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#### **THIS ISSUE**

Sunday, June 11 / Giant Silk Moths Coffee Break, June 8 Raise Giant Silk Moths this Summer Summer Day Camp Openings Around the State in June Follow Musk, Resist Trump's Mania

#### I Know Why the Caged Moth Mates

For a female giant silk moth the answer is *phenomenal pheromone power combined with a "back-against-the-wall" urgency to reproduce.* 



With up to a 7-inch wingspan the Cecropia is the largest and one of most striking lepidopterans on the continent, Yet, seemingly unfairly, it passes through this final stage of its life in a relative blink-of-an-eye.

Populations of giant silk moths aren't nearly what they used to be - certainly compared to the early seventies, when, at the onset of my teens, the first one entered my life with scary flair (http://naturediscovery.net/pdf/WILD%20TIMES%20June14%283%29.pdf). However, even if they were more common, they are surprisingly hard to detect despite huge wingspans. For one, most species in the adult or moth stage are highly nocturnal and averse to flying during the day, even when disturbed. Secondly, within the logistics of their one-year life cycles the adult stage comes and goes in a relative heartbeat as spring transitions to summer. Indeed, eleven out of twelve months of the year in Michigan don't bother looking for them in the moth form. They dwell in one of the other metamorphic states.

The four life cycle stages (egg, larva, pupa, adult) of the continent's largest moth, the Cecropia, break down like this... egg: 10-12 days; larva: 2 months; pupa: 9.5 months; adult: three to five days, tops. In fact, with an adult stage this short why bother having a functional mouth or proboscis to feed? It doesn't.

Upon extricating herself from the cocoon in early June, a female Cecropia enters the final sprint of a year-long marathon rife with dangers both natural and man-made. She is among the lucky few percent to make it this far. Now, with only a few days-worth of stored energy to propel her, she must quickly and efficiently secure a mate, then, disperse and deposit up to three hundred fertile eggs on the leaves of appropriate native trees and shrubs before she becomes too sapped and tattered to function.

My friend, Goose, and I would walk for miles on a winter Saturday through Chicago neighborhoods in search of Polyphemus and Cecropia cocoons. We learned that when a female emerges from a cocoon in early June she usually attracts a mate the very first night by releasing a pheromone. Research has found that in the right weather conditions a male can follow the trail of airborne scent molecules from up to two miles downwind to locate and ultimately mate with a female. We soon surmised that if there was a way to keep a female, fresh out of the cocoon, from flying off overnight she should still attract a wild male. Then, if we were able to secure some fertile eggs, we could try our hand at raising the caterpillars until they reached their signature beastly proportions come August.

Neither my parents nor six siblings could relate to this, much less to any other of my rotating natural bents - least of all my mother. When a hairy, stout-bodied, golden female Polyphemus emerged from its cocoon one day I informed her that I would be staying in the yard overnight to make sure it didn't fly away before its pheromones did their stuff. After all, school was out, and I had no special reason to get up in the morning. Inexplicably and unfairly to me she put the kibosh on it. I was firmly assured that I would be sleeping in my bed that night like a normal kid.

Thus, I was thrust into the dilemma of trying to figure out how I could keep an unescorted female moth from flying off before she mated. I owned a small cage made of window screen material, but there was no way it would work. While she could still attract a mate they would not be able to copulate through the fine mesh. I would need come up with a cage with holes small enough that she could not get out, but large enough such that he could cling to the outside while their abdomens connect through the openings. Would one-inch chicken wire work? While her body, although large, could still fit through an opening this size her five-to-six-inch wingspan would definitely deter her ability to escape. Correspondingly, the



The wingspan of the starkly-beautiful Polyphemus Moth is slightly smaller than that of the Cecropia.

abdomen of the male outside the cage could enter the openings easily, although his wings might keep him from completely entering it.

Strangely out of place, plunk-in-the-middle of a residential neighborhood, a cabinet factory stood a few doors down from our house. Each weekday a fresh load of scrap wood was deposited in a dumpster out back in the alley - ripe for the picking by any adult or kid with a small project in mind. I reached in and selected some choice pieces to serve as a frame then ran to the corner hardware store to purchase a small section of chicken wire. I retreated to my dad's basement workshop, cut and nailed the frame together then stapled carefully-cut rectangles of wire onto the frame.

At supportine, usually the only time of the day that all nine of us were together, I announced to my parents and siblings that I had made an invention in Dad's workshop -a "moth mating cage," and I was going to try it out that night. No one seemed particularly stirred.

