The Vermont Entomological Society (VES) 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 arthropods. 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 $15 per year to:

Deb Kiel
147 Allen Irish Road
Underhill, VT 05489

2018 Memberships are Due
Check Your Mailing Label

The upper right corner of your mailing label will inform you of the month and year your VES membership expires. Dues are $15 and can be sent to our Treasurer:

Vermont Entomological Society
c/o Deb Kiel
147 Allen Irish Road
Underhill, VT 05489

For more information on the Vermont Entomological Society, visit www.VermontInsects.org
Bug Lady’s Sidekick or “The Accidental Entomologist”

By Trish Hanson

Our VES colleagues know that my husband, Luke Curtis has been a devoted supporter of my entomology work, collaborating with me on many insect-related endeavors, contributing and reviewing writings for this and other publications, and serving as VES treasurer from February 2013 through March 2017. Though we haven’t been able to participate fully in recent VES events, we hope to keep in contact with our VES friends. As part of this, I thought you would enjoy hearing more about how Luke became involved in our work.

Luke’s folks, Lucien (Luke) and Hazel Curtis, lived in Verona, New Jersey, a residential community that, in the 1940s and early 1950s, was surrounded by rural land and nearby woods. Adjacent to the large Curtis yard, the wild open lots afforded outdoor play space, setting the stage for the life of a naturalist.

In 1938, Luke Sr. purchased an old Vermont farm, our current home in Lincoln. As Luke Jr. was growing up in New Jersey, the farm became a place of legend. Although Luke Sr. came to see the farm as a future albatross, Hazel nurtured in her children a year-round craving for life on the bleak, rocky hill overlooking Mt. Abraham. When she and Luke Jr. were alone in Lincoln, they explored the unkempt fields, forest edges, and the woodland undergrowth and its inhabitants. They identified ferns and wild flowers and learned bird-songs. Both in Verona and Lincoln, Luke collected butterflies and always had a favorite species to stalk.

Luke came by his proficiency in mathematics and science naturally. His Dad was an RCA engineer, and Hazel, the daughter of a math teacher, was an MIT graduate in architecture. As a kid, Luke toyed with electric motors and decoders. He listened to WOR radio late into the night, and loved Jean Shepherd, the New York radio raconteur “whose rambling jazzlike monologues on the air puzzled many but delighted fans over two decades.”

After graduating from Verona High School, Luke headed for Dartmouth College, where he studied political science made some lifelong friends including Jeff Dann, who later travelled with Luke to Seattle, where they both eventually enrolled in University of Washington graduate programs in anthropology.

At the UW, Luke’s master’s work focused on cognition and applications of the theory of games in the behavioral sciences. In reviewing his thesis, I noted that, along with references to folks such as linguist Noam Chomsky and sociologist Erving Goffman, Luke also cited Karl von Frisch, so he likely had dancing bee communication on the brain along with the language of human culture. He and John Atkins contributed the chapter “Game Rules and the Rules of Culture” to the compendium Game Theory in the Behavioral Sciences, edited by Ira R. Buchler and Hugo G. Nutini in 1969. After he completed his MS, Luke continued his studies in cultural anthropology, finishing his coursework and passing his comprehensive exams, but eventually joining the ABD (All But Dissertation) crowd.
MEMBER PROFILE (Continued from page 3)

Luke and I met at Kunio and Shigeto Otani’s greenhouse in the Greenwood District of Seattle. Luke thrived under Shig’s mentorship, learning how to weld and mastering the art of poinsettia cuttings and culture. He also replaced much glass, since the greenhouse range was next to a boys’ club that had stones that begged to be picked up and tossed. (The Otani family gave direct insight into and a sad appreciation of the treatment of Japanese-Americans on the West Coast in the early 1940s.)

We moved to Vermont in 1979. After working at Claussen’s Greenhouse for several years, where he met VES member Sandy Wilmot, Luke was hired as a technician at UVM’s Entomology Research Lab. In that position, he assisted with a variety of projects ranging from gypsy moth surveys (including work with our new State Entomologist and VES member Judy Rosovsky as she pursued her MS); pear thrips survey field methodologies; development with VES member and former Forests Parks and Recreation Forest Health Specialist Ron Kelley, of a standard method for long-term monitoring, evaluation, and image analysis to track forest canopy health. He also spent several years censusing breeding bird populations in VT, MA, NY, and CT as part of the Cooperative Gypsy Moth Program. He often ran a light trap on our property to help John Grehan (one of the VES founders) and others catalog Vermont’s moth fauna.

