

The Maine Entomologist

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

Volume 5, Number 4, November 2001



Season's Greetings From the President

As the holidays approach and the last leaves drop, the occasional snowflake reminds us of what lies ahead. I hope that this festive time of year finds you and your loved ones safe and healthy. Most of us have a lot to be grateful for in spite of recent events around the world. I certainly have and would like to include my gratitude for your continued support over the past year. Your dues, articles, and presence at many of our field events make it all worth while. I would especially like to thank those of you who helped to make our Maine Insect shirt design a reality. In particular, Monica Russo for her great design, Laura Stone for her technical and logistical support, and for all of you who bought shirts to help us meet our initial quota. We still have a few of these unique and attractive shirts on hand but hope to order more.

Our annual meeting and chicken barbecue was held amid one of the best foliage shows in recent years. Although collecting was limited, our forager extraordinaire, Sam Ristich, managed to find some interesting mushrooms and Gail Everett had a chance to scout out an herb, turtlehead, to see if it might be possible to reestablish the Baltimore Checkerspot butterfly on my farm.

Those present reelected our current slate of officers for another year and voted to increase our dues to \$10 per year or two years for \$15 starting January 1, 2002. We also voted to support our affiliation with the Acadian Entomological Society (AES) in July 2002; set up a tentative summer event schedule (listed in this report and on our web site); and discussed numerous other meetings, findings and ideas. Again, my special thanks to those seventeen people who came to the meeting.

Although winter collecting is somewhat limited in Maine, insects are out there and some are very interesting (see the MES newsletter for March (No.1) 1999, p.2 on winter insects). For those who don't do the winter thing, this is a time to mount, label and/or catalogue specimens, photos, or sketches from last summer. An article or two in our next issue will focus on this very subject, so stay tuned.

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The Stylopidae (Strepsiptera): A Close Encounter of the Third Kind

There is one thing that I am sure about and that is that the insect world is both bizarre and beautiful. In the gamut of insect taxonomy lies an enigmatic group of strange lifeforms called the Stylopidae (for us Coleopterists) or Strepsiptera (meriting its own order). I'll leave the "taxonomic war" alone and relate my close encounter with this small group of parasitic insects.

On July 19, 2001, while examining the multitude of insects visiting my various flowers in the backyard, my attention focused on the herbs, skirret and dill. Both were teeming with an array of insects, from flies to wasps to beetles. The paper wasps *Polistes fuscatus* and *P. dominulus* were numerous, alongside the gasteruptionids, of which I had decided to collect specimens. While doing so, one particular *P. fuscatus* female caught my attention. Her abdomen was distorted by three growths peeping out from under segments three and four. Although I had never encountered parasitized vespids before, I knew, from having read about them in various insect books, that I was witnessing the notorious Stylopidae.

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Big Bugs in the Big Forests

How many times have you heard this: "Wow! That's a big _____!"?

I've heard it for spiders, deer flies, stinging wasps, and (of course) engorged ticks. We look at the bugs we see all around us and are used to them in relation to bigger organisms like a gray squirrel or a golden retriever. To see an insect nearing the two to three inch mark causes eyes to widen and, for some, an instinctive red alert comes on.

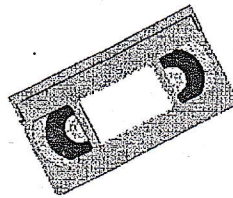
Let's put things into perspective though. Instead of wandering in a spruce forest near Cobscook Bay or an oak stand in York, think of your footsteps in a lush tropical forest. Yes, it is still sort-of Maine but a Carboniferous Maine from approximately 280 to 350 million years ago. It is all one big landmass and there aren't any pine trees yet in the Pine Tree State. In the Appalachians, massive, lush forests produced the coal that would become our important fossil fuel. All this organic matter in the forests also produced a large explosion of arthropods, from foot-long spiders to dragonflies with a 24-inch wingspan. However, the most amazing arthropod was the *Arthropleura*.

The forerunners of our myriapods (millipedes), the *Arthropleura*, if around today, would be a tracker's delight. One of the largest fossil records found was actually in Scotland, with a track width of 36 cm (14 inches). Closer to home, research has been conducted in the Canadian maritimes. In particular, a site in Nova Scotia called the Joggins Cliffs has received much attention. There, the largest fossil record was a track created through a stand of horsetails measuring 30 cm (12 inches) wide. It is believed that the specimen that created this track was several yards long! Martin Lockley wrote in The Eternal Trail: A Tracker's Guide to Evolution that more than one researcher has been fooled by *Arthropleura* tracks into believing that they belonged to a large reptile or amphibian.

Anatomically, the arthropleurids were well-armored with a segmented trunk. Evidence indicates that they probably had primitive lungs or gills. Their many legs had eight segments.

The Carboniferous Period was evidently the only time in the planet's history that myriapods reached this size. A lack of predators and an abundant supply of food for these herbivores and detritivores allowed them to thrive at the beginning of the period. The early part of the period was much warmer, but a gradual cooling and drying of the climate occurred as the super-continent drifted toward the South Pole. With this gradual change, these giants vanished, leaving only their footsteps behind...

