Maine Entomological Society Newsletter 1999

A FORUM FOR STUDENTS, PROFESSIONALS, & AMATEURS IN THE PINE TREE STATE

Volume 3, Number 4, November 1999

From the President

Our third year has been a great success with three field trips and one winter meeting. As this year draws to a close, we are approaching the seventy member mark and still growing. And several weeks ago, the Capital Weekly ran a full-page article on MES as the cover feature of the Lifestyle section.

In response to our success, the Executive Committee, made up of myself, Bob Nelson (Vice President), Nancy Sferra (Newsletter Editor), and Don Ouelette (Treasurer), met on October 4th to look into the needs and direction of our group. One of the more critical issues to deal with this winter is to discuss and approve Bylaws and a Constitution. Bob Nelson has drafted these two documents which we will be sending to members for review. Bob put a lot of effort into this endeavor, for which I am grateful.

Now for the exciting news about plans for the year 2000! We will shoot for four issues of our newsletter in 2000 if we have items and don't overburden our editor. Since our field trips seem to be popular activities, we will try to organize one collecting/field trip each month starting in May. We're open to your suggestions but would like to cover as many different areas of the state as possible. Hopefully, there'll be something for everyone. We have already been invited back to Fields Pond (Maine Audubon Society) for a second year. Other areas which have been suggested are Wells Reserve, Great Wass Island, and Fort Kent. We hope to have the summer field schedule ready to print in the spring newsletter.

I hope you have a great holiday season and a safe and happy winter. Be in touch with your questions, comments, and news articles.

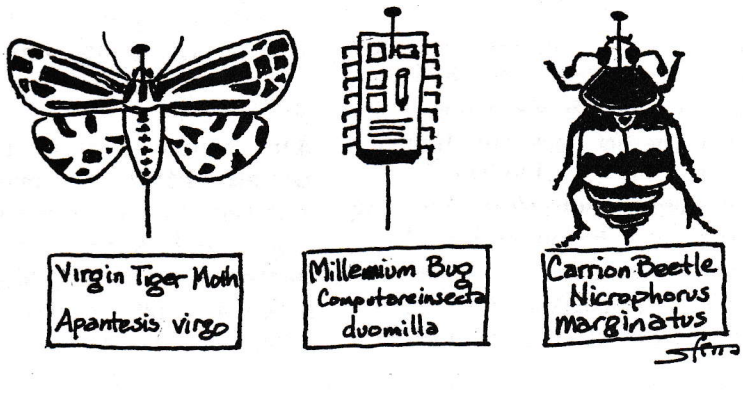
-Dick Dearborn

Millennium Bugs!

In honor of Y2K, we plan on featuring a different 20th century Maine entomologist in each of next year's newsletters. We are taking nominations from members; let us know who you would like to see profiled in the newsletter. And, of course, if you want to volunteer to actually write the article, we welcome your help. Send your nominations to Nancy Sferra or Dick Dearborn.

MES Statement of Purpose

Please help us by reviewing and commenting on a statement of purpose for the Constitution which reads: the purpose of the Maine Entomological Society shall be: a) to promote a forum for discussion, cooperation and collaboration among amateurs and professionals in entomology, who either reside in Maine or have interests in Maine insects and terrestrial arthropods; and b) to encourage the active study of all aspects of Maine insects and terrestrial arthropods, and to promote educational activities on Maine insects and arthropods throughout the state. Please send your comments to Bob Nelson and Dick Dearborn.



The Newfoundland Insectarium

by Monica Russo

Have you ever been to the Egyptian exhibit at the Metropolitan Museum of Art, and stood in awe of the amazing patterns, colors, and designs, the gold and electrum work? The Museum's displays are perfect, the lighting is perfect...and that is just the situation at the Insectarium at Deer Lake (Reidville) in Newfoundland. This new museum is a stunning artistic showcase of our planet's entomological biodiversity.

A visit to the Insectarium affords the opportunity to observe an extravaganza of shapes, textures, stripes, dots, delicate pastels, pointillistic designs and rainbow iridescence. It is a celebration of the most colorful, the most frightening, and most beautiful group of animals on Earth – eye to eye – as a personal experience. Huge stag beetles, enormous damselflies, banded *Heliconia* butterflies, jewel-like metallic buprestids, and scarabs like polished gold keep visitors surprised and awestruck.

