



VES NEWS

The Newsletter of the Vermont Entomological Society

Number 113
Fall 2021



Enclosed Periodical Cicada (*Magicicada* sp.)
Photo: Declan McCabe

VES Officers

Michael Sabourin	<i>President</i>
Warren Kiel	<i>Vice President</i>
Deb Kiel	<i>Treasurer</i>
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Mark Waskow
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Rachel Griggs

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

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Summer 2021 Newsletter correction:

Laurie DiCesare wrote the review of Rick Cavasin's "Butterflies of Southern Quebec and Southern / Eastern Ontario" field guides.

Newsletter Schedule

Spring: Deadline April 7 - Publication May 1
Summer: Deadline July 7 - Publication August 1
Fall: Deadline October 7 - Publication November 1
Winter: Deadline January 7 - Publication February 1

Want to submit an article?

Please contact Laurie DiCesare NatureHaven@MyFairPoint.net, "VES News" on subject line, for Guidelines.

Membership 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





With the arrival of autumn, the outside field season for invertebrates is just about over. There may still be the occasional sighting of a butterfly, grasshopper, dragonfly, spider, etc. and some of us may still bait for moths or dredge for aquatics. One way to look at autumn (stick season) is as the see-more-clearly season. With the leaves gone, locations become more accessible and you can spend time exploring sites farther than you may have in the past.



The Vermont Entomological Society (VES) could use your help and participation. Our treasurer, Deb Kiel, informs us that “We desperately need someone to get edited newsletter copy into Publisher so we are not spending so much money on having it done for us.” Even when printing a minimal number of newsletters, we still lose money.

We also need individuals to help lead or record field trips, do Zoom presentations, provide copy for newsletters, do school programs, etc. For example, we had a recent request for someone to do a program on insects for a Daisy and Brownie troop located in southern Vermont, so the girls would be able to see some insects for their bug badge this winter.

A reminder to keep your dues current. VES is a membership organization and dues help pay for the newsletter as well as support other VES activities and the occasional stipend for a member to participate in an entomological related event. VES is a 501(c)(3) nonprofit and donations are tax deductible.

The VES annual meeting was held on Sept. 25. We were able to enjoy the camaraderie and potluck food while being outside at the North Branch Nature Center in Montpelier. Our VES officers will remain the same. Jim Talbot gave an update on the Zadock Thompson Zoological Collection (ZTSC) at the University of Vermont (UVM). It is now open to visitors, and VES members are encouraged to do so. Jim said help is certainly needed in getting specimens sorted to family. They could also use other resources such as keys for invertebrate identification. ZTSC still resides at the Blundell House on the UVM Redstone campus. It is anticipated that, in the future, a new construction near the UVM water tower will house the collection or the collection may move into a vacant

space created by another program moving into the new building.

Spender Hardy gave an update on his work with bee pollinators. Pollinators have received increased attention in Vermont. There have been past surveys on butterflies and bumblebees. Current work is being done with bees (Spencer and others) and ladybugs (Julia Pupko). I received a recent communication from Kent McFarland of Vermont Center for Ecostudies (VCE) that a second Butterfly Atlas will begin in 2023. Kent stated “It is hard to believe, but 2023 marks 20 years since we completed the first Vermont Butterfly Atlas.”

We did not set up any future field trips at the annual meeting as we hope to meet again in the spring. Ideally though, we should have at least 5 field trips next year to cover most sections of the state. The field events we held this past summer had a pretty decent participation.

July 17 was the Lake Raponda Field Day held jointly with the Lake Raponda Association (LRA) and Cambridge Entomological Club.; over thirty people participated. To quote Will Melton (LRA) “Great event in spite of the evening being a complete washout.” John Widness (LRA) noted that over a 100 new species were added to the Lake Raponda Watershed Survey Project. Will notes that the event identified 11 Raponda insects that had not been previously recorded on iNaturalist.

Will Melton has come up with the idea of creating a local Pollinator Playground using milkweed, Joe Pye weed, etc. that a bee person could use as a demonstration site for kids to learn about bees and other native pollinators. Since the plants would be bird/insect feeding rather than ornamental, it would be easy to establish. He imagines that a dozen or so insect-related projects could unfold there over time. Will's contact information is: will.melton@mac.com.



