



Head-on a 5th instar Giant Swallowtail caterpillar's front end looks like a dog face.

THIS ISSUE

Around the State in August

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Reading for Environmentally-Concerned

Our Weirdly Wonderful Insect-centric Life

On the topic of insects – usually butterflies and moths – to a young audience, I'll often relate a slightly-embellished story from my pre-school days in Chicago...

The month was September. My older siblings were in school, my mother in the house with my baby sister. I was in the yard, engaging in a particularly keen fascination with looking for and discovering small crawling forms of life.

On this particular day I found a caterpillar. I scooped it into my cupped hands and brought it into the house to show my mother - and to tell her my plan. "Mom, I'm going to keep this caterpillar until it turns into a butterfly."

She looked down at the fuzzy worm, meandering too quickly across and around my open palms. I watched a grimace of disgust cross her face.

"Oh no you're not. Get that dirty thing out of the house!" She was so adamant, bordering on panic, that I knew there would be no room for debate. I took it back to the yard then returned indoors to make sure my mother received a pouty taste of my displeasure.

She looked down on me, pitiless, and said, "When you grow up and have a house of *your* own, you can keep as many caterpillars as you want..., but not in *my* house!"

I'll then say to the young audience, "Hey, look. I grew up. Do you know how many caterpillars I have in my house now? About a hundred... Who wants to come over?"

They laugh, and hands shoot up. I then proceed to pull an array of caterpillars along with more locally-occurring live insects from the box behind me to show and discuss.

By ‘house’, of course, I was referring to the completely unique ‘big little’ nature center attached in the back.

In addition to maintaining the huge zoo of Michigan-native reptiles and amphibians here (currently @ 70 individuals of 34 species), particularly in the summer, we maintain a separate veritable zoo in itself of insect life. Larvae of native butterflies and moths comprise most of it, and we utilize various combinations of them extensively for educational purposes.



Io Moth caterpillars possess finely branched stinging spines for protection. The irritation feels similar to stinging nettle.

As I write, we’ve got larvae in a range of growth stages of the Cecropia Moth, Polyphemus Moth, Prometheus Moth, Io Moth, Hickory Tussock Moth, Milkweed Tussock Moth, Giant Swallowtail, Monarch, and Red Admiral. The species and numbers change daily as individuals undergo metamorphosis into other stages, and new species are found outside and added to the revolving collection.

About sixty Luna Moth caterpillars spun cocoons a few weeks ago. The summer’s second brood of adult moths are emerging from them now, several each day. I placed a female outside overnight in the ‘mating cage,’ two nights ago. She attracted a wild male, then laid fertile eggs last night. A second female drew a male in last night. In another week newly-hatched caterpillars will be available with complete care instructions to raise in the classroom or in your own home.

Containers bearing Antlion larvae, the growing nymph of a Chinese Mantis, a Daring Jumping Spider, and a Long-bodied Cellar Spider comprise still other invertebrates maintained and at the ready to show to either captive audiences at libraries and other off-site venues or to visitors to our center. We catch small insects in the yard daily to keep these mini-predators alive and kicking.

Our relationship with wild insects here extends well beyond the educational aspect and into a necessarily utilitarian one. After all, keeping some twenty insectivorous frogs of ten Michigan species on hand requires taking on *all* the hunting to keep them alive.

In the colder months we buy crickets of various sizes from a pet supply store. However, the rest of the year - roughly May through October - we traverse the yard daily to collect enough insect matter to fill their stomachs.

An insect net is hardly a child’s play thing at Nature Discovery. It is a critical tool to amass lots of insect matter in a short period of time. When you perform a task or function regularly over time, quite naturally you become increasingly adept at it. I can’t imagine there are many people across the state as nimble and efficient at chasing down insects with a net as Carol. On a sunny warm day she walks out the back door of the nature center, empty net in hand then returns ten minutes later, net teeming with dozens of agitated flies, grasshoppers and crickets.



