Communication/Comunicação

A list of mosquito species of the Brazilian State of Pernambuco, including the first report of *Haemagogus janthinomys* (Diptera: Culicidae), yellow fever vector and 14 other species (Diptera: Culicidae)

Lista de espécies de mosquitos do Estado de Pernambuco e primeiro relato de *Haemagogus janthinomys* (Diptera: Culicidae) vetor de febre amarela silvestre e outras 14 espécies (Diptera: Culicidae)

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ABSTRACT

Introduction: Besides mosquito species adapted to urban environments (*Culex quinquefasciatus*, *Aedes aegypti* and *Aedes albopictus*), only 15 species of *Anopheles* had been recorded in the State of Pernambuco. **Methods**: Human-landing mosquitoes were collected in Dois Irmãos Park, in Recife. **Results**: The first report for the state of *Haemagogus janthinomys*, an important vector of yellow fever virus, and 14 other species, including *Trichoprosopon lampropus*, a first reported for Brazil. **Conclusions**: The mosquito fauna in the area is diversified and has potential medical and veterinary importance.

Key-words: *Haemagogus janthinomys*. New records. Pernambuco.

RESUMO

Introdução: Além de mosquitos adaptados ao ambiente urbano (*Culex quinquefasciatus*, *Aedes aegypti* e *Ae. albopictus*), apenas 15 espécies de *Anopheles* haviam sido relatadas no Estado de Pernambuco. **Métodos**: Mosquitos que pousavam em humanos no Parque Dois Irmãos, em Recife foram coletados. **Resultados**: *Haemagogus janthinomys*, importante vetor de vírus de febre amarela, e outras 14 espécies são relatadas pela primeira vez no estado, incluindo *Trichoprosopon lampropus*, relatado pela primeira vez no Brasil. **Conclusões**: A fauna de mosquitos na área é muito diversificada e tem potencial importância médica e veterinária.

Palavras-chaves: *Haemagogus janthinomys*. Novos relatos. Pernambuco.

The mosquito fauna of the north-eastern Brazilian state of Pernambuco has been poorly studied. In fact, besides several reports confirming *Culex quinquefasciatus*, *Aedes aegypti* and *Aedes albopictus*, other species from the state have rarely been reported.

Pernambuco is situated in a tropical region, has a diversified climate and vegetation and knowledge of its mosquito fauna is very important. Besides studies concerning mosquitoes related to filariasis and dengue, very frequent diseases in several cities, data on other mosquitoes in the state is very scarce. Dirofilariasis was shown to occur in Recife[1] and malaria transmission has occurred in the past. Although the state is currently outside the distribution of the sylvan cycle of yellow fever[2], many cities are highly infested by *Aedes aegypti*, with many cases of dengue.

Collections were developed in a reservation (Dois Irmãos Park), in Recife, State of Pernambuco, Brazil. The park (http://www.parquedoisirmaos.pe.gov.br/; headquarter: 8º00'32.7"S 34º56'42.5"W, ca. 40m a.s.l.) was described previously[3]. Briefly, it includes two lagoons, surrounded by secondary Atlantic forest; it is very humid, mostly in winter, with diversified vegetation, including bromeliads and non-native bamboos. There is a zoo in the reservation and besides visitors to this zoo, many people from the densely populated neighborhood enter the forest.

Plastic suction tubes and collection boxes were used for mosquitoes landing on collectors, from 8am to 1pm, from July 27 2009 to November 28 2009. Mosquitoes were identified by keys[4-6], checking original and complementary descriptions of each species. Genera were abbreviated as proposed by Reinert[7].

The first reports for the State of Pernambuco of the following collected species, with the number of female specimens between parentheses: *Coquillettidia hermanoi* (17), *Cq shannoni* (9), *Haemagogus janthinomys* (5), *Limatus durhamii* (=*Limatus durhami*) (8), *Mansonia wilsoni* (3), *Ochlerotatus hastatus/oligopistus/serratus* (1), *Oc scapularis* (8), *Sabethes tarsopus* (1), *Trichoprosopon lampropus* (4), *Wyeomyia arthrostigma* (1), *Wy coenonus/tarsata* (1), *Wy medioalbipes* (5), *Wy moerbista/cesari* (1), *Wy negrensis* (1), *Wy serratoria* (1). This is the firstly report of *Tr lampropus* for Brazil.

At least 15 species not previously reported in Pernambuco were added to the known mosquito fauna of this state, which included, besides the urban species cited above, 15 of *Anopheles*: *An albitarsis, An argyritarsis, An aquasalis* (*Plasmodium*-infected), *An bellator, An braziliensis, An cruzii, An darlingi, An eiseni, An fluminensis, An intermedius, An lutzi, An parvus, An peryassui, An strodei* and *An triannulatus*.

Haemagogus janthinomys is an important vector of sylvan yellow fever[2] and Mayaro virus[8] and more thorough studies should be developed in Recife. Since it is still difficult to differentiate it from *Hg capricornii*[9] and *Hg leucocelaenus* was recently reported in Natal[10],

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Haemagogus mosquitoes from the north-east region of Brazil need to be carefully studied. Maraú (14º06'57"S 38º59'37"W)[11] and Caravelas (17º42'48"S 39º59'55"W)[9], both in the State of Bahia, are the most northern localities where *Hg. janthinomys* had previously been reported in Atlantic forest area.

Ochlerotatus scapularis has been incriminated as vector of *Dirofilaria immitis* in southeastern Brazil[12]. This mosquito has also been artificially infected by Rocio[13] and yellow fever[14] viruses and naturally infected by yellow fever virus in an outbreak in the State of Bahia[15].

Females of mosquitoes of some *Wyeomyia* species (see above) and of *Oc serratus* and similar species occasionally still cannot be differentiated. Future collections mostly using light traps, in order to capture males, and examining breeding places, to capture immature forms, need to be developed for a more complete and secure identification.

The presence of *Hg janthinomys* and so many species of sylvan mosquitoes in an area where animals of several species (exotic and local) are present and many people circulate may induce the transmission of pathogens.

Ochlerotatus scapularis had been reported from the United States (Texas) to North Argentina, *Sa tarsopus* from Mexico to Peru and French Guiana, and in Brazil, it had been reported in the States of Amapá, Bahia, Rio de Janeiro and São Paulo. *Tr lampropus*, is first reported here for Brazil, had previously been reported only from Colombia. *Wy negrensis* had been reported only from Brazil and *Wy arthrostigma, Wy serratoria* and *Wy medioalbipes* from Brazil and other countries.

The high number of new reports of mosquito species for the State of Pernambuco, one of them new for Brazil, emphasizes the need to develop studies in forested areas in this huge country. The finding of a diversified Phlebotomine sandfly fauna exists in this reservation[3], some of them potential vectors of *Leishmania*, including several species previously reported only in the Amazon region, reinforces the need of studies on the insect fauna in the area.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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