The Insectarium's design and presentation reminds one of a classy art gallery, and it can be favorably compared to sections of the American Museum of Natural History and the Museum of Modern Art in New York City, on a smaller scale. The Insectarium building is a renovated dairy barn, and the original 10-ply laminated, curving cedar beams were retained, high and arched like a cathedral. There are three levels, with the top floor uniquely inviting as a balcony from which to observe the observers below. Wall and floor exhibits show insect groups from around the world, in "units" of interest that are captivating to any non-biologist. Consecutive scenes shows specimens of a *Pepsis* wasp (the big "tarantula hunter") attacking her prey. Another exhibit explains the irridescent colors of the big blue tropical Morpho butterflies. Most exhibits are grouped by region: palearctic, nearctic, australasian, etc., and accompanied by excellent maps. Displays of cultural entomology include ant wine from China, cicada larvae on rice, Taiji Diety Tea, canned beetle larvae, and insect jewelry.

Live displays are interspersed, so you can view both living and preserved specimens as you wander around. There are live Cecropia larvae, live cockroaches, a giant water bug, local tiger beetles munching up crickets, and the best *Aphis* honeybee observation window I've ever seen, with an observation runway for the bees arrival and exit. Staff members are always nearby to let visitors handle the enormous walking sticks or tropical leaf-insects. There are a few non-insects, including an African emperor scorpion, giant tropical millipedes and Central American rosy tarantula.

The Newfoundland Insectarium is one of two in Canada, and both apparently have been guided or influenced by the French bioscience-education entrepreneur Georges Brossard. His videos of entomological adventures in the field are shown in a small theater within the museum, and his exuberance and vitality are infectious. The videos may soon be released to public TV.

Other nature centers and museums often rely on gadgets to accommodate children: exhibits that light up or move when a button is pressed, a "feel and squeal" box, or clever panels to slide aside. The Newfoundland Insectarium does not need these props. I had previously visited a larger Canadian Museum, and while it was interesting and educational, and had a butterfly house with alive tropicals flying free, the Newfoundland Insectarium surpassed it, giving a spectacular sense of immediate personal discovery.

In developing the concept for the Insectarium, Director Lloyd Hollett and his partner have created a remarkable center of art, science and education. The Insectarium is sure to be the catalyst for inspiring biologists, entomologists, and botanists of our near future. If you're headed up north, don't miss it!

If you want to find out more about the Newfoundland Insectarium, call (709) 635-4545 or check out their WebSite at www.newfoundland-insectarium.nf.net.

Ammophila Rocks

by Monica Russo

Ammophila wasps are perhaps the most slender and graceful of the family Sphecidae. They are fossorial: each female diligently digs an underground nursery for her expected brood, and the burrow is stocked with the larvae of lepidopterans – usually small inch worms and cut worms. Sawfly larva are also sometimes used. At least 45 species of *Ammophila* nest in North America, and about a dozen of those may be found in the northeast.

Ammophila moms are famous insects because they were described as tool users in the late 1800s by the entomological team of George and Elizabeth Peckham. The Peckhams watched a female *Ammophila* use a pebble to tamp down the sandy dirt around the nursery entrance, apparently to camouflage the finished nest site. Indeed, this is what an *Ammophila* mother does when the burrow is stocked and her job is completed. The Peckhams were astounded. "We're claiming a great deal for *Ammophila* when we say that she improvised a tool and made intelligent use of it, for such actions are rare even among the higher mammals," they wrote. At a time when the earliest discussions of evolution were underway, this was a daring assertion.

On several occasions I have had the luxury of watching an *Ammophila* mom pick up and test different pebbles, as if to qualify them as to weight and suitability

for closing off the nesting burrow. You can watch these wasps very closely as they work, as long as you are quiet. It's easy to see the pebbles they pick up, and if they reject or drop a pebble, you can pick it up yourself once the female has moved away. So, standing on my window sill is a glass jar labeled "*Ammophila* Rocks." In it are three pebbles which *Ammophila* moms have personally handled and then rejected or ignored. Color is apparently not a factor. One pebble is dark gray, one is pinkish, and another is very light but not white. Two pebbles measure about 7 mm across, and one is about 8mm.

