

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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I sit here on my porch using my son's laptop, a soft breeze is blowing and the kitten is alternating between walking on the keyboard and chasing a gypsy moth on the other side of the screens. Porches are wonderful places for an entomologist. There is a series of overlapping orb webs along the front of the porch where we can observe spiders feeding greedily each evening. As we relax ensconced in screening, mosquitoes stare in at us in futility, and we can comfortably watch fireflies twinkle on June evenings. Best of all, a screened porch is like an inside-out light trap. You leave the light on and wait for the insects to arrive for either observation or collection. Life is good.

I get a lot of requests for insect identifications during the summer. Some people find me through MES, some through the Maine Forest Service and some through friends or colleagues. In the past most requests were either verbal or written descriptions or specimens sent in to the MFS lab. These days I also get a lot of email requests, some accompanied by photos. It is interesting to see what catches people's eye and often I can make a determination from descriptions or photos. Other times I need a specimen.

One interesting call this month was from a gentleman concerned about one of his oak trees. He had noticed that a lot of acorns were falling prematurely. Most of them appeared to have the cap gnawed and some had little 'buds' growing from under the caps. Did I know what was chewing the acorns? What were the buds and was it going to harm his trees?

I had no idea. So he sent in some of the acorns. It was immediately obvious that squirrels had been chewing on the acorns but not eating them. A closer look revealed that the squirrels had been picking out the little 'buds' from under the caps. Some of you will have already guessed what these were. They were acorn pip galls formed by *Callirhytis operator* cynipid wasps, with a fat larva inside each one. Some clever

squirrel had figured out that there was a tasty treat inside those pips and showed all his friends.



Acorn pip galls of *Callirhytis operator*

Sure enough when I called the man to tell him what I had discovered, he said the squirrels had been very active in that one tree and that was the only tree where there was premature acorn drop. At the MFS Entomology Lab, we have a gall wasp book with both keys and photos of many galls, and this was what I used to determine the gall wasp species. It's a very handy book and not easy to come by, as it was published decades ago. So a mystery solved and I learned more about oak galls.

Enjoy the rest of the summer, and may you discover more about the insect world too.

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Ross and Joyce Bell and Their Carabid Legacy

by Mark Ward

On June 12-15th, a very special gathering of about 50 individuals took place on the University of Vermont campus to honor and celebrate the work of Ross and Joyce Bell.

For those of you who don't know Ross and Joyce, they have been dedicated zoologists, teachers, and mentors whose infectious passion for understanding the world of invertebrates (and especially ground beetles) has touched many of us.

The gathering was organized by a combination of colleagues and former students and included a reception, two days of talks by invertebrate researchers from throughout North America, and a field day. Dubbed as "Bellfest" the gathering was part of a rich "Festschrift" tradition to honor the work of outstanding scientists who have reached their 80th year.

While a graduate student at UVM in the late '90s, I had the opportunity to take Ross and Joyce's famous "Field Zoology" class and became captivated by the suggestion of the complex workings of the invertebrate world that was revealed to me under the microscope. I subsequently undertook a project that involved the identification of thousands of ground beetles and other surface-active invertebrates, to which Ross and Joyce generously offered their time and expertise.

That gave me the opportunity to get to know Ross and Joyce much better. I found their relentless enthusiasm for the invertebrate world inspiring and look back fondly at the time that I spent under their tutelage. To this day, it remains one of the most memorable and valuable of my graduate school experiences.



Bembidion bellorum Maddison - one of the most recently named species in honor of the Bells. Part of the taxonomically difficult ground beetle subgenus of *Pseudoperlyphus* (the *Bembidion chalcone-honestum* complex), it is known from Greenwood in Maine but undoubtedly will be found to be more widespread. It occurs on coarse sand and gravel bars and islands in medium-sized streams. (Photo by David Maddison, from <http://tolweb.org/>)

I found it gratifying to hear so many of the Bells' carabid colleagues pay tribute to the incredible contributions that Ross and Joyce have made throughout their career to our

understanding of the mysterious world of ground beetles and specifically the wrinkled bark beetles (Rhysodidae). The presenters shared their most recent findings into the natural history and systematics of the Carabidae and other invertebrates, and offered many wonderings on the multitude of questions that remain unanswered.

Several talks were given on the phylogeny of the Carabidae. The parallel between carabid phylogeny and the Bells' continued influence on the field was not lost on me. Many former students of the Bells (as well as students of those former students!) offered presentations and demonstrated how the Bells' teaching and mentoring has produced a lasting lineage of multiple generations of carabid students and enthusiasts. Through their inspiration of students, who have subsequently dedicated themselves to an enhanced understanding of the beetle world, the Bells have truly passed a torch of passion combined with careful inquiry. In so doing, they leave a legacy that will continue to unravel the mysterious workings of these fantastic creatures for generations to come.

Congratulations, Ross and Joyce!

