

# The Maine Entomologist

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

Volume 5, Number 2, May 2001



## From the President

With the spring blooms and greening landscape, another exciting field season commences. Our insect friends busy themselves with spring activities under the watchful eyes of entomologists looking for that choice photo, observation or unique specimen. Whatever your interest, there are opportunities for all. Our summer field trip program has been set up to bring you to a variety of new and interesting sites. In this, and following newsletters, are articles to pique your interest. So travel with us now into the lilliputian world of insects. See how their lives resemble ours in so many ways and how their populations reach a balance through diversity.

It is with a bit of nostalgia that I recollect our first published flyer in May of 1997 announcing our intent to form the MES. The idea began with three of us (Monica Russo, Don Ouellette, and myself) following a USDA/APHIS/CAPS field trip to the Waterboro Barrens, in August of 1996. On June 7, 1997, an enthusiastic and varied group of fourteen charter members gathered at the Pine Tree State Arboretum in Augusta and voted to organize. Our first newsletter appeared in August of 1997.

Since then, we have grown to over 110 members, with our own website and quarterly newsletter. It has been the enthusiastic support of our diverse membership that has made this happen and will continue to allow us to grow and reach out. Many new ideas are beginning to evolve and these will be discussed as they unfold in upcoming issues of *The Maine Entomologist*. Member interaction is critical as we cover the vastness of the Maine environment and the even vaster realm of insects. Most of our members enjoy hearing from others and learning of new acquisitions and challenges. While we realize that most of you have very busy schedules, take a moment to respond to other members' requests and join us at one or more of our field events.

As a closing note, I would like to express my appreciation to all who continue to support us through membership fees and articles for others to read. Invite a friend or associate to join us. Our only real requirements outside of dues are a fascination for insects and an appreciation of their role in the natural scheme of things. Come join us and enjoy!

-Dick Dearborn

## Inside This Issue:



**Mourning Cloak Migration**



**Damselfly and Dragonfly Survey**



**Edith Patch House Update**



**Beetle Discovery in Vermont**



**Crossword: Bees, Wasps, and Ants**

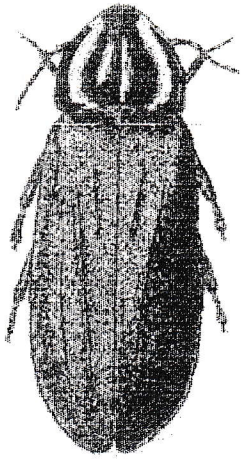
## The Unen-lightened Firefly

On your next walk through the woods, look a little more closely at the furrows in the bark of the oak trees you pass, and you'll likely see one of the most common fireflies in the northeast, *Ellychnia corrusca*. In spite of its lack of a light organ as an adult, and thus lack of flash communication, *E. corrusca* are considered fireflies because they possess light organs as larvae and have high similarity in morphology and physiology to other members of the Lampyridae family. Populations of *E. corrusca* tend to aggregate, so if you find one, you're very likely to find hundreds. They are usually a little over one centimeter in length with dark brown wing covers and orange semi-circles on either side of their pronotum. They are very poor flyers, so don't be surprised if they bang into you as they fly by.

All fireflies are beetles, not flies, and northeastern species are all members of the Lampyridae family. Most fireflies spend a couple of years as carnivorous larvae underground before emerging in the summer months for a few brief weeks of mating. It is unknown how long *E. corrusca* spend as larvae, but they are long-lived as adults, emerging in the summer and spending all winter on the bark of trees before mating in the spring.

*Continued on page 2*

*Continued from Page 1*



*Ellychnia corrusca*

Often you can see *E. corrusca* on the sunny sides of trees in the winter with snow and ice on their backs. If you pick them carefully off the tree and warm them in your hand they will revive and move about, but they seem to be unable to fly until warmer weather.

Early spring is the time of year when they become most active. Because of their long adult life spans, *E. corrusca* feed as adults unlike many shorter-lived firefly adults. Often the pronotum will be covered with pollen from eating flower nectaries, and it is very common to find *E. corrusca* on tapped sugar maple trees and even in the buckets.

Despite morphological and taxonomic similarity, *E. corrusca* differs dramatically from other fireflies in behavior. Most people have probably witnessed the light flashes used by male and female luminous fireflies to find each other. Although it remains a mystery exactly how *E. corrusca* find each other, some other non-luminous fireflies (*Lucidota* spp.) have been shown to communicate with pheromones. An additional difference between *E. corrusca* and other lampyrid beetles is that while most lampyrids often appear selective in their mate choice, *E. corrusca* seem to mate almost at random. An individual may crawl over or bump into many individuals without seeming to notice them or evaluate them in any way before mating immediately with another individual with which it has had very little contact. During copulation, males will mount females and insert the aedeagus into the female's bursa copulatrix. At this point the male transfers a spermatophore to the female – a package of sperm and nutrients. After a few minutes, the male, while still attached to the female, will turn around 180° so that the pair is end to end. They remain attached like this for an average of about 6 hours, but up to 28 hours! If you see a beetle running up or down a tree with another beetle attached and scrambling backwards, fear not – this is just the act of mating!

