HELMER BELTS FOR WESTERN IOWA

Commissi on personnel planting the 1/2 mile shelterbelt.

Jack Kirstein Photo

In all, nearly 10,000 plants will be set to make up the finished shelter belt. Approximately 4,000 bush honeysuckle, and 4,000 of the ninebark will be used. The balance is made up of more than 1,600 of the hybrid poplars.

Many Iowa farms could have benefited from such a planting during this spring when the high winds caused so much drifting soil erosion over much of the state. Areas such as the flat alluvial bottoms of the Missouri river and the flat prairie areas of northern and northwestern Iowa could use the aid of such shelter belts.

Other plants such as the purple willow and conifers could have been used and can be used in other areas. However, the evergreens would be slower in providing the necessary height, since their growth rate is slower than the poplars.

Not only will the shelter belt stop the wind erosion of valuable farmland, but it will break the force of winter winds. This will allow the winter snow to accumulate on the fields instead of being blown off. As a result, when the early spring sun appears, the snow will melt and provide additional moisture for the spring plantings.

A real boon to the sportsman, and the best answer to raising more Iowa game under natural conditions, anyone interested in arranging for such a planting on their farms should contact their local Conservation Officer, a local Game Management Unit, or write to the Des Moines office of the Conservation Commission for details.
COUNTY CONSERVATION ACTIVITIES

Land acquisition was approved for the following counties:

- Davis County received approval for the acquisition of 2.5 acres of land through a twenty year lease for the development of a private roof on a cost of $60.
- Dubuque County received approval for revision of the Massey Marina development plan, relocating sanitary facilities.
- Franklin County received approval for development plan for Popejoy County Park, which would provide picnicking, camping, a re-forestation of low head dam on the Iowa River, with appropriate permission from the Natural Resources Council.
- Jasper County received approval for a development plan for the Mag Holland River Access Area consisting of 80 acres of land to be used primarily for fishing access, some primitive camping and as a game habitat area.
- Polk County received approval for a preliminary development plan for the Duck Creek Golf Course with a more complete detailed planning proposal to be submitted later.
- Tama County received approval for a development plan for the Manatt's Iowa River Access Area to be used as fishing access and boat launching.
- Washington County received approval for a development plan for Marr Park which provides for picnicking, playgrounds and other general park uses.
- Winneshiek County Conservation Board was asked for more detailed plans on the Ambrosion Fishing Access Area on the Winneshiek River.

The Conservation Commission approved the transfer of State land by an agreement of conveyance of two parcels of land costing $12,976 of land known as the Silver Lake State Park in the town of Dallas to the Delaware County Conservation Board for the transfer of 29.5 acres of land known as Lost Island State Park to the County Conservation Board of Palo Alto County.

Monona County received approval for a management agreement for Decatur Bend Access Area and the Onawa Materials Storage Yard located at a total cost of $25,000.

Cherokee County received approval for a management agreement for the Kneb Loan Little Sioux Recreation Area for the use as a fishing access area, picnicking and camping.

Cherokee County received approval for a grant of $114 for the purchase of ski equipment and picnic tables.

The Commission held public hearing on a ski area proposal for Pilot Knob State Park and toured the area under discussion.

...
Iowa Conservationist

February River Smallmouth
For a Change of Pace

The opening of the smallmouth bass season in Iowa usually creates a stir among anglers. The smallmouth is not a major game species—at least not from theerman’s standpoint. Iowa does, however, have some fine smallmouth waters that could stand increased fishing pressure.

The smallmouth fisherman is fairly in the minority among big buffs in Iowa. He has the same sort of luck with himself as he claims the fighting qualities of a fine fish. In June, the early part of the smallmouth season, artificial baits are most productive. Natural or artificial baits are better in late summer and early fall. Of the artificial, wet flies, feather streamers, and streamer combinations, spinner and bucktail combinations are best.

