

The Maine Entomologist

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

The Official Newsletter of the Maine Entomological Society

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President's Corner by Dick Dearborn

"A Turning Point"
August 2008

This has been a great season and I've had a chance to attend at least a portion of all events. The weather has cooperated for the most part and our collectors/observers have come up with some interesting records. Our membership is now fairly stable at 136 with some gains and some losses. New members have been very active participants and hopefully will pass their enthusiasm along to others. Enthusiasm for our upcoming Schoodic Blitz is running high as is Bug Maine-ia. Our newsletter and calendar are on track thanks to Bob Nelson. MES is doing well.

With this in mind I would like to see someone else step up to the plate at least for a while. I feel that this opens up MES to exciting new and fresh possibilities with enthusiasm running high. I therefore feel that now I can extend my resignation as president effective at the end of the 2008 calendar year. I debated with myself for some time as to how to make this announcement but feel that now members can be thinking about a possible replacement in anticipation for the Annual Meeting in September. And I feel comfortable with this choice.

Why now? I've served as president of MES now for twelve years and have had fun. I feel that no one should hold a position indefinitely and that rotation is good. There are a number of other things that I would like to do, especially with my family. I would like to travel some, in spite of high gas prices. Marj and I even bought a tent and used it on a recent trip through the south. While I don't intend to bail out entirely, I would like to have the chance to step back for a while and become a regular member. So I would like to take this opportunity to thank all of you for your support. It's been fun and I've learned a lot.

Take time to look through this newsletter. If you're going to the Blitz, take your copy with you. We went from wondering if we had enough for this issue to having a full issue, thanks to members. Have fun at the Blitz if you're going and please support your club, MES, at our Annual Meeting at the Nelson Homestead in Clinton on Saturday, September 13th.

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Wow! What a bargain!

We have 12 Maine Insect T-Shirts left in a variety of sizes. We would like to close out stock and go to a print-on-demand option. From the remaining stock, you can have any of the following sizes for **\$5.00 each**, as available. You may pick them up at our Annual Meeting in September **or** we will mail them for an extra \$2.50 (per shirt). If you are interested, contact Dick Dearborn at (207) 293-2288 or modear@prexar.com. This is the last of our original order and will be the last of our reserve stock, so order now if you see your size. This offer will end October 1st or when the shirts are gone. **Let us know soon!**

Long Sleeve-Natural-1 Small
Short Sleeve-White-2 X-Large
Short Sleeve-Natural-3 X-Large & 5 Small
Short Sleeve-Grey-1 Small

New Bug Find for Maine Charlene Donahue

Well, Bill Urquhart of the Maine Forest Service Insect & Disease Lab has done it again. As he sat at the microscope sorting through the myriads of insects caught in the 30 lindgren funnel traps set out across southern Maine he spied something that looked different. (After three summers of going through this material, you get used to what is normally in a trap catch and something new catches your eye.) Also Bill is getting fired up to go to the TRUE BUG BLITZ at Acadia National Park in on August 8-11, so he was on the lookout for interesting bugs as

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New Bug (cont.)

well as the target bark beetles and woodborers – and derodontid beetles and spiders and siricid wasps... the list gets longer every year.



Anyway, I digress. Bill brought the insect over to me and asked, "Have you ever seen anything like this before?" I took a look at this snazzy tan bug with dramatic black strips on its abdomen, antennae and, most strikingly, encircling its legs and admitted that I never had seen such a beautiful bug. A bit of research revealed that it is a Sycamore Assassin Bug, *Pselliopus cinctus* (Fab.). This may be the first record of its occurrence in Maine, specifically Sanford, Maine. It also occurs in New Hampshire and south to Texas.

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THANKS, Dick!

With Dick Dearborn's decision to step down as President at the end of this year, an era is coming to a close. Without Dick's hard work, leadership, and persistence (occasionally prodded by Sam Ristich!), the M.E.S. would not have come together on that cool, overcast day in August, 1997, at the Maine State Arboretum in Augusta. And right there with him all the way has been the largely unsung co-hero, Marj ... there at almost every event as well, flitting around like one of their favorite "pet" garden orioles, making sure everyone signed "the Book," encouraging youthful members, providing tasty homemade cakes and other goodies, and often serving as well as unofficial secretary to keep notes at our Annual Meetings.

Dick's knowledge of Maine entomology and the entomological community is encyclopedic, and has served us all well. I've frequently had questions for him on various taxa, and he's almost always had an immediate response - often with far more fascinating information than I was originally seeking but was very grateful to receive. On those few occasions when he hasn't had an immediate answer to my question, he's always been able to suggest several people who *would* have the knowledge to respond to my query.

As he noted in his remarks on the front page, our membership is now stable, and a healthy mix that extends from interested general naturalists through active amateur collectors to the highest levels of the professional ranks. Our membership dues have remained relatively low, so almost anyone can afford to become a member, and there are no additional charges for field days or other activities.

The Maine Entomological Society would not exist without Dick's love of entomology and commitment to maintaining a forum for discussion and sharing among all those who have a fascination for Maine's terrestrial arthropods, including the ticks and spiders that have come to be recognized as so important



Dick and Marj Dearborn walk up from Gale Flagg's gardens at the Fort Kent field day last month.

among the non-insect Arthropoda.

Though he's far from withdrawing entirely from the Society, Dick feels it appropriate to let "new blood" take over the reins of leadership. We should be mature enough as an organization to be able to sustain this change. And though Dick and Marj will undoubtedly be traveling more to spend time with grandchildren scattered about the country, it can be a certainty that they'll remain very active within M.E.S.

Thanks, Dick, for everything! It's been great, and may this second "retirement" be as relaxing as the first!

- Bob Nelson

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The Expanding Range of the Deer Tick in Maine by Chuck Lubelczyk

One of the most frequent comments our lab hears on the subject of ticks is: "I NEVER saw deer ticks a few years back. Why are we seeing them now?"

The question, really, is: Are people actually seeing ticks in areas where they are previously absent or are people (including physicians and veterinarians) just more aware of the issue of ticks and the diseases they carry? While I think you can answer "Yes" to both, I think the first question is an absolute certainty.

Our lab at the Maine Medical Center Research Institute has been involved in a long-term surveillance project with the Maine Center for Disease Control where physicians, veterinarians, and the general public can send in their ticks for free identification. Each tick that is submitted is recorded with a town of acquisition, which provides us with a map, based on

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Ticks (cont.)

minor civil divisions, of where ticks are being found.