Because *E. corrusca* and many other fireflies are such weak flyers, and thus such easy prey, it makes sense that they have a built in predator deterrent – they taste awful (and yes, like any good scientist, I'm speaking from personal experience). When you pick up any firefly, they will often exude a drop of hemolymph (clear fluid) from either behind the pronotum or under the wing covers. This fluid has been shown to contain chemicals that cause birds, spiders, and other predators to quickly spit out what they just tasted. It's probably a good idea to keep in mind that too many fireflies in the diets of lizards and other small pets have been shown to have toxic effects, so remember when munching on fireflies – moderation is the key!

- Jen Rooney

For more information see:

Rooney, J.A. and S.M.Lewis. 2000 (September). Notes on the life history and mating behavior of *Ellychnia corrusca* (Coleoptera:Lampyridae). *Florida Entomologist*. 83(3):324 - 334.

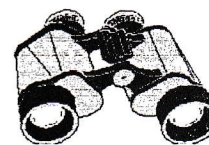


**REMINDER:  
Please Pay  
Your Dues**

There are many members who have not yet paid their dues for 2001. At only \$5 per year, M.E.S. membership is a bargain. Please help us continue to publish our newsletter, host exciting collecting trips, and have a presence at public forums. Send in your check or money order payable to Maine Entomological Society today! (See the back of this newsletter for the address).

**New MES T-shirt  
Coming Soon**

New, full color M.E.S. T-shirts will be available this summer thanks to the artwork of Monica Russo, design capabilities of Laura Stone, and a generous printing discount from Raintree Screenprint. Shirts are quality 100 percent cotton and come in white or natural. Order forms will be sent out in the near future.



**Sightings in  
Fort Kent**

As of April 20, there is still 22 inches of snow at our measuring stick with only a few bare spots on south facing banks. Just an hour ago, a green comma (*Polygona faunus*) was flying near our workshop. I caught it to be sure I identified it correctly and let it go. Usually the mourning cloak is our first butterfly sighting, but the green comma wins this year!

- Gale Flagg

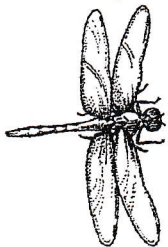
## Hunting Dragons at the Wells Reserve

It's a bright, sun-filled afternoon and the estuary spreads out before me like a giant green quilt threaded with blue serpentine veins. A great blue heron waits patiently by a tidal pool as a green crab scurries for cover. Suddenly a dragonfly the size of a small bird whizzes by as if he's forgotten an important meeting. SWOOSH! My white net streaks up almost of its own accord. Drats! I missed again. I cautiously approach a brilliant metallic blue damselfly alight on a blade of marsh grass, its wings neatly folded over its back. SWOOSH! Again, nothing. Finally, a stout, red bodied dragonfly intent on catching a mosquito streaks by. Another SWOOSH! and I am rewarded by the sound of tissue paper wings fluttering inside my net. Such is the life of a dragon hunter.

I am a volunteer for the Maine Damselfly and Dragonfly Survey (MDDS), a five-year program, which started in 1998 and is sponsored by the Maine Department of Inland Fisheries and Wildlife. The goal of the program is to provide a baseline understanding of the status, distribution, and habitat associations of damselflies and dragonflies in Maine. MDDS trains volunteers from all over Maine to survey the many different habitats where Odonates (the order name of damselflies and dragonflies) can be found. To date, 160 species have been recorded in Maine.

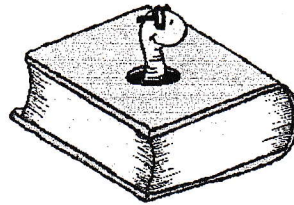
Normally, I am a sedentary map-maker (GIS specialist) for the Wells National Estuarine Research Reserve, a 1600-acre salt marsh reserve located off of coastal Route 1 in Wells, Maine. However, part of my job is mapping and inventorying the different natural habitats and their multitude of flora and fauna that occur on the reserve.

During the summer of 2000, I made three different dragonfly forays out onto the marsh. I was only able to net about half of the different Odonate species that I could see. The large and supremely fast darners and skimmers would taunt me from about 20 feet above the ground. The diminutive damselflies were extremely hard to keep track of when they flew. Other species would simply choose to stay out over the waterways. Occasionally though, I was able to glance into the eyes of a dragonfly as I held its wings between my fingers. If I could have only look hard enough, I would see myself reflected back almost 60,000 times. These are cool insects!



*Drawing by  
Monica Russo*

- Sue Smith



## Book Review: *Joyful Noise* by Paul Fleischman

This book won the 1989 Newberry Medal. It's a clever and quirky book of poems for children. All the poems are about insects or are narrated by insects. The text is printed in two columns, because two people are supposed to read it aloud, back and forth. It's a sort of performance and you feel like you are reading a movie script or stage play.

