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Scientific Note

Occurrence of *Hemiberlesia lataniae* (Signoret, 1869) (Hemiptera: Diaspididae) in Central Brazil: first report on *Bauhinia x blakeana* (Fabaceae) and in Goiás State

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Abstract. The armored scale insect *Hemiberlesia lataniae* (Signoret, 1869) (Hemiptera: Diaspididae) is reported for the first time in Central Brazil infesting *Bauhinia x blakeana* (Fabaceae) trees. Infestations of this armored scale insect were observed on the leaves of four trees located in the urban perimeter of Alto Paraíso de Goiás, Goiás. This work reinforces the polyphagous nature of the species, expanding its geographic distribution in Brazil and increasing the number of known hosts.

Keywords: Armored scale insects, forest entomology, phytophagous insects.

Trees of the genus *Bauhinia* (L.) (Fabaceae) are popularly known in Brazil as "pata-de-vaca" and are widely used in the afforestation of several cities, due to their size and exuberant flowering (Lorenzi et al. 2003; Silva Júnior & Lima 2010). In addition, some species are consumed in the form of tea and other herbal preparations (Silva & Cechinel Filho 2002). The species *B. variegata* (L.) Benth., *B. forficata* Link, and *B. x blakeana* Dunn are the most found in Brazilian urban centers. *Bauhinia x blakeana* is probably a hybrid plant originating from the cross between *B. variegata* and *B. purpurea* L. and, therefore, does not produce seeds (Lorenzi et al. 2003; Silva Júnior & Lima 2010).

Scale insects (Hemiptera: Coccomorpha) are highly diverse and common phytophagous insects in different types of plants, which can cause economic damage to agricultural and forestry crops, and, in the case of ornamental plants, harm the visual appearance and landscape (Shirazi et al. 2013; Meneike et al. 2014; Fujihara et al. 2016). The population of phytophagous insects in urban environments tends to grow due to environmental factors, mainly linked to pollution and the lack of natural enemies (Meneike et al. 2013; Adams et al. 2020).

Several insects have been observed in association with *Bauhinia* species, especially those from the Hemiptera order (Baronio et al. 2012). Among scale insects, *Praelongorthezia praelonga* (Douglas, 1981) (Hemiptera: Ortheziidae) was observed causing damage and mortality to *B. variegata* trees in urban environment in Montes Claros, Minas Gerais, Brazil (Lemes et al. 2019). In São Carlos, São Paulo, Brazil, *Protopulvinaria pyriformis* (Cockerell, 1894) (Hemiptera: Coccidae) and *Pinnaspis strachani* (Cooley, 1899) (Hemiptera: Diaspidae) were also described on *B. variegata* (Peronti et al. 2001). Armored scale insects (Hemiptera: Coccomorpha: Diaspididae) are major economic pests and are among the world's most invasive species (Normark et al. 2019). To date, 86 species of scale insects have been cataloged, with 41 species of Diaspididae, associated with *Bauhinia* spp. around the world (Garcia-Morales et al. 2016).

This work aims to report the occurrence of an armored scale insect associated with *B. x blakeana* trees in Alto Paraíso de Goiás, Goiás State, Brazil.

Armored scale insects associated with four *B. x blakeana* trees were collected in 2019 in Alto Paraíso de Goiás (14°08'02.1"S, 47°31'03.2"W), Goiás State, Brazil. Leaves, branches, and stems were analyzed for the occurrence of scale insects. The *Bauhinia* species was identified using the works of Lorenzi et al. (2003) and Silva Júnior & Lima (2010). The scale insects were fixed in a Falcon tube containing 70% alcohol and mounted on slides for subsequent analysis under an optical microscope, according to the methodology described by Wolff et al. (2014). Specimens were identified using a key and description (Claps & Wolff 2003).

The photos in this study were taken using a digital camera (Sony®). The material was collected with authorization from the Brazilian government granted to the first author by the Chico Mendes Institute for Biodiversity Conservation (ICMBio), Ministry of the Environment (MMA) (Collection Permit No. 57418-4).

The scale insect present on the leaves of *B. x blakeana* was identified as *Hemiberlesia lataniae* (Signoret, 1869) (Diaspididae) (Fig. 1). The individuals were observed mainly on the upper part of the leaves causing yellowing and chlorosis (Figs. 1A, 1B), due to the sucking of the leaf content by the insects. Similar symptoms were observed in plant species of the genus *Piper* (Piperaceae) in the State of Pará, Brazil (Noronha et al. 2023). Adult females have a protective covering commonly called a shield or scale, rounded or subcircular in shape with a diameter of about 2 mm, white in color with brownish regions and subcentral exuviae (Claps & Wolff 2003) (Fig. 1C).

Hemiberlesia lataniae is morphologically very similar to *Hemiberlesia rapax* (Comstock, 1881), where the difference between the two species consists mainly in the presence of circungenital glands in *H. lataniae* (Miller & Davidson 2005; Noronha et al. 2023). The adult females of *H. lataniae* present an oval-shaped body with broad and prominent median lobes on the pygidium, characteristics observed in the insects of the present study.

