First Record of Culex (Culex) brethesi (Dyar) (Diptera: Culicidae) in Rio Grande do Sul State, Brazil

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SCIENTIFIC NOTE

First Record of *Culex (Culex) brethesi* (Dyar) (Diptera: Culicidae) in Rio Grande do Sul State, Brazil

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Abstract

This is the first record of *Culex (Culex) brethesi* (Dyar) in Rio Grande do Sul state, Brazil. The species was identified from specimens collected in a sand bar vegetation with the aid of a Nasci’s trap, during an expedition for surveillance of the West Nile Virus in July of 2006, in the city of Mostardas, Rio Grande do Sul, Brazil.

Mosquitoes are among the most important vectors of the West Nile Virus (WNV), an arbovirus of the genus *Flavivirus* (Flaviviridae), which infects equines and urban and wild birds and may lead to death. In humans, this virus causes fever, at times progressing to acute meningitis, encephalitis, and may lead to death. The WNV was detected in Africa, Asia, Europe (Natal & Ueno 2004), and in the United States (Petersen & Roehrig 2001). In 1999 the WNV has spread throughout North and Central America, and was first isolated in South America in 2006, in Buenos Aires, Argentina (Morales et al 2006). In the United States, between 1999 and 2008, tests performed in mosquitoes detected the WNV in 64 Culicidae species, of which the majority belonged to the genera *Culex* and *Aedes* (CDC 2009).

In Brazil, 156 species of the genus *Culex* are registered, grouped in nine subgenera (WRBU 2009). The subgenus *Culex* is one of the most important in the Neotropical region from an epidemiological point of view (Forattini 2002).

Due to the potentiality to be introduced in Brazil, the WNV surveillance includes entomological studies aiming to identify potential vector species, know their population dynamics, and detect and monitor viral activity in potential hosts. To achieve this, actions focused on adult forms of *Culex* spp. and *Aedes* spp. are recommended, both in areas of high risk of transmission (zoos, hunting reserves, feeding territories or migratory bird refuges) and places of notification of possible or confirmed WNV cases in birds, humans and other mammals (OPAS 2002). Between July 24th and 28th, 2006, as part of the WNV Surveillance Program routine, the Centro Estadual de Vigilância em Saúde, an organ of the Secretaria da Saúde do Rio Grande do Sul organized an expedition to the Parque Nacional Lagoa do Peixe (PNLP), the largest migratory bird refuge in this state. The park covers the cities of Tavares (80%), Mostardas (17%) and São José do Norte (3%), and is located between the Lagoa dos Patos and the Atlantic Ocean, on the central section of
First Record of *Culex (Culex) brethesi* in Rio Grande do Sul State

Cardoso et al

**Fig 1** Parque Nacional Lagoa do Peixe, where the specimens were collected. State of Rio Grande do Sul, Brazil.

**Fig 2** *Culex (Culex) brethesi*. Male genitalia. a) Gonocoxite and gonostylus; b) Detail of the subapical lobe of the gonocoxite; c) Detail of the subapical lobe of gonocoxite, showing setae g and h; d) Phalosome, showing the ventral arms of lateral plate; e) Phalosome, showing the dorsal arms and lateral arms of lateral plate; f) Proctiger.
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