The poems are active, alive, and immediate: swirling waterstriders emit supreme confidence in their skating abilities and the frantic whirligig beetles almost make you dizzy. In contrast is a thoughtful poem by a mother digger wasp who knows that despite her hard work, her children will never see her. Another poem, a requiem, is a reflection upon the first frost of autumn which will kill most of the insects.

It might take some careful explaining if you are reading this to a young child- but that's biology! This is a book that is both fun and philosophical. It can be ordered from Bioquip for about \$5.00.

-Monica Russo

### Websites of Interest

[www.maineblackfly.com](http://www.maineblackfly.com)

What can we say about this website? Their motto is "May the swarm be with you..."

<http://insectcoll.unh.edu>

This gives access to the UNH insect collection records and our use will be one of the first announcements of its availability. There are Maine records in their holdings too. This will go along with the Maine collection websites.

[www.ucmp.berkeley.edu/arthropoda/uniramia/myriapoda.html](http://www.ucmp.berkeley.edu/arthropoda/uniramia/myriapoda.html)

Put out by the University of California at Berkeley, this is a good introduction to paleontology and entomology.



## Southern Maine Butterfly Count

This year will be the tenth year of the Southern Maine Butterfly Count. The first year, it was my daughter and myself. I didn't publicize it because I wasn't sure what I was doing at that point. But it was a successful count, and the next year I posted flyers in the Portland area. A couple showed up who were nature photographers but inexperienced with butterflies, and we had a great time.

In the ensuing years, I've had a number of interesting people take part in the count. One year, Sue Hubbell, the author of *Broadside from the Other Orders*, came along for a *Smithsonian* article. Ironically, that was the year when I learned there are times when you should just cancel the count. Drizzle and temperatures averaging 60° F do not make for much of a butterfly count.

My favorite participant, however, has to be Joann van Sambeek. She started coming the third year and was very knowledgeable about butterflies. She was a delightful lady who lived in Holland and summered in southern Maine. She related well to children and faithfully returned every year until her death in an auto accident in Holland. On every count, I think of her and the day we saw our first Compton's tortoiseshell, a magnificent animal that literally posed for us to admire, then soared straight up above the treetops. Joann was involved in an insect census in Holland, and the butterfly garden at the Maine Audubon headquarters in Falmouth is named for her.

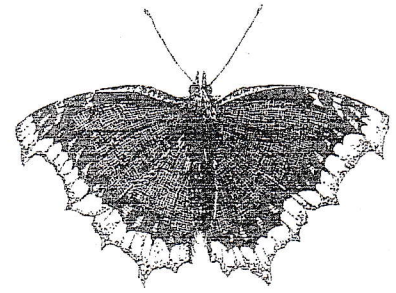
The count has been a lot of fun, but it does make me a little sad sometimes. Each year when I come back to the same "circle," it seems another area is under development or newly posted. The little dry field where we found three species of skippers that were north of their field book range has been taken over by a sandpit.

I have learned a lot from these counts, and the primary thing has been a great surprise to me - that there are a lot of other people out there who care as much about nature as I do. The count takes a lot of commitment from the participants - they usually have to drive at least an hour, getting up early on a Saturday morning when they might prefer to sleep in. They have to be willing to go all day without benefit of a flush toilet, be willing to walk for a minimum of four hours, interspersed with short drives to different locations.

I find it's the people who have made the counts the most memorable. I never tell anybody they can't come, only gently suggesting to parents that preschool children may find it too much. I'm happy to stop for turtle expeditions or even a rest stop on the Brownfield School swings (the definition of "rest" for children is a different kind of activity).

**This year the butterfly count will be held on July 7th. Meet at the entrance to the Brownfield Bog at 9 a.m.** Any who are interested and need directions should e-mail Gail at [capriolee@yahoo.com](mailto:capriolee@yahoo.com) or call at (207) 878-3794.

- Gail Everett



*Mourning cloak butterfly*  
(*Nymphalis antiopa*)

## Searching for Migrant Butterflies

Richard Hildreth and Brian Cassie have been studying butterfly migration in New England for the past three years. Most of their work has been along the southeastern coast of Massachusetts. Southward migrating mourning cloaks, red admirals, and question marks are conspicuous along the coast but migratory movement also occurs in inland areas.

Richard and Brian are very interested in any observations of migratory behavior for any of these species. The more specific the better. Details such as how many were seen during a specified length of time, date, location, and weather are also important. Observations regarding northward bound spring migrants are much needed!