Hemiberlesia lataniae is associated with 371 species of host plants, distributed in 120 families, including three species of *Bauhinia*: *B. aculeata* L., *B. grandiflora* Blanco, and *B. purpurea* (Garcia-Morales et al. 2016). In Brazil, *H. lataniae* has a wide geographic distribution, from North to South, associated with about 30 host plant species identified from the families Anacardiaceae, Araceae, Arecaceae, Euphorbiaceae, Fabaceae, Lythraceae, Malvaceae, Meliaceae, Moraceae, Myrtaceae, Oleaceae, Polygonaceae, Piperaceae, Rosaceae, Solanaceae, Theaceae, Verbenaceae, and Vitaceae (Claps et al. 2001; Peronti et al. 2024). This

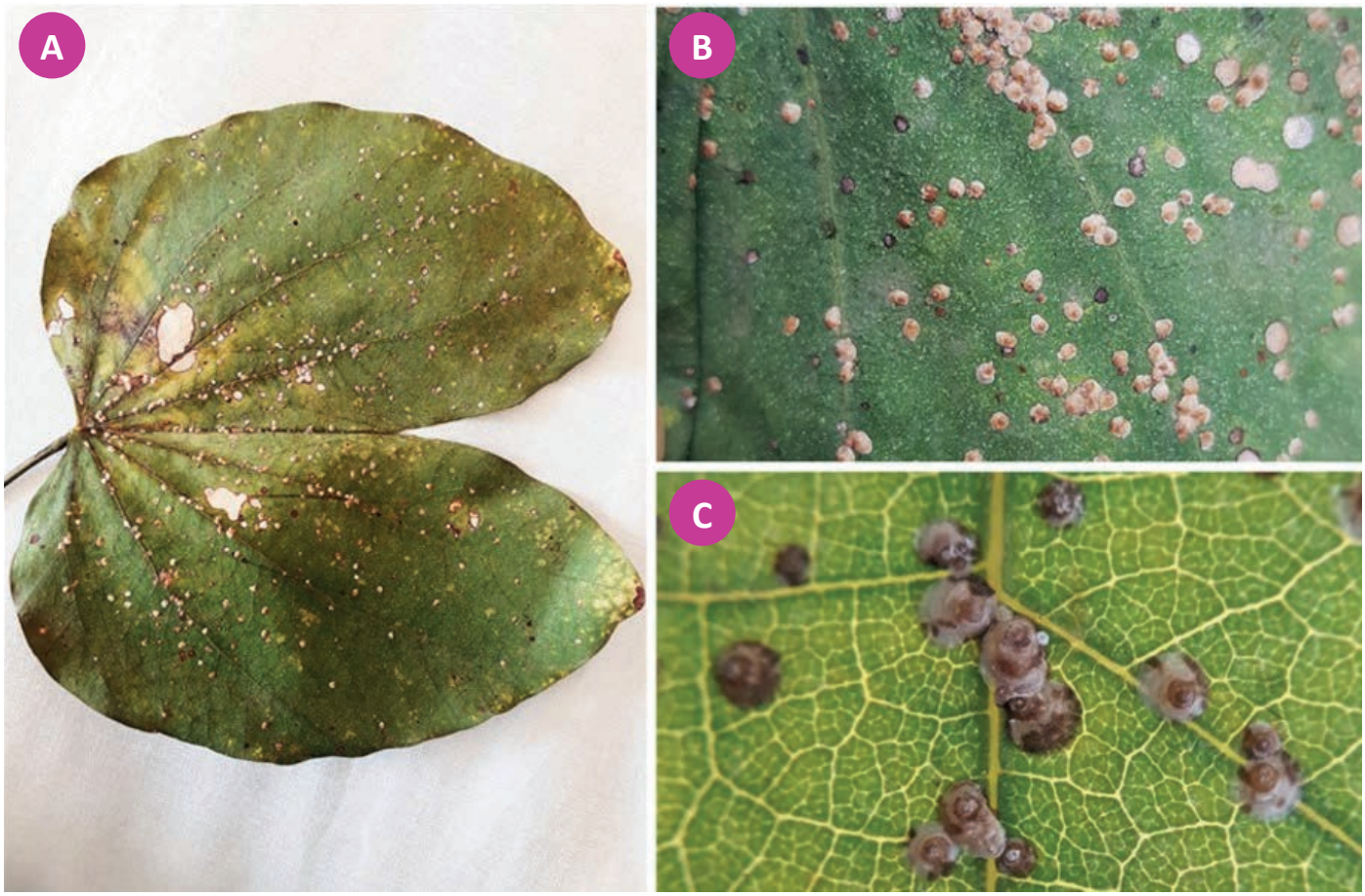

Figure 1. *Hemiberlesia lataniae* (Hemiptera: Diaspididae) on *Bauhinia x blakeana* leaves in Goiás, Brazil. a) *B. x blakeana* leaves with many *H. lataniae* individuals; b) and c) details of scale insect on the adaxial part of the leaves causing yellowing and chlorosis. Photos: M. T. de Castro.

work reinforces the polyphagous nature of the species, expanding its geographic distribution in Brazil and increasing the number of hosts.

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Authors' Contributions

MTC: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Supervision, Validation, Writing - original draft, Writing - review & editing; SCLM: Data curation, Formal analysis, Investigation; VRSW: Data curation, Formal analysis, Investigation, Methodology, Resources, Validation, Writing - original draft, Writing - review & editing.

Conflict of Interest Statement

The authors declare that there is no conflict of interest.

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