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KANSAS FISH & GAME



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Covers

Front cover, Fox squirrel Ektachrome transparency by Ken Stiebben using a Pentax Spotmatic, f/8, 1/60.

Back cover, boating on scenic Wilson Reservoir by Thayne Smith using a Pentax, f/8, 1/125—Kodachrome transparency.

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Look . . . Don't Handle

Look but don't handle is good advice this time of year.

Throughout Kansas this is the season when wild creatures are busy replenishing their kind.

It's also that time of year when children—and some adults—can't resist the urge to adopt a cuddly, cute, apparently helpless baby animal and take it home.

But yielding to this temptation poses many problems for both the person and the animal.

In the first place, there is no such thing as a "pet permit." Removal of protected game birds, game animals or furbearing animals from the wild is illegal except during the legal open seasons. Even then they must, under Kansas law and regulations, be disposed of under certain time limits.

Secondly, the babies almost certainly aren't abandoned. Mother deer or rabbit is probably either nearby watching the whole thing with apprehension or out searching for food.

The urge to pet or handle these young animals should be resisted. Touching them in any way can leave behind human scent that might upset the mother enough to cause her to abandon her young.

Virtually all wild animal babies grow up with a complete set of wild instincts and are frustrated if kept in captivity. They often become mischievous or even dangerous. Unless inoculated they can carry rabies, distemper and other diseases.

Persons adopting wild youngsters will invariably grow tired of them after they have outgrown the cuddly stage. Then it's a problem of knowing what to do with them. Simply killing the animals because they are no longer wanted is a cruel act and many zoos will refuse to take them as they are already overstocked with most native species. Returning the adopted youngsters to the woods is not the solution since they are no longer equipped for survival in the wild.

The best way to avoid the problem is to leave wild animals in their natural habitat where they belong. Wild creatures have a better chance of survival if they are left alone—they get along better without a "helping hand."

The best bet on finding wild baby animals is to take a quick look—then tiptoe quietly away.—Leroy E. Lyon

From Prairies ... to Lakes

In just 20 short years, the face of landlocked Kansas has changed.

Called the Sunflower State by some and dubbed the Wheat State by agricultural enthusiasts, Kansas now has many attributes which nobody can deny.

Take Kansas' lakes for instance. Across streams where Indians used to hunt, fish and camp are imposing earthen and concrete dams spawned by men and mighty machines. Back of these dams are miles and miles of fish-filled waters—just perfect for boaters and fishermen.

With 19 federal reservoirs, 38 state lakes, and a multitude of city, county and private lakes to its credit, Kansas' name, which means, "People of the South Wind," could now be changed to mean, "People of Inland Waters."

As prairies were transformed to lakes creating new opportunities for water sports, new problems also appeared. With multitudes using the waters for various forms of recreation, it soon became apparent that some laws and regulations would have to be imposed to provide a degree of safety for all concerned.

In 1959 the Kansas Legislature enacted the state's first boating act which for the first time required registration of certain watercraft and which imposed some badly needed water safety laws. Such registration, with small fees, provided funds for administration and enforcement of the act.

In 1960, first year for registration and issuance of boat permits, only 15,728 motorboats with motors of ten or more horsepower were registered with the Kansas Forestry, Fish and Game Commission—the state agency charged with enforcement and administration of the boating law. It is estimated that more than 60,000 boats, both registered and unregistered, are now plying Kansas' waters.

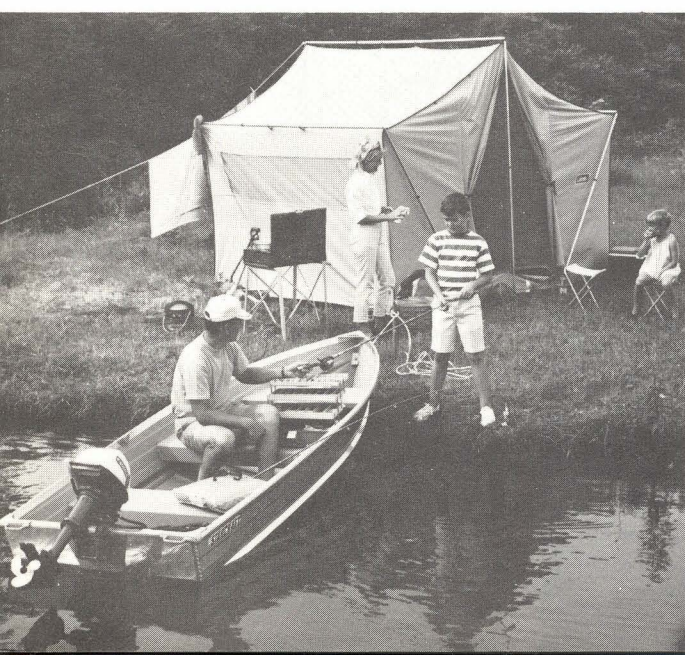
As more boats were placed on the waters, more accidents occurred, resulting in increasing numbers of deaths, injuries, and property damage losses.

To keep pace with this increased activity and to provide better boating safety laws, the 1970 Legislature enacted a new boating act which became effective Jan. 1, 1971. Shortly thereafter, the Commission drew up working regulations as required by the new act.

The new law is a two-part act which updates water safety laws and requires registration of most boats. It also brings Kansas' boating law into conformity with Coast Guard rules governing pleasure boat activity on inland waters throughout the nation.

Thus all Kansas boaters will be required to operate under a new set of rules this boating season. It will be imperative for all weekend captains to make sure their boats and equipment conform to new safety and registration requirements before placing their boats on public waters.

As the face of Kansas has changed so have the laws governing boating activities on Kansas' waters. Important provisions of the new law are described in the following two articles.



Registration Is the Word

By LEROY E. LYON

Registration is a key word in Kansas' new boating law which became effective Jan. 1. Under the new law, all boats powered by machinery and all sailboats must be registered.

This is a major change for prior to this year boats powered by motors of less than 10 horsepower and all sailboats were exempt from registration and numbering requirements.

Such will not be the case this year for now all boats propelled by machinery (even small fishing boats with electric trolling motors) and all sailboats must be registered in the same manner as that previously required for craft with larger motors.

However, under the new law, rowboats, canoes, and paddleboats will continue to be exempt from registration and numbering requirements although in most cases they must comply with new safety equipment requirements. If a motor (even an electric trolling motor) or sail is placed on a vessel which is exempt from registration, that boat must then comply with registration and numbering requirements.

Boats previously registered under the old law will not be required to re-register under the new act until their present certificate of number expires. For some this will be nearly three years since all certificates of number are issued for a period of three years.

Prior to this year small fishing boats with motors of less than 10 horsepower were exempt from registration and numbering requirements. Such is not the case anymore. Now, under the new law, all boats propelled by machinery (even small fishing boats with electric trolling motors) and all sailboats must be registered and have the appropriate certificates of number.

Kansas boaters may feel the registration procedure is much too complex. Actually the process is rather simple. Owners of each vessel requiring numbering under the new act must file for an application of number on approved application forms which are available at most boat dealers, marinas, or from Commission headquarters near Pratt. New applications are pink and should not be confused with yellow forms which were used prior to Jan. 1 and which are no longer valid. The application is to be signed by the owner of a vessel and is to be accompanied by a \$3.00 fee.

Upon receipt of the application and upon payment of the fee, the Commission's boating division will award a certificate of number to the applicant. The billfold-sized certificate must be in the boat whenever the craft is in operation. The number will be valid for a period ending three years from the date of issuance.

The identification number listed in the certificate is to be painted or permanently attached to each side of the forward half of the vessel. Numbers must read from left to right and are to be block characters of not less than three inches in height. Numbers are to be of a solid color which strictly contrasts with the color of the background and must be clearly legible at all times. No number other than the one assigned by the certificate of reg-

istration shall appear on the forward half of the boat. If a registration number such as KA-000-AA is assigned, proper spacing as shown is required when the number is displayed on the boat.

If a boater's certificate of registration is lost, stolen or mutilated, he may apply for a duplicate by writing the Commission's boating section, Box 1028, Pratt, Ks. 67124. A \$1 fee is required and a note must be included telling why the duplicate is being sought. Since by law only one certificate of registration can be issued for each boat, duplicates may be obtained only when the original has been lost, stolen or mutilated.

Unlike the old law, the new boating act provides a 10-day temporary permit upon payment of a \$2 fee. A purchaser of a new vessel can obtain the special permit from his boat dealer and by doing so can immediately place his newly purchased boat on public waters while his permanent certificate of number is being processed. However, all temporary permit holders are required to have in possession a valid bill of sale for the vessel whenever the boat is in operation.

If the boat owner sells a boat which has been registered in his name, he must notify the Commission in writing within 15 days. He must also mail in his certificate of registration with this notification.

Under the new law, anyone purchasing a previously-registered boat (one which has a number) from a private individual or dealer must re-register the craft with the Commission. While the old number may be retained, it is still necessary for the number to be re-registered by the new owner.

A copy of the new boating law and a synopsis of the new regulations are both available from the Kansas Forestry, Fish and Game Commission, Box 1028, Pratt, Kansas 67124.

Remember, registration will be required for many boats this year for the first time.

Registration is the word!

Fish and Game



Proper Equipment Essential

It's official now—Kansas new boating law is in effect.

Who does it affect? Probably you if you use a boat at all.

Every person who climbs into a boat this year on public waters will be affected by the new law. There will be few exceptions.

Under the new boating act, there are new requirements for lighting, life preservers, flame arresters, ventilation systems, whistles or bells, and fire extinguishers, to name a few.

Not only must registered vessels comply, but boats exempt from registration requirements must also have certain safety equipment aboard.

In complying with equipment requirements of the new boating law, boaters should first determine their boat's classification. As provided in the new act, there are four classes of boats as follows:

Class A—boats less than 16 feet in length;

Class 1—boats 16 feet or more in length but less than 26 feet;

Class 2—boats 26 feet or more in length but less than 40 feet;

Class 3—boats measuring 40 feet or more in length.

For determining "class," the length of a boat is the distance measured from end to end over the deck excluding sheer. Simply stated it means a straight line measurement of the over-all length from the foremost part of the vessel to the aftermost part of the vessel, measured parallel to the centerline. Attachments are not to be included in the measurement.

When operating at night, these various classes of motorboats and sailboats have different lighting requirements. The Commission urges all boaters to check the boating law to determine their individual lighting requirements. Such boating law brochures are available from Commission headquarters, Box 1028, Pratt, Kansas 67124. Lights must be placed high enough so light will not be blocked by persons or parts of the boat or its equipment.

