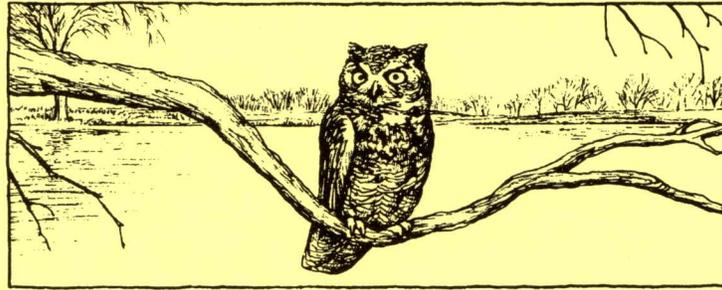


# STILLMAN NEWSLETTER



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## THE SUMMER OF CICADAS

-- Mark Spreyer

By the time you read this, the periodical cicadas will probably have emerged. I am not, however, going to wait another seventeen years to write about them.

I imagine that many of you have read more than one account of this insect's basic life history. So, let me see if I can find something a bit different about cicadas to share with you.

Ever since the Pilgrims misidentified them, many have confused cicadas with locusts. Locusts are a variety of short-horned grasshopper that come equipped with large back legs for jumping. Among many differences, cicadas are not leapers and do not have over-sized rear legs.

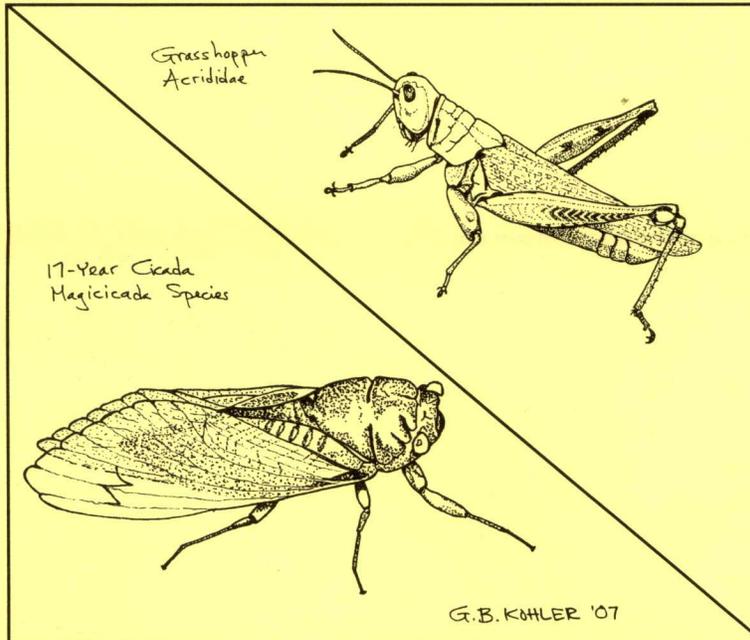
A modern musical icon, Bob Dylan, is one of those to have made this entomological error. His song "Day of the Locusts" (©1970 Big Sky Music) was inspired, in a troubling way, by cicadas.

*Took hold of my sweetheart and away we did drive,  
Straight for the hills, the black hills of Dakota,  
Sure was glad to get out of there alive.  
And the locusts sang, well, it give me a chill.*

### Hey Mr. Tambourine Bug

To further the confusion, both cicadas and locusts make sounds in the summer but they play different percussive instruments. The grasshopper rubs a scraper on its wings

against a series of projections on those large hind legs. It reminds me of that ribbed wooden block I used to rub with a stick in elementary school. In the locust's case, the result is a pitchless mechanical sound.



Before we explain the cicada's instrument, a brief review of anatomy is needed. Insects have three body parts: head, thorax, and abdomen. The thorax is the center section where the legs and wings are attached. It is also where the cicada's tambourine, so to speak, can be found.

To be precise, it is on the last segment of the thorax that the cicada has two hollow cavities which are covered on one side with a membrane similar to a drum head. These drum heads are not struck with a leg or wing, they are vibrated by muscles which are attached to them.

Now a chubby little cicada has a large, mostly empty, abdomen. The vibrations from the nearby thorax are amplified in this hollow chamber. The resulting cacophony attracts other cicadas and creeped Dylan out.

When the cicadas sing, the President of our Board refers to them as the "summer bugs." Yes, cicadas are here every summer. There are over 75 species of cicada in the eastern half of the country and most of them have a much shorter life cycle than the periodical cicada.

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Thanks to their summer performances, one group of short-lived cicadas are known as the dog-day cicadas. Each species has its own distinct call which I'm sure helps out when you are looking for an appropriate mate.

### Timing is Everything

Speaking of other species, the periodical cicada from the South emerges every thirteen years. It doesn't take a rocket scientist to recognize that 13 and 17 are prime numbers. You might recall that a prime number can only be divided by itself or one without the answer having a fraction.

