



VES NEWS

The Newsletter of the Vermont Entomological Society

Number 108
Summer 2020



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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

Cover Photo:

Robber Fly (*Efferia aestuans*) and prey.
Photo: Declan McCabe

Back Cover Photo:

Monarch caterpillar on Swamp Milkweed
Photo @ Susan C. Morse.

For more information on the
Vermont Entomological Society, visit
www.VermontInsects.org

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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

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





If you're reading this message, then we've gotten out another newsletter and I would like to thank the editor and our many contributors including those whose pictures we may not have used in this issue. I would also like to acknowledge that the Covid-19 pandemic has had an effect on probably every aspect of our daily lives. I hope everyone is doing as well as can be expected. As we are in varying degrees of transition, I hope the natural world has been able to provide some respite or entertainment during this difficult time. Thankfully, Vermont is a beautiful place to live.

Some resources for finding outside areas to explore are:

VT Wildlife Management Areas,

<https://vtfishandwildlife.com/hunt/find-a-place-to-hunt/find-a-wildlife-management-area;>

Nature Conservancy,

[https://www.nature.org/en-us/get-involved/how-to-help/places-we-protect/;](https://www.nature.org/en-us/get-involved/how-to-help/places-we-protect/)

Lake Champlain Land Trust,

[https://www.lclt.org/hike-and-paddle/;](https://www.lclt.org/hike-and-paddle/)

Winooski Valley Park District,

<https://www.wvdp.org/parks/>, and

Northwoods Stewardship Center,

[https://www.northwoodscenter.org/wordpress/conservation-corps/trails/;](https://www.northwoodscenter.org/wordpress/conservation-corps/trails/)

as well as local town forests and parks.

For ongoing invertebrate projects, the Vermont Center for Ecostudies is conducting a bee survey. To participate see: <https://val.vtecostudies.org/projects/vtbees/>. You may also wish to participate in iNaturalist's journal: <https://www.inaturalist.org/projects/vermont-atlas-of-life/journal>.

North Branch Nature Center (NBNC) is offering an in-person course in August: **Tracks & Sign of Insects and Other Invertebrates** with Charley Eiseman, Aug. 15 @ 8:00 a.m. – Aug. 16 @ 5:00 p.m. NBNC is also currently offering an online course in **Bees of the Northeast** instructed by Spencer Hardy. See <https://northbranchnaturecenter.org/naturenow/>.

To encourage an education in entomology, VES offers a 10% refund for members that take an invertebrate course in the Northeast. If you are interested, please contact me.

It's still our desire to have an annual meeting this year in Randolph, hopefully in September or October. If that isn't possible, we will have to consider a zoom alternative.

Best wishes to all,
Michael Sabourin
VES President





Staycation in Springfield, VT (July 17 – 19, 2020)

By Laurie DiCesare

Last July, I attended a gathering of the Dragonfly Society of the Americas that involved field trips in and around Springfield, VT. Northeast DSA Regional Coordinator Joshua Rose helped with logistics and Black River Action Team (BRAT) activist Kelly Stettner provided local maps with detailed directions. This summer, I decided to revisit some of those favorite wetlands for my Vermont “staycation.”

The Holiday Inn Express had changed into a Best Western without the anticipated breakfast amenities (due to Covid-19 and some construction) but I enjoyed being able to spend more time at the local wetlands. I peeked in at the North Springfield Bog at 4:45 p.m. – too late for dragonflies but I inadvertently flushed a Ruffed Grouse...possibly the same one I photographed last year.

Hoyt’s Landing was the closest site to the motel, so I started there on Saturday morning. White’s Cove, adjacent to the busy boat launch, was easily accessible and provided a place to stand and observe the butterflies (Silver-spotted Skippers, Swallowtails) and other insects visiting the abundant pickerelweed, Joe Pye Weed and other wetland flowers. I saw many of the usual skimmer dragonflies including the Blue Dasher (*Pachydiplax longipennis*), Widow Skimmer (*Libellula luctuosa*), Halloween Pennant (*Celithemis eponina*) and the diminutive Eastern Amberwing (*Perithemis tenera*) but few of the damselflies.

