Observations and Notes on the Azalea Plant Bug, *Rhinocapsus vanduzeei* Uhler

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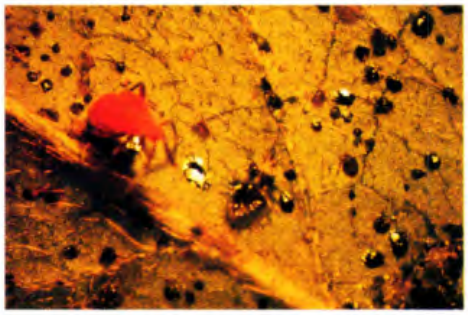
[Editor's Note: Mr. Stewart and Dr. Braman presented the results of a study in which azalea plant bugs (APBs) were challenged with varying concentrations of azalea lace bug nymphs to the Southern Nursery Association meeting at the end of July, 1999. They also presented results of similar tests using green lacewing larvae at the Entomological Society of America meeting in December, 1999. Both meetings were held in Atlanta.]

The azalea plant bug (APB), *Rhinocapsus vanduzeei* Uhler, is a beneficial insect that was discovered and named in 1890 (Uhler, 1890). It was originally placed in the family Capsidae and is now placed in the family Miridae. Of the citations listed for the APB, only three were published after 1917. The following information comes from these three articles, plus Colin Stewart's field observations.

APBs hatch from the azalea stems in synchrony with azalea bloom and can best be seen by beating the flowers over a white sheet of paper. This year, in Zone 7, they were collected primarily from Piedmont *(R. canescens)*, and Florida azaleas *(R. austrinum)* from March 31 to April 20. Peak numbers were found on the latter dates. On April 20 we stopped collecting because we had collected enough for our experiments. Braman and Beshear (1994) also reported finding eggs, nymphs, and adults on Flame azaleas *(R. calendulaceum)*, and Alabama azaleas *(R. alabamense)*. According to Wheeler and Herring (1979), the insect has been identified on the wild swamp azalea, *(R. viscosum)*, the Ghent hybrids of the Flame azalea, and the Korean azalea, *(R. yedoense* var. *poukhanense)*, and raspberries (Van Duzee, 1905). Dr. August Kehr and Mr. Judson Hardy also observed the APB on *R. bakeri*. The insect has been reported from Ontario and Maine down to Florida and as far west as Missouri.



Fifth instar azalea plant bug nymph (left) and its prey, an azalea lace bug. Photo by Ruth Jarrett.

The azalea plant bug is a "true bug" in that it has a "beak" (piercing/sucking mouthparts) and forewings. The forewings of a true bug are thickened and hardened at the base and the wing tip is membranous. It goes through seven distinct stages during its lifetime: egg, five nymphal "instars", and then the winged adult stage. Observations at Callaway Gardens indicate that the first instar nymphs start out a pale yellow color and later become reddish just before they molt to the second instar. At first glance they can easily be mistaken for pollen. The nymphs can grow to approximately 1/8-inch long. Just prior to becoming adults they take on a dark reddish color. At this stage, it has been described as resembling a "large, red, aphid" (Miller 1993). Adults are about 1/6-inch long. New adults have reddish wings which quickly turn black. The antennae have four segments, and the second segment is black.

The insect was originally thought to be a pest in that it was observed feeding on pollen and stamens. This could affect seed production. Actually, because of this pollen-feeding habit, this valuable predator is able to survive times when prey are scarce. Braman and Beshear observed APBs feeding on whiteflies, leafhoppers, aphids, small flies, azalea lace bugs, and a number of species of thrips. In the lab we have also seen them feeding on fall armyworm eggs and first instar larvae, twospotted spider mites, azalea leafminer pupae, "large" thrips *(Echinothrips)*, and each other. We saw an APB kill a twospotted spider mite, a thrip, and then attack an aphid. The aphid, which was slightly larger than the predator, started to walk away. The APB kept feeding and within a few hours the aphid had been killed. The azalea plant bug seems particularly adept at feeding on azalea lace bugs during or just after a molt when the pest is most vulnerable. The APB's bite can cause a chigger-like welt (Wheeler and Herring 1979). Colin has handled many hundreds and only received a few bites which, fortunately, did not leave welts. The insects are fascinating to watch (of course, as entomologists, we're a little biased). They move rapidly, in short sprints, along the leaf or flower when they are disturbed. We have also observed them tumble multiple times when they fall on their backs. Azalea plant bugs are not currently commercially available for purchase.

An Azalea Plant Bug adult.

We'd like to thank Ms. Cynthia Mazer, Director of the Callaway Gardens Day Butterfly Center, and Mr. Parker Andes, Director of Horticulture, for permission to collect insects from the native azaleas at Callaway Gardens.

References

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Miller III, W. C. 1993. "*Rhinocapsus vanduzeei* Uhler, A Little Known Pest of Azaleas." **THE AZALEAN.** 15(3). 58-59.

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spreading the roots and shaking out much of the container potting mix, replacing it with soil. But even when the root balls of container-grown plants (these are often badly potbound) have been spread in planting, roots will not quickly extend into the surrounding soil. For the first year or two, careful attention to moisture supply is required.

Azaleas prefer slightly acid soils, with pH in the 4.5 to 6.0 range; some do well in neutral soil (pH=7). If adjustment of soil pH is necessary, it should be undertaken with great care. Azaleas can be killed by well-intentioned but overdone dosing of the soil, even when using a slow-acting chemical like sulfur.

The question of fertilizer use is more complex. In many soils, azaleas can thrive for years without application of fertilizer. If soil nutrients are low, however, a plant may benefit from application of a fertilizer appropriate for azaleas. Sparing application and avoidance of high-nitrogen fertilizers (these may stimulate vegetative growth at the expense of flowering) are two good rules of thumb to follow when fertilizing azaleas. An essential consideration is to avoid stimulation of growth in the fall and early winter—a result that would interfere with the essential hardening-off process and increase the plants' vulnerability to winter damage.

As noted in discussion of the timeline (**E**), shaping of evergreen azaleas is best accomplished shortly after the blooms fade. A broken branch or an occasional unsightly "water sprout" (an overly vigorous branch—usually vertical—extending well beyond the general contour of the plant) may be removed at any time.

Major late-season pruning, however, presents a much greater threat than just the loss of next spring's flowers. When the plant is heavily pruned, vegetative growth will be stimulated. New branchlets will develop from adventitious buds in the stems, and this new growth will face the rigors of winter in an immature condition. Worse, the stimulation of growth will delay the normal hardening off, putting the entire plant at risk of damage from freezing temperatures.

Can these observations be refined?

The relations set forth above between environmental factors and cultural practices on the one hand and the growth responses of azaleas on the other hand reflect observations by the author and others with whom he has discussed them. Given the large numbers of evergreen azalea species and cultivars (and the complex genetic backgrounds involved), scientific tests of the posited relations under controlled conditions would be a formidable task. Tests covering the broad range of geographic, climatic, and cultural conditions under which the plants are grown would be costly indeed.

Nevertheless, a confluence of expert opinion could do much to refine understanding of the relationships under discussion. A symposium at an annual convention or in **THE AZALEAN** could pool the experience and knowledge. Plant scientists familiar with plant physiology and genetics, nurserymen who have observed azalea growth under a variety of geographic and cultural conditions, and collectors with experience in growing a wide range of species and cultivars are encouraged to undertake such a synthesis.

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