One explanation for the extreme periodic nature of the insect's emergence goes as follows. By flooding the market with cicadian appetizers, the supply of insects overwhelms all possible demands made by predators. This explanation is called predator satiation.

But couldn't this strategy be adapted over a fewer number of years? Why set the record for longest insect life cycle? Evolutionary biologist Stephen Jay Gould had some interesting observations on this hypothesis. Gould wrote that many potential predators have 2-5 year life cycles which, not surprisingly, coincide with the life-cycles of the of the dog-day or annual cicadas. These "annual" cicadas, by the way, generally emerge later in the summer than their periodical counterparts.

Now, let's say that the periodical cicada came out every ten years. Given that 10 is divisible by both 2 and 5, these cicadas are going to be on somebody's menu but 13 and 17 don't line up with any predator's life cycle.

Some moths have been able to reduce predation by jamming a bat's radar. The possum does the same by playing dead when it isn't. The periodical cicada adjusts its calendar.

As Gould concluded, "It is sometimes advantageous to put all your eggs in one basket—but be sure to make enough of them, and don't do it too often." (See Cicada Basics on p. 3.)

### Giant Cicada Killers

One can imagine all manner of birds and mammals dining on cicadas but I want to draw your attention to a cicada predator I first saw, oddly enough, around 17 years ago.

I was about to band a bird in rural Kansas when the biggest damn wasp I had ever seen loudly buzzed by. I was so startled that the bird escaped my grip. Insect net in hand, I went after this monster. He seemed to be carrying something. Unfortunately, he zipped through and around some trees and disappeared.

Later, I saw one in an insect collection at the Audubon Camp in Wisconsin. It had the perfect name, giant cicada killer. The female, the larger of the genders and the one with a stinger, can be about two inches long. I definitely had seen a female in action.

Cicada killers are solitary wasps (also called sand hornets) that burrow six to ten inches in loose or sandy soils. Golfers take note, these hornets are fond of sand traps.

At the end of the burrow are three to four cells where one to two cicadas are placed. The cicada killer lays one egg in each cell.

The wasp's name isn't exactly accurate. Her sting actually paralyzes rather than kills the cicada. That way, when junior hatches, it will be able to feed on the still living or, should I say, the living, still-cicada. Think of it as the insect equivalent of "night of the living dead." With this fate in mind, being gobbled by a crow or a possum doesn't seem so bad!

### Looking Back

By now, you'll have stories to tell about this year's emergence. Back in 1990, people in Chicago were using snow shovels to clear sidewalks of dead cicadas. In 1956, 311 emergence holes per square yard were counted in some forested areas near Chicago. Hmmm, 1956 was the year I first emerged. [Insert your own joke here.]

On that personal note, I'll leave you with a few more Dylan lyrics.

*And the locusts sang, yeah, it give me a chill,  
Oh, the locusts sang such a sweet melody.  
Oh, the locusts sang their high whining trill,  
Yeah, the locusts sang and they were singing for me.*

## PROGRAMS

**Program Basics:** TO MAKE RESERVATIONS for programs (except for bird banding open houses), PLEASE CALL US AT (847) 428-OWLS(6957), OR EMAIL STILLMAN AT: stillnc@flash.net. Remember to include your name, phone number, and the number of people that will be attending.

If less than 5 - 10 people (varying with the activity) have called two days prior to a program, the program could well be cancelled. So, don't forget to call the nature center in advance. If you discover that you are unable to attend, please call to cancel your reservations. This courtesy will be greatly appreciated.

### BIRD BANDING

Watch Mark Spreyer, a licensed bird bander, measure, weigh and record data about our resident and migratory birds. Birds are not caught in a predictable manner, so come prepared to hike the trails. With luck, you'll see a bird in the hand and two in the bush. If it is raining, the banding open house will be cancelled.



Dates: Sundays, June 3, July 1, Aug. 5 & Sept. 2

Time: 9:00AM to Noon

Fee: None

## SUNDAY MORNING BIRD WALKS

Mark Spreyer will lead a morning bird walk. Binoculars and field guides are a must. If you don't have any, don't worry, Stillman does.

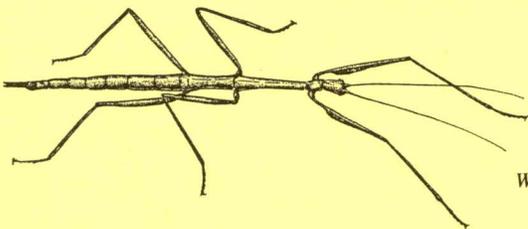
If it's raining, the activity will be cancelled. Also, if nobody makes reservations, the program will not take place. So, please call (847) 428-OWLS to let us know if you plan to attend.

