



VES NEWS

The Newsletter of the Vermont Entomological Society

Number 54
Winter 2006-2007



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The Newsletter of the
Vermont Entomological Society

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The **Vermont Entomological Society** is devoted to the study, conservation, and appreciation of invertebrates. Founded in 1993, VES sponsors selected research, workshops and field trips for the public, including children. Our quarterly newsletter features developments in entomology, accounts of insect events and field trips, as well as general contributions from members or other entomologists.

VES is open to anyone interested in insects and other invertebrates. Our members range from casual insect watchers to amateur and professional entomologists. We welcome members of all ages, abilities and interests.

You can join VES by sending dues of \$10 per year to:

Scott Griggs
VES Treasurer
49 Lover's Lane
Grand Isle, Vermont 05458

Cover Photo:

Atlantis Fritillary (*Speyeria atlantis*),
photographed by Bryan Pfeiffer in Huntington,
Vermont, on July 26, 2005.

Back Page Photo:

Canadian Tiger Swallowtails (*Papilio
canadensis*) in Belvidere, Vermont, on June
11, 2004.

Both images by Bryan Pfeiffer

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Please Renew!

It's time to renew your membership in VES.
For a mere \$10, we think it's one of the best
entomological deals around.

Send your payment to our treasurer:

Scott Griggs
VES Treasurer
49 Lover's Lane
Grand Isle, Vermont 05458

Thanks!

VES Needs You (Again)

By Bryan Pfeiffer

I'm no football fan but to me the Super Bowl is a highlight of winter. It means I can start thinking about baseball, which means warm days and flying insects ahead.

VES did a lot of thinking about those warming days during our annual winter potluck in January. We began to chart a busy agenda for 2007. You'll see it outlined on the next page of this newsletter.

But that agenda will remain incomplete without the support of VES members. You've heard me harp on this before. We've got a dedicated core group, along with a scant few newcomers, running the affairs of VES. We need more to make more things happen.

At our meeting we spoke highly of giving VES a higher profile, perhaps constructing a traveling educational display about what we do. We spoke about organizing a speaker's bureau to tap and expose the expertise among our membership. And there's still that bumblebee field key, that nighttime insect walk and many other items on our agenda.

So if you've got new ideas, a bit of free time and the desire to help VES grow, please step forward. My last plea elicited a limited response. Here's only a sampling of how

you might help:

- ◆ Write us a newsletter article about your work, your discoveries, or your favorite new insect book. As you may have noticed, we tend to have a Lepidoptera-Odonata bias (especially because that's mostly what I, your editor, study and photograph) – so here's your chance to change that.
- ◆ Help organize VES events or even a speakers bureau.
- ◆ Take our web site, please, and give it an overhaul.

Normally, I had hoped to take on many VES responsibilities this year. But, as I ask that you do more, I will need to do less. A member of my family has a serious illness, so I'll be devoting more of my time to her this year.

As some of you may know, I'm perpetually overbooked. So something has to give. As a result, I'll relinquish the VES presidency – either permanently or for some period of time.

Besides my new health-care responsibilities, I'll be focusing on my work with Vermont dragonflies, like that little red gem below. Perhaps I'll see some of you during a VES field trip, when the baseball season – and our insect nets – are in full swing.

Bryan Pfeiffer specializes in butterflies and dragonflies.



Hetaerina americana (American Rubyspot)

VES's 2007 Agenda

A couple dozen VES members ate well and set an ambitious agenda for the year during our annual winter pot-luck in January.

With Ross and Joyce Bell (more on them later) our hosts at Wake Robin in Shelburne, and with a feast before us, we discussed Diptera, opined on Odonata and considered Coleoptera. And we also began to plan some great events for this year.

This very newsletter was a topic of conversation. It is relatively expensive to print it with those color photographs. But, at least for now, we agreed to continue doing so, in part owing to the generosity of VES Treasurer Scott Griggs and the good folks at Hard Copy in Burlington. Do note that we won't raise the membership fee from the current (and paltry) \$10 per year.

We'll also investigate wider distribution of the newsletter, perhaps to public schools and libraries. Jo-Ann Doyle has gathered some good information to help make that happen.

