

## NOTA CIENTÍFICA

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**New host plant and distribution records for weevils of the genus *Hydnorobius* (Coleoptera: Belidae)**

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**Nuevos registros de planta hospedadora y de distribución para gorgojos del género *Hydnorobius* (Coleoptera: Belidae)**

■ **RESUMEN.** Se reporta la asociación de *Hydnorobius hydnorae* (Pascoe) (Belidae: Oxycoryninae) con ambas especies del género *Prosopanche* de Bary (Hydnoraceae): *Prosopanche americana* (R. Br.) Baillon y *Prosopanche bonacinai* Spegazzini, y se cita por primera vez su ocurrencia sobre esta última. Se brinda un nuevo registro de distribución en el sur de Mendoza, para la planta *P. bonacinai* y para las dos especies de gorgojos asociadas con ella: *Hydnorobius hydnorae* e *Hydnorobius parvulus* (Bruch). Tal co-ocurrencia de dos especies de *Hydnorobius* Kuschel, sobre la misma planta hospedadora, también es información nueva.

**PALABRAS CLAVE.** Oxycoryninae. *Hydnorobius*. *Prosopanche*. Nuevos registros. Argentina.

■ **ABSTRACT.** The association of *Hydnorobius hydnorae* (Pascoe) (Belidae: Oxycoryninae) with both species of the genus *Prosopanche* de Bary (Hydnoraceae), *Prosopanche americana* (R. Br.) Baillon and *Prosopanche bonacinai* Spegazzini, is reported, providing the first record of its occurrence on the latter. A new distribution record, from Southern Mendoza, is given for the plant *P. bonacinai* and for the two weevil species associated with it: *Hydnorobius hydnorae* and *Hydnorobius parvulus* (Bruch). Such co-occurrence of two species of *Hydnorobius* Kuschel on the same host plant is also recorded for the first time.

**KEY WORDS.** Oxycoryninae. *Hydnorobius*. *Prosopanche*. New records. Argentina.

The weevil genus *Hydnorobius* Kuschel (Curculionoidea: Belidae: Oxycoryninae) is endemic to Argentina and includes three described species, all of which are known to develop in flowers and fruits of *Prosopanche* De Bary (root parasitic plants in the family

Hydnoraceae) (Bruch, 1912, 1916, 1923; Kuschel, 1959, 1995; Marvaldi, 2005; Marvaldi *et al.*, 2006). The Hydnoraceae comprise two genera, the African *Hydnora* Thunberg and the South American *Prosopanche* (Cocucci, 1965; Musselman,

1991), but only the latter is known to hold oxycorynine weevils (Marvaldi *et al.*, 2006). The known host plant associations of the three species of *Hydnorobius* are as follows: *H. hydnorae* (Pascoe) and *H. helleri* (Bruch) both are associated with *Prosopanche americana* (R. Br.) Baillon (= *P. burmeisteri* de Bary) and *H. parvulus* (Bruch) is known to develop on *P. bonacinai* Spegazzini. The life history of these weevils is tightly linked with that of the host plant, and biological details are known for *H. hydnorae*: the adults feed on pollen and oviposit in the flower tissues; larval development and pupation take place inside the subterranean fruiting body of the plant (Marvaldi, 2005).

While conducting a field trip to Southern Argentina in February of 2007, plants of *Prosopanche bonacinai* were found in a site called "El Zampal" in the South of Mendoza province (Fig. 1). Individuals of this plant were found on the sandy shores of Río Grande, and adjacent to volcanic rocks (Figs. 1, 2). This was an unexpected discovery, since no records for *Prosopanche* (and their associated oxycorynine weevils) were known for that region. The plants were dug out and kept in bags for further inspection in the laboratory. Adults of *Hydnorobius* of two different species, *H. parvulus* (Fig. 3) and *H. hydnorae* (Fig. 4), were found in the collected plants. They were identified using Kuschel's (1995) key and by comparison with reference specimens of the three *Hydnorobius* species, including types from the Bruch collection, from the "Museo Argentino de Ciencias Naturales" (MACN). The association of *Hydnorobius hydnorae* with *Prosopanche bonacinai* is herein documented for the first time; it also represents a new distribution record. Because *Hydnorobius hydnorae* had been previously collected only on *Prosopanche americana*, along its wide geographical range in Central and Northern Argentina, it was thought to be host-species specific. With this new record, the host plant range of *Hydnorobius hydnorae* now includes both species of *Prosopanche*, indicating that this weevil, like many other phytophagous beetles, may be preadapted or may have evolved to develop in a new,



Fig. 1. Collection site of *Prosopanche bonacinai* and its associated weevils in the genus *Hydnorobius*, sand margins of Río Grande in the locality of "El Zampal" (Mendoza). Note the black volcanic rocks present on the shores.