Observations can be sent to:

Richard W. Hildreth  
135 Washington Street  
Holliston, MA 01746  
(508) 429-5085 (phone/ fax)  
or  
Brian Cassie  
[brianrfg@aol.com](mailto:brianrfg@aol.com)



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## Mourning Cloaks on the Move

If one is to believe much of the popular literature, the familiar mourning cloak butterfly *Nymphalis antiopa* is characterized, at least in North America, as a sedentary species. Known to spend the winter as an adult in hibernation, it sometimes flies on warm winter days. In the spring, the surviving adults mate and eggs are laid mostly on willows and aspens. Usually, small trees are selected by the ovipositing female. Many logged-over forests in Maine contain abundant small willows and aspens that make ideal mourning cloak habitat. The caterpillars usually occur in large colonies and sometimes cause noticeable defoliation of host trees.

In Maine, some incidences of mourning cloak caterpillar colonies that I have seen are:

- June 25, 1994. Sullivan, Maine. 379 caterpillars in three colonies; 62 5<sup>th</sup> instar caterpillars on a willow, 195 1<sup>st</sup> instar caterpillars on an aspen and 140 caterpillars of some intermediate instar on another aspen.

- July 24, 1999. Steuben, Maine. 166 caterpillars in two colonies; 57 5<sup>th</sup> instar caterpillars on a willow and 109 5<sup>th</sup> instar caterpillars on another willow.

These caterpillars are very spiny and thus are mostly safe from avian predators. Only hairy/spiny caterpillar specialists like cuckoos are known to take them in any significant number. In about ten to fifteen days after pupation, the adults emerge. In Maine, this usually happens in July. By the late summer, very few can be found. Some literature suggests that the adults aestivate during this late summer period. Late August to early September sees abundant adults flying until frost.

The mourning cloak has a northern hemispheric circumpolar distribution. In the Old World, it is known to be a regular migratory species. In his great classic, *Migration of Butterflies*, C.B. Williams describes migrations of this species from the northeast (Scandinavia) into Britain. He cites records as far back as the mid-1700s. Annually, mourning cloaks migrate south through Europe.

Migratory movement of the mourning cloak butterfly in North America was probably first mentioned in literature by Shannon's *Autumn Migration of Butterflies in North America*, published in the *Journal of the American Museum of Natural History* in 1917. He described a westward movement of a small number of butterflies (mourning cloaks and monarchs) and dragonflies along the south coast of Long Island, NY. The great writer-naturalist, Edwin Way Teale, published a note in the *Lepidopterist's News* also describing a similar mourning cloak migration occurring on Long Island on September 8, 1955. It is now recognized that

mourning cloaks, along with question marks, monarchs and red admirals, annually migrate south along the Atlantic coast of North America in the fall. Questions about the butterflies' destinations, springtime northward movement, and how migration fits into the life history of the mourning cloak remain unanswered.

In 2000, many mourning cloaks moved through Maine in September and October. They were numerous enough that many observers noticed them. I was in eastern Maine from August 28 though September 13. Right away, I realize that mourning cloaks are very abundant. Interestingly, when these butterflies encounter an obstacle such as a forest edge during migration, they do not fly over it the way monarchs do. Instead, they fly through the woods erratically between stem and branch.

Some notable mourning cloak sightings in Maine for 2000:

On August 31, along 15.7 miles of gravel road between route 193 and the Airline, I counted 30 mourning cloaks. On September 6, I see the first sign of migratory movement. I see two flying determinedly in off the ocean westward at the Lubec Spit. Later in the day, I see five more in migratory flight in Whiting. They fly straight westward across a beaver pond and marsh. My next chance to study mourning cloak migration came on September 9 at the Petit Manaan Wildlife Refuge in Steuben. Petit Manaan is a north-south rocky peninsula. Visiting the eastern shore, I see 24 in definite migration. They fly in over the sea from the east. As soon as they reach landfall, the plop down on the sandy beach and rest for five minutes or more before flying on. On September 11, I encounter more migrating mourning cloaks along the Baileyville 'truck road,' which runs northwest from the paper mill village of Woodland, parallel to the St. Croix River a gravel road parallel to the St. Croix River. They are flying west over the river from Canada. Many stopped for a short rest on the gravel road before flying on.

During September and October, migrating mourning cloaks were noted at several sites along the Maine Coast. On September 25, Blair Nikula and others describe migrating mourning cloaks on Monhegan Island as "streaming by." On September 27, he counts 60 mourning cloaks on the island. On September 29, I count 28 mourning cloaks migrating southwest across the Scarborough Marsh. On September 30-October 1, Bob Speare counts 12 migrating mourning cloaks at Monhegan. On October 13, William Townsend, in a boat on Frenchman's Bay, sees 40-50 mourning cloaks flying west-southwest over the water.

- Richard Hildreth

# MAINE AQUATIC BIODIVERSITY PROJECT



Program, and the University of Maine. The goal of MABP is to generate a better understanding of the status and vulnerability of freshwater species and ecosystems throughout Maine and to promote effective conservation and management of these resources.

To achieve this goal, MABP will first compile existing information on a broad range of taxonomic groups, including vascular plants, macro-invertebrates, fish, amphibians, and reptiles. This MABP database will include large-scale information about every available collection of aquatic flora and fauna. Data that contain adequately geo-referenced records, their species lists, together with any associated abundance and habitat information, will be compiled into one central database. During the second phase of the project, MABP will generate an evaluation of the "data landscape" and analyze the compiled data to produce an overall assessment of aquatic communities in Maine.

