

First record of *Chrysellampus sculpticollis* (Abeille de Perrin, 1878) in Germany (Hymenoptera: Chrysididae)

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Zusammenfassung

Paolo Rosa & Chris Ratzlaff: **Erstnachweis von *Chrysellampus sculpticollis* (Abeille de Perrin, 1878) in Deutschland (Hymenoptera: Chrysididae).** Die Goldwespe *Chrysellampus sculpticollis* (Abeille de Perrin, 1878) wird zum ersten Mal für die Fauna von Deutschland gemeldet. Die Art wurde durch ein Weibchen bei Altenbeken in Nordrhein-Westfalen im August 2014 nachgewiesen. *C. sculpticollis* ist nach *Chrysura rufiventris* (Dahlbom, 1854) und *Chrysis marginata aliunda* Linsenmaier, 1959, die dritte ponto-mediterranean verbreitete Goldwespenart, die aktuell in Deutschland neu nachgewiesen wurde.

Summary

The cuckoo wasp *Chrysellampus sculpticollis* (Abeille de Perrin, 1878) is reported from Germany for the first time. A female specimen of this rarely collected species was collected near Altenbeken in North Rhine-Westphalia in August 2014. *C. sculpticollis* is the third ponto-mediterranean chrysidid recently collected in Germany after *Chrysura rufiventris* (Dahlbom, 1854) and *Chrysis marginata aliunda* Linsenmaier, 1959.

Introduction

The cuckoo wasp *Chrysellampus sculpticollis* (Abeille de Perrin, 1878) is a rarely collected species (Arens 2014), which occasionally is locally abundant, as observed in some Italian localities (Rosa 2005). It has a ponto-mediterranean distribution range and is known from southern Europe (France (Berland & Bernard 1938), Italy (Strumia 1995), Greece (Arens 2014)), central Europe (Slovakia (Tyrner 2007)), Crimea (Martynova & Fateryga 2014), Turkey (Schmidt 1977), and western Asia (Transcaucasia (Linsenmaier 1951, 1959)). The genus *Chrysellampus* was recently revalidated by Rosa et al. (2015), after the previous synonymization with *Philoctetes* Abeille de Perrin, 1878 by Kimsey & Bohart (1991). It is known from the Palaearctic and the Oriental Region (Rosa et al. 2015) and includes ten seldom collected species: *C. sculpticollis* (Abeille de Perrin, 1878), *C. medanae* (du Buysson in Magretti, 1890), *C. heros* (Semenov, 1892), *C. pici* (du Buysson, 1900) (= *C. nigromaculatus* Linsenmaier, 1997), *C. harmandi* (Buysson, 1903), *C. praetectorum* (Semenov, 1932), *C. duplipunctatus* Tsuneki, 1948, *C. tatianae* Semenov, 1967, *C. obtusidentibus* Rosa, Wei & Xu, 2015 and *C. proximocellus* Rosa, Wei & Xu, 2015.

Host

Chrysellampus sculpticollis is a kleptoparasite of the crabronid wasps *Psenulus fuscipennis* (Dahlbom) (Martynova & Fateryga 2014) and *Pemphredon rugifer* (Dahlbom) (= *P. unicolor* Panzer) (Berland & Bernard 1938), both known from Germany (Witt 1998). These crabronid wasps nest in cavities, such as hollow stems of various plants, abandoned borings of xylophagous

insects in wood and empty galls. They provision their nests with several species of aphid, preying on both the nymphs and adults. However, *C. sculpticollis* larvae feed on *P. fuscipennis* progeny only, not on the stored aphid prey, and each larva may attack more than one host cell (up to 14) (Martynova & Fateryga 2014).

Material examined

One female specimen of *C. sculpticollis* was collected by C. Ratzlaff in the early afternoon on August 4, 2014 off of flowering plants along a forest pathway near Eggweg, Altenbeken, in North Rhine-Westphalia (Fig. 1). It was a warm, cloudy day and there was much insect activity at and around the flowers. The forest consisted of primarily conifers (spruce) with many smaller deciduous trees closing up the canopy, confining the flower plants to the pathways.

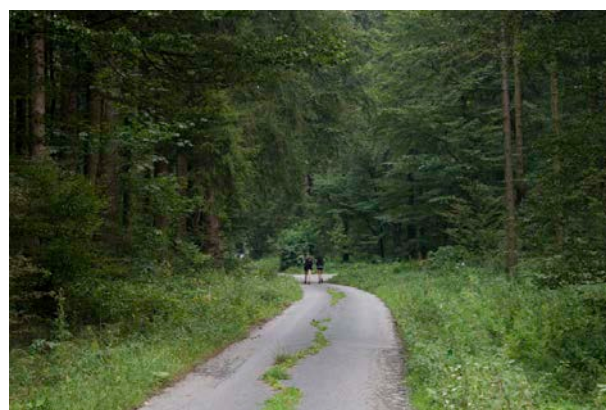


Fig. 1: The collecting place, a forest pathway near Eggweg, Altenbeken, in North Rhine-Westphalia (photo: Ratzlaff).

