

BugGuide.net

By Marci Hess and MJ Hatfield

BugGuide.net is a website worth exploring on the fly! Many of us are interested in the biota living in the ecosystems we work hard to save and protect; learning about them enhances our work and enriches our lives. While I did not set out to work with insects, I suppose it's serendipitous that during the course of my ecosystem restoration work, insects began to intrigue me. My mom tells me I've always liked them –eating them instead of dirt! Once I had cataloged the mammals, birds, and herptiles on our land the next logical step was insects. This curiosity turned into a passion.

I began my insect journey using photography. I'm not unique in this aspect. Digital cameras have revolutionized insect study. We can take great photos with sufficient detail to ascertain an identification, which has taken insect knowledge and interest to a new level.

Equally as revolutionizing is BugGuide.net. Troy Bartlett, a computer programmer who loved insect photography created this site. Bartlett calls it “an online community of naturalists who enjoy learning about and sharing observations of insects, spiders, and other related creatures.” Its success soon outgrew its first home; it is now housed by Iowa State University.

BugGuide.net is the pinnacle of citizen science. Referenced and contributed to by anyone, from citizen scientists to academics to professionals, it's more than just photos. You can find physical details about the insects, their habitats, food sources, identifying characteristics, ranges and references.

For such a colossal resource, it is surprisingly easy to use. You can click on one of the insect silhouettes along the left

hand column, and it will take you directly to that order. You also can search for a particular family, genus, or species.



Screen capture for the front page of BugGuide.net

Learn about insect behavior

This site provides photos of unique and unusual behaviors, as well as species not found on other sites. Making a contribution to the betterment of our world motivates me, but I never thought it would be in the world of insects. Yet, armed with only a camera, my photo made history on BugGuide.net when a guide page was created for this not-so-common fly found on my Lafayette County property!



Cryptomeigenia

illinoiensis

<https://bugguide.net/node/view/1481337>

Because of BugGuide.net, Harlan Ratcliff learned of a fascinating mating ritual. The females of the long-tailed dance fly ([Rhamphomyia longicauda](#)) inflate their abdomens to trick the males into thinking they are filled with eggs. Why would they want to trick the males? Mating behavior dictates the male offer the female a food item in exchange for mating. Check out the BugGuide.net page and learn about their hairy legs.



Female *Rhamphomyia longicauda* after inflating – notice the color change of the abdomen. Photo by Harlan Ratcliff



Female *Rhamphomyia longicauda* before inflating. Photo by Harlan Ratcliff

Identify Tracks and Sign of Insects

What if you find an interesting marking on a leaf or a gorgeous orange structure? Or better yet, both? BugGuide.net has a section (called Tracks and Sign) for these findings. You can post a photo or look up anything from eggs to larvae to leaf mines to droppings. I found this orange object on the backside of this oddly patterned leaf. I posted them on BugGuide and would you believe these are from a fly! It's a columbine leafminer (*Phytomyza aquilegivora*). Before BugGuide, I would have marveled at this but I would not have thought I'd find an answer.

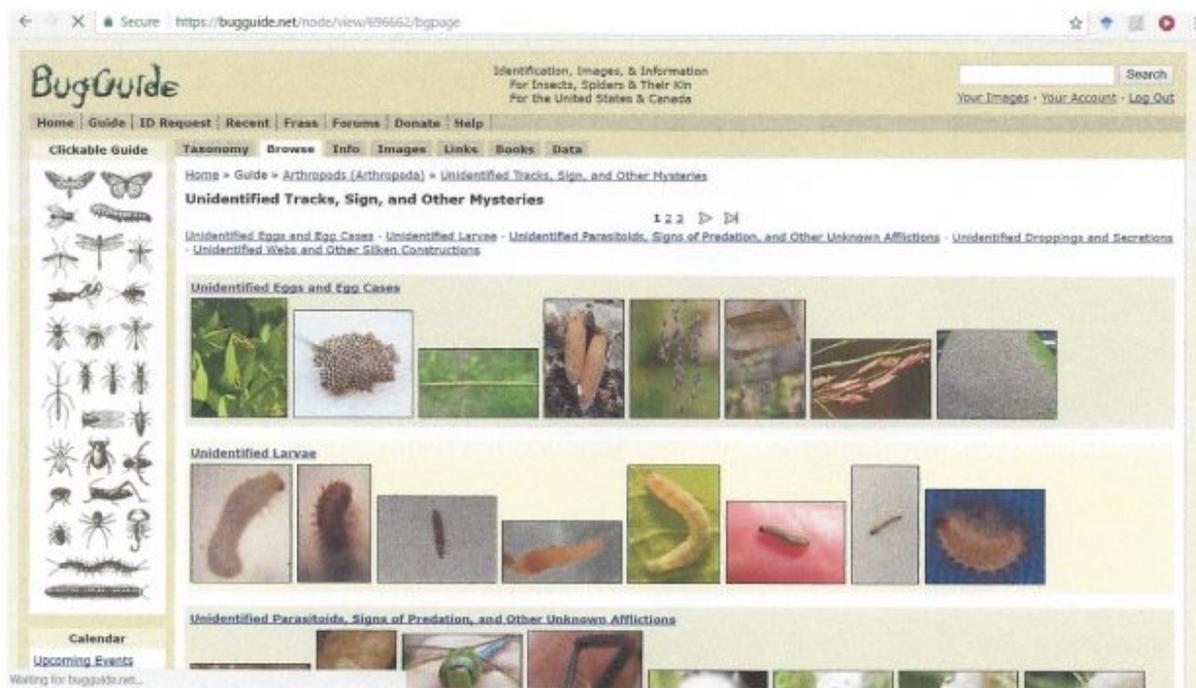


The *Phytomyza aquilegivora* pupa found on *Aquilegia canadensis*.



