The Maine Entomologist

A forum for students, professionals and amateurs in the Pine Tree State

The Official Newsletter of the Maine Entomological Society

Vol. 23, No. 3 August, 2019

PRESIDENT'S CORNER

by Charlene Donahue

My son and I are raising honey bees and that changes your perspective as you start thinking in April – will there be adequate blooming plants as for the bees to forage? The queen starts laying eggs in late winter and the bees have been using up their store of honey. What can I do to ensure a good supply of nectar and pollen? So I start letting the dandelions bloom. Then there is the 'nectar dearth' that can occur in July as the early summer flowers fade and before the late summer ones come into bloom.

So I only mow my lawn occasionally now to allow the non-grass plants to flower. Who likes to mow anyway, and it reduces greenhouse gases as well. Hopefully the lawn is low enough to keep the ticks at bay. Besides helping the honey bees this regime also is good for many native insects as well. I don't have much grass left in my lawn anyway – lots of clover and what some might consider 'weeds' mostly. I love Queen Anne's lace, black-eyed Susan, all the goldenrods, and asters. When I purchase garden flowers now my prime criteria are attractiveness to pollinators and smell. Some of my neighbors are starting to let their lawns go 'natural' as well – it's a movement! And it is amazing to go out and see all the insects bellying up to plants, sometimes muscling one another out of a particularly attractive bloom or sharing the wealth on a larger flower.

Another MES member has a very small in-town lot with no lawn at all. Out front is white sweet clover that grows 3-8' tall, milkweed and sunflowers. He says people walking by are always asking what the clover is in particular. Out back his yard is crammed with all sorts of plants and it makes a spectacular place to observe insects.

On another subject; this is my eleventh year as MES President and I am ready to step down. I am not going anywhere, just need to step back from being the one to keep all the balls in the air. The Society is in a great place with lots of activities throughout the year, outreach has increased substantially, membership holds steady at well over 100 people with quite a few lifetime members (you can be one too for $200), and we have gotten outside recognition for what we do. So think about becoming more active in MES and see you at a field day, Bug-Mainea or the annual meeting in October.

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In the 2017 August issue of ***The Maine Entomologist***, I wrote about a Braconid wasp using a virus to control a ladybeetle to protect the wasp pupae. This summer Roger Rittmaster found a Noctuid caterpillar in the same situation. The wasp larvae are endoparasitoids as they feed inside their host. They have just emerged from the caterpillar, have spun their cocoon, and will be pupating with their host caterpillar paralyzed to stand guard. ***- Roger Rittmaster photo***

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T4 R7 WELS MES Field Day:
Saturday, August 17, 2019

The MES July field day will be on Saturday, August 17th, in **T4 R7 WELS**. Charlene has a rustic camp in the Township that sits between portions of the Katahdin Woods & Waters National Monument lands. There is Peaked Mountain Pond and the Sebois River for aquatic collecting, gravel pits, open areas, mixed forestlands, beaver flowages, bogs, etc.

The roads in this area are rugged logging roads, and while 4WD may not be necessary, high ground clearance is helpful and carpooling a good option. Bring all your regular collecting gear and personal supplies, including a rain parka if there's any forecast for thundershowers, as well as food and PLENTY of water. A compass would be a good idea if you go off trail or out of sight of the road.

Because this area is more remote than most of our field events, there are some options for either staying overnight or meeting us for the day. You can meet at the Irving gas station in Sherman on Saturday morning; instructions on how to get here are below. Bob Nelson will be coordinating this group. Note that Bob Nelson does not have a cell phone, so once he leaves his home on Friday morning, you won't be able to reach him.

To get to Sherman, take I-95 northbound and get off at Exit 264. Turn left at the end of the offramp, drive beneath the Interstate, and the gas station will be right there in front of you. The station also has a quick-stop store inside; there is a diner in a Shell gas station on the opposite side of the Interstate, about 1/3 mile to the south. People wanting to go up the night before and/or stay Saturday night can contact the Katahdin Valley Motel (**http://www.katahdinvalleymotel.com**; 207-365-4554) ASAP (because they can fill up quickly!), which is right next door to the gas station. Those desiring to camp out or stay elsewhere probably already know more about the area than we could recommend.

If you want to stay at Charlene's camp, know that ***she is going up early, so if you're hoping to stay at her camp, please let her know by Sunday, August 11th!***

The camp is remote on Peaked Mountain Pond in T4 R7 WELS near the KW&W National Monument. It is 19 miles off the main road, has no electricity or running water but yes, there is an outhouse with a view. If people would like to stay there they are welcome. There is a bunk room that sleeps six, a couch, and a saggy camp bed on the porch. There is tent space outside as well as a nearby MFS remote campsite. You can swim in the pond, fish and use the canoe. We can go 'bugging' right there and process specimens in the camp. Bring your own bedding, food and water. There is a gas stove and lights and dishes. Note that ***there is NO cell-phone coverage in this area!***

Please let either Charlene or Bob know if you are coming; the last two trips have been a lot of fun. We will also need to know ASAP if you change your mind and will NOT be joining us, so we don't wait for you!