-Chuck Lubelczyk



Video Review: Dig Those Digger Wasps from "Acorn the Nature Nut"

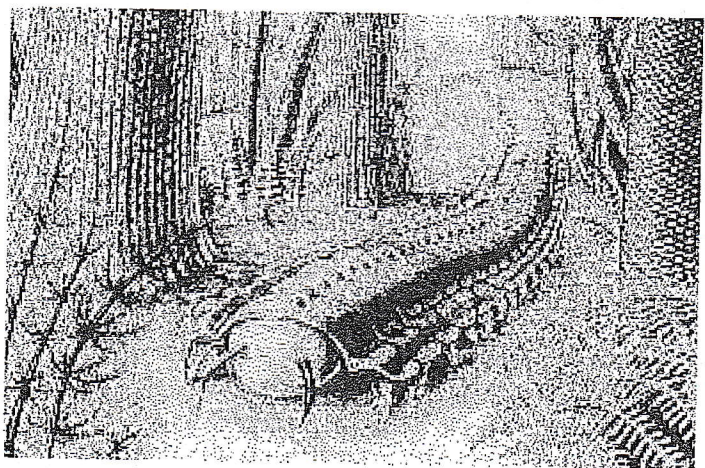
Naturalist John Acorn produced a TV series shown on PBS, mostly about insects. The Bioquip catalog offers over twenty episodes.

This 1997 video has remarkable footage of a *Bembix* wasp digging in sand, and great shots of a velvet ant and an *Ammophila* wasp. There is an amazing sequence of a *Tachysphex* wasp dragging a grasshopper into its burrow with a miltogrammid fly riding in on the carcass. Several clear points are made about solitary wasps, including the concept that having complex habits is "mainly intended to outwit parasites."

Unfortunately, I can not recommend this video for children. To demonstrate how solitary wasps sting and paralyze their prey, John Acorn dramatically uses a stunt knife to stab himself in the chest several times. Then he falls over. I can not imagine this video being used in a classroom setting. There is also a scary poem about becoming the paralyzed prey of a wasp, and being "eaten alive in the dark."

The frenetic loud songs and an unpleasant satirical skit about Henri Fabre are further detractors. Additionally, two *Tachysphex* wasps are shown, but they are so different from each other, I wondered if they were matched up with the correct dialog. Get this video if you want spectacular footage of digger wasp behavior but you might decide to show only a part of it to your kids.

-Monica Russo



Athropleura in a primeval forest. Drawing courtesy of the Nova Scotia Museum.

Stylopidae

Continued from Page 1

Capturing the female, I placed her in a covered vase with fresh clippings of skirret and marjoram. A small amount of hummingbird food was also placed at the bottom. The literature I consulted noted that "males are rarely collected but can be reared from parasitized hosts."

Over the following days, I managed to collect five more parasitized *P. fuscatus* females, leaving a few alone, as my expectations were low. I found no parasitized *P. dominulus*, which I found interesting. My attempts at rearing stylopids after daily changes of flowers and sugar water began to yield specimens on July 30th! While cleaning the two containers, I noticed an odd fly-like creature at the bottom of one. It turned out to be my first male. Quickly following were two more from the same initial paper wasp.

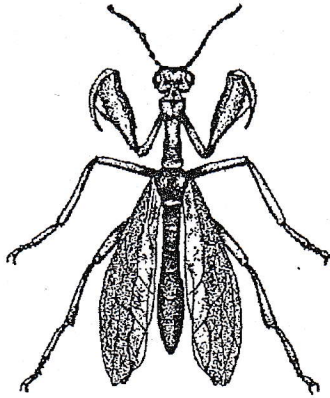
By August 2nd, the sixth and last male I was to rear from the *P. fuscatus* females began to fly inside the vase. This was the only one I was fortunate enough to watch for a brief period. Its undulating flight was unlike anything I had ever seen and something I'll not forget.

Unfortunately, the dilemma of their taxonomy has now become mine. Without specimens, it was academic. Now that I have six males, it's problematic. To beetle or not to beetle, that is the question.

I have been told that this species is most likely *Xenos peckii*, as this is the most, if not the only, species that parasitizes *Polistes* in the northeast.

-Dana J. Michaud

Editors note: A good general reference on Strepsiptera is the 1992 book by D.J. Borror, C.A. Triplehorn, and N.F. Johnson called An Introduction to the Study of Insects. Saunders College Publishing, Sixth edition, 875pp.



Climaciella brunnea which belongs to the family Mantispidae. Reprinted from Common Insects of Kansas, 1943 by R.G. Smith et. al.

Family Myrmeleontidae

The antlions resemble damselflies as adults except that they have softer bodies and longer, clubbed antennae. We have or should have the following four species in southwestern Maine.

