Nature Discovery **WILD TIMES**

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THIS ISSUE

Nettle patches are prevalent on our property, and that's okay.

The 180 on Stinging Nettle

I like stinging nettle… No, I mean I *really* like stinging nettle. When I see a patch of it, whether in our yard, on a roadside, in a park or at another area where plant life is permitted to grow *au naturale* it makes me feel good. In fact, I really don't mind very much if my exposed arms or legs should happen to come in contact with it… and I have my reasons for wanting to get close.

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One spring I was scheduled to give a Powerpoint presentation to a garden club about making their yards more accommodating to wildlife. I entered the room with not just my laptop bag, but with an open box containing six pint-sized planters, within each a small stinging nettle that I had dug up on our property. Before the presentation began I placed them on the table.

Of course, garden club people know their plants. Ladies filed into the room to their seats. Many passed the table and caught sight of the nettles. I smiled at the facial expressions ranging from annoyed to disgusted, followed by comments that backed up the looks: "Ew, what's he doing with *nettles?*" "I *hate* those plants." "I'd never let *that* grow in my yard."

An hour later the presentation had concluded, and gardeners left their seats to stretch and mingle. A number of women approached the table of potted nettles. One asked, "Are these for sale?" When I told her I'd gladly accept a small donation for one she quickly pulled a five dollar bill from her purse, handed it to me and picked up a pot. Others reached for their purses. Within a few minutes all the nettles were gone.

Mission accomplished. The content of the presentation, as intended, had induced a one-eighty in their attitude toward the plant, from noxious weed to something of value.

It's all about ecology, really, and quite simply what ecology is all about: connectedness between components that comprise an ecosystem. A plant capable of spreading rapidly that is highly irritating when even lightly brushed by human skin can rightly induce bad feelings when judged by these characteristics alone. Yet, a guided peek at some of the local animal life to which nettle is ecologically linked may just

A Red Admiral basks on a barkless log.

alter some attitudes, especially if those forms of animal life are deemed especially pleasing to the average gardener.

It is evident by the number of topic requests we've received over the years. Gardeners love birds and butterflies. They also know about the reproductive necessity of, say, the milkweed to the Monarch. They talk enthusiastically about their purposely-tended milkweed patches, seeing butterflies depositing eggs on the leaves, and watching the tiger-striped caterpillars grow, metamorphose into the penultimate jade-green chrysalis form, then later into the familiar orange and black adult.

Yet, the Monarch is only one of over 150 butterfly species found in Michigan (Moth species are *ten times* more diverse than butterflies, and thus it could be argued, ten times more ecologically-significant.). Like the Monarch, most rely on only one or a handful of herbaceous plant, vine, shrub or tree species as their literal nurseries. Indeed, as the Monarch's very existence from one generation to the next is tied to the milkweed, these other species cannot exist without their specific larval food plants.

No doubt, stinging nettle has symbiotic connections to far more life forms than these but, given their status in the human psyche, let's stick with butterflies. There are four species in Michigan which seek nettle patches in order to launch the next generation: the Red Admiral, Question Mark, Eastern Comma, and Milbert's Tortoiseshell. All are medium-sized species in the lepidopteran family, Nymphalidae, a.k.a., the brush-footed butterflies. The name refers to the truncated front pair of legs on the adult that in many species are covered with fine hairs, giving them a brush-like appearance. Since the butterflies cannot stand on them they appear to have only four legs when perched.

Perched with wings closed, an Eastern Comma melts into a background of tree bark.

In flight on a warm, sunny day, any of these species can be extremely difficult to follow with the eye, as they zig-zag up, around, in front of, then behind you. Although more brightly-colored above, the underwing surface of each species is composed of mixed hues in various patterns of rust, brown and gray. Thus, when a nettle butterfly lands, its wings close over its back and the cryptic, camouflaged pattern of the upright underwings helps it to disappear into the background hues of tree bark, leaf litter, or bare soil.

Folded nettle leaves droop from the weight of larvae hidden within.

Red Admiral caterpillars are probably the easiest to find on nettle stalks, that is, if you know the means by which they hide in a leaf. The female lays conical, green eggs individually, usually among the topmost, newest growth on the stalk. A newly-hatched, dark, spiny caterpillar perches and rests on the top of the leaf, then uses silk, in effect, to fold the leaf in half, lengthwise around itself. Thus enveloped, it is shielded from the sight of many prospective predators.

To feed on the leaf within which it also hides, the caterpillar crawls forward to the leaf's tip and consumes it methodically toward the stem while still managing to keep the rest of its body inside the fold. As the leaf is slowly devoured and its hiding place shrinks the caterpillar is eventually necessitated to vacate it, often under the cover of darkness. It then relocates

to the top surface of a new leaf where it folds itself in and is then ready to resume feeding. Over the course of the next couple of weeks the caterpillar eats its way down the stalk, growing steadily as it consumes the folded leaves. By the time the caterpillar is fully mature its progress has advanced toward the bottom-most leaves near the base of the stalk. A scan at the stalk above it reveals clues to its presence and activities - a progression of mostly-eaten folded-leaf remnants. Now on the verge of metamorphosing out of caterpillar form it will pull several close-growing leaves together with silk to fashion a three-dimensional chamber in which it will hang upside down and molt into the chrysalis state. Light brown overall, the dorsal side of the chrysalis sports spines that look as if they've been dipped in glittering gold. Within two weeks the butterfly will emerge from the leafy tent ready for flight.

