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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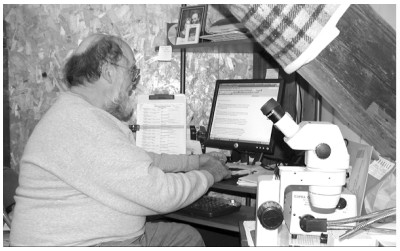

President's Corner

by Dick Dearborn

Wow!! Have we got a special issue for you, filled with lots of great items and adeptly constructed by Bob Nelson. I urge you to give it your special attention as there is so much to help you through another great "Bug Season."

The weather this past week (April 13-19), at least in Mt. Vernon, has been super with activity surging ahead from plants and birds to insects and herps! As I moved about with my granddaughter looking for "bugs" we watched: *Andrena dunningi* (an early ground-nesting solitary bee) foraging and looking for nesting sites; several species of tiny leafhoppers ranging from green to yellow and pink as they were leaving the litter; numbers of *Sehirus cinctus* (a burrower or cydnid bug) on grass clumps in our pasture; several species of rove beetles and ground beetles beneath rocks in our hedgerows; March flies; and numerous other hexapods, spiders and sow bugs. This in addition to insects making their exodus from our house! By April 19 we heard a few spring peepers near our beaver pond and a woodland clump of *Daphne mezereum* was just breaking bud. In spite of a variety of opinions, development this season at my place is close to that of 2007!!

By now most of you have already lined up your plans for this season. We hope that you have given prime consideration to our events as listed on the last page and on our website. However, we have one addition which I urge you to consider, a field event near Ft. Kent on July 28-29. While this is a week day and far from almost everywhere else, I have always found this area not only scenic but productive for collecting. So join together and get out the camping gear for a fun trip to "The County!"

Finally I would like to dedicate this issue to an old friend and mentor, Sam Ristich. In addition to our Sam's Page, note the reference to fungi in Allison Kanoti's article – Sam would be proud! I also urge members to do more observing, a Sam favorite. Consider counting bee visits to flowers and revisit by host over time as a measure of bee population health (for example, see www.greatsunflower.org).

There is so much to see, do and enjoy. Have a great season.

Dick Dearborn

Our membership count now stands at 123.

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In this issue:

UPCOMING FIELD DAYS:

☛ **Sat. June 21, 2008:** At Dick and Marj Dearborn's mountainside home in beautiful Mt. Vernon. If you've never been here, contact Dick (207-293-2288 or via e-mail at modear@prexar.com) for directions.

☛ **Sat. July 12, 2008:** Please join Brandon Woo and his parents, Domenica and Sonny, for a day of collecting and fun at the **Great Pond Mountain Wildlands** located in **Orland, ME.**

DIRECTIONS: Enter the property at the Hothole Valley South Gate, located on Rte. 1 near the Rte. 176 intersection. Follow the road for about 2.5 miles to the parking area before the Inner Gate. Meeting time will be 9:00 a.m. Contact: 843-6039. Bring a bag lunch. Drinks and snacks will be provided.

For information on Great Pond Mountain, see their web site**: www.greatpondtrust.org.**

☛ ***Visit "The County" July 28-29***

At the urging of a couple of stalwart members we will again meet with Stan and Gale Flagg at their idyllic homestead outside of Ft. Kent. It is a wonderful place to collect and late July should be relatively free of mosquitoes and black flies. They have a new drive from the north.

DIRECTIONS: From Ft. Kent head west on Rte. 161 toward Allagash. At the Ft. Kent Bible Church turn left on to the Violette Settlement Rd. At the "T" turn right, and go to the Franklin School Rd on the left.. Take a left on it and go up the hill 1/2 mile to mailbox 108 and turn left on to the Flaggs' driveway. It is 1 mile up this drive to the Flaggs'. You can make it!

Plan to meet at the Flaggs' as close to 10:00 a.m. as possible on Monday, July 28th. There will be ample opportunities to camp out and collect that evening or you can try a motel. Please let Stan or Gale (207-834-6670) or Dick Dearborn (207-293-2288) know that you plan to attend. A ride up or down the valley along the St. John would make a very scenic side trip and the opportunity to collect new state insect records a real possibility.

Samuel S. Ristich

Naturalist and Mushroom Guru

1915 – 2008

Sam Ristich on an M.E.S. field trip in New Gloucester, 2004

On February 11th, our friend, mentor and long-time supporter Sam Ristich passed on quietly at his home in North Yarmouth. Although perhaps best known for his mushroom expertise, Sam was by no means unknown in entomological circles. Mention of his name to most of our MES members brings a smile and many fond memories of one of the most energetic, knowledgeable and unique field naturalists in Maine. Without his support MES might not exist.

After a period of frustration and talk of disbanding late in 1997 it was a call from Sam, a charter member of MES, asking – "Mister Dearborn! What about the Bug Club?" (an exact quote in loud, slow and clear Sam lingo), that got us moving forward and to the point we are today. This was a turning point for us as mentioned in Vol. 2, No. 1, p. 1 of our newsletter: " Surprise!! Just when you thought that our group was a goner, like the phoenix we have risen from the ashes thanks to the prodding of two stalwart souls (Thanks Monica and Sam) … Now begins the rebirth of our group and keeping out of the fire (so to speak!)."

And over the years Sam was faithful in his support by organizing and attending many field events, writing articles, corresponding in a unique fashion on a wide variety of topics and financially supporting MES. He took our prime organizational purpose seriously: Bylaws, Sect. 1a: "The purposes of the Maine Entomological Society are to support, encourage and promote the study of the insect and terrestrial arthropod fauna of Maine."

And Sam was always there to inspire and encourage all who were willing to listen to his fascinating accounts. So, Thanks Sam, for keeping this group alive! - ***Dick Dearborn***

Selected References:

Samuel S. Ristich. 2002. **Sam's Corner: the public journal of a mushroom guru**. Compiled and edited by Eric VonMagnus and privately published by V.F. Thomas Co.; 152 pp. Now available through V.F. Thomas Co. P.O. Box 400, Southwest Harbor, ME 04679; Ph. (207) 266-5748, email info@vfthomas.com. $20/copy + $4 S&H + $1 tax in ME.

This publication consists of articles published originally in Mainely Mushrooms, the newsletter of the Maine Mycological Assoc., Inc., from 1986 to 2000. It includes a lengthy biography of Sam (**Wonderment: A Life** on p. 141) and there are many references to insects. It also includes color photos. Fun to read with many Sam-isms.

Samuel S. Ristich. A very informative obituary was published in the Maine Sunday Telegram (Sunday, Feb. 17th) and the Portland Press Herald (Monday, Feb. 18th)

Samuel S. Ristich. Feb, 1950. Biology of the Seed-Corn Maggot, *Hylemya cilicrura* (Rondani), and Preliminary Studies on its Control. Ph.D. Thesis. Cornell Univ. 165 pp.

Samuel S. Ristich. 1953. A study of the prey, enemies and habits of the great-golden digger wasp, *Chlorion ichneumoneum* (L.) Can. Ent. 85(10) 374-86.

Samuel S. Ristich. 1956. The host relationship of a miltogrammid fly, *Senotainia trilineata* (VDW). The Ohio Journal of Science. 56(5): 271-274.

