Massachusetts Butterflies

Fall 2023, No. 61

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Massachusetts Butterflies No. 61, Fall 2023

Contents

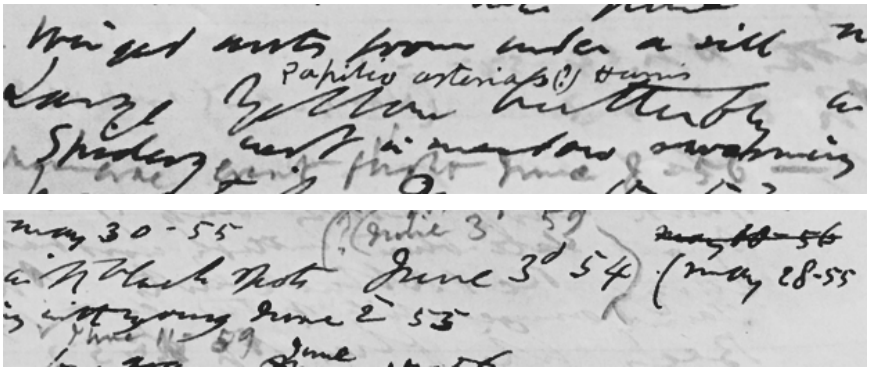
Silvery Blue (*Glaucopsyche lygdamus*), 5/23/23,
Stow, MA, Mark Rosenstein

Cover photo: Spicebush Swallowtail (*Papilio troilus*),
8/9/23, Boylston, MA, Garry Kessler

What Thoreau Knew About Butterflies

Lewis Hyde

Sometime around 1860 Thoreau combed through his journals and made dated lists of the plants, birds, reptiles and insects that he had recorded. Here are the left & right sides of three lines from the insect list in his "Notes on general phenomena" (now in the Berg Collection at the New York Public Library):



These read:

Winged ants from under a sill May 30 - 55
Papilio asterias (?) Harris
Large yellow butterfly with black spots June 3d 54
[corrected:] June 3d 59 May 28-55
Spiders nest in meadow swarming with young June 2 55

Not many butterflies appear in Thoreau's record and the yellow one noted here is not well identified. What he's seen is the Eastern Tiger Swallowtail whose scientific name at the time was *Papilio turnus*. He seems unsure of that, however, and guesses that it's *Papilio asterias*, the name properly belonging to the Black Swallowtail. The parenthetical question mark shows that he knows he's not sure and the name Harris shows that he knows where to turn for help, Thaddeus William Harris being an entomologist living in Cambridge.

Plant life around Concord fascinated Thoreau but butterflies never gripped him in the same way, primarily, I think, as a simple matter of temperament but perhaps also because so few books were available to lead him into their world. Thoreau was, after all, a voracious reader and often his reading would precede his field work. "The Scarlet Oak must, in a sense, be in your eye when you go forth . . . ," he wrote in "Autumnal Tints." "In my botanical rambles, I find that, first, the idea, or image, of a plant occupies my thoughts . . . , and for some weeks or months I go thinking of it, and expecting it, unconsciously, and at length I surely see it." In the mid-nineteenth century there were hardly any books on American Lepidoptera that could have lodged a butterfly in his eye before he went forth to find it.

Such was not the case with botany where two works served as Thoreau's constant companions when he began to seriously attend to the flora of his town, Jacob Bigelow's *Florula Bostoniensis* and Asa Gray's Manual of the *Botany of the Northern United States*. Each of these is scholarly, detailed and dense (Gray's botany is over 700 pages) and starting in 1851 Thoreau's journals are full of references to them. If you were to delete every sentence containing a Latin binomial from Bigelow or Gray, you'd seriously reduce the size of the Journal from those years. Nothing of similar scope existed for Lepidoptera. It was not until 1872 that W. H. Edwards published Volume I of *Butterflies of North America* and it illustrates only fifty species. (Two later volumes were slow to appear, the last one dated 1897.) Of more use to someone in New England was Samuel Hubbard Scudder's 1889 *Butterflies of the Eastern United States and Canada*, over 1,800 pages bound in three volumes and accompanied by 89 plates (20 in color). After Scudder published, anyone could do for the butterflies of Concord what Thoreau had done for the plants.

As for what books were available during Thoreau's lifetime, one was Harris's 1841 *Report on the Insects of Massachusetts: Injurious to Vegetation*, about which I'll have more to say below. Thoreau and Harris had a long teacher-student friendship,

Thoreau having taken Harris's class on natural history in the spring of 1837, his last year at Harvard. Twenty-two years older than his student, Harris was by vocation the college librarian and by avocation an accomplished entomologist. He appears regularly in the Journal as the man to visit with questions about insects. In July of 1852, for example, Thoreau found a Luna moth, describing it in the Journal in detail ("robust hardy body covered with a kind of downy plumage 1¼ inch long and 5/8 thick"). He took it home and put it in a cigar box where at night it made "a great noise" and within a few days had "beat itself its wings &c all to pieces in the night in its efforts to get out—depositing its eggs nevertheless on the sides of its prison." In the Journal he calls it "the emperor moth" and three weeks later he visited Harris in Cambridge who gave him the current scientific name, *Attacus luna*.

As for books other than Harris's that might have helped Thoreau identify Lepidoptera, the few that get noted in the Journal were either too arcane or came too late to be helpful. One was something Harris showed him in the college library. In January of 1854 Thoreau had taken some cocoons he'd found to Harris, who identified them as those of the Cecropia moth and went on to show Thoreau "a large & splendid work on the insects of Georgia" that contained excellent color plates representing all four American "emperor moths." This was *The Natural History of the Rarer Lepidopterous Insects of Georgia* printed in London in 1797, a folio-size, two-volume work with over 100 color plates, both the drawings and the descriptions of the Lepidoptera coming from one John Abbot, an Englishman who had emigrated to Georgia in 1775. Printed on thick, water-marked paper and richly illustrated, the volumes seem made for collectors—collectors of books, that is, not of Lepidoptera—and, in any event, not of much help to a naturalist in New England. The plates overwhelmingly show moths and only a few of the butterflies presented would have been found in Massachusetts.

