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

Last month an article (Hallmann et al., 2017*) detailing the 75% decline of flying insect biomass over 27 years hit the press and caused a stir in the natural history community – and hopefully far beyond. The work was carried out in Germany by the Entomological Society Krefeld. It was highly standardized so that the data could be compared between sites and over many years. The initial goal of the study was to look at biodiversity.

When the data was recently analyzed the results were shocking. People have been noticing a decline in insects but it has been primarily anecdotal. Fewer bug splats on the windshield, not being bothered so much by black flies, native forest pest populations not rising to noticeable levels and so on.

One of our MES members, in fact, reported on this trend ten years ago. Tony Roberts (2007) wrote an article for *The Maine Entomologist* discussing his observations over two decades and his concern with the trend. This study puts some numbers to the perceived trend.

Susan Hayward, Maine Naturalist, contacted me and said is there something that we here in Maine can do to document what is happening here so that there is some data to go along with concern for our environment? So that there is ammunition in making requests for policy changes when the reason for this drop in insect fauna is determined.

My thought is yes. The MES has the potential for being a linchpin in a long term project looking at biomass and biodiversity. We would need to partner with others to run such a project but we have the capability to work for years on a project. Look at the Bioblitzes at Acadia National Park, we partnered with them for 13 years and published the results. Once the initial investment in equipment has been made, sites chosen and project design established then it is primarily lots of time that is required. Checking traps, processing specimens and making ID's all need to be done with someone coordinating the effort and maintaining samples and data. It seems daunting at the moment but I think it is worth talking with interested institutions to see if there is support for such an endeavor. Anyone with me?

**** Accessible at***
http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0185809

A few of the news outlets covering this story that were sent to me:

http://www.sciencemag.org/news/2017/05/where-have-all-insects-gone
https://www.theguardian.com/environment/2017/oct/18/warning-of-ecological-armageddon-after-dramatic-plunge-in-insect-numbers
http://www.cnn.com/2017/10/19/europe/insect-decline-germany/index.html

Information on making or buying Towne malaise traps can be found at:

https://www.nev.nl/pages/publicaties/eb/nummers/2009/69-4/129-135.pdf
https://shop.bugdorm.com/product_info.php?cPath=1_13&products_id=125

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DUES REMINDER!

M.E.S. dues are payable on a calendar-year basis. If you haven't already done so, please renew now for 2018 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 the year on your mailing label is "2017", please contact Dana to renew for 2018 or correct the record.

Minutes of MES Annual Meeting: September 30, 2017

Submitted by Anna Court

About 16 people attended the 2016 MES Annual Meeting at Bob & Nettie Nelson's home in Clinton on September 30th**.**

Insect Photography Workshop. Roger Rittmaster held an insect photography workshop from 10 – 11:30 followed by collecting and photography.

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 the following: David Bourque, Kathy Claerr, Anna Court, Peter Darling, Charlene Donahue, Karen Hopkins, Anne Mallett, Theresa and Elizabeth Mazurkiewicz, Bob Nelson, Dana Michaud, Barry Timms, and Jon Wallace.

Minutes of the October 1, 2016 Annual Meeting were approved without correction**.**

Treasurer's Report: General Fund. Treasurer Dana Michaud presented the Treasurer's Report which showed a balance of $1,194.88 in the general account as of September 1, 2017. This is about three hundred dollars less than the balance on September 1, 2016.

Treasurer's Report: Scholarship Fund. Michaud reported that the balance in the Scholarship Account was $3,929.91 on September 1, 2017 -- approximately $200 more than the fund's balance in 2016. The increase is due to a portion of dues and the accumulation of bank interest. No scholarship moneys were dispersed in the last year.

ACTION: The Treasurer's Report including the itemized accounting of all income and expenditures. It was audited by Nettie Nelson and accepted by the members

NEW BUSINESS

Election of officers. President Charlene Donahue, Vice President Kathy Claerr, Treasurer Dana Michaud, Member-at-Large Edie King and Newsletter Editor Bob Nelson agreed to serve another year in these positions. Anna Court offered to replace Diane Boretos as the second Member-at -Large.

ACTION: This 2017 slate of MES Officers was unanimously elected.

Change in the MES By-laws. The group considered a By-law change that would allow for academic groups to become affiliates of the Maine Entomological Society if they have a stated goal aligned with that of MES, request affiliation, and pay a onetime fee of $20 for the group. The By-law change specifies that student affiliate members would then pay 50% of the current MES membership fee each year.