Tachnid Fly (Order Diptera)
Lake Rapond
Photo: Michael Sabourin

President's Message (continued)

We held two events this summer at the Birds of Vermont Museum (BOV). The traditional annual daytime butterfly and bug walk on July 11 and, new this year, an evening moth walk. On the day walk, we were accompanied by WCAX reporter Melissa Cooney. Her article later that day, "Families Find Out What's Buzzing with Vermont's Bugs", quoted Larry Haugh of the Green Mountain Audubon Society "with the insect walks as being great for getting people familiar with them (insects)." Aspiring entomologist Reed Hands Hubbard was able to learn even more about his favorite type of insect, the arachnid; quoted here "I relearned that spiders use their silk to protect their eggs. I had known that before I did this walk, but way before. I had forgotten, but then once I saw it again, I relearned it."

The moth walk was held on the evening of Aug. 27. It was trickier to plan as we had to consider the time if day that it gets dark as well as an optimal mothing opportunity. I brought along Tomato Hornworm caterpillars for assistance. There were just enough moths at bait and light, as well as caterpillars and other insects found by flashlights in the dark, to keep folks entertained. I was a little disappointed to have my recently-purchased, expensive UV flashlight out performed by cell phone flashlights. One good find at the lights that night was the tortricid moth *Ancylis sheppardana*.

I recently heard from Ken Sturm, the manager at Missisquoi National Wildlife Refuge (MNWR). He remarks that they started to assemble some invertebrate data for the refuge. Laurie DiCesare donated her MNWR species list from the Stephen J. Young Marsh and the Old RR Passage Trails to Ken Sturm's project. These lists were compiled from several visits to the site over four years (2018 -

2021) by Laurie and other VES members. I'm sure Ken would be glad to have VES members visit and add their observations. His contact:

ken_sturm@fws.gov.

As part of that MNWR invertebrate inventory project,

they have been working with VCE on the native bee inventory. So far, 123 bees had been collected by refuge staff. Some species of interest are: *Andrena bradleyi* (an uncommon blueberry specialist), *Andrena chromotricha* (a new species for New England!), *Bombus sandersoni* (an uncommon, cryptic species), *Colletes simulans* (Spine-shouldered Cellophane Bee), *Hylaeus nelumbous* (the only known location for this species in VT), *Megachile inermis* (Unarmed Leafcutter Bee) and *Megachile latimanus* (Broad-handed Leaf-cutter Bee).

Monarchs did pretty well this year. From August through September, I saw them on a regular basis while doing my mosquito routes. I do wonder however what the long-term effects of roadkill will have on their overall population.

We are excited to have Cynthia Christensen's Lady Bug's Day illustration on the back page and hope that you enter the contest for a free print. I'll end on that good note and wish everyone a pleasant winter.



Scott Symers with participants at Lake Raponda
Photo: Michael Sabourin



Virgin Tiger Moth (*Grammia virgo*) at Lake Raponda
Photo: Michael Sabourin



Melissa Cooney (right) and BOVM walk participants
Photo: Michael Sabourin



VES Annual Meeting at North Branch Nature Center (Sept. 25, 2021)

By Laurie DiCesare

The **North Branch Nature Center** on Elm Street in Montpelier was a beautiful setting for our VES annual meeting. A dozen insect enthusiasts walked the grounds and toured the museum before the pot luck lunch...which included a Monarch butterfly (*Danaus plexippus*) fly-by.

Jim Talbot shared a brief history of the **Vermont entomological collection** that was housed in Torrey Hall at UVM until the fire in 2017 when it was moved to Blundell House on Redstone Campus. Water-proof cabinets saved some of the specimens from water damage. New Cornell drawers have now been added. Digitizing of the approximately 500,000 specimens using the national iDigBio system is currently under way.

About 300 books survived the fire. Additional basic keys are needed. Trish Hanson said that the VT Forests, Parks & Recreation's Forest Biology Lab resource library is available. Michael Sabourin said we have nine boxes of reference books from Gordon Nielsen's estate.

Jim said that volunteers are needed. Jeff Freeman has been working on Tabanid flies with a volunteer. Jim lives nearby and has offered to open the museum if you contact him (jtalbot9172@gmail.com).

Spencer Hardy (a.k.a. "BeeBoy" on iNaturalist) talked about the Vermont Center for Ecostudies' (VCE's) **Wild Bee Atlas** of ~325 native Vermont bee species that he has been working on. He has acquired about 15,000 specimens from individuals and institutions from around the State which he is currently working on at home. Mary Burnham said State Entomologist Judy Rosovsky has some at the lab in Randolph. Michael said it would be interesting to compile a list of pollinators and associated plants.