The two other books mentioned in the journals were more useful but arrived late in the day. One of these appears in the

entry for June 14, 1860, where, despite his confusion on the insects list, Thoreau gives the correct scientific name of the Eastern Tiger Swallowtail. After a clear description ("a small and slender swallow tail with reddish brown and blue at the tail," etc.) he adds a note: "C[hanning] says it is the Papilio Turnus of Say." Thomas Say was another nineteenth-century entomologist whose three-volume master work, *American Entomology*, was originally published in the 1820s. In the Journal, however, Say does not appear until 1860, plausibly because in 1859 another entomologist, John Lawrence LeConte, had published a two-volume version of the earlier work. LeConte's edition has a fine color plate of the Tiger Swallowtail; William Ellery Channing must have seen it whereupon, one year later, Thoreau is sure of the name.

from Say, Thomas, and Leconte, John L., *American Entomology*: *A Description of the Insects of North America*, Boston: Estes and Lauriat (1859) (Wikipedia)

A second book lies in the background of the entry for September 24, 1860, where Thoreau records having seen "two very handsome butterflies on the Flint's Pond road in the woods . . . , which C[hanning] had not seen before. I find that they are quite like the *Vanessa Atalanta*, or red admiral, of England." In this case he knows the name because he has just acquired for his own library the 1860 edition of William Stephen Coleman's *British Butterflies*

whose Plate VIII shows what is still called *Vanessa atalanta*, the Red Admiral. To be sure, it is only "of England" because the book is British (Scudder would later give its range as "nearly the whole of the European and North American continents") but, native or not, we again see Thoreau with a new guide book in hand and thus an accurate identification.

In sum, toward the end of Thoreau's life a book from England and a fresh edition of Say's *Entomology* reached Concord and both the Red Admiral and the Tiger Swallowtail got correctly identified. These are the exceptions that seem to prove the point that Thoreau's accounts of butterflies are thin because the available literature was thin.

But here we should return to his teacher Thaddeus William Harris, for his work and his presence support that point but also complicate it. Harris's *Report* on 'injurious' insects is a big book–459 pages–but it has only fifteen pages on the butterflies, describing just eight species (Black Swallowtail, Mustard White, Gray Hairstreak, Mourning Cloak, Question Mark, Eastern Comma, Gray Comma and Silver-Spotted Skipper). In each case the adult butterfly gets less attention than the vegetation-injuring caterpillars, Harris's assignment from the commissioning legislature having been to focus on insects harmful to Massachusetts agriculture. The state's brewers, for example, apparently had trouble protecting their hops, especially from the larvae of the Question Mark which "sometimes abound to such a degree as totally to destroy the produce of the plant." As for what to do about that, Harris tells his readers that late in the summer the Question Mark's chrysalids hang from the hop leaves and this "affords a favorable opportunity for destroying the insects . . . , at some loss, however, of the produce of the vines, which, when the insects have become chrysalids, should be cut down . . . , and then burnt."

Similar advice is offered in regard to the Black Swallowtail, whose pesky caterpillars feed on "parsley, carrot, anise, dill, caraway, and fennel." To gardeners hoping to protect these plants,

Harris has a simple suggestion: “I know of no method so effectual for destroying these caterpillars as gathering them by hand and crushing them.” That’s not a sentence to be found in any current field guide. Harris’s book was a work of economic entomology.

The state of Massachusetts had commissioned three additional ‘Reports’ on the region’s flora and fauna and, taken together, this group of books became the ostensible subject of Thoreau’s first-ever published essay, “Natural History of Massachusetts.” More an Emersonian ode to nature than an actual review, the essay never addresses Harris’s work directly although Thoreau does offer one indirect bow to his teacher: “Entomology extends the limits of being in a new direction . . . Nature will bear the closest inspection; she invites us to lay our eye level with the smallest leaf, and take an insect view . . .” Thoreau did not find, however, that “the closest inspection” offered by the four reports did much to extend his own being. Showing “more labor than enthusiasm,” they were fat collections of factual matter as yet uncolored by imagination, a judgement Thoreau softens only by adding that we shouldn’t “underrate the value of a fact; it will one day flower in a truth.”

It is, of course, the flower that matters to Thoreau and, by way of proof, when he comes across an in-fact insect he will often force the creature to bloom into a symbol. In 1852 when he took that Luna moth to his teacher, Harris told of a time when the wings of a Luna had floated down from a tree and landed at his feet. Thoreau can’t let it alone: “So most poems . . . are like the wings come down to earth while the poet whose adventurous flight they evidence has been snapped up [by] the ravenous vulture of this world.”

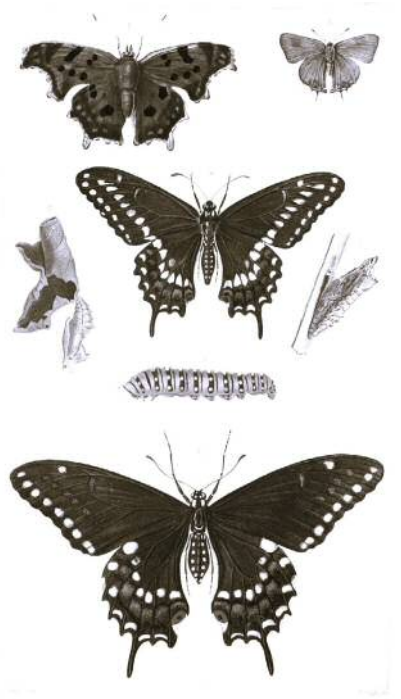
He makes a similar move in *Walden* where he declares his belief that eating too much “animal food” impairs the “higher or poetic faculties.” To support the point he offers the “significant fact” found “in Kirby and Spence, that ‘some insects in their perfect state, though furnished with organs of feeding, make no use of them.’” This is true, especially of the great silk moths such

as the Luna or Cecropia in North America. Their caterpillars are voracious eaters but the feeding stops as soon as they shed the chrysalis, the moth themselves having no functional mouths. What Thoreau misses, however, is the related fact: they don't eat because they are sex addicts. Caterpillars are born to eat, moths to copulate. There may be a story to tell about animal food and poetry, but better to leave the insects out of it. Thoreau's transcendentalist habit of finding spiritual analogies in natural facts thinned out as the years went by, but it was active when he first knew Harris, who is reported to have told Bronson Alcott that "Thoreau would be a splendid entomologist if he had not been spoiled by Emerson."