ACTION: The members voted unanimously to approve this By-law change.

Maine Entomology Student Organization. This group at UMAINE-Orono sent a letter to Charlene Donahue requesting affiliation. The president of the group is Joshua Villazana.

ACTION: The group voted to accept MESO as an affiliate.

Scholarship Fund and General Outreach. The group discussed the Scholarship Fund and the unfortunate fact that no one applied this past year in spite of an increased outreach effort (mailing of posters to 30 Maine groups and academic departments). The group discussed suggestions how to address this problem and made several suggestions. One suggestion was to drop the requirement that scholarship fund recipients be MES members because this might be an impediment to applicants. Another suggestion was to increase the amount of awards and to advertise that the scholarship amount would be $200 or up to $250. Another suggestions was to go to a MESO meeting (the new academic affiliate) to generate interest in scholarship funds.

ACTION: The group agreed to create a post card sized "advertisement" for MES to communicate clearly who we are and how to join, as well as the availability of scholarship funds. The group also agreed that the Scholarship Committee: Dana Michaud, Anna Court and Edie King (Melissa Duron wishes to be removed from this committee) would meet at Dana's house in Waterville on Sunday, November 19th to discuss the scholarship fund and present a list of recommendations to the officers.

On general outreach, the group decided to have a table at the Common Ground Fair next fall and to be more of a presence in terms of membership outreach at Bug Mania. Anne Mallett and Anna Court agreed to help with these events. Bob Nelson has the information on what's required to arrange a presence.

Second MES business meeting during the year to assess progress. One member suggest that we continue to have a second business meeting during the year to assess progress on action items specified at the annual meeting, but that the meeting be held earlier than last year (the second business meeting in 2017 was held in March).

ACTION: The group agreed that this meeting will take on Sunday, November 19th after the Scholarship Committee meeting.

MESO Workshops/ Activities of Other Maine Groups. Charlene Donahue announced that our new academic affiliate MESO would be having a pinning workshop at UMAINE at Orono on October 20th. MES members are invited.

ACTION: Routinely get the MESO schedule and advertise it in the MES Newsletter. Put a link on our website for the Coastal Maine Land Trust events. Put Jon Wallace's activities newsletter on our website. The fall MESO schedule is as follows:

October 27: Insect costume contest and Halloween party

November 3: Guest speaker, and resin insect magnet-making activity.

November 11: Aquatic insect canoe trip at Hirundo Wildlife Refuge.

(continued on next page)

Minutes (cont.)

November 17: Guest speaker, and resin and plaster insect magnet-making activity

December 1: end-of-semester party and insect-themed potluck

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

November 18: Workshop at Jim Nutting's studio in Lisbon Falls to make fused glass bees, 1:00-3:00 p.m. $45 per person for the first ten registrants. $40 each if there are over 10 participants. Children are welcome. **Coordinator: Charlene Donahue.**

Late January or early February: Winter Workshop – mosquitos and blackflies. Coordinator: Charlene Donahue. Charlene knows two experts and will make arrangements.

March 24: Maple syrup insect collecting at Charlene Donahue's house in Whitefield. The field day events will be preceded by a business meeting to discuss progress on action items. **Coordinator: Charlene Donahue**.

April ?: Service Day with MESO on Biodiversity Collection (sorting, identification, pinning). **Coordinator: Charlene Donahue**

May 6?: MES will participate for the third year in "Insect Day" at the Orono Library; collecting/identification event on the trails behind the Edith Patch house on College Ave. **Coordinator: Kathy Claerr**. Anne Mallett and Anna Court will participate.

May 12: Field Day at Sunkhaze Meadows N.W.R., Benton. **Coordinator: Bob Nelson**.

June ?: Washington County Field Day. **Coordinator: Bob Nelson will contact Richard Hildreth and Fred Gralenski**.

July 7 or 14: Weekend in T4R7 WELS at Charlene's camp. Collecting in the vicinity of Maine Woods and Waters National Monument. **Coordinator: Charlene Donahue**.

