The Maine Entomologist

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

The Official Newsletter of the Maine Entomological Society

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PRESIDENT'S CORNER

by Charlene Donahue

I was recently reflecting on what the impetus was for my interest in entomology. It certainly started with my family life in general. As kids we spent most of our time outside until suppertime or dark. This was back in the time when your mother said, "Outside until I call you!" and you made yourself scarce so that she did not find chores for you to do.

My dad kept bees and I remember my sisters and I playing on the rocky hillside face just behind the hives. The bees never bothered us – and we never bothered them. I have early memories of laying on my belly watching pavement ants in the driveway and of course annoying the ants by flattening the anthills. Hot summer days could find me floating on a pond in a boat with a friend watching dragonflies and damselflies emerging from the water and chasing prey.

Fall days were spent playing in the fields out back and peeling open dried queen anne's lace flower heads to see if there were spiders inside – there often were. None of this quite twigged me to the idea of studying insects though, they were just part of the whole fabric of the world around me.

Even when I headed off to college my interest was more generally in natural resources and forestry. Then I landed a work-study job in an entomology lab, and that is where my interest in entomology began to take hold. It was a great job with a mix of lab, field and library research. One of my jobs was to read abstracts and find articles that were pertinent to the experiments we were running. You learn a lot that way! In the lab, students were given more responsibility as they showed an aptitude for the work and I ended up teaching new students lab protocol and running experiments. When I graduated I was offered a job as the technician for a visiting scientist from the Pasteur Institute. That was an incredible year.

Most of my work has been in insect control, starting with entomopathogenic fungi in that first lab. From there I moved on to research with biocontrol of spruce budworm using *Bacillus thuringiensis* (Bt) – that was in the 1970s, when that was where the research focus was in Maine entomology. This is also when I got my master's degree in entomology. Then I had a stint with Cooperative Extension and finally my twenty-five years with the Maine Forest Service.

Always there are questions, and so much that is not known about insects and how they impact the world – not just how they impact humans, but how they fit into the whole ecology and if you change one part, what else is changed as a consequence? Projects have endings and conclusions, but often there are just as many – and usually more – questions at the end of a project as there were at the beginning.

Entomology is such a fascinating field; there are so many ways to study insects and there is always more to learn. It is a field where novices, citizen scientists and lay people can contribute in huge ways to the greater understanding of insects. You do need to have a tolerance for not getting the answer, for saying, "I don't know", for waiting another year because your funding did not come in, the weather did not cooperate, the bears trashed your traps or a million other setbacks. But then you figure a piece out, you find a species new to Maine, you help someone understand why some insect is doing what it is doing – and it all is worth the time you put in.

It is a rush to be a part of a project bigger than just you, to help make a little more sense of the world.

It is why I continue to be involved.

DUES REMINDER!

M.E.S. dues are payable on a calendar-year basis. If you haven't already done so, please renew now for 2019 to guarantee uninterrupted receipt of the Newsletter; you'll find an insert inside this newsletter. Treasurer Dana Michaud's name and mailing address are also at the bottom of the back page for your convenience. Dues are $15 per year, and may be paid up to two years in advance. If you get this via snail mail and the year on your mailing label is "2018" or earlier, please contact Dana to renew for 2019 or correct the record.

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Minutes of the M.E.S. Annual Meeting: October 13, 2018

Submitted by Anna Court

About 15 people attended the 2018 MES Annual Meeting at Bob and Nettie Nelson's home in Clinton on October 13th**.**

Business Meeting. After the pot-luck lunch, MES President Charlene Donahue called the annual business meeting to order at about 1:30 p.m. Attending the business meeting were: David Bourque, Kathy Claerr, Anna Court, Peter Darling, Charlene Donahue, Edie and Louis King, Anne Mallett, Terry and Elizabeth Mazurkiewicz, Timothy McGrath and his father, Dana Michaud, and Bob Nelson.

Minutes of the September 30, 2017, Annual Meeting were approved without correction**.**

Treasurer's Report: General Fund. Treasurer Dana Michaud presented the Treasurer's Report which showed a balance of $2,826.30 in the general account as of August 31, 2018. This is about $2735 more than the balance on August 31, 2017.

Treasurer's Report: Scholarship Fund. Dana Michaud reported that the balance in the Scholarship Account was $4201.98 on August 31, 2018 – approximately $222 more than the fund's balance in 2017. The increase is due to a portion of dues and the accumulation of bank interest. Karla Boyd, a graduate student in Entomology at the University of Maine, Orono, was award a scholarship of $845 for housing while she studied in the laboratory of an insect taxonomist at the Smithsonian. Boyd was given half the scholarship funds in August and can apply for the other half of the funds if she wishes.

Terry Mazurkiewicz gifted MES with an additional $500 for the Scholarship fund renamed last year in honor of her late husband, Mike Mazurkiewicz. Dana Michaud, Anna Court and Edie King will remain as members of the Scholarship Committee.

ACTION: The Treasurer's Report including the itemized accounting of all income and expenditures, was audited by Nettie Nelson, corrected (interest payments were updated) and accepted by the members.

NEW BUSINESS

Election of officers. President Charlene Donahue, Vice President Kathy Claerr, Treasurer Dana Michaud, Members-at-Large Anna Court and Edie King, and Newsletter Editor Bob Nelson agreed to serve another year in these positions.

ACTION: This 2018 slate of MES Officers was unanimously re-elected.