Thoreau rarely quotes from Harris's work in the Journal. He regularly quotes the botany books he favored, but not Harris whom he apparently preferred to see in person. In April of 1853, for example, he dropped in to see his old teacher and ask about two butterflies he'd seen: "Dr Harris says that that early black-winged-buffedged butterfly is the Vanessa Antiopa . . . , & is sometimes found in this state alive in winter. The orange brown one with scalloped wings & smaller somewhat is vanessa -progne." Thoreau shouldn't have had to go to Cambridge to get these names: the Mourning Cloak and the Gray Comma are well described in the old 1841 *Report*, the book he'd supposedly read a dozen years earlier.

Harris died in 1856, but not before he had prepared a working draft of a better book on the insects of New England, one that appeared in print in January of 1862. It still bears the unfortunate title of *Insects Injurious*, but nonetheless this expanded work should be counted as the first useful guide to the butterflies of Massachusetts. Yes, Harris still suggests that bothersome caterpillars should be crushed, but he soon adds page after page of illustrated descriptions of over fifty butterflies, about seven times the number found in his first edition. One of the added species is the Tiger Swallowtail, "the *Papilio Turnus* of Linnaeus," pictured life-size as Figure 97. With this book at hand, an amateur lepidopterist would not need Say's *Entomology* to distinguish the Tiger from the Black Swallowtail.

Thoreau never saw this more capacious book; he died a few months after it was published. And yet, if he had really wanted to know the butterflies of Concord, he didn't actually need a book, because Harris had something better to offer: his own research collection. In 1833—the year Thoreau went to college—Edward Hitchcock's *Report on the Geology, Mineralogy, Botany and Zoology of Massachusetts* appeared, the final pages of which contain Harris's list of the state's insects, over 2,000 species, including over 400 Lepidoptera, 50 of them butterflies. Moreover, in an added note Harris says that almost all "the insects enumerated . . . are contained in my cabinet; and most of them were collected in the vicinity of Boston." In short, from Thoreau's college days onward there was in Cambridge an insect collection with all the local butterflies and, until Harris died in 1856, a skilled entomologist who knew what they were.



From Harris, Thaddeus William, and Charles Louis Flint, *A Treatise On Some Of The Insects Injurious To Vegetation*, Boston: Crosby and Felt (1862) (Wikipedia)

So, again, maybe Thoreau's choice of botany as his primary interest rather than entomology (or geology, or herpetology, etc.) may have been a simple matter of temperament. Still, to that we can add not only the scarcity of literature dealing with Lepidoptera but also the agenda that brought much of it into print. Nineteenth-century entomology was as much about controlling insects as it was about classifying them. The standard British text from the early nineteenth century, Kirby & Spence's *Introduction to*

Entomology, contained nothing directly about Lepidoptera but it had over a hundred pages on "Injuries caused by Insects (Affecting Man Personally)." Harris's own book from 1841 had the same economic motivation, as we've seen, as did a later report on *Noxious Insects of New York* by one Asa Fitch.

One day in the spring of 1859, Thoreau "sat in the woods admiring the beauty of the blue butterfly" and began to muse on the motives behind such books. How often we attend to things that threaten us and fail to honor those that please. "We are not chiefly interested in birds and insects, for example . . . , but we spare the lives of the former only on condition that they eat more grubs than they do cherries, and the only account of the insects which the State encourages is of the 'Insects *Injurious* to Vegetation.'"

Perhaps if Thoreau had lived to see Harris's final volume he would have adjusted his complaint. Despite the retained title, it's clear that Harris was not merely an economic entomologist but an aesthetic one as well. He has nothing to say about injuries that New England's blue butterflies might cause and much to say about their beauty. Given the early May date of Thoreau's Journal entry, the butterfly that set his reflection in motion must have been the Spring Azure, fittingly described by Harris as a "beautiful azure-blue butterfly" whose light blue wings have "the lustre of satin" on top and are "pearl-gray, with little blackish spots" below. As for advice on how to kill Spring Azure caterpillars, none appears.

Thoreau's Butterflies

Four species named by Thoreau

Mourning Cloak. Harris: *Vanessa Antiopa*. Current: *Nymphalis antiopa* (Linnaeus, 1758).

Eastern Tiger Swallowtail. Harris: *Papilio Turnus*. Current: *Papilio glaucus* (Linnaeus,1758).

Gray Comma. Harris: *Vanessa Progne*. Current: *Polygonia progne* (Cramer, 1776).

Red Admiral. Harris: *Cynthia Atalanta*. Current: *Vanessa atalanta* (Linnaeus, 1758).

Four probable identifications

Clouded Sulphur. Harris & current: *Colias philodice* (Godart, 1819). Given the place and the time, the regular references to "fleets of yellow butterflies" almost certainly refer to this species.

Compton Tortoiseshell. Harris: *Vanessa J Album*. Current: *Nymphalis vau-album*. April 1, 1858: "…a butterfly (call it the tawny-orange single-white-spotted) about the size of *Vanessa Antiopa*, tawny-orange, with black spots or eyes, and pale-brown about them, a white spot near the corner of each front wing, a dark line near the edge behind, a small sharp projecting angle to the hind wings, a green-yellow back to body." Bradford Torrey, editor of the 1906 Journal, adds a bracketed footnote: "*Vanessa j-album*, to judge by the date and the general description."