Date: Sundays, June 10 & August 12

Time: 8:00AM

Fee: None

Age: 10 years and up



*Walking Stick*

## BUGS & BUTTERFLIES

Join Stillman's naturalist and search the nature center's woods and fields for butterflies, beetles, cicadas and other bugs. If you've got a bug net at home, bring it along! Since we will be handling the bugs, please minimize the amount of insect repellent that you have on your hands. Don't forget to call (847) 428-OWLS to make reservations.

Date: Sunday, July 22

Time: 2:00 PM

Fee: None

## PRAIRIE RAMBLES

Our volunteers, under the leadership of Daria Sapp, have been working hard to get prairie plants growing in Stillman's "south forty." They've been quite successful and this is your chance to join Daria on a tour of this colorful site. Please call (847) 428-OWLS to let us know if you plan to attend.

Date: Sundays, July 29 & Aug. 26

Time: 10:00AM

Fee: None

## POND LIFE: FROM THE BOTTOM UP

This afternoon, with the help of long-handled dip nets, visitors will scoop into our pond in hopes of catching crayfish, dragonfly larvae, tadpoles and other rarely seen pond inhabitants. Dress in clothes and shoes you don't mind getting muddy.

Date: Sunday, August 19

Time: 2:00PM

Fee: None

## PERIODICAL CICADA BASICS

**Description:** These robust insects are around 1.25 inches long with a three inch wingspan. The wings are clear with an orange sheen and reddish-orange trim along the leading wing margins. The underside of the abdomen is reddish-brown to yellow. Their bulging eyes are dark red.

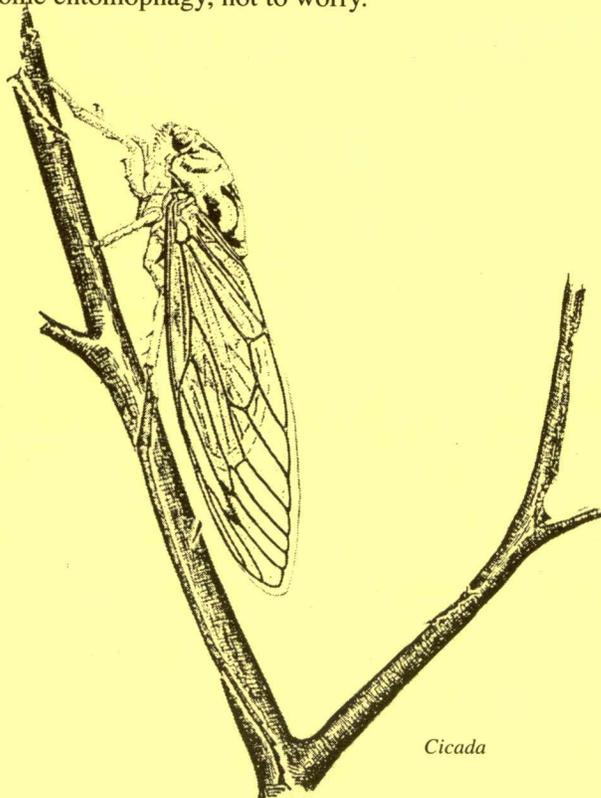
**Emerging:** Cicada nymphs, or immatures, feed on sap sucked from the roots of woody plants for 17 years. They dig exit tunnels, 18 to 24 inches long, to the surface. The exit holes are a half-inch across.

**Maturing:** Like the annual cicadas do each year, the immature periodical cicadas crawl up on tree trunks, shrubs, or your deck. They split their skin and the adults crawl out leaving a translucent shell of skin behind.

**Breeding:** For roughly two weeks, male cicadas call to attract females. As their singing diminishes, the adult males' brief lives are ending.

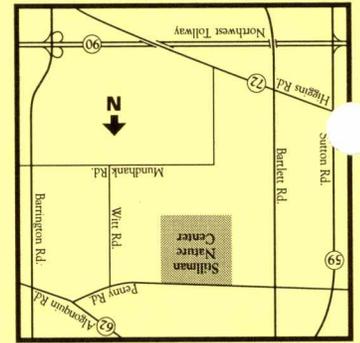
**Laying Eggs:** After mating, females deposit 400 to 600 eggs in slits in branches. Eggs are laid in more than 70 species of trees including oak, hickory, apple, elm, ash, walnut and redbud. Six to eight weeks later, the nymphs hatch, drop to the ground, and begin their lengthy subterranean life.

**Backyard Notes:** As noted above, females lay eggs in tree branches. Unless it is a young, transplanted tree like those found in nurseries or orchards, serious damage is not a concern. Wrapping vulnerable branches with cheesecloth will protect them. While I'm at it, cicadas don't spread disease or pose a threat to humans. Also, if Fido partakes in some entomophagy, not to worry.



*Cicada*

Rose/Archives Barr Area Library  
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Open Sundays 9:00 - 4:00  
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