

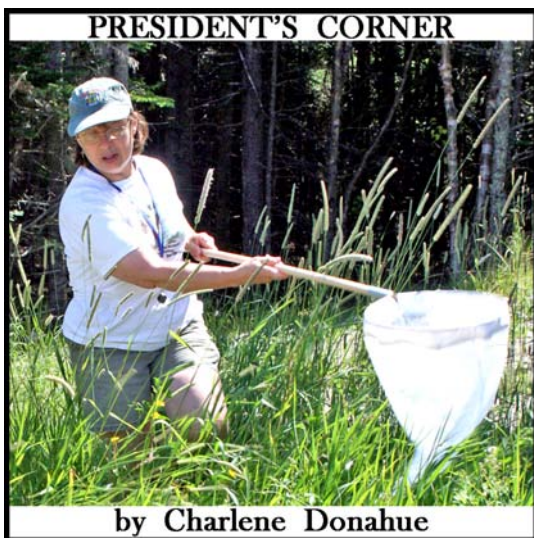
# The Maine Entomologist

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

The Official Newsletter of the Maine Entomological Society

Vol. 21, No. 1

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## PRESIDENT'S CORNER

by Charlene Donahue

I wrote in the last issue of *The Maine Entomologist* of how new species records for Maine have been published in this newsletter. *The Maine Entomologist* is not a refereed scientific journal, but these notes would probably never get published anywhere else, so at least there is some kind of record of them somewhere. This can be important over time.

Recently the USDA-APHIS-PPQ (United States Department of Agriculture – Animal Plant Health Inspection Service – Plant Protection and Quarantine) has been interested in some insects that have come into the United States that may affect plant health. One of these is the Carrot Seed Moth, *Sitochroa palealis*.

This insect was first reported in Maine in the *Maine Entomologist* after Peter Darling and I found the larvae in seedheads of Queen Anne's lace at the 2013 annual MES meeting at Bob Nelson's house in Clinton (Kennebec County). Karen Hopkins had earlier found the moth in Bangor (Kennebec County) in 2012 and had it identified by the well-known lepidopteran taxonomist Dr. Brian Sholtens. I subsequently started documenting where I found the moths in the Maine Forest Service light traps. This species is also listed in the 2012 *Peterson Field Guide to Moths of Northeastern North America*.

Karen Coluzzi, Entomologist with the Maine Department of Agriculture, Conservation and Forestry sent in a specimen to AHPIS for identification and they told her it was the first record from Maine. I can understand that, as I said, *The Maine Entomologist* is not a primary source for this type of information. But on the other hand it seems a little disingenuous to say *S. palealis* only occurs where APHIS has identified it, when a 2012 field guide reports it from the

eastern U.S. and Canada, and Bugguide.net has dozens of photos of it from many states.

So I challenged this reasoning with Karen and Terry Bourgoin, Maine State Plant Health Inspector, USDA-APHIS-PPQ, and they both agreed with me, especially after APHIS said they had to personally ID specimens from each county in order to include a species with their distribution data. And again, I can understand this to some extent: you want to make sure you have quality data. But this is an easily identifiable species and APHIS does not have the time to look at hundreds of specimens of a relatively benign species. For example, when the MFS runs surveys for invasive species, APHIS does not verify every specimen that we ID as one of the species on their watch list. We DO always have first records verified by an expert, as well as any ones that are questionable thereafter.

So Terry Bourgoin pushed back on APHIS and they agreed to accept Karen Hopkin's first find of *S. palealis*, and she generously donated the specimen to the MFS insect collection. APHIS is also accepting the record from Clinton and my records from the light traps which are: 2013 records from Calais (Washington County), Crystal (Aroostook County), Mt. Vernon (Kennebec County), and Sedgewick (Hancock County); as well as 2014 records from Hope (Knox County) and Kingfield (Franklin County); and 2015 records from Rangeley (Franklin County), and Millinocket (Penobscot County).

Terry then asked if there were any records of Peach Fruit Moth, *Carposina sasakii* (Family Carposinidae), as that is also on the APHIS watch list (see photo, p. 2). That one was negative for both MES and MFS records, but it *is* in the Moth Photographer's Group map as occurring in Aroostook, Penobscot and Piscataquis Counties. This is a species that attacks fruits of trees in the family *Rosaceae*, e.g., apples and plums. It will be interesting to see where those records came from; Terry is tracking that down. If anyone finds the Peach Fruit Moth in Maine in the future, please let me know.

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## Donna Maritato, 1950-2017



Donna Maritato with her husband, Bob Grobe, at one of the M.E.S. Winter Workshops.

With regret we note the passing of Donna Maritato, MES member and insect lover, on January 9, 2017. Donna was a regular participant in the MES Winter Workshops and took part in the 2011 Acadia National Park Lepidoptera Blitz. She also was a contributing participant in both the Maine Dragonfly and Bumblebee Surveys. Our condolences to her husband, Bob Grobe. We remember Donna fondly.