- 1a. Wingspan of about 3", wings spotted or unspotted, body brownish
- 2a. Wings spotted, larvae found on logs — *Dendroleon obsoletum*
- 2b. Wings not spotted, larvae construct pits — *Myrmeleon immaculatus*
- 1b. Wingspan of about 2", wings unspotted, body straw yellow to light brown.
- 3a. Apical tibial spurs absent, light brown, south coast of Maine, larvae live on open sand tracts or dunes — *Brachynemurus signatus*
- 3b. Apical tibial spurs conspicuous and at least as long as the first tarsal segment, straw to dark yellow, larvae live on open sand tracts or dunes — *Brachynemurus abdominalis*

Family Mantispidae

The mantispids resemble mantids except they are smaller (less than 1.25 inches long), have shorter antennae and all four wings are membranous and held rooflike over the body at rest. There are also no teeth on the front femora.

Mantispids often rest on in low bushes or flowers where they resemble *Polistes* wasps. Larvae are thought to feed on spider egg masses. We have two known species in southwestern Maine.

- 1a. Basically dark brown with the forward two-thirds of the front wings clouded with brown or black. No dark "Y" visible on wing — *Climaciella brunnea*
- 1b. Yellowish to light brown with only a narrow band along the front margin of the front wing clouded. A small but distinct, blackish "Y" visible along a fork in the veins near the middle of each front wing — *Mantispia interrupta*

-Dick Dearborn

Weird Bugs: Keys to Neuroptera of Maine

The order Neuroptera contains some very interesting but weird insects even in northern climes. In our last issue, we introduced you to one group of these, the antlions ("The Bug Mug Shot," p.8). I would now like to provide you with a key to separate the four Maine species of antlions and to introduce you to a second related but even weirder group, the mantispids. So here goes.

Browsing for Beetles in Maine

Thanks to the encouragement and support of Richard Dearborn, we had a very interesting and productive entomological visit to Augusta and vicinity from June 7 to 16, 2001.

Our first day was spent setting up a Flight Interception Trap (FIT) and a Malaise Trap on Dick's farm (10 miles south of Mt. Vernon Village) and exploring the nearby habitats. Since we were looking for scarabs, weevils, longhorned beetles, and buprestids, the partly cutover forested areas and sandy habitats were of particular interest. We did very well in cutover areas, but flower collecting was less productive. Enough beetles were collected so that we will be busy this next winter mounting and labeling them. While we cannot report on all that we collected, we did add to the list of species found on Dick's farm.

On the second day of our visit, *Onthophagus orpheus* Panzer turned up in the FIT. This small, bright green dung beetle is often found in woodchuck burrows, but also occurs outside of the burrows. A second small, quite rare scarab, *Dialytes ulkei* Horn, was taken at a 15-watt black light set in Dick's driveway on June 13, the night after a good rain.

We also took one uncommon (at least for us) longhorned beetle, *Strophiona nitens* Forster on a composite flower at Chewonki Neck, in Wiscasset. Actually, the biologists we met that day (June 15) on the MES field outing were more interesting than the beetles; but the weather could have been cooler!

Our most surprising finds of the trip were two small, unidentified longhorned beetles in the collection at Dick's office at the Maine Forest Service Entomology Lab. Both specimens were collected in June by Kimberly Foss; one at Portland in 2000 and one at Augusta in 2001. On our return to Ottawa we found two more specimens that had been collected in the Malaise trap set on Dick's farm. On checking the literature, we identified the beetles as *Tetrops praeusta* (L.), a native of Europe. We found that the species was listed by Douglas Yanega in his "Northeastern Longhorned Beetles" (1996, Illinois Natural History Survey, Manual 6.) as now possibly established in North America.

Since our evidence (beetles occurring in three different Maine localities) seemed to indicate that the *Tetrops* was definitely established, we wrote a short note on its occurrence and this is now in press in the journal *Insecta Mundi*. What has made the story more interesting is the publication, after our note was accepted, of a short paper by Léo-Paul Landry in the June 2001 issue of the Quebec Entomological Society journal *Faberies*. In this, he records the collection of 24 specimens of *T. praeusta* on *Prunus* spp. in Quebec. This is the first record of *T. praeusta* in Canada and shows that the species is definitely established and widely distributed in North America.

It is this type of unexpected discovery that makes a field biologist's life interesting; and being an entomologist means that you have lots of fun, as new discoveries are frequent! Our thanks to all whom made our trip to Maine so enjoyable.

-Anne & Henry Howden



A Chance Meeting

At one point on a late October trip to Monhegan Island, I was walking along a trail to the northern tip of the island. Descending a hill, spruce gave way to shadbush and the Seal Ledges greeted my eyes while further along, the channel running between Allen Island and Burnt Island seemed gray as lead. Darkening, low clouds and a stiff breeze spoke of an approaching front from the mainland.