Sponsorship of the Kennebec Land Trust Lyceum Lecture Series on Insects. Charlene presented this opportunity to the group. We would sponsor, for a cost of $1,000, a series of four lectures. The Land Trust lecture series is very popular. They will do all the advertising and print programs and we should have a large audience for the lecture series. Charlene reports that the KLT usually gets between 70 and 100 people at the lectures. Groups who sponsor often donate $500 and ask members to make up the difference. The money is to pay speakers an honorarium and travel expenses. Charlene recommended that we sponsor this KLT Lyceum and that it would provide an excellent opportunity for outreach for MES. She said she would donate her honorarium and that perhaps the other speakers would too. Thus, we would only have to take from $400 to $800 out of the MES account.

The three lectures in the series are from 6 p.m. to 8 p.m. in Winthrop. Charlene announced that the following schedule and speakers had been arranged:

March 14: Aquatic Insects – water quality indicators, habitats – *Hamish Greig*

March 21: Terrestrial insects – conservation, ecology and threats – *Charlene Donahue*

March 28: Insect pollinators – ecology, relationships with plant species – *Roger Rittmaster*

ACTION: The group agreed to sponsor the Lyceum and authorized the sponsorship fees. Charlene will make the arrangements**.**

New M.E.S. member Tim McGrath won the 2018 Bee Hotel.

Drawing for the Bee Hotel: For the third year, Bob Nelson constructed a Bee Hotel as the meeting door prize. Tim McGrath, our youngest and newest member (age 11) won the draw. Edie King won the draw for a carpenter ant bookmark.

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Annual Meeting (cont.)

General Outreach. The group discussed general outreach to obtain new MES members. One opportunity is the Common Ground Fair and several people spoke about this. There are some real problems with outreach at Common Group because the fair has become so large, outreach tables can be placed in areas where there is little traffic.

ACTION: The group decided to have more of a presence in terms of membership outreach at Bug Maine-ia and to do outreach more visibly at events such as the KLT Lyceum lectures. Charlene and Anna Court will review our brochure to determine if new material needs to be developed

New MES Products. The group discussed whether we wanted to have new products for sale. Currently we have hats, sweatshirts and T-shirts. Several people suggested we have a zippered sweatshirt with our logo.

ACTION: The group agreed to have the zippered sweatshirt produced. Dana Michaud will make those arrangements.

MES Field Trips and Activities. The following events were suggested and planned as far as possible. Some dates are tentative:

December 8: Work Day on Entomology Collections at Maine State Museum Annex, Augusta. **Coordinator: Charlene Donahue** (***See story, right →.***)

January 12: MES Winter Workshop: Introduction to Identifying Insects to Family, Dr. Don Chandler, University of New Hampshire; 9:30 a.m. – 3:30 p.m. at the Maine Forest Service Southern Regional Headquarters off Route 3 in Augusta. **Coordinators: Anna Court and Dana Michaud**.

February: Making Glass Insects**.** This will be a workshop at Jim Nutting's studio in Lisbon Falls. *Exact date to be determined*. **Coordinators: Kathy Claerr and Liz Mazurkiewicz**.

March 23: Maple Syrup and Insect Collecting at Charlene Donahue's home in Whitefield. Update on Karla Boyd's research on parasitoids as a means of control of the browntail moth. **Coordinator: Charlene Donahue**.

May 4: Field Day at Paupers' Field, Spurwink Road, Cape Elizabeth. **Coordinator: Peter Darling.**

June 1: Field Day at Kennebec Land Trust Preserve; precise location to be determined**. Coordinator: Dana Michaud**

June 29: Field Day in Norway, Maine. **Coordinator: Gail Everett.**

July 13: Joint Field Day with Vermont and Cambridge (Massachusetts) Entomological Societies; precise location to be determined**. Coordinators: Bob Nelson and Charlene Donahue.**

August 3: Field Day at Bangor Land Trust Preserve. **Coordinator: Anna Court**.

August 17 and 18: Field Days in T4-R7 WELS. Collecting in the vicinity of Katahdin Woods and Waters National Monument. **Coordinator: Charlene Donahue**.

September 7: Collection Day for Bug Maine-ia, in China. **Coordinator: Timothy McGrath**.

September 10: Bug Maine-ia at the Maine State Museum, Augusta. **Coordinator: Joanna Turow.**

September 21: MES Annual Meeting at Bob & Nettie Nelson's home in Clinton. Collecting from 10 a.m. – noon. **Coordinator: Bob Nelson**.

October 19: Field Day in Bowdoin. **Coordinator: Kathy Claerr**.

Adjourn. The group voted to adjourn the meeting at approximately 3:30 p.m.

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Work Day at the Maine State Museum Collection

Saturday, December 8th; 10 a.m. - 4 p.m.
MSM Annex, 10 Water St. Hallowell, Maine

Come to the Maine State Museum (MSM) Annex and help curate the collection. There are samples that need to be sorted out; some starting with the order they are in and then to family etc. There are also groups that need to have species put in the same place. Some specimens need to be pinned and there are many that need proper labels. Any level of experience is welcome. We need people with laptop computers so that they can enter label data and people to cut labels and put them on specimens. Come for whatever your schedule allows that day.

There is no food or drink allowed in the annex so plan on heading out to a nearby restaurant for lunch. Wear warm clothes as the Annex is cool and dry, to reduce insect and fungal infestations.