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The peach fruit moth, *Carposina sasakii*. (See President's Corner, page 1.) Photo by Mark Dreiling, Bugwood.org

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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 2017 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 now \$15 per year** (see explanation in last November's issue), and may be paid up to two years in advance. If the year on your mailing label is "2016", please contact Dana to renew for 2017 or correct the record.

## Article Summary: Notes on the status and distribution of the Wild Indigo Duskywing, *Erynnis baptisiae* (Forbes), in Maine by Robert E. Gobeil and Rose Marie F. Gobeil

We recently had an article published in the News of the Lepidopterists' Society (Gobeil and Gobeil 2016) on the status and distribution of the Wild Indigo Duskywing *Erynnis baptisiae* (Forbes), in Maine, and decided to summarize the paper for the M.E.S. Newsletter.

Four different species of Duskywings have been confirmed in Maine: Dreamy Duskywing (*Erynnis icelus*), Sleepy Duskywing (*Erynnis brizo*), Juvenal's Duskywing (*Erynnis juvenalis*), and the Wild Indigo Duskywing (*Erynnis baptisiae*) (Fig. 1). Duskywings tend to be difficult to identify in the field, especially in the spring when all four species are flying in Maine. You can be fairly certain, however, that any Duskywing seen in Maine after August 1st is likely *E. baptisiae*.

The first confirmed record of *E. baptisiae* in Maine was found by Phillip deMaynadier and Steve Walker in Kennebunk, ME on May 25, 2007. Based on our fieldwork and observations as members of the Maine Butterfly Survey (MBS) since 2007, *E. baptisiae* was probably established in Maine well before 2007 and likely overlooked.



Fig. 1. Wild Indigo Duskywing (*Erynnis baptisiae*), Scarborough, ME (Cumberland County), August 12, 2011.  
Photo by Rose Marie F. Gobeil.

While actively involved with the MBS (2007-2015), we recorded 52 confirmed sightings of *E. baptisiae* in 11 different Maine townships. Other MBS members added an additional 25 Maine township confirmed records for a total of 36. Whenever we encountered the species, we also counted the number of individuals observed, for a total of 247 individuals.

Based on our field records, we were also able to determine the brood periods for *E. baptisiae* in Maine. There appears to be two distinct broods: a small, early spring flight from mid-May to mid-June and a much larger flight in mid-July to late August.

Since 2007, the range of the species has been expanding northward in Maine, especially along the I-95 corridor (Maine

(continued on next page)

### Wild Indigo Duskywing (cont.)

Turnpike) where the host plant crownvetch (*Coronilla varia*) is found. This is an introduced species which has been extensively planted along major interstate highways in the US to stabilize the banks along roadsides to prevent erosion. It also appears that the range of *E. baptisiae* may have expanded northward by way of I-295, colonizing towns such as Brunswick, Topsham, Bowdoinham, and Bowdoin.

Besides areas adjacent to I-95 and I-295, we found *E. baptisiae* on power line rights-of-way (ROWS) in some inland townships as far as 15 miles from I-95. John Calhoun also found the species in five new Maine townships along I-95, extending the northward range of *E. baptisiae* to Bangor. North of Bangor, the shorter, more coastal highway (Route 9) may be the most logical pathway for the eventual range expansion of the species into New Brunswick, Canada.

#### Reference:

Gobeil, R. E. and R. M. F. Gobeil. 2016. Notes on the status and distribution of the Wild Indigo Duskywing, *Erynnis baptisiae* (Forbes), in Maine. *News of the Lepidopterists' Society*, v. 58 (3):142-4.

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### Maine Mantidflies by Charlene Donahue

Mantidflies are unusual and rarely encountered predatory insects in Maine. My interest was piqued in November when I read of Dave Bourque's encounter with a mantidfly and then received a note from Richard Hildreth saying he had just had one alight on his window in Massachusetts.

Mantidflies have a family of their own, Mantispidae, in the order Neuroptera, along with antlions and lacewings. As their name indicates, mantidflies resemble praying mantises with their triangular heads and large front legs. They are smaller than mantises, hold their wings roof-like over their body, and have no spines on their front femora.

There are not many species of mantidflies in Maine, or in North America for that matter. There are 13 known species in the United States; only four of these are also in Canada, with just an additional 13 species in Mexico (Reynoso-Velasco & Contreras-Ramos, 2008). Dick Dearborn (2001) reported two species in just one sub-family, Mantispinae, in Maine. Larvae in all species of the sub-family Mantispinae feed on spider eggs but larvae in other sub-families can be more generalist predators. There are no specimens in the Maine Forest Service collection or the University of Maine collection.