Contact either of us with any questions: Charlene Donahue (donahuecp15@gmail.com; 207-485-0960); Bob Nelson (BeetleBob2003@gmail.com; 207-426-9629)

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August is Tree Check Month
by Allison Kanoti

August of 2008 will stick in the memories of Ne England forest health specialists for years to come. Its indelible mark comes from the detection and reporting, by a Worcester, Massachusetts resident, of an Asian longhorned beetle (many forest health specialists also learned how to pronounce Worcester in 2008, too). The beetle was the first evidence of the largest infestation of Asian longhorned beetle ever detected in North America. "Tree Check Month" was born out of that detection (**www.asianlonghornedbeetle.com**).

Eleven years later, the eradication effort continues in Worcester. Beetle sightings have become rare and the pace of tree removal due to new detections of infestations is slow. However, that does not mean it's time to let our guard down in Maine.

In Maine, Asian longhorned beetle has been lost in the noise with the current urgency of emerald ash borer and browntail moth. I was asked this May by forest industry people if we still are concerned about Asian longhorned beetle in Maine. The answer is an emphatic ***yes*** (or maybe "wicked worried").

We join USDA in urging you to take time for trees and look for both signs of Asian longhorned beetle attack and for the insects themselves. Adults would be active in Maine now (**https://www.usanpn.org/data/forecasts**).

Asian longhorned beetle was likely in Worcester, a city with extensive exurban areas, for at least 20 years before it was recognized. The national realization that firewood is a huge threat to forest health had not dawned when Asian longhorned beetle arrived in Worcester. And even since it has been recognized, the movement of personal firewood for camping and other outdoor recreation continues at a rapid pace (**www.dontmovefirewood.org**).

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(Check your trees - cont.)

One person moving infested firewood, innocently and legally or not, can start an environmental catastrophe. On the flip side, one person, paying attention and checking trees around them, can slow or even stop an environmental catastrophe.

What can you do?

- Check trees now for signs of Asian longhorned beetle (**www.maine.gov/alb**) or other invasive pests (**www.maine.gov/forestpests**).
- Use local firewood and let friends, relatives and others know about the importance of using local or heat-treated firewood. You'll find some good talking points here: **http://www.dontmovefirewood.org/wp-content/uploads/DMF-FAQ2015-8p5x11.pdf**. This is probably really number one, but in deference to tree check month, it is listed second.
- Report concerns regarding unusual insects or tree damage. As MES members know best, there are a lot of insects that look similar to others, so don't panic. Try to collect a sample or at least a good picture and document exactly where you saw the insect.

Ash firewood with evidence of Emerald Ash Borer infestation, seized in June in Newport. Wood was strapped on the back of a vacation camper from Ohio.

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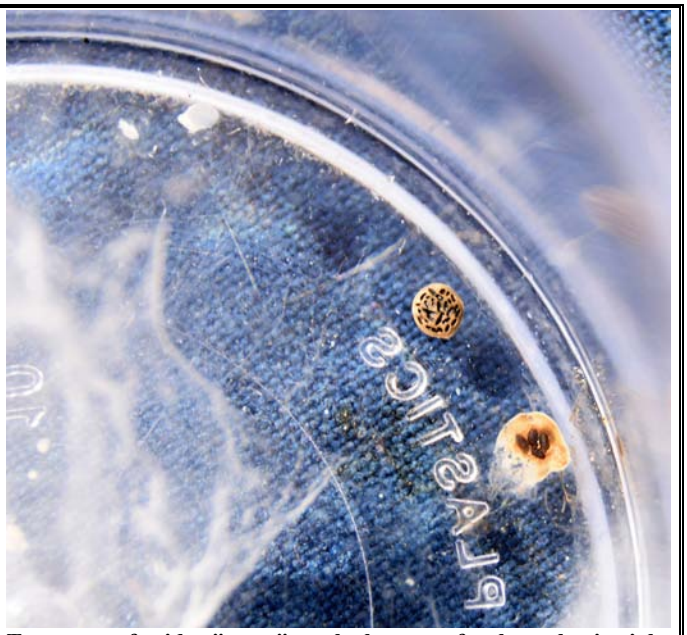
Cleanliness is Next to Spiderliness

by Dana Wilde

You might not be surprised to learn there hasn't been a whole lot of research into the phenomenon of spiders' defecation routines. But a couple of studies have shown that some spider species, at least, go out of their way to keep their surroundings clean.

Most spiders eat by capturing a prey item, such as a fly, disabling it with venom, then washing it with digestive juices and sucking the liquid through their mouths with the stomach, which acts like a pump. Many orbweavers perform a kind of chewing or shredding of body parts in the process of getting the pre-digested meat material into their mouths, and some use their palps to clean their mouth parts afterward. The liquid and pre-chewed material gets processed in the stomach, located in the spider's cephalothorax (or prosoma), and the remains run through an intestine into the midgut located in the abdomen (or opisthosoma). Waste material from the midgut travels through tiny channels called Malpighian tubules to a cloaca, which holds the excrement until it can be discharged through the spider's anus.

As with many other creatures, when you take a close look, spiders do not defecate randomly. In a study of adult female goldenrod crab spiders (*Misumena vatia*) living on milkweed and wild marjoram plants in South Bristol, Maine, Morse (2008) found that the spiders had a common routine of scurrying to the tip of a petal or leaf, lifting themselves on their large front legs, with their abdomens raised, and releasing drops of a whitish liquid which fell either all the way to the ground or onto a lower leaf of, for example, a milkweed plant. Captured goldenrod crab spiders, when allowed to climb to the rim of a vial, did the same thing, making sure the waste material cleared the rim.



