

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. 4

November, 2009



PRESIDENT'S CORNER



BY CHARLENE DONAHUE

One of the interesting parts of being an entomologist is the insects, their parts or pictures that get sent to me for identification. The advent of digital cameras and email may have increased the numbers of ID requests but I also have specimens mailed to me or brought to my house or office. Sometimes people bring me specimens at church or pull them out of a pocket in a store or at a party. There was the woman who called me one night and whispered, "I found a bug in my bathtub..."

I said, "It is not a crab louse, it is a pseudoscorpion and it doesn't bite, it eats insects." And I described what she had found. She was astounded that I knew what it was before SHE had described it. Yes, it was a guess but what else would she have found in the bathroom to whisper about?

Sometimes photos are too fuzzy to be sure of an ID and other times an identification to species can be made with a fair degree of confidence. People try to look insects up on the Internet and sometimes have success and sometimes not. One problem is that you have to have some idea of what you are looking at. A couple of students sent me a nice letter and two excellent photos of a Giant Eastern Crane Fly (*Pedicia albivitta*) but they thought it was a gnat. At least they had the right order.

Just today a woman brought in three chrysalises. She thought they were some life form of an insect but had no idea what it was. I said that they were chrysalises and then started the "Twenty Questions" you play with people when they are not familiar with insects. Where was it found? In the basement – there were hundreds of them (probably dozens.) When did you find them? This past weekend. Is the basement open? Don't think so. Are there any plants inside? No. Do you garden? Not very well, most plants die.

I used bugguide.net to identify the chrysalis by doing a comparison to photos on-line. They were *Pieris rapae*, the cabbage butterfly, or imported cabbageworm, that feed on broccoli, cabbage and Brussels sprouts. I should have

recognized them but hearing that they were in a basement threw me off. The women said, "Oh yeah, my husband had brought the Brussels sprout plants in and put them right under where most of the chrysalises were." The problem with this identification was figuring out how some caterpillars could have gotten inside in large numbers and the piece about the Brussels sprouts had slipped her mind until I asked about growing crucifers.

Spiders ("Is this a brown recluse?") and caterpillars are common submissions, along with anything big: giant water bugs, dobson flies, hornworms. Mondays after a nice weekend, when people have been outside, are big days for submissions and phone calls. I learn about insects all the time, find new sources of information and see the different ways people approach insects. Life is never boring!

**WINTER WORKSHOP RESCHEDULED –
December 5, NOT in January, 2010!!! (see p. 3)**

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IMPORTANT DUES REMINDER! M.E.S. dues are payable on a calendar-year basis. If you haven't already done so, please renew now for 2010! Treasurer Dana Michaud's name and mailing address are at the bottom of the back page for your convenience. Dues are \$10 per year, and may be paid up to two years in advance. If the year on your mailing label is "2009", please contact Dana to renew for 2010 or correct the record.

Rare Cobblestone Tiger Beetle Discovered in Maine

by Jonathan Mays and Mark Ward

adapted from *Maine Fish and Wildlife magazine*, Fall 2009

Tiger beetles are handsome, active insects that make their living running down smaller insect prey on the ground. These terrestrial beetles move so fast that they outrun their eyesight and often have to pause to refocus – a behavior that aids in quick identification of this group in the field. Though many are dark-colored and camouflage nicely with their preferred sandy or mud habitat, some species, such as the metallic emerald-green Six-spotted Tiger Beetle (*Cicindela sexguttata*), can be quite striking in appearance.



Cicindela sexguttata F.

Maine is home to 13 species of tiger beetles, two of which are considered of state “Special Concern” (*Cicindela ancocisconensis* and *C. marginata*) due to their limited range and specialized habitat requirements. In 2009, the Maine Department of Inland Fisheries and Wildlife (MDIFW), as part of an ongoing eco-regional survey in the Central and Western Mountains, conducted surveys for one of these Special Concern species – the White Mountain Tiger Beetle (*Cicindela ancocisconensis*).



Cicindela ancocisconensis Harris

This beetle was only previously known from three localities in the Western Mountains – all un-dammed rivers bordered by flood-scoured cobble and sand spits and partial tree canopy shading. These surveys were successful in adding several new

sites and a few new watershed records for this beetle. In addition, our knowledge of flight time and habitat use for the White Mountain Tiger Beetle has been furthered by these efforts.

An unexpected bonus from our surveys was the recent discovery of a new tiger beetle in Maine – the Cobblestone Tiger Beetle (*Cicindela marginipennis*).



Cicindela marginipennis Dejean

Historically the Cobblestone Tiger Beetle was likely found throughout the Northeast, but due to habitat loss this species is currently limited to a few remaining free-flowing rivers and ranked critically endangered (by NatureServe) in New Hampshire, New Jersey, New York, Pennsylvania, and Vermont. In Canada, this beetle is known from only a few sites in New Brunswick where it is listed as Endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). The newly discovered Maine population fills a critical distribution gap and offers additional hope for this species' recovery.

As the name implies, the Cobblestone Tiger Beetle prefers cobble bars on vegetated islands in medium to large rivers. Like the White Mountain Tiger Beetle, these rivers need to be un-dammed to allow natural, seasonal scouring of the cobble beaches, but not prolonged flooding. At present, this beetle is only known from a single river in western Maine and though a likely candidate for state Endangered/Threatened listing, additional surveys are needed to accurately assess the species true distribution and status.

Eco-regional surveys in Maine have been ongoing since 1997 and have consisted of a partnership between the Maine Natural Areas Program and MDIFW. Funded largely by the Maine Outdoor Heritage Fund, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service (State Wildlife Grants), and The Nature Conservancy, these systematic, statewide surveys have sought to target rare species of plants, animals, and natural communities and broaden our understanding of the conservation needs of the state's biodiversity. The discovery of the Cobblestone Tiger Beetle is one of many examples illustrating the importance of these surveys and the exciting discoveries still awaiting us in our diverse and ecologically complex state.

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Like to see *Cicindela marginipennis* in vibrant, living color?

Get a 2010 M.E.S. calendar! Order form on p. 11!

Winter Workshop 2009/10 –
Saturday, December 5th, 2009

The MES Winter Workshop will be held in December this year so that our stellar presenter, Dr. Don Chandler from the University of New Hampshire, can lead the workshop. This year we will hold the workshop in the Maine Department of Agriculture Deering Building, Room 233, on the old AMHI (now Eastside) Campus; directions may be found below. The workshop will run from 9:30 a.m. to 3:00 p.m. on Saturday, December 5, 2009.