My most interesting find at the site, however, was a Tachinid fly. This large, bristly fly with a green thorax and burgundy abdomen immediately caught my attention – however, I was only able to snap one quick photo before it flew off. I posted the photo on iNaturalist.org and sent copies to several VES members for help with identification...and received many suggestions about its possible identity. Jeff Freeman sent his copy to James O’Hara of the Canadian National Collection in Ottawa who says it is probably in genus *Archytas*. I appreciate all the collaboration, the level of expertise needed to identify flies, and am just beginning to realize how large and diverse the Tachinidae Family is.

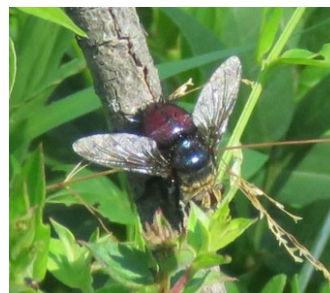
One wasp that I recognized was the Beetle Bandit Wasp (*Cerceris fumipennis* [*fumipennis* = dark-winged].) The female of this wasp has three distinctive creamy dots on its head and a cream-colored band on the abdomen. It seeks out Buprestid beetles...especially Emerald Ash Borers...to supply food for its progeny in its solitary nest, so has been used in EAB site surveys.

The Knapp Brook Ponds are located off Route 106 in the Reading Town Forest. Saturday, July 18, was another 80° day, wiltingly-hot for me with occasional respite breezes, but apparently fine for the arthropods. Odonate (dragonflies and damselflies) highlights at Pond #1 included a Marsh Bluet (*Enallagma ebrium*); violet Variable Dancers (*Argia fumipennis*); and two Slaty Skimmers (*Libellula incesta*) forming a flattened wheel. A shoreline swipe of my aerial net yielded a tan Arabesque Orb Weaver Spider (*Neoscona arabesca*) with brown bands on the abdomen (which iNaturalist.org later helped me name.) I

visited Knapp Pond #2 on Sunday morning...another 80°-plus day that brought out abundant bluets, Slaty Skimmers, Chalk-fronted Corporals (*Ladona julia*) and an Eastern Tiger Swallowtail Butterfly (*Papilio glaucus*).

Overall, I’d say my Vermont “staycation” was a success. I was very grateful for the people who helped prep the trip for me, and for all the people who helped identify my finds. The Riverside Restaurant was still serving up delicious seafood dinners (this time well-spaced) and the Route 106 Deli in North Springfield was still making great custom sandwiches. I really missed the joy and immediacy of sharing my discoveries with other dragonfly enthusiasts who appreciated them as much as I did; and the gift of having mentors nearby to share their suggestions, techniques and their favorite finds. Seeing a site through many eyes definitely enhances the experience. I’ll appreciate the “Entoforce” even more on our next field trip.

Kelly later e-mailed me a photo of the Spangled Skimmer (*Libellula cyanea*) that she discovered during a hot field trip to a nearby pond at Turner Hill Wildlife Management Area on July 19. It’s a relatively rare find which iNaturalist red-flagged as “Imperiled (S2) Conservation Status in VT.”



Archytas sp. Fly (Family Tachinidae)
Photo: Laurie DiCesare



Beetle Bandit Wasp (*Cerceris fumipennis*)
Photo: Laurie DiCesare



Slaty Skimmers (*Libellula incesta*)
Photo: Laurie DiCesare



Spangled Skimmer (*Libellula cyanea*)
Photo: Kelly Stettner



Cranberry Meadow Field Trips (June 13 and July 9, 2020)

By Susan Sawyer and Michael Sabourin

Near South Woodbury, Cranberry Meadow is a fine example of an intermediate fen with a floating mat and several rare plants. The sedges and mosses there are great, too. The fen is over ten acres in size, with a channel full of waterlilies running through the middle, flowing from Cranberry Meadow Pond to Nelson Pond (a.k.a. Forest Lake on some maps).

During our first visit, Saturday, June 13, it was almost 50° F. The participants, Michael Sabourin, Mary and Doug Burnham and Susan Sawyer, didn't see much in the way of insects. Michael caught some moths, and there were flies pollinating the pitcher plants, which were in full bloom, but other than that, there was almost nothing flying. We did observe some other invertebrates. We discovered open shells of a sphaerid clam about 3/4 inch in diameter along the edge of one of the beaver canals that crossed the mat, most likely left by a small predator. Hauling out a floating water lily root which had been dug up by beavers, yielded a couple of very large and decorative turtle leeches (?)

Placobdella parasitica). We decided to come back on a warmer day.

