

The Maine Entomologist

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

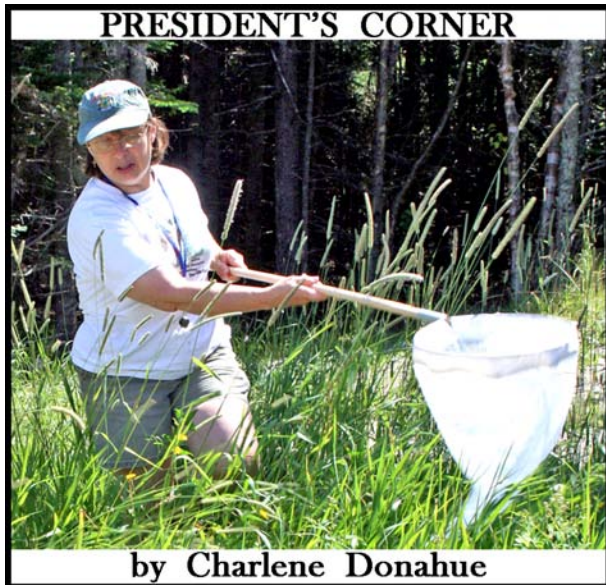
The Official Newsletter of the Maine Entomological Society

Vol. 23, No. 4

November, 2019



PRESIDENT'S CORNER



by Charlene Donahue

This is my last missive as President of the Maine Entomological Society. It has been a great run of eleven years, but I feel that others need to take on leadership roles to keep the Society vibrant and moving forward. No one has been elected MES President for 2020, and so the MES Executive Committee will take on the leadership for the coming year. Hopefully others will help out as well. We are getting more requests for people to talk to other groups about insects and to lead field trips. If you can help out in either of these areas please let Kathy Claerr know at kclaerr1@comcast.net or by phone at (207) 666-3551.

This past month a lot of my time has been taken up cataloging and making up a reference collection of the moths that MES member Tony Roberts collected in his Steuben backyard. This was a group effort with a number of MES members giving their time - well over **200 hours** in just four weeks!! The bulk of the collection will be passed on to the McGuire Center for Lepidoptera and Biodiversity in Gainesville, Florida, for further study.

The Maine State Museum (MSM) has a Memorandum of Understanding with that institution to the mutual benefit of both entities. The MSM is buying the cabinets and drawers in which the moth collection was stored, primarily through the largesse of MES members in memory of Dick Dearborn. This hardware will be used to house the expanding MSM entomological collection. Thank-you to Tony Roberts for his dedicated work collecting, preserving and identifying the moths and then his thoughtful donation to the two museums.

In the future, I will be working on the Maine Outdoor Heritage grant "Assessing Maine Insect Populations - Is

Maine Experiencing the Declines?" that was just awarded to the Maine Audubon Society, Maine Department of Inland Fisheries and Wildlife, and the Maine Entomological Society. We will be looking for help from MES members as well with data collection and sharing information that you may have.

On a more personal note, my son Brian is getting more into beekeeping - we are up to 12 colonies this year. Brian and I are putting in two bee yards on my property in Whitefield and looking to expand the number of colonies in the future.

So I will continue to stay busy with these and other entomologically related projects. Plus, I'll be spending time at camp and with friends and relatives and helping run the Town of Whitefield as a Selectwoman.

Table of contents

- Annual Meeting Minutes (p. 2)
- Winter Workshop: Hymenoptera (p. 3)
- The many benefits of M.E.S. membership (p. 4)
- Bug Maine-ia wows them again (p. 4)
- Cataloging a BIG collection of specimens! (p. 6)
- Backyard Bug Report (p. 7)
- Weds Hutchins' Beetle Study Concludes (p. 8)
- Book Review: Damselflies and Dragonflies (p. 9)
- New Literature (p. 9)
- Coming M.E.S. Events (p. 10)



A great collection catalogued and sorted see p. 6

DUES REMINDER!

M.E.S. dues are payable on a calendar-year basis. If you haven't already done so, please renew now for 2020 to guarantee uninterrupted receipt of the Newsletter; you'll find an insert inside (or as a separate e-mail attachment). 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 "2019" or earlier, please contact Dana to renew for 2020 or correct the record.

Minutes of MES Annual Meeting, October 5, 2019

Submitted by Anna Court, Secretary

About 18 people attended the 2019 MES Annual Meeting at Bob and Nettie Nelson's home in Clinton on October 5th.

Business Meeting. MES President Charlene Donahue called the annual business meeting to order at 1:30 p.m. Attending were: David Bourque, Kathy Claerr, Anna Court, Peter Darling, Charlene Donahue, Edie and Louis King, Terry and Elizabeth Mazurkiewicz, Timothy and Bill McGrath, Cathie Murray, Dana Michaud, Bob Nelson, Mike Parisio, Roger Rittmaster, Tom Schmeelk, and Jon Wallace.

Approval of Minutes: ACTION: Minutes of the October 13, 2018, Annual Meeting were approved without correction.

Treasurer's Report: General Fund. Treasurer Dana Michaud presented the Treasurer's Report which showed a balance of \$2,731.91 in the general account as of August 31, 2019. This is about \$94.39 less than the balance on August 31, 2018. During the fiscal year, MES contributed \$1,000 to the Maine State Museum for insect collection cabinets and \$600 to the Kennebec Land Trust for their 4 part Lyceum on insects. Additional income came primarily from dues. The winter workshop also increased MES income.

Treasurer's Report: Scholarship Fund. Dana reported that the balance in the Scholarship Account was \$4,444.08 on August 31, 2019 - approximately \$243 more than the fund's balance in 2018. The income to the Scholarship Fund included a \$500 contribution from Terry Mazurkiewicz.

During the fiscal year, Terry Mazurkiewicz gifted MES with \$500 for the Scholarship fund in honor of her late husband, long-time M.E.S. member Mike Mazurkiewicz. The major expenditure during the fiscal year was a scholarship of \$417.88 to Karla Boyd, a graduate student in Entomology at the University of Maine at Orono, for housing while she studied in the laboratory of an insect taxonomist at the Smithsonian.