This year the workshop will cover the order Hymenoptera to get us revved up and ready for the Summer Blitz (although you can attend either or both events, no prerequisites for either). The order Hymenoptera includes the sawflies, wasps, bees, and ants and is one of the largest orders of insects. The workshop will follow the format used in the past: there will be pictures, information and representative specimens for the different families plus simple keys and specimens so you can try identifying insects. There are some microscopes available but if you have one you can bring, please do so.

There is a \$15 fee to cover expenses and pre-registration is required by November 27th. Please bring your \$15 with you to the workshop so I do not have to deal with reimbursing money if it is cancelled. There is a limit of 24 people, and we always fill these workshops to capacity, so please sign up early. Please remember to bring a bag lunch.

To register: send your name, address, phone number and email address to:

Charlene Donahue, Insect & Disease Laboratory, 168 State House Station, Augusta, ME 04333 or (207) 287-3244 or charlene.donahue@maine.gov. If weather is threatening on the day of the workshop, contact Charlene at 549-7241. Also, if you cannot make it for some reason, please call, so that if there is a waiting list others could attend.

Directions: Get to Route 9 in Augusta on the east side of the Kennebec River. The Eastside Campus is south of the Cony traffic circle. Turn at the traffic light in front of the brick buildings. Take your first right onto Blossom Lane. Park anywhere convenient to the Deering Building at 90 Blossom Lane. Enter the building from the north end. Either someone will let you in, or you can call the number on the phone provided and security will buzz you into the building. Go up one flight, turn left, and room 233 is at the far south end of the building.

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Minor Order BioBlitz 2009 Yields Over 100 Species, Wily Escapes and Pleasant Surprises
by Don Chandler

On the beautiful weekend of August 7-10, a total of 46 people participated in the 7th annual BioBlitz held at Acadia National Park's Schoodic Education and Research Center. The focus for 2009 was the minor insect orders.

Both professional and amateur entomologists spent 1,308 hours searching for and collecting insects in these 16 orders that have relatively few species in Maine, or are for the most part poorly known. Among the participants, members represented a widespread array of institutions: the Maine Forest Service, the New Hampshire Department of Agriculture, the University of

Maine, the University of New Hampshire, the University of Southern Maine, the Illinois State University, the University of North Alabama, Texas A&M University, Colby College, the Carnegie Museum of Natural History, and of course the M.E.S. In addition, a contributor from the University of Tennessee has agreed to identify the Collembola species not identified at the BioBlitz.



The 2009 Minor Order Blitz drew a dedicated crowd, including Karen "Mothy" Hopkins, whose face got lost in the sun!

Ed Mockford, a specialist on Psocoptera who lives in Illinois, was in charge of collecting and providing identifications for that group. It was a fortunate participation, as he is the only specialist for this group in North America. John Weaver provided identifications of the Trichoptera, and Don Chandler treated the rest, excluding the Collembola which will be treated by Ernie Bernard.

An estimated 98 species were identified or placed as morphospecies over the weekend. The tally is not yet final, with 76 species now identified from all the orders except the Collembola. There were an estimated 40 species of Collembola taken, but this number is certain to change, but in which direction we do not know. The "preliminary" final count is thus an estimated 116 species, awaiting the Collembola determinations for the "final" final count.

The number of species taken by order was:

Diplura	1
Archaeognatha	1
Collembola	est. 40
Odonata (a non-target group, but collected anyway)	7
Orthoptera	8
Dermaptera	1
Plecoptera	1
Dictyoptera (Mantodea, Isoptera, Blattodea)	1
Thysanoptera	5
Psocoptera	31
Neuroptera	5
Trichoptera	14
Mecoptera	1

There were several target orders in which species were not taken: Thysanura, represented by only 2 species in Maine and which are found only in heated buildings; Ephemeroptera, none collected during this BioBlitz (although Don Chandler, from the University of New Hampshire, collected the larvae of one *Baetis* during a previous Acadia BioBlitz that was held earlier in

(continued on next page)

Minor Order BioBlitz Report (cont.)

the summer); Phasmida, a group linked to oak trees, of which none or few exist in the Schoodic section of Acadia National Park; and Strepsiptera - an uncommon parasite of a stinging wasp (the umbrella wasp *Polistes fuscatus*) that was itself in very low numbers during this year's BioBlitz.

There were success stories and sad (then happy) stories. The 31 species of Psocoptera taken was an outstanding result, with the northern extension of ranges for a few species being a pleasant surprise to Ed Mockford. The discovery of a member of the Diplura (*Metriocampa* sp.) beneath a stone, by Frank Drummond and Ellie Groden, was exciting, as this poorly known and collected group is usually never sought for nor noticed by entomologists.

The only cricket taken was the bog cricket, *Neonemobius palustris*, was taken at both bogs in the Schoodic section of the park using yellow pan traps. The only Dictyopteran collected was an introduced forest cockroach, *Ectobius lapponicus*, that was very common. The jumping bristletail, *Petrobius brevistylus*, was a species subjected to an intense search, as it is known to be restricted to the bedrock shores of the coast of NE North America. Success in the field by Brandon Woo was followed by escape in the lab, as it demonstrated why it is called a "jumping" bristletail as soon as the top was taken off of the container. The day was saved by Serena Gross, who collected two others near the end of the blitz, subsequently photographed and now accessible online at

<http://bugguide.net/node/view/320256>

To see some of the photos from the Blitz, go to the Acadia N.P. web site, at:

<http://www.nps.gov/acad/naturescience/minororderblitz.htm>

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Annual Meeting Report

A surprisingly small cadre of 14 M.E.S. members turned out for the Annual Meeting on September 12th, despite – or perhaps because of – the wonderful weather. Multiple items on the agenda received attention, people took advantage of collecting opportunities in Clinton, and of course, a grand banquet was enjoyed by all.

The first item on the agenda was the election of officers. Since no current officer had expressed a desire to step down, and no one had indicated a desire to seek a position as a new officer, it was moved, second, and voted unanimously that all current officers should be re-elected for another term in 2010.

A report on our economic status showed that the M.E.S. continues to be on sound financial footing, with funds on hand to attend to anticipated expenses. The Scholarship Fund is also increasing in strength, with several hundred dollars currently on hand. Additional funds were raised for the scholarship fund at the meeting, through sales of books donated by Dick Dearborn.

