



Arachnophilia*

(*love of spiders)

by Joan M. McKee

In the glow of the full moon, the victim sees four pairs of eyes creeping closer. The victim struggles to get away, but its legs are held tight in a sticky goo. Then it's too late. The eight-eyed creature grabs the victim in its fang-tipped jaws and slowly injects a toxic fluid. Suddenly, the victim can't move. Then slowly its insides are dissolved by the creature's digestive juices. Using a small tube-like mouth and strong abdominal (stomach) muscles, the creature sucks out the life of the victim until all that is left is a shriveled shell. Satisfied, the creature goes back into hiding to await the next insect to land in its web.

No, this is not the opening scene of the latest science-fiction thriller. This is what happens everyday in your house, backyard and fields and woods around your house and town. These creatures, commonly called spiders, may not be an ideal dinner guest, but they are working hard to keep the insect population in check.

Spiders have been around for more than 400 million years, and scientists have estimated that 11,000 spiders can live on a single acre of woodland and more than 2.5 million can live in an acre of grassland. But before you make a hasty retreat into your house, spiders lurk there, too. Indoors, many Missouri spiders like humid, dark

places where people rarely go. Since many spiders try to avoid people, they often hide in undisturbed places like under beds and in the back of closets. So next time your parents tell you to clean your room, tell them you are doing spider research and can't disturb your science project.

Even though we are surrounded by spiders, we know little about them, says Dr. James Carrel, associate professor of biological sciences at MU and one of the few people who studies spiders. "So little is known about spiders compared to insects, crawfish and common animals that almost anything will be new information," he says. Since we have little knowledge about what they eat, how they interact and reproduce, serious junior-high students can become spider researchers. One way to do this is to catch them for observation.

The best time to collect outdoor spiders, like wolf spiders, is at night when they are the most active. Carrel does most of his research on wolf spiders in Florida because he can collect them year 'round. Missouri's wolf spiders hibernate during the colder months. Carrel uses a miner's light attached to a hat to collect specimens on the ground in Florida. "Their eyes sparkle like little diamonds on the sand," he says. It's

harder to see spiders in Missouri because the dew on the grass also reflects light, just like the spider's eyes. That's why the best time to collect wolf spiders is between 9 p.m. and midnight before the dew blankets the ground, Carrel says. When collecting spiders, be sure to take along plenty of containers. "Just spoon them up, one per cup," he recommends. Since spiders will often eat each other, if you put more than one in a container, you will only have one when you get home.

After you collect your spiders, you will want to observe them and take careful note of their behavior. What type of web do they spin? What type of food do they prefer? How do they eat their food? You should also observe them in their natural habitat.

The reason spiders aren't studied is because they really are easy to live with. "On the whole, spiders don't bite us, they don't attack us, they don't eat our crops, they don't spread disease, so it's easy to ignore them," Carrel says. But spiders are important. Spiders and the other arachnids (a-RACK-nids) are second only to insects in the number of species. There are many more arachnids than all the vertebrates put together. "Spiders are predators. They eat a lot of insects because they are so numerous, and such good predators are important in the food chain," Carrel says.

Many spiders may become extinct because people don't know much about them and destroy their environment. Because of this Carrel is studying rare wolf spiders that live on ancient beaches in central Florida that were formed when the polar icecaps melted between the ice ages. He is looking at the ecology of the area where they live. He is studying how they burrow in the soil, how they space themselves, and what they need to survive.

"My hypothesis is that one very rare species is probably adapted to living only in scrubby vegetation that is opened up when an area is occasionally burned off," he says. Carrel hopes to discover if keeping fire from these areas is harmful to this rare species.

Research on where spiders live helped Missourians with a fairly embarrassing problem in the 1950s. Dr. Curtis Wingo, a former professor of entomology at MU, was researching the cause of strange bites on people's fannies when they used outhouses in southern Missouri. The bites caused the skin to form a deep wound, and produced chills, nausea or fever. Wingo discovered that the brown recluse, a shy



The large size of the tarantula found in Missouri might strike fear in the heart of Little Miss Muffet, but no need for you to back away. Approximately 50 mm (2 inches) in length, they are usually mild mannered. But even if provoked, their bite is reported to be about as painful as a bee sting.

Tom R. Johnson photo

little gray spider, was the cause. Although the bite can cause pain, death from a brown recluse is unlikely. To avoid them is easy. Since they are shy, retiring types, they like to hide under rocks outside and in little-used drawers and boxes inside the house. Be careful before reaching into these places.

The female black widow is another poisonous spider. Although its bite seldom causes death, it can cause severe stomach cramps, sore muscles, headache, nausea and sweating. This black spider often has an hour-glass shaped red spot on its abdomen. It also likes to avoid people, but will bite if it feels threatened. The black widow likes to make its irregularly shaped web in storage buildings, old tree trunks and in log piles.

While these two spiders can cause trouble to humans, most of Missouri's 300 known species of spiders are harmless and fairly easy to live with if you don't mind running into an occasional web. Their eight legs, claws and eyes, two-piece body and spinnerets to spin the webs may not make them the cutest creatures on earth. But they are worth studying, for without them, insects might take over the world. But then that's a science-fiction story. We hope. ☐



As its name implies, the brown recluse spider doesn't like to be around people. This poisonous six-eyed spider can cause a painful bite, so be careful when you reach into a box or a drawer that hasn't been opened for a while.

Richard C. Walters photo



Wolf spiders, one of the most common spiders in Missouri and the world, live in burrows in the ground or in holes under flat rocks or logs. Doting mothers, the female wolf spiders carry their egg sacks with them. After the spiderlings are born, they travel on their mother's abdomen for up to two weeks.

Tom R. Johnson photo