The warmer day was July 9, and it couldn't have been much hotter. We were pretty well cooked by the time we left. Michael Sabourin, Johanna Laggis and Susan Sawyer spent an hour and a half in the fen in late afternoon, looking at plants as well as animals. The rose pogonia orchids were blooming in abundance. Seeing the tiny bog copper butterflies (*Lycaena epixanthe*), which are numerous in the cranberry plants for a couple of weeks in early July, was a treat. A surprise lepidopteran was the pitcher plant moth (*Exyra fax*), a reddish noctuid, flying during the day. Flying Odonates included meadowhawks (*Sympetrum* sp.), frosted whiteface (*Leucorrhinia frigida*), calico pennant (*Celithemis elisa*), marsh bluet (*Enallagma ebrium*), sedge sprite (*Nehalennia irene*), and pond spreadwings (*Lestes* sp.) Cranberry Meadow is a special place. There's nothing like being out on a bouncy sedge mat in midsummer.



Bog Copper (*Lycaena epixanthe*)
Photo: Michael Sabourin



Turtle leech (?
Placobdella parasitica)
Photo: Michael Sabourin



Cranberry Meadow
Photo: Michael Sabourin



Pitcher Plant Moth
(*Exyra fax*)
Photo: Michael Sabourin

Helen W. Buckner Memorial Preserve (June 28, 2020)

By Laurie DiCesare and Michael Sabourin

The weather reports were predicting a high probability for rain on June 28 - and I drove through a lot of it on my way from Milton to West Haven, VT. Michael is an optimist, though, and has been right about the weather opening up many times when I was more apprehensive, so I drove on hoping for a sunny window of opportunity. When I arrived at 11 a.m., Michael was already out working the sunlit field.

I was glad to see some common dragonflies like the Widow Skimmer (*Libellula luctuosa*), Eastern Pondhawk (*Erythemis simplicicollis*) and meadowhawks (*Sympetrum* sp.) out and about. The pollen-feeding Hairy Flower Scarab (*Trichiotinus affinis*) with its green thorax, short elytra (wing covers) with whitish crossbands, and white spots on the end of the hairy abdomen [*tricho* = hairy], was a new beetle for me. I also photographed a Tabanid fly with interesting stripe patterns

on the eyes and thorax.

Michael noted a Great Spangled Fritillary (*Speyeria cybele*) fly-by, a Confused Eusarca Moth (*Eusarca confusaria*), an adult Monarch (*Danaus plexippus*), a Little Wood Satyr (*Megisto cymela*), a Brilliant Jumping Spider (*Phidippus clarus*), a Brown-belted Bumble Bee (*Bombus griseocollis*) and a paper wasp. He also added many birds to our species list including a Prairie Warbler (*Dendroica discolor*); Blue-winged Warbler (*Vermivora pinus*) and Common Yellowthroat (*Geothlypis trichas*). My favorite photo of the trip was of the Eastern Tailed Blue (*Cupido comyntas*) butterfly that alighted on Michael's arm and posed for a close-up.

Tabanid Fly
(Horse and Deer Flies)
Photo: Laurie DiCesare



Eastern Tailed Blue (*Cupido comyntas*) Photo: Laurie DiCesare



Hairy Flower Scarab
(*Trichiotinus affinis*)
Photo: Laurie DiCesare

A little over an hour after we arrived, our window of opportunity closed and the anticipated rain drove us to our cars for a lunch break...hoping to wait out the storm. I enjoyed my new field-trip favorite for hot days: a frozen tuna fish sandwich that was still crunchy in the middle, a cool delight on a humid day. After lunch we drove down to the riverside but it was still drizzling...with 40% chance of more to come...so we both agreed to call it a day. All in all, a short but productive adventure.

For a species list for Buckner Preserve, e-mail Michael Sabourin at mothvet@yahoo.com with "VES Buckner Preserve Species 6.28.2020" in the subject line.

Birds of Vermont Museum F.T. (July 12, 2020)

By Laurie DiCesare and Michael Sabourin

Our annual Birds of Vermont Museum insect and butterfly walk took place on July 12, a wet Sunday morning. We were surprised and welcomed by museum staffers Allison Gergely and Kirsten Talmage, and nine eager participants waiting to go on the walk. It was a challenge to stay six feet apart when sharing our catches but everyone was wearing a mask. I think we did really well for species listing considering the cloudy...and damp...conditions. As has been the case on a number of events this summer, we took advantage of a window of opportunity. I'm so glad the rain held off at least for a while.