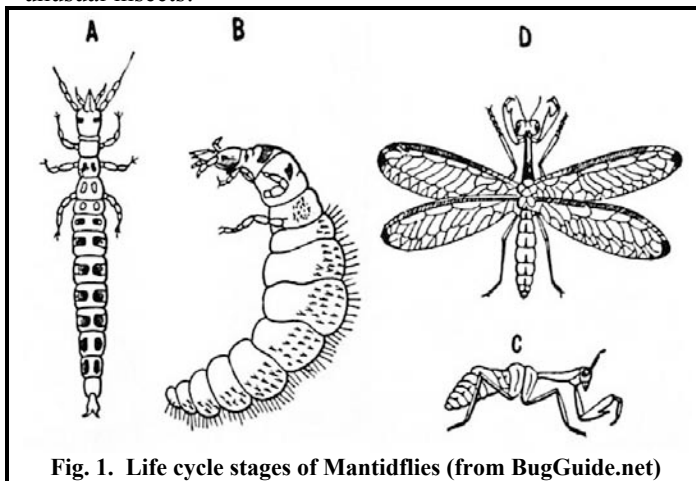
The more common and widespread species found in Maine is *Climaciella brunnea*. It is an obligate Lycosidae spider rider as it cannot penetrate the silk spun around an egg sac, but must enter the sac as soon as it is formed by the female spider. If the mantidfly larva boards a male spider then it moves to a female during mating or during the cannibalism of the males (Cannings & Cannings, 2006). The larva also feeds on the haemolymph of the spider and overwinters on it, at least in the northern part of its range.

The *C. brunnea* adults have striped coloration that mimics polistine wasps, and has both yellow and brown color morphs. This species is diurnal in nature and often found on flowers; its flight season is June through August.

The second species known from Maine is *Dicromantispa interrupta*. It has been recorded feeding on 10 species of spiders in four different families. It also rides on the dorsum of the adult spider, but may be able to penetrate the silk and so could attack egg sacs found elsewhere. This species has been collected from trees and shrubs and occasionally at lights from June to October.

The mantidfly has a very interesting life cycle: it is hypermetamorphic. Ever heard of *that*? Yes, it is in my basic entomology textbook but I did not remember reading it. Mantidflies have two larval forms and two pupal forms. When eggs are laid they are fastened on stalks (similar to lacewing eggs). The campiform larvae (A in Fig. 1) that hatch out are long and thin, with well-developed legs and long antennae. The young larvae in the sub-family Mantispinae actively search for a spider or spider egg sac. Once an egg sac is found or a female forms a sac, the mantidfly enters the egg sac and sucks the juices out of the eggs by forming a straw with its mouth parts. While inside the egg sac, the larva molts into a scarabeiform larva (B in Fig. 1), which is much fatter and with short legs and antennae. The larva molts just one more time before spinning a cocoon within the larval skin inside the spider egg sac. An active pupa is formed that eventually emerges from the cocoon and egg sac and crawls around (C). It then finally molts into an adult (D). The size of the adults depends on the amount of food the larva had available. All adults are predators of small insects.

So this coming summer, keep an eye out for these unusual insects!



#### References:

- Bugguide.net. Life cycle of Mantispidae. <http://bugguide.net/node/view/296580>
- Cannings R. A., and Cannings S. G. 2006. The Mantispidae (Insecta: Neuroptera) of Canada, with notes on morphology, ecology, and distribution. *Canadian Entomologist* v. 138, p. 531-544.
- Dearborn, R., 2001. Weird Bugs: Keys to Neuroptera of Maine. *Maine Entomologist*, v. 5, no. 4, p. 3.
- Redborg, K. E. 1998. Biology of the Mantispidae. *Annual Review of Entomology* v. 43, p. 175-194.
- Reynoso-Velasco D., and Contreras-Ramos A. 2008. Mantispidae (Neuroptera) of Mexico: Distribution and key to genera. *Annals of the Entomological Society of America*, v. 101, no 4, p. 703-712.

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## Dozens Turn out for Ant Workshop

by Bob Nelson

Some 34 eager Myrmecophiles gathered at the Bolton Hill facility of the Maine Forest Service in Augusta on Saturday, January 14th. Aaron Ellison, recognized authority on ants and lead author of *A Field Guide to the Ants of New England*, led a workshop that made identification of ants seem – at least to the genus level – to be a relatively straightforward task. Aaron also brought a small box of his field guides, which rapidly sold out – down to and including his own personal copy.

At the outset, we learned that Aaron came into entomology via the back door, as so many do. He was an ecologist interested in particular in the bog pitcher plant, *Sarracenia purpurea*, and whether it was a specialist or generalist as a carnivorous plant. What he found in the “catch” of plants in a bog in western Massachusetts was an overwhelming dominance by ants – and not just any ants, but what turned out to be the first U.S. records for bog ants. So, he set out to determine whether these were unique to this setting, or more widespread, and discovered they were common as *Sphagnum* in the proper settings. And *that* started the ball rolling on ants!