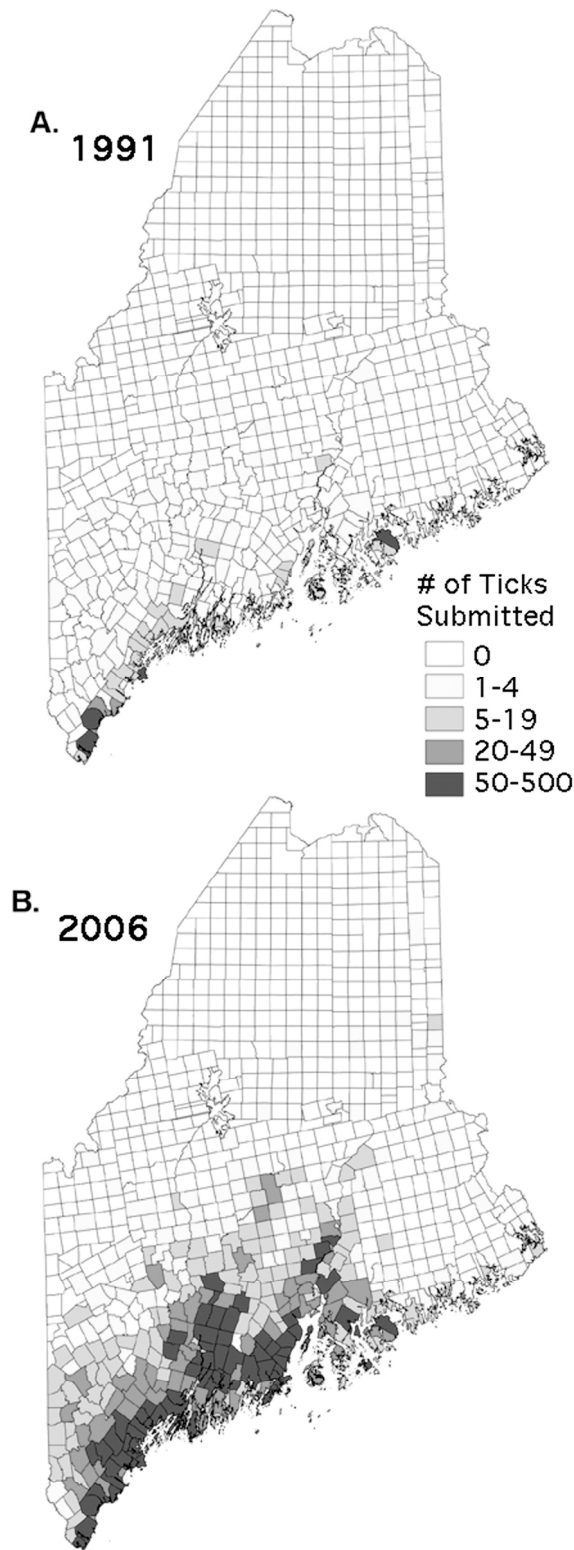


Figure 1: Distribution maps of submitted *Ixodes scapularis* from 1991 and 2006. Courtesy of MMCRI.

Since its inception in 1989, reliable distribution maps for the three most common tick species (*Ixodes scapularis*, *I.*

cookei, and *Dermacentor variabilis*) have been generated. For *I. scapularis* (the black-legged or deer tick), the vector of Lyme disease, the range expansion in Maine is dramatic. Figure 1 (left) shows the difference in the range of this tick based on maps generated from 1991 and 2006.

Each year, people submit these ticks from new towns, with slow but steady increases following the coast and into interior Maine. The latest maps depict the tick recently appearing in Somerset, Piscataquis, and Aroostook Counties, with firm establishment in southern and mid-coast regions of Maine. The results of eighteen years of this surveillance were recently published (Rand, P. W., E. H. Lacombe, R. Dearborn, et al., Passive Surveillance in Maine, an Area Emergent for Tick-Borne Disease. *J. Med. Entomol.* 44(6):1118-1129, 2007) with reprints of this paper available upon request.

As to the second point, why are more deer ticks being seen now, the answer is a little more complex (like anything in ecology). One reason is that ticks are expanding in southern parts of the northeast, and migratory birds, coming into Maine in the spring, are bringing greater numbers of ticks with them.

The second reason involves land use change. A century ago, much of the region was still agricultural, with fewer and smaller forests, critical habitat for the reproductive-stage host of the tick, white-tailed deer. With the removal of predators such as mountain lions and wolves and a change of landscape from farms to forest, deer populations have expanded to record levels in the northeastern United States. And slowly, but surely, the abundance of the deer tick increased as well. Add to this, a sharp decrease in the number of hunters and a curb on hunting in areas of residential development, deer have increased dramatically around homes, increasing the potential of encountering ticks in the peri-domestic environment.

Meanwhile the increase of forests is beneficial to the deer tick as well as its hosts, providing cover along with greater host abundance. While providing food and cover for adult deer ticks in the fall, deciduous forests also provide food and cover for the hosts of the immature stages of the tick, primarily rodents and migratory songbirds during the spring and summer.

The final piece is that many areas of the state seeing increased encounters with ticks and incidence of tick-borne diseases are suburban or exurban, with people building homes into areas where ticks are already present. A development composed of 1-acre lots with a large greenbelt seems to be a great place to encounter deer ticks.

The appearance of ticks does not immediately mean the appearance of disease, however. Monitoring on emergent sites, such as Swan's island in Hancock County, have shown that ticks might appear in an area but prevalence of infection might be minimal to non-existent. After a few years, however, as the ticks become established and their populations grow, infection may be introduced.

From a public health perspective, one should be aware of ticks and tick-borne disease in any region of the state. Certainly, there is the opportunity to pick one up in any of the Maine counties. But awareness of the potential for exposure is primary, and dressing appropriately in problem areas is the first line of defense. Light-colored long sleeves and pants, possibly treated with a repellent such as DEET or permethrin, are critical to keeping ticks away from the skin. Tick checks should also be

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Ticks (cont.)

implemented when coming in from the field. The earlier a tick is found the better! More information on personal protection measures can be found at the Maine Center for Disease Control website at

http://www.maine.gov/dhhs/boh/ddc/_lyme/index.htm .

Information on ticks and their distributions, and where to submit ticks you might find are found that the Maine Medical Center website at

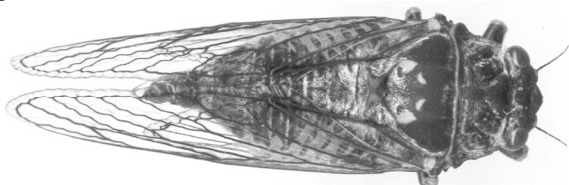
<http://www.mmcrci.org/lyme/meticks.html> .