The Winter Workshop will be in December of *this* year, rather than next January (as noted on p. 3), and additional field days were scheduled for May (Limerick, in York County), June (Hope, in Knox County) and July (Rangeley Lakes, in Oxford County). The BioBlitz at Acadia will focus on Hymenoptera and will run July 30th – August 2nd. Additional information on these will be posted on the M.E.S. web site as plans are finalized. A special entomological tour will be held at Maine Art Glass in Lisbon Falls on January 23rd, 2010 (see p. 12).

Emily's Secret

by Fred Gralenski

(this item first appeared in the October 23 issue of The Quoddy Tides)

Earwigs are not talked about in genteel company. Earwigs are associated with garbage and trash, and because of their ugly, dark countenance and menacing pincers they are feared and despised. An ancient myth was that earwigs would sneak into a person's ear, bore into the brain and set up housekeeping.

In modern times if you google 'earwig' you will find a lot of web sites of exterminators and pest management companies willing to sell you the latest chemical to eradicate these dastardly earwigs, but in among these are some sites with a little scientific bent that have conflicting information about earwigs. I dug into a lot of these and much other literature and even acquired an earwig, and named her 'Emily', and tried to find out more. Even though Emily's secrets may not be as flashy as Victoria's, I think Emily is pretty neat.

Here in the Quoddy region we probably have three species of earwigs: the European, *Forficula auricularia*; the Spinetailed, *Doru aculeata*; and the Seaside, *Anisolabis maritima*. Of these the rarest is the Spinetailed, which is the only native earwig in the group and is found primarily in swamps; the largest is the Seaside, which may grow over an inch long and is wingless; and the most common is the European.



Emily

Emily is a female European earwig, and I can tell the gender by her relatively straight pincers (cerci). Guy earwigs have curved pincers. Her ancestors were first recorded in the state of Washington in 1907, and probably were brought here to the New World in some shipping crates or something associated with agricultural products.

Emily probably started her life in Perry, where I got her. Her mother, after hibernating, laid about 30 eggs in a nest a few inches down in the dirt in April or May of this year, and carefully watched over the eggs, keeping them clean of any infectious fungi and protecting them from all predators.

Emily and her siblings hatched in about a month, depending on the temperature, and her mother continued to look after them. This type of maternal care is very rare in insects. Little by little the young earwigs foraged farther from the nest until finally they were on their own, and Emily's mom finished her programmed lifespan.

Earwigs can eat almost any type of plant, from pollen to lichens to rotten fruit, but they are also carnivorous and will eat things like aphids, fleas, ants and chinch bugs, but not ear wax.

(cont. on next page)

Emily's Secret (cont.)

By August, Emily was fully grown, possibly mated in September and, according to the literature, should have started thinking about hibernating before October and following her mother's footsteps for a new generation.

Even though she has wings, Emily does all of her long-distant traveling by hitching a ride on something. She can fly, but not very well, and needs to take off from a high place. The mechanics of an earwig's flight procedure is pretty amazing. Emily would have to bend her cerci back and unfold her very fragile rear wings and actually lock them in place. Each fold on her wings (and there are upwards of 40 folds on each wing) is spring-loaded with an elastic material called resilin, and the unfolded wing is sort of stable so that she can fly. After her flight there is a little 'flick' and the wings fold up and hide under their little covers.

Just a minute! Am I supposed to believe that this teeny bug with pincers on her butt can use these to unfold something on her back about seven times more complicated than and one ten-thousandth the size of the average road map? And after this is spread out the insect can use it for flight? And this miniature, complicated road map then magically folds up and stows away with no excess wrinkles, etc, controlled by no nerves, hooks or latches, with a 'flick'? What is this 'flick'?

Aw, come on Emily, don't be shy. Tell me how you do this stuff. Whisper what really happens in my ear... No! Wait! Emily! **EMILY!!!**

A Note on Maine Earwigs

Neither *Anisolabis maritima* nor *Doru aculeata* have been reported from eastern Maine – so any records of their being found DownEast would be highly significant and should be reported to the Maine Forest Service entomology lab in Augusta, with at least one pinned, properly labeled and identified specimen for their collections. A photograph of *Anisolabis maritima* adorns April in this year's M.E.S. calendar.

As far as is currently known, the Maine fauna of earwigs consists of five species in three families, all of which are introductions "from away": *Forficula auricularia* (as Emily was properly identified in the preceding piece); the Seaside Earwig, *Anisolabis maritima*; the Little Earwig, *Labia minor*; and two that are commonly associated with commercial poultry production: the Brown Earwig, *Matava arachidis*, and the ring-legged or banded earwig, *Euborellia annulipes*.

The February, 2004, issue of The Maine Entomologist carried a "Bug Mug Shot" article featuring the Seaside or Maritime Earwig, with notes on the other known Maine species.

– B.N.

And A Piece of Earwig Trivia for You!

"Male animals in several groups have multiple intromittent organs that outnumber the corresponding female gonopore. In Dermaptera (earwigs), males of the family Anisolabididae have paired, elongated male intromittent organs (virgae), while females have a single sperm-storage organ (spermatheca). Several authors have assumed that one of the paired virgae is non-functional, because it points in the "wrong" direction. We investigated the mating success of handicapped males of *Euborellia plebeja* in which one of their paired virgae was removed experimentally. These handicapped males succeeded in

inseminating a mate. Males with genital damage are found in the field, suggesting that the "spare" functions under natural conditions."

- from the abstract of Kamimura, Y., and Y. Matsuo, 2001. A "spare" compensates for the risk of destruction of the elongated penis of earwigs (Insecta: Dermaptera). Naturwissenschaften, v. 88, p. 468–471

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Vespinae (Hymenoptera; Vespidae) of Maine (Hornets, whitejackets and yellowjackets)

by Dick Dearborn

Over the years I have been fascinated with yellowjackets and their habits. A mild fear of their "business end" probably started me off. At first I didn't have to look for them, they simply found me, especially after I had eaten an apple! In 2003, I summarized the 15 species of Vespinae (*Vespa*, *Dolichovespula* and *Vespula*) of Maine as I knew them at that point (*The Maine Entomologist* 7(3) p. 5 ; 2003). References by Akre and others (1981) and Miller (1961) provided much of what I knew. Since then a better understanding of the group has revealed some changes that I felt should be clarified as we proceed to focus on Hymenoptera in 2010, leading up to the Schoodic Blitz. One current reference which I found useful in this update can be found on the internet (Buck and others, 2008).