On Sept. 2, 1999, I collected a fourth rock manipulated by a wasp. About ten in the morning, my mate and I observed an *Ammophila* working at her tumulus (the volcano-like mound of dirt surrounding the entrance hole). She entered head first, and backed out with a load of excavated sand, which she threw against a stump a few inches away. She repeated this at least four more times. Then she started searching the immediate area for pebbles, gripping them and discarding or rejecting several. On five occasions, she found pebbles which she determined to be suitable for closing off the entrance to the nest, and we watched those five different pebbles get dropped into the entrance hole. Then she simply left the site. It is normal for *Ammophila* to fill an entrance loosely with pebbles before it is quite finished.

We waited for several minutes, and when she did not return, I went indoors to get a pair of curve-tipped forceps to retrieve the last pebble. This was easy to do since it was near the surface of the ground. The pebble is white, like quartz perhaps, and not rounded, but long and flat, and measures about 8 mm long.

Later that day, around 6:30 p.m., I saw that the *Ammophila* mom had returned to the entrance area, but I had approached too closely and she went away. I wonder if she could tell that her most recently collected pebble, quite a nice white one, was gone? It's in my jar now, with other *Ammophila* rocks.

Life History of the Ichneumonid Parasite *Megarhyssa lunator*

by Sam Ristich

On June 6, 1999, I was very lucky to discover a newly emerged colony of the giant ichneumonid wasp *Megarhyssa lunator* in North Yarmouth. I have photographed the female several times in my 66 years of collecting, but this was my first observation of emergence activity. I decided to document my findings over the 34 day period and add some information on its horntail host, *Tremex columba*, and it's symbiotic fungus, *Cerrena (Daedalea) unicolor.*

The *Megarhyssa* adults were emerging from a large dead beech tree. There were 45 males and two females. This giant Hymenoptera parasitizes the larvae of two other Hymenoptera that are wood borers - *Sirex* spp. and *Tremex* spp. *Sirex* larvae tunnel in conifers whereas larvae of *Tremex columba* are found in deciduous wood. Both species have a symbiotic relationship with a fungus. *Sirex* are associated with species of leather fungi in the genus *Amylostereum* whereas *T. columba* has a symbiont called *Cerrena (Daedalea) unicolor.*

The larvae of the horntails store the fungal spores and mycelium in special sacs (called mycetangia) on their body. The hyphae pre-digest the cellulose for the Hymenoptera larvae. When the larvae pupate, the spores are transferred to the adults. When the females puncture the wood to deposit the egg, they also inject the spores. One of the theories claims that the female *Megarhyssa* can detect the presence of the horntail larvae in the wood by the odor of the fungus, allowing her a target when she drills the eggs through the ovipositor.

The emerging colony of *Megarhyssa* were scattered on the dead beech up to a height of ten feet. Several hours later, there were still 15 males trying to mate with one female. The males were in a frenzy probing some of the 45 emergence holes.

On June 14th, I witnessed a spectacular sight; two females drilled for 20 minutes side-by-side, and the loop in the drilling apparatus was covered by a milky film. Even two weeks later, there were still one female and six males remaining on the log. By July 14, all activity by *Megarhyssa* had ceased.

Of course my observations led me to a number of questions: a) what did *Megarhyssa* eat for 28 days, b) what was the milky film on the drilling loop, c) did I observe an unusual ratio of 15 males to one female, d)what does the male frenzied dance reflect, e) were the sporocarps of C. *unicolor* present last year when the female *T. columba* deposited its eggs in the beach log?

What Magic have we wrought and how lucky can one human being be in one lifetime!