The Ant Workshop in January was a learning experience for old and new M.E.S. members, and some non-members, alike.

We learned right at the outset that the keys to identification in his field guide had been tested on elementary-school students, so for adults they shouldn't be too close to impossible. The first criterion is size: small, medium, or large! Small ants are less than 3 mm long, medium ants are those 3-5 mm long, and large ants are those over 5 mm in length. So far, so good! Even I can handle that concept.

Then, you start looking at the ant from the side – always point (not pin) the the specimens! Key criteria are seen in lateral view: does the pedicel appear to be 1- or 2-segmented? is the gaster (“abdomen”) smooth, pinched, or lumpy? are there rear-projecting spines on the propodium (“thorax”)? does it have a stinger or not, and if so, what direction does it point? what is the form of the mandibles and any “teeth” on them? is the scape (first segment of the antenna) really long compared to the head, or shorter?

All these key criteria for identifying ants, from the basic terminology of ant anatomy to the identification keys, are pictorially put in about the easiest place to find them in the book: inside the front and rear covers. Aaron walked us all through the process of identification using specimens he'd brought, as well as specimens people had brought with them, and it almost was enough to turn even a dedicated Carabidologist into an ant fanatic.

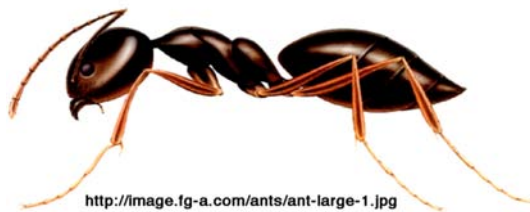
We learned that even with the intense work that's been done in the recent past, it's anticipated – based on the trajectory of faunal growth over time – that there may still be 10-20 additional species of ants to be found in Maine, but which are not yet known to be members of our fauna. Many areas of the state have virtually no records – and nearly half the ants known from the entire state are specimens collected by Dan Jennings and others in a biological survey of the Nature Conservancy preserve at Waterboro Barrens of Waterboro and Shapleigh, in York County. Many townships have zero records of any species, and some counties are represented by fewer than a couple dozen specimens. Portland has virtually no records at all – though it could be a logical first point of entry for exotics jumping ship, as Halifax (N.S.) has proven to be, to our north and east.

As usual, a number of people brought various snacks and “munchies” to keep people's blood sugar levels elevated all afternoon, from a large bowl of sesame snack sticks to a faux ant cake that was nearly 24” long. Everyone agreed that it was a very worthwhile and enjoyable, as well as educational, day that was well-spent. Many thanks to Aaron for sharing his time, experience and wisdom with us!



A mysterious faux ant cake was one of the edible contributions to the workshop in Augusta. Note the lack of a pedicel!

Photo by Amy Ouelette.



<http://image.fg-a.com/ants/ant-large-1.jpg>

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## Macro-Photography – An Experimenter’s Thoughts

by Jon Wallace

### Introduction:

A couple of years ago I ran across an image of an insect that was totally in focus. I had never seen such an image, even though I had taken many macro-photographs with film cameras. These in-focus photos use a process called ‘focus stacking’ where you take a series of images at different distances from a subject and run them through a special program where only the focused pieces are used to create a final image.

I checked out the website where I’d found the image, and there were directions for making an inexpensive programmable stage that would move a subject a precise amount and trigger my camera to take a number of photographs. I built the device and experimented with it for months and I was hooked. I no longer use that stage but learned a lot from it and want to share some of what I’ve learned here.

### Requirements for Focus Stacking:

Focus stacking allows for sharper images with smoother backgrounds as well as more depth of field. The depth of focus within each picture in macro-photography is quite thin. You can achieve more depth of field with a focus stack than if you took a single image at f32. In order to achieve this feat you must shoot multiple images of the same, completely stationary subject at different distances, run this ‘stack’ of photos through a computer program that picks out the in-focus pieces and puts them all together to make the final image. It can be used in any situation where you want to increase the depth of field, even large images such as landscapes.

