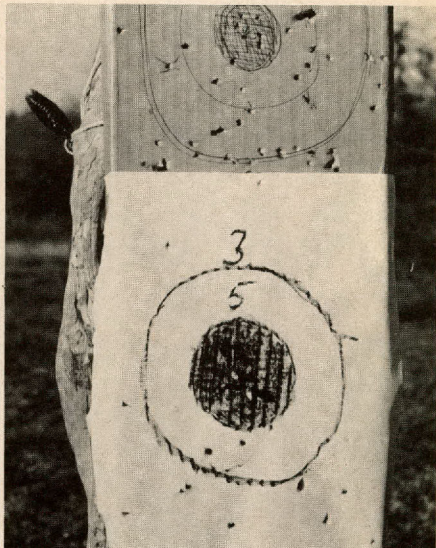
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Don't deny a youngster a chance to learn just because he's small for his age. Place the stock under his arm.



Get down beside the student. Show him how to hold a rifle, how to sight and how to squeeze the trigger. Let him prop his rifle on something sturdy until he gets the feel of aiming.



The spots in bull show improvement from hits below the bull at the beginning of session.

Eight Points Or Better



by L. A. WILKE

HILL COUNTRY PROGRESS was made in deer hunting during the past season on the Chas. Schreiner Y.O. Ranch near Mountain Home. It was opened to hunters on a guarantee kill basis.

Fee hunters, taken in during the 45-day open season, harvested 151 bucks, 202 does and 60 turkeys.

The harvest, however, included many animals taken by young hunters who were guests of the Schreiners. The taking of bucks was limited to heads with more than 8 points. According to Ranch Manager Vernon Jones, this assured the hunter an adequate trophy and at

the same time left the younger bucks to develop for breeding purposes.

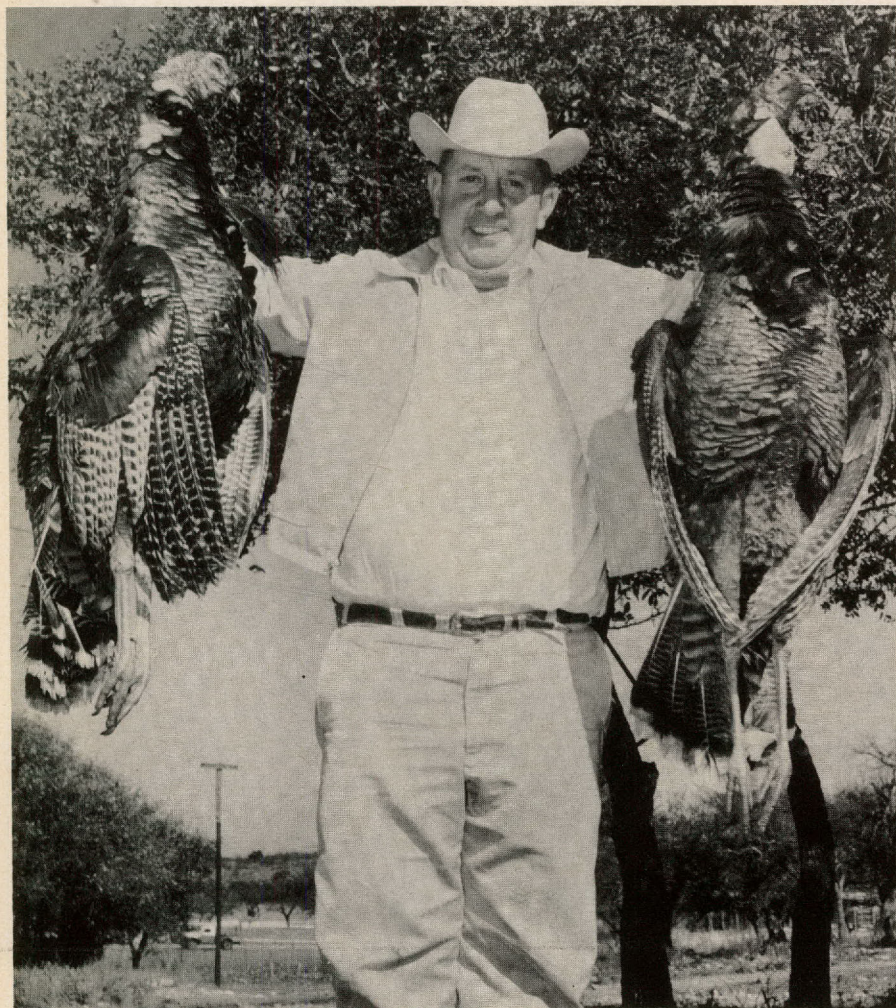
The Y.O. ranch is located in the heart of the Texas Hill Country, known as excellent white-tailed deer range. It is approximately 35 miles west of Kerrville on the Rocksprings road.

Although hunters were required to shoot the larger bucks, the deer were plentiful enough so hunters had a wide choice of 8 point bucks. Some excellent heads were taken.

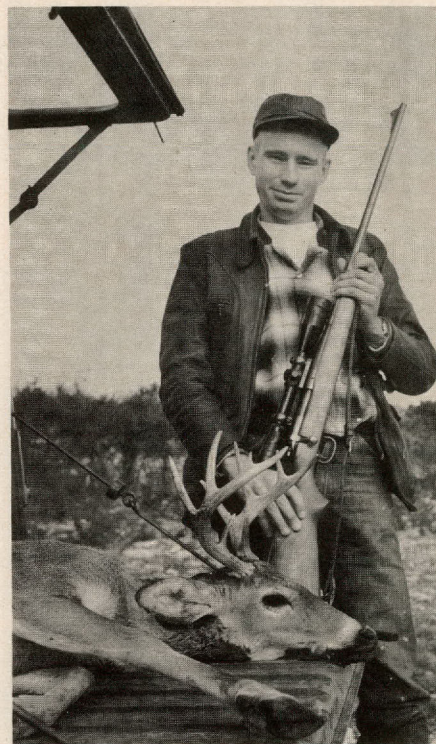
Both cattle and goats are grazed on the 50,000 acre ranch, which is divided into approximately 50 pastures. Hunter groups were assigned

to different pastures as a safety measure. No accident of any kind was reported.

The Y.O. ranch dates back to 1880. It has been an important producer of sheep, goats and cattle. It also has a heavy stocking of imported black buck antelope and axis deer which can be harvested throughout the year. **



Ranch Manager Vernon Jones shows off a pair of big toms taken on the Y. O. by hunters.



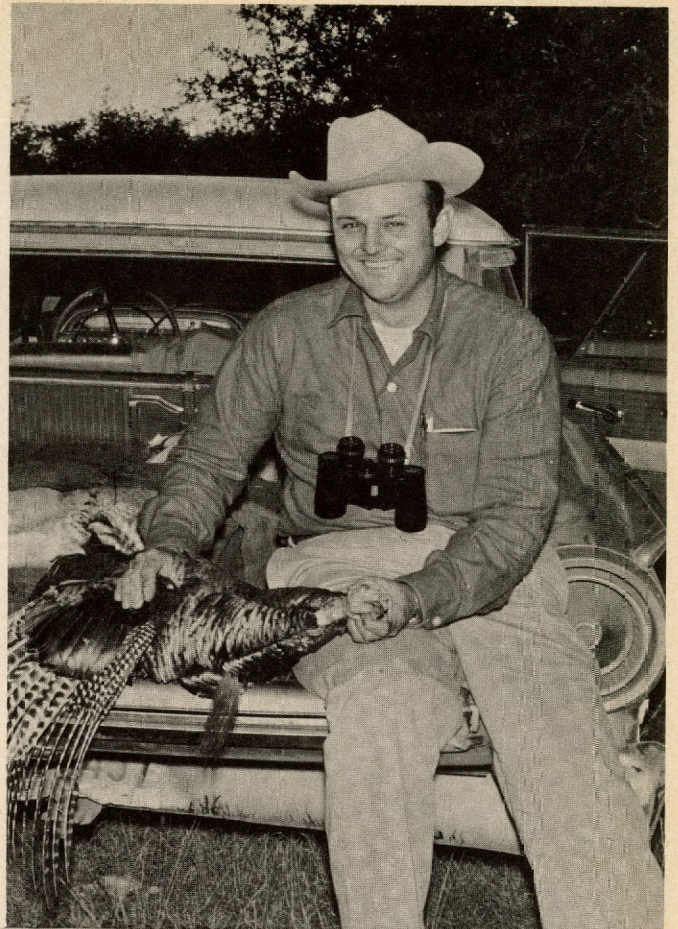
Wm. H. Miller, Corpus, got a 13-pointer.



