



VES NEWS

The Newsletter of the Vermont Entomological Society

Number 55
Spring 2007



© Ron Kelley

On the web at www.VermontInsects.org



VES NEWS

The Newsletter of the
Vermont Entomological Society

VES Officers

Bryan Pfeiffer	<i>President</i>
Mary Burnham	<i>Vice President</i>
Trish Hanson	<i>Secretary</i>
Scott Griggs	<i>Treasurer</i>
Rachael Griggs	<i>Deputy Secretary/ Treasurer</i>

Emeritus Members

Joyce Bell
Ross Bell
John Grehan
Gordon Nielsen
Michael Sabourin
Mark Waskow

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:

Ron Kelley, Forest Insect & Disease Specialist at the Vermont Department of Forests, Parks and Recreation, took this image of *Saperda candida* (Round-headed Apple Tree Borer), a member of the Cerambycidae, in Morrisville on July 14, 2003.

Back Page Photo:

Oeneis arctic (Jutta Arctic) by Bryan Pfeiffer

See this newsletter in living color
on the web at:
www.VermontInsects.org

Contents

Number 55 ♦ Spring 2007

FEATURES

- ♦ **The Weevil, Fungus and Butternut** Page 5
By Shari Halik and Dale Bergdahl
- ♦ **Note on a Vermont Tortricid** Page 6
By Michael Sabourin
- ♦ **All-Taxa Inspiration in Boston** Page 7
By Jessica Rykken
- ♦ **Teaching With Insects** Page 8
By Rachel Van Houton

DEPARTMENTS

- ♦ **President's Report** Page 3
- ♦ **Field Notes** Page 4
*VES 2007 Spring Picnic, Diptera
Workshop, North Branch Nature Center
Celebration*
- ♦ **Entomological Calendar** Page 10
- ♦ **Book Review** Page 11

Check Your Mailing Label!

The upper right corner of your mailing label will inform you of the month and year your VES membership expires. So if it's time to renew, please send your \$10 to:

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

Thanks!

Size Doesn't Matter

By Bryan Pfeiffer

The tent, sleeping bag, dried food and other backpack essentials aren't enough for a hiking trip in the Grand Canyon. My pack needed two more items: a poet and a philosopher. That's because it is pointless (at least for me) to attempt to describe the lure and enormity of the Grand Canyon. The usual superlatives for beauty and size are feeble beneath these walls. And I've seen no photograph grand enough for this canyon.

So lacking the words and wisdom for the world's largest place, I'll turn to one of the world's smallest butterflies – *Brephidium exile*, the Western Pygmy-Blue. When it decides to spread its wings, this bronze-and-bluish micro-gem is 1.5 cm across. A speck, like the rest of us, in the world's best and biggest ditch.

Brephidium was flying bigtime (figuratively) along the Colorado River during my hike with Lori in late March. That I noticed it flying, with a mile of sedimentary rock rising above, only enhanced the hike. And that is the entomologist's advantage. We get two worlds. The big one most people see – and the miniature one most people overlook.

As we all know, the hand lens is a window to another universe, a world of innumerable six-legged wonders. It offers us complexity, beauty, entertainment and lessons in humility. We have no landscape as profound as the Grand Canyon here at home. Yet our smaller world always beckons – and we need not go far to experience its charms and discoveries. Who needs a Caribbean cruise when cerambycids are in our own backyards (see the front cover)? Want a museum of Impressionist paintings? Visit the underwing of a *Vanessa* butterfly species.

One other insect was notable in the Grand Canyon.

While hiking along a creek down a side canyon, Lori and I discovered caddisfly larvae (Trichoptera). These were stone-case builders. And a close look at those shelters revealed different bits of stone – probably spanning



© Bryan Pfeiffer

hundreds of millions of years of the sedimentary rock layered like lasagna above us. A grain of Hermit Shale (from mud 280 million years ago), a spec of Tapeats Sandstone (deposited 525 million years ago), and perhaps some Vishnu Schist (formed about 1.7 billions years ago).

Those layers of rock, and many others, were our constant, satisfying view of the world during our nine days below the Canyon's South Rim. The same "rocks" were the caddisfly's world as well. At least until it pupated and flew off as an adult.

