best management approach," Shaw said.

"Remote sensing is giving us techniques that can be incorporated by state and federal agencies and laying the groundwork for interagency cooperation," he said.

## What You Can Do

Even as Mississippi State research is applied to an ever-expanding problem, research scientists say individuals can take action to help stop the invasion.

Their top advice: don't plant the top 10 weeds. As attractive as they may be, their long-term impact is devastating. You can help by incorporating only nursery-raised native plants into your landscape plans. For landowners, scientists suggest removing the noxious vegetation, perhaps in consultation with an Extension specialist.

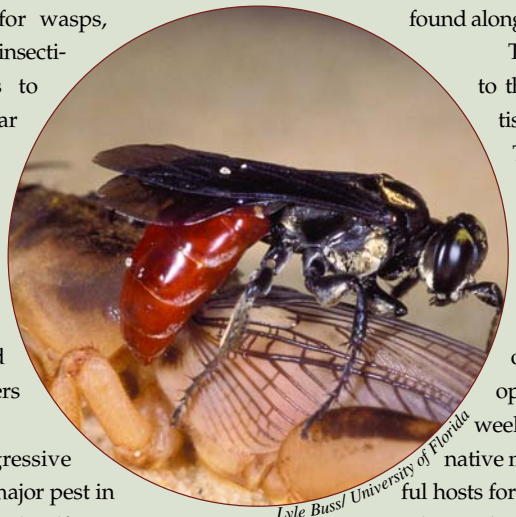
With non-native species causing up to $137 billion in damage annually, resisting an alien invasion is in everyone's best interest.

# Mississippi Coast Welcomes South American Wasp

By Bob Ratliff

Most people don't go looking for wasps, unless it is with a spray can of insecticide, but David Held wants to encourage, not annihilate a particular type of wasp.

Held is an entomologist at Mississippi State University's Coastal Research and Extension Center in Biloxi. In early October he found a tiny wasp on the Great Southern Golf Course in Gulfport that could be good news for golf courses and homeowners on the Coast.



Lyle Buss/ University of Florida

"The *Larra bicolor* is an aggressive hunter of *Scapteriscus* mole crickets, a major pest in turfgrass." Held said. "Homeowners and golf course managers in the Southeast spend millions of dollars a year to protect their lawns and fairways from the damage it causes."

The *Scapteriscus* mole cricket, a native of South America, arrived in the southeastern U.S. about 1900, probably as a stowaway in ships' ballast. With no natural predators in the Southeast it spread rapidly, causing significant root damage as it burrowed beneath pastures, turfgrass and row crops.

"There are native mole crickets in the Southeast, but their numbers are kept in check by the native wasp *Larra analis*," Held said. "The native wasp, however, does not usually attack the imported variety."

There were efforts to import *Larra bicolor* wasps from South America to Florida in the 1940s, but they were unsuccessful and abandoned when the pesticide chlordane was discovered to be an effective and economical method of control. Interest in a biological control method was revived when chlordane was banned by the U.S. Environmental Protection Agency in 1978.

"A University of Florida researcher received permission to import *Larra bicolor* moths from Bolivia in 1988, and a population was established at Gainesville in 1993," Held said. "They spread to the surrounding areas of Florida but have never been found along the Mississippi Gulf Coast until now."

The first specimen Held found was sent to the University of Florida, where scientists confirmed that is was a *Larra bicolor*. The wasp is tiny—less than an inch long—and is black with a red abdomen. It attacks *Scapteriscus* mole crickets, temporarily paralyzing its victims and laying eggs on them. The crickets recover and go on their way, only to be attacked and killed by developing wasp larvae in about two to four weeks. *Larra bicolor* wasps seldom attack native mole crickets since they are not successful hosts for their larvae.

Brooks Mosley, superintendent at the Great Southern Golf Course, welcomes the possibility of a natural control for mole crickets.

"A natural control for mole crickets would be very beneficial for us because we get heavy infestations in our sandy soil," he said. "We spend about $30,000 a year on chemical control of the crickets, so it will be good to have another option."

Since finding the first specimen at the Great Southern Golf Course, Held as found *Larra bicolor* wasps at other courses in Biloxi and Ocean Springs.

"So far, the wasp has only been found at courses adjacent to the Mississippi Sound," he said. "It may be that these sites, being buffered by the coastal waters, provide a suitable microclimate where the wasp can successfully overwinter."

Held is working with Mosley and superintendents at other area golf course to establish plants, such as the wildflower *Spermacoce verticillata*, or shrubby false buttonweed, to help attract *Larra bicolor* wasps.

"The nectar of *Spemacoce verticillata* is a favorite food source of the wasps, but it is not native to Mississippi," Held said. "We also are working to identify native plants that can be used to attract and support these natural enemies of mole crickets."