



VES NEWS

The Newsletter of the Vermont Entomological Society

Number 114
Winter 2022



Tricolor Bumble Bee (*Bombus ternarius*)
on *Veronica* sp.
Photo: Patti Greene-Swif

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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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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?

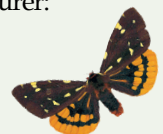
Please contact Laurie DiCesare NatureHaven@MyFairPoint.net,
"VES News" on subject line, for Guidelines.

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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





Greetings! By the time this newsletter reaches you, we'll be over the hump of winter and also hopefully this Covid virus that has put a hold on our activities for close to two years now. I did see a caddisfly walking on the ground just ahead of a recent cold snap. Two eminent entomologists that had ties to Vermont passed away recently; Drs. Edward O. Wilson and John E. Rawlins. I knew Dr. Rawlins personally. I first met him when I was identifying the moths at Torrey Hall for the checklist of Vermont lepidoptera. John verified my identifications and encouraged me to do more. He was always supportive of my work. He was someone that always had your back. In essence, I have to consider him a benefactor as material from Carnegie Museum of Natural History (CMNH) was a backbone of my early research such as the Lepidopteran Society's 2002 article: Revised Identities and New Species of *Aethes* From Midwestern North America (Tortricidae). Over the past decade, Dr. Rawlins and I collaborated on curating the tortricid collection at CMNH, allowing me the opportunity to identify many thousands of moths from across the country. It's hard for me to look around my bug room and not think of John.



At the time of his passing, John was curator emeritus of the Section of Invertebrate Zoology at Carnegie Museum of Natural History. John worked at CMNH for several decades, even coming in as much as possible after retirement. The museum website (<https://carnegiemnh.org/research/john-rawlins/>) gives John's primary research interests "as the systematics and phylogeny of Lepidoptera with emphasis on Noctuoidea", but John will be better known for his support of colleagues and institutions. John worked tirelessly to build up and maintain the CMNH collection. As Dr. David Wagner (University of CT) noted in a personal communication "Rawlins assembled one of the most valuable moth collections in the world. His greatest legacy will surely be his tremendous collections from Africa, South America, the Caribbean and still others."

John received his PhD from Cornell University

in 1982. He and his Cornell contemporaries such as J.G. Franclemont, Rich Brown, Tim McCabe, Rick Hoebeke, Dale Habeck, May Berenbaum, George Godfrey, Steven Passoa and Jim Carpenter are prominent if not iconic lepidopterists or entomologists. As someone said, John's passing was "the ending of an era".

I wanted to share some reflections. The past two years have been difficult at times for most of us. Dr. Rawlin's passing, JoAnne acquiring a James Hedbor cabinet, and a recent donation of books from the Gordon Nielsen estate certainly has me thinking.

One admirable trait of John Rawlins's was his perseverance and that is what I'll try to hold onto.

Remember when thinking of deferring taxes that the Vermont Entomological Society is a 501c3 nonprofit.

Ideally, we are hoping that the society can meet again this spring for a business/ planning meeting. No date has been set as yet but we would look to have a venue outside or with ready outside access.

Survey: We have been invited to participate in a forum on regional entomological societies at the Northeast Natural History Conference this coming April in Albany, NY. Your responses to the questionnaire below would be helpful:

1. Why is the organization important and what is the value(s) to the members?
2. Short term goals of the organization
3. Long term goals
4. Concerns and ideas to attract new members
5. Ideas for collaborating with related organizations

Send your responses to me at mothvet@yahoo.com.

Help is needed at the Zadock Thompson Zoological Collection (ZTZC). Jim Talbot could really use some assistance with maintaining the collection. With Covid, there have been fewer students participating at the collection. Jim could use help with curation, identification, even some run-of-the-mill house cleaning. To volunteer, contact him at jtalbot9172@gmail.com or 802- 5982055.

I'm looking forward to seeing folks this coming year. Meanwhile, Happy New Year!

Michael Sabourin
VES President

Member Profile:

Adam Kohl

By: Adam Kohl

My name is Adam Kohl and I live in Wendell, MA, not far from the borders of NH and VT. I was born and raised on Cape Cod, moving to Boston in my 20s, mostly for art and music. After dropping out of high school, I was introduced to mushroom identification through the writings of the composer John Cage. Inspired by the idea of naming things in nature, I became a mushroom forager, which led to foraging for plants too. I was hooked on recognizing life forms and, 20 years later, I'm still meeting new floral and faunal friends, even if I can't eat them!

A botanist and horticulturist, I was trained at Native Plant Trust in Framingham, MA. I became familiar with native plants by raising them from locally-collected seed and spores. This included designing and operating a fern-propagation lab while working at Nasami Farm in Whately, MA. When I left Nasami Farm, I started my own nursery at home which I still operate today. I sell plants to gardeners, designers and municipalities. I also use them in my own designs and home research gardens.

