A NEW EXOTIC PEST FOR FLORIDA'S NATURAL AREAS: *CRYPTICERYA GENISTAE* (HEMIPTERA: MONOPHLEBIDAE)

G. S. HODGES[1], A. C. HODGES[2] AND C. M. UNRUH[3]
[1]FDACS-Division of Plant Industry,1911 SW 34th Street, Gainesville, Florida 32608

Dept. of Entomology & Nematology, Bldg. 970, Natural Area Drive,
University of Florida, Gainesville, FL. 32611-0620

[3]Department of Entomology, One Shields Ave., University of California-Davis, Davis, CA 95616

We report for the first time the presence in Florida and the Continental United States of *Crypticerya genistae* (Hempel) (Hemiptera: Monophlebidae) (Figs. 1 and 2), an invasive scale insect native to Brazil. *Crypticerya genistae* was described by Hempel (1912) (as *Icerya genistae*) from specimens collected on *Genista scoparia* (L.) Lam., *Lespedeza striata* (Thunb.) Hook. & Arn., and *Fragaria* L. species from Brazil. There is very little information available on the biology of this insect. It is reported as a pest of vegetable crops including peppers, tomatoes, eggplants and peanuts (Barbados Ministry of Agriculture (http://barbados.gov.bb).

On Jul 7, 2005 USDA-APHIS-PPQ port inspectors Margarita Lahens and Heather Hursh made the first U.S. collection of *C. genistae* on a *Sesbania* species at Port Everglades in Ft. Lauderdale, Florida. The species was officially determined to be *I. genistae* in Aug 2006 by Cory Unruh and Dr. Penny Gullan by comparing specimens from Florida with type specimens of *Icerya genistae* borrowed from Brazil. The taxon was moved from Icerya to *Crypticerya* in 2007 by Unruh & Gullan (2007) in a revision of the generic classification of the Monophlebidae. This species is not represented in Morrison's key (1928) to the Margarodidae. Based on Morrison's key, the species keyed out between *Icerya rileyi* Cockerell and

Fig. 2. *Crypticerya genistae* on *Sesbania* sp.(photo by Susan Halbert, FDACS-DPI)

Fig. 1. *Crypticerya genistae* (photo by Lyle Buss-UF)

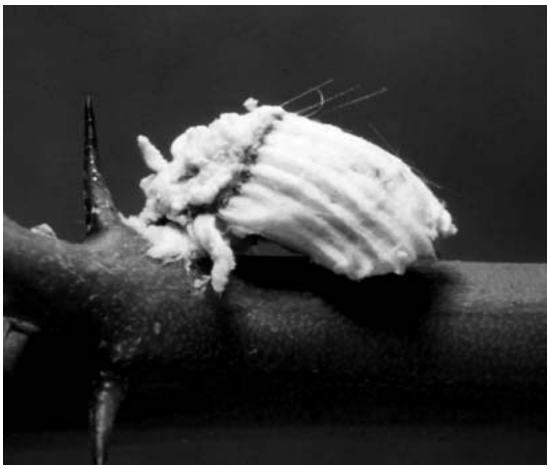

Fig. 3. *Icerya purchasi* (photo by Avas Hamon, FDACS-DPI)

TABLE 1. HOSTS OF *CRYPTICERA GENISTAE* IN FLORIDA.

Plant Family	Scientific Name
Casuarinaceae	*Casuarina equiseti*folia L.
Compositae	*Ambrosia artemisifolia* L.
	Baccharis halimifolia L
	Bidens alba (L.) DC.
	Conyza canadensis (L.) Cronq.
	Eclipta prostrata (L.)L.
	Eupatorium capillifolium (Lam.) Small
	Helianthus debilis Nutt.
	Heterotheca subaxillaris (Lam.) Britton & Rusby
	Pluchea carolinensis (Jacq.) G. Don
	Pluchea odorata (L.) Cass.
	Solidago leavenworthii Torr. & Gray
	Sphagneticola trilobata (L.) Pruski
	Tridax procumbens L.
Convolvulaceae	*Ipomoea pes-caprae* R. Br.
Cucurbitaceae	*Momordica charantia* L.
Cyperaceae	*Carex* sp.
	Rhynchospora sp.
Euphorbiaceae	*Chamaesyce hirta* Millsp.
	Chamaesyce hypericifolia (L.) Millsp.
	Chamaesyce mesembrianthemifolia (Jacq.)Dug.
	Poinsettia cyathophora (Murray) Bartl.
	Ricinus communis L.
Gramineae	*Bothriochloa pertusa* (L.) A. Camus
Leguminosae	*Acacia cornigera* (L.) Willd.
	Aeschynomene americana L.
	Cajanus cajan (L.) Millsp.
	Crotalaria incana L.
	Desmodium incanum DC.
	Desmodium tortuosum (Sw.) DC.
	*Indigofera tinc*toria L.
	Macroptilium lathyroides (L.) Urban
	Senna polyphylla (Jacq.) H. S. Irwin & Barneby
	Sesbania sp.
	Stylosanthes biflora (L.) Britton et al.
	Vicia acutifolia Ell.
	Vigna luteola (Jacq.) Benth.
Onagraceae	*Ludwigia peruviana* (L.) Hara
Palmae	*Dypsis lutescens* (H.Wendl.) Beentje & J. Dransf.
Primulaceae	*Samolus valerandi* L.
Rubiaceae	*Ricahrdia grandiflora* (Cham. & Schlecht.) J.A. & J.H. Schultes
	Spermacoce verticillata L.
Sapindaceae	*Filicium decipiens* (Wight & Arn.) Thwaites ex. Hook. F.
Sterculiaceae	*Waltheria indica* L.
Ulmaceae	*Trema micrantha* (L.) Blume
Vitaceae	*Ampelopsis arborea* (L.) Koehne
	Vitis rotundifolia Michx.

