

The Maine Entomologist

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

The Official Newsletter of the Maine Entomological Society

Vol. 20, No. 1

February, 2016



December was perfect weather for winter moth (*Operophtera brumata*) along the coast of Maine. We got a few nights below freezing and bam! the males were flying! For those of you in the 'hot zone' you know what I mean, for the rest, be glad it is not you.

The adult moths are active in the evening and the males are strongly attracted to light. People talk about driving through a 'snowstorm' of moths, of windows, Christmas lights and houses covered in moths.

The Maine Forest Service put out a press release the last week of November asking for people to log into a survey online or call the MFS Entomology Lab if they saw moths flying. Well, over 700 people have participated in the survey and 222 called in, some have done both as they saw more moths or decided they had questions. THAT is impressive.

Besides giving us an understanding of where and how bad the winter moth infestation is this year it also may point us to where there may also be some native defoliators on the rise. We can check out locations in the spring and possibly collect native Bruce spanworm (*Operophtera bruceata*) for research into their population control mechanisms. As the winter moth population spreads we are releasing the parasitic fly *Cyzenis albicans* to help control the outbreak, so engaging the public is very important to our work.

I won't talk about January insects in Maine as I was in New Zealand for the month on vacation. While there I did hear Wetas (Orthoptera: family Anostostomatidae); went caving and saw glowworms (the larvae of a species unique to New Zealand in the fungus gnat family Keriopltidae); was almost deafened by cicadas including Chorus Cicadas (*Amphipsalta zealandia*) and other cicada species; was bitten by Sand Flies (Diptera: family Simuliidae: *Austrosimulium* spp.) that are really Black Flies.

Interestingly the Sand Flies tend to bite on beaches (hence the name Sand Fly) and not in the forest even though the larvae live in the beautifully clear mountain streams. This

may be because New Zealand's only native land mammals are bats, so the flies go after seals and penguins – that are found on the beaches.

See you at the Winter Workshop on February 27th, or at my house for maple sugaring and insect collecting March 26th.

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Proposed Changes to M.E.S. Bylaws: BALLOT RESULTS

All three ballot questions passed overwhelmingly. I was pleased to see the level of participation.

1. Shall the M.E.S. amend the Bylaws to permit a voluntary life membership category, with payment of a one-time fee of \$200?

Yes **36** No **0**

2. Currently, all votes to change the M.E.S. Bylaws or amend the Constitution must be by paper ballot. Shall voting for M.E.S. issues other than Constitutional amendments, but including changes in the Bylaws, be allowed to be conducted electronically – e.g., via e-mail?

Yes **35** No **1**

3. Shall changes in the Bylaws and other Society issues, other than Constitutional amendments, be permitted to be enacted by affirmative vote of those present at the annual meeting?

Yes **32** No **4**

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IMPORTANT DUES REMINDER!

M.E.S. dues are payable on a calendar-year basis. If you haven't already done so, please renew now for 2016; Treasurer Dana Michaud's name and mailing address are at the bottom of the back page for your convenience. Dues are \$10 per year, and may be paid up to two years in advance. If the year on your mailing label is "2015", please contact Dana to renew for 2016 or correct the record.



Mike Mazurkiewicz at the 2015 BioBlitz at Acadia

Remembering Mike Mazurkiewicz

We're saddened to note the passing of long-time M.E.S. member, friend and colleague Mike Mazurkiewicz. Mike was surrounded by his family as he passed away the morning of January 13th, 2016, less than a year after retiring from some 46 years of inspired teaching at the University of Southern Maine. Literally thousands of former USM students were touched by this man's passion for teaching and wonderful warmth, as well as his depth of knowledge for all things invertebrate, both terrestrial and marine, as well as snakes, salamanders and lichens.

Mike received his B.S. and M.S. degrees from Rutgers University, and his Ph.D. from the University of Connecticut in 1970. In his master's thesis, he was the first to describe the circulatory system of a centipede; his Ph.D. dissertation focused on the "Reproduction, Ecology and Parasitology of the Polychaetous Annelid *Laeonereis culveri* [Family Nereidae]".

He joined the University of Maine faculty in 1969, and retired at the end of the 2014-15 academic year. He taught courses ranging from introductory biology to general ecology, entomology, parasitology, comparative vertebrate anatomy, freshwater field ecology, limnology, both marine invertebrate zoology and marine ecology, as well as estuarine ecology, and was known for his wonderful field trips to local salt marshes in the greater Portland area. He was also one of the stalwart "regulars" at the Entomological Bio-Blitzes at Acadia National Park every summer.

Mike was the author or co-author on nearly 20 refereed scientific publications, and made even more numerous formal symposium and meeting presentations, on topics ranging from polychaete worms to marshland snails and isopod crustaceans, and more recently, the northern brown snake.

Mike is survived by his loving wife of over 50 years, Terry, and their daughter Elizabeth.

In lieu of flowers, at the family's request, donations may be made in Mike's memory to the Scholarship Fund of the M.E.S., c/o Dana Michaud (3 Halde Street, Waterville, ME 04901). A private service has already been held, and a celebration of Mike's life will be scheduled later in the spring.

Many thanks to Doug Currie, USM, for help with this.

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2015: What Lurked in YOUR Garden? by Kathy Claerr

In the November newsletter, I saw that Charlene wanted reports from other gardeners about insects observed in the 2015 season.

Perhaps not surprisingly, I noted the same lack of pests that she reported: Japanese beetle numbers were down. I think

I saw two cucumber beetles the whole season. I usually get a few corn earworms, but I don't recall any this year. Flea beetles were present, but numbers were somewhat limited. I had a couple lily beetles (the bright red ones) early on, but no more! Usually I fight them all season.

I think I had one or two tomato hornworms, seeing telltale frass. I never located them, and thought an enterprising bird found them as the damage to the tomato foliage remained minimal. (I had a larger than normal number of birds in my backyard this year. At first I thought it was delightful, but then I started to wonder why so many all at once, and worried that many had been displaced from their usual nest sites. I saw some species I usually don't see during the breeding season, like Cardinals. It was a weird summer, wildlife-wise.)

Toward the end of August or maybe in September, I had an infestation of aphids on my broccoli. I hardly ever see aphids in my vegetable garden. I cut off the stems with aphids, and that was the end of it.

Cabbage butterflies, the ones that decimate my broccoli annually, were nearly non-existent this year. I squashed probably 8-10 larvae late in the season, but the infestation never got anywhere near the point where I needed to cut down my brocs. I never want to cut them down. I usually try to keep some plants around to go to flower in order to feed bees on cool fall days.