Since you are shooting several to thousands of images, the subject has to be secure and not move during the entire photo session. I’ve tried working with live insects and had a few successes but most times I use dead ones. The most important thing, as far as I’m concerned, is that the camera and subject have absolutely NO movement during the picture taking process. Any movement will result in blurring and is very difficult to impossible to remove with post processing with Photoshop or other program. In addition to being absolutely still, recommended equipment includes:

### Required:

- A DSLR camera with manual mode, external shutter release, removable lenses and mirror lock-up capabilities
- A high-quality lens
- Extension tubes or macro lens
- Lighting – I use high intensity LED lamps as well as flash units
- A focus-stacking program

### Recommended:

- Reverse lens adapters
- Raynox DCR-250 close-up lens – magnifies 2.5x
- Bellows
- Microscope objectives and adapters to get higher magnification

*The Maine Entomologist*

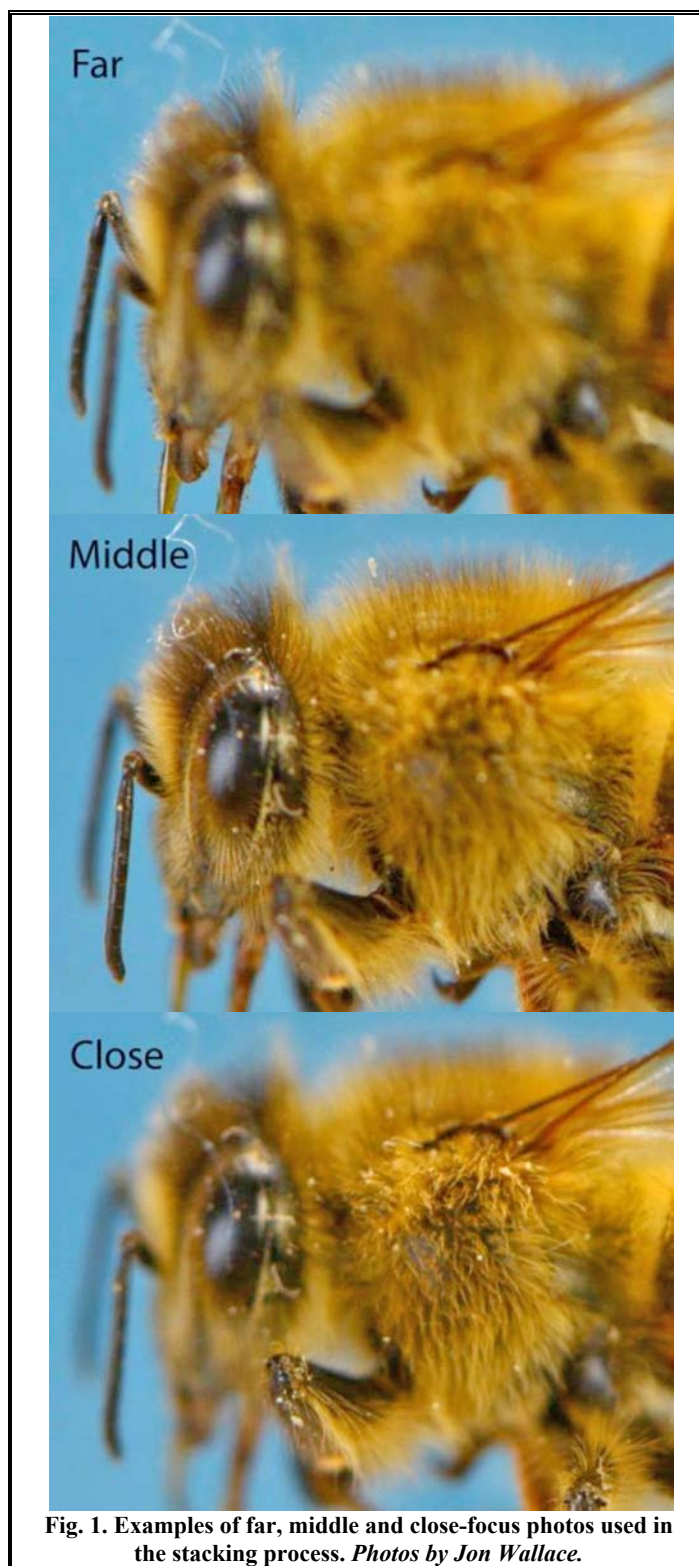


Fig. 1. Examples of far, middle and close-focus photos used in the stacking process. Photos by Jon Wallace.

### Macro-photography Methods I’ve Tried and My Recommendations

*Control My Nikon (or Canon)* – about \$50. These allow you to tether your camera to your computer (using a cable) so you can adjust the focus without touching the camera using the computer screen. Focusing is easy, the program is easy to understand and the only thing that moves is the focus of your

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## Macro-Photography (cont.)

lens (if you have a new lens with internal focusing, you can really 'lock-down' your camera and lens so it doesn't move). Great results can be achieved with this program if you use a lens or other optics that have auto-focus. If using a manual focus lens or accessory, the program will not work. Focus starts nearest to farthest with this program.

**StackShot** – about \$60. This is a fully programmable camera stage that can move your camera in very precise increments down to 1µm (perhaps less). This stage is expensive but works really well and is what I use now. It does have some rotational imperfections on the order of a few microns that may cause problems at high magnification but it's the best of any method I've tried. It can be linked to Control My Nikon as well so you can get full screen focusing, etc. Focus starts farthest to nearest with this device.