Scott went on to provide a good-news treasurer's report, with our bank balance growing, due in large part to Doug and Mary Burnham, who send a nice check to VES each year from their Birdathon for Bugs. (Contact Scott at vtleps@aol.com if you'd like more details on our financial status.)

Next on the agenda, bumblebees. As VES members may recall, one year ago we had high hopes of producing a field key to the bumblebees of Vermont. Ross Bell and Felipe Soto have developed the key. All it needs now are photos and arrangement in a useable publication. We've got a core group of members interested in bumblebees; they will try to make some progress on the key.

Another topic for discussion was an attempt to raise the public profile of VES. We discussed creating a large poster or some other kind of informative public display to describe VES and its activities. Another idea was to organize a "speakers bureau" so that VES members can be made available to give public talks on entomology (probably for a fee). I'm not sure anyone specifically has taken on either of these tasks — but if you're interested please contact Bryan Pfeiffer at bryan@wingsenvironmental.com.

In other news, Dr. Kurt Pickett, the newly arrived associate professor at the University of Vermont's Department of Biology, attended our meeting and introduced himself to VES. Kurt specializes in the taxonomy, systematics and

behavior of social wasps (Vespidae). A portion of his time will be devoted to curation of the Zadock Thompson Natural History Collection at UVM's Torrey Hall.

Finally, field trips! Not much is final yet, but we're looking at scheduling some of the usual VES outings and perhaps a few new ones.

Our tentative date for the spring picnic is Saturday, June 16 (save the date). We're looking at parks in northwestern Vermont as options. Stay tuned for details.

We'll most likely meet for the customary butterfly walk at Birds of Vermont Museum in Huntington on July 7 (tentative). This walk has become a well-attended VES event that covers not only butterflies but just about any insect order we might stumble upon.

We're still interested in organizing a nighttime insect walk. That'll probably be in early August.

Finally, the VES members were pleased and honored to award member emeritus status to Ross and Joyce Bell. Anyone privileged to know the Bells can appreciate their dedication, knowledge and willingness to share wisdom about invertebrates. Their contributions to our understanding of the entomology of Vermont is immense. And their dedication to VES is legendary and lasting.

Diptera Identification Workshop

Interested in learning more about flies and how to identify them to the family level? Here's your chance! On March 17th, 2007, Dr. Don Chandler from the University of New Hampshire will present an all-day workshop that will cover about 35 common families of non-acalypterate flies, including the muscoids. The workshop will be in Burlington at the University of Vermont with exact location to be announced later.

Don gave a similar workshop in Maine last winter, and participants said it was an excellent and engaging introduction to this group of insects. Number of participants will be limited, so make your plans and contact us soon if you'd like to take advantage of this great opportunity to improve your skills at identifying flies. All levels of expertise, including novices, are welcomed. To put your name on the list, contact Trish at trish.hanson@state.vt.us.

One Man, One Site, One Season, One Routine ... and 358 Species

By Jim Hedbor

During the five years leading up to the publication of the Checklist of Vermont Lepidoptera, 1990-1995, I ran a blacklight on a sheet many nights each summer, and recorded several hundred species of macro moths. However, I did not collect many micros, because they are hard to handle.

Between 1996-2005, I was occupied with other projects, and I did not systematically collect, and did not run a light. During those years, we experienced the great ice storm, which opened the canopy and significantly modified the nature of our woods.

I became interested in improving my skills handling and studying micro moths, and decided to run a powerful mercury vapor light above a 10-foot-square sheet, as well as a blacklight trap last season.

On a good night in the height of the season, you might collect more than 120 moths, selecting what looks most interesting from easily more than 1,000 insects on the sheet. The larger moths – say, an inch wingspan or larger – can generally be retained either in envelopes or by pinning but not spreading them; you collect during the summer and work through them in the winter by relaxing and spreading them at your convenience.

