Solanum lycocarpum Saint Hilaire (Solanaceae) is Host Plant of Leucanella memusae (Walker) (Lepidoptera: Saturniidae: Hemileucinae) in Brazilian Mountain Grasslands

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Solanum lycocarpum Saint Hilaire (Solanaceae) is host plant of *Leucanella memusae* (Walker) (Lepidoptera: Saturniidae: Hemileucinae) in Brazilian mountain grasslands

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Larvae of the subfamily Hemileucinae possess urticating bristles or hairs on the body that are capable of inducing dermatitis and hemorrhage (Lemaire & Minet 1999; Moraes et al. 2017; Mayence et al. 2018). Larvae of the genera *Lonomia*, *Leucanella* (Saturniidae: Hemileucinae), and *Podalia* (Megalopygidae) are considered to be of major medical importance in South America due to the severity of the irritation caused, and the possibility of death after accidental contact (Menezes et al. 2013; Quintana et al. 2017; Sano-Martins et al. 2018). Injury by *Leucanella* or *Podalia* are not as severe as those caused by *Lonomia*, in which the poisoning often is characterized by systemic hemorrhage (Espindula et al. 2009; Specht et al. 2009; Spadacci-Morena et al. 2016). However, recent studies have shown that dermal contact with the species *Leucanella memusae* (Walker) (Lepidoptera: Saturniidae: Hemileucinae) can inhibit blood plasma coagulation (Quintana et al. 2017).

In Brazil, *L. memusae* larvae were found attacking plants of economic importance, such as *Erythrina cristagalli* L. (Fabaceae), *Ilex paraguaiensis* Saint Hilaire (Aquifoliaceae), *Morus alba* L. (Moraceae), *Musa* sp. (Musaceae), *Olea europaea* L. (Oleaceae), *Pyrus communis* L. (Rosaceae), *Solanum tuberosum* L. and *Solanum melongena* L. (Solanaceae) (Costa Lima 1936; Gallo et al. 2002; Gil-Santana et al. 2005). However, its host in natural ecosystems is not documented.

The purpose of this report is to describe *Solanum lycocarpum* Saint Hilaire (Solanaceae) as a natural host of *L. memusae* larvae in Brazilian mountain grasslands.

Leucanella memusae larvae were observed between the months of May to Jun 2018 attacking *S. lycocarpum* plants in natural mountain grasslands in the vicinity of the Vale dos Diamantes neighborhood, city of Diamantina, Minas Gerais State, Brazil (18.2494440°S, 43.3600278°W; 1,280 masl). The local climate is Cwb, temperate humid according to the Köppen classification, with dry winter and summer rains. Local soils are predominantly sandy with low moisture retention, interspersed by large rocky outcrops of quartzite and sandstone (Abreu et al. 2005).

Larvae of different instars of *L. memusae* were observed feeding on the leaves of *S. lycocarpum*, causing intense defoliation with subsequent loss of the photosynthetic tissue of the plant (Fig. 1). Immatures were taken to the Laboratório de Entomologia Agrícola of the Universidade Federal dos Vales do Jequitinhonha e Mucuri, and maintained in 33 × 33 × 33 cm wood cages with a glass cover in a room with controlled temperature at 25 ± 2 °C and 70 ± 10% relative humidity.

The larvae were fed with leaves of *S. lycocarpum* until the pupal stage. Adults were killed in a killing chamber, mounted, and identified as *L. memusae* by Olaf Hermann Hendrik Mielke of the Departamento de Zoologia, Universidade Federal do Paraná, Curitiba, Paraná State, Brazil.

Leucanella memusae larvae are black in color, with conspicuous armed processes of prickly yellow bristles located dorsally. At the anterior and posterior extremities, white scoli are found (Fig. 1). These caterpillars are gregarious, with feeding, resting, molting, and pupation occurring synchronously. They also display processionary (trailing) behavior throughout their development. The species pupate on the host plant, weaving a cocoon of dark brown silk wrapped in leaves. The pupae are dark brown in color and measure on average (± SD) 3.8 ± 0.1 cm (Fig. 2).