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Here is a classic Sam Ristich article from the *Maine Entomological Society Newsletter* (our early title) vol. 2 # 4, p. 6; December 1998:

Hey, Someone Ate My Aphid!

Recently, I collected the woolly alder aphid, *Prociphilus tessellatus*, to observe its progressive parasitism by the charcoal fungus, *Scorias*. The fungus proliferates on the carbohydrate exudate from the aphid then invades the body, causing a charcoal-like embalming.

Before I left for a week-long trip, I put the colony in the refrigerator. When I checked on my return, I could not find the aphids, and after a search, I found two fat syrphid larvae under a twig. This left me with two remarkable observations: one, a syrphid female deposited eggs on the aphid prior to my collection of the colony, and two, the larvae that hatched were capable of feeding on the aphids at 45 degrees Fahrenheit.

- Sam Ristich

Thanks, Sam

It was May 19, 2001. That Saturday morning, as I was driving by Runaround Pond in Durham, I spotted a small sign reading "MES Field Trip". Not knowing what "MES" stood for, I slowed down just long enough to notice a slight, white-haired man in hip boots scurrying around the boat launch parking area where a few card tables had been set up with microscopes, jars, and nets.

I pulled in to see what was going on and was greeted most enthusiastically (I soon found out that he did everything in a most enthusiastic manner!) by Sam Ristich. No one else had arrived, and before I could either introduce myself or ask what was going on Sam was interrogating me: How long had I been a member of MES (I still didn't even know what "MES" was), what was my entomological background, what did I do for a living, did I like MUSHROOMS?

Now, looking back on my all-too-brief relationship with Sam, I'm reminded how he always seemed to be truly interested in everything and everyone around him. By the time he got around to answering my questions about the Bug Club, Dick Dearborn had arrived with a box of MES literature; a membership form for me to fill out, a sample newsletter, and thus my history with the Maine Entomological society began.

That day I also met Bob Nelson, Reggie Webster, Edie King, and Chuck and Laura (soon to be) Lubelczyk. And I also got a crash course in "marsh treading" for ground beetles from Bob and Reggie.

Back at the tables, Sam had set up a tremendous variety of "stuff"; he had a few live aquatics freshly netted from the pond arranged in watch glasses and under the microscopes. But he had also brought a wide variety of other insect material from his personal collection. Most of them were pinned (some were not), some had labels (some did not!), and there was a vast heap of galls.

In the years to follow, I think I saw Sam's mound of traveling specimens in a host of different venues: other field trips, annual meetings, etc. Everywhere Sam showed up that was MES-related, along came his traveling show of specimens, each time showing the advancing effects of entropy. But every single specimen had a story that Sam was always happy to share. Ask about one of the most tattered of the lot and I can still hear Sam say "Hoooeeeee….LET me tell you about that!" And away he would go.

It was in his sharing of enthusiasm for the natural world that I think I learned my most important lesson from Sam. Nothing was mundane or ordinary; there was always something interesting and new to discover. And, most importantly, Sam was willing to share his knowledge in a way that was never condescending. Thanks, Sam. - ***Chuck Peters***

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The enthusiasm that Sam had for nature was transferred to those around him. Every wasp, fungus and tree seed is important in this world, and Sam was the carrier and the vector of that immediate importance, to anyone who was near him. I have many postcards from him, handmade cards artfully decorated with spore sprints from mushrooms, a reminder of the interest and thrill that Sam had in finding even the tiniest flora and fauna, and sharing his discoveries with others. He was always generous in providing information and observations.

Sam's data on the Great Golden Digger wasp, published in 1953 in *The Canadian Entomologist*, was an intensive study, and is a vital reference to this day. Sam and his work, and his enthusiasm, have certainly affected and directed my own interest in fossorial wasps.

His influence and energy continue to spread in ripples outward, not just to me or a few, but to many, and over time.

- Monica Russo

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When Dick Dearborn called me the other day with the sad news that Sam Ristich had recently passed away, I was actually surprised. Usually when somebody "up in the 90s" dies, you don't tend to be at all surprised. But with Sam, with all his energy, his great enthusiasm for natural science, his wide knowledge which he so willingly shared, it seemed like he would always be there (or you hoped so).

Sam was a fine entomologist, full of knowledge about complex relationships of insects and plants, insects and insects, about insects and galls, etc. He was also the great expert on the fungi of Maine. It was in the fungi area that I knew Sam best. During the last ~ 10 years, I have spent most of the summer field seasons in downeast coastal Maine; during that period I have found many fungi that needed identification. So I shipped my photos, specimens and questions off to Sam.

He never failed to respond; after a while I would receive one of the famous Sam Ristich post cards. Every bit of the post card surface (both sides) would be densely covered with his writing. I always found his handwriting a bit difficult to decipher, but the effort was always worthwhile. He would identify my fungus and tell me many interesting things about it. His answer often included a bit of humor, sometimes in the form of a sketch.

Sam always came through for me. He will be greatly missed. - ***Richard W. Hildreth***

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With the death of Sam Ristich we have lost a legendary teacher and student of natural history. Although he was trained as an entomologist, his biological interests were wide-ranging and he was regarded an expert on fungi. To be in his company was to experience an overwhelming joy for the intricacies of nature.

I shall miss tramping with Sam in the field, sharing his unbounded enthusiasm for the natural world, reminiscing about entomologists from the past and receiving cards detailing his latest observations. He was always inspiring, a wellspring of knowledge about natural history and a treasured link to a time when biology was more about whole organisms than about molecules. - ***Mike Mazurkiewicz***

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When I heard of Sam's passing, it wasn't an enormous surprise, but a saddening shock - one of those cataclysmic realizations that strikes at the heart of a comfortable normalcy in life. I knew his health had been slowly slipping in recent years, but he'd always been such a powerhouse of enthusiasm and wisdom it seemed that he, indeed, would be one to go on forever. Sam seemed to know just about everything about everything in the natural world, and was always so incredibly happy to share his tales and knowledge with those of us less encyclopedic in our understanding.

He was indeed one of the grand Fathers of the M.E.S., there at that first fateful gathering at the Maine State Arboretum in Augusta in 1997, and had been pushing for its formalization long before then. Without him, many of us would still likely be working in our isolation, as we did before.

A quick look on the Internet, searching under Sam's name for images or web entries, yields pages and pages of photos and references to him and his work - all glowing and clearly written in reference to a well-known and favorite friend. A book review of a new volume on Italian mushrooms, at the North American Mycological Association web site, began: "Also from Italy comes this new book sure to make Sam Ristich beam." (http://www.namyco.org/book_reviews/Fungi_Fimicoli.html)

Numerous professional and amateur mycological groups, from New England and Pennsylvania to Wisconsin, have photos and tributes from collecting forays and gatherings up to very recent years. Clearly, Sam was special to an enormous family

of people beyond those of us in the M.E.S. - a vast network of close friends and colleagues who all have lost someone special.

Sam's wisdom, good cheer, and sparkling wit will all be sorely missed, but he'll never be forgotten.

- Bob Nelson

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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 critters like 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. Interested individuals and amateur and professional naturalists are invited to participate.

(Chuck Peters Photo)

Though a little 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!