The big trick in handling micros is to mount them immediately. Since I might be mounting between 70 and 100 moths per night of collecting, I decided on a once-a-week routine: Turn on the lights before dark. Make one or more runs collecting moths off the sheet, one per vial, before bedtime. The hard part is to set your alarm before dawn and collect again, turn off the light and disperse the bugs. (Otherwise you will create a major bird feeding station, and will only find the wings of many of the best specimens scattered on the ground). Back to bed. You can empty the trap at a more civilized hour.

The moths stay alive and undamaged in the freezer, one per small glass collecting vial, for two to four days. Imagine perfectly mounting something sometimes smaller than a mosquito, wings and antennae perfectly spread, on a stainless steel minuten pin – an inch long and .005 inch diameter, which you handle under magnification with needle-point dissecting forceps. I often barely finished the previous week's moths, working every night, before Friday came and it was time to run the lights



© Eloise Hedbor

Jim Hedbor in micro-moth paradise

again. I mounted over 900 micros on minutens during the season. Have a little eye strain?

These are the approximate results. At least 358 species of moths were collected. The most thrilling arrivals were three big, glorious Imperial Moths, reported in a previous newsletter, probably signifying an exciting breeding reestablishment of the species here. But as glorious as they are, among the 1,500 or so specimens collected, you never know what's the most important. These specimens, most of which were donated to the major collection at the Florida State Collection of Arthropods, may yet provide

(Continued on page 11)

The Huge *Hexagenia*

By Tad Dippel

Bloop. Splash. Pop. Slurp. The sounds of feeding trout were beginning to be heard out over the calm surface of Caspian Lake. It was early July and the hatch of *Hexagenia limabata* was in full swing. Every summer the surfaces of Caspian Lake and other lakes throughout northern Vermont come alive in early July as these large mayflies make their way to the surface, shed their nymphal shucks, and fly off into the gathering dusk.

Hexagenia limabata is an exceptionally large mayfly. Its body size ranges from 16 – 35 mm. Only *Litobrantha recurvata*, the largest mayfly in North America, exceeds the body length of *Hexagenia*. Both mayflies are in the family Ephemeridae. The nymphs of this family are fairly long and have distinctive, plume-like gills adorning the sides of their abdomens. *Hexagenia* nymphs spend their days burrowing through silt or marl in pools, eddies, and slow-flowing stretches of rivers. They can also be found inhabiting similar sediments in cold-water lakes and ponds.

Hexagenia tend to hatch right at dusk as the light of a long summer day slowly fades. The hatches are short in duration, averaging only about half an hour to 45 minutes tops. Emerging mayflies look like little white sailboats floating about as they dry their wings prior to taking flight.

Early July seems to be the right time to find *Hexagenia* hatching in Vermont. On July 1, I have seen the shallow water at the Charlotte Beach on Lake Champlain thick with the exoskeletons shed by emerging *Hexagenia*. I have also seen scads of adult *Hexagenia* gathering around the lights of

Shelburne Bay Plaza, about a half mile east of the bay itself, on the same date.

I gather that the hatch on Caspian Lake takes place over the first two weeks of July. I have been fishing there on July 8th two out of the last three years and found the insects coming off the water in varying numbers, from sparse to moderate hatches. Matt Crawford of the *Burlington Free Press* reports that substantial hatches of *Hexagenia* take place on Arrowhead Mountain Lake, Eligo Pond, Seymour Lake, Echo Lake (Charleston, VT), Noyes Pond at Groton State Park, and he hears rumor of significant hatches taking place at Lake Willoughby.

When the big bugs start to pop, things begin to happen. I have seen bats fluttering at the water's surface while they pluck the emerging mayflies right out of the lake's meniscus. Picture it, trout rising up from below and bats swooping down from above. It's the food chain in action. Fly fishers in the know will try to be out on the water at the very end of the day casting fraudulent offerings to the feeding fish. This hatch sometimes brings larger fish to the surface in search of an easy meal, much to the delight of those who fly fish.

Should you like to fly fish for large trout, or just enjoy watching the splendor of nature in action, try to be on the water for the *Hexagenia* hatch next summer. It is truly a sight to behold.

Tad Dippel is a science teacher at the Williston Central School. Aquatic insects are one of his favorite topics to explore.