As we went around the circle sharing our interests, Mark Ferguson



Pot Luck Lunch at Annual Meeting, NBNC
Photo: Laurie DiCesare

(VT Fish and Wildlife and VCE) said that he worked on the **VT Butterfly Survey** about 20 years ago for VT Natural Heritage. Laurie DiCesare said she helped collect butterfly photos for the project while working at Grand Isle State Park and appreciated the nets, tongs, collecting envelopes and expertise that helped her and the campers to be active participants.



Michael Sabourin, Carol Weyland et. al.
Photo: Laurie DiCesare

VES Annual Meeting at North Branch Nature Center (continued)

Michael said he's hoping we will be able to meet again in March 2022.

We appreciate the North Branch Nature Center and staffers for providing this space for our annual meeting with a tent, picnic benches and tour of the museum. 713 Elm Street, Montpelier, VT 05602. Phone: 802.229.6206. Office is open Mon. - Fri. 9 a.m. to 4 p.m.; trails open 24/7. See northbranchnaturecenter.org for more information.



NBNC Museum Trail Map Display
Photo: Laurie DiCesare

From the State Entomologist's Corner:

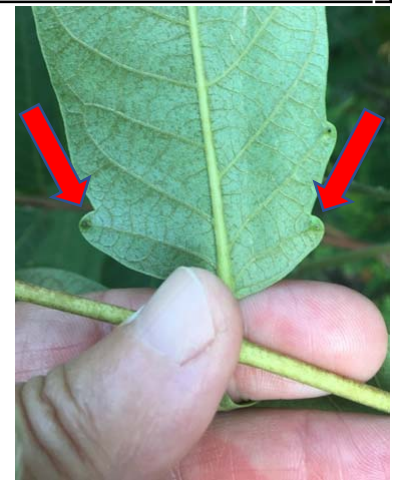
Illuminating the Spotted Lanternfly: the Infamous Fulgorid

By Judy Rosovsky

Until recently in the U.S., the Hemipteran family *Fulgoridae* was known, if at all, for their bright colors and elaborate head processes. There are 9 genera containing 17 species, all found in the southwest (University of Delaware, 2018.) An invasive Fulgorid species arrived, in 2014 or perhaps earlier, possibly as egg masses on a shipment of stone, and found itself in fertile pastures in Berks County, Pennsylvania or, more likely, in fertile vineyards. While their worldwide host species list contains 103 species, (172 species if trees on which eggs are laid are included), this insect has clear favorites among their host plants. The invasive Tree of Heaven (*Ailanthus altissima*), aka TOH, is its preferred host, but grapes (*Vitis* sp.) are sought out too. Silver and red maples, willows and black walnuts are quite attractive, but these planthoppers are found on many other species. What insect frequents invasives and vineyards and is fickle in its host preference and never stays around for long? It's the

Spotted Lanternfly (*Lycorma delicatula*) or SLF, that's hitchhiked to Pennsylvania from Asia and is making its way west through the US.

Lanternflies in either their native or introduced range aren't known to luminesce, though their illuminating name may have come from an observation by the 17th century European naturalist, Maria Sibylla Merian, who studied tropical insects (Tyrrell, 2020) and reported being given a box of lanternflies which produced a bright light (Logunov, 2018). In response to Logunov's post, Martin Laithwaite



Tree of Heaven
(*Ailanthus altissima*)
Basal leaf glands
Photo: Judy Rosovsky

Illuminating the Spotted Lanternfly: the Infamous Fulgorid (continued)



mentions that *Fulgora laternaria* has been recorded as luminescing while mating (Logunov, 2018) but admits this is difficult to observe and they are not particularly bright. (Wikipedia and several other sources all copying the same information claim that this is not true but provide no evidence or citations to support their rebuttal).