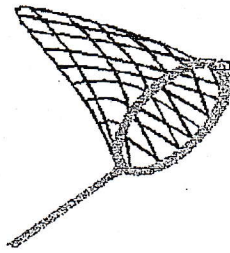
Just as my attention was drifting back to the muskrat tracks at my feet, my eyes caught a stray movement above me. At first, I thought it was a late aspen leaf tumbling to the ground. Rather, a stray monarch butterfly was coming in off the ocean. The slow flapping of his wings looked labored, and those wings looked like the sails on Ahab's *Pequod*, rent and worn.

Like a battered and bruised campaigner, he trudged through the air. This island, standing alone for many miles, calls to many weary wanderers in the spring and fall. The last I saw of him, a dot above the hills, he was pushing his way toward Cathedral Woods. Whether or not this traveler finally departed the island, I never knew.

-Chuck Lubelczyk

New Paper Wasp Records

In our last issue, Monica Russo's article on paper wasps in Maine mentioned that the non-native paper wasp *Polistes dominulus* has "been caught each year in Biddeford, Arundel, and Sanford." The appearance of this article caused folks to take a closer look at some of the paper wasps that they were seeing in their areas. As a result, we now have records of this species from Waterville, Winslow, and Rockland for this year!



Highlights of Insect Surveys in Maine

As 2001 comes to a close we thought that our members might be interested in the current species counts resulting from several insect and tick surveys currently underway across the State. While each of these surveys is conducted in a slightly different manner and for somewhat different purposes, the results are species inventories. The following presents the status of survey results as of November. It should be noted that final tabulations for the year are not complete in all cases:

•**Bees** (several families of Hymenoptera) - This survey is based on the identification of native (and in some cases non-native) pollinators. There are currently 295 species listed for Maine with the genus *Andrena* having the greatest number of species. Contact: Dr. Constance Stubbs, UMO. (207) 581-2754.

•**Odonata** (damselflies and dragonflies) - The current list for Maine stands at 162 species. Seven new species have been added since 1999 while two species were added in 2001. Contact: Dr. Phillip De Maynadier, ME Dept. of Inland Fisheries and Wildlife. (207) 941-4239.

•**Ground Beetles** (Coleoptera: Carabidae) - There are currently 400 species listed from Maine. This figure represents an increase of 57 since the last list was published in 1993. Contact: Richard Dearborn, ME Insect and Disease Lab. (207) 287-2431.

•**Mosquitoes** (Diptera: Culicidae) - There are now 41 species of mosquitoes listed from Maine. This figure represents an increase of five species since the last list was published in 1975. Contact: Richard Dearborn, ME Insect and Disease Lab. (207) 287-2431.

•**Butterflies & Skippers** (Lepidoptera: Papilionoidea & Hesperioidea) - Currently there are 109 species recorded from Maine. This includes both residents and strays. It is believed that five species have been extirpated from Maine. Contact: Dr. Phillip De Maynadier, ME Dept. of Inland Fisheries and Wildlife. (207) 941-4239.

•**Hard Ticks** (Acarina: Ixodidae) - Fourteen species of hard ticks are now known from Maine. This includes one new species record found in 1996. Contact: Richard Dearborn, ME Insect and Disease Lab. (207) 287-2431.



Mark Your Calendar!

Northeast Fish and Wildlife Conference

The fifty-eighth annual Northeast Fish and Wildlife Conference will be held at Holiday Inn By The Bay in Portland, ME on April 21- 24, 2002. The conference theme is The Public Trust. A section on non-game wildlife will feature presentations on invertebrate conservation. More information can be found at the Maine Department of Inland Fisheries and Wildlife website at:

<http://www.state.me.us/ifw/pdf/callforpapers1.pdf>

MES meetings for 2002

For the 2002 season, there are tentative plans for a field trip in June in the Norway/Waterford area, a two-day trip to Fort Kent region in August, and collecting in York County in September. The October annual meeting will once again be held amidst the spectacular fall foliage at Dick and Marj Dearborn's home in Mt. Vernon. A May meeting has not been planned yet, so if anyone has an idea for a good spot, please let us know! Information on all scheduled meetings and trips will be posted as arrangements are made and confirmed.

The one concrete event as of right now is a joint Acadian Entomological Society and Maine Entomological Society meeting set for July 21-23. Taking place in Machias, the meeting will be the first of two joint conferences. The second such meeting will happen in 2003. This 2002 meeting will also function as the July MES collecting trip. Our July field collecting expedition in the Downeast area will be on Sunday, the 21st. The following two days will include joint sessions of the AES and MES.

To Know Them Is To Love Them

Insects provide all the stealth and drama of an action movie. They are inherently artistic, devising homes and traps with all the grace and beauty, texture and intricacy of the finest man-made crafts. Making their living in a myriad of ways in environments from tropical to desert, reproducing and metamorphosing in diverse and fascinating fashion, insects, it seems, tout themselves by so many avenues that one would have to be pretty dull not to be intrigued.

Wherever you find yourself, insects are there, accessible to inquiry. While they are amazing in the tropics in numbers of species and abundance, their activities are no less enticing in your own backyard, which is where they first entertained me.

