



First record of *Hypodynerus torresi* Willink, 1970 (Hymenoptera: Vespidae: Eumeninae) for Chile, with comments on species sharing its mimetic complex

Primera cita de *Hypodynerus torresi* Willink, 1970 (Hymenoptera: Vespidae: Eumeninae) para Chile, con comentarios de las especies que comparten su complejo mimético

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Abstract. - The presence of *Hypodynerus torresi* is reported for the first time in Chile, background information on its distribution in South America is provided, and comparative comments are made between this and all species in the genus belonging to the mimic complex in that the pronotum presents a ferruginous coloration. In addition, those species belonging to the "*humeralis*" group are illustrated, a distribution map of *H. torresi* is provided, and comments are made on the taxonomic position of *H. tuberculatus* (de Saussure, 1852).

Key words: *Potter wasp*, *Andes Mountain*, *distribution*, *coloration*, *Altiplano*, *south cone*.

Resumen. - Se reporta por primera vez la presencia de *Hypodynerus torresi* para Chile, se entregan antecedentes de su distribución a nivel sudamericano, y se realizan comentarios comparativos entre esta y todas las especies del género del complejo mimético que poseen el pronoto ferrugíneo. Adicionalmente, se ilustran las que pertenecen al grupo de "*humeralis*", se proporciona un mapa distribucional de *H. torresi* y se realizan comentarios sobre la posición taxonómica de *H. tuberculatus*.

Palabras clave: *Avispa alfarera*, *cordillera de los andes*, *distribución*, *coloración*, *Altiplano*, *Cono Sur*.

Hypodynerus Saussure, 1855 is a genus of potter wasps consisting of around fifty species, distributed from Colombia to the Cape Horn archipelago in Chile, with a marked presence in the Andean regions (Barrera-Medina 2011). In Chile, this genus is represented by thirty-two species distributed throughout the country, excluding the Chilean insular territory and the Antarctic region (Barrera-Medina 2011; Barrera-Medina and Garcete-Barrett 2016, 2021, 2022).

Willink (1970) proposed dividing the genus into seven species groups: the *H. arechavaletae* (Brèthes, 1903) group, the *H. caupolicanus* (Reed, 1893) group, the *H. chilotus* (de Saussure 1851) group, the *H. excipiendus* (Spinola, 1851) group, the *H. humeralis* (Haliday, 1836) group, the *H. labiatus* (Haliday, 1836) group, and the *H. ruficollis* (Spinola, 1851) group [= *H. tuberculiventris* (Spinola, 1851) group (Willink, 1978a)]; of which only the *H. arechavaletae*

group has not been registered for Chile (Barrera-Medina 2011).

These species groups have been subject to various reviews: Willink (1970, 1978a, 1978b) reviewed the groups *humeralis*, *tuberculiventris* and *excipiendus*, respectively. Barrera-Medina and Garcete-Barrett (2016, 2021) updated and illustrated the *excipiendus* group and reviewed the *caupolicanus* group, respectively. Garcete-Barrett and Hermes (2013) review and illustrate the two species of the *arechavaletae* group present in Brazil. Thus, only the *arechavaletae*, *chilotus* and *labiatus* groups remain pending review.

The *humeralis* group includes large and robust species, with an anterior wingspan ranging between 15 and 19 mm. The posterolateral angles of the propodeum either have or lack a carina but are always strongly angular, separating a posterior region from the lateral ones. The basal



part of the sternum II exhibits a pronounced convexity, generally with two more or less defined protuberances. In males, the last antennomere is notably developed, usually exceeding the length of the sum of the previous two; the mesofemur tends to be more or less deformed, with the exception of *H. chiliensis* (Lepeletier, 1841). Additionally, the aedeagus features a small medial projection near the base, which can vary in shape from sharp and narrow to laminar (Willink 1970). The *humeralis* group comprises a total

of ten species, with seven species recorded in Chile, distributed from the Arica y Parinacota region to Magallanes (Barrera-Medina 2011).

A recent trip to the Altiplano of the Antofagasta Region, in the far north of Chile, allowed the collection of a specimen belonging to the *humeralis* group, corresponding to the species *H. torresi*, which constitutes the first record of the species for the country.

