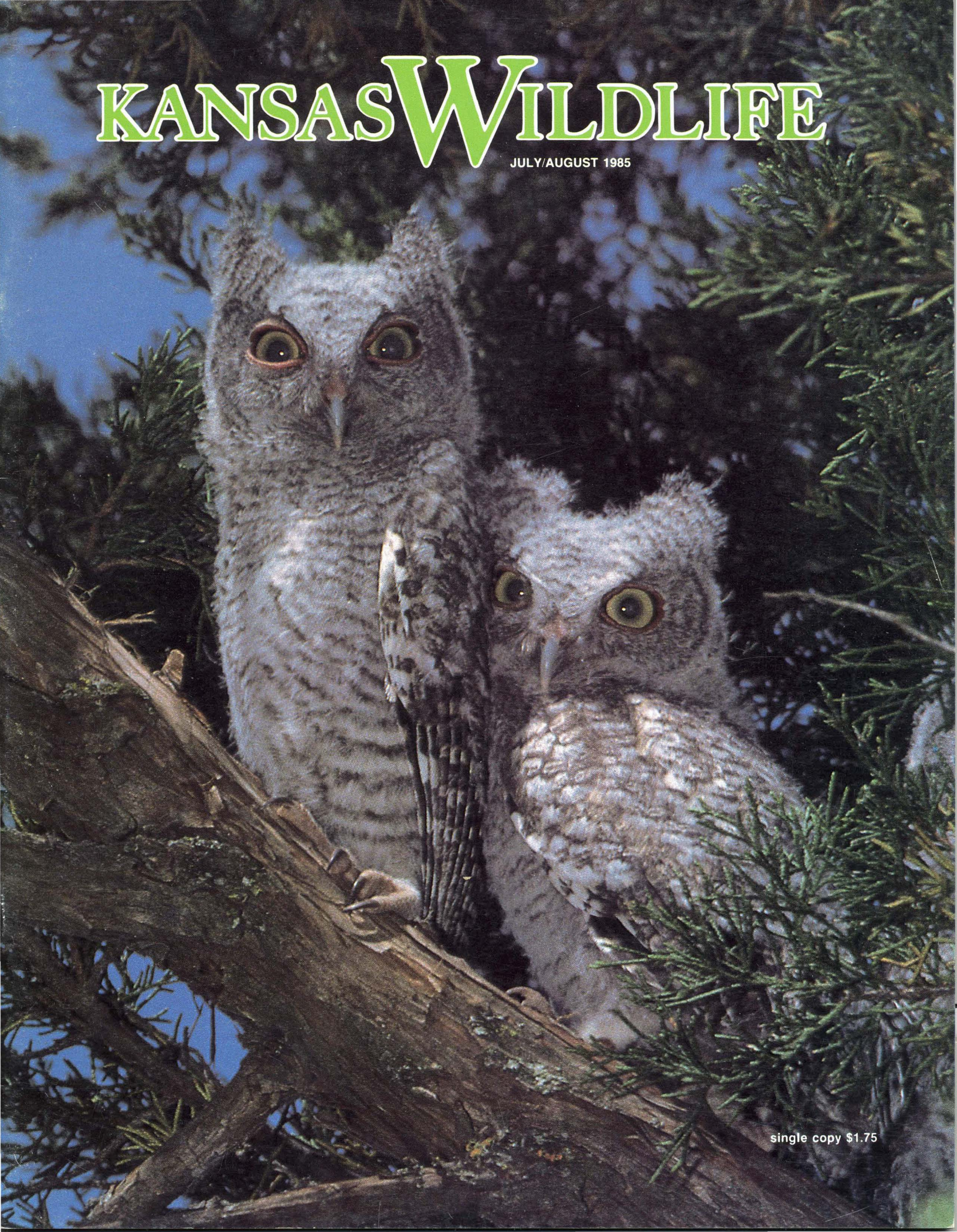


KANSAS WILDLIFE

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Between More and Better

Americans have a penchant for excess. You can look at a 1960 Cadillac or an early Duesenberg and come to that conclusion. One is a garish example of too much sheet metal and overemphasized profile, the other a superbly-engineered piece of machinery that was too costly to survive. Things interest us if they're bigger, smaller, lighter, heavier, higher, faster, longer-lasting, and more expensive. In a word, more sophisticated.

Today we find fish with sonar and catch them with rods of miracle fibers sporting reels with digital readout. We zero in on deer with electronic scopes and shoot them with rifles that pack enough energy to floor a cape buffalo on angel dust. Our cameras are miniature computers, but we can't put them in the glove boxes of our automobiles because another computer has been installed where glove boxes used to be. It does the job that was once handled by a set of spark plugs and a simple carburetor.

At home we have at our fingertips more information than we know what to do with. It used to be that a newspaper was timely. Now any print media is upstaged by telecommunication before the end of the press run. It really doesn't matter, though, because much of the important information concerns things we can't do anything about. Nonetheless, we flash by satellite updates on a national debt so big most of us can't comprehend it and so unmanageable that deciding what to do about it is a multi-month project for the brightest of minds.

We humans have been frighteningly successful at circumventing Nature's

checks on excess. In the undisturbed wild living things are not permitted to overproduce, overkill, overprocreate, overanything. There *is* a balance in the outdoors, albeit a delicate one. If we impose our excesses on other life — be they pollution, destruction, slaughter, or protectionism — the wild cannot function of itself.

Among the most common flaws in the reasoning of people concerned with the future of our wildlands is the assumption that letting things alone or compensating for one excess with another will solve problems. Neither philosophy works. Once Nature has felt our influence, she cannot soon right herself. Everything in the wild is connected to and dependent on everything else. Taking our hands off once we've injected an excess or deficiency will not correct the problem. Over time, the balance will be restored. But it won't necessarily comprise the same organisms or operate the same as before interference.

Overreacting to damage done is a uniquely human characteristic. We see it in million-dollar lawsuits for whiplash injury, the pandering of previously exploited groups in the job market, prohibition of firearms because they're used by criminals. We have become a people seduced by extremes. We have lost, somewhere, the distinction between superlatives and limits.

Our environmental boondoggles are hastily patched and often without thought. We eradicate some species because we don't like them, over-protect others because we do. Sometimes, for want of any other solution, we try to compensate for our excesses by splicing Nature's web where it doesn't need attention. Whichever of these avenues we tread, we eventually find that fixing isn't proper unless something's broken, and that when something is, it likely won't mend itself.

There is a middle ground. To be there doesn't mean you're a fence-sitter or undecided or uninformed. It may be that you recognize Nature for what she is — a complex, intricate network of relationships between living organisms. Because she is alive, she cannot be preserved. Because one member of her community depends on all others, she cannot remain unaffected by the re-

moval or proliferation of any one species. Because she is here on earth, with us, she cannot be dealt with at a distance; man is part of Nature.

We humans have the responsibility to manage our environment. We can't simply leave it alone, and it won't forever forgive our excesses. The future of a natural process — of that dynamic balance in life — depends upon our decisions as its stewards. We, in turn, depend upon it for our survival and prosperity. We would do well to emulate a few of its qualities — particularly that of moderation.

Most of the time, it rains enough to wet the ground, but not so much as to cause flooding. It can be cold or hot, but it's rarely too cold or hot. The wind blows hard sometimes, but seldom too hard. Thunderstorms don't often cause fires, and when they do, the next generation of forest or rangeland vegetation can fuel a vigorous new ecosystem as it matures.

The rain may ruin our hay and the sun parch our corn. The cold may freeze our tomatoes and the heat soften our asphalt. The wind can knock down trees and sometimes houses, and forest fires do incinerate timber. Still, in the constant flux of Nature there remains a stability that we don't often demonstrate. Perhaps that's because in the natural world it has been determined how much is enough and what is too much or too little. We are sophisticated enough to produce and consume, build and destroy, add and subtract on a grand scale. But it appears that we lack the wisdom to know how much of anything is the right amount, how much is detrimental to ourselves and our environment, how much is fatal.





Rob Manes

Bird Dog Basics

Every upland bird hunter should have the opportunity to hunt behind a top-notch dog. Many folks miss out simply because they don't want to "bother" with a dog or think they don't have what it takes to train one. That's too bad. A gun dog needn't be a bother. And anybody can train one. All it takes is a bit of basic knowledge and plenty of patience.

Whether or not a bird dog performs in the field depends somewhat on natural ability, but also on the success or failure



Gene Brehm photo

dog. Other dogs are “hard” and not only tolerate but need harsher discipline.

Perhaps most important is the relationship you develop with your dog. You must gain his confidence from the time you take him home. Avoid acting or speaking in anger and remember that dogs don’t learn in a state of fear. Successful trainers agree that the best bird dogs are developed by modifying their instincts through routines which are most often pleasurable to the dog.

Hunters who are serious about owning a good bird dog begin by carefully selecting a puppy. Though it is possible to purchase a fully trained dog that will hunt for any master, the satisfaction of training and developing a bond of friendship with a bird dog is worth working for.

The first step in selecting a bird dog is deciding what breed to consider. An upland gunner wants a dog that will hunt the desired cover, point game until a shooter flushes it and retrieve downed birds with efficiency and style. Most pointing breeds do all of this to some degree by instinct, but there are differences. Quail hunters favor dogs that work close to the handler — like Brittanies. Pheasant hunters often lean toward breeds that range a bit more, such as German shorthaired pointers and weimaraners.

Temperament should also be a consideration in choosing a breed. Some strains tend to be more hard-headed and thick-skinned than others. Pointers and weimaraners are frequently of this type and can be handled with a heavier hand than other bird dogs.

Just about any type of bird dog can make a great family pet, but smaller breeds, such as spaniels, may be more desirable to have in the house. Two trainers may differ strongly in their opinion of a dog’s place in the home. One may say, “You can’t have a dog in the house all the time and expect it to hunt for you.” The other disagrees, contending that a working dog can be a pet too.

Once you’ve narrowed your preference to one or two breeds, you can begin puppy shopping. Standing in the midst of a romping litter can make the choice difficult, but it is important to do it carefully.

First, without interfering with their play, watch the pups and try to determine which ones are most bold and alert. The one that meets you at the gate first and is first to mother’s side at mealtime is likely to be a go-getter in the field. A pup that chases bugs and blowing leaves is apt to be an enthusiastic hunter. Clap your hands and watch to see which ones cower least at the sound. This can help you select a

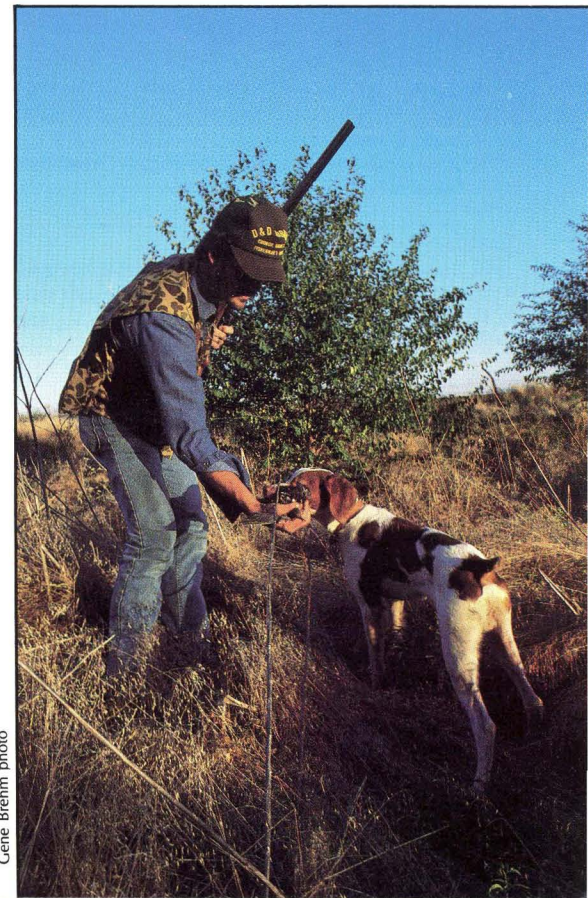
dog that won’t be gunshy. Sex will not affect performance afield if you hunt your dog alone.

After you’ve decided which pup looks best, examine him apart from the rest of the litter. His eyes should be clear, his coat should be slick and he should look well-fed. An overly distended belly and a rough, dry coat can be signs of hookworm infection, which can be serious if untreated. The pup’s limbs should be straight and his joints of normal size. The mother should be healthy also.

If possible, look at both parents of the litter. Try to determine if they have the traits you want in a bird dog. If the sire (male) and dam (female) are registered, ask to see their papers. Good bloodlines can carry the potential for a top-notch bird dog, but they aren’t necessary. Registration papers for your pup should be obtained if you plan to enter him in sanctioned field trials or shows. If you don’t plan to get involved in such organized competitions, you may pay more than you need to just to have a registered dog.

Before you take your new dog home, find out what shots and worm treatments he has had, and see a veterinarian about what is needed later. At home, be sure food, water, kennel and house are

Retrieving is a natural talent, but dropping a fetched bird into the hand is a discipline. This Brittany spaniel has been well trained; the dove is promptly and carefully delivered to the gunner.



Gene Brehm photo

of the trainer and handler. This article is intended to take you through the basics of training a young dog.

Remember, for the most part you are developing the dog’s inborn abilities — not teaching him. To succeed, you must put your dog in situations that allow him to learn for himself. It is a matter of repeated exercises that enable him to associate certain circumstances or commands with the proper responses.

You must learn to read your dog’s body language, and understand his unique personality. Some dogs are “soft” and require only slight discipline to discourage improper behavior. Too much rough handling can ruin such a

clean. Most dog experts agree that puppies should not be weaned until they are about eight weeks old.

Though it receives little attention from most dog owners, the name you give your dog is important. If he is registered, you will give him a long, formal name, but his call name should be simple and begin or end with a hard consonant. This will make a sharp, loud call easier to belt out. Long call names (for example: Billy Bob) are not good.

The first part of puppy training involves getting him used to his new surroundings and to people. Bring him in the house and play with him. Dogs are like children in that if you don't spend time with them — even talking to them — they will have difficulty understanding what you expect of them. Nearly everyone who has spent much time around bird dogs knows the unresponsive, glassy-eyed stare of a dog that

When your pup feels at home, training can begin. Be sure to discipline him consistently and praise and reward him liberally. One of the best discipline tools is a scornful voice, but if that isn't enough, a solid swat with a rolled newspaper is usually sufficient. You won't injure your dog this way but you will command his attention. Rewards can come in the form of sincere praise, hugs and pats and enthusiastic encouragement. Tasty tidbits are OK occasionally. Properly doled out, rewards can do more to bring out the best in your dog than all the Tribune thrashings you can dish out. In the first training sessions, determine whether your dog has a "hard" or "soft" personality. This will dictate the type of discipline you will use. Learn to tell when your dog is frightened, bored, and uncertain.

The first thing to teach your dog is to understand his name and obey the com-

soon as he starts to move on his own, back away and continue encouraging him to come. When he reaches you, reward him.

As you begin to train your dog, you can work with a whistle, using a consistent set of cadences for each command. Two long bursts might mean "Come", and a short one might be a cue for him to look at you for some further instruction — perhaps a hand signal.

When you feed your puppy, make startling noises around him while he is eating. Start with soft, distant noises and work up to louder ones, such as the sound of two pans banging together. As you gradually work into cap guns and louder firearms, you will help to ensure that the dog won't be gunshy.

When the puppy is ten to twelve weeks old, you should teach him to relax and behave properly on a check cord or leash. This can be done by tying the dog to a secure stake with a three- or four-foot rope. It is important that the rope be attached to the stake and to the dog's collar with snap swivels or other devices to prevent tangling or twisting.

When first confined by the short lead, most dogs thrash about, but they soon learn to relax. Leave the dog tied for most of every day for as long as it takes him to settle down. Feed and praise him there, letting him know that the confinement is little more than routine and nothing to be feared. Make sure that the stake is situated so the dog won't be subject to heat or cold.

Some dogs can be lead broken simply by walking them on a short check cord and forcing them to follow until they do so without struggling; but this should not be done with a dog that is reluctant to submit. It could strain your relationship. Whatever method you choose, breaking your dog to lead will allow you to teach him many other lessons in the future.

Another important command for your dog to understand is "Stay." This and the "Come" command will be used in nearly every other phase of his training. Some handlers teach their dogs the commands "Sit" and "Stay" in tandem, but this may produce a dog that sits whenever he is told to stay, which is not always desirable.

Training a dog to stay where you tell him is not difficult. Place him in a designated spot, open the palm of your hand toward him, give the firm command "Stay" and back away slowly. When he tries to follow, tell him "No",



Gene Brehm photo

Registered dogs don't always surpass cross-breeds in hunting ability, and strains bred for one purpose needn't be confined to that type of hunting. Here a Lab-Brittany cross delivers the goods.

spends nearly all of his time in a kennel.

Most puppies loudly protest their first few nights alone in a strange place; but unless you plan to let yours sleep at your bedside every night, it is best to let him cry it out and get used to his new situation. Some dog owners say the ticking of a wind-up clock helps puppies through their first nights.

As your pup adjusts to people, let him explore the outdoors. Start with your yard or other familiar area of sparse cover where he will feel secure. As he gains confidence and ventures farther from you, gradually introduce him to heavier cover. It takes some pups nearly a year to become comfortable in thick brush.

mand "Come" or "Here." Choose one of these calls, and stick with it, consistently calling, "Come, Rover," or "Here, Spot," or some other arrangement of these words. You can begin this training at feeding time, teaching the dog that a proper response to your call brings a reward. In the beginning it's alright to clap your hands or offer other encouragement to get the dog to come. Reward him each time he obeys. Many dogs learn their names with little coaching.

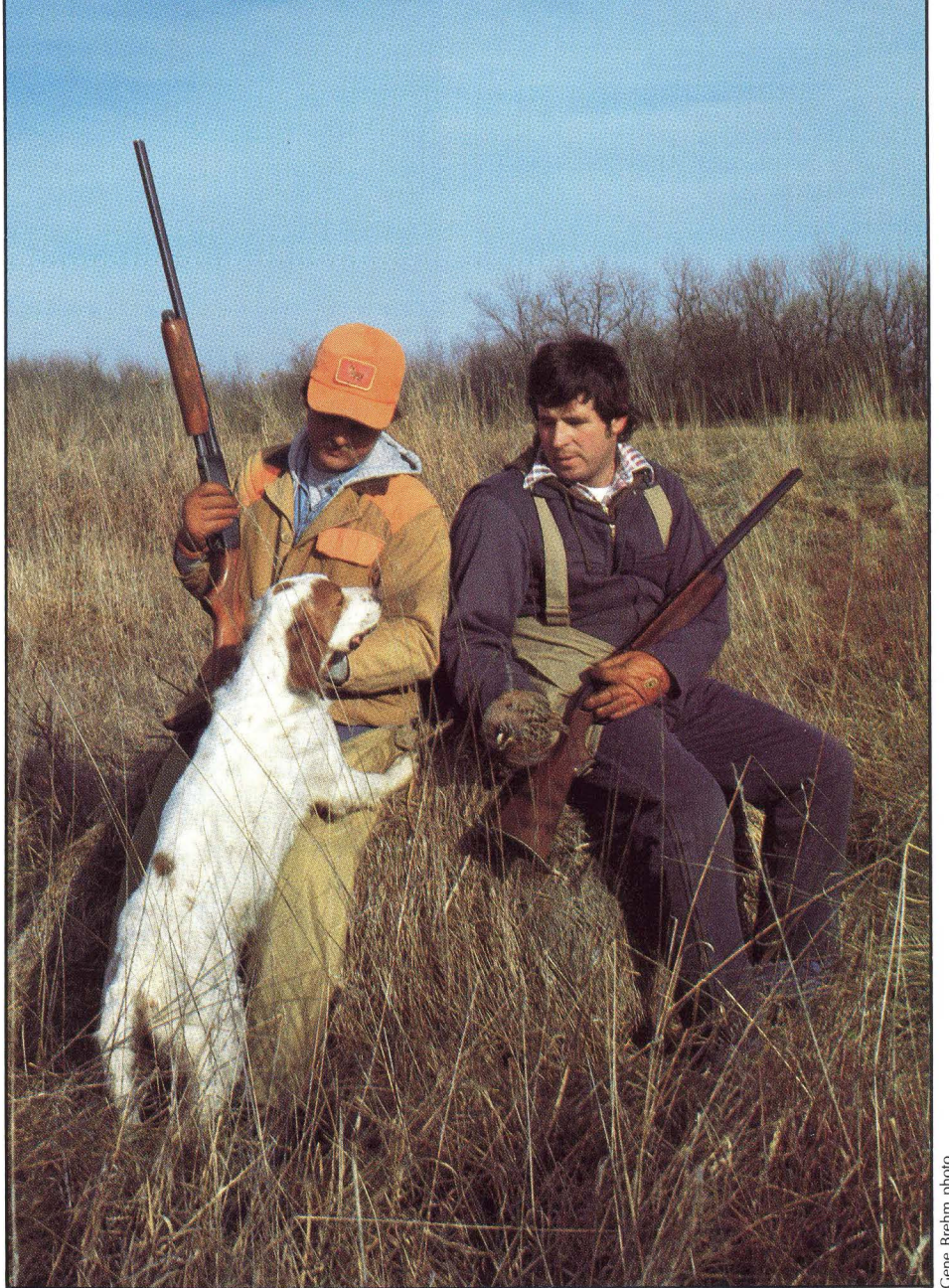
When you are sure your dog understands his name and the command "Come", begin to punish him lightly for ignoring you. If he fails to obey you, quickly go to him, punish him, return to your former position and call again. As

punish him, return him to the spot and repeat the command and hand signal. Continue this exercise until he begins to show that he understands, then stop for the day. When your dog begins to stay as commanded for longer periods, tell him "OK" before he breaks the hold, and reward him. Don't make a young dog stay for too long.

It is important that you never work a dog at any exercise, especially when using live birds, until he is bored or tired. Regular, short workouts will in-grain a concept without souring the dog on training — or worse, bird hunting.