August 25: Field Day at Kathy Claerr's property, Bowdoin. **Coordinator: Kathy Claerr.**

September 12: Bug Maine-ia at the Maine State Museum. **Coordinator: Joanna Turow.**

September 8: Field Day in the Rangeley/Saddleback Mountain area. **Coordinator: Dana Michaud.**

October 6: MES Annual Meeting at Bob Nelson's home in Clinton. **Coordinator: Bob Nelson**.

November: Maine Bumble Bee Atlas speaker.

Raffle. Nettie Nelson picked the winning raffle ticket for the Bee Hotel. The winner was Anne Mallett.

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

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Hillary Morin Peterson Describes New Wasp Species from Maine

Hillary Morin Peterson of Brunswick, Maine, has recently published a paper describing a new species of Pteromalid wasp, *Omocerus dirigoius* Morin & Gates. Her senior honors thesis at the University of Maine was on research into the relationship between predatory and parasitoid Hymenoptera and the invasive winter moth (*Operophtera brumata*) inside and outside of the infestation area in Harpswell, Maine.

Hillary continued identifying the Hymenoptera after she graduated, and was able to secure an internship in Dr. Bob Kula's lab at the Smithsonian Institution in Washington, where she met and also collaborated with Dr. Michael Gates to further her work. The new species is in a genus that is believed to be either parasitoids of gall-inducing cynipids or inquilines (that kill the gall inducers by outcompeting them for the gall tissue). Hillary named the wasp after her home state of Maine. She is now a graduate student in entomology at Penn State.

The paper is: H. D. Morin, I Mikó and M. Gates, 2017. A New Species of *Ormocerus* Walker (Hymenoptera: Pteromalidae) from North America and a Range Expansion for *Ormocerus latus* Walker. *Proceedings of the Entomological Society of Washington*, 119(4):619-628.

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November 18th Field Day in Lisbon: Create Glass Bees or Ants

On November 18, 2017, MES is having an art day at Jim Nutting's Maine Art Glass Studio at 51 Main Street, in Lisbon Falls. We will be creating a fused glass 3-D ant or bee working with compatible glass. Jim will show students how to layer and assemble these bugs in a 2-D format that will get fired (melted) in a kiln and then bent into 3-D shape after firing and cooling. No experience is required. You will also get to tour the Butterfly and Insect Museum.

Glass bee and ant created in the Maine Art Glass Studio.
Photo by Jim Nutting

The workshop is from 1:00-3:30 p.m. and the cost is $45; if a lot of people sign up then the price will go down. If you like, plan on meeting for lunch at Dr. Mike's Madness Cafe, 21 Main Street, Lisbon Falls, at 11:30 a.m. beforehand.

SIGN UP for the workshop with Charlene Donahue by November 15th so Jim will know how much material to get out. Call Charlene at 207-485-0960 or send an e-mail to donahuecp15@gmail.com.

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Watching Luna Moths

by Wesley Hutchins

In June of this year, I caught a luna moth (*Actias luna*) on the side of a building in Belfast. I brought it home to observe and put it in a mesh Lepidoptera habitat. I had no idea I had just captured a gravid female moth. Later that evening, the moth laid almost 300 eggs on the wall of the enclosure. The eggs resembled tiny, round, brown pebbles that adhered to the wall in clumps and strings. I originally thought the eggs were feces, but then I remembered that adult moths in the family Saturniidae do not eat. I continued to observe the eggs and moth. The moth died 7 days later (it's now in my insect collection).

The eggs began hatching 14 days later; around three-quarters of the eggs hatched. The rest failed to emerge. At first, the caterpillars were tiny, about the same size as the eggs they came out of. They were bright green. I spent a lot of time researching how to take care of luna moth caterpillars, and I learned that they eat walnut leaves. Luckily, we have a walnut tree growing in the backyard. Every day, I would go outside to collect fresh leaves for the caterpillars. They ate a lot and grew very quickly. They grew so quickly, the enclosure began to become overcrowded. I could literally hear the caterpillars crunching away all day. I released most of the caterpillars outside, but kept around 30 indoors. As they grew, I noticed they had red dots running down the length of their bodies. Once the caterpillars had fully matured, they were almost 2 inches in length.

The day before they would pupate, each caterpillar would turn light brown. Once I noticed this happening, I removed the brown caterpillars and put them in individual plastic cartons to protect them from the rest of the caterpillars. Once there, the caterpillars would form their cocoon. Each caterpillar would secrete silk and use it to wrap leaves around itself. This probably served as a form of camouflage as well as protection for the pupa. When the pupae were handled, the developing moth inside would wiggle around and make a scratching sound. Most of the caterpillars ended up pupating; only three or four failed to pupate and died.