Mike Cox, Austin, settled for nine points.



These hunters flew in from the Beaumont area, to take their limit of big bucks and turkeys. Left to right they are Jim Butterfield, Leland Bowman, Jim Ford, Bobby Wolff and Harvey Willis.



At right, Charles Schreiner, III, ranch owner, prefers big gobblers.



Typical ranch cowboys are guides for the hunters, looking for eight points or better on this fabulous ranch.



WILDLIFE IS ONE of the few crops not in oversupply in East Texas. And there always will be more demand than supply. Productive capacity is declining and people are increasing.

Relatively little progress has been made to date in managing forest wildlife as a crop. Some good populations of deer have been built up by individuals and groups merely by protecting the breeding stock against excessive harvest. Even this degree of deer management is the exception rather than the rule.

The majority of forested tracts in East Texas would produce more deer if the hunting pressure were properly controlled. This is a problem of people management, rather than game management.

The problems of public understanding and acceptance must be met before deer can be produced in numbers commensurate with the productive capacity of the range.

Once full control of the deer harvest is achieved, various methods of managing the deer and the deer food supply may be used to produce deer as a true crop. Timber and cattle are the two usual crops from forested tracts. You may wonder if it is worthwhile to add deer and perhaps turkey, squirrel and quail as another crop.

In addition to other benefits to be derived from having good populations of wildlife, landowners may expect increasing opportunity for cash leases of access to hunting. Pay for hunting is well established in west and central Texas and is now moving into eastern Texas, especially along the western edge of the pine belt.

The amount of money a landowner may earn in the future from lease of hunting rights may surprise all of us. Rising prices are inevitable for this crop for which there will continue to be more demand than sup-

ply, because of growing population.

I am confident wildlife can pay its way in a multiple-use forest management plan.

A pure stand of pines may produce the most income on the basis of recent high prices; however, the market is weak now and pines are difficult to sell. We are growing more pines than we are cutting—a net surplus of 2.5 billion feet a year in the South. I can remember when pine stumpage was \$5 a thousand and I hope it doesn't get back to that level.

Cattle are a suitable addition to some forest management programs. They yield annual income and have other advantages.

Likewise, wildlife can be added to achieve additional variety.

Aside from problems with people, the major opportunity for managing wildlife in East Texas forests is to stop or slow the loss of habitat.

Hardwood removal to favor pine, and more recently cottonwood, has

Forest Wildlife Problems In East Texas

by DAN LAY
Wildlife Biologist

*Presented at Beaumont, August 15, 1961,
Area Supervisors meeting of Texas State
Soil Conservation Board.*

already caused a considerable reduction in wildlife carrying capacity. Acorns are important to deer, turkey, squirrel and quail—as every hunter knows. Although deer can exist in some numbers on browse alone, the supply of browse in winter is much less than the supply in summer. Therefore anything, like acorns, which feeds deer in winter has the effect of increasing carrying capacity.

Much of the effort to favor pines by reducing hardwoods has failed. Oaks have been killed when no young pines were present to be released. The brush which followed was more of a forestry problem than the oak. The ecological factors of site quality, moisture supplies, and species present affect the outcome of hardwood control efforts. The loss of hardwoods would be reduced if the practice were applied just where pines needed release and just on sites that lend themselves to these techniques. Non-selective hardwood removal (and this is characteristic of herbicide treatments) causes destruction of some wildlife habitat without forestry gains.

Most tracts have variations in soil, drainage, and other factors that affect pine regeneration. This regeneration is easy on some parts, difficult on others. In general it is much cheaper and easier to increase a 50 per cent pine stand to 90 per cent, than it is to produce pine in the remaining 10 per cent of a given area. Wildlife usually can get along nicely on that last 10 per cent, and more than pay for the forest space used.

And it is questionable if the landowner can afford to put pines on that last 10 per cent. The costs may well exceed the gains in pine. The losses to wildlife will be considerable where that last 10 per cent is converted. If wildlife has any cash value, then the loss of that value should be added to the cost of conversion to pine. So much for the economics. To preserve wildlife values in their forests, the following points should be considered:

1. Leave 10 per cent of an area in hardwoods along with a 90 per cent stand of pine.

2. Let these hardwoods be scattered throughout the stand of pine.

3. Leave some of all species. (It is better to have black jacks on the ridges and wateroaks in the bottoms, than to have all of any one species. This variety is insurance against crop failures.)

4. Uncommon hardwood species have special values and should be saved just because they are rare. (A single mulberry, chinquapin, sassafras, or dogwood can fill an important niche in the food supply. To save these uncommon species, plans for girdling or poisoning should list the common species to be killed. Those not listed would be saved.)

5. The fruit of almost all shrubs, small trees, and vines are eaten by deer, turkey, squirrel, and quail.

6. If herbicides are applied to areas, leave untreated blocks.

Hardwoods make important contributions to the well-being of the forest generally. They contribute to soil fertility and moisture holding capacity. Dogwood litter, for instance, contains about ten times as much calcium as pine.

Pines that grow interspersed with hardwoods produce better quality lumber because the microclimate around each hardwood causes faster self-pruning of the lower pine limbs. This results in fewer and smaller knots in the pines.

The number and variety of birds in a forest is considerably greater where hardwoods are present. And most feathered creatures are an immeasurable benefit in insect control.

Some foresters probably would like to see pure stands of pine without other plants competing for moisture. Yet, it is a fact that soils under pines can hold less water than those under hardwoods.

Many hardwoods are excellent forage for cattle as well as deer. Some have much higher protein content than native grasses. So the cattleman in the forested region should be concerned with the pine-hardwood balance, also.

A policy of moderation towards hardwoods in pine forests appears to be better than one of excessive control.

In addition to saving some habitat, there are ways to increase it. The Game and Fish Commission is making trial plantings of species that

will grow under pines such as dwarf oaks, dwarf chinquapins, yaupon, dogwood and yellow jessamine. We hope there will be a need for this kind of information sometime in the future.

When the problems with people are solved, deer will soon increase and reach or temporarily exceed the carrying capacity of the range. The only solution to the problem of keeping deer in balance with their food supply is to harvest enough animals of both sexes. As every stockman knows, a herd can't be kept at a desired level without removing some females as well as males.

To summarize: the most pressing problem is people. The few good deer herds present in East Texas reflect control of hounds and headlights. When this control is general because the majority of the people want more deer, then there will be more deer than cattle in East Texas.

The next problem is the loss of habitat. Oaks and other hardwoods must be saved wherever possible, despite the current apparent lack of interest by the hunters. Their attitudes can change rapidly, but it takes many years to replace an oak.

Then when good deer herds build up, we must kill enough to keep them from damaging their food supply and dying of starvation. **





Joe McMains judges Best of Class.



Dog faces coon in a hole.



There's a coon in that log.

MORE THAN 350 dogs were entered in the Texas State Championship Wild Coon Hunt and Bench Show which ended November 5 to make it the largest such hunt ever held at Fort Parker State Park.

The weather was perfect for the hunt which brought hunters and their hounds here from throughout the states of Texas, Oklahoma and Louisiana. Coon were plentiful and the hunters left looking forward to next fall when the hunt will again be held at Fort Parker.

Activities started with warm-up sessions Thursday evening with the main hunts being held Friday and Saturday nights and the bench show

and other events being held Saturday morning.

The dogs were taken on hunts within a radius of 50 to 60 miles of the group camp headquarters.