This year I had huge numbers of bees and flower flies in my garden-- around the tomatoes, cosmos, calendula, and especially broccoli and skirret. The skirret is new to my garden-- very pretty with Queen Anne's Lace-like flowers. The flower feeders mobbed the skirret unlike I've seen them exploit any other flower in my gardens. Constant buzzing activity! I wondered if the skirret was a particular draw for the bees, so I await next season to see if the skirret remains highly attractive.

That's all I can recall.

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There's Still Time (but not much!) to Sign Up for the Winter Workshop on Lepidoptera!

The 2016 MES Winter Workshop topic is Lepidoptera, specifically the macro-Lepidoptera. Moths and butterflies are a favorite for many people and will be the focus of the 2016 Entomological Bio-Blitz at Acadia National Park. Michael Sebourin will be the workshop facilitator.

The workshop will take place at the Maine Forest Service Bolton Hill Facility in Augusta at 14 Conservation Drive, off Route 3; directions will be found below. The workshop will run from 9:30 a.m. to 3:00 p.m. on Saturday, February 27, 2016. The workshop is open to people with any level of experience or none at all.

There is a \$20 fee to cover expenses and pre-registration is required by February 12th. Please bring your \$20 with you to the workshop so we do not have to deal with reimbursing money if it has to be cancelled. There is a limit of 30 people and we usually fill these workshops to capacity, so sign up early. Please bring a bag lunch. There are microscopes available but if you can bring one, please do so.

It's not too late to sign up, but please do so ASAP if you want to participate! To register: e-mail patti.roberts@maine.gov. If weather is threatening on the day of the workshop, contact Colleen Teerling at 207-592-2474. Also if you cannot make it for some reason, please call so that if there is a waiting list, others on that list can attend.

Directions:

From north or south on Interstate 95: take exit 113 and merge onto Maine Route 3, heading eastwards toward

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Winter Workshop (cont.)

Augusta/Belfast. Cross the Kennebec River and go straight through the lights at Route 201. In 6.6 miles, you'll go up a hill. Just past the Smokey Bear Fire Danger sign, turn right onto Conservation Drive.

The physical address is: 14 Conservation Drive, Augusta. (This address in a GPS unit should get you there; if you get turned around, just watch for the Smokey Bear sign and you should be fine.)

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2016 Summer Season Set at Eagle Hill

The 2016 Summer seminar, course, and workshop schedule has been set at the Eagle Hill Institute in Steuben. A full schedule of programs is set to run from May 22nd to September 10th.

Programs that are of particular entomological appeal would include the following:

June 19-25: Moths and Butterflies: Identification, Specimen Preparation, and Taxonomy, with Bryan Pfeiffer and Hugh McGuinness.

June 26-July 2: Dragonflies and Damselflies: Field Techniques and Identification, with Bryan Pfeiffer.

July 10-16: Native Bees as Pollinators: Diversity, Ecology, Conservation, and Habitat Enhancement, with Alison Dibble, Frank Drummond, and Sara Bushmann.

July 17-23: Beetles: Diversity, Identification, and Natural History in Maine and Around the World, with Gary Hevel and Warren Steiner.

August 7-13: EPT Taxa: Taxonomy and Stream Biomonitoring, with Steven Burian.

The complete summer program, with information regarding fees and lodging, can be found at the Eagle Hill web site (<http://www.eaglehill.us/programs/nhs/nhs-calendar.shtml>). There also is a link to this web page on the M.E.S. web site.

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Surprise Honor Accorded M.E.S. Members

Late November brought a surprise to long-time M.E.S. members Dick Dearborn, Charlene Donahue, Ross Bell, Reggie Webster and Bob Nelson. Each received a surprise package in the mail, in which was a plaque inscribed with text recognizing that their 2014 paper on the ground beetles of Maine* had been honored as the outstanding paper of the year in the *Coleopterists Bulletin*, a quarterly international journal devoted to the study of beetles.

The paper, originally conceived as a companion study to Ross Bell's documentation of the Carabid fauna of Vermont and New Hampshire (which has also just been published - see page 9 in this newsletter), can be downloaded directly as a high-resolution pdf file from the M.E.S. web site. Or, anyone desiring a copy could also send an e-mail to Bob Nelson (at BeetleBob2003@yahoo.com) to request one.

* Dearborn, Richard G., Robert E. Nelson, Charlene Donahue, Ross T. Bell, and Reginald P. Webster, 2014: The Ground-Beetle (Coleoptera: Carabidae) Fauna of Maine, U.S.A. *Coleopterists Bulletin*, vol. 68, no. 3, p. 441-599.

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Maple Syrup Collecting Field Day in Whitefield (Lincoln County) – March 26th

Maple syrup buckets often contain a fascinating assemblage of insects, plus there are insects on tree boles, in the woodpile and tucked in other nooks and crannies this time

of year. There is a seep open all winter down near the river that runs free, and wetlands across the road.

Come visit a backyard sugar operation, enjoy the company and collect a bug or two or maybe more. Dress for the weather and be sure to wear boots, bring snowshoes if conditions permit, lunch and drinks.

If the sap cooker is running there are usually people hanging out, and it's a laid-back time (until a batch of syrup is ready to come off!).

Contact Charlene Donahue if you're planning to attend, at 485-0960 or via e-mail at donahuecp@gmail.com.



Charlene's lush summer gardens at the maple syruping site (Google Earth, Street View)

Directions: Take Route 17 east out of Augusta. Go 12 miles, turn right onto Route 218 (Mills Road). The house, at 460 Mills Road, is 0.8 mi. down the road on the right. It's a cream-colored cape, with a garage with rounded doors.

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Joint Field Day on May 7th with Friends of Edith Patch, Orono

On May 7th, MES teams up with the Friends of Edith Patch at the Orono Public Library for "Insect Adventures."

Current plans include MES-led collecting and identifying outdoors while the Friends offer indoor activities. The Friends are excited about bringing a more extensive outdoor component to this annual event. Let's show our "stuff!" Bring some of your collection to show – specimens or photos, collecting equipment, ID guides and cameras. Our goal is to show where to find insects, how to collect/photograph them, and relate fascinating life stories for species we identify. Coordinator: Kathy Claerr



Orono Public Library (Google Earth, Street View, image)

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Orono Field Day (cont.)

Directions: Get onto I-95 toward Bangor. Take the Kelly Road exit, EXIT 191, and go east towards Orono. Go ~1/4 mile, and turn right onto Kelly Road. After 0.9 miles, turn left onto Main Street (U. S. Route 2). In 1.2 miles, turn right onto Pine Street (just past Goodridge Drive; there's a Circle K on the corner). The library is at 39 Pine Street, on your right.

