

# TEXAS *Game AND Fish*

MAY 1945

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# TEXAS' \$93,000,000 INDUSTRY

*Don't kill it by neglect!*



Outdoor life is big business in this State. It will be even bigger after the war.

Conservative estimates forecast a 50% increase\* in fishing and hunting activity when returned servicemen and war-busy civilians again look to the waters, forests and fields for sport.

Throughout the United States that will mean a total of 26,000,000 sportsmen — 19% or more of our entire population — who will spend at least \$4,000,000,000 a year.

Will your State benefit from these new, free-flowing dollars?

It can . . . and it should.

But you will have to do something about the matter *now*, if you want your share.

For unless you take steps today to safeguard your State's fish and game, tomorrow's sportsmen may kill off your wildlife reserve — and your \$93,000,000 industry with it — before you catch up with them.

Don't let this happen. Make sure that your State keeps pace with the hugely increased demand for fishing and hunting that's coming and which so many of you enjoy.

Make sure the sportsman's leisure-time dollars keep rolling into your State treasury for the license fees that maintain your stock of fish and game . . . and into your sporting goods stores, food stores, gasoline stations, hotels, camps and every other establishment that caters to sportsmen.

For in the turn-over of the sportsman's dollar everybody benefits...*you included.*

*Here's what you can do...*

- 1 Even though you may fish and hunt but very little—or have suspended such activity for the duration—*buy a license.* It will help keep your State's \$93,000,000 industry alive.
- 2 Join a sportsmen's club . . . or start one. We will be glad to tell you how to go about it, what is being done along these lines in other States, and what has been accomplished.
- 3 Get a copy of your State Fish and Game Laws. See if they are adequate to insure plenty of fishing and hunting in the postwar future.
- 4 Send us your suggestions so that we may incorporate them in our Nation-wide campaign to protect one of America's greatest assets . . . outdoor life.
- 5 Write to your Game and Fish Commission and put yourself on record in the interest of wildlife conservation and its value to your State from both the recreational and fiscal standpoint. Your State officials are doing an excellent job in planning for the future, but they need your support. Give it to them.

**\$462,469**

**in License Fees . . .** that's what sportsmen in your State spend *now* just for the *privilege* of fishing and hunting.

**346,126**

**Sportsmen Today . . .** spend at least \$93,000,000 in your State for tackle, arms and ammunition, food, sports clothing, lodgings—all the things a sportsman must have.

**520,000**

**Sportsmen Tomorrow . . .** who will spend money in your State for fishing and hunting after the war . . . *if you provide the facilities.*

## Outdoor Life

*The magazine of discriminating sportsmen*

353 FOURTH AVENUE, NEW YORK 10, N. Y.

### MAIL THIS TODAY

Mr. William J. Tucker, Executive Secretary  
Game, Fish and Oyster Commission  
Austin, Texas

I heartily endorse OUTDOOR LIFE magazine's suggestion that Texas expand its wildlife conservation program to meet the greatly increased demand for fishing and hunting in our State after the war.

Name .....

Address .....

\*Estimate of U. S. Fish and Wildlife Service

# TEXAS Game AND Fish

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



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COVER—

By J. B. Crowe, Austin, Texas.

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**ROGER M. BUSFIELD**  
*Editor*

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Walton Building, Austin, Texas.

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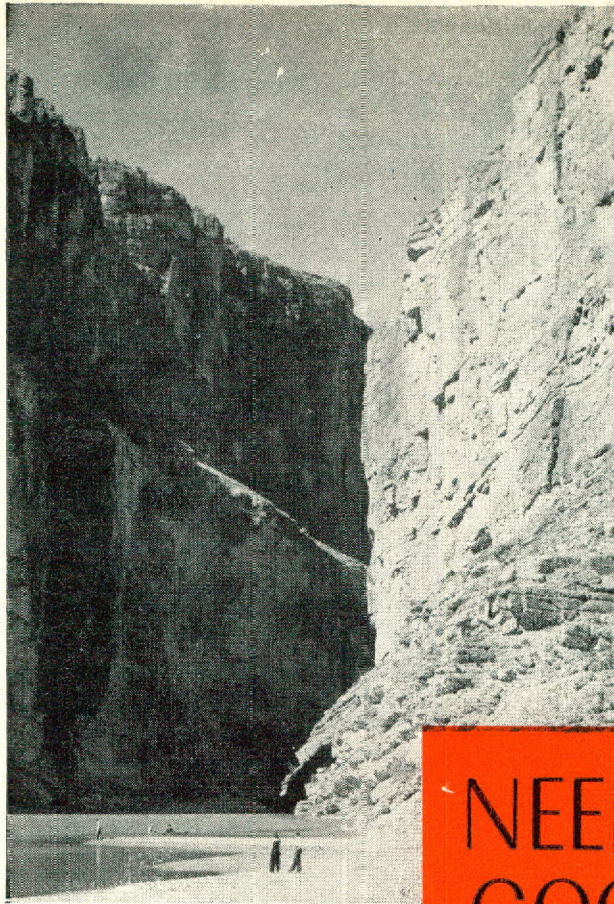
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**MOUTH OF SANTA HELENA CANYON.** Note people near water's edge to give comparison of height of huge walls. The dark wall on the Mexico side of the Rio Grande is about a thousand feet from the camera.



## NEEDED: A GOOD DAM

*By Cass Edwards*

SINCE the dawn of Texas history we have all heard the many caustic criticisms, jokes, and yarns about the extreme dryness of the Trans-Pecos Country.

To give the uninitiated a fair picture of the lack of water in this region, we might state that, after crossing the Pecos bridge, forty miles west of Del Rio, one travels the rest of the 400-mile trip over Highways 90 and 80, into El Paso, without crossing another running stream of any kind.

All along this vast stretch of dry but impressive mountain scenery the experienced eye can pick out likely canyon spots where big dams could be put in to hold back destructive flood waters and turn waste lands into great fishing places, irrigation projects, and water sources for livestock and wildlife conservation.

Tourists and vacationists constantly ask people of the Trans-Pecos why there is no water conservation. In this vast highland of cool mountain air we all know that cold-water fish would flourish and that the tourist crop would double and redouble, but as yet we have not made our State or National Governments see it.

In the Big Bend National Park, in the southern part of Brewster County, is a spot known as Dog Canyon where the storm waters of several hundred square miles of mountain country rush through a deep slit in the high rock hills. In some places in this canyon the perpen-

dicular walls are less than 25 feet apart.

Engineers who have made a survey, estimate that a comparatively inexpensive dam could be built in this canyon that would back up water 32 miles to make a vast highland lake in the shadow of the great Chisos Mountains to increase the charm and attractiveness of this park a hundred fold.

In the river and along the banks of the Rio Grande in the park area are many hot springs of great curative power, breaking out. For about thirty years Mr. J. O. Langford, who established the Post Office of Hot Springs, operated one of these springs as a health resort. During the time of operation, many remarkable cures were made by this water and the main drawback that stood in the way of a great development of this spring was the hundred miles of bad road leading to it.

Some engineers, who have made a survey of this vast flow of hot water coming up in the river and along its banks, estimate the total flow of hot water runs as high as fifty million gallons per day.

Several years ago a large party of land owners of the Lower Rio Grande Valley visited the towns of the Trans-Pecos in an effort to get a large dam across the Mariscal Canyon to hold back destructive flood waters that ruined their crops, and also to provide

a reservoir of water for needed irrigation in dry times.

The people of the Trans-Pecos were ready to cooperate, but nothing ever came of the idea because of international complications which at that time could not be ironed out with Mexico.

In the beautifully wooded mountains of Jeff Davis County are small streams of cold water that could be dammed up at likely places to make a fisherman's paradise, Lympia Creek, which flows through Lympia Canyon near the town of Fort Davis, is one of the best bets. At its source, this stream is well over five thousand feet in elevation and its waters are clear, cold, and pure. Through many miles of rugged canyons this unusual stream wends its way in this land of enchantment, and all that is needed to make some incomparable year-round fishing resorts is a few well placed dams of suitable strength to withstand rapid flood waters.

Fort Davis, the county seat of Jeff Davis County, is the mile-high town that holds the record for being the healthiest spot in Texas. With the million-dollar McDonald Observatory and the quarter-million-dollar Indian Lodge nearby it has about everything for the tourist but good fishing.



Presidio County is the only highland county that can boast a real highland fishing lake. Twelve miles south of Marfa St. Esteban dam backs up water over several square miles of territory to make the best year-round fishing of this section. The boat and fishing club of Marfa has memberships including fishermen from many other towns of the Big Bend.

Storm waters that could be held back in fishing lakes and irrigation projects sometimes come down out of the high Chinati Mountains southwest of Marfa to flood the valley of the Rio Grande at Presidio.

Last summer a flood from this semi-arid section wiped out and damaged many homes and business places of Presidio. A few dams and a little flood control in the proper places would have prevented this loss as well as added wealth to the community.

Many counties of the Trans-Pecos are getting as much as fifty thousand dollars per year or more from the Federal Government as soil conservation money for ranchmen and land owners but little or nothing for water conservation.

Big ranchmen as well as little business men nearly all like to fish as well as go boating when they can take time out to follow such pleasant relaxation.

Statistics show that no other outdoor sport is so universally popular. In this land that has so many other scenic attractions it is almost the universal belief that our State and Federal Government should begin a move as soon as possible to complete the development of the Trans-Pecos region by the addition of a vigorous move toward Water Conservation.

### **License Sales Drop**

A preliminary statement issued by the U. S. Fish and Wildlife Service reveals that a combined total of 15,308,264 hunting and fishing licenses was issued by the various states during the year ending June 30, 1944. This represents a drop of approximately 5 per cent from the preceding year. Revenues from 1943-44 sales, however, came to \$23,367,772, a decrease of less than 1 per cent from 1942-43 totals.

**OLD TIMERS** know how to get 'em out of Mariscal Canyon.

**BOQUILLAS CANYON**, looking toward the Del Carmen mountains of Mexico. From the Rio Grande waters to the top of these mountains there is a difference in elevation of 7,000 feet.



# When Game Was Plentiful

By A. S. JACKSON

**D**URING the past few years the writer has spent more than 370 spare-time hours in searching Texas newspapers for items bearing on wildlife, its abundance, utilization, and public opinion relating thereto in the early settlements of Texas.

In this paper some items from the 214 at hand are cited and discussed. They are representative of the lot with the exception that no reference touching on the buffalo have been used. In brief, these newspaper items illustrate two phases of thought and action toward wildlife. The early ones seem to indicate that wildlife was taken for granted as an asset to be used along with soil, water, and wood for fuel and fencing.

The first newspapers were largely devoted to heated political discussion, and the reader looks in vain for references to wildlife or subjects closely related to it.

In the *Telegraph*, published at Columbia, May 2, 1837, this note to emigrants occurs:

"Let no able bodied man emigrating to Texas neglect to provide himself with a good rifle or musket and at least one hundred rounds of ammunition. Those who wish to enjoy the advantages of a country should come prepared to defend it; . . ." Prophetic words in 1945.