Two of Laurie's neighbors from Milton, VT, Angela Perras and her son Jack, attending their first VES field trip, noticed a fragrant Pineapple Weed (*Matricaria matricarioides*) flowering in the parking lot...and added a new plant species to our VES list before our walk even started. Jack persistently waited with his net at the nearly-dry pond and was excited to capture and hold his first dragonfly, a 12-Spotted Skimmer (*Libellula pulchella*). This was especially amazing considering he had just received one quick lesson from Laurie on how to use a cone net. Michael photographed a Widow Skimmer (*Libellula luctuosa*).

Other observations of interest were a Great Spangled Fritillary (*Speyeria cybele*), a species previously sighted on another VES trip in 2006; and a crab spider hauling its prey, a

Stormy Arches Moth (*Polia nimbosa*), back up to a milkweed flower. Other lepidoptera included the Cream-edged Dichomeris Moth (*Dichomeris flavocostella*), Inornate Olethreutes Moth (*Olethreutes inornatana*), Clubmoss Sparganothis Moth (*Sparganothis lycopodiana*), Silver-spotted Skipper (*Epargyreus clarus*), Tiger Swallowtail (*Papilio canadensis?*), Northern Pearl Crescent (*Phyciodes cocyta*), and a Plume Moth (*Hellinsia* sp.). Michael also photographed a syrphid fly: Margined Calligrapher (*Toxomerus marginatus*).

Michele Patenaude and Larry Haugh added several new species to our Birds of Vermont Museum list including the Black-billed Cuckoo (*Coccyzus erythrophthalmus*), Gray Catbird (*Dumetella carolinensis*), American Redstart (*Setophaga ruticilla*) and Ovenbird (*Seiurus aurocapillus*).

Birds of VT Museum is located at 900 Sherman Hollow Road in Huntington, VT 05462. Call 802.434.2167, e-mail museum@birdsofvermont.org; or visit www.birdsofvermont.org. For a species list from this field trip or previous VES walks, e-mail Laurie at Naturehaven@MyFairPoint.net with "VES BOVM species List" in the subject line. See VES Calendar for upcoming **Amazing Odonates** program at the museum (Aug. 11, 2020).



Angela and Jack Perras, Laurie DiCesare and Larry Haugh
Photo: Michael Sabourin



Jack Perras with 12-Spotted Skimmer
Photo: Laurie DiCesare



Widow Skimmer (*Libellula luctuosa*)
Photo: Michael Sabourin



Margined Calligrapher Fly (*Toxomerus marginatus*)
Photo: Michael Sabourin



Aug. 8, 2020 (11a.m.): Victory, VT with NEK Audubon: Meet at Damon's Crossing. Directions: Along Rt 2 a couple of miles east of Concord take Victory Rd (turns into River Rd.) in N. Concord, 5.5 miles N to the Damon's crossing WMA parking area. Contact : Michael Sabourin, mothvet@yahoo.com, 802.426.2133 or Laura Tobin, nekaudubon1@gmail.com.

Aug. 11, 2020 (6:30 to 8:30 p.m.): Amazing Odonates at Birds of VT Museum: Naturalist Laurie DiCesare will offer her program on dragonflies and damselflies, including their multi-year life as underwater predators, then transition to the air as adept fliers, territorial shoreline patrollers, and protective and acrobatic partners. This masked, well-spaced presentation will include enlarged show-and-tell photos, a cone net demonstration, catch-and-release techniques and information on wetland habitat preservation. \$8 per person, \$25 family. Maximum: 12 attendees. 900 Sherman Hollow Road, Huntington, VT. Contact: www.birdsofvermont.org, 802.434.2167 or Laurie at NatureHaven@MyFairPoint.net.

News Article



Ways to Entomologize During a Pandemic

By Declan McCabe

What's a bug nerd to do during a pandemic? Despite the limitations of our current circumstances, we can keep doing what we did before, we just need do it differently. With work, family and other responsibilities, I find it hard to carve out time with my fellow ento-nerds under the best of circumstances. Now we are actively discouraged from finding "our people" - and you wouldn't want to kill the only other passionate entomologists in your town by infecting them.

So when I saw a young man wielding an insect net near the former Pizza Putt in South Burlington, I quelled my instinct to stop and chat. How often does one randomly encounter people with insect nets? I believe it was first such encounter in my 54 years. I steeled myself and drove on, ignoring the next potential E.O. Wilson as he picked something from the bag of his net; something fascinating most likely, perhaps something I could have helped identify...or at least enjoyed the ensuing discussion.

