

***Proceratium melinum* (Roger, 1860): the first record of Proceratiinae ants from Portugal (Hymenoptera, Formicidae)**

Tomás Pinto¹, Fernando Ascensão¹, Mário Boieiro²

¹cE3c - Center for Ecology, Evolution and Environmental Changes & CHANGE - Global Change and Sustainability Institute, Faculty of Sciences, University of Lisbon, Lisboa, Portugal. fc52535@alunos.fc.ul.pt, fjasencsao@edu.ulisboa.pt

²cE3c - Centre for Ecology, Evolution and Environmental Changes, Azorean Biodiversity Group & CHANGE - Global Change and Sustainability Institute, University of the Azores, Azores, Portugal. mboieiro@fc.ul.pt

Abstract: The ant *Proceratium melinum* (Roger, 1860) is reported for the first time from Portugal. This is also the first record of Proceratiinae in this country, from which a total of 133 ant species are now known. The species was collected in a cork oak stand (montado) using pitfall traps.

Key words: Hymenoptera, Formicidae, *Proceratium*, hypogaecic, montado, Portugal.

***Proceratium melinum* (Roger, 1860): primer registro de hormigas Proceratiinae de Portugal (Hymenoptera, Formicidae)**

Resumen: Se cita por primera vez de Portugal la hormiga *Proceratium melinum* (Roger, 1860), perteneciente a una subfamilia, Proceratiinae, que también es nueva para Portugal. Se encontraron dos ejemplares en un alcornocal (dehesa) gracias a trampas de caída.

Palabras clave: Hymenoptera, Formicidae, *Proceratium*, hipogea, dehesa, Portugal.

Introduction

The Iberian Peninsula has an outstanding biodiversity due to a variety of ecological, biogeographical, and historical factors (Hewitt, 2011). In this region, ants are also quite diverse and include several endemic species (Tinaut & Ruano, 2021). However, there are still some gaps on the knowledge of the taxonomy, distribution, and ecology of Iberian ants, particularly in Portugal, where the species inventory is still under construction. Following two key works on the myrmecofauna fauna of Portugal (Collingwood & Prince, 1998; Salgueiro 2002), there has been a regular addition of species to the checklist of the country made by several authors (e.g., Boieiro *et al.*, 2002, 2009; Espadaler *et al.*, 2008; Gonçalves *et al.*, 2014; Garcia *et al.*, 2015; Zina & Franco, 2015). Currently, 132 species of ants from six subfamilies (Amblyoponinae, Dolichoderinae, Formicinae, Leptanillinae, Myrmicinae, and Ponerinae) are recorded to mainland Portugal (Arcos *et al.*, 2021). Despite the record of several species considered to be rare, like *Stigmatomma gaetulicum* (Baroni Urbani, 1978) and *Hypoponera abeillei* (André, 1881), the species inventory is not yet complete since large areas of the country remain unsampled. As so, several species that are common in Spanish localities close to the border have not yet been recorded in Portugal. Hence, it is important to identify gaps in knowledge and direct efforts towards underrepresented regions and distinct functional groups of ants. Here, we report the findings of a new species to Portugal, sampled within an ant biodiversity study using pitfall traps in a cork oak forest near Companhia das Lezírias, Porto Alto, Portugal.

Results and discussion

Proceratium melinum (Roger, 1860)

Two worker specimens of *Proceratium melinum* were captured in a cork oak forest (Montado) near Companhia das Lezírias (38°50.518'N, 008°52.802'W), Porto Alto, Portugal. The specimens were captured using pitfall traps set for a 15-day period (5-19 April 2023) as part of an ant biodiversity study.

Ants of the Proceratiinae subfamily can be easily identified by the characteristic large and curved abdominal segment IV (Figure 1) that seems to have a phragmotic function (Baroni Urbani & Andrade, 2003) and, like other poneromorph ants, they present a marked constriction between abdominal segments III and IV. In Europe, this subfamily is only represented by the genus *Proceratium* with four species (Baroni Urbani & Andrade, 2003; Borowiec,

2014), but hitherto only *P. melinum* was recorded from the Iberian Peninsula (Martínez, 1986; Tinaut & Martínez, 1998; García *et al.*, 2009).