And if there can be any message from a tiny butterfly in a big place, and a caddisfly using hundreds of millions of years worth of rock in order to fly for just a few days, I guess it is this: On the Grand Canyon's scale of size and time, backpackers and insects aren't very different at all.

VES President Bryan Pfeiffer specializes in butterflies and dragonflies.

© Bryan Pfeiffer



P.S. Don't forget to renew your VES membership. (See that gray box on the opposite page.)

VES's Spring Picnic - June 16

The VES annual spring picnic and field trip will feature some of Vermont's most unusual natural communities when we get a rare chance to visit Camp Johnson in Colchester.

On Saturday, June 16, we'll convene first for food at 11 am in the Vermont Agency of Natural Resources Complex at 111 West Street in Essex Junction. From I-89, take Exit 12 and drive north on Route 2A for approximately 3.5 miles toward Essex



Junction. After you cross the Winooski River, turn left on South Street and then in 0.3 miles bear right onto West Street. The complex is about 0.7 miles ahead. Look for the obvious green sign that says Agency of Natural Resources.

After the potluck picnic, we will head out (with nets) for Camp Johnson for our field session. The property includes Vermont's rare sandplain natural community. And its other varied habitats will certainly offer us a nice entomological mix. We'll be busy. So, don't forget to prepare a dish to share for the picnic, and prepare for an enriching afternoon afield with your friends and colleagues.

Focus on the Fly

On a very snowy St. Patrick's Day, a hardy bunch of folks interested in flies gathered in the Hills Building at the University of Vermont to learn more about our two-winged insects.

Dr. Don Chandler, entomologist and curator of the invertebrate collection at the University of New Hampshire, was an excellent teacher. Participants agreed that Don's approach and presentation were invaluable in improving our confidence and skill in identifying members of this often-challenging order of insects. He was able to distill out distinctive features without burying us in the kind of detail that would have sent novices screaming from the room.

Through a family-by-family slide presentation, along with simultaneous examinations of sets of flies and keys that Don had prepared for each participant's use, we became familiar with diagnostic characteristics of perhaps 35-40 families of flies.

VES is extraordinarily grateful to Don for his willingness to spend this snowy holiday with us and teach us many of the basics in fly classification and identification. Some of us who have been known to avoid fly identifications in the past are undoubtedly more likely to tackle them in the future. Thanks also go to Jon Turmel for making space available in his classroom and for providing microscopes for use by all participants.

- Trish Hanson

Vermont Bumblebee Project Update

By Leif Richardson

You have probably heard that honeybee colonies around the country are disappearing due to a mysterious new ailment called "colony collapse disorder." Less well appreciated are similar declines in some native bees, including bumblebees. Vermont has 19 species of bumblebee, at least five of which have largely disappeared from the state; some of these were once common, but are now gone from much of their former range in the eastern United States. There are a number of possible causes of these declines, including habitat loss, pesticide exposure, decimation by diseases imported with European bumblebees, and genetic factors. There is thus a real need to study the problem in Vermont.

To this end, the Vermont Bumblebee Project has been

working on writing a field guide to the species found here. So far, we have gathered information on the bees, studied collections at the University of Vermont and elsewhere, and written a series of keys for identification. We plan to include photographs and schematic drawings of each species, as well as information on natural history, ecology, and distribution. Despite our efforts, there is still much to be learned about bumblebees in Vermont. If you have bumblebee collections from around the state, we would like to see them. And if you are in the field this summer and want to collect bumblebees, we would be glad to identify them and add this information to the project. If you have specimens or would like more information, contact me at: leif.richardson@state.vt.us.

Leif Richardson is a biologist with the Vermont Nongame and Natural Heritage Program.

The Weevil, the Fungus and the Butternut

By Shari Halik and Dale Bergdahl

We came across a round, bumbling weevil (identified by Ross Bell as *Eubulus parochus*) while studying butternut canker, a disease caused by a lethal fungus thought to be introduced from overseas. The fungus is wiping out butternut throughout the tree's range in the eastern United States and southeastern Canada.