That these words did not go unheeded is implied by the following on the editorial page of the same newspaper, issue of December 2, 1837:

"Large numbers of emigrants are continually arriving from the United States. We notice with pleasure that most of them are well supplied with good rifles. We fear however that too small a portion of them are farmers. Those desirous of emigration should continually bear in mind that Texas is an agricultural country and therefore offers at present but few inducements to any except practical farmers."

However, a column entitled "Recollection and Reminiscences, "The Better Class," appeared in the *Galveston Daily News*, issue of August 28, 1877 which indicates that the emigrants to Texas set up their own criteria of fitness for citizenship. Signed by "Wood, A.," it relates:

"Old Pioneers of 1820 to 1835 were often given to understand by speculative prospects traveling through the colonies that so soon as Indian depredations ceased, this beautiful fertile country would settle up with a better class of emigrants—Therefore the new-

comer was often greeted with the exclamation, 'I suppose you are of that better class we have been advised were coming. We are all anxious to see that better class.' The country so vast was slow in filling up, and though emigrants were constantly arriving, it was like the waters of the river constantly pouring into an ocean—scarcely more perceptible. An old lady, a mother pioneer, was overheard gossiping with a neighbor who lived only seven miles away, and who had made a fashionable call to spend three days, 'Have you seen any of the better class? I have been waiting and waiting to see the better class. Those who are coming in have fine clothes, it is true, and I have

**Early settlers came to Texas armed with excellent rifles which performed double service — winning a new Republic and providing fresh meat.**

seen none of the ladies wearing moccasins or homespun, **but the men are not educated.** Deer, bear, and turkeys don't mind being shot at by them. They seem to know that they are entirely safe. They know nothing about Indian fighting, which is a constantly recurring necessity. I would not feel secure if I depended on men whose education had been so much neglected, for defense and protection! Better class indeed! What is a little book learning in a country like this in comparison with the strong arm, the brave heart and dead shot, of dauntless men like your husband, and men who have got to love the sport of Indian fights."

Newspapers at a later date were to record that the newcomers whom the old lady so harshly criticized, were apt pupils in the school of education she recommended.

In at least one instance the status of wildlife as an important asset was recorded. In the *Colorado Tribune*, Vol. V, No. 13, July 12, 1852, reference is made to the hardships of Austin's first colony. Reproduced in whole, it follows:

"Facts relating to the first settlement of a new country are generally interesting to the emigrant. The following hasty sketch, composed from materials furnished in conversation, by one of the

first three hundred may prove illuminating.

1822.—: "From the 20th of April to the 20th of August, there was no rain, and then but one or two showers. About the 29th, the wet season set in but the crops were by this time ruined. The only corn in the neighborhood was raised by Andrew Robinson, and but for the game with which the country abounds, the inhabitants must have perished for hunger. At this period, it was no uncommon sight to behold from four to six hundred deer on the newly burnt patches of the prairie; which together with turkeys, snipe, grouse, quails, partridges and the endless variety of birds so common in the country, sustained them . . ."

**Squandered wild game stock.** A later period, variable in time as settlement for given areas stabilized, but reaching a peak in the 70's and early 80's is depicted, when wild game was slaughtered on an unprecedented scale. It is to be noted that the peak, as shown by occurrence of news items, was reached during the decade when the Winchester repeating rifles, models of 1873 and 1876, and their efficient fixed ammunition was

gaining favor. Texas, for all her vast size, was filling up, life for the settler had become more secure, and a rough and ready social order had come into being.

Enough of the items occurring in Texas newspapers during the era are reproduced to give the reader, willing to read between the lines, a picture of what appalling destruction of wildlife must have occurred.

Items are by exchange appearing in State News Column of the *Galveston Daily News* on dates cited.

August 1, 1877—*Henrietta Journal*—Scarcity of water is driving all kinds of game eastward. Mr. Bartlett, living near Red River in this county, has killed 278 head of deer in a circumference of 10 miles from his house. In addition to these he has killed countless numbers of antelope and other small game—

August 31, 1877—*San Antonio Herald*—gives the result of a two-week hunt at Kickapoo Springs, on the Sycamore, north of Ft. Clark, by the two brothers, Messrs. Henry and James Dignowity: Three bears, sixty-seven deer, two hundred and nineteen turkeys, (104 of which were shot in one day, all with the rifle) four geese, forty-six ducks, thirty quails, two hundred and seventy-five pounds of honey—

July 21, 1878—*Hardin County*—Game

is plentiful and venison hams are selling at 25 cents each.

March 1, 1879—**Kimble County**—Streams in the county abound with fish, beaver and otter, while in the mountains deer are plentiful, and some bear are found. There are a great many wild turkeys here—so many in fact that Judge Patterson killed twelve in one night last week.

August 24, 1879—**Mason County News** Item—Mr. Tom Gamel killed over 100 deer so far this year.—our woods are alive with deer and other game. We hear of a number of men in this section who are following no other pursuit this year but that of killing deer, the skins when dressed, bringing a fair price.

September 26, 1879—**Mason**—: A Mason County man made \$112 this year from deer pelts.

December 26, 1880—**Brownsville Cosmopolite**: Mallard and teal ducks sell in our markets at a little over 4 cents each; Brant geese at a bit apiece, and a leg of venison for 37½ cents.

December 4, 1880—**Henrietta Shield**: A load of wild turkeys was brought to town last Sunday and sold out at fifty cents apiece. They are reported abundant in the west.

December 10, 1880—**Bugle**: A wagon load of wild turkeys were brought in town last week and sold for 25 cents apiece.

Small birds and non-game species did not escape notice as is shown by the following unique items:

September 2, 1879—**Corpus Christi Free Press**: One day this week a boat arrived from Bird Island, 22 miles south of here, with a novel cargo—the skins and oil of some three thousand pelicans.

September 24, 1879—**Comanche Chief**: Bob Stephens came through town last week with a cargo of live prairie dogs, one hundred in number. He got them out west, and is on his way to Fort Worth, where he will dispose of them.

The question of what use could have been anticipated for these prairie dogs is suggested by a second reference:

October 14, 1879—**McKinney Inquirer**: A man from Coleman county was in the city on Thursday with a lot of prairie dogs which he was selling for rattlers. It is said they are equal to the ferret for hunting out and killing rats and mice.

July 30, 1878—**Gainesville Hesperian**: One hundred and fifty mocking birds were carried to Chicago this week from Gainesville.

Throughout the newspaper record of game slaughter as depicted above, was found no note sounding the word conservation. Indeed, public opinion seems to have been asleep to what was happening. In all the period leading up to publication of the first general game law of 1879, one item ventured to suggest that among certain elements the slaughter of birds was not welcomed. On June 25, 1878, the Galveston Daily News, in its State News carried the following item:

**McKinney Inquirer**—June 22: We saw a couple of ducklings captured in

## How About It Sportsmen?

AN INFORMAL, yet practical program to give pleasure to wounded veterans and to increase the number of good sportsmen in the United States is rapidly gaining momentum. It consists of the formation of local committees to organize casting clubs and lure-making and fly-tying classes at veterans' hospitals, and to arrange fishing trips to nearby waters for boys able to make them. Lure-making and fly-tying equipment and fishing tackle are contributed by civilian sportsmen. Speakers also regale the boys with tales of hunting and fishing. Anecdotes are especially popular.

Andy Anderson, sports editor of the *Houston (Texas) Press*, originated the idea, which came to him following a visit to a local hospital, where the boys evidenced considerable enthusiasm. Since then he has outlined his program to sportsmen's and civic groups in many parts of the country, and has gained many recruits for the crusade.

This looks like a splendid way for sportsmen everywhere to show in some small measure their deep appreciation of the price these boys have paid to safeguard the many privileges Americans enjoy. Anglers all over the nation can contribute materials, tackle and other equipment. Members of hunting and fishing clubs located near service hospitals can give active help. How about it, sportsmen?

East Fork a few days ago. This is a long way south for these birds to raise their young. Sportsmen are killing a great many birds in the grain fields. As a rule, this is not relished by farmers, and many may say they will post their farms in order to protect the birds. Those who have orchards begin to appreciate the labor of birds in protecting the fruit from the ravages of insects.

So much for the newspaper record. If one is sickened after reading the entire

collection of notes at one sitting, and for a time afterward travels the roads of Texas with a sense of unreality, he must be at the same time heartened by the changes which have followed, changes which reflect by contrast, an awareness on the part of news editors to wildlife, values and needs, and an awakened public consciousness. This, it may be said, belongs to a third phase in Texas news—the conservation era.

# Whitewings **ARRIVING**

By CHAS. G. JONES

THAT favored feathered knight of the air, who means so much to the Rio Grande Valley, now is sending out advance guards to look over the nesting situation.

Yes, Whitewings are arriving in the Valley, and somewhat puzzled they are, for many of their nesting sites of last year have been converted into fields of tomatoes, beans and other vegetables, causing thousands of these birds to abandon all hope of raising their young in a favored area used for 50 years or more.

In times gone by, Whitewings were seldom seen any great distance North of the Rio Grande. However, in recent years large colonies of these birds have taken up in the Beeville, George West, Catarina and Uvalde sections where vast acreage of brushland offers isolation and protection while nesting.

In the Valley where more and more land is being cleared every year, it is a question as to how long this part of the State can have and hold the White-

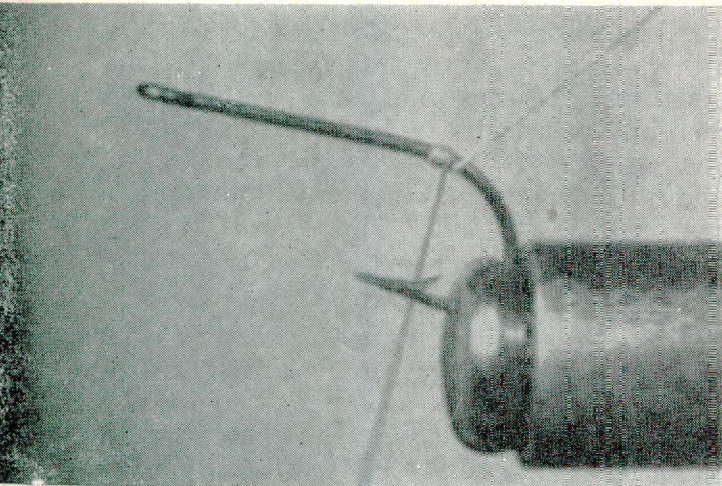
wing. The lack of nesting grounds also jeopardizes many of the other distinctive border birds.

Where agriculture and wildlife are in competition, it seems inevitable that wildlife must give way, unless both State and Federal authorities take over by lease or purchase, sufficient acreage to justify the continuance of such species as Whitewings, Chachalacas and Red-Billed Pigeons, all birds peculiar to the border section of the State.