Growing up in Kansas, my family derived much pleasure from the outdoors. Nature was always a part of my early life, whether gardening, picking wild plums and gathering black walnuts, fishing, or building a fort with my brothers. Fortunately, I am old enough to have done quite a bit of growing up without interference from TV. My brothers and I spent much of our free time outside. To boil this down a little, to know it is to love it.

Eventually during university years, my central interest became art. I came to art classes with an excellent prep in my childhood, having familiarized myself with some of the best color work and designing around - that found in nature. Drawing in the university natural history museum delighted me. Instruction at the university allowed me to draw and design in many directions, but none fit as well as nature studies.

Over the years, I have been fortunate to make paintings and illustrate books on natural history topics and in the last dozen years, create over 100 designs for t-shirts, all of them topics of natural history. Being an insect aficionado, I designed as many insect shirts as the marketplace would tolerate. Unfortunately, making shirts that didn't succeed took extra effort to engage the public in insect art that they would be willing to wear.

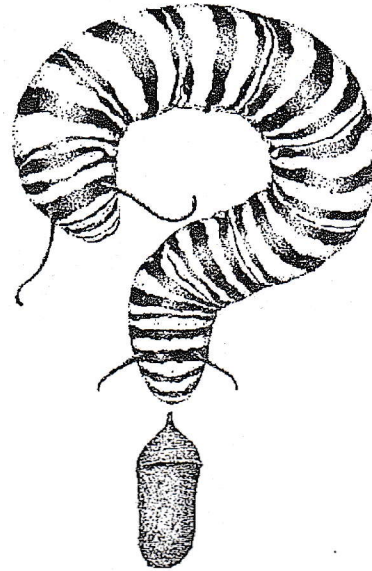
Ironically, the best selling shirt over the years featured a very large monarch caterpillar in the form of a question mark on the front. The chrysalis formed the dot of the question mark and the adult, the monarch butterfly, appeared on the back.

What many people would describe as a worm was the prominent feature of this shirt so enthusiastically purchased and worn. In the bargain, some natural history was dispensed in the depiction of the highlights of monarch metamorphosis.

Other insect shirts have sold less well, which is disappointing to me, since the subject provides a rich artistic source. I tell myself that insect art might enhance by the smallest increment, the way insects are perceived. Again, to know it is to love it.

The pleasures of insect watching and study continue to suggest new designs. While the landscape of my interests encompasses all of natural history, insects will always be an area of special focus.

-DD Tyler



"...INSECTS, IT SEEMS, TOUT THEMSELVES BY SO MANY AVENUES THAT ONE WOULD HAVE TO BE PRETTY DULL NOT TO BE INTRIGUED."

-DD TYLER

Drawing by DD Tyler, courtesy of Liberty Graphics.

"The End"

A Humbling Thought

When the moon shall have faded out from the sky, and the sun shall shine at noonday a dull cherry-red, and the seas shall be frozen over, and the ice cap shall have crept downward to the equator from either pole, and no keels shall cut the waters, nor wheels turn in mills, when all cities shall have long been dead and crumbled into dust, and all life shall be on the very last verge of extinction on this globe; then, on a bit of lichen, growing on the bald rocks beside the eternal snows of Panama, shall be seated a tiny insect, preening its antennae in the glow of the worn-out sun, representing the sole survival of animal life on this our earth,- a melancholy "bug."

Reprinted from W. J. Holland's The Moth Book: A Popular Guide to a Knowledge of the Moths of North America. Doubleday, Page, & Company. 1920.

Woolly Bear Weather Forecast

Those familiar, fuzzy, red & black-banded caterpillars, larvae of the Isabella tiger moth (*Pyrrharctia isabella*) have been the subjects of weather predicting folklore for more than a century. The story is that when the red band makes up more than one third of the color, the upcoming winter will be milder, less than one third foretells a harsher winter. Snowfall amounts are irrelevant. Even though this method may lack scientific justification, it's fun. The results are now in for the upcoming season and the woolly bears predict a good old-fashioned winter!

The following are the results of our survey taken in Kennebec County since the winter of 1997-1998:

·Normal = 4.33 red segments on average, based on 13 segments per caterpillar

·1997-1998 = 4.73 red segments on average, mild winter predicted.

·1998-1999 = 5.05 red segments on average, milder winter predicted.

·1999-2000 = 4.30 red segments on average, slightly colder than normal winter predicted.

·2000-2001 = 5.14 red segments on average, noticeably milder winter predicted.

·2001-2002 = 3.79 red segments on average, a good old-fashioned winter predicted.