The overwintering luna moth puparium, outside.
Photo by Wesley Hutchins

After waiting several weeks for the cocoons to hatch, I realized, due to the lateness of the season, they were overwintering. Overwintering cocoons will open once it gets warm again in the spring. To prevent the adult moths from emerging in the house in the middle of winter, I moved the cocoons to a glass tank outside so they would not be fooled by the heat inside. I placed them in a small glass tank with handfuls of leaf litter to keep them warm. The small glass tank is inside another large tank to keep predators out. I hope to see them emerge sometime next spring!

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MES winter workshop - Mosquitoes and Non-biting Midges

The MES workshop will be on Saturday, January 27, 2018 from 9:30 am – 3:30 pm at the Maine Forest Service Southern Regional Headquarters off Route 3 in Augusta.

Presenting on mosquitoes (Culicidae) will be Dr. Allison Gardner, University of Maine professor, and Chuck Lubelczyk, biologist with the Maine Medical Center Research Institute. These two have extensive knowledge of mosquitoes. Chuck has studied them for years in Maine. Allison is new to Maine and brings expertise on vector-borne diseases. University of Maine graduate student Chase Gage has a passion for non-biting midges (Chironomidae) and will be familiarizing us with with this group of aquatic insects that may look like mosquitoes but are very different.

As in past workshops there will information on biology, life history and taxonomy as well as the connection between mosquitoes and disease. A lot to pack into one day!

Please pre-register by January 12th. There is a $20 fee for the workshop; please bring your $20 with you to the workshop so we do not have to reimburse money if the workshop is canceled. There is a limit of 35 people and we usually fill these workshops to capacity, so sign up early. Bring a bag lunch, but coffee and tea will be provided. There are microscopes available but if you can bring one, please do so.

DO CONTACT Charlene Donahue (via e-mail at donahuecp15@gmail.com or by phone at 207-485-0960) to pre-register for the event. If you pre-register and can't attend, please let her 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 and turn right at the top (Maine Department of Conservation 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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QUODDY NATURE NOTES: Flies

by Fred Gralenski

It's the season for flies. Flies are a little different from all those other bugs out there, because flies belong to the order *Diptera,* which means, in scientific lingo, one pair of wings. Most of the other bugs out there, like bees, wasps, etc., typically have two pair of wings. Flies must have descended from their cousins since their second pair of wings seemed to have evolved into something like miniature door knobs which apparently act as stabilizers in the active flight of the fly. Most daytime flies depend heavily on sight for

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Flies (cont.)

foraging and other survival traits and have developed large eyes, while other flies like mosquitoes, gnats and midges, may be attracted or repelled from their destinations (which is oftentimes people) by temperature, carbon dioxide concentration and odors.

We have a lot to fear from flies, as probably the most dangerous critter on earth, from a people standpoint, is the mosquito. The latest Zika concern is mosquito-driven, as are many other deadly things like malaria, dengue, encephalitis and yellow fever. Our big problem here in the Quoddy region at present is more of an annoyance with mosquitoes, black flies and midges, and to make sure a fresh can of OFF is always at the ready. Horse flies and deer flies are another seasonal nuisance here that are not as easily repelled by a casual chemical spray. I've read of 'bug juices' used in the olden days of a mixture of pine tar and other secret ingredients cut with a little turpentine or kerosene to make it a liquid, and to apply this liberally to the skin until a noticeable sheen was acquired. I never seriously tried any of these. Probably as soon as a bug landed it realized it was stuck, and spent its effort trying to escape before getting swatted. The common house fly can certainly be another vector of disease. It doesn't bite, but in instances when filth, like untreated sewage is nearby, diseases like Salmonella can be transported by house flies. Normally flies are pretty fastidious in their behavior of keeping themselves clean and in ship shape. Watch them sometimes when they land.

***Toxomerus geminatus*, a common Maine hover fly (Syrphidae).**
Photo by Fred Gralenski.

But many flies are useful to people. There are flies that are excellent pollinators. There are the larvae of some flies (maggots) that are approved by the US Food and Drug Administration to help clean out infections after wounds or surgery, especially with those compromised by diabetes. Of course there are the robber flies, and these are successful predators of most types of insects either crawling or flying. Then there are the bumblebee mimics. These flies are not only good pollinators, they also like to supplement their diet with a nice, fat Japanese beetle.