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Cicadas (Hemiptera, Auchenorrhyncha) in Maine by Dick Dearborn

Just about everyone has heard the familiar raspy/chattering sound of the "Hot Weather Bug" or Dog-day Cicada singing high in the trees in late July or August. In Maine this turns out to be generally the calling of *Tibicen canicularis*, our commonest mid-sized (40-45 mm long) cicada. Should you be fortunate enough to find one it is distinct because of its size and yellowish-green collar and markings. I have not seen a definite record of a related species, *T. lyricen*, yet from Maine although it probably occurs in at least York or Cumberland counties. *T. lyricen* would be our largest (> 45 mm long) species and has a totally black collar. So far as I know the life cycle of these two species has not been determined.

Our two smallest (< 30 mm. long) species of cicada, *Okanagana rimosa* and *O. canadensis* are only separable by a specialist, if then. Adults of these two species can more easily be seen and collected on smaller trees, especially poplar and gray birch, in areas with blueberry and sweet fern. Adults emerge in June.



Okanagana rimosa, borrowed and modified from
<http://www.lesinsectesduquebec.com> .
(Original illustrations at this site are outstanding!)

These two species probably occur statewide although they seem to be most common in eastern Maine. Although they have often been lumped as one, workers such as Richard Soper have demonstrated differences which they feel show separation to be valid. Dick was also able to demonstrate that these species underwent a 9 yr. life cycle. Dick also found that *O. rimosa* was our most common of the two and emerged in early June rather than late June as *O. canadensis* does. I was fortunate to work with Dick Soper as graduate students and to see a number of his projects. An interesting account of cicada biology can be found in the following reference:

Soper, R.S., A.J. Delyzer and L.R.F. Smith. 1976. The genus *Massospora* Entomopathogenic for Cicadas. Part II. Biology of *Massospora levispora* and Its Host *Okanagana rimosa*, with Notes on *Massospora cicadina* on the Periodical Cicadas. *Annals of the Ent. Soc. of America* 69(1): 89-95.

All Maine species of cicadas have overlapping generations and at least some individuals emerge every year, unlike the Periodical Cicadas, *Magicicada* spp., none of which occur in Maine.

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Chuck Lubelczyk sent this on and thought it would be of interest to the rest of the membership. Apparently, there's a newly introduced European parasite that's killing off American bumblebees....

Greenhouse bees spread disease to wild bees

by Will Dunham

(downloaded from <http://www.promedmail.org>)

Disease spread to wild bumblebees from commercially bred bumblebees used for pollination in agriculture greenhouses may be playing a role in the mysterious decline in North American bee populations, researchers said on Tuesday, 22 July, 2008.

Bees pollinate numerous crops, and scientists have been expressing alarm over their falling numbers in recent years in North America. Experts warn the bee disappearance eventually could harm agriculture and the food supply.

Scientists have been struggling to understand the recent decline in various bee populations in North America. For example, a virus, Israeli Acute Paralysis Virus, brought from Australia, has been implicated in massive honeybee deaths last year.

Canadian researchers studied another type of bee, the bumblebee, near two large greenhouse operations in southern Ontario where commercially reared pollination bees are used in the growing of crops such as tomatoes, bell peppers, and cucumbers.

The researchers first observed that the commercial bumblebees regularly flew in and out of vents in the sides of the greenhouses, escaping from the facilities.

The researchers then devised a mathematical model to predict how disease might spread from this "spillover" of runaway commercial bees to their wild cousins. The model predicted a relatively slow build-up of infection in nearby wild bumblebee populations over weeks or months culminating in a burst of transmission generating an epidemic wave that could affect nearly all wild bees exposed. The model also predicted a drop-off in infection rates as you get farther from the greenhouses.

The researchers then sampled wild bumblebee populations around the greenhouses, catching bees in butterfly nets, holding them in vials, and taking them back to a laboratory to screen for pathogens, including testing their feces.

The patterns that had been predicted by their mathematical model were borne out by studying the wild bees, they said. Most of the parasites in the wild bumblebees were found to be at normal levels except for one intestinal parasite known as *Crithidia bombi*, that is common in commercial bee colonies but typically absent in wild bumblebees.

The researchers found that up to half of wild bumblebees near the greenhouses were infected with this parasite. "All of the different species of bumblebees that we sampled around greenhouses showed the same pattern: really high levels of infection near greenhouses and then declining levels of infection

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Bee parasites (cont.)

as you moved out," said Michael Otterstatter of the University of Toronto, one of the researchers. "It was quite obvious that this was coming from the greenhouses and it was a general adverse effect on the bumblebees," Otterstatter added in a telephone interview.

He said the parasite weakens and often kills bees. The "spillover" of disease from commercial colonies may be a factor in the decline of bee populations in North America, he added.

The study, published in the Public Library of Science journal PLoS ONE, is available at

<http://www.plosone.org/doi/pone.0002771>

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Addendum from

<http://www.xerces.org/bumblebees/index.html>

Between 1992 and 1994, queens of *Bombus occidentalis* and *B. impatiens* were shipped to European rearing facilities, where bumblebees were produced and then shipped back to the USA for commercial pollination. [The Netherlands is the world's largest commercial bumblebee producer]. Bumblebee expert Robbin Thorp [Professor Emeritus, UC Davis Dept. of Entomology] has hypothesized that these bumblebees acquired a disease (probably a virulent strain of the microsporidian *Nosema bombi*) from a European bumblebee that was in the same rearing facility, the Buff-tailed Bumblebee (*Bombus terrestris*). The North American bumblebees would have had no prior resistance to this pathogen. Dr. Thorp hypothesizes that the disease then spread to wild populations from exposure to commercially reared *B. impatiens*. In the late 1990s, biologists began to notice that wild bumblebees were severely declining.

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Reminder!

Schoodic Bug Blitz Scheduled for August

The National Park Service, Maine Entomological Society, Maine Forest Service, University of Maine, and Dorr Museum of Natural History at College of the Atlantic are again pleased to co-sponsor another BioBlitz at the park's Schoodic Peninsula. This year's intensive weekend survey will be held on August 8-11, and will focus on the Hemiptera, or true bugs, excluding the Sternorrhyncha (soft-bodied members such as white flies, aphids, and scale insects). The event will be held at the Schoodic Education and Research Center (SERC) campus in the Schoodic section of Acadia National Park.

☛ If you're interested but tardy in registering for this year's Blitz, contact David Manski at Acadia National Park ASAP via e-mail (David_Manski@nps.gov) or by phone at 207-288-8720. Over 50 people are registered thus far.