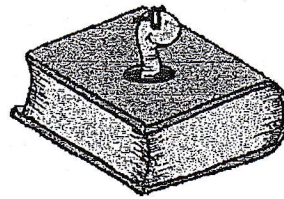
-Dick Dearborn

From the President Continued from Page 1

In parting, let me stress again the importance of members becoming involved in any activity where they can share their knowledge and enthusiasm for insects. I encourage those who can to participate in insect appreciation talks or events. Several members have voiced support for such events so let's do it and try to dispel many of the myths about insects that people have. Laura Stone and I can supply MES brochures and hope to have posters in the future. Just a reminder that one of our purposes (MES Constitution, Art II a) is "to encourage active study of all aspects of Maine insects and terrestrial arthropods, and to promote educational activities on Maine insects and terrestrial arthropods throughout the state."

Be sure and mark July 21-23, (especially July 21st), 2002 as time for MES and, in the meantime, have a wonderful holiday season and a happy, healthy winter.

-Dick Dearborn



Book Review: The Birder's Bug Book by Gilbert Waldbauer

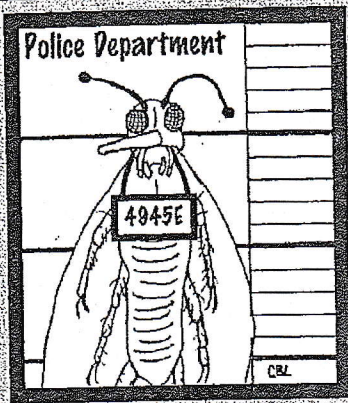
Here we have a book that you might call interdisciplinary – the relationship of birds and insects. Insects evolved 400 million years ago (MYA) and went through the vicissitudes of three large extinctions before birds appeared on the scene 150 MYA. This marks the introduction of chapter one. From here we go on to chapters such as "Bugs that birds eat," "Bugs fight back," "Bugs that eat birds," and "Birds fight back." Birds are outnumbered by insects more than 80 to 1. Despite these odds, birds and insects have been exploiting one another for a long time. A notorious case has been the story of California gulls that saved the Mormons from starvation when the Mormon "cricket" (similar to a camel cricket, but still not a real cricket) devastated their crops in 1847. The gulls ate all the "crickets" and now a monument to the event exists in Temple Square, Salt Lake City... a golden statue of a California gull.

Birds can be leaf gleaners or bark and wood gleaners, a behavior that prevents large insect damage in forests. Birds themselves are prey to a host of mites, ticks, fleas, and mosquitoes. And some even use certain foliage containing natural repellants to line their nests to ward off parasitic invasion. Insects, on the other hand, use camouflage, mimicry, poisons, and stinging actions to retaliate. There are countless examples of the interaction of these two opposing forces in his book.

Waldbauer goes on to include people in "Bugs that eat people" and "People fight back." Then there is a chapter on a guide to insect orders that Waldbauer can't resist putting into the text, because, after all, he is an entomologist. The final chapter called "Disappearing Diversity" is about the effects of man on the global environment with a special plea to adopt a conservation ethic to preserve the earth's biodiversity. This book includes seventeen pages of color plates and countless black and white drawings and the trademark of a Waldbauer book: in the lower right hand corner of the page, an animated picture of a woodpecker drumming on a tree trunk for a grub. As usual, this is all in an easy going Waldbauer-style of writing - a pleasure to read and to spark your interest.

-Joyce Bell

Editor's Note: This review was reprinted with the permission of the Vermont Entomological Society. It appeared in VES Newsletter #37, August 2001.



The Bug Mug Shot: Ladybird Beetle

A.K.A. "Ladybug", "Lady Beetle"

ORDER: Coleoptera. This is a very large, diverse order with nearly 300,000 species throughout the world.

FAMILY: Coccinellidae. This name literally means "little sphere" referring to the shape of these insects.

SPECIES: There are over 475 species in North America with an estimated 75 of these occurring in Maine. The taxonomic status of this group changes regularly as some entomologists describe color variations as new species and others lump them. One of the most widely known Maine species is the Two-Spotted Ladybird Beetle (*Adalia bipunctata*) which is known for overwintering in people's houses. Another newcomer, the Asian Lady Beetle (*Harmonia axyridis*) has surpassed *A. bipunctata* as a household nuisance.

DESCRIPTION: Adult Coccinellidae are generally oval to spherical in shape with short, weakly clubbed antennae. Their color and spotting vary greatly, but most are red, orange, or yellow with black spots or black with reddish-yellow spots. The tarsi have an apparent 3-3-3 (trimerous) structure, but are actually 4-4-4 (tetramerous) because of a minute third segment which is difficult to see. The head is partly or completely concealed by the pronotum. Adult ladybird beetles range in size from 0.8 to 10 mm with most species in the 4 to 8 mm range. The larvae are generally dark colored with red or light colored spots and often have spiny or warty projections. Some say the larvae resemble miniature alligators.

