



Wandering the Woods with Matt

“Chalchoid wasp predator
on spongy moth egg case”

Observed October 27, 2022

at Pohoqualine Fish Association
PHLT Conservation Easement

Photo Left: spongy moth egg mass

Last week on a warm fall afternoon, I was walking through a public-access portion of Pohoqualine Fish Association property, over which PHLT holds a conservation easement.

The late flowering asters are still in bloom in many places and pollinators seem desperate to take advantage of these warm days to collect just one more bit of pollen before a hard freeze marks the end of pollinator season.

As I was walking through the woods, my eye was caught by movement on the remains of a spongy moth (formerly known as gypsy moth) egg case. It appeared to be a tiny wasp associated in some way with the egg case. Even with my 10x macro lens, the photos I took at maximum magnification resulted in wasp photos that are small and rather blurry. I was surprised when the computer vision on the iNaturalist app returned a suggestion that it was “pretty sure” about, which I think must be due to the distinctive egg mass structure and not the wasp itself.

In any event, I was happy to be able to put a name, *Ooencyrtus kuvanae*, on this chalchoid wasp. Chalchoids generally form an enormous superfamily of parasitoid wasps. There are currently over 20,000 described species and estimates of the total diversity range up to 500,000 species. These are tiny wasps, mostly 3 mm or less, and the adults parasitize other insects (primarily) so they are not often seen, unless you happen to come across an active parasitization event or an adult emergence--the latter is what I witnessed that fall afternoon.

One interesting thing about *Ooencyrtus kuvanae* is that **it has recently been shown to parasitize spotted lanternfly (SLF) eggs**. In 2016, Dr. Liu at the PA Department of

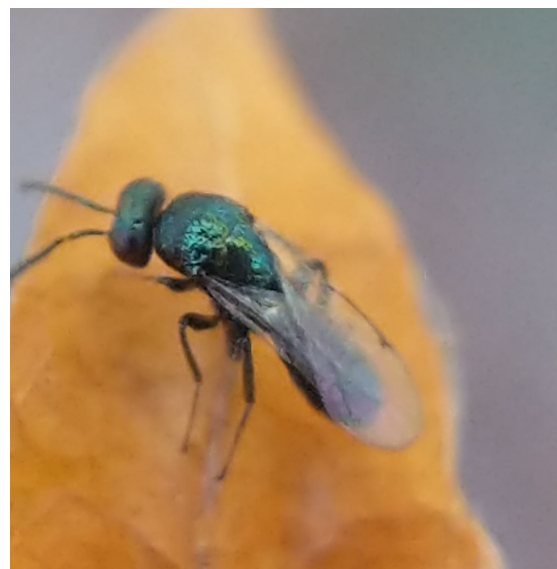
Conservation and Natural Resources found SLF egg masses from which the parasitoid wasp emerged. This is surprising because usually parasitoid wasps have a tight association with species that they parasitize, but this species has now been found to parasitize insects in two different orders (the spongy moth, an invasive insect belonging to the order *Lepidoptera* [butterflies and moths], as well as now the spotted lanternfly – which is actually a type of leafhopper, belonging to the order of *Hemiptera* ["true bugs"]). Interestingly, these two invasive species are the only hosts known in North America – *Ooencyrtus kuvanae* has not been shown to parasitize any native North American insects or other species.

The spongy moth (formerly known as the gypsy moth) was accidentally introduced into Massachusetts in 1869 and was well-established throughout New England and eastern New York and New Jersey by the 1930s. As is well known, the spongy moth has become infamous as a scourge of oak and other trees throughout eastern North America. *Ooencyrtus kuvanae* was deliberately introduced to North America from Japan in 1908 to control the spongy moth. It is regarded as a somewhat successful biocontrol for the spongy moth and millions of the parasitic wasps have been reared and released. In Pennsylvania, the wasp was deliberately established between 1969 and 1971 and, as I found, it persists to this day.

Whether or not *Ooencyrtus kuvanae* will be an effective biocontrol agent for spotted lanternflies remains to be seen. When Dr. Liu returned to his field sites in Berks county in 2017, he didn't find any *Ooencyrtus kuvanae* emerging from spotted lanternfly egg masses at his field plots. But perhaps the wasp will be one additional stressor for spotted lanternfly populations, and will help keep this rapidly-spreading invader from devastating fruit crops throughout Pennsylvania and beyond.



ooencyrtus kuvanae



unidentified chalcid wasp