Fortunately, technology has some means to keep us chugging along, finding interesting organisms, sharing our 'catch of the day', and helping each other with difficult identifications. I found three ways to keep engaged, learn about "new" organisms, and contribute to the greater community of entomophiles.

iNaturalist (<https://www.inaturalist.org>) provides a platform for sharing observations, seeking input on difficult identifications, and sharing expertise on those organisms we know best. I have used iNaturalist for seven years, but have become a slightly more active contributor in just the past couple of years.

After a slow start, I was inspired to become more active by Laurie DiCesare's (iDragonflyLady) photographs and observations. I say I'm

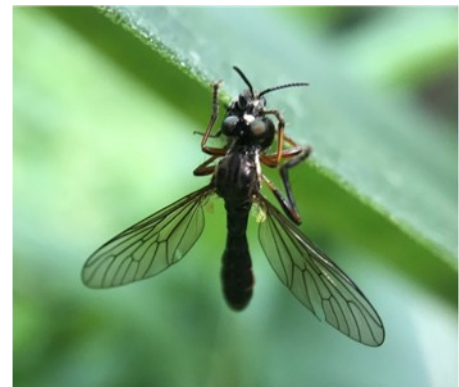
"slightly more active", because in total I have uploaded about 700 observations. Some folks seem to muster that many observations in a week. This is not a competition, though, and I upload when the mood strikes.

I have used two approaches to sharing data to the platform: I use the website to share digital photographs, such as my daughter's images of a Common Whitetail (*Plathemis lydia*) and a Dogbane Leaf Beetle (*Chrysochus auratus*); and I use the iNaturalist smartphone app to upload directly from the field. Frequently, my field images have been identified by other users before I made it back home.

An active community of iNaturalists helps with identification. Some are interested and skilled in their own area; others are broadly familiar with diverse groups. In most cases, your images will be identified by multiple users, and once three of the identifications match, your observation will receive a "research grade" label. My modest contributions have been identified by 277 different people. I am grateful for their efforts and, in the process, I have learned to identify many new organisms.



Basswood Lace Bug (*Gargaphia tiliae*)
Photo: Declan McCabe



Robber Fly (*Dioctria hyalipennis*)
Photo: Declan McCabe

Ways to Entomologize During a Pandemic (continued)

The second tool to improve my insect watching has been a clip-on macro lens for my smartphone. For less than \$20 (including shipping), the lens has made an enormous difference to the quality of images of the small things I find fascinating. If you have ever zoomed in on a small insect using a cellphone camera, you will quickly learn that “digital zoom” just crops the background and produces a fuzzy, pixelated image with little resolution.

A simple clip-on macro lens magnifies the image before it ever reaches your smartphone, getting you really close to your subject. If your subject cooperates, the result is a surprisingly-crisp image. I’m not suggesting that you’ll immediately be able to print an insect calendar, but you will capture images that are perfect for identification. One of my recent robber fly photographs revealed that the insect was carrying prey only after I displayed the image on a computer screen. The lens I purchased through Amazon was made by Criacr. My original order from a different manufacturer was so far back ordered that I canceled the purchase, so I suggest you look at the delivery date before plunking down your money.

Finally, the third way I have remained engaged has been by writing short pieces about invertebrates. This has become a mid-career passion of mine that began with a submission to this august publication and I thank VES for this opportunity. The shed I built in my yard for entirely different purposes, became my writing nook when Saint Michael's College wisely encouraged us to stay home if we could. I fully appreciate the privilege that made it possible to work from home.

Researching for a short essay on lace bugs combined all three of these pandemic-compatible tools. I was asked to write about sycamore lace bugs, which were a challenge to find in Vermont. Judy Rosovsky and Peter Hope both pointed me to a large sycamore in Shelburne. Using iNaturalist, I found a closer one on North Beach in Burlington. In neither case could I get

anywhere close to the leaves, but sprouts from a small-leaf linden stump in my own yard provided a basswood lace bug (*Gargaphia tiliae*) which was enough to provide inspiration.

So, I encourage you to become an iNaturalist. It’s socially distant and free. Consider ordering a cheap, clip-on macro lens; and writing about your experiences. All of us VES members would love to learn from your finds. Perhaps some informative, photo-embellished Newsletters will temporarily substitute for in-person gatherings.