As with past blitzes, there will be registration and meal fees to cover costs of the blitz. The National Park Service will provide housing at no cost to participants on a first-come, first-served basis. Registration materials and additional information are available via links at the Maine Entomological Society website (http://www.colby.edu/MES/). **Early registration and reservations** are highly recommended!

For individuals interested in a shorter and more general introduction about 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.

For additional information, contact David Manski at Acadia National Park via e-mail (David_Manski@nps.gov) or by phone at 207-288-8720.

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Biosurveillance: A Fascinating New Way to Monitor for Emerald Ash Borer

by Colleen Teerling

Most of you are probably aware of the emerald ash borer (EAB), and the havoc it is wreaking in the Midwest (if not, see *The Maine Entomologist*, v. 11, no. 3, p. 2) . Why is this insect so frightening? Well, it attacks all species of ash in North America, and seems to be killing 100% of the trees it attacks. There are no effective natural enemies or tree resistance to it yet in North America. It is spreading very rapidly (primarily in firewood) throughout the Midwest and Mid-Atlantic. But perhaps most frightening, is that there is no good way to monitor for this insect, so we often don't spot a new infestation until it has been there several years. However, there may be a new answer for the problem of monitoring – biosurveillance.

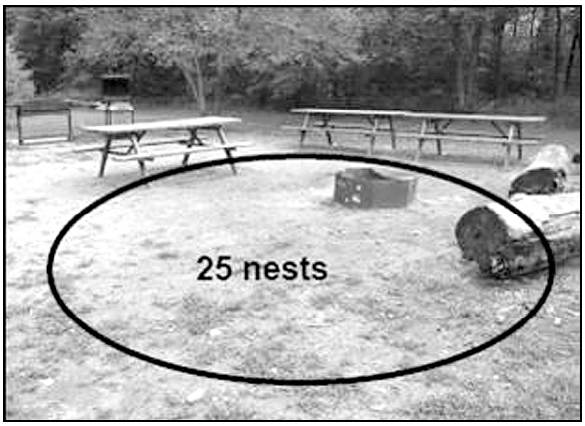

Fig. 1: Typical *Cerceris fumipennis* colony site in hard-packed soil. (P. Careless photo)

Biosurveillance is the use of one organism to monitor another; in this case, employing a ground-dwelling wasp to monitor for EAB. Recent work by a grad student in Guelph, Ontario, has shown that the native wasp, *Cerceris fumipennis,* provisions its nest with buprestids, including EAB when present. Although it will unlikely be useful for classical biocontrol, the wasp is much more efficient than humans at finding EAB, and is proving a reliable way to monitor for this pest.

Initially, we were uncertain if *C. fumipennis* even existed in Maine, since there were no official records, but two MES members had collected them in Arundel and Vassalboro (thanks, Monica Russo and Dana Michaud). We now expect to find these wasps throughout the southern and coastal areas of Maine, although we don't know yet how far north and inland they will extend. We would like to enlist the help of MES members this summer in our biosurveillance work

How can you help? Glad you asked. We would love to have MES members help us locate wasp colonies throughout the state, and to monitor them once found. We would especially like to find colonies near campgrounds and summer homes this year, because we think these areas are at the greatest risk of firewood-borne EAB introduction. Here's what to look for.

Finding Wasp Colonies

Cerceris fumipennis is a solitary ground-nesting wasp that lives in diffuse colonies in hard-packed sandy soil. It prefers full sunshine and sparse vegetation, and is almost always found near a wooded area in places of human disturbance (fire-pits,

camp-sites, road and trail edges, informal parking lots, or baseball diamonds) (fig. 1). Coincidentally, many of these areas are also at high risk of firewood-borne EAB infestation. Look in these areas on sunny afternoons in July and August (maybe as early as late June). At a potential site, look for small round holes the diameter of a pencil, with a 1-1/2 inch mound of loose soil (tumulus) all the way around it (fig. 2). Holes are often found near tufts of grass.

Fig. 2: Nest entrance with excavated soil and occupant. (P. Careless photo)

Once you find nest holes, you can verify that the occupants are indeed *Cerceris fumipennis*. This is a fairly distinctive wasp; 1/2 to 3/4 inch long, with dark smoky wings, three large cream/yellow spots on the face, and one cream/yellow band on the second tergite (figs. 3, 4). One of the many good things about this wasp is that it is not known to sting humans, even when handled. You can peer down the hole to see if the female is guarding her nest just below the surface, or place an overturned clear plastic cup (punctured with breathing holes and weighted with a rock) over the hole. As you search for additional nests, check the cup every few minutes to see if a wasp is inside the cup trying to get out or if one is outside, trying to get in. If so, you can temporarily capture her to identify her, then tip over the cup to let her past.

Fig. 3: Facial markings of female *C. fumipennis* (D. Cheung photo)

Monitoring for EAB

Monitoring for EAB is carried out by placing ventilated clear plastic cups over the holes. This slows down returning wasps so you can look at their prey. If a wasp emerges from her hole, tip the cup over to release her. When she returns with prey, you will see her buzzing around the cup. Either gently net her or knock her out of the air with your hand (remember, they don't sting). She will drop her prey, and you can examine it to see if it is EAB. If it is not of interest to you, place the dead or paralyzed beetle right on the lip of the nest and the wasp will come up and take it.

Fig. 4: Female *C. fumipennis* (P. Careless photo)

Research in Ontario indicates that if you see 40 prey items brought to a colony and EAB is not among them, it is safe to assume EAB is not in the region. In Ontario, a typical colony contains 30 nests, and 40 prey items can be observed in a few hours. Monica's colonies in Arundel were much smaller: 3-4 nests per colony, so monitoring there will go more slowly. We are not sure what size colonies we will find throughout Maine. Remember, that in order to monitor for EAB, a colony should be within a mile of ash trees – and closer is better; 200-400 feet would be ideal.

Details

Further information on *Cerceris* is available on our website. Go to www.maineforestservice.org/idmhome.htm and click on "emerald ash borer hunter" in the left sidebar. For those interested in looking for wasps, we will soon have a colony location form available for people to fill out when searching. It is just as important for us to know where colonies are NOT found as where they are, so let us know where you have looked.

For those who wish to monitor this summer, we will have an EAB/Cerceris survey form for you to use. And finally, since these wasps are often found in public areas, there may be security concerns. For anyone looking for colonies or monitoring them, we will write an official letter stating that you are looking for insects on behalf of the Maine Forest Service, and this may help alleviate the concerns of landowners. For this letter, or more information, please contact me.

Colleen Teerling
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phone: 207 287-3096
email: colleen.teerling@maine.gov

As an added incentive, for those who collect beetles, the Canadians found that in just a couple of days of wasp observation, they found one new buprestid genus and two new species records for Canada, as well as some very rarely collected beetles. Just please don't steal *all* their prey.