* * * * *

June Field Day at Merrymeeting Bay, Woolwich (Sagadahoc County)

Join us on June 11th at Merrymeeting Fields, Woolwich, for a ramble around this preserve of the Kennebec Estuary Land Trust (KELT) in this joint field trip. The preserve encompasses both forest and fields. KELT will have plant experts on hand. MES will lend entomological expertise. We'll see what we can find for a show-and-tell at the end of this outreach event. Please note that "collecting" is on a catch-and-release basis at the preserve. Coordinator: Kathy Claerr.

Directions from Bath: Take Route 1 North to Route 127 (just across Bath bridge). Proceed North on 127 to Route 128. Follow 128 about 6 miles to Chopps Point Road, turn left. Proceed 0.9 miles to parking lot and kiosk on right.

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SAVE THE DATE: 14th Annual Entomological BioBlitz in July at Acadia National Park!

The fourteenth annual Entomological Bio-Blitz at Acadia National Park will focus on macro-Lepidoptera, and will be held from **July 22nd-24th**, 2016, at the Schoodic Educational and Research Center (SERC).



The 2010 Blitz was typical in bringing together young and old, professionals and amateurs, all bound by a common love of insects.

Co-sponsored by Acadia National Park, the M.E.S., the Maine Forest Service, the University of Maine, and the SERC Institute, the objectives of the Blitzes in the Park are to:

- build upon a legacy of past natural history studies;
- develop new science partnerships with science institutions and organizations;
- increase awareness and excitement about the park's biodiversity, and;
- establish new baseline information about little-known plants and animals.

In this latter, the entomological BioBlitzes of past years have added literally hundreds of new species to the known

fauna of Acadia National Park, some of which were also species previously unknown at all within the state of Maine.

The lead taxonomist for the event this year will be long-time M.E.S. member and lepidopterist Michael Sabourin.

As always, the event is open to professional entomologists, amateur naturalists, and other interested persons.

The first organizing meeting for the Blitz steering committee is scheduled for February 22nd. More information will be posted on the M.E.S. web site as received, and will be found in the May newsletter. **Registration for the BioBlitz is scheduled to open on May 2nd.**

* * * * *

Big Wilson Stream August Field Day, Ellitsville (Rescheduled from last year)

Date: Saturday, August 6th

Time: Meet at the Monson Community Center parking lot on Routes 15 & 6 (Main Street) at 10:00 a.m.; we will car pool from there. Big Wilson Stream is in Ellitsville (see the Delorme Maine Atlas and Gazetteer # 41, area E4)



The entrance to the Monson Community Center from North Main Street (Maine Route 6), northbound. (Google Earth, Street View, image)

Logistics: We could use as many four-wheel-drive vehicles as folks have to get to the stream crossing. The road is rough, but usually passable with high clearance. We will cross the Stream close to the Appalachian Trail. Bring sturdy waterproof shoes or boots and poles to get across, and boots for hiking around. Bring water, lunch, nets, collecting containers, and your favorite field guides.

Site Description:

When we cross Big Wilson Stream we will be in a 65-acre Hardwood River Terrace Floodplain, a rare natural community type. This community is located on the floodplain of the stream and is dominated by a mix of hemlock and northern hardwood species, including a significant amount of red oak. Staff from the Department of Conservation agreed that a 33-inch-diameter red oak located on a rise above the floodplain was the largest example of this species they had ever seen in Maine. A smaller hemlock, at 24 inches in diameter, cored out to 170 years old. There is a lot of coarse woody debris, which should be interesting in terms of insects. There is also a floodplain vernal pool here, and cool lichens and fungi.

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Big Wilson Stream Field Trip (cont.)

The upland portion of the forest (295 acres, owned mostly by Plum Creek) is an exemplary Spruce-Northern Hardwoods Forest Natural Community. It's a mix of sugar maple, yellow birch, beech, red spruce, and white ash. Cores from two red spruces showed them to be 263 and 195 years old! This area is a strenuous hike up slope, but there are magnificent trees up there.

For further information call Diane Boretos at 564-2966

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New SEPTEMBER Field Day in Bowdoin

On September 17, join us for a field day in Bowdoin, in Sagadahoc County. Our bucolic setting offers a variety of habitats, from field to forest, upland to wetland, gardens and stream. Beetle Bob reports there are few carabid records for Sagadahoc County. Let's remedy this egregious oversight! Come hunt the countryside knowing that full comfort and accommodations await at my house. We'll have lunch (bring your own) on the deck or lawn. Coordinator Kathy Claerr.

Directions from Route 201: (north of Topsham, about 8 miles) Turn onto Route 125 South towards Bowdoin Center and Lisbon Falls. Proceed about 0.2 miles to a right turn onto Lewis Hill Road. Measure 1 mile. My house is 214 Lewis Hill Road, on the left side.

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Sightings of Migrant Insects in Downeast Coastal Maine During September, 2015 (with some additional ecological notes)

by Richard W. Hildreth

During 2015, I was not in Maine as much as usual for me, but I did manage a month-long visit in September. The grand plan for that trip was to be a lot of serious field work looking for migrant insects.

When I arrived in Steuben, at the cabin I found that the naughty red squirrels had been in the cabin and caused more than the usual amount of damage – there was a lot of cleaning-up to do. All this work to do, plus time spent with several visitors, resulted in less serious field work getting done than I had planned.

What I did do was make some visits to various coastal sites (from Eastport to Ellsworth), including several visits to the Schoodic District of Acadia National Park in Winter Harbor. I also got out every day in the cabin yard and environs in Steuben. I followed my usual practice of trying to identify and count all the butterflies, dragonflies, and migratory moths that I saw. I activated my banana feeders in the cabin yard, which proved to be very useful to attract passing migrants (see "Tech Tip: Banana Bait Feeder," by Richard W. Hildreth, *Maine Entomologist*, v. 17, no 1., February, 2013).