Carol amasses dozens of Carolina Ground Crickets in a matter of minutes, all destined as frog food.



A pair of large Two-striped Grasshoppers found on the lawn adjacent to the dense, taller, perimeter grass on which they feed.

We also collect insects of all sizes randomly or incidentally while performing other tasks. When I'm mowing the lawn I will keep an empty, small plastic peanut butter jar in my pocket. Systematically cutting straight swaths back and forth I watch the ground immediately in front of our electric walk-behind mower. A thin but continuous cloud of tiny leafhoppers rises from the front edge of the deck as they fly out of its path. Among them I'll sporadically spot a small grasshopper as it too jumps to safety. I snatch it from the grass, insert it in the jar, then keep mowing. Thirty minutes later I have a dozen more food items to supplement Carol's haul.

Sometimes a fairly sizeable cutworm moth flies out of the mower's path and lands in the grass ten or twenty feet distant. I dash from behind the mower, pounce on it and deliver it directly indoors to the tank that houses our three Gray Tree Frogs. In keeping with their nocturnal habit, they have a special fondness for moths. Pinching the flapping moth by a wing between my thumb and forefinger, I hold it in front of a tree frog that perches on a horizontally arranged stick. It launches to snatch it, then uses its front feet to stuff it into its mouth.

At this point this may go without saying... It takes me longer to mow the lawn than it normally should. I must confess that many other insects that suddenly avail themselves - although not targeted for frog food - also quite easily distract me.

For instance, in the first half of August on the south side of our house the Butterfly Bushes, along with the Joe Pye Weeds and Bull Thistles are in full nectar-laden bloom. On a sunny afternoon now, the activity of many dozens of butterflies fluttering in orbital feeding clouds is definitely eye-catching.

From a distance I recognize quite a few large species: Giant Swallowtails, Eastern Tiger Swallowtails, a Spicebush Swallowtail or two, a Monarch or two, a Great-spangled Fritillary, etc. Walking closer reveals several commonplace Cabbage Whites which I can't help but glance past, given the more impressive species to be seen.

Erratic-flying Silver-spotted Skippers appear more territorial with each other than the other lepidopterans. They spend as much time chasing each other around a Butterfly Bush as they do feeding. Smaller skipper species are busy here too, like the delicately marked, golden Long-dash. A combination of about ten Hummingbird Moths and only slightly smaller Snowberry Clearwings hover with blurred wingbeats from cluster to cluster.



A Great Spangled Fritillary nectars on the blossom clusters of Butterfly Bush.

The air buzzes loudly and continuously around these shrubs. Honey Bees and Bumble Bee species, incessantly drone from blossom to blossom. A big, burly Carpenter Bee scrambles through a pink cluster of blossoms like a bull through a china shop. There are so many varied, tinier bees and wasps of different species, all, again, in seeming perpetual motion between and underneath the showier diners that you would need to spend all day with a magnifier and a Hymenoptera identification key to name them all.

I pull out my cell phone and start taking close-ups, knowing full well that the activity is so continuous, over three quarters of the shots will be out of focus. Fifteen minutes fly by. I turn and look across the lawn. The mower sits, mid-swath, in silent repose. Oh, yeah... I shrug and head back to it.

We have an ‘open door policy’ when it comes to insects.

Over the summer, unless inclement weather dictates otherwise, the sliding back door to the nature center remains wide open from morning to dusk. We’re in and out so many times through the course of the day - nearly always with a net, a bucket of water, a turtle or some other utensil in hand - that leaving it open is more expedient. Naturally then, insects - most notably, flies - enter regularly. Many eventually find their way out but many more end up on the window panes. We’re not only fine with this but make use of the windfall, again, to feed our many insect eaters. Why go out to catch them when you can so easily invite them to come to you?