Manually propelled vessels are required by the new law to carry, ready



This pretty young lass claims any safe boater will wear a U. S. Coast Guard approved life preserver while on the water. All boats, regardless of size, must carry a U. S. Coast Guard approved life preserver for each person aboard when the boat is being operated on public waters. And the lifesaving devices must be close at hand if they aren't worn.

at hand, a lantern or flashlight showing a white light which is to be exhibited in sufficient time to prevent a collision.

Additionally, all vessels at anchor between sunset and sunrise, unless in special anchorage areas, must display anchor lights. An anchor light is a white light visible for one mile to a boat approaching from any direction.

Under the new law, all vessels, whether propelled by sail, motor or by hand, and regardless of size, must carry a U. S. Coast Guard approved life preserver for each person aboard when the boat is being operated on public waters.

Not only must there be the proper number of approved lifesaving de-

vices aboard every boat but they must also be readily accessible—a new requirement which will cause plenty of headaches for those boaters who insist on locking up the devices in storage compartments. Lifesaving devices may include life preservers, buoyant vests, buoyant cushions, ring buoys, and special purpose water safety buoyant devices.

Coast Guard approved life preservers bear markings showing flotation material used, size, and U. S. Coast Guard specification numbers.

As with lighting requirements, fire extinguisher requirements also vary according to classes of boats. For classes A and 1, at least one B-1 type Coast Guard approved hand portable

extinguisher must be on board. However, if the motorboat is less than 26 feet in length and there are no enclosed or partially-enclosed spaces where explosive fumes or vapors could become trapped, and if there are no permanently-installed fuel tanks, an extinguisher is not required. On all other class boats, specified fire extinguishers must be on board in proper condition and readily accessible.

Each fire extinguisher is classified, by letter and number, according to the type of fire it may be expected to extinguish, and the size of the extinguisher. The letter indicates the type of fire.

Extinguishers approved for motorboats are hand-portable, of either B-I or B-II classification. The "B" denotes that this extinguisher may be used for gasoline, oil, and grease fires.

The reason it is mandatory to have fire extinguishers on boats of closed or semi-closed construction is obvious. Gas fumes gather in enclosed areas and in the lower part of the boat since they are heavier than air. These fumes are easily ignited with terrific and tragic explosions resulting.

To reduce this possibility even more, ventilation system requirements have also been incorporated in the new law.

Having proper equipment aboard means greater boating safety and fun. Some equipment shown is mandatory under the new boating act while other items are optional but recommended to insure safe boating. Equipment includes: hand bilge pump, tool kit, boat fenders for mooring, life preservers and buoyant seat cushions, anchor and adequate line, boat whistle, fire extinguisher, portable spot light, boat hook and paddle, and a first aid kit. Kansas boaters are urged to check the new boating laws to see what items are required for their particular class of boat.

This regulation stipulates that all motorboats (except open boats) which use a volatile fuel shall have at least two ventilator ducts fitted with properly installed cowls for efficient removal of inflammable gases from fuel tanks.

Backfire flame arresters are also required on certain craft under the new law. After April 1, every gasoline engine installed (except outboard motors) must be equipped with an efficient method of backfire flame control. Installations made prior to April 1 do not need to meet the detailed requirements of the regulation and may be continued in use as long as they are in good and serviceable condition.

All motorboats in classes 1, 2 and 3 must now carry an efficient whistle or other sound-producing mechanical appliance. In addition, every motorboat in classes 2 and 3 must have an efficient bell. The whistle or bell must be in good operating condition at all times.

No whistle or bell is required for class A boats.

Despite the new safety provisions, some accidents will occur. When an operator of a vessel is involved in a collision, accident or other casualty resulting in death or injury to a person sufficient to require first aid or medi-

cal attention, he is required to file a report on the proper form to the Kansas Forestry, Fish and Game Commission. Such a report is also to be filled out if property damage is in excess of \$100. If death occurs as a result of the accident, the report is to be made within 48 hours from the time of the accident, otherwise, the report is to be filled out within five days from the time of the accident.

Possession of all safety equipment required under the new boating act is not enough for safe operation. It will also be essential for every boater to carry aboard a lot of "common sense" which is one of the best pieces of equipment if he is to enjoy the many safe and enjoyable hours of water recreation. Without "common sense," chances are good something will happen—even if the boat and all equipment conform to all provisions of the new law.

Boaters are urged to obtain a copy of the boating law and a synopsis of Commission regulations. Both may be obtained by writing the Kansas Forestry, Fish and Game Commission, Box 1028, Pratt, Kansas 67124.

Then after reviewing the various laws and regulations, check your boat and equipment. You'll be glad you did.

Photos courtesy of Evinrude Motors



These people may be having a good time—but not for long as they are in danger of capsizing at any minute. Overloading is one of the most common and potentially fatal mistakes made by boaters and results in many serious accidents each year. The capacity plate of the vessel should be checked for information on passenger and weight limits. Under the new law it will be illegal for any person to operate any vessel which is carrying passengers, cargo or equipment beyond the safe carrying capacity of the vessel. Additionally, all boats manufactured after Jan. 1, 1971 must have a permanently attached capacity plate.



Skiers' Signals



Water skiing is good sport.

To many, water skiing is the thing that makes a lake "come alive" in early summer.

With more boats now on Kansas' lakes and reservoirs, many beginners will start this summer to learn the technique, timing and teamwork required by this fascinating sport.

To insure greater safety on water for all concerned, it is imperative for all water skiers to learn the communication signals and become familiar with state and local regulations governing water skiing.

A water skier being pulled by a tow boat cannot successfully communicate vocally with the boat operator or observer. Thus the solution to this problem is to learn the sign language of hand signals developed by the American Water Ski Association which enables a skier to "talk" with those in the tow boat. The signals are simple but before starting out the skier, observer and boat operator should compare notes to make sure they understand the six basic water ski hand signals depicted by the photos on this page.

Likewise, the boat operator, observer and skier should acquaint themselves with state and local regulations. Under Kansas' new boating law there are at least five "basics" which water skiers, boat operators and observers should know. These include the following:

(1) No person is to operate any motorboat or vessel or manipulate any water skis, surfboards or similar devices while intoxicated or under the influence of any narcotic drug, barbiturate or marijuana.

(2) Water skiing and pleasure boating are prohibited on public waters marked by buoys as non-boat-

ing areas or otherwise designated as mooring, launching, fishing, or hunting areas. Pleasure boating and water skiing are prohibited in all state lakes under the jurisdiction of the Kansas Forestry, Fish and Game Commission.

(3) No person is to operate a vessel on public waters towing a person on water skis, a surfboard or similar device between the hours of one hour after sunset to one hour before sunrise. It is also illegal for any person to engage in water skiing, surfboarding, or similar activity during the same hours.

(4) No person is to operate a motorboat or manipulate any water skis, surfboards, etc., in a reckless or negligent manner which may endanger the life or property of any person.

(5) No person is to operate a motorboat on public waters for towing purposes unless the boat is equipped with a wide angle rear view mirror or unless there is an observer in the boat in addition to the operator. If a mirror is used, it is to be properly placed to provide a maximum vision of the person or persons being towed. If an observer is used, he must be a responsible person at least 12 years of age.

For safety's sake, all skiers should wear a U. S. Coast Guard approved life preserver whenever they are enjoying their sport. Even the best of swimmers can be momentarily jolted by a tumble in the water. Ski belts are not U. S. Coast Guard approved lifesaving devices.

Skiers are also reminded that the new Kansas Boating Act requires each vessel to carry at least one Coast Guard approved lifesaving device, in good and serviceable condition, for each person on board.

In all situations not covered by boating laws, common sense should be the guide. If the skier sees danger ahead, he should drop off.

Communication signals, coupled with a knowledge of the basic state laws and employment of common sense can provide a more enjoyable and safer summer of fun for all concerned.

The six basic hand signals, demonstrated in the accompanying photos, will be adequate for most skiers. An "O" with the thumb and forefinger (top left) means "ok," everything is fine; a hand across the throat means "cut" or "I'm dropping off"; an open palm means "stop"; thumbs up says "faster"; thumbs down says "slower"; and a finger pointed in one direction indicates "go" in that direction. Photos courtesy of Evinrude Motors.

Kansas' Top 20 Bass Lures

By VIC McLERAN

"What's the best bass lure around?" Ask this question of 20 different bass fishermen and you'll probably receive 20 different answers.

Trying to name the "best" bass lure would be impossible, but in an attempt to determine several of the favorites, we recently sent several hundred questionnaires to bass fishermen, game protectors, fisheries biologists, bait and tackle dealers, lake managers and outdoor writers throughout the state.

Anglers questioned included those who fish strip pits, farm ponds, creeks, state lakes and rivers, as well as the many large reservoirs throughout the state.

Then too, we checked Kansas Forestry, Fish and Game Commission Master Angler Award files for 1969 and 1970. An angler, in order to receive one of these awards in the largemouth bass category, must land a fish weighing at least seven pounds. From these files we obtained the types

of lures on which 96 lunker bass were taken.

The poll was designed to determine favorite artificial lures only, since most anglers who fish for bass specifically, use artificials rather than live bait.

Undoubtedly the poll has omitted some lures which many anglers feel should be included and probably added others which some think are unworthy.

However, the following 20 lures emerged as those cited most often as being favorites in three categories—surface, floating-diving and sinking.

SURFACE LURES

This category includes lures which are strictly top-water baits. They float at rest and remain on the surface when reeled in or retrieved. Lures in this group are most effective when bass are feeding in shallow water, both at night and during twilight periods.



Kristen, the author's six-year old daughter, displays a six and one-half pound farm pond bass taken on a yellow Scorpion—one of Kansas bass fishermen's favorite spinnerbaits. Photos by Vic McLeran.

Jitterbug—Made by Arbogast, this lure is an all-time favorite of bass fishermen everywhere. Especially effective at night, the Jitterbug is also deadly in early-morning or late-evening hours. The lure's double lip creates a loud paddling noise which really draws big bass up. Its slow, crawling action is designed to imitate a small animal which has fallen in the water. The lure is also good on windy days when many surface lures are ineffective due to wave action.

Hula Popper—Another one of Arbogast's old, reliable lures, the Hula Popper, is usually plunked, popped or twitched with the rod tip to create a surface commotion. This rod-tip manipulation results in a popping, gurgling sound which many big bass have found irresistible. The lure's skirts may be reversed to increase action.

Chugger—Made by Heddon, the chugger is probably the most popular "popping" surface lure. It rests on the surface at an angle and although it has no action of its own, occasional twitches of the rod tip produce a distinct chugging noise, complete with gyrations. This lure is ideal for use in small pockets around lily pads or exposed vegetation.

