

ENVIRONMENT

Adding ants to your insect identification repertoire

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The commercial days of the week, from Black Friday to Cyber Monday, have come and gone. With Thanksgiving past—I hope your gathering was as wonderful as ours. (Yes, the Naturalist adequately represented the geezer contingent on the football field during the Fellman family's annual game.)—we're now well into the Holiday season, which, of course, marks the advent of a series of much anticipated journal entries devoted to solving that perennial conundrum: what to buy the naturalist in your life.

Here's a suggestion: run down to your favorite book-store and purchase *A Field Guide to the Ants of New England* (FGANE). This fascinating and beautifully illustrated book by veteran myrmecologists—myrmecology is the study of ants—Aaron M. Ellison, Nicholas J. Gotelli, Elizabeth J. Farnsworth, and Gary D. Alpert was just published by Yale University Press (and no, as a Yale retiree, I don't receive a royalty for positive comments) and retails for \$29.95. And yes, I know that most people consider that the only good ant is, if not a dead one then at least one as far away from home as possible.

But this book might change your mind.

Harvard biologist Edward O. Wilson, probably the world's best known students of these insects, once called ants the "little things that run the world." According to Wilson, their competitive advantage comes from their "highly developed, self-sacrificial colonial existence," he notes in *Journey to the Ants: A Story of Scientific Exploration*, a terrific and easy to digest exploration of ant natural history that he wrote with his long-time collaborator Bert Hölldobler. (This book, by the way, is the one to get after you get hooked

on FGANE: I guess this makes the field guide a kind of gate-way drug.)

Collectively, ants outweigh all other invertebrate groups on the planet, and Wilson and Hölldobler attribute the success of these ubiquitous insects to the way they've finetuned a social existence over their 250-million-year evolutionary history. (Ants we'd recognize as modern have been around for between 135 and 115 million years.) "It would appear that socialism really works under some circumstances," they write. "Karl Marx just had the wrong species."

Worldwide, there are at least 10,000 species of these insect socialists going about their communal business; New England, given the weather challenges any critter attempting to make a living here must face—think winter—has somewhere in the neighborhood of 150 species. This makes the task of knowing them all quite doable. FGANE is the book to help you do just that.

It starts off with a readable introduction about ant biology: a primer that will have you nodding your heads in agreement with the authors' assessment that "ants are important, fascinating, and cool." They then move on to a careful consideration of "observing, catching, and collecting ants," which encourages the acolyte myrmecophile to start looking around "the edges of open fields, campgrounds, picnic areas, parking lots, and even sidewalk cracks and brickwork." In fact, they note, "good ant hunting also can begin at home!"

I am, I must admit, all too familiar with ants that seem to view my abode as a great place in which to feed and nest: carpenter ants in the attic and sugar ants in the space behind the butcher block countertop. But armed with this book, I am now actually looking forward to their appearances—well, not the carpenter ants; they can

remain outdoors—so I can collect them, pin them, and start the observation processes leading to an identification.

I'll no doubt begin by following Elizabeth Farnsworth's advice: "There is probably no better way to get up close and personal with an ant than to take the time to draw it," notes the artist who produced the lovely and useful illustrations that grace FGANE. And with all of this useful information under my belt, and a bit of warmer weather than we've had recently—ants are pretty much out of sight during the winter—it would be time to work my way through the lion's share of FGANE: the identification keys and species accounts of the ants that reside in New England.

"We've designed the book so that all you need to get started is a 10X hand lens, and we've tested this approach with elementary school teachers and their students," said Aaron Ellison, an ant ecologist at the Harvard Forest.

With your ant in hand, you open the book to the inside front cover, determine the ant's size—big, medium, and small—by comparing it to a scale bar at the top of the page. You then examine various key characteristics, starting with the pedicel, the "wasp waist" constriction between the thorax and abdomen. Figuring out what genus an ant belongs in is, says Ellison, "not too bad. Any fifth grader can do this."

Trying to determine an ant's species, however, can be "harder," admits Ellison. There's a formidable array of vocabulary to learn in order to become an expert and a dissecting microscope can be handy, even necessary, to work through the identification keys. Fortunately, "there are a lot of genera in New England for which there is just one species," he continues.