For practical field uses, one of the most important commands is "Whoa." It is used to stop the dog when he is on the move without calling him to you. The "Whoa" concept can be conveyed with a 10- or 15-foot check cord fastened to a sturdy stake and to the dog's collar. Another check cord, attached to his collar with a large snap swivel, is used to coax the dog away from the stake. As he nears the end of the staked rope, say "Easy"; then as he hits the end of the rope give the firm command, "Whoa." Repeat the exercise until your dog begins to show an understanding of what "Whoa" means. As with any other training exercise, stop before the dog becomes tired or bored. There will always be time for other training sessions.

If your dog ignores the "Whoa" command in the field and you are sure he understands it, you should catch him as quickly as possible, discipline him, and return him to the spot where he should have stopped. A long check cord attached to a pinch collar can also be used to reinforce the concept. Remember to give the "Easy" warning before commanding "Whoa."



Gene Brehm photo

Dogs do more than find and retrieve game. They are hunting companions, friends with whom to share success and failure, hardships and rewards. Your canine helper can lift your spirits and rekindle your enthusiasm for the chase.

Many bird dogs will begin to sight point when they are only a few weeks old. You can develop this behavior by working your pup on a pheasant or quail wing tied with about three feet of string to the end of a fishing pole. Encourage the pup to chase the wing, but do not let him catch it or creep close to it. When he is near pouncing, flip the wing to another spot and wiggle it slightly. Let him point about ten times in each exercise, making him hold the point a little longer in each session. This workout should only be done every other day, and for only two or three weeks. If the pup catches the wing or refuses to point it at first, don't punish him — just be calm and patient.

After two or three weeks your pup should be pointing readily and you

should begin using live birds instead of the wing. Special harnesses available through bird dog magazines and supply companies allow quail to be suspended from the rod tip. The live bird generates excitement in a dog and helps him to progress in the association of scent and pointing. This practice also should be discontinued after a few weeks. Always leave the dog wanting more after each workout.

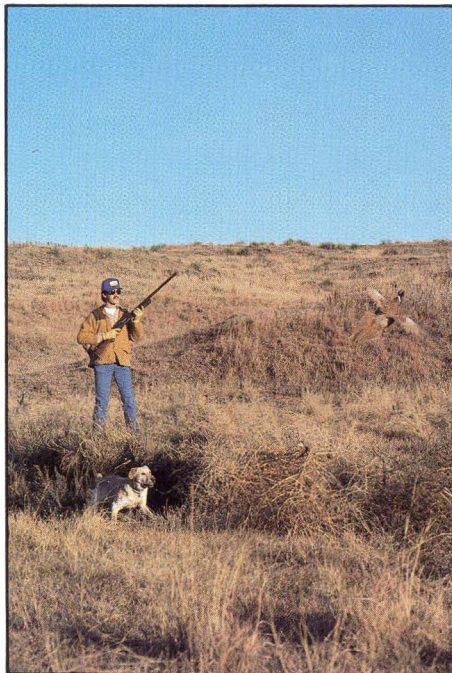
When your puppy has learned to respond consistently to your call, you can begin to develop his retrieving skills. Many dogs will retrieve naturally, but most require some coaching. Experts recommend the use of dummies which are fitted with pheasant or quail wings,

and they say not to let retrieving lessons run too long. Once serious retriever training begins, it is best not to let your dog play "chase and pull" with rags and other items.

Throw the dummy and allow the dog to go pick it up, which most will do by instinct. As soon as he has the dummy in his mouth, say his name and encourage him, commanding "Fetch." Coax him to you without shouting or chasing after him. In these early stages, it is OK to use the "Come" command to get him to bring the dummy to you. Don't let the dog run from you.

When the dog gets to you with the dummy in his mouth, first reward him with praise, then place your hand under

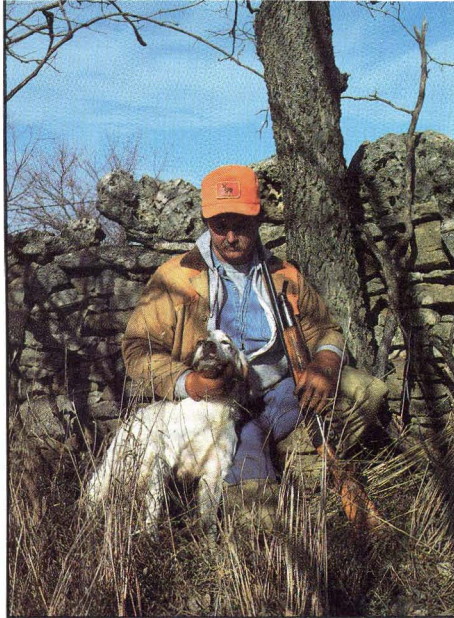
his mouth and command "Drop", or "Leave it." At first, you may have to force his mouth open while pinching his upper lip against his teeth, or you can buzz your lips in his ear to make him drop the dummy in your hand. When he does, reward him. In following sessions, repeat the sequence, decreasing the amount of coaxing used each time until he makes the retrieve with only the commands "Fetch" and "Drop."



The moment of truth! Pheasant hunting is twice the fun if you can watch a well-trained dog at work.

After your dog begins to understand retrieving, and if he is not frightened by loud noises, clap your hands as soon as you throw the dummy. Some handlers have an assistant fire blanks from a handgun after the dog passes the clapping test. Later, a louder gun can be used. This will help your dog associate the sound of the gun with a "dead-bird" situation. Be careful not to discipline your dog too heavily for failing to retrieve, as this could make him even more reluctant to pick up a bird.

When you want to approach an area of cover without alerting birds that might be there, it is important to have a dog that will heel, or follow close behind you quietly. Most dogs can be taught to do this in a few lessons in which they are given the command "Heel" and forced to follow on a short check cord. When your dog strays from the heeling position, chastise him, pull him firmly back into place, and give the command again. Once he begins to understand



Dogs work harder than we do afield. A brief rest stop on occasion will not only calm your dog but give his lungs and muscles a needed break.

what you expect of him, you can work without the leash. When he strays, discipline him and force him back into place, repeating the command. At first you may need to encourage him by patting your leg and calling him. After he performs the task properly for a brief period, give him the "OK" and reward him.

By the end of your dog's first full year, he should point, retrieve and obey the basic commands — "Easy-Whoa", "Stay", "Come", "Fetch", "Drop", and "Heel." He will require further development, even in the most basic and natural tasks; but remember, he is a puppy through his second year. Be patient.

During the first year you and your dog are together, you will probably hunt over him several times, and you will have the opportunity to identify any serious problems. Common trouble spots include gunshyness, retrieving faults and broken points. If problems persist, you may want to enlist the help of a professional trainer or consult some of the valuable references about bird dog training; but you will be able to handle most training problems yourself.

Dogs that are reluctant to retrieve can be enticed with live training birds. Pheasants and quail may be purchased from licensed game breeders, or pigeons can be easily captured. In Kansas pen-raised game birds may be shot for dog training purposes only during the upland bird season or on licensed controlled shooting areas from September 1 through March 31. Some-

times retrieving skills can be developed simply by giving your dog special rewards for fetching a feathered dummy. If you use food as a reward, give it to the dog only every second or third time he performs the task. Other times, simply reward him with praise.

If such tactics fail, you may have to force the dog to retrieve through a method which involves punishing him for not picking up a bird. Place the dog on a table with a light cord looped around one ankle and fastened with a noose around two toes of the same foot. Another cord, fixed to a pulley which runs along a wire above the table, attaches to the dog's collar to keep him from jumping off the table. When the toe string is pulled, it causes the dog to yelp in discomfort. When he does, a small dummy is placed in his mouth, and he is forced to hold it until given the "Drop" or "Leave it" command. Soon the dog will move to get the dummy because he knows when it is in his mouth, the pressure on his toes is released. After several repetitions, place the dummy on the table in front of the dog at increasing distances and let him go get it while slight tension is kept on the string. Once he masters the task on the table, the same method can be used in the field. When the dummy is tossed a short distance you can squeeze his toes until he makes a move to retrieve. This method takes several weeks. It should be administered carefully, with constant attention to the dog's attitude. He will not learn if he is frightened or in severe pain. This method should not be used on soft dogs.

Another method which sometimes works to solve retrieving problems is to let your dog watch while a reliable retriever fetches a bird. The envy your dog feels may prompt him to bring the bird to you, providing you an opportunity to reward him for proper behavior.

If your dog will not hold a point you can show him the correct behavior by stopping him from flushing with a check cord and pinch collar. Use this method sparingly, as it can dampen a dog's enthusiasm for finding birds. You can also use the "Whoa" command to hold him from rushing in on birds. Planting dizzied birds for your dog to point will provide valuable repetition in this exercise.

If your dog shows a fear of a shotgun report, you should begin again with the first stages of conditioning, using subtle background noises at feeding time and progressing very slowly to louder sounds. If the problem persists, don't continue to shoot over the dog. Get help from a professional handler.

You may find that your dog is "hard-mouthed" or tends to bite too hard on

Gene Brehm photo

Gene Brehm photo

birds he retrieves. If he is retrieving well, you can stop this behavior by tapping several tacks, point-out, on a retrieving dummy. Just a few lessons with this tool are usually sufficient.

In order to be truly finished and have a chance of being a field trial winner, a dog must be steady to wing and shot and he must back, or honor, another dog's point. Making a dog steady to wing and shot involves training him not to pursue flushed birds until the shooting is over and he is told to retrieve. This can be accomplished by using planted birds and a long check cord. The dog is shown that chasing flushed birds is not enjoyable, because when he does, he receives a sharp jerk on the neck. Once the basic concept has been conveyed, the "Whoa" command can be used instead of a check cord.

Many dogs will honor another dog's point naturally, but some require coaching. Using planted or wild birds and an experienced pointing dog, force your dog to stop behind the other dog

each time he points. This can be done with a check cord or the "Easy-Whoa" command. Some handlers use "honoring dummies", or imitation dogs posed in pointing positions, as models which a young dog can be taught to honor.

You can develop your bird dog's skills to whatever extent you wish. What level of performance you accept from him is your choice. Most importantly though, befriend your dog — you cannot ruin a bird dog with too much love and attention, and it is more fun to hunt with a companion than a servant. A few dogs lack the basic, inborn abilities to perform well in the field, but most can be developed into fine hunters. There are no perfect bird dogs, just as there are no perfect handlers.

The end of a perfect day. Only the hunting field will put your pre-season training to the real test. Shooting over a well-disciplined dog is a pleasure easily worth the hours of patient coaching you give during the summer.

Even experienced bird dog trainers need help from time to time, and there are hundreds of references on the subject. Available through *Gun Dog* magazine, two books come highly recommended: *Best Way to Train Your Dog: The Delmar Smith Method*, by Bill Tarrant; and *Training Pointing Dogs*, by Paul Long. Another standard of bird dog references is *Wing & Shot Gun Dog Training*, by Robert G. Wehle, published by The Country Press, Scottsville, New York. An especially valuable training aid is a video tape titled *Common Sense Bird Dog Training for Hunters*, available from Greg Koch, Rt. 1, Box 511, Beggs, OK 74421, (918) 827-3188. □



Gene Brehm photo



Death From Above

text and photos by Mike Blair

Where nature was concerned, it was just another moment in time. There was no crime committed, and no one to mourn when it was over. For the bullsnake it was simply a meal; for the kingbirds it was the loss of a family. The rest of life paid no attention.

Still, those minutes in the elm were packed with drama. They marked the end of nearly two months of effort to raise a nest of young birds to the age of flight. Feathered and crowded on their straw platform, the nestlings were just two days short of winged freedom. But the untimely attack caught them defenseless.

There must have been an instant of terror when the flickering tongue and yellow eye appeared without warning at the rim of the nest. The snake was large and powerful, nearly five feet long. Slowly and methodically it had climbed the elm, searching for food. At the kingbirds' home 18 feet above the ground its quest was rewarded.

The discovery of the four helpless birds prompted a burst of speed by the snake. In an instant a thick coil of that serpentine body pinned them securely in the depression of the nest.

The bullsnake ignored the frantic parents hovering a few feet away. Western kingbirds are typically noisy, chattering excitedly when returning with food, or at annoying intrusions by men and dogs. But in these serious moments the birds were strangely silent. They

dipped again and again from their high-line perch, watching as their young were consumed.

The snake was well-suited to this kind of meal. It was a slow hunter, poorly adapted for catching prey in an open environment. Its chances of taking a mouse above ground were slim, but that sensitive tongue which registered the warm scent of a rodent could home with deadly accuracy on a victim in the close quarters of its burrow. The confined kingbirds offered the same opportunity.

With cool precision, the snake feasted. There was no need to strike the trapped nestlings; they were simply seized in needle-like teeth and swallowed alive. Frantic chirps and vigorous struggling had no effect on the snake's rhythmic facial motions.

When the last bird was in its jaws, the



snake uncoiled itself until three feet of its body hung free in the air. With nothing to push against, it could not swallow its victim. For several minutes the reptile hung, slowly rotating back and forth, until the struggles of the young bird subsided. Then it curled its neck into a nearby crotch and pushed the lifeless prey against the tree. Again the jaws worked, until the last feathers disappeared. The thing was finished.

It was a grisly, fascinating scene. In twenty minutes, the countless trips of the parents bringing food to their young were nullified. It didn't matter how near to independence the young birds had come. Their destiny was fulfilled.

Its meal completed, the bull-snake resumed a methodical search of the tree. Every limb was checked with the flickering tongue. Then it descended to a leafy branch four feet above the ground, looped itself around the cool foliage, and became invisible.

The snake would travel when it was cool again. The parent birds would feed in the open fields, never to return. The elm would continue to grow, and the vacant nest would wear away with the wind and the rain.

It was nature's way. □

Snagbark at large:

what to do when there's nothing to do

When it's hot, doing things is hard. Work is hard; play is even harder. Nobody gets much done in the summer because summers in Kansas are usually hot and doing nothing is, in summer, the state sport.

Unfortunately, we continue to age in summer whether we do anything or not. Aging has always seemed to me to be a waste of time, and it is prudent to do something else while you age so you don't wind up old but unaccomplished.

What to do in summer is a good question. A lot of fish feel like we do and simply lie around the weed beds all day, eyes half open for the occasional anemic worm that might drift by. Hit a top-water lure? Man, they aren't about to hit *anything*. It's too hot.

You can hunt squirrels in summer, but the thick foliage makes that very difficult. Birdwatching, too, is impeded by all that greenery. Besides, the woods are full of ticks and chiggers and other scratchy, bitey things in summer, and they feed vigorously regardless of the heat.

Water skiing is a popular summer sport, as is canoeing, swimming — just about anything that allows you to splash once in a while. These are all great activities, but there's another that is often overlooked by the overheated.

It's reading.

That's right. Reading not only expands your mind and makes you a more interesting person, but it can take you where you haven't the energy or time or money to go. Books transport you in time as well as space, and you can journey to other places in history. You can learn, laugh, change your way of looking at the world, all in a book. It is a summer thing, reading, and you'd best do it before the weather changes and the Kansas outdoors once again becomes habitable. Here are some particularly interesting titles. A few may be found in your library; the others can be bought from the publisher or at bookstores.

The Scientific Angler (Johnson, Charles Scribner's Sons, New York) is an absorbing book. Johnson works in wet suit and lab coat, with microscope and underwater camera, to discover what

makes fish behave the way they do and why. He explores the equipment and techniques available to fishermen and rates their effectiveness based on his research data. He doesn't recommend you buy a boatful of electronic gizmos to improve your fishing. Rather, Johnson's goal is to better understand fish, to find ways to boost fishing success with current gear.

Shoot Better (C. W. Matthews, Bill Matthews, Inc., P. O. Box 26727, Lakewood CO 80226) is an eminently practical book for the hunter and rifle enthusiast. Its 558 pages are crammed with ballistic information on 457 different loads in 105 cartridges. What makes this book unique is that all the listings are for commercially loaded ammo, while the tables contain the type of sophisticated data usually reserved for hand-loading manuals. It's a no-frills publication, but an invaluable reference for anyone who uses factory rifle ammunition or loads his own fodder to factory specs.

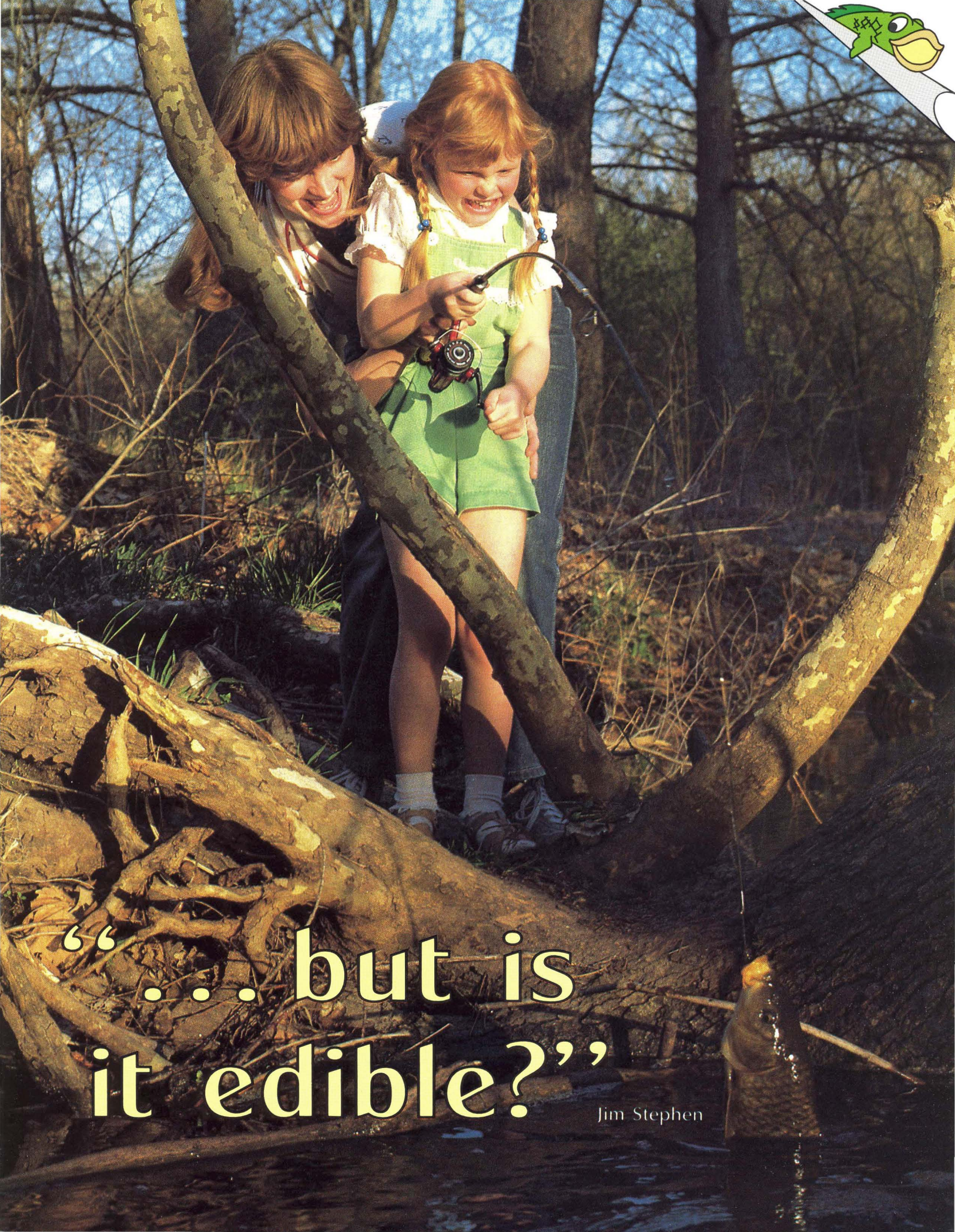
The New Compleat Angler (Downs and Knowelden, Stackpole, P. O. Box 1831, Harrisburg PA 17501) is a delightful work, examining the habits of numerous freshwater fish and the techniques used to catch them. It's more than a manual, though, and the authors take us aside to explain that "...Victorians were more hardy than us; the advice never to wade in deeper than the fifth button of your waistcoat, and to examine your legs after entering frozen waters and return home if they are black or purple, was given in all seriousness." Illustrations are top-drawer.

Wood Warbler's World (Harrison, Simon and Schuster, New York) is a real achievement. For over 30 years the author has made these delicate, colorful — and elusive — birds his passion. In this book are his findings and experiences, as well as photographs of all 53 species that nest in North America. If you were impressed by the warbler section in the last KANSAS WILDLIFE — or if you think studying these woodland wraiths is child's play — you must read this book!

How I Photograph Wildlife and Nature (Rue, W. W. Norton & Co., 500 Fifth Ave., New York NY 10110) will be devoured by anyone who has admired Leonard Lee Rue's striking photographs. The most widely published professional in his field, Rue writes not only of the equipment and techniques needed to procure salable outdoor photos, but the logistics of getting within camera range of each species. Rue may, in fact, be more naturalist than photographer. Even he was surprised, though, when a snake he'd briefly refrigerated to induce lethargy delivered a litter of six in his icebox!

There's been a recent clamor for old sporting classics, and original editions of some works are commanding hundreds of dollars. That, naturally, opens the market for reprints. Two firms that are doing a superb job of reintroducing outdoor books long out of print are **Amwell Press** (65 Old Route 22, Clinton NJ 08809) and **Wolfe Publishing** (Box 3030, Prescott AZ 86302). Many of Amwell's selections are offered through its National Sporting Fraternity Limited club, with special serial numbers reserved for each participant. Gilt-edged and leather-bound, they are more than just reading material — though they are eminently readable. Titles by American authors like Charles Sheldon, Townsend Whelen, Jack O'Connor, and John Jobson are supplemented by works on Africa and other far reaches of the wild. Subjects range from exploration to natural history to the field sports. The underlying theme is adventure. Contemporary writings as well as those out of print are on the Amwell list, which grows almost monthly. These are premium-quality books and, by some standards, costly. But limited edition printings of choice titles can appreciate in value. Should you decide not to join NSFL, you can still avail yourself of some mighty fine reading from Amwell, which also offers open-market selections guaranteed to erase the summer doldrums.

Wolfe Publishing, best known for its excellent technical journals, *Rifle* and *Handloader*, is now offering shooters and firearms enthusiasts new editions of classic gun books. Wolfe's approach is similar to Amwell's, with a limited number of serialized books reserved for participants. As with Amwell, too, some of the offerings are sold *without* qualification. These are definitely worth asking about, especially if you decide not to join the club. In a day when general-interest gun books are as common as grass in a Flint Hills pasture, it's refreshing to read a lot about a little — and to marvel at the accomplishments of early hunters, rifleshooters, and ballisticians. Considering their quality, Wolfe books are quite affordable. □



“...but is
it edible?”