Lanternflies are voracious eaters but do not kill large trees as the Emerald Ash Borers do. They kill grapevines, and they can damage or stress trees, sometimes by the sheer weight of their numbers, and

sometimes from feeding damage. Smaller plants can also be injured or sometimes killed. Both the nymphs and adults feed on plants. One of the worst things that SLFs do is a by-product of their plant consumption. Planthoppers like SLF are akin to aphids and produce honeydew. At 20 times the size of an aphid, they produce a far more noticeable amount of honeydew. When Tree of Heaven plants are present, they attract many SLFs, so there is a great deal of honeydew. Neighborhoods in Pennsylvania were drenched in the sticky goo. The deck and deck furniture, the car, kids' toy bikes, and garden tools were all covered. The sticky honeydew is prone to sooty mold and attracts stinging insects, so you soon have a yard full of moldy, sticky surfaces with bees and their allies buzzing around.

Adult SLFs aggregate on Tree of Heaven. It was initially thought that the SLF needed the TOH in order to reproduce. That would make SLF management easier because once the *Ailanthus* trees were destroyed, the insects would be eliminated too, an invasive twofer. Researchers at Penn State University have now determined that SLF can

reproduce without their favorite host plant, though fertility is lower and development is delayed (Uyi *et al.*, 2020). This means that the range of SLF is not confined to the range of Tree of Heaven. TOH look very similar to staghorn sumac but they don't have the fuzzy branches (staghorns) and sumac leaves are serrated. TOH leaves are pinnately compound (they have pairs of leaves opposite each other and one at the top of the leaflet) and can easily be confused with ash, walnut and hickory leaflets (Jackson *et al.* 2021). TOH leaves also have glands at their bases (see image.) There are very few known locations of this tree in Vermont but that may be because no systematic survey has taken place. When state staff in New Hampshire started looking for TOH, they found a lot more of them than they thought they had, particularly on railroad and highway rights-of-way. Your help in locating these invasive plants would be very valuable to us. Please report them at www.VTinvsives.org.

If Vermont lacks the preferred TOH host, and if SLFs don't reproduce well without it, this insect may not easily become established in Vermont. While it is primarily a nuisance pest, it can harm grapevines and other crops as well (Leach and Briggs, 2021). Another limiting factor that may help VT is our colder temperatures. SLF egg masses are not deterred from establishment up north by the cold, as they can easily survive -15 F°, but the adults which are active from July to December, can be killed by frost. The nymphs occur between April and September and have so far thrived in the northeast.

The SLF was first detected in Pennsylvania and has expanded fairly rapidly, despite superlative efforts on the part of Pennsylvania's attempts to prevent or slow the



Front of Spotted Lanternfly (*Lycorma delicatula*) outreach card
Photo: Emelie Swackhamer, PA Dept. of Agriculture
Used with permission.

Illuminating the Spotted Lanternfly: the Infamous Fulgorid (continued)

spread. It is an excellent hitchhiker; the first SLF detected in New Jersey came in via a woman's purse; the second one came in on a basket. Ten states currently have SLF infestations: CT, DE, IN, MD, NJ, NY, OH, PA, VA and WV. Massachusetts is trying to fight off an infestation in Fitchburg near the New Hampshire border. Vermont has had three dead SLFs reported and had one regulatory incident where three live insects were found but all were killed. Several VT nurseries and landscapers had received trees from another state that had purchased maples from an SLF infested state that may have had SLF egg masses on them, but none were found on the trees sold to VT. No other SLFs have been found in surveys or in traps. With help from you as alert entomologists, and some luck, we can find and eliminate any visiting SLF before they become established.

References:

If you see spotted lanternfly or TOH, please help us by reporting it on www.VTinvasives.org.
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The preferred host of spotted lanternfly is tree-of-heaven, but it also attacks grapes, hops, fruit trees, & other trees and plants.



Report sightings at VTinvasives.org

Back of Spotted Lanternfly (*Lycorma delicatula*) outreach card
Photo: Emelie Swackhamer, PA Dept. of Agriculture
Used with permission.

From Kent McFarland and Vermont Center for Ecostudies

As November begins, we enter stick season, surrounded by the bare twigs of deciduous trees and shrubs. However, the lack of leaves reveals other jewels, if you know where to look for them—giant silk moth cocoons. Giant silk moths (*Saturniidae*) are massive by moth standards, including the well-known Luna Moth (*Actias luna*). In Vermont, five species in this group have been recorded: Luna Moth, Polyphemus Moth (*Antheraea polyphemus*), Cecropia Moth (*Hyalophora cecropia*), Prometheus Moth (*Callosamia promethea*), and Columbia Moth (*Hyalophora columbia*). These species overwinter as pupa, wrapped snugly in their silken cocoons. This November, the Vermont Atlas of Life is asking you all to join our Cocoon Watch on iNaturalist and help us find and photographing giant silk moth cocoons. Learn more about the project at <https://val.vtecostudies.org/missions/cocoon-watch/> and join us on iNaturalist at <https://www.inaturalist.org/.../vermont-giant-silk-moth...>