RESULTS

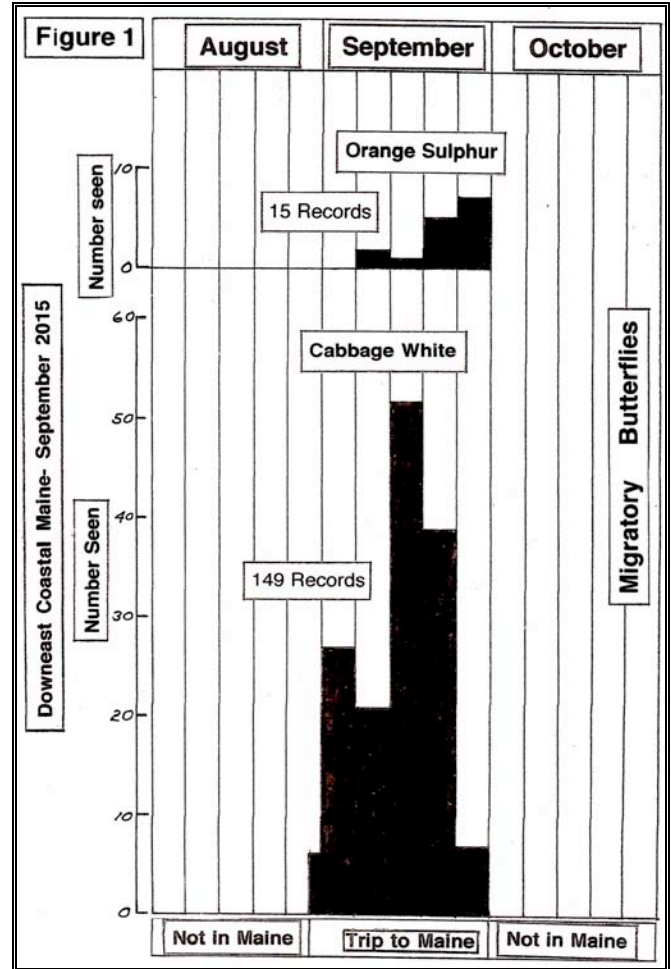
Butterflies: A total of 495 butterflies of 18 species were identified and counted. Some 362 of the butterflies seen were migrants of 8 species – 73.13% of the total. Details follow.

Cabbage White (aka, Cabbage Butterfly) – 149 records, all told (see Fig. 1). Many people don't realize or don't believe that Cabbage Whites are migratory. In the Old World, they are known to be migratory. I have been studying these migrants for years and have thousands of records. It appears to be that Cabbage Whites make annual NE-trending flights in the spring, and SW-trending flights in the fall.

In 2014, during April, May and June, in Holliston, Massachusetts, I carefully counted all the Cabbage Whites that I saw and very carefully recorded their behavior (see Fig. 1.5). Migratory butterflies spend their time on three activities:

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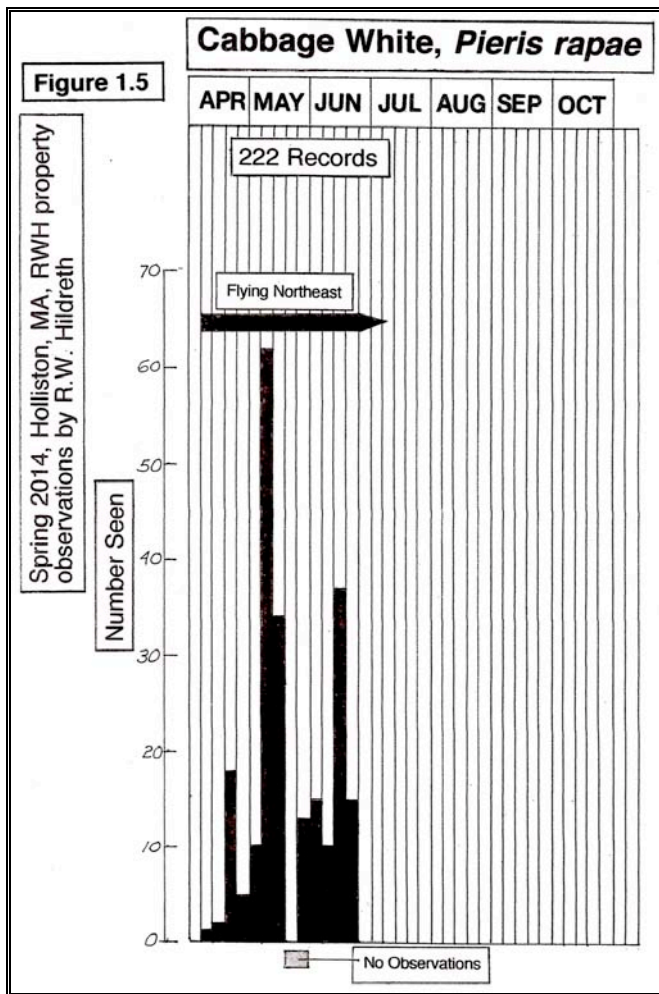
the females search for the proper plants and lay eggs on those plants, they make "fuel stops" when they can find flowers with nectar (or rotting fruit, sap, etc., for those species that feed on such things), and they mate.



I am quite certain that by the time I see any migrants, they have already mated and the females are ready to lay eggs on the proper plants. During migration, I have seldom seen any mating behavior. In April, when I first see Cabbage Whites, they come flying out of the woods at the south end of my front field. In early April there are only a few of them and they always are flying northeast. As soon as they come out into my field they make a few circling flights, searching.

R. Robin Baker (in *The Evolutionary Ecology of Animal Migration*) characterized what he called linear migratory flight in butterflies as being rapid and direct over unfavorable terrain, and more leisurely and meandering over favorable terrain. What these first Cabbage Whites find is Dr. Baker's "unfavorable terrain." At that time of year, there are no proper caterpillar food plants and no flowering species. Within about 5 minutes they give up searching and quickly fly on toward the northeast. As the season goes on herbaceous plants are soon popping up and flowering species are getting going. By June the Cabbage Whites are now over Dr. Baker's "favorable terrain" and are spending much more time searching. They take about two hours to search the field, stop to nectar, etc., before they fly on. From July on there are plenty of flowering plants constantly available and there are usually some Cabbage Whites nectaring on them. In mid-summer I do see some mating pairs and probably some Cabbage Whites are breeding on the property somewhere.

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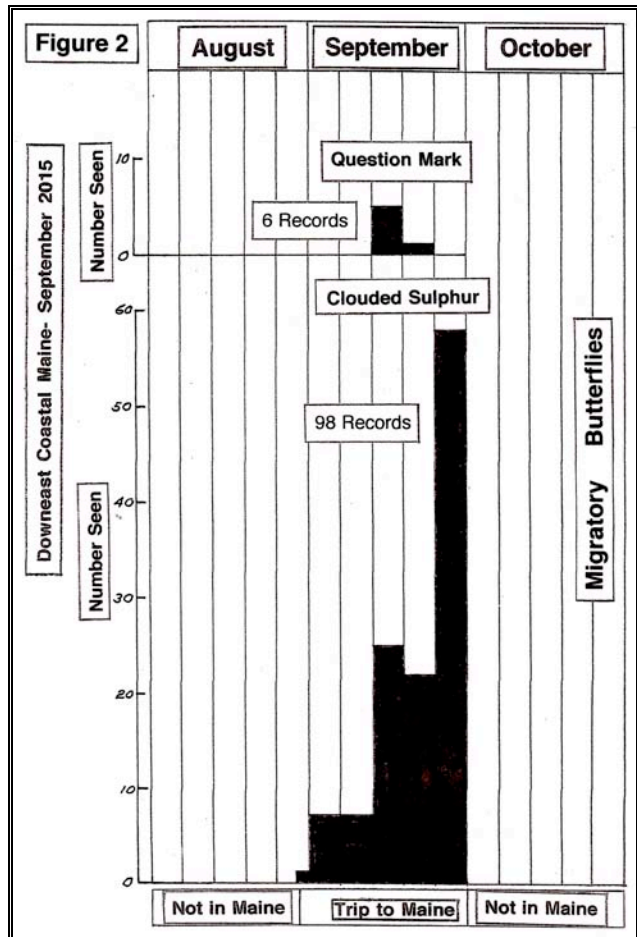


