

First record of *Microlycus heterocerus* Thomson, 1878 (Hymenoptera: Eulophidae) in the Netherlands

Konstantinos KAMOUDIS  Wageningen University & Research, Wageningen, Gelderland, Netherlands; k.kamoudis@gmail.com

Rudy SOETHOF  Zevenaar, Netherlands; rudysoethof@hetnet.nl

Jessica AWAD  Naturalis Biodiversity Center, Leiden, Netherlands; jessica.awad@naturalis.nl

INTRODUCTION

Eulophidae (Hymenoptera: Chalcidoidea) is one of the most speciose families of parasitoid wasps, encompassing more than 6,000 described species in 328 genera across five subfamilies worldwide (UCD Community 2023). They are natural enemies of a wide range of arthropods (insects, spiders, and mites) and their biology is equally diverse, covering virtually every mode of parasitoidism across all host life-stages, a form of spatially-confined predation (inside galls), and phytophagy in the form of gall induction (Gauthier et al. 2000).

Eulophinae is the second-largest subfamily of Eulophidae, with more than 1,700 species in 99 genera (UCD Community 2023). In the Netherlands, more than 350 eulophid species in 54 genera are recorded, of which 71 species in the following 19 genera are eulophines: *Aulogymnus*, *Cirrospilus*, *Colpoclypeus*, *Dahlbominus*, *Dichatomus*, *Di cladocerus*, *Diglyphus*, *Elachertus*, *Elasmus*, *Eulophus*, *Euplectrus*, *Hemiptarsenus*, *Hyssopus*, *Miotropis*, *Necremnus*, *Pnigalio*, *Rhichnopenelte*, *Stenomemphus*, and *Sympiesis* (Nederlands Soortenregister 2025).

Microlycus Thomson, 1878 (Eulophidae: Eulophinae) includes 9 species, with patchy records across the Palearctic, Afrotropical, and Neotropical realms. The type species, *Microlycus heterocerus* Thomson, 1878 was described from Sweden. It has since been recorded from Austria, Czechia, England, France, Germany, Hungary, Moldova, Slovakia, and Spain (UCD Community 2023).

The biology of *M. heterocerus* is unknown. Other *Microlycus* species have been reared from the coffee leaf-miner *Leucoptera coffeella* (Lyonetiidae) and the minor coffee pest *Odites artigena* (Depressariidae) (Enriquez et al. 1975; Evans 1969). We would therefore speculate that *M. heterocerus* parasitises some species of micro-Lepidoptera with a concealed feeding habit, possibly in association with *Raphanus sativus* (Brassicaceae) or *Fagus sylvatica* (Fagaceae) (Bouček & Askew 1968; Ulrich 1999). On 28 April 2025, the Dutch naturalist Rudy Soethof collected one specimen of *Microlycus heterocerus* from Nationaal Park Veluwezoom, Gelderland, Netherlands. This represents the first Dutch record of this genus and species.

RESULTS AND DISCUSSION

Description. Minute (ca. 1.0 mm long), squat-shaped eulophine with short antennae. Body coloration uniformly metallic: mesosoma green-bluish, and abdomen purple-bluish. Mandibles meeting apically. Anterior margin of

clypeus entire (smooth and continuous). Antennae inserted below the middle of the face. Scape approximately equal in length to the distance between lateral ocelli, pale in coloration (unpigmented) on both base and apex. Lateral ocelli small and approaching the compound eye margin. Flagellum not fusiform with a 3-segmented funicle (F1–F3) and a 3-segmented clava (C1–C3); F2 and F3 strongly transverse; clava noticeably broader and longer than the whole funicle (see fig. 22 of Bouček). F1 always white; F2 potentially also white, otherwise concolorous (F2 noted as white in a specimen from Hungary). Mesosoma not strongly depressed dorsally. Mesoscutum with conspicuously long, dark setae, longer than in other European congeners. Notauli absent. Axillulae well developed, continuing into a submarginal furrow behind the scutellum. Scutellum distinctly transverse and without any longitudinal grooved lines. Fore wing with costal cell broad; basal cell largely bare and the strip beneath the cubital setal row also bare; wing disc broadly infusate below the stigmal vein. Postmarginal vein $< 1.5 \times$ the length of stigmal vein. Tarsi with first (basal) tarsomere longer than the second (potentially of same length in the hind leg) and longer than mesotibial spur. Apical metasoma weakly acuminate in dorsal view.

Diagnosis. *Microlycus heterocerus* (♀) is recognised by the enlarged clava that surpasses the length of the funicle, the white F1 ($\pm$ F2), the strongly transverse F2 and F3, the exceptionally long mesoscutal setae, and scape pale in coloration on both base and apex. No other European *Microlycus* shows this character suite. Thus, Bouček retained *M. heterocerus* as the sole member of subgenus *Microlycus*, distinct from the subgenera *Necremnulus* (*M. biroi*, *M. virens*, *M. gyorffii*) and *Microlycodes* (*M. erdoesi*).

MATERIAL

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

ACKNOWLEDGMENTS

We are grateful to Natuurmonumenten for issuing a collecting permit to Rudy Soethof. Thanks also to Frederique Bakker for curatorial assistance at Naturalis Biodiversity Center.

REFERENCES

- [1] Bouček, Z., 1959. A study of Central European Eulophidae, 1: Eulophinae (Hymenoptera). Acta Entomologica Musei Nationalis Pragae 33, 117–170.

[2] Bouček, Z., Askew, R.R., 1968. Index of entomophagous insects. 3, Hym. chalcidoidea. Palearctic Eulophidae (excl. Tetrastichinae). Le François, Paris.

[3] Enriquez, E., Bejarano, S., Vila, V., 1975. Morphology, life-cycle and behaviour of *Leucoptera coffeella* Guer-Men. Revista Peruana de Entomologia 18, 79–81.

[4] Evans, D.E., 1969. The biology and parasites of *Odites artigena* Meyr. (Lepidoptera: Xyloryctidae) on coffee in Kenya. Journal of the Entomological Society of Southern Africa 32, 435–442.

[5] Gauthier, N., Lasalle, J., Quicke, D.L.J., Godfray, H.C.J., 2000. Phylogeny of Eulophidae (Hymenoptera: Chalcidoidea), with a reclassification of Eulophinae and the recognition that Elasmidae are derived eulophids. Systematic Entomology 25, 521–539.

<https://doi.org/10.1046/j.1365-3113.2000.00134.x>

[6] Thomson, C.G., 1878. Hymenoptera Scandinaviae. Tom. V. *Pteromalus* (Svederus) Continuatio. Havq. Ohlsson, Lund.

<https://doi.org/10.5962/bhl.title.9332>

[7] Ulrich, W., 1999. Phenology, stratification and life cycles of the parasitic Hymenoptera in a beech forest on limestone. Polskie Pismo Entomologiczne 68, 244.

[8] Nederlands Soortenregister. Naturalis Biodiversity Center. Accessed 21.05.2025.

<https://www.nederlandsesoorten.nl/>

[9] UCD Community (Universal Chalcidoidea Database). 2023. TaxonWorks.

<https://ucd.chalcid.org/#/taxon?taxonID=457303>



Figure 2: Dorsal habitus of *Microlycus heterocerus*, specimen RMNH.INS.1561252. Photo by Soethof.



Figure 1: Lateral habitus of *Microlycus heterocerus*, specimen RMNH.INS.1561252. Photo by Soethof.