

# The Maine Entomologist

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

The Official Newsletter of the Maine Entomological Society

Vol. 13, No. 3

August, 2009



Writing is not one of my favorite activities and certainly not in the summer. But here I am, presenting some words of wisdom for the Summer of Rain, 2009. Collecting has been tough; it has to be squeezed in between rain - not just showers - but rain and cool weather. Planned days off, free afternoons, and weekend trips all are getting rained out this year. Collecting insects is more difficult and not as much fun in the wet. Last weekend I was at my camp in T4 R7 WELS and the storm clouds cleared off just before sunset. As dusk deepened we sat by the pond and watched the thousands of insects skittering across the water while the bats swooped across the water scooping up their prey. What surprised all of us was the lack of mosquitoes. In Whitefield right now, if you venture out after dark the mosquitoes will descend in hordes that threaten to suck a person dry. It was delightful, whatever the reason, to be unencumbered by biting insects for a time. Probably by this weekend the mosquitoes will have arrived at the pond.

At the Maine Forest Service Lab we have received some interesting insects (and their relatives) this summer. The *Cerceris* wasps that collect metallic woodboring beetles brought back a new buprestid in Fryeburg. This beetle, *Spectralia gracilipes*, is associated with oak, hop hornbeam and hawthorn where it bores into the branches. Hopefully we will get additional specimens now that it has warmed up enough for the wasps to fly more and bring in more prey. Another interesting new record is a Galumnid mite. It is tiny, black, very smooth and shiny and could be mistaken for a beetle - until you count its legs. They were pouring into someone's cellar through a crack in the wall. Not much information on them but it appears they live in the soil and probably just got flooded out. Another new addition to our collection is the woods gnat *Sylvicola fenestralis*. You would think they would already be in the MFS collection but they are not. I got these from Dixfield where the swarms of dancing males are annoying the neighbors.

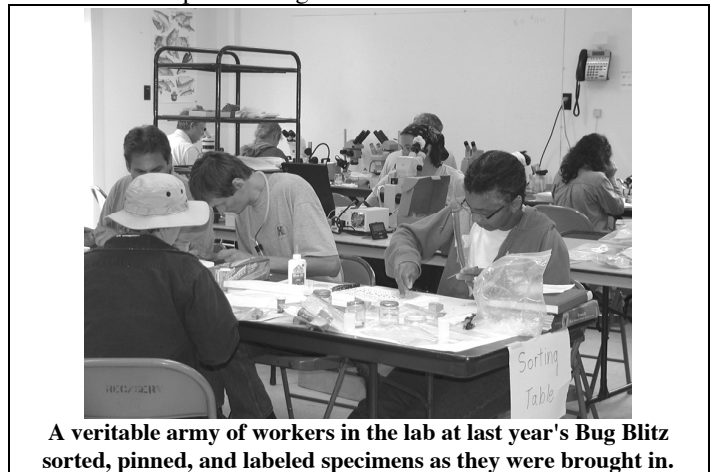
Enjoy the rest of the summer, and I hope to see you August 7-10 at the Minor Orders Blitz at Schoodic Point.

\* \* \* \* \*

## Last Chance for Minor Order Blitz!

(with dates for 2010 and 2011 Blitzes)

The Acadia BioBlitz on August 7-10, for Minor Insect Orders (full details in the May issue of *The Maine Entomologist* and on our web site), is about full. **BUT** if you have a last-minute change of heart (or just procrastinated), and want to attend and participate, please contact Melissa Rice ASAP at Acadia Partners for Science and Learning, at 207-288-1326 or [melissa@acadiapartners.org](mailto:melissa@acadiapartners.org).



A veritable army of workers in the lab at last year's Bug Blitz sorted, pinned, and labeled specimens as they were brought in.

*NEXT year's Blitz*, and that for 2011 are scheduled for:

**Aug 13-16, 2010 • Aug 12-15, 2011**

The groups to be studied in 2010 and 2011 have not yet been set, but that decision is made in the fall - to facilitate planning for the M.E.S. Winter Workshop in January and to allow recruiting of the appropriate expert(s) for the events.

### *In this issue:*

- ☞ Wells Field Event Reports (p. 2)
- ☞ July Field Day Report (p. 3)
- ☞ Bug Maine-ia coming to Augusta! (p. 3)
- ☞ Solitary Hunter Wasps of Southern Maine (p. 3)
- ☞ A "Vampire Ant" in Maine (p. 4)
- ☞ Report from Maine Butterfly Survey (p. 5)
- ☞ Deer Browsing Intensifies HWA impact on hemlock survival (p. 5)
- ☞ Woolly Bear Watch, Calendar Photo Call, Annual Meeting Announcement (p. 7)
- ☞ BioBlitz at Islesboro on August 15th (p. 7)
- ☞ Japanese Beetles and Biocontrol (p. 7)
- ☞ Fall webworm watch (p. 8)

## Wells Field Day A Big Success

By Mike Mazurkiewicz

The first MES field day of 2009 brought 13 participants to the Wells National Estuarine Research Reserve on May 23. The event began with Dick Dearborn providing a nice overview of insect life at the Reserve with emphasis on salt marsh inhabitants featuring extensive fly trap data. Monica Russo followed next with a description of the fossorial wasps of southern Maine and their nesting habits. She thoughtfully gave everyone copies of her wonderful illustrations showing the distinctive external features of the more common species (see above!).