The annual hunt is sponsored by the Texas State Coon Hunters Association of which Dr. H. R. Martin of Mexia is president. Other officers are L. J. Saucier of Elm Mott, first vice president, C. H. Dailey Jr. of Mexia, second vice president, and Mrs. Joe McMains of Elgin, secretary.

Prior to the first hunt Friday night, Dr. Martin delivered an address of welcome and then the invocation.

There were two hunts each eve-

ning—one for the registered class and another for the grade dogs.

Winners in the registered classes were Bryce Rawlinson of Gatesville, first; M. G. McClaran of Marshall, second; Richard Cox of Canton, third; Troy Rice of Groesbeck, fourth; James Knight of Houston, fifth; Vernon Watson of Groesbeck, sixth; Rodney Lowery of Houston, seventh; H. Z. Zanter of Waco, eighth; Bill Hardoson of Dallas, ninth; and Carl Kasse, who is in Germany, tenth. Mr. Kasse's dog was hunted by Jack Gerhart.

Winners in the grade class were C. B. Rogers of Waco, first; Charles Allen of Longview, second; Leo DeMoney of Mexia and Earl Eeale of

Fort Parker Cooners

Photos by BOB MAGUIRK
State Parks Board



Place winners in grade class dogs for night hunt.



Place winners in registered dogs, night hunt.

Welder Foundation Director Awarded Audubon Medal

THE AUDUBON MEDAL, the ninth conferred since the award was established in 1946, was presented to Dr. Clarence Cottam of Sinton, Texas, at the National Audubon Society's annual banquet held Nov. 29 at the Roosevelt Hotel in New York City.

The Texas scientist, who now heads the Welder Wildlife Foundation, was hailed for "distinguished service in conservation" and particularly for his long career as a wildlife biologist and administrator of research programs. Dr. Cottam served 25 years in the U. S. Biological Survey and its successor agency, the Fish and Wildlife Service, advancing to chief of wildlife research and assistant director of the Service.

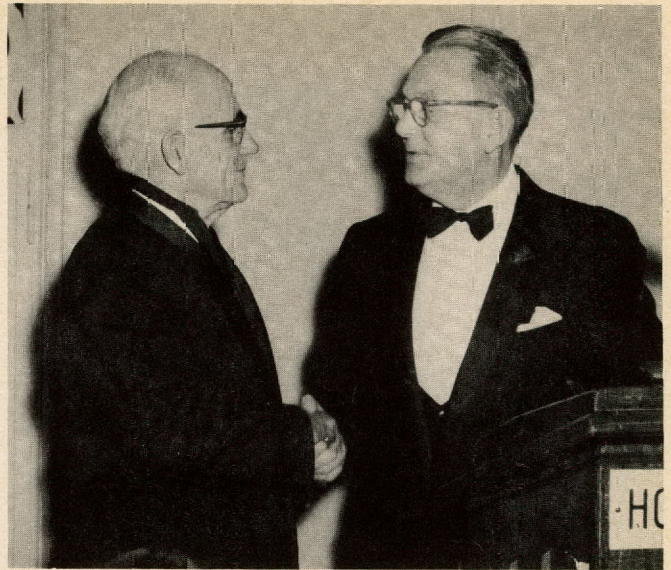
He resigned from his government position in 1954 to become dean of the College of Biology and Agriculture of Brigham Young University in his native Utah. One year later he went to his present post to organize and direct the research foundation and wildlife area established by the late Rob and Bessie Welder.

A capacity crowd of over 600 attended the dinner and, in addition to seeing the Audubon Medal conferred, heard Allan D. Cruickshank personally present his outstanding new film lecture, "The Bear River."

Mr. Herbert H. Mills, chairman of the Board, expressed the Society's welcome. President Carl W. Buchheister introduced distinguished guests and presented the medal to Dr. Cottam.

"There are many reasons why an award from the National Audubon Society is a coveted prize," Dr. Cottam said in his response. "First and foremost, this Society has an enviable record of leadership and service in the valiant fights that have been made for sound conservation principles and policies. Its governing board and officials have always been men of stature who would sooner lose a fight for a just cause than to win a victory without principle."

The Audubon citation referred to Dr. Cottam's outspoken, public criticism of pesticide-spraying programs



Dr. Clarence Cottam, left, and Carl W. Buchheister

of the U. S. Department of Agriculture. As chairman of the pesticides committee of the International Association of Game, Fish and Conservation Commissioners, and in other capacities, he has urged a more scientific approach to insect-pest problems as preferable to blanket spraying with powerful chemicals that often kill wild birds, mammals and fish along with the unwanted insect.

Dr. Cottam received his bachelor's and master's degrees in biology from Brigham Young University and later took his Ph.D. at George Washington University in Washington, D. C. He is a fellow of the American Ornithological Union and has served as president of the Wildlife Society and the Texas Ornithological Society. He currently is president of the National Parks Association and vice-president of the Texas Academy of Science.

Previous recipients of the Audubon Medal were Hugh H. Bennett, 1947; Ira N. Gabrielson, 1949; John D. Rockefeller, Jr., 1950; Louis Bromfield, 1952; Walt Disney, 1955; Ludlow Griscom, 1956; Olaus J. Murie, 1959, and Jay N. ("Ding") Darling, 1960. **

The winner of coon-in-the-hole was Trouble

Cooners

Dallas, tie for third; J. T. Hicks of Valley Mills, fourth; and Roy Calame of Wortham, fifth.

Other winners in the grade class were James Clark of Fort Worth, Wayne McCain of Corsicana and E. G. Moran of Waco, tie for sixth; A. J. Jones of Bridge City and Ike Duncan of Fort Worth, tie for 7th; J. C. Hawkins of Fort Worth, 8th; T. A. Braswell of Fort Worth, 9th and Dennis Huffman of Waco, tenth.

Winner of the Champion of Champions in the night hunt was James T. Bowlin of Shreveport, La.

The annual Sportsmanship Award was presented to Joe McMains of Elgin. He was selected by a vote of the hunters as the best sportsman.

McMains was the judge for the bench show which had separate events for registered and grade dogs.

In the grade show, the best female of the show was "Lou," owned by Tommy Wyche of Taylor. The best male of the show was "Arkansas," owned by H. H. Moses of Waco.

In the registered bench show, the best female was "Morton's Texas

Twister," owned by Ralph T. Morton of Cisco, and the best male of the show was "Nite Ch PR Imperial Blue Star," owned by James T. Bowlin of Shreveport.

The Champion of Champions of the bench show was "Nite Ch Ch PR Shady Acres Blue Sally," owned by Jack McClaran of Mexia.

The winner of the coon-in-the-hole event was "Trouble," owned by J. D. Reeves of Denton. Winner of the coon-in-the-log event was "Joe," owned by Johnny Kert of San Antonio. **

From Page 22

WILD GAME RECIPES

by ANN STREETMAN

WONDERING WHAT to do with your hunter husband's season catches stored away in your locker or deep freeze? You might start a recipe collection to make good dishes from the frozen stock and to have ready for the spring onslaught of fish and other game. Here are some recipes from other publications with which you might start your collection.

You might try a tangy barbecue meal, using the hunter's duck prizes as the principal ingredient for the entree. The Virginia Commission of Game and Inland Fisheries suggests preparing *Barbecued Duck* as follows:

Cut breasts from 2 large wild ducks. Broil under flame until brown. Baste frequently with following barbecue sauce.

- 4 teaspoons lemon juice
- 1 teaspoon Worcestershire sauce
- 1 teaspoon tomato catchup
- 1 tablespoon butter

After duck has begun to brown, sprinkle with salt and paprika, and continue to broil until it has reached the desired degree of doneness. Serves 4.

