

SOUTHERN INSECT MANAGEMENT  
RESEARCH UNIT  
**USDA-ARS**  
**Mid South Area**

**Mission**

- *The mission of the Southern Insect Management Research Unit (SIMRU) is to generate new knowledge of arthropod pest biology, ecology and management and integrate this knowledge into contemporary farming systems that will promote economical and environmentally stable pest management practices for the southern U.S.*
- *The vision of SIMRU is to be a recognized center of innovation for negating agricultural pest problem through deployed scientific knowledge of pest biology, ecology and management options.*

**CRIS PROJECT**

**Insecticide Resistance Management and New Control Strategies for Pests of Corn, Cotton, Sorghum, Soybean, and Sweetpotato**

**PROJECT INVESTIGATORS**

- Clint Allen
- Randall Luttrell (Project Leader)
- OP Perera
- Gordon Snodgrass
- Yu Cheng Zhu

**CRIS PROJECT**

**Control of Tarnished Plant Bugs by Biocontrol and Other Methods**

**PROJECT INVESTIGATORS**

- Randall Luttrell
- Maribel Portilla
- Gordon Snodgrass (Project Leader)

## CRIS PROJECT

Effect of Resistance on Insect Pest Management in Transgenic Cotton

### PROJECT INVESTIGATORS

- Clint Allen
- Randall Luttrell
- **OP Perera (Project Leader)**
- Maribel Portilla

## NEW PUBLICATION CONGRATULATION Dr. Katherine Parys

10 *Florida Entomologist* 96(1) March 2013

### BIOLOGICAL CONTROL OF COMMON SALVINIA (*SALVINIA MINIMA*) IN LOUISIANA USING *CYRTOBAGOUS SALVINIAE* (COLEOPTERA: CURCULIONIDAE)

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#### ABSTRACT

Common salvinia, *Salvinia minima* Baker, is an aquatic invasive fern that obstructs waterways and impacts water quality throughout the southeastern United States. In an effort to establish populations for classical biological control of this weed, the weevil, *Cyrtobagous salviniae* Calder and Sauts, was released at multiple sites across Louisiana. Many of the release sites were lost due to a variety of ecological and anthropological disturbances. In 2008, *C. salviniae* was found to have successfully overwintered on *S. minima* in Gramercy, Louisiana. Attack by *Cyrtobagous salviniae* significantly increased the number of damaged terminal buds and decreased the fresh weight biomass of *S. minima*.

**Key Words:** classical biological control, aquatic weed, invasive species

## NEW PUBLICATION CONGRATULATION Dr. Katherine Parys

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### EVIDENCE OF ESTABLISHMENT OF *BAGOUS HYDRILLAE* (COLEOPTERA: CURCULIONIDAE), A BIOLOGICAL CONTROL AGENT OF *HYDRILLA VERTICILLATA* (HYDROCHARITALES: HYDROCHARITACEAE) IN NORTH AMERICA?

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#### ABSTRACT

The semi-aquatic weevil *Bagous hydrillae* was released during 1991-1996 at 19 sites in 4 states in attempts to control the aquatic weed hydrilla, *Hydrilla verticillata*. Portions of the sites were in Florida, 2 each in Texas and Georgia and one site in Alabama. Over 220,000 adult weevils were included in these releases. Despite the fact that a few adults were recovered as late as 4.5 yr post release, presence of permanent, self-perpetuating populations was never confirmed. Thus, during 2009 adults *B. hydrillae* were collected in southern Louisiana, at least 500 km from the nearest release site and 11 yr after attempts to establish this insect had terminated. This suggests that earlier recoveries were indicative of successful establishment and that this weevil species has persisted and dispersed widely in the southeastern USA. Nonetheless, there is no evidence that *B. hydrillae* has had a suppressive effect on hydrilla.

**Key Words:** aquatic weeds, *Bagous* weevils, biocontrol agent release, biocontrol agent establishment, herbivory, phytophagous insects

## NEW PUBLICATION CONGRATULATION Dr. Katherine Parys

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### Larva of *Nothorichia shasta* Harris & Armitage (Trichoptera: Hydroptilidae) from California, USA, with its phylogenetic and taxonomic implications

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#### Abstract

*Nothorichia* Flint 1907 is a small genus of infrequently collected microcaddisflies known from Chile and Brazil in South America, Costa Rica in Central America, and the United States in North America. Previously known only from adult specimens, we provide the first description and illustration of a larva in the genus, the larva of *N. shasta* from California, USA. We provide characters to separate *Nothorichia* from other similar genera and an updated key to larval Hydroptilidae modified from that of Wiggins (1966). Larval characters provide additional evidence for the phylogeny and classification of the genus, which we now place tentatively in tribe Ochrotrichini (subfamily Hydroptilinae).

