



Scientific Note

Pinnaspis strachani (Cooley) (Hemiptera: Diaspididae) infesting neem trees (*Azadirachta indica* A. Juss., Meliaceae) in Bahia, Brazil

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Abstract. *Pinnaspis strachani* (Cooley) (Hemiptera: Diaspididae), a highly polyphagous scale insect and a known pest of various crops, is reported for the first time infesting neem (*Azadirachta indica* A. Juss., Meliaceae) in Brazil. Infestations of this diaspidid were observed on the trunks, branches, and leaves of neem trees in Barreiras, Bahia, Brazil.

Keywords: Forest Entomology; Phytophagous Insect; Scale Insect; Urban Afforestation.

The neem tree (*Azadirachta indica* A. Juss., Meliaceae) is a forest species originally from India that grows quickly and easily adapts to a variety of locations, including the urban environment (LIMA NETO & SOUZA 2011). Parts of the plant can be used as natural botanical insecticides and its wood is resistant and hard (RODRIGUES *et al.* 2017), indicating its use in large-scale production (MOREIRA *et al.* 2012). In Brazil, neem is grown in the Cerrado, Caatinga, Atlantic Forest, and Amazon regions (NEVES *et al.* 2013) and is part of afforestation of several cities (LUNDGREN *et al.* 2013; SOTO *et al.* 2014; DANTAS *et al.* 2018).

Although neem is used for insect control, several scale insects and other arthropods have been reported to damage this plant around the world (CABI INTERNATIONAL 1999; PENTEADO *et al.* 2011). This host has been associated with 19 species of scale insects from the families Diaspididae (6), Coccidae (5), Pseudococcidae (5), Kerridae (1), Lecanodiaspididae (1), and Monophlebidae (1) (SCHMUTTERER 1998; GARCIA MORALES *et al.* 2016). *Aonidiella orientalis* (Newstead) (Hemiptera: Diaspididae) has been considered an important pest in neem, especially in Nigeria (BOA 1995). In Brazil, its first occurrence in neem was found in the Ceará (COSTA *et al.* 2013); nevertheless, scale insects have not been a big problem for neem in Brazil. Thus, other insects have been better studied, such as the bark beetles (Coleoptera: Curculionidae), which was reported as the agents of the “neem decline”, causing the death of some trees in Tocantins (PENTEADO *et al.* 2011).

This work reports the occurrence of the scale insect *Pinnaspis strachani* (Cooley) (Hemiptera: Diaspididae) infesting neem trees in Barreiras, Bahia, Brazil.

In January 2018, ten neem trees were observed showing high diaspididae infestation in Barreiras, Bahia, Brazil (12°09'10.6" S 44°59'32.6" W). The regional climate is classified as AW (tropical climate with rain in summer and drought in winter), in which the rainy season runs from October to April and the drought from May to September (KÖPPEN & GEIGER 1928). During the studied period, the average temperature was approximately 27 °C and the precipitation was about 100 mm (www.inmet.gov.br).

Samples of leaves, stems, and pieces of bark from the trees with the scale insect were stored in Falcon tubes, containing 70% alcohol, and later mounted on slides for viewing under an optical microscope, following the methodology adapted and described by WOLFF *et al.* (2014). The individuals obtained were identified by the co-author of this work using a description and classification key (CLAPS & WOLFF 2003). Voucher slides containing scale insects are deposited in the reference Collection of “Ramiro Gomes Costa Museum of Entomology (MRGC), State Secretariat of Agriculture, Livestock, and Rural Development, Rio Grande do Sul (DDPA, SEAPDR, RS)”.

The diaspidids were identified as *P. strachani*. The trunks of ten trees were completely infested by the scale insects (Figure 1) that resembled a covering of white paint. All stages of insect development were found in the analyzed neem trees, which indicates that *P. strachani* can develop and reproduce by feeding exclusively on *A. indica*. In addition to the trunk, insects were also found on the stems and leaves of the plants, but to a lesser extent, throughout the observation period. The analyzed trees are part of the Barreiras afforestation, in which many neem trees are distributed throughout the