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Observations on *Bombus* Bees Using and Cleaning Out a Bird House

by Kevin Byron and Monica Russo

The last week of June, 2010, we received a call from a friend in Wells, to tell us of bumblebees (*Bombus* sp.) that were nesting in a bird house facing their extensive gardens.

On June 30th, Kevin visited the site at about 2:00 p.m. High temperature of the day was about 72, a sunny, breezy, nice dry day. He found that bees were coming and going from the box, which is placed at the edge of a large open lawn, with woodland behind it, and the entrance faces the open area and extensive gardens (flowers, heather and herbs) with excellent foraging.

The bees were seen carrying out at least one fly, as if cleaning out the nest box, and at least two bees were seen carrying out large yellow-white grubs. Kevin photographed both of these activities.

There is reference to *Bombus* nesting in bird houses in Maine, by Bernd Heinrich in *Bumblebee Economics*. However, we did not find documentation of "nest-cleaning." The bees were not carrying vegetation or nesting materials. They were *carrying out* insect material. Were the large grubs *Bombus* larvae? (They looked very similar to such.) But a fly was carried out also. When the bees exited with this material, they flew several feet away. No outcast material could be found on the ground under or near the box.

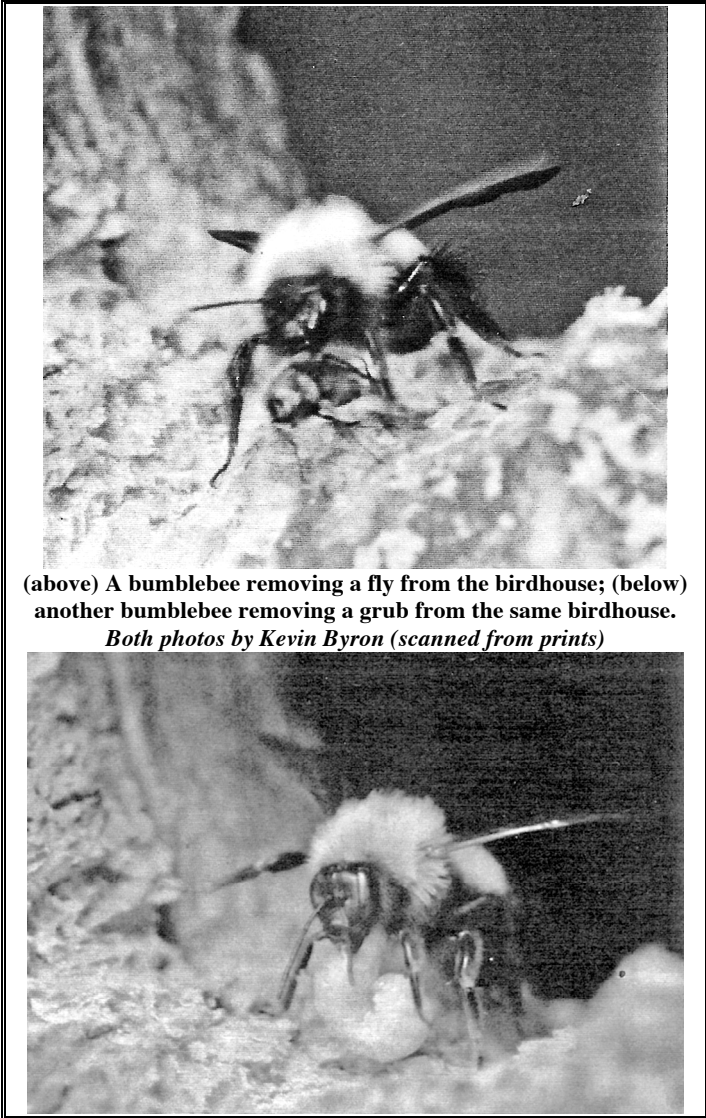
On July 4th, Kevin returned to photograph the site again, from about 3:30 to 5:00 p.m.; it was a much warmer day, with a high around 87.

To compound the previous odd events, Kevin's photos show what may be two different species exiting the box at the same time. One individual has yellowish fuzz on its thorax, while the other has yellow-white fuzz, and a black central area on the thorax. One photo clearly shows a bee entering with a

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Bumblebee house cleaning (cont.)

load of pollen. Another shot shows a yellowish fly entering the box.



None of the bees seem to be the inquiline *Psithyrus*, which looks very much like *Bombus*, but has the first two segments of the abdomen black.

The box is a bluebird house, and the entrance hole is about 56 inches from the ground. The box was painted blue in 2009 and was not cleaned out in the fall, so mice may have used it in the winter. This coming fall/winter, we hope to open the box to see if there are any clues about the summer inhabitants.

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The Microaquarium
by Chuck Peters

I first learned about the microaquarium at the Schoodic Minor Order Blitz in August 2010, when I met its inventor, Paul Davison from the University of North Alabama. Paul is a botanist who specializes in Bryophytes (mosses and liverworts) and the tiny limnoterrestrial organisms that live in the film of water between their overlapping leaves. Paul was

kind enough to direct me to a spot where I could observe the liverwort *Bazzania trilobata* and also shared with me some techniques he uses to extract some of the nematodes, tardigrades, rotifers, and flatworms from mosses. He also gave me a microaquarium to try.