The sunken lure is the best producer early in the season and should be fished well toward the bottom. The season opens at a warm which usually follows closely the spawning period, so that may be pugnacious and strike lure landing near them.

When fishing, stay as far from spot being fished as possible. "Out techniques" apply— all wents slow and deliberate, no foam on the water, no silhouette cast the sky. Fast current will keep most fish down upstream, so fish upstream and of yourself if possible. Cautiously approach a pool and watch quietly for a few moments. Cast to a rise if you see one. One of the best spots to fish is the head of the pool where the current enters. Cast to the fast water and let it carry your lure into and through the pool. Natural cover such as submerged rocks, roots, and stumps as well as undercut banks are also good.

The angler should fish all sections of the first few pools to locate the fish. Then in other pools hit those sections that were productive in the early pools. Use a variety of lures and experiment.

Where to go? Probably the best Iowa smallmouth water will be found in the streams listed below. Remember, too, that many small tributaries to these streams will offer good smallmouth fishing.

Smallmouth water: Upper Iowa River, Yellow River, Turkey River and tributaries, Volga River, Maquoketa River, Wapsipinicon River (and Buffalo Creek). Little Cedar River, Cedar River, Shell Rock River, Iowa River from Aiden to Eldora, and the Des Moines River particularly the West Fork.

Did You Know?

The hummingbird feeds constantly but has no crop for storage of plant nectars on which it feeds. This leads to a condition known as thermal dormancy which prevents the bird from literally "burning up" at night when it is roosting.

Female toads and frogs are usually voiceless except for cries of alarm. But males summon their mates to the breeding pools by voice. They call with the mouth closed by using the inflated vocal sac as a resonating compartment.

The liver oil of the mackerel shark was used as an ingredient in tanning leather in the early 19th century.

Grebes are duck-like swimming water birds, poor fliers but expert divers. They can be distinguished from ducks by the pointed bill, narrow head and neck and tailless appearance.
MATCH YOUR BOAT AND MOTOR

Jack Kirstein

Prospective boat buyers are often confused as to what motor to buy for their boat to provide the maximum performance while keeping an eye on the pocketbook. As a rule of the thumb, for the average canoe no motor over 3 to 4 horsepower should be used.

This also applies to small 10- to 12-foot boats with only 12 inch depth. The standard depth of a transom for any motor is a minimum of 15 inches.

When the horsepower increases, beam width becomes an important factor, because safety depends on both size of the boat and its design.

A 5HP motor should not be used on less than a 12- to 14-foot boat, with a 15 inch transom depth and not less than a 4 foot beam.

A 10HP should not be used on less than a 12- to 14-foot boat with a 15 inch transom depth and not less than 41/2 - to 5-foot beam.

A 15HP motor requires a 12- to 14-foot boat with a 15 inch or better transom depth not less than a 5-foot or better beam.

For motors in the 25HP and 30 to 35HP range the beam should be increased considerably, and the transom depth becomes another problem as the length of the motor increases.

In the 50HP and over categories, 75-Inch and greater beams are needed, and again length should be increased as well as depth. A 50HP motor will weigh approximately 250 pounds and another 20 pounds is added for the weight of the battery and gas tank, to make a total of 270 pounds or more. All of this weight will cause your small boat to ride low in the water at the stern, and as power is applied, can lead to serious accidents. Use only large boats in this horsepower class.

For water skiing, specially designed boats with planing bottoms and minimums of 66 inches in the beam are needed, to accommodate the 35 to 40HP motors and over. These boats are designed to skid or slide when a skier swings wide to the side of the boat, rather than to roll and perhaps cause an accident.

In doubt, check with your local Conservation Officer or Water Safety Officer. Also contact more than one boat dealer and check the recommendations of each.

Many boats carry the OBC maximum horsepower rating marked on a metal plate on the transom. These ratings are actually derived by using the largest possible motor on the boat in a trial and error method. You can trust the ratings as marked.