In Maine, the six species in the genera *Vespa* and *Dolichovespula* are relatively easy to identify. It is the nine species of *Vespula* that have been more problematic. While I have tended to rely heavily on abdominal color patterns I have found this somewhat confusing especially when working with single specimens. Such color patterns can vary not only between queens, males and workers but between individual workers of the same species. And hybrids undoubtedly exist. To minimize the influence of variation it is best to depend on series of six or more individuals from a single source and if possible relate specimens to nesting and/or feeding habits. This might help too especially in the identification of the two species which are obligate parasites of other species.

As you proceed to add further records be sure to collect voucher series of six or more if possible. If specimens are handled with care and respect, you shouldn't get stung - but be careful. Check the following references. This is a small group of species but they are beautiful under the microscope from any angle.

Akre, R. D., A. Greene, J. F. MacDonald, and P. J. Landolt, 1981. The Yellowjackets of America North of Mexico. USDA Agriculture Handbook No. 552; 102 pp.

Miller, Charles D., 1961. Taxonomy and Distribution of Nearctic *Vespula*, Canadian Entomologist, Supplement 22; 52 pp.

Buck, Mattias, Stephen A. Marshall, and David K. B. Cheung, 2008. Identification Atlas of the Vespidae (Hymenoptera, Aculeata) of the northeastern Nearctic region. Canadian Journal of Arthropod Identification No. 5: 492 pp. (pdf version). Available online at:

http://www.biology.ualberta.ca/bsc/ejournal/bmc_05/bmc_05.html

Vespa crabro L. Giant or European Hornet. Introduced; the only true hornet in North America; predacious; a forest species which usually nests in tree cavities or buildings; night active at light. Two Maine records, in York County.

(cont. on next page)



The brown and yellow introduced European *Vespa crabro* is the only true hornet in Maine, with two records in York County. (from: <http://www.naturephoto-cz.eu/frelon-pic-4229.html>)

Dolichovespula spp. Aerial or rarely ground nesting; all species are predacious.



Dolichovespula maculata is much more attractive from this end than the other!

(image from <http://www.free-yellowjacket-removal.com>)

- D. albida* (Sladen) Now norwegica (Fab.); An arctic whitejacket, northern mountains; rare.
- D. arctica* (Rohwer) Now adulterina (Buys.). A whitejacket; obligate social parasite of *D. arenaria*.
- D. arenaria* (Fab.) Aerial yellowjacket; common eaves-nesting species.
- D. maculata* (L.) Bald-faced Hornet; a whitejacket; not a true hornet.
- D. norvegicoides* (Sladen) A rather rare yellowjacket.

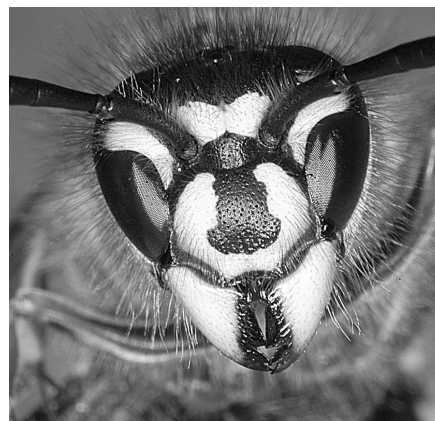
Vespula spp. Usually nest in the ground, tree cavities or walls but rarely exposed aerial nests.

- V. acadica* (Sladen) Forest yellowjacket; northern; not common in Maine.
- V. austriaca* (Panzer) Obligate social parasite of *V. acadica*; rare.
- V. consobrina* (Sauss.) Blackjacket; has reduced white markings; common and aggressive
- V. flavopilosa* Jacobson Downy yellowjacket; has tan nests; southern; common.
- V. germanica* (Fab.) German yellowjacket; introduced and spreading rapidly; aggressive.
- V. intermedia* (Buys.) Now rufa (L.); northern mountains; no Maine records.

V. maculifrons (Buys.) Eastern yellowjacket; common and aggressive.

V. vidua (Sauss.) A yellowjacket; southern and rare.

V. vulgaris (L.) Common yellowjacket; aggressive.



The face of a queen *Vespula vulgaris* shows striking structural similarities to that of *Dolichovespula*, but the coloration pattern is quite distinctive.

(image from http://bio.kuleuven.be/ento/photo_gallery.htm)

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Spineless Wonders: Invertebrates as Inspiration by Charlene Donahue

Need a break this fall? Take some time to visit the Atrium Art Gallery in Lewiston and see the exhibit "Spineless Wonders: Invertebrates as Inspiration." I was privileged to attend the opening of this delightful show on September 11th, the evening before the MES Annual Meeting.

The exhibit includes many forms of art using insects as subjects, as well as sea creatures and other invertebrates. The breadth of art forms that the show covers is amazing: large sculptures, tiny insects as art, photos, paintings, video, poetry and more. I had read about Joseph Sheer's huge photographs of moths and was overwhelmed by their detail and size. I would love a metal sculpture of an insect in my backyard, like the praying mantis in the show. The dust mites high on the wall in the corner and the delicate tea set with insect motifs were also favorites.

This free exhibit runs through December 18th at the Atrium Art Gallery, University of Southern Maine Lewiston - Auburn College, 51 Westminster St., Lewiston, ME. Call 753-6500 for hours, or go to the following web site:

usm.maine.edu/lac/art/spineless09/

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Lecture Scheduled on Maine's Rare and Endangered Invertebrates

Maine's Rare & Endangered Invertebrates will be the title of a talk presented on December 7th by Phillip deMaynadier, Wildlife Biologist with the Maine Department of Inland Fisheries & Wildlife, at the University of Southern Maine – Lewiston-Auburn campus.

The presentation will be preceded by a reception from 6-7 p.m., so visitors may enjoy the "Spineless Wonders" exhibit currently on display in the Art Gallery at USM-LA (see story above). The discussion will begin at 7:00 p.m. in the Function

(continued on next page)

Endangered Invertebrate Lecture (cont.)

room. The USM-LA is located at 51 Westminster St. in Lewiston, minutes off Maine Turnpike exit 80. Both the reception and event are free and open to the public.

The event is a collaborative effort between the Stanton Bird Club and USM-LA. Please feel free to contact Linda Seamans (address below) or Robyn Holman (USM Director of Exhibitions, holman@maine.edu) if you have any questions or concerns.

Linda Seamans
Stanton Bird Club
Chair, Public Relations Committee
Phone (207) 240-1380
E-mail: StantonPR@Yahoo.com

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**Getting to know the crowned slug caterpillar,
Isa textula
by Allison Kanoti**

The slug caterpillars (Limacodidae) are an eye-catching group—and potentially attention grabbing should you back into one. They have stinging hairs that can raise blisters. Wagner (2005) indicated that the sting is about equal to that of stinging nettle. I will not volunteer to find out, having once encountered the urticating hairs of an io moth caterpillar. According to Wagner (2005) there are about 30 species of slug caterpillars in eastern North America. The Maine Forest Service has eight species from Maine recorded in its collection (Table 1).