Please let Charlene Donahue know (via e-mail: **donahuecp15@gmail.com** or by phone: 207-485-0960) if you plan on attending.

Directions: *The MSM Annex is in the back part of the Maine Lottery building*.

From the North: Take exit 109A from I-95 S heading toward Augusta on Western Avenue.
After 0.5 mile, at the light by the Fire Station (before Burger King), turn right onto Armory Street.
Merge left onto Capitol Street.
In 0.8 mi turn right onto State Street.
Pass by Dairy Queen (on the left in 0.8 mi)
Take next driveway into Maine Lottery parking lot.
(If you pass the cemetery, you have gone too far.)
Enter the building by the wooden steps next to the tractor trailer, where the sign says "ENTRANCE." Turn left and go down the long hall to the door on the right with the insect poster on it.

From the South:
Go through Hallowell on Route 201.
Pass the Hallowell Cemetery, which will be on your right.
Take the next driveway into the Maine Lottery parking lot.
(If you pass the Dairy Queen, you have gone too far.)
Enter the building by the wooden steps next to the tractor trailer, where the sign says "ENTRANCE." Turn left and go down the long hall to the door on the right with the insect poster on it.

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MES winter workshop – Introduction to Identifying Insect to Family

Join us for the kickoff of the 2019 entomological season at our annual Winter Workshop, on Saturday, January 12, 2019, from 9:30 a.m. – 3:30 p.m. at the Maine Forest Service Southern Regional Headquarters, off Route 3 in Augusta.

Dr. Don Chandler from the University of New Hampshire will be leading the workshop. Don is a superb teacher and has spent a lifetime collecting and identifying insects. He will give an overview of insect identification and where to find keys and aids. Handouts of pictorial keys to Maine families generated for previous winter workshops will be available (2007, Diptera; 2008, Hemiptera; 2009, Hymenoptera; 2009, small orders; 2013, Coleoptera [from 2nd time!]). Bring specimens to identify or you can work with material from the Maine State Museum collection.

This workshop is for all levels of expertise. Come if you are new to insect identification and learn the basics. If you are more advanced, this is a chance to ask an expert your questions and help advance your skills. Plus, you can assist others or collaborate with other MES members. This will also give people exposure to some of the insect groups that need work at the Maine State Museum (MSM). Feel free to bring any specimens that you want to work on identifying.

There is a $20 fee to cover expenses, and pre-registration is required by January 4th. Please bring your $20 with you to the workshop, so we do not have to deal with reimbursing money if it cancelled. There is a limit of 30 people, and we usually fill these workshops to capacity so sign up early. Please bring a bag lunch; coffee and tea will be provided. There are dissecting microscopes available but if you can bring one, please do so.

CONTACT Anna Court (via e-mail at **annaleecourt@yahoo.com** or by phone at 207-474-8691) to pre-register for the event. If you pre-register and can't attend, please let Anna know ASAP so anyone on a wait list can be made happy.

Directions: From north or south on Interstate 95: take exit 113 and merge onto Route 3, heading eastwards toward Augusta/Belfast. Cross the Kennebec River and keep going straight on Route 3. At 5.9 miles from the Interstate, you'll go up a hill; turn right at the top of the rise (at the Maine Forest Service Southern Regional Headquarters sign) onto Conservation Drive.

Either 14 Conservation Dr. or 2870 North Belfast Ave., Augusta, might work in your GPS unit; the facility is located at the TOP of the hill.

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First records of the White-M Hairstreak (*Parrhasius m-album*) in Maine

by Robert E. Gobeil

In a recent maineleps Google Groups posting, Herb Wilson, one of the coordinators of the Maine Butterfly Survey, announced that on July 24, 2018, Doug Hitchcox found a White-M Hairstreak (Parrhasius m-album) at the Maine Audubon's Gilsland Farm in Falmouth, Maine. This is the first state record for this species in Maine. The second record for the state of Maine was an individual photographed by Brian Willson on August 11, 2018, at the summit of the Beech Hill Preserve in Rockport, Maine (Fig. 1). Brian indicates (pers. comm.) that the White-M Hairstreak was photographed early in the morning (8:28 a.m.) with temps around 65°F. The butterfly was nectaring on Meadowsweet. The White-M Hairstreak is fairly easy to identify since it is tailed and there is a line on the hind wings forming a white M or W near the tail. This species is often associated with oak trees since that is the caterpillar host plant.

Fig. 1. White-M Hairstreak photographed at the Beech Hill Preserve in Rockport, Maine on August 11, 2018. ***Photo courtesy of Brian Willson*****.**

In nearby New Hampshire, I was able to locate four confirmed records listed on online entomological websites but there may be a few others that I missed. There are three records of the White-M Hairstreak recorded on the Butterflies and Moths of North America website (BAMONA 2018). Two records are from Rockingham County (Sept. 15, 2012 at the Odiorne Point State Park in Rye, NH and May 15, 2014 at the Pawtuckaway State Park in Nottingham, NH). The third record is from Barnstead, NH (Belknap County) where an individual was found feeding on Goldenrod on August 16, 2014. On the BugGuide website (2018), there is a record of an individual photographed in Portsmouth, NH (Rockingham County) on August 14, 2013. All four of these records are from the southern portion of the state.