If you have some leftovers from roasted duck, here's another Virginia recipe to try:

Duck Pilau

Remove meat from leftover cold roast duck. There should be about 2 cupfuls of duck meat. Break carcasses apart and add 4 cups water, 1 chopped onion and some celery leaves. Simmer for 1 hour, strain, bring to boiling point and stir in slowly $\frac{2}{3}$ cup rice. Cook the rice in the liquid for about $\frac{1}{2}$ hour (until rice is tender), strain it, and reserve the liquid. Rinse rice in cold water. Drain. Melt 2 tablespoons butter, add $\frac{3}{4}$ cup finely chopped celery and 1 teaspoon grated onions, and

saute covered for 5 minutes. Add the duck scraps, the rice, and 1 cup leftover gravy, or duck broth and cream combined. Mix ingredients well with a fork. Season with salt and paprika if needed. Serve hot with stewed plums or apricots.

Here is a recipe from the KENTUCKY HAPPY HUNTING GROUND for duck with a sharper flavor.

Hungarian Roast Duck

- 2 wild ducks
- Garlic, salt and pepper
- 2 tablespoons paprika
- 2 apples, quartered
- 2 onions, quartered
- 6 slices bacon
- $\frac{1}{4}$ cup butter, melted
- 3 cups sauerkraut
- 4 juniper berries, crushed
- 2 teaspoons caraway seeds
- 2 slices cooked bacon, crumbled

Sprinkle ducks inside and out with salt, pepper and paprika. Place apple and onion quarters in cavity of each. Cover breasts with bacon and fasten with string. Place breasts up in baking pan. Roast in pre-heated 350 degrees oven 1 to $1\frac{1}{2}$ hours, or 15 minutes per pound, basting frequently with butter. Combine sauerkraut, juniper berries, caraway seeds and bacon in shallow casserole. Mix well. Discard apple and onion quarters; remove string. Carve ducks. Arrange duck slices on sauerkraut and serve with potato pancakes, plum jelly and hot biscuits.

For a filling squirrel feast, the Virginia Commission recommends *Brunswick Stew*:

- 2 or 3 squirrels
- 1 small can corn (6 ears)
- 1 pint lima beans
- 4 potatoes
- 1 onion
- 1 quart sliced tomatoes

- 3 teaspoons sugar
- $\frac{1}{2}$ pound butter
- 1 teaspoon salt
- 1 teaspoon pepper

Clean squirrels, cut into pieces. To four quarts boiling water add salt, minced onion, beans, corn, potatoes, squirrels and pepper. Cover and simmer for two hours. Add sugar and tomatoes. Simmer an additional hour. Add butter. Simmer 10 minutes, bring to boil, remove from fire. Add additional salt and pepper to taste.

Few hunters or hunters' cooks can pass up a quail meal. Here is a recipe for *Quail Brunch* taken from the Kentucky magazine:

- 4 quail
- Salt, pepper, flour
- $\frac{1}{4}$ cup butter
- $\frac{1}{2}$ cup water
- 6 small mushrooms, sliced
- 2 tablespoons chopped parsley
- 4 buttered toast slices or trenchers

Sprinkle quail inside and out with salt, pepper and flour. Melt butter in a skillet; add quail and brown on all sides. Add water and mushrooms. Cover and cook over low heat 10 minutes. Add parsley, cover, and cook 10 minutes longer, or until tender. Serve on buttered toast or trenchers with mushroom sauce in pan, fried hominy squares, applesauce, and additional toast. Makes four servings.

Here is a versatile recipe for *Louis Sauce* to dress up broiled, pan-fried, or oven-fried fish.

- 1 cup mayonnaise
- $\frac{1}{4}$ cup French dressing
- $\frac{1}{4}$ cup catchup or chili sauce
- 1 teaspoon bottled horse-radish
- 1 teaspoon Worcestershire

Salt and coarsely ground pepper. Mix first five ingredients; add salt and pepper to taste; chill until serving time. Makes about $1\frac{1}{2}$ cups, or enough for four large servings. **

aquaria, and it is possible that continuous shrimp farming will be a reality in the future. Farming of shrimp does not seem to have the attention it deserves. The initial successes in artificial propagation in the laboratory should be followed up with a full scale attack on the problem. The high protein content of shrimp and the rapidity with which it reaches maturity and reproduces make it an ideal animal for cultivation.

Primary Elements in the Food Chain

A source of food that has been suggested many times, especially during wars when food shortages exist, is plankton. Plankton is composed of microscopic animals, called zooplankton, and microscopic plants, called phytoplankton. The zooplankton consist of small crustaceans, fish eggs, and the larvae of many animals. Phytoplankton consist almost completely of microscopic algae.

It is strange that although plankton has a tremendous potential as a source of food there is very little applied research being carried out to develop it for that purpose. There is, however, a considerable amount of basic scientific data being accumulated on plankton distribution. This information will be of great practical value if plankton eventually is used for food. In view of the fact that the amount of plankton in the ocean is far greater in quantity than all larger animals or plants, man should proceed at full speed in developing this natural resource as a food. An argument used against developing plankton as a direct source of food is that it may be more economical to capture plankton-eating fish than to collect plankton. This argument may be valid, but man can ill afford not to make every effort to exploit the food chain at the lowest possible level.

In recent years, there has been considerable interest in the possibility of using fresh-water planktonic algae as a source of both food and oxygen in space ships and submarines. Laboratory equipment has been designed in which a culture of algae is maintained and from which the excess algae are periodically removed. These units are small, but they could be constructed on a larger scale to supply large quantities of food. Although fresh water algae have been used in experiments, salt-water varieties could probably be substituted.

A discussion of potential foods from the sea would not be complete without the mention of sea weed, which is mostly macroscopic algae. Some sea weeds are used extensively for food in the Orient where they

have been cultivated for many centuries. As they are low in protein, the major food value is in their mineral and vitamin content. Those who do not relish the idea of eating sea weed should remember that over half the ice cream made contains the chemical algin, which is derived from sea weed and is used in ice cream to provide smoothness of texture and body. In the United States, sea weed is extensively used as a source of unusual chemicals and in cattle and poultry feeds. There is much room for experiment in cultivating sea weed and also in investigating the properties of chemicals derived from algae. To date only a small number of species has been thoroughly studied.

Other Resources

In addition to the living resources available in the sea, the sea and the sea floor are rich in mineral resources. Oil, coal, and iron are presently being removed from the continental shelf. The continental shelf also contains deposits of sulphur and phosphates, and the deep sea floor contains manganese deposits of potential importance.

The water of the sea is thought to contain at least a trace of every chemical element. Yet, today only common salt, magnesium and bromine are removed from sea water on a commercial basis. Because present availability of other elements on land makes their removal from sea water uneconomical, very little work is being done to develop processes for the removal of specific elements.

The sea is also a potential source of fresh water. Tremendous strides have been made in the last few years in designing equipment for deriving fresh water from the sea and eventually fresh water may be the sea's most valuable resource.

Summary

The yields from established fisheries are apparently being successfully sustained through regulatory measures. A decrease in yield is predicted for those animals that spend part of their life cycle in brackish bays unless greater effort is made to prevent destruction of their habitat by population and industrial pressures.

Programming must be expanded to include the development of new and previously unexploited resources if the sea is to have a significant role in supplying the food requirements of a rapidly growing world population. **

SCOT Sets New Membership Record

HENRY LeBLANC, president of Sportsmen's Clubs of Texas (SCOT) has announced the organization now for the first time lists 100 local clubs with more than 90,000 individual outdoorsmen and conservationists represented.

"We think this a good showing in as much as SCOT is only five years old," LeBlanc said.

New member clubs bringing SCOT's total to 100 include:

Dallas Woods & Waters Club, Inc., Dallas

Southeast Texas Pointer and Setter Club, Orange
Mid-Coastal Sportsmen's Club, Victoria
Kerr County Wildlife Association, Kerrville
SCOT is affiliated with the National Wildlife Federation. **

GUNS



... and Shooting

This Month: NEW YEAR CHANGES

by L. A. WILKE

IT'S BEGINNING to look as if the fellows who make guns and ammunition spend the entire hunting season trying to figure out something new. Every year at the end of the season we begin to get releases on new and improved guns and ammunition. There was a time when a man might remember the ballistics of his favorite cartridge. But that time is long gone.