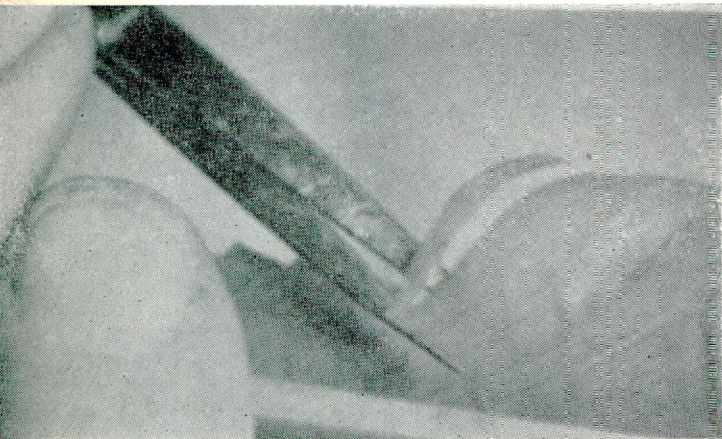
What a pity to have something of value and then lose it by lack of forethought. Game and fish are an asset. They are irreplaceable.

Baseball, golf, polo and tennis have their following, but American men and women when really seeking recreation spend their vacations hunting and fishing. It should be the ambition and effort of every one of us to increase wildlife—for the benefit of our returning war veterans, and the millions at home who live close to nature.

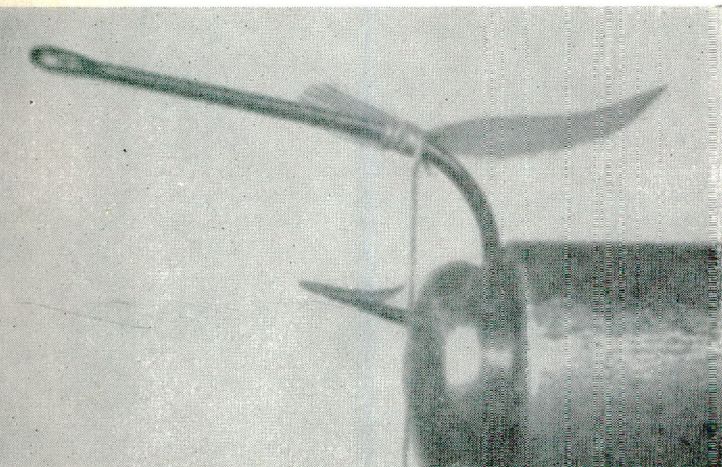
# HOW TO TIE A HACKLE FLY



**CLAMP HOOK IN VISE.** Wax a 12-inch length of thread and wrap tightly around shank of hook where it starts to curve. Fasten by wrapping thread over itself several times. Cut off short end.



**MAKE TAIL** of barbs cut from wing-feather.



**TIE FEATHER-BARBS** to shank with thread dangling from hook.

A. R. Mottesheard demonstrates in the Missouri Conservationist how to tie a hackle fly for general purpose use. His list of materials include:

A vise, either woodworking or fly-tying.

Hook, size number 6 is average.

Tweezers for close work — not necessary, but helpful.

Silk thread, size A.

Beezwax, small lump.

Scissors.

Quick-drying glue—fingernail polish is good.

Chenille, 10-inch length, any color.

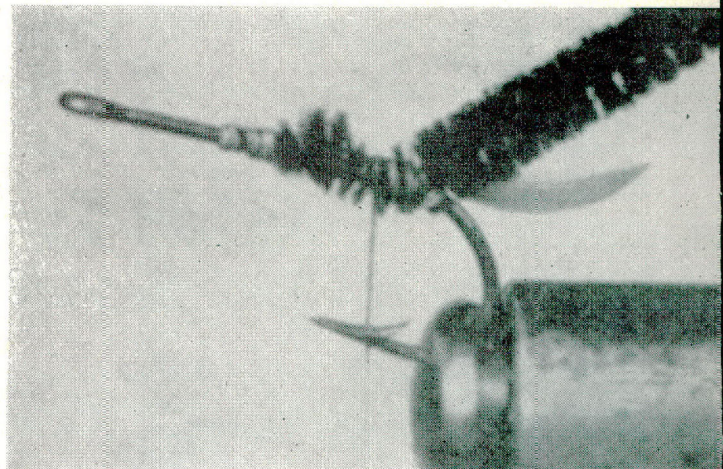
Feathers:

One  $\frac{3}{4}$  inch hackle feather. Different colors may be obtained by use of fast-color dyes.

Hackle feathers are obtained from neck of chickens.

One feather from duck or good wing.

Hackle pliers, not necessary, but helpful.



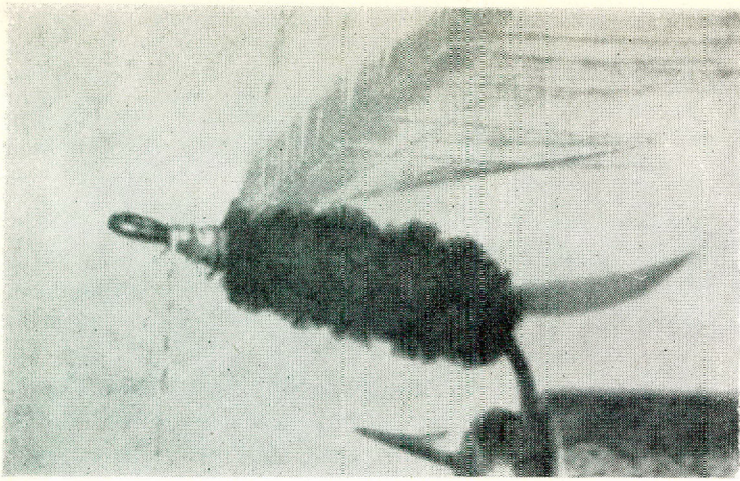
**TIE CHENILLE** to shank about midway, wrap toward curve. Wind thread toward eye over chenille, but do not cut off.



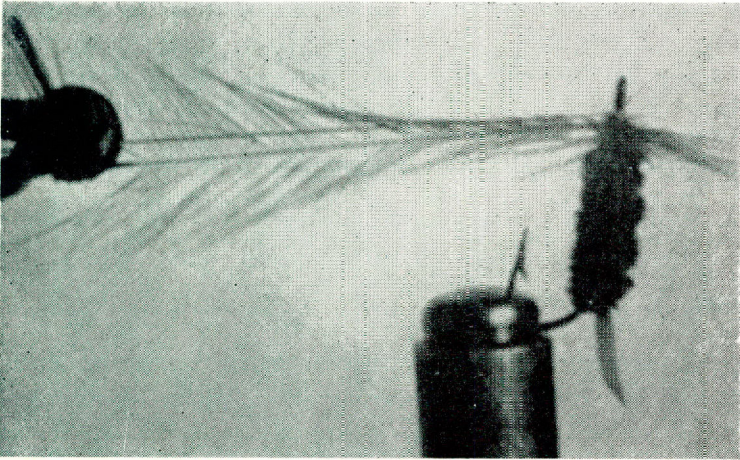
**WIND CHENILLE** toward eye, fasten end with thread and cut.



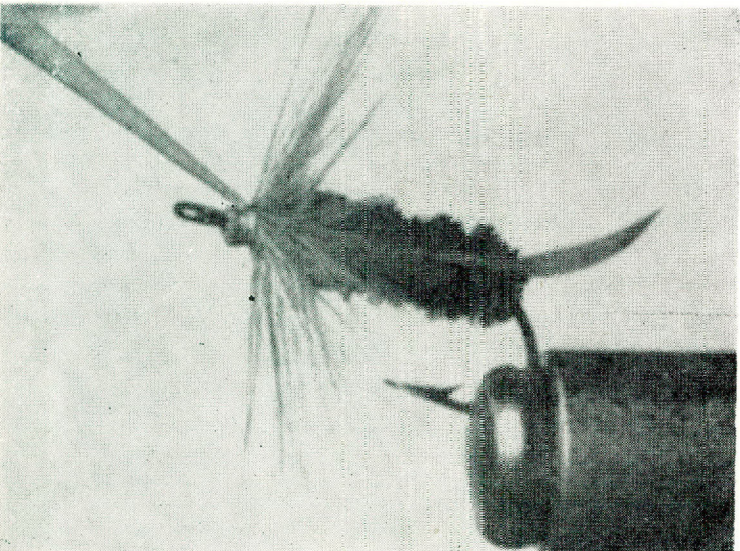
# Homing Pigeons Are *War Heroes*



**STRIP HACKLE** between thumb and finger to make barbs stand out. Remove barbs from about  $\frac{1}{4}$  inch of the quill and fasten bare quill to hook with thread left after securing chenille.



**WRAP HACKLE** feather around hook between chenille and eye.



**BIND END** of hackle to hook just behind the eye. Form head of fly with several layers of thread, then make the thread secure with three half-hitches and cut off end. Seal head with clear fingernail polish applied with toothpick.

For centuries, homing pigeons have been used to carry messages.

The ancient Greeks used them. So did the Persians. Even back in Solomon's day, homing pigeons were used.

They have carried stories for newspapers—and financial messages for stockbrokers.

But most important of all, they carried messages during wartime. Of course, they ran into a few difficulties here and there. The enemy trained hawks to interrupt the pigeon carrier service. The Chinese tried to protect their pigeons by putting whistles and bells on them to scare away birds of prey. But no infallible system ever was devised.

During World War I, pigeons were used widely to carry back messages from advanced positions.

But it was predicted that wireless telegraphy would end their usefulness. It didn't. Pigeons are proving themselves valuable in this war, too.

For instance, pigeons have brought help to fliers downed at sea, or in isolated sectors. They have flown information from occupied Europe to England. They have served as a communication link with advance forces. Pigeons also have been used by dirigibles and planes to provide data on the location of submarines when radio messages would have warned the lurking enemy.

This war has brought new methods of training the pigeons, too. In World War I, they could fly only one way—from the point of liberation to their home loft. But now pigeons carry messages back and forth from two points—which always before has been considered an impossibility. How it is done is—of course—a carefully guarded military secret.

In the Navy, the pigeon's training begins when it is a month old—when the bird is allowed to leave its loft and perch on the roof to exercise its wings and become acquainted with home territory.

After the pigeons have developed their natural homing instinct, they are taken on short trips and turned loose to find their way home. Gradually, the distance is increased until the birds can fly back in record time from 50 miles away.

The Navy birds must become accustomed to finding their way home from a blimp at any point on the compass. This is the tough part of their training, and it takes a certain amount of time and a number of circles in the air before they get their bearings and head for home. But they come home to roost, bringing back that vital information.

# Luling Oil Fields *and the* San Marcos River

In days when oil fields were pouring their waste into the rivers and streams of Texas an oil lawyer lamented legal interference in behalf of fish and wildlife with the remark: "You have no fish and wildlife but minnows and English sparrows."

By J. G. BURR

THE Blanco River, which empties into the San Marcos River a little below the town of San Marcos, once ran through the present city of Lockhart, according to a well known geologist. It is also believed that during the glacial epoch Texas had a much greater rainfall than at present, as evidenced by the extra large flood basins of the rivers. Under such conditions there was doubtless overlapping of watersheds and changes in the courses of rivers.

That change, if it happened, was a laudable move on the part of the Blanco, and if a few other rivers had joined the San Marcos it would have been better able to carry the load of oilfield waste of the Luling area which has plagued the stream for the past quarter of a century. Other oil fields over the State were also pouring their wealth into communities winning popular favor and good will to the public in general. . . . It was therefore anathema to say anything against the oil companies if they ruined a river with waste oil and brine.