Spring Azure. Harris: *Polyommatus Pseudargiolus* (Boisduval) or *P. Lucia* (Kirby). Current: *Celastrina ladon* (Cramer, 1780). April 30, 1859: "That interesting small blue butterfly (size of small red) is apparently just out . . . The moment it rests and closes its wings, it looks merely whitish-slate, and you think at first that the deeper blue was produced by the motion of its wings, but the fact is you now see only their under sides which thus [sic] whitish spotted with black, with a dark waved line next the edge."

Fritillary. *Speyeria* ssp. July 18th, 1860: "The *Asclepias Cornuti* [milkweed] is abundantly visited nowadays by a large orange butterfly with dark spots and with silver spots beneath." In his earliest inventory, Harris listed four local species of fritillaries: *idalia*, *aphrodite*, *daphnis*, and *cybele*.

Likely

American Copper. Harris & current: *Lycaena phlaeas* (Boisduval, 1852). Thoreau regularly mentions small

copper butterflies as, for example, on July 29, 1853: "Butterflies of various colors . . . especially the small reddish or coppery ones."

Puzzling or vague

Black Swallowtail. Harris: *Papilio asterias* (Stoll, 1782). Current: *Papilio polyxenes* (Fabricius, 1775). Thoreau uses *asterias* when trying to identify the Tiger Swallowtail but he never describes or reports the Black.

And others:

July 4, 1853: "butterflies – dark steel blue with a light blue edge."

May 3, 1855: "butterfly one inch in alar extent, dark velvety brown with slate-colored tips."

April 28, 1856: "a fine little blue-slate butterfly."

October 12, 1856: "a large handsome butterfly, with dark snuff-colored wings and a stripe of blue eyes on them."

March 31, 1858: "In the wood-paths now I see many small red butterflies, I am not sure of what species, not seeing them still."

May 19, 1860: "a smaller and redder butterfly than the early red or reddish one. Its hind wings are chiefly dark or blackish. It is quite small. The foreward wings, a pretty bright scarlet red with black spots."

A version of this essay first appeared in *The Concord Saunterer: A Journal of Thoreau Studies*, N.S. Vol. 30, 2022.

A writer living in Cambridge, Lewis Hyde is the editor of *The Essays of Henry D. Thoreau.* (North Point Press, 2002). His most recent book is *A Primer for Forgetting: Getting Past the Past*. You can explore more about Lewis and his many interests at www.lewishyde.com.

And for further reading about Thoreau's butterflies, please see the article by Sharon Stichter in the Fall 2009 issue of *Massachusetts Butterflies*, which you can access at: www.massbutterflies.org.

Butterfly Presentation

by Joe Dwelly

Background: I and a friend have been monitoring Borden Colony in Raynham for many years. The field we monitor is behind the Raynham Senior Center, and we thought that it might be interesting to show people what was in the field right near them. I made up a Powerpoint presentation and, during the winter months, we presented it. People very much enjoyed it and wanted it again the following year and the year after that.

I thought that since people like it I should present the same presentation closer to home on Cape Cod and contacted three senior centers near where I live to offer the activity. Two of them responded and the presentation was well received again. After that, I am not sure how word spread, but other senior centers contacted me followed by two conservation trusts. The Harwich Conservation Trust encouraged the Garden Club of Harwich, and I have been receiving requests to do the presentation for many years now with most requests of late coming from garden clubs. I have also presented at the Natural History Museum of Marion and after that received a request from the Greater New Bedford Garden Club. What started out modestly took on a life of its own and has been fun to do.

Eastern Tiger Swallowtail (*Papilio glaucus*), 8/22/23, Medfield, MA, Walt Webb

The presentation: These audiences are people who are usually not very familiar with butterflies, so we start from the beginning and keep it simple. We do

connect butterflies with the plants they use, both larval host plants and nectar plants. All photos are photos I have taken of butterflies in natural areas (including my yard). Most presentations are one hour, and it seems that time up to about an hour and a half is the limit for attention span. In that time, I can manage to cover around a dozen butterflies, out of the 70+ I have found on the cape and 80+ in southeastern Mass. So, I focus on butterflies most likely to come to people's yards and butterflies that are, you know, flashy and eye catching. I start at the beginning of the season, so Mourning Cloak and Spring Azure, though they are not yard butterflies, kick things off. I use Baltimore Checkerspot to demonstrate the life stages because I have photos of that one in all life stages, even including a lucky photo of a Baltimore just eclosed and pumping its wings. Other featured butterflies are swallowtails, and both American and Painted Lady. We also include…..wait for it…. MONARCH! because, you know, it is the Monarch. I do also include Viceroy at that point and talk a bit about the differences and the concept of mimicry in nature. As much as possible I try to use photos of butterflies on plants and that allows me to at least touch on butterfly gardening. Of course, Mourning Cloak and azure are the exceptions to that.

The first photo of each species includes a sidebar with the name, both common and scientific, the family, wingspan to give an idea of large, medium small; the most common used host plants, type of habitat including yards for yard butterflies,

Hackberry Emperor (*Asterocampa celtis*), 7/11/23, Sheffield, MA, Mark Rosenstein

and overwintering habit. The sidebar acts as much as a reminder to me of what I should be talking about, and I can expand thus using the sidebar as a kind of outline. So, I might start with the picture, talk about forewing, hindwing and other body parts the use the sidebar to, for example, talk about overwintering resident butterflies, migrant butterflies and so on.

The Powerpoint has many other butterflies, so I can go on if there is time, but usually there is not extra time. It surprised me how much there is to talk about, and I have to resist the urge to go on and on.

I also do a six-week Butterflies Across Cape Cod class at the Academy Of Lifelong Learning, a volunteer organization offering a variety of classes on many topics for people over age 50. Those classes are an hour and twenty minutes long. Even then there is not enough time.

I never planned for this project to take on a life of its own and never imagined that I would be a speaker on this, but it is popular, has been in demand even without direct promotion, and gives me the opportunity to talk about butterflies, ecosystems, and the importance of butterflies as an indicator of healthy ecosystems.. It has been fun, we keep it light, and include a lot of butterfly mating to keep people interested—you know how people are about that—and we just have a good time with it.

