

Grasshoppers

By Susan Heath

I've been thinking a lot about grasshoppers lately because I'm going to use them as bait for our shrike trap in November (I'm a researcher at Gulf Coast Bird Observatory). Don't worry, no grasshoppers or shrikes will be harmed in this experiment!

Working with grasshoppers made me realize that I don't actually know very much about them. So, I did some research. Grasshoppers are among the most ancient living group of chewing herbivorous insects. The fossil record shows they evolved about 300 million years ago long before the dinosaurs. There are 11,000 named species and they are found worldwide except in Antarctica. That's a lot of grasshoppers folks.

When they form swarms, grasshoppers are known as locusts and these swarms are well known for destroying crops and even causing human famines. Even in smaller numbers they can be serious pests, but they are also used for food in many areas of the world. In Mexico, they served with tortillas and chili sauce and in China and throughout Indonesia they are served roasted on skewers. Crunchy! They are most often eaten fried in Uganda. Some Native Americans burned grasslands so they could herd grasshoppers into pits where they could collect them. They are an excellent source of protein!

While they can fly, their most oft used method of escape is jumping, which is supported by their powerful hind legs. If humans could jump the way grasshoppers can, we'd be able to easily leap the entire length of a football field. That might come in handy! They prefer to eat grasses and have little pinchers to snip off bits of vegetation.

Grasshopper "ears" are actually a membrane that is found not on their head but on their abdomen. The membranes vibrate in response to sound waves made by other grasshoppers. Those species that make sounds do so by stridulation. The sounds are produced by rubbing a row of pegs on the hind legs against the edges of the forewings. These sounds are made mostly by males to attract females but some females stridulate as well.

After mating, the female lays her eggs in the soil near food plants. After a few weeks of development, the eggs spend the winter in diapause which is broken when the soil warms up in the spring. The embryos continue development until they hatch (usually all together). They go through five or six molts becoming larger and more like an adult with each molt.

While jumping or flying is their number one go-to when attempting to escape a predators, they protect themselves in other interesting ways as well. Their colors often act as camouflage, but some are brightly colored, indicating their toxicity if eaten. Several species mimic leaves while others mimic sticks. Some have bright patterns on their wings which give a sudden flash of color when they jump or fly which may startle a predator enough for the insect to escape.

And finally, many of them spit a brown liquid which is often referred to as tobacco juice because of the color. You may have had an experience with this if you've tried to catch one! Since I have to catch a few in the coming weeks, I guess I'll be getting some first-hand experience with these insects. Wish me luck!