Then, of course, we can't forget the flower flies in the family Syrphidae. These are the Hover flies and Yellowjacket mimics. If you see something like a yellowjacket on your favorite rose or rhododendron, don't panic and grab the Raid and spray it, since it probably is one of my favorite Hover flies, *Toxomerus geminatus*. After a little sip of nectar and if she is pleased, she will probably lay an egg on the plant. In a few days the egg will hatch, and the larva will patrol the plant looking for some aphids to eat.

So don't think too harshly on all of the 17,000 species of flies we have here in North America. After all, my spiders have to eat too, and worldwide they consume upwards of 800 million tons of bugs a year, and some of these are flies.

Editor's note: This gem was supposed to be in the August issue of the Newsletter ... but the editor blew it and it didn't get in that issue. SO, here it is in all its glory – late but not forgotten a second time! - BN

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Lord of the Flies

by Fred Gralenski

In the Indian summer days of autumn, if you have an old house or a garage like mine with southern facing windows, when the sun is shining through those windows you will probably see zillions and zillions of flies. "YECH!" you say, thoroughly disgusted with the thought, but since you are stuck with them, you might as well learn a little about them.

If you can stand examining your flies a little, you will notice there are many different sizes, shapes and colors with maybe even a wasp or lady bug thrown into the mess. By far the predominant fly resembles the standard housefly, but it is noticeably larger and darker with a mixture of wispy black and yellow hairs on its body. They are sluggish when cool, and very energetic when warm, and fly with a distinct buzzing sound. This is the Cluster Fly, *Pollenia rudis* (Calliphoridae).

***Pollenia rudis* (Calliphoridae), the common Cluster Fly.**
Photo by Fred Gralenski.

The Cluster Fy overwinters as an adult and the new generation is started in the spring when the female scatters her eggs haphazardly in the ground. There the eggs hatch and the larvae parasitize earthworms. After about a month the metamorphosis is completed and the adults emerge to start a new cycle.

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Cluster Flies (cont.)

In the Quoddy region, up to four broods are possible each year, resulting in a large number of flies. With the onset of cooler nights, the Cluster Fly starts to look for a place to hibernate. They and innumerable friends and relatives gather in warm spots on south-facing walls, buzzing and enjoying the final warm rays of the sun. At nightfall, they creep into any small crack or crevice, preferably where a little heat is escaping from the building. This cycle continues until the days get cold enough and the flies stay hidden, clustered together to preserve heat and humidity.

Many times the flies work their way into the house where they are a minor nuisance, and their presence is often blamed on spouses or children carelessly leaving the door open. Usually when they do work their way into a house, they use up their energy reserves by buzzing around and remaining active, causing premature death, but not before pooping on the walls and ceilings. I wonder how they do this without eating? Anything, I guess, to make themselves more annoying. Cluster flies are also susceptible to a fungus infection which often reaches sufficient levels to kill them in an unusual way. The fly is left hanging on the wall or ceiling with its wings up and surrounded by a pattern of spores that looks like a tiny explosion had occurred, like some terrorist had slipped him a micro-grenade.

So what can one do to prevent these miserable wretches from getting into your house? Well, the Cluster Flies are undocumented invasives from Europe, so you could petition Homeland Security to deport them. You could wrap your house in Saran Wrap from August through October, or you could douse your house with all sorts of toxic chemicals available at Walmart or Home Depot. The 'cure' in this case is more dangerous than the disease, as Cluster Flies do not bite people.

The method of control I use is a vacuum cleaner. After making sure there is no interesting critters amongst them, I charge into those buzzing wee beasties with my trusty Hoover at the ready and suck 'em all up! HA HA HA! It makes me feel like a giant black hole in outer space picking up any wandering planets or stars or other space debris until all around me is quiet and empty. I wonder if I accidentally generate any gravitational waves.....