Canadian Tiger Swallowtails (*Papilio canadensis*), 6/20/23, Pittsburg, NH, Bill Benner

Butterflies at Community Gardens

by Marjorie Watson

I always enjoy joining the Mass Butterfly Club on our scheduled group field trips whenever possible. However, since 2020 with Covid-19 restrictions, rising fuel costs, and even my own increasing age, I haven't ventured as far away from Essex County as I might have done in past years. I find myself spending more time enjoying butterflies at several local community gardens.

For those unfamiliar with a community garden, it is often a town or local garden club sponsored property that is subdivided into plots for seasonal rental by individual gardeners or families. It can also be called allotment gardening. This is a great option for people who don't have enough yard space, or even perfect for apartment dwellers. Usually plot preference is given to previous year's renters, and there can sometimes be a waiting list. Every town has their own requirements for plot upkeep, weeding, fall clean-up dates, etc., but access to water is usually included.

An obvious benefit of finding butterflies at community gardens is being able to search locations relatively close to your own home. Many times, I can choose to go looking for butterflies on the spur of the moment. I often make multiple visits to the same location throughout the peak butterfly season to see what new butterflies are flying. August and September are great times to visit. For those of us who might not want to take a long hike alone in search of butterflies, most community gardens are small enough to easily explore without being very far from your vehicle.

I have found that community gardens include a good diversity of plants, including annual flowers, fruits and vegetables, herbs and even native weedy patches like Milkweed that encourage butterflies to nectar or serve as possible host plants for caterpillars. Sometimes, a multi-year garden plot renter will grow perennials including Joe Pye Weed and Buddleia (butterfly bush) that attract

(continued on p. 21)

Hessel's Hairstreak (*Callophrys hesseli*), 5/29/23, Windham Co., CT, Garry Kessler

Juniper Hairstreak (*Callophrys gryneus*), 5/23/23, Woburn, MA, Garry Kessler

Baltimore Checkerspot (*Euphydryas phaeton*), 6/29/23, Lancaster, MA, Dawn Vesey

Oak Hairstreak (*Satyrium favonius*), 6/30/23, Westhampton, MA, Todd Wiley

Clouded Sulphur (*Colias philodice*), 8/22/23, Rowley, MA, Bo Zaremba

Silver-bordered Fritillary (*Boloria selene*), 6/25/23, Washington, MA, Gael Hurley

Tom Gagnon in his garden of Butterfly-Weed (*Asclepias tuberosa*), 7/5/23 Florence, MA, Karl Barry

Arctic Skipper (*Carterocephalus palaemon*), 6/13/23, Windsor, MA, Mark Rosenstein

European Skipper (*Thymelicus lineola*), 6/23/23, Newbury-port, MA, Bo Zaremba

Juvenal's Duskywing (*Erynnis juvenalis*), 5/14/23, Groton, MA, Linda Graetz

Coral Hairstreak (*Satyrium titus*), 7/11/23, Pembroke, MA, Susan Wellington

Pipevine Swallowtail (*Battus philenor*), 7/17/23, Whately, MA, Bill Benner

Gray Hairstreak (*Strymon melinus*), 7/7/23, Arlington, MA, Peter Loshin

Black Swallowtail (*Papilio polyxenes*), 7/5/23, Lancaster, MA, Dawn Vesey

Eastern Pine Elfin (*Callophrys strobus*), 6/11/23, Punkatasset, MA, Linda Graetz

Great Spangled Fritillary (*Speyeria cybele*), 7/22/23, Chorocua, NH, Linda Graetz

Two-spotted Skipper (*Euphyes bimacula*), 7/5/23, Washington, MA, Gael Hurley

many species of butterflies too. Some gardens are very well maintained, while others garden plots can by quite untidy. Don't let that discourage you from exploring. The butterflies don't seem to mind the weeds!

Zabulon Skipper male (*Poanes zabulon*), 8/20/23, North Andover, MA, Marjorie Watson

Community gardens can also be a source of inspiration for your own yard. When I see a patch of flowers at the garden that is attracting many different butterflies, I make note of the flower species, hoping to possibly plant some in my own home garden. Zinnias are a great example of an annual flower that attracts a variety of butterflies and is found at most gardens I have visited.

I am lucky to have several community gardens not far from my home that I visit fairly regularly: Georgetown Community Garden, Battis Farm Community Garden Amesbury, North Shore Community Garden Middleton, Endicott Gardens Danvers and Goss Farm Community Garden in Rye NH. While doing a little research for this article, I discovered other nearby community gardens in Salisbury, Andover, Haverhill and Wenham that I was previously unaware of. I hope to visit some of those locations very soon.

If you plan to visit your local community garden, please check the garden rules for any special restrictions including suggested parking locations. Often there is information about the

garden on the town website or you can just do a Google search for "Community Gardens Nearby". Always be respectful of the hard-working gardeners and stay on the paths between the plots. Of course, never help yourself to any produce, cut any flowers, or collect any seeds without permission..I always make a point to say hello to any gardeners working on their plot as I walk by, just to let them know I am looking for butterflies and birds. They often ask me questions about a butterfly they have seen. So far, I have only had positive experiences while visiting community gardens.

Here's a short list of some of the butterflies I have seen at my local community gardens in recent years: Monarch, Eastern Tiger Swallowtail, Black Swallowtail, Spicebush Swallowtail, Painted Lady, American Lady, Red Admiral, Red Spotted Purple, Pearl Crescent, Common Buckeye, Silver Bordered Fritillary, Great Spangled Fritillary, Common Ringlet, Eastern Tailed Blue, American Copper, Gray Hairstreak, Common Wood Nymph, Fiery Skipper, Sachem, Zabulon Skipper, Broad-winged Skipper, Silver Spotted Skipper, Least Skipper and Pecks Skipper.

