Larger Elm Leaf Beetle, *Monocesta coryli* (Say) (Insecta: Coleoptea: Chrysomelidae)[1]

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The Featured Creatures collection provides in-depth profiles of insects, nematodes, arachnids and other organisms relevant to Florida. These profiles are intended for the use of interested laypersons with some knowledge of biology as well as academic audiences.

Introduction

The larger elm leaf beetle, *Monocesta coryli* (Say), is one of the most conspicuous members of Florida's leaf beetle fauna. Although usually uncommonly collected in this state, it occasionally is abundant enough to cause defoliation of both native and exotic elms (*Ulmus* spp.) in ornamental and natural settings.

Distribution

There are many Neotropical species of this genus, but only *Monocesta coryli* is found in the United States. Wilcox (1965) listed it as occurring from Pennsylvania south to Florida and west to Kansas. However, *Monocesta coryli* does not appear to be evenly distributed throughout its range. Clark (1986) reported *Monocesta coryli* as new to Ohio and hypothesized that it had recently spread to that state. In Florida, it occurs from the Panhandle south to the middle of the peninsula. Blatchley (1924) first reported it from Florida from the town of Palmetto, Manatee County. Data (1995) from specimens in the Florida State Collection of Arthropods and from Division of Plant Industry files represent the following Florida localities: Glen St. Mary, Baker County; Blountstown, Calhoun County; Chattahoochee, Gadsden County; Tampa and Valrico, Hillsborough County; Umatilla, Lake County; Torreya State Park, Liberty County; Bradenton, Manatee County; Plymouth, Orange County; Port Richey, Pasco County; Auburndale and Winter Haven, Polk County; Apopka and Longwood, Seminole Country; Hastings and St. Augustine, St. Johns County; Palm Valley, Flagler County.

Identification

At a length of 10 to 16 mm (~⅜ to ⅔ in), *Monocesta coryli* is one of the largest leaf beetles in the United States. Its size and orange and metallic blue coloration make the adults easily recognized. The large (up to 20 mm (¾ in) in length) orange larvae are also conspicuous and easily recognized. The other coleopterous pest of elms, the elm leaf beetle (*Pyrrhalta luteola* Muller), is much smaller (6 to 7 mm (~¼ in)) and has longitudinal stripes on the elytra instead of transverse maculae. It also occurs in Florida, but it does not seem to be a serious pest in the state.

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Figure 1. Adult larger elm leaf beetle, *Monocesta coryli* (Say). Credits: M. Huston (originally posted on BugGuide)

Biology

Kelsheimer (1945) reviewed the biology of this species in Florida, and the following information is drawn from his account of a population at Bradenton. There is only one generation per year. Eggs are laid in the spring in "hard yellow crusty" masses of 24 to 58 eggs on the undersides of elm leaves. They hatch in about two weeks.

The newly eclosed larvae are about 3 mm long and greenish-yellow. They are gregarious for three to four days and feed on leaf surfaces before dispersing. The mature larvae crawl down the tree and undergo a wandering phase for a few days before entering the ground, where they remain until pupation the following late winter or early spring. Pupation lasts about a month and adults begin emerging in April. Adults are active from April until early August, with most records from June to July. Both adults and larvae exude an orange, presumably defensive, fluid when disturbed.

Hosts

Monocesta coryli has been recorded as feeding on elms (*Ulmus* spp.) and hazel (*Corylus* spp.), as well as hawthorn (*Crataegus* sp.), red birch (*Betula nigra* L.), and pecan (*Carya illinoensis* (Wang.) K. Koch.) (Anderson and Papp 1961). Florida host records from specimens in the FSCA and from DPI files include *Nolina recurvata* (Lem.) Hemsl., *Cephalanthus occidentalis* L., *Citrus x paradisi* Macfad., *Citrus sinensis* (L.) Osbeck, *Citrus* sp., *Cycas revoluta* Thunb., *Impatiens* sp., *Passiflora incarnata* L., *Passiflora* sp., *Rhododendron* sp., *Ulmus americana* L. var. *floridana* (Chapm.) Little, *Ulmus* sp. Undoubtedly, the records from plant genera other than *Ulmus* represent resting or incidental records.

Damage sometimes can be severe. A DPI record from Bradenton in 1957 estimated 1,000 beetles per tree and noted: "Not since 1944 have we seen elm trees so 'burned'. Looks like Jap[anese] beetle damage at a distance. The leaves are brown, and many have dropped." Kelsheimer (1957) also estimated 1,000 beetles per tree in that infestation, and Madden (1940) reported larvae "completely skeletonized" elms at Quincy.

Management

Apparently, parasites normally keep populations of M*onocesta coryli* at non-economic levels. Kelsheimer (1945) noted a dramatic decrease in population level the year after an outbreak, with a very high rate of parasitism. The necessity of the larvae to crawl down the tree to pupate in the soil suggests a vulnerable stage in the life cycle that could be exploited in a control strategy.

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