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WANTED: DERODONTIDS and ADELGIDS

by Allison Kanoti

In February I attended the Hemlock Woolly Adelgid Symposium in Hartford Connecticut. Among the speakers was Nathan Havill. Nathan is a postdoctoral fellow at Yale University and a visiting scientist with the USDA Forest Service Northern Research Station. Nathan's doctoral work helped uncover the origin of the hemlock woolly adelgid in our neighborhood as well as illuminate relationships within the adelgid and conifer family trees. At the symposium he was presenting some of his work on the molecular ecology of hemlock woolly adelgid, its hosts and natural enemies. During the course of his talk Nathan mentioned that he is looking for *Laricobius* spp. from as many locations as possible for population genetic analysis. If you are interested in collecting material to submit to Nathan this is what he's looking for:

- Members of the family Derodontidae, especially any *Laricobius*.
- Members of the family Adelgidae

Nathan would prefer that samples be stored in 95-100% ethanol for shipment to him, but can also accept samples stored in isopropyl alcohol.

He says: "To the best of my knowledge, the best way to collect *Laricobius* adults is to beat trees infested with adelgids. There are several potential hosts - *Pineus strobi* and *P. pinifoliae* on white pine, *P. pini* (= boerneri) on red and Scots pine, *Adelges laricis* on larch, *A. piceae* on fir, and of course HWA…Also scan bark colonies which can't be beaten for beetles"

Clark and Brown (1960) found that *L. rubidus* adults first appeared in New Brunswick when tree wells formed in the snow around white pines. Beetle activity peaked between April 14th and May 12th and ceased in late June. They found adults on all sizes of infested pines in areas where their prey, *P. strobi*, were most abundant (at the bases of branches, below whorls and in smooth-barked areas). They also mentioned that the adults of *L. rubidus* and L. *erichsonii* respond to disturbance or rapid movements by dropping from the trees.

If you do collect *Laricobius,* collect the adelgid hosts in a separate vial. Nathan will use the material to verify the host and to continue work on adelgid systematics. He would appreciate adelgid samples, even if you don't find any *Laricobius*. He says, "Adelgids can be placed in ethanol still attached to host material, e.g. bark pieces, branch tips, etc." Nathan also mentioned that *Derodontus* spp. adults are often found in the fall on the fruiting bodies of their fungal hosts—mostly *Pleurotus* and *Hericium*.

So, you say, how do I know if I have a Derodontid? And what the heck does a *Pleurotus* or *Hericium* look like? Here is some background information to help answer those questions:

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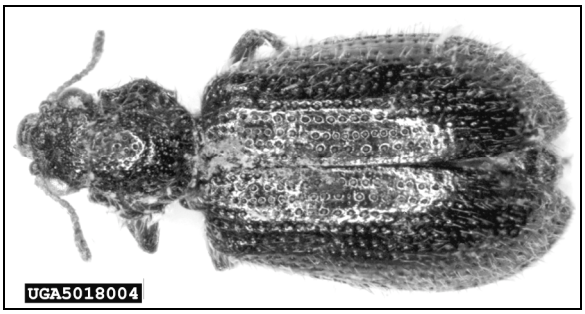
The Insects

(Unless otherwise noted information is from Triplehorn and Johnson, 2005)

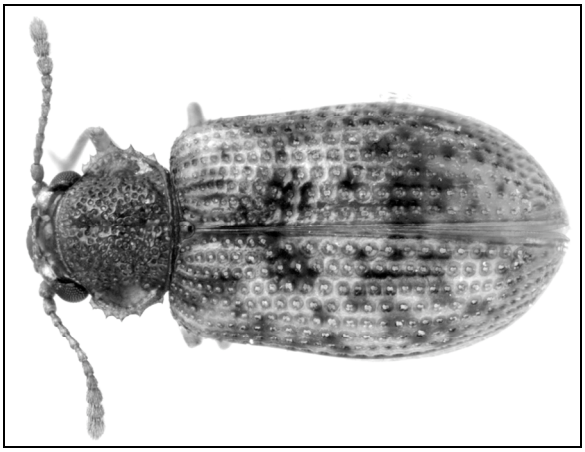
Derodontids (tooth-necked fungus beetles) are small (3-6 mm) brownish beetles, with a pair of ocelli adjacent to the inner margin of the compound eyes. Their elytra completely cover the abdomen and have rows of square punctures or polished spots. These beetles tend to be most active in cooler months of the year (Bright 1991).

Laricobius species are predators on adelgids; all other genera are fungus feeders (Bright 1991). The Maine Forest Service has released two species of *Laricobius* for adelgid control. *L. erichsonii* was released in Bradley, Carrabassett Valley, Woolwich and Chelsea as a biological control agent of balsam woolly adelgid (*Adelges piceae*) between 1959 and 1963 (Dearborn and Donahue 1993). *L. nigrinus* has been released in the last two years in Kittery and York for hemlock woolly adelgid (*Adelges tsugae*) management. The native *L. rubidus* has also been collected in Maine (UNH Collection). ***Nathan would be interested in records of the native and the balsam woolly adelgid biocontrol.*** (Note: There are no *L. rubidus* in the Maine Forest Service collection, and we would welcome specimens as well.)



***Laricobius nigrinus* Fender**
(photo from Pennsylvania Department of Conservation and Natural Resources - Forestry Archive, Bugwood.org; used with permission)

The other genus that has been reported from our area is *Derodontus*. Members of the genus have the toothed "neck" that gives this family part of its common name, and they feed on fungi. Leschen (1994) described them as slow-moving tan beetles with "small (2.0 mm to 3.0 mm) tank-like bodies." The two species that have been found in the region are *D. maculatus*, with backward pointing teeth on the pronotum and *D. esotericus*, with laterally projecting teeth on the pronotum.



***Derodontus maculatus* (Melsheimer)**
(photo by Larry Watrous; used with permission and our thanks)

Adelgids are in the Aphidoidea superfamily. They often are covered with wool-like waxy tufts, or waxy threads. They feed only on conifers, and often have two conifer hosts. Winged forms hold their wings roof-like over their bodies.

The Fungi

(Information from Tom Volk's Fungi Web pages: http://tomvolkfungi.net, and Arora 1986)

***Pleurotus* spp.,** oyster mushrooms, are found in shelf-like formations on hardwood boles and stumps or downed logs. They are a white to off-white mushroom with a white spore print. The gills are attached to the stem or run down it (decurrent). There may not be a stem at all, if there is it is often off center. The cap is smooth. In a study in the southeastern United States, Leschen (1994) found that *Derodontus maculatus* fed almost exclusively on *P. ostreatus*.

***Hericium* spp.** white to off-white fruiting bodies are also found on hardwoods. Spore-bearing spines, somewhat resembling a minute hollow icicle, hang off the main body of the fungus. Once you have seen one, this genus is easily recognized. Images and more details on identification are found on Tom Volk's fungus of the month page: http://botit.botany.wisc.edu/toms_fungi/jan2003.html.

My suggestion is, grab a friendly mycophagist and head into the woods for a derodontid, adelgid, and fungal fall foray. You may come out of the field day with supper ingredients **and** a contribution to the expansion of entomological knowledge.

If you have questions or samples for Nathan you can reach him at:

Nathan Havill
USDA Forest Service Northern Research Station
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* * * * *

DON'T FORGET to get those cameras cleaned and ready, so you'll be able to take THE stunning photographs of the season! Now is the time to be planning for photos for either the *Maine Entomologist* or the 2009 M.E.S. Calendar!