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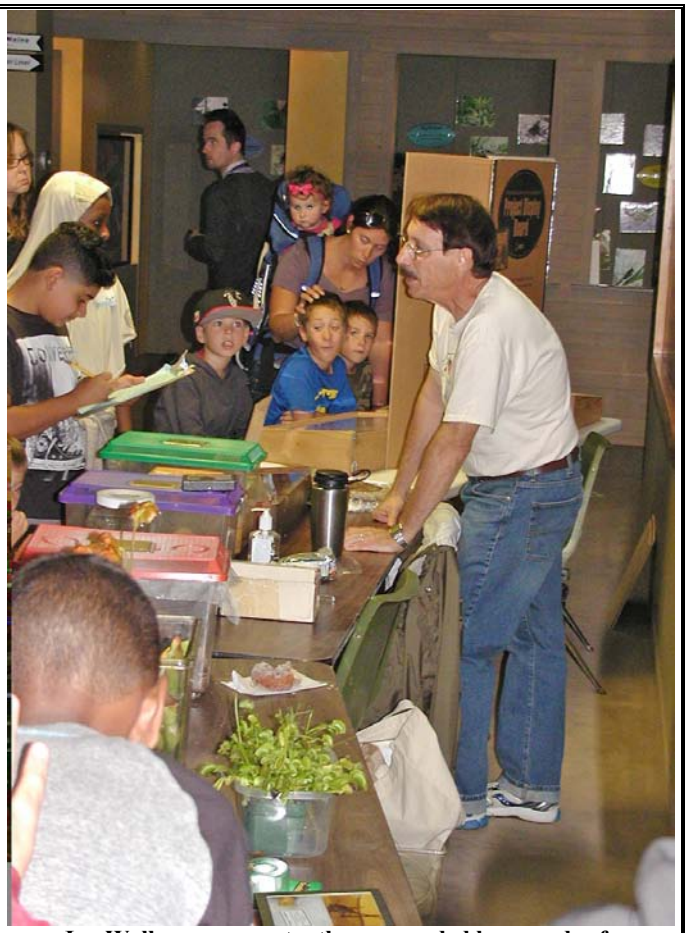
Jon Wallace Reflects on Outreach Efforts

As many of you know, I have state permits to raise a variety of arthropods to use in schools where I get to share my love of 'bugs' via free programs. I was surprised to find that arthropod units have to be 'fit in' for students so teachers have to be creative and place it with modeling, biodiversity, structure, function and information processing, or environments, which means I have to tailor my program for each school. First grade teachers seem to have been the ones to pick this unit up. Working with students that young is a challenge for me (a retired high school science teacher), but their energy and enthusiasm is contagious! This year I visited 12 classes and 2 libraries (one being the Edith Patch day in Orono).

This year I also did programs for the Cub Scouts. Their summer program had a theme of "Bug Hunters" and, while I had numerous requests for 'bug shows', I only was able to attend two of these camps. They were a mixed age group (ages 4-15) and very enthusiastic. The leaders had obviously put in a lot of work to try to make this fun and educational so I was glad to participate and do my part for their program.



Jon Wallace was constantly surrounded by crowds of enthusiastic youngsters at this year's Bug Maine-ia.
Photo by Bob Nelson

Lastly, I did two large 'bug' events again this year. The first was at the Wildlife Park in Gray; I set-up displays of arthropods as well as some fossils and insectivorous plants ("a bug's worst nightmare"). The park requires a Maine relationship so I had labels that listed relationships to Maine animals. The second was Bug Maine-ia, where I set-up my fossil arthropods and showed the evolutionary history as well as current adaptations with a few live animals, insectivorous plants, and a microscope to view insect fossils in amber.

Hopefully, through these events, I have been able to share the fact that arthropods are important to us and the environment and should not be squashed every time they are seen. I hope I have also inspired a few students to learn more about my favorite animals.

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M.E.S. Member Has New Book Out

M.E.S. member Dana Wilde has a new book out - *Summer to Fall: Notes and Numina from the Maine Woods.* The book is a collection of excursions through Maine's woods and fields during the time of "the most gorgeous weather in the world." Inside these essays are the science and experience of what the world looks like when you turn a transparent eye to the energies bubbling up in the flora, fauna and summer starlight of backyard Maine.

More information can be found at the publisher's web site: **http://www.northcountrypress.com/summer-to-fall.html** .

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Maine Forest Service Ranger Kent Nelson caught this photo of a dragonfly assisting with a heavy load of supplies being delivered to the top of Mt. Blue last August. And most of us thought the giant *Meganeuron* of the great coal swamps went extinct hundreds of millions of years ago!