I am the Conservation Agent for the Town of Wendell, working with the Conservation Commission on issues pertaining to wetland protection. Separately, I offer services as a freelance naturalist which include rare plant surveys; habitat landscape consulting; seed collecting; garden design and entomological surveys. In 2021, I received funding from Gegear Lab at UMass Dartmouth to continue my research on nocturnal flower-visiting moths. I'll be collaborating with Dr. Gegear over the Winter on analyzing and publishing the results of my surveys.

When I'm not working, I'm probably still out looking for plants and insects. I catch and identify insects in town with my friend Bill Stubblefield, adding to a list of life in Wendell. I run lights on a sheet and survey flowers nocturnally at least once a week during the field season, recording my observations and contributing records to Mass Moths (massmoths.org). I'm also a volunteer contributor of plant records to the Flora of Franklin County, MA recently published by New England Botanical Society. I'm married and have two young children. All that

seems to keep me busy enough! I'm hoping to meet more VES folks in person down the line :) Thanks!



Adam Kohl collecting diurnal flower-visiting insects
Photo: Adam Kohl, Wendell, MA



Adam Kohl photographing hemlock looper moth (*Lambdina fiscellaria*) on *Nabalus* sp. flowers.
Photo by Matt Samolis, Barre, MA



Hemlock Looper Moth (*Lambdina fiscellaria*) on *Nabalus* sp. flowers.
Photo: Adam Kohl, Barre, MA



Hedbor Insect Cabinet Finds a New Home

By Joanne Russo

I never wanted an insect collection! A proper one needs organizing, maintenance, labeling, insect-prevention measures and a present and future place to reside. I did want to collect moths that needed dissection in order to go further than family or genus level; I needed to know the species. Once I started this, more and more moths began to accumulate in neatly-labeled boxes. When I put word out that I would aid others in this quest of species identification, I started to receive a few moths. For the most part, the senders weren't collectors so most didn't want the specimens back. As the years went



JoAnne Russo with cabinet on her car, South Hero, VT.
Photo: Michael Sabourin

on, more and more homeless, soon-to-be identified species arrived and filled more boxes. Probably the most moth specimens came from Aaron Hunt from Block Island who is doing an island-wide moth survey. He gives

boxes of micro-moths to Michael Sabourin and I identify his macro-moths. Aaron loves micro-moths, so these are returned but not the macros. Even when I helped Trish Hanson reorganize the Vermont insect collection into new Cornell drawers, I still didn't feel the need for a collection of my own.

On November 17, Michael Sabourin put out a message on our FaceBook Vermont Entomological Society page that read "free Cornell cabinet; open cabinet that holds 20 Cornell drawers. Made of solid wood with a dark mahogany finish; six feet 2 inches tall and ca 27 inches wide. Has been a living room fixture for decades. Now want it to go free to a good home where someone enjoys looking at bugs. Cornell drawers included." I decided to admit that I did have a collection and messaged Michael back saying I was interested in the cabinet.

On a sunny Sunday, my husband, Gerry, and I drove up to South Hero to the lakeside home of Eloise Roberts Hedbor, who was the generous donor of her late husband, Jim Hedbor's, handmade cabinet. Jim was a founding president of the Vermont



Hedbor Cabinet at JoAnne's home in Rockingham, VT.
Photo: JoAnne Russo

Entomological Society and co-author of the 1995 Vermont checklist for moths and butterflies. We carefully packaged the 20 drawers into the back of our car and roped the cabinet onto the roof rack. Eloise invited us into her home to see the amazing, painted insect cabinet and chest that Jim had made, which are family treasures. We didn't stay long, as it would be a slower than usual drive back to southeastern Vermont for us. Eloise had told us how, like me, Jim never intended to have an insect collection. But once he did, he made his own cabinet, this wonderful one which I have already started to fill with moths. Jim would surely be smiling that his cabinet holds specimens once again, and I have accepted the fact that I now have an insect collection.

References:

James David Hedbor obituary, <https://www.legacy.com/us/obituaries/burlingtonfreepress/name/james-hedbor-bituary?id=24616171> Aaron Hunt; bugguide contributing editor. <https://bugguide.net/user/view/101985> Gerry Biron; artist, www.gerrybiron.com



Spotted Lanternfly: The Well-dressed Invader

By Kelly Stettner

Wearing an elegant cloak of buff grey with undertones of blush rose, delicately speckled with a graduated pattern of tiny black dots, the spotted lanternfly would be at home on the runway of an upscale haute couture fashion gala. Beneath the cloak, this troublesome insect hides a flash of unapologetically brash cadmium and stark black-and-white underwings. This destructive, sap-sucking insect of Chinese origin does a better job at jumping than it does at flying, and has worked its way north from Pennsylvania, where it was first noted in the U.S. in 2014. I've been aware of *Lycorma delicatula* since environmental biologist (and insect enthusiast) Jennifer Forman-Orth began spreading the word several years ago. I've shared newsletters; written "BOLO" announcements to help the public "be on the lookout"; and have been a bit hypersensitized to watching for the lanternfly's telltale "goo" on tree trunks, a residual waste they leave behind.