During the 2015 September trip to Downeast Maine, I got to see some Cabbage Whites drifting west-southwest. On 16 September, 2015, my daughter Tarn and I visited Gleason Point Park in Perry, Maine (from 11:00-13:15 hrs.). The park is a large grassy seaside site with lots of flowering plants, a great butterfly place. While Tarn searched for sea grass, I searched for butterflies. I was able to find 31 Cabbage Whites, all of which were nectaring on the yellow flowers of mustard along the shore. At first glance there seemed to be no migratory movement at all, and I walked along the shore to the end of the spit beyond the flowering mustard. Then I saw one or two Cabbage Whites flying west. They were very slowly drifting westward. Before we left the site at 13:15, almost all the Cabbage Whites were gone.

Clouded Sulphur (aka, Common Sulphur) – 98 records (see Fig. 2). The Clouded Sulphur is a regular migrant species. In September, I saw them drifting toward the W-SW, often stopping to nectar on various flowers. They were in fresh condition and were quite large in size. They were especially attracted by the flowers of the New York Aster, *Symphotrichum novi-belgii*.

In the spring, Clouded Sulphurs fly NE into and through Maine in small numbers. I have not noted any Clouded Sulphurs breeding right along the coast, but I do know of breeding populations a bit farther inland. In the fall there is often a substantial W-SW movement along the coast. At such sites as the Petit Manan Point Division of the Maine Coastal Islands National Wildlife Refuge in Steuben, and at the Schoodic Division of Acadia National Park in Winter Harbor,

Clouded Sulphurs can sometimes be seen flying in over the ocean from the SE, probably flying from the southern tip of Nova Scotia, as many small migratory land birds do.



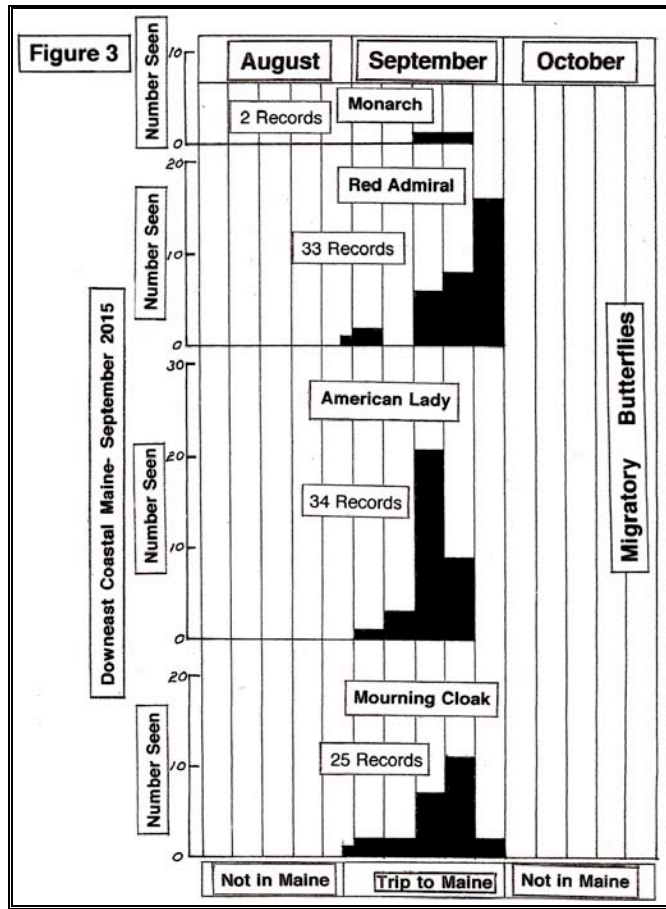
In mid-summer, if you see a Yellow Sulphur flying, great caution is needed with the identification. In summer, the **Pink-Edged Sulphur**, *Colias interior*, is flying in blueberry-rich areas and cannot be told from the Clouded Sulphurs without a good, close look at the underside of the wings. The Pink-Edged Sulphur on the underside is clear yellow without any dark scales. On the hind wing, there is a single, round, silvery spot, rimmed in pinkish-red. The Clouded Sulphur has a well-defined central spot on the hind wing underside, but right next to it is a smaller satellite spot. There is also a post-medial row of dark spots. If you don't get that clear and close a view of the underside details, yellow sulphurs seen in summer are best recorded as sulfur sp.

Orange Sulphur (aka Alfalfa Butterfly) – 15 records (see Fig. 1). Before ~1920 or so, the Orange Sulfur was a rare stray in New England. Alfalfa began to be planted and this probably attracted the butterflies. By about the 1940s, the species was established in Maine, and they are now regular breeding species in the state.

The spring flight into and through Maine is usually quite small, in some years barely detectable. The fall flight to the W-SW can be quite big, although there is great year-to-year variation. In September, 2015, the fall flight was modest. The ones I saw were especially beautiful, very orange and unusually large-sized. They drifted through to the W-SW, frequently nectaring on various flowers. They were greatly attracted to New York aster. Some Clouded Sulfurs sometimes have a bit of orange on the undersides and are

Downeast Migratory Insects (cont.)

sometimes confused with Orange Sulphurs. But the Orange Sulphurs are orange **on the upper wing surface** (usually *bright orange*). During the fall flight, Orange Sulphurs in Steuben are sometimes seen flying in over the ocean from the SE, probably from the southern tip of Nova Scotia.



Monarch – 2 records (see Fig. 3). In September, 2015, we had presumably a very sparse flight. I saw only two records. My daughter found one female nectaring on cultivated *Hydrangea paniculata* on 17 September in Steuben (photographs were taken); I saw one flying west at the cabin in Steuben on 23 September.

