

THIS ISSUE

Thank you, Donors!

Raise Polyphemus Moths

Visit Us by Appointment

Zoom in on MI Snakes, June 25

While We're Distracted...

Be a Caterpillar-keeper this Summer



We found this beautiful Eastern Comma larva on the stinging nettle in our yard. It's growing rapidly in our care.

Inner city Chicago is not exactly the ideal location for an enthusiastic young student of the natural world to blossom. However, like so many others, from an early age I held a special fascination for butterflies. Of course, urbanscapes yield a limited variety, but I grew to become aware of the tremendous diversity out there upon my discovery of, and subsequent obsession with the *Golden Guide to Butterflies & Moths*.

I leafed through this little guide countless times as a teenager. In so doing, I quickly came to realize two additional, critical tidbits of lepidopteran detail that deserve recognition in any educational journey. First, within the insect order, Lepidoptera, *moth* species far outnumber the butterflies – by about ten to one. Ten times the diversity and abundance equals ten times the ecological significance. Secondly, there is usually a very small menu of food plants on which the larva of any given butterfly or moth species can thrive. It is hardly possible for an urbanized area to harbor more than a smattering of wild plant growth. The amount of available ground is just not there. The same holds true for rural landscapes dominated by cropland. Ergo, as goes plant abundance and diversity, so goes lepidopteran abundance and diversity.

My boyhood friend, Goose (the only other kid in the ‘hood as invested in such pursuits), and I had a few means at our disposal to escape to more naturally-diverse surroundings, one of which was to take the

Addison bus westward to the end of the line. The last ones remaining, we would disembark before the bus turned around, then cross Cumberland Avenue and disappear into the woods of the Cook County Forest Preserve.

On one particular sunny day in the summer of ‘70 we wandered into an expansive meadow of overgrowth teeming with a diversity of wildflowers, complete with an array of buzzing bee species busily foraging among the blossoms - and butterflies - oh, the butterflies, so many of which we had never laid eyes on before, except, of course, for the countless times we’d seen their images in the *Golden Guide*: Monarchs and cabbage whites, yes, but also



Note the transverse black line across the middle of each hind wing to tell the Viceroy from a Monarch.

viceroy, red-spotted purples, red admirals, painted ladies, great-spangled fritillaries, clouded sulphurs, tiger and black swallowtails, buckeyes, pearl crescents, silver-spotted skippers, and more.

We were enamored with their beauty and infatuated by their novelty. We wanted to possess them, so we returned home, purchased a couple of cheap butterfly nets from the neighborhood hardware store, grabbed an empty Hills Bros. coffee can (the common insect container of the day), and went back to the meadow to collect our booty.

It didn't turn out well for the butterflies..., but Goose and I had learned a valuable lesson in witnessing their hot, crowded, messy demise within the cans. Butterflies cannot be contained, cannot survive, and thus, cannot display their proper beauty without open air space and *freedom*. To attempt to keep them confined suddenly felt sinful, in a *To Kill a Mockingbird* sort of way.



Buckeye.

Take it from the "kid-me" speaking from that ill-advised endeavor some fifty years ago. Don't keep butterflies captive. Allow them to fulfill their rightful splendor in the wide open spaces they were evolutionarily designed to occupy. This doesn't mean you can't attempt to get close. Hunt them with a camera in the wild instead of a net. With digital technology today any beginner can take decent photos while honing the skills of patient stalking and waiting, the necessary forte' of any wildlife photographer.

Surely there are other kids today who are as captivated with butterflies as we were then, but just as surely there are countless more who will never know what they are missing. How many never get so much as an opportunity to peruse the color-splashed pages of a field guide like the one we came to know, then to unleash their imaginations and let their aspirations run wild?

However, there is another more benign way to keep live, wild butterflies and moths of nearly every species native to your area for days, even weeks at a time. There is not only far less chance of their being harmed, but of actually being given better odds of survival under your watch than they would have in the wild. Find and raise them in their *larval* stages.



We found this 5th instar Viceroy larva on a scrubby willow sapling leaning over the waters of the Red Cedar River.



Days later, it had molted into its subtly beautiful chrysalis form.