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Cool Ent-Story Links at U. Maine

There's a lengthy and detailed piece posted late last August on a University of Maine web page about the browntail moth that's wreaking havoc among Maine's coastal oaks. It can be accessed at **http://tinyurl.com/ybxoympk**.

A second story covers how University of Maine researchers, led by doctoral candidate Brianne Du Clos, have developed a tool called "BeeMapper" that will allow blueberry growers to assess the predicted wild bee abundance in the landscape surrounding their crop fields. More can be learned at **http://tinyurl.com/ybve77zf**.

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White Fuzzy Oak Leaves Cause Citizen Panic

by Charlene Donahue

A woman called in to the Maine Forest Service Pathologist at home on a Sunday in a panic, saying her oak trees were infested with something and she needed to know what to do immediately. (How did she get his personal cell phone number anyway?)

Well, few trees problems are really THAT urgent. He told her to calm down, send him some photos and he would check them in the morning. She also contacted the MFS District forester and he said he could look at the trees in a few days. When I came into the office on Monday, the pathologist showed me the pictures and asked me what I thought.

Woolly oak aphids on Northern Red Oak (*Quercus rubra*).
Photo by Maine Forest Service

It looked to me like woolly aphids; I had seen them on oaks just a few times. So I looked them up on the Internet and the references in the office and was pretty sure that was what they were. When the District Forester brought the samples in a couple days later, I could confirm it they were *Diphyllaphis microtrema*, or woolly oak aphids. These aphids were first reported in 1971 in Canada (Quednau, 1971). They have very small cornicles (a pair of little tubes projecting dorsally from the posterior of their abdomens), so that you have to double check that they are indeed aphids.

Lacewing larvae under aphid wool
Photo by Maine Forest Service

What was really cool was that there were lacewing cocoons underneath almost every clump of aphids. This was a problem that needed to left alone. It was already October so the aphids would not survive much longer. Plus, they were

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Fuzzy Oak Leaves (cont.)

heavily infested with predators that would take care of the issue and be there in the spring to do clean-up duty if any more aphids appeared. Treating with chemicals would just upset the balance and the problem would be more likely to resurface in the spring.

We don't see this insect very often in Maine and it may have been the extended warm weather that allowed the population to develop to where it was noticeable. It never hurts to check when you see unusual insect populations, but it rarely is worth panicking over.

References

Quednau, F.W. 1971. New and little-known aphids (Homoptera: Aphididae) from Eastern North America. *The Canadian Entomologist* 103: 1083-1106.

http://entnemdept.ufl.edu/creatures/TREES/woolly_oak_aphid.htm

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Hawk Moth Paper Published

If you think back, you may well remember Brandon Woo's long and illustrated article in the August, 2016, issue about a Northeastern hawk moth (Sphingidae) conference that he attended. A formal paper has now been published, presenting the results of research that was discussed at that meeting in a preliminary form. Records from the Maine Forest Service and University of Maine collections were included in the survey.

The researchers examined some 6600 records of hawk moths based on collection specimens, and found that of the 22 species for which there was sufficient data to assess population trends, eight species have declined and four species increased in detection probability. There is also a great deal of additional information beyond this, including discussion of possible causalities.

The full text of the paper can be found at

http://tinyurl.com/yaaw8agh.

Alternatively, you could e-mail Bob Nelson for a pdf copy of the paper.

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Summary of Articles: "Notes on historical butterfly records from Maine" (Part 1 and Part 2)

by Bob Gobeil

bob.gobeil@mainebutterflies.com

Two recent articles were published in the News of the Lepidopterists' Society dealing with historical butterfly records from Maine (Calhoun 2017a, Calhoun 2017b). Calhoun was primarily interested in old reports of four butterfly species supposedly recorded in Maine between 1860 and 1880 and not seen in Maine since that time.

The four rare species included the Persius Duskywing (*Erynnis persius*), Frosted Elfin (*Callophrys irus*), Karner Blue (*Plebejus samuelis*), and Tawny Crescent (*Phyciodes batesii*). At the start of the Maine Butterfly Survey in 2007, all four of these species were listed as "collected in Norway (Oxford Co.) around 1865 by S. I. Smith" with no other specimens recorded in Maine since that time and all were listed as extirpated in Maine (Webster and deMaynadier 2005).