ACTION: The Treasurer's Report was audited by Nettie Nelson and approved by the members

NEW BUSINESS

Changes in the Bylaws and Constitution: The Executive Committee proposed the following change in the MES Constitution and By-laws, with struck-through text being that which will be replaced:

CONSTITUTION:

Article VI. Officers

a. Identity

~~Officers in the Society shall consist of the President, a Vice President, a Secretary-Treasurer, and a Newsletter Editor. These four, plus two members elected at large, shall be considered the Executive Committee of the Society.~~

Officers in the Society shall consist of the President, Vice President, Treasurer, Secretary, and Newsletter Editor. These five, plus two members elected at-large, shall be considered the **Executive Committee** of the Society.

c. Responsibilities

~~3. The Secretary/Treasurer shall be responsible for maintaining:~~

~~a. the financial records of the Society;~~

~~b. a list of Society membership; and~~

~~c. other Society records, as defined in the Bylaws.~~

3. The **Treasurer** shall be responsible for maintaining:

a. the financial records of the Society.

4. The **Secretary/Treasurer** shall be responsible for maintaining:

a. a list of Society membership; and

b. other Society records, as defined in the Bylaws.

BY-LAWS:

A. Treasurer:

1) In addition to those duties outlined in the Constitution, the Treasurer will be responsible for maintaining written records pertaining to the financial records of the Society, including supervision and maintenance of any bank account(s) in which Society funds are deposited.

B. Secretary

1) In addition to those duties outlined in the Constitution, the Secretary will be responsible for maintaining written records pertaining to Society business. These records will include, but not necessarily be limited to:

a) membership records of the Society, including dues status of all members;

b) a complete archival set of all Newsletters and any other publications of the Society.

2) The Secretary will not make Society records or membership lists available to any non-Society member, organization, or institution not explicitly required by law, without the expressed consent (by 2/3 majority vote) of all members of the Society; any member may request that her/his name not be included in any list so distributed by vote of the membership, and such request shall be honored.

ACTION: The Members voted unanimously to approve these changes.

Election of Officers. President: this position will become vacant on January 1, 2020, when the term of the current president, Charlene Donahue, expires. At that time she will serve as ex-officio president. **Discussion:** Charlene has been president for 11 years. She is the second president of MES in 22 years; Dick Dearborn was the first president. Charlene said that the president needs to know the entomology community in Maine well. She said that the position has a great deal of scope to define new roles for MES, and that now that we have a Secretary, there is no need for the clerical tasks that the president was expected to complete. She pointed out that MES has recently received awards for its activities and outreach and has generally a stellar reputation in New England/New York as an active and vital entomology group. Thus, she noted, the MES presidency has some prestige. She said that someone interested in the presidency would be invited to the Executive Committee meetings.

(cont. on next page)

Minutes (cont.)

ACTION: The November Newsletter will announce the vacancy and invite candidates. The February Newsletter will include an article about the duties of President.

Nominated for the remaining Executive Committee positions: Vice President, Kathy Claerr; Secretary, Anna Court; Treasurer, Dana Michaud; Members-at-Large, Cathie Murray and Dr. Kathy Murray; Newsletter Editor, Bob Nelson. **ACTION:** This 2019 slate of MES Officers was unanimously approved.

Election of the Scholarship Committee. Dana Michaud is currently on the scholarship committee. Jon Wallace and Karen Johnson have also agreed to serve on this committee. The scholarship committee will receive and approve scholarship applications. **ACTION:** The group agreed that the scholarship application needs to be revised to be more specific as to what kinds of projects and expenses would qualify and needs to be on the MES website.

General Outreach. The group discussed general outreach to obtain new MES members. The membership numbers are quite stable. Kathy Claerr suggested that, as a form of outreach and to provide a critical service, MES sponsor a symposium in the spring to bring together people who represent the spectrum of entomological interests in Maine and the region. This meeting would be directed toward professional, academic and amateur entomologist and be open, as well, to the general public. Kathy said she will need a number of members to volunteer to organize and implement this event and will write an article for the Newsletter on this.

Outreach for Speakers. Charlene said that her appearance on Maine Calling raised our profile in Maine and she is getting a number of requests for speakers. The group agreed that we need to conduct outreach to identify potential speakers. Anna Court, in the new position as Secretary, will keep a roster of speakers, help identify speakers for specific requests and put them in contact with the requesting organization.

Outreach for Members to Become More Active. Charlene suggested that having a variety of activities, in addition to Field Days, would attract more members to participate. She suggested a workshop on writing about insects, for example. The Symposium suggested by Kathy Claerr and the Winter Workshop are other types of activities that diversify MES offerings.

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

October – November, Mondays and Thursdays:
volunteers are needed to inventory a donated moth collection at the Maine State Museum Annex.
Coordinators: Charlene Donahue and Dana Michaud

January 25, 2020: *MES Winter Workshop on parasitic wasps* by Dr. István Mikó, University of New Hampshire. The Deering Building of the Maine Forest Service was suggested as a venue. The workshop would include a tour of the new Forest

Service Entomology laboratory. **Coordinators: Charlene Donahue and Thomas Schmeelk.**

February, March or April: *Workshop on integrated pest management* by Dr. Kathy Murray, Maine Department of Agriculture. This workshop would be held at Longfellow Greenhouse. **Coordinator: Cathie Murray.**

March 28: *Maple Syrup and Insect Collecting* at Charlene Donahue's home in Whitefield. **Coordinator: Charlene Donahue.**

April, October or November: *Writing workshop.* Coordinator: Kathy Claerr

May: *Field Day with Kennebec Land Trust.* **Coordinator: Dana Michaud.**

June: *St. John River Valley Field Day* at Maranda Cook's request. **Coordinator: Bob Nelson.**

July or August: *Bioblitz at Appledore.* **Coordinator: Pete Darling.**

August: *Field Day at Bangor Land Trust's Walden Parke Preserve, Bangor.* **Coordinator: Anna Court with BLT's Grace Bartlett.**

September 12: *Collecting for Bug Maine-ia* at Bill McGrath's family farm, China. **Coordinator: Bill McGrath.**

September 15: *Bug Maine-ia* at the Maine State Museum. **Coordinator: Kathy Claerr.**

September 26: *MES Annual Meeting* at Bob and Nettie Nelson's home in Clinton. Collecting from 10 – 12, pot-luck lunch, business meeting. **Coordinator: Bob Nelson.**

October: open

April 2021: *Symposium*; Working Title: Bridges: The spectrum of entomologically related interests in Maine and the region. **Coordinator: Kathy Claerr.**

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

* * * * *

MES winter workshop- Hymenoptera workshop

Join us for the kickoff of the 2020 entomological season at our annual Winter Workshop, on Saturday, January 25, 2020, from 9:30 a.m. - 3:30 p.m. at the Deering Building located at 90 Blossom Lane in Augusta.

