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A Short-tailed Shrew Lives Life in the Fast Lane

I've written about the prevalence of deer mice on our property in previous newsletter columns - especially in the cold months, occupying the garage of our country residence, skittering through the house walls, and even repeatedly and inexplicably showing up in our silverware drawer. With the continuous use of multiple live traps I capture and feed them to our rat snakes and also use them educationally. Children attending our day camps are fascinated to watch the act of constriction then consumption up close, as do our regular weekly students at Montessori Children's House in Lansing, Stepping Stones Montessori in East Lansing and at Okemos Nursery School. In case you missed them or would like to peruse again...

<http://naturediscovery.net/pdf/WILD%20TIMES%20Jan15.pdf>

<http://naturediscovery.net/pdf/WILD%20TIMES%20Feb18.pdf>

Short-tailed shrews are briefly mentioned in each of the columns, too. Sometimes we catch one in a live trap amid the unending carousel of deer mice. The shrews are not nearly as prevalent as the mice nor can they ever be because they feed at a higher trophic level than rodents, but their uber-metabolism and associated hyperactivity in search of protein makes the ones that are here hard to overlook, especially in the winter.

Indeed, the shrew that goes more than a handful of hours without consuming food is a dead one, so it is bound by survival to be "on-the-hunt" any and all hours of the day or night. For us, knowledge of its trademark penchant for animal protein, no matter the source, instills a sense of relief that this voracious predator grows no larger than a mouse.

It is hard to look a shrew in the eye. The beady pair of pinpoints can be tough to locate on its twitchy tapered head. (This feature is probably most responsible for it being misidentified as a mole. Shrews and moles share membership in the mammalian order, Insectivora.) Although functionally-sightless its superior olfactory sense and bat-like echolocation capability more than compensate for the loss.

I take quiet delight in seeing a wild shrew around the outside perimeter of the house in the winter, albeit usually no more than a glimpse at a time. On the north side of the house, for instance, you can watch the far corner of our garage door through the kitchen window for a couple minutes and be likely to see the same individual zip from a small hole there across a twelve-inch miniature trail beaten in the snow and

into another hole under a board on the ground situated on the outside corner of the garage. A minute later it zips back. How fast does the crossing happen? Blink at the given microsecond and you'll miss it.

As you open the door from our nature center into the garage you best watch that first step. A startled shrew - possibly the same individual - ostensibly amid some protein-securing mission, often skitters across your path to or from the small hole at the corner of the threshold plate.

On the east side of the house, a look out the window in the lower level of the nature center purveys a view of the bricked-in pen that acts as an outdoor box turtle and tortoise enclosure in the warmer months. In the winter it serves as an active bird-feeding site. At any random minute a shrew suddenly materializes from a quarter-sized hole at the base of the bricks to nervously glean fallen sunflower seeds smattered across the ground, then just as quickly disappears back into the hole to store them for future feasting.

While clearing a path through the snow during last week's sub-zero conditions past the brick pen and around to the south side of the house toward another bird feeding station outside our dining room window, I turned in time to glimpse the dark flash of a shrew across the shovel-wide path I had just opened seconds earlier. I had exposed a portion of what I imagined to be a hidden labyrinth of ground-level tunnels. Now, a pair of neat, round, shrew-diameter entry-and-exit holes punctuated each side of the freshly-shoveled swath. I felt certain that if I was inclined to settle there for a spell (but not at ten below!) I would be sure to glimpse its comings and goings dozens of times across the shoveled path over the course of an hour.



Thus, it should come as no surprise that a box trap set in the garage overnight to catch a deer mouse might occasionally yield a roaming shrew, instead. Most of the time when this happens I will release the shrew back into its familiar domain. Inevitably, however, I sometimes find the box trap sprung shut, then lift it and feel the weight of the mammal inside but notice none of the typical movement or scratching from its captured contents. This tells me not just that I caught a shrew instead of a mouse, but that the shrew devoured the tiny bit of bait many hours earlier, then starved to death while I slept. When I happen to empty a *live* shrew from the trap, it surely must have been caught only a few hours or less prior to checking it.