In more recent years, along with assisting me with various insect-related projects, Luke helped transcribe Ross Bell’s book on Carabids, monitored plant phenology for FPR, and collected daily temperatures, and snow depths at our Lincoln site to help the Vermont Department of Fish and Wildlife track the Winter Severity Index.

Luke has three children. In Seattle, he became a father to Bay, an energetic little girl who grew up to be an energetic young woman. She and her Ontario-born husband Guy, and their children, Milo and Jove, live in Coles Island, New Brunswick. Our children, Ole and Lena, are both married; Ole and his wife Jamie, live in Philadelphia, are expecting a baby girl in May. Lena and her husband, Patrick, live in Port Townsend, WA, where I grew up.

Luke has been struggling with memory loss in recent years along with physical issues that keep him from joining me in the outdoor projects that we love, but I have fond memories of our many outings together, particularly most recently when we haunted ballfields around Vermont on a quest for buprestid-carrying Cerceris wasps, and when we attended VES functions and other work-related gatherings. Despite Luke’s health concerns, we continue to relish weekly music sessions with an informal couple of wisecrackers, VES member Dave Henderson who has contributed to VES News, and Eric Mortensen, who is a bottomless pit when it comes to jokes about insects and just about everything else. Together and separately, Luke and I have come to know and cherish our many bug-loving friends and other naturalists through VES and through my work with the State of Vermont.
By Judy Rosovsky

On February 19, 2018, a forester in Orange County was updating a current use management plan for a new client. He had recently attended a Forest Health meeting organized by the Vermont Department of Forests, Parks and Recreation (VT FPR) and was well informed about the signs and symptoms of the destructive forest pest, the Emerald Ash Borer (EAB) (*Agrilus planipennis*). He noticed dying trees and realized, upon closer inspection, that he was seeing EAB damage. We received his information through [vtinvasives.org](http://vtinvasives.org), a website designed for people to report invasive insect sightings.

Gwen Kozlowski works for the University of Vermont Extension, (UVM Ext), and she coordinates the invasive insect reports. She looked at the photos the forester then forwarded them to the other members of the team with the message “Yikes!” Fortuitously, there was a meeting to update the VT EAB Action Plan on Feb 20th, and members of that group volunteered to go and check out the report. To our regret, EAB was confirmed in Orange County, VT, and subsequently in Washington and Caledonia Counties. The towns in which these insects have been found to date are Orange, Plainfield, Groton and Barre.

For many years, the various agencies involved in searching for EAB had trained together to practice what we would do if an invasive pest was found in the state. Once the pest was confirmed, we took immediate steps to delineate the extent of the infestation. VT FPR took the lead, assisted by UVM Extension, Vermont Agency of Agriculture, Food and Markets, and the USDA. Visual road surveys of all of the towns abutting the infested towns have been completed. Follow-up crews are checking trees identified as “suspect,” and work is almost complete. That could change quickly, however, if another EAB is found in a new town.

What will happen to our forests once the EAB is established? The insect causes almost 100% ash tree mortality, and the survivors are not robust. Mortality takes place over one to five years, with healthy, large trees in new, low insect-density areas surviving the longest. Once the insect population increases, or if the targeted trees are weakened from any other source (basal wounding, drought, other abiotic factor or other insect attacks), mortality occurs sooner. In more urban areas, dead ash trees may become hazardous. The loss of almost all individuals of any species in a forest will have an ecological impact. Almost all North American ash species appear to be susceptible. Foresters now refer to the “aftermath forest” and use the phrase “functional...
extrapartation” to refer to the fate of the ash.

David Wagner, a former University of VT Entomology Research Lab post-doc, discussed the effects of the loss of ash on lepidopteran ash specialists (Wagner, 2007.) He lists 21 Lepidopteran species that require ash to some degree, including the Canadian Sphinx Moth *(Sphinx canadensis)* which is found in Black Ash swamps.

There are rays of hope. Resistant trees are out there, and we have learned lessons from the past. Foresters are trying to encourage landowners to leave some ash trees on their land, even small ones, to help identify resistant survivors. Our neighbors in New Hampshire have started to experiment with parasitoid wasps as bio-controls. The introduction of natural enemies will not eliminate tree death from EAB, but it will help suppress the insect population enough to allow some trees to reach maturity.