Earnest collecting efforts ensued on the salt marsh, sandy beaches and adjoining uplands. Although cool, breezy with overcast sky, the day yielded a diverse assortment of insects, representing seven orders and dominated by beetles. Dave Bourque and Dana Michaud were the most prolific collectors, tallying about 95 species (79, beetles) among 36 families (22, beetles). The beetles included two species that may be new state records awaiting confirmation.

In all it was a good start to the 2009 field season, brought about through the gracious efforts of Domenica Vacca who made arrangements and kindly provided refreshments enjoyed by all.

\* \* \* \* \*

### A Day at the Beach

by David Bourque

To the typical family, a day at the beach means sand, sun, gentle sea breezes, and gulls squawking. It means digging out last year's bathing suit and hoping it still fits, remembering the sunscreen and the anticipation of leisurely strolling the beach looking for shells and other treasure. It means children laughing and giggling as the waves gently bump into them.

To the dedicated insect collector, however, it means a chance to explore a unique habitat, find some elusive specimens, and who knows, maybe a stray *Cicindela dorsalis* will appear! More realistically, we were hoping to catch our first *Cicindela marginata* or scarce deer flies.

On May 23rd, the Woo family graciously hosted an M.E.S. field trip at the Wells Reserve. The weather cooperated, and about fourteen people gathered. We were granted permission to collect insects with the proviso that we furnish a list for them.

Dana Michaud and I were the first to arrive. The sky was overcast and it was a bit chilly, but the weather was predicted to improve. While waiting for the others to arrive, we got a trail map and examined our options. Since Dana and I are primarily interested in beetles, the choice was easy. We were headed for our day at the beach.

Shortly, people began to arrive. After some greetings and catching up on friendships, Dana and I grabbed our nets and started down barrier Beach Trail to Laudholm Beach.

A little sweeping along the trail netted very little and produced one deer tick. Sadly, what was once pasture and apple orchards now was overgrown by a dense covering of honeysuckle, barberry and sweetvine.

Upon arriving at the beach, the tide was high, the sky overcast, and the sea breeze definitely chilly. We started

examining the rack (washed-up rotting seaweed) nearest the dunes, and other debris.

Poking through the rack is an interesting experience. The rotting seaweed is very pungent. Then there are the "sand fleas." They immediately pop out by the hundreds. A few beetles and other things also make a run for it, so you must be alert. A few minutes later, as the sand dries out, spiders and other insects scramble to the surface.

We were soon catching an excellent array of beetles. As we made our way down the beach, turning over every piece of debris and poking through the seaweed, the sky cleared and it warmed up nicely. It was an excellent day.

Dana showed me an interesting beetle he had found by gently scraping the sand under the rack. Later, he found two more, plus the remains of a third one. They turned out to be *Sperchopsis tessellatus*, a rather scarce Hydrophilid. These are probably the first Maine records.

About an hour later, I made my find of the day. I saw a bright patch of orange on the sand. Initially, I thought it was a live *Sperchopsis*, but soon realized it was a *Spilodiscus*, a stunning orange and black Histerid. We subsequently identified it as *Spilodiscus arcuatus*, possibly the first Maine record.

Dana later found a second one when he dug up an odd-shaped burrow. We poked in others, but found no more. While doing this, we noticed some cone-shaped depressions along the beach-dune interface. We watched for a while, and sure enough, when an unlucky ant wandered into a pit, it was grabbed by an ant lion larva.

By now we had collected quite a few specimens, and were getting a little tired, so we headed back to see how the others were faring. A group was gathered around a large picnic table, enjoying some snacks kindly provided by the Woos. We swapped stories and enjoyed a cold drink. The ever-energetic Brandon Woo said he hadn't been down to the beach yet, so Dana and I, his father, and a few others walked down with him.

Brandon was soon happily running around and chasing tiger beetles. We showed him the ant lion pits, and he couldn't resist putting in a few ants and watching the quick attack.

While looking for more insects, I discovered an interesting encounter. A tiger beetle larva apparently seeking a new site for its burrow was having a face-off with a large jumping spider. After a few minutes of back-and-forth sparring, the spider decided to find an easier meal.

It had been a long day, and we were all getting tired, so our little group marched back to pack up and head for home. We had a final chat with the few people remaining and headed home to sort and examine our day's catch.

In all, we caught about 215 specimens, 176 of them beetles. We managed to find 23 different beetle families, mostly in the Carabidae (42 total). Included was *Cicindela hirticollis*, the aptly named hairy-necked tiger beetle. Some obscure families such as Salpingidae, Heteroceridae, Scydmaenidae, and Anthicidae were also present.

The order Hymenoptera yielded ten specimens in several families. Seven specimens were from the Heteroptera. Ants were very common but we didn't collect any. Diptera produced eight specimens from four families, including *Coelopa frigida*, the seashore fly, present in abundance.