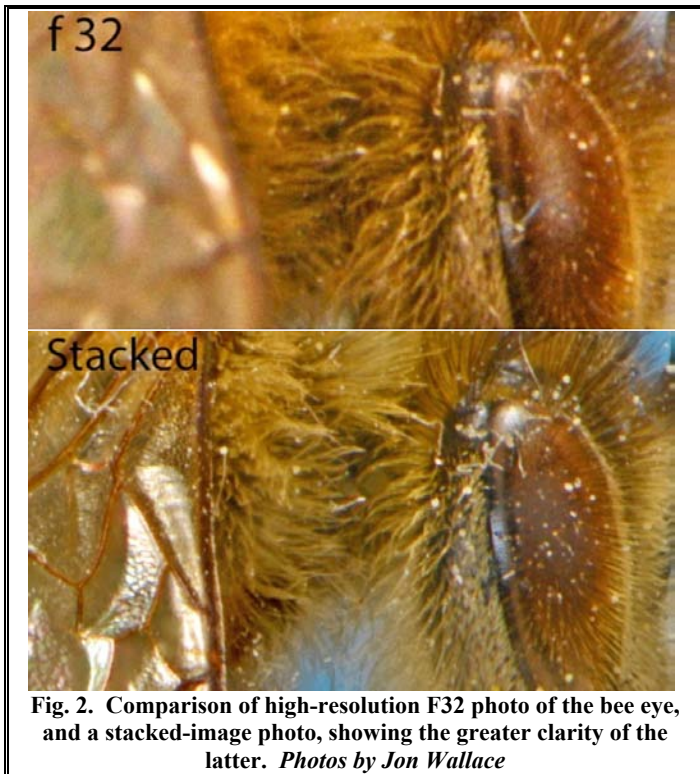


Fig. 2. Comparison of high-resolution F32 photo of the bee eye, and a stacked-image photo, showing the greater clarity of the latter. Photos by Jon Wallace

**Programmable Stage** - for moving the subject – I no longer use this and do not recommend it. I've found that subjects are fairly fragile and moving them many times makes them shift. Best not to move the specimens at all.

**Four-Way Macro-Focusing Rail** – this is a manually operated rail that your camera attaches to. I tried this on my tripod and found they had too much 'play' in their mechanism. Mine was quite inexpensive so perhaps a more expensive version would work but I don't recommend this.

### Focus Stacking Software

I mentioned earlier that you need to run the pictures through a program that picks out the 'in focus' bits and puts them all together into one image. I use a program called Zerene Stacker that costs about \$100 for personal users but can be tried for free. Others are available and can be found with a quick web search.

There are several ways stacking can be done with the software. I use two that are available from Zerene Stacker. One is called P-Max (pyramid method) and the other is D-Map (depth map). P-Max is my favorite and yields the most details but does increase noise and contrast while D-Map yields good color and smoothness. By using D-Map as the source and then 'retouching' in Zerene Stacker, you can combine P-Max (or any other picture) to get the best parts of all of them.

### Final Processing Software

When finished in Zerene Stacker, there are often artifacts such as dust spots (fuzzy dark spots), hot pixels (white spots or trails), bad pixels (spots or trails of varied colors), halos around images caused by stacking imperfections, etc., that need to be removed. There are often lighting and contrast issues that might need some tweaking. I use Photoshop Elements 14 which is reasonably priced and has most of the features of Photoshop that I need.

I hope this has piqued your curiosity and you will want to try this for yourself. If there is interest, I might be able to do a workshop on it or we could plan a visit to my house during the 2018 season. Until then, have fun exploring macro-photography and feel free to contact me (via e-mail at [wallacefj@comcast.net](mailto:wallacefj@comcast.net)) if you need any help or advice.

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## Watch for European Beech-Mining Weevil

*Orchestes fagi* (Linnaeus) (Coleoptera: Curculionidae: Curculioninae: Rhamphini) (formerly known as *Rhynchaenus fagi*), is a relatively recent introduction into Maritime Canada (Morrison *et al.*, 2017). Known from the area around Halifax, N.S., since 2012, analysis of anecdotal reports indicate it may have been present as early as 2007.



Mine of the European beech miner, *Orchestes fagi*, in leaf of European beech, *Fagus sylvatica*. Photo by Gyorgy Csoka, Hungary Forest Research Institute, Bugwood.org

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Though like most forest pests *O. fagi* is capable of flight as an adult, its dispersal appears to depend greatly on human agencies, analogous to the emerald ash borer. A favorite hiding place for adults is in the cracks and crevices of rough and irregular bark on the main trunks of trees, so its ready transport as a rider on beech firewood is to be expected.

