

From Corsica to Sardinia: distributional range extension of the recently described *Hoplitis agnielae* Le Divelec, 2024 (Hymenoptera: Anthophila: Megachilidae)

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INTRODUCTION

Wild bees are the main pollinators in temperate regions, essential for ecosystem biodiversity, agriculture, and human well-being (Ollerton et al., 2011), yet they are undergoing a severe decline (LeBuhn and Vargas Luna, 2021). Nevertheless, the Mediterranean basin remains a biodiversity hotspot, including for wild bee species (Orr et al., 2021). The genus *Hoplitis* Klug is the most diverse among the Osmiini (Hymenoptera: Megachilidae), comprising 391 species and exhibiting high diversity (M ller, 2025). Its distribution is primarily Palearctic, where it includes 14 subgenera and 313 species (Ivanov et al., 2023), but it has subsequently expanded into southern Africa, the Nearctic region (Sedivy et al., 2013), and as far east as India (Michener, 2007). Within the Palearctic, 65 species of the subgenus *Alcidamea* Cresson are currently recognised (M ller, 2025), of which 24 occur in Europe (Ghisbain et al., 2023). Two additional species have been recently described, including *Hoplitis (Alcidamea) agnielae* Le Divelec, 2024.

RESULTS AND DISCUSSION

Hoplitis agnielae (Fig. 1) was described as a Corsican endemic, with a broad distribution across the island from the coast up to 1700 m. Morphologically, it cannot be confused with other western Palearctic species except *H. acuticornis* (Dufour & Perris). In his description, Le Divelec (2024) provided a detailed set of diagnostic characters distinguishing both sexes of the two species, highlighting that these features remain the only reliable means of separation, as DNA barcoding analyses do not support their differentiation according to the molecular analyses conducted by the author. All specimens used in the original description of *H. agnielae* originated from Corsica, supporting its endemic status. However, we here extend its distribution to the neighbouring island of Sardinia, where several individuals of both sexes were collected in the south: Torre delle Stelle – Maracalagonis, City of Cagliari (Fig. 1-A), between April and May 2015. While the nesting ecology of *H. acuticornis* is well known and its floral preferences are polylectic with a strong affinity for Fabaceae, knowledge of *H. agnielae* biology remains scarce. Current evidence suggests that it is probably mesolectic, visiting mainly Fabaceae and Boraginaceae (M ller, 2025). These unpublished data are indeed confirmed: in the Sardinian locality of Maracalagonis, one pair was collected on *Echium plantagineum* L. and five females on *Lotus cytisoides* L. Taxonomic and

biogeographic knowledge is essential for developing effective conservation strategies, particularly in southern and central European countries, which host a high but often understudied biodiversity (Praz et al., 2022). This is demonstrated by the continuous discovery of new species and distributional range expansions (e.g., Gaspar et al., 2025), especially within the family Megachilidae (M ller & Wood, 2025). In this context, Mediterranean islands represent not only biodiversity hotspots but also centres of endemism (Schneider et al., 2024). Among the 332 wild bee species recorded in Sardinia and the 309 in Corsica, 20 and 25, respectively, are endemic to these islands (Revert  et al., 2023). The Sardinian–Corsican complex, with several underexplored areas, continues to yield new taxa (Flaminio et al., 2024), and the recent description of *H. agnielae* together with the newly documented extension of its range highlights the still incomplete understanding of the European bee fauna, particularly within the Mediterranean basin, thereby underscoring the need to intensify research efforts in these regions.

MATERIAL

Specimen data available at <https://doi.org/10.5886/cxm3mj>

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Figure 1: Collection habitat in Maracalagonis, Cagliari (A). Specimens of *H. agnielae*: male, specimen RRPC-0002, in dorsal (B), ventral (C), and frontal (D) views; female, specimen RRPC-0001, in dorsal (E), lateral (F), and frontal (G) views.