Amid some other task Carol or I will spot a fly on the window, pluck it from the pane, pick a wing off, drop it into the lucky ‘chosen’ one, then resume what we were doing. After a dozen or more ‘window pickings’ throughout most summer days over many years this sequence has become an entirely knee-jerk reaction for both of us. It manifests itself even when we’re away from the nature center.



Horse flies find their way onto the inside window panes...then into frog stomachs.

One summer day Carol and I were grabbing breakfast at a restaurant. We sat at a booth adjacent to a large window. As we dined and talked, a fly buzzed past us, struck the window, then began crawling up the pane. The conversation paused and both of our gazes shifted toward the fly. We locked eyes again and burst out laughing. We had each had to stifle a reflex to grab it. Where is a frog when you need one?

We’ve identified some six different species of horse flies that find their way through the doorway and onto the windows, too. They make for an especially robust meal for the medium to large sized frogs. As summer goes on, the horse fly species that occur get progressively bigger. By August we’re treated to the occasional entry of a big female bomber of a Black Horse Fly. She hits the window with such force you’d think from the sound that someone just threw an acorn at it. We will put it in a jar to save if we see that we have a presentation title in the next day or two that will allow us to show and discuss it. Since this large blood-seeker rightfully makes many people uncomfortable, say, if it starts circling them at the beach, pulling a live one out of a jar during a library presentation tends to garner heightened attention. For more about our relationship with horse flies, read the opening column to our July 2019 newsletter, *Ode to the Horse Fly* (<http://naturediscovery.net/pdf/WILD%20TIMES%20July19.pdf>).

Our open-all-day door attracts a female mud dauber wasp nearly every summer. Mud daubers have a propensity to build mud nests in locations with shelter overhead. The Yellow-and-Black Mud Dauber’s nest is a series of side by side tubes. It is a common sight under an outdoor picnic shelter, usually adhered to an overhead joist.

Since our door was open throughout the day one summer quite a few years ago a female of this mud dauber species proceeded through several weeks to build a structure on the face of the bison skull which hangs on the wall above the doorway. She eventually filled the tubes, separated into linear chambers, with spiders that she stung and paralyzed before laying an egg on them. Weeks after she completed them and disappeared (most likely, at the end of her life cycle) the offspring that matured inside chewed their ways out of the sides of the tubes and flew out the door opening.

At the start of a day camp week here kids would at first be frightened or alarmed to see a large wasp enter the nature center. When we pointed out what she was doing and added that she is completely unaggressive



The American Bison Skull on the wall over the door wears the tubular nest of a Yellow-and-black Mud Dauber like an eyebrow.

toward people, they came to love observing her, and would shout to others when she was seen carrying a fresh ball of mud or a paralyzed spider in her grasp.

Since that summer, nearly every summer since, a female of another species, the Blue Mud Dauber, would move in to nest-build and procreate. This species seems to have a particular fondness for the corners where walls meet the ceiling. Three years in a row, a female Blue Mud Dauber would build a nest high above and beside the bison skull in the uppermost corner of our vaulted ceiling, each ensuing one annexed onto the abandoned one from the summer before. Another female chose to build a fresh nest in a corner of the ceiling in our lower level.

From time to time on a sunny summer morning we fail to open the sliding door early enough to suit the schedule of the busy matron. We enter the classroom to find her flying against the inside of the pane, trying to get out. We know then that when dusk approached the night before, she chose to spend the night inside one of her chambers. We open the door and she quickly disappears to perhaps resume spider-hunting. Other mornings we enter the nature center

to find her buzzing up and down on the outside of the pane. The moment the door is slid open she enters past us and rises up and into the mud chamber.

This summer's female comes and goes from the dark recesses of the cartilaginous sinuses of the bison skull. She lands at the base and crawls upward into the darkness of the many crevices to tend the hidden nursery's contents.

