

***Merrifieldia menthae* (Chrétien, 1925) (Lepidoptera: Pterophoridae) in Portugal**

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Introduction

I have been aware for some years that the name *Merrifieldia tridactyla* (Linnaeus, 1758) has been applied to more than one taxon in Portugal. Regrettably no great effort was made to collect specimens of this group. However, it was suspected that a large *Merrifieldia* associated with *Mentha suaveolens* Ehrh. in wet places was different from *M. tridactyla* from dry limestone sites. Although based on very limited material, the *Mentha*-associated species clearly belongs to *Merrifieldia menthae* (Chrétien, 1925). The moth from limestone sites in Estremadura, Ribatejo and Beira Litoral requires further investigation, but is apparently not *M. tridactyla*. Other records attributed to *M. tridactyla* cannot be assigned to that species with any certainty.

In *Merrifieldia* the valvae are asymmetrical, each bearing a sacculus of complex structure, usually with three sections, an inflated elongate basal section, a median section usually narrower and shorter than the basal section and a terminal usually slender section, often needle-pointed and especially on the left valva, curved. The median and terminal sections are often referred to as the saccular process (e.g. Skyva & Elsner, 2007). Bigot & Picard (1989) figured the genitalia of all nine French species of *Merrifieldia*, with *M. menthae* added by Nel (1991).

Abbreviations

ALG Algarve
BA Beira Alta
E Estremadura
Gen. prep. Genitalia preparation
leg. legit = collected by
MNHN Muséum National d'Histoire Naturelle, Paris
R Ribatejo
TM Trás-os-Montes

***Merrifieldia menthae* (Chrétien, 1925)**

Alucita baliodactyla menthae Chrétien, 1925: 243.

Male lectotype in MNHN: San Ildefonso, Segovia, Spain, 29.vi.1902, leg. P. Chrétien. Also recorded from mainland France (Alpes-Maritimes), Corsica and Morocco (Nel, 1991).

Material examined:

Caldas de Manteigas, Serra da Estrela, Beira Alta, 9.ix.2001, M. Corley P6326, gen. prep. 1667 male. Published as *M. tridactyla* in Corley et al. (2012) and Corley (2015).

Caldas de Manteigas, Serra da Estrela, Beira Alta, 17.vii.2007, M. Corley P8631, gen. prep. 2909 male.

Moimenta, Vinhais, Trás-os-Montes, 8.vii.2009, M. Corley, gen. prep. 3304 male, as *M. tridactyla* in Corley et al. (2012).

Vilarinho, E. of Parâmio, Bragança, Trás-os-Montes, 8.vii.2009, M. Corley P9140.

Methods. All specimens were netted in afternoon sunshine, resting on or flying over *Mentha suaveolens* Ehrh. Dissections were made following the methods detailed by Robinson (1976).

Description of Portuguese specimens

Wingspan 23–24 mm. (Fig. 1). Head pale lemon yellow; antennae light fuscous, not ringed. Thorax pale lemon yellow. Forewings creamy white, costa narrowly edged dark brown in middle, fringes very pale grey; hindwings light grey.

Male genitalia

Fig. 2. Middle section of left saccular process with a conspicuous thorn. The left saccular process has terminal section about 1.3 times length of middle section, while this ratio for the right saccular process is 1.0. The equivalent figures for *M. tridactyla* are approximately 0.7 and 0.65.

Female genitalia

No females have been collected in Portugal, but Nel et al. (2025) illustrate the female genitalia of *M. menthae*.



Fig. 1. *Merrifieldia menthae* (Chrétien, 1925). Vilarinho, E. of Parâmio, Bragança, Trás-os-Montes, Portugal, 8.vii.2009, leg. M. Corley, P9140.

Bionomics

In Portugal *M. menthae* has only been found resting on and flying around *Mentha suaveolens* Ehrh. in July and September. Nel (1991) mentions *Mentha sylvestris* L. and *M. rotundifolia* Sole as host-plants. Both are synonyms of *Mentha longifolia* (L.) L.



Fig. 2. *Merrifieldia menthae* (Chrétien, 1925) – male genitalia. Moimenta, Trás-os-Montes, 8.vii.2009, leg. M. Corley., gen. prep. 3304.

Discussion

Alucita baliodactla menthae was described by Pierre Chrétien from San Ildefonso (Segovia) in Spain.

The two 'standard' works covering European Pterophoridae, Arenberger (1995) and Gielis (1996) treat *menthae* as a synonym of *M. tridactyla*, but it should be noted that both authors were inclined to doubt the value of the numerous species described by French lepidopterists mainly in the 1980s and 1990s. These species were based on differences in host-plants together with small differences in larvae and in genitalia. Arenberger (1995) and Gielis (1996) do not always agree on which species should be recognised and which should be treated as synonyms. Vives (2014) also treats *menthae* as a synonym of *tridactyla*. Skyva & Elsner (2007) briefly

mention *M. menthae*, stating that it is currently considered to be a junior synonym of *M. tridactyla*, but they point out that it shows differences from *M. tridactyla* in external characters and in female genitalia.