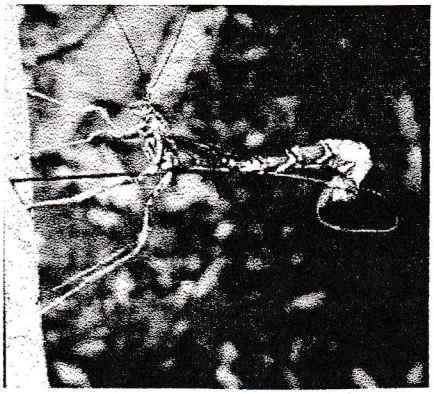
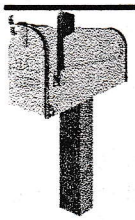
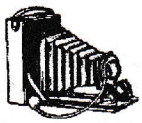


Photo by Sam Ristich

Female *Megarhyssa lunator* depositing her eggs into a dead beech log.



Please check your mailing labels to make sure your address is correct. Send any changes to Don Oullette. The number in the right hand corner of your mailing label is the year through which your membership is paid. Most everyone should be thinking about sending year 2000 dues (still a bargain at $5) to Don.



For All You Shutterbugs

In order to jazz up the newsletter, we'd like to include more photos. If you take a picture that you'd like included, please mail me a copy or send it digitally via e-mail. We are also in the process of pulling together a display panel on MES, so any photos of the group in action would be greatly appreciated.

-Nancy Sferra

Insect Trivia

Did you know that there is a Beetle Mountain (T7R10) and a Caterpillar Mountain (Sedgwick)?

DRAGONFLY SURVEY TAKES WING

Maine's Damselfly and Dragonfly Survey (MDDS) got off to a strong start this year with over 120 volunteers having expressed interest in participating in the state's first odonate atlas initiative. The Maine Department of Inland Fisheries and Wildlife hosted two separate training workshops this summer at the Eagle Hill research facility in Steuben where 47 volunteers were briefed on dragonfly biology, preliminary identification, capture techniques, and specimen preparation. In addition, workshop participants were provided with a field manual designed by Paul Brunelle filled with valuable information on field techniques and survey protocol.

As a result, nets were swinging from Biddeford to Fort Kent this summer and the season's first specimens are now trickling into my Bangor office. Volunteer efforts will greatly improve our Department's knowledge of the distribution and abundance of the states 150+ species, including several globally rare species that may require future conservation attention. Indeed, the highlight of the survey season so far includes a first U.S. record for the Quebec Emerald (*Somatochlora brevicincta*) found haunting a remote bog in central Maine. Stay tuned for further discoveries and dragonfly information on our upcoming WebSite to be announced shortly.

-Phillip DeMaynadier

Migrations

Dawn Nelson has moved to Ashville, NC, where she has taken a teaching position at Warren Wilson College. Her e-mail address is dnelson@warren-wilson.edu.

The deadline for the winter issue of the Maine Entomological Society Newsletter is January 15, with a mailing date of February 1. Send your submittals to Nancy Sferra. Other projected newsletter dates for the year 2000 are May 1, August 1, and November 1.

The Maine Entomological Society Newsletter is published quarterly by the Maine Entomological Society. Send newsletter items to Nancy Sferra, editor, at HC-33, Box 350, Bath, ME 04530 or via e-mail: nsferra@clinic.net. Dues are $5.00 per year. Checks should be made out to Maine Entomological Society and sent to Don Ouellette, Treasurer, at 892 Lewiston Road, West Gardiner, ME 04345.

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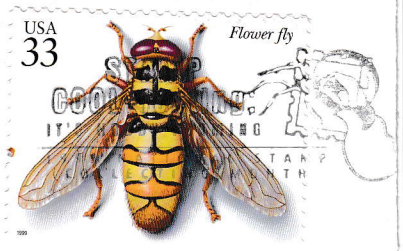

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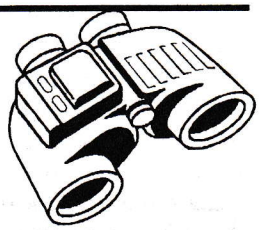
SIGHTINGS



Eastward Ho, Southward Ho

For whatever reason, insects continue to shift their ranges. It's too early for a full report on new Maine moth records for the '99 season, but the following stand out. First, to add to the list of western moths moving east, it is interesting to record the appearance for the second year of *Clepsis penetralis* Razowski, a tortricine first described in 1979 from Utah. Second, please note that the European geometrid, *Perizoma alchemillata* L., which was first reported in Nova Scotia in the '70s, has now made it south to Steuben. (Any earlier records from Maine should be submitted to Dr. Douglas Ferguson at the Smithsonian for an upcoming government survey on adventives.)

