EENY481

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A mosquito *Culex (Melanoconion) iolambdis* Dyar (Insecta: Diptera: Culicidae) [1]

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Introduction

Culex (*Melanoconion*) *iolambdis* Dyar is a small, dark brown mosquito that exists in the tropics and subtropics. In the United States, this species has been found only in South Florida. Little is known about the biology and behavior of *Cx. iolambdis*. Species in the subgenus *Melanoconion* are noted for their small size and the difficulty in distinguishing between species.

Distribution

Culex iolambdis occurs from Mexico south to Colombia and Ecuador and east to Florida. *Culex iolambdis* has been reported in collections from Cuba, Jamaica, Puerto Rico, and the Cayman Islands.

In the U.S., *Culex iolambdis* has been reported in collections from 10 counties in Florida: Charlotte, Collier, Dade, Indian River, Lee, Manatee, Martin, Monroe, Polk, and St. Lucie.

Description

Adults: Species in the subgenus *Melanoconion* are noted for the wide scales on their wings, flat scales on the posterior of the head, and their small size. The wing length of adult *Cx. iolambdis* varies from 2.0 mm to 2.18 mm (Knight and Haeger 1971, Belkin, et al. 1970). The mosquito is dark brown (Pratt and Seabrook 1952) to black and the abdomen can appear to be bluish-black. The scales on the posterior of the head have a metallic reflection (Carpenter and LaCasse 1955). The proboscis is long, dark, and has a bulb-like tip (Carpenter and LaCasse 1955). The dorsal surface of the thorax is covered in

Figure 1. Worldwide distribution of *Culex* (*Melanoconion*) *iolambdis* Dyar, a mosquito. Graphic by: Gregg Ross, University of Florida

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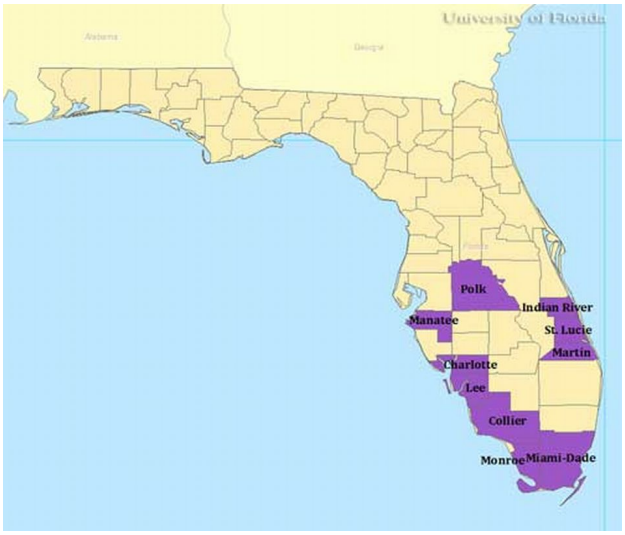

Figure 2. Florida distribution of *Culex* (*Melanoconion*) *iolambdis* Dyar, a mosquito. Graphic by: Gregg Ross, University of Florida

brownish-black to shiny black scales, and dark brown setae (Knight and Haeger 1971). At the base of the last few segments of the abdomen there are a few white scales (Pratt and Seabrook 1952). The legs have a bronze reflection with pale tips (Carpenter and LaCasse 1955).

Figure 3. Adult female *Culex* (*Melanoconion*) *iolambdis* Dyar, a mosquito. Photograph by: C. Roxanne Connelly, University of Florida

It is often difficult to distinguish between females in the subgenus *Melanoconion* and Williams and Savage (2009) found that an internal structure used for feeding, the cibarial armature, was a useful character for identifying females in the *Melanoconion* subgenus.

Eggs: The eggs of *Cx. iolambdis* are laid in oval rafts that may contain 100 or more individual eggs.

Figure 4. Adult male *Culex* (*Melanoconion*) *iolambdis* Dyar, a mosquito. Photograph by: James M. Newman, University of Florida

Generally, the eggs will hatch into 1st instar larvae within two hours of being deposited.