(continued on next page)

(A Day at the Beach - continued)

We saw many of the seaside earwig *Anisolabris maritima* (Dermaptera), some quite large, but didn't collect any. We also observed a few Odonates and Lepidoptera. We did find two dog ticks and a great variety of spiders.

In closing, I would like to thank the Woo family and all others involved for making this, at least for Dana and me, a great day at the beach!

\* \* \* \* \*

### July Field Day in Smithfield Disappointing

by Charlene Donahue

The July 18th MES field trip in Smithfield was pretty much a washout. The impetus for that particular venue and date was to highlight the *Cerceris* wasps that the Maine Forest Service is employing to monitor for the Emerald Ash Borer. But it was too cold and wet for the wasps to be active – as well as most other arthropods.

Seven people did show up and we had a nice time visiting and poking around the edges of the road and gravel pit so all was not lost. Dan Jennings picked up a few spiders, Brandon Woo found a few interesting insects and I found an immature Reduviid with striking color patterns. I also picked up some fungi called Earthstars (Gasteromycetes). The outer skin breaks open and inverts pushing the puffball center up in the air when it rains. We ate our lunches in the drizzle and then headed home. Next time will be better weather.

The August "field day," of course, is the Minor Order Blitz at the Schoodic Point facilities of Acadia National Park. Hope to see you there!

### Bug Maine-ia 2009 Coming to Augusta!

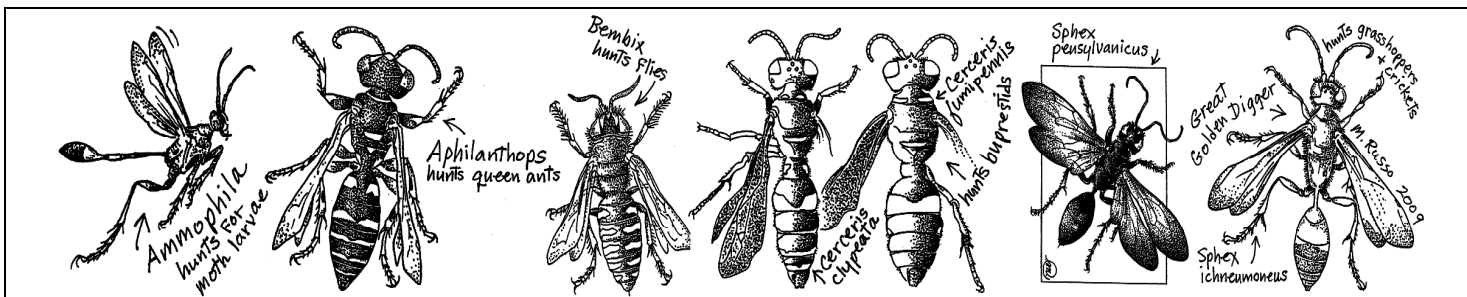
Amazing displays and hands-on activities featuring bugs of all sorts of sizes, shapes and colors, that will fascinate and inspire visiting school children and teachers, will be featured at the Maine State Museum's annual Bug Maine-ia, from 9 a.m. – 3 p.m. on Sept. 16th. The event provides maximum exposure to the creatures that are over, under, and around our world. Admission is free for the celebration.



Karen Hopkins entertains some enthusiastic admirers with her display of Insects on Stamps at Bug Maine-ia in 2008.

For more information about the schedule and events, please call 207-287-2301 or check the museum's and/or the event's website at [www.bugmaine-ia.com](http://www.bugmaine-ia.com). Volunteers always needed!

\* \* \* \* \*



### Solitary Hunting Wasps of Southern Maine

By Monica Russo

There are over 40 species of wasps, hornets, spider-wasps, yellow-jackets, mud-daubers, potter wasps, paper wasps, and solitary wasps in Maine. The Solitary Wasps, shown here, sometimes called Hunting Wasps, are *fossorial*: the females dig nesting burrows in the ground. The females construct the burrows themselves, hunt for prey, and stock the nursery. Some are colonial: many individual females may dig nurseries in the same general area. They are independent workers, however, and do not make "hives."

Look for a *tumulus* (plural: *tumuli*) – a mound of excavated dirt with a hole in the center. It will look like a tiny volcano,

and may be 2 or nearly 3 inches in diameter. Then stand and watch for a female digging at the entrance; you can usually watch closely as she backs out with a load of excavated dirt. Or you may see a female flying in with her prey; each species hunts for a particular prey, and each may stock her nursery in a different way.

The late Sam Ristich, an M.E.S. member from its start, was an expert on the Great Golden Digger, documenting its biology and home life in 1953. Some genera of Solitary Hunting Wasps in Maine include *SpheX*, *Bembix*, *Ammophila*, *Philanthus*, *Aphilanthops*, *Bicyrtes* and *Cerceris*.

\* \* \* \* \*

The largest butterfly in the world is the Queen Alexandra's Birdwing from New Guinea (an endangered species), with a wingspan of 11 inches. The smallest butterfly is the blue butterfly from Africa, which has only a 1/2 inch wingspan.