Two spots of spider "poop" on the bottom of a clear plastic vial.
- Photo by Dana Wilde

Another study in Missouri on black-and-yellow garden spiders (*Argiope aurantia*), which are fairly large spiders often seen in their orb webs in fields and on houses in Maine, similarly followed particular routines (Curtis and Carrel, 2000). These spiders tend to hang upside down at the center of their orb webs for long stretches of time. So if they were to defecate at random with the anus pointing up, the excretions would fall down and foul themselves and the webs. The researchers found the spiders had two methods of solving this, usually at night.

One was to shift around on the web so the anus pointed down, or nearly so, and let the dropping fall clear of the silk. In the second method, the spider attached a line of silk to the hub of the web and used it to descend to about the level of the bottom of the web. The spider then turned its body so the anus pointed straight down, released a dropping, then climbed back up the line of silk. The whole process usually took 10 to 15 seconds.

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(Spider cleanliness - cont.)

The spiders' cleanliness might be a way of avoiding predators. In other words, if a wasp spots evidence of prey on the ground, it might look around futilely on the ground, instead of up on the milkweed plant or in the web. Another motive for cleanliness might be to avoid driving away potential prey: the presence of excretions might alert bugs to the spider's presence and drive them away from the web or the hunting vicinity of the crab spider.

Goldenrod crab spiders who were held in vials routinely waited until they were released to defecate, even up to 47 days later. They just do not want to foul their immediate surroundings, it seems.

References:

Curtis, J. Thomas, and James E. Carrel, 2000. "Defaecation behaviour of *Argiope aurantia* (Araneae: Araneidae)." *Bulletin of the British Arachnological Society*, vol. 11, no. 8, pp. 339–342.

Morse, Douglas H., 2008. "Excretion behavior of adult female crab spiders *Misumena vatia* (Araneae, Thomisidae)." *The Journal of Arachnology*, vol. 36, pp. 612–614.

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Which Trees Will Thrive in the Future Forest of Coastal Maine?

by David Manski, Nick Fisichelli & Catherine Schmitt

In the May, 2019, MES Newsletter, Roger Rittmaster wrote an article about the importance of native trees to maintaining insect diversity in our forests and in particular, the caterpillars that are such important food resources for birds. This got me thinking about the future Maine insect fauna, given our changing climate. What is native and non-native today may be different in the future, as some tree distributions shift northward in response to changing environmental conditions. Maine's future insect biodiversity will thus be greatly influenced by the species composition of our future forests.

Research that has just now started should help us understand what some of Maine's future forests will look like and thus may help us to better envision what, if any, changes this will bring to our insect biodiversity. Because the forests of Downeast Maine are located in a transition zone between northern and southern climates, they provide an ideal setting to document forest changes related to warming temperatures, changing precipitation patterns, habitat fragmentation, herbivory, and invasive plants, pests, and diseases.

How will the forests of Maine respond to these pressures? Which tree species will thrive and which may decline? Will we continue to see a spruce- and fir-dominated landscape Downeast? Or will more warm-adapted species such as oaks, maples, and birches overtake the forest as the climate changes?

To answer these questions and foster the future forests of coastal Maine, Schoodic Institute and its partners, Blue Hill Heritage Trust, Coastal Mountains Land Trust, Maine Coast Heritage Trust, and Waldo County Soil & Water Conservation District, are conducting a research experiment to evaluate growth and survival of tree seedlings with current and predicted habitat in the region over the next several years.

Researchers are testing which tree species (warm-adapted and cold-adapted broadleaf and evergreen species) are able to establish and grow into the overstory canopy. In addition, the study will help researchers identify the environmental variables (temperature, moisture, light availability, soil conditions) influencing success of these species.

Schoodic Institute at Acadia National Park employees planting tree seedlings in an experimental tree growth plot.
- David Manski photo

This spring, 1,600 bare-root trees that currently grow in the region (white pine, red oak, and white spruce) and that grow farther south (white oak, chestnut oak, red cedar, sweet gum, and tulip tree) were planted in experimental plots at four conservation areas from Belfast to the Schoodic Peninsula. Seedling growth and survival over the next several years will be monitored with the hope that the results will inform future land management and stewardship in Maine and across the region. The results should also help us begin to predict what our forest insect diversity will look like and if, for example, we may anticipate the arrival of new pest species.

For more information about the science and education programs at Schoodic Institute at Acadia National Park, see: **https://www.schoodicinstitute.org/**

For more information about Schoodic Institute at Acadia National Park's *"Future Forests"* research, see:
https://www.schoodicinstitute.org/understory-the-future-forest-of-acadia-part-1/
https://www.schoodicinstitute.org/understory-the-future-forest-of-acadia-part-2/

MES member David Manski was formerly Chief of Resource Management at Acadia National Park (he retired in October, 2014). During his tenure there, he co-led with the MES, Maine Forest Service, University of Maine and University of New Hampshire, insect bioblitzes on the Schoodic Peninsula and Mount Desert Island sections of the park. He currently serves as Vice Chair of Schoodic Institute's Board of Directors.

Nick Fisichelli is Director of Science and Education and Forest Ecologist at the Schoodic Institute.