Initial data compilation efforts are focusing on the downeast region, but the entire state will ultimately be covered. The staff of the MABP encourages anyone who has information that might be suitable for inclusion in the MABP database to contact them. MABP Director, Dr. Peter Vaux, can be reached in Bangor at (207) 941-4459 or [peter.vaux@state.me.us](mailto:peter.vaux@state.me.us).

-Peter Vaux

## Correction to Maine Butterfly Atlas Information

*Editor's Note: In the last newsletter, Phillip deMaynadier's e-mail was incorrectly given. We apologize for any confusion that may have resulted. Consequently, we have reprinted the correct information below.*

The Maine Department of Inland Fisheries and Wildlife (MDIFW) is compiling a Maine Butterfly Atlas. In addition to visiting major collections hosted by museums throughout the northeast, MDIFW is interested in accessing data from private collections held by amateurs and professionals who have collected in Maine. If you, or anyone you know, holds a large private collection of butterfly specimens sampled in Maine, please contact Phillip or Reggie as soon as possible.

Phillip deMaynadier  
Endangered Species Group  
Maine Department of Inland Fisheries & Wildlife  
(207) 941-4239  
[phillip.demaynadier@state.me.us](mailto:phillip.demaynadier@state.me.us)

Reginald Webster  
[rwebster@nb.sympatico.ca](mailto:rwebster@nb.sympatico.ca)

## Friends of Dr. Patch Receive Grants

The Friends of Dr. Edith Marion Patch are pleased to announce the receipt of three grants which will allow us to move forward in preserving "Braeside," the historic former home of distinguished Maine entomologist, Dr. Edith Marion Patch, located on the University of Maine campus.

We were recently informed that we have been awarded the following grants: \$500 from the Preservation Outreach Fund, Maine Preservation; \$5400 from the Survey Grants Program, Maine Historic Preservation Commission; and \$1000 from the Preservation Services Fund, National Trust for Historic Preservation. These grants will allow a professional structural evaluation of the house, which will provide an estimate of costs to renovate the structure as "The Dr. Edith Marion Patch Center for Entomology, the Environment, and Education." Within the next few months we will be launching a membership drive and starting a campaign for restoration funds.

For more information about Dr. Patch see the November 2000 issue of *The Maine Entomologist*.

For more information about the project to restore Braeside and its future use, contact Cassie Gibbs, 588 Kennebec Road, Hampden, Maine 04444, or call (207) 862-3578.

- Cassie Gibbs



## Mark Your Calendar For These Upcoming Events!

### Acadian Entomological Society Meeting

The 61<sup>st</sup> annual Acadian Entomological Society Meeting will be held on Prince Edward Island from August 22-24. The meeting, held at the University of PEI, will be broken down into three main categories: forest entomology, crop protection entomology, and general ecology. Keynote speaker, Dr. Robbin Lindsay from Health Canada in Winnipeg, will discuss arthropod-borne diseases in Atlantic Canada. Dr. Lindsay has worked for many years on Long Point, Ontario, studying the effect of temperature on the biology of ticks.

Room rates, directions, and conference registration forms can be obtained on their website at [www.upei.ca/~aes](http://www.upei.ca/~aes). Hard copies of the registration forms may also be obtained from Dick Dearborn for any interested parties. *Conference registration deadline is May 31.*

### MDDS Training Opportunities

The Maine Damselfly and Dragonfly Survey is a program sponsored by the Maine Department of Inland Fisheries and Wildlife that utilizes volunteers to help inventory the many Maine odonates. Training opportunities for 2001 include an introductory workshop from June 30 to July 1 and a close-up photography workshop on August 4 and 5. Both workshops take place at Eagle Hill Field Station in Steuben. For further details, visit the MDDS webpage at [www.mdds.umf.maine.edu/~odonata](http://www.mdds.umf.maine.edu/~odonata).

### Vermont Entomological Society Meetings

June 24 at 11 am. Field trip and potluck at the home of Trish Hanson and Luke Curtis in Lincoln, VT.

July 7 at 10 am. A butterfly walk at Bob Spear's Birds of Vermont Museum in Huntington, VT.

July 28 at 1 pm. Field trip to North Branch Vermont Institute of Natural Sciences in Montpelier.

Anyone interested in attending these meetings should contact Ross T. Bell at (802) 862-8579 or Trish Hanson at (802) 241-3606.

## MES Collecting Trips

### *Runaround Pond trip on May 19*

Sam Ristich will be leading this aquatic entomology expedition in Pownal. The group will meet at 9 am. Sam will have some microscopes and field guides on hand but suggests you bring equipment to catch critters. From I-95, take exit 20 in Freeport to route 136. At approximately 1.6 miles, take Poland Range Road on the left. Follow this to Lawrence Road. Take a right onto Lawrence, then a second right onto Runaround Pond Road (also known as Fickett Road). Runaround Pond will be on the left at about 2 miles. Sam will be able to answer your questions at (207) 829-3375.