NORTHERNS, MUSKIES

Carol Buckmann

Since the original stocking of muskies in Clear Lake and West Okoboji four years ago, there has been considerable confusion by anglers between muskies and northerns. The distinguishing features between the two are quite evident.

First of all, northerns are usually a bluish-green to gray on the back with irregular rows of light yellow or gold spots on the sides running lengthwise. Muskies are often olive to dark gray with dark overmarkings on the sides that may be vertical or horizontal bars, spots or splotches rendering a "tiger-like" appearance.

Another difference is found on the cheeks. Where the cheeks of northerns are fully scaled, the musky has no scales on the lower half of the cheek. The next place to look and the surest identification is the underside of the lower jaw. Northerns have five holes on each side of the jaw whereas muskies have six to eight.

The first attempt to raise muskies was made in 1960 when 1,500 were obtained from the Kenosha Hatchery at Land O'Lakes, Wisconsin, and placed in a pond prepared at the Decatur Hatchery. The production that year was 85 muskies ranging in length from 7 to 121/2 inches.

Forty were stocked that year in West Okoboji and forty in Clear Lake. Again in 1962, muskies were reared at the Decatur Hatchery and in July, sixty fish, ranging from four to five inches were removed and stocked equally between Clear Lake and West Okoboji. That fall, eleven more were stocked, averaging twelve inches long.

To date, 81 muskies have been stocked in West Okoboji and the same number in Clear Lake. There have been six records of muskies from the 1960 stocking in West Okoboji and by 1963, fish up to six pounds had been taken. The latest musky taken by angling was in August, 1963, when a six pound, 8 ounce, 20 inch fish was taken from Clear Lake.

Two large muskies were taken in April of this year by netting crews collecting brood fish for walleye hatchling. At Clear Lake, a 31/2 pound, eight and a half pound immature male was taken, and from East Okoboji a 10 pound, 32 1/2 inch specimen was taken.

If by chance you should happen to catch a musky, return it to the water and let fisheries personnel know. You'll be violating the law by taking it home, as there is no open season on muskies.

Mushrooms that Glow in the Dark

Carol Buckmann

Deep in the woods on a moonless June night, all is still except for the occasional haunting cry of a night creature or the lifting of a leaf by a whip-poor-will. To the imagination of the wise observer, the occasional glimpse of a great horned owl breaking upon the sereness is indicative of a successful hunt.

Clouds cover the moon and the brilliant light of fireflies dots the woods with their flashing dance seemingly only means of light. But at the night's blackest, strange phenomena reveals itself as a ghostly, greenish-white glow around dead, decaying wood illuminating the blackness.

Looking closer, a night woods visitor may find the soft glow is a hobgoblin's hex but rather a light from a jack-o-lantern mushroom, one of the three common luminescent mushrooms found amongst woodlands.

This production of light with heat, similar to that produced by fireflies, has been the object of speculation and inquiry since times of Aristotle and Pliny. The light of these and certain other luminous mushrooms and their attraction is often called "fox fire" and their native, woodsmen, foresters and anyone who has tramped the woods at night.

In northern woodsmen have this glowing quality to good use by using bits of decaying wood vaded by these luminous fungi to mark their trails, the soft phosphorescent guiding their way.

This glowing quality is displayed in young, fresh mushrooms from June to October and is best seen on the three most common mushroom types found in Iowa. These are jack-o-lantern (Clitocybe gibba), the honey agaric or fairy ring mushroom (Armillaria mellea) and the small astrangi (P. stipitatus). Any of these three can be found around dead wood.

The honey agaric or "hoop mushroom" develops the glow quality in the interwoven, white filaments that grow in strata surrounding wood. The strands have also given it common name "shoestring mushroom." In this case, it is the strands and not the wood that glow.

Honey mushrooms are parasitic on trees and other woody plants where they grow in clusters upon hardwoods but also in coniferous trees. Their presence attacks roots of trees and forest trees bring on a growth decline and kill the branches. They are said to be very good in omelets or fried with other vegetables.

