You Ain't From Around Here! Exotic Invasive of the Quarter: Asian Lady Beetle

Jennifer Gagnon, Virginia Tech

In the Winter 2007 edition of the *Virginia Forest Landowner Update*, I featured the hemlock woolly adelgid (HWA) in "You Ain't From Around Here!" In this article, I touted the on-going research to control HWA by releasing ladybird beetles (aka ladybugs, lady beetles), which are adelgid predators. Little did I know that the publication of this article would result in my phone ringing off the hook for weeks. Virginians were outraged that researchers had intentionally released these critters. One caller claimed she swept up buckets of ladybugs from her walkway every day in the fall.

So, I did some more research. Turns out, the ladybird beetles that are being released as a biological control agent are not even in the same genus (*Sasajiscymnus*, *Scymnus* and *Laricobius*) as the one so many of you deplore, and have not been shown to be invasive. In fact, one of the main challenges with using these as a biological control is getting them to reproduce in the wild. The troublemaker trying to move in with you is the multi-colored Asian lady beetle (also known as the Japanese ladybug or Halloween lady beetle), in the genus *Harmonia* (one of six exotic lady beetle species in the United States).

In the spring, adult Asian lady beetles lay their yellow eggs in upright clusters on host plants (up to 20 eggs/day). These hatch into larvae which molt 4 times before entering an immobile pupal state. After several days, the adults emerge; the entire process from egg to adult takes approximately 20 days. Asian lady beetles only feed on other insects, outdoors. They are voracious eaters of aphids, scale and other soft-bodied arthropods, (an individual can eat up to 300 aphids before it even reaches adulthood), and mainly live in orchard trees and forests. Since their introduction (which was probably both intentional and accidental), use of insecticides in crops such as pecans, has decreased dramatically, and they are generally considered to be a beneficial insect.

So why all the fury? The problems begin when the weather turns cold (September - November). These insects are not cold hardy and seek winter shelter. They are attracted to light, warmth, and areas with high surface contrast (think black shutters on a white house). Asian lady beetles release pheromones to attract other individuals, resulting in large clusters occurring most commonly on sunny sides of light-colored rock outcrops or homes on hillsides or near forests. While they are clustered on your home, they seek out crevices, like cracks around windows and door frames, in which to over-winter. They will mostly remain in cracks, walls and attics. But in the spring, when the temperatures warm up, they leave dormancy and may accidentally enter your home in an attempt to exit the walls.

Now, Asian lady beetles do NOT chew holes in wood or fabric and do not lay eggs in your home. They do not carry disease or sting. They do, however, exhibit a stress response when squashed or agitated known as reflex

bleeding. Reflex bleeding is the release of a foul-smelling yellow fluid from the leg joints. Outdoors, this deters predation. Indoors, it stains your walls and fabrics. Some individuals may have an allergic reaction to Asian lady beetles. Additionally, studies have shown that some crops infested with Asian lady beetles can become contaminated. For instance, if they are on grapes, they can alter the taste of wine. There is also concern about these non-native species displacing some of our native ladybugs, whose populations have been on the decline since the establishment of the non-natives.

So, while these are far from the most noxious of exotic invasives I've covered, they can still be a nuisance to many folks.

How to identify multicolored Asian lady beetles

The ¼" convex beetles exhibit a wide array of wing covers. In the United States, the most common coloration is mustard-red with 16 or more dark spots. However, Asian lady beetles may be black with 2 or 4 red spots, or red-orange with 0- 20 dark spots. The best way to identify this species is by the small dark "M" or "W" on the whitish area behind the head (circled in the top photo above). Larvae, which look like small alligators, are black with orange streaks on both sides of their abdomens.

Control

Because of their agricultural benefits, the use of pesticides is NOT necessary OR recommended for control. The best thing to do is to prevent these insects from entering your home in the first place. Simply use a high quality caulk to fill in exterior cracks and crevices before the weather starts turning cold. Replace and repair any damaged screens. Creating afternoon shade by planting trees along the south and west sides of your home may be a good deterrent to clustering.

If these critters do get into your house, sweeping and vacuuming are good ways to remove them. Ladybug houses, sold in garden departments, will not keep the beetles out of your home. You can build a trap that uses light to attract the insects in otherwise dark areas, such as attics. Directions for building a trap can be found at: http://www.ars.usda.gov/is/br/lbeetle/001030.trap.pdf. Once they are trapped, you can dispose of the trap bags. Or, as one researcher did in the 1980's, keep the bag of insects in your refrigerator, remove it once a week to warm them up and allow them to drink sugar water, and release them outdoors in the spring. If you do this, PLEASE let me know. I'd love to hear about your adventures in Asian lady beetle care.

Photo Captions (top to bottom):

Female adult with eggs. Photo by: Gerald Lenhard, Louisiana State University.

An Asian lady beetle larva eating aphids. Photo by: David Cappaert, Michigan State University

Variety in markings. Photo by: Bill Ree, Texas A&M.

Jennifer Gagnon is a Research Associate in the Department of Forest Resources & Environmental Conservation
Jgagnon@vt.edu 540/231-6391