After the butterfly-capture debacle Goose and I grew increasingly more aware and knowledgeable about finding, then keeping various lepidopteran larvae; our goal, to watch them grow and metamorphose into adult form. On some summer days we would go "caterpillar-hunting" for hours and miles across Chicago's

northwest side. We came to recognize the target food plants in the form of diverse trees, shrubs, vines, herbaceous weeds and garden vegetables on which larvae of specific lepidopterans fed. Then, we would take our varied multi-legged prizes back to one of our yards, arrange each among sprigs of its appropriate food plant, then watch it eat and grow.

Mind you, we had limited access to printed instruction on lepidopteran larval care. How did we know what to do or not to do? We didn't. We contained them under parameters that seemed right to us at the time, but which often, ultimately proved not to be. Indeed, I sometimes tell students that we killed hundreds of caterpillars and other small creatures through our formative naturalist years, but not through any purposefully malicious intent. In a sense we loved them to death through our ignorance.



The Luna is only the beginning when it comes to moth diversity and, yes, beauty.



This Luna larva camouflages perfectly with the black walnut leaves on which it is feeding.

Trial and error is an effective teacher, however. A variety of missteps often led to caterpillar deaths. We felt badly about it but were not to be deterred. After a particular caterpillar-keeping failure we were cognizant to try something different when the next specimen of that species came into our hands.

Fast forwarding a few years to young adulthood, my caterpillar-keeping successes began to outnumber the failures. Also, I was no longer as hard on myself when a given larva perished under my watch; I had become aware of how stacked the cards are against any *wild* caterpillar's survival in the environment.

Only a fortunate few percent make it long enough to emerge from pupal form to attain the metamorphic goal - reproductive form. However, what used to be, ecologically, a mini-jungle full of dangers out there has gotten worse for caterpillar survival with the addition of human activities that are deadly to them. There is no shortage of sources of mortality: Environmental (i.e., extreme heat, cold, drought, precipitation or wind), ecological (i.e., predation, competition, parasitism, bacterial/fungal infection), and human-wrought (i.e., climate change, habitat loss/destruction, pesticide application, curious kids). Thus, armed with proper tried-and-true methods to caterpillar husbandry, a caterpillar under *your* supervision and protection could be said to have a far greater odds of survival to see butterfly or moth form than any wild one left to fend for itself.

The mantra that wild things should be left in the wild may hold true regarding many vertebrates, megafauna or threatened species, however, while well-meaning, it may not hold true so much these days for most lepidopterans. The negative impact of such human activities places a huge thumb on the scale and upends the balance to their detriment. Indeed, recent scientific research points to large-scale insect population declines that should be deemed as nothing short of alarming.



The Virginia Ctenucha larva feeds on grasses among other herbaceous plants.



When the moth emerged from its cocoon we photographed it within its ecological niche before releasing.

Why not make caterpillar-collecting and rearing a primary activity for kids, families and, yes, even interested adults? Done right, it is good for all life forms involved. For parents looking for more options to keep kids engaged throughout this COVID-19-altered summer, the educational value of this activity is limited only by how deeply *you* decide to become immersed. Heck, why not go crazy and operate your own wild caterpillar “farm” at home by nurturing a dozen or more species at once?

Caterpillar-keepers need to become knowledgeable, necessarily, in plant and tree recognition (i.e., knowing what a hop-tree looks like in order to find and keep giant swallowtail caterpillars), life cycle details beyond anything learned in school (i.e., awareness of larval instars and pending molting events), and implementation of search strategies to locate well-camouflaged, visually-deceptive, or hidden larvae (i.e., a young giant swallowtail mimicking a wet bird dropping or a spicebush swallowtail hiding within the purposely-folded lobe of a sassafras leaf).

Warning: This is hardly just “kid stuff.” This activity can become downright addictive to some adults! Over the years we’ve introduced many parents to the giant silk moths and to the larvae of other species “beyond the Monarch.” While the initial intent of most is to introduce children to the experience, before long a mom, dad or grandparent is the most personally-invested of the bunch! The experience blossoms into a relaxing, interesting and rewarding summer pastime - with or without the involvement of children.

Upon emergence from the pupal stage, then expansion of its wings, a penultimate opportunity presents itself – the acquisition of a *memento* to your cause’s success. With care the individual butterfly or moth can often be coaxed onto a fingertip or into a hand for a personalized photo or Instagram shot. Shortly thereafter, the final moment of your liaison has arrived. The fully-metamorphosed lepidopteran launches into its maiden flight, into the air and out of sight. Your effort to help it beat the odds has been realized. It will most likely soon find a mate, breed, and in so doing, ensure that at least one more generation of its kind will grace the landscape.