At dusk I carefully pinched the moth by her folded wings and placed her in the cage on the steps of our back porch. I went to bed with a feeling of anticipation not too different than that of the night before Christmas. I awoke at first light and ran barefoot down the stairs through the kitchen and swung open the back door. Yes! It had occurred just as I had imagined. A wild male clung to the outside of the cage. His abdomen was curled through the chicken wire opening, the tip adhered to the female's abdomen.

The moths remained motionless in this manner through the entire day, but at dusk they quite abruptly severed their bond, and the male disappeared into the night. Minutes later the female began to grow agitated. She fluttered sporadically. Her movements quickly escalated into a frenzy of beating wings within the small enclosure. After several minutes of observing this I feared she would start to damage those beautiful wings against the cutting wire. I stifled a pang of guilt over keeping her caged. She was meant to fly free, but I *really* wanted some fertile eggs.

All at once the flapping ceased. She clung to the inside of one of the upright corners of the frame, her body quivered like an idling car. Then the vibration ceased. Slowly, the tip of her abdomen curled to the side face of the wood. A single, pearly, round egg appeared. Within a minute a second, third and fourth were adhered in a tight row next to the first. Suddenly, more of the same wild flapping. Then she stopped again, this time depositing a string of a half-dozen more.

And so it went. I was fascinated by the consistent pattern - flap wildly, then stop and lay. Within an hour multiple short strings totaling over fifty eggs were strewn about surfaces of the frame. I took the cage outside and set her free.

About ten days later tiny, yellow caterpillars with brown heads hatched from the eggs. Field guides listed some trees, the leaves on which Polyphemus larvae would feed. I collected them from low hanging branches and was thrilled to see the caterpillars begin to eat. By the following day they had turned as green as the leaves, and had already noticeably grown.

Alas, this first attempt at giant silk moth propagation was doomed to fail. I was too green to the many factors, and, initially, unexpected pitfalls related to larval health - molting, nutrition, hydration, humidity, parasites, predators, and more.

The next year I was at it again, and found some limited success. I had learned from my previous gaffs and incrementally tweaked my methods. As years went by, survival rates grew in leaps.

Today, Nature Discovery offers opportunity for participants to raise their own giant silk moth larvae. Only we've made it much less failure-prone than my early years of trial-and-error. Next Sunday you can sit-in on a presentation and learn exactly how to find and rear giant silk moths, then take a few fertile eggs or newly-hatched larvae home to raise over the summer, complete with a three-page care sheet – the contents *decades in the making*. We can practically guarantee you will, one year from now, experience the successful fruit of this summer's TLC: an impressively huge, starkly beautiful giant silk moth.



Raising an ultimately beastly Polyphemus caterpillar takes most of the summer. A unique and absorbing hobby!

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Local resident, Eric Petrie, first attended our program with his daughters three years ago. Little did he know when he entered our nature center on that Sunday in June how the dynamic of his summers, his knowledge of moths and trees, and respect for the natural world were about to take a significant leap. Here are excerpts from a few of his emails...

\* We had so much fun the last two years, and especially last year, when we had as many as twenty caterpillars of three species. My kids had the best time watching them eat, grow and then make their cocoons. How is it that everyone doesn't do this as a hobby? We took the whole bunch to Torch Lake last August and all three species did fine eating the leaves we took from the countryside. It is the best fun my two daughters and I have in the summer.

\* I love being part of this natural cycle that starts in the middle of one summer, carries over winter, with a magical hatching on the most romantic nights of late spring, and then continues with twilight mating and a new brood of tiny eggs deposited on the wall or wire mesh or on a paper bag. What a special experience of nature, from egg to caterpillar to cocoon to winged giant.

\* This is the best family hobby I have ever had! There is nothing like the spring hatching and mating. Thanks so much for making this possible.

Thank you for the great testimonial, Eric!

The continued existence of these declining beauties depends, for starts, on broad acknowledgement of their existence by we who live among them. Good reason to attend our program next Sunday! Can't make it? Contact us to pick up larvae at another convenient time. Details here...

- Jim McGrath



#### Catch Jim on Coffee Break Thursday, June 8

Jim is scheduled to appear on Thursday, June 8 at 9:45am, discussing giant silk moths and more. The show airs weekdays from 9 to 10am on 89.7 FM. Listen live online at lcc.edu/radio/onair/ or watch it live (or later in the day at 6pm) online at lcc.edu/tv/watch. We'll post a reminder on our Facebook fan page.

# **Finding & Rearing Giant Silk Moths**

#### SUNDAY, JUNE 11



### Doors open from 1 to 5pm. Admission \$5/person.



Start the newly-hatched larvae in an air-tight jar.

