

Scientific Note

Oiketicus kirbyi (Guiling, 1827) (Lepidoptera: Psychidae): first record feeding on *Malus domestica* Borkh. (Rosaceae) in Brazil

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Abstract. Several phytophagous insects, such as sap-suckers, borers, and defoliators, affect apple (*Malus domestica* Borkh. (Rosaceae)) production in Brazil. Recording insects that cause damage to plants can facilitate their identification when making control decisions. Given the importance of apple production in Brazil, it was necessary to report the occurrence of *Oiketicus kirbyi* (Guiling, 1827) (Lepidoptera: Psychidae) feeding on *M. domestica* leaves in Brazil. The caterpillars identified as *O. kirbyi* were observed feeding on the leaves of *M. domestica*. These were collected, determined, and deposited in an entomological reference collection, constituting the first record of the species damaging leaves of *M. domestica* in Brazil.

Keywords: apple tree, basketworm, defoliator, polyphagy.

The apple tree (*Malus domestica* Borkh. (Rosaceae)) is a temperate fruit tree that has adapted and become cultivated in Brazil, with an estimated annual production value of R\$2.9 billion reais, from a production of 1.1 million tons and an area of 33,000 hectares (IBGE 2023c). Brazilian apple production is primarily concentrated in the southern part of the country, due to favorable temperature and rainfall conditions for the crop, especially in the state of Santa Catarina (Kist 2019; IBGE 2023c). The apple tree is native to the Caucasus, the Middle East, and East Asia (Bleicher 2002). This species has more than 7,000 commercial cultivars, allowing it to be planted on all continents. Nutritionally, it is one of the most complete fruits, featuring a composition rich in antioxidants, vitamins, and minerals (Mello 2005). Pest insects such as fruit flies (Santos 2022), defoliating caterpillars, and fruit borers (Cattaneo et al. 2017) with different feeding habits, as well as mites (Rode et al. 2023), affect *M. domestica* plants at various stages of development.

Oiketicus kirbyi (Guiling, 1827) (Lepidoptera: Psychidae) is a brown caterpillar with black spots throughout its body. They shelter in mobile, fusiform-shaped cocoons constructed of silk threads and plant fragments (leaves and branches), with only the head and thorax exposed (Rhainds et al. 2009). When disturbed, the caterpillars quickly retreat into the cocoon. The basket grows as the caterpillar develops, with documented records of up to 12 cm. The cocoon plays a fundamental role, serving as a shelter, breeding site, and egg protection for females that remain neonates (Baronio et al. 2012).

Oiketicus kirbyi is an insect known for its polyphagous feeding habit, widely distributed in Central, North, and South America (GBIF 2023). This caterpillar causes damage to several forest, ornamental, and agriculturally important species (Ellis et al. 2005). The objective of this study was to report the first occurrence of *O. kirbyi* feeding on *M. domestica* leaves in Brazil.

During occasional observations in a garden, it was noted that the caterpillars were feeding on a *M. domestica* tree (Fig. 1A), located at the Universidade Federal dos Vales do Jequitinhonha e Mucuri (UFVJM), Campus JK, in Diamantina, Minas Gerais, Brazil (Coordinates: 18°12'09" S, 43°34'17" W; 1,387 m.a.s.l.). The climate is Cwb - highland subtropical, characterized by dry winters and rainy summers (Köppen

1936). The predominant vegetation near the study area is rupestrian grassland (Soares et al. 2019).

Photographs of the caterpillars and the host plant were taken with a Nikon D5200 DSLR camera with a Nikon AF-S DX 18-55mm f/3.5-5.6G VR II lens. Approximately 30 caterpillars were observed, and two caterpillars were collected with entomological tweezers, stored in Falcon tubes (50 mL) with 70% ethyl alcohol. The terminology of Arce et al. (1987) was used for identification. The collected material was deposited in the Entomological Collection of the Universidade Federal dos Vales do Jequitinhonha e Mucuri (UFVJM), without a voucher number. The caterpillars defoliating the *M. domestica* tree in the garden were identified as *O. kirbyi*. These caterpillars did not share the same feeding branch with another one (Figs. 1B and C).

The record of *O. kirbyi* feeding on *M. domestica* has expanded the list of fruit trees that host this caterpillar, reinforcing its status as a polyphagous species and representing a future risk of a potentially damaging pest.

This caterpillar has been reported in more than 40 botanical families, including species of commercial and ornamental interest (Guzzo & Lima 2020).

Oiketicus kirbyi has been reported on orange trees (*Citrus* spp.) in Brazil, one of the country's main fruit crops, with a production value of 19 billion reais from 17 million tons of harvested fruit (Gravena & Almeida 1982; IBGE 2023b). Two other essential fruit crops in which *O. kirbyi* occurs are banana trees (*Musa* spp.), with a production value of 13 billion reais from a production of 6 million tons (Suplicy Filho & Sampaio 1982; IBGE 2023a). In addition to these, *O. kirbyi* has also been reported on grapevines (*Vitis* spp.), with a production value of 5 billion reais from a production of 1 million tons (Baronio et al. 2012; IBGE 2023d).

