

# Larval habitat characteristics of mosquitoes of the genus *Culiseta* Felt, 1904 (Diptera: Culicidae) in the Caspian Sea littoral, Iran

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**Abstract.** The fauna and ecology of mosquitoes (Diptera: Culicidae) was studied in Guilan province, Caspian Sea littoral, northern Iran, between April and December 2000. Larval habitat characteristics were recorded according to the water situation (clear or turbid), vegetation, bottom type, sunlight situation, habitat situation (transient or permanent, running or still), habitat kind (natural or artificial), and water temperature. In total, 643 larvae of the genus *Culiseta* from 16 larval breeding sites were collected and, based on larval morphological characters, identified to the species level. Three species of the genus *Culiseta*, *Cs. (Allotheobaldia) longiareolata*, *Cs. (Culicella) morsitans*, and *Cs. (Culiseta) annulata*, were found in the province. All three species were collected from still and clear water. *Cs. longiareolata* and *Cs. morsitans* were collected from natural habitats and *Cs. annulata* from both natural and artificial ones (wells). *Cs. longiareolata*, *Cs. morsitans*, and *Cs. annulata* comprised 61.3%, 31.6%, and 7.1% of samples, respectively. The mean and range temperatures of larval habitat water for *Cs. longiareolata*, *Cs. morsitans*, and *Cs. annulata* were 17.9°C (13–25°C), 11.6°C (10–16°C), and 16.5°C (12–22°C), respectively.

**Kurzfassung.** Die Fauna und Ökologie der Stechmücken (Diptera: Culicidae) wurden in der Provinz Guilan am Kaspischen Meer im nördlichen Iran zwischen April und Dezember 2000 untersucht. Für die Charakterisierungen der Larvenhabitate wurden folgende Parameter herangezogen: Trübung des Wassers (klar oder trübe), Vegetation, Art des Grundsubstrates, Sonneneinstrahlung, Habitatsituation (permanentes oder zeitweises, fließendes oder stehendes Gewässer), Habitattyp (natürlich oder künstlich) und Wassertemperatur. Insgesamt wurden 643 *Culiseta*-Larven von 16 verschiedenen Brutstätten gesammelt und gemäß den morphologischen Eigenschaften bis auf Artniveau bestimmt. Drei Arten von *Culiseta* kommen in der Provinz vor: *Cs. (Allotheobaldia) longiareolata*, *Cs. (Culicella) morsitans* und *Cs. (Culiseta) annulata*. Alle drei Arten wurden in klarem und stehendem Wasser gesammelt. *Cs. longiareolata* und *Cs. morsitans* wurden in natürlichen Gewässern gefunden, *Cs. annulata* sowohl in natürlichen wie in künstlichen (Brunnen) Gewässern. Die relative Häufigkeit der einzelnen Arten betrug: *Cs. longiareolata* – 61,3%, *Cs. morsitans* – 31,6% und *Cs. annulata* – 7,1%. Die durchschnittlichen Wassertemperaturen der Bruthabitate betragen 17,9°C (13–25°C) bei *Cs. longiareolata*, 11,6°C (10–16°C) bei *Cs. morsitans* und 16,5°C (12–22°C) bei *Cs. annulata*.

**Key words.** *Culiseta annulata*, *Culiseta longiareolata*, *Culiseta morsitans*, larva, ecology, Iran, Middle East.

## Introduction

The genus *Culiseta* Felt, 1904 includes seven subgenera and at least thirty-seven species in the world fauna (MASLOV 1967, WARD 1992). Certain species of the genus *Culiseta* are notorious biting pests of humans and cattle, and other species are involved in the transmission of various diseases to humans and domestic animals such as tularaemia, avian malaria, Malta fever, fowl pox, avian influenza, West Nile encephalitis, eastern equine encephalitis (EEE), western equine encephalitis (WEE), St. Louis encephalitis (SLE), California en-