Thanks,
Kent



Cecropia Moth Cocoon.
Photo: Sean Beckett

The Dragonfly-Mercury Connections

By Kelly Stettner and Kate Buckman, PhD

"You are what you eat" is very true, especially for fish. While a fish can swim for miles before it is caught, the small aquatic creatures that it eats are usually a lot more local and can provide a window into what's happening in the food chain that might affect the fish at the top of it. We've all heard about mercury advisories for fish consumption...but where do fish get the mercury from, and what makes some areas more vulnerable to mercury build-up in the food chain? Researchers at Dartmouth College's Toxic Metals Superfund Research Program and their colleagues at the National Park Service, the US Geological Survey, and the Appalachian Mountain Club are looking at dragonfly larvae to help answer these questions. Volunteers with the Black River Action Team (BRAT) recently had the opportunity to assist one of these researchers, Dr. Kate Buckman, by collecting more than a dozen dragonfly larvae from below the surface of the Black River where it meets the Connecticut River in Springfield, VT.

Thick fog obscured the morning sky on September 25, but BRAT volunteer Barbara Casey made the trip from Grafton, VT to Hoyt's Landing in Springfield to assist with this effort, excited to build on her prior experience collecting aquatic macroinvertebrates. Less enthused about being up and out of the house early on a Saturday morning, homeschool student Armando Stettner helped his mom, BRAT Director Kelly Stettner, set up tables and prepare the processing station. Dr. Kate arrived and provided an overview of the project. Water samples were collected, and field tests run for a range of parameters - from dissolved oxygen to ammonia and pH, and several others - to get a sense of the kind of water the dragonfly nymphs were living in.

The next step was "dragon hunting"! As the sun burned through the fog to reveal a bright cyan autumn sky, D-nets were used to jab and scoop the shoreline vegetation and to dredge the top half-inch of fine sediment at the bottom of the cove. Eighteen nymphs were collected over the span of 45 minutes, and the largest fifteen were retained for use in the project. While the vast majority were of the Libellulidae or Corduliidae family, one Aeshnidae and one Gomphidae were collected and kept. The quartet of "dragon hunters" were treated to a fly-over by an



Armando Stettner (background) and Dr. Kate Buckman finding nymphs at White's Cove, Springfield, VT.
Photo: Kelly Stettner

American bald eagle!

Dr. Buckman and Dr. Celia Chen at Dartmouth have worked with various New Hampshire and Vermont schools for over a decade gathering dragonfly larvae to monitor mercury bioaccumulation, a project that grew out of the National Park Service Dragonfly Mercury Project. Along with Dr. Sarah Nelson at the Appalachian Mountain Club, they recently received funding from the Forest Ecosystem Monitoring Cooperative to continue and expand community science sampling efforts in NH and VT. This funding supported the collecting event with BRAT.

Dragonfly larvae are a good biomonitoring tool for mercury because they are abundant, are an important food source for many fish and birds, and reflect the



Larger nymphs are Emeralds (Corduliidae)
Photo: Kelly Stettner



local conditions in which they live. The data generated by the project will ultimately be used to help understand which water bodies may be at risk for mercury impairment.

Learning all we can about the other organisms we share our world with can help us understand the connections between our environment and ourselves. In the case of mercury bioaccumulation, it can also help us to make more informed decisions to protect environmental and human health. Plus, those little larvae are a lot of fun to catch!



B.R.A.T. volunteer Barbara Carey measures a nymph.
Photo: Dr. Kate Buckman

Species Accounts and a Simplified Key to the Bees of Vermont

By Spencer Hardy, Vermont Center for Ecostudies

It's no secret that insect identification is hard. Yet, for those of us who have spent time learning a particular group know that some species are instantly recognizable. Insects like the Chalk-fronted Corporal dragonfly (*Ladona julia*) or the Baltimore Checkerspot butterfly (*Euphydryas phaeton*) can often be identified from a distance or a poor photo. Though not nearly as well known, there are plenty of similar examples from the bee world. Thanks to a grant from UVM's Apis Fund, the Vermont Wild Bee Survey has put together an online guide to help casual observers and bee biologists learn more about the approximately 330 bee species found in Vermont.