Other fruiting plants that *O. kirbyi* has been reported to feed on are jackfruit (*Artocarpus heterophyllus* Lam.), coffee (*Coffea arabica* L.), guava (*Psidium guajava* L.) (Núñez 2005), avocado (*Persea americana* Mill.) (Rhainds & Cabrera 2010), peach (*Prunus persica* (L.) Batsch.) (Baronio et al. 2012), pomegranate (*Punica granatum* L.) (Santos et al. 2023), and cocoa (*Theobroma cacao* L.) (Kirkpatrick 1953), as well as palm trees used in oil production, such as bacaba (*Bactris gasipaes*

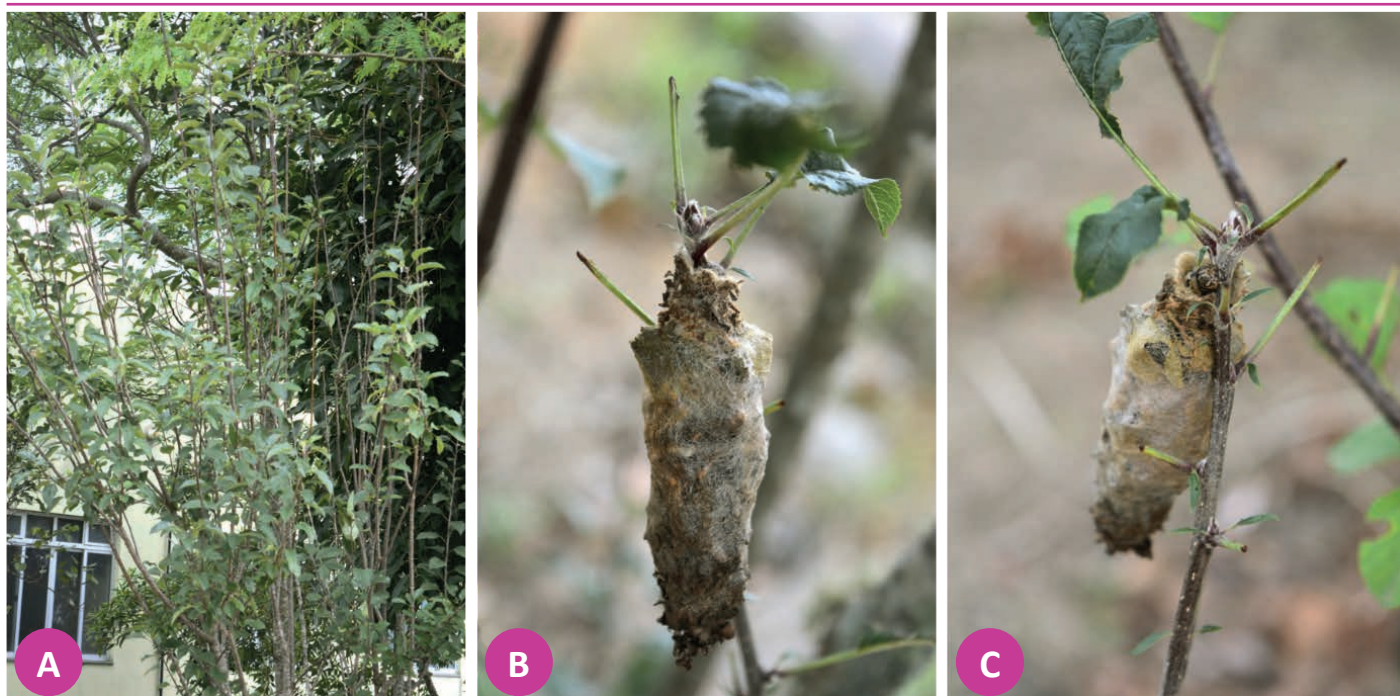


Figure 1. *Malus domestica* Borkh. tree (A); *Oiketicus kirbyi* (Guilding, 1827) caterpillars feeding on *M. domestica* leaves in a garden (B and C).

Kunth.), oil palm (*Elaeis guineensis* Jacq.) (Rhains et al. 1995a; Rhains et al. 1996) and coconut (*Cocos nucifera* L.) (Rhains et al. 1995b).

This is the first report of *O. kirbyi* defoliating *M. domestica* tree in Brazil. This record increases the number of caterpillar species causing damage to apple trees in Brazil, as well as the number of host plants known for *O. kirbyi*.

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Authors' Contributions

RAP: writing - original draft, conceptualization, investigation, methodology, visualization; SVS: writing - review & editing, validation; LGS: writing - review & editing, validation; PPS: writing - review & editing, validation; GGSJO: writing - review & editing; SLAJ: writing - review & editing, data curation, validation; MAS: writing - review & editing, validation.

Conflict of Interest Statement

The authors declare that there is no conflict of interest.

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