These counter-intuitive movements can best be added to the northward drift represented by *Pyrausta signatalis* and *Manduca sexta* as reported elsewhere in this issue.

-Tony Roberts

Pipevine Piggybackers

A garden center in Scarborough recently brought in a shipment of Dutchman's pipevine (*Aristolochia* sp.) from Florida and, soon after, large dark caterpillars with body filaments were found chewing the foliage. I collected several of the caterpillars on July 26, 1999, and within three or four days they pupated. On August 19, 1999, the last three butterflies emerged. The species was *Battus polydamus*, a neotropical tail-less swallowtail butterfly with a U.S. distribution of southern Florida and coastal areas of the Gulf Coast states.

-Dick Folsom

The *Monarda* Moth

In the summer of 1998, I purchased several plants of the genus *Monarda*. I was looking forward to the time when the flowers would come into full bloom...the red *Monarda didyma* bee balm, pink *Monarda fistulosa* wild bergamot, and purple *Monarda media* purple bergamot. When blooming time arrived, the *Monarda* flowers started to open up then withered and died. This year, the flowers still did not bloom, showing the same signs of necrosis as last year's flowers.

I started investigating, looking closely at the dead blossoms. I found whitish-green worms up to approximately one inch long in the flower heads. Several worms were found per flower head. My guess is that this worm was the cause of my wilted flowers. It appears to be the larval stage of the microlep *Pyrausta signatalis* which has a range from New Jersey south. I found presence of the worms on *Monarda* at more than one plant nursery in Maine within the past two years, and have been informed of plant symptoms occurring in Lewiston. Records of this species occurring in Maine in the past have been in one or a few remote areas. Is it possible that this pest of ornamentals is now being transported to various parts of the state?

-Jerry Therrien

Metrioptera roeselii -- A Grig Downeast

No one seems quite sure just when the European decticine *Metrioptera roeselii* (Hagen) first showed up in North America. It is tempting to speculate that this handsome little bush-cricket was a World War II import, as it was first recorded in Quebec in the summer of 1952; by 1965 it was ensconced in upstate New York, and in 1972 the redoubtable Maine orthopterist E. K. Ede collected it in Massachusetts, New Hampshire, and southern Maine. Ede's collections in Maine that year were from Kittery, York, and Cape Neddick. Being aware of Ede's records and having idly wondered just how widely *Metrioptera* might have spread during the intervening years, I kept my eyes open for the species during my own sporadic collecting efforts during the 1990s, but never turned it up and never made any concerted effort to do so.

It was, therefore, an unexpected pleasure to find myself eyeball to eyeball, as it were, with a specimen of *M. roeselii* one summer afternoon four years ago. I had spent a rather long couple of hours at manual labor in the vegetable garden at my home in Belgrade, and had just assumed the prone position in a shady spot on the back lawn, when I spied, at a distance of six inches, a fine specimen of the creature in question. Aquiring it was simplicity itself, establishing yet again the value of sloth and indolence in scientific collecting!

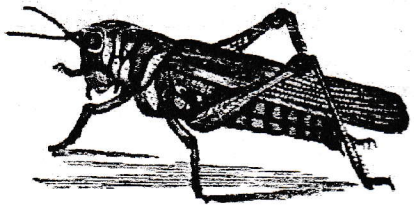
So now we know that our grig has made it at least as far inland and upland as Belgrade, but this fall yet another puzzle regarding its presence has arisen. Each year after the tree swallows have completed their domestic endeavors in my nest boxes, I remove and clean these structures prior to winter storage. I went through this drill several weeks ago, and was surprised to find the remains of two *M. roeselii* in one box. One of the specimens was largely intact, but the other consisted of broken but readily identifiable fragments. The question is, how did these remains come to be in the swallow nest? Were they prey items? Tree swallows often pick up nesting materials from the ground, but rarely feed there.