Jim Stephen



Several species of Kansas fish get little attention from sport anglers and even less from chefs. These fish frequent a wide variety of habitats. In some cases, they've successfully thwarted intense removal or eradication projects. Many reach trophy size — and are edible to boot. A few are even delicious! All are classified as non-game fish. Let's take a brief look at some of these tarpaper denizens of our state waters.

Carp

This largest member of the minnow family is an exotic species brought from Europe to the United States in the 1880s. Praised for its eating qualities in the old country, the carp's importation was encouraged here by immigrants. It is recognized as an intelligent and hardy fish by biologists and is a strong, aggressive fighter when taken by pole and line.

Carp are found throughout Kansas, in both running and still waters. They are omnivorous; just about anything is food for a carp! Their habit of uprooting the bottom vegetation while searching for food, thus creating turbid water and competing with other fish species, does not endear them to sport anglers.

Buffalo

Three species of buffalo fish exist in Kansas: the bigmouth, smallmouth, and black. Not readily taken on hook and line, these fish feed primarily on zooplankton, straining the water through devices in their gill structures called gill rakers. Buffalo fish reach weights in excess of 50 pounds and are a valuable commercial species with excellent eating qualities. Over 600,000 pounds of buffalo fish have been taken from Kansas waters annually since 1978.

Drum

Related to the saltwater drum, freshwater drum are found throughout Kansas in major streams and impoundments. They're excellent fighters on rod and reel and good food fish. Slow growing but prolific, drum often compete with sportfish for food—though they also become prey for predacious species. Many of these fish are taken by anglers fishing for walleye and channel catfish. Drum prefer minnows and nightcrawlers and will take a variety of artificial lures such as plugs, spoons, and jigs. Drum can reach 50 pounds in weight; the Kansas state record is 31 pounds 4 ounces.

Gar

The gar is a primitive fish, a throw-back to prehistoric species. Gar prefer

slow-moving streams and quiet backwaters and are very tolerant of low oxygen levels. Gar can be taken on gobs of worms or minnows. The gar's bony mouth makes hooking difficult and various methods to entangle the fish's sharp teeth have been employed, including the use of raveled nylon cord in conjunction with the bait. Though gar flesh is a delicacy, the eggs of this fish are poisonous. Three gar species are found in Kansas: the longnose, snortnose, and spotted. The longnose gar is the most abundant.

Many other non-game fish species occur in Kansas waters, but these four rank high in size, abundance and palatability. Most are taken incidentally, while anglers are pursuing sportfish. Since many of them can tolerate extreme water temperatures as well as high turbidities, non-game fish are available to anglers for a longer season and in more areas than species with more stringent requirements and tolerances.

Just because they're classified as non-game doesn't make these fish any less sporty. Angling for carp, for example, requires the same skill and patience required for many game species. Dangling bait on the bottom is the surest way to attract a carp's attention. Good bait includes corn, cheese, earthworms, and raw potatoes. Most popular, and most controversial, is the ubiquitous doughball. The doughball is simple enough in concept, but literally hundreds of recipes exist for concocting this fare. Here are two of the most popular.

doughballs . . . cooked

½ cup canned corn juice
¼ cup crushed corn
cornmeal as needed to form thick dough flour

Bring corn juice to boil; stir in crushed corn while boiling. Add cornmeal until mass is solid but still moist. Remove from heat and add flour to form soft but firm mass.

doughballs . . . uncooked

1 pint powdered cornflakes
¼ cup brown sugar

Mix ingredients well and store in a screw-top jar. On site mix with water enough to knead the dry mixture into a stiff dough that forms well around the hook.

A special doughball recipe for buffalo fish is:

2 oz. sour grape candy, melted
1 cup white flour
1 small box Wheaties cereal

When candy is melted, mix in flour and cereal. Knead into balls.

When fishing with doughballs, use small hooks (number six and eight treble hooks are great) and only enough weight to permit casting. Allow some slack line. Since carp will carry bait away before eating, a tight line will encourage the fish to drop the bait. Use a bobber only if you make sure the bait reaches the bottom. Keep the bobber size small. Your line should be eight- to ten-pound monofilament because of the size and strength of the fish you're after.

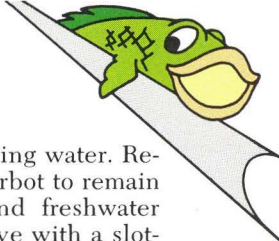
Though hook and line anglers account for most of the non-game fish taken in Kansas waters, other methods can be used. All Kansas waters are open to bowfishing unless posted otherwise. Species that can be taken when bowfishing include: carp, buffalo, carp-sucker, sucker, gar, gizzard shad, drum, white amur, goldfish, eel, sturgeon, goldeye, and bowfin. Bowfishermen must have in their possession a valid Kansas fishing license. Fish arrows must have a barbed head and each must be attached by line to the bow and must be shot from the bow.

Spearfishing is limited to legal scuba and skin divers. No spearing (gigging) from above the water surface is allowed in Kansas.

Fish — non-game or sportfish — are too often pitched on the bank to roll in the dirt, left dead in a livewell of warm water, or held all day on a stringer. The surest way to have a delicious product is to maintain a fresh-caught condition in your fish as long as possible. Freshly caught fish — preferably gutted — should be iced in a cooler chest. If no ice chest is available, try to keep your catch alive as long as you can.

Carp, drum, and buffalo fish should be skinned, as the skin may impart a strong fishy flavor when left on the meat. This can be done initially, or you can skin after the meat is off the bones.

To skin a whole fish, first gut it. Then grasp it by its head and cut through the scales and skin along the entire length of its back. Cut on each side of the dorsal fin. Cut through the skin down each side just in back of the head. Using pliers,



start at the upper corners and peel off the skin down to the belly. Remove any fins yet attached. Remove the dark longitudinal band of red meat; it may impart a strong flavor. Then remove the head.

To fillet the fish, make a deep incision from top to bottom immediately behind the gill cover. Then insert your blade just in back of the head and cut to the backbone on either side of the top fin. Next, push the point of your knife down from the back to the vent and pull the blade through to the tail. Lift the flap of meat near the head and, with a downward slicing motion, separate the meat from the vertebral column and rib cage. Repeat for the other side of the fish.

To remove skin and scales, place a fillet skin side down. Firmly grip the tail end of the fillet and cut into the fleshy portion until you reach the layer of skin. With a gentle sawing motion away from you, separate skin from flesh. Carp and buffalo have many small "Y" bones throughout the flesh. Each fillet should be scored by cutting into the fillet and through the "Y" bones at quarter-inch intervals in the front two thirds of the fish. Cooking oils are then able to soften the bones to make them unnoticeable.

Car have a layer of durable scales protecting their flesh. To get to the flesh, cleave the dorsal area lengthwise past the protective skin and scales. Then with a sharp knife separate skin from flesh around the cylindrical body. Once the skin is removed, the fish can be steaked to size by slicing crossways.

A surprising number of people have non-game fish recipes. Most are willing to share them. The recipes included here came from a variety of sources. *A Fine Kettle of Fish*, by Vern Hacker of the Wisconsin Department of Natural Resources, was especially helpful. Our thanks to the many contributors.

Fish Paprikash

1-6 lb. whole fish
salt
3 tbsp. cooking oil
1 small onion, finely chopped
1 tsp. paprika
½ c. sour cream, room temperature

Clean and fillet the fish and make a stock with the heads, tails, and bones. Wash and dry the fillets, salt lightly, and place in a lightly oiled baking dish. Sauté chopped onions in oil. Stir in pa-

prika and 1 c. fish stock. Simmer 10 minutes, then take the pan off heat and let it cool to lukewarm. Blend some of the paprika sauce into the sour cream, then slowly pour it back into the sauce. Taste for seasoning and consistency; if necessary, dilute the sauce with more fish stock or water. Pour sour cream sauce over fillets, cover and bake 20 minutes in 300°F oven. Serve with galuska (spaetzle).

Planked Carp

3 or 4 pounds dressed carp, fresh or frozen
1½ tsp. salt
Dash of pepper
2 tbsp. melted fat or oil
Seasoned hot mashed potatoes
Seasoned hot cooked vegetables
(broccoli, carrots, cauliflower, onions or tomatoes)

Clean, wash and dry fish. Sprinkle inside and out with salt and pepper. Place fish on a well-greased platter, 16 x 10 inches. Brush with fat. Bake in a moderate oven, 350°F, for 40 to 60 minutes or until fish flakes easily when tested with a fork. Remove from oven and arrange border of hot mashed potatoes around fish. Broil about eight inches from source of heat for six to eight minutes or until potatoes are lightly browned. Remove from broiler and arrange two or more hot vegetables around fish. Serves 6.

Baked Buffalo with Mustard Sauce

1½ pounds of fish
2 tbsp. fat
1 tbsp. flour
1 tbsp. lemon juice
1 tbsp. prepared mustard
½ c. fine, dry bread crumbs
1 c. boiling water

Cut fish into serving-size pieces and lay in a shallow, greased pan. Melt half the fat and blend in the flour. Add the water and lemon juice. Cook until thickened. Stir in the mustard gradually, then pour sauce over the fish. Add the remaining fat to the crumbs and sprinkle over the fish. Bake at 400°F for 20 to 25 minutes. Serves 4.

Poor Man's Lobster

2 qts. water
2 tbsp. salt
Fish fillets

Drop fillets in salted boiling water. Return to full boil; allow burbot to remain in water 1½ minutes and freshwater drum 3-4 minutes. Remove with a slotted spoon. Dip fish pieces into melted butter or pour butter over fish. Sprinkle with salt and lemon juice. Serve with boiled new potatoes, vegetable, pickles, cole slaw and rye bread.

One variation to this is to prepare a "crab boil." Cut the fillets in finger-sized pieces, then drop them in the boil. Serve the pieces with melted butter or simple cocktail sauce.

Canned Carp

Fillet and cut fish in 2-inch pieces. Pack pieces in clear pint jars. Add: 1 tsp. salt, 3 tsp. vinegar, and 1 drop Liquid Smoke per pint. Pressure cook process for 80 minutes at 10 lbs. pressure.

Canned Drum

Pack fillets in pint jars solidly. Add ½ tsp. salt and 1 tbsp. cooking oil. Screw on lids. Cook in pressure cooker 90 minutes at 10 lbs. pressure (or 65 minutes at 15 lbs. pressure).

Smoked Carp Chowder

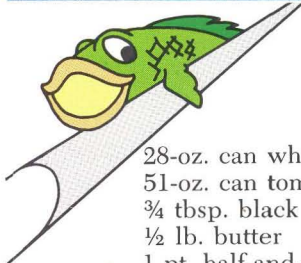
In all soups and chowders, the bones of the fish should be removed before use. Give special attention to those fish with Y-bones.

1 lb. smoked carp
1 can (10¼ oz.) frozen condensed cream of potato soup
3 c. milk
1 tbsp. grated onion
1 small bay leaf
Dash of pepper
1 can (8 oz.) whole kernel corn
Chopped parsley

Remove skin and bones from carp. Flake the fish. Combine soup, milk, onion, bay leaf and pepper. Heat until soup is thawed, stirring occasionally. Add corn and fish; heat. Remove bay leaf. Garnish with parsley. Serves 6.

Fish Chowder

Recipe makes 3 gallons — use 12 qt. kettle
5 lbs. white potatoes
1 onion (3" diameter)
1¾ tbsp. salt
4 lbs. boned fish



28-oz. can whole tomatoes
 51-oz. can tomato soup
 ¼ tbsp. black pepper
 ½ lb. butter
 1 pt. half-and-half coffee cream
 ¼ lb. soda crackers (reduce to meal in blender; add hot water to make slurry)

Peel, quarter, and slice potatoes thin. Rinse in cold water until water is clear of excess starch. Put onion in blender with a little water and reduce to liquid. Add onion and salt to potatoes, cover with water, then add 2 extra qts. of water. Boil until potatoes are soft. Do not pour off liquid. With potato masher, reduce about ¾ of the potatoes to a puree. Cut the fish in chunks if you're using raw fish. Add to the potato puree. Put whole tomatoes in blender for 2 seconds to break up; add to potato puree along with the tomato soup. Cook until the fish flakes. Turn down heat. Add pepper, butter, half-and-half, and soda crackers. Add hot water to give consistency of a medium-thick soup. Simmer for ½ hour.

Fried Buffalo

Lightly salt fillets (or strips of buffalo ribs). In a bowl mix the following:

1 c. unsifted flour
 1 tsp. baking powder
 1 tsp. salt

Add ¾ c. milk and 1 egg, well beaten. Beat until smooth. Dip fish in batter and carefully drop in hot (375°F) fat. Fry for approximately 3 minutes and drain.

Pickled Carp

Wash fillets well and place for 60 min. in brine (1 c. salt/1 gal. water). Drain and add new brine (2 c. Morton's Tender-Quick/1 gal. of water). Drain and rinse.

In a large pot mix 6 c. vinegar, 3 c. water, and 4 medium sliced onions.

Add:

1 tbsp. allspice
 1 tbsp. crushed bay leaves
 1 tbsp. whole cloves
 1 tbsp. brown sugar
 ½ tsp. garlic salt
 1 tsp. lemon pepper
 1 box (1½ oz.) whole pickling spice

Bring to boil and simmer for 15 min. Add 10 lbs. of fillets. Cook until fish is easily pierced with fork. Pack fish loosely in pint jars and pour on the vinegar pickling. Add a piece of alum the

size of a small pea to each pint of fish. Keep refrigerated.

Pickled Buffalo

Soak fillets in a strong pickling or iodized salt brine (3 c. salt/1 qt. water) for 24 hours while refrigerated. Drain off brine and rinse fillets. Cover fillets with white vinegar and refrigerate again for 24 hours.

Mix a marinade of 1 c. white vinegar, ½ c. water, ½ c. sugar, ½ c. port white wine, ½ tsp. pickling spices. Bring to boil, then cool to room temperature.

Drain fish of vinegar. Cut fillets into ¾" chunks and pack in glass jars, alternating layers of fish with layers of onion rings. Strain spices from cooled marinade and pour over fish and onions. Cover and refrigerate for 24 hours.



You bet it's edible! In fact, it's good! Carp, gar, drum, buffalo — all are underrated as food fish. Use a little imagination, a dash of lemon, and one of these recipes; you'll be convinced!

Smoked Fish

Brine recipes are legion, but 1 c. salt in 1 gal. water (or a solution strong enough to float an egg) with ½ c. brown sugar seems standard. Spices can be added, but are not necessary. Clean and wash fish, then marinate in a cold brine from two hours to overnight, depending on the size of the fish. Remember that the longer the fish remains in the brine the saltier the fish will taste. Remove the fish after the necessary marinating time, rinse and damp dry with paper towels. Allow to air dry uncovered in a refrigerator overnight so a "skin" forms on the flesh side. Remove and place skin (scale) side down on smoker racks, with larger fish nearer the smoke and heat source.

Chunks of split maple, hickory, or apple wood 4 inches in diameter should be presoaked in water. Place the wood chunks on the fire source and keep temperatures less than 200°F. A meat thermometer is handy in this case. Smoking should take 4-6 hours. Examine the fish occasionally to see if your desired moisture level has been reached. Don't let them dry out completely. Smoked fish should keep for several weeks.

Fish Cakes

Cook fillets and flake meat from the bones, or use canned fish. For each ½ pound of fish add:

¼ lb. mashed potatoes
 1 tbsp. chopped onion
 1 tsp. finely chopped parsley
 1 whole egg
 ½ oz. Crisco
 Salt and pepper to taste

Mix thoroughly and form patties. Fry in vegetable oil until golden brown.

Fish Loaf

3 c. ground fish fillets
 1 c. tomato juice
 ½ c. cracker crumbs
 ¼ tsp. dry mustard
 1 whole egg
 1 tbsp. fat
 ½ small onion
 ½ tsp. Worcestershire sauce
 ½ c. water.

Grind fish and combine with the tomato juice, water, crumbs and egg. Melt fat and fry the onion in it for two minutes. Add the fish mixture, mustard, and Worcestershire sauce. Pack in greased loaf pan and bake at 350°F for 1 to 1½ hours. Serve with horseradish sauce.

Sauces

Sauces are frequently served with fish when additional spicy taste is desired. Here are a couple proven recipes:

2 tbsp. fat
 2 tbsp. flour
 1 c. milk
 Horseradish

Melt fat and blend in flour. Add milk gradually, stirring to prevent lumps. Cook until thickened. Add horseradish to taste. Or try:

¾ c. catsup
 ⅛ to ¼ c. prepared horseradish
 juice of one lemon
 dash hot pepper sauce

the center section

Edited by Rob Manes

LETTERS

TELL ME

Editor:

I am 94 years old. Do I have to buy a license to go fishing?

I was born here, lived here all my life and bought trapping, hunting, fishing, dog, car, truck, pickup, and marriage licenses.

Ross Cornwell
Haddam, KS

Dear Mr. Cornwell:

No, Kansas residents older than 65 years are not required to purchase hunting, fishing, or trapping licenses. *Manes*

Editor:

I am concerned about the wildlife habitat that is destroyed when new highways are built in Kansas. I am trying to persuade the Kansas Department of Transportation to partly compensate for this lost habitat by planting native grass, wildflowers, shrubs, and trees along highway rights-of-way. Shrubs and trees would need to be planted far enough away from the highways so as not to create a safety hazard.

In Doniphan County in northeast Kansas, for example, the Kansas Department of Transportation is planning to build a new highway soon. A lot of very good wildlife habitat will be destroyed when this highway is constructed. The Environmental Impact Statement on this project states: "Many of the habitat types that are in affected areas can be considered nothing short of top quality."

I attended a public hearing on this highway project and the officials there told the audience that this Doniphan County highway project will cost \$36 million. I believe that a small portion of that money should be used to replace habitat that will be destroyed.

Habitat destruction is a serious problem in Kansas and all across the country. Others who share my concern for wildlife in this time of dwindling habitat should contact the Kansas

Department of Transportation. Letters should be addressed to John B. Kemp, Secretary of Transportation, Kansas Department of Transportation, State Office Building, Topeka, KS 66612.

Editor:

I enjoy reading your magazine very much, but one thing disturbs me. The first article under "The Law" (K.W. M/J 1985) states that the fines go to the General Fund instead of to the Kansas Fish and Game Commission.

I would like to know to whom I can write to let them know how I feel about this. Fish and Game needs the extra money for management, personnel, and equipment. Keep up the excellent work on our magazine.

Doyle L. Hill
Olathe, KS

Dear Mr. Hill:

You are right, adequate funding is essential, if the Kansas Fish and Game Commission is to continue proper management the state's wild resources. Such management results in economic, aesthetic, health, and recreational benefits to Kansans. Funding of the agency is, for the most part, in the hands of the Kansas Legislature. If you desire change in the system of funding distribution, you should notify your area law makers. *Manes*

Editor:

Why is it that after having fed and watered the deer all these years, we landowners have to pay for a deer permit? Every year I find evidence of deer feeding in our corn fields. I've also noticed they like my watermelon patch. I feel that after the deer eat corn on the cob, out of my field all summer, I should get a deer permit free. I've already payed more than the city people who don't own any land.

People in town would get mad in a hurry if a deer ate in their gardens and they couldn't

do anything about it. The worst part is when hunting season opens, a lot of hunters show up and just go anywhere they want to, without asking anybody. City people wouldn't like me to come to town and drive my pickup all over their lawns.

K. Wood
Haviland, KS

Dear Mr. Wood:

Laws at the federal and state level make wildlife the property of all U.S. and Kansas citizens. It is under that precept that the Kansas Fish and Game Commission manages the wildlife resources of this state. That management is expensive, and is financed only through license and permit fees and excise taxes on sporting equipment. Those funds are used to administer the deer harvest, to pay law enforcement officers, and support all other programs of the agency.

As a landowner, you are already entitled to hunt without a license on your own land and purchase firearms (or archery, beginning in the 1986-87 season) deer permits at a reduced price. In addition, you are given preference over "city people" in the permit allotment process.

If you are experiencing crop damage from high numbers of deer on your property, I suggest that you allow legal deer hunters to reduce the herd size on your land. If the problem is severe, you may wish to allow only hunters who will harvest does.

You are probably correct in your statement, "City people wouldn't like me to come to town and drive my pickup all over their lawns." Most would likely report the incident to law enforcement authorities. You have the same privilege where trespassers are concerned. License and permit fees pay the salaries of Fish and Game wildlife conservation officers, who will respond to your reports of trespassing or illegal hunting activity.

While it is true that whitetail deer and some other species benefit from agriculture in Kansas, many other wildlife populations are harmed by intensive farming. Much of the management required to offset losses resulting from farming is extremely expensive. *Manes*

THE LAW

CRAZY

If there was an award for crazy stunts, a Derby man would surely be nominated to receive it. It was early April at Kanopolis Reservoir, and the chilly wind was blowing hard out of the south, scouring the lake with threatening white-capped waves.

The word of good white bass and walleye fishing had convinced the man that he should give it a try — no matter that he had no boat, no motor, and no life jackets. In a small rubber raft, he put in on the south shore of Kanopolis, planning to troll as the wind pushed him to the other side. Somewhere along the way, he hooked a white bass and hauled it into the raft. To stop the fish's flopping about, the man decided to kill it with a knife he was carrying. With one swift motion, he skewered the bass — and the raft. Watching in amazement, he couldn't believe the amount of air expelled by the fish. Then came the grim realization that he had punctured his craft, and he began a losing battle to keep it inflated. A few minutes in the water would mean death.

Watching from shore, Park Rangers Rick Martin and Tom Swain perceived that the man was in trouble and notified Kansas Fish and Game employees Bruce Zamrzla, Mike Nyhoff, Doug Nygren, and Gordon Schneider, who were on the lake collecting walleye eggs for hatching. When they reached the man, it was evident that he would not have made it to the north shore, and they hauled him to safety. Before the fortunate man left, the Fish and Game workers got his name and address, which they passed on to Wildlife Conservation Officer Val Haworth.