On any downed wood or arid decayed tree trunks, the ghostly light of jack-o-lanterns may be seen. (Continued on page 46)

Things You May Not Know

At least 1,500 species and subspecies of mammals have been identified in North America north of the Rio Grande.

Pecaries are found only in the Americas. Although numerous in Central and South America, they are comparatively scarce in the United States.

A struggle between bull elk may end in a broken neck or a fatal horn-thrust for one contestant or locked antlers for both.

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On any downed wood or arid decayed tree trunks, the ghostly light of jack-o-lanterns may be seen. (Continued on page 46)
Fundamentals of Fly Fishing—Part V

Feather Fishing—Bill Tate
Ass't. Supt., Fisheries

Largemouth Bass

The largemouth bass is now widely distributed in the United States, and is probably sought by the state-side anglers than any other species of game fish. He is found in a variety of habitats, from marshes to lakes and streams. The crevices of large impoundments in the South and Sierras have created hundreds of acres of good largemouth habitat. Old "satchel" does well in the warm water of the South, while the other waters farther north. His nicknames, referring to large mouth are well deserved as a big mouth, and an appe- lation. Almost any creature that crawls, walks or swims or is taken for food whenever available.

Iowa's catchable populations of largemouth are found in most rural and artificial lakes, in river impoundments, and in hundreds of farm ponds, gravel and quarries. Largemouth are infrequently caught when abundant, but difficult to catch in heavily fished areas. It has been shown they have a memory of sorts, and are possible to catch when abundant, but difficult to catch in heavily fished areas.

As a normal Iowa season, the largemouth spawners in May. This gives an opportunity to catch bass not easily at other times of the year. After spawning, they feed on feeding spots, while their mates are busy mind the nursery. The male largemouth makes a nest (a shallow depression) in relatively shallow water, and after the nest is deposited, the eggs and fry hatch. He also patrols the school of fry that are his offspring until they become large enough to be attractive to food. It is not unusual to have a school of fry that are his offspring until they become large enough to be attractive to food.

The most effective surface lures are those that provide a commotion, a sound and action. Wings or legs that flap or kick when the lure moves through the water or is retrieved, are effective. Surface lures made from deer hair are particularly effective. Cork or wood lures are sometimes effective, but it is necessary to set the hook quickly and hard after a surface lure is taken. Surface lures made from hollow hair or deer hair float well, and apparently have a natural feel so that they are retained by the bass, which facilitate setting the hook quickly and hard after a surface lure is taken.

Some sixty species of game fish. He is well known for his ability to catch largemouth bass. As a trout fisherman, born and raised in Colorado, he was soon "suckered" into a bet that at least one of the fish could be caught. After much insistence he kept casting. After forty casts a geyer of spray erupted as a largemouth torpedoed the lure with abandon. Some sixty casts later, he had accounted for four of the six bass, and he called it a "dry." If you can go before dark, select the areas to fish and get the gear ready; use a boat or wade. You might even catch a fish before dark.

The Bluegill

The bluegill is found as a companion to his larger cousin, the largemouth bass. He is similar habitat requirements, and in Iowa, they will be found in the same waters. The bluegill or "bream" as he is called in the South, has a very small mouth, and feeds predominantly on insects and other small invertebrates. Bluegill start their spawning activity after most largemouth have completed spawning and spawn at intervals throughout the summer. They use the same general spawning sites, and shallow bars are pock-marked with nests in good bluegill waters. The next guarding males can be taken by retrieving small (Size 14 to 10) wet flies across their

(Continued on page 47)
For the vacation camper who has been loading and unloading a tent and all the accessories packed in the family auto, the step up to a trailer camping may be a welcome one.