As for Massachusetts, there are numerous records indicating that the White-M Hairstreak is apparently expanding its range northward which may be associated with climate change. According to Stichter (2013), the species was first reported in 1979 in Falmouth, MA (Cape Cod) and the numbers found in the state have been increasing over the years. Between 1992 and 2010, the White-M Hairstreak was recorded from 32 towns in Massachusetts and records were mostly from the southeastern portion of the state. By 2013, however, the species had been reported from 58 towns and its known range had expanded dramatically to central Massachusetts and the Berkshires.

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Acknowledgements:

I wish to thank Brian Willson for supplying details on his sighting and for granting me permission to use his photo of the White-M Hairstreak.

***References*:**

BAMONA 2018. Butterflies and Moths of North America. (Online) **https://www.butterfliesandmoths.org/species/Parrhasius-m-album** [Accessed 28 August 2018].

BugGuide 2018. (Online) **https://bugguide.net/node/view/824595** [Accessed 11 September 2018].

Stichter, S. 2013. The Butterflies of Massachusetts - White M Hairstreak *Parrhasius m-album* (Boisduval & LeConte, [1833]. (Online) **https://www.butterfliesofmassachusetts.net/white-m-hairstreak.htm)** [Accessed 28 August 2018].

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Humans in Monsters' Bodies

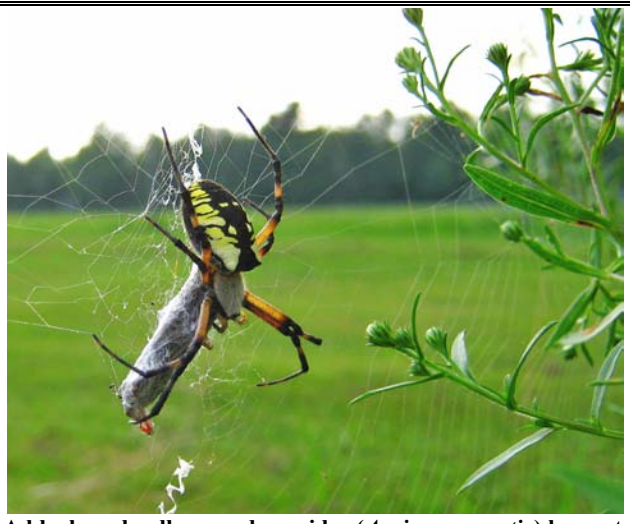
By Dana Wilde

My fascination with spiders started 10 or 12 years ago amid an overall self-generated awakening to the details of the woods. I was head-first in flower, tree, bird, and bug facts I had never taken time to really sort out because the feelings of awe always seemed more important than the mastery of names. But the names started to feel like a layer of the different kinds of awe – a flock of Canada geese reflects one facet of cosmic beauty, a pair of blister beetles copulating on a rose petal another. These birds and bugs, I was thinking, have names that might be illuminating.

Blister beetles (*Epicauta* sp.) copulating on a rose in Troy, Maine. *Photo by Dana Wilde*

It turned out to be complicated. *Branta canadensis* is an object; a flock of geese rising over the lake in still evening air is something else.

Another thing was the population of black-and-yellow garden spiders that had set up their orb webs in the brush at the Unity park. If one noticed you getting too close, she started bouncing her web, as if she was stuck to a vertical trampoline. Maybe the bouncing web was a threat, or maybe a diversion, or a blurring tactic, who knows exactly what she thought she was doing.



A black-and-yellow garden spider (*Argiope aurantia*) busy at work in the park in Unity, Maine. *Photo by Dana Wilde*

Whatever else was happening, the spider was: 1. watching me and 2. thinking.

Now, to remain grounded in the real world of natural fact, you have to immediately realize that what the words "watching" and "thinking" refer to in a spider's experience can't possibly be the same as what they refer to in a human's experience. You can see that the garden spider is small, it lives in a web, it's constantly at risk of being attacked and swallowed by huge beings from above or below, and it visits its own shocking savagery on smaller beings yet. A spider takes completely different meaning from its surroundings than humans do. But it is, nonetheless, meaning.

Jumping spiders, I soon discovered, have much better eyesight than garden spiders. When you encounter them, they look right at you in ways the garden spiders can't. Dimorphic jumping spiders (*Maevia inclemens*), in a study, reacted to videos of prey and potential mates as if they were real. It's not known if a spider can recognize you personally, but in other studies, bees learned to distinguish between human faces. And jumping spiders watch you.

Spiders communicate with each other. For example, mated cellar spiders (family Pholcidae) send vibrations through web silk that are secret messages – "It's me, don't eat me!" Dewdrop spiders (*Neospintharus*) send vibrations that trick other spiders into coming out of their own webs to be attacked and eaten. Spiders detect sound waves, too, and process them to extract information about their surroundings – meaning that in their own way, spiders hear.

You might think their brains are too small to be generating anything like what we call "meaning." But recent theories of mental capacities suggest that it's not the number of brain cells that matters in intelligence; rather, the proportion of the brain's physical size to the body's physical size is a better indicator of a being's relative intelligence. Crow brains are much smaller than chimpanzee brains, but studies indicate crows are every bit as clever as chimps. Some species of orchard spiders (e.g., *Leucage mariana*) and jumping spiders (e.g., *Phidippus clarus*) have brains so big that they spill down into their body cavities and legs early in life, when they're still spiderlings.

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What are the upper limits of a spider's sentience?