Species	Common Name	Location(s)
<i>Apoda biguttata</i>	shagreened slug	Waterboro
<i>Euclea delphinii</i>	spiny oak slug moth	Hollis
<i>Lithacodes fasciola</i>	yellow-shouldered slug	Bar Harbor, Crawford, Waterboro
<i>Packardia geminata</i>	(none)	Waterboro
<i>Phobetron pithecium</i>	monkey slug, hag moth	Benton, Hollis
<i>Tortricidia flexuosa</i>	abbreviated button slug	Lincoln, T11 R8 WELS
<i>Tortricidia pallida</i>	red-crossed button slug	Waterboro
<i>Tortricidia testacea</i>	early button slug	Allagash, Washington, T17 R12 WELS

Table 1. Limacodidae (slug caterpillars) recorded from Maine in the Maine Forest Service insect collection.

The crowned slug, which had been for me a creature of the color-glossy pages, has popped into my life twice in the past month. The first was in a report from a Whitefield resident who noticed the strange-looking creature beneath her Norway maple tree. She sent a photo in for identification, which revealed the tell-tale red-rimmed anterior margin, and spined lobes (Wagner 2005). I checked the collection here at the bug lab for records of this moth, but did not find any.

The second surfacing was on Sunday, November 1st. My family took advantage of the beautiful fall weather to hike in the Kennebec Highlands, in the Belgrade Lakes region. We chose to walk the Round Top Mountain Trail—it seemed a good hike for my daughter to try her own two-year-old legs on a hike, or alternately, for one of her parents to carry her. The advantage of having a two-year-old on foot is that they notice goings on close to the ground. It wasn't long before Lida had pointed out a

nymphal assassin bug, but also not long before she tired of self-powered locomotion. She went into the carrier, and I soon discovered that oak leaves over rocks are a slippery combination, especially with 30 extra pounds.

I was paying more attention to my feet than usual, and a bright green dot, similar in color to the *Zelus* nymph that my daughter had pointed out earlier caught my eye. It was about the size of the tip of my pinky finger, and oval. Closer inspection revealed that it was the same species of slug caterpillar I had seen in October. Its brilliant green hue stood out against the dull copper brown of the fallen oak leaves (Figure 1).



Figure 1. Crowned slug (*Isa textula*) on the lobe of a northern red oak (*Quercus rubra*) leaf (Photo: Keith Kanoti).

The crowned slug commonly feeds on oaks, maples and cherries (Wagner 2005; Hyche 1998). Their heads are hidden by the forward projecting thorax. As with other slug caterpillars, they glide over substrates (much like a slug) due to their reduced thoracic legs and sucker-like prolegs (Hyche 1998). They really are odd-looking, and unless you are familiar with them, or make a habit of thumbing through field guides of Lepidoptera, “caterpillar” is not the first classification that jumps to mind.

Perhaps *Isa textula* are common in Maine—it would seem from the past month that they are not rare in the lower Kennebec Valley. The adults, although notably hairy and stocky, could be passed over as dull-looking moths. They are nearly uniformly brown, with a wingspan of less than an inch (Covell 2005; Bugguide). Should you come across a spare *Isa textula* moth in your collecting, we would welcome it as an addition to the M.F.S. collection. In the meantime, we'll be asking people to keep them in mind when scouring light trap catches in the lower half of the state, as time permits.

References:

Bugguide. <http://bugguide.net/node/view/25201>. Accessed November 2, 2009.

Covell, C. V., Jr. 2005. Field Guide to Moths of Eastern North America. Virginia Museum of Natural History, Martinsville, VA.; 496 pp.

Hyche, L. L. 1998. Stinging Caterpillars: A Guide to Recognition of Species Found on Alabama Trees. <http://www.ag.auburn.edu/aaes/communications/bulletins/bull633.pdf>. Accessed November 2, 2009.

Wagner, D.L. 2005. Caterpillars of Eastern North America: A guide to identification and natural history. Princeton University Press. Princeton, N.J. : 512 pp.

Entomological Foundation Requests Ideas for Science Projects

The Entomological Foundation requests your help in exciting young people about science through insects. The Foundation is looking for ideas for science projects to add to its new web site. Authorship credit will be cited for submitted science projects published on the Foundation's web site. The target audiences for the projects are students, teachers, and families.

Students of elementary, middle, and high schools, and their parents are constantly searching for exciting ideas for science projects. In response to this growing need, the Foundation will create a web site containing a collection of science projects, based on grade level, the majority of which will involve insects or be built around an entomological question. The Foundation's goal is to develop an interest and understanding of scientific laws and principles that underlay the natural world.

Anything that relates to insects is welcome.

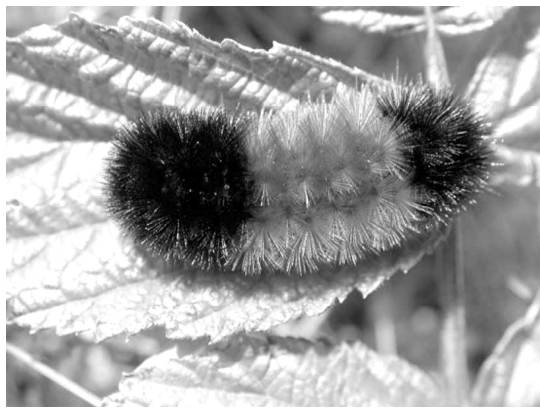
Please submit your project to April Gower at the Foundation at april@entfdn.org and please indicate if you would be willing to be identified as a contact for further questions by the users of the site. Our plans are to identify and include on the website a "mentor" or resource for each listed project. To see an example of a project, provided by Dr. Nan-Yao Su, please go to: <http://www.entfdn.org/ScienceFairExperiments.htm>. The project contains a question that catches a student's imagination and contains an experiment that is very simple and can be done by using common household items.

If you have any questions, please contact April Gower at the Foundation, 301-459-9083 or april@entfdn.org.

* * * * *

? Normal Winter Weather Coming ? 2009/2010 Woolly Bear Winter Weather Forecast by Dick Dearborn

This has been an unusual season for insect populations; up in a few species but more often down. Adult moth catches of the banded woolly bear (*Pyrrharctia isabella*) were up slightly at my farm in Mt. Vernon, so increased larval numbers were anticipated. This was not to be. Reports from across the state indicated some woolly bear "hot spots," but overall numbers were spotty, late (up to two weeks) and down.