Our typical work day here doesn't end until dusk, often later. However, as the sun descends in the western sky Carol and I purposefully create an opportunity to stop, however briefly, and smell the figurative roses. We'll agree on a time, usually between seven and eight, where we can both conveniently stop our respective tasks. A couple of outdoor chairs are placed on the lawn just off of the edge of the patio. We grab a couple of adult beverages and have a sit with an eastward view across our wild country lawn.

If it is a clear day, the wall of dense foliage of the varied trees that rim the lawn is gilded brightly by the setting sun's rays. Meanwhile, we sit in the cool shade from the house behind us and watch the shadows stretch and advance across the lawn ahead of us. Eventually they begin to inch their way up the leafy backdrop.

An extended family of exactly eight Chimney Swifts come and go in circles and arcs overhead, twittering spritely all the while. We're quite sure that two pairs nested in the chimney of our next door neighbors just past the tree line to the north. By their comings and goings, always from this direction, we assume the families of adults and grown young continue to roost in it nightly. We watch them overhead, intermittently swooping and sharply banking to devour small aerial insect matter too small to see from our ground-bound vantage. A family of comparatively slim-bodied, Barn Swallows cut through the air like darts as they enter the feeding stage in pursuit of the same tiny, floating midges and such.



The view from the patio chairs as an early evening storm brews.



A diminutive female Eastern Amberwing, pre-release, after she flew into our nature center by mistake.

Then, there are the dragonflies. On some days as we sit, more than a dozen of varying sizes and wing patterns traverse our field of view at any one moment. They cruise fitfully and territorially at all altitudes, some skimming tiny winged insects from just above the grass blades in front of us (the leafhoppers I see in front of the running lawnmower?); others at eye-level or barely over our heads; and more, high into the sky, hovering and jerking at sharp angles among the eddying flow of swift and swallow flight. Of course, of all people it is least of all lost on us... This diverse, aerial, summer evening revue would not exist without the availability of abundant flying small insect matter.

Our break time necessarily over, we get back to a few more outdoor chores before darkness falls. An hour later the swifts, swallows and dragonflies have all retired. Fireflies punctuate the advancing gloom. We look skyward and marvel once more before going indoors as the many members of the Big Brown Bat colony in our crawl-space attic emerge from the vents to forage. They meander over the yard's air space in floppy fashion for more insect prey, unseen to us, that will continue to fill the air and to fill their bellies throughout the warm night.

A year or two before my mother passed, our family was gathered at one of my siblings' houses in suburban Chicago. At one point Carol was sharing one of many strange and funny anecdotes we've accumulated due to our constant connection to all of these wild things so central to our daily life. As the others laughed (either with or at her - it doesn't matter to us) my mother, who sat on the couch next to me, leaned closer and said under her breath, "You are *so* lucky to have found her."

"I know." I replied.

- Jim McGrath

Around the State in August

- ❖ ***Saturday, August 9: 10am-2pm. MI Reptiles & Amphibians Exhibit; Dahlem Environmental Center, Jackson.***
- ❖ ***Sunday, August 10: 10am-2pm. 'Michigan's Largest' Exhibit; Williamston Farm & Artisan Market.***
- ❖ ***Monday, August 11: 6pm. MI Snakes Presentation; Gladwin County District Library, Gladwin.***
- ❖ ***Saturday, August 16: 7pm. Feeding Frenzy Presentation; Hartwick Pines State Park, Grayling.***
- ❖ ***Sunday, August 17: 1pm. MI Snakes Presentation; Hartwick Pines State Park, Grayling.***
- ❖ ***Saturday, August 23: 10:30am. MI Reptiles Presentation; Huron County Nature Center, Hume Township.***



Nature Discovery

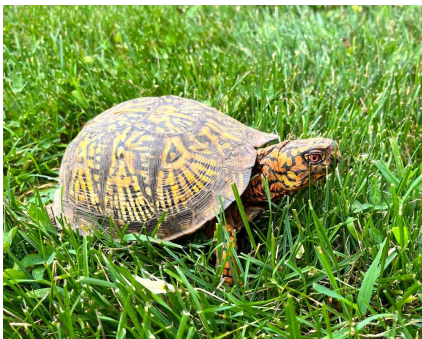
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Visit Our Nature Center by Appointment