Eastern Comma and **Question Mark** butterflies also seek nettle in order to procreate. Both have spiny, multi-hued larvae that spend their days consuming leaves in a more conventional caterpillar manner; the larva clings to the underside of the leaf while feeding and at rest. Like the Red Admiral these two species lay conical eggs singly and often near the newest tender growth at the apex of the stalk.

An Eastern Comma clings to a nettle leaf.

Given their propensity for hyperactive flight you could easily miss a nettle visit by an ovipositing female of one of these species. Turning your back on a nettle for less than a minute provides plenty of time for a female Question Mark to zip up, lay an egg or two, and be gone.

A related circumstance occurred once, while we were exhibiting at an outdoor event at a park on a summer day. I had placed a clipped nettle stalk about three feet in length that protruded from a bottle of water on the display table. A small sign in front of the bottle that read, *Can you locate the Red Admiral Butterfly larva hiding on this stinging nettle?* At one point several visitors had gathered in front of the nettle while I discussed its ecological connection to this butterfly. I then opened the little paperback *Golden Guide to Butterflies and Moths* and pointed to illustrations of the three other pertinent species. As if on cue, all in a matter of seconds, a female Question Mark materialized out of nowhere. She quickly circled the plant in front of our widened eyes, landed, laid an egg, circled again, and was gone. The visitors gaped in amazement as I exclaimed too late, "Question Mark!" As if I were a magician with a secret, one incredulous man turned to me and asked, "How did you *do* that?"

The Question Mark illustrated on a page from the Golden Guide to Butterflies & Moths.

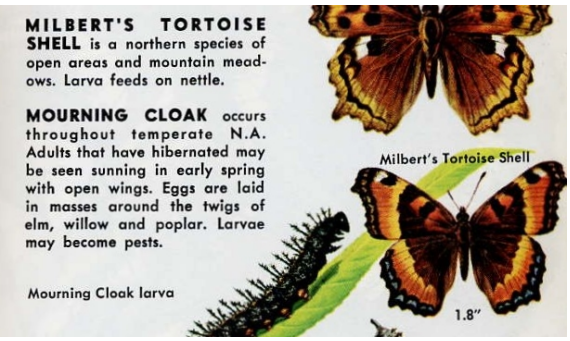
Throughout the 90s - our first full decade residing in our north Williamston country home - the **Milbert's Tortoiseshell** was a fairly commonly-seen butterfly around our yard and around neighborhood roadsides. Nearly every winter we would find one or two hibernating on the ceiling of our unheated garage.

Over the years and up to present-day, however, this species has declined to the extent that we never see them anymore. In fact, decades have now elapsed since I've laid eyes on this butterfly in any of its metamorphic states around our neighborhood. There is hardly a shortage of nettle on our property or elsewhere, thus, other forces are likely driving its absence.

While agricultural and residential pesticide usage is a persistent concern, climate change may very well be playing a role here. This butterfly has a more northerly range than other species. It occupies much of

Canada with the edge of its range reaching southward no further than the bottom of the Great Lakes Basin. It makes sense with a warming atmosphere. Organisms that require cooler climes may begin to experience some level of recession along the southern edge of the range.

Unlike the others, the female of this species lays a cluster containing dozens of eggs on the new growth at the tip of a nettle stalk. The slim, finely-bristled, gray-and-yellow striped larvae hatch then feed gregariously, methodically munching their way down the stalk. Days later they will have stripped the entire stalk of leaves. Then they are driven by hunger to crawl away from the stalk in search of another. This feat is easily accomplished since nettles grow in spreading patches from connected rhizomes under the soil. Other leafy stalks are just inches away and the caterpillars quickly find and scale them to resume eating and growing.



The Milbert's Tortoiseshell illustrated on a page from the Golden Guide to Butterflies & Moths.

In the late 90s I found a colony of young tortoiseshell larvae on a patch of nettle in the overgrowth at the edge of our lawn. I was able to observe their progress down the stalk day after day. Strangely, one day I noticed some dark green stains on the top side of some leaves situated directly below the caterpillars. An opaque liquid appeared to have dripped from the area of the their activity, then dried.

On an ensuing visit later that day I saw more stains on leaves below them, but these were still wet. When I scanned the many caterpillars directly above it I soon located the source. A single individual's body had somehow been torn open. It insides oozed from the curled, dying body. I barely had a chance to process what I was seeing when a buzzing noise approached from behind me. An American Paper Wasp made a beeline over my shoulder directly to the mortally wounded caterpillar. Eyes only inches away I observed it work with efficiency. Cutting mandibles combined with coordinated movements from its legs produced a tote-able ball of the caterpillar's wet entrails in a matter of seconds. While clutching the green glob underneath it the wasp took wing and rose across the lawn in the direction of our house. No doubt, it had growing larvae to feed within the cells of an inverted paper nest that perhaps hung under one of the eaves.