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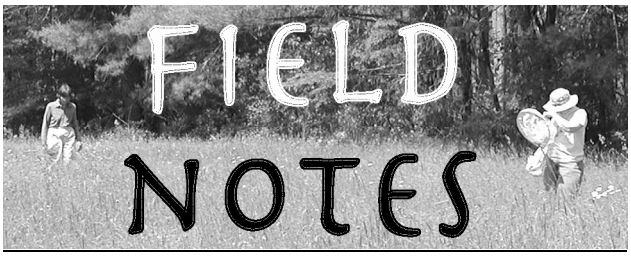


Man-made Holes for Egg-laying Insects

by Joe Gray, Interpretive Naturalist

Several years ago I began creating cavities for egg-laying insects by drilling deep 3/8-inch and 1/2-inch holes in the edge of foot-long 2"x6" boards and fastened them to the sunny side of my woodshed. By mid-summer there was evidence there was activity at many of the holes. Success, I thought. However, in early fall I observed a Hairy Woodpecker visiting the blocks regularly and upon examination discovered the Hairy had excavated the broad side of the blocks, drilling into the man-made cavities the short way, and consumed the contents. Our good intentions to help nature along are sometimes foiled!

[*Note: I've had precisely the same experience! - Bob Nelson*]

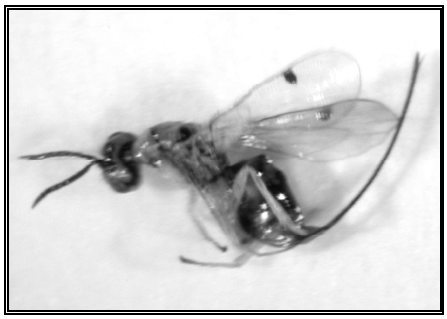
* * * * *

A Surprise in Edie King's Lab

by Edie King

On February 9, 2008, a bright sunny day, I observed about two dozen insects (approximately 2-1/2 mm long, excluding the ovipositor) on one of the windows in my laboratory. As I got closer to them, I could see that they were in the order Hymenoptera.

Near the window I had a vase of dried rose hips (*Rosa multiflora*), which I assumed was the source of these tiny wasps. I wanted to remove the rose hips from the house, so I didn't think to check them for holes.



A specimen of *Megastigmus aculeatus* from Edie King's lab. (Edie King photo)

I saved a dozen of these wasps, all of which happened to be females. After observing one under my microscope and photographing it, I knew it was in the superfamily Chalcidoidea, but didn't have the resources to classify it any further.

I decided to give Dick Dearborn a call. He was able to identify the wasp from the photos that my husband Louie e-mailed to him, as being in the family Torymidae - the rose seed chalcid (*Megastigmus aculeatus*).

Dick also told me about the article written by Chuck Peters in *The Maine Entomologist*, volume 8, number 3 (September, 2004). The description matched my insects, so now we know that they are in Waterville, Maine.

Thanks, Dick, for your help!

Insects in Fort Kent in March and April

by Gale Flagg

On March 27th when I was walking with the cat on our driveway, I spotted a caddisfly at the base of the snowbank beside the driveway. I scooped it up, put it on a dry beech leaf I found nearby, and then put it in my pocket.

Amazingly, it was still there when I got home, and I was able to study it. It had long segmented antennae, and the wings were a mixture of gray and brown with small white patches on the edges of the wings, and a few white patches and one dark linear one on the wings. The legs were tan with black spurs on them.

Caddisflies are closely related to moths, but caddisflies have hairy wings rather then scaly wings, and they do not have a proboscis. I never thought about what caddisfly adults do in the winter. Having found a live one on snow, I guess they are pretty tough. When the ice thaws off the ponds and streams, you will be able to see caddisfly larvae in their cases throughout the spring and summer and into the fall.

On April 3rd I was skiing on the first corn snow when I spotted a tiny insect on the snow. I captured it in my hand and gave it to Stan, who managed to get it back to the house and into a container while I was enjoying a good ski. The little creature was a Small Winter Stonefly, about 8 mm long. It was blackish, and the fairly long antennae were segmented. The simply veined wings cover the abdomen and the two cerci at the tip of the abdomen. The nymphs of this species are usually in small streams, and they are plant feeders. The adults feed on blue-green algae.

For several years I have also noticed small insects swarming on a screen on our porch late in the autumn and on the first warm days of spring. Last year I caught one and identified it as an ichneumon. This year when I saw them in the middle of April, I was determined to get to the species. I managed to get the wings separated from the body. The closest identification I could find in my references suggests this specimen might be a species of *Netelia* - a caterpillar parasitoid. The wings are beautiful in the sunlight with a rainbow of colors in them. The diagnostic mark on the wings was a little round section on the forewing at the tip of the nose of a horsehead section formed by the veins. You can't imagine how excited I was to finally get to the genus on these little ichneumons.

There are also some 3-mm-long stout little flies with white halteres that swarm with the ichneumons. No identification yet!

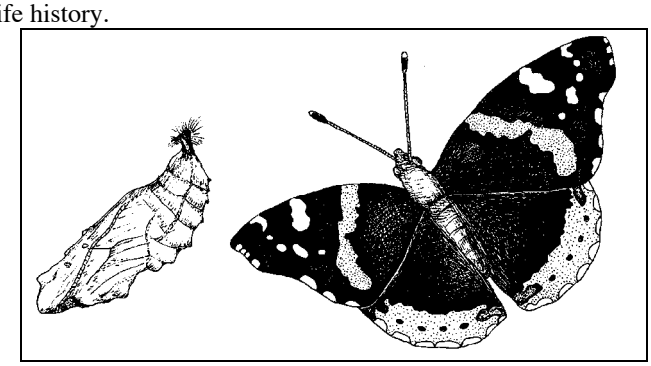
* * * * *

2007- The Year of the Red Admiral

by Richard W. Hildreth

Eight species of butterflies: **Alfalfa Butterfly** [Orange Sulphur] *Colias eurytheme*, **Cabbage Butterfly** [Cabbage White] *Pieris rapae*, **Monarch** *Danaus plexippus*, **Question Mark** *Polygonia interrogationis*, **Mourning Cloak** *Nymphalis antiopa*, **Red Admiral** *Vanessa atalanta*, **Painted Lady** *Vanessa cardui* and **American Lady** *Vanessa virginiensis*, all make annual flights (migrations) into and through Maine. There is a spring flight in late May-June on a north-northeast track, and an Autumn flight in late August-October on a southwest-west track.

All these species breed in Maine, producing one or more broods. It is unlikely that any of these species, except the Mourning Cloak, Alfalfa Butterfly and Cabbage Butterfly ever are found in Maine in the winter in any life stage. If anyone finds the adults of any of these species (or any butterfly) overwintering in Maine, please carefully document your sighting and make it known [a great note for the Maine Entomologist]. Little is known about the migratory flights of these species through New England. With the exception of the Monarch, we don't know where the migrants are coming from, where they are going or how this flight behavior fits into their life history.