**Key words:** caddisflies, microcaddisflies, United States

**NEW PUBLICATION  
CONGRATULATION  
DR. YuCheng Zhu**

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**Susceptibility of Cry1Ab maize-resistant and -susceptible strains of sugarcane borer (Lepidoptera: Crambidae) to four individual Cry proteins<sup>a</sup>**

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**ABSTRACT**

Sugarcane borer, *Diatraea saccharalis* (L.), is a major target of Bt maize in South America and many areas of the US high-moisture regions. Six laboratory strains of *D. saccharalis* were established from one single wild *D. saccharalis* population: maize resistance alleles to Cry1Ab maize hybrids. Susceptibility of the six strains was evaluated as they crossed with each of their purified strains harbored by proteins, Cry1Ab, Cry2Ab, Cry3A, and Cry3B. In susceptibility of the six strains was compared with that of maize Cry1Ab-resistant but not -resistant strains of *D. saccharalis*. In maize lines of the six strains demonstrated a similar level of resistance to Cry1Ab, Cry2Ab, and Cry3A, but the resistance to Cry3B was significantly higher than that of the other four strains. The results indicate that the maize resistance to Cry1Ab is not due to the presence of the Cry1Ab resistance allele, which was previously reported to be present in other strains (130 to 128 kb). All the six strains were highly sensitive to Cry1Ab (10–200 µg/ml) and Cry3B (10–100 µg/ml), but only with a low level of Cry2Ab (1–10 µg/ml). Larval growth of all six strains was also inhibited on the treated diet, but except for Cry1Ab, the growth inhibition of the six strains was considerably less than that of the Cry1Ab-susceptible strains. The results provide clear evidence that the maize resistance to Cry1Ab maize in the six strains is a result of resistance to other proteins. The low level of maize resistance between Cry1Ab and Cry3B suggests that pyramiding these two types of proteins into a single strain is a good strategy for managing *D. saccharalis*.

**Welcome Aboard  
Dr. Nathan Little**

The USDA ARS Southern Insect Management Research Unit is pleased to welcome Dr. Nathan Little to the Jamie Whitten Delta States Research Station. Nathan will be working with the entire SIMRU research team to investigate the biology and ecology of lepidopteran pests and their susceptibility to transgenic crops.



Dr. Little received his Ph.D. from the Department of Biochemistry, Molecular Biology, Entomology, and Plant Pathology at Mississippi State University in May 2013. He investigated the association of native (*Reticulitermes* spp.) and non-native (*Coptotermes* sp.) subterranean termites with trees and lumber inhabited by blue-stain fungal associates of the southern pine bark beetle guild. Additionally, his past research focused on the development of environmentally benign wood preservative systems with an emphasis on natural resistance of some woods to subterranean termites.

You may contact Nathan by phone at 686-5270 or by email at [Nathan.Little@ars.usda.gov](mailto:Nathan.Little@ars.usda.gov). In addition, his office is located in Building 1, Room 409.

**WELCOME BACK  
SUMMER EMPLOYEES**

- JULIAN BEAMON
- JOHN COLEMAN
- D'ANICE DISHMON
- ARI ESTERS
- RUSSELL GOBOLD
- SYDNEY HOLLEMAN
- JESSE KING
- CHRISTOPHER MORRIS
- CAVISHIA ROBERSON
- THOMAS SHERMAN
- LAURA SIPES
- JANA SLAY
- BAILEY TUBERTINI
- DARSHANISHA WARREN



**2013  
SUMMER ORIENTATION**

**WHEN: THURS., JUNE 6, 2013**

**WHERE: 1<sup>ST</sup> FLOOR CONFERENCE ROOM**

**TIME: 8:00 AM-10:00 AM**

**MANDATORY MEETING FOR ALL SIMRU SUMMER  
& YEAR ROUND PATHWAY EMPLOYEES**

## JUNE BIRTHDAYS CELEBRATION

Nathan, Kenya, Emily, Julian,  
Donny, and Cavishia