Dr. István Mikó from the University of New Hampshire will be leading the workshop. István is the collection manager at UNH and has a vast knowledge of the Order Hymenoptera, specializing in ichneumonid wasps. Bring specimens to identify, or you can work with material from the Maine State Museum collection.

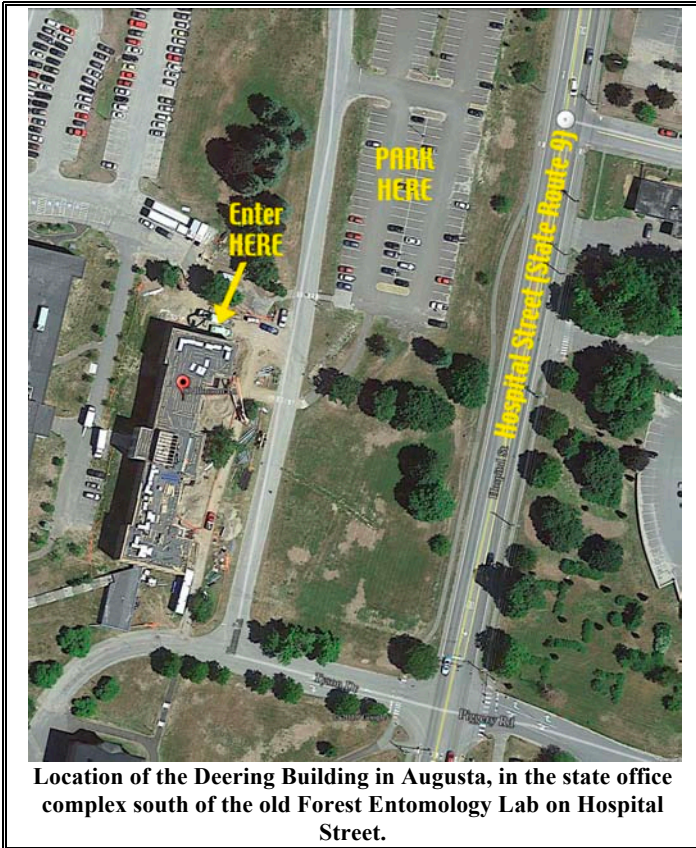
This workshop is for all levels of expertise. Come if you are new to insect identification and learn the basics, or if you are more advanced, this is a chance to ask an expert your questions, help advance your skills and assist others. Plus, you can assist others or collaborate with other MES members.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

(cont. on next page)

Winter Workshop (cont.)

There is a \$20 fee to cover expenses, and **pre-registration is required by January 17th**. Please bring your \$20 with you to the workshop, so we do not have to deal with reimbursing money if it cancelled. 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.

Entry will be at the north end of the building on the ground level; park in the area indicated in the Google Earth view of the facility below (photographed when the building was under renovation).



* * * * *

Wicked Awesome Membership "Bennies"

by Kathy Claerr

MES is a vibrant entity on the entomological scene in New England (and beyond?) because of the many and varied activities that we sponsor or organize. It is MES that has undertaken the herculean task of assembling and organizing (curating) the insect collection for the State of Maine. We offer events at least nine months of the year, including Bioblitzes that survey the insect fauna of target areas, workshops that attract professionals needing enhanced taxonomic skills, and outreach events that raise our visibility and attract new members.

All of our events are carried out by member-volunteers. There are many ways that you can help increase your membership benefits:

- Write a newsletter article
- Coordinate a field trip
- Sort specimens at the Maine State Museum
- Speak to an outside group, variable ages*

- Create artwork for MES publications
 - Identify specimens with your expertise
 - Publish photographs in the newsletter
 - Provide internet or database support*
 - Create and/or manage an MES PayPal account*
 - Create a diorama to be lent by the Museum
 - Serve on a committee to accomplish your goal
 - Design or manage the website*
 - Help a workshop, lecture or symposium
 - Offer wicked good idea for an MES event
- * acute need

Many of these opportunities come with help or training, some are/can be one-time stints, and some can be accomplished in the comfort of your own home. Contact Kathy Claerr (kclaerr1@comcast.net) or any Executive Committee member to discuss your interest.

* * * * *

**Bug Maine-ia Once Again Enlivens
Maine State Museum Environment**

by Joanna Torow

The Maine State Museum was alive with insects and children on Tuesday, September 10, 2019. All were there to take part in the seventeenth annual Bug Maine-ia at the Maine State Museum in Augusta. This year's event received a fantastic amount of attention from the media. Not only was the event featured on several local TV networks, but the event was also featured on 92 Moose, which broadcast their morning show from the museum lobby. They caught all the action and excitement as presenters set-up, and the first school buses rolled in. It was a great start to the day!

Although, Bug Maine-ia is normally a joyful day, this year it was tinged with sadness. We dedicated Bug Maine-ia 2019 to the memory of entomologist Dick Dearborn of Mount Vernon, and educator and collector Tony Sohns of Bangor. Dick and Tony were very popular exhibitors at previous Bug Maine-ia events. Both men passed away within the last year, which has been a great loss to all of us who are dedicated to learning more about the world of insects.



Jim Nutting shows off one of his live tropical scorpions to an enthralled Bug Maine-ia visitor and her mom.

- Maine State Museum photo

(cont. on next page)

Bug Maine-ia (cont.)