The goal of this contribution is to report the presence of *H. torresi* in Chile, providing

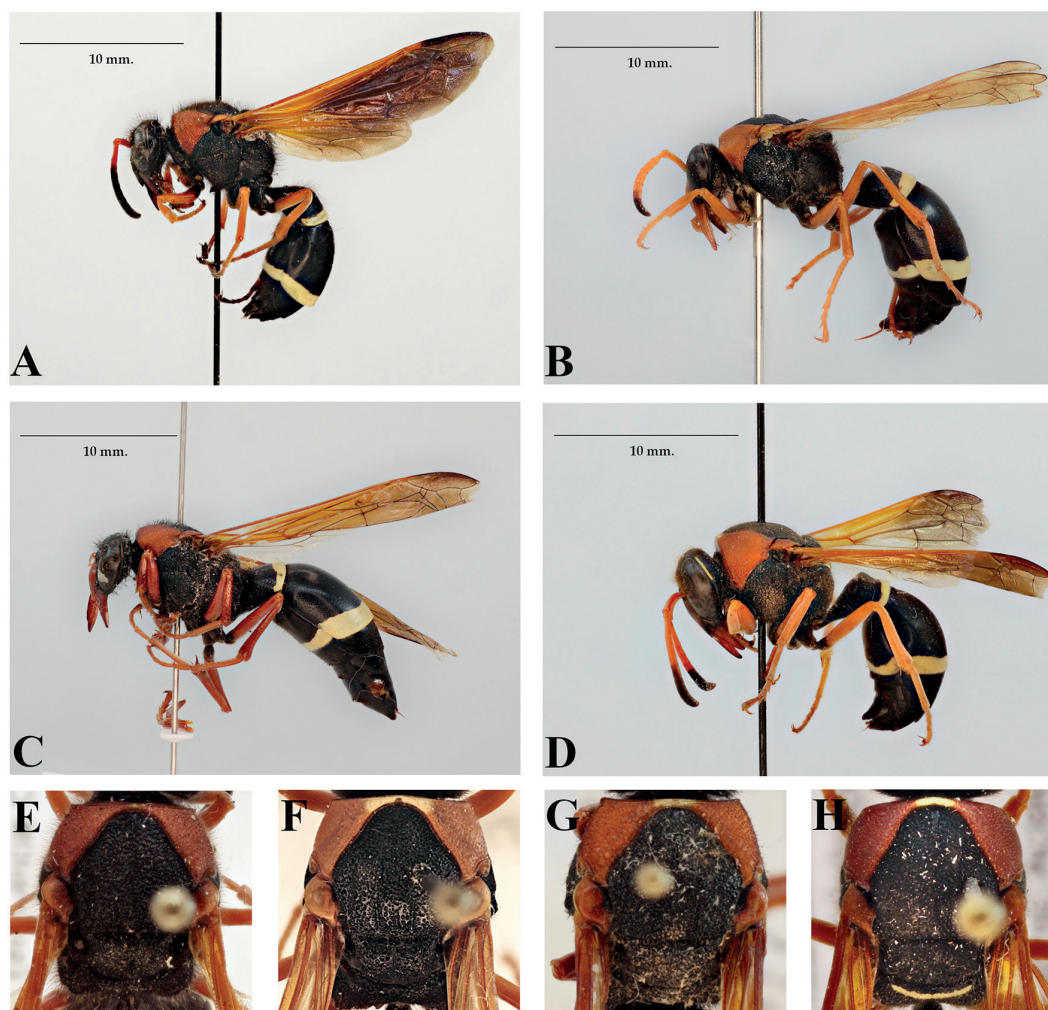


Figure 1. *Hypodynerus* spp. *humeralis* group. **A, E)** *Hypodynerus chiliensis* (Lepeletier, 1841). **B, F)** *Hypodynerus humeralis* (Haliday, 1836). **C, G)** *Hypodynerus torresi* (Willink, 1970). **D, H)** *Hypodynerus tuberculatus* (de Saussure, 1852). // **Figura 1.** *Hypodynerus* spp. grupo *humeralis*. **A, E)** *Hypodynerus chiliensis* (Lepeletier, 1841). **B, F)** *Hypodynerus humeralis* (Haliday, 1836). **C, G)** *Hypodynerus torresi* (Willink, 1970). **D, H)** *Hypodynerus tuberculatus* (de Saussure, 1852).

background information on its distribution in South America, and to make comparative comments between this and all the species of the genus belonging to the mimic complex in that the pronotum presents a ferruginous coloration, and to discuss the systematic position of *H. tuberculatus*.

Materials and methods

The specimens were identified under a stereoscopic microscope following the key given by Willink (1970). The distribution map was created by entering the geographic coordinates of the collected specimen and collection records provided by Willink in 1970 on the website www.simplenappr.net. The material examined is deposited in the collection of the National Museum of Natural History of Santiago, Chile (MNHN).

Results, discussion and conclusions

Hypodynerus torresi Willink, 1970

(Fig. 1 C y G)

Diagnosis: *H. torresi* corresponds to a robust wasp with a black tegument, ferruginous pronotum, and ivory markings. The female clypeus is ferruginous, while the male is ivory. The females have wings ranging from 16.5 mm to 18 mm, while the males range from 15 mm to 16 mm. Exceptionally, some specimens have a reduced ivory spot on the middle of the pronotum.

This species is distributed along the eastern side of the Andes, from Mendoza to Salta, at altitudes between 1000 and 2600 meters above sea level (Willink 1970).

