

## NOTES

**Fabaceae, a new host plant family for *Hypanartia* and for the Neotropical Nymphalinae (Lepidoptera: Nymphalidae).**

*Hypanartia* Hübner [1871] are medium-sized butterflies whose members are recognized by the orange, brown or reddish-brown color on the dorsal surface, angular wing shapes, and hindwing tails with variable length (DeVries, 1987; Willmott *et al.*, 2001). The genus contains 14 species, with the center of diversity in high Andean cloud forest habitats (Willmott *et al.*, 2001). The known larval host plants for *Hypanartia*, like other genera of Nymphalini, include mainly Urticaceae and Ulmaceae (see Beccaloni *et al.*, 2008; Nylin & Wahlberg, 2008), with a single record for Piperaceae (Alayo & Hernández, 1987).

*Hypanartia bella* (Fabricius, 1793) is a common and widespread species that occurs in several types of habitats in the Southern Peru to the northern Argentina, eastern and southeastern Brazil, Uruguay and Paraguay (D'Abrera, 1987; Willmott *et al.*, 2001). The immature stages are relatively well known and host plant records include *Celtis*, *Trema* (Ulmaceae), *Urtica*, *Phenax*, *Boehmeria* and *Parietaria* (Urticaceae) (Biezanko, 1949; Hayward, 1969; Toledo, 1973; Brown, 1992; Beccaloni *et al.*, 2008). This note is to record a new host plant family for *H. bella* that represents a new record for the Neotropical Nymphalinae. In addition, some aspects of oviposition and larval behavior on this new host plant are described and discussed.

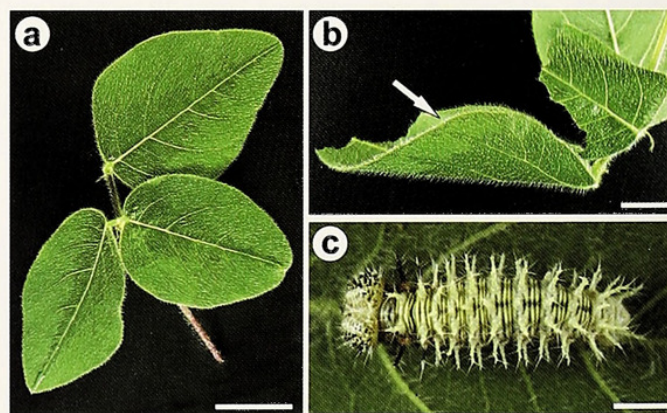
Field observations were conducted in three sites of Atlantic Forest in Rio Grande do Sul State, South Brazil: 1) Morro Santana (80 m a.s.l.), Porto Alegre (30°04'S, 51°07'W), in several opportunities between 2002-2005; 2) Barra do Ouro (450 m a.s.l.), Maquiné (29°30'S, 50°15'W), in October 2002; and 3) Floresta Nacional do Pinho (800 m a.s.l.), São Francisco de Paula (29°26'S, 50°34'W), in December 2006. The oviposition behavior was observed in the field, and the immature stages were collected and reared to confirm the viability of host plant in the larval development.

Eggs and larvae of *H. bella* were observed on *Desmodium uncinatum* (Jacq.) DC. (Fabaceae), a prostrate herb densely covered with hooked trichomes (Figs. A-B). Oviposition behavior on *D. uncinatum* was observed in two localities (Porto Alegre and São Francisco de Paula). Females of *H. bella* fly near to the vegetation and eventually land on potential plants (oviposition observed between 12:00-13:00 h). To find the appropriate host plant the female spends some

time inspecting (up to 3 min.). The butterfly can lay several eggs per plant, with eggs laid singly or in small groups of two or three. Eggs are placed on different plant parts, including new and old leaves, petioles and stems. The immature stages are similar to those described by Toledo (1973) from Argentina and from other localities in SE Brazil (AVLF unpublished). Eggs are light green, the larvae yellowish with large scoli in the last instar (Fig. C). All instars construct leaf shelters built as semi-rolled leaf held by silk (Fig. B).

The use of Fabaceae by a Nymphalinae species is striking. This is the first report of the plant family by a Neotropical Nymphalinae, but the use of Fabaceae has been reported rarely in *Vanessa cardui* (Linnaeus, 1758) and *Vanessa virginiensis* (Drury, 1773) in the Holarctic region (Scott, 1986; Tolman & Lewington, 1997).

*D. uncinatum* is a native plant in the Neotropics and can become invasive in some situations, infesting pastures, road edges, and waste land, mainly in southern and southeastern Brazil (Lorenzi, 2000). Thus, it is predictable that *H. bella* often encounters this plant species throughout its geographic distribution. However, the use of *D. uncinatum* by *H. bella* was confirmed only in these three localities in southern Brazil, suggesting that this new host plant use is a local phenomenon. The colonization of new host plants is



**Figure 1.** *Hypanartia bella* on *Desmodium uncinatum* host plant. **A**, leaves; **B**, detail of leaves, note the larval shelter (arrow); **C**, last instar in dorsal view. Bars = 1.5, 1.5, and 0.5 mm, respectively.



an important phenomenon in butterflies (Willmott & Freitas, 2006; Janz *et al.*, 2006). In Nymphalinae, recent studies have shown that the plasticity in host plants ranges may be related to diversification processes (Weingartner *et al.*, 2006; Nylin & Wahlberg, 2008). In this sense, *H. bella* may be a model for understanding the importance of local adaptation in the evolution of host plant use in Neotropical butterflies.

## ACKNOWLEDGEMENTS

We thank Adriano Cavalleri and Cristiano A. Iserhard for their help in the field, and Niklas Wahlberg and Keith S. Brown Jr. for reading the last version of the manuscript. To CNPq for the doctoral fellowship granted to LAK (Proc. 140183/2006-0). AVLf thanks FAPESP (grants 00/01484-1 and 04/05269-9) and the BIOTA-FAPESP program (98/05101-8), the Brazilian CNPq (fellowship 300315/2005-8) and the National Science Foundation grant DEB-0316505. This work was partially supported by the CNPq (Proc. 478787/2001-4).

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## Duration of molt in a Neotropical butterfly (Lepidoptera: Nymphalidae)

In this note I present the results of an observational study on the length of molting in caterpillars of *Hypothyris ninonia daeta* (Boisduval, 1836), an ithomiine (Lepidoptera: Nymphalidae: Ithomiinae) butterfly of southeastern Brazil. To determine the proportion of time spent molting I measured the time caterpillars spend in molting relative to total development time. I was able to do this using a specific external marker (see below) that enabled me to recognize the start and the end of each molt period.

The species, hereafter referred to as *Hypothyris*, is a

medium-sized (forewing length 29-32 mm), relatively common butterfly inhabiting the Reserva Biológica do Poço D'Anta (RPA), a 277 ha forest fragment in Juiz de Fora, MG, Brazil (21°45'S, 43°20'W) (Costa, 2002).

*Hypothyris* has five larval instars that feed exclusively on *Solanum* (Solanaceae) species (Costa, 1999). Ovipositing females lay their eggs singly on the underside of hostplant leaves. Neonates are approximately 1.5-2 mm in length and are translucent white. Their color turns from white to greenish after feeding. However, since food consumption



Kaminski, Lucas A. and Freitas,  
Andre

Victor Lucci. 2009. "Fabaceae, a new host plant family for Hypanartia and for the Neotropical Nymphalinae (Lepidoptera: Nymphalidae)." *The Journal of Research on the Lepidoptera* 41, 76–77. <https://doi.org/10.5962/p.266531>.

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