

10 Fascinating Facts About Grasshoppers

Interesting Behaviors and Traits of Grasshoppers

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1. Grasshoppers and locusts are the same thing.

Mention grasshoppers, and many people recall pleasant childhood memories of trying to catch them in meadows or backyards. Say the word locusts, however, and most people think of historic plagues of pests, raining down on farm fields and eating every plant in sight. Truth be told, grasshoppers and locusts are one and the same. Yes, we have some species we've dubbed grasshoppers, and others we call locusts, but essentially we're talking about short-horned members of the order Orthoptera. These jumping herbivores with shorter antennae are grouped in the suborder Caelifera, while their longer-horned brethren (crickets and katydids) belong to the suborder Ensifera.

2. Grasshoppers have ears on their bellies.

In grasshoppers, the auditory organs are in a rather unusual location – on the abdomen. On each side of the first abdominal segment, tucked under the wings, you'll find membranes that vibrate in response to sound waves. This simple eardrum, called a tympana, allows the grasshopper to hear the songs of its fellow grasshoppers.

3. Although grasshoppers can hear, they can't distinguish pitches very well.

As in most insects, the grasshopper's auditory organs are simple structures. They can detect differences in intensity and rhythm, but not pitch. The male grasshopper's song isn't particularly melodic, since females don't care whether a fellow can carry a tune. Each species produces a characteristic rhythm that distinguishes its song from others, and enables courting males and females of a given species to find each other.

4. Grasshoppers make music by stridulating or crepitating.

That sounds complicated, doesn't it? Most grasshoppers stridulate, which simply means they rub their hind leg against their forewing. Special pegs on the inside of the hind leg act like a percussion instrument of sorts, when they come in contact with the thickened edge of the wing. The band-winged grasshoppers crepitate, or snap their wings loudly as they fly.

5. Grasshoppers can fly.

Because grasshoppers have such powerful jumping legs, people sometimes don't realize they have wings, too! Most grasshoppers are pretty strong fliers, and will make good use of their wings to escape predators. Their jumping ability just gives them a boost into the air.

6. Grasshoppers jump by catapulting themselves into the air.

If you've ever tried to catch a grasshopper, you know how far they can jump to flee danger. If humans could jump the way grasshoppers do, we would easily leap the length of a football field or more. How do they jump so far? It's all in those big, back legs. A grasshopper's hind legs function like miniature catapults. When it wants to jump, the grasshopper contracts its large flexor muscles slowly, bending its hind legs at the knee joint. A special piece of cuticle within the knee acts as a spring, storing up all that potential energy. When the grasshopper is ready to jump, it relaxes the leg muscles, allowing the spring to release its energy and catapulting its body into the air.

7. Grasshoppers cause billions of dollars in damage to food crops annually, worldwide.

A lone grasshopper doesn't do much harm, although it eats about half its body weight in plants per day. But when locusts swarm, their combined feeding habits can completely defoliate a landscape, leaving farmers without crops and people without food. In the U.S. alone, grasshoppers cause about \$1.5 billion in damage to grazing lands each year. A desert locust swarm in Kenya in 1954 consumed over 200 square kilometers of wild and cultivated plants.

8. Grasshoppers provide an important source of protein to people in many parts of the world.

From what I've heard, grasshoppers are delicious. People have eaten locusts and grasshoppers for centuries. Even John the Baptist ate locusts and honey in the wilderness! In many areas of Africa, Asia, and the Americas, locusts and grasshoppers are a regular ingredient of the local diet. Want to try them? Our Guide to Mexican Food, Chelsie Kenyon, offers this recipe for sauteed grasshoppers, a dish called chapulines.

9. Grasshoppers existed long before dinosaurs.

The ancestors of our modern day grasshoppers evolved well over 200 millions year ago, during the Triassic period, when the first reptiles appeared on Earth. The fossil record shows that primitive grasshoppers first appeared during the Carboniferous period, more than 300 million years ago. Most ancient grasshoppers are preserved as fossils, although grasshopper nymphs are occasionally found in amber.

10. Grasshoppers sometimes "spit" brown liquid to defend themselves.

If you've handled enough grasshoppers in your day, you've probably had a few spit brown liquid on you in protest. Scientists believe this behavior is a means of self-defense, and that the liquid helps them repel predators. Some people say grasshoppers spit "tobacco juice," probably because grasshoppers have been associated with tobacco crops in the past. Rest assured, though, the grasshoppers aren't using you for a spittoon.