"I thought that fish had awfully big lungs," the man told W.C.O. Haworth when she went to visit him. She issued him a ticket for operating a boat without a proper personal flotation device. Perhaps it will be for his own good.

Manes

MAKING IT STICK

Wildlife Conservation Officer J.D. Lichlyter arrested a Waverly man in 1983 for illegal possession of a deer. Coffee County Judge Phillip Fromme ordered the poacher to pay \$250 and \$30 court costs within one year from the November hearing date. Judge

Fromme also placed the man on one year's probation, during which he would not be allowed to hunt or trap in Kansas.

Apparently the convicted poacher didn't take the judge seriously, as he failed to pay the fine. So, Judge Fromme issued a warrant for the man's arrest in February of 1985, and sent him to jail for a month. *Manes*

IT'S GOING TO COST

One Sunday in January, Ensign Kansas Policeman Leon Kreger stopped two Iowa men for speeding through town. In the back of their pickup was a dead jackrabbit, a dead prairie dog, and the antlers from a deer. What appeared to be blood and hair was on the tailgate. Neither of the men possessed a Kansas hunting license. Officer Kreger notified Wildlife Conservation Officer Marvin Jensen of his findings.

The two men were escorted to the Ensign City Hall, where they were advised of their rights and questioned about the evidence in the back of the truck. Permission to search the vehicle was obtained, and Jensen and Kreger discovered two more sets of deer antlers, one raccoon pelt, and five bloody packages of wrapped meat. Behind the seat of the pickup were the front legs of a deer.

When questioned about the additional evidence found in the truck, the two Iowa men admitted shooting two deer out of season in Gray County earlier that week. Both were charged with taking deer in closed season, possession of untagged deer, and hunting without a valid license. One man was also charged with possession of a furbearer without a furharvester's license.

Bond was set at \$1,000 for each man, and they were taken to the Ford County jail. The following day, the men pleaded guilty to all counts in Gray County District Court and were fined \$1,000 each plus court costs. Later that afternoon, wildlife conservation officers Jensen and Mike Smyth and a Gray County sheriff's deputy visited the home where the two men had been staying. There they seized 14 more packages of deer meat from a basement freezer and charged the Kansas resident who lived there with possession of untagged deer. Gray County Attorney Curt Campbell summed it up when he stated, "We want people to know

that if they come to Gray County, poach deer, and get caught, it's going to cost them." *Marvin Jensen*

DESERVED REWARD

Keith Heigle was at work on a ranch near his southcentral Kansas home in Wilmore, when he witnessed part of the illegal killing of three deer, a wild turkey, and a steer on another nearby ranch. ("Law", M/A 1985, KANSAS WILDLIFE). Information he provided about the case allowed Kansas wildlife conservation officers to arrest and obtain convictions on a man from Udall and another man from Wilmore.

For his responsible actions, the Kansas Bowhunters Association presented Heigle with a \$100 reward. The reward is available to anyone who provides information which leads to a conviction of a big game violation in Kansas. Applications for the reward are processed through Kansas wildlife conservation officers.

Manes

NAME CHANGE

There are no more game protectors in Kansas. They were lost in the Kansas Legislature, but they have been replaced with wildlife conservation officers (WCO). The action represents nothing more than a name change, but the Kansas Fish and Game Commission sees the change as an important one.

The main reason for the switch is that the title, game protector, did not accurately reflect the duties of a modern wildlife law enforcement officer in Kansas. The WCO's job description states that he will spend 50 percent of his time conducting actual law enforcement operations. The remainder of his time is spent on other wildlife conservation activities, including fisheries and game management, information and education, and assisting the public.

Manes

FEDS NAB 'EM

A three-year poaching sting operation by U.S. Fish and Wildlife Service agents led to the sentencing of one key defendant to 15 years in prison for selling illegally taken eagles and elk antlers. Most of the 33 suspects arrested in the 11-state undercover operation pleaded guilty, and fines as high as \$15,000 plus \$5,000 in restitution were imposed by federal judges. *Manes*

ISSUES

GOOD MOVE?

Several western U.S. senators have asked President Reagan to transfer responsibility for animal damage control from the U.S. Fish and Wildlife Service to the Agriculture Department. The move is opposed by wildlife managers because the interests of modern intensive agriculture and wildlife often conflict.

Reagan Administration lawyers have determined that transfer of the program would require a legislative act. So, those on either side of the movement will have time to regroup.

Wildlife damage control must be carefully administered, as any other management program. Though it most frequently deals with species such as, waterfowl, blackbirds, and coyotes, damage control may also include endangered species and all other wildlife.

Manes

THUMBS UP

A Federal Court of Appeals has stopped attempts by a western irrigation district to build a dam that would restrict water flows necessary for the whooping crane along the Platte River. According to the court decision, developers of a proposed dam across Wildcat Creek located northwest of Denver must secure an individual permit from the U.S. Army Corps of Engineers for the project. The court agreed with legal arguments by the National Wildlife Federation, that the dam could restrict downstream water flow to the Platte where the endangered whooping cranes roost and feed during spring and fall migrations. NWF pointed out that without proper stream flows, the areas the cranes rely on would dry up. Under individual permit requirements, public notice and hearings are required before the application can be approved. *N.W.F.*

“SWAMPBUSTER”

The National Wildlife Federation is working with congress on proposed legislation that would prohibit farm subsidies to those who convert swamps, prairie potholes and other wetlands to cropland. The so-called “swampbuster” measure is modeled after “sodbuster” proposals introduced last year that would have denied farm assistance to those who plow and plant land prone to erosion. NWF’s proposal would ban crop loans, land and operation loans, crop insurance and other federal payments to farmers who drain, fill or alter wetlands. *N.W.F.*

BOTTOMS STUDY OK'D

The 1985 Kansas Legislature approved funding for an 18-month study of Cheyenne Bottoms Wildlife Area to develop recommendations for the Governor and Legislature on the best methods to solve water supply problems and restore the area as a manageable wetland. Financing for the study will come from the Kansas Fish Game Commission, which will be the contracting agency, as well as from the State General Fund and Nongame Income Tax Checkoff donations.

Cheyenne Bottoms is a 19,000-acre marshland of critical importance to migratory bird and other wildlife populations. In the late 1940's and early 1950's, water rights from the Arkansas River and Wet Walnut Creek were awarded to Cheyenne Bottoms for a permanent, reliable source of water for managing the marshland.

Today, the Arkansas River no longer flows for over 150 miles, and is nearly out of water at Great Bend. Lack of reliable inflows has caused the Bottoms to dry up during the fall in recent years. Decreasing wetland habitat in the United States, Canada, and Central America has resulted in population declines in many wildlife species, especially ducks. Cheyenne Bottoms has been indentified by the International Shorebird Survey as one of the three most important wetlands east of the Rocky Mountains. *Jan Garton*

INTERNATIONAL THREAT

An international coalition of conservation interests defeated a proposal endorsing establishment of a worldwide Convention for the Protection of Animals, which would have been aimed at banning hunting and trapping throughout the world. The proposal failed before the fifth meeting of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), held in Buenos Aires, Argentina. CITES is an 87-nation body which regulates commerce involving endangered and threatened plants and wildlife.

The CITES delegates voted 42-5 against even considering the proposal. The measure was introduced by Israel, and promoted by animal rights activist Bill Clark, an American expatriate. The proposed Convention was reportedly drafted by an official of The Humane Society of the United States. Other nations voting for the proposal were Switzerland, Uruguay, Ecuador and Gambia. *W.L.F.A.*

CLEAN CUT

Even staunch conservationists are often blind to one of the most widespread and environmentally disruptive practices in our society. We all do it regularly, with scarcely a thought given to the habitat it ruins. Modern society has made neatly trimmed grass an object of desire, so we mow.

There are good reasons to mow near your house, but think of the wildlife that could find a home in the untrimmed corners of 100,000 backyards in Wichita, Kansas. Many native grasses can lend a splash of lacy color to yards, becoming both decoration and habitat. Even a patch of weeds can be hidden behind shrubs, providing food for many small birds. Birds and other wild animals are much more attracted to back yard feeders that are surrounded by cover than to those on spacious, neatly trimmed lawns.

In this age of nature trails and interpretive outdoor walks, it is no small wonder that most city parks are neatly mowed from border to border like golf greens. Surely no park is too small to allow a wild area, where native grasses, trees, and shrubs are left to grow naturally, providing habitat for wild animals that will add to the recreational value of the park.

Whether country roads or six-lane highways, most trafficways in Kansas sport neatly mowed shoulders and ditches, which often extend beyond the area reasonably defined as the roadside. Safety considerations dictate the mowing of some areas adjacent to roads, but many ditches would do well with only a late summer mowing to keep down invading woody plants. If frequent mowing is required, it should be restricted to one or two swaths next to the road. Such an approach would no doubt save tax dollars and provide thousands of acres of quality wildlife habitat. *Manes*

HUNTING

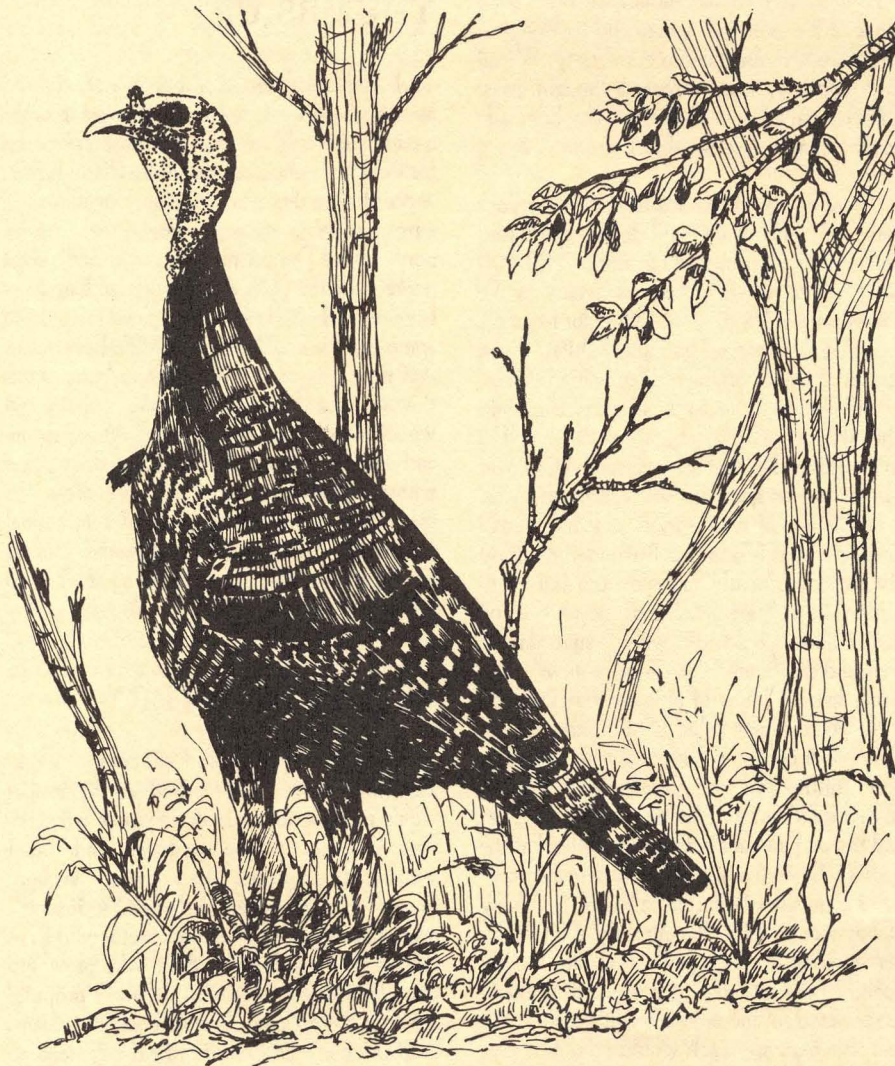
YOUR BEST SHOT

Where are the wild turkey's vital organs? If you know, you may be in a minority among Kansas hunters. Even targets and archery silhouettes usually depict the turkey's body cavity too far forward and too high. Actually the breast area of a turkey is almost solid muscle, with a minimum of bones. The bird's vital organs are located low and to the rear.

Archers should be particularly aware of this. Most experienced turkey hunters recommend head-and-neck shots for shotgunners. The best possible bow shot may be presented when the bird is facing away from the hunter. In spring,

when toms are displaying, this is especially true, because it not only presents a clear shot at the bird's kill zone, it gives the bowhunter an opportunity to draw while the turkey's vision is blocked by his own tail.

With a little planning, a hunter can increase his chances of getting such a shot. If a decoy is used, it should be placed a sufficient distance from the hunter and heavy cover to allow a displaying tom to move around it. If a hunting partner is to call the bird past the shooter, both should be situated so the bird is likely to come from behind the hunter who is to make the kill. Toms will often display as they move toward a hen's call. *Manes*



DEER DEATHS

The most common cause of deer deaths not related to hunting, poaching, or vehicle accidents, according to a report by Deer Project Leader Keith Sexson, is tangling in fences. The number of deer dying in fences, however, is barely worth mentioning in comparison with the number killed in collisions with automobiles. More than 3,000 such accidents were reported in Kansas during 1984, a 12.7 percent increase from the previous year. Reno and Leavenworth counties had the highest number of deer-vehicle accidents at 89 each. Only in Lyon County were no such mishaps reported last year. More than 26 percent of the state's total highway deer mortalities occurred in northeast Kansas. Statewide, about eight deer-vehicle accidents are reported on an average day. *Manes*

WILDLIFE BENEFIT

Since 1939, more than \$1 billion has been apportioned by the federal government to the states for use in wildlife restoration programs. That \$1 billion is not the type of "federal aid" that one customarily thinks of. It doesn't come from income taxes, rather directly from the special excise taxes paid by sportsmen on sporting equipment.

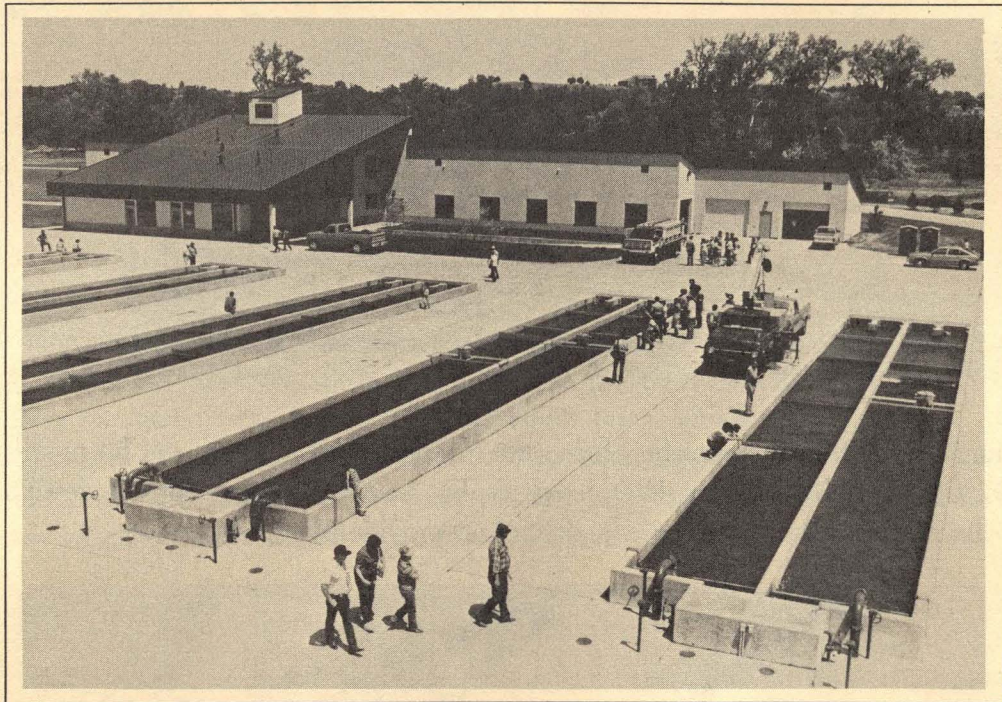
These special excise taxes were created by the Pittman-Robertson Act passed by Congress in 1937. While many people vigorously oppose new taxes, sportsmen enthusiastically supported it. The P-R Act and the programs it has financed have helped many species that were once endangered to thrive again. States match P-R funds with the federal funds on a 75-25 basis, with the federal government paying 75 percent. *NSSF*

D.U. AND NASA TEAM UP

A cooperative effort between Ducks Unlimited, Inc. and NASA resulted in the placement of a satellite in orbit 440 miles above the earth, to be used to map North American wetlands. "Landsat 5" will orbit the earth 14 times a day and is capable of producing computer-generated photos showing a wide range of biological information, from plant types to water quality.

Biologists from Ducks Unlimited interpret the satellite data and compare it with on-the-ground surveys. Information gained is expected to help with the U.S. Fish and Wildlife Service wetland inventory. *U.S.F.W.S.*

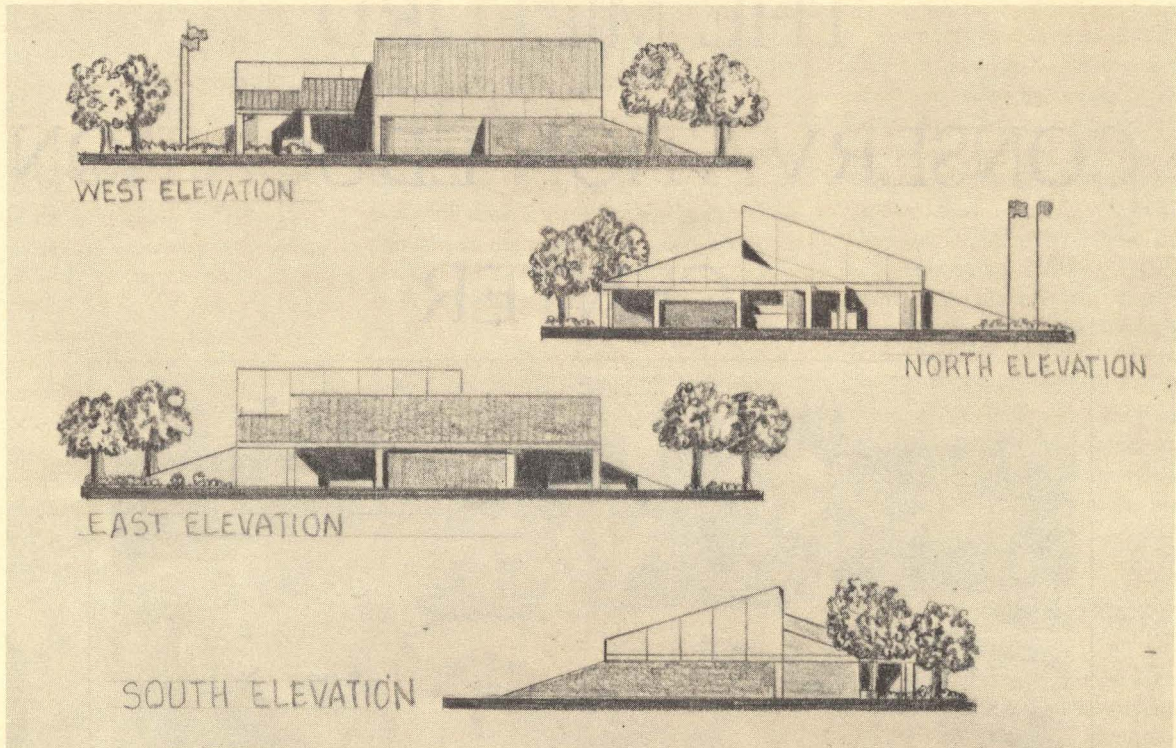
THE MILFORD CONSERVATION EDUCATION CENTER



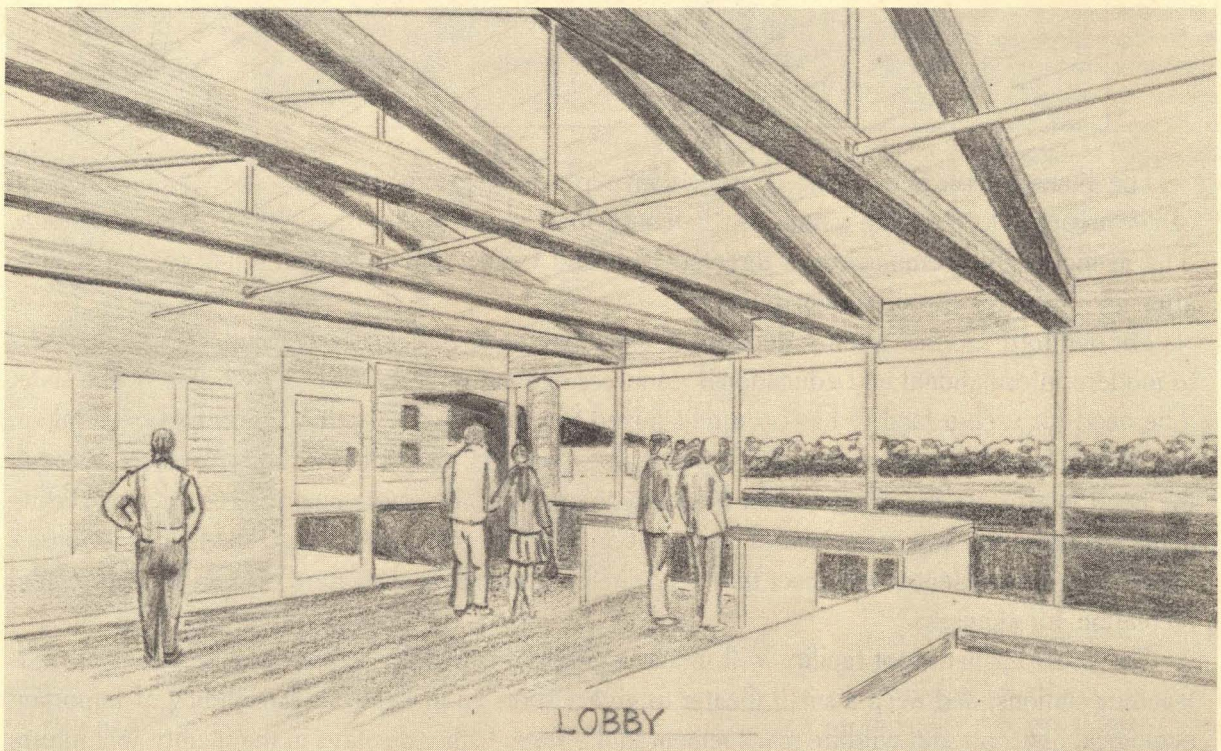
The Kansas Fish and Game Commission is planning to construct a conservation education center adjacent to the state's new fish hatchery located just below the Milford Reservoir dam. The agency's five commissioners directed Fish and Game staff to seek funding for the facility after an April review of design plans.

