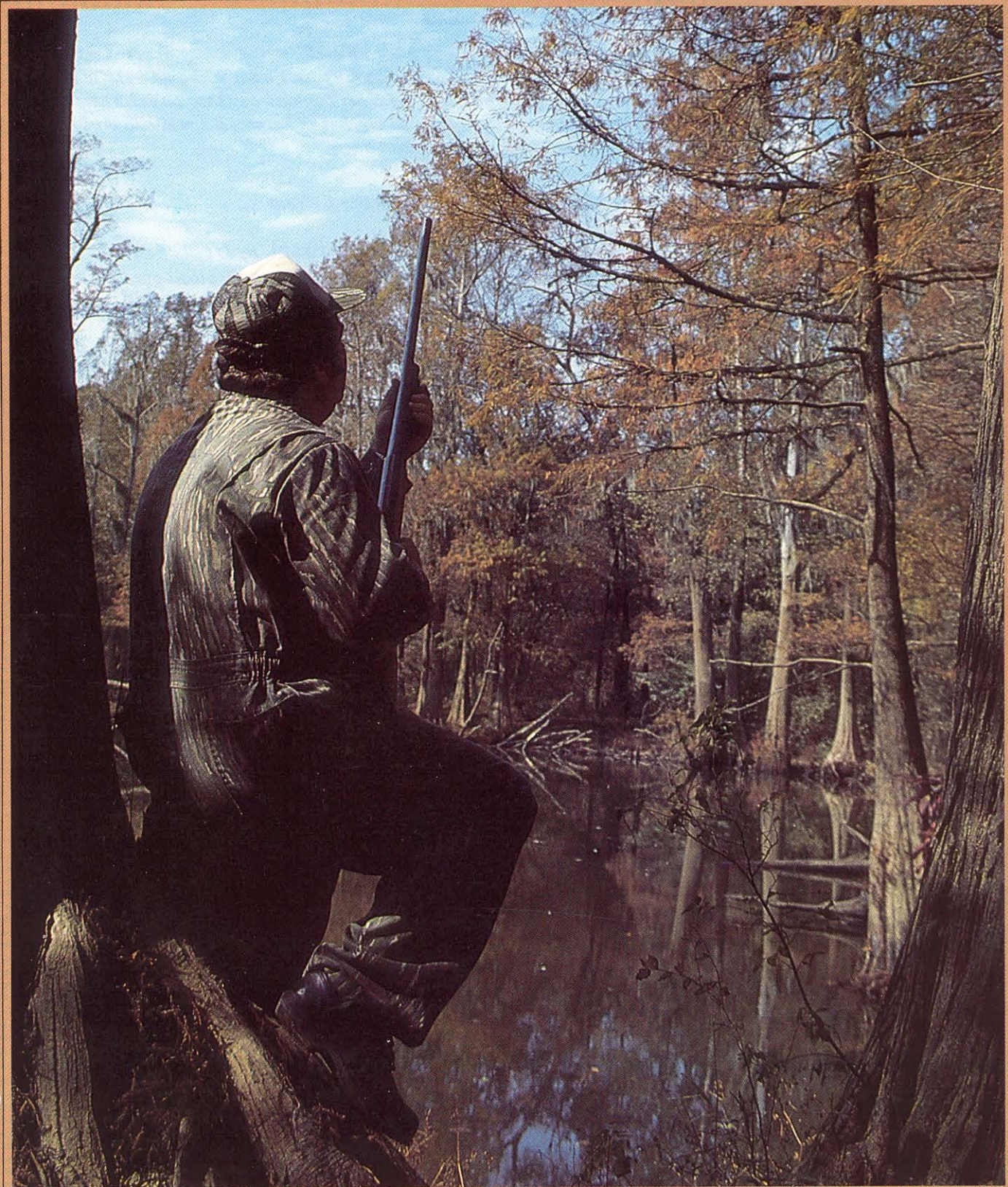


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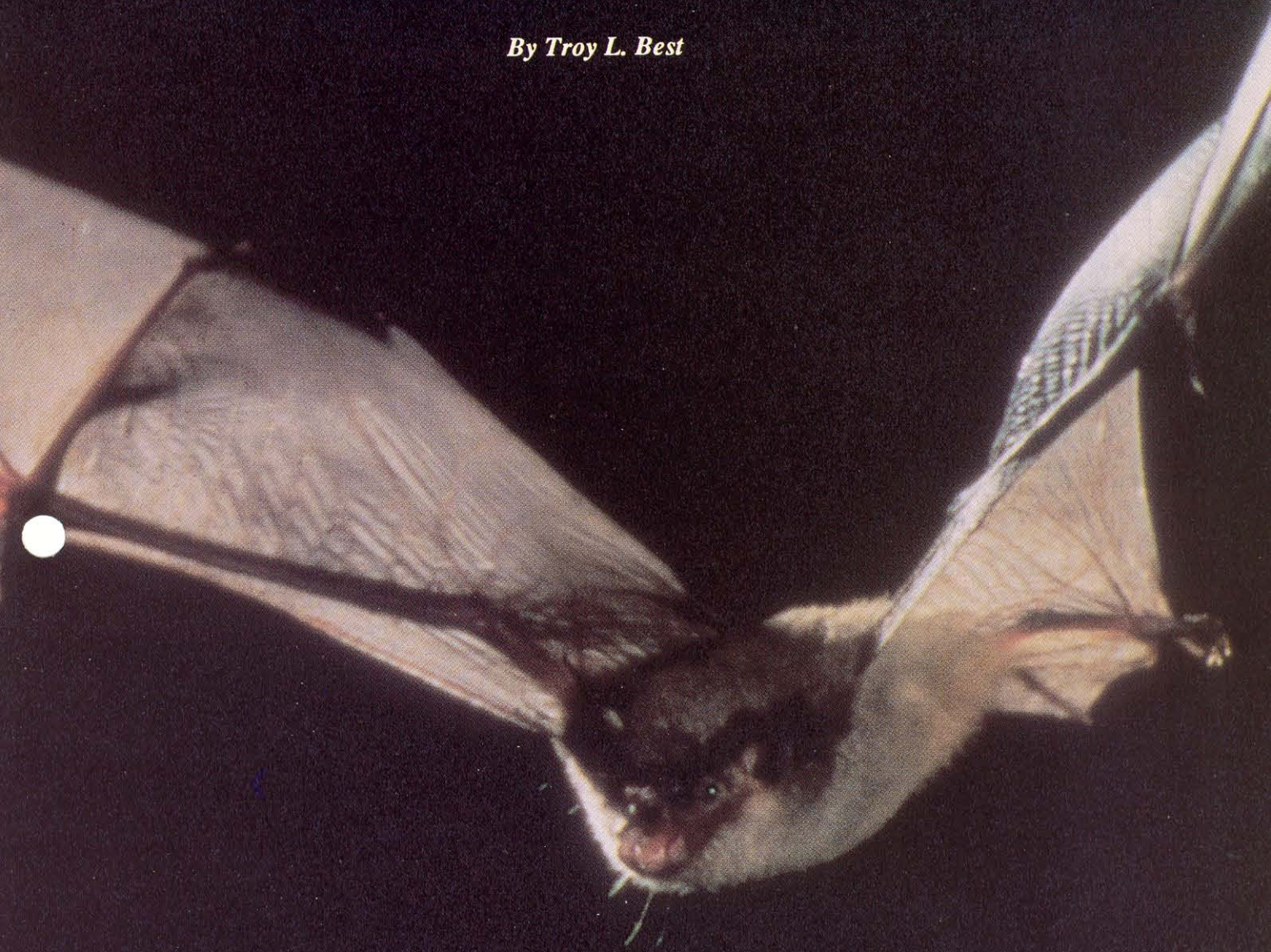
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OUTDOORS



Mississippi's Mystery Mammal

By Troy L. Best



*Bats often have been the subject of massive destruction
by humans because of superstition
and lack of knowledge about their positive
contributions to our world.*

Melvin D. Tuttle, Bat Conservation International



Those stories about bats being blind, that they get tangled in your hair, or have a high incidence of rabies, are just not true. In addition, they are not flying mice, and they do not suck blood from your neck.