It was in 1923 that an oil attorney lamented any legal interference in behalf of fish and wildlife with the remark: "You have no fish and wildlife but minnows and English sparrows." But this attitude was an exception and the major oil companies soon began to meet the new situation with fairness. They then began to reckon with the law and the landowner whose property sustained damage. Usually when a company bought a right-of-way over a man's land the matter was permanently settled unless too much of the waste water reached a public stream. Sometimes there was a back-fire.

A certain land owner sold a right-of-way through a small creek for the waste water and then tried to back up on it. He appealed to the State to prosecute the company for damaging his stock water. When asked if any fish had been killed he replied: "I hope it does kill the fish, then my niggers would not waste so much time fishing." The poor fish! Thus in the early stages of oil de-

velopment, wildlife and aesthetic values were subordinated to the standards of the so-called practical.

Primitive methods of handling the oil output was responsible for much of the river contamination. Oil was pumped into dirt reservoirs which sometimes leaked and frequently broke or overflowed when it rained, allowing the oil to reach the nearby water course.

Such was the fate of the San Marcos River at Luling, a stream of unequalled beauty anywhere in the State. With the ruin of the stream for domestic use the oil company or companies drilled water wells both at Luling and Ottine, leaving only a potential threat to the Gonzales water supply at that time.

When the Ganders Slough field came in on the south side of the river in about 1924 the situation became critical as great quantities of escaping oil from certain leases began to blacken the surface of the river. One well got away

and ran wild. It was then that Mr. Albert Taylor, a Luling banker and two associates obtained permission from an oil company to trap the oil and prevent its escape into the river. A large earthen pit was excavated at the foot of the field to capture the fugitive oil. At the base of the dam a pipe was located to bleed off the salt water that came in with the oil, and the oil was pumped into metal tanks. This device, according to Mr. Taylor, kept at least 300,000 barrels of oil from going into the river during the time the trap was in operation and, at the same time, netted the trappers a neat profit on the investment. . . . The law provided for traps adequate to arrest the flow of oil. When this one was installed the writer, on invitation of Mr. Taylor inspected the trap and on his return to the office wrote a letter pronouncing it to be satisfactory and a real service to the State.\*

Another trap was installed on the north side of the river by Taylor in what is known as the old Luling field and the flow of oil into the river was practically ended, but the disposition of the oil field brine was a problem not so easily solved.

From almost the start, the fields began making salt water. Drilling along the river was being rapidly completed

\*FOOT NOTE: A man whose name is withheld, leased some of the ground over which the fugitive oil was flowing, and entered suit against Taylor et al, claiming that the oil was coming from his lease, though he had not drilled any well at that time.

In the court arguments it became necessary to testify on whose authority the oil was trapped. The company in question, fearing a damage suit by some riparian owner, declined until later, to admit that any oil had escaped. Time passed and as the case traveled through the various courts there was the usual laws delay. When the final hearing was to come up Mr. Taylor came to the writer to inquire if he still had in his files a copy of the letter he had written concerning the oil trap some years back. Letter files accumulate and must be tied in bundles and stacked in a basement or burned ever so often. The writer, in less than half a day, found the carbon copy for Mr. Taylor. He tapped the paper with his finger and said, "I have my case won." Also the oil company then came across with its evidence.



FOUNTAIN USED in aerating salt water in Luling oil field.

between 1922 and 1926 and by 1931 an estimated 185,000 barrels of brine were entering the river daily. And yet, with the river stage of 209 second feet the diluted chloride in the stream was only about 400 parts per million. This gave little concern until the Salt Flat Field north of Luling came in just prior to 1931 with a brine of higher chloride content.

Fortunately, the operators of that field realized that steps should be taken to prevent further injury of the river, and a Salt Water Disposal Company was formed. The company established a huge reservoir capable of holding the brine indefinitely, or until the river was at flood stage. When the time came, the salt water was released into the river where it was so diluted as to be harmless.

About 1929 the Darst Creek Oil field near Kingsbury came in and soon began to send a little salt water into the Guadalupe River. The river normally carried about 36 parts per million of chloride. The small amount that entered the river near Belmont made very little difference. Pecan trees were said to grow along the stream and it was feared that they might be damaged if the chloride content became excessive. Whether for this or other reasons it was decided to turn part of the salt water into Smith Creek which enters the San Marcos River just above Luling or at the intersection of Highway 90. Not all of the flow into Smith Creek is gravity flow. Some is pumped from a section of the field across the divide. This creek, ordinarily dry, carries about five second feet of oil field brine most of the time, or about one sixth of the total oil field waste by volume. As the Darst Creek brine has more than double the strength of the Luling field brine it is probable that the Darst chloride constitutes as much as one third of the total chlorides that enter the San Marcos River. (Darst Field Chloride 15,000 p.p.m. or more).

The Salt Flat waste waters most of which goes into the big reservoir for later release, has chloride ranging from 26,000 to 28,000 p.p.m. As the water is discharged from the pipe the stench of hydrogen sulphide is intolerable. One is able to breathe it long enough to pick up a sample of the water if he is not too slow. The discharge amounts to about 24,000 barrels daily, according to Mr. Dick Bridges who has charge of the waste water disposal. He says about 5,000 barrels daily flow uncontrolled into Plum Creek. Pin Oak Creek, which drains a section of the Luling field, contributes a three second foot flow into Plum Creek making the diluted chloride run around 5,000 parts per million, not enough to kill fish but unwholesome as stock water.

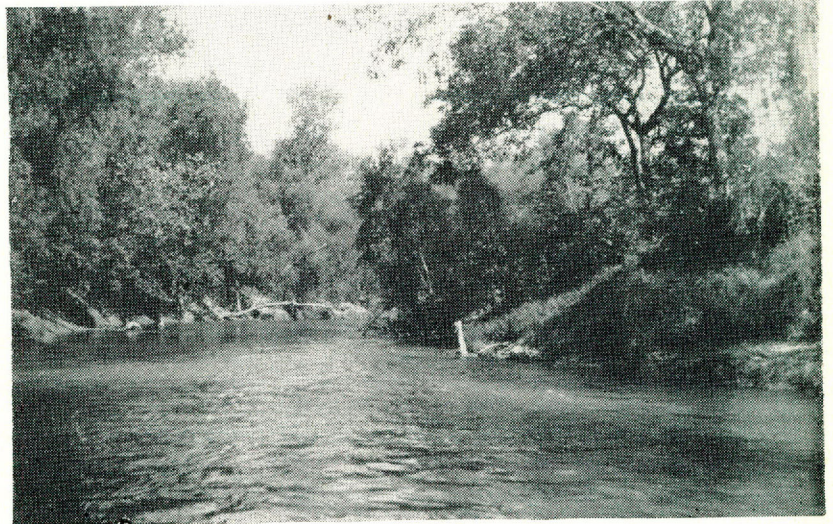
Plummer and Tapp, geologists of the University of Texas have made studies of the Luling brine in connection with hydrogen sulphide. (See Transactions Texas Academy of Science 1943). "The Luling water as it comes from the well

contains about 350 parts per million of hydrogen sulphide. This compound, when it reaches the surface and is exposed to the atmosphere, begins to escape into the air, and this loss to the air continues as it flows through the shallow ditches and over the waterfalls . . . Trillions of sulphur bacteria swarm in the Luling water. The result is that the hydrogen sulphide under normal conditions diminishes rapidly at first as the water flows through the tanks and skimming pits, then more slowly as the water reaches the ditches, and never quite disappears from the water before it reaches the river."

A number of aeration fountains are located over the field one of which is shown in action. This aeration has no effect on the chloride but effectively removes most of the sulphide. No one has yet devised an economic plan for eliminating the chloride from an oil field. Therefore the resort to the river method which is not always satisfactory. (To return the brine to the oil sands by injection is considered too expensive for the old Luling field).

field authorities this increase will not occur. On the contrary, it is claimed, the amount of salt water will become less because many wells will have been plugged before that time. When salt water constitutes 97 per cent of the pumping the end is in sight, and a few wells in the Luling field have already been plugged. The Mexia field was kept going by sinking deeper wells but the Luling field has no such prospect as shown by numerous deep tests which yielded nothing.

Few fields have an accurate check on the amount of salt water that is pumped or that reaches the stream. If one checks the flow in a ditch, there is a certain dilution from surface drainage, and in the intervening space between the field and the testing station in the river a considerable amount of the salt has disappeared in the banks and bottom of the stream. Therefore the initial estimate of the second foot flow of brine in the field is apt to be too high. My own check and that of Mr. Kellersberger shows about 36 second feet flow from the various fields.



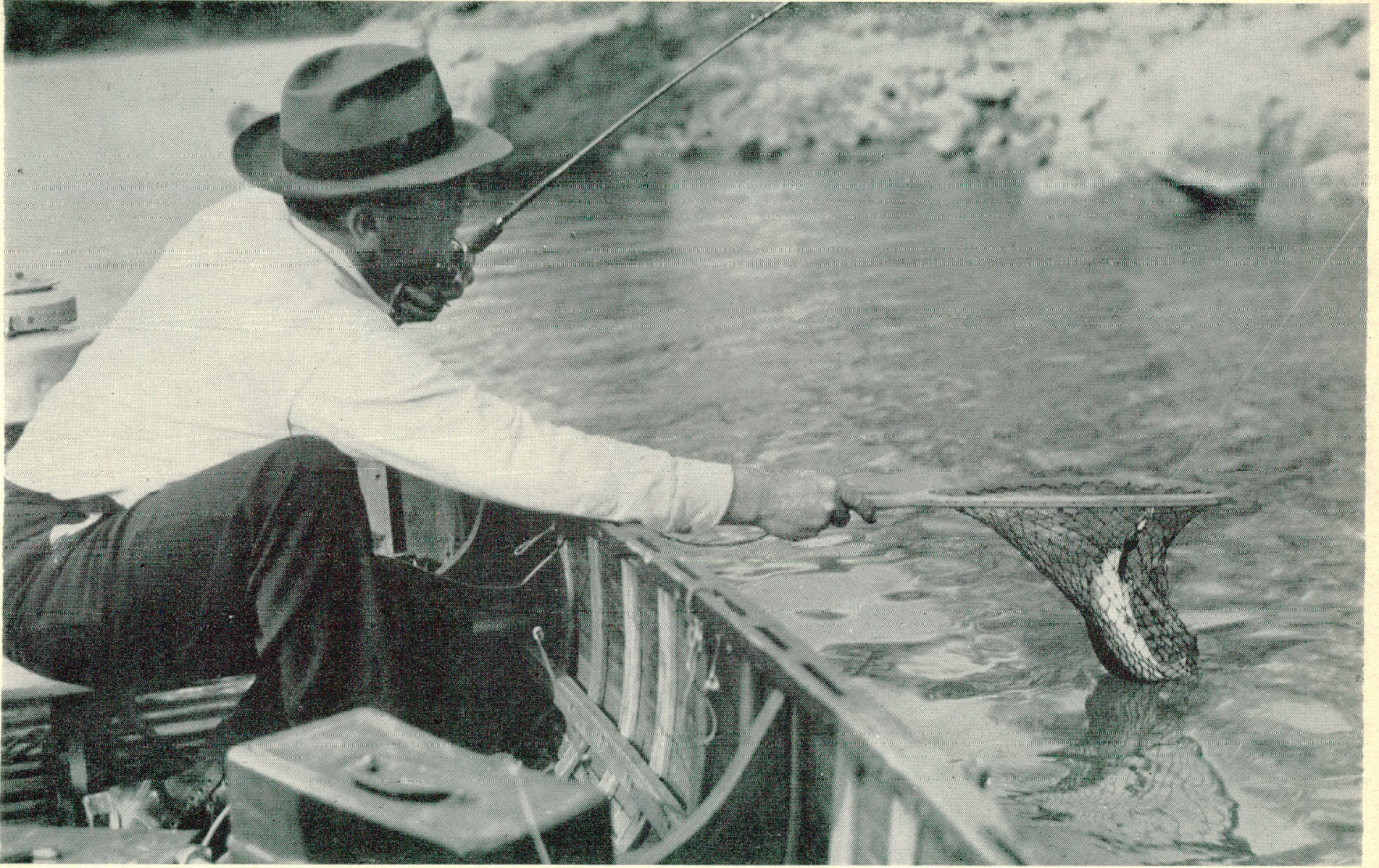
THE SAN MARCOS RIVER as it flows through Palmetto State Park near Ottine.

