Bug-Wise

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Periodical Cicadas: An emergence of periodical cicadas is something that only happens every thirteen years, but for much of Northeast Mississippi this is the year. Periodical cicadas look and behave much differently than the large green annual cicadas we see every year from mid-summer through fall. First there's their color, black and orange with red eyes. Then there's their numbers, thousands and thousands. Finally, there's the singing of the males, loud and long.

For the past 13 years nymphs of periodical cicada Brood XIX have been quietly developing below ground, living and growing by sucking the sap from the roots of hardwood trees. This spring they will emerge as adults to enjoy a few brief weeks in the sunshine. The males will sing to attract a female, the females will deposit their eggs, and the adults will then die, leaving the eggs of the next generation to carry on the cycle. The eggs will hatch in about six weeks, and the tiny nymphs will fall to the ground, dig in, and search for a tree root to feed on. They won't see daylight again until 2024.

Exactly when and where in the state will periodical cicadas occur? Emergence will likely begin in late April and the woods will be thrumming with cicadas through much of May, with numbers declining toward the end of the month. By mid-June the songs of periodical cicadas will be replaced by those of annual cicadas.

The question of exactly where periodical cicadas will occur is a bit more difficult to answer because we just don't have complete distribution records. Practically all of this emergence will occur in the northeastern portion of the state, roughly bounded by Interstate Highways 20 and 55. Records from 1920, which was only seven generations ago, indicate that Brood XIX cicadas emerged in the following counties: Attala, Chickasaw, Choctaw, Clarke, Clay, Itawamba, Jasper, Kemper, Lauderdale, Lee Leflore, Monroe, Noxubee, Oktibbeha, Prentiss, Rankin, Scott, Union, Webster, Winston, and Yazoo. Note that the absence of a county from this list does not necessarily mean cicadas will not occur there; it only means the county was not listed in the 1920 records. One of the best ways to verify whether or not periodical cicadas are likely to emerge in your area this year is to check with your local paper(s). If the paper ran articles about cicadas in May or June of 1998, then they will probably be back this year.

Of course the occurrence and distribution of hardwood trees also affects where periodical cicadas will occur. You won't find cicadas emerging from tilled fields or pasture, pine plantations, or hardwood swamps that experience prolonged flooding, but well-drained hardwood forests can support amazingly high populations, exceeding a million insects per acre in some cases.

Broods and Species of Periodical Cicadas: There are only three broods of 13-year cicadas in the world, and all three occur in Mississippi. Brood XIX, is the largest, covering portions of 15 different states. Brood XXII is the smallest, occurring in only a few Louisiana parishes and a few counties in southwestern Mississippi. This brood will emerge in 2014. Brood XXIII, which will emerge in 2015, occurs in parts of eight different states, ranging from Mississippi into southern Illinois. Even though it occurs in fewer states, Brood XXIII will occur in more Mississippi counties than Brood XIX. Despite having all three broods of thirteen-year cicadas in the state, there are some areas, such as extreme southeastern Mississippi and other scattered areas in the state, that do not have these insects. There are 12 broods of 17-year cicadas, but these occur in more northern areas of the country and are not seen in Mississippi.

Periodical cicadas belong to the genus *Magicicada*. Brood XIX actually consists of four different species, which emerge together in order to overwhelm predators with their combined numbers. These species differ subtly in size, coloration, and morphology, but the mating songs of the males sound distinctly different, especially to female cicadas.

Are periodical cicadas dangerous? Although their black and orange color certainly suggests they might be dangerous, cicadas are neither venomous nor poisonous. In fact, they are eagerly eaten by many birds, reptiles, and mammals, and even a few people. The warning colors are all bluff; periodical cicadas defend themselves from predators by overwhelming them with numbers, a defense strategy ecologists call "predator satiation." There are just so many cicadas the predators can't eat them all.

The ovipositor of the female may look like a stinger, but it is are better at penetrating tree bark than human skin. I have never known anyone who had their skin pierced by a cicada ovipositor. People do sometimes report experiencing a sharp pin-prick from the mouthparts of cicadas, but this is rare and only occurs when handling the insects.

Will these cicadas damage plants? Yes they will, but in a rather unusual way. Female cicadas use their strong, knife-like ovipositors to insert their eggs into the pencil-sized twigs of hardwood trees. These egg-laying slits sometimes cause the twigs to break, usually about six to twelve inches from the end. This results in a hanging brown "flagged twig." By late May hardwood trees in areas where cicadas occurred will be brown with flagged twigs.

Although this ragged tip pruning does not cause serious long-term damage to mature hardwoods, it can be detrimental to young shade trees and fruit and nut trees growing in home lawns and commercial landscapes, orchards, and nurseries. Gardeners may want to take steps to protect young trees that are especially valued or vulnerable. For example, if your back yard is bordered by an oak-hickory forest and you have some young hardwood or fruit trees that are just getting established, you may want to protect these trees.

The only effective way to protect such trees is to cover them with some type of netting that has a small enough mesh to exclude cicadas (Some bird netting is small enough; some is not.). Obviously this requires preventive planning and a good bit of work, which is why such protective measures are usually limited to small, high value trees. With the possible exception of commercial orchards and nurseries, spraying with insecticides is not a practical or effective way to protect trees from cicada injury.

For more information about the upcoming emergence of periodical cicada Brood XIX, see the April issue of Mississippi Gardener Magazine.

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