Bats are among the most mysterious of Mississippi's mammals. Our natural fear of the unknown, especially of dark places and of the night, probably has led to many superstitions about bats. Often, they are detected only as a small, dark shadow passing overhead, a whisper of a wing beat, or a nearly imperceptible high-pitched squeak as they pass.

Bats have keen eyesight, but most also have a sonar system to help them locate objects in their darkened environment. They use sound waves to keep themselves from running into objects, such as humans and their hair, and to locate food. Their sense of hearing is far more sophisticated than the most complex sonar systems constructed by humans. Bats can detect a tiny insect several feet away, determine its size and direction of movement, and capture it—all in total darkness.

Their ability to turn in flight is astonishing. At 40 mph a bat can

turn at a right angle in a distance less than its body length.

The incidence of rabies in bats is far less than that in domestic dogs and cats. Less than one-half of 1 percent of bats carry the rabies virus. Those that develop symptoms of rabies rarely become aggressive.

Fewer than a dozen persons have been infected with rabies by bats in the United States and Canada within the past 30 years. More people are killed each year by dog attacks, bee stings, power mowers, or lightning. However, sick or dead wildlife, whether it is a bat, squirrel, raccoon, or whatever, should not be touched or handled.

Three species of bats in the world are vampires and utilize blood as a source of food. None of these occur even close to Mississippi. These bats live in Central and South America, but they do not suck blood.

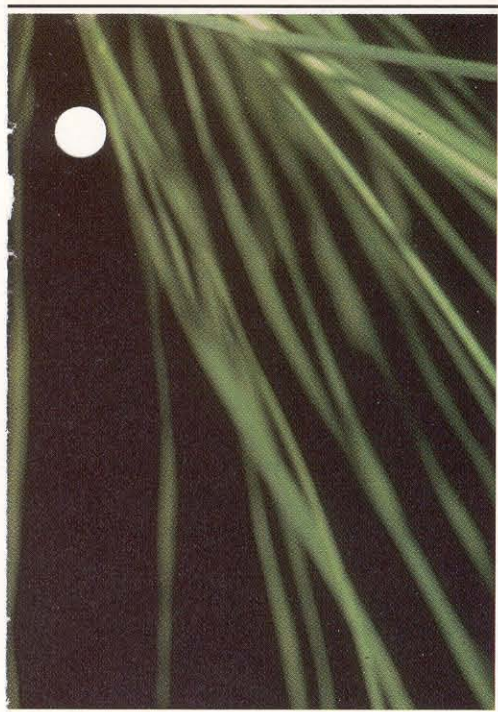
Instead, they puncture the skin of an animal with their razor-sharp teeth and lap the blood as it seeps from the wound. The victim usually does not know that the bat is there because a mild anesthetic is injected into the area of the wound with saliva from the bat.

These bats are small in size (body is about two and one-half inches in length and the wingspan is about 18 inches), and they rarely attack humans.

Bats, which are not closely related to rodents, make up a diverse group of mammals called "Chiroptera." The term means "hand wing." Bats have hair and mammary glands like mammals and humans, but differ from other mammals in their ability to fly. Some mammals, such as flying squirrels, even glide. Usually one young is born in May or June each year, and their life span may exceed 25 years.

The smallest bat occurs in Asia and weighs about as much as a penny. The largest occurs in the same area of the world, weighing about two pounds, with a wingspread of about six feet. Other than rodents, bats are the most diverse kind of mammals. Worldwide there are nearly 1,000 species, about 25 percent of all mammals.

In Mississippi, bats make up about 25 percent of all mammal species. The 14 species that have been reported here range in size from about 8 inches from wingtip to wingtip up to about 18 inches,



Melvin D. Tuttle, Bat Conservation International

The hoary bat, above, is the largest bat species in Mississippi. Its wingspan is about 18 inches, and it roosts in trees. Though uncommon in the Magnolia State, the hoary bat has the widest range of any bat species. The Northern bat, right, has long ears and may inhabit dense stands of timber, though almost nothing is known about its habitat requirements. This small bat is known to occur in Tishomingo County, but is rare in Mississippi.

far smaller than most people realize.