The worker specimens sampled in Portugal match the description of *Proceratium melinum* since they present small eyes composed by an agglomeration of ommatidia, clypeus anteriorly triangular, propodeal suture absent, the fore tibiae have a basal spine and the mid tibiae have a pectinate spur (Figures 1, 2 and 3) (Baroni Urbani & Andrade, 2003). There are very few reports of this species in the Iberian Peninsula (and in Europe) due to its hypogean habits that make its detection extremely challenging, but also because it is considered a rare species, with small and fragmented populations (Martínez, 1986; Tinaut & Martínez, 1998; García *et al.*, 2009; Tăușan & Rădac 2014). The study of hypogaecic ants using specific sampling methodologies is key to gather information on their abundance, distribution and ecology (Espadaler & López-Soria, 1991), thus providing valuable information to assess their vulnerability to extinction.

Acknowledgments

We would like to thank Roberto Keller from Museu Nacional de História Natural e da Ciência (MNHNC) for helping with image collection. Thanks are also due to Tomás Alves, Raquel Oliveira, Gonçalo Fernandes, Tiago Carrapiço, Rafael António, Martim Galdes and Dávid Domingos for their support and fellowship during fieldwork.

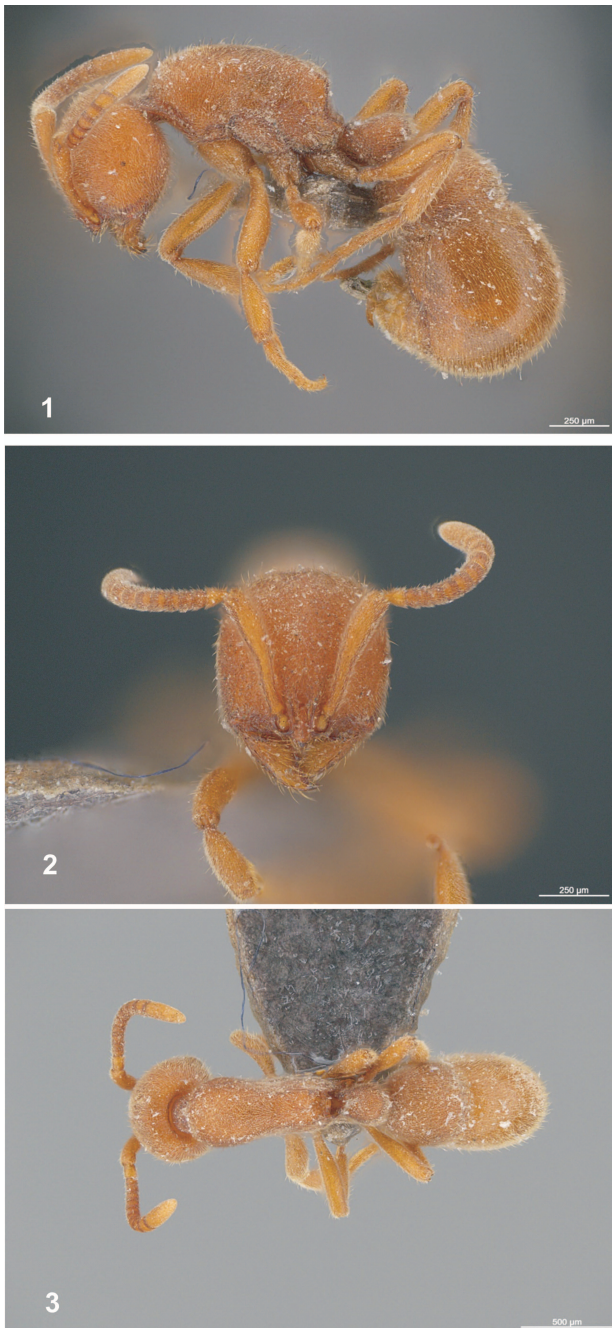


Figure 1. Lateral view of a *Proceratium melinum* worker. Photo by Roberto Keller. **Figure 2.** Head view of a *Proceratium melinum* worker. Photo by Roberto Keller. **Figure 3.** Dorsal view of a *Proceratium melinum* worker. Photo by Roberto Keller.

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