BEYOND CLASS

Callie Holtermann on a high school student and her singular fieldwork

Teen who went mothing

As the sun went down one night in September, 16-year-old Violet Clinton marched into a meadow of goldenrod with her butterfly net. Every few minutes she flicked it toward a speck in the air. She knelt to examine a bug that looked like a toasted pecan with antennae. "This is a three-lined leafroller moth," she said. "There's one kind of woodgrain leafroller moth that looks similar, but those came earlier in the year."

She snapped a picture with her smartphone, then set the moth free. Onward she went toward a cluster of pines where an even greater variety of insects awaited. "That's a pug moth. That's an elegant grass-veneer moth. And that's a wasp."

Violet is a high school junior by day and a moth researcher by night. While her GenZ peers scroll through TikTok or fret about college applications, she spends two or three evenings a week "mothing" — think birding, but without the feathers — in the Eugene and Agnes Meyer Nature Preserve in Westchester County, New York.

She has catalogued more than 11,300 insects so far as part of a seven-month study of moth diversity and abundance in the area. Her goal is to identify which species are present in three habitats under different weather conditions and moon phases — information that can be used to aid conservation efforts.

Violet's findings have placed her in a league with researchers decades her senior. Her work is filling in gaps in scientists' knowledge of where moths can be found, especially common moths that do not attract as much research funding as pest species, said Jason J. Dombroskie, an entomologist and manager of the Cornell University Insect Collection, US.



AT WORK: **Violet Clinton measures environmental conditions at the Eugene and Agnes Meyer preserve in Armonk, New York, and (left) captures images of moths.**
The New York Times/Hillary Swift

Violet hopes to persuade others to be a bit kinder in their estimation of moths — not exactly the prom queens of the insect world. They tend to be seen as drab brown pests, perennially overlooked in favour of flashier, more charismatic insects like butterflies.

Violet wants people to appreciate that moths are important. If you look closely enough, she said, you may even find them beautiful. It is rare for her to come across a moth she cannot identify.

As we walked, she showed me moths the size of Oreos and moths that looked like splinters, moths with brilliant red underwings, moths that disguise themselves to resemble bird poop. She treated each one with affection, as if it were an adorable kitten.

She moved through the woods with the seriousness of a seasoned entomologist, pausing occasionally to record the temperature, air pressure and humidity in a spreadsheet. Soon she reached the first of three data-collection stations she had set up earlier that evening, where a sheet of canvas glowed purple under two UV lights. Violet had bought one light with money from her after-school job shelving books at the local library; the other was technically a Halloween decoration. A gardening cage nearby was draped with a damp T-shirt that Violet had soaked in her homemade moth bait: a mixture of mushy bananas, brown sugar and beer.

Violet's first memorable brush with a moth was when she was seven and brought home two woolly bear caterpillars. In the winter, she thought they might have died, but in the spring they hatched as Isabella tiger moths with vibrant orange wings.

At the beginning of her sophomore year, Violet's science research course at Horace Greeley High School required her to pick a subject for study. While many students chose to work with publicly available data sets about artificial intelligence or mental health, she elected to do her own fieldwork.

Her data-collection efforts went well beyond the stuff of a typical school project. Seeking guidance, she sent an email to Dombroskie, whose research specialty is moths. "She had what I thought was an impossibly ambitious project, but she was insistent," he said.

They began meeting on Zoom to refine her research process. Impressed by her drive, Dombroskie encouraged her to attend the Lepidopterists' Society meeting at the Carnegie Museum of Natural History in Pittsburgh, US. There, she presented her preliminary data from three habitats — deciduous forest, pine forest and meadow — on a poster board for the student research competition.

Unlike many people her age, Violet does not use social media — that is, unless you count iNaturalist, the citizen-science app where she identifies moths with the help of other lepidopterists.

Ask her why she pays such close attention to moths, and she will give it to you straight: "They're important pollinators that people haven't thought about already."

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