© Tad Dippel

Vermont Butterfly Survey's Final Season And Our First Vermont Butterfly Summit

By Bryan Pfeiffer and Kent McFarland

What do you call more than 31,000 encounters with 105 species of butterfly across Vermont, ranging in date from as early as May 15, 1890 through February 5, 2007?

We call it a great start.

The Vermont Butterfly Survey has completed five years of field work (from 2002 through 2006) and visits to many museums across the nation — all in the great pursuit of scaled wings. Our database overflows. But we're not done yet.

Thanks to the Vermont Fish and Wildlife Department, VBS was recently awarded a 2007 State Wildlife Grant to complete a sixth and final season of field work next summer. This next season will concentrate on under-surveyed regions of the state and many of the 16 butterfly species listed as "Species of Greatest Conservation Need" in Vermont's Wildlife Action Plan, which is a kind of blueprint for wildlife study and conservation.

Despite that full database, VBS still needs your help. We have many butterflies to pursue before we close the field portion of the project once and for all. So if you've been feeling guilty about a lack of contributions on your part, here's your chance to grab a net and find us more data.

We're still busy processing the specimens, photographs and sight records from the 2006 season. But soon enough, we'll have the database up to date and answering questions like these:

Which regions of Vermont still need survey work? Which habitats in the state need more investigation? Which species might inhabit Vermont but as of yet remain undiscovered here?

We do know a few things: First, wetland butterfly species remain a priority (see table below). Second, skippers (Hesperiidae) will occupy a good portion of our time this year. And third, but certainly not last, we're preparing a Butterfly Summit in order to prepare for the coming season.

The Summit's tentative date and location are Sunday, April 22, at the Vermont Institute of Natural Science in Quechee. (Check www.vinsweb.org/vbs for updates.) We'll review all the VBS data and discuss what still needs to be done in our final field season. We'll offer an identification workshop on tricky species. We'll feast on a pot-luck brunch. And we'll celebrate the diversity of butterflies and



© Bryan Pfeiffer

Olive Hairstreak (*Callophrys gryneus*)

the coming flight season. If you'd like to help organize the event, please contact Kent McFarland at kmcfarland@vinsweb.org.

Kent McFarland and Bryan Pfeiffer operate the Vermont Butterfly Survey.

Butterflies of Greatest Conservation Concern	
Species	Vermont Habitat
Bog Copper ¹	acidic bogs
Jutta Arctic ¹	acidic spruce bogs
Dion Skipper ¹	sedge wetlands
Black Dash ¹	sedge wetlands
Two-spotted Skipper ¹	sedge wetlands
Mulberry Wing ¹	sedge wetlands
Broad-winged Skipper ¹	sedge wetlands
Cobweb Skipper ¹	grasslands
Persius Duskywing	unknown
Regal Fritillary ³	grasslands
Dusted Skipper ²	grasslands
West Virginia White ¹	rich, hardwood forests
Early Hairstreak ¹	beech forests
Hackberry Emperor ²	floodplain forests
Tawny Emperor ²	floodplain forests
Edwards' Hairstreak ²	pitch pine-oak-heath rocky hill

¹ new population(s) discovered by VBS

² species discovered in Vermont by VBS

³ extirpated in Vermont

Another Perspective on Fishing Spiders (and More)

By Kelly Stettner

I remember the closeness I used to feel sneaking up on a squirrel, watching its darting movements, feeling the electricity of its tensed nerves, somehow hearing the thrumming of its frantic heartbeat. Or parking my kayak in the cove of a small lake, feeling what I imagine to be fish sliding against the yellow hull, as if investigating this alien visitor. Drifting ever-so-slightly toward a moose, part of me thrilling at being so close, part of me wondering if this was such a good idea. Reveling in my not-so-solitary solitude, watching and listening to be part of nature.