Caterpillar season is here. Ready to get started? We can act as your source and resource to attaining and caring for a slew of caterpillar species, beginning today. Read on to learn how...



Many larvae are gorgeous in their own right: A Spicebush swallowtail is exposed from its hiding place on a Sassafras leaf.

Our sincerest thanks to those who have supported us through generous donations this past month...



*Claud Agnello
Valrie Brooks
Amy & Brian Fielbrandt
Robyn Fiore
Dale Giddings
Jan Heminger
John & Cynthia McGrath
Katharine Merritt
Nancy & Dale Nagele
Eric & Mary Petrie
Renae Slayton
Kristin Thomas
Candy & Rob Voigt*



*Raise Huge
Polyphemus Moth
Caterpillars
this Summer!*

A Fantastic Hobby & Unique Gift!

*Fertile eggs are available now. Eggs or young larvae available for sale thru June.
Four eggs or larvae with complete care instructions, suggested donation: \$10.
Contact us to make arrangements for pickup.
Ask about acquiring larger quantities.
Other giant silk moth species available, too!*



Individual, Family & Small Group Visits BY APPOINTMENT

Geared specifically for the times... Individuals, individual couples, families or other small groups are invited to spend an hour or more immersed in any of an array of guided experiences outside - virtually any day through the summer by appointment at Nature Discovery. The sky's the limit as to the range of activities. Here are some ideas...

- Identify Michigan turtles up close as they swim and bask in pools at your feet. Kids *love* feeding them!
- Visit our big red-footed tortoise, Milberta, as she wanders in slow-motion around the lawn. Kids love hand-feeding her, too!
- Snakes! Meet, handle and even feed our gentle rat snakes, garter snakes, water snakes and others.
- Identify and feed up to twenty species of Michigan frogs and salamanders.
- Spend a morning identifying birds by sight and “by ear.” Take a guided birding walk around our country block, or arrange to meet at a natural area of your or our choice. We provide our own Michigan Birds checklist for you to keep track of the finds.
- Learn how to find and raise a huge variety of native butterfly and moth caterpillars “beyond the monarch.” Arrange for Jim to lead you on a guided search around our neighborhood or yours, identifying specific food plants then searching for larvae on them.
- **VISIT US** any time throughout the summer! In fact, visits planned as often as weekly can feature a different theme or area of interest all summer long: Think *Bird Day*, *Caterpillar Day*, *Turtle Day*, *Frog Day* or *Snake Day*. Visiting kids love their time with our snakes so much that we could easily arrange more focused “snake days” such as Rat Snakes Day (lots of handling, watching them crawl through grass, climbing trees, feeding), or Garter Snakes Day (identification of 3 species, handling, crawling in the grass and feeding).



Through the month of June we will not be charging a specific minimum fee so as not to exclude visitors who may be financially-stressed through these times.

However, **DONATIONS ARE ACCEPTED** in light of each participating party's ability and discretion. Wondering about a “suggested” donation? Our previous base fee for such visits was set at \$5/person/hr.



Zooming-in on Michigan Snakes

On Thursday, June 25 at 2pm Farmington Community Library hosts this free Zoom/Facebook Live presentation featuring up to ten species of live snakes shown and discussed by Jim & Carol. Visit <http://www.farmlib.org/> for details on how to connect and participate.

While We're Distracted...

<https://insideclimatenews.org/news/04062020/trump-pipeline-sign-amid-racial-justice-coronavirus>

<https://www.nytimes.com/2020/06/03/climate/black-environmentalists-talk-about-climate-and-anti-racism.html>

<https://insideclimatenews.org/news/01062020/extreme-rain-study-climate-change>

https://www.independent.co.uk/environment/sixth-mass-extinction-endangered-animals-wildlife-markets-biodiversity-crisis-standford-study-a9544856.html?utm_medium=Social&utm_source=Twitter#Echobox=1591112891

-JM

The next generation would be justified in looking back at us and asking, “What were you thinking? Couldn’t you hear what the scientists were saying? Couldn’t you hear what Mother Nature was screaming at you?” -Al Gore



Less Beef = Less CO₂
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