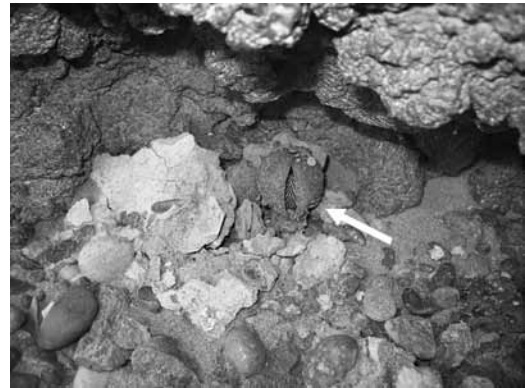


Fig. 2. The parasitic plant *Prosopanche bonacinai* emerging from the sandy soil between volcanic rocks, in "El Zampal".

locally abundant host, which is similar to its ancestral host. The other species found, *H. parvulus*, is so far only known to occur on *Prosopanche bonacinai*, but their presence in Southern Mendoza is a new distribution record for both the plant and the weevil species. Finally, we herein document the previously unrecorded co-occurrence of two *Hydnorobius* species on the same plant.

For each of the two recorded species of *Hydnorobius* we provide the previous known distribution and host plant data followed by the new records. Voucher specimens are deposited in the entomological collection of IADIZA (two individuals of each species dry pinned and the rest preserved in pure



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**Figs. 3-4.** *Hydnorobius* from *Prosopanche bonacinai*. 3, specimen of *Hydnorobius parvulus* found in the flowers of *Prosopanche bonacinai* from “El Zampal”, Mendoza. Note the protibiae produced to a long apical process; 4, specimen of *Hydnorobius hydnorae* found in the flowers of *Prosopanche bonacinai* in “El Zampal”, Mendoza. Note the elytra sharply carinate and granulate between costae.

ethanol) and also in the MACN collection (one dry pinned specimen of each species). Plant specimens of *Prosopanche bonacinai* are deposited in MERL (Mendoza Ruiz- Leal) Herbarium of IADIZA.

***Hydnorobius hydnorae*** (Pascoe, 1868)

Previous known distribution. Argentina [Mendoza, San Juan, San Luis, La Rioja, Catamarca, Tucumán, Córdoba, Santiago del Estero, Buenos Aires].

Previous known host plant association: *Prosopanche americana*.

New records. Argentina, Mendoza, Departamento Malargüe, El Zampal, margins of Río Grande, 36° 30' 59.8" S, 69° 40' 14.1" W, 1085 m, 17-II-2007, M. S. Ferrer, 11 adult specimens (10 IADIZA, 1 MACN), ex. flowers of *Prosopanche bonacinai*.

***Hydnorobius parvulus*** (Bruch, 1916)

Previous known distribution. Argentina [Buenos Aires, Catamarca].

Previous known host plant association: *Prosopanche bonacinai*.

New records. Argentina, Mendoza, Departamento Malargüe, El Zampal, margins of Río Grande, 36° 30' 59.8" S, 69° 40' 14.1" W, 1085 m, 17-II-2007, M. S. Ferrer, 6 adult specimens (5 IADIZA, 1 MACN), ex. flowers of *Prosopanche bonacinai*.

#### ACKNOWLEDGEMENTS

We thank Dr. Sergio Roig Juárez for leading the field trip to Southern Argentina and Dr. David Maddison for pointing out the parasitic plants that MSF collected at margins of Río Grande. Thanks also to Dr. Axel Bachmann and Dr. Arturo Roig Alsina for the loan of oxycorynine specimens of the Bruch collection (MACN, Buenos Aires), and the two reviewers for their suggestions and comments. This work was supported by Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET, Argentina) through a doctoral fellowship to MSF and research grants to AEM (PIP 5766 and PIP 112-200801-00162).

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