Some engineers in Great Britain taught regal jumping spiders (*Phidippus regius*) to leap between platforms so they could observe the mechanics of the spiders' leg motion; the training, interestingly, did not involve food bait, and not all the spiders learned the trick. But some took a challenge and solved a problem. Somehow, spiders think. Whatever that means.

A goldenrod crab spider (*Misumena vatia*) and a beetle share space on a wild rose blossom in Troy, Maine.
Photo by Dana Wilde

Studies of a velvet spider (*Stegodyphus dumicola*) native to the desert in southern Africa showed that traits such as boldness, shyness, and task specialization within spider social structures varied from individual to individual in changing circumstances. Other studies on wolf spiders have made similar findings. Meaning that some spiders, at least, have individual personalities.

We can't get carried away and start speculating about spider philosophers meditating in the brush at the park – that's science fiction (Adrian Tchaikovsky's novel *Children of Time*, for example). But we can at least take seriously the idea that sentience has many more facets than only the ability to reason abstractly and then talk about it. Big brains, complex webs. Spiders are having experiences we can probably never understand, the same way we're having experiences they can never understand.

My wife, Bonnie, loves her backyard encounters with nature's cosmic beauty. She likes to drive the back road through nearby Thorndike to see the Canada geese drift on the still water of a pond there. Mysterious, they perennially are, beautiful. She's not interested in their scientific name. But they seem almost human to her. By what lake's edge or pool will they build after they fly away, she wonders, and what will that family's life be like?

"They're like the best part of people, and with wings," she says.

Spiders are a different story. Strange. Alien-looking. Threatening.

But they're just making a living like us, I always say, and like the geese and everybody else, and the vast majority of them aren't the least bit dangerous to humans.

My words avail not much.

"They give me the creeps," she says.

"They're just humans in monsters' bodies," I say.

"Anyway, thank goodness they're small. Who knows what they'd be thinking about us."

MES member Dana Wilde lives in Troy, Maine. This essay first appeared in slightly different form in the Kennebec Journal and Morning Sentinel newspapers. He can be reached at **naturalist1@dwildepress.net** .

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Rangeley Field Day Rewarding

By Dana Michaud

On September 8, 2018, as M.E.S. members gathered at the scenic view lookout parking lot overlooking Rangeley Lake and the largely undeveloped panorama, the decision to tackle Saddleback Mountain and the trail up it was made. Alternatives were discussed in the event that access to the area wasn't available. The weather, being affected by the looming presence of the White Mountains to the west, was cool, breezy and refreshingly clear and crisp.

Dave Bourque, Dana Michaud, Dawn Drexler, Charlene Donahue, and Pete Darling, with Melyri the Wonder Dog, atop Saddleback.

At the base parking lot, the group, consisting of Charlene Donahue, Dave Bourque, Peter Darling, and me, along with the wonder dog Melyri, prepared itself for the day-long hike. Dawn Drexler, a local resident who also became a new M.E.S. member, joined our group after initial introductions.

The trail to the summit is up one of the ski trails, and although steep, was wide enough to offer collecting opportunities on both sides, with a variety of plants in bloom. Although much of the flowering had peaked, some goldenrod, asters, and other fall flowers were still present, allowing for the collecting of pollinators in addition to any other insects crawling or hiding on the ground, under stones, on vegetation, etc. Surprisingly, there were also a few blooms of normal spring flowers, lupine and bunchberry.

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Rangeley Field Day (cont.)

The arrival at the treeline lift hut led to lunch and conversation, both about insects collected and a personal introduction to our newest M.E.S. member, Dawn. The subsequent short climb up to the tableland and summit was visually rewarding, as both Katahdin to the northeast and Mt. Washington to the west were clearly visible.

While hiking to the summit, a number of through-hikers and day hikers, with their own superdogs, crossed our path. After a few photos, Dawn decided to head eastward alone to Saddleback Junior, and our group backtracked down the same route we had taken up, for further collecting, sweeping trailside vegetation. As we explored an upland meadow area near the gondola summit, Dawn caught up with us and the group continued down.

The breeze had died down, so the bog fritillaries (*Boloria eunomia*) sulfurs (*Colias*) and occasional skippers were more visible, along with other flower pollinators – both Diptera and Hymenoptera.

Arriving at the parking lot, we said our good-byes. Peter Darling, who had a long drive home, and Dawn, who had to return home to care for her parents, opted not to join the remaining trio at a local eatery for supper before heading home.

It's been nearly two months since the trip, and although I haven't identified most of the 50+ specimens I collected, *Notiophilus borealis* (a ground beetle) was a nice addition to my Carabid collection. Although I look forward to finishing the identifications of the rest of them, I also look forward to the next field collecting trip with fellow M.E.S. collectors for another enjoyable day outside exploring while observing and collecting insects.

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A Moth With An Identity Problem

by Gail Everett

On a trip to the Enchanted Pond area in western Maine after several very hot days, I saw a clearwing moth flying over a small puddle on a dirt road. On looking more closely, it seemed to be dipping the end of its abdomen in the water, just the way a dragonfly would do to lay eggs. At first I wondered if the moth was hurt and unable to fly properly, but that turned out not to be true.

Over the course of about 10 minutes it returned to the puddle several times, each time repeating the same behavior, then flying away again. I netted it and could not determine the sex, but did see that it was most likely identical to several other clearwings that were nectaring a few dozen feet away, none of which seemed interested in the puddle.

I'm curious whether anyone else has ever seen behavior like this from a lepidopteran. To be clear, it was definitely NOT sipping with the proboscis, but was touching the surface of the water with its genital area.