The microaquarium consists of 2 large (2" x 3") microscope slides silicomed together to leave a space of about 1mm between the slides. Open at the top, organisms can be loaded with a pipette, allowing the observation, photography, and even culturing of small aquatic forms. The small space between the slides allows the chamber to lie on its side on the stage of a microscope without leakage of the water. Since the sides are made of microscope slides, the optical properties are excellent and even allow viewing under a compound microscope at high power.



A typical microaquarium. (Chuck Peters photo)

There have been a number of precursors to this design, the first of which may have been that of Garnett (1953; pp. 36-37) who described a "trough" slide which used a plastic spacer glued between two microscope slides with waterproof glue, being before the use of silicone. Borror and White (1970, p. 28) described a "water cell" made of two microscope slides with a spacer of window glass for the projection of insects using a photographic enlarger.



Caddisfly larva in microaquarium. (Chuck Peters photo)

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The Microaquarium (cont.)

More recently, Park, and others (2005) described a chamber made of a microscope slide with thin polypropylene bars on either side to support a cover slip for the culturing of copepods. This chamber was used horizontally and features two open ends, presumably for increased gas exchange.

Paul's design, however, incorporates the use of aquarium-grade silicone for ease of use and durability, a vertical orientation conducive to the growth of plants and algae, and is commercially available.

The microaquarium is ideal for the observation of small aquatic insect larvae such as those of mayflies, damselflies, mosquitoes, chironomids, and caddis. One advantage is that the chamber can be viewed from either side, allowing observation of both dorsal and ventral surfaces. Add a little substrate and a small aquatic plant and the small ecosystem can be viewed over a period of time to observe changes in the micro-community. My sophomore Biology students maintained microaquaria for about 3 months this school year, observing and recording changes in the populations of a variety of freshwater invertebrates and protozoa. I successfully reared a mosquito larva to adulthood, and was able to photograph two of the instars, and on another occasion was able to photograph a caddis larva as it constructed its case. The number of projects that could be carried out in a microaquarium is only limited by one's imagination. I'm sure even small terrestrial insects could be observed and possibly reared.

While not too difficult to build yourself, the cost of a box of large slides and aquarium-grade silicone makes the project feasible only if constructing a large number. I have been successful in making them for my classes and have made them up to 6mm in width to accommodate larger forms. If anyone has the need or desire for one this size, I would be happy to make you one for a nominal charge (chuckp@securespeed.net).

The microaquarium can be purchased from Carolina Biological Supply (at <http://www.carolina.com>; search for "microaquarium") for \$6.20, and comes with a small stand and a cover. Order two because you will probably want to have a couple of experiments running simultaneously!

References:

- Borror, D. J. and White, E. W. 1970. A field guide to the insects of North America and Mexico. Houghton Mifflin Co., Boston; 404 pp.
- Garnett, W. J. 1953. Freshwater Microscopy. Dover Publications, Inc., New York, 300 pp.
- Park, S. H., Chang, C.Y., and Shin, S. S. 2005. A new culture system for *in situ* observation of the growth and development of *Eucyclops serrulatus* (Copepoda: Cyclopoida). The Korean Journal of Parasitology 43(4), 141-147.

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Insects Rebounding Downeast

by Tony Roberts

I've bent your ear on the subject in the past, so it seems only fair to let you know that the beginning of July, 2010, has brought some signs of a recovery in the insect population here, a much greater range of species from various moth families appearing at the ever-lit bathroom light.

A few hot days seem to have helped bring these out, but they've kept coming since through variable weather, including some days of cold and of heavy rain. Numbers remain quite low, but diversity is substantially greater than in the past three years, when it had dwindled down to no more species perhaps than one might count on the fingers of one hand. I would guess that perhaps a third of our normal complement may have returned.

Butterflies also did well this spring, beginning about ten days ahead of their normal schedule. And some Diptera — especially deer flies — seem to be thriving as well (mosquitoes, fortunately, less so thus far; and black flies were very scarce, many of those that did appear being small and stunted).

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Hope Field Trip: June, 2010

by Charlene Donahue

The day of the June field trip was gorgeous: hot and sunny, with a bit of a breeze. Twelve MES members gathered at Eleanor Lacombe's homestead in Hope.

Although the weather was glorious, collecting was mediocre — few butterflies, not many beetles, no exciting finds. There were some interesting moths hanging around near the Maine Forest Service light trap that Eleanor runs, and everyone found something to hold their interest for a time. Sometimes hot days keep the insects from moving around much just like people. But the company and discussions were stimulating and it is always enjoyable to spend time with others who share a love of insects.

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Rangeley Field Day Surprisingly Good!

by Bob Nelson & Dave Bourque

The rainy weather forecast apparently scared off many would-be attendees, but we were there at Saddleback Lodge on Saturday morning, July 10th. The view from near the summit wound up being awesome, and the abundant ripe wild strawberries were delicious!