The lanternfly's favorite host tree is another invasive species of Asian origin, the Tree-of-heaven (*Ailanthus altissima*), a quick-growing deciduous tree planted intentionally in Philadelphia in the 1700s and on the West Coast in the 1850s. It is a quickly-spreading thug, with roots that threaten roads and other infrastructures, and chemical secretions in the soil that keep native plants from taking root and thriving nearby. The poshly-dressed lanternfly, first documented in Pennsylvania in 2014, suspected of arriving in a shipment of stone from China, enjoys a broad menu and dines on all manner of trees and plants. The affected-species list includes an alarming array of agricultural and commercial plants including grapes, hops, sugar maples, fruit trees and many more.

On November 6, 2021, while cleaning out my desk in my Springfield, Vermont home office, I emptied a drawer, tossed some old papers into the recycle bin, and wiped the dust and pollen off my computer. When I came to the old plastic pen holder that I hadn't cleaned in far too long, I removed all the pens and pencils then upended it over my desk. Out

tumbled a sprinkling of pencil shavings, a dust bunny of epic proportions, and the desiccated remains of an insect with an all-too-familiar fashion sense: a long-deceased spotted lanternfly. I was both fascinated and horrified - how did it get here? How did it get inside, without me seeing it? We have two dogs who love to hunt any small critter that is scooting across the floor or flitting about in the air. With the leaf-hopping tendencies of this insect, I was amazed that it had somehow evaded detection.

I had to stop and ask myself "why?" That initial gut feeling of dismay and alarm is the all-too-common reaction to the announcement of any invasive species. There are so many invasive species that can takeover so quickly, we're never going to "win the war," so maybe just throw up our hands and allow apathy to take over, right? Species move, with or without our "assistance," regardless of our intentions or awareness.

Yet I believe that we can and should take action. My immediate, knee-jerk reaction to the discovery of the lanternfly in Springfield, VT should not be the endpoint. Instead, I believe that the alarm and ensuing apathy can and should be quickly overtaken by a much broader perspective, a push for a culture-wide, systemic paradigm shift. It is heartening to see a resurgence of interest in native and naturalized plants and trees, as a way to encourage not only use by humans for medicinal and agricultural purposes but also to provide habitat for native wildlife and insects. The awareness of invasive plant and tree species is just the beginning. Removing and managing their populations is the next step. The most vital step of all, in my view, is replacing them with more native and naturalized species. We may never rid ourselves of all problem species, but we can and should work enthusiastically and urgently to plant more of the better behaved native and naturalized species, thus supporting wildlife of all types as well as streambanks and structures. By planting more native, berry-bearing shrubs and trees, we can "passively recruit" birds and small animals to

Spotted Lanternfly: The Well-dressed Invader (continued)

pass along the seeds, thus helping the effort on another front.

So be heartened and steel your resolve. Speak up when you see an exotic plant among the offerings at a local landscape supply business or garden center. Encourage your community's garden club to use natives in their planting projects. Seek out and join any project to plant native trees and shrubs in your town. If you can't find one, start one. If more of us request native species from the market, demand will eventually shift the supply.



The unmistakable markings of Spotted Lanternfly (*Lycorma delicatula*)
Photo: Kelly Stettner

Discovering the *Olethreutes fraternanum* Moth (McDunnough) (Olethreutini, Tortricidae)

By Michael Sabourin

This summer, on June 19, 2021, while visiting one of my collecting sites near Richmond Pond, I discovered a small population of *Olethreutes fraternanum* moths (McDunnough). Climbing up the bank of a small rivulet associated with Richmond Brook, I noticed some permundana-like tortricids landing on alder leaves. I thought they could well be examples of *Olethreutes permundana* (Clemens) but there was the chance they could be *Olethreutes fraternanum* (McDunnough, 1922). *Olethreutes permundana* is an ubiquitous tortricid associated with *Rubus* sp. and blackberry was known to be at this site.

Olethreutes fraternanum was described by McDunnough (1922) as *Exartema fraternanum* from a single adult male collected in Ottawa, Ontario, on July 3 by C. H. Young. In the original description, McDunnough remarked on *E. fraternanum*'s similarity in appearance to *E. permundana* Clemens. That was confirmed by this author when I photographed and examined the *E. fraternanum* holotype during a visit to the Canadian National

Collection. My photograph of the type specimen is currently used as a plate photo for the species on the Moth Photographers Group website.

McDunnough's male genitalia figure of *E. fraternanum* (1922, Fig. 2) shows it to be of the *Exartema* type A group of *Olethreutes*. Heinrich (1926) characterized male specimens of *Exartema* as having two groups of spines on the harpe. One, a cluster of heavy spines at the base of the cucullus called Sp^1 and a second, Sp^2 cluster along the neck of the harpe. He divided the species of the genus into three categories based on the location of Sp^2 . *Exartema* type A specimens have the Sp^2 spine group on a digitus projecting from the neck of the harpe near the sacculus. Diakonoff (1973) synonymized the genus *Exartema* with *Olethreutes*. McDunnough (1942) reported rearing two male individuals of *E. fraternanum* on alder.