### *Chewonki trip on June 15*

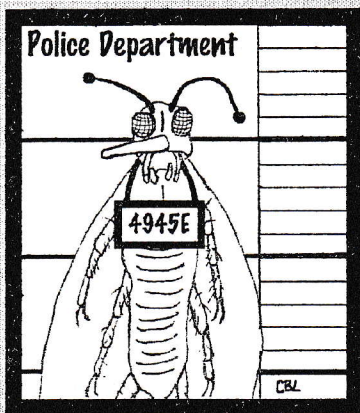
Our June 15th field event starts at 9 am and will include educational activities and collecting for the Chewonki Foundation staff and MES members. Following a brief look at the new Center for Environmental Education, we will spend most of the day in the field. A variety of insect traps will be set out in advance and we will collect their contents. For directions to Chewonki, check out their website at [www.chewonki.org](http://www.chewonki.org) or call Don Hudson or Dot Lamson at (207) 882-7323.

### *Wells Reserve trip on July 14*

The July collecting trip will take place at the Wells National Estuarine Research Reserve starting at 9 am. The morning will be spent in the salt marsh sorting through a variety of traps and capturing insects while the afternoon session will take place in the lab where we will identify specimens found. Specimens will count towards the Wells Reserve species list. The public has been invited and we expect some entomologists from NH, MA and VT, so we hope to have a good showing from MES members. Please bring any ID guides you will need, a bag lunch, and shoes that can get wet. For directions, call Laura Stone or Chuck Lubelczyk at (207) 324-2849 or look up the Wells Reserve online at [www.wellsreserve.org](http://www.wellsreserve.org).

### *Jackman (Somerset County) trip August 4*

Collectors will meet Don Oullette at 9 am to explore a variety of mountain and coniferous forest habitats. The day will convene at the Four Seasons Restaurant, 417 Main St. (Rte. 201) in Jackman. This is the third building on the right heading north after the railroad tracks. Call Don during the day for more details at (207) 287-2431.



## The Bug Mug Shot: Giant Water Bug

A.K.A. "Toe Biter" or "Electric Light Bug"

ORDER: Hemiptera or "true bugs".

FAMILY: Belostomatidae. Insects in this family are quite large and are collectively referred to as giant water bugs. Their form is quite distinctive as they are oval and flat

along the back. The front legs are thickened and raptorial while the middle and hind legs are fringed with hairs and modified for swimming. Antennae are small and inconspicuous.

SPECIES: There are two species of giant water bugs found in Maine. *Lethocerus americanus* is the most common water bug found in Maine. The rarer *L. griseus* occurs only in the southwestern portion of the state.

DESCRIPTION: Adults are usually dark brown to tan and between 50 and 65 mm in length. Their hind legs are flattened and oar-like, enabling them to swim rapidly. Their forelegs are tipped with a hook-shaped claw for capturing and holding prey.

PRIMARY HABITAT: The giant water bug normally inhabits vernal pools, marshes, ponds, lakes, and slow-moving rivers and streams. It is also occasionally encountered in swimming pools. *Lethocerus* can often be found around aquatic vegetation where they lie in wait for their prey.

FOOD: Giant water bugs are aquatic predators, feeding on insects, tadpoles, salamanders, small fish, and snails. They capture their prey with powerful forelegs, inject poisonous saliva through a needle-like beak, and suck the tissue fluid out of their prey. Because of their feeding habits, *Lethocerus* can be significant predators in fish hatcheries.

LIFE HISTORY: Eggs are laid in masses on the stems of emergent aquatic vegetation and require about a month to develop from egg to adult. Adults overwinter beneath the ice.

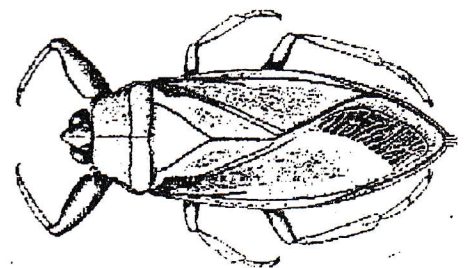
NOTES: Adult *Lethocerus* do not breathe underwater, and return to the surface regularly to breath though two short, strap-like tubes at the tip of the abdomen. These tubes allow for exchange of air from the atmosphere to a bubble of air trapped under the wings. Air enters the insect's body through spiracles in the abdomen. Because they breathe air and are attracted to bright lights, many people see them in parking lots or near porch lights, hence the nickname "electric light bug".

## Giant Bumble Bees and Yellowjackets You Say?

Those noticeably larger than normal, solitary bumblebees and yellowjackets that you see early in the spring are fertilized, foundress females (queens). They usually first appear sometime in April (late April, this year) and can be seen busily searching for a place to start house-keeping. Some species' overwintering queens may be as much as 50 percent larger than the first female workers of the season.