There was a light rain as we drove over, but by the time we were setting out directional signs to the site it was little more than drizzle. At 10:00, there were sporadic sprinkles, but after waiting until 10:15 or so to see who else would show, we went browsing slowly around the parking lot. By 10:30, we were still the only ones there.

The Saddleback Lodge folks undoubtedly arranged for the weather to cooperate, and we started slowly climbing up one of the ski runs through the vast fields of blooming lupines and other wildflowers (meadow rue, bluebells, yarrow and others). An unusual aspect of the vegetation was that there were sundews — normally bog plants — growing up much of the hillside in almost any damp setting, even tiny depressions the size of a teacup.

It was admittedly too wet for sweeping, and even deer flies were in short supply. However, collecting for ground beetles was excellent, and it was pretty good as well for ground-dwelling Hemiptera. Small, white moths were constant companions, and by late afternoon there were many flies, including bee-mimic Syrphids and butterflies. A lone

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Saddleback Field Day Report (cont.)

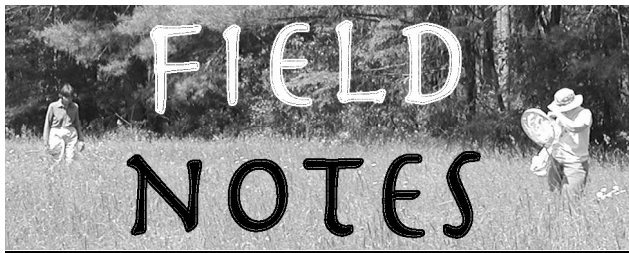
but very wily tiger beetle was also out and about. We found a large wasp nest in one of the control cabins near the summit – but left it intact for another day. Ants were varied and ubiquitous.

The higher we climbed, the drier it became, and on a couple of occasions the sun was bright enough we could see our own shadows on the ground. A light breeze kept it constantly comfortable, and the ceiling rose to where we had panoramic views of 10-20 miles across the Maine and New Hampshire landscape.

Between us, we probably collected a couple hundred specimens, including some unusual carabids and ant-mimicking Hemiptera. It was most definitely a successful day in the field.

It was unfortunate that the weather was suboptimal, and undoubtedly kept everyone else away. However, on a sunnier day this could have been a phenomenal trip. We'll hope to schedule it again for July of next year, and maybe we'll get better weather. The Saddleback management has done a beautiful job of landscaping at the base of the slopes, and on a drier, sunny day the flying insects should be everywhere.

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Japanese Beetles & *Istocheta aldrichi* Report

On July 8, Dana Michaud and I took a trip to one of our favorite insect hunting spots, a gravel pit in Litchfield. While there, we noticed many Japanese beetles that had eggs of the parasitic fly *Istocheta aldrichi* attached. We observed over a hundred beetles, including many mating pairs.



This dead Japanese beetle sported five eggs of the parasitoid Tachinid fly *Istocheta* (= *Hypercteina*) *aldrichi*, as photographed in Waterville by Edie King.

About half the beetle population was infected, typically with two to four eggs per beetle. This is similar to what I have seen around my house in Winslow this year. On July 23 to 24

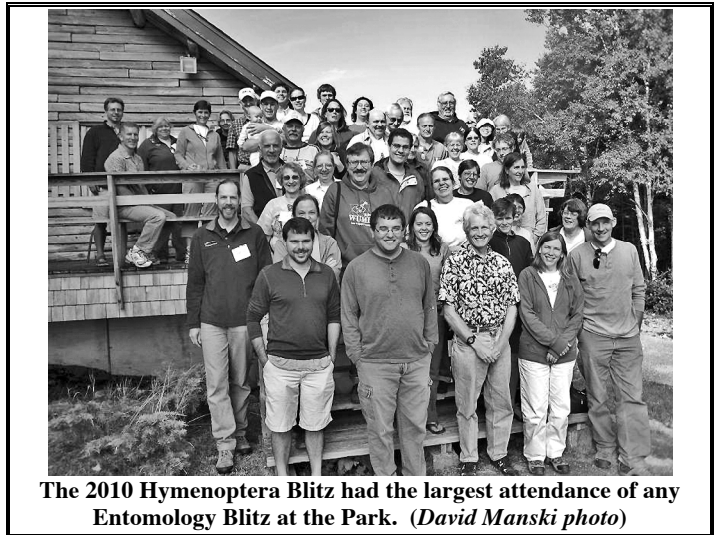
at my camp on East Pond in Oakland, about one-fourth of the fifty or so beetles were parasitized. At the Good Will-Hinckley School grounds on July 28, of the forty plus beetles observed only about one-fourth were infected. - *Dave Bourque*

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Hymenoptera Blitz Big Success

by Bob Nelson

Near-perfect weather helped the Hymenoptera blitz at SERC (the Schoodic Education and Research Center) at Acadia National Park to be a success by almost any standard. About 70 people turned out to collect, pin, label and identify Hymenoptera, led by Ellie Groden and Frank Drummond of the University of Maine, and Sam Droege of the U. S. Geological Survey.