Bug Maine-ia 2019 saw a total of 2063 visitors and all were amazed by the displays and activities that filled the museum from top to bottom. Energy filled the museum atrium as visitors streamed in looking for insects. They found bees in their hive brought by the Kennebec County Beekeepers Association. Tropical and Maine-based insects live and preserved, were to be found in displays by the Cooperative Extension and Jim Nutting's Butterfly and Insect Museum, some encased in beautiful stained glass enclosures.

The Maine Department of Agriculture, Conservation and Forestry had large displays showing how some insects are important to farmers, while others like the Emerald Ash Borer and Asian Longhorned Beetles are a threat to our forests. Representatives from the Maine Entomological Society had a large and varied display that kept kids engaged as they hunted for live insects among leaves and sand-filled containers.



Anna Court introduces one of the older students at Bug Maine-ia to a live mantid at the M.E.S. table.

- photo by Joanna Torow

Moving farther into the museum galleries, visitors came across the Hudson Museum's fascinating display of objects. Many of these artifacts were constructed from insects, while others were inspired by the form and design of these fascinating creatures, including necklaces made from beetles and rattles made from cocoon casings. The Maine State Library had students emulating lightning bugs by lighting up their own man-made electrical circuits. Students and homeschoolers then came across collector Edie King's display with an impressive array of pinned specimens. Next

door was Chewonki's Bug Mobile display featuring a millipede that tickled as it traveled up arms stretched out.



A team of insect-masked students were really into the spirit of things at Bug Maine-ia 2019!

- photo by Joanna Torow

Visitors followed a paper "ant trail" laid out on the floor and made their way downstairs. Many paused to sign their names in oak gall ink made with help from the oak gall wasp. Others learned how to tie flies from Master Maine Fishing Guide Sean McCormick. And some learned how insects in our water act as important water quality indicators at the hands-on display run by the Maine Department of Environmental Protection's Biological Monitoring Unit. Some students came across Nancy Tyndall of Milkweed Puppet Theater, who told stories about Queen Bumblebee's gold and Brother Bear's meeting with Max the Monarch.

After exploring the museum and all the presenters within, students jumped at a chance to go outside and collect insects among the grass, trees, and rocks around the museum grounds. After netting a specimen, they could then get it identified by volunteers from the Maine Forest Service.

In all, everyone who visited Bug Maine-ia left with a smile on their face and a little bit more aware of the significant role insects play in all our lives. Mark your calendars for Bug Maine-ia 2020, which is scheduled for Tuesday, September 15. This is one event you don't want to miss!



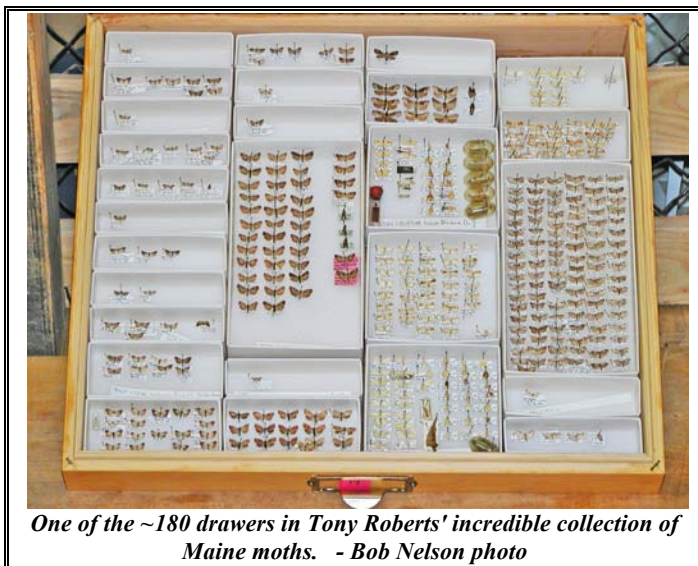
Young hands weren't afraid to handle a giant live millipede at Bug Maine-ia. - Maine State Museum photo

* * * * *

How Did Over 25,000 Specimens Get Cataloged and a Reference Collection Made in Just One Month?

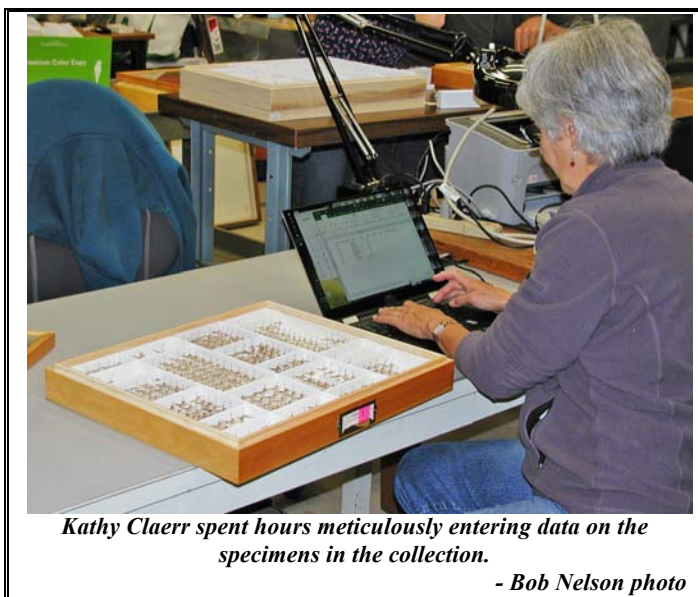
by Charlene Donahue

In my President's Corner on the first page, I made mention of the work that had been done by M.E.S. members to catalog the thousands of specimens in Tony Roberts' incredible moth collection to prepare it for transfer to the McGuire Center for Lepidoptera and Biodiversity in Florida. Here, in greater detail, I'll describe just what we did - and invite anyone interested in such critically important work to join us as we work through other Museum specimens as well.



One of the ~180 drawers in Tony Roberts' incredible collection of Maine moths. - Bob Nelson photo

The first step in the process was cataloging. The moths are in unit pinning trays by species, with an identification label in each box. Most labels had a Moths of North America (MONA) number on the label. Having this number was key to making this project move forward so quickly.