Each winter, including this one, I will purposely capture a live shrew then keep it for weeks in a small aquarium in our nature center to use educationally, both for visitors to our nature center and in school lessons and presentations. Doing so means shouldering sole responsibility for its insatiable metabolism. A high-maintenance endeavor! Field guides list not only a wide array of invertebrate life that a short-tailed shrew will chase down and consume, but small vertebrates, as well, including mice. How does it take down a small mammal as large as itself? The short-tailed shrew is one of a very short list of mammals worldwide with toxic saliva, and, therefore, a venomous bite. The effect is instantaneous on a small insect, but to a cat or to us it might be equivalent to a mere bee sting.

When I drop a handful of crickets into the shrew it scurries about the tank in frenzied pursuit. A cricket becomes immobilized the instant the incisors make contact. The shrew will leave it to pursue another hopper then the next until, after several circuits around the tank it is satisfied it got them all. Then, in a more leisurely manner (in shrew time) it may eat one, two or three, then collect the rest and pile them neatly in a designated corner for later consumption.

Keeping a short-tailed shrew in this way opens the door to other behavioral observations. For instance, besides stashing uneaten food in a specific spot to be eaten later the shrew is also fastidious when it comes to waste management. Where a mouse will piddle or plop in random fashion throughout an enclosure, the shrew deliberately heads to a specifically-chosen corner to sequester its droppings. After days of deposits there becomes no doubt which of the four is Pooh Corner.

No matter how hyper a given organism, it has to rest *sometime*, right? Over the course of each day a shrew undergoes dozens of activity/rest cycles. Our current shrew shredded a bunch of the hardwood mulch substrate and fashioned it into a neat, little, cupped nap-nest next to the water dish. After it eats its fill it retreats to the nest, curls up tightly and drifts into a fitful “shrew-sleep” that appears very unproductive by human standards. Even at rest its body seems to buzz like an idling Matchbox race car, probably due to a resting heart rate hundreds of beats per minute and a respiration rate to match. It’s no wonder that short-tailed shrews observed in captivity almost make it a full year.

Apparently, hunger demands the nap last only around fifteen minutes. A few upward twitches of its pointed nose and it’s out of the nest and back into the fast lane to secure more protein. In the wild a particular bout of activity probably depends on how far and wide it needs to forage in search of food. Driven by life-or-death necessity, then, activity would need to continue until satiation is achieved; then, back to the nest for another shrew-nap, and so on hour after hour, night after day to the end of its months.

I try to feed our shrew a range of protein-rich foods, mostly animal matter - usually alive, sometimes dead. Life history readings mention that seeds and vegetable matter comprise only a tiny portion of its diet. Throughout a day I will alternate between crickets, waxworms and a fat, juicy earthworm. I will also toss a dozen-or-so shelled peanuts into a corner for it to nibble in case I’m late delivering a meal. These, too, usually disappear by the end of a day. Before I hit the sack, though, I need to ensure that the shrew has enough to sustain it through the night. I perform a midnight-raid on the rat snake food in the freezer - a plump, frozen fuzzy mouse, and drop it into the tank where it is immediately seized. By morning nothing remains.

Despite the awareness that a short-tailed shrew is capable of killing and eating a similar-sized adult mouse, and despite having such easy access to them by way of our box traps, I had never gotten around to actually putting one in with a shrew for a chance to observe the process. A few days ago I did....



Sparing the details I’ll summarize in stating that it took nearly 24 hours for the mouse to succumb. I believe it would have taken much less time had the mouse not spent so much of it clinging upside down to the screen lid of the tank where the shrew could not reach it. Once dispatched we watched the mouse’s body systematically disappear from head to tail. After another 24 hours only a small swatch of dorsal skin and tail remained. A few hours more and even these scraps had vanished from the tank.

You can view, learn more about the short-tailed shrew and even drop crickets to it during our open hours this Sunday, February 10th. More details on the next page.

-Jim McGrath



Catch Us on Coffee Break

Friday, February 8

Jim is scheduled to appear on Friday, February 8 at 9:15am, discussing shrews and bird song. 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 Facebook.