The assembled chloride of the various confluent comes together in the San Marcos River somewhere above the little town of Ottine. There the dilution brings the chloride down to 500 or 1200 p.p.m., depending on the stage of the river. In the dry month of September 1944 the average was 605 p.p.m. (Kellersberger Report to the State Health Department). By further dilution in the Guadalupe at Gonzales the average in the same month was 235 p.p.m. This is not seriously high for drinking purposes but there are times when the volume of water in both rivers is low and then the chloride climbs to well above 400 parts per million. With all this there is very little taste of the salt.

My best figures indicate that the amount of brine entering the San Marcos River has increased about two and one half times since 1931. Should the same ratio of increase continue for another dozen years a water crisis would arise at Gonzales. But according to oil

Let us see what has happened down stream at Ottine. We have three known factors. The average chloride and the average flow of the river at Ottine, and the average degree of chloride in the field. The unknown factor X will be the volume of brine from the fields. To make it explicit the formula would be—The second foot flow of the river, minus the second foot flow of brine would be to the brine as the average chloride of the field is to the chloride in the stream at Ottine, to wit, 348 minus X:X::6380:605. The X is 30.4 second feet which would amount to 469,029 barrels of brine daily. The tons of chloride daily dumped into the river would be 522 or 871 tons of sodium chloride. That would be 12.1 pounds each second for chlorides. This may look like a lot of chloride but the precision of the result is near enough when we compare the weight of the chloride with the weight of the second foot flow of the river

★ Continued on page 18



*When the troubles of the World are Forgotten*

There are millions of fishermen in this great land of ours and they are not all fly or plug fishermen. No sir, not by a creek bank full! As a matter of fact, a large number are known as either hook and line, bank, nigger, trot-line, set hook, bush hook, throw line, jigger poll, patient or just plain lazy fishermen, and by divers other names as well, depending upon the locality in which they fish. They include people in all walks of life—from the barefoot boy to the top executive.

It is not very often you read anything in the magazines of the exploits of these legions. Seemingly, they are a sadly neglected but happy lot. Perhaps it matters little to them whether they are ever in the "spotlight." However, they are a favored class of fishermen, for the law has never required them to purchase a fishing license so long as they confine their activities within the limits of the county of their legal residence.

No matter whatever else may be said of them, they are first cousins to their more professional brethren who use rod and reel in that they can and do spin some tall fishing yarns.

Catfish, bream or perch are the favorites of most hook and line fishermen; however, a few go out for bass and crappie. Texas waters, both running streams and lakes, abound in these species.

There are several varieties of catfish such as channel, blue, yellow, and mud; the channel being the gamest and the choice for the table or fish fry. Its meat is white and is found in or near swift water.

Most commonly used bait for catfish include earth worms, cut fish, snails, lizzards, minnows, chicken and rabbit entrails, white soap, etc. For bream, perch or bass most hook and line fishermen choose live minnows or earth worms.

As to the kind of tackle used, it includes anything imaginable from a plain ordinary switch to the finest cane or bamboo pole; any kind of line from sewing thread to plow line, and as for hooks, anything from a bent pin to the finest forged steel in a variety of designs and sizes, according to the taste of the fisherman.

Our hat is off to the hook and line fisherman for he usually comes home with the meat and has lots of fun doing it.

Many anglers are now using the fly rod for bass and panfish, and when the beginner is successful in hooking a good bass or taking some fat bluegills, he becomes an enthusiastic convert.

The many errors and misconceptions regarding this type of fishing have prompted the following suggestions:

Equipment: A GOOD tempered bamboo rod is best and cheapest in the long run. Don't buy a cheap rod "just to try

fishing" because you are wrong then before you start, but get a standard make, which is priced from \$12 up. One rod maker has designed rods especially for this fishing in both 8½ and 9 feet, and has marked the right size line to fit each rod, on the rod itself.

Either a "single" action or "automatic" fly reel is suitable.

With your good rod, reel and line, and gut leader you are now ready to actually go after the fish. If you have never used the fly rod your sporting goods dealer can usually show you how it's handled, and we assume you can cast a reasonable distance before you start fishing.

Lures are of two types SURFACE and UNDERWATER. The surface bugs are very effective towards evening in calm water and are made on No. 6 to 1-0 hooks like the "Wilder Dile" and Spook Bass Bugs. Cast the bug in pockets in the weed beds, lilies and rushes, pause then twitch slightly and repeat and thus retrieve, and DON'T HURRY.

# HINTS FOR THE ANGLER

If Mr. Bass is around you'll get a smash and then a battle that is something and full of thrills, because a one-pound bass on a fly rod is equal to a 3-pounder on a bait rod.

Panfish and especially bluegill take the baby size bugs and are to be found usually along the break-off or weed line.

The underwater lures are streamer flies, spinners, small bugs, etc., which your sporting goods dealer can help you select.

A few don'ts: Don't let your line sink and water log. Keep well greased and floating when fishing surface bugs. Make sure that your underwater lure is brought to the surface before attempting to pick it up on the back-cast, otherwise you will strain your rod or break a tip.

Don't lift even a small fish with a fly rod, use a net.

Don't cast too far. 30 to 50 feet.

Don't stand up in the boat, learn to cast sitting down.

Don't hang your rod around on the boat. Take care of it and it will serve you well for years.

Don't get discouraged if you are not successful your first trip or two, because this "splashy" sport is worth some effort to learn.

In bait casting, remember that your reel needs a regular oiling at the points of greatest friction, namely, the two bearings and the level-winding screw and sliding bar. Oil it lightly every day, and in heavy use, two or three times a day. Keep sand and grit away. Grease gears after severe use.

In putting on a new line, use a cork arbor or put on ten or fifteen yards of old line as a filler, and to this attach the new line. Reel off your new line so that its spool revolves. Run a pencil or nail through the center. Do not let line spiral off the edge of spool with the spool stationary or you will put a heavy twist in it.

There is a "balance" between your casting rod and lure and line. It is difficult to cast a light lure on a "medium" or "stiff" rod or with a 20 to 25-pound test line. Use a light line with a light lure and with a light whippy rod.

Keep your lures in good condition. Have a file to sharpen hooks. Dry your lures before putting them back. Your line should be dried after use, and rubbed down with a very light oil. It is particularly important to have a floating line with surface lures. Wire leaders are not necessary for bass, but important for wall-eyes and great northern, and other fish with sharp teeth. Wire leaders affect the action of lures, particularly surface ones. Ten inches is long enough.

Learn how to use various lures in the way that they were intended, it pays dividends in increased catches and more fun. Learn chugging, surface tease, stop-and-go method of retrieving your plugs.

Always make the overhand cast and seldom, if ever, the side-swipe as the latter may be disastrous to someone in the boat. A hook in the ear, nose, or eye is a serious matter.

String fish through both lips, not through gills. This keeps them alive better and facilitates movement of the boat through weeds, etc., with less chance of losing fish. A good sport returns undersized fish, and if it is so small that he has to measure it, he gives it the benefit of the doubt. Wet hands before handling fish, particularly crappie. Unhook carefully.

When walking through the woods,

★ Continued on page 18

# Bobbin

By DUVAL J. FARRIS

THE writer was afforded the unusual opportunity a few days ago to go fishing in a Florida lake known as Lake Butler, located about twenty miles northwest of Tampa. The lake, water, and aquatic vegetation greatly resembles the lakes in Southeast Texas. We were fishing in a tributary of the lake for what they call "Speckled Perch," known to fish culturists and Texas fishermen as "Black Crappie" or "Calico Bass." We used minnows for bait and, incidentally, Florida native fishermen hook minnows through the mouth instead of through the tail or back.

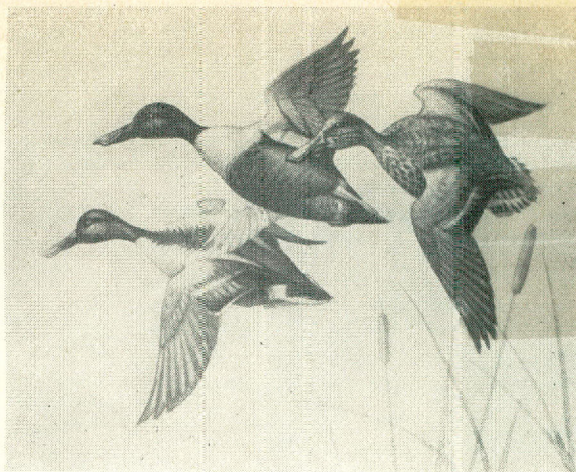
My usual Game Warden luck was with me and the so-called "Speckled Perch" were not biting, so we amused ourselves by catching Warmouth Bass or Goggle-Eye, which were nice and fat and unusually ferocious in their fight for freedom after being hooked.

But the educational portion of the trip came as we were rowing back up the creek at sundown. Two fishermen were coming up the creek—one paddling quietly in the rear of the boat, while the other sat in the front holding a long cane pole with about two feet of line on the end of it. The line had a commercial Al Foss-type pork rind on the end as a lure, and he was using three 7/0 hooks, chain style, with the rind. Much to my amazement, he ripped the end of the pole around the edges of the vegetation and brush in somewhat of a loud manner. Just as curiosity about killed me, he had a hard strike. I thought surly the pole would break, but it didn't and he landed the bass—approximately 3 pounds.

Being very interested, I questioned him about the procedure. He said it was known as "Bobbin." He said it was much better than casting or flyfishing in these brushy, dense streams and lakes because he could work places with ease that no other type of fishing would allow him to do.

Having been with the Game Fish and Oyster Commission three years before entering the service and having wide-spread experience fishing in Texas waters, it was entirely new to anything I had ever seen there, but I fully believe that Texas fishermen can catch their share of the bass in lakes and streams having a dense amount of brush and vegetation in this same manner. Be sure to have a long pole because it takes the pull of the fish and, naturally, the line because it's short must be strong. The ripple of the pole attracts the fish and then they go after the pork rind. Try it from sundown until dark when snakes scare you away, or either early in the morning.