Injured Minnow—The last surface favorite on our list is manufactured by the Creek Chub Company of Garrett, Indiana. These are the same people who made the lure on which a world record largemouth bass was caught—the Wiggle Fish. That bass weighed 22-pounds four-ounces, and was taken 39 years ago from Georgia's Montgomery Lake by George Perry. The Injured Minnow features propeller spinners at both ends and is usually twitched with the rod tip to set these spinners in motion. At other times, short jerks will produce the action.

FLOATING-DIVING LURES

These are lures which float at rest but dive beneath the surface when

retrieved. Baits of this type are effective when bass have left shallow water and moved deeper. Anglers may choose between shallow and deep-diving lures. Many lures of this type are used in trolling large reservoirs.

Bass-Oreno—Manufactured for more than 65 years, this plug is a mainstay of the South Bend people. Originally called the South Bend Wobbler, it can be fished either as a surface or subsurface lure. Floating at rest, the Bass-Oreno has a wobbling, side-to-side motion when retrieved. Although originally sold only in the red-head, white-body style, it is now available in a variety of colors. Its smaller cousin, the Midge-Oreno, is almost identical in action. Both lures are extremely simple to cast, even in wind.

Flatfish—This is one of the largest-selling lures of all time. Charles Helin, a Detroit mechanic, developed the first Flatfish in 1933 and since that time has sold more than 39 million. The lure features an unusual offset hooking arrangement in the form of a crossbar with small treble hooks on each end. This gives the Flatfish a peculiar swiveling motion different from most other lures. Marketed originally in a weird shade of orange, the Flatfish now comes in about 40 colors.

Bomber—This is a Texas lure which, since 1942, has consistently hooked big bass. It's a deep-diving, fast-wiggling lure which floats at rest. Relatively weedless, the Bomber's wide diving plane usually prevents hooks from snagging. Although classified as floating lures, they dive at an extremely sharp angle and obtain maximum depth quickly. They are excellent for trolling and a favorite of bass men who use them for bottom bumping. Aside from being a popular lure for largemouth bass, the Bomber's other claim to fame is the fact that it took the world record smallmouth bass from Dale Hollow Lake on the Tennessee-Kentucky border. D. L. Hayes, Litchfield, Kentucky, boated the 11-pound, 15-ounce lunker in July 1955.

Hellbender—This deep-diving lure



Favorite surface lures according to our poll include: (left to right) Injured Minnow, Hula Popper, Jitterbug and Chugger.

is also made in Texas by the Whopper Stopper Company. Like its fellow Texan, the Bomber, it has accounted for quite a few "bucketmouth" bass. It is a favorite of those who fish large reservoirs since it's ideal for trolling and bumping the bottom. In addition to its broad diving plate, which takes it down rapidly, the Hellbender is equipped with a small spinner on the rear.

Rapala—First marketed in 1962, the Finnish-made Rapala was immediately in great demand by bass fishermen. Following a story in *Life* magazine, there was something of a Rapala "craze," with anglers renting their lures for \$5 per day after a \$20 deposit had been posted. They were black-marketed for \$17 and auctioned for as much as \$15. Today, however, the supply is greater and fishermen are able to acquire the lure much easier. This balsa wood imitation minnow is probably the most popular in its class. Twitched with a rod tip, this lure gives an extremely life-like imitation of a real minnow. The plastic lip provides a rapid minnow-like swimming action when retrieved. Sinking or deep-running models are also available.

Rebel—This was one of many minnow-like lures which was marketed following the success of Rapala. Unlike many others introduced at this time, the Rebel has consistently accounted for big bass. It is manufactured in Fort Smith, Arkansas, by the Plastics Research and Development Corporation. This bait can be worked



Favorite floating-diving lures among Kansas bass fishermen include: (bottom row from left) ThinFin, Bomber, Hellbender, Rebel, Flatfish; (middle row) Lazy Ike, Bass-Oreno, Lucky 13; (top row) Rapala.

on the surface, retrieved beneath or trolled along the shore.

Lucky 13—Another Heddon product, this lure can be used either on the surface or underwater. It combines an excellent chugging action on the surface with an erratic, darting motion when retrieved. The Heddon 1910 catalog listed a Dowagiac Swimming Minnow, forerunner of today's Lucky 13.

Thinfin—This is one of several lures currently on the market which simulate shad, a primary forage food of the largemouth bass, especially in the reservoirs. Manufactured in Norman, Oklahoma, by the Storm Manufacturing Company, the ThinFin floats upright at rest and dives to about 12 feet when retrieved. Easy to cast, it darts and dives erratically during retrieve.

Incidentally, a ThinFin lure hooked the first state record striped bass in Kansas. Delbert Krehbiel, Moundridge, netted the 18-ounce "striper" May 19, 1969 while walleye fishing at Cheney Reservoir.

SINKING LURES

Unlike lures in the other two categories, those in this group sink if not retrieved. As bass fishermen become more sophisticated in their approach, sinking lures are gaining in popularity. Since bass spend much of their time on or near the bottom, this group of lures can be placed nearer the fish more of the time.

Mepps Spinner—This lure was reportedly brought over from France after World War II by a GI who traded American nylon hose for his supply. He was obviously a dedicated fisherman. One of the largest selling lures in the world, Mepps was second only to the plastic worm in Kansas Master Angler Award bass. It is currently being imported and marketed by Sheldon's Inc., of Antigo, Wisconsin. During the 1968 Field & Stream and Sports Afield national fishing contests, Mepps accounted for four bass, ranging from 11 to 13 pounds.

Shyster—Manufactured by Glen Evans, the shyster has proven itself

in the hands of numerous Sunflower bass fishermen. Experts like Homer Circle, SPORTS AFIELD fishing editor, say the lure should be fished deep, just nicking the bottom. Similar to the Mepps, the Shyster's vibrating spinner lets anglers know it's working. It is especially good in murky water impoundments with clean bottoms.

Sonic—Another Heddon product, this was the first lure designed to generate sound waves beneath the surface. It also departed from tradition in the manner in which it's retrieved—rapidly. It has taken quite a few big bass and is popular with Kansas bass men.

Johnson Silver Minnow—The Johnson spoon was developed in the 1920's by Louis Johnson, a retired Chicago foundry operator. Starting with the bowl of an ordinary teaspoon, Johnson added a rigid hook and an extremely effective weed guard. This is one of the all-time great bass lures and is often used with pork—either chunk or strip. Charles "Shorty" Prewett, Pittsburg angler, can vouch for this, since he paired the spoon with a pork chunk to haul in the current state record largemouth—11-pounds, 3-ounces—from a private lake in Bourbon County. Speaking of pork, our poll indicated Uncle Josh pork baits were among the most popular with Kansas bass fishermen.

Lazy Ike—What happened to the Lazy Ike? Well, it's still around and still catching fish. This bait was first manufactured in the late 1930's by Rudy and Joe Kautzky, brothers from Fort Dodge, Iowa. Some models float at rest and dig down on retrieve, but others sink when cast and rise when retrieved.

Jig—Fished with or without the addition of pork, the jig is an extremely popular bass lure in Kansas. At one time, the black jig with black pork eel was "the bait" for fishermen who hunted big bass in the strip pits of southeastern Kansas. The jig has a rounded lead head, single hook, (sometimes weedless) and is adorned

with hair—feathers or nylon filaments. When pork is attached, the rig is usually fished on the bottom, in or near cover. Without pork, it is generally worked in an up-down “jigging” motion or pulled through the water in short jerks. Although several different outfits manufacture jigs, one of the most popular is the Bass Buster, made by the Ward Company, Amsterdam, Mo. Virgil Ward, its originator, and Harold Ensley employed this lure in winning back-to-back National Fresh Water Fishing Championships.

Spinner Baits—Many persons, when filling out our questionnaires merely wrote “single spin” or “twin spin.” As a result, we’ve lumped them all into one category, unable to select any single most popular brand. The fore-runner of spinner baits as we know them today, was the Shannon Twin Spinner, developed in 1915. It was, and still is, an extremely popular bass lure. The first true spinner bait, or safety-pin lure as they’re called in the South, was the Helldiver, made in St. Louis by Howser during the Forties. Since then, a number of newer baits have appeared on the market. Some of the names which appeared in our poll include: Beetle Spin, Spider Spin, Scorpion and Tarantula, all manufactured by Virgil Ward. An extremely versatile lure, the spinner bait can be fished topwater, shallow, deep or directly on the bottom. Another feature which has made the spinner bait a favorite is its effectiveness when paired with pork. A Council Grove angler, Newell E. Julian, utilized a Scorpion and black pork eel to attract the state record spotted “Kentucky” bass. Julian took the 3-pound, 15¼-ounce prize from Council Grove City Lake, April 21, 1970. Many professional bass casters rank these lures at the top, along with plastic worms.

Plastic Worm—Last but surely not least, the plastic worm probably comes closer to being “the favorite bass lure” than any of the others. In the past 20 years, no other lure has had the impact on bass fishermen and bass as plastic worms. Although several firms market them, our poll showed Fliptail and Creme the favor-

ites among Kansas anglers. Anglers using Fliptail worms placed first and second in the 1970 Oklahoma National Bass Tournament, held on Lake Eu-
faula. Several methods of rigging and fishing the worm have evolved in the past few years. The most popular seems to be the following:

A slip sinker, weighing from one-eighth to one-half ounce is threaded onto the line. Next, a 4/0 or 5/0 hook is tied to the line. A plastic worm is then impaled on the hook and the barb is brought out of the worm’s head about one-half inch from the upper end. The hook is then pulled down until its eye is concealed in the head of the worm. The barb can now be buried in the worm’s body, making the rig weedless. To prevent the hook being pulled from the worm, a round toothpick can be shoved through the hook’s eye, extending from both sides of the worm. The extending portion is then clipped off even with the side of the worm. In this manner, the hook is “locked” in the worm and will withstand a great deal of punishment before pulling free.

The sliding sinker gives the angler adequate casting weight and also is believed to make a bass less wary since the line slides through the sinker as the fish runs with the worm, provided the angler has released his spool.

The worm rig is cast out and al-

lowed to sink. When slack line indicates the worm is on the bottom, the angler should start reeling very slowly, crawling the worm through bottom cover.

There has been a great deal of controversy, both written and verbal, over the question of when to set the hook after a bass has picked up the worm rig. Some anglers say strike immediately, while others feel the fish should be allowed to run with and “mouth” the worm. The individual angler can experiment and decide for himself which method is more effective.

