



Early Music

A friend and I talked about old songs recently, and he asked how old I thought the oldest known song was. I'm not usually good at music trivia, but I knew the answer to that one: I had listened to a recording of a song that was heard 165 million years ago, back when dinosaurs roamed the tree fern forests of the Jurassic. The original performer? A now-extinct katydid.

Bioacoustic scientists revived the song using the fossilized remains of this katydid. You can hear it too, ringing today through the jungles of cyberspace. Search for "Jurassic katydid song" OR "Archaboilus musicus." You will find the sound familiar, not unlike the fall field cricket song with its low, sweet chirps.

If you watch a cricket chirp, you will notice that he (as with birds, the males sing and females select their favorite singer) first raises his wings. The tree crickets raise their long forewings straight up and fan them out, making a heart-shaped display. Scientists have speculated that this behavior evolved as a visual signal to attract mates. Vibrating their wings would surely be even more alluring. An audible vibration would be more attractive still and would have the tremendous benefit of broadcasting a location and fitness message to potential mates some distance away.

The wings of male katydids and crickets developed according to the whims of females. While the tones and textures of the songs vary among species, the instruments are similar. At the base of one forewing is a ridged area, at the base of the other a thickened scraper. When the two rub together—music!

If a song is to work its magic, the intended must be able to hear it. Scientists believe that the ears of early musical insects evolved together with their music-making ability. The ears of katydids and crickets are located just below what would be knees on a vertebrate. If you look closely, you can see them, openings the size and shape of

the eye of a needle. These ears contain a tympanum that vibrates in response to sound waves. Before insects developed music, their legs were sensitive to vibrations from the substrate, preadapting them for sensitivity to vibrations borne by air.

Today, 31 katydid and cricket species make their music in our fields and forests. Late summer is their season, from August until the onset of freezing weather. While many sing all day, you can hear the most diversity of songs in the few hours around sunset. Learning to recognize some of their calls can enhance appreciation for the soundscape of late summer.

Most of us recognize the “chirp, chirp, chirp” of field crickets. These are the black, shiny, round-headed crickets we picture when we think “cricket.” There are also four species of smaller, browner, fuzzier crickets—the ground crickets. These are the hordes that scatter from your feet whenever you walk in the grass. While very difficult to distinguish by sight, their songs are easy to learn. The striped ground cricket makes a dry,

buzzy sound: “Tzit...tzit... tzit,” with a pause between each tzit. The tinkling ground cricket makes a series of clearly separated ringing notes: “tink, tink, tink.” The Allard’s ground cricket makes a similar sound but strings the notes together too fast to count. The Carolina ground cricket speeds it up even more to make a slightly sputtery trill. If you pause right now and listen, you can probably hear some. These crickets provide the nearly constant background trill that can be heard in any grassy area, all day and all night. They will be the last insect singing in the fall.

If you want to become more familiar with the musicians playing this earliest music, get outside on warm nights in August and September. Just listen to the chorus. Eventually, you will begin to hear the voices of the different musicians. When you are ready to start learning their names, google songsofinsects.com. Lang Elliott has been recording and writing about these specialized insects for years, oh, and photographing them. Be prepared to be amazed!