The EAB life cycle does not lend itself to control efforts since larvae can spend one to two years under the bark. The adult females lay eggs on protected areas of the bark. The larvae hatch about a week later and bore into the trees. It takes longer for the insect to mature in healthy trees, so some larvae overwinter for a second year. The adults start to emerge in May and need to feed on ash leaves before they lay eggs.

Emerald Ash Borers belong in the family Buprestidae, the flat-headed borers, metallic wood-boring beetles, or the jewel beetles. There are several native borers in the genus *Agrilus* in Vermont, including the Two-lined Ash Borer (*A. bilineatus*), and the Bronze Birch Borer (*A. anxius*.) We have learned more about our native fauna thanks to Trish Hanson and the Cercerid wasp-catching volunteers. Another family often associated with Buprestidae are the Cerambycids, known as round-headed borers or longhorned beetles. This group includes some native ash borers, such as the Redheaded Ash Borer (*Neoclytus acuminatus*) (MSU Extension, 2005.) The Cerambycidae family includes the dreaded Asian Longhorned Beetle (*Anoplophora glabripennis*) which has not yet appeared in Vermont…so don’t move firewood! Please report any suspicious potential invasive-insect sightings to [vtinvasives.org](http://vtinvasives.org). You can post photos, too, which are always welcome.

**References:**


By Jeff Freeman

The Big One is a one-inch, dark brown horse fly found in Addison County, Vermont. Standing near a horse in Weybridge, west of Middlebury, at a home on Snake Mountain Road in July, there is steady traffic of Upland Green-heads (*Tabanus quinquevittatus*) and Hairy-eyed Spot-wing horse flies (*Hybomitra lasiophthalma*) attempting to feed on horse blood. In the course of a week’s trapping there may be thousands of each, carefully collected into labeled freezer bags by Deb Laramie of Addison.

The Latin name of the hairy-eyed spot wing, *Lasiophthalma* refers to hairiness (*lasio*) and eyes (*ophthalma*). There are several obvious darkened spots on their wings. The Latin genus *Tabanus*, the horse fly, suggests that Romans experienced these horse flies too. In Latin, *calend* refers to the first day of the month. Each year, the Big One appears near the first day of August. “You can hear them as they are approaching”, we are told.

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<th>2015</th>
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My cooperator, Deb Laramie, hopes to see fewer Big Ones at, near, or on her horse, Journey. With beef cattle, their weight gain is reduced by pestering and blood feeding by tabanid flies. Less milk from dairy cows has led to large free-ranging barns with more adlib feeding and watering, different ways to handle manure, and not having to go get cows at milking time. Because of the measured negative effects on large livestock, economic entomologists have been called in to help.

My hope is to see if this is a true range extension by [actually] collecting the Big One along a north-south line back to where they have been found in New York in the past. I hope that the UVM collection will show our results.

Some 60 years ago, H. Tashiro at Cornell did the “home run” of tabanidology: adult-to-egg-to-adult rearing. Using this method, an investigator collects a horse fly, allows it to feed on blood, feeds it sugar water in a cage, provides it with an egg-laying surface and then rears the larvae for two years until they pupate and emerge as an adult. For this, you need to have a clean, well-
kept laboratory and provide individual rearing containers (They are cannibalistic). Each larva must be allowed to feed on a soft-bodied invertebrate, then must be washed and kept clean in an individual container.

Trapping Tabanidae at Addison led to three years of counting data on 43 species of tabanid flies in one location for the whole season, a first for this family in Vermont using a trap. *T. calens* represented a major part of this community. The two-tier trap, the horse, and the careful and regular collecting by Deb Laramie made this possible.

Was this abundance an isolated occurrence or was this the northern extreme of a continuous distribution of this species? This certainly was an isolated use of this trap. Previous range maps show that Vermont is just outside the northeast edge of the distribution of this species. Field work in August began in 2017. Hemenway Rd., Bridport; Dead Creek Flow WMA, W. Addison; and Stony Point Rd. next to Benson Landing in western Rutland County provided only sightings of *T. calens*, but we do not have any specimens on pins yet. A location in Hampton, NY, offers this study an interested horse owner and collector, a horse, and a place to put a 2-tier box trap in August.