The species has not yet made an appearance in Maine, but the northern border with New Brunswick would seem to be a likely area for first introduction. Charlene Donahue has specimens from Canada at the M.F.S. lab in Augusta should anyone like to see what to watch for, or need to check suspected specimens.

**Reference:**

Morrison, A., Sweeney, J., Hughes, C., and Johns, R. C., 2017. Hitching a ride: firewood as a potential pathway for range expansion of an exotic beech leaf-mining weevil, *Orchestes fagi* (Coleoptera: Curculionidae). *Canadian Entomologist*, v. 149, p. 129-137.

- B.N.

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**Monarch Web Links**

Tony Roberts forwarded a link to a lengthy and profusely illustrated on-line article on the overwintering habitat of Monarch butterflies in Mexico. The original URL was over 400 characters long, but you can access it at <http://tinyurl.com/go5rmbz>.

A second recent (November 16th) story he also encountered was on the negative impact of avocado cultivation in Mexico on the Monarch's overwintering habitat: <http://tinyurl.com/janj7tg>.

**Some Other Cool Web Links**

Alison Kanoti found an interesting article on "The Arthropods Among Us" that appeared on-line before making the print edition of *Northern Woodlands*. Turns out, a national study revealed over 600 genera of arthropods could be identified from DNA in simple house dust. The article can be found at

[http://northernwoodlands.org/outside\\_story/article/arthropods](http://northernwoodlands.org/outside_story/article/arthropods)

Kathy Claerr found one with a series of spectacular photos of New England caterpillars, at

<https://weather.com/science/news/up-close-and-personal-with-new-englands-caterpillars>.

Anna Court also found a great one on insects and arachnids as mascots for various college and university sports teams, at

<http://arthro-pod.blogspot.com/2014/09/the-insects-and-arachnids-of-college.html>.

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**Maine Maple (& Mothing) Field Day  
Saturday, 25 March, 2017**

Join us from 10:00 a.m. – 4:00 p.m. at 460 Mills Road, Whitefield (in Lincoln County). Maple syrup buckets often contain a fascinating assemblage of insects plus there are insects on tree boles, in the woodpile and tucked in other nooks and crannies this time of year. There is a seep open all winter down near the river and wetlands across the road. Come visit a backyard sugar operation, enjoy the company and collect a bug or two or maybe more.

Dress for the weather and be sure to wear boots; bring snowshoes if conditions permit, as well as your lunch and drinks. If the sap cooker is running, there are usually people hanging out, and it's a laid-back time (until a batch of syrup is ready to come off!). Contact Charlene Donahue if you're planning to attend: call 485-0960 or by e-mail at [donahuecp15@gmail.com](mailto:donahuecp15@gmail.com).

There will be a meeting of the Executive Committee at 9:00 a.m. to discuss how we are doing on action items from the 2016 MES annual meeting; this meeting is open to all.

Directions: Take Route 17 east out of Augusta. Go 12 miles, and then turn right onto Route 218 (Mills Road); Charlene's house is 0.8 mile down the road, on the right. It's a cream-colored cape, with a garage with rounded doors.

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**Membership Survey Coming!**

Watch your mailboxes, electronic or otherwise, this February for a Membership Survey. It's time to freshen up our files. The Executive Committee will send out a survey about interests and abilities that you would be willing to share.

We want to know how you would like to contribute to the entomological scene in Maine. What are you interested in learning more about? A specific group of insects? Behavior? Invasives? How to collect? Can you share your knowledge? Skills both insect-related and in other realms – such as photography, clerical, social media, public speaking, leading a group or who knows what else - may be needed at various times. So stay tuned!

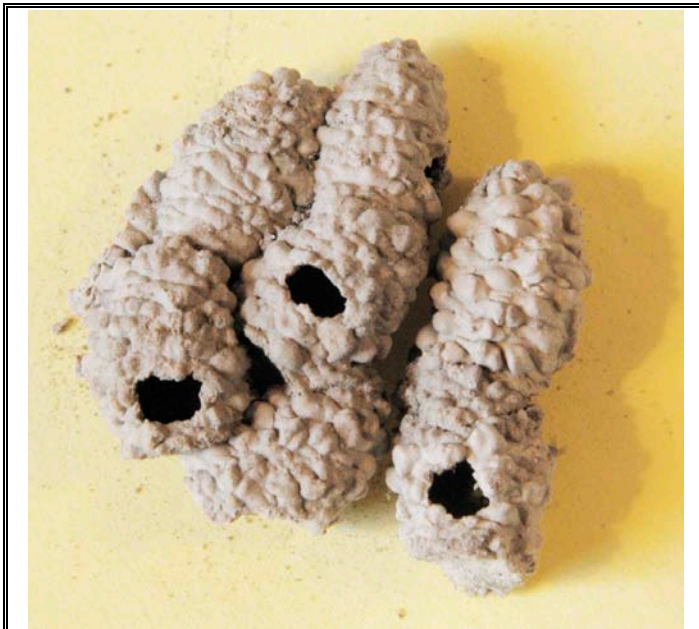
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## Puzzling Out *Auplopus*