Since McDunnough's article, little if anything has been written on *Olethreutes fraternanum*. A goal of mine in revising nearctic "*Olethreutes*" has been to resolve the enigma of *O. fraternanum* and find an

Discovering the *Olethreutes fraternanum* Moth (McDunnough) (Olethreutini, Tortricidae)
(continued)



Fig. 1, *O. fraternanum*, male,
Richmond, VT
Photo: Michael Sabourin

associated female specimen. This has been done by dissecting the occasional male *permundana* pseudotype specimen to find some with characteristic type A genitalia. Then I looked for associated females with

genitalia differing from that of *O. permundana*. In June of 2007, my friend and colleague Steve Johnson of Sunbury, PA, collected a series of male moths in Warren Grove, NJ which resembled *O. permundana* and met the criteria of having type A male genitalia. In 2020, at the same locality, he was able to find associated females.

Fortuitously, that same year, he was also able to rear two female specimens collected in Pine Grove Mills and Arnot, PA from *Alnus* sp. These two females corresponded in genitalia with those previously collected in NJ.

The ground color of *Olethreutes fraternanum* (Fig.1) varies from brown to maroon. The forewing is 7 to 9 mm. long. The male genitalia (Fig.2) have



Fig. 2, *O. fraternanum*, male, Warren Grove, NJ
Photo: Michael Sabourin

Exartema type A genitalia. Female Exartema genitalia are noted for the sterigma's posterior parallel lobes. Those of *O. fraternanum* (Fig. 3) are subovate.

Like many *Olethreutes*, *O. fraternanum* can be collected both during the day and at lights. You can also look for their leaf-rolling larvae.

References:

- Diakonoff, A. 1973. The South Asiatic Olethreutini (Lepidoptera, Tortricidae). Zoologische Monographien. Rijksmuseum van Natuurlijke Historie (Leiden) 1:1-700.
Heinrich, C. 1926. Revision of the North American moths of the subfamilies Laspeyresinae and Olethreutinae. United States National Museum Bulletin. 132:1- 216.
McDunnough, J. 1922. Undescribed Lepidoptera in the Canadian National Collection. The Canadian Entomologist, 54:35-47.
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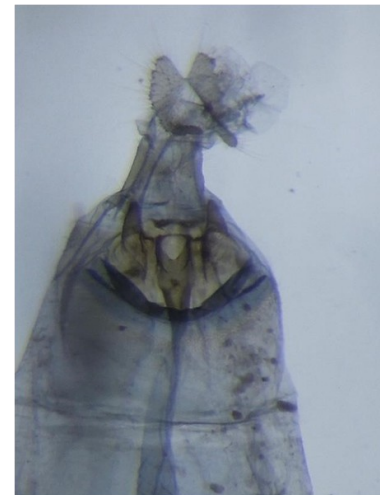