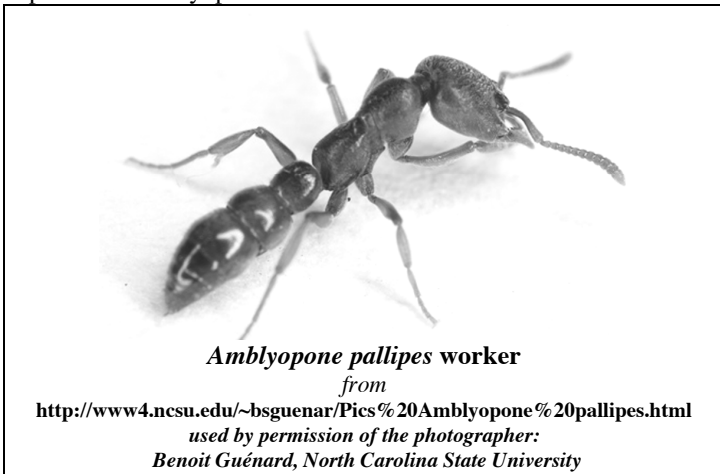
The 12 species of the mosquito genus *Malaya*, found from Africa across southern and eastern Asia, are incapable of drawing blood. Adults instead steal honeydew from ants as they are taking it back to their nests.

## Blood-Sucking Ants Among Us

By Gary D. Ouellette

Ants from the subfamily Amblyoponinae constitute a cosmopolitan and cryptobiotic group of species with a rather gruesome secret. Several species have been recorded maintaining an aberrant form of nutrient exchange, in which queens cut holes in the integument of mature or nearly mature larvae and feed upon the exuding larval hemolymph (Masuko, 1986; Ito & Billen, 1998; Masuko, 2003). The term used to describe this cannibalistic, though non-destructive, behavior is Larval Hemolymph Feeding (LHF) (Masuko, 1986); but, since this act conjures up images of blood-imbibing vampires, these ants are more commonly referred to as “Dracula Ants.” For these queen ants, the LHF behavior is adopted in place of the traditional trophallaxis, a process by which ant species exchange nutriment or other secretions between members of a colony through regurgitation (Hölldobler & Wilson, 1990).

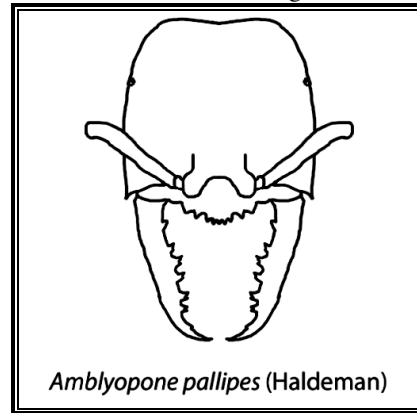
The LHF behavior is most common in the subfamily Amblyoponinae and has been recorded in at least five genera (Masuko, 2003); in addition, LHF is known from a handful of species divided between four other closely allied subfamilies (Ito & Gobin, 2008). Because of their cryptic habits, the biology of the majority of Amblyoponine species remains entirely unknown; hence, there still exists a data gap as to whether every species of Amblyoponinae conducts LHF.



Given this seemingly bizarre social behavior, coupled with several putatively primitive anatomic structures, the systematic placement of Amblyoponinae has proven a paradox for the ant evolutionary tree (Saux et al., 2004; Ouellette et al., 2006). However, following recent DNA analysis, it comes as no surprise that this subfamily most likely constitutes an earlier lineage of ants, arising within the Cretaceous period over 100 MYA (million years ago) (Crozier, 2006). Thus, LHF could therefore represent a precursory behavior of food transfer for ants as a whole.

The ant *Amblyopone pallipes* is the only Amblyoponine species represented in the northeastern United States and is most often collected from cool, moist, forested areas (Traniello, 1982). Like other ants in the genus, the species *A. pallipes* chiefly preys on geophilomorph centipedes (Gotwald & Léviex, 1972; Masuko, 1993). Colonies are typically small, consisting of less than 30 workers, and are arranged in a

clumped distribution (Traniello, 1982). Nests are comprised of single chambers within leaf litter, rotting wood or under rocks.



At present, only a few records exist for Maine for this centipede specialist. The 2003 Acadia National Park AntBlitz offered an initial record; the same year, I collected a second specimen in leaf litter from Kennebec County. Given the cryptic and close-clustered distribution of this species, it is anticipated that further leaf-litter sampling will likely yield additional specimens, as well as present a clearer understanding of the overall distribution within Maine. People interested in this species should consider employing collecting methods that target ground nesting ants and hypogaecic foragers, such as leaf-litter sifting with use of Berlese funnels or Winkler sacks.