At 2pm, attend our presentation, Finding & Rearing Giant Silk Moths. The largest, most impressive moths on the continent can be found right here in Michigan, yet, their numbers have declined dramatically over the past few decades. Beautiful photographs enhance this Powerpoint presentation featuring the life cycle and ecology of Cecropia, Polyphemus, Promethea and Luna Moths. Over the past week, females have begun emerging from cocoons, attracting mates, and laying eggs. See huge newly-emerged live moths in the "mating cage," and more!

Then, take advantage of this unique opportunity. All paying participants will receive two Cecropia larvae to rear at home over the summer, along with detailed care instructions. Additional Cecropia larvae will be available on this day only for \$1 each while supply lasts. Fertile eggs or larvae of other species will also be available for sale with complete care instructions.

An AWESOME summer project for enthusiasts of all ages.

As always, come early or stay late to take a guided walk on our trails or to interact with the largest collection of live Michigan reptiles and amphibians in the state, including two unprecedented "grand slams" – all 10 turtles and all 13 frogs found in Michigan! Photo ops galore!



This huge 5<sup>th</sup>-instar Polyphemus melts into the green leaves that surround it when viewed from below the tree branch.

## Raise Giant Silk Moth Larvae this Summer

A Fantastic Summer Hobby! A Unique Gift!

Eggs and young larvae are available for sale now thru early July.

Polyphemus, Cecropia & Promethea Moths!



4 eggs/larvae (per species): \$12. Additional eggs/larvae \$2 each while supplies last. Includes detailed care instructions. Contact us to make purchase arrangements.

A huge, late 5<sup>th</sup>-instar Cecropia larva eats more than 10 whole leaves a day!



#### A Few Summer Camp Openings Still Remain

Michigan Field Birding Camp (10 yrs & older) June 19-22, 1 space available

Budding Naturalists (5-6 yrs) July 10-13, 3 spaces available

Nature Discovery (7-9 yrs) August 7-10, 1 space available August 14-17, 3 spaces available

Details: <u>http://naturediscovery.net/pdf/summercamps.pdf</u>

Openings still remain in the following summer classes offered by Carol at LCC East.

Build a 'Bot (4-5 gr): July 10-13, 1-4pm. Fun with Physics (2-3 gr): July 17-20, 9am-12pm. Rockets & Robotics (6-8 gr): July 17-20, 1-4pm. Classroom Arcade (4-5 gr): July 24-27, 9am-12pm. Alternative Energy Projects (6-10 gr): July 24-27, 1-4pm. Visit <u>http://lcc.edu/seriousfun</u> to enroll.



- Saturday, June 3: 9am-1pm. MI Reptiles & Amphibians Exhibit; 2pm. Recognizing MI Wildlife Presentation; Kirtland's Warbler Festival, Roscommon.
- 12-2pm. MI Reptiles & Amphibians Exhibit; Capital Area Downtown Library, Lansing.
- Saturday, June 10: 10am-2pm. MI Turtles & Snakes Exhibit; Get Outdoors Day, Baldwin.
- Sunday, June 18: 10am-2pm. Giant Silk Moths Exhibit & Guided Birding; Williamston Farmer's Market, Williamston.
- Sunday, June 19 10am-2pm. Giant Silk Moths Exhibit, Guided Birding; Williamston Farmers Market.
- Friday-Sunday, June 23-25: 12-4pm. MI Reptiles & Amphibians Exhibit; Milliken State Park, Detroit River Days.

#### Follow Musk's Lead: Protest Trump's Mania

By agreeing to serve on Trump panels on economics and manufacturing Elon Musk was under the impression that his presence would make a positive impact. Apparently he underestimated the faux-commander-in-chief's world class ego. Now, so disgusted over Trump's decision to back out of the Paris Climate Agreement despite overwhelming evidence of man-made climate change's catastrophic, cascading consequences, he's quitting the councils in protest:

http://www.latimes.com/business/la-fi-elon-musk-climate-change-20170601-story.html

Donald Trump's decisions *do not* represent us as Americans or as responsible human beings. We are greatly unsettled that such a demonstrably unstable, self-serving egomaniac has been granted the authority to determine what is best for us. Moreover, we are ashamed that the words and actions of this charlatan on the world stage are ostensibly supposed to represent our stance as citizens of this country. This man is unfit to drive the country, much less a car. Let's take the keys away before it's too late. This is no time for complacency.

**-**JM





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NATURE DISCOVERY 5900 N. Williamston Road Williamston, MI 48895 (517) 655-5349 naturedisc87@gmail.com www.naturediscovery.ne