Red Admiral butterfly - chrysalis and adult.
(Art supplied by Richard Hildreth)

With diligent effort, especially during the spring and autumn migration periods, every year you can probably find at least a few of all these species in Maine. I have, however, never seen all these species conspicuously abundant in any single year. There is great year-to-year variation in the abundance of these migrant species. As I go about in downeast Maine doing my usual natural history puttering, I always try to identify and count all the butterflies I see. My records for the period 2000-2007 show something about the abundance of the migrant species as follows:

Monarch Big year in 2006 (1834 records), Fair year in 2007 (645 records)

Red Admiral 3 Big years, 2001 (621 records), 2003 (376 records), 2007 (1892 records)

Mourning Cloak Big year in 2000 (320 records)

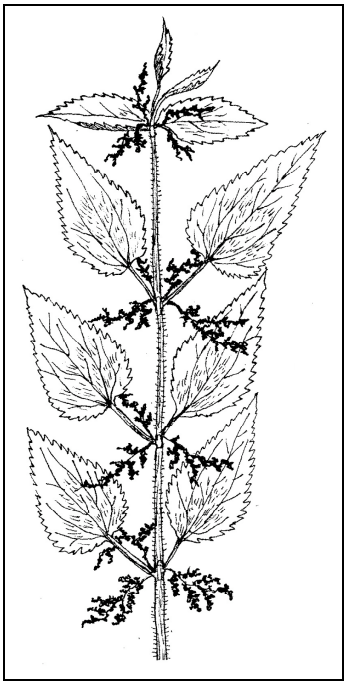
Question Mark No big years during this period. Largest number of records is 28 in 2007. Last big year for this species in New England was 1998 with a very big autumn flight (e.g. I saw 181 on 12 September 1998 in Westport, MA)

Painted Lady Big year in 2005 (1230 records)

American Lady big year 2004 (147 records)

A note of caution: my efforts at counting butterflies in Maine are not consistent (either temporally of spatially) year to year, so the number of records per species per year is only a vague suggestion of actual abundance.

In 2007, Red Admirals were conspicuously abundant all over Maine: many people saw them in various places and commented on it. I, unfortunately, didn't get into the field in Maine until 26 May. The Red Admirals were already passing northeast through Massachusetts by early May. By 26 May they already were flying north-northeast through Maine. Early June visits to Petit Manan Point in Steuben yielded some impressive numbers (on 8 June, 126 seen; on 19 June, 157 seen).



Stinging nettle - host plant for Red Admiral caterpillars. (Art supplied by Richard Hildreth)

Almost all these Red Admirals were in excellent condition and most were associated with stands of the caterpillar food plant, Stinging Nettle (form *gracilis* – the Slender Nettle). Most of the females were busy laying eggs on the nettles. The new leaves of the nettles begin to show themselves in early June just about in time for the Red Admirals to arrive.

The big spring flight occurred in late June; on the 29th I counted 539 at Petit Manan Point. Of these, 177 were nectaring on flowers (at that season huckleberry and chokeberry) or feeding on sap; 225 were associated with the nettle patches; and 137 were on the move. They were flying in over the sea from the south and flying northeast along the east shore of the peninsula. I sat at the point and made a 1-hour count (1300-1400 hours). I counted 137 Red Admirals rapidly flying by. I also counted passing during that hour: 8 Monarchs and 3 species of migratory dragonflies (28 Spot-winged Glider, 1 Painted Skimmer and 1 common Green Darner).

During this period a big flight of Red Admirals was also taking place in coastal Massachusetts. Brian Cassie sent along the following notes: 27 June, seen on a whale-watching trip, on the water at Stellwagen Bank-5 Red Admiral. 28 June, Westport, MA, Gooseberry Neck – 4 per minute for 2 hours near midday. 29 June, Hingham, MA, at Worlds End- 20 in 1 hour.

All the Red Admirals that Brian saw were in excellent condition and flying north. By 3 July, I was still able to count 227 Red Admirals at Petit Manan Point. At that date, there was no sign of migratory movement. There were 169 associated with the nettle patches, busy laying eggs and breeding. I saw 4 attracted by Green Alder sap, and some busy nectaring (at this season on Beach Pea, blackberry and Seaside Angelica). Most were still in good condition, but some were already quite worn.

The 2007 big spring flight of Red Admirals is very similar to the one seen by A.E. Brower in 1957 (Brower, 1958)*. That year, great numbers of Red Admirals passed in a northeast direction across Maine and into Atlantic Canada. The flight was first noticed on 15 June, 1957, in southern Maine (noted by several observers). On 16 June, Brower went out at Augusta and counted the passing Red Admirals, which he described as follows: "Shortly after noon (D.S.T.) June 16, I went out and made a number of timed counts of the number crossing a twenty foot strip in front of me, and found an average of one each two and one-half minutes." The flight continued for several days and reached Nova Scotia by 17 June. The flight was still going, with big numbers passing, on 25 June, in Edmunston, New Brunswick.

In 2007, I was away from Maine from early July until 6 August, so I didn't get to investigate breeding success. On 9 August, I visited Petit Manan Point in Steuben and found only 6 Red Admirals flying, all very worn. All the nettle patches were seriously defoliated, but no caterpillars were in sight.

In 2001 (another big abundance year for Red Admirals in Maine and all over New England) I was able to spend time finding, observing and photographing the Red Admiral caterpillars busy feeding on the nettles. There is usually 1 caterpillar per plant, which feeds at the very top of the plant and takes shelter in a silk tent.

On 23 August 2001, Brian Cassie and I visited Petit Manan Point in Steuben and spent considerable time examining and counting the Red Admiral caterpillars. We concentrated our effort on one large nettle patch which we determined to be 150 square yards in area. We found that there were 35 Red Admiral caterpillar tents per square yard, each tent containing 1 caterpillar. Therefore, this one nettle patch probably contained **5250** caterpillars (last instar at that date). What survival success rate these many caterpillars enjoy I don't know [a great future project to find out]. I know of only one serious predator of the Red Admiral caterpillars – the **White-tailed Deer**. The Petit Manan Point Div. Of Maine Coastal Islands NWR has a large White-tailed Deer population. The deer like to eat the nettles along the shore. In a very short period (1-3 days) they can eat the tops off an entire nettle patch. They eat the upper parts of the nettle plants – just where all the caterpillar tents are.

It is well known that Red Admirals are attracted by baits and tree sap. Along the shore at Petit Manan Point there are many gravel beaches (usually of rounded pebble- cobble-sized stones). Just behind these beaches there is usually a band of Green Alders. Storms throw some of the beach gravel inland so that it strikes and wounds the alder stems. Sap leaks from these stems all summer and is a powerful attractant for Red Admirals. Moth bait, the "high test", alcoholic stuff I make for sugaring for moths I also use to fill my butterfly feeders. Red Admirals (and other migrants such as Question Mark and Mourning Cloak) are powerfully attracted by moth bait painted on trees or in the feeders. An example: 25 August 2007, 1300-1350 hours, I went out along the trail at my cabin and paint out moth bait – during this exercise I saw one Red Admiral (getting sap from a "leaky" apple tree). From 1410-1518, I checked the 18 bait trees – I found **31** Red Admirals on the bait trees. Another example: 27 August 2007, at my cabin in Steuben – most of the day ~3 Red Admirals visited the butterfly feeder. Early afternoon I put out fresh "high test" moth bait in the feeder, **Immediately** Red Admirals come flying in – by 1500 I can count **20** Red Admirals at the same time on the butterfly feeder.