During a survey for potential insect vectors of this fungus from 1997 to 1999, we focused on *E. parochus* because of its fondness for butternut, especially dead and dying butternut infected with the fungus. We discovered very little information about its natural history and development. The beetle was reported to feed and breed in butternut in the late 1800s and early 1900s. Other possible host tree species were mentioned but remain unconfirmed.

While collecting adult beetles from freshly cut and fallen butternut stems and branches at the University of Vermont's Jericho Research Forest and the Berlin Town Forest, we made observations on the natural history and development of *E. parochus*. We also collected beetles from crowns of butternut trees by shaking branches with a long pole.

Eubulus parochus adults became active in April and May in north central Vermont and resumed feeding on dead bark of butternut. They fed in groups, in pairs, or singly, often right next to the fruiting structures of the fungus. Most adults were found in May and June.

Mating occurred in June and July, and females laid eggs in bark of dead butternut stems and large limbs through late August. Larvae of *E. parochus* tunneled and pupated beneath the bark, and most new adults emerged in August and September. We assume that *E. parochus* adults overwinter in the soil or duff layers near butternut trees or downed logs.

Each year, 30-40% of *E. parochus* adults carried spores of the fungus, with up to 780,000 spores recovered per individual. In the lab, we determined that spores remained viable on the weevils for at least 16 days.

In the field, we noted adults grazing on the fungal pegs that split open the outer bark of diseased branches to expose sticky masses of spores. Examination of fecal pellets from *E. parochus* revealed intact spores. In the lab, we found that spores remained in *E. parochus* digestive tracts for up to 24 hours after feeding and were still viable when deposited in fecal pellets.

While beating branches, we occasionally collected *E. parochus* from crowns of diseased butternut trees. As far as



Eubulus parochus

we know, *E. parochus* does not subsist on living, healthy butternut bark. But, the weevil carries spores externally and internally, and as it bumbles along in search of dead branches, may inadvertently drop spores and infect living butternut bark.

In a checklist of Curculionidae of North America, Central America, and the West Indies, O'Brien and Wibmer (1982) reported *E. parochus* from Canada to Florida and west to Iowa. Curiously, Florida is not within the natural range of butternut, but a closely related tree species, black walnut, is native as far south as northwestern Florida.

Hopefully, *E. parochus* uses this tree for feeding and breeding. If not, the weevil's existence is threatened along with that of butternut. The fungus has been found infecting branches of black walnut but has not caused tree death. Collection of *E. parochus* in Florida makes us suspect the weevil can rely on other tree species besides butternut, but this needs to be confirmed by entomologists in the field.

References:

O'Brien, C.W. and G.J. Wibmer. 1982. Annotated checklist of the weevils (Curculionidae sensu lato) of North America, Central America, and the West Indies (Coleoptera: Curculionoidea). Memoirs of the American Entomological Institute, No. 34. American Entomological Institute, Ann Arbor. 382pp.

Dale Bergdahl is a retired University of Vermont professor who spent 29 years teaching forest pathology and researching forest pathogens and insect vectors. Shari Halik is a former research technician at UVM.

Miscellaneous Note on a Vermont Tortricid (Lepidoptera): A Misidentification

By Michael Sabourin

In Grehan et al, 1995, lepidoptera species identification was done by known specialists, comparing specimens with museum collections, and with photographs and written descriptions in literature; the web was not a tool used at the time. Some misidentifications occurred for a variety of reasons. This note remedies one: *Endothenia montanana* (Kearfott, 1907), not *Endothenia heinrichi* McD. , 1929 of Grehan et al, 1995.

E. montanana (forewing length 6.5- 9mm; 6.5mm, Fig. 1) was identified as *E. heinrichi* in Grehan et al, 1995. Subsequent examination proved this to be a misidentification. The apical third of the forewing in *E. montanana* is variable in specimens with the nominate phenotype having a brownish white apical third of the forewing. Some specimens of *E. heinrichi* (forewing length 5- 7.5mm; 6 mm, Fig. 2) approach *E. montanana* in appearance and size, and have similar genitalic characters.