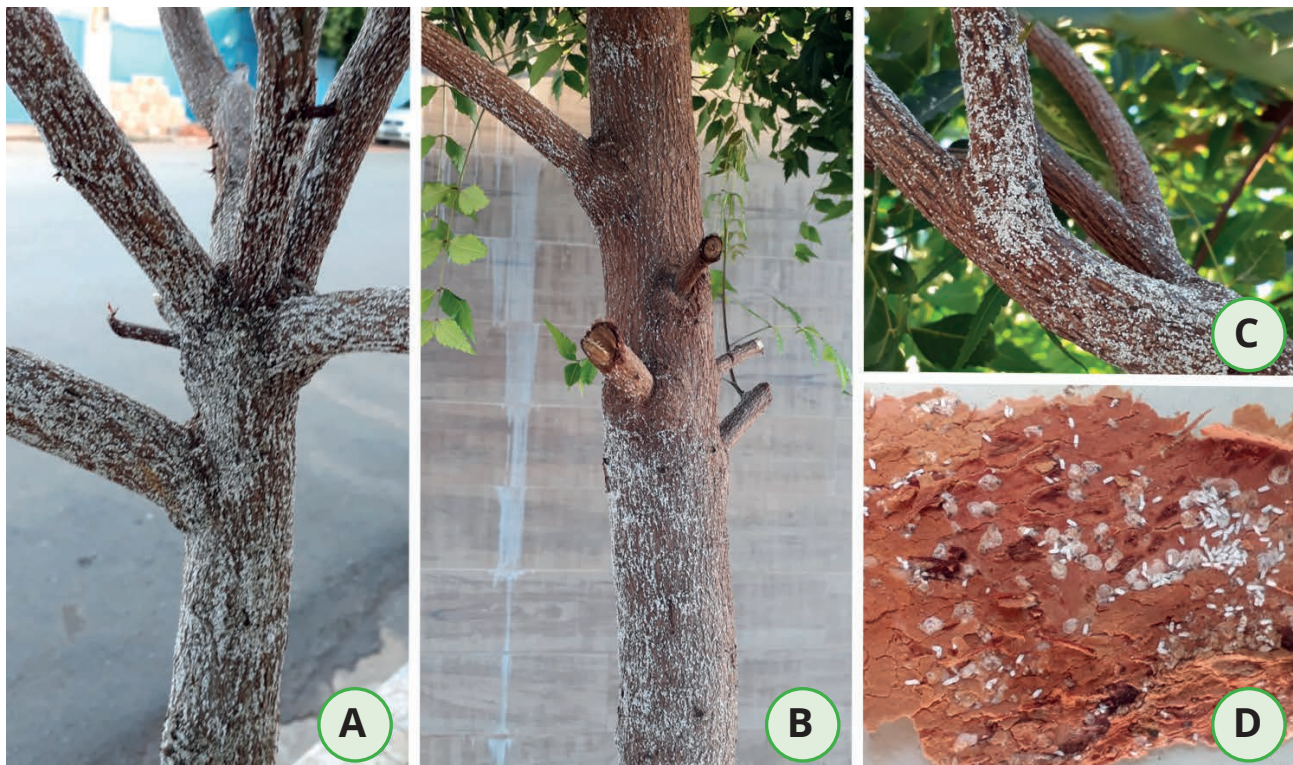


Figure 1. *Pinnaspis strachani* infesting *Azadirachta indica* trees in Barreiras, Bahia, Brazil. A and B – Plants highly infested with *P. strachani*. C – Detail of an *A. indica* branch with whitish appearance. D – *A. indica* bark containing diaspidids. (Author: M. T. Castro).

city. Although only a few *A. indica* trees were sampled in this study, most neem tree in the city of Barreiras, Bahia, could be infested by *P. strachani*.

Pinnaspis strachani is a cosmopolitan and polyphagous scale insect that has been reported in 114 countries, over 70 botanical families, and more than 240 hosts around the world (GARCIA MORALES *et al.* 2016). In Brazil, *P. strachani* can be found from the Northern to the Southern Regions (CLAPS *et al.* 2001; PERONTI *et al.* 2001; CLAPS & WOLFF 2003; SANTOS & WOLFF 2015; GARCIA MORALES *et al.* 2016). The main damage caused by this scale insect is the intense suction of sap, causing discoloration on the leaves along with fall and death of stems. Severe infestations can even lead to the death of the plant (WATSON 2002; MALUMPHY *et al.* 2015). It can occasionally cause serious damage to tamarind, hibiscus, olive, citrus, and wild plants (MILLER & DAVIDSON 2005).

Although *P. strachani* has already been reported in *A. indica* in countries in Asia, Africa and even Latin America (CABI INTERNATIONAL 1999), this diaspidid had not been recorded on this plant in Brazil (GARCIA MORALES *et al.* 2016). Therefore, this work reports for the first time the occurrence of *P. strachani* associated with neem plants in Brazil.

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