Question Mark – 6 records (see Fig. 2). A regular migrant species which probably is never overwintering in Maine in any life stage. It is one of the least common migrant species, and in some years is barely detectable. In recent years, 2012 was the only year of unusual abundance with 419 records. In the spring they fly into and through Maine in small numbers along a NE track. An example of one of these spring flights was noted in my observations at the Schoodic District of Acadia National Park in Winter Harbor on 9 July, 2012. They were flying in over the water from the west. Choke cherry (*Prunus virginiana*) was in full flower, and 12 Question Marks stopped to nectar on huckleberry. Six more flew on to the NE without stopping.

Another example of spring flight was documented in some observations I made in Machias. I was standing along the rail trail by the river looking to the SW (the direction from which migrants might be expected). I soon spotted a large butterfly flying in over the river and headed right towards me. As it got closer, I was able to see it clearly through my binoculars and identify it as a Question Mark. Growing right

beside the rail trail was a single American elm (*Ulmus americana*). Elm is the favorite caterpillar food of the Question Mark. When the flying butterfly reached the tree, it began circling the crown of the tree. Through my binoculars I saw it lay several eggs on the underside of elm leaves. This process took maybe 10-15 minutes, and then the Question Mark flew off in a determined fashion towards the NE.

During the fall flight, they can be seen flying in a determined fashion to the west-southwest. These fall migrants are attracted to sweet bait. In September, 2015, all six records I obtained were in the cabin yard in Steuben at my banana feeders.

Mourning Cloak – 25 records (see Fig. 3). The Mourning Cloak is a regular migrant species, with a small NE-bound flight in the spring and a usually much larger and more conspicuous W-SW flight in the fall. The adult butterflies spend the winter in hibernation. Some probably spend the winter in Maine, but if you ever find a hibernating Mourning Cloak please get all the details and let the entomological world know about it. In the fall, though, many Mourning Cloaks fly off toward the SW right out of Maine, to apparently hibernate somewhere else.

In migration, the flight of Mourning Cloaks is usually fast and determined. Mourning Cloaks spend very little time nectaring on flowers, but are attracted to sweet baits. During September, 2015, I saw some flying W-SW, and many were attracted to my banana feeders at the Steuben cabin. All eventually flew off to the W-SW.

One curious bit of nature lore regarding the Mourning Cloak: they are able to make clicking sounds with some sort of wing movement. Thornton Burgess mentioned this in *The Big Book of Burgess Nature Stories*.

American Lady – 34 records (see Fig. 3). The American Lady is a regular migrant species that annually flies into Maine on a NE track in the spring, is a common breeding species, and makes a fall W-SW flight out of Maine. The favorite caterpillar food is pearly everlasting (*Anaphalis margaritacea*).

During the spring NE flight into Maine and through Maine, the female American Ladies search for tiny, just-emerging pearly everlasting plants. When a plant is found, the female lays one or more eggs on the underside of the leaves. Then the females continue on to the NE.

Pearly everlasting is a very common plant in Downeast Maine. In the late spring or summer, if you examine pearly everlasting plants, you'll find the American Lady caterpillars, though these are more likely to be found on the smaller plants and new growth than the older, larger and more mature plants.

During the fall W-SW flight, the American Ladies will nectar on many flowering plant species. During September, 2015, all the American Ladies I saw were nectaring. On 17 September, at the Schoodic District of Acadia National Park in Winter Harbor, I saw 14 of them nectaring on rough-stemmed goldenrod (*Solidago rugosa*) and seven nectaring on New York aster. Neither these nor the Painted Lady butterflies are attracted by sweet baits.

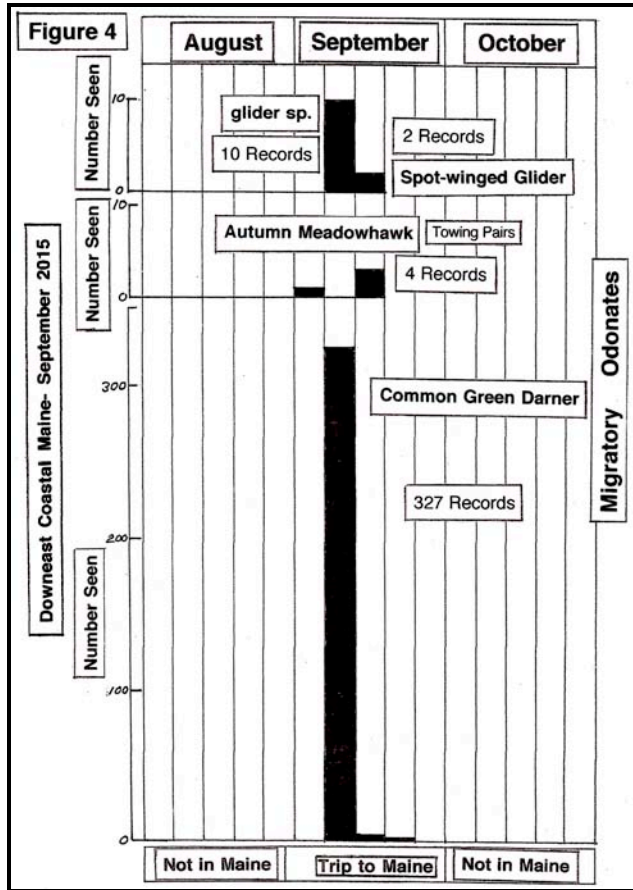
Painted Lady – I personally saw none this past September, but Bill Townsend reported in the *Guillemot* (v. 45, no. 5, Sept-Oct., 2015) that Painted Ladies were seen in Downeast Maine.

Red Admiral – 33 records (see Fig. 3). The Red Admiral is a regular two-way migrant in Maine and is commonly the most numerous migrant species. In the last 20 years, there have been numerous high-abundance years.

(continued on next page)

Downeast Migratory Insects (cont.)

They arrive in spring just as the stinging nettle (*Urtica dioica*) plants are coming up. The females lay eggs on these nettles, and sometimes great numbers of Red Admiral caterpillars can be found in nettle patches. The Petit Manan NWR site in Steuben is an excellent site to find Red Admiral caterpillars. The year 2015 was presumably only a modest-abundance year for Red Admirals; most of the ones I saw in September were visiting my banana feeders at the cabin in Steuben.



Dragonflies: A total of 341 dragonflies of four migratory species were identified and counted.

Green darner – 327 records (see Fig. 4). Common Green Darners are the most common and conspicuous migratory dragonflies that make annual flights into, through, and out of Maine. During September, 2015, I saw only one major Common Green Darner flight. On 8 September, I was at the Blueberry Hill site in the Schoodic District of Acadia National Park from 10:52 a.m. to noon. When I arrived, I found a Common Green Darner flight already in progress on the east shore. Luckily, I had my mechanical counter in my pocket so I could click off the dragonflies as they passed. They were rapidly and determinedly flying in off the sea from the SE, probably from the southern tip of Nova Scotia. When they made landfall at Blueberry Hill, some did a bit of circling before flying W-SW across the peninsula.