I hope you all have a chance to find a community garden close to your home. Have fun exploring these new locations for butterflies!

'Summer' Azure (*Celastrina ladon neglecta*),
7/18/23, Newbury, MA, Bo Zaremba

Surface Tension, A Deadly Hazard for Small Caterpillars

By Don Adams

Ever since I was a young boy about 10 years old, I had discovered how simple it was to find and gather caterpillars of the Spicebush Swallowtail butterfly on Sassafras by using the leaf folds they could construct, by spinning silk, as a cue to where they would be. It also wasn't difficult to see that these 'leaf folds', at first, were quite small then increased in size as the caterpillars grew larger. A caterpillar would build from three to five folds, each increasing in size from the last, before pupating. I was intrigued by how, using silk, the leaf folds would be rolled around the caterpillars without being 'stitched' and fit it snugly, completely concealing it from view. The leaf folds, at all stages, clearly helped provide the caterpillar some protection from both predators and parasites although not perfectly in this regard.

The first small leaf fold utilizes one of two basic methods to build and is usually constructed a day or two after hatching from egg. This is because either fold method requires more silk than the early cats can produce until a bit of growth is attained. After hatching from its egg, the caterpillar usually consumes the shell entirely, leaving no trace of it, then treks about spreading its feeding to several leaves as much as possible. The first fold method can be used only if the tiny cat can find a very small leaf, often not much larger than itself. Here, the cat crawls to the center vein and silks the leaf such that it rolls in half so that the entire leaf, or most of it, is used for cover (See Photo 1). Since there may not be that many

Photo 1

leaves on Sassafras that are small enough for this, the second fold method used on larger leaves is more common. Here the caterpillar crawls down the leaf to the outer margin on either side about 1/2 inch from the tip, and then chews an incision straight across to the midrib. This makes a small triangular leaf piece which it then silks up to make its fold (See Photo 2).

Photo 2

What was not apparent to me at first was that, in the case of the caterpillars first fold in particular, there was a downside to the fold's effect owing primarily to the closeness of the leaf surfaces in the first fold. During a heavy rainstorm, water touching the fold would be drawn inside due to the physical property called surface tension. Thus, the fold became a tank and the little cat would drown! Even if the fold is vertically oriented, gravity does not come to the rescue, as surface tension holds the water tightly between the leaf fold surfaces. Additionally, by this time later in the season when nighttime temperatures reach the dew point, condensate will cover leaves frequently leaving as much water as a rainstorm, thus producing the same effect.

Over the past few years, I've found many drowned in this way. If I had checked early enough after the wet event, I could save the cat by wicking water out of the fold with a tissue. It turns out however that the small caterpillars do have a defense of their own for this outcome. This season I had a good opportunity to gain insight on this. In addition to being able to find a larger number of 1st instar cats than normal, about 20, with folds described above,

we also had numerous enough deluges of water for me to pay attention to what went on.

I was surprised to find that in most cases after opening a soaked sleeve set over caterpillars, small ones had totally deserted their folds and taken up on the underside of a nearby large leaf where they often remained until leaves dried out a bit. Slightly larger caterpillars would occasionally remain on the leaf top surface and lay down enough silk to produce a slightly 'half-rolled' trough that would lead water away (See Photos 3 and 4), Both of these photos seem to demonstrate that the still small caterpillars 'caught on' that what they had to do for better chances for survival was increase the distance between the fold surfaces to break surface tension and allow water to flow out of the fold. As caterpillars grow larger close to pupation, their much larger folds fit this objective perfectly.

Photo 3

Photo 4

2023 4TH OF JULY COUNTS

by Karl Barry and Bill Benner

What a difference a year makes! Last year we were lamenting one of the worst droughts in memory. Contrast that with this year, where we were deluged with historic amounts of rain for pretty much the entire summer. One example: the town of Conway in Franklin County, in the Connecticut River Valley, received more rain for the month of July than any other town in Canada or the US, including Puerto Rico—over 20 inches! While the worst of last year's drought occurred after the end of the count season, this year's floods impacted the entire butterfly season, and resulted in some counts having lower-than-average numbers of butterflies, participants, and time in the field.

It's difficult to quantify just how much the excess water impacted actual butterfly numbers overall, mainly because each year's numbers can vary quite a bit for seemingly obscure reasons, but all this rain definitely impacted our ability to count butterflies this year. One count, Northern Berkshire, was rained out and didn't happen at all, reducing the number of counts for the year from last year's 12 to 11 (three other historical counts—Bristol, Barnstable, and Martha's Vineyard—have not been reported for the past several years). Other counts were either postponed due to rain (e.g., Northampton) or occurred anyway despite damp weather and thus suffered lower-than-usual participation and/or time in the field (e.g., Central Berkshire; Central Franklin; Truro). Cool wet weather tends to delay flight periods, and this also possibly meant that overall numbers of some species were reduced if their main flights occurred after most of the counts.

In any case, butterfly numbers were quite a bit lower this year compared to 2022 and 2020, and more like the numbers from 2021, which was also a slow butterfly year. This year 5785 individuals of 65 species were tallied. In 2022, there were 10125 individuals of 70 species, whereas in 2021, there were only 7923 individuals of 63 species. In 2020 there were 9941individuals of 75 species. At least as far as 4th of July counts are concerned,

2023 qualifies as a below-average year, though again, there was also one less count for comparison this year.