The 2010 Hymenoptera Blitz had the largest attendance of any Entomology Blitz at the Park. (David Manski photo)

In early counts, with catches from numerous pan traps and Berlese funnel samples still remaining to be examined, there were already some 20 ant species in 10 genera known, with the number expected to rise to around 30 in the final count. (For comparison, the 2003 Ant Blitz on Mount Desert Island recorded a total of 44 species.)

Although only two were overwhelmingly dominant in the counts, there were at least *eight* species of bumblebees recorded in a bee fauna of over 30 species, that was expected to rise to at least 40 as more of the unknowns were identified; one highlight in this regard was the discovery of what could be a previously undescribed species of bee.

Perhaps surprisingly, despite the proximity of numerous homes to the park collecting sites, not a single European honeybee (*Apis mellifera*) was encountered in the blitz. The bee diversity was also quite surprising, inasmuch as the Schoodic Peninsula is predominantly spruce forest (not generally good bee habitat), and there are only some 70 species of bees known from the entire state of Maine.

Wasps were numerous and diverse, with Ichneumonidae, Braconidae, Vespidae and the Chalcidoidea being major groups represented. A tremendous amount of work remains to be done on this highly diverse assemblage, and experts are being ferreted out to help with specific groups. Over 100 Hymenopteran species were collected in this year's efforts.

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Hymenoptera Blitz Report (cont.)

Though the dates and group to be targeted for 2011 have not yet been set, there was some discussion of re-visiting the Lepidoptera, previously covered in the second blitz in 2004. That blitz, however, was scheduled in mid-June, too early for some species to have emerged, and was also hampered by cool and wet conditions.

There was also discussion of assembling a publication of some sort, documenting what has been learned of the insect fauna of the Park as it has been expanded by the Blitzes over the years. Discussions on this topic and the 2011 Blitz plans will undoubtedly go forward over the late fall and winter months. Updated information will be reported in *The Maine Entomologist* as it becomes available.

Everyone agreed that David Manski and his crew did an outstanding job of facilitating the event once again, despite major construction projects currently underway at the facilities. Alicia Fortier in particular seemed to be everywhere helping out with everything.



The lab at SERC was very busy into the wee hours of Sunday morning as people sorted, pinned and labeled specimens that had been collected Saturday afternoon and evening.

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Calendar Reminder!

Here's a reminder that we're still looking for a few more good photographs for the 2011 M.E.S. official calendar!

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

Please submit only unpublished photographs. All images should be digital and submitted via e-mail or on a CD (JPG format preferred). The photos should be "landscape" orientation and of sufficient resolution that they will retain clarity when enlarged to 7x9 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, 2010. 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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Bug Maine-ia to Return to Maine State Museum in Augusta

Insects of all sorts of sizes, shapes and colors will be featured in displays and hands-on activities at the Maine State Museum's annual Bug Maine-ia, from 9:00 a.m. to 3:00 p.m. on Wednesday, September 15th. The event provides maximum exposure to the fascinating creatures that are over, under, and all around our world. Admission is free for the celebration.



Bill Urquhart encouraged young entomologists-in-training in field collecting at Bug Maine-ia in 2009.

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



Dana Michaud and Dick Dearborn were among those who shared their entomological knowledge with young enthusiasts at Bug Maine-ia in 2009

A Great Collecting Day at Kennebunk Plains

By Dana Michaud

Arriving early for the May field day at Kennebunk Plains, I opted to do some collecting in the field opposite the main parking lot. Sweeping the low-lying vegetation, the ½-hour excursion yielded primarily Coccinellids (*Brachiacantha* sp.), a number of Cantharids, and ants.

Returning to the parking lot, I found that other M.E.S. members had arrived to talk insects and spiders, including our hosts, the Woos. Dan Jennings was here to sample Arachnids. Kevin Byron, a local photographer, informed the group of the areas to avoid due to the presence of the grasshopper sparrow, as well as the whereabouts of a protected colony of northern blazing star (which was not in bloom).

Eager to see Maine's longest snake (the Black Racer), I headed northward with Dave Bourque on a dirt side road used primarily by joggers and dog walkers.

Collecting along the dirt road yielded, besides ants, a *Methoca* (an antlike wasp parasite of tiger beetles), two species of Mutillids, bee flies, a number of very hairy robber flies, and a large *Calosoma calidum* (not taken, but identified).



Charlene Donahue and Dan Jennings inspect specimens at the Kennebunk Plains (Kevin Byron photo)

At the northern edge, the road turned and headed towards scrub pines and mixed forest. Sweeping the vegetation yielded more coccinellids, cantharids, an array of small wasps, and finally the bane of all collectors, ticks. After collecting a dozen or so deer and dog ticks, I decided to return to the plains edge where burning was carried out to control plant growth for the northern blazing star colony. The perimeter trail circles back to the main dirt road and to the parking lot.

