Meet the High Park Mothia — a group of ‘insect obsessives’ who make late-night treks to study Toronto’s moth species

As dusk settles upon High Park and most of the visitors begin heading home, Taylor Leedahl leads a small group into the woods. They lug a wagon filled with lights and several hundred feet of extension cords.
This is the “High Park Mothia,” an eclectic pack of bug enthusiasts who make late-night pilgrimages to conduct the High Park Moth Study.

“It’s just citizen science by some insect obsessives,” said Leedahl, the study’s director, donning socks emblazoned with a pattern of bugs.

Since beginning in 2016, the study has documented more than 880 different moth species inside High Park, including one type that hadn’t been seen locally for more than 100 years and was believed to be extirpated.

Roughly once a week from May to October, the group descends into the woods near the High Park Nature Centre. There, the amateur entomologists hang white sheets beside UV lamps and mercury vapour bulbs, as well as set up light traps that lure the moths into a tub so they can later be documented and photographed before they’re released. The study has a strict no-collection and no-kill policy.

Richard Aaron got the idea to start the study in 2015 after attending the annual High Park Moth Night, organized by the Toronto Entomologists' Association and the High Park Nature Centre.

Aaron, a Toronto-based naturalist who leads workshops and nature walks, had sporadically attended moth nights throughout the years, though the experience of standing around in the twilight as someone shouted out scientific names of insects “never really resonated with me,” he said.
Then, one night in 2015, he saw two moths that captivated him — one whose beautiful wings look like a colourful Rorschach test; the other, a bizarre-shaped creature seemingly yanked from a science-fiction film.

“It’s just like eye candy,” Aaron said. He was hooked.

He proposed the idea of a study group, “sort of the blind leading the inept” where enthusiasts would help each other learn about the moths, he said. His idea blossomed into a weekly expedition.

Standing before one of the study’s three white sheets, Aaron spots a moth he recognizes with distinct splotches on its wings.

“This was one of my gateway moths,” Aaron said, shining a light onto the colourful Ailanthus Webworm.

Most of the night, however, is spent looking at moths that aren’t easily recognizable.

Peering at a mysterious moth, its closed wings like a speckled arrowhead, Aaron flips through the pages of his well-used copy of *Peterson Field Guide to Moths of Northeastern North America* — a canonical text for the study’s members.

He compares the moth’s shape and colouring to the ones in the book. A minute later and not much closer to an answer, he snaps the field guide shut. The study group has an easier resource standing a few feet away.

“Dave, what are we looking at?” Leedahl asks.

Dave is David Beadle, one of the co-authors of field guide and the study’s moth guru. He shines a light on the moth, which is no bigger
Beadle has an encyclopedic memory for moths. For more than two decades, he has set up a light trap in his small backyard near Dupont and Bathurst Sts., where he's recorded a little over 800 species.

“I never thought it possible in such an unpromising location,” he said.

Beadle, who illustrates birds for field guides for a living and says moths are merely “my side interest,” takes pleasure in learning about the wildlife with whom we share the world.

“It just goes to show what lives in the city. If the habitat is provided, they will use it. They will persist,” he said.

As Beadle speaks, moths dart around the mercury vapour light, momentarily landing on the white sheet. Beadle flits his flashlight around like a TV detective discovering pieces of evidence in a darkened crime scene. He rattles off the name of the moths, each one sounding increasingly like it belongs in the pages of a Harry Potter book. A dark-spotted palthis. A bent-winged owlet. A Baltimore snout.

One of the study members records the names on a clipboard, from which they’ll be loaded into a database.
The study's still in its infancy. As its data grows, the hope is it could be used to detect patterns in future years.

A 2017 study based on the research of dozens of amateur entomologists in Germany found the population of flying insects plunged by more than 75 per cent over 27 years — an alarming drop that scientists say can have cascading consequences on other ecosystems.

Earlier this spring, Toronto had low-flying helicopters spray an insecticide in High Park and other targeted areas in a bid to kill off invasive Gypsy moth larvae, whose voracious appetites for leaves lead to widespread defoliation and damage to trees. The High Park Moth Study's data eventually could be used to measure the impact of the insecticide on other moth species.

“You set out to labour over a project like this and you don’t necessarily know what the value of it is immediately,” Leedahl said.

For some members, the moth nights satiate a collectors' itch. With each expedition into the woods, their list of moths seen grows.

For others like Leedahl, it's about the experience. The study gives her an opportunity to tap into her childhood love of bugs, when she and her brother fed flies to spiders and overturned rocks “to see what critters were underneath.”

“I remember growing up in Saskatoon, going down to the river and feeling like I’m not in the city anymore,” she said. “This gives me the same feeling.”

On this July night, there's about a dozen attendees, at least one out for her first time. There is a core group of about eight who come out almost every week.

“When it first started, I didn’t think it would last longer that a few weeks,” Beadle said.
“That’s what moths do — they bring people together.”

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