More recently DNA barcodes have indicated that many of the French species (including all the *Merrifieldia* species) that were synonymised by both Gielis (1996) and Arenberger (1995), are valid species (Nel, pers. comm.). In Portugal barcode studies showed that records of *Merrifieldia malacodactylus* (Zeller, 1847) in Portugal actually refer to *Merrifieldia garrigae* Bigot & Picard, 1989 (Corley et al., 2024). In Nel et al. (2025) DNA barcoding revealed that a *Merrifieldia* from France is a different species from *M. tridactyla* and that this species also occurs in more or less wet places in Portugal, resulting in its description as *Merrifieldia thibaulti* Nel, Corley & Varenne, 2025. The saccular processes of *menthae* and of *thibaulti* were compared by Nel et al. (2025).

At present there is no DNA barcode available for *M. menthae*, but genitalia characters indicate that this is clearly different from *M. tridactyla*.

Arenberger (1995) considered *M. tridactyla* to be very variable, both in habitus and in male genitalia. He illustrated male genitalia from Germany and left and right valvae of a specimen from Albarracin, Spain and another from the Middle Atlas Mountains of Morocco. The illustrated differences between the saccular processes are such that these must represent three different taxa, but further research is needed to discover if these taxa already have names.

As a result of Arenberger's broad concept of *M. tridactyla*, Portuguese specimens were identified as that species, but can now be considered as definite or possible misidentifications. Some of these are here recognised as *M. menthae*, but unfortunately genitalia preparations have not been retained of all such specimens. Published records include those from Cabecico da Vinha, Freixiosa, Miranda do Douro, Trás-os-Montes (Corley et al., 2012) and from Valverde, Ribatejo (Corley et al., 2020). Both of these are females with retained genitalia preparations, but more work is needed to clarify the identity of females previously named as *M. tridactyla*.

To summarise, Portuguese records attributed to *M. tridactyla* may belong to *M. menthae* (recorded from BA and TM), *M. thibaulti* (recorded from BA and TM) or an as yet un-named species from limestone habitats in R, E and BL. The distributions of all three species may well be wider. Currently there is no certainty that *M. tridactyla* occurs in Portugal. Further collections of this complex are needed.

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References

- Arenberger, E. 1995. *Pterophoridae I*. In Amsel, H.G. (Ed.) *Microlepidoptera Palaearctica* **9**: i-xxv, 1-258, Plates 1–153. G. Braun, Karlsruhe.
- Bigot, L. & Picard, J. 1989. Remarques sur les Pterophoridae français du genre *Merrifieldia*: *M. neli* et *M. garrigae*, espèces nouvelles. *Alexanor*, 1988, **15** (7): Suppl. 25–40.
- Chrétien, P. 1925. La légende de *Graëllsia isabellae*. Appendice – *L'Amateur de Papillons* **2** (16): 241–247.
- Corley, M.F.V. 2015. Lepidoptera of Continental Portugal. A fully revised list. 288 pp. Martin Corley, Faringdon.
- Corley, M.F.V., Cardoso, J.P., Dale, M.J., Marabuto, E., Maravalhas, E., Pires, P. 2012. New and interesting Portuguese Lepidoptera records from 2010. (Insecta: Lepidoptera). *SHILAP Revista de lepidopterología*, **40** (157): 5-21.
- Corley, M.F.V., Fabião, J.L., Lemos, P., Nunes, J., & Rosete, J. 2024. New and interesting Portuguese Lepidoptera records from 2023 (Insecta: Lepidoptera). *SHILAP Revista de lepidopterología*, **52** (208): 761–786. <https://doi.org/10.57065/shilap.1018>
- Corley, M.F.V., Nunes, J., Rosete J., Terry, R. & Ferrerira, S. 2020. New and interesting Portuguese Lepidoptera records from 2019 (Insecta: Lepidoptera). *SHILAP Revista de lepidopterología*, **48** (192): 609-641.
- Gielis, C. 1996. *Pterophoridae*. In Huemer, P., Karsholt, O. & L. Lyneborg |(Eds.). *Microlepidoptera of Europe* **1**: 1–222. Stenstrup (Apollo Books).
- Nel, J. 1991. Deuxième note sur les Ptérophores de la Corse. *Stenoptilia cyrnea* n. sp. et *Merrifieldia moulignieri* n. sp. (Lepidoptera Pterophoridae). *Alexanor* **17** (3): 167–182.
- Nel, J., Corley, M., Varenne, Th. & Ferreira, S. 2025. Description de *Merrifieldia thibaulti* sp. n., découverte en France et au Portugal (Lepidoptera, Pterophoridae). *Revue de l'Association Roussillonnaise d'Entomologie*, **118**: 247–251.
- Robinson, G.S., 1976. The preparation of slides of Lepidoptera genitalia with special reference to the microlepidoptera. *Entomologist's Gazette*, **27**: 127–132.
- Skyva, J. & Elsner, G. 2007. A new species of *Merrifieldia* Tutt from Slovenia (Pterophoridae). *Nota lepidopterologica*, **30**: 115–119.
- Vives Moreno, A., 2014. Catálogo sistemático y sinonímico de los Lepidoptera de la Península Ibérica, de Ceuta, de Melilla y de las Islas Azores, Baleares, Canarias, Madeira y Salvajes (Insecta: Lepidoptera.): 1184 pp. *Suplemento de SHILAP Revista de Lepidopterología*, Improitalia, Madrid.