Declan McCabe is Professor of Biology and Natural Area Coordinator at St. Michael's College. His daughter, Lauren McCabe, will be attending Rice Memorial High School in the Fall. She enjoys photography and some of her photos have been published in the Burlington Free Press, St. Albans Messenger and VTDigger.



Common Whitetail (*Plathemis lydia*)
Photo: Lauren McCabe



Dogbane Leaf Beetle (*Chrysochus auratus*)
Photo: Lauren McCabe

Programs of Interest

Eagle Hill Institute Courses:

Spider Ecology, Identification, Biology, and Photography (Aug. 9 – 15, 2020): Course taught by Kefyn Catley.

See <https://www.eaglehill.us/programs/nhs/seminar-flyer-pdfs/2020%20Catley.pdf>.

Chittenden BioBlitz (June 1, 2020 to May 31, 2021)

Green Mountain National Forest staff are excited to announce our first bioblitz which will take place in the Telephone Gap Integrated Resource Project Area, centered in Chittenden, Vermont. A bioblitz is a detailed study of biodiversity in a specific location over a specified period of time, bringing experts and amateurs together to collect data. In contrast to a traditional bioblitz which takes place within one 24-hour period, this bioblitz will last 365 days, having started June 1, 2020, and ending May 31, 2021. The event will be virtual, via iNaturalist, with no scheduled gathering of biologists, although educational field trips to share discoveries will be considered for the Spring of 2021. The year-long time-period will spread participants out over time and over the landscape and allow us to capture phenological differences between tax groups and, we hope, to document

biodiversity well.

The public is encouraged to participate. Data collection will be via iNaturalist, a free publicly-available app. Participants record observations by taking a photo in the field with their phone within the app or by uploading photos to the app later. If location-tagging of photos is enabled on a participant's phone, their observations within the project area will automatically be included in our bioblitz as they add images and observations to iNaturalist. Technical support for using the iNaturalist app is generously provided by Vermont Center for Ecostudies. Compiled observations and species lists can be viewed on the GMNF Telephone Gap BioBlitz page at <https://www.inaturalist.org/projects/gmnf-telephone-gap-bioblitz>. Whether you like to observe moose, ants, orchids, or any other living thing, we hope you will spend time in the GMNF Telephone Gap BioBlitz area and record what you see. A comprehensive information packet, maps, and spatial data are available for download by accessing our webpage at: <https://www.fs.usda.gov/main/gmfl/home>. More information is available by contacting Forest Service staff MaryBeth Deller (marybeth.deller@usda.gov) or Sue Staats (sue.staats@usda.gov).



A Mutualistic Relationship with *Vespula*

By Laura Hatmaker

Vespid wasps are often the bane of any summer cookout. The nectary scents of the five-fruit salad, the sweet allure of that frozen margarita in your hand, or the meaty aroma from the grilled chicken all combine to be the perfect allure for the most uninvited guests of backyard gatherings: yellow jackets (genus *Vespula*). This is nothing new. Humans were demonizing wasps as early as Aristotle in 350 BCE (*De Generatione Animalium*, III.10.)

While COVID-19 may have shut down our large *al fresco* dinner parties and afternoon socials, our complicated relationship with *Vespula* (Latin for “the little wasp”) has not diminished in kind. These highly-social and territorial stingers on wings induce terror even in the most seasoned outdoorsmen. I recently watched my partner suit up in a hodge-podge of rain jacket, ski attire, and fly-fishing gear to face, in the most dramatic of fashions, an ill-placed nest. This fiery assault also titillated our neighbors, who watched with beers in hand from afar in case anything went awry.

Anthropomorphism of *Vespula* and others of the *Vespidae* family has led us to see them as mean and vindictive creatures bent on wreaking havoc and destruction on all life. While these assumptions are known to be erroneous, the underlying current of fear and rage against these insects persists. Ask any beekeeper and they will swear bloody vengeance on *Vespidae* and their ilk if they’ve suffered a hive loss at the hands of hornets, wasps, and/or yellow jackets.

As we have increased our agrarian pursuits during quarantine (as evidenced the scare supply of seeds at the height of the pandemic), we have likewise increased our time in the outdoors and backyard spaces, cultivating flowers or food as we marked weeks of “shelter in place.” Our age-old nemesis likewise sent out freshly-hatched queens to colonize new ground and propagate the next generation. Yet, despite the likely clash between gardener and *Vespula* over backyard territory, there is a potentially-positive outcome of this relationship – if both parties are amenable.