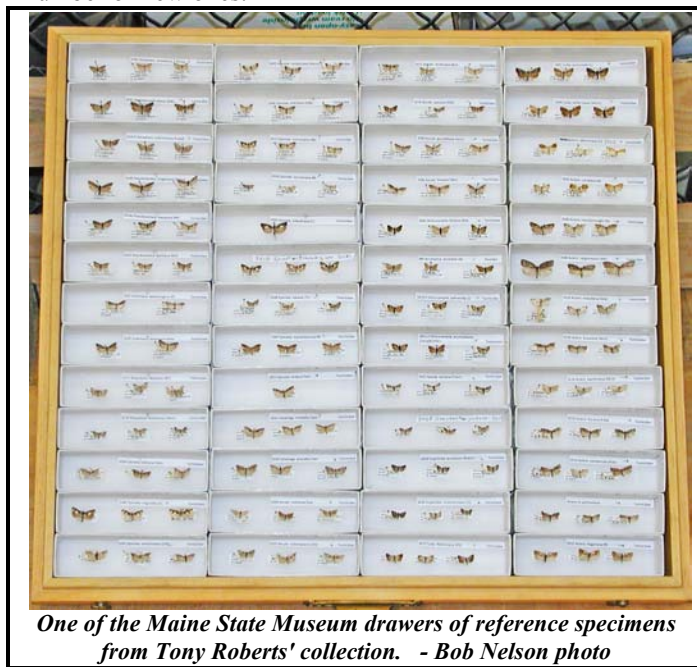
Kathy Claerr spent hours meticulously entering data on the specimens in the collection.

- Bob Nelson photo

A spreadsheet was set up with columns for cabinet and drawer number, MONA number, number of specimens,

family, genus, species, author and comments. The family, genus and species (hard to type correctly every time) were not entered when cataloging. Special thanks to Kathy Claerr who helped with the cataloging.

If there were enough people on hand, then one person would read labels and count specimens and the other person would record the information. After a session of data entry, the spreadsheet was sent to Pete Darling or Wheeler Lowell, and they would use the Mothphotographersgroup.com web site to complete the genus and species fields, and drag over the MONA number that would hyperlink to the species' webpage. Family names were then added, which was not an easy task as some old families have been broken up into a number of new ones.



One of the Maine State Museum drawers of reference specimens from Tony Roberts' collection. - Bob Nelson photo

The data was then sorted by the number of specimens; the Maine State Museum is retaining a reference collection of identified moth species of which there were more than 12 specimens in the collection from Maine. This gives the McGuire Center enough specimens for research. The list of species that the Museum was going to get was then resorted back into the cabinet/drawer order.

A set of labels for each species box and a set of three specimens labels were created (the reference collection consists of one to three specimens/species). A "drawer" list was made listing all the species in each drawer so that those taking reference specimens could double-check the catalog list.

At this point we needed people to cut labels, pin them in the unit pinning trays and cut the specimen labels. People who had worked with fragile insect specimens were the ones who carefully went through the drawers making sure that: there were enough specimens present from Maine, labels were correct, and that a specimen had not been dissected (often needed for identification). Dana Michaud and Bob Nelson in particular spent days working through the drawers carefully checking data and removing specimens.

(cont. on next page)

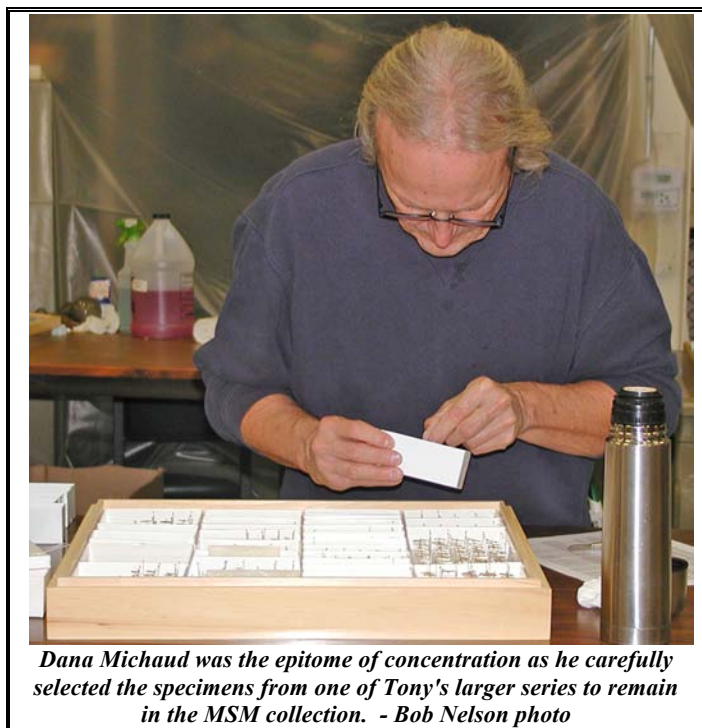
Cataloging 25,000 Specimens (cont.)



Cathie Murray was one of those ensuring that the proper labels were in the unit pinning trays for specimens being retained in the MSM collection, and that tray labels matched specimen labels.

-Hillary Peterson photo

Cutting labels does not seem like a very exciting job, but it was absolutely vital to have that kind of support so that the other person could focus on the specimens and checking label accuracy. I am so thankful for the MES members who worked for hours and came back multiple times to help.



Dana Michaud was the epitome of concentration as he carefully selected the specimens from one of Tony's larger series to remain in the MSM collection. - Bob Nelson photo

Tony's collection has well over 25,000 Lepidoptera specimens. He collected over 1,700 species in his backyard, some of which still need final identification or are new species that need to be described. Of the fully identified

species, there were enough specimens that the Museum could retain samples of more than 700 species.

One important set of data that has not been recorded yet are collection dates. We will be able to get that for the specimens that stay at the Museum.

Thank you to: Dana Michaud (key to getting this job done), Bob Nelson, Kathy Claerr, Hillary Peterson, Cathie Murray, Jon Wallace, Peter Darling, Liz Mazurkiewicz, Nina Beckwith, Mike Parisio and Wheeler Lowell.

