

## Mexican Bromeliad Weevil Report

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The production of *Lixadmontia franki* pupae was down 42% from the previous three months. This is probably due to a reduced level of infested pineapple tops being placed in the cage (due to less availability from grocery stores) and lab technicians not keeping the environmental conditions sufficiently wet. Average weekly production of pupae was only 69, with a maximum of 123. In October, 323 pupae were produced, in November 213 pupae, and in December 358 pupae. The trimestral total was 894.

Only two field releases of *L. franki* were made during the reporting period. Both releases occurred at Collier Seminole State Park. On October 27, 25 females and 21 males were released; on November 24, 27 females and 25 males were released. Hot weather, the need for flies to maintain the laboratory colony, and low numbers of adult emergence did not allow for additional releases. To date, 1,641 females and 1,470 males of *L. franki* have been released in the field. No recent recoveries of the parasitic fly from any of the release sites have been made.

Howard Frank, Dennis Giardina, Tim Andrus, and Jose Monzón spent the first 10 days in November 2009 collecting weevil larvae from epiphytic bromeliads in Guatemala. Most of their time was spent in the lowlands near the Caribbean coast. The most productive sites were in (a) riverside trees along the shores of Lago de Izabal and Río Dulce and (b) roadside trees bordering cattle pastures north of Puerto Barrios. All the plants from which weevil larvae were collected were *Tillandsia utriculata* (or a species they could not distinguish from *T. utriculata*). They brought almost 50 living larvae back to quarantine in Ft. Pierce, but the only creatures so far to be reared from those larvae were healthy adult *Metamasius rugipectus*.

Approximately 100 *Metamasius quadrilineatus* larvae were collected in Honduras in late November with the goal of obtaining *L. franki* pupae to send to Florida for invigorating the colony in Ft. Pierce. Based on previous experience, about 40 fly pupae were expected from these ~100 larvae. By the scheduled shipping date of December 1, only 9 fly pupae were obtained. Nineteen living weevil larvae were also shipped and received into the Ft. Pierce quarantine, but from none of these were parasitized. One female and 3 males emerged from these 9 pupae. Two males died soon after emergence, so only 2 healthy flies were incorporated into the fly colony.

Graduate student Teresa M. Cooper completed her research, presented and successfully defended, and graduated in December. Teresa's dissertation is called "An assessment of a biological control agent, *Lixadmontia franki* (Diptera: Tachinidae), to control *Metamasius callizona* (Coleoptera: Curculionidae), an invasive herbivore destroying Florida's native bromeliads." Chapter topics include seasonality, abundance, and biological control of *Metamasius callizona* on *T. utriculata* in the Enchanted Forest Sanctuary, release and monitoring of *Lixadmontia franki* to control *Metamasius callizona*, indirect assessment of host density by *Lixadmontia franki*, description of the immature life stages of *Lixadmontia franki*, and ovoviviparity versus viviparity. She will be hired in January as a post-doctoral research associate to supervise the fly production, field releases, and research.

Publications:

Cooper, T. M. Cooper, J. H. Frank, R. D. Cave, M. S. Burton, J. S. Dawson, and B. W. Smith.  
Release and monitoring of a potential biological control agent, *Lixadmontia franki*, to control an invasive bromeliad-eating weevil, *Metamasius callizona*, in Florida. Submitted to the journal Biological Control.

Presentations:

1. Ron Cave gave a talk to the Bromeliad Society of South Florida on November 3
2. Ron Cave displayed a poster at the Bromeliad Extravaganza on November 14
3. Bradley Smith, Ron Cave, Howard Frank, Teresa Cooper, and Jan Dawson presented a poster titled “Release history and biological information on *Lixadmontia franki* (Diptera: Tachinidae), a parasitoid of the Mexican bromeliad weevil” at the annual meeting of the Entomological Society of America in Indianapolis on December 15