This woolly bear showed four red segments before going into the overwintering pupal stage.

As I needed woolly bears for Bug Maine-ia and my winter weather forecast, I worried about finding enough of my woolly friends. Just in the "nick of time" my son John and I found four in Bradley, and his wife Diana found another at home. "Phew!" And all were robust and ready to go. Their red-band average was 4.30, indicating a slightly harsher than normal winter, 4.33 being normal. Woolly bears seen after mid-September substantiate this prediction.

Using the red-band width as an indicator of winter severity is based on folklore, and as would be expected is subject to a good deal of criticism. I was enlisted to conduct the first annual Maine survey in 1997, and enjoyed it so much that I have continued to do so. No matter what anyone says, it's been fun. And following my weather surveys, I have had woolly bears to share with many school children at Bug Maine-ia.

This year I pressed into service all five of my woolly little friends to entertain over 1,200 school children and teachers. All caterpillars survived, but were exhausted after traveling over 2,000 hands. However, after feeding them and allowing them to recuperate for several days, I set them free. I hope to see more in 2010.

And by the way, I still have woolly bear book marks. They are free if you send me a self-addressed, stamped legal-sized envelope. My address is Dick Dearborn, 115 Spring Hill Road, Mt. Vernon, ME 04352.

* * * * *

Bug Maine-ia Wows Them Again

On September 16th, 2009 Bug Maine-ia, one of the most popular events at the Maine State Museum in Augusta, transformed the normally quiet history and natural science museum to an entomological wonderland. Over 1200 visitors, mostly school children, surrounded 15 presenters, some "ooh"ing and "aah"ing, while others were scrunching up their faces in disgust, and still others were wide-eyed in wonder. This multi-disciplinary event shows a broad picture of the wonders of insects and their relatives and the ways they affect our lives; from pollination to food, disease, art, and just adding to the pleasures of living on earth.



A youthful entomologist-in-training enjoyed hands-on learning with giant wireworms (larvae of darkling beetles, family Tenebrionidae, genus *Eleodes*) at Bug Maine-ia.

This year's event featured exhibits on how insects can predict the severity of winter, what insects can tell us about water quality, and how good insects and bad insects affect the plants that we eat. There were also displays taking a look at how
(continued on next page)

other cultures view insects - some cultures see insects as added protein to their diet, others see beautiful beetles as components for a necklace. Students were invited to solve insect puzzles while they learned about Edith Patch's pioneering work and to try collecting insects from the museum grounds for identification by Maine Entomological Society volunteers.

Joanna Torow, Chief Educator at the Maine State Museum, described the event as "a unique and quite wonderful opportunity for students to interact with scientists and environmental educators, to ask the experts their most difficult bug questions, and participate in hands-on science. Bug Maine-ia truly transforms the museum with an energy that is felt throughout the building. Although this year's event had fewer visitors than the previous two record-breaking years, the smaller numbers, if 1206 can be called small, were very comfortable and allowed for more in-depth interaction between the presenters and visitors."

* * * * *

Bee Happy **By Linda Sevier**

My husband, Terry, our son, Jaden, and I have a log home that sits back quite a ways in the woods in central NY. We both grew up in the country and wanted to continue living in the country. Over the years, we have been blessed with sharing our home with; blackjackets, European (giant) hornets, carpenter bees, leaf-leggers (Western conifer seed bugs), paper wasps, various ants, lady beetles, and cluster flies, not to mention various other insects. We said we wanted to live in the country and it has welcomed us full force! My father (Richard Dearborn) never fails to remind me, "build a home that looks like a pile of logs and you're going to have insects moving in." Thanks Dad! The most memorable, so far, has been the colony of Honey Bees that took advantage of my husband's downfall of not always finishing things.

Over a year ago, Terry, Jaden and I were sitting in the front room, when we heard a loud humming sound, almost a roar. We got up and went to the kitchen in time to see a swarm of bees outside our kitchen window (Terry had not yet trimmed this window). This was around the beginning of September. For a few days we heard the hum of bees preparing for the winter ahead. Friends told us they moved in too late and they wouldn't survive the winter. We chose not to worry, even though other people told us the bees would be fine. We have been sharing our home with other insects for years, why stop now?

Well, apparently when honey bees have a good thing, they know it! They definitely had no problems surviving the winter (to our dismay). Twice this summer, Jaden and I witnessed a swarm leaving the nest! This was both intimidating as well as fascinating. Outside the house, we enjoyed watching them hard at work from dawn to dusk, never with any incidents. Inside the house was another story. After spending the summer dodging bees in the kitchen and dining room, being stung on occasions, and sucking up more bees than our vacuum could handle, we decided we really should do something about them. Unfortunately, we waited too long and we couldn't find anyone interested in taking the bees. We were told they wouldn't

survive the winter if they took them (funny, I've heard that before). Terry decided to take matters into his own hands.

He found a neat device (bee excluder) that his father had used in years past, that allowed the bees to come out of the hive but they were unable to go back in the same way. We also placed a bee hive with honey to entice them, outside the entrance, with hopes the queen would come out and they would all move into the new hive. Obviously we know nothing about honey bees! After a few days the "sheet" of bees on the side of the house continued to grow and what used to be friendly bees became angry bees. One night, armed with a skid steer and a Shop Vac, Terry decided to "clean up" around the entrance hole. After doing this about four nights in a row the numbers of bees seemed to decrease.

The hive was in a framed wall behind the kitchen cabinets. So one night, off came one cabinet (thankfully that was it). This time Terry was armed with a utility knife (to cut sheetrock) and, again, his trusty Shop Vac. As he slowly peeled away the sheetrock, he vacuumed up the bees, Jaden pointing out all the stray bees he may have missed. I know - what was he thinking?!! Well we had lived with these bees and the odor that went with them (who knew honey bees would stink?) long enough. We wanted the honey!! But after a few stings and a big sticky mess later - we are now bee-free and six quarts of honey richer!!

* * * * *

Online Resources for Those Interested in Native Bees

(information courtesy of Sam Droege,
USGS Patuxent Wildlife Research Center)

NOTE: Some of the lengthier URLs have been shortened using aliases created at the tinyurl web site (<http://tinyurl.com>), to facilitate entry and minimize potential errors. However, the links given here will deliver you to the correct site.