All these dragons were freshly hatched. Females and immature males all have reddish abdomens; mature males have bright blue abdomens. In this flight there was no sign of males with blue abdomens. The flight was over before I left at noon, and 324 darners were counted.

Dragonflies of other species can sometimes be found in big darner swarms. In this instance, two **12-spotted**

Skimmers were seen flying along with the darners. This big, distinctively handsome, and easy-to-identify species may also at times be a migrant in Maine.

Gliders: Wandering Glider and Spot-Winged Glider

These species in the genus *Pantala* are regular two-way migrants in Maine. On 8 September at Schoodic, I counted ~10 Gliders flying along in the darner swarm (see Fig. 4). My impression was that both species were present, but they passed by too quickly for me to be sure.

Members of *Pantala* are called Rain-Pool Gliders because the females lay eggs in temporary water bodies. The larvae of these species are able to develop very quickly, before the pools dry up. The Wandering Glider is light-colored with a yellow face; the Spot-Winged Glider is darker with a dark red face.

Wandering Gliders have an almost world-wide distribution and an awesome capacity to make great migratory flights. In my travels, I have seen them on the move in many places (in Thailand - in the millions, and in China, many more in flight, etc.). I once even saw some in Namibia, in the Namib Desert, one of the driest places on Earth where sometimes years will pass between rainfall events. During the year that I was there, there had been a great typhoon in the Indian Ocean which brought vast amounts of rain to Africa, right across Namibia. Among the great dunes of the desert some tiny pools of water remained. The Wandering Gliders had found these pools and were busy breeding in them.

The Spot-winged Glider is a New World species with strong migratory tendencies. On 17 September, 2015, I saw two Spot-Winged Gliders flying west-southwest at Schoodic.

Autumn Meadowhawk (aka, Yellow-Legged Meadowhawk) – four towing pairs counted (see Fig. 4). This is a regular migratory species that makes fall W-SW flights through and out of Maine. Most of these migrants fly as towing pairs, with the males towing the females. These pairs fly toward the SW in very fast, determined flight, going up and over all obstacles (such as mountains). These pairs presumably head off somewhere to breed, lay eggs, etc. I have never seen any of the migrating pairs show any sign of stopping to breed or lay eggs in any water body in Maine. These Autumn Meadowhawk flights extend from southern Canada to at least southern Connecticut.

I was, however, once lucky enough to see these migrants arrive at a pond and stop to lay eggs. On 5 October, 2001, I was visiting the sewerage beds in Northridge, Massachusetts (Worcester County). Back in those days the technology for cleaning municipal wastewater was the use of filter beds, shallow pools excavated from sandy soil and then raked with a thin layer of crushed stone on the top. The pools were then filled with several feet of waste water which was allowed to drain away through the permeable sand. The pools were then allowed to dry out, the solids were removed, the beds raked level and the procedure repeated.

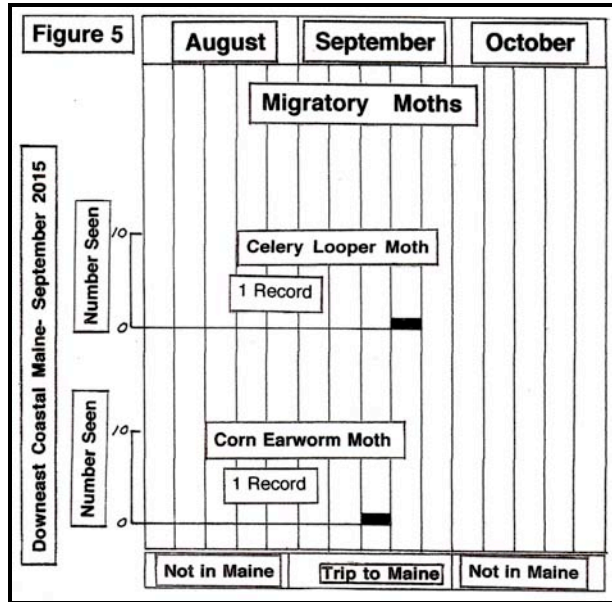
These muddy pools attracted migratory shorebirds during spring and fall flights, which was why I was there that day – to look for the shore birds. The water in the pool I visited was nearly drained away, but not yet dried out. Large numbers of Autumn Meadowhawks were just arriving and beginning to lay eggs. I counted ~84 towing pairs. Although I had no net with me, I managed to use my hat to catch one of the towing pairs (specimen no. 095 in my Massachusetts Odonate collection). Photographs were also taken to document the event.

On 18 September, 2015, right in the commercial heart of Ellsworth, I saw Autumn Meadowhawk towing pairs flying rapidly toward the SW. At the Home Depot parking lot, I

(continued on next page)
February, 2016

Downeast Migratory Insects (cont.)

saw two migrating pairs, and at Simon's Farm Store I saw another pair.



Migratory Moths: I recorded one individual each of two different species (see Fig. 5). It is probable that many species of moths are migratory, but I only have experience with a few big day-flying species. On 16 September, 2015, I saw a Corn Earworm Moth at Gleason Point Park in Perry, Maine, nectaring on New York aster. On 21 September, I saw one Celery Looper Moth nectaring on New York aster at the Schoodic District of Acadia National Park.

I urge *everyone* to get out during the 2016 season and hunt for migratory insects. There are many exciting things to discover!

* * * * *

Could Deer Hunting Help Insect Populations?
by Bob Nelson

A recent journal article* reported some interesting results from a study of heavy deer browsing in the Allegheny Forest of Pennsylvania that could have implications here in Maine.

In Pennsylvania, lack of major predators has combined with low hunting pressures to result in a large deer population for decades. The elevated deer population has resulted in long-term chronic overbrowsing, which in turn has reduced the biodiversity of understory plant communities, favoring unpalatable taxa – particularly ferns. Comparing open areas to a plot that has been fenced to keep deer out for some 60 years, understory plant diversity within the enclosure was five times that of the area outside the enclosure.

The apparent impact on the insect community was interesting. The team reporting this study used sweeping techniques as well as pitfall trap sampling to assess insect diversity inside the enclosure and outside. Though specimens were identified only to the family level, they found that above-ground (sweeping) insect diversity and abundance was some 50% higher inside the enclosure than outside, but ironically, diversity and abundance were higher in the ambulatory (pitfall trap) litter communities *outside* the enclosure. Mirid bugs were more abundant inside the enclosure, and Elaterid (click) beetles more common outside the enclosure, when samples were taken in June. Ants, Carabid beetles, and Chrysomelid beetles were more abundant in the heavily browsed areas in August than they were earlier in the year.