Though later than past Blitzes, August should be the ideal time of the year to collect members of this order, so a whole host of new Park records are expected! Past experience as well is that we may even wind up with new STATE records for some species - see the summary on LAST year's blitz, below!

For individuals interested in a more general introduction to the natural history of these fascinating animals, there will also be a public Resource Acadia "True Bugs for Beginners" workshop held from 8:30 to 11:30 a.m. on Sunday, August 10. The workshop will include a classroom section discussing the

ecology and natural history of these diverse insects and a field component to collect true bugs for the blitz effort.

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2007 Acadia National Park Spider Blitz: An Overview of Results

by Richard Bradley
Ohio State University

Over the July 21, 2007 weekend, 58 professional and amateur entomologists and other interested persons spent 2,553 hours participating in a 24-hour spider bio-blitz at the Schoodic Peninsula section of Acadia National Park. The bio-blitz was one of the many programs being coordinated through the National Park Service's Schoodic Education and Research Center to foster interdisciplinary research and science education to enhance the understanding of Acadia National Park's natural and cultural resources and to offer science education opportunities for people of all ages and abilities. The blitz was sponsored by the National Park Service, Maine Forest Service, Maine Entomological Society, and University of Maine.

During the bio-blitz, a total of 57 different locations were sampled using a variety of collecting techniques. Drs. Daniel Jennings (retired, US Forest Service) and Richard Bradley (Ohio State University) performed species determinations on all of the spider specimens.

The collecting effort yielded 1,040 adult specimens representing 18 families, 101 genera, and 151 species. Of these, 89 species had not been recorded previously on the Schoodic Peninsula. According to Dan Jennings, one species, *Porrhomma pallidum* Jackson, 1913, is a Palearctic species that until recently had not been collected in North America. Dr. Jennings has recently collected this species (both males and females) elsewhere in Maine. There is one other species, *Sciastes* sp. (near *extremus* Holm 1967) that may be an introduction or an extreme range extension. This, along with 4 other specimens (all erigonine Linyphiidae), remain to be confirmed. Six species that were collected during the blitz are new state records for Maine. One of these, the wolf spider *Pardosa palustris* (Linnaeus, 1758), may represent the first record for the conterminous United States.

As expected, the various collecting methods captured different assemblages of spider species. The most productive method (in terms of number of spiders collected) was sweeping (314 specimens representing 53 species). The various pit fall traps yielded 264 specimens of 65 species. Hand collecting provided 274 specimens of 74 species. Beating yielded 103 specimens and 37 species. Litter extraction produced 64 specimens, and 38 species. Thus, if we assume that number of spiders is a reasonable measure of effort, litter sampling yielded the maximum number of species per unit collecting effort. This is likely a result of the fact that tiny erigonid linyphiids, the most speciose group of spiders in our area, are chiefly collected by litter extraction.

The composition of the collection of spiders from the blitz held some surprises for me. There were fewer species of ground spiders (Gnaphosidae), ground sac spiders (Corinnidae), and jumping spiders (Salticidae) than I would have anticipated based on my Ohio collecting experience. The dominant families (in

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2007 Spider Blitz Results (cont.)

terms of number of specimens and species) were not as surprising. The most specimens and species were sheet weavers (Linyphiidae) with 54 species represented among 292 individuals. The second most abundant spiders were the cobweb weavers (Theridiidae) with 269 individuals of 20 species represented. An astounding 48% (128) of these were specimens of one introduced species, *Enoplognatha ovata*. At least it is an attractive species, well known for its distinctive color polymorphism. The generally large and obvious orbweavers (Araneidae) were not particularly abundant, 101 specimens of 8 species, but this can probably be ascribed to the fact that they mature in late summer/autumn and many individuals were probably immature at the time of the blitz and were thus discarded as unidentifiable.

There is still work to do in the form of additional verification of determinations, as well as analysis of the habitat associations of the spider species. Nevertheless, it is clear that last year's spider blitz was a great success. Thanks to the efforts of dedicated volunteers, we now know much more about the diversity of spiders in Acadia National park, and on the Schoodic Peninsula in particular.

I would like to thank everyone involved in the planning and execution of the blitz, in particular the staff of the National Parks Service (David Manski and Jim McKenna) and Maine Forest Service (Charlene Donahue). Daniel Jennings is the real spider expert in Maine. As I'm sure everyone realizes, this effort could not have been successful without his expert help, local knowledge, and sage guidance. I would also like to thank the National Park Service for permission to study on lands under their care (Permit # ACAD-2007-SCI-0033).

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Bug Maine-ia at the Maine State Museum Wednesday September 17, 2008 9:00 a.m. - 3:00 p.m.



2007 Bug Maine-ia participants get up close and personal at "What Bug Did This?"

Scientists estimate there may be as many as 30 million species of insects in the world. More than a million of them

have been identified and some of them will be in attendance at the seventh annual Bug Maine-ia at the Maine State Museum in Augusta. Admission is free for the celebration, a fun-for-all festival that includes information, activities and live examples of the good, the bad, and the beautiful members of the insect world. Volunteers always needed!

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.mainestatemuseum.org or
www.bugmaine-ia.com

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An Odd Meloid in Maine by David Bourque

Nemognatha nemorensis Hentz is an unusual beetle from an interesting and diverse family: the Meloidae, or Blister Beetles. It is slightly less than 10 mm long, darkish gray, and resembles a small firefly. This beetle is unusual in that the mouthparts are modified into a hollow sucking tube similar to the Lepidoptera.

Its biology is typical for the family. Eggs are laid on flowers and after hatching the tiny larvae attach themselves to a visiting bee. They are then carried back to the nest where they feed on bee eggs and stored food.

Dana Michaud and I have been collecting insects in the central Maine area for about fifty years. We have only recently found this beetle. I found our first specimen on July 26, 2004, in Auburn. [That day we also caught our first ant lions.] Two years later in July in Bowdoin, we found many more beetles.

On a subsequent visit to Don Chandler in New Hampshire, he confirmed our identification and said our specimens were probably the first Maine records. The Maine Forest Service collection in Augusta had none.

On July 12, 2007, in Winslow, we collected more and found them very abundant. Later that month we saw many more in Oakland. This year at the M.E.S. field trip to The Wilderness in Orland on July 12, we collected several more. The beetle seems to be getting well-established and spreading throughout Maine.

All our specimens were found in July on the flowers of black-eyed susan, except one found on a daisy. They are often in pairs or larger groups on the same flower.