### References:

- Crozier, R. H. 2006. Charting uncertainty about ant origins. PNAS. 103:18029-18030.
- Gotwald, W. H., Jr. and J. Léviex. 1970. Taxonomy and biology of a new west African ant belonging to the genus *Amblyopone* (Hymenoptera: Formicidae). Ann. Entomol. Soc. Amer. 65:383-396.
- Hölldobler, B. and E. O. Wilson. 1990. The Ants. Harvard University Press, Cambridge, MA.
- Ito, F. and J. Billen. 1998. Larval hemolymph feeding and oophagy: behavior of queen and workers in the primitive ponerine ant *Prionopelta kraepelini* (Hymenoptera, Formicidae). Belgian J. Zool. 128:201-209.
- Ito, F. and B. Gobin. 2008. Colony composition and behavior of a queen and workers in the Oriental ectatommine ant *Gnamptogenys cribrata* (Emery) 1900 in West Java, Indonesia. Asian Myrmecol. 2:103-107.
- Masuko, K. 1986. Larval hemolymph feeding: a nondestructive parental cannibalism in the primitive ant *Amblyopone silvestrii* Wheeler (Hymenoptera: Formicidae). Behav. Ecol. Sociobiol. 19:249-255.
- Masuko, K. 1993. Predation of centipedes by the primitive ant *Amblyopone silvestrii*. Entomol. Sci. 24:35-44.
- Masuko, K. 2003. Analysis of brood development in the ant *Amblyopone silvestrii*, with special reference to colony bionomics. Entomol. Sci. 6:237-245.
- Ouellette, G. D., B. L. Fisher, and D. J. Girman. 2006. Molecular systematics of basal subfamilies of ants using 28S rRNA (Hymenoptera: Formicidae). Mol. Phylogenet. Evol. 40:359-369.
- Saux, C., B. L. Fisher, and G. S. Spicer. 2004. Dracula ant phylogeny as inferred by nuclear 28S rDNA sequences and implications for ant systematics (Hymenoptera: Formicidae: Amblyoponinae). Mol. Phylogenet. Evol. 33:457-468.
- Traniello, J. F. A. 1982. Population Structure and Social Organization in the Primitive Ant *Amblyopone pallipes* (Hymenoptera: Formicidae). Psyche. 89:65-80.

## Great Second Year for the MBS

(adapted from the Maine Butterfly Survey newsletter)

The second year of the volunteer phase of the Maine Butterfly Survey was highly successful. Over 2200 records were submitted in 2008, from 85 volunteers. These records included 1515 specimen vouchers (some included more than one specimen), and 605 photo vouchers. Over half of these (1182) represented new township and county records. Among these were 45 new county records (some county records represented by more than one township from more than one volunteer) and one new state record, increasing the state's official butterfly checklist to 119 species (including 5 extirpated species).

Among the notable records was the first state record of the Mulberry Wing Skipper (*Poanes massasoit*) collected by Phillip deMaynadier in Waterboro, York County. This species was expected to occur in Maine and will probably be found in more localities in York County in and near sedge marshes with an abundance of its caterpillar host, Narrow-leaved Sedge (*Carex stricta*).

The related species, Broad-winged Skipper (*P. viator*), was found in Cumberland County by Carla Brown and John Calhoun in Falmouth and Scarborough, respectively. There was one previous published record of a specimen collected in York Village in 1991. The above two records confirm its presence in Maine and suggest that this species may be more widespread in the state. Look for it in and around dense stands of Common Reed (*Phragmites australis*) near the coast of southern Maine.

Cobweb Skipper (*Hesperia metea*) and Dusted Skipper (*Atrytonopsis hianna*) were each recorded from a new locality in York Co. by Phillip deMaynadier, and Jonathan Mays and Trevor Persons, respectively. John Calhoun checked roadside stands of Crown Vetch (*Coronilla varia*) and found Wild Indigo Skipper (*Erynnis baptisiae*) for the first time in Androscoggin and Cumberland Counties and at three new localities in York County. Robert and Rose Marie Gobeil also found this species at a new locality in York County. The Wild Indigo Skipper was first reported from Maine in 2007.

Crown vetch, a non-native species, is planted along roadsides as a cover plant. The Wild Indigo Skipper began using this plant as its larval host (formerly they used only Wild Indigo, *Baptisia tinctoria*) in the Middle Atlantic States and has begun expanding its range since that host plant switch. It is unclear how far north this species will move in Maine, but we should check roadside areas with Crown Vetch throughout the state (especially in southern areas) for this potentially range-expanding skipper.

Spicebush Swallowtail (*Papilio troilus*) was recorded from a flower garden by Gerald Carter via Tracey Levasseur from Shapleigh, York County, in early August. This specimen represents the first modern record for this species for Maine! There is one specimen of this species from York, York County, collected in 1918 and a published record, also from York from 1934. Brower reported a record of this species from Bar Harbor, Hancock County, from the Proctor Collection collected around 1947, but this is almost undoubtedly a mislabeled specimen. Phillip deMaynadier and Mark Ward will be conducting targeted surveys of Spicebush (*Lindera benzoin*) and Sassafras (*Sassafras albidum*) stands in southern Maine in 2009

in an effort to confirm a resident, breeding colony of the Spicebush Swallowtail, currently listed as a species of Special Concern.

Professor Ernest Williams, a butterfly ecologist in the Biology Department at Hamilton College, observed an individual of Snout Butterfly (*Libytheana carinenta*) from Monhegan Island in August, 2006. This species was reported by Brower from Lincoln (Penobscot County) Maine, around 1974. A specimen of this species was also collected in Nova Scotia in 2006, indicating that it is capable of reaching almost any site along coastal Maine. Many butterflies are well known for spectacular long-distance movements so we should all keep our eyes peeled for these distinctive butterflies.