This guide will always be a work in progress, but currently has a simple key and species accounts for most of the field-identifiable species found here. The key is designed to work best with images of live bees and focus on features visible to the naked eye. Through a combination of morphological features, phenology, and flower associations, the key directs users to the most likely species, or higher group when species-level identification isn't possible without a specimen. For each species, relevant ID and natural history information is (or will be) provided, along with a map showing all the Vermont records

that are published on Global Biodiversity Information Facility (GBIF). Also available on the same site is a list of plants that host specialist bees, which is a great place to start if you want to find uncommon or overlooked bees.



Ground-cherry Mining Bee (*Perdita halictoides*)
Photo by Spencer Hardy

Member Photos:



Common Buckeye Butterfly (*Junonia coenia*)
Photo: Bill Boccio
(Geprags Community Pk., Hinesburg, VT)



Monarch Butterfly (*Danaus plexippus*)
Photo: Bill Boccio
(Geprags Community Pk., Hinesburg, VT)

Volunteering at Zadock Thompson Zoological Collection, University of Vermont

Group Goals

1. Aid and improve the ZTZC and preserve its historical and scientific integrity for the future.
 2. Gain new skills and experience in a museum collection in a way that advances individual and institutional curiosity and knowledge.
- Promote greater appreciation of invertebrates, their diversity, and how they impact the world so that they may be respected and conserved in nature.

Group Projects

1. Barcoding and Digitization: digitize the insect collection according to the barcoding protocol; update the master list of barcodes, feed digitized specimens data into the iDIGBio national database.
 2. Collection Organization: verify insect specimen placement by family, genus and species; organize said collection; update species names and information.
- Collection Management: monitor insect collection for

pests; create a collection inventory; help coordinate community events such as periodic open house for youth and adults.

Senior volunteers are needed to work in each of the three group projects, and to guide and mentor university undergraduate volunteers in each. Undergraduate researchers can also help with your individual or group project, as need be. Hours are flexible, and a few hours a week minimum would be appreciated. We are located at the Blundell House, 342 S. Prospect St, Burlington, on the UVM Redstone Campus.

If interested, please coordinate through Jim Talbot, VES Member and regular volunteer: jtalbot9172@gmail.com and Telephone at (802) 598-2055

Species Profile: Northern Amber Bumble Bee (*Bombus borealis*)

By Abigail Castriotta, Vermont Center for Ecostudies (VCE)

The Northern Amber Bumble Bee (*Bombus borealis*) is one of Vermont's most eye-catching Bumble Bee species. With a beautiful amber color and slightly larger size than other *Bombus*, you likely won't miss it if it's around. The abdominal segments one through four (the closest segments to the thorax) are always yellow-amber with segment five occasionally being black. The thorax is yellow-amber with a black bar between the wing bases. *B. borealis* is one of two predominantly yellow *Bombus* species found in Vermont with the Golden Northern Bumble Bee (*Bombus fervidus*) being the other. In addition to the more amber tone of *B. borealis*, there are a few other characteristics to help differentiate between the two species. *B. borealis* has a thicker black bar between the wings, black instead of yellow beneath the wing bases, and a yellow face as opposed to the black face of *B. fervidus*. The Northern Amber Bumble Bee can be seen in Vermont into October but the flight period peaks in July.

As the name suggests, the Northern Amber Bumble Bee is native to North America with a range that spreads from Alaska and Canada to the northeastern portion of the United States. The range of the species in Vermont seems to be spreading southward since the early 2000s. Previously, the species was almost exclusively recorded in the northern part of the state but there are now more frequent sightings in the Champlain Valley and Central Vermont with a few records in the southern counties. *B. borealis* is not as common in the state as other species, such as the Common Eastern Bumble Bee (*B. impatiens*) and the Tricolored Bumble Bee (*B. ternarius*), but it may be locally common. The Northern Amber Bumble Bee prefers agricultural areas, meadows and shrub areas. Preferred flowers include Vetches (*Vicia*), Asters, Red Clover (*Trifolium pratense*) and Comfrey (*Symphytum officinale*). According to a Richardson, et. al. (2018) developed lands were negative predictors of *B. borealis* occurrence. Although the species is relatively uncommon in Vermont, this study also indicated that *B. borealis* populations have been increasing in the state. Overall, the population of *B. borealis* is considered stable.