Fig. 3, *O. fraternanum*, female, Warren Grove, NJ
Photo: Michael Sabourin

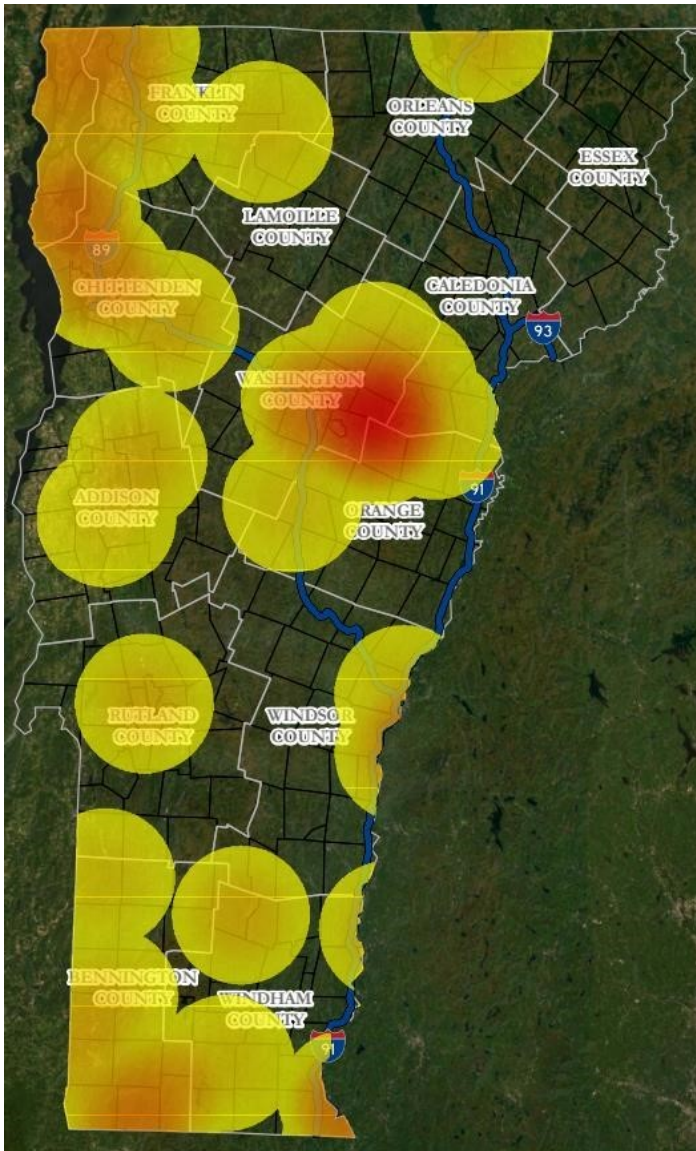
Emerald Ash Borer Update

By Savannah Ferreira

Emerald Ash Borer (EAB), *Agrilus planipennis*, was first discovered in Vermont in February 2018, and new detections continued in 2021. This year, monitoring efforts resulted in the discovery of 15 newly-infested towns. New towns include Belvidere, Berlin, Brookfield, Colchester, East Montpelier, Grand Isle, Hartford, Highgate, Middlebury, North Hero, Rupert, Saint Albans Town, Shaftsbury, Vernon and Wilmington. New counties with EAB this year include Lamoille and Windsor counties. Essex county is currently the only county in the state without a confirmed detection. The State of Vermont's management strategy continues to focus on providing

recommendations on slowing the spread of EAB and for managing ash in urban and forested landscapes.

The Vermont Department of Forests, Parks and Recreation had its second successful year of biocontrol releases in 2021. Established release sites include L. R. Jones State Forest in Plainfield and a private property in the Town of South Hero. The first year of releases (2020) included *Tetrastichus planipennisi* exclusively, with over 4,300 wasps released at each site. In 2021, all three parasitoids were available for release, and each site received at least 4,000 *T. planipennisi*, 1,100 *Spathius galinae*, and 1,000 *Oobius agrili*. Recovery efforts will begin in 2022 for *T. planipennisi*, with another year of releases for both *S. galinae* and *O. agrili*. New sites for biocontrol releases in 2022 have been submitted to USDA Animal and Plant Health Inspection Service, Plant Protection and Quarantine (APHIS-PPQ) for consideration in the program.



EAB larval parasitoid
(*Tetrastichus planipennisi*)
Photo: David Cappaert, Bugwood.org



These biocontrol agents are tiny, stingless wasps that parasitize EAB by laying eggs in either EAB eggs or larvae, where they eventually hatch and grow, and ultimately kill the larvae/egg. They are known to target EAB exclusively, and do not parasitize other insects or pose a human health risk. The goal of these releases is not to eradicate EAB (which is considered impossible in the U.S. at this point) but to establish a self-sustaining population of the parasitic wasps that will improve ash regeneration and lessen the impact of EAB in infested areas in Vermont. Map of emerald ash borer-infested areas (December 2021): For each infested area, the relative EAB infestation severity is represented along a color spectrum. A dark orange infested area indicates a severe infestation; a yellow infested area indicates a less severe infestation. The “confirmed infested areas” are within five miles of these

locations. High-risk areas extend five miles from the outside of the confirmed infested areas; EAB is likely expanding into and present in some of these areas.

References:

Savannah Ferreira is a Forest Health Specialist for the VT Agency of Natural Resources, Dept. of Forests, Parks and Recreation.



EAB larval parasitoid (*Spathius galinae*)
Photo: David Cappaert, Bugwood.org



EAB egg parasitoid (*Oobius agrili*) parasitizing EAB egg.
Photo: Houping Liu, Michigan State Univ., Bugwood.org

Resources

VCE Resources: Milkweed Specialists and Bumble Bees of New England

By Abbie Castriotta

I'm Abbie Castriotta, the ECO AmeriCorps member with the Vermont Center for Ecostudies (VCE). (I wrote a short article for the VES Fall Newsletter about the Northern Amber Bumble Bee). One of the projects I am engaged with involves surveying for pollinators and milkweed specialists along power line corridors. This fall my supervisor, Jason Hill, and I realized that to make species identification easier for the community scientists, interns, and staff biologists in the field, we would need a concise yet comprehensive guide. We struggled to find a guide to Milkweed Specialist Insects that fit our needs so set out to create our own. We are sharing the guide with organizations doing great work on insect monitoring and conservation, hoping that it will be distributed among scientists and home gardeners. With more observations of these insects by community scientists from databases such as iNaturalist and eButterfly, we will be able to fill gaps in knowledge surrounding life cycle events, distribution and

population size of these insects.