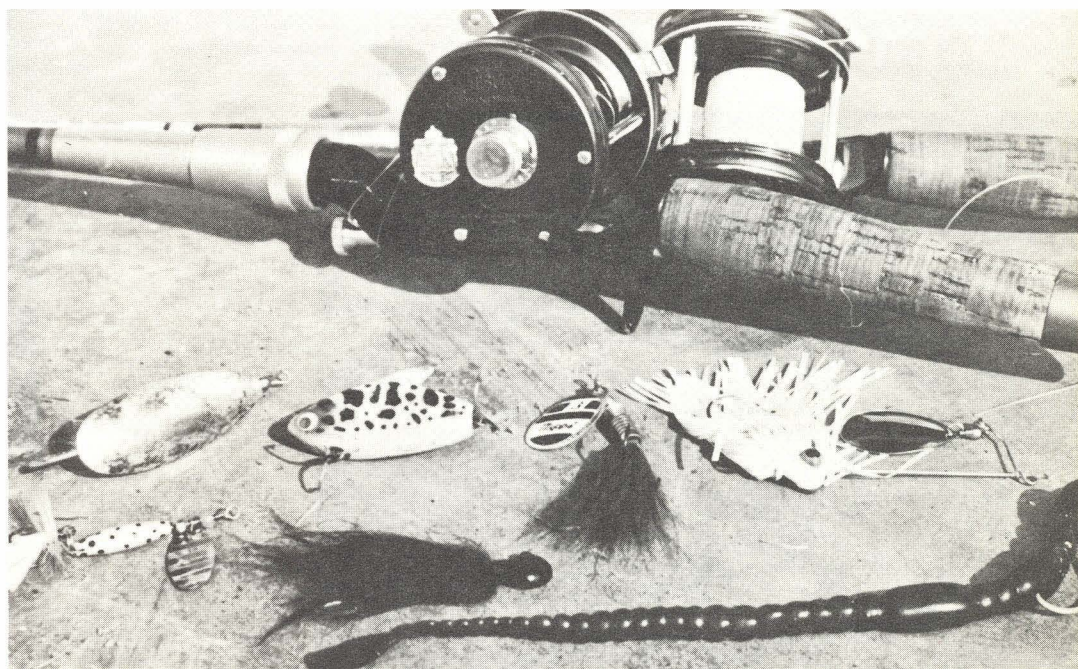
One thing is sure, though! Plastic worms are one of the most popular bass lures on the market today, as many Sunflower anglers have attested in our poll.

As mentioned earlier, it would be difficult to name the most effective bass lure, since a lure’s effectiveness will vary considerably according to time, place, weather and water conditions.

However, lures mentioned here are those which you—the sportsmen of Kansas—have chosen as your favorites. And, they’re favorites for a very good reason—they catch bass!

So, in stocking or replenishing your bass lures for those spring bass fishing trips, give some thought to our “top twenty” listing—if there is any room left in your tackle box!

Most popular sinking baits in the top twenty are: bottom row from left; Shyster, jig, Fliptail plastic worm—top row; Johnson spoon, Sonic, Mepps spinner and Scorpion (spinnerbait).



Tying

Text and Photos

The late-winter, early-spring period is a busy time for the fisherman. During those long, cold days, he is often repairing damaged equipment or tying new jigs.

The winter past-time of making jigs is the development of our many large crappie fishing.

Since jigs are probably the most common and since quite a few are lost when they are used, many anglers have started making their own.

There are many different methods of tying jigs, and each angler has his own twists and techniques. One of the most popular, as Gray, offered to show us his method.

Gray ties jigs not only for crappie fishing but also for walleye as well. "When tying jigs for crappie, I use sixteenth and one-eighth ounce size molds, and for walleye, quarter and one-half ounce molds."

Homemade jigs can be darned useful. One angler recently discovered. Glen Gray, a state record walleye on a yellow perch, weighed 12 pounds, 3½ ounces and was taken at Kanopolis Dam.

Chester A. Graham, Hutchinson, Mo., caught a white homemade jig. That fish, taken on a yellow perch, weighed the scales at 29 pounds, 14 ounces.

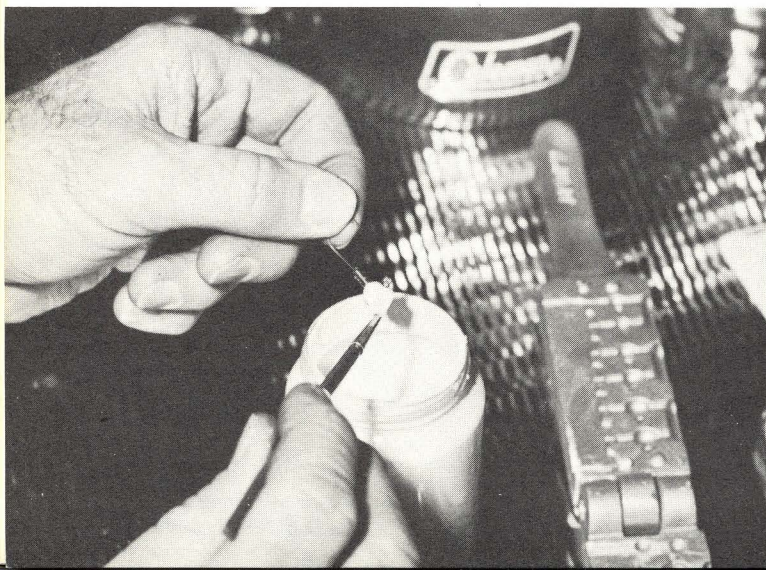
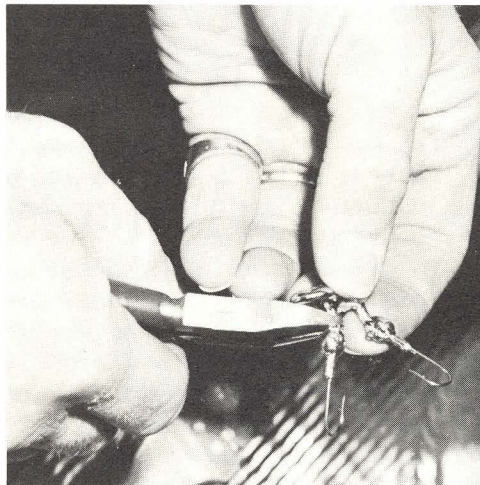
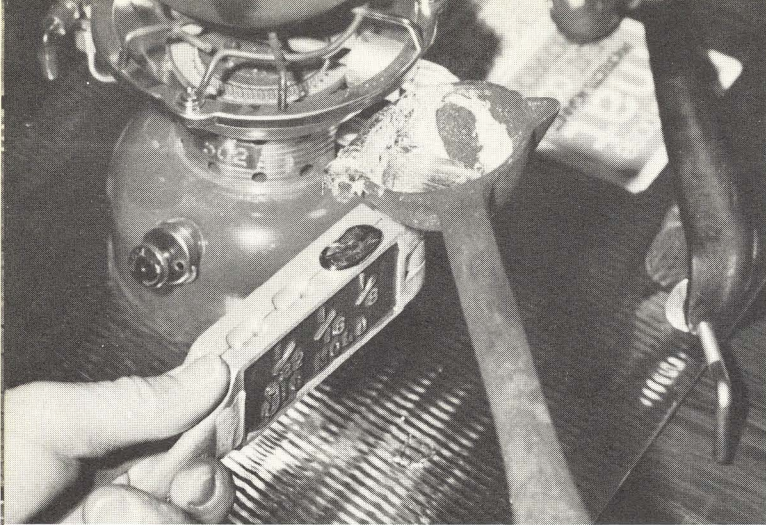
But regardless of your fishing preference, the hunting season and fishing season are here, and it's time to tie some jigs.

1. The lead is melted over a one-burner stove and ladled into a hand mold containing hooks of the desired size. The ladle should be kept hot to prevent lead from cooling too quickly. Gray recommends "plumber's lead," available from most plumbing supply shops, because of its high quality.

2. Lead is allowed to cool and the jig is removed from mold. The excess lead is then trimmed with wire cutters.

3. The jig's lead head is painted with the desired color. Some anglers spray the lure while others dip. It's all a matter of personal preference.

4. After drying, the jig is placed in a fly-tying vice. Thread is then wrapped around the jig's body and over part of the hook's shank to prevent maribou from slipping.



a Jig

by VIC McLERAN

It is not off-season for a do-it-yourself angler. In the evenings he's busy wrapping rods, reels and jigs. His own jigs probably started with his interest in Kanopolis Reservoir and subsequent interest in walleye.

A popular artificial lure for this species is the brush jig. In fishing in the brush, many anglers

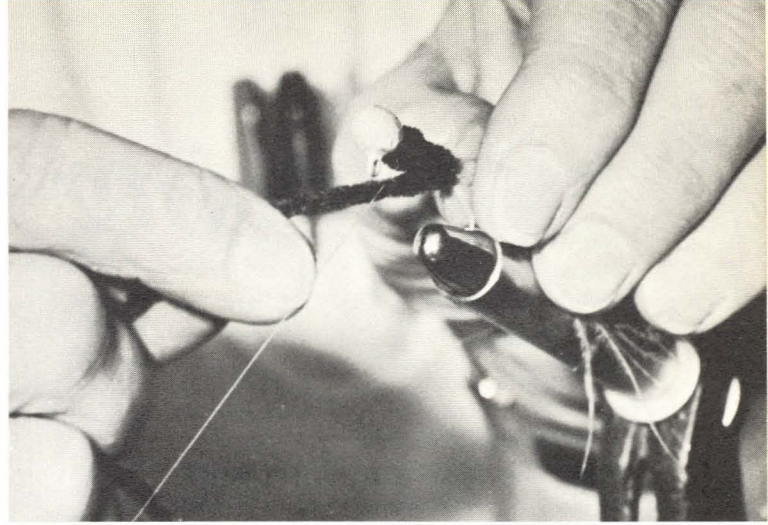
enjoy tying jigs and each do-it-yourselfer has his own. A Junction City angler, Carl "Red"

explains that for walleye and largemouth bass he uses the brush jig, and for walleye, I stay with the one. For bass, I move up to the one with the maribou. Red explained.

The brush jig is effective too, as a pair of Kansas anglers, Jerry and Merwood, Lyons, caught the current state record walleye which he had tied. The lunker was taken from the outlet below

the dam. He landed the state record buffalo on the outlet from Kanopolis Reservoir, tipped

by the brush jig. In essence, the transition period between the brush jig is an excellent time to tie up a mess



6. A five or six-inch strip of chenille is wrapped around the body of the jig and the shank of the hook to form desired body length and thickness. Excess chenille is then clipped and tied at the neck with thread of the same color to position it securely.