The ideal choice of a trailer that will best suit you may not be an easy one, although there are many different trailers to choose from. Some of the luxuries available in tent trailers are found only by using them. The first dividend you will receive after becoming the proud owner of one of these chrome plated wick-ups, is once more having the use of your car for yourself and the family. No more will you perch the kids on top of the sleeping bags or camp kitchen in the back seat. No more will your patient wife have to peek out from behind hanging clothes to see the scenery as you travel down the road. No more will you have to spend thirty minutes trying to get to the spare tire in case of a blow-out. All these things are now neatly stored in the bunning gusroom fastened to your rear bumper.

If you choose, mother can now sleep off the ground on a four-poster with a miniatures version of her kitchen sink at home, or enjoy a myriad of little conveniences she never had before in a campground.

For yourself, you can choose wisely and easily many of the little chores that detract from camping fun, such as: faster erection of the tent in case of impending rain, easier breaking of camp on those one-nighters along your way, space to keep a few toiletries and other essentials that you left at home before.

If it is possible to rent a trailer of the type you choose to buy, by all means do so. This will afford a chance to try it out and be certain that your choice is a wise one. It is possible that your choice may have been partly on the strength of a good "sales pitch" made in behalf of a certain type of trailer. Trying it out will set the record straight for you.

One of the controversial subjects surrounding tent-trailers is whether the off-the-ground trailer is better than the trailer with the bed off the ground but with living space on the ground. By renting both types on trial trips you can settle this best for your family. You may find that your first impression was not the right one for you.

Level ground is not the rule in most campgrounds. For this reason you will want to take a close look at the leveling device used on the trailer you are considering. Easy access to your storage area and handling location for you. If it is necessary to erect the tent get at important pieces of your camping gear, you may find this a deterrent to buying some particular trailers.

Overall size of the folded package on the road can be another factor which will be best decided if you can actually pull the trailer behind your car on a regular trip.

Convenience of the opened unit might be overlooked by the buyer. While a dining fly or canopy is attached on many trailers, often it is located so that the camper might use it very little if rains come to the camp ground.

While most trailers and their tents can be erected while attached to the car in the camp ground, some may be erected while parked at the curb on a city street. If you find that some of the campgrounds on your itinerary are too crowded, or too far away for the amount of driving necessary to get to them, this feature might be desirable.

The kind of material used to build your trailer will determine how much attention and preventative maintenance you will have to provide to keep it on the road.

Wheel sizes will be an important consideration to you if you plan to travel long distances for long periods at a sustained high speed. The larger wheels have less tendency to heat up at high speeds, therefore presenting fewer problems.

Hitches will be a consideration as well as electrical hook-ups for license lights, turn signals, and stop lights. Bumper hitches are not satisfactory for many reasons. Safety chains should be used with all hitches and trailers.

Weight is a problem in some trailers. As you may have to haul this unit through many campgrounds, if it is not at least well balanced for easy handling you may wish you had stayed with the tent.

Ventilation is important in all tents. Your new tent trailer is no exception. Again, the rental of the unit can help you make up your mind on this point.

Materials used in the trailer, undercarriage and the tent itself should be of the best available at the price you pay. Light colors shed heat and dark ones absorb heat, so try to avoid the very dark shades if possible.

If all of this seems confusing, you may decide to stick with the tent. If, however, your mind is made up, you can make a wise decision by being careful in your selection.

You may even go all the way and decide that the house-type travel trailer is better for you and yours. If so, it's back to the shopping with more things to take into consideration.

**MUSHROOMS—**

(Continued from page 44) seen occurring on the underside of the mushroom's gills and down the stalk. These poisonous mushrooms grow in clusters around the base of tree stumps (especially oak), and in the soil.

Panus mushrooms are not found on decayed wood as the other two but on dead, dry wood. These are soft and hairy on top growing in clusters with the gills resembling dried apricots. If you should happen across these high lighters, do not pick them with the idea of bringing them home for a midnight mushroom feast as they are leathery and not palatable.