* * * * *

Backyard Bug Report

by Dana Wilde

(this first appeared in the Central Maine newspapers on 23 October, 2019)

Earlier this year a scientific study called the disappearance of insects over the past few decades "alarming." Not to be outdone in the field of pessimism, I went along with it because my own unscientific observations, the anecdotes of friends, and stories in the news media seem to corroborate there's a serious problem with disappearing wildlife. It is generally agreed in the sciences that a mass extinction event is under way on Earth, and humans are a direct cause of it.

Some biological scientists, however, criticized the "alarming" study. They have three basic objections. One is that the original researchers and the news media overdramatized the findings beyond what the study's results warrant. Another, more technical objection, is that the study's methods were flawed. But the main objection is that the original study lacked data. There is in general a huge lack of data on insects; by some estimates, there are 7 million species of arthropods (basically, invertebrate animals), 80% of which are undiscovered, and information on the known 20% is spotty.

This doesn't mean nothing is known about insects. A lot is known — it's just that a huge amount is unstudied. But based on the facts they do have, the scientists are confident that something on the order of disastrous is going on with life on Earth, the full extent and implications not yet clear.

All this is happening, more or less. So I'll just add my own anecdotal report to the lack of clarity.

In our backyard this summer, we saw overall more bugs than in recent years. Especially dragonflies. It's not that they returned in the droves that used to patrol all day and summer evening before about five or six years ago. But this year one or two white-tails were seen pretty much every day from July through September, and a few times whole squadrons were clearing the air, some of them iridescent greens and blues.

In the way of pests, the May-June invasion of black flies and mosquitoes this year seemed massive. As I've said before, I am of two minds on phenomena like this. On the one hand, it's good to see living things thrive. On the other hand, I wish the little bastards would die. My 2-year-old grandson Silas and I had to limit our excursions to the brook until mid-July because of them. Deer fly and horsefly populations, normally thick in the July driveway were negligible in number, as were houseflies and syrphid flies, some of which look like yellow jackets who along with wasps were also

(cont. on next page)

Backyard Bug Report (cont.)

scarce. They were all made up for, though, by some kind of tiny gnat-like devil never noticed before hereabouts. Whatever they are, they left nasty, slow-swelling bites that itched for days, even after application of our special green lotion bought in Shanghai, where the mosquitoes are thought to be a hybrid offspring of Alien and Predator.

And of course there were ticks. We checked Silas carefully, and pulled three others out of our own bodies, using a tick remover supplied by a thoughtful nurse.

I had about an average number of beetles sightings, some of them lustily copulating on rose petals, most unidentifiable to my innocent coleopteran eye. I saw no Japanese beetle orgies in the brush this summer. No idea what to make of their recent absence. We did see two or three ladybugs, the first in some years. Populations of some species of ladybugs, or lady beetles, have been plummeting in recent years, so it was encouraging to see even a handful of these mite- and aphid-eaters.

We saw a few extra moths this summer, not a lot more, but including the first luna moth we've seen in years. Butterflies made about their average appearance - Canadian tiger swallowtails early in the summer, here and there a mourning cloak, some checkerspot in the asters, viceroys in the park, and any given afternoon a flutter of white admirals up and down the driveway.

The ants, of course, are undeterred by anything, and as usual there were all kinds of ubiquitous. If they had nuclear weapons, E.O. Wilson once observed, they would destroy the Earth in two weeks.

I do everything I can to protect the spiders. This summer they seemed to number about the same as usual, fairly abundant. Thin-legged wolf spiders, for example, darting around the driveway and flower garden. A large, beautiful *Schizocosa* genus wolf spider at the foot of the wood pile. House spiders seemed particularly numerous in and outside the house, and so were the furrow spiders at the park. In July a big fat marbled orbweaver, of the mottled form, set up shop underneath a hanging flower pot and is still there. Another one, more conventionally orange colored, has been living in the back door frame since late August. Bonnie named her Stella. A juvenile nursery web spider was patrolling a curtain, hopefully hunting those biting gnats. I found numerous trashline spiders and nordmanni orbweavers in their face-height webs spun up between trees in the woods.

Spiders are a tough bunch, ecologically speaking, because most of them are generalist predators; if one food source diminishes, they turn to others. But even some of them have problems. A recent 18-year study in Greenland revealed population declines in several species of high arctic spiders "in response to rising temperatures and snow depth dynamics ... No species increased in abundance through the study period."

So it goes. In Greenland. And Troy. And Dresden.

* * * * *

Followup:

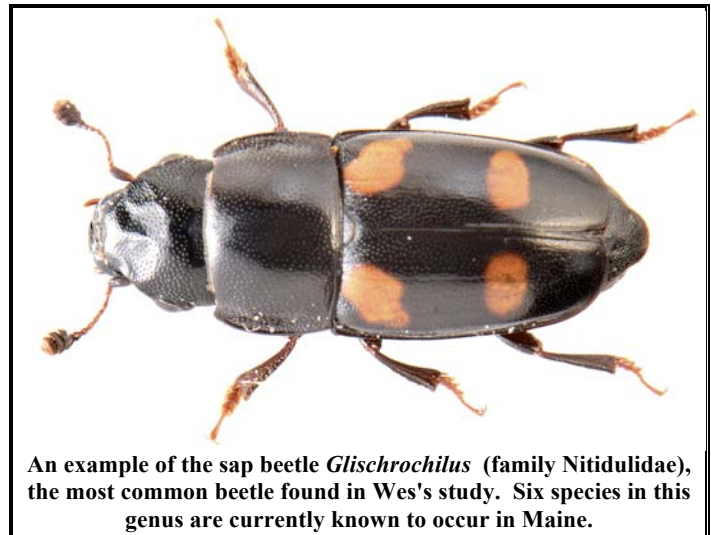
**Wes Hutchins' Forest Beetle Study,
Swanville, Maine
by Bob Nelson**

Folks may remember the story in the August, 2018, issue about how member Wes Hutchins achieved the distinction of being the first Maine recipient of a Senior Youth Incentive Award from the Coleopterists Society, to study beetles in the forest plot near his home in Swanville. Wes's study has been completed, and his report submitted to the Society, entitled "A Study of Coleoptera in the Penobscot Bay Biophysical Region of Maine."