M.E.S. members had gathered to talk catches. Brandon Woo's *Cicindela repanda* was released after he showed us. As we never went near the "pond," we had only encountered *C. sexguttata*. Karen Hopkins had found a second specimen of a pretty tiger moth I had given her earlier. Dan Jennings and Charlene Donahue were still looking for spiders (and insects).

I collected one of the Pompilids (spider wasps) they were chasing, but not its spider prey. Both were in jeopardy, as [non-M.E.S.] vehicles that weren't supposed to travel on the road (where the wasps were nesting) were disregarding the sign that stated no cars were permitted past the entrance during grasshopper sparrow nesting season. The Pompilid

was a casualty of one of the vehicles, as were a number of other insects.

Mid-afternoon, as members were leaving, we left to explore the western part of the plains via a separate road. The blatant ongoing four-wheeler abuse of this area ended at the power line where we found the beautiful tiger beetle *Cicindela formosa generosa* in small numbers. Circling back, we encountered the Woos, who offered to take us to Parson's beach in Kennebunk.

At Parson's, with much scattered debris at the high tide mark, we collected an occasional Carabid and a few specimens of the beach scarab *Aegialia arenaria*, while passing up two common denizens, the large Maritime Earwig and the beach tiger beetle *Cicindela hirticollis*. Returning to the parking lot, we said our good-byes, the Woos gave me directions on how not to get lost and we headed out.

Once we finish identifying what we can, our findings will be integrated into a common collecting database, to add to the known species that inhabit the Kennebunk Plains. Hopefully, all who attended will pool their findings to help those entrusted to protect this area. The endemic insect life, as well as the threatened Northern Blazing Star, Black Racer, and Grasshopper Sparrow, make this area home and thus worthy of protection.

The contact person for any findings is:

Marie Louise St. Onge
Executive Director, Kennebunk Land Trust
11 York Street
Kennebunk, Maine 04043

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Annual Meeting Call!

Just a reminder that the 2010 Annual Meeting of the M.E.S. will be held at **Rock Ridge**, Bob and Nettie Nelson's home at 779 Battle Ridge Road in Clinton, on Saturday, Sept. 11th, from 11:00 a.m. - 3:00 p.m. This is when and where we conduct Society business, elect officers for the coming year, and have a great time, including some collecting in a variety of habitats, if weather permits. Come early if you'd like to collect - there's plenty of insects about in a wide range of habitats, from the gardens to the forest and the peeper pond.

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

Important items on the agenda include the Treasurer's Report and auditing of books; election of 2011 M.E.S. officers; calendar status and sales protocol; Bug Maine-ia; 2011 Winter Workshop (topic, location & date); selection of events for 2011 so that they can be placed on the calendar; discussion of M.E.S. outreach efforts, and other pertinent Society business. If you're planning to come, please DO let Bob know so we can plan accordingly! You can send an e-mail to BeetleBob2003@yahoo.com or call at 426-9629. Contact Bob also if you need driving directions. We'll also have signs posted from the Clinton exits off I-95 to help those coming from outside the immediate area, whether you're coming from the north or the south.

Hope to see you there!

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Insect Notes From an Observer

by Dick Dearborn

While my presence has been somewhat focused on non-entomological pursuits this season, I have continued to maintain a constant vigil for the new and unusual and 2010 has not let me down! After a cold, damp and very limited season in 2009 I was pleased when greeted by a great deal of insect activity, especially butterflies, ushering in the early (up to two weeks), hot and humid, and somewhat dry spring and summer this year.

As the flowers burst into bloom around my home it appeared early that 2010 would be the year of *Vanessa*. Numbers of Red Admirals and both American and Painted Ladies added a vestment of colorful activity to a heavy floral bloom. Of course, it didn't hurt that I encourage a fair amount of stinging nettle to remain in rough areas as food for many of the caterpillars! As the season progressed my granddaughter and I also saw unusual numbers of White Admirals, Mourning Cloaks and Anglewings (especially Eastern Comma). Northern Crescents, Clouded Sulfurs and Common Ringlets were common, as usual, while we saw Canadian Tiger Swallowtails and several of the Fritillaries scattered about.

The crowning point of the butterfly season for us was the arrival of royalty, the Monarchs, in early July. We keep patches of both mature and maturing milkweed in an unused pasture so that the Monarchs will have a choice as they return to us. After a very limited season for them in 2009, numbers so far for this year have been good and larvae seem to be happy with their food. Shortly after seeing the Monarchs, we were blessed by a healthy crop of Cabbage Whites so we have to keep things in perspective. So as you can see I have followed the "flowers of the air" and although numbers and diversity were good I have no rarities for the record books. My field guides have had a workout though.

To keep my hand in identification work I was also given the opportunity to help with processing light trap collections for the Maine Forest Service. Although this can be itchy work due to moth scales, it can be rewarding and interesting. I won't go much further than to state that routine surveys can produce some great records.