The principal difference between the two species is a hair-pencil (Fig.3) composed of mixed black and pale ochreous hairs, on the male hind tibia (McDunnough, 1929). The hair pencil is entirely lacking in males of *E. montanana* and is present in males of *E. heinrichi*. Photo images for *E. montanana* and *E. heinrichi* are available on the web at <http://mothphotographersgroup.msstate.edu/MainMenu.shtml>.

Material Examined:

E. montanana, VT, Colchester, male, 4 July 1993 (Fig.1); WI, Burnett Co., Grantsburg, male, 8 June 2000; W. Marshland, Crex Meadows, female, 25 May 1999. *E. heinrichi*, WI, Burnett Co., Grantsburg, male, 9 June 2000 (Fig.2); male 26 June 2001 (Fig.3); female 26 June 2001; female 26 June 2004.

References:

Grehan, J. R., B. L. Parker, G. R. Nielsen, D. H. Miller, J. D. Hedbor, M. Sabourin, & M. S. Griggs. 1995. Moths and butterflies of Vermont (Lepidoptera): a faunal checklist. Vermont Agr. Exp. Sta. and Vermont State Misc. Pub. 116, VMC Bull. 1, 95pp.

Kearfott, W. D. 1907. Microlepidoptera from the Black Mountain region of North Carolina, with descriptions of new species. Bulletin American Museum of Natural History 23:153- 167, Plate VIII.

McDunnough, J. 1929. Some apparently new Microlepidoptera. Canadian Entomologist 61:266-271.

Michael Sabourin, a Peacham resident, studies the taxonomy and natural history of Tortricid moths. He participated in the Vermont checklist published in 1995 and has had several journal articles published.



Figure 1: *Endothenia montanana*



Figure 2: *Endothenia heinrichi*



Figure 3: *Endothenia heinrichi*

All-Taxa Inspiration in Boston

By Jessica Rykken

If you've ever flown into Logan International Airport and peered out of the window during your descent, you've seen at least some of the 34 islands that make up the Boston Harbor Islands national park area. These islands range in size from tiny bedrock outcrops to 50 hectare forested drumlins (elongate glacial deposits), with the most distant islands being about 12 miles to sea from downtown Boston.

Over the last several hundred years, humans have had a large impact in shaping the natural history of the islands. Native American seasonal settlements, forts, schools, farms, hospitals, prisons, quarantines, fishing villages, light houses, a garbage dump, a nuclear missile storage facility, a brothel, and a horse rendering plant have all been on the islands at one time or another. Today, the islands within the national park are managed by federal, state, city, and non-profit agencies. Several of the islands comprise a state park, one is a privately owned nature reserve, another is home to an Outward Bound Education Center, and one serves as the location for the state-of-the-art sewage treatment plant that cleaned up Boston Harbor after its dubious honor of being the nation's most polluted harbor in the late 1980's.

What better place to do an All Taxa Biodiversity Inventory (ATBI)? This first phase of the project, during which we are focusing on insects and some other invertebrate groups, is a collaborative effort between the Museum of Comparative Zoology (MCZ) at Harvard University and the Boston Harbor Islands Partnership, which manages the islands. This turns out to be a very effective collaboration for an ATBI that tries to combine the scientific endeavor of recording biodiversity on the islands with lots of public outreach. Being so near a major urban center gives us a large audience and pool of students, teachers, volunteers, and other collaborators from which to draw. The National Park Service (NPS) provides logistical support and outreach opportunities through its ranger-led educational programs, and the MCZ offers one of the largest insect collections in the world, state-of-the-art digital imaging capabilities, lab facilities, affiliation with the Harvard Museum of Natural History, and a pool of eager undergraduate students looking for part-time work and research projects.

After one-and-a-half field seasons, we have surveyed intensively on seven of the islands, capturing among these a wide range of sizes, habitat types, and distances from the mainland. We've used malaise traps, pitfall traps, various kinds of light traps, and bee bowls, taken litter and soil samples, used nets and beating sheets, and have had the



Taking the subway to field work.

entire 5th grade from the Wellesley school district on their hands and knees searching for bugs as their "service project." Both in the lab and in the field, we've also harnessed the labor of NPS interns, several Harvard undergrads, public school teachers and students, state park rangers, and various other volunteers. Collecting enough material has not been a problem, it's the sorting, labeling, and putting names on everything that limits our progress as anyone involved with an ATBI knows too well.