Not addressed in the study was whether the greater diversity and numbers registered among ants and beetles outside the deer-free zone may have reflected greater mobility in the populations, due to depleted food resources, rather than greater absolute abundance. The hypothesis *was* advanced, however, that the fern understory may have provided greater ground-level temperatures and lower humidity, as well as protection from birds.

* Chips, M. J., E. H. Yerger, A. Hervanek, T. Nuttle, A. A. Royo, J. N. Pruitt, T. P. McGlynn, C. L. Riggall, and W. P. Carson, 2015: The Indirect Impact of Long-Term Overbrowsing on Insects in the Allegheny National Forest Region of Pennsylvania. *Northeastern Naturalist*, vol. 22, no. 4, p. 782-797.
* * * * *

Book Announcement:

Carabidae of Vermont and New Hampshire
by Ross T. Bell

A lifetime of work on the ground (carabid) beetles of Vermont and New Hampshire has reached fruition and is now available in *Carabidae of Vermont and New Hampshire* by Ross T. Bell, Professor Emeritus at the University of Vermont, and long-time M.E.S. member and supporter. Ross Bell is a well-known and well-published expert on Carabidae. He and his wife, Joyce Bell, are also the world's leading experts on the carabid tribe Rhysodini, the Wrinkled Bark Beetles, and have described over three-quarters of the world's 360 species.

The work will be indispensable to anyone interested in the fauna of New England, ecology, habitats, conservation, distribution, or carabid beetles. It is not an identification manual, but there is a wealth of biological and distributional information beyond what has been currently available, along with new state records or confirmation of catalogue records that were in doubt. An introduction discusses topography, mountains, wetlands, vegetation, soils, life zones, and biophysical regions of Vermont and New Hampshire. A list of species indicates state records, confirmation of catalogue records previously considered tentative, literature records, and adventive species. Names have been updated following Bousquet's 2012 Catalogue. The main text follows with brief tribal and generic summaries and individual accounts of 495 species. Each species account includes general range, local range, habitat, life cycle, behavior and dynamics. References, an index, and Vermont/New Hampshire range maps for all species finish the work.

Publication of this book was supported by the Vermont Department of Forests, Parks and Recreation, Vermont Monitoring Cooperative, Vermont Center for Ecostudies, Vermont Entomological Society, and the Carnegie Museum of Natural History.

Published in hardcover by Shires Press, the 385-page book is available for \$50, shipping included for U. S. orders, from Shires Press at:

<http://www.northshire.com/book/9780970082312>

Shipping cost for international orders available on request.

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Bumble Bee Atlas Project Needs Volunteers

The Maine Bumble Bee Atlas project is hoping to get some MES members involved. There will be training sessions for those interested in collecting bumble bees in 2016 on May 14th in the Gorham area, and June 11th in Orono. For more information go to mainebumblebeeatlas.umf.maine.edu/; please contact Beth Swartz, at beth.swartz@maine.gov if interested. There is also an article in last May's Maine Entomologist (v. 19, no. 2, p. 6).

Literature notice:

History of BioControl in Canadian Forests

A forthcoming article in *The Canadian Entomologist** documents the history, successes and failures, of biocontrol efforts on insect pests of Canadian forests since the 19th Century. Since 1882, 161 biological control agents (mostly parasitoid and predatory insects, but also including mites and one mammal) have been released in efforts to control 41 insect pest species, with varying levels of success. Bob Nelson has a pdf file of the preprint – e-mail him (BeetleBob2003@yahoo.com) if you'd like a copy.

* MacQuarrie, Chris J. K., D. B. Lyons, M. Lukas Seehausen, and Sandy M. Smith, 2016: A history of biological control in Canadian forests, 1882–2014, *Canadian Entomologist*, in press.

Literature notice:

Forest Pests and Symbiotic Fungal Associates

Another forthcoming paper in the *Canadian Entomologist** discusses at length the various obligate relationships between invasive and native insect forest pests and their symbiotic fungal associations. Of particular interest is that both native and non-native taxa can apparently develop relationships with new fungal pathogens, as environmental change occurs and ranges expand.

While this is particularly troubling with invasives, it is now being seen in native species such as the native mountain bark beetle, *Dendroctonus ponderosae* (Curculionidae: Scolytinae), which has ravaged Rocky Mountain populations of ponderosa pine and lodgepole pine, leaving millions of acres of dead trees. This beetle species has now expanded its range north into Alberta, where it is now known, for the first time, to be attacking jack pine – a species that extends across Canada and the northern tier of the U.S.A., including eastwards into Maine.

The paper is an admirable synthesis of what is known of the relationships between both introduced and native insects that attack and kill forest trees, and of their known old and newly acquired fungal associates.

E-mail Bob Nelson if you would like a copy of the in-press version of this paper.

* Ramsfield, Tod D., 2016: Evolving symbioses between insects and fungi that kill trees in Canada: new threats associated with invasive organisms; *Canadian Entomologist*, in press.



Some people think the collecting is all there could be to an entomological BioBlitz, but many people work long hours into the night sorting, pinning, and identifying the specimens collected. Sometimes, they only get a few hours of sleep before breakfast calls and the grand finale of collecting begins. See page 4 for information on *THIS* year's Blitz, scheduled for July, with a focus on macro-Lepidoptera.

COMING M.E.S. EVENTS in 2016

- 27 February Winter workshop in Augusta (To register: e-mail patti.roberts@maine.gov)
- 26 March Mapling and collecting in North Whitefield (contact person: Charlene Donahue)(see p. 3)
- 7 May Field day at the Orono Public Library (see p. 3) (contact person: Kathy Claerr)
- 11 June Field day in Woolwich (see p. 4) (contact person: Kathy Claerr)
- 22-24 July Entomological Bio-Blitz (Lepidoptera) at Acadia National Park (see p. 4)
- 6 August Field Day at Big Wilson Stream, Sangerville (see p. 4) (contact person: Diane Boretos)
- 13 September Bug Maine-ia, Maine State Museum (contact person: Joanna Torow (Joanna.Torow@Maine.gov))
- 17 September Field Day in Bowdoin (see p. 5) (contact person: Kathy Claerr)
- 1 October M.E.S. Annual Meeting, Clinton (contact person: Bob Nelson)

(See <http://www.colby.edu/MES/> for more detailed information; new information on any event will be posted as it is received.)



Dendroctonus ponderosae, the Mountain Pine Beetle.
(Photo by Steven Valley, Oregon Dept. of Agriculture, Bugwood.org)

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