Many specimens of *Metrioptera* are brachypterous and thus incapable of flight, but others are long-winged and fly well. The wings of these specimens were missing, but even assuming they were captured on the

wing, how common a phenomenon is it for swallows to feed on flying Orthoptera? I've never found grasshopper remains in nest boxes before, have you? Could our hoppers not have been prey items at all, but made their own way up the poles and into the boxes for reasons known only to them, there to meet whatever grisly fate befell them? So many questions! As befits a retiree, I think I'll go lie down and ponder. After all, it worked once!

-Don Mairs

(Editor's Note: "Grig" is an English term applied to all leaping Orthoptera)



Some say Tomato, Others Say Tobacco!?...

Every year we recieve scattered reports from southern Maine of large hornworms decimating tomato plants in home gardens. Although the tomato hornworm (*Manduca quinquemaculata*) was reported from Maine by Brower, nearly all reports of hornworm defoliation over the last couple of years in Maine seem to have been due to the tobacco hornworm (*M. sexta*). The tobacco hornworm was not recorded from Maine by Brower and was generally considered more southern in distribution. Another new addition to our fauna?? The attractive moths have not been collected here unless reared, so populations may be due to spring migrants from the south. We will see!

-Dick Dearborn

.....Or Maybe Jimson Weed

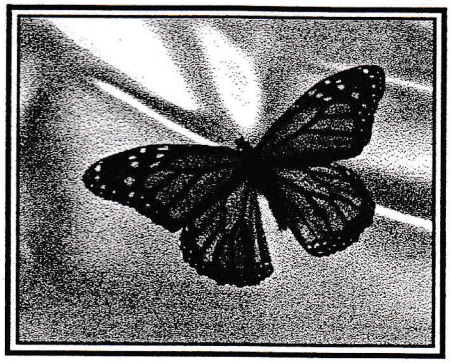
Tropical Jimson weed (*Datura cerotocaula*) seems to be another plant on which tobacco hornworm has been found lately. The huge green larva has seven white stripes on the sides that don't form a "J" at the base like the tomato hornworm. Like tomato, Jimson weed belongs to the Family Solanaceae. Tobacco hornworms are parasitized by the wasp *Apanteles*, and the wasp was able to find and deposit her eggs on the tobacco hornworm that was feeding on Jimson weed.

-Sam Ristich

Mexico or Bust

This August, there were reports that Monarch butterflies were more numerous than in previous years. Despite the drought, milkweed plants fared well, creating ample food for the caterpillars (they certainly were enjoying the butterflyweed in my perennial garden). According to Don Mairs, monarchs were seen on Monhegan in early September, and by late September, individuals were spotted as far as 30 to 35 miles out to sea in the Bay of Fundy over the Grand Manaan Basin. If you want to learn more about monarchs, check out http://monarchwatch.org/, a WebSite developed by the University of Kansas Department of Entomology and the University of Minnesota Department of Ecology. Here, you can find out about monarch biology, research, conservation, and resources, with links to other sites.

-Nancy Sferra



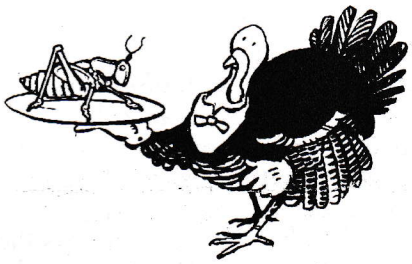
Monarch Butterfly
(*Danaus plexippus*)

Better Put On Your Woollies

We have again checked our winter weather barometer, the familiar banded woolly bear caterpillar (larva of the Isabella tiger moth, *Pyrrharctia isabella*) for an indication of whether we should be stacking extra firewood. At least in Kennebec County, the caterpillars have less than one third red segments and apparently entered hibernation early, indicating an early and more normal (more snow and cold) winter than we've had the past couple of years. Not to be outdone, the bald faced hornets nested low and many migrating birds left early, substantiating the forecast. So, break out the blankets and get ready to curl up in front of the fire with a good insect book this winter.

-Dick Dearborn

Have A Happy Thanksgiving



A Joyous Holiday Season

And A Happy New Year!