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What Thoreau Knew About Butterflies

I have hunted for butterflies since I was a child and recently I've been writing about that passion, intent on figuring out what I've been doing. The working title of this project is *The Collapsible Net*, an image out of Vladimir Nabokov who tells us that a hundred years ago one could buy a butterfly net that folded neatly for travel. A central topic of my meditations is the odd fact that when I walk with my butterfly net I fall into a state of awareness difficult to reproduce without the net in hand (the elusive goal, then, is to have the state without the net, to collapse the net). The state is a kind of generalized attention in which one is alert to one's surroundings without focusing on anything in particular. It is a delicious trance of undifferentiated awareness.

The hunter *is* looking for something, of course, but—if most of the time that thing is not there, if attention's pleasures lie in the search not in the finding—then it is almost better if the hunter never lays hands on the prey. In *Walden* Thoreau tells a story of hounds chasing a fox: a hunter kills the fox before the hounds arrive and, when they do, they are stupefied—the point was never to get a dead fox! Whatever we hunters are searching for quickly disappears in the carnality of capture.

My writing focuses mostly on my own experience but that experience is always enriched in conversation with others, especially with such remarkable naturalists as Thoreau and Nabokov. Manuscripts from each of these writers are now held in the Berg Collection of the New York Public Library and I therefore applied for and was lucky enough to receive a fellowship to spend much of the past year at the library's Cullman Center for Scholars and Writers. Once I got to the library, my earliest project was to figure out what Thoreau knew about butterflies.

A good place to begin turned out to be the dated lists Thoreau made around 1860 of all the plants, birds, reptiles, and insects that he'd recorded in his Journal. Here are a few lines from the insect list in his "Notes on general phenomena" (Figure 1, next page).

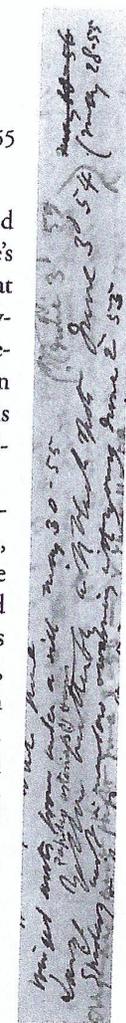
This entry reads:

Winged ants from under a sill May 30 - 55
 Papilio asterias (?) Harris (? June 3d 59) May 20-56
 Large yellow butterfly ^with black spots^ June 3d 54 (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 suggests that he knows he's not sure and the name Harris indicates that he knows where to turn for help: Thaddeus William Harris, 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 winged 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 writes 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" ("Autumnal" 257). In the mid-nineteenth century there were no books on American Lepidoptera that could have lodged a butterfly in his eye before he went forth to find it. (See the Appendix for what butterflies Thoreau did find.)

Figure 1. Detail from "Notes on general phenomena," "Insects," paginated in pencil as 33-40; page 34. Henry David Thoreau Collection. The Henry W. and Albert A. Berg Collection of English and American Literature, The New York Public Library, Astor, Lenox and Tilden Foundations. Courtesy New York Public Library



Such was not the case with botany. 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* (1824) and Asa Gray's *Manual of the Botany of the Northern United States* (1848). Each of these is scholarly, detailed, and dense (Gray's botany is over 700 pages) and starting in 1851, Thoreau's Journal is full of references to them. If one were to delete every sentence containing a Latin binomial from Bigelow or Gray, one would 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*; it contains illustrations of 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 then-current scientific name for it, *Attacus luna* (July 8th & July 26th, 1852; 5: 199, 251).

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. I classify as arcane 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" (January 19th, 1854; 7: 245). 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 were supplied by 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 Journal 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" (XIII: 352). 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 this entry in 1860, plausibly because in 1859 another entomologist, John Lawrence LeConte, had published a two-volume version of Say's 1820 edition. 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.

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" (XIV: 95). 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*; 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 that allows him to make an accurate identification (Scudder, I 447).

In sum, toward the end of Thoreau’s life a book from England and a fresh edition of Say’s *Entomology* reached Concord and Thoreau correctly identifies both the Red Admiral and the Tiger Swallowtail. 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 Thoreau’s teacher Thaddeus William Harris, for his work and his presence in Cambridge 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 was 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” (Harris 220 [1841]).

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” (Harris 212-213 [1841]). 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” (1842). 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 . . .” (“Natural” 7). 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 judgment Thoreau softens only by adding that we shouldn’t “underrate the value of a fact; it will one day flower in a truth” (“Natural” 27).

It is, of course, the flower that matters to Thoreau and, by way of proof, when he comes across an actual 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 the ravenous vulture of this world” (July 26th, 1852; 5: 251).

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’” (214-215). 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” (Elliott 175).

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 blackwinged-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" (April 11th, 1853; 6: 84). 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 friends of his brought into 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, the suggestion that bothersome caterpillars should be crushed still appears, but before he died Harris had added 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 (Harris 268 [Figure 97, 1862]). 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—a *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" (Hitchcock 595). 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.

So, again, maybe Thoreau's choice of botany as his primary interest rather than entomology (or geology, say, or herpetology) 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)" (Kirby & Spence, xix-xxi). 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'" (May 1st, 1859; XII: 171).

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. Harris 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 (Harris 307 [1862]). As for advice on how to kill Spring Azure caterpillars, none appears.

Appendix: Thoreau's Butterflies

Four species named by Thoreau

Mourning Cloak. Harris: *Vanessa Antiopa*. Current: *Nymphalis antiopa* (Linnaeus, 1758). Harris confirms the name, April 11th, 1853 (6: 84). July 5th, 1857: HDT identifies the larvae "according to Harris's description" (IX: 469).

Eastern Tiger Swallowtail. Harris: *Papilio Turnus*. Current: *Papilio glaucus* (Linnaeus, 1758). Correctly named June 3rd, 1859 and June 14th, 1860 (XII: 199 and XIII: 352).

Gray Comma. Harris: *Vanessa Progne*. Current: *Polygonia progne* (Cramer, 1776). Harris gives him the name, April 11th, 1853 (6: 84).

Red Admiral. Harris: *Cynthia Atalanta*. Current: *Vanessa atalanta* (Linnaeus, 1758). September 24th, 1860 (XIV: 95). HDT identifies based on William Stephen Coleman's *British Butterflies* (1860).

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 (July 15th, 1852; 5: 222). July 26th, 1854; 8: 244. September 3rd, 1854; VII: 8. July 19th, 1856; XIII: 418.

Compton tortoiseshell. Harris: *Vanessa J Album*. Current: *Nymphalis vaualbum*. 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" (X: 341). Bradford Torrey, editor of the 1906 Journal, adds a bracketed footnote: "*Vanessa j-album*, to judge by the date and the general description" (X: 341n).

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" (XII: 167).

Fritillary. *Speyeria ssp.* July 18th, 1860: "The *Asclepias Cornuti* [milk-

weed] is abundantly visited nowadays by a large orange butterfly with dark spots and with silver spots beneath" (XIII: 407). In his earliest inventory, Harris listed four local species of fritillaries: *idalia*, *aphrodite*, *daphnis*, and *Cybele* (Harris "Insects" 589).

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" (6: 275).

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" (6: 250).

May 3, 1855: "butterfly one inch in alar extent, dark velvety brown with slate-colored tips" (VII: 353).

April 28, 1856: "a fine little blue-slate butterfly" (VIII: 315).

October 12, 1856: "a large handsome butterfly, with dark snuff-colored wings and a stripe of blue eyes on them" (IX: 112).

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" (X: 335).

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" (XIII: 302-303).

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