Adults vary in color from brown to green. Females are about 9.0 ± 0.2 cm in wingspan, and males about 6.8 ± 0.1 cm. The anterior wings are larger than the posterior ones, and are marked by a stripe that divides the wing between the alar and cubitus regions. The posterior wings are rounded, and each bears a large ocellar spot. The species has sexual dimorphism, with the males smaller than the females, bipectinate antennae, and a less pronounced abdomen.

All except first instar larvae of *L. memusae* collected from the field successfully completed their life cycle feeding on leaves of *S. lycocarpum*. The adults (6 females and 2 males) were mated in a wood cage (33 × 33 × 33 cm) with a plastic tray containing *S. lycocarpum* leaves. Only 1 egg cluster was placed on the leaves, which failed to hatch (Fig. 2). A *Belvosia* sp. *(*Diptera: Tachinidae*)* parasitoid emerged from 1 of the pupae in the laboratory (Fig. 2).

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Fig. 1. *Leucanella memusae* (Walker) (Lepidoptera: Saturniidae: Hemileucinae) larvae of different ages on leaves of *Solanum lycocarpum* Saint Hilaire (Solanaceae). Diamantina, Minas Gerais State, Brazil.

Solanum lycocarpum is the host of *L. memusae* in natural ecosystems. This plant is found in southeastern and west central Brazil in native Brazilian savanna and grassland. It is a shrub of 2 to 3.5 m in height, and has rough and prickly leaves and edible fruits. The fruits of *S. lycocarpum*, popularly known as "fruit-of-wolf" can reach 15 cm in diam, and are present in virtually all months of the year (Dall' Agnol & Von Poser 2000; Bueno & Motta 2004; Tavares et al. 2018). The popular name of the fruit is derived from the fact that it is the main food of the Brazilian wolf *Chrysocyon brachyurus* (Canidae), and comprises more than 25% of its diet (Motta-Jr et al. 1996; Massara et al. 2012). Seed dispersal by the wolves seems to benefit these shrubs (Santos et al. 2003).

Belvosia spp. are common, parasitizing larvae and pupae of moths of the families Arctiidae, Hesperiidae, Noctuidae, Saturniidae, and Sphingidae (Tavares et al. 2014). However, this is the only record of a natural enemy of *L. memusae* in the literature.

Individuals of *L. memusae* have the potential to disperse to agricultural crops in the region of Diamantina, Minas Gerais State, especially to *M. alba* and *O. europaea*, as this species was previously recorded as a pest of these crops. These crops normally receive manual cultivation, with the potential for harm to befall workers in the field due to the stinging of the urticating spines.

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Summary

Larvae of the subfamily Hemileucinae possess urticating bristles capable of inducing stinging in humans. The objective of this report was to describe *Solanum lycocarpum* Saint Hilaire (Solanaceae) as a natural host of *Leucanella memusae* (Walker) (Lepidoptera: Saturniidae: Hemileucinae) larvae in Brazilian mountain grasslands. Individuals of *L. memusae* complete their life cycle feeding on leaves of *S. lycocarpum*, and have the potential to migrate to agricultural crops in the region of Diamantina, Minas Gerais State.

Key Words: cerrado; fruit-of-wolf; venomous caterpillars

Sumário

Lagartas da subfamilia Hemileucinae apresentam cerdas na superfície do corpo capazes de produzir e inocular substâncias de ação urticante. O objetivo foi descrever *Solanum lycocarpum* Saint Hilaire (Solanaceae) como hospedeiro natural de lagartas de *Leucanella memusae* (Lepidoptera: Saturniidae: Hemileucinae) em campo rupestre brasileiro. Indivíduos de *L. memusae* completaram o ciclo biológico alimentando-

Fig. 2. Adults (left: female above, male below), cocoon (center, above), egg cluster (center, below), pupa (right, above), and *Belvosia* sp. (Diptera: Tachinidae) parasitoid of *Leucanella memusae* (Walker) (Lepidoptera: Saturniidae: Hemileucinae). Diamantina, Minas Gerais State, Brazil.

se de folhas de *S. lycocarpum* e têm potencial para migrar para culturas agrícolas na região de Diamantina, Estado de Minas Gerais.

Palavras Chave: cerrado; fruta-de-lobo; lagartas venenosas

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