Excellent guide to using natives with lots of information about insects/pollinators

<http://bringingnaturehome.net/>

Excellent regional guide for the best native plants for pollinators: Delaware Native Plants for Native Bees (will download as a pdf file)

<http://tinyurl.com/yh4vdbn>

Farm Management for Native Bees (downloadable pdf file)

<http://tinyurl.com/yf8lnr5>

Species lists, identification guides, and maps for genera and species are available at the DiscoverLife web site for Apoidea:

<http://tinyurl.com/yg3d65o>

Theodore Mitchell's 1960-62 two-volume work on the bees of the Eastern United States is available as a series of pdf files at:

<http://insectmuseum.org/easternBees.php>

Handy Bee Manual - Information about collecting, processing, and managing information about bees (downloadable pdf):

<http://tinyurl.com/yz6v7mf>

Bee Identification and Monitoring - Listserv/Discussion Group - Good for the latest information - go to:

<http://tech.groups.yahoo.com/group/beemonitoring/>

A set of slideshows highlighting the identification of the genera of bees of Eastern North America and how to catch, process, and work with bee specimens is available at:

<http://www.slideshare.net> (search on "SDroege")

Status Report:

The University of Maine Insect Museum

by Ellie Groden

The University of Maine Insect Museum is currently housed on the 4th floor of Merrill Hall. This museum consists of 29 cabinets (18 full-size cabinets with 25 drawers/cabinet and 11 half-size cabinets with 12 drawers/cabinet) of collections developed by previous members of the University faculty and endowed to the University by private collectors. Curating the collections has been the responsibility of the University's insect taxonomist/systematist, most recently, Dr. Steve Woods.

With Dr. Woods' departure from the University and the unlikely replacement of his position any time in the near future, it is necessary to assure the continued maintenance of the collection so it does not become infested with dermestids and deteriorate, and is still assessable to those needing access to specimens.

On October 16, 2009, the following entomologists and UM School of Biology and Ecology (SBE) faculty met with Paula Work, Curator of Zoology Collections at the Maine State Museum, to discuss possible options for continued housing and maintenance of the UM Insect Museum.

Frank Drummond, Andrei Alyokhin, and Ellie Groden, *SBE Entomologists*

Chris Campbell, *Plant Systematist and Manager of the University Herbarium*

Jody Jellison, *SBE Director*

Charlene Donahue, *Maine Forest Service Entomologist, Manager of the MFS Insect Collection, and President of the Maine Entomological Society*

Richard Dearborn, *retired Maine Forest Service Entomologist and founder of the Maine Entomological Society*

Marge Dearborn, *member of the Maine Entomological Society*

Issues Identified:

- The insect museum represents an extremely valuable scientific, historic, and educational resource.
- Collections will deteriorate rapidly without some maintenance.
- Current lack of oversight and curating limits access to collections by interested scientists.
- Current facilities in Merrill Hall with poor temperature controls (uninsulated attic) are inadequate for maintaining quality of material and working environment of those accessing the collections.
- Current entomology faculty do not have the expertise and/or time to assume curating responsibilities.

Paula Work's suggestion:

- The best home for the University Insect Museum would be at the University of Maine in Orono (see * below).
- IF the University is unable to maintain the collection, however, the State Museum will take it on.
- Transportation of the collections to the State Museum would need to be paid for by the University. (Estimated costs at ca. \$3,000)
- There are planning grants (up to \$40,000) and infrastructure grants (up to \$400,000) available to fund assessment of collections and renovation of collections. Paula is willing to work with University of Maine to acquire funding for all natural history collections.

Christopher Campbell: "Each individual collection is of lower value than all of the University of Maine's natural history collections combined." Chris, working with Paula and others, is willing to spearhead efforts to acquire funding for feasibility planning for a University Natural History Museum and/or Repository for ALL of the University's collections. Both Paula and Chris emphasized that:

** Natural history collections are best located where they will receive the greatest long-term use, both as data and reference. At UMaine, natural history collections are important to UMaine's land-grant status and studies related to agriculture, forestry, and biodiversity. These collections also play a role in training graduate students and teaching undergraduates.*

Group's recommendation:

Continue to hold insect museum collections in Merrill Hall for one year in order for Chris and Paula to pursue funding for a planning grant regarding long-term housing and maintenance of ALL University of Maine natural history collections.

Short-term needs of the insect museum:

- Freezing of the insect museum collections is necessary to bring dermestid infestation under control and preserve the collections.
- Assessment of valuable components of the insect collections needs to be made. (What groups/specimens have appropriate documentation and are in good condition? Are there any voucher specimens or type specimens?)

Proposed Action:

1) Andrei Alyokhin will coordinate with the other entomologists to arrange for the UMaine entomology faculty and staff and the Maine Entomological Society members to set up a time to sort through the collections and assess the valuable components, and to identify what should be preserved and what can be disposed of.

2) A request has been made to the Dean of the College of Natural Sciences, Food, and Agriculture, for funds to set up a program for freezing the collection this winter.

* * * * *

Insect Samples Available

The University of Maine at Orono is planning to dispose of a collection of insect samples from different taxa including: Coleoptera, Diptera, Hymenoptera, Hemiptera and Arachnids. These were collected using a variety of trap methods including: emergence, intercept, pitfall, malaise etc. The collection spans the years from 1995 to 2002 and are stored in 70% ethyl alcohol. They were collected from different sites in western Maine primarily in forested areas. There is also a set from Martha's Vineyard.

There are also unsorted taxa available that are stored in 70% ethyl alcohol or propylene glycol.

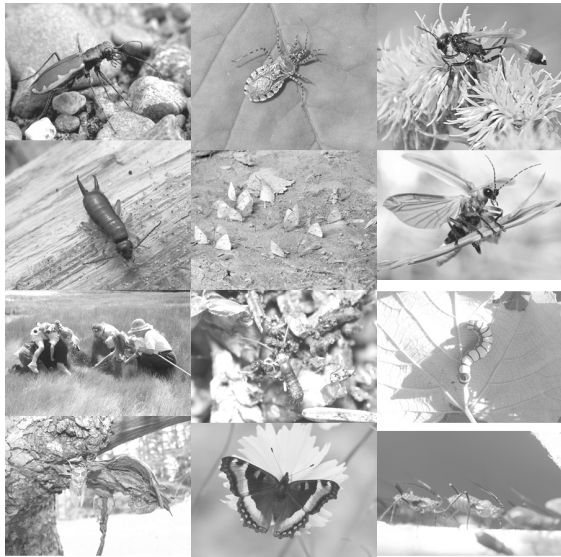
There is no funding available at this time for this work and any data or papers resulting from it would be the property of the processor. The Maine State Museum and Maine Forest Service are also interested in preserving the data that is in these samples. They are willing to assist by providing space and more time to process the samples.