Two things seem to influence finding *T. calens* in collections. First, they are very hard to catch with a net. Swinging and missing are common. Second, these flies take up much space in a collection, so any sense of numbers is missing. Sightings and being bothered by Big Ones outnumber actual captures, pinnings, labelings, and placing in a collection. They are easy to ignore. I want to intentionally place in Vermont’s Zadock Thompson NHM insect collection some well-documented examples of the Big One so there will be a Vermont record in place.

We now know how to collect *T. calens* and get it into a working collection. We know of the difficulties that go with collecting by net. One way to reduce populations of horse flies is to reduce larval habitat and egg-laying opportunities…but we do not yet know exactly where eggs are laid or where the precise larval habitat is.
May 6
Herrick’s Cove Wildlife Festival
Rockingham, VT
11 a.m.
VES will set up a small table and lead an afternoon insect walk.
Contact: Michael Sabourin, mothvet@yahoo.com, (802) 426-2133 or (802) 345-0644.
See www.nature-museum.org/herricks-cove-festival/.

June 3
Macrae Farm Park (WVPD)
Colchester, VT
10 a.m. to 1 p.m.
This easy walk includes many habitats (fields, wetlands, overview of the Winooski River) and a good variety of flora and fauna (dragonflies, frogs, wading and soaring birds; turtles)
Some areas may be wet so appropriate footwear is advised.
Directions: From the intersection of Heineberg Rd. (Route 127), Prim and Macrae Roads, follow Macrae Rd. about a mile to a wooden bridge at the park entrance. Parking is available before and beyond the bridge.
Contacts: Don Miller (leader), entdon@gmail.com, (802) 288-9766 or Laurie DiCesare, NatureHaven@MyFairPoint.net, (802) 893-1845.

June 24
Buckner Preserve (Nature Conservancy)
West Haven, VT
11 a.m.
Buckner Preserve is an amazing site that we visit yearly due to its diverse habitats. Boots and long pants are recommended; watch for snakes; no pets, please.

July 8
Birds of Vermont Museum
Huntington, VT
10 a.m. to 12 p.m.
Meet in the museum parking area and we will venture up to the pond and beyond. Call Museum (802) 434-2167 if raining to see if we have rescheduled.
Directions: Museum is 8 miles from I-89 Exit 11, Richmond. At the stoplight in Richmond Village, turn right (south) towards Huntington and follow the signs (5 miles). Turn on to Sherman Hollow, a dirt road, after crossing Huntington town line. The museum is one mile up, 1/2 mile past the Audubon Nature Center.
Contact: Michael Sabourin, mothvet@yahoo.com, (802) 426-2133 or (802) 345-0644.

July 21-22
Montpelier BioBlitz
Montpelier, VT
The Montpelier 2018 BioBlitz is a unique cross-city collaboration of the North Branch Nature Center, the Montpelier Parks Department, and the Montpelier Conservation Commission.
Information at montpelierbioblitz@gmail.com.
**July 29**

**Black River BioBlitz**  
**Springfield, VT**
Discovering the flora and fauna (butterflies, dragonflies, birds, mammals) of the lower Black River with experts from many fields. Bird Walk at nearby Muckross State Park (7 to 8 a.m.); Exhibitors set-up 8:30 a.m. at Hoyt’s Landing; open to the Public 10 a.m.; VES canoe/kayak at Hoyt’s Landing starts at 11 a.m. Shuttle bus available to nearby Muckross State Park for walking trails. **Contacts:** Kelly Stettner (Springfield), blackrivercleanup@gmail.com, (802) 738-0456, or Laurie DiCesare (Milton), NatureHaven@MyFairPoint.net, (802) 893-1845.

**August 4**

**Hogback Mt. Conservation Area**  
**Marlboro, VT**  
**11 a.m.**
VES walk in association with Cambridge (Mass.) Entomological Society.  
**Contact:** Scott Smyers, smyers@oxbowassociates.com, (978) 929-9058 x103 or Michael Sabourin, mothvet@yahoo.com, (802) 426-2133 or (802) 345-0644.  
See [www.hogbackvt.org](http://www.hogbackvt.org).