* * *

Mount Vernon Field Event June 21, 2008 by Diana Dearborn

Thanks to the 15 "bug" enthusiasts who visited Spring Hill Farm on June 21st, 2008. Your presence, passion, and knowledge helped make my official bug collecting day very enjoyable. Being the daughter-in-law of an entomologist has

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Field Notes (cont.)

spoiled me, no doubt. However, it was nice to meet some other M.E.S. members. I quickly realized that those who attended are just as relaxed about collecting as I am. Not only was it my first attended M.E.S. event, but the same goes for Gregory Kehaya, botanist from Limington, Maine, as well as Peter Darling from Cape Elizabeth, Maine.

We all experienced a beautiful, sunny summer day on Dick & Marj's 50-acre Mount Vernon homestead. Conversations varied from wildflowers, butterflies, dragonflies, itchy ponies, spiders, dogs, and poison ivy, to salamanders!

Thanks to 11-year-old Brandon Woo for being so patient with my four-year-old daughter, Evelyn. He never hesitated to share a cool find with her, answer a question, or make her smile when she scratched her leg.

Thanks to my husband, John, for being so hospitable. He was kind enough to cart us across the brook by use of his 4 wheeler and trailer. (I knew we'd find a use for that park bench!)

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"Gone A Buggin'" by Dana Michaud

At 6:30 a.m. on July 12th, Dave Bourque and I headed eastward to Hothole Valley off Route 1 in Orland. Leaving early (the field event for M.E.S. members started at 9:00 a.m. at the inner gate), we figured we'd go "A Buggin'" along the way.

We arrived at the south gate around 8:00, when it opened, and we headed in. The absence of M.E.S. signs meant we beat the Woos here, but not by much! Driving in 0.2 miles, we pulled into a gravelly area on the right. As the car approached "stop," a gang of deerflies began to buzz the slow-moving green VW Golf. Once we got out, we became "the game."

The collecting was short-lived as the Woos pulled up and explained the itinerary. Brandon had to show us his beautiful female dobsonfly (*Corydalus cornutus*) that he had caught at home. I reminded him that beauty in this case can inflict a nasty bite if handled incorrectly. We then decided to head north to the inner gate rendezvous point and check out the area.



Domenica Woo and Dave Bourque discuss collecting strategies, while Dana Michaud searches for the elusive deerfly in his net the Orland field day.

As 9:00 rolled around, and the M.E.S. members (14) gathered, Brandon was getting restless (as were we) to go "a buggin'." With the Hothole Brook Trail to the west of us, and a bright blazing sun in the east, we opted to put Sol to our backs.

With nets in hand, sweeping the vegetation often gave way to sweeping the airspace around ourselves to collect the deerflies, who kept announcing that we were now in their realm and blood meal was their "raison d'etre!"

The many skippers and Atlantic Fritillaries visiting the blooming flowers paled in numbers to the bumblebees and honeybees visiting the many species of clover. The walk up and down yielded a few keepers, excluding all the deerflies we kept. We've now amassed almost every species, except the very rare ones, known from Maine. Fortunately, a deerfly specialist from the University of New Hampshire, John Burger, while recovering from a bad illness, nonetheless offered to ID all of our deerflies and horseflies. We're still hoping we can find some of the coastal rarities, to give him as *thanks!*

As noon approached, the members decided to return to the parking area, talk bugs, and munch on snacks and drinks the Woos had graciously supplied (many brought their own lunches as well). Once Dick Dearborn (M.E.S. participant #15) got everyone to sign "The Book," and people were nearly done eating, Richard Hildreth gave a quick presentation, with photos and specimens, on his excursion to Cape Cod, Mass., to witness one part of Nature's grand emergences - that of the 17-year Cicada (*Magicicada septendecim*). In New England, only a small area of Cape Cod is affected, by what is referred to as "Brood 10." The next emergence is quite a ways away.

Once lunch was over, the eastern Flag Hill Road trail looked good, so off Dave and I headed to go "a buggin'" again. The first of a number of specimens of *Cicindela sexguttata* (6-spotted green tiger beetle) appeared as we walked uphill. As we swept, looking for odd wasps, flies and beetles, Dave called me over to a Queen Anne's Lace plant. "It's a Gasteruptid (parasitic wasp)! Take it!" Trying to catch it with a jar, he then looked at me and said, "I hate being outsmarted by a wasp," as he showed me the empty container. Been there, done that.

We started the southbound Hillside Trail, walking uphill through some mostly woods with small clearings. Veering off the trail, we headed west, hoping to intersect the road eventually. Bushwhacking, we eventually ended up back where we started on the Hillside Trail. Dave would say we got lost, but he has so little understanding of the art of trailblazing. Scrambling through waist-to-head-tall blackberry bushes and thickets for a quarter mile doesn't constitute being lost: it's an adventure!

Returning to the parking lot at 4:00 p.m., most other members had already left and the remainder decided to call it a day. As we loaded up the Woo's stuff into their vehicle, we wished them good luck in their move to their new home in Kennebunk. We also reminded them that the August Bug-Bug Blitz wasn't too far off, and we'd see them all there.

Somehow, the "Gone Buggin'" will yield to "Gone Bug-Buggin'." Hopefully, Brandon will bring his usual enthusiasm and contagious love of insects with him. Judging by how everyone was acting while "A Buggin'," there's still a little kid in us, too!

(continued on next page)

Ever wonder why deer flies are so hard to swat as they zoom in for the attack? Some have been clocked at speeds of 90 mph!

Field Notes (cont.)

Collecting at Fort Kent

by Bob Nelson

Gale and Stan Flagg welcomed an even dozen M.E.S. members and visitors to "Kew Gardens North" at their mountain retreat outside Fort Kent on July 28th. Despite advance warnings that mosquitos this summer were both vicious and abundant, we saw few - to no one's great dismay.

The weather was also unusually cooperative. We (Dick and Marj Dearborn and I) drove through some violent thunderstorms en route to Fort Kent late Sunday, and stayed overnight in town - Dick and Marj deciding that discretion was the better part of valor, and camping out might not be the pleasantly bucolic experience they would have enjoyed. The next morning was overcast and gray, but by the time we reached the Flaggs' home the sun was starting to peek out, and eventually the morning was bright and sunny on all sides.

The transformation in their home and environs since our last outing here was phenomenal. Extensive stone-lined raised beds raise a multitude of gorgeous vegetables and flowers, but Gale's large flower garden was the real showpiece and abuzz with a whole host of bumblebees, small wasps, and an especially rich variety of Syrphidae (hover flies). Though there were a few Colorado potato beetles to be found on her potatoes, there wasn't a single Asparagus beetle (genus *Crioceris*) to be found on any of the plants in the large bed of asparagus. That's the first time I've ever had *that* experience!



