

## Wandering the Woods with Matt

A kleptoparasite on a spider's prey

Observation of the week August 3, 2021

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This year, “observation of the week” would be more appropriately titled “observation of the season” as I only seem to be able to produce one every few months. But I’ve got a doozy of an observation for you, loyal reader, that should be worth the wait.

Unless you’re a serious naturalist, the title itself will contain an unfamiliar word. Klepto means a compulsion to steal. For a person (kleptomaniac), it’s a mental disorder. For a large group of invertebrates, it’s literally true: they are compelled to steal because their whole foraging strategy depends on it.

An earlier “observation of the week” from 2020 covered [nomad bees](#). These are kleptoparasitic on social bees, stealing pollen and honey from their hives.

This observation was made on May 18<sup>th</sup> at the Upper Paradise Nature Preserve. I had a few extra hours at the end of a day, so I walked the trail slowly, looking for anything that would catch my eye. The first thing I saw was a spider that had apparently caught an ant.



I'm always excited when I get to see predation in action. For one thing, it's potentially two new species to photograph and usually both the predator and prey will let me get close with my macro lens.

To see a spider with an ant is fairly unusual for me. Ants are tough and most predators seem to leave them alone. This spider seems to be a crab spider, genus *Tmarus*, that specializes in ants, or at least is capable of hunting them. See this nice website for more info on *Tmarus*:

<https://www.riveredgenaturecenter.org/bug-of-the-week-tree-crab-spider/>

The ant, I think, is a carpenter ant – *Camponotus* sp. But what really caught my eye were the tiny flies on the ant. I could not figure out what the flies were doing. So I took my photos, popped them on iNaturalist and let it percolate away in the back of my mind. May was a busy month and I didn't have any time or mental energy to look into the question!

A new version of iNaturalist's Computer Vision (CV) image-recognition algorithm was released about a week ago and a lot of new taxa are covered now that didn't have sufficient training images previously. Anyway, the CV is suggesting "freeloader flies – Milichiidae" pretty regularly now. I think many of these are not correct, but it did introduce me to a family of flies I'd never heard of before.

Milichiidae are a family of tiny flies that are kleptoparasitic on predatory invertebrates. They seem to rely on olfactory cues (scents) released by two orders of insect prey – Hemiptera "true bugs" and Hymenoptera "ants, bees, wasps and sawflies." The predator often is a spider, but freeloader flies have also been associated with the prey of robber flies, assassin bugs, and even praying mantises. They eat a little bit of a prey item that a predator has brought down. Seems like a pretty risky strategy to me, because these are tiny flies (usually 1-3 mm) nibbling away at a dead or dying insect while the ferocious predator still has its fangs clamped down.

But there is some evidence that some species of freeloader flies actually provide a benefit to the predators, especially spiders, by scavenging around their chelicerae (jaws). This is known as "cleaning symbiosis" and while some examples are readily accepted (e.g. wrasse fish cleaning larger fish) others occur more rarely and are hotly debated among ecologists (it's what we do for fun). The famous example of an Egyptian plover cleaning the teeth of a crocodile, for example, though it has penetrated the public consciousness, has been rarely documented despite much effort.

You can read more about freeloader flies here:

<https://www.inaturalist.org/taxa/329891-Milichiidae>

Like to learn new things? Explore more of Matt's observations on our website:

<https://www.phlt.org/wandering-woods-series.html>