Given that the islands represent the human-disturbed habitat typical of eastern Massachusetts one wouldn't be surprised to learn that the majority of our identified specimens thus far comprise the typical fauna of the region. However, the Boston Harbor Islands are somewhat unique in that they are, obviously, islands, and they lie in a major port of entry. To date, we have focused most of our taxonomic efforts on a few groups (i.e., focal taxa of generous, friendly taxonomists willing to donate time and expertise to the ATBI), including bees, ants, beetles, orthopterans, and syrphid flies. Among these groups, we have had some surprises, including: two new Massachusetts records for bees (*Megachile sculpturalis*, commonly known as the giant resin bee, from Asia, and *Lasioglossum asteris*, a North American native, but not previously known from New England); two as yet unidentifiable (by the experts) specimens in the wasp families Sphecidae and Pteromalidae; several new New England and/or state records for ants in the genera

(Continued on page 11)

Teaching With Insects

By Rachel Van Houton

Deb and Shawn taught a much-loved unit on black bears in their first grade classrooms. They loved the unit. The kids loved the unit. They had a local expert that came into the classroom to talk about bears. They read books about bears. So when the Montshire Museum was called in as consultant and partner to help make the curriculum more “inquiry based,” I realized I had my work cut out for me. The terms “first grade kids,” “hands-on learning” and “bears” seemed like a recipe for a disaster! How could we keep the kids’ (and teachers’) interest but also present a topic of study that was more accessible and also met the Vermont curriculum standards?

I came to be involved with these two wonderful teachers through the Montshire/Rivendell Partnership. The primary goal of the Partnership is to increase the opportunities for hands-on inquiry for students. Another very important component of this first goal is to develop new teaching skills for both Rivendell and Montshire staff. By working cooperatively and learning from each other, our respective expertise would come together, strengthening the lessons and how they were presented. We knew what we learned would extend into future units. Shortly after our first meeting, I received word that the teachers had decided to plan a unit on insects. My enthusiasm and activity ideas would come in handy and I knew I would learn a lot, too. I was also excited about working with the same kids for eight weeks, something I almost never get to do in my role as a museum educator.

Deb O’Brien teaches at Samuel Morey Elementary in Fairlee, and Shawn Gonyaw teaches at Westshire Elementary in West Fairlee. They brought a wealth of knowledge and skills but were not sure what an insect unit would look like. I had taught a couple insect workshops for kids so had some ideas to toss around. We met at Montshire to see the leafcutter ant colony, the bee hive and the Museum’s extensive pinned collection as inspiration for our curriculum plan. We decided the schools

would purchase dissecting microscopes to view insect anatomy. We browsed the gift shop for insect related books and interactives. We also found a collection of plastic insects that were anatomically accurate (three body segments, all legs attached to the thorax, etc.) for an activity focused on classifying insects. We sat down to outline an eight-week curriculum that would offer a wide variety of activities, for every kind of learning style. We planned field trips to



First graders at Samuel Morey enjoy observing mealworms.

© Rachel Van Houten

nearby trails and to the Museum. We thought about how we could integrate art and math.

The Vermont Grade Expectations were our guide to the experiences we would create: describing observations using senses, recording similarities and differences, drawing scientifically, sorting and classifying objects, generating new questions, studying life cycles and exploring energy flow in food webs. Insects are ideal model organisms for six-year-old scientists — they are intrinsically fascinating, their

life cycles happen within a short time frame, and some species are easy to raise and observe in the classroom, allowing an up-close, daily look at the way they grow and change. The students would look for insects on their own during recess and at home. They learned to take a sample of the plant on which they found the insect to help with identifica-

“It tickles when it walks on you.”

- An enlightened young entomologist

tion and how insects should be released after a day or so. And in my eyes the best lesson was that insects are important and really fun to watch — not gross, icky, slimy, dangerous, or scary. We did talk about avoiding touching bees and wasps, though.