In the guns line Mossberg is the first to make a 1962 announcement. This time it is a new barrel combination on the model 500 12 gauge shotgun recently announced. In this combination deal the shooter gets a basic 500 equipped with a special barrel which handles the 3" magnum shells, plus his choice of a regular barrel of any of the four chokes available. All the barrels are interchangeable in a matter of seconds without tools.

Since the combination is priced well below \$100 for a quality shotgun it will have an especial appeal for waterfowlers along the Texas coast. A shooter could use his magnum barrel for the high flying geese, switching over to the regular barrel for blind shooting of ducks or field shooting of birds.

There was a tendency to an increased swing to magnum shells in the past goose hunting season. Practically all the goose shooters went to the 2¾" magnums, and many of them bought guns chambered for the long magnums in hopes of reaching the high flying honkers.

Since most gun manufacturers start out with a 12 gauge gun and get around to a 20 gauge later it is possible that Mossberg will announce a 20 gauge magnum com-

bination at some future date. Although short magnums are now available in the 20 gauge, which gives the equivalent of a 12 gauge regular load, there is still a need for more guns that will handle the 3" shell. All manufacturers discourage rechambering regular barrels for the longer load.

Remington also has announced a new "choke bore" version of the model 572 slide action .22. Built to handle the .22 caliber long rifle shot cartridge the 572 SB is designed for miniature targets, pest control and economical practice shooting. The gun is fast handling, light in weight, and patterns like a shotgun.

For years .22 shot shells have been in demand around farms for shooting rats. Ordinarily they were shot in cheap single shot .22 caliber rifles, which tended to lead up the bores of the rifled barrels.

Tremendous strides in the development of cartridges has been made since Winchester came out with its first rim fire .44 in 1866. Actually the first .44 rim fire was used in 1861 in the Henry rifle.

From that time on the .44-40 was developed for the 1873 until today there is a new caliber developed every year or so.

Thomas E. Hall, curator of the Winchester gun museum, has pro-

vided a list of new cartridge developments since 1925 by Winchester. Remington also has had its part in the development of a number of new calibers. And they do not include the magnums and wildcats by custom gun makers.

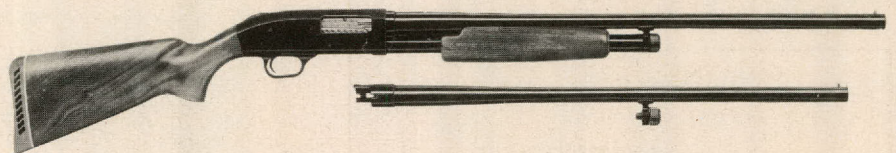
The Winchester list follows:

270 Winchester	1925
22 Hornet	1933
220 Swift	1936
348 Winchester	1936
219 Zipper	1938
218 Bee	1939

Leader line of 22 Short,

22 Long and 22 Long rifle	1939
308 Winchester	1952
243 Winchester	1955
358 Winchester	1955
458 Winchester Magnum	1956
22 Winchester Magnum Rim Fire	1959
338 Winchester Magnum	1959
264 Winchester Magnum	1960

To this list we can add such calibers as the .257 Roberts, the .244 and the .280 Remington calibers for rifles and the .22 Jet for revolvers. However, the .257 and the .244 have already passed out of the picture in deference to the .243 Winchester which has become so popular. **



Mossberg Model 500M Combination

hooks from the tough skin of one of these fish.

Male bowfins can be distinguished from the females by an "eye spot" located at the base of the caudal fin—where the tail attaches to the body. And during the spawning season, the lower fins of the male become a vivid blue-green color.

Favorite spawning territory for the bowfin is shallow water with an abundance of plants. The male selects a spot on the bottom which is relatively free of plants, yet well concealed. Small holes in moss are just about perfect.

He then works with fins and mouth to clear the few remaining plants from the bottom, leaving only a few roots exposed. He works mostly at night. When the nest is ready, he accepts the female for spawning. The number of eggs laid varies greatly, with most estimates in the thousands. The male continues to protect the nest after spawning occurs.

One of the most unusual facts about the bowfin is his ability to breathe air. The air bladder in the bowfin is more highly developed than in most other fish, because of the cellular structure which resembles lungs. By using this as an aid to breathing, he can remain alive out of water for hours. He also can live in more stagnant water than other fish since he can surface and take gulps of air.

Another unusual internal organ of the bowfin is its stomach which contains what is known as a "spiral valve." This greatly increases the digestive surface of the intestine. It resembles to a certain extent—and this might explain the voracious appetite of the bowfin—the stomach found in sharks.

Few, if any, fishermen actually make trips in pursuit of bowfins. The flavor is terrible. They merely take these fish by accident when

fishing for bass. Even at that, the smashing run of a bowfin has helped break the monotony of more than one dull fishing trip when bass refused to hit.

Although many bass fishermen curse these fighters, there are some anglers who will tell you confidentially that they're always ready to do

battle with Mr. Bowfin.

They know there's no need to apologize for his strength by recommending light tackle to catch him. As a matter of fact, if you expect to get a close-up of the bowfin, leave your light tackle at home. This bayou bandit will do his best to take it away from you. **

The welcome mat is out for any and all insects

Calling All Insects

From Page 9

opinion that birds are of inestimable value as destroyers of pests is correct. The robin, catbird, bluebird, house wren, chickadee, swallows and others have been studied carefully and found to be practically insectivorous.

The aim of the department is to obtain representative specimens of each injurious, potentially injurious or beneficial species in the state. During past years scores of insect groups have been studied and keys for identification developed. Some of the important research works concern studies of various groups in the state, such as armored scale insects, grasshoppers, long-horned beetles, maybeetles, thrips, fleas, stink bugs, robber flies, blister beetles and lice.

Controlling undesirable insects in Texas may depend considerably on the work being carried on at A&M College, now and in the future. Regardless, insect taxonomy is basic to all fields of entomology, and a thor-

ough training in systematic entomology is necessary no matter what type of work the student pursues. The collection is invaluable in this preparation. The department is one place where any and all insects will find the welcome mat. **

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Doe Eats Car Seat

FRED W. STRONG
Beeville Bee-Picayune

DIDJA HEAR ABOUT the deer that tried to eat Colie Hall's Chrysler? So help me, it's the truth. Last week, Brother Hall, along with Roy Vance and Harry Young of Houston, went out to the ranch for a bit of bird shooting. In their quest for game they walked several hundred yards away from the parked car.

While they were gone an ol' deer decided she would sample the upholstery in the automobile. Her tracks showed exactly where she stood as she chewed a hole big enough to put both fists in. On this particular brand of auto, the seat

back on the driver's side extends up above the window. All the deer had to do was to stick her head through, and with today's low automobiles, that's no trick at all. She chewed out the hole in the seat back and then spit it back into the car.

Hall's theory is that some chemical in the upholstery probably attracted the animal. He said the "cud" was still wet when they returned from their hunt and that deer tracks were the only signs around the auto.

"I don't think it was a buck," he went on, "unless it was a small one. A buck with antlers would have had trouble getting his head through the window—and besides, the tracks looked like doe tracks." **

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It Happened This Way . . .



ON THE FIRST MORNING of squirrel season, a determined individual was hunting on the Kickapoo Valley Ranch in the Sulphur River bottom, when he heard a squirrel barking loudly at an intruder. Naturally he thought the squirrel was barking at him, but when he finally located the squirrel, he found it facing in the opposite direction.

He shot the squirrel, but before he could walk over to where it lay, a fox ran out of a near-by cane break, picked the squirrel up, and ran away. He then had to shoot the fox to retrieve his squirrel. **

Beagle Bays Bass

BELIEVE IT OR NOT, it happened this way. In September, I was clearing some brush along my lake front when I heard my one-year-old Beagle hound barking.

He had recently found a few rattlesnakes so my wife grabbed the hoe and ran to him. She was surprised to find he had a four-pound black bass cornered behind a log that had floated in to shore. She raked it out on the bank, and we enjoyed eating it very much. **

Give the youngsters a break

BB's for Beginners

From Page 17

is as important as anything.

