

A Mosquito *Culex (Melanoconion) iolambdis* Dyar (Insecta: Diptera: Culicidae)¹

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Introduction

Culex (Melanoconion) iolambdis (Dyar 1918) is a small, dark mosquito that tends to feed on reptiles and amphibians. It is found in the southeastern United States and many countries in Central America and South America. It has not been identified as a species of medical importance as it has not been shown to vector pathogens like some other *Culex* 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 US, *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 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 1. Worldwide distribution of *Culex (Melanoconion) iolambdis* Dyar, a mosquito.

Credits: Gregg Ross, University of Florida

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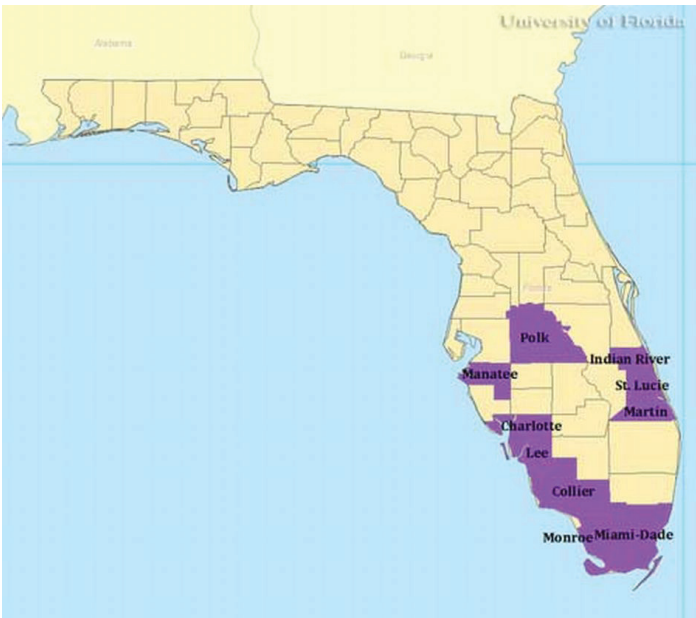


Figure 2. Florida distribution of *Culex (Melanoconion) iolambdis* Dyar, a mosquito.

Credits: Gregg Ross, 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.



Figure 3. Adult female *Culex (Melanoconion) iolambdis* Dyar, a mosquito.

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Eggs

The eggs of *Cx. iolambdis* are laid in oval rafts that may contain 100 or more individual eggs. Generally, the eggs will hatch into 1st instar larvae within two hours of being deposited.



Figure 4. Adult male *Culex (Melanoconion) iolambdis* Dyar, a mosquito.

Credits: James M. Newman, UF/IFAS



Figure 5. Egg raft of *Culex (Melanoconion) iolambdis* Dyar, a mosquito.

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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 pecten 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 pecten spines, five pairs of long-barbed tufts of setae occur. There is a dark sclerotized 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.
Credits: James M. Newman, UF/IFAS

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 that 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.
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Biology

Adult *Culex iolambdis* have been identified from Centers for Disease Control Light Trap collections (unpublished data, Connelly) and resting shelter aspirations (Blosser et al. 2016) in Indian River County, Florida, during all months of the year. This species is known to feed on a very wide range of host animals, including birds, mammals, reptiles and amphibians (Edman 1979; Blosser et al. 2016). Blood from recently fed *Cx. iolambdis* females from Indian River County, Florida, were analyzed to determine the bloodmeal sources and demonstrated that the most commonly bitten hosts were Green heron, American alligator, green anole, Raccoon and Souther leopard frog (Blosser et al. 2016). Other hosts included eastern cottontail, Cuban tree frog, and American oystercatcher (unpublished data, Connelly).



Figure 8. An adult *Culex iolambdis* Dyar mosquito (upper left) feeding on *Osteopilus septentrionalis*, the Cuban tree frog.
Credits: Erik M. Blosser, UF/IFAS



Figure 9. An adult *Culex iolambdis* Dyar mosquito feeding on *Pseudemys nelsoni*, the Florida redbelly cooter.
Credits: Erik M. Blosser, UF/IFAS

Culex iolambdis populations are primarily associated with mangroves in Florida (Blosser et al. 2016) and probably throughout the American tropics (Pratt and Seabrook 1952).

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).

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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