The 2007 autumn flight of Red Admirals began in late August and had its peak in early September (191 on 2 September at Petit Manan Point, 156 on 5 September at Petit Manan Point). On some days during the autumn flight period, most of the butterflies are on the move, busy flying toward the southwest-west. On these days the best strategy is to sit on a comfortable rock (or chair if you have one handy), face the oncoming butterflies and count the number passing per hour. If many butterflies are involved in the flight, a mechanical counter or two is very useful. On other days, during the flight period there is almost no migratory movement; all the butterflies are making a "fuel stop", busy nectaring on flowers. On the nectaring days you need to carefully search through the flowers to count the butterflies. It really gets complicated on days when both active migratory flight and nectaring are going on. The autumn flight continued through October. On 22 October, in 7 hours of observation, I counted 4 Red Admirals flying west over the summit of Schoodic Mountain in T9 SD, Maine. On 25 October I saw my last Red Admiral of the season, at Petit Menan Point, it flew in off the sea from the east and continued on west across the peninsula.

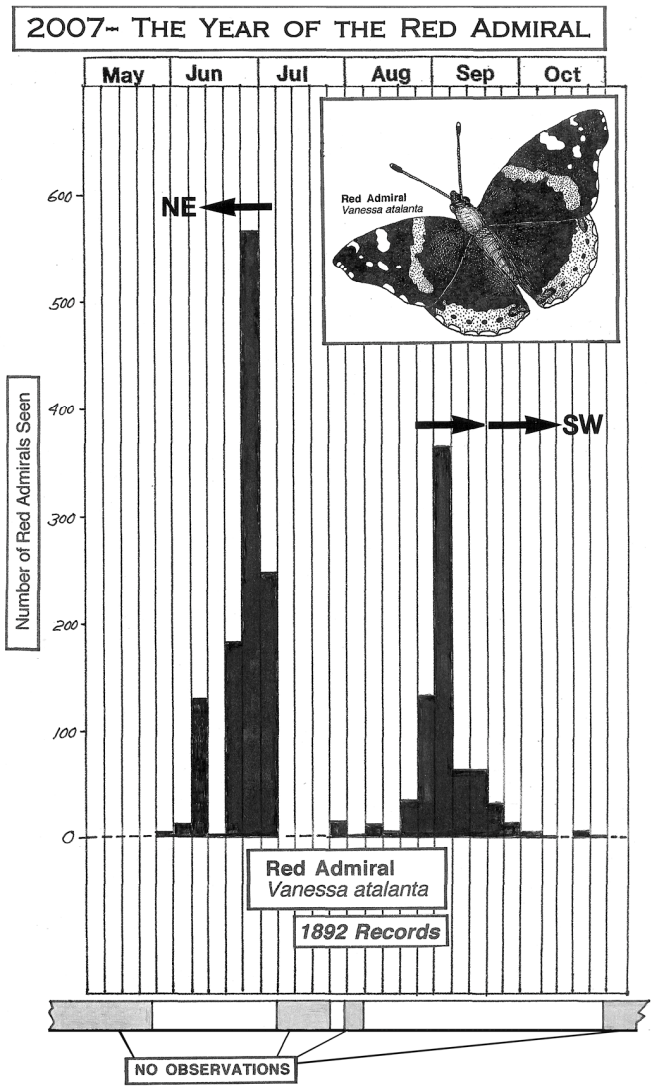


Fig. 1. Observation data for Red Admiral in Downeast Maine in the summer of 2007

Figure 1 shows the temporal distribution of all the Red Admiral sight records collected by R.W. Hildreth for the 2007 field season in downeast coastal Maine.

What will be the abundant migrant species in 2008? **Get out there and find out!**

* Brower, A. E., 1958. A Flight of Red Admiral Butterflies Across Maine. *Maine Field Naturalist*, Volume 14, No. 2, pages 37-39.

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BOOK REVIEW *by Dana Michaud*

"Ants of North America, A Guide to the Genera," by Brian L. Fisher and Stefan P. Cover, a 2007 University of California Press publication, will become a welcomed edition for both beginner and amateur entomologists who wish to delve into the fascinating family, the Formicidae, which has mastered the art of survival for over 100 million years, to the tune of over 12,000 species.

This 194 page, pocket sized guide (4-1/2" w x 7-1/4" l x 3/4" thick), has its key to genera based on the worker caste. After a short preface and introduction (6 pages), the following 51 pages are dedicated to the taxonomic key that takes you both through the 10 subfamilies and their corresponding 73 genera. Accompanying the easy-to-read key are many well-done illustrations depicting the various characteristics that enable the reader to work through the dichotomous choices and arrive, hopefully, at the correct subfamily and genus. The Short Taxonomic Descriptions section (p. 53-58) examines the subfamilies individually with a brief breakdown of the group including some genera, locales, and biology.

The Genus Descriptions section (p. 59-153) encompasses, alphabetically, every genus in all the 10 subfamilies. Each genus, about 1 page long, list subfamily and number of North American species, followed by some diagnostic remarks, distribution, and ecology. Large colored photographs of actual specimens of each genus, both full side and full face views make for easy comparison once you've keyed out an ant for verification.

A 2-page Ant Genera of North America by Subfamily, lists genera, and is followed by eight pages of Ant Species North of Mexico working list, done alphabetically. Pages 167-182, Terminology section, done alphabetically, is followed by 7 pages of identification references, then 6 pages of general references, concluded by a 6-page Index.

The overall quality of the book is good. If you walk into Barnes and Noble it will cost about $34/$35 or they can order it on their website for you for about $28 and then ship it to you free of charge. The main complaint I have with the book is it doesn't "lay flat" when using the key and therefore is awkward to keep the book open. Other than that, the book is worth the $28 as it is updated, in depth, and a long overdue book on this amazing group of insects. The last major book was compiled in 1950 by W.S. Creighton when 585 species were known. This latest book (the number of species approaches 1,000!) helps fill the gap with all the newest discoveries, both endemic and adventive, at least to the generic level. Those who wish to pursue keying to species have only to turn to the back sections Identification References (175-182) and General References (p. 183-188) for further information on where to look.

* * * * *

Little Beetle, Global Impact

Bob Nelson

According to an article in the April 24th issue of *Nature**, warming global climates have had an unexpected impact resulting in a positive-feedback loop. Recent warmer winters have allowed larger than normal populations of western pine beetle (*Dendroctonus ponderosae*) to survive, resulting in an outbreak that's now killing vast tracts of western pine.

The demise of these forests is now expected to turn them from global CO_2 sinks into CO_2 sources, as the dead wood decays to release additional carbon dioxide into the atmosphere.

Is this a harbinger of things to come in the Northeast? Time will tell.

* Kurz, W. A., et al., 2008: Mountain pine beetle and forest carbon feedback to climate change. *Nature*, v. 452, p. 987-990; 24 April, 2008.