Just as they are quick to descend on your cocktail or bratwurst, *Vespula* are just as quick to prey on aphids, flies and other garden pests that could otherwise devastate a crop. As they forage up to a mile away from their nest, having a yellow jacket or two in your backyard can be a positive sign for your growing produce. Although with less efficacy, just as their honeybee (*Apis*) counterparts, they are known to occasionally pollinate as well. Provided the nest is located away from your immediate vicinity, enabling you to safely harvest and maintain your crops, a mutualistic relationship between human and *Vespula* is possible.

More interesting, however, is the dearth of research done on these apex predators – aside from their extermination – when compared to their *Apis* cousins. Although the argument for yellow jackets is further explained in Seirian Sumner’s publication in *Ecological Entomology*, there is not much else in the way of good news for *Vespula*. Little research has yet been done to

explore the diversity of *Vespula*, its benefits to organic and natural farming, the complexities of their social mores, and their roles in the natural world. Perhaps more discussion could be had on the positives of these “pests.”

Laura Hatmaker is a student in the Field Naturalist program at UVM, who enjoys discovering the natural world and encouraging others to do the same. She became interested in the dynamic lives of insects and their ecological roles while working on organic farms in Maine and Massachusetts.

References and Resources:

The Summer Lab (<http://www.summerlab.co.uk/the-group/seirian-sumner/>).
Lester, P.J. (2018) *The Vulgar Wasp: The Story of a Ruthless Invader and Ingenious Predator*. Victoria University Press, Wellington, New Zealand.
Sumner, S., Law, G. and Cini, A. (2018), Why we love bees and hate wasps. *Ecological Entomology*. 43: pp. 836-845. doi:10.1111/een.12676.



Bald-faced Hornet (*Dolichovespula maculata*)
Photo: Laurie DiCesare

Entomologist's Corner: Milkweed Ecology

Judy Rosovsky

The story of monarch butterflies and the cardiac glycosides that they ingest from milkweed, rendering them unpalatable to birds, is well known, but there are many other untold stories of milkweeds and their utility. Monarchs are not particularly good pollinators of milkweed. Instead of supplying individual pollen grains, Milkweed offers a pollinia comprised of a pair of waxy sacs (Borders & Lee-Mäder. 2014) that stick to the feet of some insects as they pull away. (Some smaller insects that lack the strength to pull away may remain stuck to the flower.) Once attached to the potential pollinator, the pollinia must be inserted into slits in the stigma of the receiving flower. Some Lepidopterans, such as swallowtails, are able to accomplish this feat but monarchs are not so adept. Bumble bees, carpenter bees and honey bees are more effective pollinators...and may sometimes be seen wearing "golden slippers."

North America has at least 72 native species of milkweed plants, though New England states usually have 10 or less species (Borders & Lee-Mäder. 2014). The Forest Service (Taylor, USFS) says there are approximately 450 insect species in six and possibly more orders that feed on some part of milkweed. The six that the Forest Service cites are Coleoptera, Diptera, Hemiptera, Hymenoptera, Lepidoptera and Orthoptera; but Betz *et al.* (1997) include Thysanoptera (thrips) and exclude Orthopterans. Many but not all of them need to cope with the potentially-toxic chemistry of the plant. Insects like monarchs sequester the cardiac glycosides which, in the case of the common milkweed plant, takes the form of steroids called cardenolides.

Brightly-colored red or orange-and-black insects warn off experienced predators through their aposematic (warning) coloration, which indicates that they are an unpleasant prey item. Many visitors to milkweed patches are aposematic, like the large (*Oncopeltus fasciatus*) or small (*Lygaeus kalmia*) milkweed bugs, the red milkweed beetle (*Tetraopes tetropthalmus*) or the milkweed aphid (*Aphis nerii*) because they utilized the cardenolides (Taylor, USFS). But other aposemats, like the many bees and wasps that feed or hunt on milkweed, don't owe any debt to plant chemistry as they are warning others of their physical structure in the form of a sting. Literature suggests that the tactic of warning coloration may be less successful with some predators than with others.

There is some irony that the plant's own defense mechanism is used by herbivorous insects to protect themselves. There are at least 16 insect herbivores of milkweed, (Betz *et al.*, 1997) and these specialists may employ behaviors that help them avoid sap consumption. Most of them do little harm to the plants.