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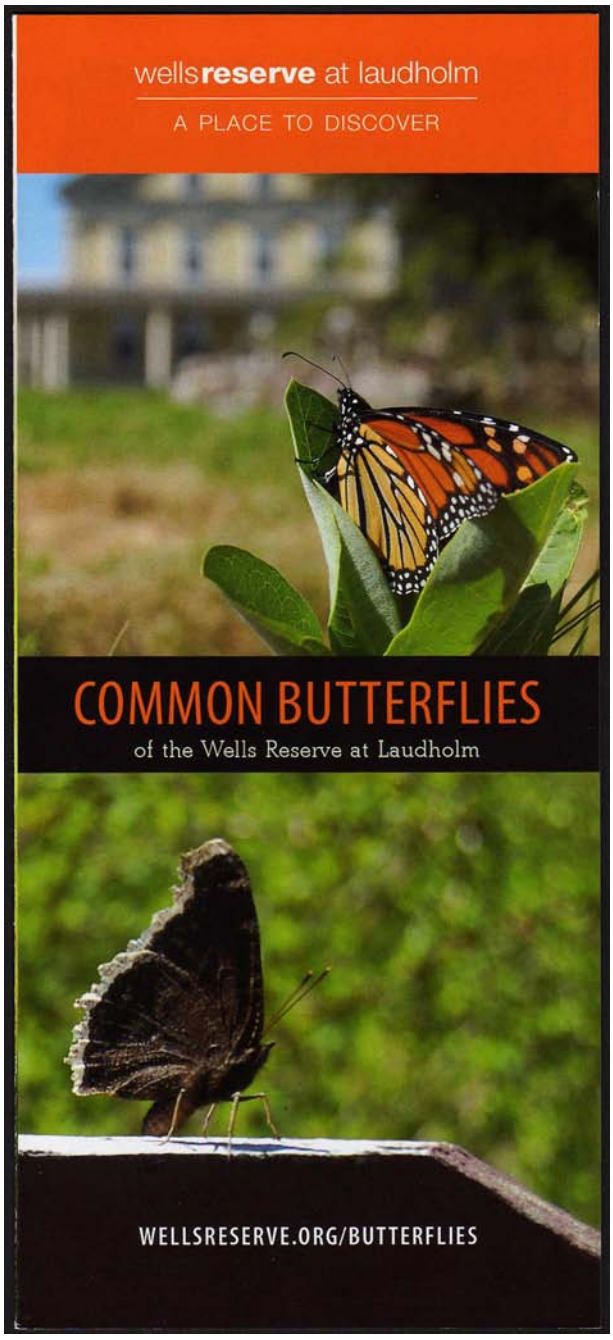
Common Butterflies of the Wells Reserve at Laudholm – A New Brochure

By Robert E. Gobeil & Rose Marie F. Gobeil

In conjunction with Scott Richardson (Communications Director) and Susan Bickford (Stewardship Coordinator), staff members of the Wells Reserve, we helped to produce a brochure of the Common Butterflies of the Wells Reserve at Laudholm.

The Wells Reserve at Laudholm is comprised of over 2,200 acres of open fields, woodlands, salt marshes, and beach areas. The brochure is based on butterfly surveys that we conducted at the Reserve over a two-year period (2016-2017). Additional information was obtained from online sources, including records from the Maine Butterfly Survey and confirmed records for the Wells Reserve posted on eButterfly.

While working on the brochure, we also updated the Checklist of Butterflies at the Wells Reserve, which now contains over 45 confirmed species that have been recorded at the Reserve.



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A Summer of Rarities

by Gail Everett

I was lucky enough this summer to find two different insects not commonly seen in Maine. The first, at the end of May, was a female Cobweb Skipper (*Hesperia metea*) nectaring on a blueberry bush on an ATV trail. Photographs of the specimen were sent to Philip deMaynadier and he verified it as the 6th known specimen in the state, and the farthest north so far.

A few weeks later, while changing the propane tank on my RV, I found a recently dead mantispid underneath the tank. With the help of Dana Michaud this was identified as *Climaciella brunnea*, the brown mantisfly. The following photo is not of my specimen, but I'm including it because we don't often see these.

The brown mantidfly, *Climaciella brunnea*.
- Photo by Marcie O'Conner; used with permission

Both of these nice bugs are now in the Maine State Museum collection. Here's hoping next year is just as productive!

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Insect and Spider Biology "Through the Lens" To Be Offered at Eagle Hill (Steuben) June 23-29, 2019

The calendar for next summer's workshops at the Eagle Hill Institute in Steuben is still being assembled, but several programs of particular special interest to M.E.S. members have been tentatively scheduled. As of right now, these include:

June 9-15: Chironomids: Classification, Morphology, Identification and Lifecycles, with Armin Namayandeh.

June 23-29: Insect and Spider Biology "Through the Lens", with Kefyn Catley. (*see description below*)

July 14-20: Trichoptera of the Northeast, with John Morse and Paul Frandsen.

July 28 – August 3: Leaf- and Stem-Mining Insects, with Charley Eiseman.

August 4-10: Microlepidoptera: Collection, Preparation, Dissection, Identification, and Natural History, with Jason Dombroskie and Kyhl Austin.

August 11-17: EPT Taxa: Ephemeroptera, Plecoptera, and Trichoptera, with Steven Burian.