Icerya littoralis Cockerell. These species are native to North America; *I. rileyi* is found in the deserts of the southwestern United States and northern Mexico and *I. littoralis* is found in the tropical regions of Mexico (Morrison, 1928).

The adult females of *I. rileyi* and *I. littoralis* have a very long (up to 30 mm), slightly fluted ovisac and the body becomes dark purple-gray with age. The microscopic features of these species are very similar, but 2 important differences should be noted. First, they differ from one another by the shape of the pores forming the outer edge of the ovisac band. Specifically, those pores in *I. littoralis* generally have a bilocular center and 4-6 outer loculi. In contrast, the pores of *I. rileyi* and *C. genistae* generally have a trilocular

center, but differ by the number of outer loculi: *I. rileyi* has 6-10 and *C. genistae* have 9-12. Second, they differ by the shape of the flagellate setae present in the ovisac band. The setae of *Crypticerya genistae* are dense, robust and have very rounded bases. In contrast, the setae of *I. rileyi* are shorter and stouter with slightly flattened bases and the flagellate setae of *I. littoralis* are very fine with completely flattened bases.

Upon the detection of this exotic/invasive scale insect, a survey of the nearby area was conducted. Plant inspectors from the Florida Department of Agriculture and Consumer Services Division of Plant Industry (FDACS-DPI) detected *C. genistae* in additional locations within Broward County outside of the initial infestation site and also in Miami-Dade County. There were a total of 80 positive samples from Jul 2005 through Dec 2006 of *C. genistae* ranging from 1.6 to 52.5 km from the initial site. One of the additional sites was near the Miami International Airport, 46.3 km from the Port Everglades find. It is not known if sites further south from 29-52.5 km had the same origin as the Port Everglades population or if there were 2 independent infestations.

Crypticerya genistae is the second non-native species of *Icerya* found in Florida. The first being *Icerya purchasi* Maskell, the cottony cushion scale (Fig. 3). *Crypticerya genistae* field specimens superficially resembles *I. purchasi* in that both species have a light orange body, black legs, and a fluted ovisac, but differ in ovisac length, microscopic features, and relative head position. The 2 species are distinguished from one another by the presence of 2 pairs of abdominal spiracles in *I. purchasi* compared to 3 pairs present in *C. genistae*. The ovisac of *C. genistae* is approximately 20 mm long and held either parallel to host plant material or erect. In contrast, the ovisac in *I. purchasi* is about 6 mm long and tapers downward to the host plant material (Fig. 3). *Icerya purchasi* also has large open-center pores clustered around the margin of the body that produce long glassy filaments of wax that surround the adult female. These are absent in *Crypticerya genistae*.

Although *C. genistae* has been reported as a pest of peppers, eggplants, tomatoes, and peanuts in Barbados, in Florida there have been no infestations occurring in agricultural crops or ornamental plants. Plant hosts for Florida have been restricted to common roadside plants (Table 1). No specific life history information is currently available for *C. genistae.* No natural enemies have been detected in Florida populations. This is FDACS-DPI Contribution Number 1057.

References Cited

HEMPEL, A. 1912. Catalogs of the Brazilian Fauna published by the Museu Paulista S. Paulo. Catalogos da fauna Brasileira editados pello Museu Paulista S. Paulo - Brasil. Diario Official, Sao Paulo. 77 pp.

MORRISON, H. 1928. A Classification of the Higher Groups and Genera of the Coccid Family Margarodidae. United States Department of Agriculture Technical Bulletin 52: 1-239.

UNRUH, C. M., AND J. P. GULLAN. 2007. Molecular data reveal convergent reproductive strategies in Iceryine scale insects (Hemiptera: Coccoidea: Monophlebidae), allowing the re-interpretation of morphology and a revised generic classification. The Roy. Entomol. Soc. London, Systematic Entomology (2007): 1-43.