Catherine Schmitt is Science Communication Specialist at the Schoodic Institute.

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Western Maine Wild "Tigers"

By Erica Cassidy Dubois

Greetings from the Forest Society of Maine!

Early in July our summer intern and I were out in the field in Coplin Plantation (just west of Stratton) and spotted, in a small pool, two aquatic invertebrates that I'd never seen before. We noticed the first creature because it was moving: curling and uncurling its long flat body, propelling itself in bursts just under the surface of the water. When it was still it looked almost shrimp-like: pointed tail curved towards the water's surface, head down, six jointed legs hanging limp. In the high July sun, its body appeared silvery, translucent; but when we bent down for a closer look we saw the striped pattern: a distinct white line down the middle, ringed in black and then an outer layer of smoky gray. Its suit of aquatic armor made the abdomen appear almost segmented, an effect that was augmented by thin hairs that spiked out of its thorax and legs. Then we noticed a second, almost identical creature. This one was working hard, pumping its body, dragging a fat silver tadpole. It pinched the soft prey in a death-grip of scythe-like mandibles.

"*That* is not a fairy shrimp," said my intern, and I had to agree.

A water tiger drags its prey, a hapless tadpole, in the shallow pool. - Photo by Erica Dubois

This was my first encounter with the larval stage of the predaceous diving beetle larvae (Order: Coleoptera, Family: Dytiscidae), more commonly called "water tigers." These particular "tigers" were roughly two inches in length (about 50 mm)—on the large end of the spectrum for Dytiscidae larvae, a family that includes more than 4,000 described species in freshwater habitats all around the globe. Some sixty-seven species have been reported in Maine, alone (Boobar and others, 1998)

Voracious predators, water tigers may not even have a mouth; their channeled mandibles can deliver digestive enzymes that quickly paralyze and kill their prey, which can include fish, amphibians, other aquatic invertebrates, and adult diving beetles. In 1981, two men reported seeing a large water tiger successfully snare and kill a 7.5-inch garter snake (*Thamnopsis elegans*). Of the attack, aquatic ecologist Lewis R. Boobar wrote, "The snake writhed convulsively for 7 minutes before dying." Once succumbed, a water tiger's prey is drained of its body fluids, leaving behind little more than an empty husk of skin or exoskeleton.

Encountering a water tiger may make you think twice about dipping your toes in the calm shallows of a lake or pond. They move fast, using the "water jet" method. When they are immobile, they stay well camouflaged among grasses and other vegetation, waiting for their next meal to swim by. It's clear that the two water tigers in Coplin Plantation were the top predators in their small (perhaps 15-foot square) pool—just a depression in an old gravel pit where rainwater settled and the soil was too compacted to drain. I wonder if their home will last to late summer; whether July thunderstorms will give the water tigers enough time and moisture to grow, molt (three times, most likely) and bury themselves into the damp earth to pupate. If they do survive, the adult diving beetles will wait beneath the ground for their exoskeleton to harden, then emerge in fall for their first flight.

References:

https://lifeinfreshwater.net/water-beetles-coleoptera/ (24 July 2019).

Lewis R. Boobar, Paul J. Spangler, K. Elizabeth Gibbs, Jerry R. Longcore, Karen M. Hopkins and Ron G. Talyn. Predaceous Diving Beetles in Maine: Faunal List and Keys to Subfamilies. *Northeastern Naturalist*, Vol. 5, No. 1 (1998), pp. 1-20.

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New Paper On Winter Moth Compares Potential Hosts

The winter moth, *Operophtera brumata* (L.) is an invasive forest and agricultural pest in North America whose caterpillar causes severe defoliation to a wide range of host species.

Former U. Maine graduate student and M.E.S. member Kaitlyn O'Donnell has just published the results of her studies of its preferred hosts*. She found that red oak and apple trees showed the highest density and survival of caterpillars, and pin cherry the lowest. Low densities of caterpillars were found in open, wild lowbush blueberry fields, but laboratory studies found that the species could survive and develop on this species. This could potentially be a problem should the moth's range expand to the wild blueberry fields of Washington County and elsewhere in the state.

Joseph Elkinton of the University of Massachusetts, M.E.S. President Charlene Donahue, and University of Maine professor Ellie Groden were coauthors on the study.

E-mail Bob Nelson for a pdf copy of the paper.

*** O'Donnell, K., J. Elkinton, C. Donahue, and E. Groden, 2019: Host Plant Effects on Winter Moth (Lepidoptera: Geometridae) Larval Development and Survival. *Environmental Entomology*, XX(XX), 2019, 1–11; doi: 10.1093/ee/nvz085**

Tim McGrath found this beautiful sphinx caterpillar in China. Brandon Woo identified it as *Sphinx chersis*, the great ash sphinx. Tim is currently waiting for it to emerge from its pupa.

Butterfly Friend Stalks Dana Michaud and Charlene Donahue

Dana Michaud and I had a delightful interaction with a butterfly this summer. Dana was out 'bugging' in the morning and when he came back he said, "There is a butterfly hanging out on my net and it has followed me back."

The American Painted Lady butterfly (*Vanessa virginiensis*) that befriended Dana Michaud and Charlene Donahue.