## YOUR 1945 DUCK STAMP



## WILL LOOK LIKE THIS

The Federal "duck stamp" for the 1945-46 hunting season will feature as its central design three shoveller ducks in flight.

The design for the new stamp is the work of Owen J. Gromme, curator of birds and mammals at the Milwaukee Public Museum in Milwaukee, Wis. The original sketch, in black and white water color, shows two male and one female shovellers in full spring plumage.

Twelfth in the series, the new migratory bird hunting stamp, universally called "duck stamp" is now on its way to the engravers and will be available to hunters and philatelists at all first and second class post offices on July 1.

Sold for \$1, the duck stamps provide funds to help finance the Federal Gov-

ernment's refuge program. Ninety percent of the money realized from the sale of the stamps is used by the Fish and Wildlife Service to supplement other funds for the purchase and maintenance of waterfowl refuges throughout the country. The remaining 10 percent is used for the printing and distribution of the stamps, enforcement of the Migratory Bird Hunting Stamp Act, and other Federal activities for migratory bird conservation.

Required by law of all migratory-waterfowl hunters over 16 years old, the so-called duck stamps provide the only available index to the number of wildfowlers in the country, says the Service. During the 1944-45 hunting season 1,169,352 stamps were sold.

## Hunting-Fishing Licenses Decline

Hunting and fishing license sales during the fiscal year ended June 30, 1944, show very small declines in comparison with the previous season, according to a preliminary statement issued today by the Fish and Wildlife Service of the Department of the Interior.

During the 1943-44 hunting season, 7,483,058 licenses brought in revenue to the states of \$13,538,606 as compared with the previous season when 8,080,678 licenses sold for \$13,576,383, it was stated. The number of licenses declined 7.4 percent while the decline in revenue was only .3 percent.

Anglers purchased 7,825,206 fishing licenses in 1943-44 for \$9,829,166, against 8,028,674 for \$10,024,329 in 1942-43. The decline in number amounted to 2.5 percent and in revenue to 1.9 percent, the figures show.

The number of non-resident hunting licenses sold in 1943-44 increased from 90,972 in 1942-43 to 109,513, or 20.4 percent, while the non-resident fishing licenses decreased 16.8 percent in 1943-44, or from 744,897 to 619,870.

An analysis of the data obtained from the various state fish and game departments reveals upward trends in the sale

of hunting licenses in the New England, Rocky Mountain and Pacific Coast states; the principal decreases in such sales occurred in the Southeastern, Middle Western and Middle Atlantic states.

The Fish and Wildlife Service announced that federal migratory-bird hunting stamps, commonly called "duck stamps," were issued to 1,169,352 sportsmen for use in the 1943-44 season. This figure falls 214,277 short of the 1942-43 season when 1,383,629 stamps were sold at \$1 each to all waterfowl hunters over 16 years of age. These stamps are required in addition to the state licenses.

## Texas Big Game Count

Texas had a big-game population of 320,860 head when a national inventory was taken in the winter of 1941-42, according to the Federal Fish and Wildlife Service.

The total for the continental United States was 6,748,424 head. Pennsylvania lead the list of all states with 752,637.

Ranking ninth from the top, Texas big game were as follows:

White tailed deer, 254,700; mule deer, 18,000; elk, 400; prong-horned antelope, 9,000; desert big-horn, 110; peccary, or javelina, 38,000; black bear, 300; buffalo, 250. Total 320,860.

# Tin Shield Keeps Squirrel Damage Low In Orchard

Squirrels frequently cause considerable damage to pecan trees as well as consume quantities of the crop, and as a consequence pecan growers are continually warring against these animals. In certain localities where squirrel range is limited it is sometimes possible to completely eliminate these animals but in certain other situations it is neither possible nor desirable to do so. Some device which can be constructed and maintained at a small cost and which will prevent squirrels from damaging trees and the crop is most desirable. One pecan grower has devised a shield to be placed around trees which is reported to have been 95% effective against squirrels over a four-year period. The shields were constructed and attached in the following manner (see diagram at right). A hole slightly larger (about 1 inch) than the diameter of the tree was cut out of the center of a piece of tin. The hole should roughly conform to the shape of the tree. Next, a series of triangular teeth were cut in the remaining tin around the cut hole. The teeth were turned upward, the shield slipped around the tree and **EVERY OTHER** tooth nailed to the tree. By fastening only every other tooth it was found that there was sufficient room for the expansion from three years growth of the tree. The edges of the tin were then overlapped as much as possible so that there was a downward slope to the shield, and then bolted together.

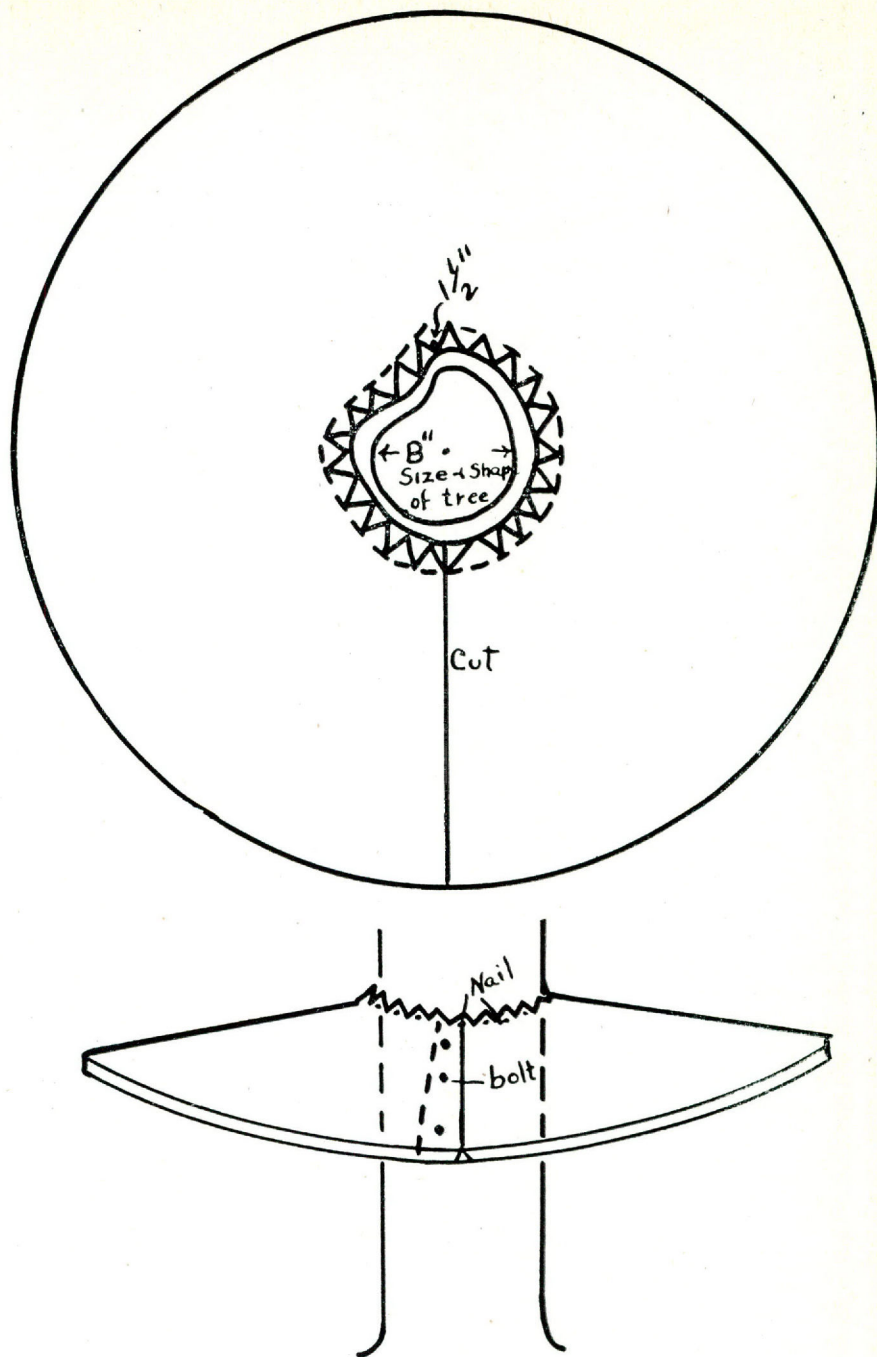
It has been found that shields should be five or more feet from the ground and should extend out from the tree about 15 inches. Painting the shields with aluminum paint will help preserve them. A half-inch flange on the outer edge strengthens the shield and makes them more effective.

When it becomes necessary to move the shield due to growth of the tree, the heads of the nails attaching it to the tree can be cut off and left in the tree.

To prevent squirrels from coming in the overhead route it is necessary to clear a swarth around the orchard or individual trees. If trees are near fence posts it is essential to cover the top 15 of the post with tin so that squirrels can not get on the post to jump to the trees.

The 145 shields observed were constructed and put up at a cost of approximately 35 cents each. Old tin signs were secured free of charge for the purpose. If new tin had been used the cost of each shield would have been increased somewhat. But undoubtedly other pecan growers can secure old tin signs as this man did.

Pecan growers having trouble with squirrels might, in the long run, find the use of shields much more economical than other means of control.



## 118,879 Predatory Animals Killed

The taking of 118,879 predatory animals in Federal-cooperative control operations carried on in 29 states during the fiscal year, 1944, has resulted in the saving of thousands of sheep, calves and poultry needed to increase the production of food and wool, according to the Fish and Wildlife Service.

Despite insufficient manpower, this total represented an increase of 3,592 over the take of 115,267 predators in the preceding year, and consisted of 108,050 coyotes, 8,900 bobcats, 1,170 wolves, 592 bears and 167 mountain lions.

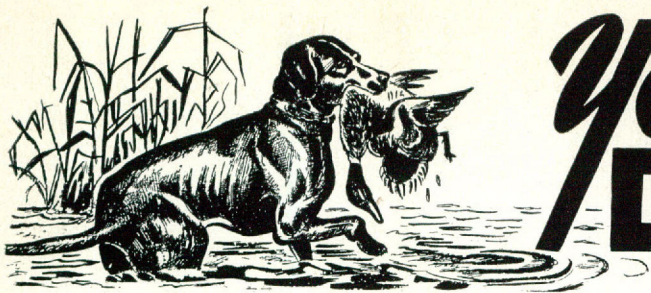
The greatest number of coyotes were taken in Texas—14,756. Wyoming was

second with 12,002, followed by Oregon with 10,343; Colorado, 9,832; Nevada, 9,790; Idaho, 8,800; California, 8,211; and Montana, 7,035. Of the methods used for taking predators, trapping accounted for 72,727.

From July 1, 1915, to June 30, 1944, the Service reports that control operations have destroyed a total of 1,771,663 predators, of which 1,569,625 were coyotes.

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**Where Do the Antlers Go?**—perhaps many people have wondered where or what happens to the antlers shed each year by deer. Many are eaten for their mineral content by mice, rabbits and porcupines. Other disintegrate and are absorbed into the soil.