* * * * *

Great Grasshopper Flight at Talmadge

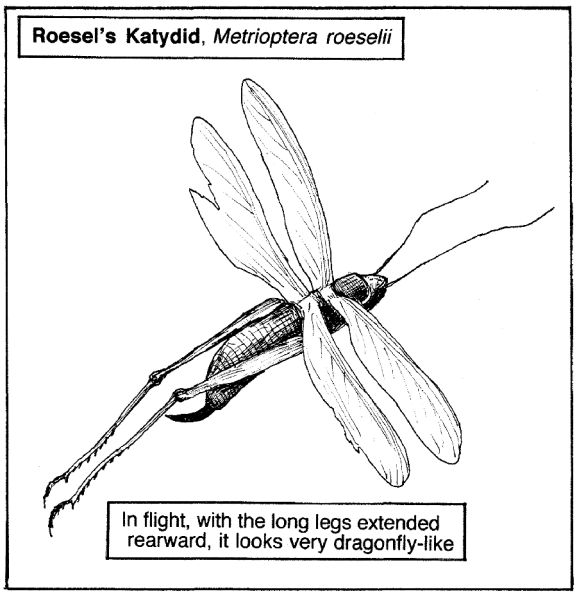
By Richard W. Hildreth

Recently I was looking through *The Songs of Insects* (Elliott and Hershberger, 2007), marveling at the spectacular images. [See a review of this book in *The Maine Entomologist*, November, 2007.] On page 176 was the image of a very colorful and distinctive-looking long-horned grasshopper, **Roesel's Katydid**, *Metrioptera roeselii*, which I suddenly realized I had seen in the field, photographed and collected, but which had remained unidentified until this moment. I couldn't remember when or just where I had seen this colorful insect. I looked through my specimens and found the three *M. roeselii* specimens I had collected. Since the specimens were well labeled, I quickly determined that I had collected the specimens on 30 July, 2004 at Talmadge, Maine. I then went to my natural history journal to find the details of my encounter with this species and to find the photographs.

From my Natural History Journal 30 July 2004 –

On 30 July 2004, I visit a site in Talmadge, Maine where a logging road crosses the East Branch Big Musquash Stream. [Site RWH 161, N 45.320, W 67.718 degrees, DeLorme Atlas map 35] I am intent on collecting odonates for the Maine Damselfly and Dragonfly Survey. I am not disappointed; from 1250-1518 hours, I manage to collect ten specimens for the project (from a township with no prior records). However, the big natural history event of the visit has little to do with odonates. Near the bridge over the stream, a side road leads north into a large gravel pit. One section of the pit has been "reclaimed," graded and planted. This area now has a lush growth of Birdsfoot-trefoil, *Lotus corniculatus* and grasses. I decide to have a look out over this area to see if I can spot any large dragonflies patrolling around. I scan the area with binoculars and right away I see several large winged insects flying rather weakly over the field. At first I think they may be some sort of teneral dragonflies making their first flight. I hurry out into the field and net one. It turns out to be a very colorful, long-horned grasshopper. They are everywhere, **hundreds** of them crawling up the plant stems and flying off, out of the clearing and away over the trees. I attempt to photograph them as they crawl up to the tops of the plants; I manage to take 3 photographs. I collect 3 specimens, all females. I am not the only grasshopper hunter; 2 Cedar Waxwings, *Bombycilla cedrorum*, are flying out over the field and catching the weakly flying hoppers in the air. The waxwings make many sorties, catching a hopper on each one. The waxwings pay no attention to my presence in the field, they sometimes snatch a hopper out of the air right above me in spite of my waving net.

The flight of *Metrioptera roeselii* is very dragonfly-like. In flight, the very long legs are fully extended to the rear and look, at least through binoculars from a distance, like the long abdomen of a dragonfly.



Roesel's Katydid is a European species, accidentally introduced to the Montreal area in the early 1950s. "A Recently introduced Species of European Grasshopper" (Urquhart and Beaudry, 1952) gives the details of the first discovery of *M. roeselii* in Canada. During the period 12 July, 1952, through 19 July, 1952, Beaudry collected 7 specimens (all males) of *M. roeselii* near the airport in Montreal. Urquhart and Beaudry speculated that it was likely introduced by aircraft. They further speculated, that since *M. roeselii* has a wide distribution in Europe and is very abundant there, it probably will become established in Quebec and spread over eastern United States and Canada.

This has turned out to be a very accurate prediction. The range map for *M. roeselii* (Elliott and Hershberger, 2007) shows the species to be found now in southern Quebec, southern Ontario, all of New England (except northern Maine), all of New York, northern New Jersey and northern Pennsylvania. There is also an isolated population in Illinois. The range map doesn't show any *M. roeselii* in New Brunswick, but the site in Talmadge is just 13 miles west of the border. Don Mairs, in his note in the MES Newsletter, *Metrioptera roeselii* – A Grig Downeast, followed the spread of the species into New England. He mentioned that it reached upstate NY by 1965 and that E.K. Ede collected it in MA, NH and Maine (Kittery, York and Cape Neddick) in 1972. Don went on to report on his interesting adventures with the species in the 1990s at his property in Belgrade.

A couple of months before I discovered the identity of my long-horned grasshoppers from Talmadge, I was looking through a bargain book catalog; I spotted *Katydids and Bush*

Crickets, Reproductive Behavior and Evolution of the Tettigoniidae (Geynne, 2001). It was being offered at a greatly reduced price so I bought a copy, not knowing just what practical use it would be. Once I knew that the long-horned grasshopper from Talmadge was Roesel's Katydid and that *roeselii* was in the Tettigoniidae family, the book became immediately useful.

M. roeselii occurs in both the short-winged (flightless) form and in the long-winged (macropterous) form. In Europe, *M. roeselii* usually occurs in the short-winged form. In Canada the species very frequently occurs in the macropterous form. All the many Roesel's Katydids I saw at Talmadge were the long-winged form and were actively dispersing. Population density is thought to be the cause of the wing length polymorphism. "The ability of individuals within flightless populations to develop functional wings should be adaptive when high population densities result in intense local competition for limited resources" (Gwynne, 2001)

The genus *Metrioptera* occurs almost entirely in the old world. There is one native North American species, the Bog Katydid, *Metrioptera sphagnorum.* This species is a Canadian endemic, found in the lower tier of Canadian provinces from eastern British Columbia to western Quebec. *M. sphagnorum* occurs only in northern bogs (Capinera, Scott and Walker, 2004).

ACKNOWLEDGMENTS

Thanks to Dr. Jessica Rykken for sending me a copy of the paper by Urquhart and Beaudry. Thanks to Richard G. Dearborn for telling me about the note by Don Mairs and for sending me a copy of it.

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COMING M.E.S. EVENTS in 2008:

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

21 June, 2008	**Field Day at Dick Dearborn's, Mt. Vernon (see p. 1)**
12 July, 2008	**Field Day, Orland (see p. 1)**
28-29 July, 2008	**Field Day, Fort Kent (see p. 1)**
8-11 August, 2008	**Hemiptera BioBlitz, Schoodic Point, Acadia N.P. (see p. 4)**
13 September, 2008	**Annual Meeting, Clinton**
17 September, 2008	**Bug Maine-ia at Maine State Museum Wednesday, from 9 a.m. to 3 p.m.**

IMPORTANT DUES REMINDER! **M.E.S. dues are payable on a calendar-year basis. This is absolutely, positively, your last reminder for 2008! Treasurer Dana Michaud's name and mailing address are at the bottom of this page for your convenience - $10 for one year, $18 for two years: Git 'er done!**

Maine Entomological Society
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