As to make matters less potentially perplexing, "90 percent of what you collect will include about 10 very common species," says Ellison, who got the ant "bug" by studying an unusual group, the ants that live in bogs. Among the commoners will likely be two species of carpenter ants, the "broke-backed" ants that disperse bloodroot and trillium seeds, the sugar ants (when squeezed, these give off the aroma of rotting bananas), and the pavement ants.

But once you get hooked on these remarkable insects—and you will (you were warned)—you may find yourself spending the warmer-weather days searching the rock walls for vampire ants, the hardwood leaf litter for the Euphonia Pyramica ants, rotten wood for "Lady Gaga" ants, and the tree-fall gaps for the Somewhat Hairy Furry Ants. (Ellison and his coauthors coined many of the common names, which are based on loose translations of the Latin- and Greek-based scientific names.)

Personally, I can't wait to get my hands on one of the so-called winter ants, the ones that congregate on the buds of peonies and, according to Ellison, have the "highest temperature tolerance of any New England species." In fact, I might see them in early December, if we have another warm spell. In the meantime, I could study the chapter on New England ant biogeography, check out the many books and scientific journal papers devoted to ants, scan back issues of *Myrmecological News*, and explore the book's list of various ant-oriented websites, starting with the companion site to FGANE: NEAnts.net.

Except for the appearance of winter moths at the lights, insects were definitely scarce on the ridge. But last week, while I was splitting wood, I got an unexpected early present when my ax, as occasionally happens, exposed a nest of carpenter ants.

I took a close look: large size, one-segmented pedicel... I quickly worked my way to the genus *Camponotus*, "the ants with the bending backs." Now, it was time to study the traditional two-choice, dichotomous keys and the newer matrix keys, which offer comparisons of a variety of characteristics at once. It would be

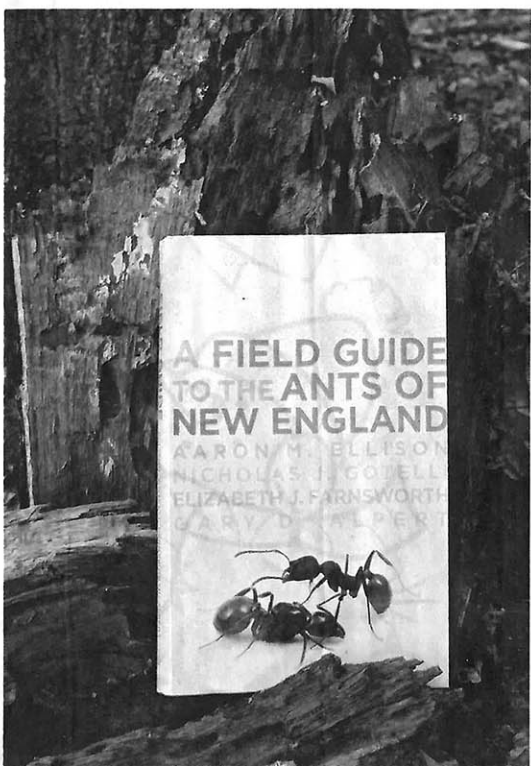


PHOTO BY BRUCE FELLMAN

Ants, according to Harvard biologist Edward O. Wilson, are the "little things that run the world." This new field guide, supported atop wood carved by carpenter ants, gives the curious naturalist a window into the myrmecological world... and a fairly easy way to learn the cast of local characters. Find out why the authors consider ants to be "important, fascinating, and cool!"

slow going, but as I read and analyzed, I knew that FGANE offered my idea of fun. "Let's go," say the authors of this fine addition to everyone's natural history library. Let's go, indeed.



PHOTO BY BRUCE FELLMAN

A carpenter ant, attempting to return to the snug nest it and thousands of its sisters had excavated in a log.



PHOTO BY BRUCE FELLMAN

A very slowly meandering carpenter ant, unexpectedly awoken when I split the log in which the insect was hiding from the cold.

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