Deadline: January 1, 2010

If you are interested in one or more taxa please contact Tamara Levitsky via e-mail at tamara.levitsky@umit.maine.edu

Phone: (207) 581-2679

2010 M.E.S. Calendars Are Ready!



The 2010 M.E.S. Calendars are ready to order, showing a host of species found in Maine, including a tiger beetle (*Cicindela marginipennis*, see story on p. 2) and true bug that are new additions to the known Maine fauna. The composite thumbnails above show the photos used for the various months, taken by 10 different photographers. This year's choices were very difficult, as a number of marvelous photos were submitted.

Calendars will be \$10 each if you pick them up, \$12 each if you want them mailed to you. They make great gifts for entomologically minded friends, and a dollar from each calendar sold goes into the M.E.S. Scholarship Fund.

You can find an order form for your copy (or copies!) at the bottom of this page. You should be able to cut this off and mail it in without losing anything from the newsletter, since only the mailing address part of p. 12 should be on the reverse side.

* * * * *

Dragonfly Society of America Schedules Maine Annual Meeting in June, 2010

The Dragonfly Society of America will be convening its annual meeting in Orono, Maine, on 24-27 June, 2010. Maine's rich Odonate fauna, documented through the Maine Dragonfly and Damselfly Survey, was touted as a major attraction, as some species reach their northern limits here, and others are at their southern known distribution limits. Six species of *Ophiogomphus* (Snaketails), eight or more species of *Somatochlora* (Striped Emeralds), numerous bluets, and many others of regional interest are to be found in our fauna.

The headquarters for the meeting will be the Best Western Black Bear Inn and Conference Center in Orono, where a block of rooms has been reserved at a special meeting rate of \$69.95 per night. When reserving a room, attendees should ask for the special Dragonfly Society of America rate.

A web site with additional information on the meeting has been established, and can be accessed at

<http://www.wingsenvironmental.com/dsa>

It's been estimated there may be as many as 7000 species of dragonflies extant in the world today. Many of these have small geographic ranges and are habitat specialists as larvae, making them important taxa for monitoring environmental change.

2010 MAINE ENTOMOLOGY CALENDAR Order Form

This twelve-month wall calendar features entomology photos from Maine in full color, all taken by M.E.S. members, along with information on each species shown. January and February show two new additions to the known fauna of the state. Dates for M.E.S. summer field events and Bug Maine-ia are also noted. These calendars should be available by mid-November, and they make great gifts for that buggy person in your life!

Name _____ Phone _____

Address _____ E-mail _____

City _____ State _____ Zip _____

To reserve your calendar, indicate your choice(s) below and mail your order along with payment (*checks* should be made out to **M.E.S.**) to:

Dick Dearborn; 115 Spring Hill Road; Mt. Vernon, ME 04352-3406

_____ Please **MAIL** me _____ calendars at \$12.00 each

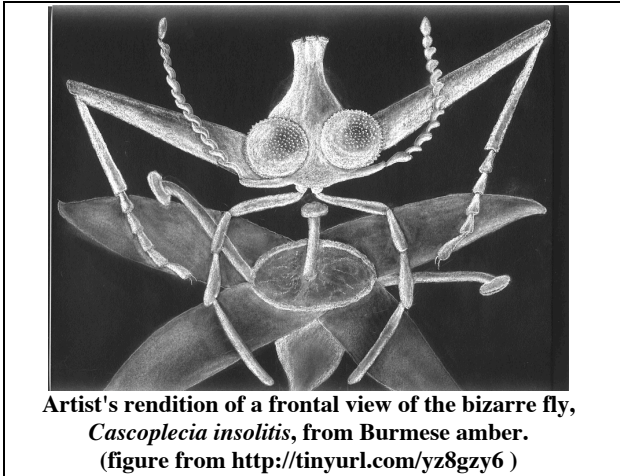
_____ I will **PICK UP** _____ calendars at \$10.00 each

For pick-up contact Dick Dearborn at (207) 293-2288 or via e-mail at modear@prexar.com

Pick-up points include Augusta, Bangor, Orono, Mt. Vernon and Waterville

New Bizarre Fossil Fly Described

A paper currently in press in the journal *Cretaceous Research*, written by George Poinar, Jr., of Oregon State University, has described a new family, genus and species of fossil fly from amber that dates to 97-110 million years ago. *Cascoplecia insolitis* was about 3.5 mm long and is believed to have been a pollen/nectar feeder on small flowers.



What makes this specimen so particularly unusual is that it has a horn on the top of the head, with three ocelli at the tip of the horn. No other insect has yet been described that has ocelli thus stalked at the end of a long supracranial protuberance. The specimen also has an unusual serrated antennal structure.

The fly has been placed in the new family Cascopleciidae, in the Bibionomorpha (the group that includes our March flies, in the family Bibionidae).

The specimen is the latest in a series of new discoveries being made by Dr. Poinar from amber quarried in Myanmar (formerly Burma) starting in 2001. Photos of the actual specimen from two perspectives, and the artist's rendition, may be seen at the Oregon State web site linked from

<http://tinyurl.com/yjvnqp7>

* * * * *

M. E. S. and ? *Maine Art Glass?* YES!

This tour on January 23rd will feature insects and arachnids in both live situations and in hundreds of stained glass exhibits. Jim Nutting has recently participated in Bug Maine-ia and has been featured in the October issue of *Downeast Magazine*. Some of his exhibits are currently on display at the State House in Augusta. You can also see some of Jim's work on "Facebook" through his email katenallie2@msn.com or in the Downeast article.

COMING M.E.S. EVENTS in 2010:

- | | |
|------------------|---|
| 23 January | Tour of Maine Art Glass, Lisbon Falls |
| 22 May | M. E. S. Field Day, Limerick (York Co.) |
| 19 June | M. E. S. Field Day, Hope (Knox Co.) |
| 10 July | M. E. S. Field Day, Rangeley (Oxford Co.) |
| 30 July – 2 Aug. | Schoodic BioBlitz, Acadia National Park (Hymenoptera) (Hancock Co.) |
| 11 September | Annual Meeting, Clinton (Kennebec Co.) |
| 15 September | Bug Maine-ia, Maine State Museum, Augusta |

(See <http://www.colby.edu/MES/> for more detailed information; stories on the Winter Workshop and Blitz elsewhere in this Newsletter.)



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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. 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.