Pollinating insects in particular were out in abundance for the July field day in Fort Kent, as attested to by this wasp and flies atop just one of the many multicolored flowers in Gale Flagg's gardens.

As the noon hour approached, rumblings to the south heralded the proximal arrival of another great thunderstorm, with torrents of rain and great flashes of lightning - some quite close. During an indoor lunch safe inside the Flagg's spacious and solid home, Paul Sprung shared photos he'd taken of what appears to be a hybrid between a White Admiral and Viceroy butterfly - a very peculiar-looking specimen indeed!

By the time we were done with lunch, the rain was starting to subside. Some then departed for home or collecting forays en route home, while others went out with Stan and Gale to visit the two very different ponds on the property. The first, their new pond, is relatively new, but provided an interesting contrast to their older pond, filled with tadpoles, dytiscids and the

occasional water tiger, and surrounded by a marsh that hosted an abundance of meadowhawk dragonflies and blue damselflies.

Gale and I also walked up the road to their new wellhead, accompanied by their two affable German shepherds, where we found several interesting specimens, including what I think was likely either a *Cymindis americanus* or *C. borealis*, a lovely black ground beetle about 12 mm long with rounded, reddish shoulders on the elytra. Gale was particularly impressed by an *Agonum cupreum*, another ground beetle that's metallic green on the head and thorax, while bright reddish-copper on the elytra, with green margins.

Thanks, Gale and Stan, for an absolutely wonderful visit!

* * * * *

Preying Mantids in Maine

by Charlene Donahue and Dick Dearborn

Someone from MES has been asking questions about preying mantid distribution in Maine. The question is on the Science Teacher List Serve and I thought others might be interested in mantids as well. Below is information Dick Dearborn has gathered over his decades of tracking insects in Maine.

There are no native species of preying mantids (Order Mantodea) in Maine. Of the three species that I have seen here over the years, only one, The European Mantid (*Mantis religiosa*) has become established here. The Chinese Mantid, *Tenodera aridifolia sinensis*, and the Carolina Mantid, *Stagmomantis carolina*, have been introduced at times but seem to live only through one season. As our summer seasons get longer and our winters milder this could change, at least in York and Cumberland Counties.



Mantis religiosa on a blackberry vine at a field margin.

My records show that *M. religiosa* is established at least as far north as Farmington, Newport and Old Town and as far east as the Penobscot River towns south of Old Town (including Dedham, Bucksport, etc.). Numbers and survival rates seem to increase noticeably as you move southward. I'm sure that when we start looking this range will be expanded. My earliest Maine record is 1953. I found that the frequency of sightings increased steadily from the mid 1960s on.

Mantis religiosa seems to do best in grassland and open weedy meadows. Adults are attracted to light at times, although they don't seem to be when they occur at relatively low numbers

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Mantids in Maine (cont.)

such as at my place. On at least two separate occasions I have observed massive flights in Augusta and Randolph.

In Augusta I received a call at the lab one September from a gas station where Applebee's now sits that insects, thought to be preying mantids, were all over the pumps and biting customers. When I arrived there were still nearly one hundred mantids of different colors hanging from the lights, hoses, etc. I was able to identify the species but unfortunately did not record the sexes.

At another point I received a call from a concerned homeowner in Randolph, that their house was being taken over by mantids. Apparently they had gone out for the evening and left their living room light on and a window open (!!!) When they returned there were 25-30 mantids just hanging around their living room. Again it was *M. religiosa*. I also found *M. religiosa* common in flight at my place in Mt. Vernon nearly every year when I was taking in a crop of hay in late August or early September.

If anyone would like to add to the information about preying mantis distribution (and species) in Maine, please send your observations to me at:

Charlene Donahue
Insect & Disease Laboratory
50 Hospital Street
Augusta, Maine 04330
(207) 287-3244
FAX (207) 287-2432
charlene.donahue@maine.gov

In the case of a flight it would be best if reports were accompanied by a series of specimens or at least a good photo so that a species ID and color and sex ratio can be confirmed.

* * * * *

*The praying Mantis is the official state insect of both
Connecticut and South Carolina.*

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BOOK REVIEW by *Frank Graham, Jr.*

The Flower Spider Gets Her Due

For more than a quarter of a century Douglas H. Morse, now professor of biology emeritus at Brown University, has spent summers with his students studying a common Maine spider, *Misumena vatia*, in protected fields in and around the University of Maine's Darling Marine Center in Walpole. The book detailing his findings is *Predator Upon a Flower: Life History and Fitness in a Crab Spider* (Harvard University Press, 2007, 377 pages). This is a seminal work, describing through observation and experimentation the integrated conditions that determine an individual animal's lifetime fitness and thus its contribution to the next generation's breeding pool.

Most people who frequent old fields or gardens know this "flower spider," or at least the adult female. Of medium size, she displays a strikingly colored abdomen, white or yellow, usually marked by two oblique magenta stripes, and is found on a variety of blossoms, including goldenrods, daisies, milkweeds, and roses. This is the spider that has the ability to change color, influenced by the substrate. The change is not chameleon-like, but occurs usually over a period of days, and may account for the discovery of yellow spiders on white flowers, and white

individuals on yellow flowers. The species is dimorphic, with males growing to only a fraction of the females' size, and bearing a color pattern best described, Morse writes, "as dirty white, with prominent deep red to mahogany stripes on the dorsal and lateral parts of the abdomen and candy-striped legs of the same color."

Much of the emphasis placed here is on choice —*Misumena's* habitat and substrate choices, as well as its prey and mate selections. In an amusing parallel, the author describes his own choices, or options, in setting up his study. He originally set out to focus on predictions about how bumble bees should forage. Those flighty creatures turned out to be difficult to propagate under field conditions. *Misumena* is basically a sit-and-wait predator, not building a web but moving within a fairly small area to settle on one flower or another, where it ambushes invertebrates (some larger than itself) coming for nectar or pollen.

"The irony of this story," Morse writes, "is that *Misumena* preys heavily on the bumble bees upon which I had previously worked."

It is obvious from his results that he made better choices than many of his subjects did. He discovered that individual members of *Misumena's* population, though apparently similar in many features, made differing choices in key stages of their lives, thus drastically altering their chances of survival. Why did some spiders make favorable choices about the patch of flowers to settle on, while others chose areas that turned out to be almost devoid of prey or safe havens? Like humans, *Misumena* provides dramatic examples of good parents and lousy ones.

