

Return of the Magic Cicadas

An invasion by billions of winged insects that make a racket so loud it can be painful to the human ear might seem like a plague right out of the Bible. Yet periodical cicadas are actually benign bugs that are both fascinating and tasty...both to wildlife and to humans with daring appetites.

DIRK J. STEVENSON

The odd brown grubs called nymphs awakened with rising spring temperatures, and like mercury in a thermometer, they headed skyward as the soil warmed. Tunnels through Mother Earth—beneath elms and oaks, hickories and locust trees—had been their homes for the last 13 years, but in parts of Georgia this spring, nymphs of the periodical cicada dug up toward the light and emerged en masse—by the billions.

In damp soils, these nymphs cap their exit tunnels with chimneys like those atop crayfish burrows. After exiting the

ground, the nymphs climb telephone poles, tree trunks, walls, fence posts, and just about anything else close, where they molt one last time. Shells of their cast exoskeletons, strewn about on the ground and clinging to trees, mark their exodus from the dark world below to the bright world above. An invasion of the little red-eyed insect “monsters” has begun!

The hallmark of periodical cicadas (often erroneously referred to as locusts, which are actually grasshoppers) are 13- or 17-year life cycles that culminate in a synchronous emergence of the adults in astonishing numbers. Periodical cicadas are native to most of the United States east of the Mississippi River. The wonderful species of periodical cicada that graced the hardwood forests and suburban lawns of Georgia this past spring is a 13-year variety, *Magicicada tredecim*. Of the three broods of 13-year cicadas native to the eastern U.S., the brood that emerged this past spring, known as Brood XIX, “The Great Southern Brood,” is by far the largest.

Like other species of periodical cicadas, *Magicicada tredecim* is one handsome and distinctive little bug...if you're a lover of bugs, which anyone with a healthy dose of curiosity ought

The newly emerged adult periodical cicada sheds its exoskeleton on a tree, telephone pole, or anything else handy.



DIRK STEVENSON #1 JOHN JENSEN #2 AND #3

to be. Possessing a stout, inch-long green-black body, the belly of which appears to have been dipped in caramel, transparent wings tinted with orange, and demoniacal red eyes, well, I think even the crustiest of entomologists would admit that they look dang cool.

Periodical cicadas differ from the more familiar “dog-day” or annual cicadas in several ways. Annual cicadas emerge later in the year (usually in July and August), in far fewer numbers, and are considerably larger at about two inches in length.

Female periodical cicadas, plumper and a bit larger than the males, come equipped with an impressive saw-like ovipositor that they use to cut slits into twigs and small branches during egg-laying. Six to ten weeks later, the eggs hatch and the new nymphs drop to the ground, where they burrow into the soil and locate rootlets for feeding. Thus begins the next generation—and another 13- or 17-year period of development.

Only males of the species produce the cicadas’ distinctive sound, and the circadian rhythms of cicadas are such that they sing only during the day (this goes for all North American species). The nighttime insect chorus heard in the woods behind your home comes courtesy of katydids and crickets.

The sound made by the male periodical cicada is a rhythmic shrill produced by two drum-like membranes on each side of its abdomen. Male periodical cicadas aggregate in enormous numbers when singing, and the resulting choruses are

preternaturally loud—to the point of being mind-splittingly surreal. The din produced by these large choruses has been described as similar to “the industrial whirl that UFOs and flying saucers made in the old science-fiction movies” and has also been likened to “herds of lawnmowers chugging along, occasionally sputtering.”

Regardless, the sound is apt to leave a distinct impression, for a large outbreak of periodical cicadas can produce sound measured at about 90 decibels. By comparison, a New York City subway registers at 95 decibels. In fact, the cicadas are loud enough that prolonged exposure can be quite unpleasant or even painful to the human ear.