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Northern Amber Bumble Bee (*Bombus borealis*)
Photo by Kent McFarland (VCE)



A Field Guide to the Ants of New England

A. M. Ellison, N. J. Gotelli, E. J. Farnsworth and G. D. Alpert. Yale Univ. P, New Haven, 398 pp.

I became interested in ants many years ago and have studied them off and on since, mostly by following the numerous writings of E.O. Wilson on the topic, arguable culminating in that encyclopedic tome, *The Ants*, which became a classic almost at the instant of its publication.

In *A Field Guide to the Ants of New England*, we have a field guide that is actually much more than the standard reference to a coterie of species. I have used this reference now for about five years and there are, in my opinion, few field guides even close to its overall excellence for any family-level of insects, at least for North America. Perhaps, with two exceptions, that is Yves Bousquet's book on the *Carabidae of Northeastern North America* (2010, 562 pp., Pensoft) and Jeffrey Skevington et. al.'s *Field Guide to the Flower Flies (Syrphidae) of Northeastern North America* (2019, 512 pp., Princeton.)

A Field Guide to the Ants of New England has superb keys, both dichotomous and matrix. It is extremely well illustrated with both superb black and white drawings; maps colored at county-level to show the distribution of individual species; and one or two pages of most species with colored photographs and/or the habitat of each. Each species account includes brief descriptions of habitat, geographic range, natural history and comparisons with other "look-alike" species. Each species description also has large, full-face and lateral, black-and-white drawings with arrows indicating key features used for identification. This practically leads the rank beginner by the hand to have a very high probability of making a correct identification of each of the 132 species that are known to nest in New England.

The 60-page introduction covers both practical aspects of how to best collect, curate and study ants; as well as superb discussions of the evolution, ecology and the behavior of ants. This tome is packed with information, unlike anything I've ever seen before in almost any field guide. There is an additional section (pp. 333-351) on the biogeography New England ants that is not just a primer on ants, but also on principles that can be applied to almost any group of insects.

Another feature that I find so unusual is the inclusion of information on undescribed species, known and thought to be eventually found in the area. In reading through the guide, the reader learns not just what is known about the ants of New England but also is encouraged to add to their knowledge. I personally find this a most refreshing approach.

Finally, there is a checklist to all New England ant species, an excellent bibliography and other sources of information. At \$15 a copy, the *Field Guide to the Ants of New England* could be the deal of the century.

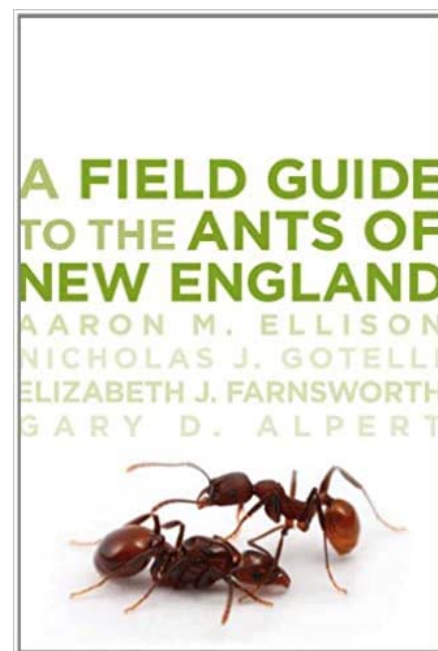
Aaron Ellison's *A Field Guide to the Ants of New England* (Yale University Press, 2012) is available for sale at \$15 each, inclusive of shipping - well below the \$40 list price. If you would like a copy, email Aaron at: s4@ssforss.com.

Reviewed by:

Donald H. Miller, Williston, VT; entdon@gmail.com.

References:

The Ants, E.O. Wilson and Bert Holldobler, 1990, Harvard (732 pp.)



Articles, Books and Programs of Interest



[Eagle Hill Institute Programs:](#)

Introduction to Spiders: Biology, Ecology, Behavior and Field Identification (Nov 15–29)- Eagle Hill Online Mini-Seminar. See Eaglehill.us/programs/seminars for more information about this and other programs.