Reggie Webster has completed the task of verifying the identification of all 2008 records; photo records that could not definitively be identified to species were rejected. You can see all the data organized taxonomically by family at: <http://mbs.umf.maine.edu/Survey%20Results.htm>.

\* \* \* \* \*

## Deer Winter Browsing on Seedlings May Enhance Hemlock Loss from Hemlock Woolly Adelgid

A recently published article\* has reported on a study of some 400 compared forest plots and their response to deer browsing on various species of tree seedlings, with particular focus on browsing's impact on stands already infested by hemlock woolly adelgid (HWA → Hemiptera: Sternorrhyncha: Adelgidae: *Adelges tsugae*). Deer populations in most studied plots were estimated to be at least 5 deer per km<sup>2</sup>.

Eastern hemlock (*Tsuga canadensis*) is a preferred winter browse for eastern white-tailed deer. The study found that increased deer browsing on seedlings in areas already suffering hemlock decline due to HWA, may in fact augment that loss and contribute to further long-term loss of hemlock from the forests. This may be because seedlings in the declining sites have greater nitrogen reserves (due to decreased competition), or because they store more overwintering carbohydrates in their shoots, rather than in the roots (as more shaded seedlings do).

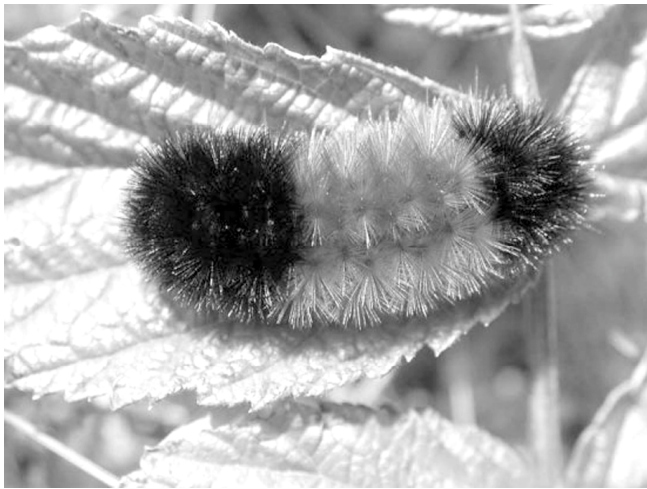


HWA (white tufts beneath hemlock needles, as shown above) has already been reported in Maine in Eliot, Kennebunkport, Kittery, Ogunquit, Saco, South Berwick, South Portland, Wells and York. For more information on the HWA spread in Maine, see the Maine Forest Service web page at:

<http://www.state.me.us/doc/mfs/idmhwa.htm>

### Reference:

\*Anne K. Eschtruth and John J. Battles, 2008: Deer Herbivory Alters Forest Response to Canopy Decline Caused by an Exotic Insect Pest. *Ecological Applications* : Vol. 18, no. 2, pp. 360-376.



### Woolly Bear Watch, 2009

I've been watching woolly bear caterpillars and adult Isabella tiger moths (*Pyrrharctia isabella*) through my association with MES for twelve years now. This will be the thirteenth! This activity has been fun and certainly generated a lot of comments, pro and con. Children love the fuzzy little banded caterpillars as they are safe to handle, old timers like to have the "official forecast" as a conversation piece, and entomologists think that I'm nuts. At this point this summarizes my experience.

Earlier this summer I thought that I would drop the whole thing this year but in organizing my files and seeing the numerous articles and photos, I decided to give it another run in 2009. Increased numbers of the adult moths in my light trap provided further incentive. To give some consistency to this "survey" I suggest that you begin looking for woolly bears in September and focus on areas you have looked at before.

If you want to join in the woolly bear fun here are some suggestions: You need to collect about 20 of the fuzzy creatures for a good sample. These should be collected in September and from different spots for diversity. If you keep them they need air and fresh foods such as plantain, dandelion or wild aster leaves and they should be kept out of the direct sun.

Now comes the winter weather prediction! Each caterpillar has 13 fuzzy segments and will always have one or more on each end that are black and one or more in the middle that are reddish (caterpillars that are all black, red, yellow or spotted are not banded woolly bears). Count the number of segments that are reddish and take an average of all 20 caterpillars. Folklore has it that when the reddish segments make up more than one third (4.33 segments) a milder (tamer) winter can be expected whereas less than one third indicates a harsher winter can be expected. You'll get all kinds of opinions as you do this but go ahead anyway and pit your results against the weather man, but in any case have FUN.

Woolly bear numbers were down noticeably last fall (2008). In the sample that we did get the average number of red segments was exactly 4.33 indicating a "normal or average" winter whatever that meant. Your call on this one.

- Dick Dearborn

\* \* \* \* \*

### Calendar Reminder!

Here's a reminder that we're still looking for a few more good photographs for the 2010 M.E.S. Official calendar!

Calendar photos must be of entomology-related subjects and either taken at Maine events or include arthropod species which either are known to occur in Maine or may be found here. We are especially interested in seeing new taxa represented, and final selections will be based in part on a good balance of subject matter.