There were seven species that were recorded in all three years, 2020/2021/2022, that were not seen at all in 2023: Bronze Copper, Hickory Hairstreak, Common Buckeye, Hoary Edge, Northern Cloudywing, Crossline Skipper, and Dion Skipper. There were also an amazing 21 species whose numbers in 2023 were lower than any of those previous three years: Cabbage White, Bog Copper (188, far lower than the numbers of 919 in 2022, 1802 in 2021, and 922 in 2020), Banded Hairstreak, Gray Hairstreak, Eastern Tailed-Blue, Meadow Fritillary, Pearl Crescent, Northern Pearly-Eye, Eyed Brown, Appalachian Brown, Little Wood-Satyr, Common Wood-Nymph, Monarch, Horace's Duskywing, Wild Indigo Duskywing, Tawny-edged Skipper, Little Glassywing, Delaware Skipper, Mulberry Wing, Broad-winged Skipper, and Dun Skipper. Some of these numbers might have changed if the Northern Berkshire count had happened, but the overall trend is still pretty clear—it wasn't a great year for butterfly numbers on the counts. Still, of the 65 species on this year's counts, a surprising four species were butterflies that hadn't been recorded at all during the three prior years: Pipevine Swallowtail (1; the first ever for the Northampton count), Hackberry Emperor (3), Juvenal's Duskywing (1), and Sachem (1). Another two species had higher numbers in 2023 than any of the prior three years: Black Swallowtail and Red Admiral.

Other than the good numbers of Black Swallowtails (54, as compared to 50 in 2022, 38 in 2021, and 36 in 2020), the remaining swallowtails had a relatively slow year. For example, 46 Spicebush Swallowtails were tallied this year, vs. 62 in 2022, though their numbers were similarly low in 2021 (42). An exciting addition this year came in the form of the above-mentioned male Pipevine Swallowtail photographed in your editor's garden. It appeared for only a few minutes, just long enough for a quick photo then bounding off into the woods, but fortunately it happened to be late in the afternoon on count day! As far as can be determined,

this is the first Pipevine Swallowtail seen on any count going at least as far back as 1993.

Whites and sulphurs had a mixed year, with some species having fairly low numbers (e.g., Cabbage White), while others were closer to average (e.g., 623 Clouded Sulphurs, vs. 741 in 2022, 385 in 2021, and 1111 in 2020). But on another bright note—there were 3 Mustard Whites recorded on the Central Berkshire count, the first ones on any count since 2020. Lycaenids had a slow-to-average year, with one exception—the numbers of Bog Coppers were far lower, at 188, than the 900+ yearly numbers over the past 3 years, and the lowest number of Bog Coppers (183) recorded on the Central Franklin count since 2011 (162). This is likely a reflection on the weather again, with Central Franklin compiler Mark Fairbrother's comments being: "It was the first time this count has been as badly affected by clouds and sometimes heavy rain. In most places the sun didn't appear until almost mid-afternoon, after which the skies cleared, and butterflies went on the wing. As a result, we had the lowest number of species (30), and individuals (516) in the…history of this count."

Nymphalids had mixed results, trending on the low side. The two more northerly fritillary species, Atlantis and Meadow, continue to trend downwards, with both recording their fewest numbers over the last several years, though this may have been different if the Northern Berkshire count had happened. There were no Milbert's Tortoiseshells or Gray Commas seen, both last seen in 2020. The satyrids were markedly low in numbers across the board: Pearly-Eyes, the Browns, Little Wood-Satyr, and Common Wood-Nymphs all had their lowest counts vs. 2022/2021/2020. One example: one large field in the Southern Berkshire count circle (Questing, a Trustees property in the town of New Marlborough) sometimes has hundreds of Wood-Nymphs, but this year, none were seen—possibly because the count was on the early side (June 30), and the preceding weather was cool and rainy. One notable exception to this downward trend was Red Admiral, which seemed to be everywhere this year: 129 of them, a more than five-fold increase compared to the past three years for this irruptive

species (17 in 2022, 29 in 2021, and 18 in 2020). Three Hackberry Emperors on the Southern Berkshire count were also a nice find—the first ones on any count since 2018.

Skipper numbers were mostly lower as well, with a few exceptions. Only 2 Wild Indigo Duskywings was a greater than ten-fold decrease over the previous three years. On the other hand, one Juvenal's Duskywing on the Northern Worcester count was the first count sighting since one was seen on the Southern Berkshire count in 2015. Of the three "witches", only Northern Broken-Dash was about average; the other two had their lowest numbers since prior to 2020, as did Delaware, Pecks, Tawny-edged, and most of the wetland skippers. One Two-spotted Skipper on the Central Berkshire count was the first since 2020, and the Sachem seen on the Brewster count was the first recorded since one was seen in Falmouth in 2018.

Thanks to everyone who makes the counts happen—all of the participants, as well as the following compilers: Tom Tyning, Rene Wendell, Mark Fairbrother, Wendy Howes, John Shetterly, Russ Hopping, Tom Dodd, Andrew Griffith, and Mark Faherty. Everyone's careful observations are invaluable and much appreciated. Karl Barry deserves a special note of thanks for receiving all of the count data from across the commonwealth and tabulating it for easy access. If you haven't been on a count yet, please consider joining one or more in 2024! It's a great way to contribute to citizen science while having a fun day in the field.

Little Glassywing (*Pompeius verna*), 7/19/23, Arlington, MA, Peter Loshin

July Count 2023	Pipevine Swallowtail	Black Swallowtail	Eastern Tiger Swallowtail	Canadian Tiger Swallowtail	Spicebush Swallowtail	Mustard White	Cabbage White	Clouded Sulphur	Orange Sulphur	American Copper	Bog Copper
Total count	**1**	**54**	**67**	**2**	**46**	**3**	**753**	**623**	**82**	**389**	**188**
Central Berkshire		1	13	2		3	61	100	6	7	
Southern Berkshire		2	10				40	13	1		
Central Franklin			6		4		58	37	1	22	183
Northampton	1	19	12		5		196	127	31	34	
Northern Worcester		21	14		7		71	215	14	32	
Concord		1	1				39	67	8	12	
Northern Essex		10	2				49	8	4		
Blackstone Corridor					4		75	42	8	10	
Falmouth					5			10	5	39	
Truro			8		14		44	4	3	130	5
Brewster			1		7		120		1	103	