[Maine Entomological Society News:](#)

Aaron Ellison has written and published *A Field Guide to the Ants of New England* (Yale University Press, 2012), which may be the first comprehensive field guide devoted to ants. He has a stock of them for sale at \$15 each, inclusive of shipping - well below the \$40 list price. If you would like a copy, email Aaron at: s4@ssfors.com.

Tiger Beetles: The Often Colorful "Butterflies" of the Beetle World by Bob Nelson, the first of the MES 2021-2022 webinar series, aired on Oct. 14, 2021. The program is available here: <https://www.maineentosociety.org/events/mes-webinar-series-tiger-beetles>. Access is free to all but a donation for Maine Entomological Society membership (\$15 per year) is appreciated.

Ladybugs of Maine (pdf poster): www.lostladybug.org/fileuploads/Maine6.pdf.

[North Branch Nature Center:](#)

The Nature Lending Library is Open!

We have more than 2,000 books to explore in our brand new Syz Family Nature Lending Library, including everything from bird taxonomy to environmental history to children's nonfiction. The library is open to the public, and NBNC members are invited to sign out books.

See info@NorthBranchNatureCenter.org for more information.



[Northern Woodlands:](#)

Ant-mimic Spiders: See northernwoodlands.org/outside_story/article/ant-mimic-spiders.
Great American Millipedes article by Declan McCabe, Summer 2021 issue, pg. 70.

[PBS Programs:](#)

Nature: My Garden of a Thousand Bees aired on October 20, 2021. Nature begins its 40th season with a story of surprise and revelation. A veteran wildlife cameraman, Martin Dohrn, is bee-obsessed. Seeking refuge from the pandemic in a small city garden, he filmed all the bees he could find in his tiny urban plot in Bristol, England during the COVID-19 lockdown. From giant bumble bees to scissor bees the size of a mosquito, by the end of the summer, Dohrn saw more than 60 species of bees and unlocked new knowledge about the diversity of personalities in this insect family. But more importantly, he developed a close relationship with an individual bee that he followed through its entire life. See: <https://www.pbs.org/wnet/nature/my-garden-thousand-bees-about/26263/#>.

NOVA: Edible Insects aired on Oct.20, 2021. This fascinating program includes insect-eating practices in many parts of the world, small- and large-scale propagation techniques and recent genetic research. Cicadas, crickets and caterpillars are highlighted...with a few eaten by entomology students and other volunteers. (For many, the insect powders were easier to swallow when disguised in cakes and pizza crusts.) Cultivating insects like crickets provides many time more protein and immune-system stimulating healing properties than meat production with much less water and feed consumption. Google: PBS NOVA Edible Insects.

Back Cover: Lady Bug's Day;

Markers & Pens Drawing by Cynthia Christensen

By Michael Sabourin

Cynthia Christensen is a Vermont artist, of Barre, VT. While drawing 'Lady Bug's Day', she shares, "I wanted to hold onto summer as long as possible, of which ladybugs are a part, and remind me of sweetness in life, appreciating simple joys. I love their red shells and white spots! I also drew 'Grasshopper Leaps' and 'Dragonfly's Sun Day' ...,all with great joy!"

"I totally enjoyed looking at the Vermont Entomological Society (VES) website, and several copies of your previous newsletters! My five-year-old grandson and I love picking up rocks and watching ants scurry below with their young's white sacks into their underground tunnels, and are kept fascinated by other insects too!"

Cynthia invites folks to visit/shop her art website <https://www.cynthiachristensenart.com> for prints/merchandise with her printed art. Contact Cynthia if interested in originals (18" x 24", Tom Bow Brush

Markers, Unibell Pens, Swarthmore Heavyweight Drawing Paper).

Announcing a free "Lady Bug's Day, 9 x 12" signed Photo Paper print Giveaway! To enter, add your email at hyperlink <https://www.cynthiachristensenart.com/ves-lady-bug-giveaway>, or at <https://www.cynthiachristensenart.com>, Use "Contact Me", under "Message" write VES-lady-bug-giveaway with your email, and Cynthia will add you to her list! Good luck!

A random winner will be chosen on Live FB video, Thursday, December 1st, 2021.

What a great Christmas present for someone and may entomologists of all ages enjoy "Lady Bug's Day"!

Cynthia thinks the contest will be a fun way to highlight VES's mission.





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



“Lady Bug’s Day” Marker & Pen Illustration by Cynthia Christensen.