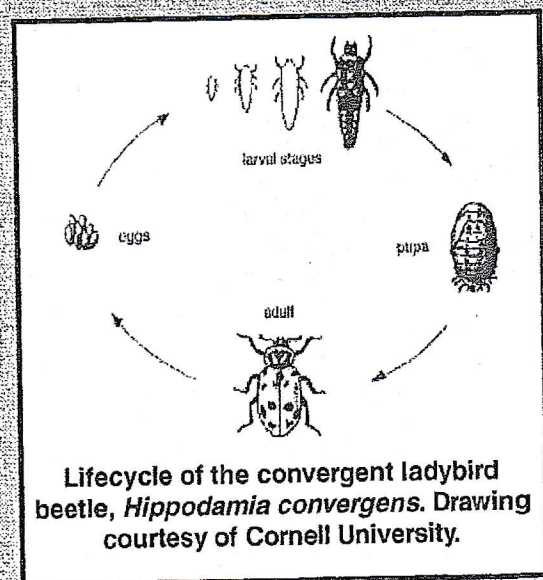
PRIMARY HABITAT: Ladybirds live in a very wide variety of habitats, although the best place to look for them is generally on or around foliage, especially when aphids or scales are nearby.

FOOD: Both adults and larvae of most species are active predators eating soft bodied insects such as aphids, scales, and mites. Only two species in Maine are not predators. The Mexican Bean Beetle (*Epilachna varivestis*) is a destructive plant-feeding species while *Psylloborn virgintimaculata* feeds on fungi.

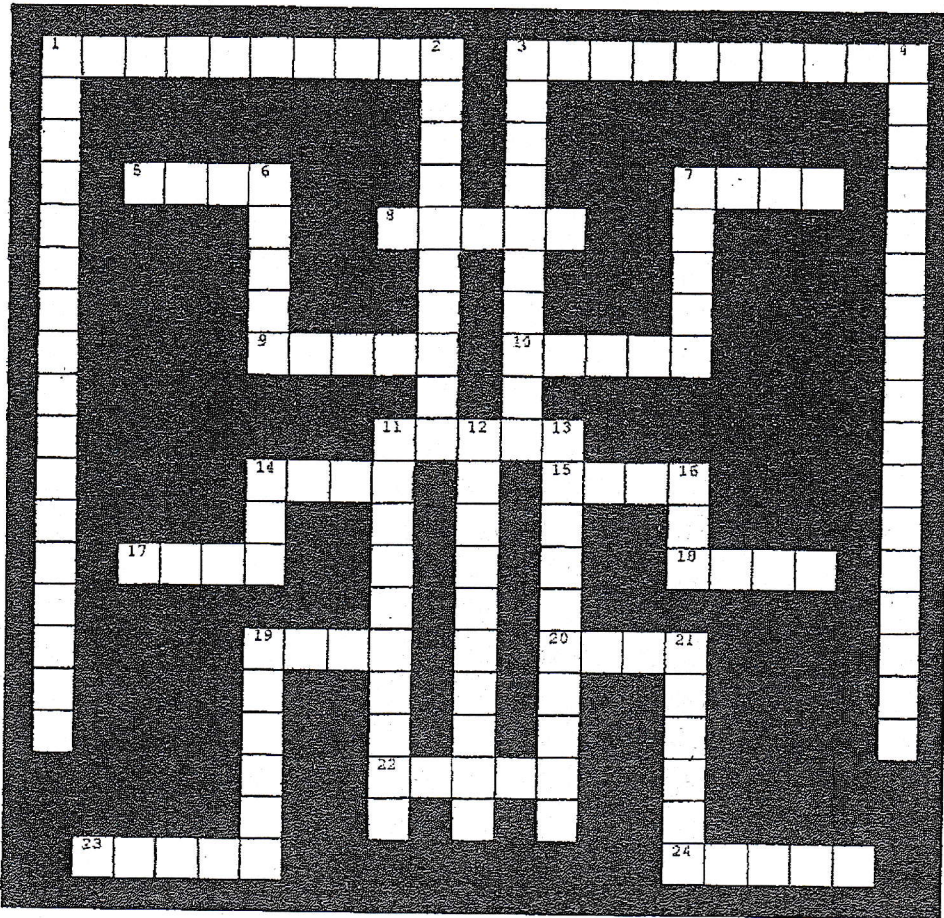
LIFE HISTORY: Adult ladybird beetles often overwinter in large groups in sheltered places. They emerge in spring and lay their eggs in small clusters on leaves. The larvae pupate in about four weeks. After a week the adult ladybird beetle emerges, but the characteristic bright colors and contrasting spots often take a few days to appear. Most ladybirds have only one generation per year, but some have two.

IMPORTANCE: Lady beetles are frequently the focus of biological control programs. Roughly 179 species have been intentionally introduced into North America for this purpose with varying degrees of success.

NOTES: As a defense, ladybird beetles sometimes "play dead". They also can secrete an amber colored bad tasting fluid from the joints in their legs making them unpalatable to birds and other predators. Some cultures believe that ladybirds are a sign of good luck. They have also been used medicinally.