New quarters for most will be some snug retreat such as a rodent burrow, hollow stump, or tree hole. A few aerial species of yellowjackets may build their nest in the open. Once they have found a suitable protected nesting site, they will spend the first couple of weeks preparing the nursery nest, laying eggs, and providing food for themselves and the developing young. These foundresses will not have help until the young emerge as adults in three to four weeks. Care should be taken not to disrupt or destroy these progenitors of future pollinators and predators. A short but interesting account of spring bumblebee activity can be found in *The Field Book of Insects* by Frank E. Lutz.

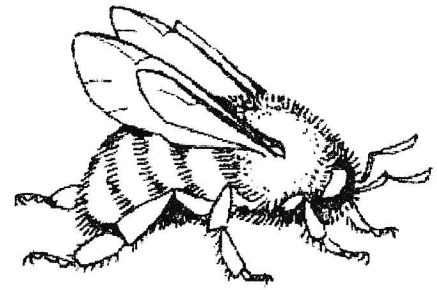
-Dick Dearborn



Adult *Lethocerus americanus*.  
Drawing courtesy of City Bugs at  
University of California Berkeley



# Maine Bees, Wasps, and Ants

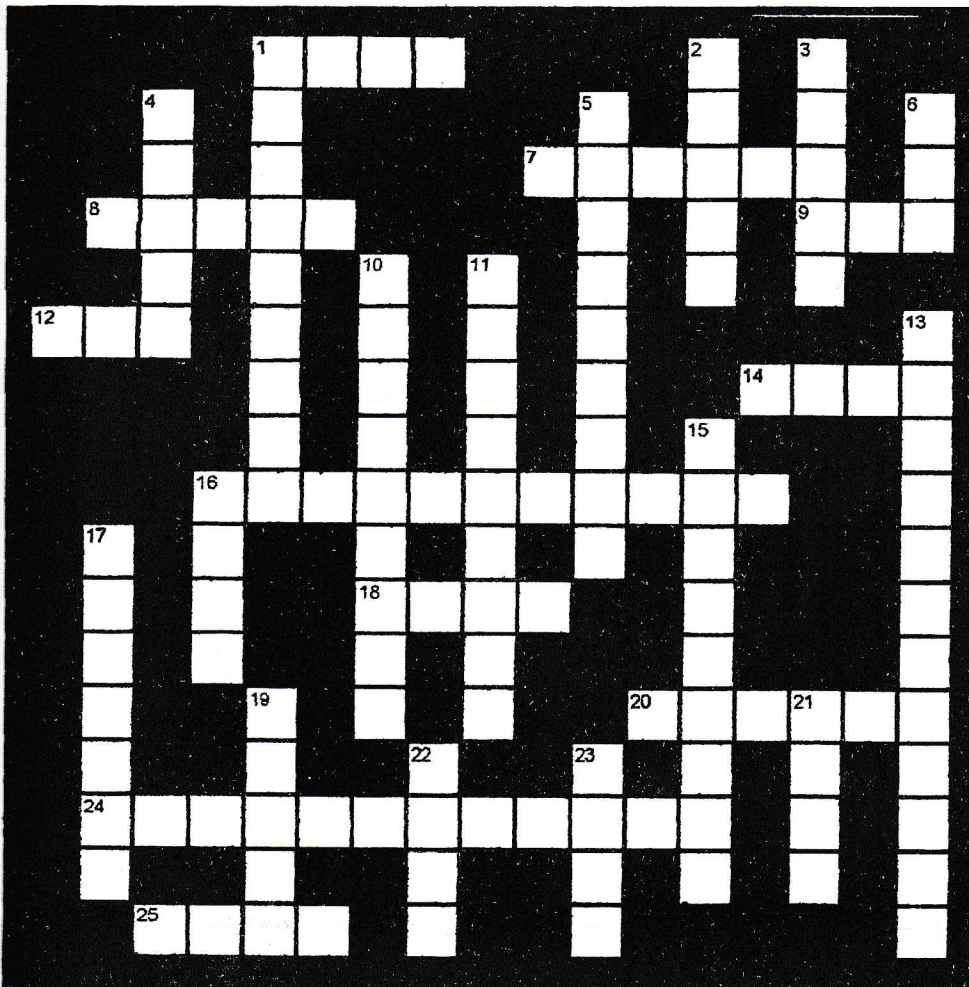


Drawing by Monica Russo from  
The Insect Almanac

“When that the general is not  
like the hive  
To whom the foragers shall all  
repair,  
What honey is expected?  
When, like the bee, culling  
from every flower the virtuous  
sweets,  
Our thighs pack’d with wax,  
our mouths with honey,  
We bring it to the hive; and,  
like the bees,  
Are murder’d for our pains.”

