REPORT TO THE
FLORIDA COUNCIL OF BROMELIAD SOCIETIES
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1. Exploration

Howard Frank and Dennis Giardina traveled to the Petén of Guatemala in October 2005 to search for additional bromeliad weevil parasitoids. Eight weevil larvae were found in a single locality. These larvae were shipped to the Ft. Pierce quarantine laboratory for rearing. From one weevil larva emerged a single parasitic fly maggot which pupated. Unfortunately, no adult fly emerged so that a positive identification could be made, but we suspect that it is the same parasitic fly species known from Honduras and collected in another locality in Guatemala.

2. Grant proposal submissions

No word has been received from the Critical Ecosystems Initiative program of the Dept. of Interior concerning the grant proposal submitted on August 15. A pre-proposal submitted to the National Fish and Wildlife Foundation on September 15 was rejected.

3. Parasitic fly research and rearing

Dr. Monty Wood and I have submitted a manuscript to Florida Entomologist in which the fly is described as a new species in a new genus.

The sum of $5,555 was sent to Zamorano to support fly rearing activities there. Dr. Alonso Suazo has left Honduras and no further research is being conducted at Zamorano. However, he is working with Howard Frank and I in the preparation of manuscripts to publish results of research performed in Honduras.

4. Importation of parasitic fly into quarantine in Ft. Pierce

Shipments of 40 parasitic fly puparia each were received into the Ft. Pierce quarantine on the following dates: November 4, November 16, December 2, and December 15. There was good (80%) to excellent (98%) emergence of adult flies. Adult flies were placed in a large cage and exposed to 7-15 *Metamasius callizona* larvae every 3-4 days. Feeding on hummingbird food and mating were observed on occasions. Twenty days after exposure of the first weevil larvae, we observed fly maggots exiting weevil larvae.

SUCCESSFUL PARASITIZATION IN OUR LABORATORY CONDITIONS!

Since this time, we have obtained several parasitized weevil larvae. Twenty days after pupation of first maggots in our laboratory colony, adult flies (both sexes) began emerging from puparia. The adults were placed in a Bug Dorm and provided food. Unfortunately, all flies died within 10 days.

Significant findings:

- Flies will mate and deposit maggots on weevil hosts under our laboratory conditions
- On a lark, one weevil larva was left in a pineapple stem and this was placed in the oviposition cage. The larva was parasitized. Therefore, female flies WILL deposit maggots on pineapple stems containing a larva of *M. callizona* (important information for future mass rearing)
- Adult flies (at least females) will survive up to 2-3 weeks as long as conditions in the laboratory do not exceed 30°C and cage is "watered down" daily

Future objectives:

- Continue to receive shipments of 40-50 puparia from Honduras every 2 weeks.
- Solve temperature control problems (for the most part, already done)
- Increase the size of the colony
- Submit publications
- Compile all information and prepare a release permit application to USDA APHIS PPQ

5. Publications

- Frank, J. H. and R. D. Cave. 2005. *Metamasius callizona* is destroying Florida's native bromeliads. 1: 91-101 *In* Hoddle, M. (ed.) Second International Symposium on Biological Control of Arthropods, September 2005, Davos, Switzerland. USDA Forest Service, Morgantown, WV, as FHTET-2005-08.
- Wood, D. M. and R. D. Cave. Description of a new genus and species of weevil parasitoid. (submitted to Florida Entomologist)
- Pú Pacheco, D.E.A. Biología reproductiva de *Metamasius quadrilineatus* (Coleoptera: Dryophthoridae) y parasitismo por su agente de control biológico cf. *Lixophaga* (Diptera: Tachinidae) en condiciones de laboratorio (thesis submitted to Panamerican School of Agriculture)
- García Gavilánez, M.S. Fecundidad de cf. *Lixophaga* (Diptera: Tachinidae) y parasitismo artificial de *Metamasius quadrilineatus* (Coleoptera: Dryophthoridae) como forma alterna para su producción masiva (thesis submitted to Panamerican School of Agriculture)
- Suazo, A., N. Arismendi, J. H. Frank and R. D. Cave. Method for mass rearing *Lixadmontia franki* (Diptera: Tachinidae), a potential biological control agent of *Metamasius callizona* (Coleptera: Dryophthoridae) (in preparation)
- Frank, J.H., T.M. Cooper and B.C. Larson. *Metamasius callizona* (Coleoptera: Dryophthoridae): longevity and fecundity in the laboratory (in preparation)
- Cave, R.D., P.S. Duetting, O.R. Creel and C.L. Branch. Biology of *Metamasius mosieri* Barber (Coleoptera: Dryophthoridae) (in preparation)
- Suazo, A., D. Pú Pacheco, R.D. Cave and J.H. Frank. Fecundity and longevity of *Metamasius quadrilineatus* (Coleoptera:: Dryophthoridae) on a natural bromeliad host in the laboratory (in preparation)