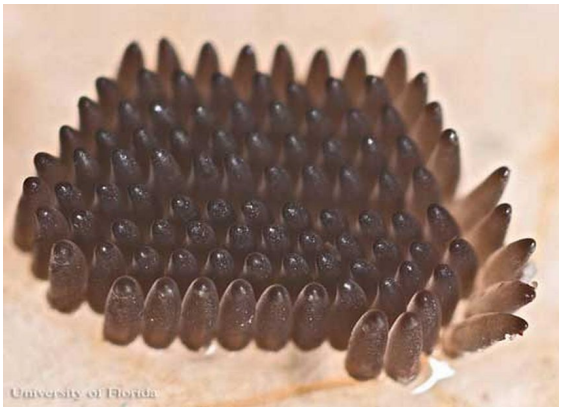

Figure 5. Egg raft of *Culex* (*Melanoconion*) *iolambdis* Dyar, a mosquito. Photograph by: James M. Newman, University of Florida

Larvae: A common characteristic of species in the subgenus *Melanoconion* is that the larval head is wider than long and the thorax is the same size as the head (Foote 1952). The abdomen has eight segments, the siphon, and the saddle. The first two abdominal segments are two times as wide as they are long. The remaining segments taper to the siphon and the saddle (Foote 1952). In *Cx. iolambdis* larvae the antennae are almost as long as the head (Carpenter and LaCasse 1955). The siphon is five times as long as it is wide, with a black band one-third of the way down

the siphon (Pratt and Seabrook 1952), and a row of pectin spines occurs from the base of the siphon for approximately one-third the length of the siphon (Darsie and Ward 2005, Pratt and Seabrook 1952). Beyond the row of pectin spines, five pairs of long-barbed tufts of setae occur. There is a dark scleritized plate on segment X (Pratt and Seabrook 1952) and at the end of the saddle there are four anal papillae that are shorter than the saddle plate (Pratt and Seabrook 1952).

Figure 6. Larva of *Culex* (*Melanoconion*) *iolambdis* Dyar, a mosquito. Photograph by: James M. Newman, University of Florida

Pupae: As with all mosquito species, *Cx. iolambdis* pupae have two body parts, the cephalothorax and the abdomen. The cephalothorax and the abdomen are light tan with trumpets which are used for breathing (Darsie 2002). The paddles, at the apex of the abdomen, are light tan and oval in shape (Darsie 2002).

Figure 7. Pupa of *Culex* (*Melanoconion*) *iolambdis* Dyar, a mosquito. Photograph by: James M. Newman, University of Florida

Biology

Adult *Culex iolambdis* have been identified from Center for Disease Control Light Trap collections in Indian River County, Florida, during all months of the year (unpublished data, Connelly). This species is known to feed on wild birds and has also been reported to feed on humans (Edman 1979, CIDH 2003). Blood from recently fed *Cx. iolambdis* females from Indian River County, Florida, were analyzed to determine the sources used for bloodfeeding and were positive for eastern cottontail, southern leopard frog, green anole, Cuban tree frog, American oystercatcher, and raccoon (unpublished data, Connelly). *Cx. iolambdis* has been observed taking a blood meal from frogs and turtles in Vero Beach, Florida (unpublished data, Blosser).

Figure 8. An adult *Culex iolambdis* Dyar mosquito (upper left) feeding on *Osteopilus septentrionalis*, the Cuban tree frog. Photograph by: Erik M. Blosser, University of Florida

Larvae have been found in crab holes, coastal rock holes, mangrove swamps, and brackish swamps (Pratt and Seabrook 1952, Darsie 2002, Belkin et al. 1970).

Medical Importance

Venezuelan equine encephalitis virus has been found in *Cx. iolambdis*. It is not known if this species can transmit the pathogen to other hosts (Scherer, et al. 1971).

Figure 9. An adult *Culex iolambdis* Dyar mosquito feeding on *Pseudemys nelsoni*, the Florida redbelly cooter.
Photograph by: Erik M. Blosser, University of Florida

Management

Culex iolambdis is not considered a mosquito species of medical importance and does not usually occur in substantial numbers to be considered a major mosquito pest species. As a result it is not usually targeted for mosquito control and there are not any methods currently recommended for controlling this species.

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