If you want to, you can place a can lid over the bull so they can hear the shot hit. Once they hit the bull consistently, let them shoot at a can. Later, you can set up a deer silhouette.

Very small youngsters may have trouble reaching the trigger when they put the stock against the shoulder. If so, let them put the stock under their arm. Don't penalize them because they are small for their age. Usually, five and older is the best age to begin a new rifleman. This, of course, depends on many factors, including mentality and interest.

Keep up the training and practice as the junior sportsmen grow older. When they are able to hold a regular rifle in a standing position with a steady hand long enough to get off a few dry shots at a target, they are ready for the first tryout on a rifle range. A youngster should prove that he is safety conscious and responsible before he is allowed to go into the field and hunt. And even then, he should be accompanied by his father on several hunts.

If a hunter knows nothing about hunting safety and hasn't had lots of experience shooting on a range, or doesn't know the firearm he is using, he shouldn't be in the field endangering himself and others out there with him.

This is reason enough to start a prospective hunter out with a BB gun at an early age. You can build a range in the backyard, or in the garage with little effort and cost. Just be certain that you have a good backstop.

It'll work, if the instructor has substantial patience and interest. Give the youngsters a break. Let them learn the rights and wrongs of handling firearms before they go afield. This could be an excellent project for scout groups or other organizations.

If you have a boy or girl old enough to handle a regular rifle, start now and when the hunting season rolls around he or she will be well trained. If your child is not ready for a trip into the field because of size, get him started now with an air rifle, and when he is big enough, he'll know what to do. And, he may live longer. . . . **

Use Dogs and Save the Cripples



One of the main objectives of the San Antonio Retriever Club of Texas is to aid conservation by encouraging hunters to use retriever dogs. Their motto is "Save the crip-

ples." This float (above) promoting the use of retrievers won first place in the Boat and Sport Show parade in San Antonio last spring.

What Others Are Doing

by JOAN PEARSALL

SPARE THE POISON, PRESS THE SPORT: South Dakota may soon have a unique type of public shooting area, with prairie dogs as targets. The S.D. Wildlife Federation and the S.D. division of the Izaak Walton League requested the Dept. of Game, Fish and Parks to consider the acquisition of a few prairie dog towns, to provide a logical use for what is now often considered a nuisance animal. The U.S. Fish and Wildlife Service at present poisons out prairie dog towns whenever requested by ranchers. South Dakotans feel that shooting them instead can provide a great deal of off-season recreation.

ONE THAT DIDN'T GET AWAY HAS NO PLACE TO STAY: "Homeless record paddletfish desires position above fireplace of ardent angler." This was the ad inserted in a Pierre, S.D. newspaper, by a druggist who caught the biggest paddletfish ever taken in South Dakota. For months, the whopper 69-pound, 12-ounce fish cooled off in a freezer at a sports shop, but the owner felt his trophy should enjoy a little of the prestige a record fish should have, by being preserved. He said anyone who would promise to have the fish mounted could have it.

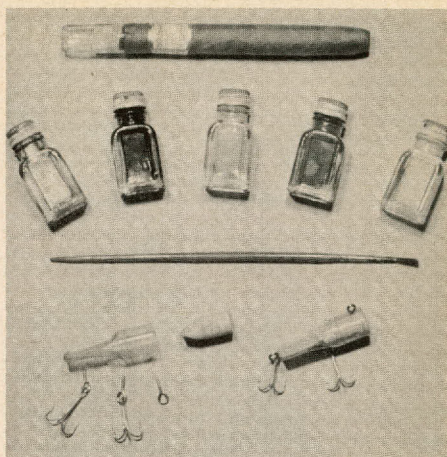
WISE STEWARDS: Farmers in Missouri, cooperating in agricultural conservation plans with the Soil Conservation Service, apparently are replacing more wildlife habitat than they are destroying. A study showed an average of 1.4 acres of wildlife cover was destroyed per farm unit in 1960, but that 7.1 acres per farm were protected and improved for wildlife. The study covered 110 farm plans. About three-fourths of the soil conservation districts in Missouri now have working agreements with the Conservation Commission to help in planning and establishing wildlife food and cover.

NABBED FROM ALL ANGLES: An airplane and a horse aided the downfall of a party of elk hunters in Colorado. After an aerial patrol, a conservation officer was not happy with what he saw. A trek on horseback into the area confirmed his suspicions: four hunters had an illegal cow elk. All members of the party were found guilty, and paid \$400 in fines. One of the hunters was sure the officer had been spying on them from behind a tree for two days.

KEEP A HOLD ON YOUR GOLD: A Minneapolis, Minn. cartridge corporation has taken steps to help prevent one type of hunting accident by changing the color of its 20 gauge shells. The 20 gauge shells will be the only gold ammunition. Purpose is to prevent a hunter from unwittingly dropping one of these smaller shells into the chamber of a 12 gauge shotgun. The small shell can slip ahead into the barrel, obstructing it and causing the gun to blow up if a 12 gauge shell is fired behind it.

RACCOON RESTAURANT: For the past four or five years, a lady in New Hampshire has been feeding a number of raccoons. It started one year with a lone female seen frequently around the premises. When fed, the coon became quite friendly. She returned the following year, bringing along her babies! The project snowballed. Each year, the mother coon returns and brings her current litter of young. In addition, a number of young of previous years have continued to come back, bringing their families. Consequently, their benefactress sometimes has as many as fifteen coons to feed. She doesn't mind, since some of them have become so tame they will take bread, cake, and other goodies from her hand.


Don't Throw Those Cigar Holders Away



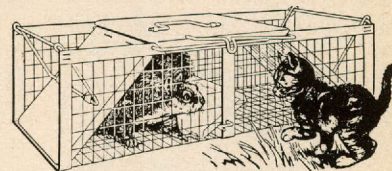
DISCARDED PLASTIC cigar butts or filters make effective popping lures. Plug the large opening of the butt with a balsa dowel so the popper will float. Be sure the dowel is recessed about a quarter of an inch from the lip so the popper will produce a popping or gurgling noise when retrieved.

Fit a small screw eye to the top of the popper and a pair of treble hooks to the underside—one where the butt starts to taper and the other at the tail end.

Poppers can be effectively finished with plastic-based fast-drying model airplane paints.

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each. This dries swiftly, so you should hurry and lay it on thick. It may be necessary to compress the hilt several times before all the discs can be crowded on the tang. With all discs in place and the blade driven tightly against the guard facing, keep the vise drawn up and hilt compressed until the cement is dry.

20. In the meantime, roughly fashion a pommel from a chunk of deer antler. In this piece, drill a 7/32-inch hole 5/8-inch deep and pierce it from side to side with a very small hole about 5/16-inch from the face.

21. When the hilt is dry, remove it from the vise and slip the pommel over the tang. Insert the drill in the small hole and mark the tang to show its exact location with the pommel in place. Then remove the pommel and with a center punch place an indentation on the tang about 1/64-inch in front of the drill mark. Drill a small hole through the tang at this spot. Select a suitable nail and smooth off its point. After coating the face of the pommel with cement slip it on the tang and secure it by driving the nail through the hole. The off-center hole in the

tang will draw the two pieces together firmly. Cut off the ends of the nail and the pommel is permanently attached.

22. When the last of the cement is dry trim the hilt to shape. The leather can be carved with a sharp knife but the other material must be shaped on the grinder. Finish the shaping with a file, then smooth the entire hilt with several grades of sand paper. Two coats of spar varnish will bring out the rich colors of the various parts of the hilt. Your knife is now ready for its first hunting trip. **

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Folger Coffee Gets Friend of 4-H Award



Donald Atha (right) of the Folger Coffee Company receives a plaque from Edwin H. Cooper, Wildlife Specialist, Texas Agricultural Extension Service. This "Friend of 4-H" award was made to the Folger Coffee Company in recognition of its sponsorship of the 4-H Wild-

life Award Program. This annual program makes available medals, savings bonds and a \$1200 college scholarship for 4-H members conducting outstanding demonstrations in the field of wildlife conservation.