All Mississippi bats are insect feeders and help rid the night sky of mosquitoes, moths, and other pests. In fact, individuals of the endangered gray bat (*Myotis grisescens*), which occur here in Mississippi, may eat up to 3,000 mosquitoes each night. No other mammals are specialized to consume night-flying insects.

Most people are surprised to learn that bats are almost totally beneficial animals. About the only time they become a nuisance is when they take up residence in an attic or other structure. Here their guano (bat droppings) may accumulate and become odorous. However, bat guano is an excellent fertilizer and has been extensively mined throughout the

world for application to agricultural lands. In many large caves around the world, thousands of tons of guano have been removed for sale as fertilizer.

Because we need to protect agricultural crops, we have applied insecticides to rid our crops of insect pests. Unfortunately, bats, one of nature's pesticides, consume insects that come into contact with the poisons we apply. And the bats die. The magnitude of the relationship between bats, insects, and pesticides is being documented by biologists worldwide.

One of the problems associated with our application of pesticides is that some insects are able to survive because of their ability to resist the affect of poisons. These insects may reproduce populations of pesticide-resistant individuals that continue to damage

crops or transmit diseases to humans.

Because pesticides have killed large numbers of bats, the animals no longer are available to control populations of the pesticide-resistant insects. As we learn more about bats, insects, and pesticides non-toxic to bats, we will be able to better use insect-specific pesticides, and allow bats to once again control insect populations.

Two internationally listed endangered species of bats occur in northeastern Mississippi: The gray bat and the Indiana myotis (*Myotis sodalis*). Neither species has been seen in the state since the mid-1960s. However, it is likely that they occasionally enter the state from Tennessee and Alabama where populations exist.

Another rare bat occurring in northeastern Mississippi is the Northern myotis (*Myotis sep-*



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tentrionalis). Like the gray bat and the Indiana myotis, the Northern myotis is a cave-dweller. Because of widespread pesticide use and few caves in Mississippi, these species are very rare.

During a 12-month survey of

and dark and around street lights throughout the night. Like the endangered species, these consume night-flying insects, mostly moths.

It is true that a few species of bats in Mississippi, given the oppor-

do this when there are no babies present in the roost, usually in August and September. Once all bats are gone, simply plug the opening. It is important not to trap bats inside the building, not only to prevent killing bats for purely humane reasons, but to prevent having their decomposing bodies in the house.

Poisons should not be used to solve bat problems in buildings. This may create far worse problems. Poisoned bats may fall to the ground where they die slowly and are more likely to come into contact with children and pets.

As more people discover the advantages that bats provide in controlling insects, considerable interest has developed in attracting bats. Perhaps the best method for increasing bats in your neighborhood is to provide shelter for them in the form of a bat house. These structures, which can be similar in size to a birdhouse, can be built and placed in suitable areas for bats. Information on constructing bat houses may be obtained from Bat Conservation International, P.O. Box 162603, Austin, Texas 78716-2603.

You can help conserve Mississippi's bats by avoiding maternity colonies and hibernating bats. Even slight disturbances can be harmful to the animals. If you must enter caves, do so only as an observer. Leave everything as you find it, and remember that disturbing or harming endangered bats is a federal offense with serious penalties.

Never shoot, poison, or otherwise harm bats. They are extremely beneficial insect eaters, and nuisance bats can be encouraged to move elsewhere without killing them. Bats are among the most beneficial and interesting species of wildlife in Mississippi. ♣

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Roger W. Barbour

The big brown bat is one of the most common bats in Mississippi. Often it is seen between sundown and dark as it forages near trees and street lights.

caves, buildings, and other potential roosting sites in northeastern Mississippi, no endangered bats were observed. However, red bats (*Lasiurus borealis*), Eastern pipistrelle bats (*Pipistrellus subflavus*), and big brown bats (*Eptesicus fuscus*) were found in many locations. These are the most common bat species in the state and frequently are seen foraging around trees between sundown

and dusk, and around street lights throughout the night. Like the endangered species, these consume night-flying insects, mostly moths.

Usually, the best method to prevent bats from roosting in buildings is simply to close the openings where they enter. If bats already are using the structure as a roost, place a piece of cloth over the opening on the outside of the building. Attach the cloth to the building only on the upper side of the opening. This allows bats to leave, but not return.

However, it is very important to