7. Quick-drying clear varnish is applied to cement the thread at the base of the lure's neck.

5. The maribou (or hair) is clipped to its desired size and positioned on the edge of the lead body and onto the shank of the hook. It is then wrapped in position with thread.



8. The finished product, ready for the crappie beds.



Tyin' a Jig

Text and Photos by VIC McLERAN

The late-winter, early-spring period is not off-season for a do-it-yourself fisherman. During those long, cold nights he's busy wrapping rods, repairing damaged equipment or tying jigs.

The winter past-time of making one's own jigs probably started with the development of our many large reservoirs and subsequent interest in crappie fishing.

Since jigs are probably the most popular artificial lure for this species and since quite a few are lost when fishing in the brush, many anglers have started making their own.

There are many different methods of tying jigs and each do-it-yourselfer has his own twists and techniques. A Junction City angler, Carl "Red" Gray, offered to show us his method.

Gray ties jigs not only for crappie but for walleye and largemouth bass as well. "When tying jigs for crappie and walleye, I stay with the one-sixteenth and one-eighth ounce sizes. For bass, I move up to the one-quarter and one-half ounce molds," Gray explained.

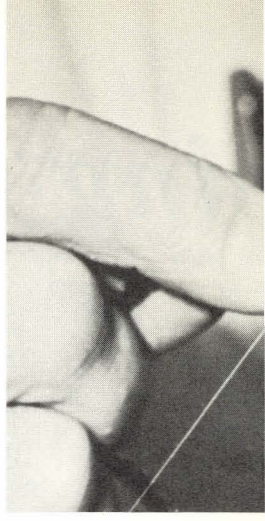
Homemade jigs can be darned effective too, as a pair of Kansas anglers recently discovered. Glen Sherwood, Lyons, caught the current state record walleye on a yellow jig which he had tied. The lunker weighed 12 pounds, 3½ ounces and was taken from the outlet below Kanopolis Dam.

Chester A. Graham, Hutchinson, landed the state record buffalo on a white homemade jig. That fish, taken from Kanopolis Reservoir, tipped the scales at 29 pounds, 14 ounces.

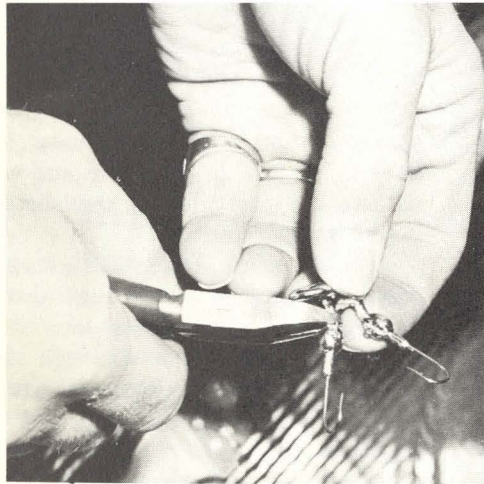
But regardless of your fishing preference, the transition period between hunting season and fishing season is an excellent time to tie up a mess of jigs.



ladled into a hand mold and be kept hot to prevent "lumber's lead," available in high quality.



6. A five or six-inch strip of chenille and the shank of the hook to form a loop. The chenille is then clipped and tied at the top to position it securely.



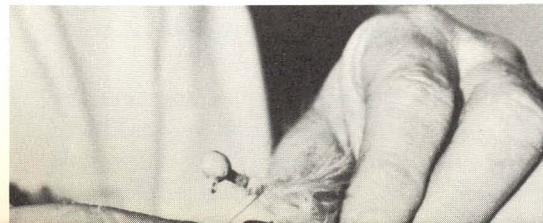
4. After drying, the jig is placed in a fly-tying vice. Thread is then wrapped around the jig's body and over part of the hook's shank to prevent maribou from slipping.



5. The maribou (or hair) is clipped to its desired size and positioned on the edge of the lead body and onto the shank of the hook. It is then wrapped in position with thread.

7. Quick-drying thread is used to secure the thread.

8. Some anglers spray the jig with a clear finish for protection.



8. The finished jig.

Raising a Cannibal

By VERL STEVENS
Hatchery Superintendent

In past summers, many Kansas anglers have traveled to Canada in search of northern pike.

However, recent introduction of the species to Sunflower waters has created quite a bit of excitement about pike fishing at home.

Northern pike, or *Esox lucius*, as the scientist calls him, was first introduced into Kansas waters in April 1962, when 3,750,000 five-day-old fry were placed in Tuttle Creek Reservoir. Although this stocking yielded no fabulous returns, it was a start and some early state records were established.

Not until Council Grove and Norton Reservoirs were stocked in April 1965 and opened to fishing did northern pike really catch on. With the opening of Norton Reservoir, several fishermen were catching limits for the first time in Kansas.

Prior to 1966, all stockings made by the Kansas Forestry, Fish and Game Commission were with fry less than five days old. On initial introductions, fry are usually stocked in lakes which do not contain large panfish populations. Bluegill, crappie and other panfish forage on the young pike before they are large enough to escape.

In a natural state, northern pike usually spawn in areas which contain terrestrial vegetation that has been inundated due to spring precipitation. This situation was duplicated in Commission rearing ponds by allowing vegetation to grow during the late fall. This vegetation was then flooded the following spring.

In order to obtain successful natural spawning of northerns, this submerged terrestrial vegetation is essential.

Spawning activity of the northern looks much like the common carp in that they do not establish a nest or



Northern pike, once found only in northern states and Canada, have recently been introduced successfully to many Kansas waters. The fingerlings shown here are ready for stocking.

definite area for spawning. The female simply swims through the shallow, weedy areas dispensing eggs, while two or three males follow closely behind fertilizing the spawn.

This activity is characterized by a splashing noise as the fish move through shallow water.

Being adhesive, the eggs cling to submerged vegetation, without which, they would settle to the mud and die.

In 1966, two ponds at the Meade Rearing Station were utilized for raising northerns to approximately four inches before stocking into lakes with established fish populations. After some research, it was decided to use one pond experimentally for a natural spawning study with eight adult fish. The other was stocked with fry produced from eggs taken at Norton Reservoir.

The eight adult fish which were

used had been trapped during late fall of 1965 and held over winter in other rearing ponds.

The pond used in the study was approximately one and one-half acres in size with an average depth of 15 inches. A maximum depth of four feet was located at the outlet structure. Like all of the Commission's ponds, this one was capable of being drained.

The northern's spawning activity normally starts around the middle of March in southern Kansas and occurs later in the northern part of the state. Water temperatures normally range from 47 to 50 degrees F. at this time of year.

The cannibalistic nature of northerns make it imperative that an adequate food supply is available for the five to seven day old fry. This food, called zooplankton, resembles tiny,

insect-like creatures barely visible to the naked eye. Fish culturists must evaluate the pond and determine the proper amount and type of fertilizer to be used which will produce a sufficient amount of zooplankton essential for the fry's survival. Much of this comes from personal experience and time spent in observing pond conditions and the feeding fish.

Many types of fertilizers have been used to produce the desired zooplankton "blooms" or concentrations. In many cases, very little or no fertilizer is needed depending on the water source and type of pond. In some cases, organic fertilizers such as chicken, turkey or sheep manures are used, although alfalfa pellets have produced good results in some ponds. Weekly applications may be necessary as are periodic checks of the zooplankton.

As the fish grows, so its appetite increases and the fry start looking for larger zooplanktors. If there is no supply of larger zooplanktors, they will turn cannibalistic. Under optimum conditions, northern pike can be raised to approximately four inches in length during a short five week period. However, once they attain this size, culturists watch carefully for signs of cannibalism.

Normally, when walking around the perimeter of the pond, only a few of the northern pike will be sighted, an indication they are feeding on zooplankton and doing well. Upon running out of food, they can be observed close to the surface and appear to be milling around.

Once cannibalism starts, numbers decrease drastically and the fingerlings can be seen around the ponds edge, all traveling in one direction.

When any of the described signs of cannibalism appear, culturists drain the pond immediately in order to hold losses to a minimum. If larger fish are desired, they are left in the pond a while longer but the number recovered will decrease sharply.

From this initial experiment with northern pike, the species has been introduced to several state lakes, and large reservoirs which did not formerly contain pike populations.

Also, several additional ponds have been managed for the production of northern pike. Further research is now being conducted with brine shrimp in an attempt to obtain better survival on fry when they are introduced to the rearing ponds.

Research of this type in northern

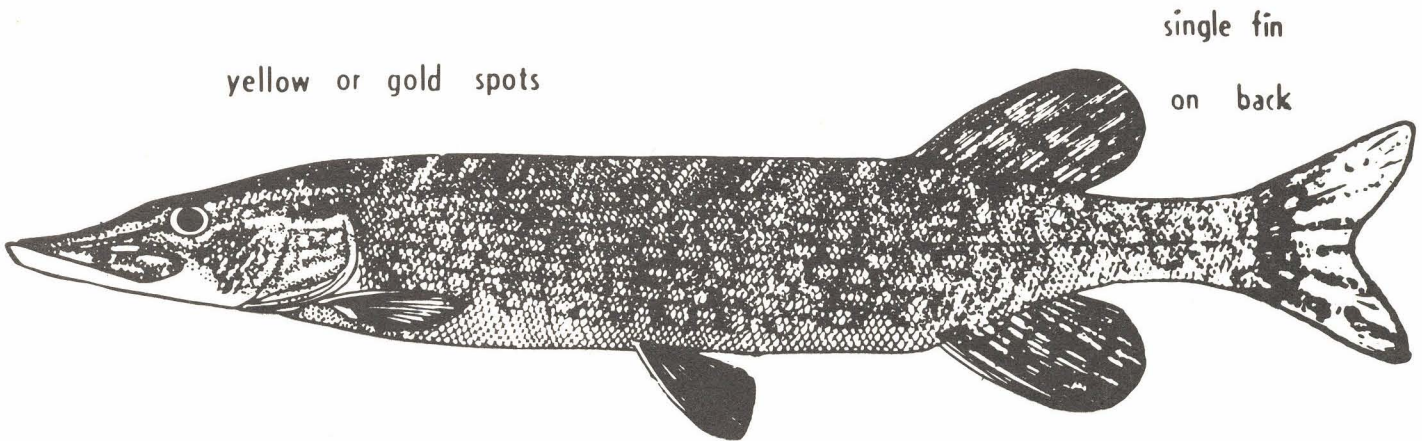
pike development has resulted in some lunker fish.

Glen Swanson, Council Grove angler, currently holds the state record on northern pike. Swanson pulled an 18-pound, 12-ounce monster from Council Grove Reservoir while using a live minnow for bait.