A link to the Eagle Hill summer calendar may be found on the M.E.S. web page and can be checked periodically for updates. However, we do have available this descriptor for the Kefyn Catley course on insect and spider ecology and photography:

Insect and Spider Biology "Through the Lens", with Kefyn Catley.

This hands-on seminar provides a unique opportunity to learn more about insect and spider biology and ecology using your own images as a point of entry into the engrossing world of arthropods. It addresses the biology behind the photograph for photographers and the art behind the image for those with a biology background. The class is largely taught in the field with lectures, post-production work and group image critiques when the light and/or weather do not cooperate. Participants will gain much deeper insights into the biology, ecology, behavior and conservation of their subjects as well as the skills required to produce high quality photographs of them. It provides an ideal forum for the synergism between photographic technique, scientific knowledge, and artistry to produce a memorable learning experience.

The instructor has 30 plus years of experience teaching and mentoring students and science professionals in the field, lecture, workshop, and lab. His research has been published extensively in a wide range of scientific journals and his insect photographs have appeared online and in press including National Wildlife Magazine. Participants are expected to have a basic understanding of how to operate their digital 35mm or equivalent camera, but no background in insect biology is assumed.

Samples of Kefyn's photography can be seen at his website: **https://www.hiddennatureimages.com/** .

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Stable Isotope Study Shows Important Change in the Insects Birds are Eating

A recent paper* in the journal ***Frontiers in Ecology and Evolution*** revealed something not previously suspected, but which has potentially alarming implications: the decline of aerial insect biomass that's been previously documented** is apparently also having an impact on the insectivorous birds that depend on these insects for food.

The decline of aerial insectivores is apparently already of concern in the birding community. These authors reasoned that if prey insect communities were declining, the preferred-food insects at higher trophic levels (e.g., larger moths and beetles, in particular) should also be seeing steeper declines. Though normally higher trophic levels would be expected to show higher levels of nitrogen-15 in tissues, analysis of modern and museum specimens of three large preferred-prey insects (the peppered moth, a predaceous diving beetle, and a May beetle) showed too much scatter to be definitive.

Analysis of nitrogen-15 and carbon-13 in modern birds, and in preserved museum specimens from the 19th and 20th centuries, however, showed a definite decline in the abundances of these isotopes, and by inference, of the quality of food being consumed by these birds. In other words, to survive, insectivorous birds today are apparently having to eat larger numbers of smaller, lower-trophic-level insects. This makes finding sufficient food resources more challenging.

(continued on next page)

Insect Decline Affecting Birds (cont.)

The study was prompted by the particularly sharp decline in breeding populations of Eastern Whip-poor-wills in southern Ontario, which was the target species of the study. The authors caution that their study is preliminary, but that further studies of museum collections and modern specimens can help to further clarify feeding behavior changes over time.

Bob Nelson can send a digital pdf copy of this paper to anyone who would like a copy.

References:

* P. A. English, D. J. Green, and J. J. Nocera, 2018: Stable Isotopes from Museum Specimens May Provide Evidence of Long-Term Change in the Trophic Ecology of a Migratory Aerial Insectivore. *Frontiers in Ecology and Evolution*, vol. 6, article 14; 13 pp.; doi: 10.3389/fevo.2018.00014 .

** See Charlene Donahue's *President's Corner* column in the November, 2017, issue of *The Maine Entomologist*.

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Basic Collecting: Far More Important than Many Realize

By Bob Nelson

For some M.E.S. members, collecting insects is a matter of course, as natural as breathing. The thrill of finding something you've never seen before, of adding to a collection, and of having a great reason to be out in the Maine countryside in almost any but the most extreme weather events, is exhilarating. For some of us, there can also be that most exquisite of joys: finding a species previously unknown in Maine, or even unknown to science. Hillary Morin Peterson has done it, as have I, and so have many others. Dave Bourque and Dana Michaud have found numerous species previously not known in Maine by working with "bycatch" from Maine Forest Service survey collections,

Collecting insects does require time, care, and a little money for proper supplies (pins, storage containers, etc.). A microscope is not essential unless you want to work with smaller things – those less than ½ inch long or so. Proper labeling and curation, in particular, is a must; the happy little beetles of the family Dermestidae are all too happy to turn your beautiful Luna Moth or Giant Water Bug into nothing more than a pile of dust. Their ecological role is to recycle dead, dry animal protein – so collections must be kept in airtight conditions, or fumigated, to be protected from their ravaging appetites.

However, the value of the collections – whether or not you can identify the specimens yourself – is incalculable. Consider the recent study on historical Eastern whip-poor-wills and their insect prey that's reported elsewhere in this newsletter. Without museum specimens of birds and insects collected and preserved by scientists and citizens in the distant past, it would not have been possible. Large museum collections of seemingly common things is also how subtle but consistent patterns of variation can also lead to the recognition of previously unknown species. Several years ago, two species of ground beetles known in Maine to be quite variable, were shown to actually be a closely related complex of *seven* different species – with this interpretation borne out with DNA analyses. Only having large series of available specimens made this analysis possible.

Those of us who now are able to document today's fauna will also help future scientists document the changes in that fauna over time, as climate change results in shifting species ranges. Again, the specimens are real, and document the presence of the species at a particular time and place. You can identify them later – as your knowledge and skills increase. Even if you can only identify them to family or genus, the specimen is a physical document. And perhaps obviously, accurate labeling is essential.