The next time you happen to be out on a moonless night and chance upon an eerie, ghostly glow, chances are your eyes aren't playing tricks on you—it's an inoffensive, luminous mushroom, its glow a mystery since medieval times.
Half-Way Mark Shows Two New Fish Records

Denny Rehder

Fish activity at the half-way mark of the year has provided two outstanding records on the State Conservation Commission's Official Fish Records list.

The Little Sioux River lists three fish for two records; the Cedar River lists three fish for one record; and the Wapsipinicon lists three fish, but no records.

Anglers are urged to send their large fish for entry on the Big Fish records. To enter his fish the angler must submit the following to the Conservation Commission in Des Moines: name and address of angler, date fish caught, species, where caught and county, total length of fish, weight on scales, legal for trade, signatures of two witnesses to the weighing, and a photo of the angler and his fish.

Thefisher, a member of the Weiss family, seldom outcatches any fish. Most of its diet is made up of small land animals.

FLY FISHING—

(Continued from page 45)

lakes may provide excellent fishing for bluegills along shores where willows extend to or into the water. Small caterpillars, larvae of the willow moth are usually abundant. These small caterpillars are webworms and can often be seen gathering in the water only by a silken thread. When they fall into the water, they coil tightly into a ball. These worms are eagerly sought by bluegills and small white poppers are very effective among willowed shores.

Night fishing with small white or yellow poppers along willowed shores will produce the best bluegill fishing possible! You will not catch small bluegills while fishing at night. You should fish during the dusk period, then prepare for a treat. A boat is almost a necessity for this type of fishing. On dark nights it is necessary to use a flashlight or electric lantern to detect targets. The popper is cast and replaced by standing up. You will need to cast within a foot or two of shore, then cast 10 feet or so from where you shined the light and let it settle on a popper. Any movement is minimum, a bluegill will find the lure. The sucking strike of a bluegill will tell you when to strike. Night fishing with poppers will take the largest bluegills in the water you are fishing. Most of them will be close in shallow water; 10 feet or more. For the next night you will need a bigger fly bag; you will need it.

MARSHES—

(Continued from page 46)

on the upland portion, while squirrel and deer hunting is enjoyed along the Wapisi River. Some muskrat trapping is done but this marsh is not managed for high muskrat populations and only a bare minimum is allowed due to the danger of trapping. Although hunting is the most important aspect, fishing is the main activity. No motors are allowed on the Wapisi River. A small breeding population of northern pike and white bass is enjoyed by the upland hunters.

Under regulations covering Pittman-Robertson appropriations, a portion of the total area of any project may be maintained as a wildlife refuge. One pool is set aside as a permanent waterfowl refuge closed to public hunting at all times. The other pools, though, are open to hunting.

This large area is used heavily for hunting due in part to its nearness to the well-populated areas surrounding it. Also, it serves as a playground for fishing, canoeing, and even the smallest stream.

Camels are essentially animals of the arid deserts and have a great aversion to water, only with difficulty being persuaded to cross even the smallest stream. Badgers have an excellent "disappearing act." Using all four feet and its mouth, it can dig itself out of sight in a few seconds.
Denny Rehder

The Mississippi River along Iowa's eastern border provides nearly 192,000 acres of excellent fishing water for Iowans. The river is actually a series of lakes created by eleven locks and dams along the Iowa portion. The river is extensively fished by over one-half million anglers each year. It has been estimated that the annual yield of game fish is over two and a half million fish.

Each year more and more anglers come to enjoy the fishing offered by the Mississippi and its sloughs and backwater areas. The river is easily accessible along its entire Iowa course with many public and private areas offering access to its waters.

What have studies shown concerning fishing on the ‘Big River'? Over half of the angling activity on the Mississippi will be found below the lock and dam in the first mile. Here food and oxygen is plentiful for fish life. Two in five anglers on the river are fishing between Harpers Ferry and Bellevue. Their overall success averages about one fish per hour of fishing.