Over the next few weeks I was a frequent visitor to the two first grade classrooms. We went out to the nearby trails to roll over dead logs, we took nets into the fields to look for grasshoppers and we searched tree bark for cryptic arthropods. I never worried that the students wouldn't find anything. Not only are insects ubiquitous, these kids had sharp eyes and had the advantage of being closer to the ground.

One day I visited Deb's class at Samuel Morey. I was barely in the door before students physically pulled me over to see their insects. Some Monarch caterpillars happily munched milkweed inside a net enclosure. A beetle scurried around a peanut butter jar among dead leaves, holes carefully punched in the lid. I asked the students what they noticed about the insects they had captured. "It tickles when it walks on you," "I can see the holes in the milkweed!" and "The feet hang on really good!" were only some of the facts students had gathered via their own astute observations.

Then it was time to get to work. Each student constructed a proper habitat for a mealworm in a baby food jar, including lots of bran for bedding and food, a slice of apple for moisture and a masking tape label. I reviewed appropriate handling procedure and each student was introduced to his or her very own mealworm. Many of the mealworms were named; one inexplicably received the appellation "Daniel Ichabod Jones."

The students made initial observations and created carefully constructed scientific drawings. I encouraged students to just record what they saw, which wasn't as simple a direction as I expected. I saw more than a few smiley faces on mealworms! I went around the room and gently critiqued their drawings. Does a mealworm really have antennae? How many legs does it have? How many segments? We also had to talk about how a mealworm is not a worm at all, but a larva. I described the familiar caterpillar as a larva, or "baby" form of some insects. The process of changing from one form to the other is called "metamorphosis." I was surprised at how quickly students



© Rachel Van Houten

even noticed the holes that the mealworms had chewed in the apple slice.

These observations led to all kinds of questions: Do mealworms eat wood? If a hole was drilled into an apple would the mealworm crawl inside? How long does it take a mealworm to bury itself in the bran? Do mealworms prefer bran or corn meal? Some of these questions became student-led experiments.

Eventually the mealworms CHANGED! They were shorter and now white with raised bumps on them that many students described as "wings." They didn't move much or eat. What was happening? The class still had the Monarchs in the butterfly tent. The students had seen how the caterpillar makes a chrysalis. We compared our mealworm pupae with the chrysalis and came to the conclusion that a similar thing might be happening to our larvae. I hadn't told the kids what their pupae would become, so most of the kids thought they would be butterflies. They waited, as patiently as first graders can wait, for something to happen.

I visited their class again the following week. I was greeted at the door of the classroom by a crowd of excited kids. "Beetles!" they cried. "Our pupas turned into beetles!"

Rachel Van Houten is a science educator at the Montshire Museum of Science in Norwich, Vt. She can be contacted at rachel.vanhouten@montshire.org.

grasped and used the vocabulary I introduced.

Over the next couple of weeks, students made daily observations. Some days nothing seemed to happen. Some students noticed their larva turning black. They quickly realized that these had died and didn't seem to mind having them replaced with another mealworm. As all the mealworms came from the same batch from the pet store, replacing a mealworm did not put that student's insect behind in development compared to the rest of the class. Students noticed that the mealworms would appear shiny just after they shed their exoskeletons. They often found the cast off "skin" in the bran bedding. They noticed that the mealworms would

bury themselves in the bran. They

Entomological Calendar

Fifth Annual Adamant Black Fly Festival

May 20 / 11am - 6pm / Calais, VT

The village of Adamant (in the town of Calais) is a-buzz with preparations for the Fifth Annual Adamant Blackfly Festival. The festival has become a cult classic and the focal point of the Central Vermont social season. For details visit www.blackflyfestival.org.

North Branch Nature Center Insect Walks

June 9 / 11am / Montpelier, VT

VES will help the North Branch Nature Center celebrate it's "Grand Re-Opening" and its new independence from the Vermont Institute of Natural Science. NBNC is planning a full day of activities — from bird walks to kids' events. The festivities are still being planned, but VES members can help by joining the event and leading ad-hoc insect walks in the fields, wetlands and along (and in) the North Branch of the Winooski River. Questions? Contact Chip Darmstadt at chip@northbranchnaturecenter.org.