**August 19**

**Preston Pond**  
**West Bolton, VT**  
**11 a.m.**
From a small trailhead on Stage Road, we will take a leisurely, 1-hour walk on a gravel road and woodland trail (with hand-painted wildlife signs) to Preston Pond, a good site to look for dragonflies. Carpooling from Jonesville is encouraged.  
**Contact:** Laurie, NatureHaven@MyFairPoint.net, (802) 893-1845.

**September 22 (Rain date, Sept. 23)**

**Missisquoi National Wildlife Refuge**  
**Swanton, VT**  
**2 p.m. and 7 p.m.**
Meet at southern parking lot on Tabor Rd. near Steven Young Swamp at 2 p.m.; then meet at 7 PM at refuge visitors’ center on Tabor Rd. The event will focus on moths and other insects, depending on interests. The group will walk along the railroad passage trail adjacent Maquam Bog in the late afternoon; then set up lights at the visitor’s center in the evening.  
**Contact:** Michael Sabourin or Warren Kiel, dkiel1@hotmail.com, (802) 899-5039. For more about the refuge: [www.fws.gov/refuge/Missisquoi/about.html](http://www.fws.gov/refuge/Missisquoi/about.html).

**Victory Bog**  
**Victory, VT**  
**[Time and site to be determined]**
Explore Victory Bog and the vicinity with NEK Audubon (details pending). Michael Sabourin will lead a daytime field trip; Laura Tobin will do an evening “moth light”.  
**Contact:** Michael Sabourin, mothvet@yahoo.com, (802) 426-2133 or (802) 345-0644.

**Other Vermont Natural History / Insect Field Trips & Events:**

**July 11 – 15**

**Annual Lepidopterists’ Society Meeting**  
**Ottawa, Canada**  
See [www.lepsoc.org/content/annual-meeting](http://www.lepsoc.org/content/annual-meeting).

**Green Events List**
For Laurie’s current list with information on natural history programs and NatureHaven Day Camp (with $25 VES grant off first week).  
**Contact:** Laurie, NatureHaven@MyFairPoint.net, (802) 893-1845.
Bill Boccio’s “Favorite Things” Art Exhibit

In February, VES member Bill Boccio, whose insect photos have often graced our Newsletter covers, was invited to display some of his photographs at the Jericho Town Hall. Reporters from Mount Mansfield Community TV attended the artist’s reception and created an 8-minute video of the event. You may see the clip at https://vimeo.com/259754539.

Amazing Odonates: Dragonflies and Damselflies
by Laurie DiCesare

On March 29, Laurie DiCesare, a member of the Milton Conservation Commission (MCC) since 2003, presented a free, introductory show-and-tell program on Odonata (Dragonflies and Damselflies) to a small but attentive audience at the Milton Town Office. Dan Gaherty, the MCC Chairperson, introduced her and mentioned some of the local projects that the MCC has been working on this past year, including securing funding for an ADA-accessible walking trail at the Milton Town Forest, to help access the Milton Marsh, and working with the VT Youth Conservation Corps on bridge-work and trail re-routing at the Lamoille Riverwalk.

Using body language, Laurie described the differences between the diminutive “Dainty Damsels” with slender bodies and barbell-shaped eyes (and sometimes eyespots); and the “Mighty Dragons” with larger, broader bodies and multi-faceted, wrap-around eyes that sometimes look like sunglasses. She also described the basic wing differences, with Broad-winged Damselflies and Pond Damsels holding their four wings behind their thorax; dragonflies holding their wings perpendicular to their bodies; and Spreadwing Damselflies often holding their wings at a 45-degree angle to their bodies when they perch.

After considering a few points of history, from the primitive “Griffinfly” Meganeuropsis fossil with a 30-inch wingspan (Carboniferous Period, 325 million years ago… almost 100 million years before the advent of the dinosaurs in the Triassic) to Hopi rock art dragonfly symbols, Laurie described the life cycle of modern dragonflies, from predatory aquatic nymphs with piercing or scooping jaws; emergent tenerals drying their glistening wings in the sun; and mosquito-munching, flying adults.

Laurie also demonstrated the use of the conical butterfly/dragonfly net and handed out three door prizes: Stokes’ Beginner’s Guide to Dragonflies and Damselflies; a set of Laurie’s hand-made dragonfly note cards; and a copy of a recent VES Newsletter.
Photo by David Cappaert, Bugwood.org