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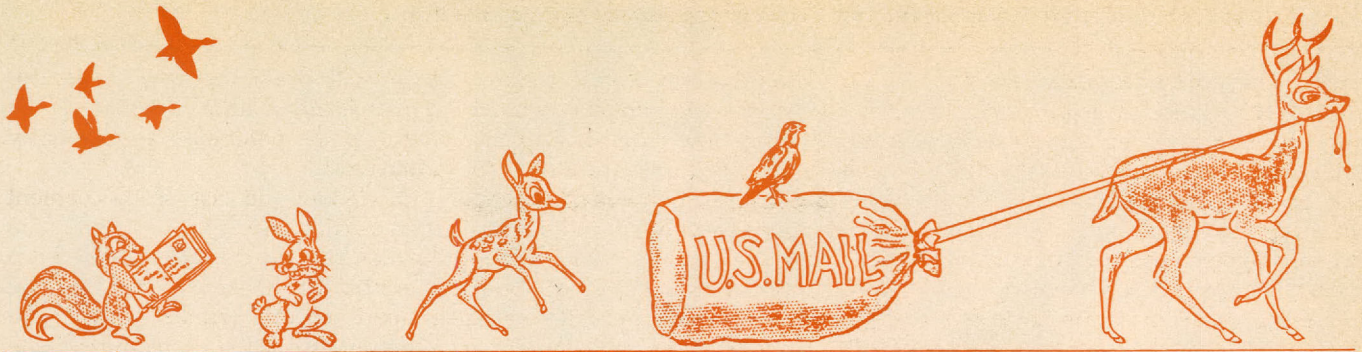
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Editor:

I am a resident of Texas (Houston), but I am in a prep school in Pennsylvania now, and I have **TEXAS GAME AND FISH** sent here every month. I want you to know that the magazine is not only appreciated in our great home state. I have yet to be the first person on my dorm hall to get it. They all know my box number, and I usually find it in very poor shape after 20 boys have fought over it. It has become known as "Tex's monthly mag," and they really do like the pictures and stories.

I am an avid hunter and fisherman, as are the rest of my family, and I want you to know that you have a terrific "mag."

Houghton B. Hutcherson
The Hill School
Pottstown, Pa.

All White White Tail



Editor:

Having been a subscriber to your good and informative magazine for many years and noting the many unusual pictures and stories you have, here is one not only unusual but my first—an albino buck—and you have my permission to put this in your magazine if you care to do so.

This eight-point albino buck was killed by me on November 24, 1961, on the

ranch belonging to Mrs. Minnie W. Miller in Medina County near Utopia, Texas. It was the first albino that I ever saw. Hoofs, nose and ears were pink, and its horns and eyes were light brown or pale brown. I believe it was about two years old and possibly with its first set of horns.

F. P. Allen
Clarksville, Tenn.

Appreciative Aficionado

Editor:

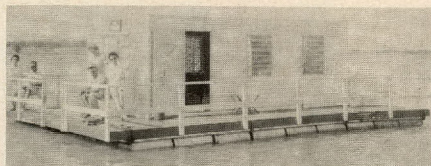
I would like to say something now that I have been putting off for some time. That is a very big **Thank you** to all the personnel of the Texas Game and Fish Commission for a thankless and difficult job that has been very well done. My hat is off to you and I am proud of the whole department.

I started hunting with my Dad when I was five years old, which was 25 years ago, and our deer, quail, and dove populations (my three favorite game) have seemingly known a steady increase. I feel confident that with such a tremendous job being done by the Game Department that my young son will also have many years of good hunting ahead of him. This is mainly why I am so thankful and proud.

Once again, my sincere thanks and no need to say keep up the good work, because I know you will.

John E. Thompson, Jr.
Robstown

Lake Chateau



Editor:

The snapshot is of a houseboat built in his spare time by Bert Wafer, local business man, at a total cost of less than \$1,800.

This is Mr. Wafer's third houseboat and in it he has incorporated all the desirable features of the other two plus some new ideas.

It is 30 feet long and 20 feet wide. The aluminum building is 20 feet long and 10 feet wide and was made for Mr. Wafer by a local concern. The house is mounted

on 30 50-gallon steel drums supported by a two-inch pipe structure.

He has installed a 25 horsepower outboard to take him to a favorite fishing hole in Lake Halbert.

H. C. Capshaw
Corsicana

Sailfish Waste



Editor:

I got lucky again at Acapulco and won the Dual Championship of the Texas Game Fishing Club and Sailfish & Tarpon Club of Mexico dual Sailfish Tournaments in December.

I caught a really big one this year that we estimated would go close to 175 pounds, but again I let him go as I'd rather get a chance to catch him again. The sails are not good eating so why kill them? Wish you could be there some time and see how much fun a bunch of real sportsmen can have releasing fish.

I got really sick at my stomach last summer when I saw the pictures of sails piled up at Port Aransas. Why doesn't somebody give those guides a pep talk on the fun of releasing such game fish? It might not be them though. Perhaps I speak out of turn. It is probably the anglers who wish to brag a little. Well, I'd much rather brag about those I released.

Elmore L. Finch
Dallas



The **HUNTER'S ENCYCLOPEDIA**, edited by Raymond R. Camp, 1152 pages, fully illustrated. Published by The Stackpole Co., Harrisburg, Pa., \$17.50.

When a publisher is faced with the task of putting nearly all the information, even in a condensed form, concerning hunting, fishing, birds, mammals, guns and tackle into one volume he must make many difficult decisions.

The **HUNTER'S ENCYCLOPEDIA** is an excellent example of how this task should be handled. Heavier than most family Bibles, it was designed especially for a desk reference book. This it is, and about as complete as any you'll ever find. Actually, the content of this book could have been put in a half-dozen volumes to make interesting reading while resting in bed.

This certainly is not meant as a criticism of this tremendous volume. Within its hard back there is crowded more information than has ever been assembled before in any one work of its kind.

Adequately illustrated guns, animals and birds are easily identified, especially the birds which are on color plates.

This is a book which should be in every library, especially for those who need a ready reference on any outdoors subject. —L. A. Wilke

HORNED LIZARDS and **THE ROAD RUNNER**. Two books for children by Theodore W. Munch and M. Vere DeVault. Illustrations by Carol Rogers. Each 30 pp. Published by The Steck Company, Austin, Texas. Price \$1.75 each.

Two big new friendships have been launched for children, a little reptile being one new friend, and the other a colorful bird of the southwest. Making the introductions are a team of adults who know very well how to capture the interest and imagination of a child. Professors Munch and DeVault have a rich background in the teaching of science and writing for children, and the illustrations of Carol Rogers, a well-known children's artist, are so realistic they almost seem to hop out of the pages.

HORNED LIZARDS explains some of the pedigree of its subject; how the little

lizard is related to the ancient dinosaurs, giving a brief glimpse at evolution, and telling about some present-day relatives. Its present physical structure is described, and habits, all in an exciting "telling a story" manner. Such facts as its ability to swallow food whole, and spurt blood from an extra eyelid when aroused, are sure to be intriguing to a youngster. With the reader's interest all stirred, it is fun then to find a diagram and instructions in the book on how to catch a horned lizard, and keep one for a pet.

It is not suggested that one try to catch a road runner for a pet, but a real appreciation of its friendliness and intelligence can be learned from **THE ROAD RUNNER**. Its physical characteristics are described in detail, and the way it lives, eats and breeds. How interesting it is to know that even the baby birds have small eyelashes. And what little tot will not enjoy reading about the way a road runner loves to race animals and cars, how it often stops quickly, turns and starts again in another direction, and is hardly ever caught? It is told how many stories and legends have grown up about this strange bird, and how beloved it has become.

With such a vivid picture, in words and art, young readers cannot help but feel well acquainted with the subjects of these

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two volumes. They will also have absorbed a good deal of general information about birds and animals. These books are presented in such a way that children seven to ten will be able to read and understand them for themselves. Yet, they are informative and interesting enough that older children will want to sneak them off, and parents, too. —Joan Pearsall

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A HOME-GROWN WORM!!