The following includes just a few things to whet your appetite: I saw the opportunity for specialists to glean some great records, if someone wishes to spend the time to sort through the catches. For instance in following up on my article on slug moths (Limacodidae) in our February 2010 newsletter, I found at least four species to be common to abundant throughout much of the state: *Apoda biguttata*, *Euclea delphinii*, *Lithacodes fasciola* and *Tortricidia flexuosa* (very abundant in some traps). Further distribution records could be very helpful. I also noted two records for the beautiful little Pink-bordered Yellow moth, *Phyometra rhodarialis* which had not yet been recorded for Maine. I also found a cerambycid beetle which could also be a new Maine record, *Tylonotus bimaculatus*. I was also surprised to see large numbers of the Asiatic Garden Beetle, *Maladera castanea*, which Dana Michaud informs me has been here for a while, in many traps.

So as you can see, entomologists can find entertainment just about anywhere. Enjoy!

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Quoddy Nature Notes:

Burying Beetles

by Fred Gralenski

A couple of weeks ago I left a 5-gallon bucket outside the cellar door, and an unfortunate deer mouse investigated it and fell in. By the time I needed the bucket the mouse had met his demise, and the carcass had attracted some blow flies and a red and black beetle. I went to get my camera, but the beetle had left.

I suspected it was a burying beetle and did some cursory study on them; I found them interesting, and decided to try a little experiment. I put 4-5 inches of dirt in the bucket and put the dead mouse on top. In one day, the mouse was buried. I knew it was a burying beetle, and I carefully dug up the little rascal and took his picture, then put him back to his living room, kitchen, boudoir and nursery as best I could. I did identify the genus as *Nicrophorus*, but none of my references could tell the species. An email to 'Beetle Bob' of the Maine Entomological Society and I got the answer, and I was off and running with this column.



According to 'Beetle Bob', we have 6 to 8 different species of burying beetles here in Maine. My beetle was *N. orbicollis*, and these are the most common here. Lots of the genus *Nicrophorus* are colored orange and black but only *orbicollis* has a circular 'pronotum', which is the chunk of beetle armor between its head and abdomen.

My beetle is a marvel of chemical engineering in both production and sensing. Using his hi-gain clubbed antennae, each with its three orange apical segments, he can detect a dead carcass over a mile away. When he finds his treasure and checks that everything is OK and that there are no
(cont. on next page)

Quoddy Burying Beetle (cont.)

competitors, he gets out his chemistry set and mixes up a batch of pheromones and summons the missus. She gets the signal from up to a mile away and comes flying in and they set up housekeeping. The first order of business after mating is to secure the food supply and the two of them will work together to bury the carcass. In the process, the male again gets out his chemistry set and produces an antibiotic to delay the decaying of the carcass.

Within two days after arriving the female will lay her eggs, not on the buried carcass but nearby in the soil. The eggs hatch in about 2 days and the larvae are fed by both adult beetles. The adults eat the carrion and regurgitate the food for the larvae, as the larvae apparently have weak and ineffective mouthparts. (I can visualize the family scene: "Gee, Ma. Are we going to have upchucked mouse again tonight? We had that last night.")

The number of offspring is somewhat determined by the size of the carcass. If the carcass is deemed too small to provide enough sustenance for the number of eggs hatched, the parents will limit the number of larvae by a grisly process called filial cannibalism, and kill some of their offspring. After about a week Daddy will leave, and shortly thereafter the well-fed larvae (if they like upchucked mouse) will go off into the surrounding soil to pupate, at which time Mom will also leave.

After about two weeks the youngsters will finish their process and emerge as adult burying beetles. It is probably too late in the season for them to set up housekeeping this year, but they will seek out carrion and dung for food until the cold weather comes, then they will hibernate.

In 2011 the generation of beetles hatched in my bucket will emerge in the spring and if they are successful in finding the right carrion they may produce two or more broods. None of my references gave a lifespan for these critters, but I would guess about two years max. *N. orbicollis* ranges along the east coast from Canada down to Florida, out to Texas and up to North Dakota.

I always wondered why in the nursery rhyme, "Who Killed Cock Robin?" the Beetle volunteered to make the shroud. I think he was playing it sneaky and let Mr. Owl do the heavy digging, but Mr. Beetle was planning other things.

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Cirque du Soleil

by **Charlene Donahue**

I know the following review is of an event outside the State of Maine but it is a production that will never come to Maine and is close enough for others to attend this month.

For years I have yearned to attend a Cirque du Soleil show (a high end 'circus' of acrobats in fantastical costumes telling a story set to music). This year the traveling show is called *Ovo*: the tale of a fly who finds a huge insect egg and falls in love with a ladybug. All sorts of 'insects' take the stage - a caddisfly, syrphid flies, caterpillars, leaf-rollers, grasshoppers, spiders and many more.

So often insects in art are monarchs, dragonflies and cutesie bees, and it was refreshing to see some very clever renditions of more obscure insects. There are the high-wire

acrobats, tightly choreographed dances, gymnastic numbers, trampoline and climbing-wall routines.