*Suggested Minimum
Donation: \$5/person/hour*



The sky's the limit for natural science learning here – with a Michigan twist! Adults, couples and individual families are welcome to schedule an intimate indoor or outdoor visit to what we call “The Biggest Little Nature Center in Michigan,” and “Home to the Largest Zoo of Michigan-native Reptiles and Amphibians.” The unique, in-person, hands-on experiences here are unrivaled at any other nature center or zoo! We will bring snakes, turtles, frogs and salamanders out of tanks to interact with adults or students of any age or grade-level.



Identify and feed “the grand slam of Michigan turtles” - all ten species native to our state as they swim and bask in pools on the patio! Meet, pet and feed “Milberta”, our hungry Red-footed tortoise.

Handle any or all of Michigan’s three species of garter snakes while learning how to tell them apart, then watch them gobble up worms and frogs. Hold or “wear” a gentle 6-foot Black Ratsnake – the largest in the state!

Many more snakes, turtles, frogs and salamanders to identify and feed. Identify birds at the feeders. Take a guided walk on our trails to identify birds, bugs, insect and plant life.

See our ‘caterpillar farm’ featuring an array of butterfly and moth larvae. Arrange now to take Luna Moth caterpillars home to raise on your own.

Ask about special guided birding outings and nature walks at a natural area of your or our choosing!

Raise LUNA MOTH Caterpillars Now!



All you need is access to WALNUT or HICKORY leaves!

EDUCATORS: What a great way to kick off the school year! This is so much better than raising Painted Ladies in the classroom - on a number of levels. Caterpillars feed on leaves for four weeks before spinning cocoons by late September. Moths emerge in early June just before the end of the school year. A valuable addition to middle school and high school science/biology classes too. Contact us to schedule a special presentation - featuring Powerpoint images and live specimens - covering the life cycle, behavior and ecology of this beautiful but seldom seen moth.

PARENTS: Raise Luna larvae with children right at home. There is so much to be learned through daily nurturing and observation of your growing subjects.

LEPIDOPTERA ENTHUSIASTS OF ALL AGES: Hey, this is hardly just kid stuff! Any adult with an interest in the natural world or a desire to reconnect with it in an engaging way scan take advantage of this unusual opportunity.

FIVE FERTILE EGGS or YOUNG LARVAE FOR \$15 includes complete, detailed care instructions. Inquire about reduced rates for larger quantities while they last.

NO NEED TO PURCHASE ANY EXTRA SUPPLIES. All you need is a clean, dry jar to get started.

Contact us to make a purchase and pick up arrangements (Shipping not available).

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our mission, including these
most recent donors...*

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More Reading/Listening for the Environmentally-concerned

'Half the Tree of Life': Ecologists' Horror as Nature Reserves Are Emptied of Insects

<https://www.theguardian.com/environment/2025/jun/03/climate-species-collapse-ecology-insects-nature-reserves-aoe>

What the Disappearance of Insects Means for Humanity and the Earth

<https://natehagens.substack.com/p/the-silent-collapse-what-the-disappearance>

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

I don't want you to be hopeful. I want you to panic. I want you to feel the fear I feel every day. I want you to act. I want you to act like you would in a crisis. I want you to act like your house is on fire, because it is. – Greta Thunberg

The personal actions that cut climate pollution fast are to go flight-, car-, and meat-free. Start with the one that feels most feasible for you; if you can't totally go without, aim to cut your consumption today at least in half. – Kimberly Nicholas, Under the Sky We Make

What if we had storytelling mechanisms that said it is important that you know about the well-being of wildlife in your neighborhood? – Robin Wall Kimmerer

Study nature, love nature, stay close to nature. It will never fail you. – Frank Lloyd Wright



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