Morse proceeds through a series of chapters that flesh out the most complete portrait of a spider we have ever had. He gives a succinct description of what a spider is, and how it relates to other invertebrates, then discusses aspects of *Misumena's* foraging decisions and techniques, cues that point it in the right direction, and built-in constraints that prevent an individual from making wise decisions. He examines the role played by experience and learning, and the interactions between males and females. What are the sources of the extreme dimorphism we see in this species? What effects does *Misumena* have on other insects and spiders in its ecosystem and, in turn, how do they affect this spider? What are the questions his work leaves unanswered, and what directions ought future investigators take to help answer them?

Doug Morse thinks like an invertebrate. And fortunately for us who are interested in spiders and insects, he has the ability to lead us into their world.

* * * * *

BOOK REVIEW by *Dana Michaud*

A New Illustrated Guide to Longhorn Beetles

The Illustrated Key to the Longhorned Woodboring Beetles of the Eastern United States, by Steven Lingafelter (published as Special Publication #3 by the Coleopterists Society, 2007; \$65 + postage) is a must for anyone wishing to identify nearly every species of Cerambycid east of the Rockies.

The Abstract and Introduction, pages 3 and 4, explain the scope of the book, which is a guide to identifying 377 of the 400 known species that occur in the region covered. This includes

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Book Review: Cerambycids (cont.)

all those found in the Southeast and nine invasive species that may or may not be established; it doesn't cover uncommon or isolated taxa of southern and western Texas, or of northernmost New England (boreal forest), including Maine.

The beautifully illustrated, mostly colored photographic key (with a few black and white photos to show details), pages 7-135, is comprised of 417 couplets and is rather well-written and easy to understand. Explaining to such a degree, one wonders why he didn't title it "Cerambycids for Dummies!"

The statement that "most taxa will key out in 20 couplets in 10 minutes" is reasonable, as I keyed out a number of species in 10 or less. Those that keyed out to the genera *Astylopsis* and *Liopinus* took longer. The key itself, as noted, is constructed such that with color variants and characteristic interpretation, it allows one to go either way at times and still get to the proper identification.

The Species Account and Notes section, pages 137-161, preserves the subfamilies normally used, and under each, lists genera alphabetically, then species within each genus, followed by specific notes on each, including Tribe, plate number (e.g., 9g or 21i, *but no page is given*), the length of the specimen used, its status (rare, etc.), geographic range, when adults are active, and finally larval host plants (if known).

The short Bibliography lists literature and web sites, p. 159-161, and cites all the sources used by the author.

The nicely done plates on p. 163-194, with each plate depicting 10-15 species or varieties covered in the key, complements that already well-illustrated section.

These plates, prepared from 1500 specimens used, are far superior to Yanega's (*Field Guide to Northeastern Longhorned Beetles (Coleoptera: Cerambycidae)*, by Douglas Yanega, 1996) dark blue background photos used, and use mostly light backgrounds. (I noted a few, oddly, were done in blue also!)

Appendix I, pages 195-197, lists the scientific names (genus/species) alphabetically, with common names, of all the host plants referred to in the "notes" section for larval food.

The Index, pages 199-206, lists all the genera and species alphabetically. Each species is followed by the key couplet number(s), and corresponding page(s) where it keys out (which may be in more than one spot), followed by the page number in the Species Account and Notes section that has a short write-up about the species.

The only major criticism I have of this wonderful work is that once you key out a specimen in the key section, it doesn't list the pages to go to in *either* the Species Account and Notes section **or** tell you what plate number or page it's on to see if you've keyed it out to the right beetle. To do so, you must go to the Index and look up the genus/species, which then refers you to the corresponding page in the Notes section, which then directs you to the appropriate plate (but with no page number). Going to the plate section you now arrive at what hopefully will be the beetle you have keyed out.

Had the index been placed directly after the key section, the backtracking could have been avoided. Had the page numbers for the corresponding Notes and Plates sections (with plate numbers) been given in the Key section, the whole process would have been simplified. Why the author would write such a comprehensive, beautifully illustrated key, making it easy for

amateurs to arrive at a species-level identification, but make it very awkward to find the corresponding photograph of the beetle in the plates section, eluded me.

Lingafelter's book, while praising Yanega's field guide in the beginning because of its thoroughness in covering 342 of the 344 species known to occur in the Northeast, reminds the reader that his IS primarily a key based on species characteristics and not just photos. Yanega in his species descriptions lists size ranges, which is a better feature as many species vary considerably in size, while Lingafelter uses a single length (for the specimen used in his photo).

Ordering information on this may be found at the Coleopterists Society web page (<http://www.coleopsoc.org/>) or by writing to:

Office of Publications, Coleopterists Society
15703 Quince Orchard Road
North Potomac, MD 20878

or electronically by contacting:

Vicki Bahnsen --- vicki@lectramedia.com
Tel: 530.478.8300, extension 39

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Maine Forest Service Publishes 100th Anniversary Edition of "Forest Trees of Maine"

The Department of Conservation's Maine Forest Service announced the release of the centennial edition of its most popular publication, "Forest Trees of Maine." The Maine Forest Service published the first edition of "Forest Trees of Maine" in 1908 as a small black and white booklet that detailed how to identify about 50 of Maine's important trees. It was immediately popular with the public.

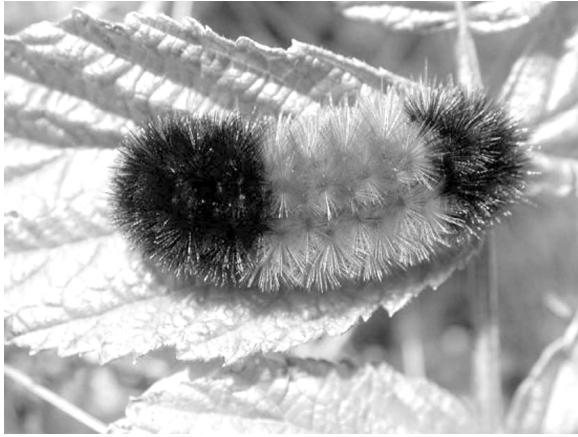
In his 1910 report to the Legislature, Forest Commissioner Edgar Ring wrote, "For the 'Forest Trees of Maine' there has been a large and constant demand which will very soon exhaust the edition. Possibly in order to meet the demands for this pamphlet it will be considered wise and money well spent to issue another edition." The Maine Forest Service has published 13 editions in the past century. Several generations of Maine Forest Service staff have used the book to introduce tens of thousands of Mainers to Maine's trees and forests.