A time-tested-and-true aphorism among ecologists: “There is no such thing as a free lunch.” Generally, this is the case, but newly emerged periodical cicadas are not only soft, but also defenseless. And periodical cicadas, incapable of biting, stinging, or doing anything else unpleasant, are among the slowest and most feeble-flying insects. Lacking noxious or toxic secretions, they taste just fine to a variety of predators including birds, snakes, raccoons and fish.

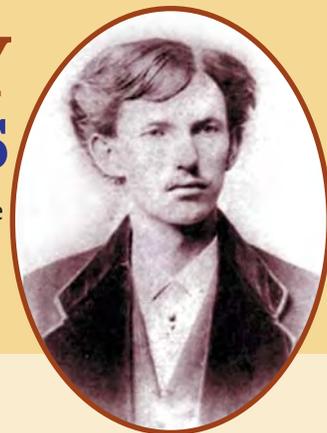
Terry Johnson, former Director of the Georgia Department of Natural Resources Nongame Wildlife Program, recently described these protein-packed little six-leggers as “hamburgers falling from the sky.” He was referring to their status as a menu item for wildlife, but cicadas are in fact

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After nearly 13 years underground feeding on rootlets, the cicada larva emerged from the earth—leaving behind telltale holes—seeking a highpoint on which to shed its exoskeleton.



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edible by humans. For more information, check out the “Cicada-Licious” brochure prepared by “cicadamaniacs” at the University of Maryland: <http://www.newsdesk.umd.edu/pdf/cicada%20recipes.PDF>. The menu includes Shanghai cicada, stir-fry cicada, cicada dumplings, and El Chirper Tacos. For desert, you can nibble Emergence Cookies or Chocolate Chip Trillers!

In late April of this year, I visited Bullard Creek WMA in Jeff Davis County to look for water snakes and turtles. Hiking among giant swamp chestnut oaks near the Altamaha River, I was soon overcome by cicada noise, an incessant “wall of sound” that throbbed from the shadowy forest. And then I began to notice the predators. Two gorgeous swallow-tailed kites, and also a Mississippi kite, gracefully flew just overhead for close to 20 minutes, repeatedly plucking periodical cicadas from the air and from branches.

Both kite species have special talent for locating swarms of insect prey, and are especially fond of cicada outbreaks—uncontested banquets they simply cannot pass up!

Copperheads, which are normally terrestrial snakes, ascend shrubs with abandon to get to these “cicada snacks.” Basically, all and sundry insect-eating fish and wildlife species from raccoons to spotted salamanders, digging the concept of easy and free meals, pluck these defenseless “fruits” from the tree, sky or ground. Still, the mass emergence of periodical cicadas has real benefit for the species, as they emerge in such phenomenal



numbers that predators are overwhelmed (burp!) and simply unable to eat them all. The fairly short-lived adults are only with us five to six weeks before expiring and moving on to cicada heaven.

Dr. Nancy Hinkle, an entomologist with the University of Georgia, is actively tracking this year’s distribution of the Great Southern Brood in Georgia, and is interested in any locality reports of periodical cicadas that the readership of *Georgia Backroads* may be able to provide. You can email reports to her at insects@uga.edu.

She recently told me, “In 1959, the last time a census of *Magicicada tredecim* in Georgia was undertaken, periodical cicadas were only documented in 14 counties; so far this year (2011), cicadas have been reported from 73 counties, a five-fold increase.”

This may indicate an expansion of the species’ range, but most likely this is due to better reporting. Results of this year’s survey indicates that periodical cicadas appeared throughout much of the northern half of the state excepting parts of northeast Georgia, with especially large populations near Augusta, Macon, West Point Lake, Rome, and Lake Sinclair. Interestingly, cicadas seemed to be absent from much of south Georgia, and are known to extend into the Coastal Plain only via the vast corridor of hardwood forest fringing the Altamaha River.

Thanks for the wonderful natural history experience, *Magicicada tredecim*. We’ll look forward to seeing you again in 2024! 🐛

Dirk Stevenson, herpetologist with The Orianne Society, lives in Hinesville.