

THIS ISSUE

Around the State in August

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What's the Difference Between a Toad and a Frog? - a Jarring Taxonomy Lesson



A Wood Frog and an Eastern American "Warted Frog."

It's a question that, in our professional position, we field with regularity from kids and adults, alike. A standard response from someone else might go something like... Frogs are generally covered with thin, smooth, finely glandular skin that produces their characteristically slimy coating. Toads are generally covered with dry skin from which arises many scattered, bumpy glands often called "warts," the largest of which are a pair of parotoid glands situated one behind each eye.

I can't help it. I have to give the inquirer more..., yes, even the kindergartener. From my perspective the question opens the door to an amphibian taxonomy lesson. What's the difference between a toad and a frog? A toad *is* a frog. It is as much a frog as *any* species of frog is a frog. The question has been primed to be asked ad nauseum because of whoever decided (whenever in linguistic history) to call this particularly dry warty-looking hopper by a different four letter word than *frog*. I'm going to venture onto a very short limb and surmise it was not a biologist.

A similar question arises out of the same etymological confusion generated with countless other assigned common names across the animal kingdom. Birds have a lot of them. What's the difference between a flicker and a woodpecker? A flicker *is* a woodpecker. It just doesn't have woodpecker in its name, thus creating the uncertainty. What's the difference between a pewee and a flycatcher? Between a brandt and a goose? Between a sora and a rail, or a martin and a swallow?

On the flip side, no one asks, *What's the difference between a red-winged blackbird and a blackbird?* It is assumed it is one particular species of the group. Likewise, no one has ever asked us what the difference is between a tree frog and a frog. They know a tree frog is a type of frog, of course, because it says so in its name. By assigning a common name to a particular organism that deliberately reflects its place in the taxonomic order of life you effectively eliminate this uncertainty. So, instead of *toad*, how about *warted frog* or *noduled frog*?

"I'm about to teach you college-level stuff now."

When I state this to kids in middle school, third grade, first, or even in kindergarten it gives many of them an extra sense of accomplishment or a feeling that this material must be way more advanced than your typical ABCs. However, most school district curricula fail to take into account that the content isn't so difficult for young minds that the topic must wait until the student requires more years of education to grasp it. Indeed, through various points amid my wildlife or zoology courses at MSU the pending teacher in me noted that this particular material could be easily absorbed by any interested second-grader... and kids are wired to be interested in frogs. Why not give them more than the generic, often far-too-simplistic basics, a la, *the frog is green, the frog lives in a pond, the frog says ribbit, the frog eats bugs and a baby frog is a tadpole?*

At the three area private schools where I teach weekly Michigan nature and wildlife lessons – Montessori Children's House in Lansing, Stepping Stones Montessori in East Lansing and Okemos Nursery School – young frog enthusiasts learn not only how to identify local species by sight and by their breeding calls. They also learn Michigan frog classification.



Three frog families are represented within these 12 jars.

scrutiny any Michigan frog species can be correctly correlated to one of these three families. You just have to know what to look for.

We typically have ten to thirteen Michigan-native anuran species on hand at our center at any given time. For early-grade students I will place specimens into individual, unmarked jars. I then discuss a key characteristic that is easy to notice for a member of each family. Any tree frog, large or small, will readily stick to the clear glass wall of the jar, most seeming to *prefer* to do so rather than sit on the bottom like any typical frog. Toads vary in appearance from the tree frogs and typical frogs in the ways described at the onset of the column. Again, like the typical frogs, they, too, remain at the bottom of the jar. No member of these two families is physically or behaviorally adapted to stick and climb like a tree frog.

I'll place the dozen-or-so jars with individual anuran contents randomly in front of the young students, then pick a volunteer to come forward and separate the jars into three groups based on the family characteristics - tree, toad, or typical - of their occupants. It is gratifying to see, with minimal repetition, how eagerly, quickly and universally the students are able to use a discerning eye to recognize the key characteristics, then effectively separate the frogs into their proper families. Along the way they witness that there is indeed a

Before I go on, here's a taxonomic preview/review for our readers... Within the phylum, Chordata, in the Animal Kingdom there are five classes of vertebrates. Of those five, frogs belong to the class, Amphibia (in Michigan, shared with salamanders), but reside in the amphibian order, Anura, while the salamanders occupy the order, Caudata. Fourteen species of anurans in the state are separated into only three families: Ranidae, the typical frogs (Bull, Green, Leopard, Pickerel, Mink, Wood); Hylidae, the tree frogs (Eastern Gray Tree, Cope's Gray Tree, Blanchard's Cricket, Northern Spring Peeper, Western Chorus, Boreal Chorus); and Bufonidae, the true toads (Eastern American, Fowler's). With a few seconds of close



Naming the common frog family represented within these 5 jars is a slam dunk.