- From William Shakespeare’s  
Troilus and Cressida

Submitted by Dick Folsom



## ACROSS

1. What an apiarist keeps.
7. Genus of common bumblebees; what we didn’t want the Russians to do in the 1960s.
8. These arthropods have been a plague to honeybees; *Varroa*.
9. Shape of mud nest that *Eumenes fraternus* makes; a cooking vessel.
12. A fruit available at Thanksgiving time that is pollinated by a tiny wasp, who also lays her eggs in it.
14. He wrote the book on yellowjackets: Dept. of Agriculture Handbook #552.
16. The order that bees, wasps, and ants belong to.
18. The genus that honeybees belong to.
20. The little dark blob on the leading edge of a wasp’s forewing; dragonflies have them also.
24. *Sphecius speciosus*; it hunts for big, loud insects.
25. General word for a hornet or yellowjacket.

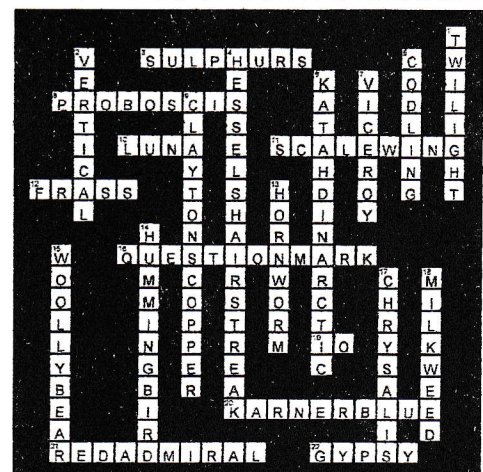
## DOWN

1. Native bees pollinate this Maine crop (*Vaccinium*).
2. Many insects millions of years old are preserved in this resin.
3. Genus of the giant European hornet we don’t want in Maine; an Italian motor scooter.
4. You don’t want a wasp to do this to you.
5. If bees and wasps didn’t do this to flowers, we’d run short on fruit, vegetables, and cotton fiber.
6. Underground “lions” construct this to trap insects.
10. A female, wingless wasp named for her reddish fuzz.
11. Descriptive word for solitary wasps which dig in the sand.
13. Common name for an aggressive wasp with bright warning colors.
15. Descriptive word for solitary wasps that hunt other insects or spiders.
16. A place where domesticated honeybees live.
17. The genus of some common ants; what many kitchen counters were made from in the late 1950s.

19. Author of *Wasp Farm* and *Life on a Little-Known Planet*.
21. A tiny Cynipid wasp causes this almost golfball-sized swelling on oak leaves.
22. A rounded, European beehive made of straw.
23. Mason bees use this, or mud, to seal off their nests.

- Monica Russo

## Last Issue’s Crossword Answers



## Rare Carrion Beetle Found in Vermont

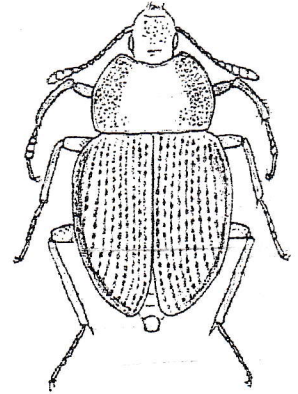
Three former graduate students in the Naturalist Program at UVM, Mark Ward, Jeff Collins, and Susan Young, have made an inventory of the invertebrates found on a large tract of land in Lincoln, VT. A rare and unusual beetle was found in one of their pitfall traps. It goes by the name *Necrophilus pettitii*. It is about 13 mm (about 1/2 inch) long and has a wide, oval outline and a wide flange on either side of the first body segment (pronotum). It is entirely black or very dark brown. Each wing cover (elytron) has nine grooves separated by convex ridges. The antennae are rather long with the outer segments slightly enlarged, forming an indistinct club.

This beetle is the only member of its family, Agyrtidae, in the eastern United States. It was formerly included in the larger family of carrion beetles Silphidae. *Necrophilus* does eat carrion (dead and decaying animal tissue), but it also likes mushrooms and other fungi, and the droppings of mammals. Specialized carrion feeders have to cover lots of ground because dead animals are few and far apart, so they have to be good flyers. This is probably why the flightless agyrtid has a more varied diet. The Lincoln record is the first found north or east of the New York City area. The beetle is active in the winter further south, and the larvae are produced then. Up here, it probably breeds in the late spring after the snow melts. Dr. Stewart Peck of Carleton University in Ottawa has studied it and says it is often associated with rock crevices, caves and other situations that would allow it to escape the hottest summer weather.

The workers in Lincoln hope to find more of their prize. I hope they also find the larva, which is a long, narrow, cylindrical creature with a dark head and a pair of two segmented "tails" on the ninth abdominal segment.

- Ross T. Bell

*Editor's Note: This piece is being published simultaneously with the Vermont Entomological Society and is included because it is possible for this species to exist in Maine, although it has not been found to date. We urge our members to be on the lookout for this beetle!*



**Necrophilus pettitii**  
Drawing by Joyce Bell

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