# Your DOG

## DOG TICKS

By R. D. TURK, D.V.M.

**T**HERE are few dog owners that have not seen their dogs infested with one or more varieties of ticks or who have not wished for some easy method of keeping their animals free of this pest.

There are several different kinds of species of ticks that may be regularly found on dogs. Certain species are more prevalent in certain sections of this country than others. All are of importance as parasites of dogs and many attack other animals and man. Many ticks carry disease from animal to animal, or from animal to man in addition to the irritation produced by their bites.

The American dog tick is probably the most widely distributed tick. The Rocky Mountain spotted fever tick and the Pacific Coast tick are two very closely related species. These three ticks are very similar in appearance and only an expert entomologist can definitely determine which is which. The lone star tick, the Gulf Coast tick and the brown dog tick are the varieties of tick found most often on dogs in Texas.

The American dog tick and related species have been known to transmit Rocky Mountain spotted fever and tularmia or rabbit fever. Because of these and other diseases, ticks should always be removed with forceps or tweezers, the ticks dropped into kerosene or turpentine as soon as picked off and the hands thoroughly washed when the job is done. Care should be taken to prevent crushing an engorged tick. If a tick is accidentally crushed, do not allow the blood to get on the hands.

All the ticks mentioned pass through four stages: the egg, the seed tick, or larva, nymph and adult. The engorged female tick drops off, lays several thousand eggs and dies. The eggs hatch into seed ticks. These attach themselves to warm blooded animals, usually small rodents, feed about two weeks, drop off, and shed their skin and are known as nymphs. The nymphs attach themselves to a warm blooded animal, again usually a rodent, feed several days, drop off, shed their skin and become adults. The adults attack dogs or other large animals, the female is fertilized, becomes engorged, drops off to lay eggs and thus the cycle is complete. All the ticks mentioned are found in the open except the brown dog tick. The brown dog tick has become adapted to life in kennels, barns and houses and the immature stages feed only on the dog. It is of particular importance in certain areas because it sometimes carries canine tick fever.

Derris dip, prepared by stirring two ounces of derris or cube powder into a gallon of soapy water is one of the most effective treatments to kill the ticks on the dog. At the present time these powders are not obtainable because the demands of the armed forces. Pine oil is probably the best available substitute. If only a few ticks are present, they may be picked off by hand, using forceps or tweezers. It is impossible to free heavily infested brushy areas of ticks, but they may be partially controlled in yards or around houses by keeping the grass or other vegetation short. Where shrubbery is infested, it may be sprayed with nicotine sulphate solution. Use about 2½ teaspoonfuls of the 40 per cent solution to each gallon of soapy water.

Since the brown dog tick infests houses, dogs kept in such places are constantly becoming re-infested with hundreds of immature as well as adult ticks. It is fortunate that this tick does not attack human beings. It is essential if they are to be controlled that not only must the dog be treated, but also his surroundings. If possible, use creosote oil on kennels or infested out buildings. Dogs should be kept in one place to prevent the ticks from being spread all over the premises. Kennels or cages should be so constructed as to reduce the number of hiding places to a minimum. When a dwelling house becomes infested, the dog or dogs must be kept out of doors and the baseboards, window casings and other possible hiding places sprayed thoroughly with some standard fly spray. The ticks are resistant and must be thoroughly wet with the spray if they are to be killed.

Once a place becomes infested with the brown dog tick, weeks and sometimes even months are required to get rid of all the ticks. This is truly one instance where an ounce of prevention is worth a pound of cure. There is no easy way to control ticks. This is particularly true at the present time when the rotenone bearing powers, cube and derris roots are unobtainable for this purpose.

### First Aid

**F**IRST aid training and advice as to the proper manner of rendering assistance in event of injuries, accidents and other emergencies has been made available to many persons within the last few months. There is no doubt many persons' lives have been saved as a result of such training. It is of importance that dog owners also be in-

formed of what to do in case of certain emergencies in order that injury to the animal may be minimized, or even his life saved. One should always seek the aid of a veterinarian in severe injuries or serious disease conditions but there are many things one may do until such assistance can be obtained.

One of the essential things to remember in the handling of any injured animal is that the animal is usually badly frightened and nervous. He may be inclined to snap at or bite the person proffering assistance. This is particularly true if an animal has been hit by an automobile and a stranger rushes up to him. A tape should be placed around the animal's mouth or his head held firmly by an assistant, particularly if the first aid treatment is painful to any degree, in order to protect the operator.

Cuts, scratches, bits or other skin breaks are particularly prevalent in dogs. Such injuries should be carefully cleaned with soap and warm water to remove all foreign material, dirt, hair, etc. Hair should be clipped from around the wounds to facilitate cleaning and to prevent contamination. Any loose jagged edges of skin should be trimmed off, and the wound treated with some reliable disinfectant, such as tincture of metophen, tincture of iodine, or an anti-septic dusting powder. Powdered sulfathiazole is excellent for wounds of this type. Do not attempt to suture small wounds. In cuts that bleed profusely the bleeding may be controlled by pressure bandages or by applying a tourniquet above the wound. If a tourniquet is applied it should be loosened every 15 or 20 minutes so that circulation below the tourniquet will not be permanently impaired. In those cases sufficiently severe to require a tourniquet to control the bleeding professional help should be obtained as soon as possible. In case such help is not obtainable the tourniquet should be replaced by a pressure bandage at the earliest possible moment.

In cases of severe wounds, broken bones or dislocations the animal should be kept as quiet as possible to prevent further injury to the surrounding tissues and professional help should be obtained as promptly as possible. The animal should be placed in a large well padded box or basket and if the weather is cold, care should be taken to prevent chilling while being transported from one place to another. One should always ascertain, if possible, when a dog is badly cut up fighting whether the dog inflicting the wounds is in the first stages of rabies. If a dog acts suspicious he should be quarantined for two weeks to determine definitely whether or not he is in the incubative stages of this disease.

Mild burns or scalds may be relieved by treatment with a weak solution of tannic acid or a saturated solution of baking soda. Ointments of the type sold for human use are valuable in treating burns in the dog.

When a dog comes in from hunting with sore eyes, a careful search should be made for foreign objects. Often a thorn, briar, or needle grass awn may be present. Such objects should be removed as gently as possible and the eyes washed with warm boric acid solution. A few drops of freshly prepared 5-10 per cent argyrol will also aid. If

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# ARMS AND AMMUNITION

Edited by A. S. JACKSON

## Shooting to KILL Game

Often—too often—that one stray shot that reaches out and accidentally kills duck and other game establishes forever, in the hunter's mind, the killing range of his gun. The result? Crippled birds and animals. Some of these cripples are so badly wounded that even though they get away, they die a short time later. Others, not so badly hurt, fall easy prey to predators.

The Armed Forces devotes considerable time teaching the capacity and limitations of small arms. Estimation of distance is an important part of this training. The Infantry is armed with the M-1, .30 caliber (Garand) rifle. The Infantryman knows the trajectory of his bullet runs from 2.3 minutes of angle at 100 yards through to 17.9 at 600 yards with M-1 ammunition. If his rifle is sighted in at 200 yards and he has no idea whether the enemy is 200, 500 or 600 yards, it means the difference between a hit and a very wide miss. It also could mean the difference between life and death of our Infantryman. So, he learns these things.

It is very easy to learn to judge distance. Pick out objects in the woods, field, or even city streets, objects that you guess are 20, 30 and 40 yards away.

Count your steps to these objects. It is surprising how quickly range estimation can be acquired in this way. Many hunters are adept at gauging distances. All trained riflemen are. It is a part of the training. The results are well worth the efforts. It gives the hunter confidence and best of all, it means clean kills.

Tables of elevation and shotgun patterns are dry things to weave through. It is extremely easy to find out almost exactly what your particular shotgun will do at any given range and load. Tack up a large sheet of wrapping paper, say at 20 yards, then 30 and 40 yards. Hold on the center and touch off. Then study the shot pattern. If a quail or duck could not get through any part of that pattern, the gun is deadly at whatever distance it will throw such a pattern. This will vary, of course, with the gauge, load and choke.

That occasional chap who knocks 'em dead at 100 yards or more (around the club at night), will find this pattern test interesting. Tall tales are not to be discouraged. We all get a kick out of

hearing them. The individual shooter should, nevertheless, know the actual limits of his gun. It means better and safer hunting.

If some want to reach out for the long shots, 75 yards or so, then the 12 gauge magnum, with all its weight, is needed. Most waterfowl are killed at 40 yards and under, and most quail at 30 yards or under. The light, trim little 20 gauge will kill them at these ranges.

We hunters don't do so badly when you consider the billiard players, and golfers. They miss many shots. If hunters had time to back off and size up their shots as those fellows do, we probably never would miss.

In recent issues of various conservation and outdoor magazines, articles have been published extolling the superlative virtues of the comparatively new .257 Roberts, high power rifle cartridge. As a matter of comparison, for the benefit of our readers, it has less shocking power at 300 yards with any bullet weight with which it is regularly loaded than does the oldest cartridge in the class, the 250-3000 Savage. The Western Cartridge Company's latest ballistic figures rate the 250-3000 cartridge with 87 grain bullet as retaining 2170-foot seconds velocity and 910-foot pounds energy at 300 yards, as compared with 2005 foot seconds velocity and 760 foot pounds energy for the same weight bullet from the .257 Roberts. At 300 yards the .257 Roberts cartridge loaded with a 100 grain bullet retains 860 foot pounds energy. With the 117 grain bullet it retains 835 foot pounds energy at 300 yards. The .257 being of slightly larger diameter, lacks some of the "atmosphere-bucking" qualities of the 250-3000, and is therefore not quite as effective at long ranges as the old, reliable .250.

### Why Guns Don't Blow Up

In these days of global warfare, when everyone is conscious of the use of guns, cartridges, bombs and other explosives, this question is frequently asked: "Why

is it that the powder charge in a cartridge doesn't blow up the chamber of a gun, like dynamite or black blasting powder would do in the bore hole of a quarry or mine?"

The answer, according to a Remington Arms Company authority, lies in the fact that different kinds of powder are used for different purposes.

"For instance," he said, "the distinction between an explosive and a propellant powder is that an explosive generates its energy in an extremely rapid or violent manner and is intended to disrupt, scatter or burst the container. This is generally known as a high explosive.

"That type of explosion is generally called a detonation in contrast to the slow or progressive combustion of propellant powders. The bullet or shot charge at the front end of the propellant powder charge is not absolutely confined and is permitted to move which, of course, relieves the pressure immediately. Propellant powders, in the main, are made from what are technically known as 'slow and progressive burning' materials. This type of powder, with its gases finding an outlet through the bore of the gun, continues to PUSH the bullet or shot charge through the barrels as it burns, thus relieving the generated pressure on the chamber and sending the missile on its way at top speed.

"The term 'slow' is used in a comparative sense. For instance it requires approximately 1/1000th of a second for a .30 caliber cartridge to reach the muzzle of the rifle after the cartridge has been fired, which is, of course, very fast time. But the energy of detonation powder would have been exhausted several thousand times faster.