Studies also show that fish taken from the river will run 39 per cent panfish, 16 per cent walleye, 13 per cent white bass, 11 per cent sheepshead and 8 per cent catfish.

Fish Are Everywhere

Where does the new angler try his luck in the unfamiliar water of the Mississippi? Bluegill and sunfish are best in backwater and shoreline areas. Bass, panfish and catfish offer their best in sloughs, cuts, lakes and ponds. Walleye and sauger fishing is tops near wing dams, rip-rap and sand bars. Also, immediately below the dams are the “bread and butter” haunts of the walleye fishermen. Bass are taken almost everywhere in early summer, but as the water warms they will seek shaded water near stumps, snags, and rock piles. White bass are taken mainly on minnows below the dams, over wing dams, and around sandbars. Sheepshead are found in the channel. Flatheads are found below the locks and in deep holes. Some bullheading is found in isolated backwaters, pools and lakes. Northern are plentiful, but not heavily fished.

The heaviest fishing pressure centers around the dams at Guttenberg, Dubuque, Bellevue and Clinton. But, studies indicate that the highest success ratios come from the dam areas north of Burlington and the two dams in the Davenport area.

No matter where you fish on the Mississippi, anglers will be taking fish. Many fishermen refer to the “River" as the "world's greatest shing hole." Correct or not, they know the sport to be found there.

The whooping crane is larger than the sandhill crane or the great blue heron.

Called by many anglers "the world's greatest fishing hole," the Mississippi River offers fine angling for all species of game fish. Up to one million Walleyes and as many as 10 million White Perch are taken in the river each year. The river is famous for its white perch, walleye and sauger fishing.

Primitive Fishing Tackle

Fishing is one of man's oldest occupations and the gear used for catching fish has changed but little over the ages. The basic methods in use today—sparring, trapping, netting and angling—had their origin among primitive people back in prehistoric times.

Our modern steel fishhooks have gradually evolved from early crude hooks made from flint, bone, ivory, shell, horn or wood. Thousands of years ago, the Swiss Lake Dwellers and the ancient Egyptians used bronze wire bent into a shape like a youngster's pin hook. Much later some inventive fisherman added a bar to those bronze hooks to hold the fish more securely.

The forerunner of the fishhook was probably the gorge, a slender piece of flint, bone or wood with a groove in the middle for attaching a cord. This was buried in the bait and swallowed end first. A pull on the cord turned it crosswise in the stomach and the fish was hauled in.

Early fish lines were of gut, vegetable fibers, sinew, or strips of leather. The American Indians of this region twisted lines from the fibrous inner bark of the basswood tree. Ancient Greeks and Romans used horsemhair.

The use of brightly colored trout flies and other artificial baits dates back much farther than present-day sportsmen suppose. Apparently the first mention of this method was written by the Greek author Aelian about 200 A.D. He describes a Macedonian way of angling in a river where "there are fish with speckled skins." These fish fed on a peculiar fly (probably a mayfly) which hovers on the river. However, the fishermen did not use these flies for bait because they lose their natural color and their wings wither. Instead, "they fas-

Bird Identification Guide for Campers

Upon request we hereby print a guide for bird-watchers and nature lovers who find themselves besieged by a wide variety of wild and unusual species around state park campgrounds.

Bald-headed tent pitcher
Ruby-throated morning gospell
Red-eyed stork pointer
Tufted sleepy-eye
Common kawling snatcher
Hawk-eyed girl watcher
Burnt-shouldered beach lover
Big-nosed dinner-snatcher
Double-breasted bore
Hairy-chested barbecue bar
Greater and lesser water eart
Stuffed-belly potwatcher
Fleet-footed milkman-catcher
Rust-colored garbage dog
Long-armed table-snatcher
Red-shafted match-flicker
Shifty-eyed flower-puller
White-faced air-mattress puff
Trumpeting early riser
Western burrowing hobbler

Brown-winged plover

Gray-crowned lourger

White-thatched table sitter