Milkweed has historically been used for human medicinal purposes and as a source of fiber for people and birds but can be problematic for domesticated animals like sheep, goats, horses, cattle, turkeys and chickens. Although care must be taken with all grazers as small amounts can be deleterious, the weed-eating goats and sheep are most likely to consume milkweeds. Wild vertebrates like rabbits and deer can eat milkweed, but based on observations of my yard, it is not a preferred food or there wouldn't be any left. In some areas, milkweed is considered a weed with invasive properties and in others as a beneficial plant vital to monarch migration. Young game birds eat the smaller insects that are found on milkweed. Mammals as small as meadow voles also consume the plants and their denizens.

For insects, milkweed can be useful even if it isn't a food source. The plants provide shelter, shade and prey items. Birds can hide among them, spiders stalk their prey in them and multitudes of insects visit them regularly. There are seed eaters, nectar feeders and

foliage feeders and the predators and parasites of all three. The large and small milkweed bugs eat the seeds, leaves and stems and the adults may sip the nectar. The material excreted by the insects may return to the plant in the form of nutrients.

Ants and aphids may enact their farming system on milkweed. The oleander aphid (*Aphis nerii*) extracts the food and water it needs from the plant, then secretes a substance known as honeydew that is sought out by ants. There is a parasitic wasp that attacks the aphids, and syrphid flies, ladybug larvae and lacewings all apparently find aphids to be tasty despite their warning coloration. Crab spiders make a nest by sealing up a milkweed leaf but take care to hunt six or more feet away from their nest sites. They too are subject to egg parasites and predation.

Milkweed was once an abundant plant in the US but has been in decline, perhaps since the 1950s. Some of the decline can be attributed to cultural practices such as fence-to-fence cultivation, which

eliminates edges favorable to milkweed, and to the use of genetically-modified crops that allow spraying everything between rows, eliminating



Tricolored bumble bee (*Bombus ternarius*)
Photo by: Judy Rosovsky

another area where milkweed could grow. There are other hypotheses for the decline, but the loss of a keystone species that is important to so many organisms has encouraged many unlikely allies to advocate for milkweed cultivation. Monarchs have been in decline too, and I encourage VES readers to join a citizen-science project for monitoring or otherwise helping monarchs. There is a good list of projects at <https://monarchjointventure.org/get-involved/study-monarchs-citizen-science-opportunities>, which includes well-known efforts like MonarchWatch.org and the Monarch Larva Monitoring Project. Your yard can become a waystation for monarchs by allowing milkweed to grow (see Monarch Watch for details). You'll be helping far more insects and other animals than just the monarchs.

References:

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Stokes, Donald and Lillian Stokes. 1995. A Guide to Enjoying Wildflowers. Little, Brown and Co., Boston, MA. Milkweed (*Asclepias*) pp.231-237.

Taylor, D. US Forest Service Plant of the Week: Common Milkweed. USDA FS.

https://www.fs.fed.us/wildflowers/plant-of-the-week/asclepias_syrriaca.shtml



Orange-spotted lady bug (*Brachiacantha ursina*)
Photo by: Judy Rosovsky



Red milkweed beetle (*Tetraopes tetraphthalmus*)
Photo by: Judy Rosovsky



Eastern comma (*Polygonia comma*) ventral and dorsal views.
Photo by: Judy Rosovsky

Odds and Ends



Cryptophage Encounter:

Declan McCabe recently photographed a Silken Fungus Beetle (*Antherophagus ochraceus*) attached to a bumble bee antenna. This member of the Cryptophagidae Family is symbiotic in bumble bee nests and phoretic on (carried by) adult bumble bees. The bees unwillingly provide taxi service for the beetle. Reference: <https://www.inaturalist.org/observations/54570801>.



Silken Fungus Beetle (*Antherophagus ochraceus*)

Photo: Declan McCabe

Additional Programs of Interest



North Branch Nature Center (NBNC) is offering an in-person course in August: **Tracks & Sign of Insects and Other Invertebrates** with Charley Eiseman, Aug. 15 @ 8:00 a.m. – Aug. 16 @ 5:00 p.m. NBNC is also currently offering an online course in **Bees of the Northeast** instructed by Spencer Hardy.

See <https://northbranchnaturecenter.org/naturenow/>.



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