by Monica Russo      Photo by Kevin Byron

This past fall, an observant gardening friend (Jane) gave me several small mud-dauber nests. The textured mud tubes were joined together, with each tube just less than an inch long – much too short to be those of *Sceliphron caementarium*, the big "black-and yellow mud dauber." The texture on the surface of the nests seemed to be made up of tiny rounded mud pellets. The nest rows had been attached to shingles on the inside of a roofed entrance-way.

I told Jane that the nests probably belonged to the "organ-pipe dauber" *Trypoxylon politum*, because that's the only other mud nest creator we have that makes tubular mud nests. (The potter wasps *Eumenes fraternus* make clay pots instead of rows of tubes.) Was I wrong! The tubes of *Trypoxylon* are much longer than the ones Jane gave me, and have an entirely different surface texture.



The mud nests of *Auplopus*, probably *A. mellipes* or *A. architectus*, the latter species being recorded on the Augusta list (Dearborn, et al., 1983) for a specimen from 1941 in Abbott, Maine. Each nest tube shown here is less than an inch long.

Photo by Kevin Byron

Fortunately, I knew of a great pictorial guide that showed comparisons of different wasp nests: the July 1937 issue of National Geographic. It has an important feature article titled "Farmers' Friends Among the Wasps" by Hashime Murayama, with many color illustrations by the author, showing wasps with their prey and nests. One picture shows that the wasp *Pseudagenia adjuncta* constructs short mud nest tubes *inside* the larger nests of a *Sceliphron*! So perhaps it means that there's yet another tube-builder to expect here.

I looked through 18 reference books and monographs on wasps, and found only a few hints about these wasps. The genus *Pseudagenia* had been a synonym for *Pompilius* at one

point, and then over the decades since the National Geographic article, it had become *Auplopus*. If you were trying to look up what kinds of mud-daubers there were aside from the big *Sceliphron* in the family Sphecidae, or the mud-using potter wasp in the Eumenidae -- you'd miss the *Auplopus*, which is a member of the Pompilidae! Add to all this that there are several species of *Auplopus*, which have had name changes, and not a lot of life history data.

An illustration of nests appears in the Field Guide to Insects of North America (Eaton and Kaufman, Houghton Mifflin 2006) but which species of *Auplopus* is the builder is not clear. In older books, there are a few reports of these wasps placing their mud nests under tree bark, or exposed roots, and even in the folds of a tarp. There is very little online about the life-history and nests. So it helps to have some older references on hand. (I give many thanks to my friend Jane for finding the nests, and generating an illuminating search of the literature.)

Aside from the July 1937 National Geographic, and Eaton and Kaufman's guide, here are just a few of the references that provided helpful clues:

- Dearborn, R., Bradbury, R., and Russell, G., 1983. Forest Insect Survey of Maine: Order Hymenoptera. Augusta, Maine.
- Evans, Howard E., 1963. *Wasp Farm*. Ithaca, New York: Cornell University Press.
- Krombein, Karl, 1967. *Trap-Nesting Wasps and Bees*. Washington, D.C., Smithsonian Press.
- Krombein, Karl, 1979. *Catalog of Hymenoptera in America North of Mexico*. Washington, D.C., Smithsonian Press.
- Rau, P. and Rau, N., 1970. *Wasp Studies Afield*. New York: Dover Publications.
- Viereck, H. L., 1916. *Guide to the Insects of Connecticut, Part III, The Hymenoptera*. State of Connecticut Public Document No. 47; Hartford, Connecticut.

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### COMING M.E.S. EVENTS in 2017

(details of most events will be in future newsletters)

- 25 March** Maple Syrup collecting day in Whitefield
- 6 May** "Insect Day" at Orono Public Library
- 20 May** Field Day at River Point Conservation Area, Falmouth (**changed from what's in the Minutes**)
- 10 June** Field Day in Mayfield Plantation
- 23-24 June** Moth Night in Camden
- July** → **NO Acadia N.P. BioBlitz this year**
- 29 July** Insect Photography workshop, Augusta
- August** Weekend of the 12th or 19th - Field Days in or near Katahdin Woods National Monument
- 12 September** Bug Maine-ia at the Maine State Museum
- 16 September** Field Day – Kittery/Berwick area, coordinated with Mount Agamenticus Nature center
- 30 September** M.E.S. Annual Meeting in Clinton
- (See <http://www.colby.edu/MES/> for more detailed information; new information on any event will be posted as it is received.)

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