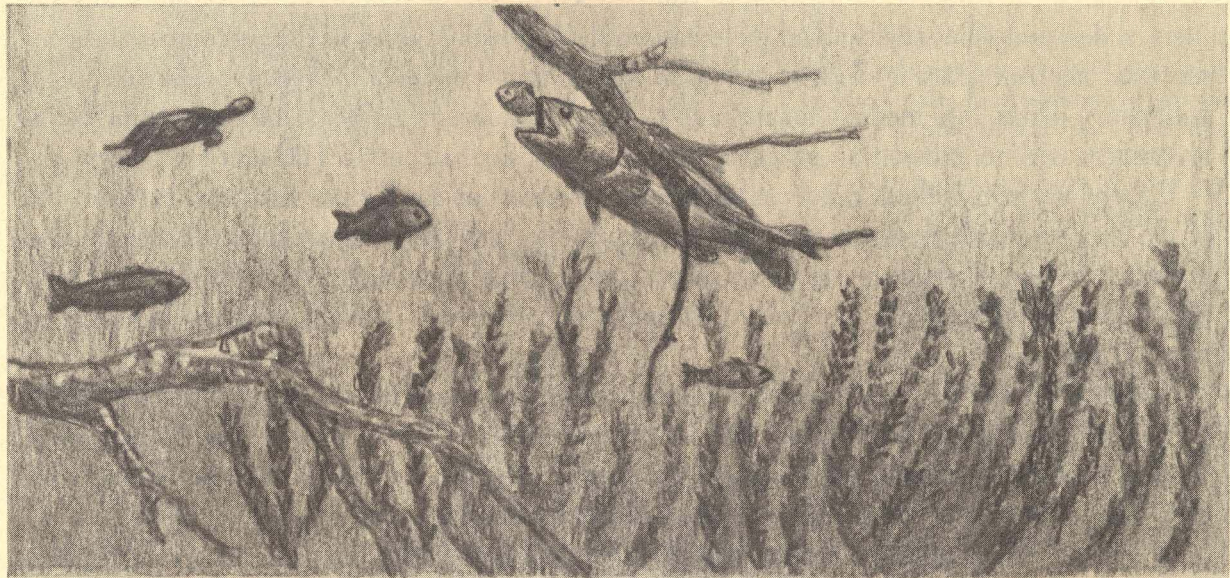
The Milford Conservation Education Center has been designed to provide Kansans access to modern informational and educational resources dealing with the fish and wildlife of the state. The need for such a facility has been recognized for many years, but no action had been taken, due to lack of adequate funding and a proper location. As threats to wildlife resources increase, the need to educate the public about Kansas ecology becomes more acute. Professional wildlife managers agree the key to successful conservation is an educated public, and the Milford Conservation Education Center will meet that need, helping to ensure the future of wildlife and related recreation for Kansans.

The 4,800-square-foot facility will utilize a variety of displays, audio-visual equipment, self-teaching stations, and even a small theater to give visitors an in-depth understanding of important ecological concepts and wildlife management in the state. Other displays in the facility will inform visitors about all aspects of the Milford Fish Hatchery.



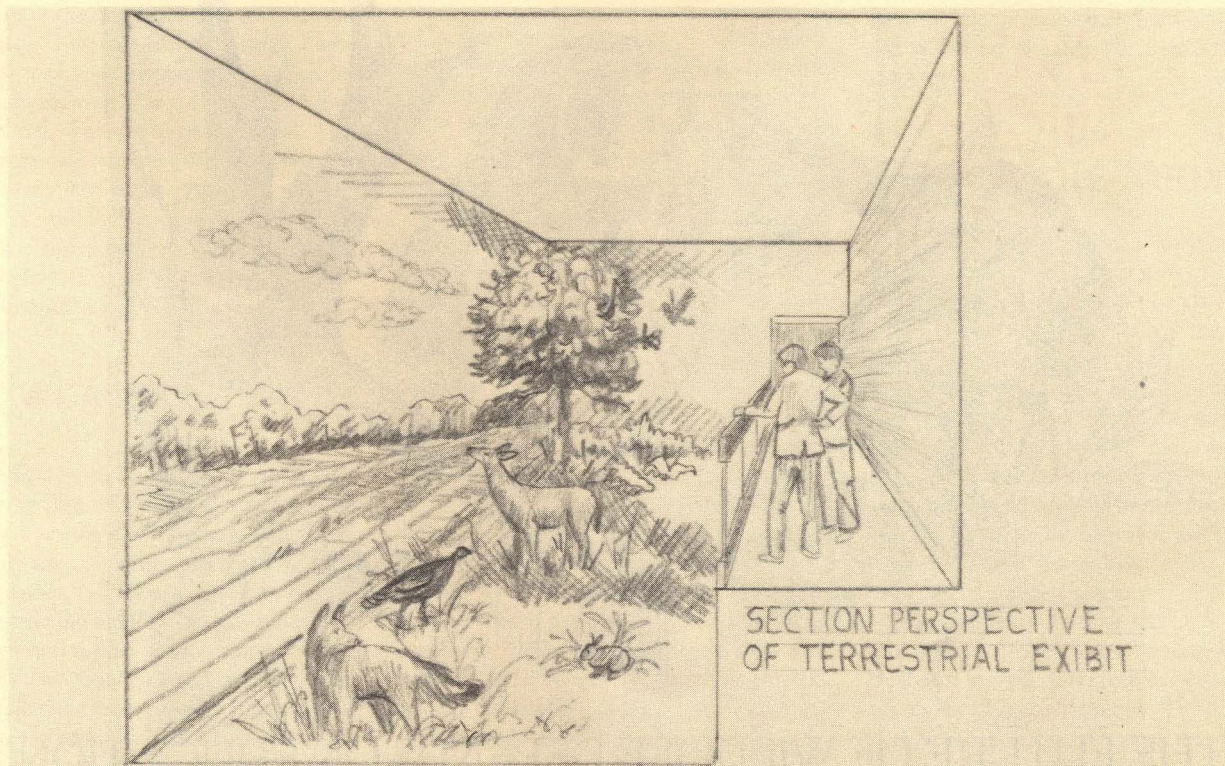
Entering the Milford Conservation Education Center lobby, visitors will be provided with an overlook of the entire hatchery. Interpretive displays and audio-visual aids will detail the functions of the raceways and hatching equipment and provide other information.





In another room, displays and other educational stations will feature pond, reservoir, and stream life of Kansas. The aquatic areas will explain ecological relationships of organisms from simple water-dwelling plants and animals to the most advanced predatory fish. Man's interaction with aquatic wildlife will also be examined. Other features of the aquatic area are to include mounted fish displays for identification instruction and various types of fishing tackle.

In another area of the Milford Conservation Education Center, the land-dwelling plants and animals of Kansas will be studied. Terrestrial displays will feature ecology of woodlot, wetland, and prairie wildlife. Man's negative and positive effects on wildlife will also be examined.

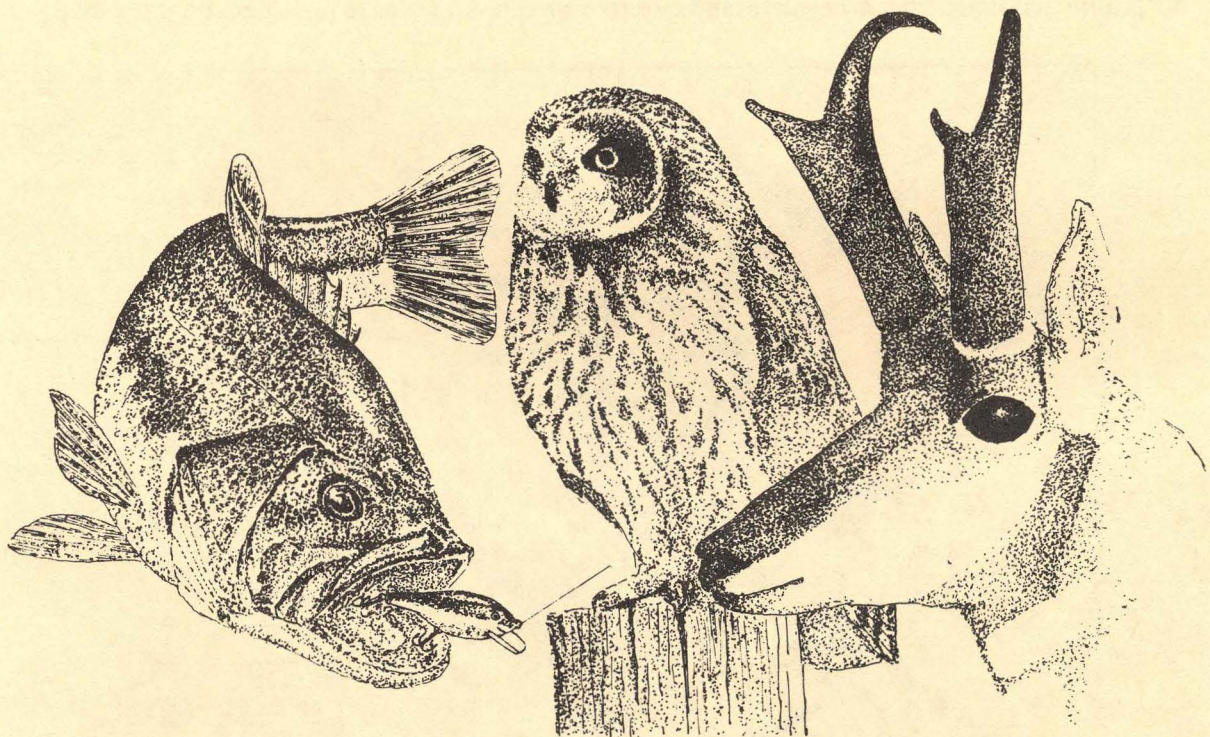


A small theater housed in the facility will be used to provide visitors an opportunity to view films, slides, and other audio-visual presentations dealing with Kansas wildlife resources and conservation matters. Outside displays will include a nongame wildlife interpretive area, complete with native plants, bird feeding stations, and examples of nongame habitat. Also outside the facility, visitors will be allowed an up-close look at one of the hatchery's 100-foot-long raceways.

Experts say that without proper information and education for Kansas residents, management of the state's wildlife resources may become impossible, and future generations will lose the opportunity to hunt, fish, and engage in other types of wildlife-related recreation. Located with easy access to Interstate-70, the Milford Conservation Education Center is expected to serve that purpose well.

Kansas Fish and Game Commission representatives say the Milford Conservation Education Center will cost about \$625,000. The five commissioners directed agency staff to prepare a funding package examining private donations, grants, the State General Fund, the Kansas Fish and Game Fee Fund, Dingell-Johnson Expansion Funds, and other appropriate sources.

In the first month after the Commission decided to proceed with the plan, nearly \$200,000 was pledged toward developing the facility. Persons or organizations interested in contributing may contact the Kansas Fish and Game Commission headquarters, Rt. 2, Box 54A, Pratt, KS 67124, (316) 672-5911. Donations made through the agency's WILDTRUST program may be eligible for tax credit consideration. Individuals or organizations making large contributions will receive permanent recognition at the Milford Conservation Education Center for their assistance in securing a bright future for Kansans and the state's wild resources.



THE FUTURE OF WILDLIFE DEPENDS ON EDUCATION.

FISHING

NO STINK BAIT

Most serious anglers know we should avoid contaminating fish baits with gasoline, oil, nicotine, insect repellents, and suntan oils. Fish have senses of smell many times more sensitive than ours, and they can detect amazingly small concentrations of such offensive materials. So it makes good sense to keep our hands as clean as possible when handling bait and tackle.

But is this enough? Apparently not. Humans secrete a chemical known as L-serine, an amino acid which is very soluble in water and is an amazingly effective fish repellent. Some people evidently produce more L-serine than others, light-colored people being more repellent than dark ones. This may be one of several reasons why one of a pair of anglers is sometimes more successful than the other, even though they may be fishing in the same spot with the same bait.

There are two ways of dealing with the L-serine problem: It is possible to "mask" our offensive odors by keeping a coating of fish extract or natural bait juices on our hands, or by using one of the artificial concoctions that has appeared on the market lately. A second solution, one less likely to make us offensive to other humans, is to simply avoid touching the bait at all with our bare hands.

It seems that we aren't completely offensive to fish. The same studies that explained the repellent nature of L-serine also indicated that human saliva is actually a fish attractant. Maybe those old superstitions about spitting on the bait weren't so far off after all. *Carp Newsletter Quarterly*

OBSCURE RECORD

A dollar says you don't know what the Kansas record for shortnose gar is — without looking it up. Well, even if you knew the old record, you won't know the new one without reading this.

Jack Frost was fishing in the Timber Creek area of Milford Reservoir, but he wasn't using conventional fishing tackle. He was using a compound bow and a fishing arrow. It was on the evening of May 4 that Frost arrowed a five-pound, 15-ounce shortnose gar that measured 34 and one-half inches long, setting the new state record for that species.

Anyone who is keeping track may note that this makes it three Kansas record fish (two bullheads and one gar) taken in May. An article in the January/February 1985 issue of *KANSAS WILDLIFE* stated that May was the best month of the year to catch a record fish. *Manes*

HOW OLD?

The Kansas record flathead catfish was caught in 1966 from the Neosho River near St. Paul. It measured over 55 inches long and tipped the scales at 86 pounds, 3 ounces. Fisheries Research Specialist Bob Hartmann set out to answer some questions about the fish's age, and he obtained a vertebra and some other bones for his investigation.

Under close scrutiny, the bones revealed growth rings, like those on a tree stump. Each one reflected a period of rapid growth followed by a period of slow growth, representing successive summers and winters. The rings are formed because tissues which form quickly under warm, favorable conditions are less dense than those formed under cold, harsh conditions.

Some of the growth rings were quite wide, and others were so close together that they were difficult to distinguish. This variation, says Hartmann, may have been due to flooding patterns, which created differences in the amount of food available in the fish's river habitat. It could also indicate that the fish spent part of its life in an impoundment — perhaps a lake or oxbow in the Neosho drainage.

Because of the compaction of some of the growth rings in the record fish's bones, Hartmann was unable to pinpoint its age, but he was able to estimate it was between 25 and 35 years old. This figure is consistent with research regarding flathead catfish growth rates. Under adverse conditions, they may gain no weight at all during the course of a year, or they may even lose weight. Under ideal conditions, weight gains of up to 10 pounds per year have been documented. *Manes*

HOT WEATHER FISH

In the heat of summer, fish are sometimes hard to catch, but we can increase our chances of success if we think like a fish. In some ways fish are like people — they seek comfort. During hot weather, fish move to cooler water than that often near the surface. The water must also have sufficient oxygen dissolved in it. Such a situation is often found in a portion of the water column called the thermocline, a boundary area of varying thickness that usually separates cold, oxygen-poor water from warmer water on the surface. Not all impoundments have ther-

moclines all the time, but when they are present, the upper reaches of these zones often provide the best fishing.

Though some fish will venture below the thermocline to feed for short periods, most species remain in or near it during much of the warmest part of the year. It is common to find fish suspended in the thermocline over underwater structure, and areas where the thermocline intersects with shoreline habitat are frequently concentration points for sport fish.

Without a thermometer, the thermocline can be located simply by using a depth finder and noting the depth at which most fish are suspended. Often other anglers or local fisheries biologists can also give assistance in finding the thermocline. *Paul Miller*

BULLHEAD CITY

It's difficult to explain why a fish record stands for more than 10 years and then is broken twice in just under one month. That appears to be the case with the Kansas bullhead catfish record.

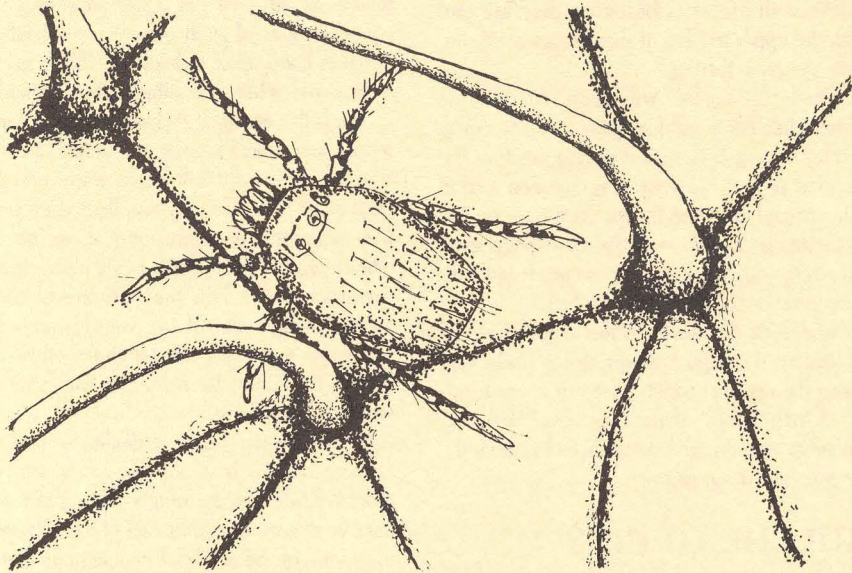
The official record holder is Lyle Houghton of Winfield. His six-pound, nine-and-three-quarter-ounce fish was taken on April 4 from a Cowley County farm pond. Houghton's trophy measured 22 and three-quarters inches long and 13 and three-quarters inches around. It was approved through the Kansas Fish and Game Commission's fish record review process during the first week in May.

The ink on Houghton's record was barely dry, when David Tremain of Havana caught a black bullhead that tipped the scales at seven pounds, five and one-quarter ounces. On May 13, he was fishing in a Montgomery County farm pond where he had taken some nice bullheads and channel catfish before, but the one that took his bait that day was, by far, the biggest he'd seen. The investigation process on Tremain's record is not complete at the time of this writing, but it appears the fish will set the new official mark. It measured 24 and one-half inches long and 15 inches around.

There are few similarities between the two trophy bullhead catches. Houghton took his on a yellow beetle spin while fishing for bass. Tremain caught his on a live crawdad, and he was actually fishing for catfish.

The old bullhead record was five pounds. Will it be 10 years before a new Kansas record bullhead is caught? *Manes*

NATURE



THE ITCH

There are more than 700 species of chiggers, or harvestmites, in the world, but only one of the 46 species found in Kansas is bothersome to humans. Unfortunately that species, *Eutrombicula alfreddugesi*, is the most common one in the state.

Only the chigger larva is a parasite to people, as well as other vertebrates. Contrary to popular belief, it does not burrow under the skin and suck blood. The larva climbs onto its host and seeks a patch of moist skin, where it inserts sharp mouth parts and injects a fluid which breaks down tissue cells. Experts believe it is this fluid that causes itching a few hours after a chigger bites. The cells around the bite harden in reaction to the fluid, acting as a straw through which the larva draws liquified tissue until it is full and drops off the host.

Because chiggers are so small, they often are not seen before being knocked loose by scratching. Close examination of the itching area prior to scratching will often reveal a small red speck about the size of a pin point. Adult chiggers appear much like their close relatives, spiders and ticks. The eggs are laid on moist soil, and after about two weeks they leave the shell, having gone through a developmental stage in which they remain attached to half of the shell. In the larval stage, the chigger closely resembles a six-legged tick. It would take about 130 chigger larvae, laid end to end, to measure one inch. The larva sheds its skin and becomes a

predatory nymph, with eight scarcely defined legs. Both the adult and nymph chigger eat insects and insect eggs.

Chiggers do not require bodily contact to mate. As males walk about, they drop hair-like structures containing seminal fluid on the ground. Females pick up the structures and fertilization occurs as they walk over the area afterward.

Humans aren't the only animals attacked by chiggers. Birds, reptiles, and other vertebrates are also chigger hosts. The larvae are spread from one area to another when they drop from their hosts as they move about.

In the U.S., chiggers aren't known to carry diseases which affect humans, though severe cases can be debilitating. Certain Asian and South Pacific species carry scrub typhus, an infection which can kill humans.

Many commercial mosquito repellents will fend off and kill chiggers. Those containing diethyltoluamide are said to be most effective. It is best to put repellent on clothing, not skin, because its potency is diminished by perspiration. Of course, all label instructions should be followed carefully. Sulfur also is an effective chigger repellent, but its odor makes it less desirable than others that work equally well.

During midsummer, it is unwise to lay down in heavy vegetation where chiggers may be concentrated. When they are contacted, bathing with repeated lathering and rinsing will wash away and kill chiggers already on the body.

Manes

WEIRD BEARD

What a turkey beard is stimulates much discussion among gobbler enthusiasts. The rough hair-like bristles that make up the beard are actually individual feathers. Their dark color comes from the pigment melanin. The beard feathers grow continually, though they are often dislodged, and are never shed. Tom turkeys usually have one beard, but birds with two or more beards are not uncommon. Hens sometimes have beards as well. Tom turkeys with long beards are prized as trophies by some hunters, much the same as deer with large antlers. *Arkansas Game and Fish Commission*

CICADA LIFE

In Kansas, late summer nights are often filled with the raspy song of cicadas. Males vibrate plate-like membranes near their hind legs to make the loud call. The largest and most common one in Kansas is the green cicada. These clear-winged insects are nearly two inches long.

The female green cicada cuts slits into tender tree branches and deposits eggs inside. When the eggs hatch, the nymphs drop to the ground and burrow. Some species remain underground in nymph form, feeding on juices from tree roots, for as long as 20 years. When full grown, the nymph climbs a tree, sheds its skin, and emerges a winged adult. After about a week, adults stop eating, mate, and die. Many green cicadas die as the result of a wasp sting.