Identification

Chrysellampus sculpticollis can be easily separated from other German Elampini for its subcylindrical and elongate habitus (Fig. 2); head and mesosoma with a colliculate sculpture (Fig. 3), a reticulate microsculpture set with granulations on the intervals among punctures; Flagellomeres 2 – 11 flattened and dilated; bisected or nearly so by curved genal carina; mesoscutum with large punctures clumped along notauli; metanotum round; medial vein weakly curved; distance between posterior margin of anterior declivity of the first tergite and its posterior margin as long as or longer than mesoscutellum; apex of the third tergite with median notch, with tooth at each side (Fig. 4); tarsal claw with five teeth. Males show sexual dimorphic colouration, being dorsally darker to blackish matt (Agnoli & Rosa 2017).



Fig. 2: *Chrysellampus sculpticollis* (Abeille de Perrin) habitus, lateral view (photo: Rosa).

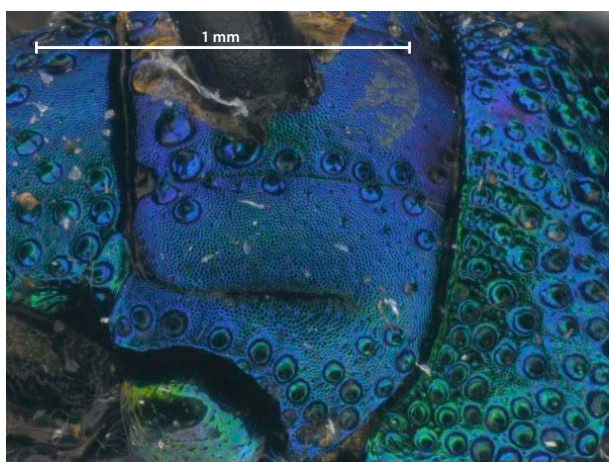


Fig. 3: *Chrysellampus sculpticollis* (Abeille de Perrin) mesoscutum, detail on the colliculate sculpture (photo: Rosa).

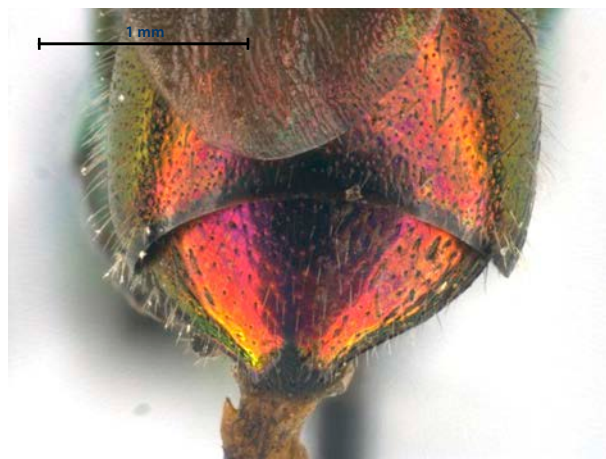


Fig. 4: *Chrysellampus sculpticollis* (Abeille de Perrin) metasoma, apical margin, posterior view (photo: Rosa).

Discussion

Primarily known from southern European countries, there has been only one published record of *C. sculpticollis* in Central Europe (Slovakia: Kováčov, Štúrovo, on the Danube river) (Polacek 1966). No recent data of this species have been published for Central Europe and this German specimen represents the northernmost record for this species.

Northwards range expansion, similar to what *C. sculpticollis* appears to have done, has been observed in two other chrysidid species recently recorded from Germany, *Chrysis marginata aliunda* Linsenmaier (Herrmann & Niehuis 2017) and *Chrysura rufiventris* (Dahlbom) (Reder & Niehuis 2014).

Pagliano et al. (2000) observed that over the last 60 years *Chrysis marginata*, another ponto-mediterranean species, has spread westward from its native range in the Balkans and Caucasus, being discovered in Dalmatia in 1959 and in north-eastern Italy (Emilia-Romagna) in 1962. Since 1975 it has become widespread, even common, in a number of regions of central and northern Italy and has continued to move northward to Austria (Bregant 1998), Switzerland (2002) and Germany (2009) (Herrmann & Niehuis 2017).

Livory et al. (2008) and Schneider & Herbrecht (2009) discovered that *Chrysura rufiventris*, yet another ponto-mediterranean chrysidid species, had spread from its historical range on the French Mediterranean coast, where it is very common, to Brittany and Lower-Normandy in north-western France. It has since been observed in German states of Baden-Württemberg, Hessen and Rhineland-Palatinate (Reder & Niehuis 2014; Niehuis & Krumm 2017).

We cannot, however, provide any valid hypothesis as to why *C. sculpticollis* has spread north and whether it has become naturalized in this new habitat. This apparent range expansion northward into Germany may be a result of climate warming, landscape and habitat changes or a combination of factors. It is possible that it has spread up through the Rhine Valley from France or west along the Danube from Slovakia but there is also a high probability that it has arrived accidentally through the movement of ornamental plants.

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