Please submit only unpublished photographs. All images should be digital and submitted via e-mail or on a CD (JPG format preferred). The photos should be "landscape" orientation and of sufficient resolution that they will retain clarity when enlarged to 8x10 inches. Photos should be accompanied by species identification (as close as possible) with date, location and host, if applicable, and should be received by September 15th, 2009. Accepted photos will be used only once, in the M.E.S. calendar.

Please submit photos **A S A P** to: Bob Nelson (BeetleBob2003@yahoo.com) or at the mailing address on the label page of this newsletter. Please e-mail any queries.

\* \* \* \* \*

### Annual Meeting Call!

Just a reminder that the 2009 Annual Meeting of the M.E.S. will be held at **Rock Ridge**, Bob and Nettie Nelson's home at 779 Battle Ridge Road in Clinton, on Saturday, Sept. 12th, from 11:00 a.m. - 3:00 p.m. This is when and where we conduct Society business, elect officers for the coming year, and have a great time, including some collecting in a variety of habitats, if weather permits.

The meeting will begin with a pot-luck luncheon, with barbecued chicken (as always) prepared on site for everyone. Whatever else is to be served depends on what people bring - but it's always varied and delicious.

**Important items on the agenda** include the Treasurer's Report and auditing of books; election of 2010 M.E.S. officers; calendar status and sales protocol; Bug Maine-ia; 2010 Winter Workshop (topic, location & date); selection of events for 2010 so that they can be placed on the calendar; and discussion of M.E.S. outreach efforts. If you're planning to come, please DO let Bob know so we can plan accordingly! You can send an e-mail to BeetleBob2003@yahoo.com or call at 426-9629. Contact Bob also if you need driving directions. We'll also have signs posted from the Clinton exit off I-95 to help for those from outside the immediate area. See you there!

\* \* \* \* \*

**Insects with really interesting life histories include:**

- the coffin flies (several spp. of Phoridae), which can live through multiple generations in human bodies buried in coffins; they are an important group in forensic entomology.
- the petroleum fly (Ephydriidae: *Helaeomyia petrolei*), the larvae of which feed on other flies that get trapped in pools of crude petroleum in California.
- the human botfly, *Dermatobia hominis*, which utilizes some 40 species of mosquito hosts as intermediaries in egg transfer; the bot fly seizes and lays her egg on the mosquito, and the larvae emerge from their eggs and crawl under the human's skin through the mosquito bite or by boring into the flesh.

## And Another Blitz at Islesboro!

The Islesboro Islands Trust, the community land trust on Islesboro, has planned another Bioblitz for this summer, on Saturday, August 15. This is the weekend after our big blitz in Acadia, but an invitation is extended to interested M.E.S. members to take part in this event as well.

The Bioblitz will be at Hutchins Marsh, which is on the northeastern shore of the island roughly across from Castine. It's an interesting spot - the preserve contains 20 or so acres of upland forest vegetation surrounding a 5.5-acre freshwater pond/wetland complex. This was formerly an estuarine system, but it is transitioning to freshwater due to beaver activity. There has been an explosion of freshwater diversity, and they've been having a hard time keeping up with the ecological changes on the property. It should be a really fun day, with (hopefully) a dozen or more biologists from different specialties exploring the preserve.

Because of the ferry schedule, this will be a daytime-only blitz, running from morning through mid-afternoon (instead of the traditional 24-hour marathon).

### **For information, contact:**

Aaron Megquier  
Assistant Director, Islesboro Islands Trust  
P.O. Box 182 / 376 West Bay Rd.  
Islesboro, ME 04848  
(207) 734-6907  
iitaaron@gmail.com

## Japanese Beetles and Biocontrol

(A tribute to Bug Mug Shot, by Bob Nelson)

I don't know about the rest of you, but I've certainly not seen Japanese beetles (*Popillia japonica* Newman) the last few years in any numbers like I remember from the 1980s. It was probably 1988 or 1989 when Colby College had traps out all over the central campus, were emptying them twice a day, and collecting literally GALLONS of specimens on a daily basis. Yet I haven't seen one at our home in Clinton this year, even in the vegetable garden.

A plant-feeding member of the Scarabaeidae (which includes the native "June Beetles" and many species of dung beetles), the species is native to Japan, where it is not a major pest and in fact was considered good luck because of its beautiful coloration. It has since been introduced to China, Russia, Portugal, Canada and the U.S.A.

Japanese beetles were first detected in North America in a nursery near Riverton, New Jersey, in 1916, though they are suspected to have been introduced earlier. Happy to feed on as many as 300 different plant taxa, the species has since spread to most states east of the Mississippi River. They have been known in Canada since 1939, but are currently restricted to southern Ontario and Quebec.

Adults generally emerge in late June through July, so we should be nearing the end of the emergence season. Adults are capable of flying up to five miles, but will begin feeding on the nearest suitable host. Once happily feeding, individuals will release a feeding pheromone, that then attracts other individuals, which is why you'll often find large masses on your rose bushes, green beans, raspberry bushes, or other ornamentals.

Females will then release sex pheromones as well, drawing in increased numbers of males. It is not uncommon to see two, three or more males all attempting to mate with the same female. Eggs are then laid in the ground - where they hatch into typical scarabaeiform larvae (Fig. 1).