Apparently, live bait has been the most effective for Kansas anglers, although spoons, spinners and large bass plugs have also taken some big northerns.

Reservoirs and state lakes which have been stocked with northern pike are: Tuttle Creek, Perry, Pomona, Council Grove, Elk City, Milford, Glen Elder, Wilson, Norton, Cheney, Webster, Marion and Cedar Bluff Reservoirs, Clark, Meade, Wilson, Bourbon, Neosho, McPherson, Sherman, Crawford No. 2, and Woodson County State Lakes, Winfield City Lake and some Strip Pits.

Although fishing in Canada may be nice, recent efforts by the Kansas Forestry, Fish and Game Commission in stocking and establishing populations of northern pike, have made it possible for Jayhawk anglers to enjoy excellent pike fishing without the trip north.



The color of a northern pike is variable depending on water conditions. It is usually bluish-green to gray on the back and sides, having regular rows of light yellow or gold spots. Its snout is broad and shaped somewhat like a duck's bill.

Black Widow and Brown Recluse Spiders

Sinister

Take some venom 15 times more poisonous than the rattlesnake's and add some poison with enough toxicity to destroy an area of flesh 11 inches in diameter.

Mix well and you have the combined products of our "sinister spinners," the black widow and the brown recluse spiders.

Although it's unlikely anyone would mix a potion such as the one described, it does provide some idea of how deadly a bite from either species can be.

Even though poisonous snakes like the copperhead and rattler often receive most of the adverse publicity, these two spiders can be just as dangerous as snakes, due to their greater numbers and less conspicuous size.

However, the ability to identify both species, knowing something of their habits and habitat, how to avoid them and what to do in case of a bite should dispel unnecessary fears about either spider for Kansas sportsmen.

Physical Description

Garbed in shiny black with a globe-shaped abdomen, the female black widow is unmistakable in appearance. The characteristic orange or crimson hourglass located on her underside is usually visible due to her habit of hanging "bottom-side-up" from her web.

Immature females are characterized by several bright red dots which accompany the hourglass. Faint yellow stripes may also occur on the abdomen but these turn black with maturity.

Female black widows average about one and one-quarter inches in diameter, including their eight legs.

Males are smaller and patterned much differently. Each has a series of red spots on his back with white lines radiating outward. Their legs

are bi-colored with alternating bands of black and yellow, while the body color is brownish-gray.

Males average about one-half the female's size and although poisonous while in the immature stage, lose their toxicity with adulthood.

Because of this juvenile poisonous stage, individuals bitten by a small spider of this description should treat the bite accordingly.

The black widow's web is an irregular crisscrossed pattern of densely woven strands. On one side of the web is a center pocket about the size of a man's finger and is the spider's retreat when frightened or alarmed. The web is usually located beneath some type of cover.

Individual strands of this silk, though small in diameter, are extremely strong and prior to World War II were used in making crosshairs for bombsights, telescopic sights and other optical instruments.

Habitat

Ideal black widow habitat includes trash heaps, stacks of lumber, garages, basements and cellars, unused clothing and old boots.

The outhouse, that old American institution, provided the setting for a number of black widow bites, since the underside of the lid was a favorite web-site. Not surprisingly, however, is the fact that the gradual disappearance of outdoor toilets has resulted in a decrease in the number of black widow bites.

Within the strands of her web the black widow snares a number of insects upon which she feeds. The diet includes: beetles, flies, roaches, mosquitoes, grasshoppers, other spiders and even members of her own species since cannibalism is not uncommon among black widows.



The brown recluse spider is often called "fiddler" in the South due to the dark brown violin or fiddle-shaped mark on its back. Photo by Rex Bare.

Known scientifically as *Latrodectus mactans*, black widows often serve as food for other predatory insects. Both the preying mantis and mud dauber wasp prey on the black widow. The latter paralyzes the widow and places her in the mud nest as food for wasp larvae.

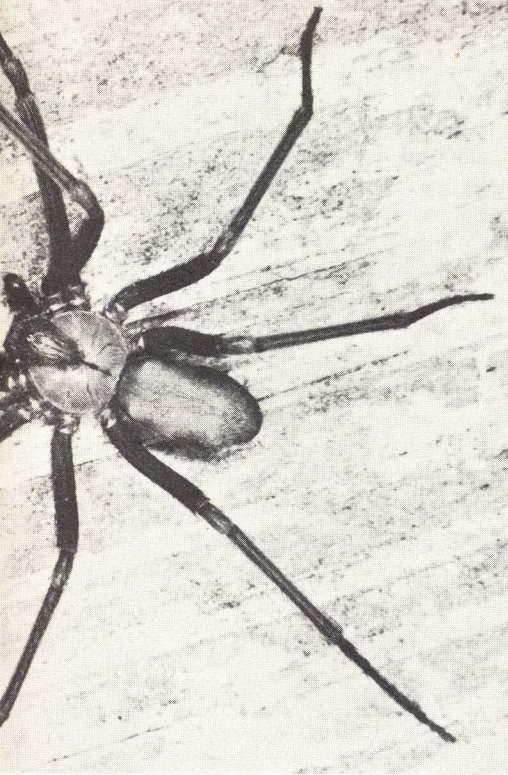
Reproduction

Losing one's head over a female is always a dangerous practice but doubly so for the male black widow. After mating, if the female is hungry, she will occasionally capture and devour her spouse. Well-fed females often allow the male to leave unmolested, contrary to folklore. The habit did, however, prompt the name of black widow.

Following fertilization, a tan, pear-shaped egg case is constructed by the female. When completed, it is about the size of a pea. Females may account for several egg cases during the summer, depositing from 200 to 800 eggs in each case.

The eggs hatch and spiderlings emerge within two to four weeks. The female spider's life span is about one and one-half years while the male lives only about a year.

Spinners



Physical Description

Challenging the black widow in notoriety is a relative newcomer, the brown recluse spider. Named for its color and secretive habits, *Loxosceles reclusa* as the brown recluse is known scientifically, was identified as poisonous through tests in 1957 by a team of experts from the University of Missouri.

The recluse is a small, dusty-brown spider identifiable by a darker brown, violin or fiddle-shaped mark on its back. This mark prompted the nickname, "fiddler," by which the spider is sometimes called.

The male and female are marked alike and both sexes are equally poisonous for life, unlike the black widow male which is toxic only in the immature stages. The female recluse is slightly larger than her mate and with legs extended, is about the size of a quarter.

Habitat

The recluse spins a coarse, scanty, irregular web in dark places such as closets, garages, boxes, cellars, attics, sheds and other similarly sheltered areas. They are especially fond of areas where they're not disturbed such as inside old fishing boots, clothing that's seldom used, bedding, behind

furniture and other places not utilized regularly.

In its northern range, of which Kansas is part, the recluse is associated with human dwellings more often than the black widow. It was originally believed the brown recluse was unable to withstand the colder northern temperatures like we have in Kansas.

Now however, scientists are discovering facts to the contrary. Rex Bare, a Kansas University doctoral student, who is doing his dissertation on the brown recluse, reports a colony of this species near Lawrence has occasionally endured temperatures as low as -25 degrees Fahrenheit during the past 15 years.

However, Bare is quick to note that the spiders were living in old, deserted buildings, which delay abrupt temperature changes and enable the spiders to gradually adjust.

"Without the protection offered by the buildings and junk within, the spiders would probably not survive the coldest or hottest temperatures in Kansas," explained the KU entomologist.

Further proof of the spider's ability to withstand extreme cold is seen in the discovery of isolated brown recluse colonies in Wyoming, Pennsylvania and Canada.

Unlike the black widow, the brown recluse is basically a hunter or stalker and doesn't depend as much on the web in which to trap prey. They do, however, feed on an insect diet similar to that of the black widow, although no cannibalism has been noted.

Reproduction

According to most authorities, mating occurs from February through March and is most common in June and July. After fertilization, the female constructs a white egg case in which approximately 200 eggs are deposited.

Upon hatching 30 days later, spiderlings resemble adults except for an absence of the "fiddle" pattern on the back, which appears later with maturity.

Norman Hoerner and Kenneth Stewart, a pair of Texans who conducted a study on the brown recluse, found the maximum life span of adult females was more than 1,400 days or five winters. The male's life span is slightly shorter.

Rex Bare says these figures are consistent with his findings in the Lawrence area. This is in marked contrast to the black widow's shorter life span of one and one-half years.

Bites and First Aid

It should be pointed out that neither the black widow nor the brown recluse spider is aggressive. They don't seek out people for the purpose of biting them but would rather flee than fight. Bites are inflicted in self-defense—most often when the spider is handled roughly, either intentionally or accidentally.

For example, the brown recluse hunts at night for its food. If it gets into a bed or a sleeping bag and a person rolls over on it in his sleep, the spider will bite in self-defense. The same thing applies to the hunter or fisherman who gets into an old coat or boot which hasn't been used for some time. If the spider is crushed or disturbed, it will bite.

Similarly, the camper who inadvertently manhandles a black widow while gathering wood for a campfire, is asking for trouble.

The black widow's poison, like that of many poisonous snakes, is proteolytic. This means it affects cell protein and releases histamine which generates sickness and shock. Generally, there is very little swelling or skin destruction at the bite location. This is in marked contrast to the bite

location of the brown recluse which festers and sloughs away.

Various authorities have labeled the black widow's poison "10 to 15 times more deadly than that of the rattlesnake." However, the spider's fangs are small and the dosage injected is minute.

The initial bite of the black widow is much like the sensation of being stuck with a pin. Effects of the bite vary according to the state of the victim's health, his size, location of the bite in relation to the heart and brain and the amount of venom injected.

Children and persons with a history of allergies or poor general health are likely to suffer more serious effects than healthy adults.

Statistics from the Kansas State Department of Health show seven Kansans have died as the result of spider bites since 1959. The report did not always indicate the exact species involved. Five of the victims were less than 12 years of age and although bite locations were included on only two cases, both were on the head.

The victim may experience pain and tightness in the abdominal muscles, shoulder, back and chest. Discomfort may also be felt at the bite location. Headaches, difficult breathing, nausea, dizziness, vomiting and overall weakness may also occur.

Victims should be kept warm, quiet and inactive. An ice pack may be applied to the bite location. A phy-

sician should be contacted immediately and the individual hospitalized.

Anti-serums are now available commercially and although deaths from the black widow's bite do occur, they are uncommon.

Victims are usually aware of being bitten by the black widow because of the initial pain. However, the brown recluse's bite is generally painless and often undetected. Victims may not be aware of the bite for several hours, although in some cases, immediate pain has been experienced.