Junior Sportsmen

Summer Fishing Idea: build a Worm Factory

ALTHOUGH IT is cold outside now, it isn't too early to be thinking about the sunny days next spring when you will grab up your old cane pole and spend the day on a little creek or pond, pulling out frying size perch. If you start now, you can have your own stock of fat, healthy worms to tempt those perch.

To make your "worm-a-tarium" get an old wash tub or wooden box and fill it with

a mixture of rich soil, coffee grounds, leaf mould, and stable manure. Mix in a little homogenized dog food, and dampen the new mixture of soil.

Dig your own worms for stocking or buy them at a bait shop. You probably will have to buy them since most of the little wigglers have burrowed very deeply into the soil to escape the cold.

Place the stocked container in your garage or on a shady porch. To feed the lively creatures, use small amounts of the homogenized dog food about every three or four weeks. Scratch up the top soil in one corner of the container and put in about a cup of dog food for every square foot of surface. Loosely cover the enriched area with the old soil. **DO NOT OVER FEED.**

For healthy worms, do not let the container be exposed to hot sunshine. Keep the soil cool and moist, but not wet. Watch for ants and other insect intruders and remove them from the worm container immediately.

Your worm-a-tarium should provide fun for you now and later!

in Brazos County. Each animal was killed with a single .308 shot.

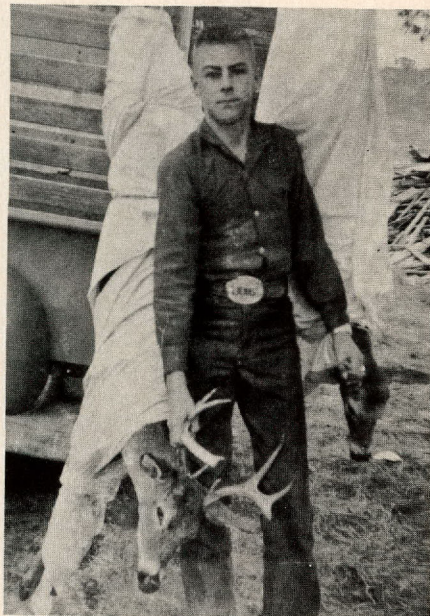


The biggest and best came last for Ronald Zipp, 14-year-old New Braunfels student, on an opening day hunt. He got a four-pointer at about 20 yards at 7 a.m. At 5 p.m. he ended his exciting day with an 11-point buck shot at about 50 yards. Ronald was hunting on the Flying K Ranch at Leander.

White Tail Roundup



Sam "Barney" Tolleson, Jr., of Palacios dropped his first buck last season. It was a four-pointer which weighed almost as much as eight-year-old Barney. The buck weighed 67 pounds dressed—just one pound shy of the young hunter. He was hunting on a private lease between Camp Wood and Leakey in Real County.



Randy Trncak of Sugarland made successful bags in two counties in 1961. Opening day, he killed a 10-point buck between Weimar and Sheridan in Colorado County. A week later on Thanksgiving Day, he got a spike on the Frierson Ranch



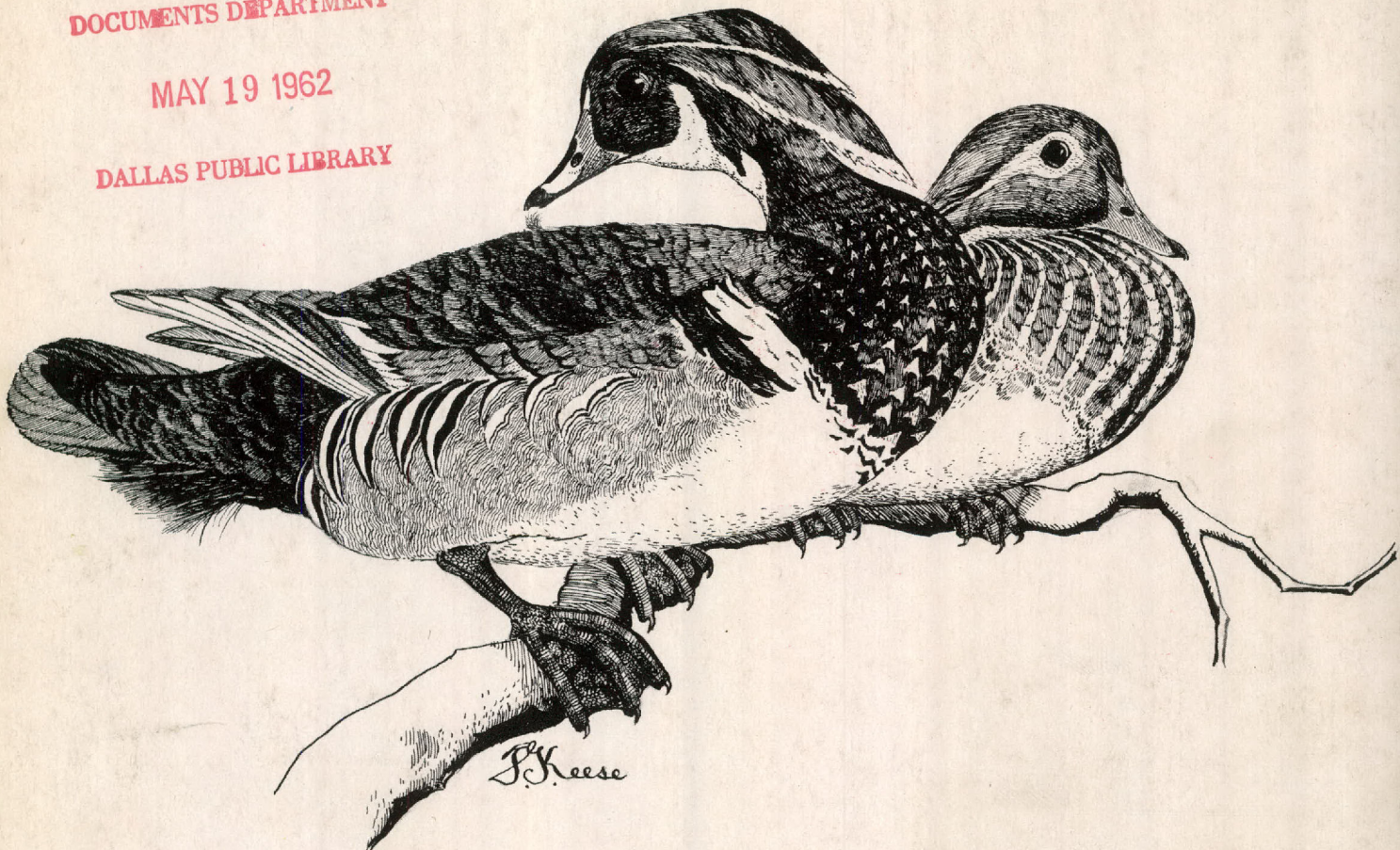
Already a fine bird and rabbit hunter, nine-year-old Larry Claxton of Gainesville dropped his first buck last season. He got the fat five-pointer at 60 paces, using 150 grain bullets. He was hunting on the Vinegaroon Ranch near Menard.

Relaxation After Duck Season

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Another season is spent, and waterfowl are probably taking time out to rest and reshuffle their feathers. The wood duck, *Aix sponsa*, shown above, undoubtedly had its moments of fear. With its exquisite iridescent colors and unusual crest, the male of this species is first choice for the den wall. Its head appears long because of the droopy crest of purple and green, streaked with white. Its throat is white, and back, a dark iridescent. The chest is rich cinnamon spotted with white, and its underparts are mostly white. The female's head is a dull grayish brown, glossed with

green on crest and crown. The sides of the head and throat are white. The back is a glossy grayish brown and the underparts are white. The wood duck is at home wherever there are trees and quiet fresh water. It is primarily a vegetarian preferring a number of aquatic plants on its menu. Hollow trees, vacated woodpecker nests and the like, become the sites for wood duck housekeeping. When the babies hatch, they leap to the ground and race for water. This duck is a common sight in Texas. Along wooded streams in many areas of the state, it is considered a permanent resident.

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