VES Annual Spring Picnic and Field Trip

June 16 / 11am / Essex Junction, VT

The VES annual spring picnic and field trip will feature some of Vermont's most unusual natural communities when we get a rare chance to visit Camp Johnson in Colchester. We'll convene for food at 11 am in the Vermont Agency of Natural Resources Complex at 111 West Street in Essex Junction. After the picnic, we will head out for Camp Johnson for our field session. The property includes Vermont's rare sandplain natural community. Its other varied habitats will certainly offer us a nice entomological mix. We'll be busy. (See page 4 for directions.)

Annual Birds of Vermont Museum Insect Walk

July 8 / 10:30am - Noon / BOVM / Huntington, VT

Our annual butterfly walk at the museum has become a general insect walk. With our usual good turnout, most anything that flies, crawls, burrows or just sits there is fair game. Besides the insects, you'll have a chance to see Bob Spear's legendary collection of bird carvings in the Museum. Many of us pack a lunch and stick around after the walk.

Maine Spider Blitz

July 21-22 / Acadia National Park

This intensive survey will focus on spiders occurring in the Park using a wide variety of sampling techniques. Interested individuals, amateur and professional naturalists, are welcome to participate. The Blitz will run from 1 pm Saturday to 1 pm Sunday, July 21-22, 2007. For more Blitz information, or a registration form (pre-registration is required), visit the following web sites:

www.nps.gov/acad/naturescience/spiderblitz.htm

www.Colby.edu/mes or call Kelly Pontbriand at Acadia Natl. Park (207) 288-1316, Kelly_Pontbriand@nps.gov.

Annual Audubon Kid's Bug Walk

August 18 / 10:30am / Huntington, VT

All insect orders are fair game during this general insect walk, which is great for the entire family. We'll meet in the Sugar House Parking lot on Huntington Road.

More Insect Courses at Eagle Hill

By Laurie DiCesare

This summer, along with other natural history intensives, Humboldt Field Research Institute ("Eagle Hill") will offer three entomology classes. They include:

- ◆ Aquatic Invertebrates: Taxonomy, Ecology and Monitoring - June 17-23, 2007. Frederick H. SaintOurs, Consultant, Res. Assoc., University of Massachusetts.
- ◆ Odonata: Adult Damselflies and Dragonflies - July 22-28, 2007. Ron Butler, Prof., University of Maine, Farmington.
- ◆ EPT Taxa: Systematics and Biomonitoring: Ephemeroptera, Plecoptera and Trichoptera - August 5-11, 2007. Steven Burian, Prof., Southern CT State University.

Eagle Hill is a naturalist's paradise. The compact campus is located on a wooded hilltop just a half an hour north of Acadia (where some classes go for field studies) and adjacent to Petit Manan National Wildlife Refuge. The site includes modern classrooms and labs, cabins and tenting areas, a main meeting room and a dining hall with wrap-around windows that invite you look out into the woods - when you can pull yourself away from the vibrant conversation long enough to watch the wildlife. Classes are small so you usually get to know your classmates and have time to meet and converse with people who are attending other natural history classes. The food is amazing, too.

I've taught Elderhostel (Edible and Medicinal Plants and Ecology) there and have attended several botany classes, including Ethnobotany with Dr. James Duke (co-author of Peterson's Edible and Medicinal Plants) and an intensive inventory class with botanist/taxonomist Jerry Jenkins. College credits and CEUs are available. I'd highly recommend Eagle Hill for a delightful learning experience. Hope to see you there sometime. For more information contact: Humboldt Field Research Institute, P.O. Box 9, 59 Eagle Hill Road, Steuben, Maine 04680-0009. E-mail: office@eaglehill.us or <http://www.eaglehill.us>

VES member Laurie DiCesare is the Naturalist at Grand Isle State Park.

Book Review

Guide to the Wildlife Management Areas of Vermont. Vermont Fish and Wildlife Department, Agency of Natural Resources. Waterbury. 2006.