Distribution (Fig. 2). **ARGENTINA:** Provinces of Salta, San Juan and Mendoza (Willink 1970). **CHILE:** Antofagasta Region, Loa Province, Ollagüe, Quebrada del Inca, around 3850 masl., 04/02/2019 Leg. Mauricio Cid Arcos (1 female MNHN). **New record for Chile.**

Comments: The new record of *H. torresi* in Chile represents both the highest altitude and the northernmost record of the species, as it is located north of the Argentine province of Salta

and on the border with the Bolivian department of Potosí. Given that there are no natural barriers to its movement and considering that the species predominantly inhabits high altitude areas, its presence in the Andean regions of these areas is possible, a hypothesis that still lacks confirmation.

This species (i.e. *H. torresi*) shares the same mimetic complex (which consists of black wasps with a ferruginous pronotum and ivory markings) with *H. chiliensis* (distribution: Argentina, Neuquén near the Chilean border; Chile, from the Atacama Region to the Biobío Region) (Fig. 1 A, E), *H. humeralis* (distribution: Argentina, Neuquén, Chubut, and Santa Cruz; Chile, Magallanes Region) (Fig. 1 B, F), and *H. tuberculatus* (de Saussure, 1852) (distribution: Chile, Coquimbo, Valparaíso, General Bernardo O'Higgins, and Metropolitan Regions) (Fig. 1 D, H), all belonging to the



Figure 2. Distribution of *Hypodynerus torresi* in South America (red stars): **Argentina**, provinces of Salta, San Juan, and Mendoza; **Chile**, Antofagasta region. // **Figura 2.** Distribución de *Hypodynerus torresi* en América del Sur (estrella roja): **Argentina**, provincias Salta, San Juan y Mendoza, **Chile**, región Antofagasta.

humeralis group. Additionally, it shares this mimetic complex with *H. ruficollis* (Spinola, 1851) (distribution: Chile, Coquimbo, Valparaíso, General Bernardo O'Higgins, Maule, and Metropolitan Regions) from the *tuberculiventris* group and *H. brethesi* (Jørgensen, 1910) (distribution: Argentina, San Juan, and Mendoza) from the *arechavaletae* group.

H. torresi is distinguished from *H. chiliensis* in that the latter lacks protuberances at the base of the sternum II, and the females have a black clypeus, unlike *H. torresi*. In males, *H. chiliensis* shows a median protuberance on the tergum VI, which is absent in *H. torresi*.

Regarding *H. humeralis*, *H. torresi* differs by having less dense punctation on the frons and vertex, with well-defined intervals between the punctures, whereas in *H. torresi*, the punctuation in these areas is dense and coalescent, especially on the pronotum. Additionally, in females of *H. humeralis*, the pronotum has sparse and isolated punctation on the upper part, unlike *H. torresi* where it is dense and coalescent. In males, the last antennomere of *H. humeralis* has a spatulate termination, while in *H. torresi*, it is subcylindrical, broadened at the base, and narrower towards the tip. Furthermore, *H. torresi* generally does not present an ivory median spot on the pronotum, a characteristic common in *H. humeralis*; however, the specimen reported for Chile of *H. torresi* does clearly show this spot.

Finally, *H. tuberculatus* can be quickly distinguished from *H. chilensis*, *H. humeralis*, and *H. torresi* due to the presence of a tubercle on the first tergum of the former, with a rounded medial protuberance anterior to the basal median groove; additionally, some specimens may have a white band-like spot on the postscutellum (Fig. 1 H).

The other wasps that share the same mimicry complex as *H. torresi* are *H. ruficollis*, which belongs to the group of *H. tuberculiventris*. This group is characterized by small wasps with wings less than 9 mm, generally even smaller.

Their clypeus is as wide as or wider than long and has a subglobose shape. The junction of the anterior and superior faces of tergum I forms a well-defined angle, usually elevated in a ridge. The sternum II has a strongly angled base, and the pronotum features a complete anterodorsally ridge or lamina (Willink 1970).

Another species sharing the same mimicry complex is *H. brethesi*, which belongs to the group of *H. arechavaletae*. This group is distinguished by having tergum I, in lateral view, with a smooth curve at the junction of the anterior and superior faces; the superior face gradually merges with the anterior face without forming a ridge (Willink 1970). These characteristics differentiate *H. brethesi* and *H. ruficollis* from *H. torresi*.

Regarding the position of *H. tuberculatus*, included in the *humeralis* group by Barrera-Medina (2011), indicating that they are large and robust wasps with the posterolateral angles of the propodeum lacking carinae but angular, and a basal convexity on the second sternum, subsequent reviews have suggested that its group needs to be reevaluated. Among other characteristics, this species does not exhibit the aedeagus feature of a small medial projection near the base and its size does not exceed 15 mm. The group to which *tuberculatus* belongs will be reviewed in future studies.

With this new citation in Chile the species of the *humeralis* group are represented by eight species, and the genus *Hypodynerus* represented by 33 species distributed from Arica to Magallanes.

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