It was worth the trip to Hartford, CT, to experience the show and see a creative manner of portraying insects. If you are interested in the show, it is now playing in Boston.

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Ladybird Beetle Talk Scheduled at U. Maine

On October 22, Dr. Louis Hesler from the U.S. Department of Agriculture will present a seminar on lady beetles (Coleoptera: Coccinellidae) on the University of Maine campus in Orono. The seminar will take place at 3:10 p.m. in Room 102 of Murray Hall. Refreshments will be served at 3:00 p.m.

Dr. Hesler will talk about The Lost Lady Bug project. This is a large, federally funded project that relies on citizen scientists to catalogue the current diversity and distribution of native and non-native lady beetles across the United States. The ultimate goal is to gain a better understanding of how global change affects this important and very charismatic group of insects. More information is available at

<http://www.lostladybug.org/>

If you have any questions about Dr. Hesler's seminar, please e-mail Andrei Alyokhin at

andrei.alyokhin@umit.maine.edu

U.S. Army and Reserves Seeking Entomologists!

The branch of the U. S. Army responsible for providing health care has various positions for entomologist officer(s) for those looking for either part-time or full-time employment. To be eligible for consideration, the following criteria must be met: the applicant

- *Must be a US citizen;*
- *Must have either a Masters degree or Ph.D. in entomology, including a minimum of one medical entomology course from a school acceptable to the Surgeon General;*
- *Must be able to pass the Army's height and weight standards.*

A brief "job description" is as follows: "The Entomologist Officer primarily conducts research in medical entomology, planning, controlling, and monitoring pest and disease-control programs that can affect the health and morale of soldiers and their families. Many entomologists serve in staff assignments, where they prepare regulations, directives, standards, and criteria. Others are engaged in teaching preventive medicine personnel.

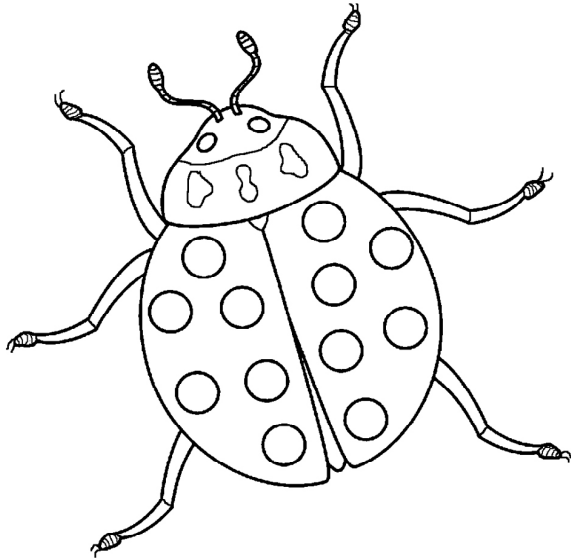
At more senior levels, entomologists serve as consultants both in the United States and overseas locations."

If you would like to know more, please contact

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Just for kids:

Coloring Spot - Color in the Ladybird Beetle!



BEE GOOD!

By proclamation, Governor John Baldacci declared June 21-27, 2010, as Pollinator Week in the State of Maine. This coincided with the third annual National Pollinator Week. For more information, go to

http://www.pollinator.org/pollinator_week_2010.htm

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More than you ever dreamed possible to know about Honeybees, honey, and beeswax can be gleaned from the Maine Bee Keepers' web site at

<http://mainebeekeepers.org/resources/bee-trivia.html>

Ladybird beetle trivia: One or another species of ladybird beetle is the official state insect in Delaware, Iowa, Massachusetts, New Hampshire, New York, Ohio, and Tennessee. Ladybird beetles are often called "ladybugs," but they are beetles (order Coleoptera), not bugs (Hemiptera).

There are about 5000 species of ladybird beetles in the world, and almost all are predators on soft-bodied insects such as aphids and mealybugs. Ladybird beetle larvae can eat about 25 aphids a day; adults can eat over 50.

Ladybird beetles are winged insects. When they are not flying, the flight wings are covered and protected by a pair of modified wings (called elytra). When flying, the elytra open up, allowing the flight wings to unfold and move. The upper surface of the thorax is called the *pronotum*. The pronotum frequently has variously shaped and colored (usually yellowish) spots, which can be used to tell one species from another. Many ladybird beetles are red or orange and black, but other colors occur. Females are usually larger than males.

An average man can pull about 0.86 times his own weight, but a leaf beetle (*Donacia*) can pull 42.7 times its own weight. Horses can pull half their own weight, and ants can pull 52 times their weight (comparable to a human pulling 4.5 tons)

COMING M.E.S. EVENTS in 2010

(information on each item below can be found inside this issue of *The Maine Entomologist*)

- 11 September Annual Meeting, Clinton (Kennebec Co.)
- 15 September Bug Maine-ia, Maine State Museum, Augusta.
- 15 September Deadline for submission of photos for 2011 M.E.S. Calendar consideration.

(See <http://www.colby.edu/MES/> for more detailed information)



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

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