Beetles

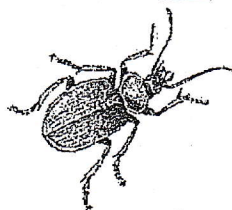


ACROSS:

1. Put *this* in ORDER!
3. Family to which diving beetles belong
5. Beetle ova.
7. Alleculidae: ____ clawed beetles.
8. Desmocerus: ____ berry borer (long-horn).
9. Karl Von ____ was an early Swedish botanist.
10. Member of the largest group of Scolytids (plural).
11. Oedemeridae: ____ blister beetles.
14. Byrrhidae: ____ beetles.
15. Label date: month, day, ____.
17. Trogidae: ____ beetles.
18. *Phanaeus* and *Copris* are both ____ beetles.
19. All Coccinellid beetle tarsae are ____ segmented.
20. Cerambycidae: ____ horn beetles.
22. First antennae segment; fall guy or ____ goat.
23. Outer lobe of the maxilla.
24. Anobiidae: ____ watch beetles.

DOWN:

1. *Anthonomus grandis*: serious southern snouted pests (plural).
2. *Stictoleptura* (formerly ____) *canadensis*; cerambycid.
3. Carpet beetles.
4. This common firefly does not flash.
6. Cychrini: ____ eating beetles.
7. Beetle "fingers".
11. Chafers and many weevils are this (HINT: an anagram is forest welp).
12. The family to which fireflies belong.
13. *Alaus oculatus*; a large click beetle.
14. Holds the beetle and label.
16. Rufus is Latin for this color.
19. These structures connect the coxa to the tibia.
21. Carabidae: ____ beetles.



-David Bourque
& Dana Michaud

T-shirts Make Great Holiday Gifts

We still have a few "Insects of Maine" T-shirts and sweatshirts left. They make a great gift for anyone who enjoys the outdoors. T-shirts sell for \$11 and come in either natural or light grey. Sweatshirts are \$19 each and are available only in grey. Please contact Laura at (207) 324-2849 if you would like to place an order.

The deadline for the next issue is February 1, 2002. We will gladly accept any articles, anecdotes, artwork, or announcements. The earlier we receive your submissions the better!

Entomology Humor

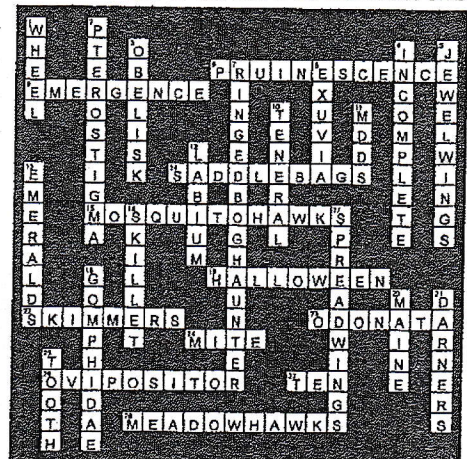
Q: What do you call a bug that hates Christmas?

A: A humbug!

Q: What do you get if you cross a beetle with a Rolling Stone?

A: A squashed bug!

Last Issue's Crossword Answers



A Sasquatch Sighting in Maine

Among the most interesting captures of a generally dry and desultory season was a single male specimen of the Larentiine moth (Lepidoptera: Geometridae) *Eulithis xyлина* (Hulst).

Hulst described this moth in 1896 based on a specimen supposedly from New York but while the moth is confidently known from Washington State to the Yukon Territory, further records from the east have been spotty at best and on closer inspection each case turned out to be based on an error. Forbes, in 1948, calling *E. xyлина* "very rare in the east," nonetheless cited it from Maine, Ontario, and "New York" after the type. But examination of all available Ontario specimens by Handfield, in preparation for his 1999 *Guide des Papillons du Quebec*, showed that they in fact represented the closely related species, *E. serrataria* (Barnes and McDunnough), and a recent check of two specimens from the Procter collection assigned to *E. xyлина* by Brower (in Procter, 1946) showed that they were *E. serrataria* as well.

It was therefore a real surprise to have an authentic specimen—readily identifiable in the male by its broadly pectinate antennae—turn up in Steuben on 1 August. We must now go back to the drawing board and reexamine our growing suspicion that the type was mislabeled and that *Eulithis xyлина* does not really exist in the east. Of particular interest in this connection will be fresh study of the single specimen - a female from Depot Mountain in T14R16 in northern Aroostook County now at the Smithsonian - which Brower in his 1974 *List* still felt "appear[ed] to be *xyлина*."

- Tony Roberts

New Catches

Among the additions to my collection this season was a spectacular tachinid fly caught in Waldoboro that appears to be *Belvosia bifasciata*. The distinctive fly is a little over 20 mm long, jet-black in color with two broad pale yellowish bands on the abdomen. The abdomen is encircled by stiff crown-like circles of black hair. On the wing, the fly has the sound and appearance of a bumblebee. Most of the members of the tribe *Belvosini* are southern in distribution and parasitize large lepidopterous larvae.

The bilobed looper (*Autographa biloba*) was reared from caterpillars found feeding on delphiniums, perennial geraniums and other plants over much of Maine this May and June. This is the first year I have seen this species so widespread.

-Dick Folsom

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