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Notes and Comments

Occurrence of *Allorhogas* sp. (Hymenoptera: Braconidae: Doryctinae) associated with galls on seeds of *Inga vera* (Fabaceae) in Brazil

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(With 1 figure)

The first phytophagy record of the Braconidae family was made by Macêdo and Monteiro (1989) for Brazil, where *Allorhogas dyspistus* Marsh 1991 was observed feeding on immature seeds of the leguminous plant *Pithecellobium tortum* Martius (Fabaceae). Later new cases of phytophagy of the genus *Allorhogas* Gahan 1912 were described in leguminous seeds in Brazil. Marsh et al. (2000) found two species: *Allorhogas brasiliensis* Marsh 2000 in *Balizia pedicellaris* (DC.) Barnaby & J.W. Grimes (cited as *Pithecellobium*) and *Allorhogas spermaphagus* Marsh, 2000 in *Stryphnodendron polyphyllum* Martius. Tuller et al. (2015) also found an unidentified species feeding on the seeds of *Senegalia tenuifolia* (L.) Britton & Rose in the region of Lavras, Minas Gerais.

Marsh (2002) reported two species associated with leguminous plants in Costa Rica: *Allorhogas argentinus* Marsh 2002 forming galls on the seeds of *Abarema macradenia* (Pittier) Barnaby & J.W. Grimes (cited as *Pithecellobium*), and *Allorhogas hansoni* Marsh 2002 associated with *Inga vera* Willd fruits. *Allorhogas* species have also been reared from galls on plants of other families such as Melastomataceae and Solanaceae (Chavarría et al., 2009; Martinez et al., 2011).

In Brazil, *I. vera* occurs from Rio Grande do Sul to Minas Gerais states, mainly in the Atlantic rainforest (Figliolia and Kageyama, 1994; Lorenzi, 2002).We collected 10 fruits of an *I. vera* specimen on November 22, 2013, in an area located on the BR 464 roadway margins, on the border of the municipalities of Delfinópolis and São João Batista do Glória (20° 33' 4.6"S 46° 32' 10.2"W), about 36 km from the main entrance of the Serra da Canastra National Park, in the southwest of Minas Gerais. The tree was found laterally to a bridge over the Rio Grande, whose local vegetation was composed of gallery forest and grassland. The fruits were collected using long-handle (6 meters) pruning shears and individually placed in sealed plastic bags still in the field, later being transported to the laboratory of Entomology at the Universidade do Estado de Minas Gerais, (UEMG - Unidade Passos). In the laboratory, they were individually kept in polypropylene plastic pots (750 ml), sealed with *voil* fabric for the emerging fauna containment, allowing air circulation and to prevent fungi proliferation. The specimens of *Eurytoma* Illiger 1807 sp. (Eurytomidae) of this study are found in the same laboratory, and those of *Allorhogas* sp. are in the Hymenoptera parasitoid studies laboratory of the Department of Ecology and Evolutionary Biology at the Universidade Federal de São Carlos, all in flasks with 70% ethanol. For the identification of specimens we use the following keys to the genera: DiGiulio (1997) (for *Eurytoma*) and Marsh (1997) (for *Allorhogas*).

We found five individuals of *Allorhogas* sp. forming galls on the seeds (Figure 1A), and three individuals of its parasitoid, *Eurytoma* sp., within the galls formed by them (Figure 1B). Among the galls only one adult of *Allorhogas* emerged, all other gall produced adult individuals that failed to emerge.

Through dissection of galls we observed that there was no evidence of parasitism by *Allorhogas* because we did not find remains of other species inside the gall chambers, suggesting that *Allorhogas* is the gall-inducing species. For *Eurytoma*, we observe that inside the galls had traces of parasitism, but the remains of the host could not be directly associated to *Allorhogas*. However, specimens of *Eurytoma* has been pointed out as ectoparasitoides of *Allorhogas* in works such as those of Macêdo and Monteiro (1989), Penteado-Dias and Carvalho (2008) and Tuller et al. (2015). All galls presented a similar aspect as those observed by Tuller et al. (2015), of *Allorhogas* specimens feeding on *S. tenuifolia* seeds extremities and causing their deformation. In our studies the galls had an ovoid aspect with yellow / brown coloration, located at the extremities of the seed.

This study reports for the first time the occurrence of *Allorhogas* sp. forming galls on *Inga vera* seeds in Brazil. The detailed biology of most *Allorhogas* species is still little studied (Chavarría et al., 2009). Such record may contribute, to both the hymenopteran fauna survey in the Cerrado area, located in the southwest Minas Gerais, and to the advancement of knowledge on *Allohogas* biology in Brazil.

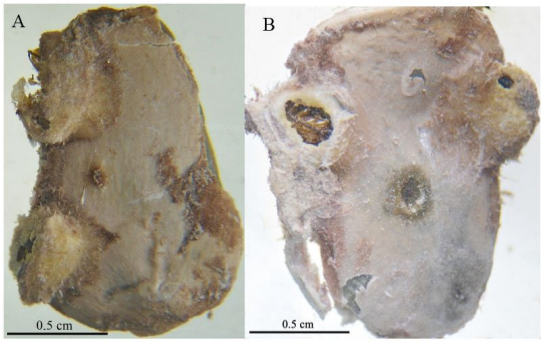

Figure 1. *Inga vera* seeds with ovoid galls: (A) Galls with *Allorhogas* sp.; (B) Galls with *Allorhogas* sp. (Left) and its parasitoid *Eurytoma* sp. (Right).

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