To download your Milkweed Specialist Insects Guide, see:

<https://vtecostudies.org/wp-content/uploads/2022/01/Milkweed-Specialist-Insects-Guide.pdf>

Bumble Bee Guides:

Here is the link to the page that houses both of the Bumble Bee Guides:

<https://val.vtecostudies.org/projects/vtbees/bombus>

Here is the direct link to the illustrated one-pager:

<https://val.vtecostudies.org/wp-content/uploads/2022/01/BombusIllustrationsFinal-1-2.pdf>

And here is the direct link to the two-page guide:

<http://val.vtecostudies.org/wp-content/uploads/2021/11/BombusIDGuideFinal-1.pdf>

European Wool-Carder Bees in Barton, VT

By Jody Frey and Andree Reno Sanborn

Facebook Messenger Conversation

Jody: It's a carder bee! Of course it is!

Andree: With the curly antennae?

Jody: No, with all the campion fluff. They are called wool-carders. Imagine the soft-knitted linings in the carder queen's winter quarters.

Andree: Wow!

Jody: It was the coolest thing Andree. I saw it nipping off the stem hairs and making a fluff-wad on its belly.

Andree: How could you tell what it was doing?

Jody: I was trying to take the picture and it kept messing around the stem instead of the flower. Then I looked at the photo and saw it was gripping a cotton ball between its legs. It was scraping the stem, like the wasps scrape the daylily buds.

Andree: Gee.

Jody: Gruesomely fascinating. I imagine the scraping sound is like our baby caterpillars chomping on parsley. Either that, or the sound of my mother's good shears cutting through fabric. I am in loooooove!

Despite her years of teaching fiber arts, and her years of growing plants for fiber and for dyes, Jody had no idea such a thing as a wool-carder bee existed until she started photographing insects in her garden. Now the wool-carder bee is a kind of totem for her, representing the powerful connections between gardening, arts and community science.

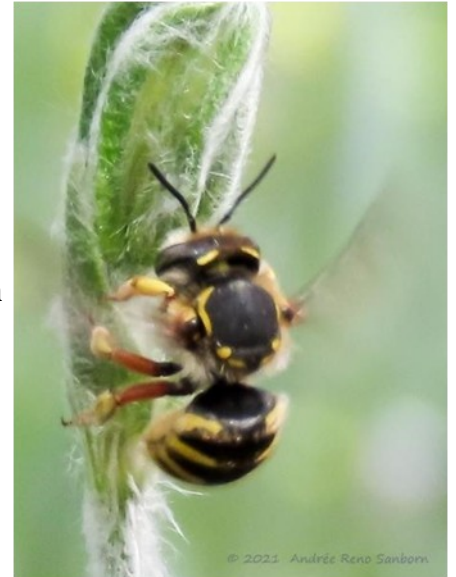
Jody's gardens taught her about wool-carder bees and she taught me. They are fascinating to us, as we watch these tiny insects harvest plant hairs. They use the fibers in the same way that a mouse, a bird or a human artisan would, to make soft, warm beds for their offspring. Do the European wool-carders displace any native bees? The males are quite aggressive and will run off other insects and even hummingbirds from their territory. Jody's garden, though only a few thousand square feet in area, is so varied that I doubt that the wool-carders deterred the multitude of her other bees. She has documented at least 42 different species of bees, including 9 different bumblebee species at her home in the Village of Orleans, VT. She hasn't seen any kind of competition at all for fiber, neither on the campion nor any other fuzzy plant.

In Jody's observations, the wool-carder bees' most territorial activity is around patches of lemon balm and flowering spikes of foxglove. In those places, a male wool carder bee's behaviors include darting and patrolling. The bee stays in nearly constant vigorous motion, so that a photographer's eye has only an instant to recognize the

characteristic yellow-and-black patterning before the bee reverts to a noisy blur. In contrast, the female wool-gathering behaviors are more sedate. Having selected a likely stem of campion, she efficiently shears off plant hairs with her mandibles. With her front legs, she packs the loose fibers into a lint ball that is held between her middle legs. The gathering lasts only a minute or two, less if the bee is spooked. Occasionally a spooked bee will abandon her fibers altogether, but more often she will leave with whatever she's gathered. She may return to a nearby stem, but only after she's flown reconnaissance at least once.

I live in Barton Town, seven miles from Jody, but in a completely different habitat of wetlands, forest and meadow with no cultivated areas except some mowed lawn. I have only found 7 different bumblebee species here. (My jealousy of Jody's abundant *Bombus* species runneth over.)

This year, once the wool-carders appeared in her garden, I ran over and photographed them myself (for my life list). I also sat many times near my own wild mullein plants waiting for wool carders to show up, but they did not. Jody usually finds them on rose campion and occasionally lemon balm. In my reading, lamb's ear seems to be their preferred fibrous plant



Woolcarder Bee

(*Anthidium manicatum*)

Photo: Andrée Reno Sanborn

but I read that mullein is up on their favorites list, also. My problem with finding the wool-carder bees is that they simply are not in my area. Do cultivated gardens lure them? I need to plant some rose campion to find out. But then I would also need to provide them with blue, long-throated flowers that they prefer. My conflict: any energy I may expend to attract wool-carders could possibly be at the expense of my native bees.