Strategies for collecting vary with the individual. Henri Goulet, a lifelong entomologist now retired from Agriculture Canada, made a long-term study of the insects just in his back yard in suburban Ottawa, and found many hundreds of species. Others may decide on a particular group (e.g., butterflies, dragonflies, beetles, or wasps) and still limit themselves to a restricted geographic area. For example, see the short story on Bob and Rose Marie Gobeil's pamphlet on the butterflies of the Wells Reserve in southern Maine, reported elsewhere in this newsletter. This is an important documentation of the entire butterfly fauna of a single restricted area, which may be quite different fifty or a hundred years from now.

The January Winter Workshop, with Don Chandler, will be an outstanding opportunity to learn how to identify insects to family for those who may feel tremulous at the challenge. But like all things that seem difficult at the outset, it becomes easier with focus and training. As FDR so famously declared in his 1933 inaugural address, "The only thing we have to fear is .... fear itself!"

I hope to follow this up in the February newsletter with some basic pointers on collecting techniques, for those who may have enjoyed looking but not collecting in the past, and might like to start their own modest collection. And of course, going on the various field days that are scheduled is a chance to become more involved – and learn from others as you get to explore many new areas around the state.

Meanwhile, may you have a great holiday season!

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Edible Bugs talk in January at the Augusta Nature Club

On January 30, 2019, Martin from EntoMarket in Lewiston will be the guest speaker on "Edible Bugs" at the Augusta Nature Club, and will be bringing handouts and free samples. The club will meet at the Capital Area Technical Center on Pierce Drive in Augusta at 11:30 for lunch, which will be followed by the presentation. If you don't want to have lunch you are welcome to join us afterward; Martin will speak at 1:00 p.m.

About the Augusta Nature Club: almost 100 years ago, Augusta recognized the need for "green spaces" and the Augusta Nature Club was one of the first organizations that started to work toward that end. As of now, there are 178 acres of natural preserve for the public to enjoy almost directly in the center of Augusta. They are a non-profit organization of people who enjoy all things in nature. There

(continued on next page)

Edible Bugs talk (cont.)

are about 60 members and they meet once a month from September to May, with "field trips" in June, July and August.

For information, please contact Sara Marston at 207-215-1112, or via e-mail at **barefoot@fairpoint.net;** if you're planning to join them for the "Edible Bugs" talk, please let her know by January 25th.

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Book Review:

"The Sting of the Wild" by Justin O. Schmidt
(Johns Hopkins University Press, 2016)

reviewed by Dana Michaud

The Sting of the Wild is one man's unorthodox approach to exploring a cross-section of the vast array of this planet's stinging Hymenoptera.

The first five chapters take the reader through such titles as "Stung," "The Stinger," "The First Stinging Insects," "The Pain Truth," and finally "Sting Science." From discussion of his experience of having been stung as a child to the evolution of both stinger (only in females!) and the various venoms and degree of pain inflicted, Schmidt introduces the reader to one group of insects that have developed both chemical and physical warfare worthy of noting. If sound (buzzing) and warning coloration doesn't work to discourage a would-be curious or approaching human (or any other potential threat), the ensuing defensive/offensive attack will, whether the wasps are solitary or social.

Chapters 6-10 contain much information about various stinging wasps, including fire ants, yellowjackets, tarantula hawks, and bullet ants, to mention just a few. Each sting carries a different venom, delivered through punctures that Schmidt rates via his pain scale. The reason for the sting, whether (a) purely for self-defense or protecting a nest, or (b) as a paralyzing agent for prey, will determine the chemical composition of the injected venom – whether a toxin or just a paralyzing agent.

The final chapter, "The Honey Bee," betrays human reliance on these insects for pollination. In this case, the Africanized form, which produces more honey, has now crossed the Atlantic into South America, aided by human ignorance, and spread northwards into the southern U.S. relatively unabated. Although no more venomous than the "normal" *Apis mellifera* to which we are all accustomed, it is recognized by being slightly smaller and much more aggressive when its hives are threatened.

The Africanized honeybee has instilled fear into the human psyche. Often named "Killer Bees," this variety poses a grave threat to those allergic to bee venom. Although a non-allergic person can survive up to hundreds of stings, someone allergic to the stings can die from as few as one or two, through anaphylaxis.

The Appendix, on pages 221-230, lists the various species of stinging ants, bees and wasps to which Schmidt has exposed himself, some 83 in total. Here he rates their stings from 1 (mild) to 4 (very painful).

Whatever one thinks of Schmidt's methodology, the book itself is both well-written and very informative. I don't think I'll run out and test his pain scale, but I have learned to have greater respect for this marvelous group of insects that have evolved a defense mechanism that only a fool would ignore. There is also safety in numbers: the solitary bee or wasp may deliver a potent and painful sting, but it's a hive collective that can overwhelm a would-be aggressor, and send the message, "we will protect, or die trying."

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Memories of Bug Maine-ia ....

Dana Michaud and Anna Court were two of the stalwarts of the M.E.S. tables at the entrance to Bug Maine-ia at the Maine State Museum this year, along with Ariana Hansen, Kathy Claerr, Ann Mallett and Charlene Donahue. Over 2000 young visitors came for the annual celebration of all things entomological.
- Photo by Joanna Turow

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

(See the Annual Meeting minutes, on page 3, for a complete listing of planned events for the coming year; details of most events will be in future newsletters)

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

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