Since the brown recluse's venom is necrotic — tissue destroying — flesh around the bite becomes congested and swollen. Victims may become feverish, restless and experience difficulty sleeping because of severe local pain.

In time, tissue affected locally by the venom dies and gradually sloughs away, exposing the muscles beneath. Dense scar tissue forms and the wound heals quite slowly, often taking many weeks. The sunken scar which remains can range in size from one inch up to 11 inches in diameter and often requires plastic surgery.

Keep the victim quiet, apply an ice pack to localize the venom and consult a physician immediately. Although a knowledge of first aid measures is wise, spider bites like many other outdoor hazards are best dealt with through preventive measures.

Preventive Measures

Tents, sleeping bags and other

camping equipment which have been stored for the winter should be carefully examined prior to spring usage. Hunters and fishermen should carefully inspect old hunting coats, vests and boots before wearing. This is especially true when these articles have been stored in the garage, cellar or attic during the off-season.

Since many camping and hiking trips involve children, they should be informed of the spider's presence and shown pictures or color photographs of each species. They should also be instructed to report to adults if they see any spider which resembles the black widow or brown recluse.

Due to the black widow's preference for wood or brush piles, campers should exercise care when gathering fuel for campfires. Ideally, gloves should be worn for this camping chore.

Outdoor toilets, when in use, should be affixed with a hinged lid to facilitate periodic checking. Lindane and chlordane mixtures are effective repellants and should be applied to the lid's underside.

Fishermen and boaters who use docks, piers or old boathouses should check these areas carefully each Spring. The large number of aquatic insects makes these areas attractive to both the black widow and brown recluse.

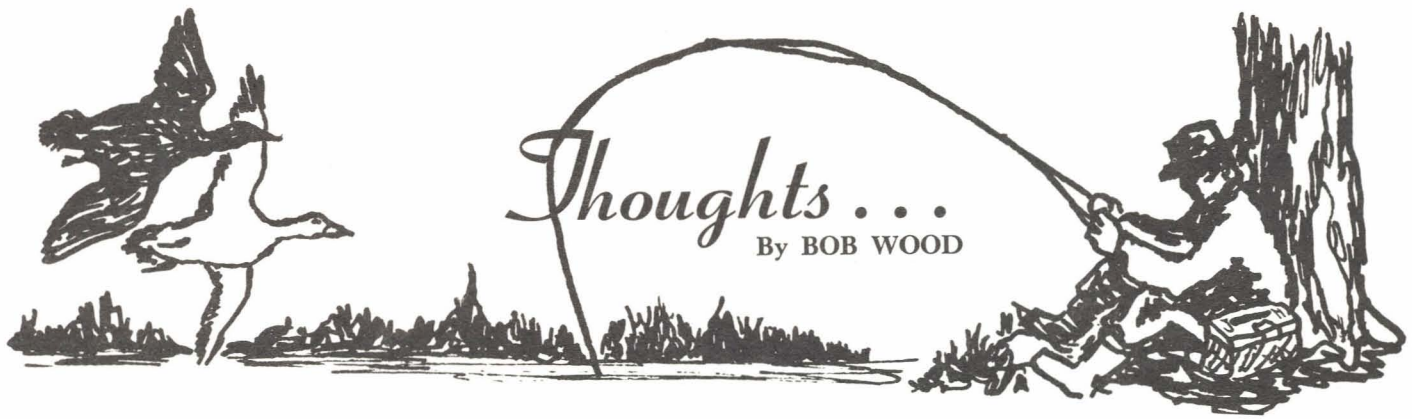
Farmers and stockmen working around barns and out-buildings should exercise caution since both species inhabit these areas. If one of either species is located, the area should be checked thoroughly since others may be present.

Since both spiders perform a useful function in controlling insect pests, total eradication is not desirable. Farmers interested in reducing populations of spiders around out-buildings, foundations, cellars and crawl spaces may treat such areas with a one percent solution of lindane or chlordane.

As the popularity of outdoor activities continues to grow each year, increasing numbers of Kansans take to the woods and waters of our state. With a little knowledge and some degree of caution, Kansas outdoorsmen need not fear the black widow or the brown recluse—our "sinister spinners."

The black widow spider's characteristic red or orange hourglass marking is usually visible due to her habit of hanging "bottom-side-up" from her web. Photo courtesy of University of Missouri.





It seems to be a part of man's nature that he must treat the symptoms of his maladies rather than their causes. This characteristic can be aptly demonstrated immediately following hard winter weather.

Early this year, much of central and western Kansas experienced the most severe winter weather since 1960. Two blizzards, plus several other storms, produced above normal moisture levels for most of the state. The blizzard of February 21-23 was classed as one of the worst this century.

Since the February storm, much ado has been raised over ways to replenish game populations that suffered the wrath of wind blown snow. This speaks well of the concern many people have for our wildlife resource. As is usually the case, however, when the snow quit flying, the cry was for scattering grain. Later, as spring approached, efforts were directed toward

stocking. In their futile way, these activities were misguided attempts to solve the question of winter losses of wildlife by treating symptoms of starvation and death from exposure rather than trying to effect a cure for the real problem, lack of suitable habitat.

Time had ripened us for a hard winter. Not since the Spring storms of 1960 has winter weather been a major factor in reducing Kansas wildlife populations. We have experienced an unprecedented run of years with weather favorable to maximum survival of resident wildlife brood stock. The "Law of Averages" caught up with us in February. Although significant losses may have occurred, our game resource was far from wiped out. Reduced in number perhaps but not eliminated.

All wild animals are subject to a variety of decimating factors which control their numbers. It has to be so, or we would soon be overrun with a myriad of teeming things. Weather is only one such control. We must expect wildlife losses in every winter storm. But, we must also realize we can only treat the **cause** of such losses by improving wildlife's living conditions.

Assuming the presence of a viable animal population with good food and cover conditions **before a storm strikes**, we can rest on the knowledge that brood stock capable of replenishing the resource will survive. It logically follows, if viable brood stock is present and given good food and cover conditions, the resource will be replenished.



Photos
by
Merle
Gary
Hesket



Fish and Game

Bushytails

By LEROY E. LYON

Busy little homebodies would be an apt description of fox and gray squirrels—Kansas' most familiar woodland mammals.

Belonging to the family *Sciuridae* which includes marmots, woodchucks and prairie dogs, the squirrel has been correctly named by scientists. The family name, *Sciuridae*, means "shade-tailed"—a most appropriate title when one considers the long bushy tail which is the squirrel's trademark.

The tail is a most valuable asset and is used in most of the squirrel's activities. It provides shade from hot sunshine and in cold weather is often curled about the body for warmth. It is also used for balance in climbing and is important in slowing descent when the squirrel either falls or jumps to a lower limb.

Of the two species, fox squirrels are more abundant in Kansas and are found nearly statewide. Shelterbelts

and hedgerows have provided ideal homes for fox squirrels in western Kansas. Fox squirrels prefer open stands of mature timber containing broadleaf trees.

Gray squirrels are found only in eastern counties and are generally limited to oak-hickory forests with bushy understory vegetation.

Coloration varies in both species. In Kansas, fox squirrels are usually bright rust brown in color while the gray squirrel's basic color can best be described as a salt-and-pepper gray.

Fox squirrels, however, occur in three different color phases, each phase being dominant in a particular section of the country. In northeast states, from Pennsylvania to Maryland, they may be steel-gray in color. In the South, black is the predominant color although some have black-and-white faces with grizzled reddish fur. In western portions of the range, including Kansas, the fox squirrel wears a yellowish brown coat.

Gray squirrels also vary in color and quite often black ones are found in the northeast part of the range where the black color is more dominant. As with most animals, some individuals are born which are either albino (pure white) or melanistic (jet black). As a result, occasional black or white specimens may be found throughout the entire squirrel range.

Regardless of the coloration, a gray squirrel nearly always has a tail which is bordered with white-tipped hairs. A fox squirrel's tail is usually trimmed rusty yellow. Gray squirrels also have tawny fringes on the hair along their sides. This is a natural coloration and in no way indicates a cross between the gray and fox squirrel species. The tawny fringing is quite common on gray squirrels in Kansas.

The gray squirrel is also smaller and more agile than his fox squirrel cousin. Grays will usually be from 15 to 20 inches in length, including the seven- to 10-inch tail. Usually a gray will weigh about one and one-half pounds.

Fox squirrels, largest of tree squirrels, vary in length from 19 to 30 inches, including a 12- or 13-inch tail. This squirrel may weigh as much as three pounds.

The diet of both species is largely gleaned from woodlands. Acorns are the favorite food of both squirrels although many other kinds of nuts and seeds are also eaten. Buds, roots, fruit, flowers, leaves, twigs, insects, fungi and grains, particularly field corn, are all included on the bushy-tail's menu. Fox squirrels expand their diet in winter to include osage orange seeds and bark.

Gray squirrels are ambitious, hard-working rodents. They are up at dawn and begin work immediately either feeding or gathering food for future use. Fox squirrels are not

The squirrel hunting season this year will open June 1 and remain open through Dec. 31. The daily bag limit has been set at five; possession limit consists of 10.

The Commission set the longer season after study by the game division indicated that such a season would not endanger the basic squirrel resource. Data indicated squirrels are currently underharvested in Kansas. It was also felt that increased hunting pressure could be justified since hunting is not a significant limiting factor on squirrel numbers.

Like most small game species, the squirrel resource is a crop of the land. In a year when food is sufficient and production of young is about normal, the total fall population is nearly two and one-half times larger than in spring. Unlike other crops of the land, we cannot stockpile game surpluses since a large percentage of squirrels and other small game birds and animals will fail to survive through winter whether we hunt them or not. If they aren't hunted, many will die from natural causes—winter habitat will support only a certain number.

Thus, the longer squirrel season and increased hunting pressure are tools of game management whereby some of the natural mortality of squirrels can wisely be converted into human use and recreation.



early risers but are active throughout the day. Both species are born hoarders spending considerable time and effort in stashing away a supply of nuts and seeds during late summer and autumn months. At a later date, when food is scarce, the squirrel will locate the buried nuts by using his keen sense of smell. Nuts buried by a squirrel are not his private property but are available to others as well. When a squirrel is hungry, it will dig up the first nut it can find whether he planted it or not. Every buried nut is a potential tree and some of those not located by the squirrels will sprout into trees.

Winter finds tree squirrels fat and well prepared. Both species are active throughout the year. They never hibernate but cold temperatures, high winds, rain or snow may keep them inside their dens for a few days.