Jody and I have not yet found a wool-carder nest but we intend to keep looking no matter how long it takes. These are solitary bees, so we may need to follow each female back to her nest individually. Jody notes that the fluff-laden bees rise to about six feet above the campion patch and zoom purposefully off with their wad. Property boundaries and neighborly courtesy forbid the kind of steeplechase the bees invite. The females are said to nest in premade cavities high above the ground. In Jody's neighborhood, full of street trees and hundred-year-old wooden houses, the possibilities are endless.

Taxonomy confusion

If you do an Internet search on "wool-carder bees", you can become entangled in taxonomy. So far, the two species of wool-carders found in Vermont are the European Wool-Carder Bee we have photographed (*Anthidium manicatum*) and, the Oblong Wool-carder Bee (*Anthidium oblongatum*), which we have not yet seen. The *Anthidium* genus is in the tribe *Anthidiini*.

In your research, you may bump into *Bombus pascuorum*, the common carder bee of Europe (*Bombus pascuorum*) or the large carder or moss-carder bee (*Bombus muscorum*) of the UK which are in the tribe *Bombini*. Both species card grasses and/or mosses for nest materials. I mis-attributed many behaviors to our wool carders because I failed to pay attention to the taxon.

Philosophical dilemma

I could describe *Anthidium manicatum* as "a tiny bee who cares so much for her young that she makes soft, warm beds for them." Anthropomorphizing. Yes, I am. I do it all the time. This tendency of mine is disdained by some scientists. This habit can lead to all sorts of problems, including even the mistreatment of wild animals when taken in

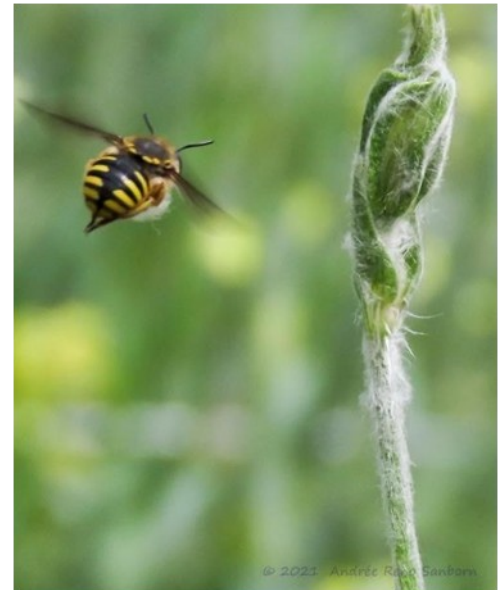
as pets. What I am talking about here, however, is anthropomorphizing in the field and classroom.

Jody and I constantly wonder aloud one word: "Why?" Why is that bug colored the way it is? Why does it move in that way? Why does it even exist? The questions pop up endlessly and the lessons we learn often teach us about ourselves. We constantly zig and zag with no overarching research objective except to learn more and document all that we can.

We both anthropomorphize bug behaviors. We even create dialogues that we imagine the bugs could have, as if they were characters in *The Wind in the Willows*. Identifying with a behavior that a non-human species has, which we may rightly or wrongly assign a motive to, is what creates empathy for other creatures so that we may step up and protect and defend other species. When we learn about other species, we can identify more easily with them and respect their right to survival.

Kristie Reddick and Jessica Honaker, *The Bug Chicks*, have taken anthropomorphization and turned it inside out. Their entomology curriculum, *Different*, uses social-emotional education goals in entomology. It teaches children that they can connect with both their own human world and the natural world. They learn to view themselves with higher regard and learn what they are capable of. They also develop empathy for creatures that are different and may be misunderstood.

I have used the curriculum twice in two different classes, with two different age groups. Children start the curriculum with an overload of misinformation about arthropods: poisonous caterpillars, we eat many spiders every night in our sleep . . . the list goes on and on. Children can be



Wool-carder Bee
(*Anthidium manicatum*)
Photo: Andree Reno Sanborn



very efficient arthropod killers. After reconnecting with the natural world through *Different*, they stop killing. Instead, they start moving arthropods to more suitable places. During the school year, they bring me bugs every day. They share what they have noticed at home. They have reconnected to their natural world and begin to ask questions like: “*Why?*”

Wool-carder Bees (*Anthidium* spp.) are not native but they seem to be non-invasive. Children can learn to relate to them and then relate to other arthropods. Global trade and the migration of people and animals have caused many species to diversify and expand their habitats. The only solution to this mess that I see is acceptance. Many of these new species, like *Anthidium* spp., can be thoroughly enjoyed.

*“When you realize the value of all life,
you dwell less on what is past
and concentrate more on the
preservation of the future.”*

Dian Fossey

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Wool Carder Bee
Anthidium manicatum
in Vermont (2021)
Map: iNaturalist.org



Personal Reflections on Edward O. Wilson

By Donald H. Miller

As I'm sure most members of the VES know, Edward O. Wilson passed away on December 29, 2021, at the age of 92. His brilliant legacy will continue, exemplified by all the awards he received, as well as his shared knowledge and recommendations. If heeded, his advice will make the world a better place in which to live, not just for mankind but for all organisms.