"Of course," he continues, "these new powders generate a lot of pressure and should not be used in the old Damascus barrels. But unless the barrels of modern guns are obstructed by some foreign substance, such as mud, snow, etc., there is little danger of the present day powder blowing up the chamber of a gun."

# Oil Fields

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minus the 30.4 sec. feet, and find the ratio to be .000612 or 612 parts per million, instead of 605.

That fish, caught in the San Marcos fish bait, have told the writer that no live mussels could be found for quite a distance down the Guadalupe River due to salt water or possibly to some toxic substance derived from the oil.

Water organisms have their preference, had an oily taste was a complaint heard years after the traps had virtually stopped the escape of fugitive oil. But oil deposits along the banks and on the bottom of the stream remained caked in an almost indestructible form.

A few years ago the writer made inquiry along the stream and learned that game fish, especially bass, no longer had the oily taste. That was the claim of fishermen who are sometimes inexact in their statements. An effort was made to verify the claim by catching a few samples. In several trips no bass were caught, probably the fault of the fisherman, but catfish were easily obtainable. The fish, fried and eaten at noon, was delicious beyond question. Some of the fish was left in the refrigerator for the evening meal. The cold fish then had a decidedly kerosene taste. The catfish, a bottom feeder, is apt to get some oil when probing for food. However, no complaint of oily taste has been heard in recent months.

Fishermen along the San Marcos and Guadalupe Rivers, who use mussels for encs whether for fresh or salt water and respond to the most favorable environment. A most unique discovery was made when the writer, in studying microscopic organism in the San Marcos River at Ottine, came upon a marine diatom that he had never seen anywhere except in the Bay of Matagorda; and there it was none too common. It was identified as *Bacillaria paradoxa*. Its behavior as a microscopic vegetable is most amazing. At one moment it is a small picket fence. Then it elongates itself into a single, long picket with joints. Then it rebuilds itself again into a picket fence, and so on indefinitely as if never tired of its destructive constructive activity. This little novelty can be picked up in a plankton net at the low concrete bridge below Ottine, more frequently perhaps, when the river is a bit low and therefore more salty.

## FISHWORMS

We have for immediate shipment thousands and thousands of lively, healthy Fishworms. Raised here in "Sunny Tennessee" especially for the "particular" sportsman. They are well scoured, transparent, tough, and lively. Priced as follows: 100 for \$1.00; 300 for \$2.00; 500 for \$3.00. Shipped postpaid promptly, anytime. C. M. Stoner, Harrison Pike, Chattanooga 6, Tenn.

# Hints

★ Continued from page 13

always carry the rod with the butt forward and not the tip. This is particularly true with fly rods. Many a tip has been smashed in carrying the rod with the tip in front.

Test your line every time you put on a new lure by breaking off the end. It is surprising how soon casting weakens the first eight or ten inches. Most fish that "break lines" are the result of not removing the frayed portion. A cracked agate will ruin a line in a short time. If the rod is left for several weeks in may corrode at the joint and "freeze" and be hard to pull apart, so separate it now and then.

Never put a rod away damp or in a damp case. Dry it thoroughly. Your aluminum rod-case is not necessarily water-tight at the end and your bag may become soaked without your knowledge.

☆

"Fly fishing is a very pleasant amusement, but angling or float fishing I can only compare to a stick and a string, with a worm at one end and a fool at the other."—Samuel Johnson.

☆

As Papa Gnu walked in the door Mama Gnu said, "I've got Gnus for you."

☆

Scientists believe turtles to be totally deaf. To compensate for the lack of this sense, however, they are especially sensitive to vibrations which they receive through their shells.

☆

"There is a passion for hunting, something deeply implanted in the human breast."—Charles Dickens.

☆

The beaver may appear quite harmless, but when aroused it can become one of the deadliest of water fighters. A beaver can easily kill a dog, if the dog tries to battle him in the water.

☆

Muskrats prefer swimming to walking. A muskrat caught in a fish trap remained under water 17 minutes. Upon returning to the surface and seeing the owner of the trap it plunged a second time and stayed under 10 minutes more.

☆

Don't be ashamed of your own favorite way of fishing, no matter what it is. Any method of fishing is worthwhile, so long as it is legal and sporting. The purist who uses only dry flies, for example, misses a lot of fun if he never tries still fishing for suckers or worm fishing for trout or angling with a bobber.

☆

Rhyme it with vine. That's the way to pronounce carbine, according to Winchester, developers of the Army's five-pound spit fire that will fire fifteen slugs as fast as you can pull the trigger.

Although military personnel who use the carbine sometimes prefer to call it car-bean or car-bin, the Army, Navy and Marine Corps prefer to rhyme it with vine. Nazis and Nips pronounce it deadly and let it go at that.

# Really Scares Crows

Some crows just don't scare. Or perhaps it's that the scarecrow isn't frightening enough. Some crows have been known to perch smack on the shoulder of a scarecrow.

But now science has come up with a new type of scarecrow, guaranteed to do its job unflinchingly.

The University of California at Los Angeles is introducing an electrical scarecrow. It's a new high-voltage friend of the farmer—a device with six beacons that move back and forth across cabbage patches and the corn fields scaring the daylight out of marauding crows, ducks and rabbits. It also is said to wear old clothes longer than the present type of scarecrow.

The University has come up with another sinister discovery. The scientists say that insects find a special attraction in blue light. So blue lights have been harnessed to gadgets that lure the bugs to their doom, much like the sirens of Greek mythology lured the sailors of Ulysses to their death.

# First Aid

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the edges of the eyelids stick together they should be greased with plain vaseline to prevent their sticking.

Often no foreign body will be present in the eye but there may be infection from slight wounds, scratches, bites, or other injuries. The irritation may be mild or serious. Gently flushing out the eye with boric acid solution followed by 5 per cent sulfathiazole ointment usually is beneficial.

Car sickness is not uncommon in dogs and many dogs can not ride any distance without drooling saliva, or even vomiting. In animals that have a tendency to be car sick, no food nor water should be given for several hours before starting the trip. A few grains (3-5) of potassium or sodium bromide before starting may help in controlling the symptoms.

# Illegal Ducks Cost \$17.80 Each

Hunters who violated the Federal migratory bird regulations during the last fiscal year paid \$62,357 in fines and received jail sentences totaling 462 days, according to a report to Secretary of the Interior Harold L. Ickes.

The 60 game management agents of the Fish and Wildlife Service, working singly or with Federal deputy game wardens and state officers, obtained 1,985 convictions for illegal hunting during the period.

One of the largest fines was paid by an Ohio hunter who killed 28 ducks in one forenoon and received a fine amounting to \$17.80 per duck.

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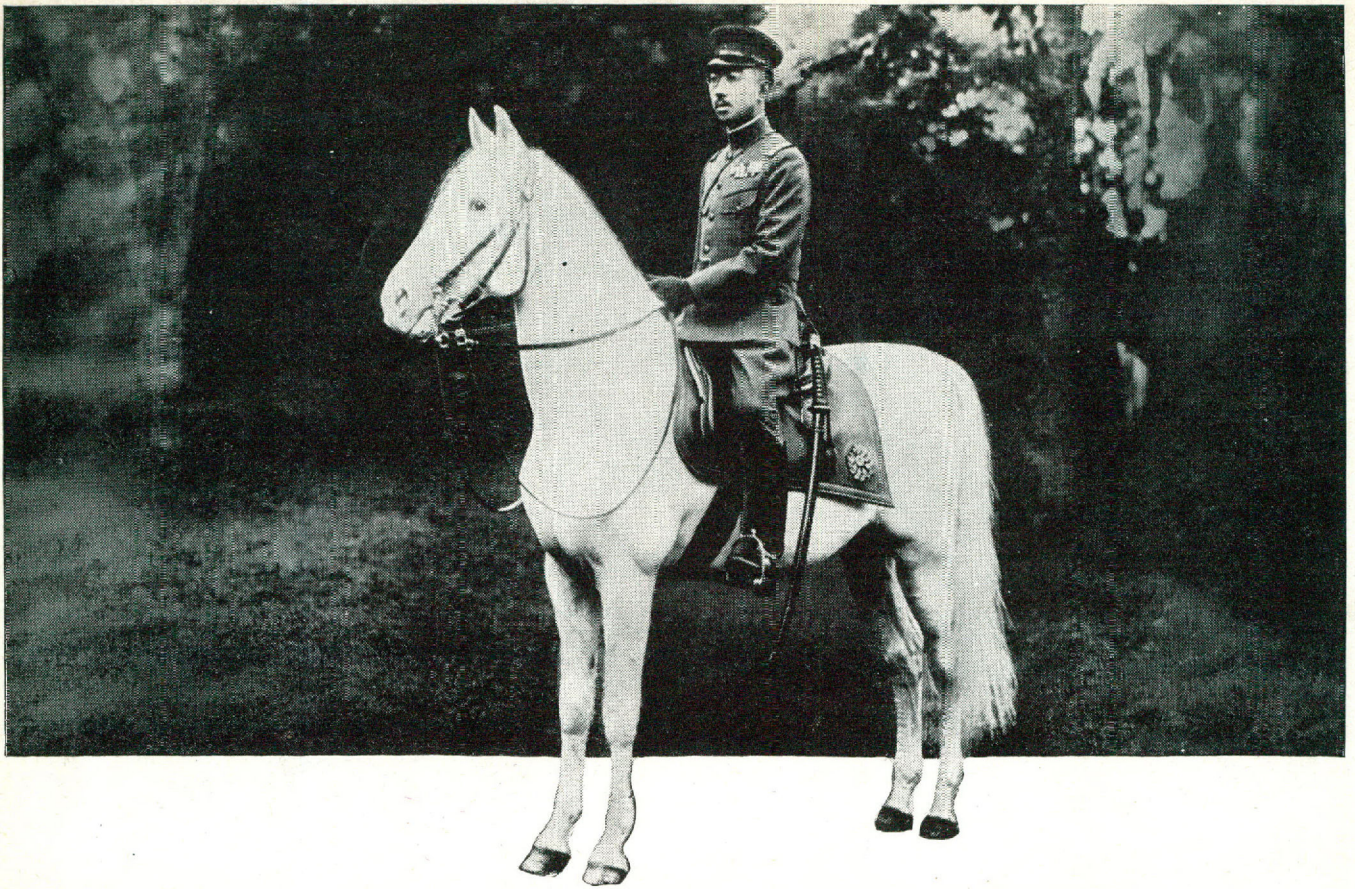
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## LET'S GET THE ADMIRAL HIS HORSE!



Official  
U. S. Navy Photo

**Admiral Halsey** has his eye on a fine white horse called Shirayuki.

Some time ago, at a press conference, he expressed the hope that one day soon he could ride it.

The chap now in Shirayuki's saddle is Japan's Emperor—Hirohito.

He is the ruler of as arrogant, treacherous, and vicious a bunch of would-be despots as this earth has ever seen.

**The kind of arrogance shown by Tojo—who was going to dictate peace from the White House . . . remember?**

Well, it's high time we finished this whole business. High time we got the Emperor off his high horse, and gave Admiral Halsey his ride.

The best way for us at home to have a hand in this clean-up is to support the 7th War Loan.

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