The black and yellow cicada killer wasp is the largest wasp in Kansas. The female cicada killer paralyzes cicadas with her sting, then flies or drags her immobile prey to her eggs in an underground den, which may be more than a foot deep. Sometimes the wasp launches herself from a tree, so she can fly with her heavy prey. Inside the den, the wasp stores the paralyzed cicadas until her eggs hatch and begin feeding on the fresh food supply. After a week, the larvae are full grown and build loose cocoons that encase them until the following summer, when they emerge as adults ready to breed.

Manes

MAGPIE WAKE

Magpie birds follow one of the more unusual displays of bird behavior. After the death of a fellow magpie, the flock assembles, then one by one, or in groups of two or three, the magpies swoop down to peck at the dead companion. *International Wildlife*

NOTES

ART SHOW & MORE

The sixth annual Kansas Wildlife Art Show, held in conjunction with National Hunting and Fishing Day and Kansas Wildlife Day, will not take place in the Wichita Cessna Activity Center as it has in the past two years. Rather, it will be held in the Beech Activity Center on September 28 from 10:00 a.m. to 8:00 p.m., and on September 29 from 1:00 p.m. to 6:00 p.m.

The art show will feature 65 nationally known artists from across the U.S., bringing expert works in scratchboard, stained glass, wood carving, bronze, and many types of paintings. The second painting in the Kansas Department of Economic Development Wildlife Art Series will be on display, as well as the fourth Kansas Fish and Game Commission "Wildtrust" painting by renowned Michigan artist Dietmar Krumrey. Prints of both paintings will be available at a later date.

Most of the other artwork at the Kansas Wildlife Art Show will also be for sale, offering an unusual opportunity for collectors and wildlife enthusiasts to obtain originals and prints of some of the finest wildlife art found anywhere.

Other activities of interest to sportsmen, including equipment booths and displays, will be included in the National Hunting and Fishing Day expositions. The Beech Activity Center is located at 9709 E. Central in Wichita. Both parking and admittance are free. *Manes*

NATURAL KANSAS

An eighteenth century French explorer said of the land now called Kansas, "This is the finest country and the most beautiful land in the world; the prairies are like seas, and filled with wild animals . . ." Despite the plow and roadway, today's Kansans still enjoy a comparatively rich and diverse natural heritage.

A book by renowned zoologist and writer Joseph T. Collins, *Natural Kansas*, offers a survey of the wonderous wild heritage still found in the state. It examines the Kansas land, waterways, weather, plant life, and wildlife. Intended for non-experts, the easy-to-understand

text and 200 illustrations provide an introduction to the natural environment and native wildlife of Kansas.

Natural Kansas is available from the University Press of Kansas, 303 Carruth, Lawrence, KS 66045. The cost of the 224-page book is \$20. *Manes*

VICE PRES JOINS NRA

United States Vice President George Bush joined three million other National Rifle Association members when he submitted a \$300 check for his life membership.

"I am proud to be part of the three-million-member NRA," said Bush, "proud of its many fine programs and successes. As a sportsman myself, belonging to NRA is very important to me, and I value its heritage."

President Ronald Reagan is also a life member of the National Rifle Association. *Manes*

WATER SAVER

Approximately half of all Americans rely on groundwater for drinking, much of it untreated. Although groundwater has always been considered a pristine resource, recent data increasingly shows that man-made toxic organic chemicals have contaminated public and private wells in many locations in all regions of the country.

A new book, *A Citizen's Handbook on Groundwater Protection*, informs citizens of ways to stem the tide of groundwater contamination and protect this vital resource from further despoil. The 200-page book was written by Wendy Gordon, a scientist with the Natural Resources Defense Council, for the purpose of supplying citizens, community groups, and government officials with basic information about groundwater, its contamination, and the regulations and methods being used or considered to protect it. With this information, the author states, "citizens are much better able to participate in and influence the decision-making processes at all levels of government that

will affect their groundwater supplies and initiate far-sighted groundwater protection programs." *NRDC*

FUTURE ANGLERS

The Outdoor Writers of Kansas — an organization of professional communicators who deal with hunting, fishing, camping, and other outdoor recreation — has worked with the Kansas Fish and Game Commission to produce a 15-minute slide series aimed at teaching young children the basics of fishing. The program includes a prepared script and cued sound track, which allows it to be used even by inexperienced anglers.

The slide series, called "Beginning Fishing," is available on a free-loan basis from major Kansas Fish and Game offices. It may also be obtained from the Kansas Fish and Game Wildlife Reference Center located at the agency's headquarters in Pratt. Hundreds of other references including films, books, and teaching aids are also available from the Reference Center for use by Kansas schools and conservation organizations. *Manes*

NWF PRESIDENT

Carl Crouse of Olympia, Washington has been elected President of the National Wildlife Federation, the nation's largest private nonprofit conservation organization. The retired Director and 36-year employee of the Washington State Department of Game, Crouse was elected to a one-year term at the 49th Annual Meeting of the National Wildlife Federation in Washington, D.C. this year. Crouse served on the Federation's Board of Directors from 1975 to 1984, and on its Executive Committee from 1981 to 1984.

Active in conservation for almost 50 years, Crouse has received many awards for his work in the field, including the 25-year Conservation Award from the Washington State Outdoor Association in 1981 and the Seth Gordon Award from the International Association of Fish and Wildlife Agencies in 1978. *NWF*

WISDOM

"May the countryside and the gliding valley streams content me. Lost to fame, let me love the river and woodland."

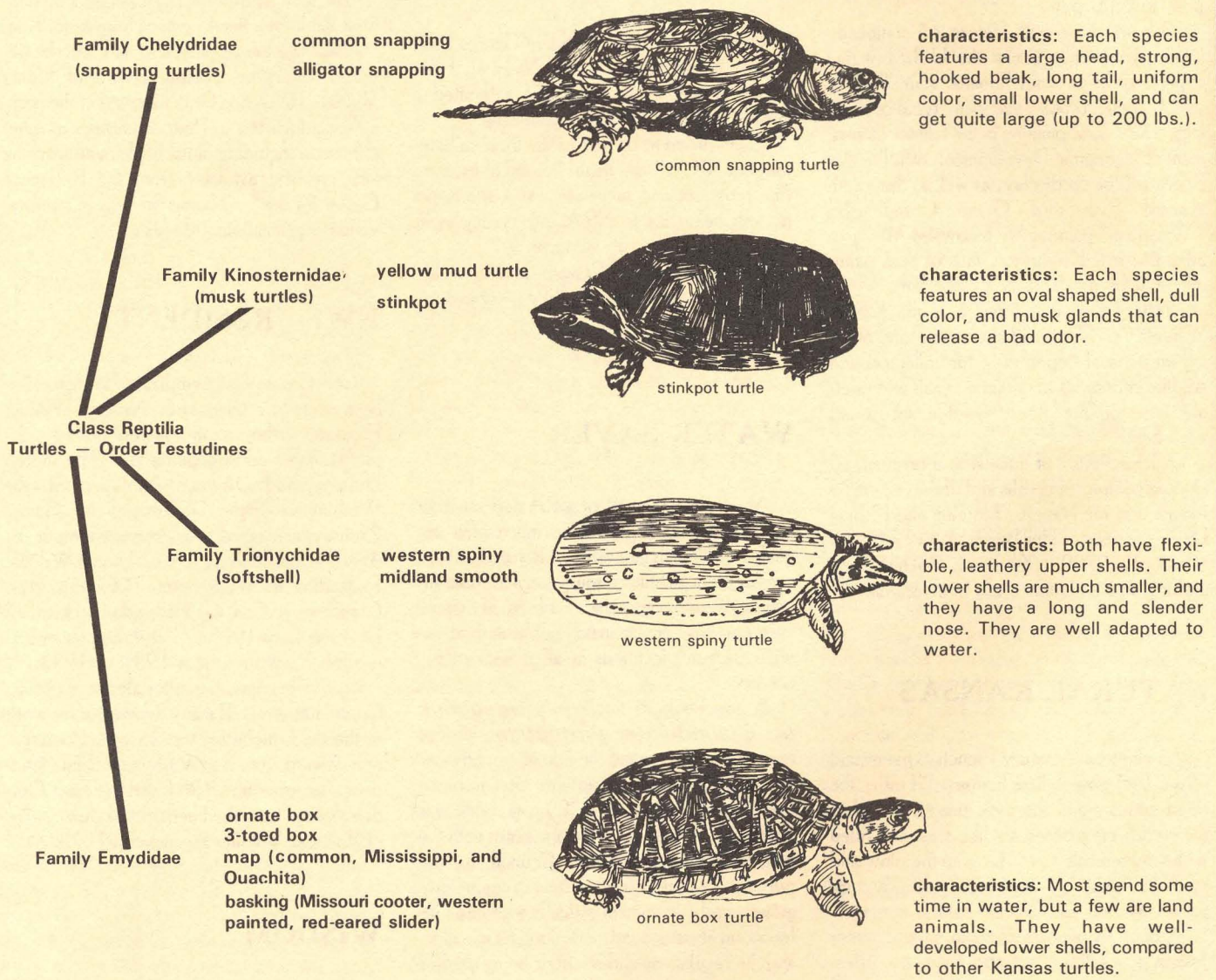
Virgil

NATURE'S NOTEBOOK

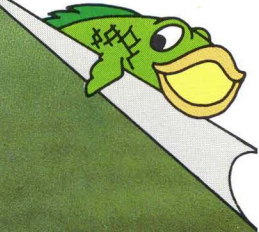
by Joyce Harmon Depenbusch
Wildlife Education Coordinator
Kansas Fish and Game Commission

TURTLE I.D.

To simplify identification of turtles, follow this simple key.

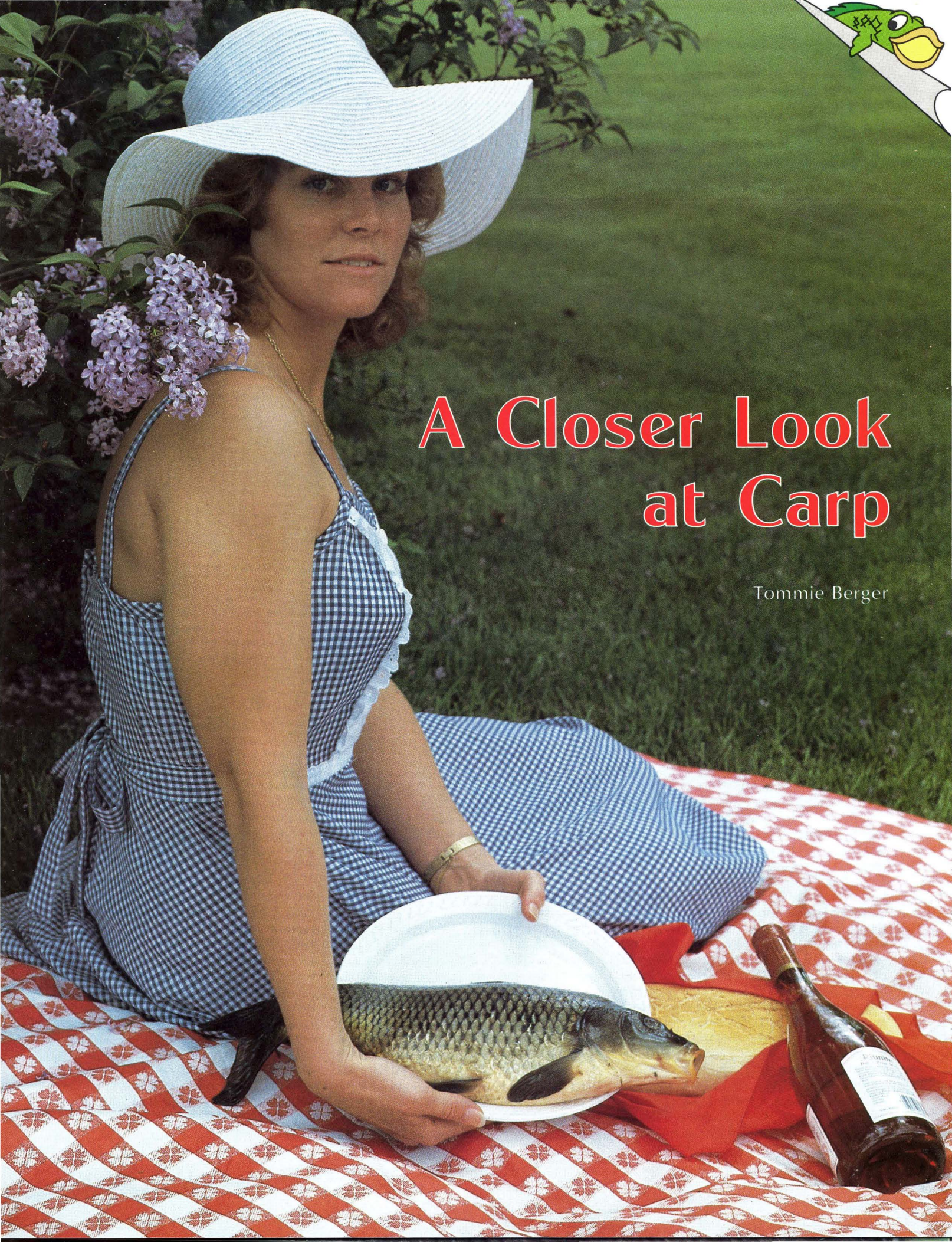


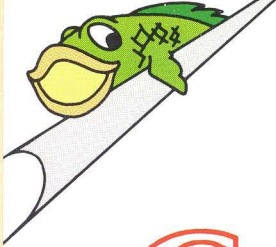
Find a turtle near your home and see if you can correctly identify it. The book, *Amphibians and Reptiles In Kansas*, will give you more help in identifying turtles. You will learn more about turtles in future issues of Nature's Notebook.



A Closer Look at Carp

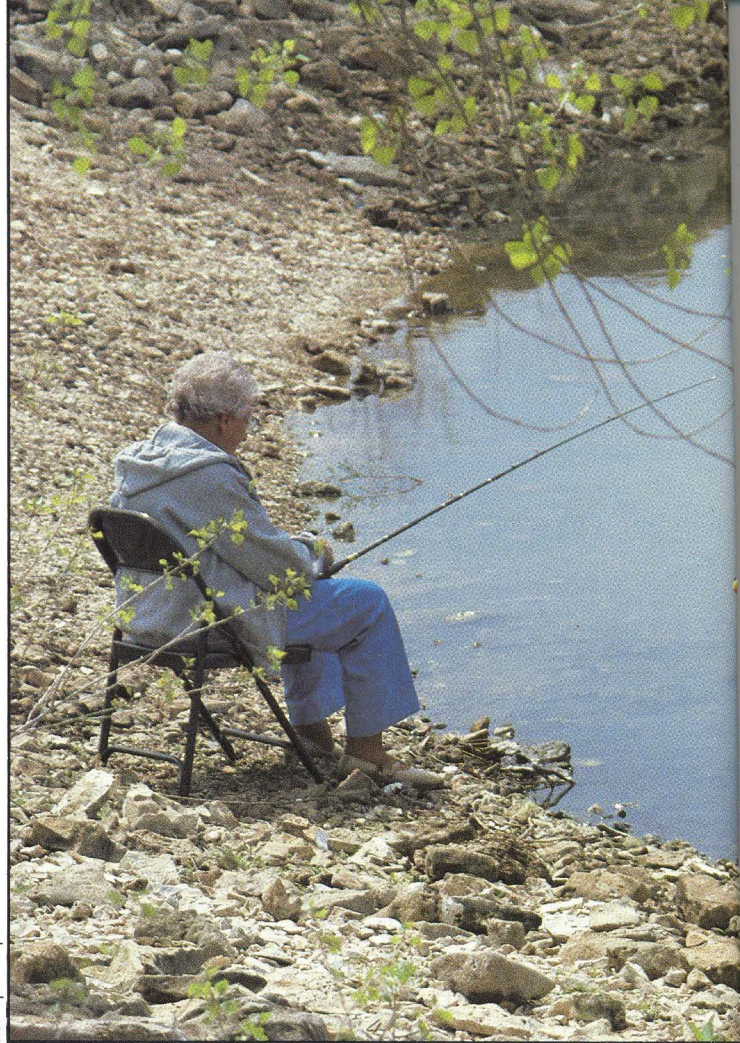
Tommie Berger





Carp. Yuk. Americans grow up spurning carp. It doesn't look like they want a fish to look or taste like they want a fish to taste. Neither of which is the carp's fault.

Nor do other cultures share our contempt. Emperors keep pet carp in jeweled tanks in some Asian countries, while in Japan carp — especially big carp — have a high barter value. In Europe the carp is highly acclaimed by both commercial and sport fishermen. In England it ranks second only to trout as a game fish and is the object of restocking programs.



Ron Spomer photo

Carp fishing is a relaxing sport. No matter what your age or angling experience, carp are fun to catch. No exotic lures required, no \$10,000 boat, no depthfinder. Carp make fishing what fishing should be: simple.

History

Oddly enough, Kansans at one time also hailed the carp as a fine game and food fish. When carp were first introduced into this country in the late 1800s, they were selling readily at \$1 per pound! It's interesting, too, that our tremendous carp fishery all began with just five carp, the survivors of 83 shipped by steamer from Germany in August, 1872. Offspring from the original five numbered over 3,000 by the summer of 1873.

Nationwide distribution came in 1877 when the Bureau of Fisheries began to stock carp in large numbers. It was at a peak around 1883 when 260,000 were distributed to 298 of the 302 Congressional Districts. The reason, wrote Spencer F. Baird, then U.S. Commissioner of Fish and Fisheries, was that "Their instinct for domestication has already been established and there is no reason why time should be lost with less proven species."

Though the carp came to the United States as a hero, people soon began to regard this prolific fish in a different

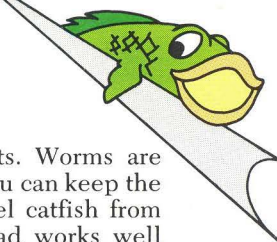
light. As early as 1883, an increase in carp numbers was accompanied by a great decrease in wild celery and wild rice in shallow northern lakes. The carp was subsequently blamed for ruining some of the nation's finest waterfowl lakes and marshes. People began to notice that where there was a comparatively large number of carp in a pond, the water was always turbid.

"Carp up to 86 pounds have been reported . . ."

Carp became the dominant fish in many lakes and rivers. Lakes fertilized with domestic sewage had high densities of carp, another black eye for this poor fellow. One observer said of carp around the turn of the century, "German carp are nomadic in their habits and wander apparently aimlessly into all ac-

cessible waters, hence if introduced into any streams, will spread rapidly over the whole system ... Like undesirable weeds, they have spread everywhere and it is practically impossible to limit their progress or to effect their extirpation."

Despite a dubious history and bovine personality, carp *do* have redeeming qualities. Many shallow lakes would be totally weed-choked if it were not for the common carp and his cousin, the grass carp. Carp also have some commercial value, estimated at between two and three million dollars per year. They aren't bad eating when taken from clean water and prepared properly. And once you've hooked a carp, you'll enjoy the fight of your life. What other fish can you name that is so readily available, so eager to bite on just about anything and so game at the end of a line? Whether we like it or not, carp can be found from one corner of Kansas to the other and are here to stay. So let's take advantage of that fact and start to view the carp as a fish to be celebrated!



Biology

The common carp (*Cyprinus carpio*) is the largest member of the minnow family. He is a robust fish, deep through the body and laterally compressed with large, thick scales. His toothless mouth and thick lips are cornered by a pair of barbels which he uses to sense food along the bottom.

Carp have a single dorsal fin with a strong serrated spine at the front. Colors range from dull silver to a bronze green on the back. The sides are lighter, grading to white or yellow on the belly.

These fish spawn in very shallow water in May or early June, dispersing their eggs at random over vegetation or inundated brush and debris. They thrash the water vigorously while spawning. A large female can produce between one-half and three million tiny grayish-white eggs.

Rate of growth depends upon water fertility and food availability. A Kansas carp should weigh a pound after two growing seasons and will generally grow rapidly from that point on. The present state record is 37.31 pounds. Carp up to 86 pounds have been reported in other states, and carp near 100 pounds are common in Europe and Asia.

The carp is a bottom feeder and omnivorous, eating nearly anything that can be ingested. Aquatic invertebrates such as insect larvae, crustaceans, plankton and small mollusks make up a large part of his diet. Carp do a lot of grubbing around along the bottom, often uprooting aquatic plants but seldom eating them.

The carp is an extremely hardy fish that can live in waters uninhabitable by other fish species. Carp can survive long periods with little oxygen and can live in polluted waters by sucking the oxygen-rich surface film which is in direct contact with the air. Some call him the "sewer bass" because of these survival traits. A carp can survive long periods out of water if kept moist and can withstand extreme changes in water temperature.

Fishing Methods

Carp enjoy warm water and can be caught most readily when the water temperature is above 50 degrees F. Late spring, summer and early fall are the most productive seasons to catch a carp on a rod and reel in the sunflower state. When I was a boy Dad and I didn't get too excited about carp fishing until the good spring channel cat and crappie fishing was over. But as the summer heated up we'd get out the old dough bait recipes and head for Stranger Creek in Leavenworth County or the low-water dam on the Kansas River at Law-

rence. I can remember some trips when we'd drive 100 miles out to the Big Blue River near Marysville or 60 miles over to the Delaware River below Perry Reservoir — just to spend a day fishing for carp!

Carp are shallow-water fish and unless the water is extremely clear, you shouldn't need to fish any deeper than 8 to 10 feet. Since they are bottom feeders, a bait set under a bobber usually is not very successful. Carp have a fairly small mouth. Some anglers prefer single hooks, while others opt for a treble. The type of bait will determine the type of

nel corn and dough baits. Worms are also a proven winner if you can keep the sunfish and small channel catfish from stealing them. Plain bread works well when mashed into a ball, and some anglers even use partly boiled potatoes. I've had good luck in the late summer and fall with grasshoppers. Marshmallows work too.

My favorite carp dough ball recipe uses whole wheat flour, garlic salt, cinnamon and vanilla. You would do well to give it a try. First, mix the flour with warm water to form a dough. Add flour



Gene Brehm photo

Bow and arrow buffs take note! The carp is one fish that is not only a legal but a sporting quarry. During spawning runs in shallow water shooting can be very fast — and those big-lipped targets aren't as easy to hit as you might think!

