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KNOWING NEW ENGLAND'S ANTS Ecologists bring ant identification to the people

PETERSHAM, Mass. (October 31, 2012)—Every time you go outdoors in New England, you're surrounded by at least a dozen species of ants. Some are pavement or picnic specialists; others live under rocks, inside acorn caps, or in the branches of trees. The new *Field Guide to the Ants of New England*—the first book of its kind in the region—uses a mix of natural history, ecology, and even pop culture to describe the region's 130 species. The book, published by Yale University Press, is part identification guide, part regional and scientific history, part paean to each ant species' distinctiveness and importance.

According to Aaron Ellison, lead author of the *Guide* and Harvard Forest senior ecologist, ants are irreplaceable contributors to our lives. "Ants make an inch of new topsoil every 250 years," he explains. "Ants--not earthworms--are the reason we have soil in New England today." He also praises ants' role as diligent garbage collectors: "Ants eat everything. Imagine, we'd be knee-deep in caterpillar carcasses if we didn't have ants cleaning them up."

Many of the region's most spectacular woodland flowers, including trillium, bloodroot, fringed polygala and many violets, also depend on ants. "Ants are like the FedEx of the forest plant world. They carry seeds around, eat the small part that's rich in protein and fats, and then they store the seeds—and essentially sow them—in the rich soil of their nests," Ellison says.

The *Field Guide to the Ants of New England* is meant to be accessible to just about everyone: the illustrated mini-guide printed on the book's inside cover was field tested with fifth graders. Success with the mini-guide requires only an inexpensive, low-magnification hand lens – "and a little patience," adds Ellison.

The more technical guide to ant species inside the book, meant for amateur naturalists and professional scientists, is copiously illustrated. The authors are keenly aware of the tools that budding ant enthusiasts need to advance from simple beginnings to expertise. Fifteen years ago, Ellison himself was new to the field of ant research. His study species--local carnivorous plants--eat mostly ants, and he wanted to know which ants they were eating. But no local field guide existed. "We wrote the book we'd wished we had then," says Ellison.

Every species in the book is documented with color photos, ninety percent of which were taken by the authors. Co-author Nicholas Gotelli, an ecologist at the University of Vermont, describes, "We wanted to create something more like popular bird identification books, with color photographs, range maps,

detailed drawings, and of course natural history and habitat information. We also created a sort of matrix guide that compares related ant species side by side--like a police line-up."

Co-author Elizabeth Farnsworth, an ecologist at the New England Wild Flower Society, drew the more than 500 illustrations that illuminate small details crucial for identification. She admits that illustrating the guide was her first truly close look at ants. "They used to be just the little critters that marauded my picnic or scurried across my kitchen floor," says Farnsworth. "But pick one up and look closely at it, or better yet, put it under a microscope, and you suddenly realize what gorgeous creatures they are."

To create the field guide, Ellison, Gotelli, Farnsworth, and Gary Alpert, a research associate at Harvard's Museum of Comparative Zoology, went on the road with a few students and colleagues for several rounds of what they call "blitz sampling." From Nantucket to interior Maine, the research teams would locate a field site, start a stopwatch, and begin flipping over rocks, digging around in rotten logs, and sifting through soil and leaves to collect an ant from every nest they could find.

Other scientists and students caught wind of the project and began sending them ants from habitats they'd missed. The authors also scoured every archived ant collection in the region, traveling to museums, universities, and personal collections throughout the Northeast and Canada. They ended up with just shy of 30,000 records of ant species from more than 100 different habitat types.

Fifteen of the ants in the book have not yet been named by science, including one species the authors note as the most difficult to track down: "an extremely small and shiny ant living below the sand in only a few habitats in Massachusetts," according to Alpert.

Massachusetts is home to more than 100 of the total 130 ant species described in the book. "From the Berkshires to the Cape, there's an incredible range of habitats and climates in Massachusetts alone," says Ellison, "But there are some boreal ant species that you only find up in Northern Maine and the White Mountains, and some southern species known only from coastal Connecticut." But, Ellison admits, there is more work to be done. "We're sure we didn't get them all."

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Upcoming book lectures and signing events include:

- November 7, 6:30pm at the Arnold Arboretum, Jamaica Plain, MA
- November 29, 6:00pm at Harvard University's Museum of Natural History, Geology Lecture Hall, Cambridge, MA
- December 2, 1:30 - 3:30pm at New England Wild Flower Society's Garden in the Woods, Framingham, MA
- December 3, 6:30pm at the Harvard Forest, Petersham, MA

More information on *A Field Guide to the Ants of New England* can be found on the book's website at <http://harvardforest.fas.harvard.edu/ellison/field-guide-ants-new-england>. Press photos and other information are available at <http://harvardforest.fas.harvard.edu/press-resources-1031-ant-story>. For additional information, or for an interview with the authors, please contact Clarisse Hart at 978/756-6157 (9a-5p) or email hart3@fas.harvard.edu.