It was an American Painted Lady (*Vanessa virginiensis*) that appeared to have recently emerged from her chrysalis, as her wings were in perfect condition. She fluttered over onto my leg and seemed to be licking up the salts from my skin. She then moved over to Dana and he reached out his finger to her. At first she was skittish and would fly away at any movement. Then she seemed to realize that nothing would happen to her and she walked onto his finger. Then we could pass her back and forth and walk around with her as she continued to take in salts. After lunch she reappeared and spent the afternoon in the yard.

What a special interaction with another creature that shares our world!

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National Moth Week Brings Out the Lights

by Charlene Donahue

National Moth Week in Maine is the fourth week in July every year. Originally founded in 2012 in New Jersey, this is now an international event with participants in all 50 U.S. states and more than 80 foreign countries.

Here in Maine, celebration of the week is catching on. Marnie and Ken Crowell hosted a moth breakfast at the Island Heritage Trust. Here's a link to Marnie's blog on the National Moth Week website:

http://nationalmothweek.org/2019/07/18/moth-breakfast-guest-post-by-marnie-crowell-2/

Fred Gralenski also hosted a moth night on July 22nd at Cobscook Bay State Park in Washington County, and Chloe Joule of The Islesboro Islands Trust hosted a Mystery Moth night on July 25th, and invited me to participate. Dana Michaud came along as well.

The lights were bright and the moths a flyin' at Islesboro. - ***Charlene Donahue photo***

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Revised Brochure - Butterflies of Swan Island, Perkins TWP, Maine Steve Powell Wildlife Management Area

By Robert E. Gobeil & Rose Marie F. Gobeil

In cooperation with the Maine Department of Inland Fisheries and Wildlife (MDIFW), we recently revised our brochure of the butterflies of Swan Island. The information in the brochure is based on an extensive survey of butterflies that we conducted during the summer of 2013.

Swan Island (Perkins Township, Sagadahoc County) is located within the Kennebec River at the head of Merrymeeting Bay, near Richmond, Maine. The island is approximately four miles long and varies in width between a half-mile and three-quarters of a mile, with a total of about 1,755 acres including approximately 230 acres of fields and some tidal flats. Swan Island, also known as the Steve Powell Wildlife Management Area, is managed by the Maine Department of Inland Fisheries and Wildlife.

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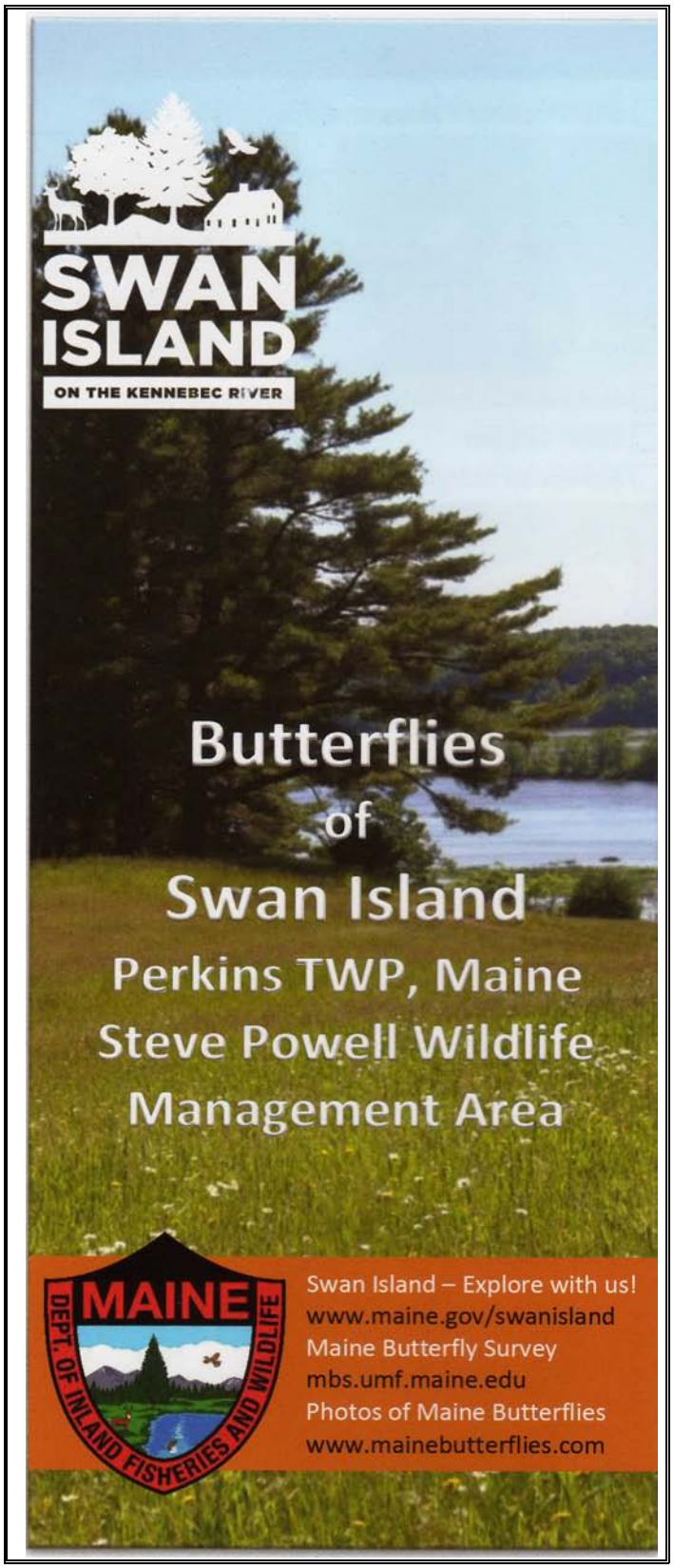
(Butterfly brochures - cont.)