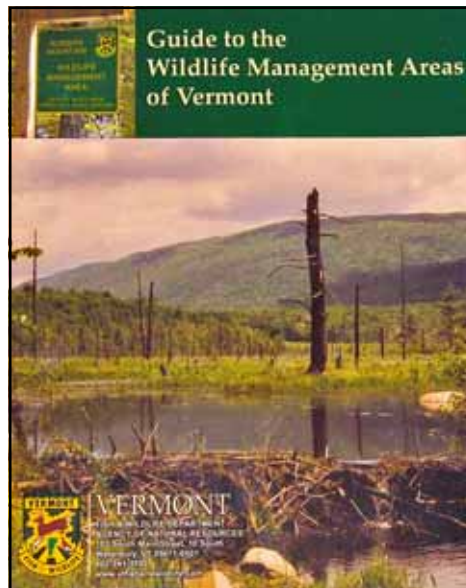
By Luke Curtis

This useful compendium provides maps and descriptions of the 81 Wildlife Management Areas (WMAs) currently administered by the Vermont Fish and Wildlife Department. Ranging in size from 60 acres for the Fairlee Marsh WMA to 22,738 for the West Mountain WMA in the Northeast Kingdom, these lands reflect a wide variety of historical land use and many have significant wetlands.

Text for each site includes a general description of current status and location, history of ownership and use, habitat features, and common fish and wildlife, including mammals, birds, reptiles, amphibians, and fish – *but no invertebrates*. Looks like a challenge to me.

On a facing page for each WMA is a map showing contours, roads and political boundaries, watercourses, and occasionally trails within the WMA. Be prepared to bushwhack and slog in many of these places.

Generally speaking, these WMAs are “open to regulated



hunting, trapping, fishing, hiking and wildlife viewing.”

This guide opens up a wide variety of possibilities for exploring public lands in the state. The layout is attractive, the WMA descriptions are comprehensive for the space allotted, and the

maps are all one could expect. It's up to the user to take it from there. This guide is available for \$16.27 through www.vtfishandwildlife.com.

Luke Curtis is a woodworker from Lincoln who enjoys observing wildlife. His tribute to stable flies appeared in the Summer 2006 issue of VES News.

Boston's ATBI Project

(Continued from page 7)

Camponotus, *Pyramica*, and *Myrmica*, and a new state record for a carabid beetle, *Amara bifrons*. We still have far to go with taxonomy, and we're sure to find more interesting records as the project continues.

Our data are being entered into a relational database developed here at the MCZ by Piotr Naskrecki (Mantis ©), and can be accessed by anyone through the project website (http://insects.oeb.harvard.edu/boston_islands/index.htm). In our effort to get non-insect enthusiasts excited about the diversity of insects we're finding on the islands, we've quickly realized that a museum drawer of 40 species of ants, while titillating to most of us on the entomology floor, is just a drawer of 40 tiny brown specks to most ordinary people. Luckily, we have access to the imaging room at the MCZ, and thus have been able to make stunning images of all identified species, and these are also included in the database. Bringing insects up to a scale where their bizarre morphologies can be fully appreciated has been key to impressing people about diversity on the islands. Another artful use of the images, developed by Brian Farrell at the MCZ, has been to make poster-sized “contact sheets” of, for example, 24 species of ants. Our newest poster, “Predators

of the Boston Harbor Islands” (including a centipede, pseudoscorpion, carabid beetle, and fishfly), will surely take people by surprise! The biggest hit though, has been the three-dimensional images of insects that we are able to produce. I routinely carry 70 pairs of red and blue 3-d glasses when giving talks about the project, and the images of horse fly and weevil heads zooming out from the screen elicit as many “oohs” and “aahs” from academics and land managers as from 2nd graders.

All-taxa biodiversity inventories are starting up all across the country and the world, and it's exciting to see the diversity of approaches among the projects. The Boston Harbor Islands ATBI is a great example of what is possible in a small, essentially urban park with limited resources. While we may not have the wild, natural splendor and diversity of the tropics, the Great Smoky Mountains, or the Adirondack Park, we are nonetheless making new discoveries, and also nurturing an interest and appreciation among the public of the amazing biodiversity that exists right here in Boston's backyard.

Jessica Rykken is a postdoctoral fellow at Harvard University's Museum of Comparative Zoology.



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

Oeneis jutta (Jutta Arctic)

© Bryan Pfeiffer