For a home they may use hollow trees or construct outside nests of twigs, leaves and bark. Generally a tree cavity is preferred to provide better protection. Outdoor leaf nests,

constructed as "second homes" during summer, are quite often flimsy affairs. But the winter nest's tightly matted roof and sides keeps the occupant warm and dry.

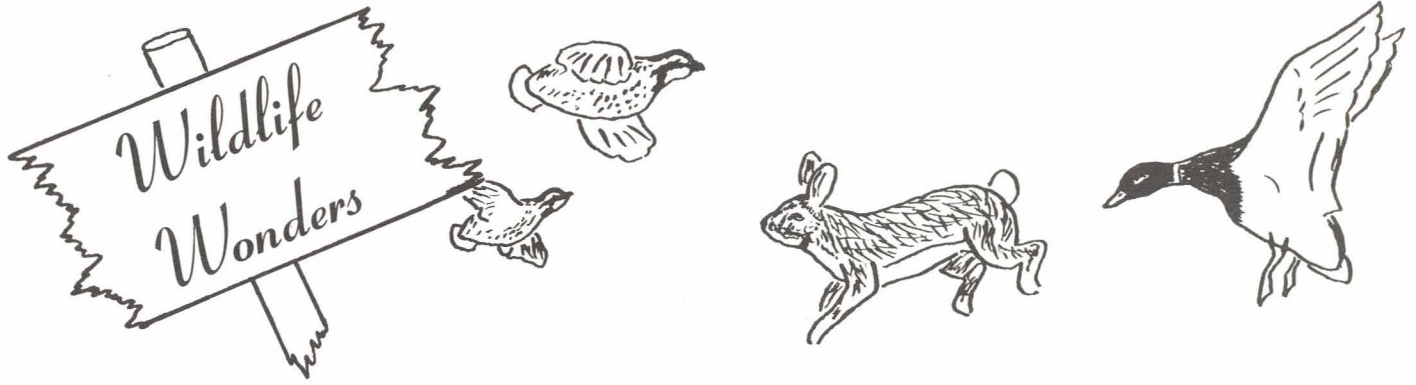
Mature females usually raise two families (litters) each year. The first litter is born in early spring, usually in March or April, while the other litter is born in July or August. Females born the previous year only raise one litter. The average squirrel family is three. However, gray squirrels may have larger litters, from one to six per litter, while fox squirrels may only occasionally have as many as five.

A newborn squirrel weighs only about one-half ounce at birth. It is naked, blind and deaf—about like a baby mouse. When about three weeks old, the youngster is covered with hair and is able to hear. Eyes do not open until the young squirrel is four or five weeks old. When about seven weeks of age, the young bushytail leaves the nest and goes exploring. Litters are weaned at 10 weeks.

In Kansas, both fox and gray squirrels are legal game during the hunting season established by the Kansas Forestry, Fish and Game Commission. This year the season has been lengthened and will run from June 1 through Dec. 31 with a daily bag limit of five and a possession limit of 10.

In a year when food is sufficient and production of young is about normal, the total fall population is nearly two and one-half times larger than in spring. But, even if they aren't hunted, a large majority will fail to survive through winter since many will die from natural causes. Thus, the annual surplus squirrel crop can be utilized without harming the squirrel resource.

Without question fox and gray squirrels are an important addition to Kansas' wildlife scene—and a favorite of all who hunt them with gun or camera.



For three-quarters of a year now, wildlife populations have been declining. Predation, road kills, poachers, ice storms, inadequate cover, winter blizzards, insufficient or low quality food, sub-zero temperatures, disease, pesticides and hunting have brought wildlife populations to their annual low.

Quality of the habitat determined how much the population suffered. Availability of sufficient food, water and cover is essential if wildlife is to survive. Precise requirements of different species vary of course to form all the strands in the web of life. But the only proven way to increase a wildlife population is to increase the required habitat. The species for which you are increasing the habitat then takes over. Reproduction accelerates and more individuals are able to survive to the next reproduction period until all habitat is filled to carrying capacity.

Summer, that all important production period is now underway. Only the strongest, healthiest and most wary individuals have survived since last year's production period. These healthy individuals blossomed into peak plumage or pelage and sang, danced or in many other ways performed elegantly to attract and mate with their kind. Now, as many or more young must be produced as were lost during the fall, winter and spring or the species will gradually disappear.

We know reproductive potential of our native wildlife is more than adequate—so in the long run, abundance

of the various forms of life depends directly on the quality and abundance of their specific habitat.

It was a calm and peaceful evening as I watched the hawk moths, also known as hummingbird or sphinx moths, come and go at our bed of four-o'clocks. Most common were the white-lined sphinx. Individuals moved from flower to flower, body hovering perfectly still—yet with wings beating rapidly—while they inserted their long feeding tube (proboscis) deep into the throats of flowers to suck up sweet nectar at their base. Much larger, tomato worm hawk moths with their longer feeding tubes hovered farther away from the flowers to feed in the same manner. The tomato worm moths also fed in the deep throated flowers of the moonflower vine.

I picked one of the large, morning glory-like flowers from the moonflower vine and measured the length of the flower's throat to the basil nectar. It was just a little less than three and one-half inches deep and less than one-eighth inch in diameter. I captured one of the big moths with an insect net, its feeding tube now was

rolled into a tight circle appearing as a watch spring just under the mouth. Unrolled, it measured just three and one-half inches long—as though one was made for the other. One of the flowers was visited 18 times in 30 minutes, certainly this flower was well pollinated.

I recall having once read something concerning extreme adaptations between a flower and a moth in Charles Darwin's writings. Rechecking, I found this to be orchid from Madagascar with an exceedingly long spur, or nectary, hanging from the flower's lower lip. Darwin examined this orchid more than one hundred years ago and wrote, "In Madagascar there must be moths with proboscides capable of extension to a length of between ten and eleven inches! This belief of mine has been ridiculed by some entomologists." Darwin believed the orchid could not be pollinated—so could not exist—unless there was such an insect. Some forty years after his writing a member of the hawk moth family with an eleven-inch feeding tube was found there.

Many are the adaptations and dependence of one form of life upon another.

NOTICE TO READERS

Kansas Fish and Game Magazine is distributed free to Kansas residents, upon written request. Complete name, address and zip code number should accompany any correspondence relative to the publication. Anyone moving to a new address must notify the Information-Education Division, Kansas Fish and Game Commission, Box 1028, Pratt, Kansas (67124) if they desire to continue receiving the magazine.

Readers' Response

Magazine for Blind—"Last fall we were requested by a blind Wichita resident to record on cassette tape your KANSAS FISH & GAME Magazine.

We realize, of course, that permission is not required for reproduction of publications of this kind but we feel you should know we are recording it.

"This client enjoys it so much he wants it continued, which we are doing, and have added another reader as well.

"The cassettes are furnished, recorded and mailed to the people who return them when through, for reuse for the next issue. There is no charge of course. We anticipate a somewhat larger circulation of the recording in the future.

"I might add that, in addition to the satisfaction our volunteer readers get from doing something for someone else, they enjoy reading the magazine themselves. It is very interesting reading."—**Carlton B. Martin, Workshop Manager, Braille Association of Kansas, Inc., Wichita, Kansas.**

Change of Address—"Please change my address as noted. Your Winter 1970 issue was just great. I was not aware of this publication until recently. Keep them coming."—**H. E. Poindexter, Olathe, Kansas.**

Notification of a change in address is extremely important if you wish to continue receiving KANSAS FISH & GAME. If we aren't notified and the magazine is returned to us by postal authorities, we automatically drop that subscriber from our mailing list. This results in one wasted magazine, additional postage charges, no future issues, and more headaches for all concerned. So please let us know of any changes in address. That way we can keep 'em coming'. And thank you Sir!—**Editor.**

Great Kansas Resource—"I enjoyed the article by Marvin Schwilling in the Winter 1970 issue. These giant Can-

ada geese truly are a great Kansas resource.

"Please include me on your mailing list for future issues. As I borrowed this issue, could you please send me a copy?"—**Thomas A. Curtis, Great Bend, Kansas.**

We'll be more than happy to include your name on our magazine mailing list. We'll also be pleased to grant similar personal requests from adult Kansas residents—particularly those sportsmen who have current hunting or fishing licenses since they are the ones who are providing operating funds for the Kansas Forestry, Fish and Game Commission.—**Editor.**

More Hunting Stories—"Would you please send me your KANSAS FISH & GAME Magazine? I wish you would have more articles on duck hunting. The magazine isn't quite as good with just a story on the animals. Have more hunting pictures and good stories."—**Gregg A. Bell, Wichita, Kansas.**

Special Issue Praised—"Your recent "Special Issue" of KANSAS FISH & GAME Magazine is the finest I have ever read. Too bad all sportsmen and those interested in conservation cannot have a copy as it would enlighten many to see how and where our money is spent.

"My congratulations to you and your fine associates for the great job you are doing.

"Please change my mailing address as noted. I do not ever want to miss a copy."—**George H. Vandenberg, National Committeeman for Kansas,**

KANSAS FISH & GAME invites all readers to submit their comments, suggestions, likes and dislikes to Readers' Response. In each issue the magazine will feature as many letters as space permits. We reserve the right to edit and condense letters.

—**Editor.**

Ducks Unlimited, Inc., Wichita, Kansas.

Staff Congratulated—"I just finished reading the "Special Issue" of the magazine and it is great!

"You have given more insight into the operations of the entire Commission than ever before. I am sure thousands of Kansas sportsmen are now aware of the complex operations and problems of our fine Fish and Game Commission.

"You and the entire staff are to be congratulated on the extra fine issue of the magazine. Keep up the good work."—**Ted Cunningham, Executive Director, Kansas Wildlife Federation, Inc., Wamego, Kansas.**

More Meaningful Appeal—"I received your magazine today. As a Kansan I am glad to say you are making strides in what I think is the right direction.

"The last couple issues have had a much more meaningful appeal to me and I am sure to others as well. Your last issue (Winter 1970) seems to have been spiced with 'conservation.' This I like very much. On these grounds alone I have 'hung up my rod and reel as well as my shotgun.' I cannot feel free to encourage conservation and carry a gun so I put down the gun. I hope we as a human race can manage to look at wildlife and the wilds without a business-like approach. Wisdom does not necessarily have to show a profit.

"The article, 'Plan Now . . . Plant Later,' is a very positive and necessary move to involve people in the conservation act. The actual good the planting of seeds does is only minor to the attitude of those who plant them, not to mention its spreading influence to others.

"Am looking forward to more KANSAS FISH & GAME Magazines with the attitude of the Winter 1970 issue."—**Robert J. Mangile, Pittsburg, Kansas.**

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