And then, suddenly, explosively, I'm experiencing nature through the eyes of my young daughter, Moira. Her scale is so much smaller, her involvement much more intimate. Where I observe, she touches. Where I listen, she squeals in delight. Where I calmly absorb my surroundings, she exudes fascination and energy. The gasp of excitement as she scoops up a wriggling Red-backed Salamander, the bright sparkle in her eye as she every-so-gently captures a Praying Mantis, the mournful tears as a fragile Cabbage White lies broken in

And then, suddenly, explosively, I'm experiencing nature through my young daughter's eyes. Her scale is so much smaller, her involvement much more intimate.

her tiny palm, its legs slowly twitching into a retracted curl.

Moira has to know "why" and "how" ... I enjoy listening to the evening crickets, she marvels at discovering the source of their music. A fishing spider in the basement becomes more than an eight-legged beast – it is something to carefully capture and to "scientist with."

She studies it through her magnifying glass, sketches it and adds her own observations to the drawing. She gently carries the jar to the library, where she and Daddy discover its species, its diet, its habitat. I convince her to release the

hairy thing outside, but her sense of wonder has softened my heart toward the creature ... a little.

Kelly Stettner of Springfield is blessed with a husband and two children. She is the founder and director of the community-based watershed group, the Black River Action Team, working within a philosophy of hands-on stewardship projects and evidence-based science, as well as creative partnerships.

If VT Isn't Enough: Here's Another Butterfly Survey

By Phillip deMaynadier

The long-anticipated Maine Butterfly Survey (MBS) is scheduled for flight in 2007.

Sponsored by the Maine Department of Inland Fisheries and Wildlife, in partnership with the University of Maine at Farmington and Colby College, the MBS is intended as a five-year, statewide, volunteer atlas project. In addition to raising public awareness and concern for Maine's butterflies, and invertebrate conservation generally, the MBS will increase our knowledge of the distribution and status of over 115 species of butterflies and skippers statewide. Following in the tradition of previously successful state-sponsored wildlife atlas projects, including most recently the Maine Damselfly and Dragonfly Survey (2005), data generated from the MBS will come primarily from citizen scientists like you.

We are fortunate in Maine to have a trained cadre of invertebrate enthusiasts among the many members of the Maine

Entomological Society. As such, you are invited to participate in the first of several MBS volunteer workshops from 9:30am to 3:00pm (catered lunch) on Saturday, April 28th hosted at the Olin Building on Colby College, Waterville. Co-coordinated by Dr. Herb Wilson and myself, the workshop will introduce volunteers to the basics of butterfly biology, identification, and MBS survey methods. A second 2007 volunteer MBS workshop will be held on Saturday, July 14th at a location soon to be announced. Space is limited and reservations will be accepted on a first come first serve basis. Interested registrants for the April 28th workshop should send their name and contact details to Dr. Herb Wilson at whwilson@colby.edu or Biology Department, Colby College, 5739 Mayflower Hill, Waterville, ME 04901.

Phillip deMaynadier is the Reptile, Amphibian, and Invertebrate Group Leader with the Maine Department of Inland Fisheries and Wildlife (phillip.demaynadier@maine.gov).

Mantises: True and False

By Ross T. Bell

As winter winds wipe out our local insects, or at least the adults of most of them, we can remember those that we saw in the fall. In that season, our only species of praying mantis is conspicuous, feeding greedily on grasshoppers, or sometimes on a male of its own species. We have only one mantis in Vermont, the European species *Mantis religiosa* which is around two inches long.

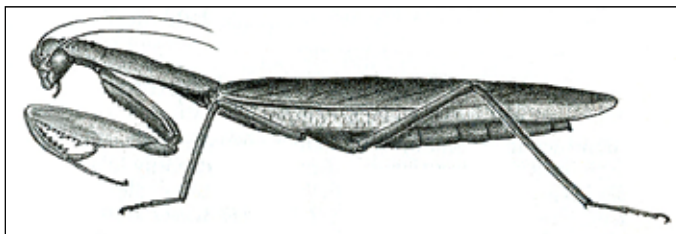
In the summer, a sharp-eyed bug watcher may spot a relatively scarce insect, a *Mantispa*, which has very similar front legs to those of a true mantis. This bug is only about an inch long. It has fully developed wings and, since insects don't get larger after their wings become fully developed, we know it isn't an immature mantis. If you study the two animals closely, you discover that the similarity between them affects only the grasping front legs and the long first body segment (prothorax). These are features that allow these insects to overpower prey that is large relative to the predator, often equal to or larger than the latter.