Our butterfly survey of Swan Island can be viewed online at

https://drive.google.com/file/d/0B985dSJVRA1mN0lOWER2b2VUWlE/view

The brochure is now available to visitors of Swan Island.



Bowdoin Alumnus Makes Entomological News

Dr. Alex Wild is a 1995 Bowdoin College graduate who's gone on to achieve quite the reputation in entomological circles, both for his phenomenal photography and his taxonomic expertise. He's currently the Curator of Entomology at the University of Texas.

A fascinating story with some of his photography can be found at the Bowdoin College web site, at

https://www.bowdoin.edu/news/2019/06/little-things-matter.html

Can YOU find the photo in the story that doesn't match the caption? ☺

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Bug Maine-ia at the Maine State Museum
Tuesday, September 10, 2019
9:00 a.m. - 3:00 p.m. - Free Admission All Day

The Maine State Museum staff is getting excited for our largest event of the year, Bug Maine-ia. This entomology-themed education fair takes over the entire museum with displays and activities featuring insects of all sizes, shapes, and colors. Last year just over 2000 visitors came to meet the bugs, and most of them were students!

Enthusiastic young entomologists-in-training explored leaf litter and decaying wood for what hidden entomological treasures might be found at last year's Bug Maine-ia.

- Joanna Torow photo

To make sure this year's event will be even better than last year's, the museum education staff is in full event-planning mode. We are rushing around creating flyers, e-mailing new potential presenters, and diving deep into all the details that take this event to the next level. But it is the dedication and enthusiasm of all the entomologists and educators who participate that make the event a favorite of students and teachers alike. We extend a big thank you to all those dedicated presenters who join us year after year.

We are always looking for new presenters and new volunteers, so if you or someone you know has an insect-themed idea for a display or activity, let me know. Or if you would like to volunteer to help with an existing activity, please contact Joanna Torow at 287-6608 or e-mail her at **Joanna.torow@maine.gov**. We'd love to have you.

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Upcoming September Field Day is *Special*!

Join us at the McGrath Farm in China on Saturday, September 7th, at 10:00 a.m. for an unusual M.E.S. collecting day. We'll be focusing on collecting *live* specimens for Tim to take to Bug Maine-ia for display on the following Tuesday!

Tim McGrath and his family are hosting this event, at his grandfather's farm at 759 Lakeview Drive in China, next door to the China Elementary School. Mixed hardwood forest, a pond, and open fields are here for scouting and collecting.

Bring your regular collecting gear, lunch, water, insect repellant, etc., and weather-appropriate clothing.

The farm is on U.S. Route 202 (= Maine State Route 9) on the east side of China Lake, at 44 degrees 26.32'N, 69 degrees 31.65' W. From either I-95 or U.S.-1, get onto Maine State Route 3 (which runs from Augusta to Belfast); turn north on Route 202 in South China and go about 3.65 miles; the farm will be on the right. If you're coming in from the Waterville/Winslow area on the China Road, it's 3.45 miles south of the flashing light where the Albion Road (Route 202) joins the China Road, and will be on the left.

Look forward to seeing you there!

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Appledore Field Day Hot but Great

Charlene reports that the field day on Appledore was great, hot, beautiful, and with a good number of insects, though some of them were lying low, too. They saw lots of butterflies and bees. The Isles of Shoals Institute would like us to return for an overnight event next year. She reported that it was really good to meet Scott Smyers from the Cambridge Insect Club, and both he and Michael Sabourin from Vermont Entomological Society would like to come back next year, and also have more joint field days.

Appledore Crew - standing, from left: Jeanne Rittmaster, Roger Rittmaster, Dana Michaud, Liz Mazurkiewicz, Anna Court, Don Chandler, Istvan Miko, Pete Darling, and Scott Smyers (Cambridge Insect Club). Seated: Charlene Donahue, Colleen Teerling, Kathy Claerr, and Michael Sabourin (Vermont Entomological Society)

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***Book Review*: by Dana Michaud**

A Field Guide to the Flower Flies of Northeastern North America, by Jeffrey Skevington and Michelle Locke, with four additional coauthors. Princeton University Press, 2019; 512 pp. (Peterson Field Guide Series)

This book is both well-written and packed with color photographs and drawings. The 512-page guide is dedicated to the Syrphidae and covers all 413 known species (some undescribed) known from north of Virginia, west to Kentucky, north to Ontario and Nunavut, and east to the Atlantic Ocean and Greenland. It is the culmination of the work of six authors, 3835 individual collectors who supplied specimens and data, study of some 148,000 specimens from both private collections and museums, and over 3000 photos supplied by many contributing photographers.

The first 33 pages start with a foreword and acknowledgments, followed by an Introduction (pages 12-33) that explains collecting, Syrphid biology, and finally conservation. Pages 34-35 explain the distinctions between the four subfamilies and how to differentiate them, using colored photos and drawings.