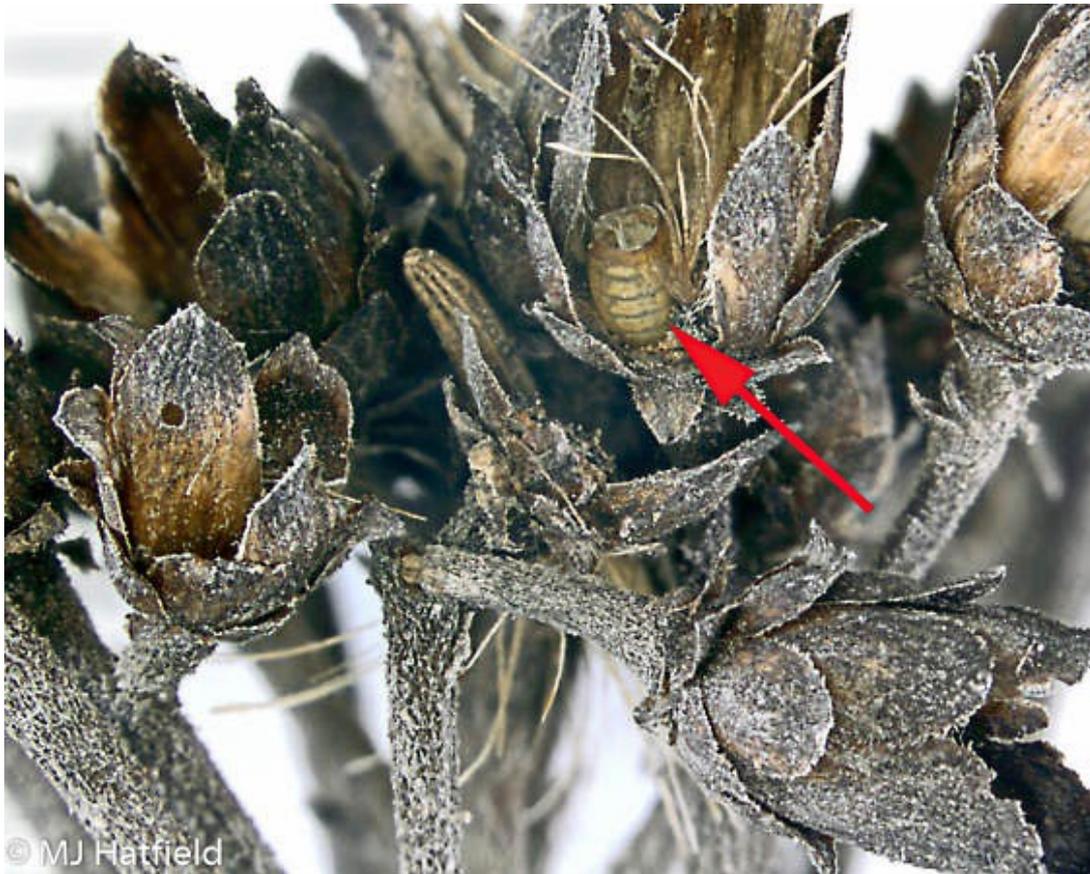
The larva of the *Phytomyza aquilegiovora* mines the leaf of the *Aquilegia canadensis*.

You can see how I've linked the pupa and the leaf mine on BugGuide so it's known the pupa was found on this leaf.



A screen capture of this “Tracks and Sign” section of the guide.

If you like a good mystery or better yet, solving one, BugGuide can help! Ironweed (*Vernonia* sp.) is a commonly found plant in our area. In December, MJ Hatfield, found spent fly puparia, which encapsulates the pupa, in the seedhead. Based on the host plant and location, the fly was tentatively identified as [*Neaspilota alba*](#). Until an adult fly is found, the ID will remain a best guess. If you know of a patch of ironweed, check it out this year, catch a fly and post a photo to BugGuide.net and help solve this mystery.



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Note the spent puparium. Wow! One must be looking closely to find these little nuggets of nature! Photo by MJ Hatfield



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Notice how the seeds form around the puparia. Photo

by MJ Hatfield

There are incredible numbers and incredible diversity in the insect world, and relatively few are identified, described, and named, much less studied for behavior. For years, identifying insects required using dichotomous keys. Finding those keys was not easy and once found, how up to date were they? Then after struggling through the keys, coming up with an identification, who could confirm it?

Citizen scientists make valuable and significant contributions to science. This is especially so in the insect world. Whether you are a user or a contributor or an editor, BugGuide is an important addition to understanding our ecosystems.

What users say about the site:

Here's what users of BugGuide are saying:

BugGuide.net provides a tremendous service to us entomologists as well as to other biologists, naturalists and interested amateurs, helping make up for the deficiencies which we entomologists know we have. – James Trager

*BugGuide is such a great resource for finding names, information, and identification. It has helped me learn the names of insects I have found, but also, it helps me constantly when putting together presentations, providing information like what the insect eats, life cycles, range where found, links to more information, etc. And I know I do not know how use all the data Bugguide has to offer!!*Moni Hayne

BugGuide was, and continues to be, absolutely instrumental in my growth as an entomologist. My formal training is general biology, but BugGuide served to teach me everything I could ever want to know about insect diversity, taxonomy, and distribution. -Darren McNabb

I started using BugGuide as a technician in a systematic entomology lab run by the State of California's Dept of Food and Agriculture. It was by far the best and most trustworthy site to assist me in my identification of many, many, MANY small beetles and other critters as, among other duties. – Megan O'Donnell