In celebration of the book's centennial, the Maine Forest Service has completely revised the book, incorporating many changes asked for by the public over the years. The new book is in full color and has over 250 color photographs of Maine's trees in all four seasons as well as the traditional pen and ink line drawings from previous editions. The book also includes historic photographs from Maine Forest Service archives, illustrating Maine's rich logging and forest products history.

"I'm very pleased with the quality of the 100th anniversary edition of 'Forest Trees of Maine,'" said Donald Mansius, Director of Forest Policy & Management. "The team that created it did an outstanding job. Our signature publication should be in the collection of anyone who cares about Maine's forests."

Single copies of the book can be obtained by contacting the Maine Forest Service at (207) 287-2791. For information, contact Keith Kanoti, 287-2428. Priced at just \$7 per copy as of this writing.

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WOOLLY BEAR WATCH 2008!

It's that time of year again! Those familiar, fuzzy, reddish and black banded caterpillars, larvae of the Isabella tiger moth (*Pyrrharctia isabella*), will soon be moving about in search of winter quarters. These interesting little creatures have entertained both young and old as "pets" and as the subject of weather-predicting folklore for more than 100 years. Children like them because they are safe to handle and can perform many feats, including races, for many days with relatively little care. Adults enjoy discussions centered on the unreliable nature of folklore. Whatever the case, they're just plain fun even for entomologists! And they have been the featured insect by MES at Bug Maine-ia in September.

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.

This will be the 12th year that I have conducted this survey since 1997, with mixed results. Last year the red segment average fell to 4.13, indicating a harsher winter than normal. You be the judge.

- Dick Dearborn

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BIOBLITZ on ISLESBORO

Dick Dearborn received an invitation for M.E.S. members to attend a BioBlitz in Islesboro the weekend after the Bug Blitz at Acadia N.P. The site, Hutchins Marsh, is a formerly estuarine marsh that is rapidly converting to a freshwater habitat due to beaver activities. The bioblitz is scheduled for Saturday, August 16th. Because of the ferry schedule, it will be a daytime-only

blitz running from morning through mid-afternoon (instead of the traditional 24-hour marathon).

If you're interested at all, please contact Aaron Megquier of the Islesboro Islands Trust ASAP, at (207) 734-6907 or by e-mail at iitaaron@gmail.com.

Announcement and Call for Entries:
Spineless Wonders: Invertebrates as Inspiration
Atrium Art Gallery
University of Southern Maine,
Lewiston-Auburn College
51 Westminster St.,
Lewiston, ME 04240

September 8 - December 18, 2009
Reception, Friday, September 18, 2009

"Spineless Wonders" celebrates the diversity of species for the 2009 bicentennial of Charles Darwin's birth and the 150th anniversary of "On the Origin of Species." Paintings, prints, sculpture, poetry, sound, and work in clay, metal, fiber, glass, wood, and stone will all be part of the multi-dimensional exhibition.

Invertebrates are animals without a spine, comprising 97% of all animal species. This vast group includes worms, insects and their larvae, spiders, jellyfish, shellfish such as crabs and shrimp, sponges, and more. From fairy shrimp and glow worms to luna moths and giant squid, invertebrates include both aquatic and terrestrial forms. If it's not a fish, reptile, amphibian, bird, or mammal - it's an invertebrate.

Call-for-entries

We are seeking paintings, drawings, printmaking, textiles, and work in clay, metal, fiber, glass, wood, and stone. Also poetry and projects that include sound, video, or any combination of media. Please contact Robyn Holman, director of exhibitions, by e-mail at holman@usm.maine.edu, or call 207-753-6554 for more information. **Deadline:** November 30, 2008.

CALENDAR REMINDERS

Here's a reminder that we're still looking for a few more good photographs for the 2009 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 occur in Maine or could 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, 2008. Accepted photos will be used only once, in the M.E.S. calendar.

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

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ANNUAL MEETING CALL!

Just a reminder that the Annual Meeting of the M.E.S. will be held for the first time at **Rock Ridge**, Bob and Nettie Nelson's new home at 779 Battle Ridge Road in Clinton, on Saturday, Sept. 13th, 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 forests and meadows if weather permits. With Dick Dearborn stepping down as President, this is a particularly important meeting, as we will be electing his successor - the first new President since M.E.S. was founded!

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 election of 2009 M.E.S. officers; calendar status and sales protocol; Bug Maine-ia, Winter Workshop (topic, location & date); early selection of events for 2009 so that they can be placed on the calendar and how to handle outreach & exhibits for MES as a group. If you're planning to come, please **DO** let Bob know so we can plan accordingly! You can send him e-mail at BeetleBob2003@yahoo.com or call him **AFTER** mid-August at 426-9629 (873-3943 until then!). Contact Bob also if you haven't been to one of the August field days in Clinton and need driving directions. We'll have signs posted from I-95 to help for those from outside the immediate area. See you there!

COMING M.E.S. EVENTS in 2008:

(See <http://www.colby.edu/MES/> for more detailed information; stories on each of these events elsewhere in this Newsletter as well.)

- | | |
|---------------------------|--|
| 8-11 August, 2008 | Hemiptera BioBlitz, Schoodic Point, Acadia N.P. |
| 13 September, 2008 | Annual Meeting, Rock Ridge, Clinton |
| 17 September, 2008 | Bug Maine-ia at Maine State Museum
Wednesday, from 9 a.m. to 3 p.m. |

INSECT TRIVIA

(gathered from multiple on-line sources)

How fast can insects flap their wings? Insects with the fastest wing beat frequency are the no-see-ums, or very tiny midges, which beat their hairy wings over 1000 times per second. Male mosquitoes beat their wings 450 to 600 times per second. Cabbageworm butterflies beat their wings nine times per second.

Fleas can jump 200 times their body length, analogous to a human clearing a 70-story building. Grasshoppers can jump 80 times their length - like a human jumping 1-1/2 football fields. Flea beetles 1 inch long can jump up to 2 feet--like a human jumping over 15 cars. A 1/2 inch click beetle can catapult about 1 foot.

In warm weather, if the host plant is healthy, an aphid can produce 50 babies in one week, which will mature 1 week later. (Aphids are born pregnant!) In one season, a single cabbage aphid and its young, if none died, could produce 1,560,000,000,000,000,000,000,000 (that's 1 heptillion, 560 hextrillion) individuals under ideal conditions. Also under ideal conditions, one hectare of vegetation can feed 5 million aphids, which could produce 2 tons of honeydew every day.



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 or \$18 for two years. 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. Dues are paid through the year printed on your mailing label. 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.