Since all of the published records for these species were attributed to Sidney I. Smith who lived in Norway, ME and collected butterflies in that area in the mid to late 1800s, Calhoun decided to do an exhaustive search of the literature and collections at various museums looking for possible Maine specimens. He even studied old correspondence for clues to confirm the presence of these species in Maine.

Persius Duskywing (*Erynnis persius*)

Calhoun searched for museum specimens labeled as collected in Maine and found that "references to *E. persius* in Maine were almost surely based upon specimens of *E. icelus*" (Dreamy Duskywing). Prior to 1964, various species of *Erynnis* were often confused and misidentified. His conclusion: "Status in Maine: no known valid records".

Frosted Elfin (*Callophrys irus*)

After studying records of *C. irus* attributed to S. I. Smith, Calhoun believes that "outdated species concepts are to blame for published reports of *C. irus* in Maine." He also found that a specimen thought to have been collected in Maine was actually collected in New Haven, CT. His conclusion: "Status in Maine: known specimen of dubious origin".

Karner Blue (*Plebejus samuelis*)

In 1992, a female specimen of *P. samuelis* labeled as taken in "Maine" was discovered in the Natural History Museum of London. After that discovery, another researcher assumed that the specimen was probably collected by S. I. Smith around Norway, ME. Thereafter, Maine began to be included in the historic range of the species. An additional specimen of *P. samuelis* labeled "Maine" was also recently found. By studying old correspondence, Calhoun believes that the specimens were probably collected in the area of Albany, NY and not from Maine as previously suggested. His conclusion: "Status in Maine: known specimens of dubious origin".

Tawny Crescent (*Phyciodes batesii*)

Calhoun searched for specimens of *P. batesii* at the Peabody Museum of Natural History based on reports that the museum had the "only credible" specimen from New England, notably from Norway, ME. He found that in the 1800s *P. batesii* was difficult to identify due to a poorly understood complex of Crescent species. Over the years, many specimens of *P. cocyta* (Northern Pearl Crescent) and *P. tharos* (Pearl Crescent) were misidentified as Tawny Crescents (*P. batesii*). His conclusion: "Status in Maine: no known valid records".

In summary, after extensive research, Calhoun found no positive evidence that any of the species listed above were ever recorded in Maine.

References:

Calhoun, J. V. 2017a. Notes on historical butterfly records from Maine. Part 1. News Lepid. Soc. 59:76-83.

Calhoun, J. V. 2017b. Notes on historical butterfly records from Maine. Part 2. With the designation of a lectotype. News Lepid. Soc. 59:128-133.

Webster, R. P. and P. G. deMaynadier. 2005. A baseline atlas and conservation assessment of the butterflies of Maine. (Online) **https://drive.google.com/file/d/0B985dSJVRA1mQnN0VFppU285NUE/view** [Accessed 26 October, 2017].

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Memories of Bug Maine-ia

12 September, 2017 – Maine State Museum, Augusta

Dana Michaud (above) and Kathy Claerr (below) greeted all incoming visitors at the door.

Young entomologists in training fanned out across the Museum grounds to see what they could collect.

All displays were a focus of attention as waves of students swept through the exhibits, arranged throughout the museum complex.

Charlene Donahue was constantly busy, with arrays of light trap specimens laid out for students to inspect and discover for themselves.

COMING M.E.S. EVENTS in 2017-18

(details of most events will be in future newsletters)

18 November, 2017	**Field Day at Jim Nutting's art glass studio (see p. 3)**
27 January, 2018	**Winter Workshop, Augusta (see p. 4)**
24 March	**Maple Syruping & Field Day, North Whitefield**

Dates for other many other events are tentative; see p. 3 for a more complete list of scheduled events.

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

AFTER MORE THAN TWO DECADES OF STATE SERVICE

CHARLENE IS RETIRING

Join us to celebrate Charlene Donahue's years of service and send her off onto her next chapter.

MONDAY, FEBRUARY 26TH, 2018

11:00AM - 1:00PM

MAINE FOREST SERVICE
INSECT AND DISEASE LAB
50 HOSPITAL STREET
AUGUSTA, ME 04333

Snow Date: Tuesday, February 27th, 2018
(if state offices are closed)

Light refreshments will be available beginning at 11:00.
Please stop by to share your memories.

FOR MORE INFORMATION CONTACT: PATTI.ROBERTS@MAINE.GOV OR (207) 287-2431

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