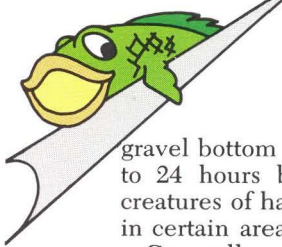
hook you use. Dough baits work well with treble hooks. Hook sizes 6, 8, 10 and 12 are best. Sinkers should only be used to provide the needed casting weight and to keep the bait on the bottom. Egg or slip sinkers should be employed so that the fish feels no resistance when he mouths the bait.

Line size is important. Carp are formidable fighters and spend lots of time close to underwater brush. Line weights of 8- to 14-pound test are best in most carp-fishing situations.

The two most commonly used carp baits in our state are canned whole ker-

for firmness, water for softness. Then stir in the other ingredients until it smells almost good enough to eat. Anise oil gives dough balls a good flavor. One of my uncle's favorite recipes was a dough made out of Wheaties and strawberry soda pop. Like I said, Kansas carp will eat just about anything!

Chumming or baiting a hole is a common carp-fishing practice. (No, it is not illegal to bait a hole for any Kansas fish.) Scattering soaked corn, oats, chopped cooked vegetables or dough balls in likely spots to be fished can attract carp to a given area. Try to find a sand or



gravel bottom and use this technique 6 to 24 hours before fishing. Carp are creatures of habit, and repeated baiting in certain areas can be quite effective.

Generally speaking, carp fishing is very much a "sit-down-and-wait-for-a-bite" affair. Some anglers might have trouble with that, but a lot can be said for a leisurely day on the creek bank, relaxing and waiting for a big carp to come along. Carp fishing can be suspenseful, thrilling and relaxing, all in one. Can you think of a better way to spend hot summer days when nothing else will bite?

"The nice thing about carp is you don't need a boat; the best fishing is close to shore."

You can catch carp with just about any piece of fishing equipment made. Cane or bamboo poles will work for smaller carp, but lacking the ability to let a fish run for 20 or 30 feet severely limits their effectiveness when large carp are available. Closed-face spincast reels are fine if they have a good drag system. Most carp fishermen prefer a medium-size, open-face spinning reel and a fairly stout six- to eight-foot rod.

Rod rests or rod holders are essential when carp fishing. In lakes or slow-moving streams, many anglers fish with a very loose line and an open bail. In currents tight lining is required. If you don't have access to a rod rest or a rod holder, you'd better find a rock or a log to lay your rod against. By last count, big carp have made off with three of my fishing outfits — hook, line, sinker, rod, reel, the works! Although most carp bite lightly, some just pick up the bait and head for the other side of the river. A landing net is important, since carp are hard fighters and difficult to handle by hand. Big and deep is the word for a carp net.

There aren't too many places in Kansas waters you won't find carp. Like all fish, though, they prefer certain types of water. Upper ends of lakes where the water is warm and shallow are generally better than deeper areas. Backs of coves, close to vegetation or brushpiles, are also good spots to try. Stream anglers

should spend their time fishing deep holes on creek bends. Don't cast to the deepest part of the hole; instead aim for the far bank and let your bait settle within three to six feet of the shore. Cast close to brush or logs extending out of the water. Carp like to congregate where fresh water runs in, so check out areas just below a feeder stream junction, next to a spring and below any obstruction in the stream, such as a waterfall or a low-water dam. I've had some of my best fishing days near the outlets of reservoirs and below low-water dams.

Large reservoirs hold lots of carp. Fishing the shallow upper ends of coves and areas where feeder streams dump in will usually provide action. The nice thing about carp is you don't need a boat; the best fishing is close to shore.

Bow and arrow enthusiasts find rough fish like carp an exciting challenge, especially in the spring and early summer when carp are spawning in the shallows. Some archery clubs have organized carp shoots in and around waterfowl marshes throughout the summer when water levels are low and carp are abundant.

Regulations regarding bowfishing have changed in the last few years and many archers are still not aware of the

relaxed requirements. In Kansas, bowfishing is legal *in all waters* unless posted otherwise. The only other restriction is that water within 50 yards of an occupied boat dock, swimming area or picnic site is closed to bowfishing. (Carp fishing with a bow *does* require you to have a Kansas license, by the way.) The May-June spawning season is the best time for bowfishing carp. Be sure to stalk quietly, as carp in the shallows are very spooky.

To Cook a Carp ...

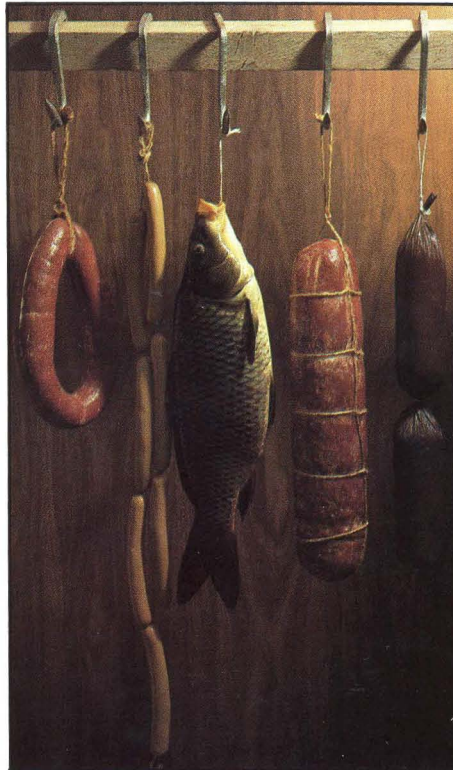
Unfortunately, the average American angler is not a carp eater. I'm not sure if that's because they've tried them and found them unpalatable or if it's because they've heard so many stories about carp they just assume they're not good. I really think lots of anglers would change their minds if they forgot all those stories and gave carp a try.

The flesh of carp is somewhat darker than that of the walleye, crappie and catfish. And yes, carp do have inter-muscular bones throughout the meat that can be bothersome. Still, there are several ways to make this fish just as edible as any other.

Carp can be fried, pressure cooked, baked, pickled or smoked. My favorite recipes are deep fat fried carp and fried carp patties. Most folks clean fish by either filleting them or removing the head, entrails, fins and scales and leaving the backbone and ribs intact. Whichever method you prefer, you also need to "score" a carp to rid him of the small bones. Scoring is merely a process of slicing two thirds of the way through the slabs of meat every one-eighth to one-fourth inch parallel to the ribs, all the way from one end to the other. After scoring, dip the carp in your favorite fish batter and fry to a golden brown.

For carp patties, simply fillet several carp and run the meat through a coarse meat grinder or food processor. Take the ground flesh and add corn flake crumbs, eggs, garlic salt and minced onions until the mixture forms patties that no longer stick to your fingers. Drop these patties in a deep fat fryer or skillet. Several fishing friends prefer these patties over conventional walleye or crappie fillets.

The carp is, indeed, an underrated fish in Kansas. He needn't be. Great carp fishing is available in most any water near your home if you want to give it a try. Expensive trips aren't necessary, equipment needs are minimal, and bait is as close as your backyard garden and corner grocery. You won't find many fish that try any harder to pull that rod from your hands, and if you'll take a bit more time to prepare carp right, you can add many delicious and nutritious meals to the family menu. □



Gene Brehm photo

Butcher's choice? Maybe not; but the carp was originally introduced to Kansas waters as a food fish and is still considered a delicacy in many countries.

Kansas' Twilight Phantoms

David Case

Bats. Just the word elicits responses ranging from indignation to shrieks of terror. Whether Kansans like, dislike, or perhaps have no opinion about bats, few are aware of their diversity and importance in Kansas and throughout the world. In fact, bats comprise one quarter of the mammal species on earth. Nearly a thousand kinds of bats have been identified.

In terms of image, bats do not have a lot going for them. They are only active at night and their darting, phantom-like flight makes it almost impossible to get a good view of one. Their looks — many have “beady” eyes and contorted facial features — definitely do not place them in the “cuddly” class of animals. Bats rarely make sounds audible to humans;



red bats in flight

Photos courtesy Bat Conservation International, Inc.

they sleep hanging upside down in caves, sewers and attics; and a few species in Latin America live on blood.

Unfortunately, we humans tend to fear what we do not understand. Public acceptance and tolerance of bats have lagged far behind our scientific knowledge of them.

In various civilizations, bats have been worshiped as gods, feared as the devil, and used to ward off evil and predict the weather. Centuries ago, bats and witches were closely linked. The unfortunate family who had bats using their home as shelter were accused of being witches and even punished by death. Ancient Chinese societies held bats in high esteem and used them to symbolize happiness. The Chinese talisman formed by five bats arranged in a circle symbolized the greatest joys of man: contentment, happiness, prosperity, health and longevity. In rural Finland some people still believe that when humans sleep their souls leave the body and fly about as bats.

Nonsense, you say. Indeed, but misconceptions of bats and their way of life persist to this day — and right here in Kansas! No doubt the most popular myth is that bats will entangle themselves in a woman's hair. Dr. Merlin Tuttle, President of Bat Conservation International, says "If a bat can detect a mosquito in the dark, it sure as heck isn't going to blunder into your head." Bats do not become entangled in people's hair.

Another misconception about bats, and one that has resulted in the deliberate destruction of hundreds of thousands of them, is that most bats have rabies and serve as an important carrier of the disease. Bats, like many mammals, can contract rabies. But research has indicated rabies occurs in less than one percent of wild bats. Dr. Denny Constantine, a public health veterinarian in California and one of the world's foremost authorities on rabies and other bat diseases, found that about one in every thousand bats in California had rabies. He felt that this ratio was accurate for most of the northern part of the country.

In Kansas, captured bats suspected of having rabies are tested at Kansas State University's Veterinary Diagnostic Laboratory. Of the 377 bats tested between

This young Mexican free-tailed bat (inset) is just learning to fly at five weeks of age. A large colony of these bats (right) emerges at dusk for a nightly feeding foray. A swarm this size may eat more than a quarter of a million pounds of insects before dawn, climbing to heights of 10,000 feet and covering thousands of square miles at up to 40 miles an hour.





1981 and 1984, 19 (five percent) had rabies. In contrast, 415 skunks and 16 horses tested during the same period were rabid. All the bats submitted for testing were found sick or dying or had come in contact with humans or pets. The proportion of the entire wild bat population in Kansas that has rabies is probably considerably lower. Constantine says that the incidence of rabies among bats is no greater than that in other wild animals.

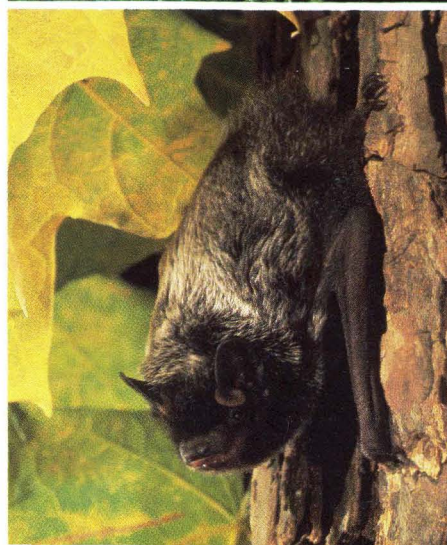
Among the few bats that do become rabid, attacks on humans are exceedingly rare. One to three percent of infected bats display "furious" rabies, wherein the animals make unprovoked attacks. Ten people in the U.S. and Canada combined are thought to have contracted rabies from bats in the past 40 years.

Most bites people receive occur when they try to handle bats that have fallen to the ground because of sickness. Bats — any wild animals for that matter — should be left alone if they exhibit odd behavior or appear sick. If a person is bitten, the bat should be recovered without damaging the head and sent immediately to a diagnostic laboratory.

The notion that bats can carry and transmit rabies to other wildlife or humans without being affected themselves resulted from faulty research conducted in the 1930s. Although the idea persists among some public health officials, subsequent studies found that bats succumb just as readily as other animals to the disease. If bats transmitted rabies without being affected, one would expect rabies outbreaks in wildlife populations to increase as the incidence of rabies in local bat populations increased. None of the studies conducted in the U.S. or Canada have shown this correlation.

Bat diets vary and may comprise mice, frogs, fish, pollen or, in the case of the vampire bat, blood. But the majority of bats can be classified as fruit or insect eaters. Seventy percent of bats worldwide feed on insects — including all the 39 species in the United States and 14 found in Kansas.

Although all bats can see, insectivorous bats use echolocation or "sonar" to locate their prey. Flying with their mouths open, the bats emit a series of high-pitched sounds inaudible to the human ear. The sound waves bounce off objects and are received by the bats. By detecting differences in how the sound waves return, bats are able to tell where



objects are located, their size and how fast they are moving. Bats can even learn to identify different species of insects.

When a bat locates its prey, it will try to catch the insect with its mouth. If the bat misses, it will cup the insect with its wing or catch it in its tail membrane. The insect is then flipped into the mouth. Some species of bats will carry larger insects to a tree limb or other roost and eat them at leisure.

Because of their small size and high metabolic rate, bats require a tremendous amount of food to keep their bodies going. Smaller species of bats may consume half their body weight in insects per night. An individual gray bat will eat up to 3,000 insects, many of them mosquitos, in a single night. The gray bat colony in the storm drains of Pittsburg, Kansas will consume about 7.5 million insects per night or 1.5 billion in a typical season between April and October. The colony comprises about 2,500 bats. A bigger colony of bats in Texas numbers roughly 20 million individuals and eats up to a quarter million pounds of insects each night.

As their name implies, fruit bats consume fruit. They are found in the tropical parts of the world and differ significantly from the insect-eating bats. Fruit bats have larger eyes and don't use echolocation to find their food. They are larger than the insect-eating bats, and some may have wingspans as broad as six feet. In general, fruit bats tend to have a slower, less erratic flight pattern. How elusive, after all, is a mango?

Fruit bats play a critical role in the life cycles of many important fruit- and seed-producing trees and shrubs in tropical areas. As seed dispersers, bats are the most active group of mammals. Bats consume the seeds from ripe fruit and then effectively plant them in other areas through defecation. Bats that eat pollen serve as the sole pollinators for certain plant species.

The list of common grocery products that are obtained from "bat-dependent" plants includes peaches, bananas, avocados, carob, mangos, cashews, cloves, dates, figs and Tequila liquor. Bats are important seed dispersers or pollinators for plants that produce balsa wood, chicle latex used in chewing gum and the kapok used in making life preservers, surgical bandages and cooking oil.

Because insects are not available when temperatures drop below 50°F, bats are forced to hibernate or move to warmer climates. Of the 14 species of bats in Kansas, seven are year-round residents. A few species migrate outside of Kansas to find suitable caves in which to hibernate, while others move to tropical areas and remain active all winter.

Kansas bats, from top: Townsend's big-eared bat, big brown bat, pallid bat, silver-haired bat.

Most bats that stay in Kansas begin hibernating between September and November, depending on weather conditions. Caves, hollow trees, storm sewers and mine shafts are common winter hibernation quarters. So are the attics of buildings and churches (“bats in your belfry”). Some species, such as the cave and gray bats, hibernate in large concentrations, while others, such as the eastern pipistrelle and Townsend’s big-eared bats, will hibernate by themselves or in small groups.

The body temperature of hibernating bats may drop as low as 40°F. Their heart rate will also drop considerably. But unlike other mammals that remain “asleep” till spring, bats will awaken at intervals of several days or weeks throughout the winter. On warm winter evenings big brown bats may even leave their winter quarters and venture out for a drink of water. The ease with which bats are aroused from hibernation can be fatal in areas accessible to humans. Each time the bats are disturbed, they burn up precious energy. If they are disturbed too many times and use up all their stored fat before spring arrives they will die. In Kansas bats will begin leaving their hibernation areas in March or April when insects begin to appear.

Oddly enough, bats usually breed in the fall prior to hibernation or during the active periods while in their winter quarters. Bats are unique among mammals in that the male’s sperm will remain alive for five to seven months within the genital tract of the female. The gestation period ranges from 50 to 100 days.



The gray bat, shown here in flight, is a cave-dweller. Roughly 95% of the known population hibernates in just nine caves. Vulnerable to human disturbance, gray bat colonies have shrunk 80% in recent years, and this creature is now on the endangered list. Top right: Hoary bats are uniquely camouflaged to resemble the lichens on conifers in which they normally roost. Left: A Keen’s Myotis displays the highly-developed ears that help guide all bats in flight. Bottom: This hibernating eastern pipistrelle is covered by condensation, something to which cave-dwellers must adapt.



In Kansas female bats give birth between May and July. Most species form maternity colonies consisting of young bats and females. The males are solitary at this time and have little to do with rearing their offspring. The size of maternity colonies in Kansas may vary from five or six up to several hundred young, depending on the species. The maternity colonies may or may not be set up in the hibernation room. A few species, such as the small-footed and red bats, have their young in seclusion.

How, one might wonder, does an animal that rests by hanging upside down by its feet give birth? Carefully, for sure! To give birth, the female hangs up from the small claws on her wings. The young bat is dropped and then caught

The pallid bat is unusual in that all its prey is caught on the ground. Here shown eating a scorpion, it is particularly resistant to scorpion venom.

by its mother in a skin membrane connected to her tail. While nursing, or during daylight hours when both are roosting, the young will cling to the under parts of the female with their hind feet and wing claws. The young are left in the roost when the females go out on their nightly feeding forays. In many species, the young bats will huddle together to conserve body heat while their mothers are out feeding.

Worldwide, a majority of the bat species produce only one offspring per year. Seven of the 12 species that breed in Kansas have a singlet. The red bat, a solitary creature that spends most of its time in the forested areas of the state, may have up to five young.

Bats are able to maintain populations at this low reproductive rate primarily because they are long lived. The little brown bat, found in the eastern two-thirds of Kansas, has been known to live up to 30 years. Most other Kansas bats have been recorded to live over 15 years. It is believed that their long life span results from a lack of heavy predation and their extended periods of inactivity during the winter.

One predator that bats have not been successful in avoiding is man. Bats are one of the most persecuted groups of wildlife on earth. In spite of their usefulness as pollinators, insect eaters and components of the ecosystem, man has caused drastic declines in bat populations throughout the world. In the United States, major population declines have resulted from disturbances in bat roosting and hibernating caves. A colony of 300,000 gray bats in the southeastern U.S. disappeared in only three years due to human disturbance.

The use of agricultural pesticides has also been implicated as the cause of major declines in bat populations. Bats are especially vulnerable to pesticide use because of their voracious appetites. Pesticide residues from the thousands of insects they consume builds rapidly to toxic levels. Dr. Jerry Choate, Professor of Zoology at Hays State University, says that the bats analyzed thus far in Kansas have been relatively free of pesticide residues.

One of the major reasons for declining bat numbers is extermination efforts by man. Even in countries that depend on bats for the production of economically important plants and timber, there are government programs aimed at eliminating bats.

In the U.S., thousands of bats are poisoned each year because of perceived threats to public health. In some parts of the country, pest control companies and even public health agencies recommend poisoning bats when they roost or



The little brown bat is one of our most common species. It hibernates in caves, but often forms nursery colonies in old buildings. Gentle by disposition, the little brown bat is also a voracious feeder, consuming up to 900 insects an hour!

raise young in or near human dwellings. Fortunately, in Kansas that is not the situation. The community health agencies and pest control companies around the state that I talked with indicated that the few problems they encounter with bats are solved without poisoning the animals.

Studies have demonstrated that trying to poison bats with toxic chemicals such as DDT or Rozol increases, rather than decreases, the public health hazard. Applying poison to bat roosts exposes humans to bats because the sick and dying bats are likely to fall onto the ground where they may be handled by children or pets. It is also thought that the stress in those bats that survive the poisoning may increase their susceptibility to viral infections such as rabies.

On occasion, bats do create problems in buildings where their noise, feces and urine become offensive. But experts agree that this situation can be handled by simply excluding the bats from the area. Although bats can squeeze through relatively small spaces, they will not use their teeth or claws to make a hole.

When excluding bats, care should be taken to ensure that all bats are out of an area before closing it off. This is particularly important during the spring and

summer months when flightless young dependent on their mothers are present. The best time to close off bat access areas is during the winter months when bats have migrated to their winter hibernation areas. Access points can also be closed off in warmer weather after the bats depart in the evening to feed, provided young are not present. Bats can be excluded from human living quarters by covering chimneys with hardware cloth, adding draft guards beneath outside doors and covering windows, doors and other ventilation openings with screen.

The big brown bat is the most common and widespread bat in Kansas and is usually the one that is found flying around in dwellings. Most large abandoned buildings in the western half of Kansas have a brown bat colony using them. A colony of several thousand hibernates in the old coliseum at Hays State University. The maternity colony is in the bleachers at the football stadium.

One of the "battiest" parts of the Sunflower State is the gyp hill region in Comanche and Barber counties. The caves in this area harbor large colonies of cave and Brazilian free-tailed bats, in addition to several other species. Large abandoned mines in Marshall and Atchison counties in northeast Kansas also are year-round homes to several species of bats.

Information on the size of bat populations by species in Kansas is lacking. As a result, assessing changes in populations is difficult. Marvin Schwilling, Nongame Project Leader for the Kansas Fish and Game Commission, anticipates that research on bats in Kansas will increase as money becomes available through the Nongame Program — which is funded by donations made on state income tax forms.

Bats may not be your favorite wild animal, but they certainly do not deserve their bad reputation. Bats are important pollinators and seed dispersers for a variety of economically valuable plants. They help control insect populations and are useful in medical research. But more importantly, they are an integral part of the earth's wildlife resource. We have changed our attitudes and come to accept and appreciate the role of once-maligned predators such as wolves, hawks, owls and eagles. This same change must occur in our attitudes about bats.

The next time you walk along the bank of a stream or river at dusk and darkness is almost upon you, toss a pebble wish into the air. Chances are that one of Kansas' bats will materialize to check it out. □

History of the Hunting Handgun

Handguns courtesy L. D. Strickland;
photos by author



Shooting a Cougar, a watercolor by Alfred Jacob Miller, 1859

Wayne van Zwoll

This year for the first time Kansans will be able to hunt big game animals (deer and pronghorns) with handguns. Not every such arm is capable of clean kills on large game, of course, and there are some restrictions. Even so, the decision is a noteworthy one. It wasn't that long ago that all handguns were considered defensive weapons only; indeed, the uninformed today would eliminate pistols and revolvers on the premise that their designated use is for criminal activity!