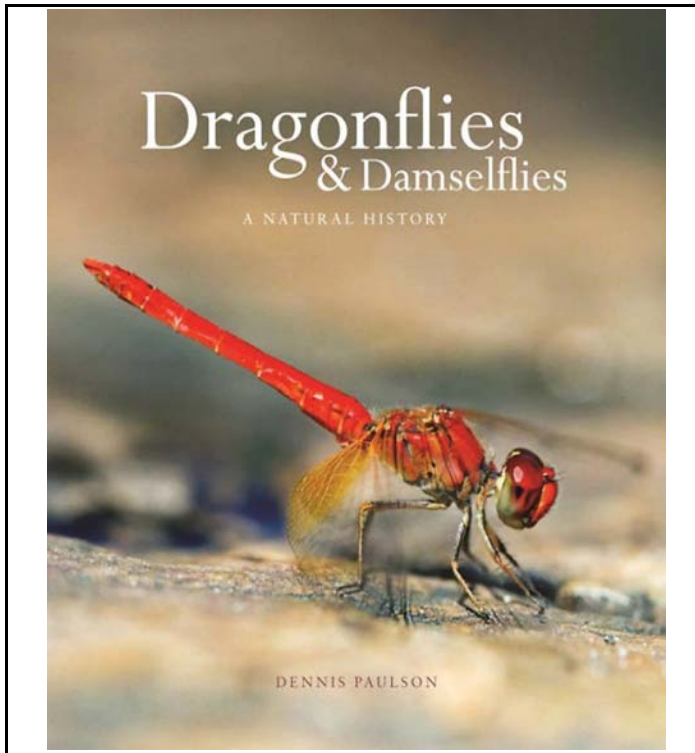
In his one-year study, from April, 2018 through summer of this year, Wes utilized two Lindgren funnel traps in a forest plot near his home, coordinated through the Maine Forest Inventory Growth Program. Paper birch, sugar maple, and bigtooth aspen were the most abundant hardwood species in the plot, which also included quaking aspen, northern red oak, and a single white oak. Softwoods were mostly balsam fir, but also included eastern white pine and a single spruce. Five of the six fir trees in the plot were dead when the study began; the sixth died during the course of the study.

Beetles captured in the traps were identified to the family level; Nitidulidae (127), Curculionidae (65), Cleridae (58), and Elateridae (22) were the most abundant families represented; 35 specimens in 14 other families were also identified. The beetles dominant in the study were those either feeding on sap of trees, or their foliage, or that are dependent on dead and decaying trees. Most critically, he said, all Nitidulids collected were of the genus *Glischrochilus*, which feeds mostly upon tree sap. These beetles can sometimes carry fungal diseases that can be spread to plants as they feed upon them.

Wes says he's learned a great deal in his study. We certainly expect to see a lot in the future from someone making such a splash so early in his career!



* * * * *



Book Review: by Richard Hildreth

Dragonflies and Damselflies: A Natural History, by Dennis Paulson. Princeton University Press, 2019; 224 pp. (Hardbound, 9.75" x 8.75" x 1" thick; ~\$29.95)

Dennis Paulson is one of the greatest experts regarding the Odonata (the insect order to which dragonflies and damselflies belong) of the world. He is the author of the two premier field guides to North American Odonata: *Dragonflies and Damselflies of the West* (Princeton, 2009) and *Dragonflies and Damselflies of the East* (Princeton, 2011). If you are planning on finding and identifying Odonates in Maine, his eastern guide is the one to own.

Dennis Paulson is a natural scientist of wide interests; he is also author of *Shorebirds of North America: The Photographic Guide* (Princeton, 2005), my favorite shorebird guide.

His new book on dragonflies and damselflies is an introduction, covering all aspects of odonate studies. There are six chapters: Chapter 1, What is a Dragonfly?; Chapter 2: Capturing Prey and Avoiding Predators; Chapter 3: Reproduction; Chapter 4: The Life Cycle; Chapter 5: Dragonflies and People; and Chapter 6: Odonate Diversity Around the World.

The real heart of the book is 55 profiles of various species. Each Odonate species is covered in a 2-page spread. On the first page he uses the species to illustrate some interesting and important issues. The second page contains one or two very well-chosen color photograph(s) of the species. These color photographs are stunning.

Worldwide, there are about 7000 species of Odonates currently known, comprising 39 families. In Chapter 6, there is a brief summary of each family. There is also a list of references and a glossary of terms.

This is a fantastic book, beautiful and useful. People who are already familiar with Odonates will love this book,

The Maine Entomologist

but will also gain a great deal of new knowledge. For those who might want to get started learning about Odonates, there is no better introduction.

* * * * *

Literature Notices

Several recent papers have come out that may be of interest to members of the Maine entomological community. First and foremost is that a number of articles in the November, 2019, issue of the *Journal of Medical Entomology* are devoted to a review of West Nile Virus, its vectors, etc., in the United States since its introduction in 1999. Probably most significant here is the paper that identifies the mosquito vectors of the disease by Rochlin and others⁽¹⁾. (See <https://tinyurl.com/yyc65ggt> for mosquitoes in Maine.)

A short paper by M.E.S. member Trish Hanson and coauthors in the latest *Coleopterists Bulletin*⁽²⁾ reported twelve new state records for Buprestidae that they found in baited traps set out in Emerald Ash Borer surveys. A much more extensive paper by Bohne and coauthors, including Trish and life M.E.S. member Colleen Teerling, appeared in the previous issue and documents 56 new state records for Buprestidae in New England, that were collected in the monitoring of *Cerceris fumipennis* colonies throughout the region.⁽³⁾

A paper in the latest issue of the *Annals of the Entomological Society of America* by Chen and others⁽⁴⁾ reported that planting legumes as ground cover in tea plantations reduced the numbers of harmful insects, and in general, increased the diversity and abundance of natural predators and parasitoids on pest insects. This could have significance for Mainers looking to reduce the use of chemical pesticides in crop fields and orchards.

