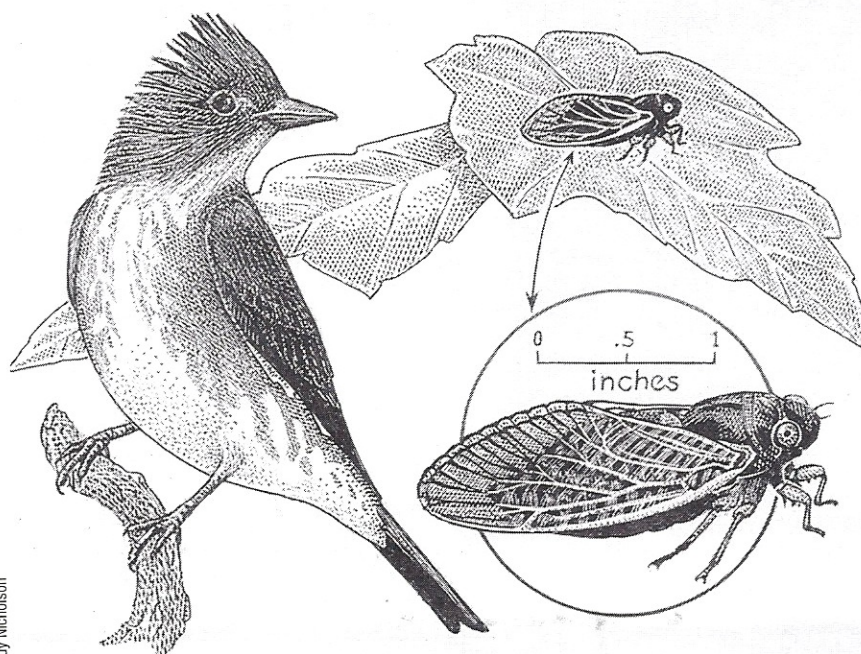




Local Nature

by Eric Dinerstein

Nature's Opportunists



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Olive-sided Flycatcher (left) and Cicada (right)

Cabin John residents who have wandered outdoors during the past month—to walk the dog, mow the lawn, or stroll the towpath—may have made a spooky and certainly startling discovery: a large, locust-like insect buzzing on the ground. My curious naturalist companions, my dogs, encountered a live one on Tomlinson Road last week, and they received a shock when they attempted to paw at it. This science fiction-like periodical cicada with bright red eyes emitted a piercing shriek that made the dogs step backwards, just as it often does people unfamiliar with these harmless insects.

Periodical cicadas are emerging this spring in great numbers across Maryland and much of the eastern United States. These creatures are one of three species of the aptly named genus *Magicaladada*, that emerge every 17 years on a timeline dictated by wizards as much as by natural selection. Some call these creatures locusts, perhaps because it seems a biblical plague has descended when the males gather in a singing chorus to attract females and use

their amazing tympanum organs to produce a deafening sound.

Sticklers for precision will note that the creature singing is not a true locust, which is actually a kind of grasshopper, but a relative of the leafhopper family. Other naturalists might note that this brood is four years too early—the next big emergence of flying, shrieking 17-year cicadas is not scheduled to occur until 2021. However, nature rarely goes according to plan; embedded within the genetically hard-wired 17-year cicadas are sub-populations that appear and try to mate on the 13th year of the cycle. These early arrivals are the creatures we are seeing now perched on the mailboxes, in the street, and on the bark of trees.

Why do cicadas exhibit this pattern of laying low underground as nymphs for more than a decade and then pop up out of their subterranean refuges to fill the air with their piercing calls? And why every 17 years, or this offshoot group in the 13th year of the cycle? Seeking the answer to this question has consumed biologists for two centuries. The answer seems to be that by emerging in odd, prime-numbered years it is impossible for their major predators to time their own breeding cycles to take advantage of the bumper crop of cicadas about. The trade-off of spending so much of the life cycle sucking on tree roots as nymphs allows them to enjoy a partial escape from predators and a better chance to emerge, mate, and pass on their genes to future generations before some bird, mammal, insect or fungus attacks or makes a meal of them. The periodical cicadas then appear in such massive regiments that, as in a World War I infantry battle, they overwhelm the predators in their midst: some cicadas thus make it through and survive to breed. That 17-year cicadas still emerge in staggering numbers suggests that the strategy works.

The gauntlet of cicada predators is staggering in its own right. There is a wasp called the cicada killer that specializes in adults. Their paralyzing sting allows the robust wasp to carry off its prey, deposit it in a burrow, and allow its egg, planted behind the second pair of legs, to hatch and dine on the living, but still paralyzed, adult cicada. Other predators show more mercy: they gobble the cicadas in a flash. Among mammals, squirrels eat cicadas if they can spot them camouflaged on tree bark and skunks and other small mammals dig up the nymphs from the soil. For turtles in the canal, fallen cicadas must come as a descending feast catered by the overhanging trees, while to some dogs and cats, rather than fearsome, the noisy creatures are seen as a tasty natural treat.

Birds, too, are avid cicada-eaters. English Sparrows and European Starlings, although not native to the U.S. where 17-year cicadas are resident in eastern forests, have no trouble recognizing them as nutritious packets to be devoured. Wild turkeys and many of our native songbirds, such as grackles, love them too, even if for some of the smaller songbirds, they are difficult to swallow. This consumption by above-ground living vertebrates of what came from below ground is what scientists now view as an important ecosystem function: a massive nutrient transfer from the plant world to the animal kingdom.

Opportunistic feeding behavior is a hallmark of animal ecology from the most common species to the rarest of birds. This spring in Monticello Park, near South Arlington, VA, a veritable birding hotspot, those of us who are devotees of this site were treated to a rare occurrence: an olive-sided flycatcher was spotted sitting for the first time in a decade on the branch of a tall dead tree in the middle of the park. I have seen this bird on its breeding grounds in the boreal forests of Canada, in the California redwoods, and in Western Mountains, but never in our locale. There it was, a female in all its glory, the rare sighting of the year, doing what every other bird that could was doing—cramming a writhing insect down its throat, making a meal of a 13-year cicada. *Carpe cicadum.* —