Short, maneuverable, concealable firearms were originally developed for military and police use, later for a growing number of people who wanted quick access to a lethal weapon on the frontiers of civilization. Here, pursuing big

The premier big game cartridge for many years after its 1956 introduction, the .44 Magnum is still a fine hunting round — especially in long-barrel revolvers like this Smith and Wesson M29.



game with a *pistole* during the pre-railroad era was about as sensible as trying to stop a buffalo stampede by swinging a shovel. In the late 1880s frontiersmen on the Great Plains and in the Mountain West carried the most effective firearms they could afford. Not only hunting success but life itself hinged on quick, accurate use of a dependable, hard-hitting rifle. At first this meant one of the “Hawken” variety — a half-stock big-bore offshoot of the graceful Kentucky or Pennsylvania rifle. The Hawken was named after two St. Louis gunsmiths (brothers) who popularized this style of gun.

After the Civil War, cartridge firearms quickly supplanted the muzzle-loading caplock Hawkens in the West. Preceded by the Volcanic Henry, repeating mechanisms came close on the heels of the metallic case. These first repeaters, however, were not game guns but defensive weapons. Under-powered cartridges like the .44 rimfire would not take buffalo with any regularity and were of limited application for deer and pronghorns. Serious plains hunters preferred the Sharps, with its cave-mouth muzzle and Panatella-size cartridges. The .45-90, .50-110 and other potent offerings in strong single-shot falling-block breechloaders accounted for most of the meat and hides that soon became the ignominious end of once-countless buffalo.

Handguns in this period were tools of the street, not the hunting trail. They were good insurance in poker games and reliable bed partners — as well as invaluable assets to Pony Express riders and other horsemen who suddenly found themselves the front-runner in a race against painted natives. When Sam

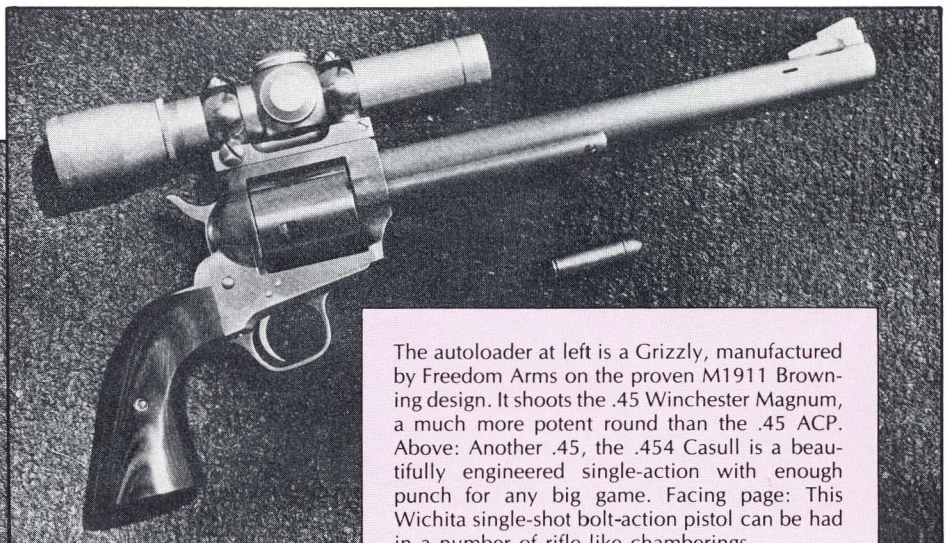
Colt’s multi-chambered cylinder, in use since 1836, was chambered by Smith and Wesson for metallic cartridges in 1857, it didn’t change the status of the revolver as a defensive weapon, but it did immediately outdate any other one-hand guns. A man without a cartridge revolver on the post-war frontier was a poorly-dressed gent, to be sure!

Until 1869 Smith and Wesson alone had the option of making handguns that could be loaded with cartridges from the breech. This was because Rollin White, who earlier patented the bored-through cylinder, had sold his patent to that company. (Colt, incidentally, had been offered the patent and refused it.) In 1869 Smith and Wesson’s exclusive right to that feature expired, and while they were developing the top-break .44 American and .44 Russian revolvers, Colt came up with the classic Single Action Army model of 1873. Despite its fragile lockwork, this gun caught on immediately with both the public and the military. It was produced virtually unchanged until 1941, then reintroduced

by public demand in 1955. It is still in production, having been chambered for a wide variety of rimfire and centerfire cartridges.

Though the self-contained cartridge made handguns much more reliable and powerful — there was no rear-chamber gas leak to shunt pressure — rifles were still the order of the day for hunters on the frontier. The big Winchester 86 had finally combined the features of a dependable repeating arm with the buffalo-blasting power of the most popular black powder cartridges of the day. Handguns and long arms were developing along different tracks, and understandably so.

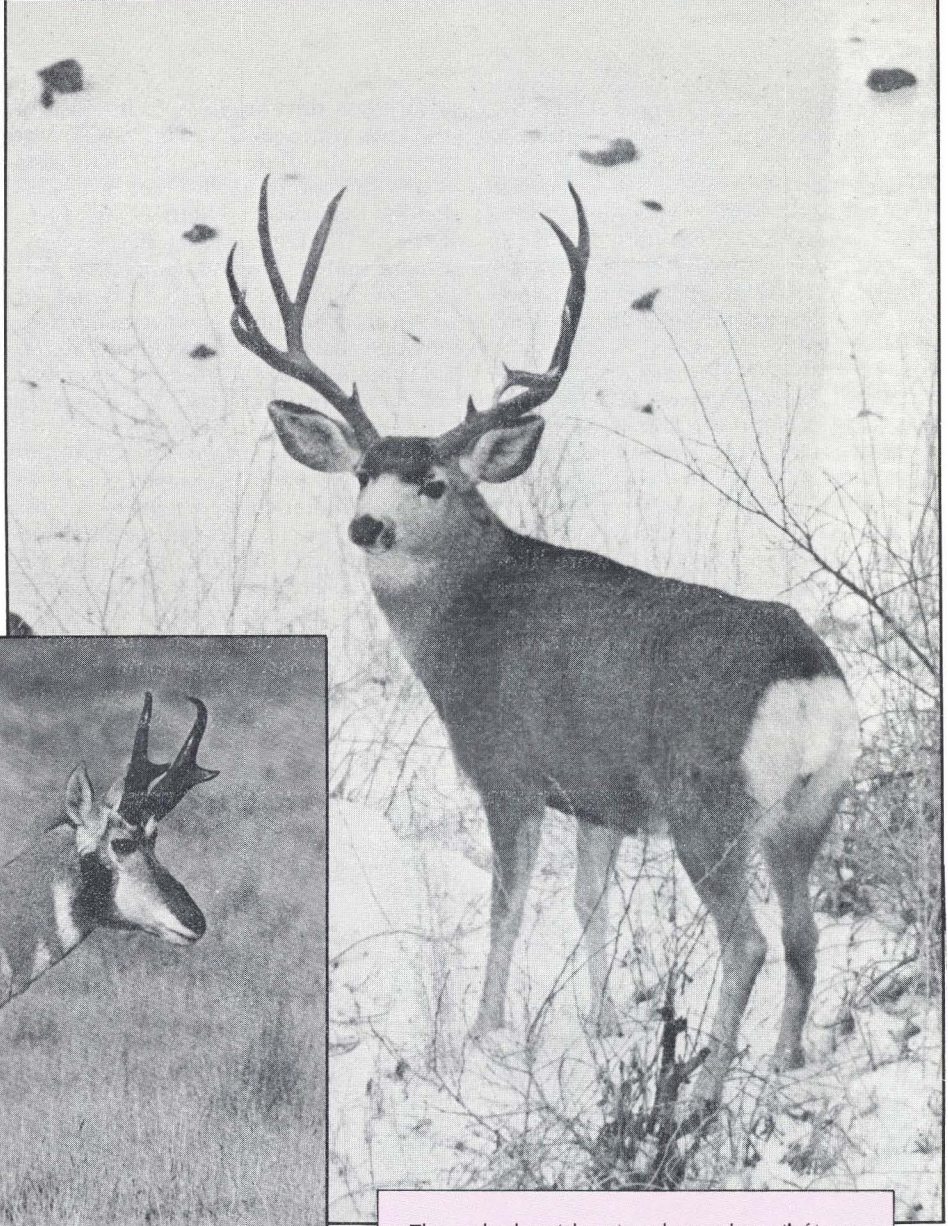
With the perfection of central ignition and the development of smokeless powder late in the 19th century, both rifles and revolvers suddenly became modern. In fact, today’s double-action revolvers and autoloading pistols, as well as our bolt-action and lever-action rifles borrow heavily from the design of weapons developed between 1890 and 1910. In 1911 John Browning’s magnifi-



The autoloader at left is a Grizzly, manufactured by Freedom Arms on the proven M1911 Browning design. It shoots the .45 Winchester Magnum, a much more potent round than the .45 ACP. Above: Another .45, the .454 Casull is a beautifully engineered single-action with enough punch for any big game. Facing page: This Wichita single-shot bolt-action pistol can be had in a number of rifle-like chamberings.

cent .45 pistol was adopted by the U.S. military as the Colt M1911 and saw subsequent use in two world wars, numerous police encounters and countless gangster movies. The Colt and Smith and Wesson revolvers of WW I vintage have been given several facelifts in the last half century but are essentially the same today as they were then. The Mauser bolt-action rifle has been improved upon but not supplanted and is the basis in one form or another for most of the state-of-the-art custom rifles now being built.

Cartridges are often developed before the guns that chamber them and to a large extent determine the use to which a firearm will be put. Until the 1930s all



The mule deer (above) and pronghorn (left) are two open-country animals that should provide plenty of challenge for Kansas handgunners.

pronghorn and mule deer by Gene Brehm

commercial handgun cartridges were short-range affairs, good for defensive use and target shooting, but not in any way comparable to rifle cartridges in the field — especially since the .270 and .30-06 had replaced the .30-30 and its ilk as standard big game rounds. Then in 1935 Smith and Wesson introduced the .357 Magnum, using their heaviest N-frame revolvers to absorb the higher pressures and greater recoil of the cartridge. The .357 is essentially a long .38 Special, and .38 Special ammunition can be fired in .357 Magnum cylinders. Both cartridges have a bullet measuring .3565 inches in diameter.

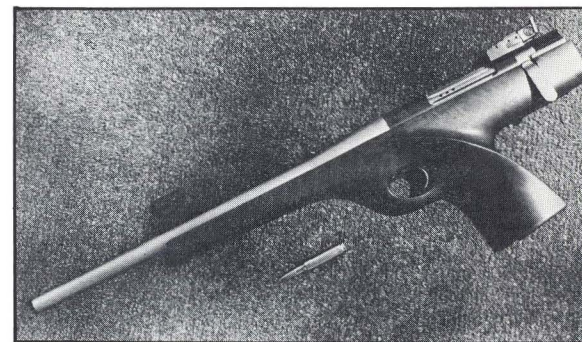
The .357 was the first domestic handgun cartridge that could be considered a game load — though the .45 Long Colt was effective at short distances. Just after the .357 became available, D. B.

Wesson used it on a hunting trip in Wyoming, collecting an antelope with two shots at 125 and 200 yards. He also clobbered an elk with a single shot at 130 steps and a moose with his first round at 100. Famed trick shooter Ed McGivern then turned the gun on paper targets, shooting as far as 600 yards with iron sights!

Though a few dedicated pistoleers tried hunting with the .357, it was still considered a traditional handgun cartridge — that is, primarily a defensive and police cartridge. In 1956 it was upstaged by the .44 Magnum, an enormously powerful round and one that was promptly chambered in the heavy-frame Smith and Wessons that had handled the .357 so well. With its .4295 bullet, the .44 Magnum is to the .44 Special what the .357 is to the .38 Spe-

cial, and .44 Special loads can be used in the Magnum revolvers.

The big .44 soon found favor with hunting guides around the world as a backup gun in heavy cover. More than a few Alaskan brown bears were subse-



quently taken with it, some at uncomfortably close range. While the .44 Magnum performed impressively at the muzzle, however, recoil was severe enough that in 1964 a smaller version, the .41 Magnum, was developed to bridge the gap between the .357 and .44 Magnums. It never attained the popularity of either round but was and is an effective game cartridge.

In the fifties and sixties interest in handgun hunting grew slowly. The Remington XP-100, a nylon-stocked bolt pistol firing the .221 Fireball cartridge, had an anemic, if loyal following. Ruger's Hawkeye single-shot and Blackhawk revolver in .256 Winchester and .30 Carbine respectively were likewise tepidly successful. None were truly big game guns, and though scopes were being developed for use on handguns, they weren't popular. The .44 Magnum was still the most powerful commercial load available.

Handgun development in the last 10 years has proceeded so fast it's hard to keep up with all the new developments — this in contrast to the almost glacial changes that occurred between the birth of the .357 Magnum and the first silhouette match. Several innovative single-shot pistols have been designed for the tin chicken shoots, and so many new cartridges have been pressed and blown and trimmed into existence in basement workshops that there isn't room here to list them all. The most popular are based on existing rifle cases, shortened to make the guns manageable and to increase efficiency. A whole line of silhouette rounds was developed around the military .223 (5.56mm) case, and the IHMSA lineup pioneered by Elgin Gates uses the .308 case. The well-known Herrett cartridges are formed from .30-30 brass, while some ballisticians are working with more exotic rounds like the .220 Russian.

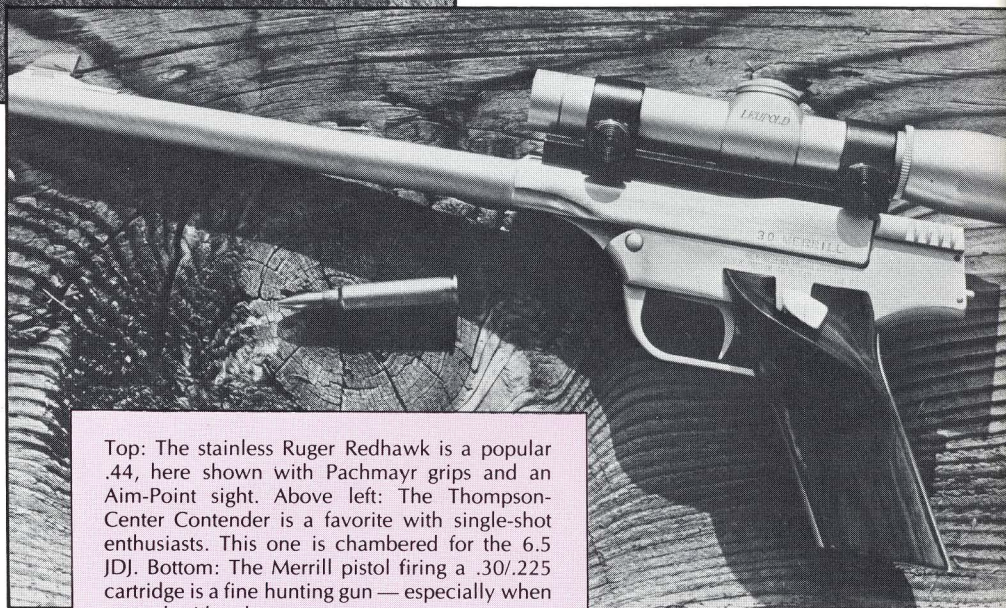
Bolt-action and top-break single-shot pistols will handle much higher pressures than revolvers and autoloading pistols, and silhouette shooters were the first to discover the awesome down-range power of the more potent wildcat loads. Many of these competitors have since become avid proponents of handgun hunting and have attempted it wherever legal. It's probably safe to say



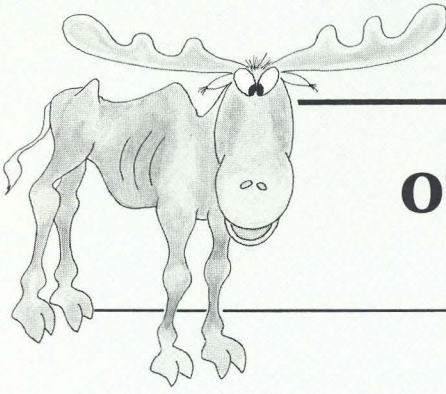
that there isn't a game species on earth that hasn't been hunted with a handgun, and many magnum-size animals — elephant included — have been taken.

Kansas' decision to permit the use of handguns in the pursuit of big game is not the first of its kind, and the trend among other states is toward liberalization of handgun seasons. Such actions should spur interest in these weapons and promote the development of more effective handguns and ammunition. So far, the trail of the one-hand gun from stage depot to deer blind has been an exciting one. As more Kansans discover the fun of hunting with pistols and revolvers, their new role as sporting arms will be strengthened. □

Then in 1975 handgun enthusiast Lee Jurras imported the rifle sport of metallic silhouette shooting from Mexico to Arizona and adapted it to handguns. The monstrous new Auto Mag pistol he was promoting at the time seemed ideally suited to competition of this type, where long-range punch was at a premium. The .44 and .357 Auto Mag cartridges, based on cut-down .308 (7.62mm) cases, were indeed potent, but the expensive, specialized guns did not catch on. Still, the sport of shooting iron targets with pistols *did* catch on. And the traditional function of a handgun as a defensive and short-range weapon was suddenly only one of its roles.



Top: The stainless Ruger Redhawk is a popular .44, here shown with Pachmayr grips and an Aim-Point sight. Above left: The Thompson-Center Contender is a favorite with single-shot enthusiasts. This one is chambered for the 6.5 JDJ. Bottom: The Merrill pistol firing a .30/225 cartridge is a fine hunting gun — especially when topped with a low-power scope.



off trail

... with *Stub Snagbark*®

I hope you like noise better than I do, because we live in a noisy world. It's been a particularly noisy day here, the typewriter and telephone clacking and clanging, papers rattling. Someone down the hall has a cough.

Most folks put up with noise better than I do, so I don't know how many of you out there really like noise and how many just tolerate it. Could we have a show of hands?

Just what I thought. It's a shame we quiet people have such a hard time escaping noise. Even in the wild places noise persists. Oil pumpers and irrigation motors, airplanes, tractors and dirt bikes all make noise away from roads, in places noise didn't used to be. Getting out of earshot of internal combustion engines is hard to do in Kansas.

When I was young, fishing and hunting used to be very pleasant because they replaced noise with music. In the woods or by a stream there was the chirping of birds, the croak of frogs, the swish of wind and water. Leaves fluttered and ticked their way to earth. Deer snorted. Fish splashed. Coyotes yapped. Pheasants cackled. If you listened intently, you could hear an awful lot at once. A woodpecker might hammer while a grouse drummed and a teal whistled. The trees might creak under the press of the wind while overhead a wedge of geese or squadron of sandhill cranes would talk to the clouds.

The difference between music like that and noise is that only the music can be ignored. You can have silence while listening to music, if you wish. You can think, too. You can tune in what you want, absorb the symphony in whole or part, consciously or subconsciously. Noise, on the other hand, is always there

hammering at you, an outside force to contend with.

When I went afield as a lad, I did everything possible to be quiet. I considered myself an intruder in the wild and knew that my hunting and angling success depended on silence. Other youngsters thought me a bit strange.

"C'mon, Arnold," I said to a cohort over the phone one Friday evening. "I got a full bag there the other day, and it should be a hotspot tomorrow, too."

"Do I have to wear sneakers and walk tip-toe?"

"I think its the least you can do."

"How about lunch?"

"You can take what you want as long as it doesn't slosh or rattle or bump around in its container. Of course, you won't want anything that will crunch when you bite it, and we can't have wrappers that crinkle or tear. Cans and bottles naturally, are out. Bananas and avocados are O.K."

Arnold sighed. "I think I'll just stay home and watch cartoons."

"Sissy."

"I am not. I just think it's stupid to be so quiet when you're hunting mushrooms."

Not all my friends were spoil-sports like Arnold. A few appreciated stillness in the woods. I taught most of them what they know about becoming one with nature. Some subsequently put my instruction to good use as Boy Scouts. A few lost interest or couldn't make the grade and became lawyers and doctors.

"It's turkey season tomorrow," I told one of my prize proteges over the phone one night. "See you at Claskey's gate at 3 AM."

Butch didn't reply. He simply hung up. That was a sign he was prepared,

practicing silence up to the last minute.

At 3 AM I was huddled against the fencepost supporting Claskey's gate. The stars were cold crystals in an inky sky. It was very still. Suddenly I heard a snuffle. It was Butch.

We didn't talk at all, even whisper. The turkey roost was only a mile away, and we knew the birds would be listening. In unison we chambered shotshells, muffling the clank of falling bolts with blankets brought for that purpose. I gave Butch my hanky. Then we crawled through the fence.

Walking tip-toe on freshly-plowed ground in sneakers is tiring, but we were both seasoned stalkers and found the dead furrow in no time. By the time a rose blush tinted the sky we were settled by a tree near the roost. We would wait, silently, for the turkeys to come to us.

It was very cold sitting on the wet grass, and it struck me that the blankets we used to muffle the sound of our shotgun actions would serve double duty as ground cloths. Next time out we would try it.

I sucked furiously on a chocolate-filled lollipop, anticipating the moment when the hard root beer outside would be eroded through to the gooey center. I wanted in the worst way to bite that lollipop, but steeled myself against the urge. Sometimes being a woodsman is the supreme test of will.

A turkey gobbled and the sun peeked over the hill and my tongue found the center of my lollipop about the same time. That was all I remembered until my friend tugged on my ear. He looked unhappy. The sun was well into the sky now, and I deemed it safe to speak in a low whisper.

"See anything?"

"Five big toms and enough jakes and hens to supply Butterball the week before Thanksgiving." Butch dabbed his eyes with my hanky.

"Did they come in?"

"Got within 20 yards." Tears were welling now, and it was plain that something had gone terribly wrong. A novice, no matter how promising, will make mistakes.

I put a consoling hand on my friend's shoulder and whispered gently, "Go ahead, tell me about it."

"You snored," Butch said.



cover photo: screech owls by Gene Brehm

*What a joy it is
to feel the soft, springy earth
under my feet once more,
to follow grassy roads that lead to
ferny brooks where I can bathe
my fingers in a cataract of
rippling notes,
or to clamber over a stone wall
into green fields that tumble
and roll and climb in riotous
gladness!*

—Helen Keller