**Fig. 1. A Japanese beetle larva, or grub, from**  
<http://www.agf.gov.bc.ca/cropprot/images/jbeetle3.jpg>

Larvae feed principally on the roots of grasses. Thus, those broad, sweeping lawns that are so popular in rural Maine provide ideal breeding grounds for Japanese beetles! The grubs are, in fact, considered to be the most damaging pest of lawns in the Northeast (Cranshaw, 2004).

The larvae feed into the fall, then migrate downwards in the soil with cooling temperatures. In the spring, with increased warmth, they migrate back upwards, and pupate beneath the surface. Emergence of the adults completes the cycle. Unlike many other summer-emerging beetles, Japanese beetles are strictly diurnal, and are not attracted to lights. Flight and activity takes place during the daylight hours.

Control of Japanese beetles has been a major drain of agricultural resources, and resulted in considerable research efforts. This is one of the reasons for the strict border agricultural quarantines you'll experience if you ever drive into California, which doesn't have the species but DOES have a \$20+ billion agricultural industry.

Ants, ground beetles (Carabidae) and moles are the principal natural subterranean predators on eggs and larvae. Milky spore (*Bacillus popilliae*, more properly called milky disease) is favored by some organic gardeners, but testing indicates that soil temperatures must be above 65 degrees for it to be effective - more likely in Maryland than Maine when larvae are in the ground to ingest the spores. Ironically, this microbial biocontrol is apparently native to North America, which would make one wonder why it has not been more effective in the past. An isolate of *Bacillus thuringiensis*, var. *japonensis* is apparently more effective than milky spore, at least in other areas (Potter and Held, 2002).

The Japanese beetle traps that used to be so ubiquitous are falling out of favor, as research done at the University of Kentucky and elsewhere indicated they serve more as a lure to bring beetles into an area, sometimes from as far as 1/4 mile away. Thus, they were counterproductive in reducing the number of beetles in gardens.

(continued on next page)

**(Japanese beetles, cont.)**

Two species of tiphid wasps, *Tiphia vernalis* Rohwer and *Tiphia popilliavora* Rohwer have proven successful biocontrol agents against Japanese beetle grubs elsewhere (Fleming, 1976). *T. vernalis* attacks overwintering grubs, whereas *T. popilliavora* attacks young grubs in late summer. A tachinid fly, *Istocheta aldrichi* (Mesnil), parasitizes adult Japanese beetles; the egg of one of these flies on the pronotum of a Japanese beetle was shown in our July M.E.S. calendar photo by Edie King, taken in Waterville.

In a spot collection I made of Japanese beetles a couple years ago in Turner, half the specimens I picked up (6 of 12) had the distinctive eggs of *Istocheta* on them, and one even had two. Since this parasitoid kills the host before it has a chance to reproduce, I suspect this is the principal reason I've been seeing fewer Japanese beetles in recent years. Certainly, the fly is well-established here.

**References:**

Cranshaw, W., 2004: Garden Insects of North America: The Ultimate Guide to Backyard Bugs. Princeton University Press, Princeton, New Jersey; 672 p.  
Fleming, W. E., 1976: Integrating control of the Japanese beetle—a historical review. USDA Technical Bulletin 1545, Washington, D.C.  
Potter, D.A. and D. W. Held, 2002: Biology and management of Japanese Beetle. Annual Review of Entomology, v. 47, p. 175-205.

\* \* \* \* \*

**Time for Fall Webworm to Appear!**

Before too long, the fall webworms (*Hyphantria cunea*) will start to appear once again, if you haven't seen them already.

To many of the non-entomological public, these appear as just another outbreak of the tent caterpillars (Lasiocampidae: *Malacosoma americanum*) of the spring, but it's of course a totally different species in a different family (Arctiidae). Only time will tell whether we'll see a spectacular outbreak like we did in the fall of 2006 and 2007, with some trees all but completely enveloped in the filmy webs.

Tent caterpillars also make their tents in the crotch of the trees, as daytime refugia from birds. The fall webworms, by contrast, will spin webs that envelope the tips of branches, including all foliage.

Fall webworms are known to feed on over a hundred different species of hardwoods. In Maine, they seem to be particularly fond of ash, maples and oaks – three of our most common genera of forest trees.

The snow-white moths have been out laying eggs for the past month or so. The caterpillars will feed into the fall, then overwinter as pupae in the soil, and emerge next summer as adult moths. Unlike more southern states, Maine has only one generation per year.

**COMING M.E.S. EVENTS in 2009:**

(See <http://www.colby.edu/MES/> or stories in this issue for more detailed information.)

- 7-10 August, 2009 Minor Order BioBlitz, Schoodic Point, Acadia N.P.
- 12 September, 2008 Annual Meeting, Rock Ridge, Clinton
- 16 September, 2009 Bug Maine-ia at Maine State Museum  
Wednesday, from 9 a.m. to 3 p.m.



Maine Entomological Society  
c/o R. E. Nelson  
Department of Geology  
Colby College  
5804 Mayflower Hill  
Waterville, Maine 04901-8858 U.S.A.

Please visit our website at <http://www.colby.edu/MES/>

*The Maine Entomologist* is published quarterly by the Maine Entomological Society. Dues are \$10 per year and may be paid for up to two years in advance. 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.