Though you wouldn't know by its common name this spring peeper leaves no doubt that it resides in the Tree Frog Family.

systematic order to the diversity of the frogs they encounter around the state and beyond; this, opposed to the mere generic frog information stated above that is largely where most public school education on the topic begins and ends.

I'll reiterate to the students that I didn't learn what they just learned until I was in college. I then encourage them to go home and explain the Michigan frog families to their parents. Why? Because most of their parents never took a herpetology class, and so, probably never learned this either. The following week, I smile when a parent stops me in the hall to report that an in-depth lesson about frog families was indeed received at home from an enthusiastic, young student/teacher.

Would you like your kids to experience this exercise in person? Ask their school teacher to schedule a visit from us. Easier yet, schedule an appointment to visit our nature center and let us know in advance that you'd like the frogs-in-jars taxonomy lesson.

-Jim McGrath

Around the State in August

Here are a few events open to the public in which we will be presenting/exhibiting. Check the hosting entity's website and social media for details and directions.

- ❖ ***Thursday, August 5: 6:30-8pm. Michigan Turtles Presentation; Commerce Twp Library, Commerce Township.***
- ❖ ***Wednesday, August 11: 11am. Michigan Wildlife Tails & Tales; Millington Public Library, Millington.***
- ❖ ***Saturday, August 21: 10:30am. & Huron County Nature Center, Port Austin.***
- ❖ ***Saturday, August 28: 2-5pm & 7pm ; Michigan Reptiles & Amphibians Exhibit & Presentation; Ludington State Park, Ludington.***

Still Two Spots Left in Next Week's Day Camp

The limited-roster day camp scheduled for Monday thru Thursday, August 9-12, currently has two openings. For students, 7 years or older.

For more details or to enroll contact us at naturedisc87@gmail.com or call 517-655-5349.



Nature Discovery

5900 N. Williamston Road
517.655.5349

naturedisc87@gmail.com

Williamston, MI 48895

www.naturediscovery.net

Raise Caterpillars of Big and Beautiful Polyphemus or Luna Moths this August!



They're double-brooding!

That means...

A second batch of fertile eggs and newly hatched larvae are now available.

5 caterpillars of one species with complete, printed care instructions, \$15.

Ask us about purchasing additional quantities.

Teachers, a unique and rewarding live science project for students.



Nature Discovery

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Identify and feed all 10 species of Michigan turtles.

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! Individual adults, couples, individual families and small groups are welcome to schedule a safe, intimate outdoor or indoor 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, hands-on experiences offered here can be found nowhere else! We will bring snakes, turtles, frogs and salamanders out of tanks to interact with adults or students of any age or grade-level. Visitors are asked to wear a mask during all indoor time.

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.

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 live frogs. Hold or “wear” a gentle 6-foot Black Rat Snake – the largest in the state!



Check out our “caterpillar farm.”

Many more snakes, turtles, frogs and salamanders to identify and feed. Take a guided walk on our trails to identify birds, insects, trees, vines, and invasive plants.

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

Contact us for more information or to make an appointment.

We're grateful to our many donors and supporters through challenging times, including donors this past month...

*The Bills Family
Jessica Gevers & Family
Jan Heminger
Brie Largent & Family
The Small Family
Gene Wasserman*



*The state-threatened
Blanchard's Cricket Frog*

You Can Shrink Your Clothing & Laundry Carbon Footprint

If the devastation of climate change, including persistent plastic pollution generated by human consumption habits, is to be effectively addressed we need to rise above a state of inertia that persists by way of apathy and petty politics. We can start by simply becoming introspective about the impact each of our daily routines has on the problem then adjusting each one accordingly to reduce our carbon footprints.

Everybody needs clothing and needs to wash and dry it. The following links can guide you to lowering your environmental impact substantially in this area. Now all it takes is the will...

Four Ways to Help Reduce Ocean Pollution

<https://www.outsideonline.com/outdoor-adventure/environment/4-ways-help-reduce-ocean-pollution/>

The Dirty Business of Fashion - How the clothes you're wearing are wreaking havoc on the environment
<https://www.bbc.co.uk/programmes/w3cstx50>



10 clothes washing tips to help reduce microplastic pollution. <https://guppyfriend.us/pages/guides>

We're planning on purchasing a special clothes washing bag that catches microplastic particles, thus keeping them from going down the drain and into the environment. We'll report in next month's newsletter about our impressions of the product. Check out this website, including their "Stop!Blogs" for more footprint shrinking revelations.

<https://guppyfriend.us/>

-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.*



Less Beef = Less CO₂
Cowspiracy.com

**Union of
Concerned Scientists**
Science for a healthy planet and safer world



Worldwarzero.com



RSPO.org



insideclimatenews.org

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NATURE DISCOVERY 5900 N. Williamston Road Williamston, MI 48895

(517) 655-5349 naturedisc87@gmail.com www.naturediscovery.net