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First record of the Nearctic blue mud-dauber wasp *Chalybion californicum* (de Saussure, 1867) from Hungary (Hymenoptera: Sphecidae)

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Abstract – The Nearctic blue mud-dauber wasp, *Chalybion californicum* (de Saussure, 1867) (Hymenoptera: Sphecidae), is native to North America, and has been introduced to Europe. In this paper, the species is reported for the first time from Hungary, representing its third country-level record from Europe, following Croatia and Italy.

Key words – introduced species, Europe, distribution

INTRODUCTION

The Hungarian mud-dauber wasp fauna, i.e. species of the genera *Chalybion* Dahlbom, 1843 and *Sceliphron* Klug, 1801 (Hymenoptera: Sphecidae), was overviewed ten years ago by Vas & Józan (2014); that time the authors listed three native species (*Chalybion femoratum* (Fabricius, 1781), *Sceliphron destillatorium* (Illiger, 1807), and *Sceliphron spirifex* (Linnaeus, 1758)), and two introduced species, namely *Sceliphron curvatum* (Smith, 1870) of Oriental origin and *Sceliphron caementarium* (Drury, 1773) of Nearctic origin, as occurring Hungary. Since then, *Sceliphron madraspatanum* (Fabricius, 1781) has also appeared in Hungary, most probably due to natural expansion from the Mediterranean region (Paulovics & Vas 2021). In this paper we report yet another introduced mud-dauber wasp, *Chalybion californicum* (de Saussure, 1867), from Hungary.

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The blue mud-dauber wasp, *Chalybion californicum*, is native to North America and has been introduced to Hawaii, the Bermuda Islands, and Peru (Bohart & Menke 1976, Hensen 1988, Pulawski 2024). It has also been introduced to Europe, reported for the first time from Croatia by Mei & Boščík (2016). Subsequently, Schmid-Egger & Herb (2018) published further Croatian localities of occurrence, and Pezzi (2021) confirmed its presence in northern Italy.

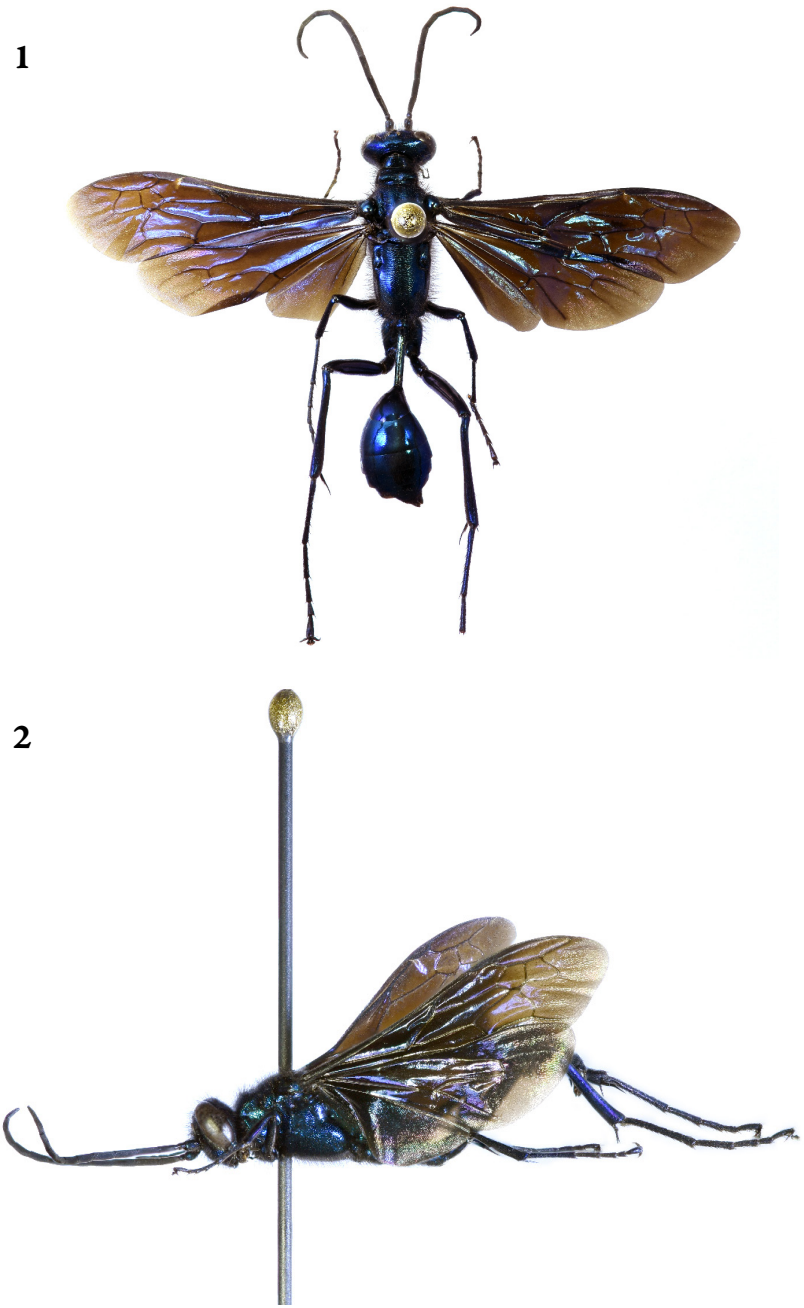
Taxonomy, nomenclature and identification are based on Bohart & Menke (1976), Hensen (1988), and Pulawski (2024). The examined material was collected by the second and third authors using agricultural light trap and sent to the first author for identification. Voucher specimens are deposited in the Hymenoptera Collection of the Hungarian Natural History Museum, Budapest (HNHM).