Pages 36-469 deal with all the 413 known species by subfamily, breaking down each subfamily by genus, then discussing each species. Each genus has an introduction on the top left of the page, and accompanying photos and drawings on the right, explaining the characteristics of that genus. The following write-ups on each species appear on the left, with corresponding photos and drawings on the right. Species descriptions include the common name, size range, identification details, abundance, and flight notes, followed by general notes and a range map. The colored photos and drawings on the right depict actual specimens (pinned or in the field) revealing color patterns and morphological traits of the species.

Pages 470-473 consist of fully labelled line drawings illustrating all morphological features of the flies, and is followed (pp. 474-479) by a glossary of taxonomic terms. Pages 480-482 comprise a list the plant names that are utilized in the book, which is followed by a species checklist (pp. 483-492), photo credits (pp. 493-495), bibliography (pp.

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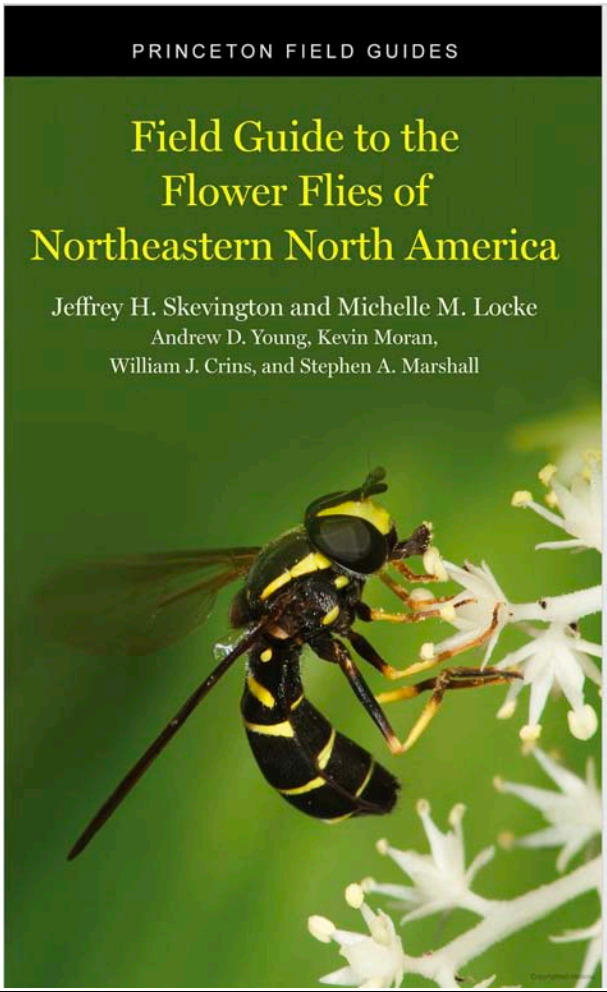
(Flower Fly Guide - cont.)

496-501), and index (pp. 502-511). Page 512 has a biographical sketch of each of the authors.

If ever you wanted to learn all about the Syrphidae, better known as flower flies, this guide is a must-buy. This is true for both beginners and long-time fly enthusiasts who enjoy seeing the many mimics of hornets, bees and other wasps hovering over flowers, not realizing that many of these beautiful flies are uncommon to rare.

At the price of $27.95, the guide is well worth the money!



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Productive Field Day With Bangor Land Trust on April 3rd

by Anna Court

On Saturday, August 3rd, a group of 13 met at Walden Parke Preserve for a joint field day with the Bangor Land Trust. Participants included MES members, Bangor Land Trust members and several people from the general public.

This 410-acre reserve north of Bangor is ecologically diverse. The group explored half a mile of the level trail following a railroad bed trail edged with early succession hardwood and conifer forests and wetlands.

We made short excursions to several wetlands and a beaver pond along this trail which were very productive in terms of dragonflies and aquatic beetles. We collected or photographed a number of insects from different orders including an autumn meadowhawk dragonfly, a smartweed caterpillar (smeared dagger moth), and a jewel damselfly.

M.E.S. members Anna Court, Pete Darling & friend Nina, Dana Michaud (hiding behind Pete), Gail Everett, and Bob Nelson joined Bangor Land Trust members including Grace Bartlett, front, and Donne Sinderson (photographer) exploring and collecting on the Walden Parke Preserve field day.

A smartweed caterpillar encountered at Walden Parke Preserve. This will become a smeared dagger moth (*Acronicta oblinita*).
- Grace Bartlett photo

The Field Day ended and 3 p.m. and a group of MES and Bangor Land Trust members continued to visit over beer and snacks at Dysart's in Bangor. The Bangor Land Trust has already expressed an interest in holding another Field Day next summer.

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Mattie Wadsworth: Pioneer Maine Entomologist

by Bob Nelson

Mattie (Martha) Wadsworth was an avid amateur entomologist who lived her entire life on a farm in Manchester Maine during the years 1862 to 1943. She was a scientist in a time when women were not often welcomed into the fold, and was one of the first women to publish her observations in the *Entomological News*. She was quite active in corresponding with entomologists elsewhere, and did trade

(cont. on next page)

(Mattie Wadsworth - cont.)

for some specimens from exotic locales.

As an entomologist, Mattie collected many insect specimens on her farm, including what became the type specimen of a new species of dragonfly, subsequently named *Celithemis martha* (Odonata: Libellulidae) in her honor by E. B. Williamson.