The mantis has front wings that are thickened and colored, while the hind wings are about twice as wide but are thin and clear. These resemble wings of cockroaches, and mantises are actually a group of cockroaches which become killers of other insects. The mantispas have wings that have a network of veins, and both pairs of wings are nearly identical. They resemble the wings of lacewings. In case you don't remember lacewings, they are the beautiful pale green bugs, with golden eyes which come to lights in the summer time. The praying mantis belongs in the Order Dictyoptera along with cockroaches and termites. On the other hand, the mantispas belong with lacewings and ant-lions in the order Neuroptera.

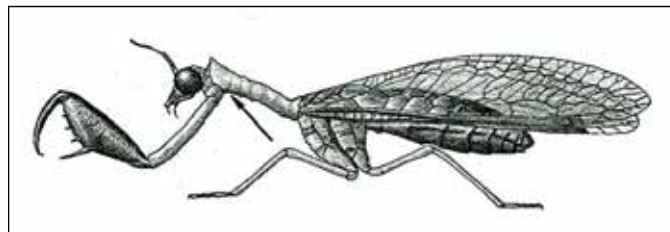
The biographies of these two groups are also completely different. A female mantis lays her eggs in a mass of foam either on a twig or often on a shingle on a house. The foam hardens. At first it is white but soon it turns gray, I think because of adhering dust. The eggs survive the winter here. The young hatch in the first warm spring weather. If you keep the egg mass in a jar, some spring morning you

will see hundreds of tiny but very active hatchlings. They look like the adults except that they lack wings. If you don't release them quickly they will kill and eat one another until few are left. As they grow through the summer, their wings form gradually, but they can't fly until after the last molt.

In contrast, a female mantispa lays each egg separately on a stalk. Lacewings also have this habit, and it probably prevents active young larvae from cannibalizing their siblings who are still struggling out of the egg shells. Hatchlings are very small and quite active.



A Mantis species



A Mantispa species

We have two local species. One, *Climaciella*, brown as an adult, the other, *Mantispa*, green. The larval brown kind searches for the nest of a burrowing bee or wasp. The larva parasitizes the larva of a bee. The larval green kind searches for a female wolf spider in her burrow, where it climbs on board. It rides the spider until she weaves her egg sac, when it slips into the

sac as the eggs are laid.

In either case, whether in a bee larva or a spider egg sac, as the larva grows in a complete food supply, it changes into a soft grub, with only remnants of legs and jaws. Eventually it is large enough to change into a pupa, an inert, non-feeding stage, when the wing pads appear. A week or two later, an adult emerges from the pupa.

Strong similarities of front legs means nothing about the relationships of Mantis and Mantispa. One is a killer cockroach and the other a killer lacewing. What it does mean is an ecological similarity, a similar way of solving a similar problem, killing large prey.

Ross Bell, a founding member of the VES, taught at the University of Vermont for 45 years and continued as Emeritus Professor, teaching and continuing his research on the Carabidae (ground beetles) of Vermont and New Hampshire, as well as continuing his research on Rhyssodid beetles of the world. He also has a fondness these days for grasshoppers and bees.

Increasing Our ODDS (ODonata Data Scorecard)

By Mike Blust

Vermont has 141 species (so far) of Odonata (dragonflies and damselflies) and 14 counties. If every county had all 141 species (which is admittedly unlikely), we would have 1,974 county records. Counties are a relatively

course measurement of distribution. They are political units, not ecological ones. But they are handy to help ensure a balance of survey effort in our quest to document the abundance and distribution of Odonata in Vermont. From such broad data, patterns begin to emerge.

So where do we stand in our scorecard? Of the potential 1,974 county records, we are now at 1,094. That works out to a given species occurring in an average of about eight counties and an average of 78.1 species per county.

Some counties are doing better than others. Rutland is our most diverse county with 113 species. Grand Isle, with its lack of elevation and mountain streams, is our least diverse county with 53 species.

