Protopolybia Exigua (Hymenoptera: Vespidae) Nesting on Citrus Grandis (Rutaceae)

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Protopolybia exigua (Hymenoptera: Vespidae) nesting on *Citrus grandis* (Rutaceae)

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Protopolybia exigua (Saussure) (Hymenoptera: Vespidae) has been reported in Brazil from the states of Acre, Amazonas, Bahia, Ceará, Espírito Santo, Goiás, Maranhão, Minas Gerais, Mato Grosso, Pará, Pernambuco, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, and São Paulo (Richards 1978). Social wasps are predators (Donovan 2003; De Souza et al. 2012) that feed on insects, mainly defoliating Lepidoptera (Richter 2000). They contribute to insect population reduction, and represent an important natural enemy group for biological control (Prezoto & Braga 2013). In addition, these insects are used in environmental impact assessment and evaluation of forest conservation (Dos Santos et al. 2016; Brügger et al. 2011, 2017). Although known from native (forest) environments, this species is not well known in cultivated agroecosystems. The objective of this communication is to report the first case of nesting of *P. exigua* on citrus plants.

Two nests were collected with an entomological net in Divinópolis, Minas Gerais State, Brazil (20.149904°S, 44.895827°W) on pomelo (*Citrus grandis* [L.]) (Rutaceae) in Jul of 2017. One of the *P. exigua* nests found under pomelo leaves (Fig. 1) was active and another was aban-

Fig. 1. *Protopolybia exigua* (Hymenoptera: Vespidae) nest under *Citrus grandis* (Rutaceae) leaf.

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doned. These insects were killed in ether vapor and preserved in 70% ethanol for identification. The numbers of pedicels, brood, and adults in the colony were determined.

The active colony of *P. exigua* had 12 pedicels, 600 brood cells, and 15 adult wasps. The number of pedicels, brood, and adults of this wasp in this colony were higher than those of this wasp collected in Pedregulho (southeastern Brazil), which was a younger nest, possessing 1 pedicel and 307 brood cells with 46 eggs, 28 workers, 37 intermediaries, and 30 queens (Noll et al. 1996). The high cell count but low numbers of active wasps in the *P. exigua* nest in this study indicate a declining stage. The life expectancy of queens of this wasp is up to 1 yr, but their nests are abandoned after about 6 mo due to the invasion by parasitoids of *P. exigua* wasp larvae, as reported for *Pachysomoides* sp. (Hymenoptera: Ichneumonidae: Cryptinae), and *Megaselia scalaris* (Loew) (Diptera: Phoridae) in nests of *Mischocyttarus cassununga* (von Ihering) (Hymenoptera: Vespidae) (Soares et al. 2006). In addition, the study was conducted in a cold, dry season, when foraging activity of *P. exigua* is lower, and few nests of this species are active (Ribeiro-Júnior et al. 2006).

The pedicel number of the *P. exigua* colony is common for the genus *Protopolybia*, whose species build nests supported by a central pedicel or several smaller ones (Wenzel 1998). The nests of these wasps are found underneath or between leaves, in the first case with a fragile and whitish wrapping, and in the second, supported by 1 leaf and several others glued to each other by oral secretion, functioning as an envelope (Somavilla et al. 2012).

The identification of nesting habits of social wasps in agroecosystems can be used to justify transferring or maintaining their colonies for biological control; moreover, there were no previous reports of *P. exigua* nesting on *C. grandis* plants.

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Summary

Social wasps are predators. Two nests of *Protopolybia exigua* (Saussure) (Hymenoptera: Vespidae) were collected on pomelo (*Citrus grandis* [L.]) (Rutaceae) leaves, 1 active and another abandoned. The colonies of *P. exigua* were located under pomelo leaves, providing protection against adverse environmental conditions. The active nest had 12 pedicels, 600 brood cells, and 15 adult wasps. The knowledge of nesting habits of wasps in agroecosystems favors the management of these insects for biological control.

Key Words: biological control; foraging; grapefruit

Sumario

Vespas sociais são predadores. Dois ninhos de *Protopolybia exigua* (Saussure, 1854) (Hymenoptera: Vespidae) foram coletados em folhas de grapefruit (*Citrus grandis* [L.]) (Rutaceae), um ativo e outro abandonado. As colônias de *P. exigua* estavam localizadas sob folhas de pomelo, proporcionando proteção contra condições ambientais adversas. O ninho ativo tinha 12 pedicelos, 600 células de cria e 15 vespas adultas. O conhecimento dos hábitos de nidificação de vespas em agroecossistemas favorece o manejo desses insetos para o controle biológico.

Palavras Chave: controle biológico; forrageamento; pomelo

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