RESULTS

Chalybion californicum (de Saussure, 1867)
(Figs 1–2)

Material examined – Two males; Hungary: Fejér County, Velence, Ország út 23, 47°14'39.2"N 18°38'43.3"E, 9.VI.2023, leg. K. Kőszegi & A. Takács, agricultural light trap.

Identification – *Chalybion californicum* is characterised by the presence of plantulae on tarsomeres (cf. Hensen 1988: fig. 3), presence of angular carina between middle and hind coxae (cf. Hensen 1988: fig. 25), strongly produced and flattened metanotal flange (cf. Hensen 1988: fig. 5), black hairs of head and mesosoma, and entirely dark wings. This species can be easily distinguished from *Chalybion femoratum* (Fabricius, 1781), the single congener known to occur in Hungary, by the colouration of hind femur, which is, similarly to the body, bluish in *Chalybion californicum*, while it is almost entirely reddish in *Chalybion femoratum*, strongly contrasting with the bluish body. A similar species, *Chalybion omissum* (Kohl, 1889), is expected to occur in Hungary by area expansion from the Balkan Peninsula (Vas & Józan 2014); *Chalybion californicum* can be readily distinguished from this species by its entirely dark wings (wings more or less infuscate but never entirely dark in *Chalybion omissum*). However, as recently at least three other, rather similar, non-native *Chalybion* species have been introduced to Europe (Mei *et al.* 2012, Mokrousov *et al.* 2019, Demetriou *et al.* 2021), these species should also be taken into consideration. Therefore, reliable identifications of further specimens from Hungary should also be based on the world revision by Hensen (1988).



Figs 1–2. Voucher specimens of *Chalybion californicum* (de Saussure, 1867) from Velence, Hungary, 1 = dorsal view, 2 = lateral view (photos by Zoltán Vas)

Remarks – First record from Hungary, representing the third country-level record from Europe, following Croatia and Italy (Mei & Boščík 2016, Pezzi 2021). The Hungarian occurrence might be explained by area expansion originating from the population introduced to the neighbour country Croatia. In North America, the species is widely distributed between Mexico and Canada, hence it is reasonable to suspect that climatic conditions will allow its establishment in the country. *Chalybion* species nest in preexisting cavities, often in abandoned nests of *Sceliphron* species, and hunt spiders for larval provision (Bohart & Menke 1976). Proposed Hungarian name: kaliforniai lopódarázs.

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