On July 27, the L. C. Bates Museum in Hinckley (Fairfield) featured its own Mattie (portrayed by Serena) to explore, with guests, insects in the museum collections and on the grounds outside. Key in the Museum collections are much of Mattie's own extensive collection, particularly rich in Maine Lepidoptera and Coleoptera, and most collected with two miles of her home in Manchester. Notable among her surviving butterflies are specimens of *Speyeria idalia* (Drury), the Regal Fritillary, a species now extirpated from virtually all of eastern North America, including Maine. She also had six specimens of *Polygonia faunus* (Edwards) from Manchester, a species now more often encountered in the boreal forests of northern Maine.

Her important collection of Odonata is apparently now split between the U. S. National Museum of Natural History (Smithsonian Institution) and the Academy of Natural Sciences of Philadelphia.

After the talk and explorations, "Mattie" served tea and talked with attendees about the joys and difficulties of being a woman interested in insects in the late 19th and early 20th centuries.

A lengthy article on Mattie Wadsworth and her contributions was published in the *Transactions of the American Entomological Society* in 2009. E-mail Bob Nelson (**BeetleBob2003gmail.com**) if you'd like a digital copy.

Anna Court first brought this item to our attention.

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Annual Meeting in Clinton - October 5th

Bob and Nettie Nelson (BeetleBob2003@gmail.com or 426-9629) invite all M.E.S. members and potential members to their home at Rock Ridge, in Clinton (in the NE corner of Kennebec County) for the annual M.E.S. business meeting, on Saturday, October 5th. ***NOTE*** that this is a date change from what was in the November, 2018, newsletter in the minutes of the 2018 Annual Meeting.

The grounds are open for collecting, as usual, with some changes since last year as to habitats. Our perennial sunflowers should be in full bloom at this time, and are usually a haven for late-season Lepidoptera, Hymenoptera, Diptera and other nectar and pollen feeders.

We'll have oven-roasted chicken and vegan chili available, and invite everyone to bring something else to add to the pot-luck luncheon that precedes the business meeting.

Please do let us know if you're planning to attend to help with our planning! Signs will be posted at the ends of the Clinton off-ramps from I-95 to guide you to the meeting. Please contact Bob if you need directions from another route.

We'll be ready for guests by 10:00 a.m., so people can spread out across the fields and forest for collecting. Lunch will begin around noon, and the business meeting will start at 1:30. Dana Michaud will be in attendance, so this'll also be a good opportunity to renew your membership for 2020 (hint!).

Minutes of the 2018 Meeting were published in the November, 2018, issue of the newsletter, on p. 2-3. One of the agenda items will be to confirm to accept (or amend) these minutes, so please be ready to bring any errors to our attention.

Two ***critically important*** items will be on this year's meeting agenda. As you saw in Charlene's President's Report, she would like to step down and let someone else take over the Presidency. We also have a proposal for a Constitutional Amendment to authorize creation of a formal position of Secretary for the Society - someone whose duties will include officially taking notes at meetings, sending acknowledgments, etc.

Coordinator: Bob Nelson (BeetleBob2003@gmail.com; 207-426-9629).

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October Field Trip Doubles As a Society Social?

If the early October Annual Meeting doesn't float your boat, come collect, relax and meet and greet October 19th at Kathy Claerr's house in Bowdoin. There is a variety of habitats nearby, including the Dana-and-Dave fave, the gravel pit and pond. Meet at around 10:00 a.m.; the collecting foray will start soon afterwards. You might want to bring a snack and water for the hike to the pit. Afterward we'll gather on the lawn for socializing and bag lunches, beverages supplied! Bug picking in the garden is encouraged. Some of us may muster our energies for collecting again after lunch, but feel free to relax, snooze or hang around and visit.

From I-295, take exit 37 off of I-295. Turn towards Bowdoin Center and Lisbon Falls (left turn from the south, right turn from the north). Immediately turn right onto Route 125.

After crossing Route 201, in 0.5 mile, turn north/right onto Lewis Hill Road. Our house is 1.0 miles up the hill on the left. Our number is on the mailbox at the bottom of the drive. It's nice to know if you're coming (666-3551 or kclaerr1@comcast.net), but come even on the spur of the moment!

COMING M.E.S. EVENTS in 2018-19

August 17-18 - Field Day in T4 R7 WELS (p. 2)
September 7 - Collecting for Bug Maine-ia in China (p. 8)
September 10 - Bug Maine-ia at Maine State Museum (p. 7)
October 5 - Annual Meeting, Clinton (above)
October 19 - Field Day in Bowdoin (see M.E.S. web page!)

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(See http://www.colby.edu/MES/ for more detailed information; new information on any event will be posted as soon as received.)

The Maine Entomologist **is the quarterly newsletter of the Maine Entomological Society. Dues are $15 per year. Checks should be made payable to the M.E.S. and sent to Mr. Dana Michaud, M.E.S. Treasurer, at 3 Halde Street, Waterville, ME 04901-6317. Our records show your dues are paid through the year printed on your mailing label; please contact Dana if you believe this is in error.** ***Individual articles reflect the opinions of the authors and mention of any specific commercial products or businesses should not be construed as formal endorsement by the M.E.S. of any such product or business.***