July Count 2023	Coral Hairstreak	Edwards' Hairstreak	Banded Hairstreak	Striped Hairstreak	Juniper Hairstreak	Gray Hairstreak	Eastern Tailed-Blue	Summer Azure	Great Spangled Fritillary	Aphrodite Fritillary	Atlantis Fritillary
Total count	**42**	**22**	**19**	**13**	**1**	**12**	**77**	**54**	**268**	**5**	**3**
Central Berkshire	6		9	3		1	8	10	77		3
Southern Berkshire							4	4	38		
Central Franklin	2		4			1	2	7	65		
Northampton			4				9	3	43	1	
Northern Worcester							4	11	36	4	
Concord						2	10	9	2		
Northern Essex											
Blackstone Corridor			1			1	1	7	7		
Falmouth		18					37				
Truro	1	2		7		4	2				
Brewster	33	2	1	3	1	3		3			

July Count 2023	Silver-bordered Fritillary	Meadow Fritillary	Pearl Crescent	Baltimore Checkerspot	Question Mark	Eastern Comma	Mourning Cloak	American Lady	Painted Lady	Red Admiral	Red-spotted Admiral
Total count	**12**	**5**	**469**	**383**	**4**	**33**	**8**	**37**	**4**	**129**	**15**
Central Berkshire	1		3	146	1	1	4	6		10	14
Southern Berkshire		4	3	10		23	2	2		4	
Central Franklin		1		4		5		1	1	19	
Northampton	2		366	14	2	4		3		45	
Northern Worcester			4	3	1				1	14	
Concord			9					3	1	23	
Northern Essex	9		64	5						1	
Blackstone Corridor				1				1		4	
Falmouth				200				12		1	
Truro							2	6		5	
Brewster			20					3	1	3	1

July Count 2023	White Admiral	Red-spotted Purple	Viceroy	Hackberry Emperor	Northern Pearly-Eye	Eyed Brown	Appalachian Brown	Little Wood-Satyr	Common Ringlet	Common Wood-Nymph	Monarch
Total count	**2**	**7**	**19**	**3**	**6**	**4**	**68**	**111**	**76**	**275**	**124**
Central Berkshire	2		2		4	2	3	1	17	147	15
Southern Berkshire		2	3	3				14	31		3
Central Franklin			1		1			8			5
Northampton		1	12				8	6	22	50	42
Northern Worcester		3	1		1		11	26	6	6	29
Concord							23	15		9	7
Northern Essex						2		1		21	10
Blackstone Corridor							2	8		1	3
Falmouth								2			
Truro		1					20	30		28	
Brewster							1			13	10

July Count 2023	Silver-spotted Skipper	Southern Cloudywing	Juvenal's Duskywing	Horace's Duskywing	Wild Indigo Duskywing	Common Sootywing	Least Skipper	European Skipper	Peck's Skipper	Tawny-edged Skipper	Long Dash
Total count	**169**	**2**	**1**	**1**	**2**	**23**	**36**	**475**	**81**	**5**	**58**
Central Berkshire	8						10	158	67	1	13
Southern Berkshire	21						7	286	6		44
Central Franklin	47						11	11	3		1
Northampton	54				2	23	1				
Northern Worcester	8		1					12	2		
Concord							1		2		
Northern Essex							2	1			
Blackstone Corridor	5						3	6			
Falmouth		2					1			2	
Truro	18										
Brewster	8			1				1	1	2	

July Count 2023	Northern Broken-Dash	Little Glassywing	Sachem	Delaware Skipper	Mulberry Wing	Hobomok Skipper	Broad-winged Skipper	Black Dash	Two-spotted Skipper	Dun Skipper
Total count	**164**	**41**	**1**	**21**	**33**	**5**	**12**	**9**	**1**	**127**
Central Berkshire	69	21				1			1	14
Southern Berkshire	10	10				4				2
Central Franklin	2									3
Northampton	53	7		3	11			8		42
Northern Worcester	1	2		4	1			1		1
Concord	2			2	13					2
Northern Essex	1				7					3
Blackstone Corridor		1		8	1					
Falmouth	2			4						4
Truro	8						2			17
Brewster	16		1				10			39

July Counts 2023 Summary	No. of Individuals	No. of Spe-cies	No. of parti-cipants	Party Hours	Date	Compiler
Total	5,801	356	-	-	-	-
Northern Berkshire	Canceled due to weather				July 2	Tom Tyning
Central Berkshire	1052	45	13	30	July 9	Tom Tyning
Southern Berkshire	606	74	9	14.5	June 30	Rene Wendell
Central Franklin	516	30	n/a	18.5	July 4	Mark Fairbrother
Northampton	1266	37	7	19	July 17	Mark Fairbrother
Northern Worcester	568	34	8	24	July 8	Wendy Howes
Concord	267	26	17	26	July 8	Jay Shetterly
Northern Essex	200	18	3	n/a	July 22	Russ Hopping
Blackstone Corridor	212	24	7	16	July 1	Tom Dodd
Falmouth	344	16	8	n/a	July 1	Andrew Griffith
Truro	361	23	6	10	July 9	Mark Faherty
Brewster	409	29	5	13.5	July 16	Mark Faherty

Eastern Tailed-Blue (*Everes comyntas*), 8/14/23, Mattapoisett, MA, Garry Kessler

Submission of Articles, Illustrations, and Season Records

We encourage all members to contribute to *Massachusetts Butterflies*. Articles, illustrations, photographs, butterfly field trip reports, garden reports, and book reviews are all welcome, and should be sent to the Editor by August 31 for the Fall issue, and January 31 for the Spring issue.

Send NABA Fourth of July count results to Karl Barry at: karl@massbutterflies.org by **August 15** for inclusion in the Fall issue. Send your season sightings and records to Mark Fairbrother at: mark@massbutterflies.org, by **December 15** (or earlier if possible!) for inclusion in the Spring issue. Records may now be submitted via the online checklist and reporting form, which is available for download from our website at: http://www.massbutterflies.org/club-publications.asp

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Compton Tortoiseshell (*Nymphalis vau-album*),
7/8/23, Westhampton, MA, Todd Wiley

American Lady (*Vanessa virginiensis*), 8/29/23, Arlington, MA, Peter Loshin