To be sure, some of the county variation can be attributed to varying survey efforts. With that in mind, our goal this past season was to raise all counties to a minimum of 50 recorded species. Obviously, we made that goal. This coming summer raises the bar to a minimum of 75 species per county. This sounds tough, but it is still only requires finding slightly more than half of the Vermont species in each county. Eight counties are already there. In fact, three counties are over 100 (Rutland, Windham and

Essex). Besides Grand Isle, our targets for this coming summer (our last field season before publication on the odonate fauna of Vermont) will be Lamoille (56), Franklin (59), Orange (61), Orleans (67) and Caledonia (74).

Properly timed excursions to the right habitats should make this goal fairly easy to achieve (although Grand Isle could be a problem).

The other effort will be to focus on sensitive habitats (such as bogs and large rivers), no matter which county they are in. This is where some of our rarer and more threatened species occur.

Sometime we need not leave the comfort of our desk or a museum in order to boost the totals. About 20 county records have fallen this winter as museum specimens, old collecting records, and larvae from state surveys have been added to the database.

This is where VES members can help.

We welcome any and all data, and encourage anyone reading this to send us information about specimens you have or know of. We also encourage you to venture forth on your own and see what you can net! Detailed charts of damselflies and dragonflies species by county are available at

<http://campus.greenmtn.edu/dept/NS/Dragonfly/> and will be updated soon. We hope to have as many records as possible in our database by the beginning of April so as to guide our efforts this coming field season.

Mike Blust is studying Odonata in Vermont while on sabbatical from his position at Green Mountain College.



Celithemis elisa (Calico Pennant)



© Eloise Hedbor

Leps By The Dozen

We have about a thousand species of micro moths in Vermont. Many are plain little grey or brown moths. But many are astonishing in their beauty and diversity of form. These examples are larger micros; some of the most beautiful are even smaller. Next summer, have a close look. Capture them under a light, freeze them for a few hours, and have a close look with a magnifying glass. A new world awaits you!

- Jim Hedbor

1st Column (top to bottom)

Sparganothis niveana (Tortricidae)
Urola nivalis (Crambidae)
Hypsopygia costalis (Pyralidae)
Croesia forskaleana (Tortricidae)
Pyrausta orphisalis (Pyralidae)

2nd Column (top to bottom)

Lithacodes fasciola (Lymacodidae)
Vaxi critica (Crambidae)
Pandemis lamprosana (Tortricidae)
Lygropia rivulalis (Pyralidae)

3rd Column (top to bottom)

Sparganothis acerivorana (Tortricidae)
Argyrotaena quercifoliana (Tortricidae)
Sparganothis reticulatana (Tortricidae)
Munroessa icciusalis (Pyralidae)

One Man ... and Lots of Moths

(Continued from page 5)

information of unknown significance. New species, subspecies, range extension, who knows? Here are some numbers:

- 58 species pre-tortricid micros
- 58 tortricids
- 64 post tortricid micros
- 57 geometrids
- 1 apatelodid
- 5 lasiocampids
- 4 saturniids
- 5 sphingids
- 12 notodontids
- 10 arctiids
- 2 lymantrids
- 82 noctuids

I am still working on determining identities of the smaller

micros. That part of my synoptic collection will expand from two to six drawers. Many thanks to Mike Sabourin, who spent a Sunday afternoon in December determining tortricids!

By the way, this is by no means the whole species list for our 10 acres here in South Hero. Let us not forget everything that flies in the daytime, everything that doesn't come to lights, and everything that didn't come this year. But what a season.

Addendum: In addition to last year's light collection, 2007 is underway. January 6: 52 F. Two moths came to the mercury vapor light: *Hypena scabra*, a noctuid, and a dark gray tortricid, probably *Acleris* sp.

Jim Hedbor, one of the co-authors of the Checklist of Vermont Lepidoptera, is an amateur lepidopterist. A resident of South Hero for the last 28 years, he has been fascinated with and collected butterflies and moths since he lived in Rutland in 1956.



Vermont Entomological Society
49 Lover's Lane
Grand Isle, Vermont 05458

