

## Music from a Minor Nation

Last summer I attended a performance by a trio of very talented percussionists. The pieces they played, while not melodic, were thrilling to listen to, and the variety of sounds dazzled. I recalled that concert as August arrived, for August marks a transition in our natural soundscape; as summer progresses the vocal music of the birds fades, and the buzzes, chirps and rattles of the insects begin their crescendo. While not melodic, these sounds are a part of the essence of the days and nights of mature summer.

Most of these noisy insects are members of the order Orthoptera, which includes crickets, katydids, and grasshoppers. Our local orthopterids create their sounds through “stridulation,” the rubbing of a hard scraper over a ridged surface. In katydids and crickets, the scraper is located on the lower inside edge of one wing, and the bar of ridges is located on the inside edge of the opposite wing. The insects raise their wings and vibrate the scraper across the ridges to make sound. Some of our local grasshoppers also make sounds. They do so by rubbing ridges on their hind legs against their forewings.

In the order Homoptera we find another noise-maker, the cicada. Cicadas emit buzzes using membranes that cover resonating chambers in their abdomens. The sound of these “drums” is created when abdominal muscles pop the membranes outward.

The ears of our insect instrumentalists do not detect changes in pitch, or at least not very well. They are, however, very sensitive to rhythm and the intensity of the sound. You may not have noticed the ears on these insects unless you have a leg fetish. Crickets and katydids have ears located just below the knees on their forelegs. Grasshoppers ears are concealed beneath their wings, and the ears on a cicada can be found on their abdomens.

Dawn is the quietest time of day during the insect season, and perhaps this is to be expected from percussionists. Grasshoppers and cicadas usually prefer daylight for their concerts, while katydids and some of the crickets make their music after dark, with the most noise generated in the few hours after dusk.

I recently discovered a resource that will make this year’s performance more interesting—The Songs of Insects, by Lang Elliot and Wil Hershberger (Houghton Mifflin Company, 2007). This book includes beautiful close-up photographs, descriptions, sonograms and range maps for 77 common and widespread musical insects east of the Great Plains. Best of all, it comes with a compact disc of their songs. These authors have something of the evangelist about them. The book and compact disc are very reasonably priced (\$19.95), and they have made additional resources available to those who wish to learn more about insect music. Their website (google “songs of insects”) groups the sounds that might be confusing so you can hear them consecutively, has an introduction to twenty common insect songs, and photo and audio galleries.

The following excerpt from Emily Dickenson’s poem, “My Cricket” is found in the book’s introduction:

Farther in summer  
Than the birds  
Pathetic from the grass  
A minor nation celebrates  
Its unobtrusive mass

I loaded the recordings onto my computer and then eliminated all of the insects not found in southeastern Vermont. This left me with thirty-three insects—a much less daunting number to learn. The insects in our area include two field crickets, and five ground crickets. These are the in-

sects we all recognize as crickets by sight, though only the field crickets create the rich chirps. We also have the northern mole cricket— a subterranean cricket that strangely resembles a mole. It also chirps, though lower and more hoarsely than the field crickets.

The tree crickets are green and appear more delicate than the other crickets. The snowy tree cricket produces one of the most familiar insect sounds. Its sweet rich chirps emanate from the treetops. This is the cricket that can be used to tell the temperature. Count the chirps in 13 seconds, add 40, and the number you get will approximate the temperature in Fahrenheit.

Among the katydids, we have just one “true katydid.” This is the insect that argues in its raspy voice about whether or not katy did it. Ka-ty-did. No-she-did-nt. Yes-she-did . . . (Just what Katy is supposed to have done is the source of another debate.) The “false katydids,” like the true one, make their noise from leafy perches, and, also like the true one, sport leaf-green camouflage and have leaf-shaped wings. The meadow katydids (also called “long-horned grasshoppers”) look like little green grasshoppers with long, delicate antennae.

Their calls are more subtle— think of the sounds made by shakers.

There is nothing subtle about cicadas. In both appearance and decibel level, these insects stand out. With their stubby bodies, pointed rear ends, bulging eyes, and over-sized clear wings, they look a bit alarming. They are also likely to be the loudest insects in the neighborhood. The dog-day cicada is one of the insects I most associate with hot summer days. Its call sounds like a buzz saw that gets louder and then fades over about fifteen seconds.

And so, with the commencement of August, I’ve been out with my insect net, my recordings, my book, and my ears. While I’ve been looking and listening for crickets and katydids, I have also indulged in another late summer past time—lying in the grass and watching the activities of the busy insect metropolis at ground level. I see the beginnings of a plan for the month here . . . Yes, many hours spent lounging in the grass enjoying the celebration of the “unobtrusive mass.” All for the sake of science and art of course.