A paper in *Environmental Entomology* by Clark and Seewagen⁽⁵⁾ showed that abundant understory coverage of Japanese barberry significantly reduced both branch-dwelling and leaf-litter arthropod diversities in New York. Given that there are some areas of Maine, especially in the southern part of the state, with significant Japanese barberry infestation, this could have significant importance here as well.

A forthcoming paper in the *Proceedings of the National Academy of Sciences* by Kawahara and 19 coauthors⁽⁶⁾ on the evolution of the Lepidoptera, presented the results of a complex analysis of all known DNA sequences of Lepidoptera. The common ancestor probably originated in the coal-swamp communities of the late Carboniferous Period in geologic history, and was most likely a small moth with a leaf-mining larva. Over 75% of modern Lepidoptera are nocturnal moths, and the common assumption is that butterflies evolved to be diurnal in response to bat echolocation predation on moths. However, their study indicates that butterflies evolved a distinct identity before the first bats appeared, and likely became diurnal to take advantage of nectar made available in daytime-flowering angiosperms. Moths have also independently evolved the ability to hear on multiple occasions in their history.

A paper in *Canadian Entomologist* by Jothi and Sircom⁽⁷⁾ on small-scale cranberry farms in Newfoundland found that native pollinators were quite sufficient in providing

(cont. on next page)

Literature (cont.)

pollination of the crops. Crop yield variation from one season to the next was more closely tied to overall growing conditions, and not to efficiency of fruit set, which was relatively constant. Poor growing years resulted in less yield in total crop weight, but not in the numbers of fruits set.

Last but not least, another paper in *Canadian Entomologist* by Archibald and Cannings⁽⁸⁾ described fossil dragonflies from the early Eocene (48-56 million years old) deposits of the Okanagan Highlands of northeastern Washington State and eastern British Columbia. Six new species were named, in five new genera, four of which are placed in the Aeshnidae. This paper could be of particular interest to anyone interested in the history of dragonflies in North America.

If you'd like a pdf copy of any of these papers, please contact Bob Nelson.

References:

- (1) Rochlin, I., A. Faraji, K. Healy, and T. G. Andreadis, 2019. West Nile Virus Mosquito Vectors in North America; *Journal of Medical Entomology*, 56(6), pp. 1475–1490; doi: 10.1093/jme/tjz146 .
- (2) Hanson, T., M. R. Burnham, M. J. Bohne, and E. R. Hoebeke, 2019. New State Records of Non-Target Buprestidae (Coleoptera) Detected In Emerald Ash Borer Traps In Vermont, USA. *Coleopterists Bulletin*, 73(3), pp. 757–760.
- (3) Bohne, M. J., C. E. Rutledge, T. Hanson, N. C. Carrier, C. Teerling, J. Weimer, E. R. Hoebeke, R. L. Lilja, M. F. DiGirolomo, and K. J. Dodds, 2019. Utilizing Prey Captures by *Cerceris fumipennis* Say (Hymenoptera: Crabronidae) for a Survey of Buprestidae (Coleoptera) in New England, USA. *Coleopterists Bulletin*, 73(2): 369-379.
- (4) Li-Lin Chen, P. Yuan, M-S. You, G. Pozsgai, X. Ma, H. Zhu, and G. Yang, 2019. Cover Crops Enhance Natural Enemies While Help Suppressing Pests in a Tea Plantation. *Annals of the Entomological Society of America*, 112(4), pp. 348–355; doi: 10.1093/aesa/say050
- (5) R. E. Clark, and C. L. Seewagen, 2019. Invasive Japanese Barberry, *Berberis thunbergii* (Ranunculales: Berberidaceae) is Associated with Simplified Branch-Dwelling and Leaf-Litter Arthropod Communities in a New York Forest. *Environmental Entomology*, 48(5), pp. 1071–1078; doi: 10.1093/ee/nvz095.
- (6) Kawahara, A.Y., and 19 others, 2019. Phylogenomics reveals the evolutionary timing and pattern of butterflies and moths. *PNAS* *Latest Articles*; www.pnas.org/cgi/doi/10.1073/pnas.1907847116 . [7 pp.]
- (7) G. A. Jothi and J. Sircom, 2019. Native pollinators alone provide full pollination on small-scale commercial cranberry (Ericaceae) farms. *Canadian Entomologist*, v. 151, pp. 745–756.
- (8) Archibald, S. B., and R. A. Cannings, 2019. Fossil dragonflies (Odonata: Anisoptera) from the early Eocene Okanagan Highlands, western North America. *Canadian Entomologist*, v. 151, pp. 783–816.

* * * * *

* * * * *



Marj Dearborn renewed old acquaintances at Bug Maine-ia 2019, and joined Colleen Teerling and Amy Emery (Maine Forest Service) on the museum grounds as eager young entomologists searched for new and mysterious "bugs."
- Joanna Torow photo

* * * * *

COMING M.E.S. EVENTS in 2019-20

(more information on field days will appear in the February and May newsletters)

- January 25** Winter Workshop on Hymenoptera (see p. 3)
- March 28** Maple Syruping & Insect Day, Whitefield
- April** Integrated Pest Management (IPM) Workshop, Manchester (Kennebec County)
- May** Field Day - Kennebec Land Trust property
- June** Field Day - Grande Isle (Aroostook County) in the St. John River Valley
- July or August** Insect BioBlitz on Appledore Island
- August** Field Day with Bangor Land Trust, Walden Parke Preserve.
- September 12** Field Day, China (collecting live specimens for Bug Maine-ia at the Maine State Museum)
- September 15** Bug Maine-ia, Maine State Museum (Augusta)
- September 26** Annual Meeting, Clinton (Kennebec County)
- October** Field Day (open as to where and when)
- April, 2021** Symposium - *Working Title*: Bridges: The spectrum of entomologically related interests in Maine and the region. **Coordinator: Kathy Claerr.**

* * * * *

(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.*