

# A Mosquito *Culex (Melanoconion) pilosus* (Dyar and Knab) (Insecta: Diptera: Culicidae) <sup>1</sup>

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## Introduction

*Culex (Melanoconion) pilosus* (Dyar and Knab 1906) 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 pilosus* is recorded from Argentina, Bahamas, Belize, Bolivia, Brazil, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, French Guiana, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, Suriname, Trinidad and Tobago, United States, Venezuela and Virgin Islands (WRBU 2012). In the United States, *Cx. pilosus* has been reported in many southeastern states including Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina and South Carolina (Roth 1943) and is distributed throughout Florida (Branch et al. 1958). The species is also reported from Kentucky, as well as the eastern tip of Texas (Darsie and Ward 2005).



Figure 1. Distribution of *Culex pilosus* as of March 2012.  
Credits: C. Roxanne Connelly.

## Description

### Adults

*Culex* mosquitoes tend to have relatively blunt-shaped posterior abdomens compared to other mosquito genera and are small and delicate (Marshall 2006). Female mosquitoes of the subgenus *Melanoconion* can be identified based on two unique features: 1) the thorax possesses a scutum lacking acrostichal setae, and 2) the head has broad, flat scales posterior to the compound eyes (at least along the ocular line) (Darsie and Ward 2005). The male mosquitoes in the subgenus *Melanoconion* can be extremely difficult to

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identify to species, and an analysis of the genitalia is often necessary (Roth 1943). Positive identification of *Cx. pilosus* females can be accomplished by observing only three teeth on the cibarial armature (a series of specialised spicules, cibarial teeth, borne on a transverse ridge) (Michener 1944). Both sexes of *Cx. pilosus* have dark short palps and a long dark proboscis, dark abdomen with somewhat reflective bronze or blue-green scales, dark thorax with a lighter patch on the dorsal portion of the mesepimeron, narrow and dark wing scales, and dark legs (Cutwa and O'Meara 2012).



Figure 2. Adult female *Culex (Melanoconion) pilosus*, a mosquito. Credits: Michelle Cutwa, University of Florida

## Eggs

*Culex pilosus* females will lay their eggs near ponds or rainwater seepage areas and ditches which may or may not contain vegetation (Putnam 2011). Unlike other *Culex* eggs, *Cx. pilosus* eggs lack a corolla (collar) at the anterior end of the egg (Mattingly 1976). Another unique feature of this mosquito is that *Cx. pilosus* lays eggs singly, or individually, or sometimes in single-layer patches, but not in rafts like many other *Culex* species mosquitoes. The eggs are placed just above the water line and are viable for one month in moist conditions (Galindo et al. 1951).

## Larvae

The larvae of *Cx. pilosus* have a broad head and long antennae with a large tuft at the ends. On the ventral side of the larval head, an oval gill is inserted at the base of the

antennae (Carpenter and LaCasse 1955). They have an upcurved siphon and a curved preapical spine at the end of the siphon. There are eight pairs of long tufts of setae on the siphon, comb scales on the eighth abdominal segment in a single row that appear long and pointed, and gills of two different lengths (Cutwa and O'Meara 2012).



Figure 3. Larva of *Culex (Melanoconion) pilosus*, a mosquito. Credits: Michelle Cutwa, University of Florida

## Pupae

As with other mosquitoes, the pupae have two major body parts, a cephalothorax and abdomen. A pair of trumpets containing breathing spiracles is present on the cephalothorax. *Culex pilosus* pupae have abdominal segments with distinctive setae patterns; the second segment's most medial seta possesses 14 or fewer branches (Darsie and Day 2003). The pupal trumpet on the cephalothorax, which tapers gradually, is about four times as long as the width of the trumpet at the tip, and the pinnae are about one-third the length of the trumpet (Foote 1954).



Figure 4. Pupa of *Culex (Melanoconion) pilosus*, a mosquito. Credits: Michelle Cutwa, University of Florida

## Biology and Behavior

*Culex pilosus* adults tend to rest inside forests or woodlands during the day, but then fly over open land during the night to a different habitat in which they feed, only to return to their daytime habitat again in the morning (Clements 1999). The flight patterns of adult *Cx. pilosus* are not influenced by wind direction, which is unique among mosquitoes since many species tend to fly upwind (Clements 1999). *Culex pilosus* feeds mainly on reptiles and amphibians (Edman 1979, Clements 1999).

## Medical Importance

Although many *Culex* species transmit viruses that cause encephalitis, *Cx. pilosus* is currently not considered to be an important vector of human pathogens. However, since *Cx. pilosus* feeds on a variety of hosts, it may prove to play a secondary role in the transmission of some pathogens.

## Management

*Culex pilosus* is not a mosquito of particular concern in terms of management as it does not generally reach pest levels.

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