Open Hours

Sunday, February 10

1 to 5pm; \$5 admission

2pm Presentation

Birding by Ear

Late Winter Edition



Tufted Titmouse. Photo © Steve Sage

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At 2pm, *Birding by Ear – Late Winter Edition*, will be presented. Cued by our lengthening days, chickadees, titmice, cardinals and many other winter resident songbirds have ratcheted up the volume, intensity, and frequency of their breeding songs. Learning to identify birds by sight is a useful skill, however, when you are able to step outside and “bird by ear,” you graduate to a level of avian awareness that blows away identification by sight alone! February may be the best month to start. A manageable number of common species are singing their breeding songs now. As migrants return, the number of songs out your window increases steadily. By May, a boggling 40 or more may be heard on a country lot! Powerpoint slides and audio recordings are used to familiarize participants with who is calling now. At the presentation’s conclusion we’ll step outside to identify singers and elicit some responses with recordings. Bring your binoculars!

Don’t forget! Our **Michigan Reptiles & Amphibians Interactive Zoo** is open to all ages for visitation before, during and after the presentation. Visit our shrew, too!

Registration Deadline Approaches for LCC Saturday GATE Youth Classes



© Stephen Sage

The following two classes will be taught by Carol starting in less than two weeks at East Campus. The classes run for four weeks, Saturday, February 16 through Saturday, March 9. A recommendation form from a teacher is required.

Michigan Wildlife Adventures for students in grades 2-4; 9am to 12pm.

Advanced Science Experiments for students in grades 4-6; 1 to 4pm.

For more information or to register please visit www.lcc.edu/seriousfun and select Spring GATE.

Monday, February 18

Kensington Field Trip

9am to 3pm

For elementary students and older. Hand-feeding birds at this metropark, just east of Brighton, is the highlight of this field trip that begins and ends in Nature Discovery's classroom. We'll take pictures of all participants with bird-in-hand. Bring binoculars if you have them, dress warmly and pack a bag lunch for the road! Advance enrollment required. FEE: \$70/student.



From www.cowspiracy.com

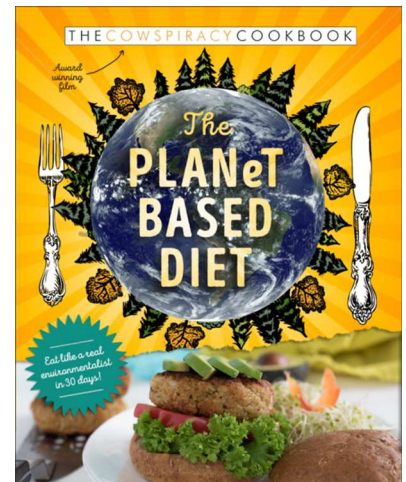
<https://www.usatoday.com/story/news/world/2019/01/16/food-report-3-b-malnourished-radical-changes-worlds-diet-urged/2594455002/>

Eat Sustainably for Health - Yours and the Planet's

On the heels of the environmental topic posed in our past two newsletters it was a pleasant surprise to see an article in *USA Today* earlier last month addressing society's current dietary choices (largely meat) as unsustainable to the health of the planet. Here it is: "What to eat to save the planet: Report urges 'radical changes' to world's diet -- less meat, more veggies"

Our son, Robin, caught the 2014 documentary movie, *Cowspiracy*, on Netflix and recommended we watch it: <http://www.cowspiracy.com/> We did, and now, also recommend it as critical viewing for every American. Are you *truly* concerned about what you can do personally to combat climate change? Here is the single, most impactful lifestyle choice you can make. There is a bonus: better health for you, as well! In fact, this movie and appropriate peripheral studies and assignments should be incorporated into every high school social studies class.

There is a follow-up movie available on the website entitled, *What the Health*, basically a guide to the sustainable eating choices proposed in the original movie, plus a publication for sale entitled *The Cowspiracy Cookbook: The Planet Based Diet*. We've ordered a copy.



-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



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