I don't remember the year I first became aware of him but was fortunate to be present at two of his lectures. One was while I was a graduate student at the University of Connecticut, where he discussed swarming in ants and how it is influenced by pheromones. The second lecture I attended was many years later at Stetson University in Florida, where he spoke about the importance of biodiversity. After his presentation, people queued up to meet Wilson and have him autograph a book he had recently written.

The majority of his ideas evolved from his lifelong interest in, and passion for, the study of ants. I was well aware of that as a young college professor but had decided never to let myself get professionally interested in studying ants, though I continued reading as many of his works as possible. It was like finding a good wine — once found, it is hard to resist the urge to sample more.

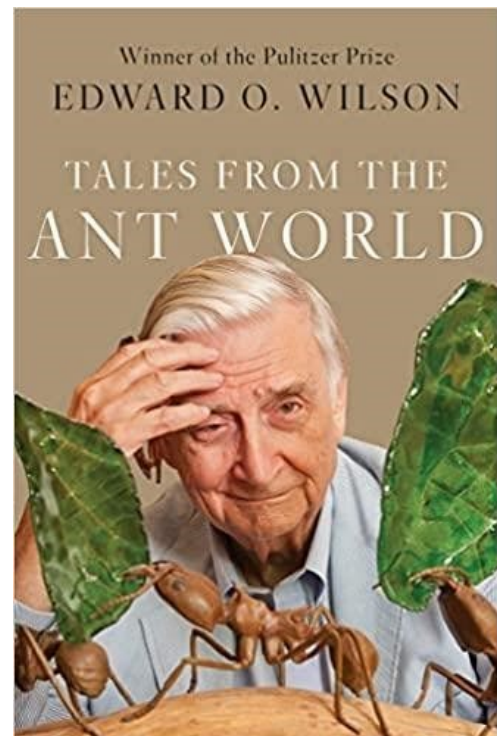
I decided to share that knowledge with my students. With considerable hesitancy, I wrote to Wilson and asked for his reprints. (This was before the widespread availability of PDFs and other information online.) Often in science when one makes such a request to a world-renowned leader in some field, especially if you haven't published a word in that field, the silence of the response can be deafening. Much to my delight, he sent me a large packet of his reprints, accompanied by a one-page signed personal letter encouraging me to continue my interests.

I have read a few of Wilson's books in their entirety and did my best to comprehend his most famous books that encapsulated his vast knowledge

about not only the biology of ants but of his basic theories of life that were stimulated through his lifelong study of ants. He was the sole author of most, but two that were co-authored by others are considered among his greatest joint contributions to science. These are *Island Biogeography* with Robert MacArthur and *The Ants* with Bert Holldobler. Perhaps his most controversial book, *Sociobiology*, suggested that group selection rather than selection at an individual level was the prime mechanism by which many of the attributes of the social biology of species could have evolved.

To say that *Sociobiology* raised a firestorm of criticism would be putting it mildly. Perhaps my favorite book of his is *Biophilia*.

It is a general summation of the importance of biodiversity at all levels.



Tales from the Ant World cover
Publisher: Liveright 8.25.2020

Personal Reflections on Edward O. Wilson (continued)

Edward O. Wilson put the general field of natural history on a podium for the first time since the works of Darwin. He showed how a detailed study of one family of insects, the ants (Formicidae) could lead to the discoveries and ideas of great importance not just in zoology but even to major non-science disciplines, including religion.

Beside his obvious academic brilliance, my impression of him was that of a very kind person with an endlessly inquisitive mind — one who spent his entire life emphasizing the importance of biodiversity for the very continued existence of mankind.

In every photograph I ever saw of him, he always seemed to have a wry smile! His face essentially said it all. He loved ants, and I'm convinced, all life everywhere. He was once asked what one should do if ants are a problem in, say, someone's house. He answered 'carefully step over them.' To me, that says it all!



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Programs of Interest:

Maine Entomological Society:

The "Tiger Beetles: The Often Colorful "Butterflies" of the Beetle World" webinar by Bob Nelson which was hosted on Thursday, October 14, 2021 is now available to watch in our webinar archive.

Other available webinars include the following topics: Ringed Boghaunter (4.1.2021); Pitcher Plant fly (7.14.2021); Tiger beetles (10.14.2021.) Here is the link to the archive:

<https://www.maineentosociety.org/webinar-archive>.

[Nature & Environment Book Sale](#)

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Peruse hundreds of books ranging from nature guides to environmental writing to travelogues. This book sale follows our recent launch of the Syz Family Nature Lending Library, and comprises hundreds of overstock and duplicate titles generously donated to the collection. Proceeds from the book sale will be

used to grow our collection of titles by BIPOC (Black, Indigenous, and People of Color) authors. If you would like to donate books to the collection or to the book sale, please review the intake guidelines at our Library page and contact us.

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Wool-carder Bee with fluff wad
(*Anthidium manicatum*)
Photo: Andree Reno Sanborn