The rest of the caterpillars resumed eating and growing apparently oblivious to their siblings' gruesome ends. When they reached the bottom of the stalk they fanned out to climb several adjacent nettles, but now the whole wasp colony was onto them. In the coming days I witnessed two or three busy wasps at a time cutting and carting caterpillar entrails. Several days later what had started out as over fifty small caterpillars had been reduced by the wasps to only a handful of now mature ones. Within another few days no Milbert's Tortoiseshells were to be found among the defoliated nettle stalks. Surely, more had been taken by the wasps, but I held out hope that a perhaps a few lucky individuals had been able to make it through the feeding stage without becoming food themselves and had crawled off to successfully molt into chrysalises within some dense shrub or grasses nearby.

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I meet many people, often adults with children, who search milkweeds for Monarch caterpillars. They then take them home with some milkweed to observe the process of growth and metamorphosis before ultimately releasing the butterfly. Anyone can easily search for and keep nettle butterfly larvae with the same intent. Who knows? With such heightened attention to nettle patches you may even discover a colony of the locally rare tortoiseshells.


A 5th instar Eastern Comma.

Observe the larvae of any of any of these butterflies on stinging nettle over time, and you will inevitably become

witness not just to acts of predation, but to many more species beyond the butterflies that act as primary, secondary or even tertiary beneficiaries to the presence of stinging nettle, whether in your yard or beyond.

Heck, go ahead and insert yourself into your nettle's ecology as one more primary consumer. Clip the new leafy growth through spring and early summer. Boil it to "get out the sting," then sautè it and mix it into virtually any pasta or rice-based dish of your choosing for a nutritious, delicious, leafy green straight from nature's free produce section. Stinging nettle is a seasonal, culinary staple in our household.

- Jim McGrath

Nature Discovery

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The Blanding's is the only Michigan turtle to sport a solid, bright-yellow chin and throat.

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The sky's the limit for natural science learning here over the summer – with a Michigan twist! Individual adults, couples, individual families and small groups are welcome to schedule a personalized 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 - both indoors and out – make your experience here far more impactful than a visit to a standard 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 in pools at your feet. Meet, pet and feed "Milberta", our always hungry Red-footed tortoise.

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Ask about arranging guided interpretive experiences or guided birding by appointment for your small group of kids, adults or families at a local natural area of your or our choosing.

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LCC Summer Youth Day Camps

This summer Carol will be teaching 4-day science camps for students entering grades 2-8 at LCC's East Lansing Campus. Check out the schedule below, which offers hands-on, fun learning with Chemistry, Physics, Math, Engineering, Natural Science, and Machine Building. Morning classes, 9am-noon. Afternoon classes, 1-4pm.

June 27-30 AM: Science with Experiments (Gr 2-3). PM: Toy Science (Gr 2-3).
July 25-28 AM: Fun with Physics (Gr 2-3). PM: Build a 'Bot (Gr 4-5).
August 1-4 AM: Carnival Games (Gr 4-5). PM: Miniature Golf Challenge (Gr 5-8).

For details or to register for Summer Youth Camps, visit lcc.edu/seriousfun.

Around the State in June

- ***Saturday, June 11: 10am-2pm. MI Reptiles & Amphibians Exhibit; Get Outdoors Day, Baldwin.***
- ***Sunday, June 12: 10am-2pm. Michigan Turtles Exhibit; Eastern Ingham Farmers Market, Williamston.***
- ***Saturday, June 18: 10am. Michigan Snakes Presentation; Betsie Valley District Library, Thompsonville.***
- ***Sunday, June 19: 10am-2pm. Michigan Frogs Exhibit; Eastern Ingham Farmers Market, Williamston.***
- ***Friday, June 24: 6pm. MI Amphibians Presentation / Exhibit; Charlotte Public Library.***
- ***Saturday, June 25: 11am-3pm. Michigan Reptiles & Amphibians Exhibit; Otsego Conservation District, Gaylord.***
- ***Saturday, June 25: 2-5pm. Michigan Reptiles & Amphibians Exhibit; Ludington State Park.***

A New GOP Climate Plan is Long on Fossil Fuels, Short on Specifics

From *Inside Climate News* get a load of their "climate action" agenda:
https://insideclimatenews.org/news/03062022/gop-climate-plan-fossil-fuels-new-mexico/?utm_source=InsideClimate+News&utm_campaign=85b5b1abaf-&utm_medium=email&utm_term=0_29c928ffb5-85b5b1abaf-327904609

-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

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

Scientific findings should never be distorted or influenced by political considerations.
- from President Biden's Memorandum on Restoring Trust in Government through Scientific Integrity and Evidence-Based Policymaking.

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