

# ***Cryptocheilus elegans* (Spinola, 1806) is the new name for *C. fabricii* (Vander Linden, 1827) (Hymenoptera, Pompilidae)**

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## **Zusammenfassung**

Christian Schmid-Egger: *Cryptocheilus elegans* (Spinola, 1806) ist der neu gültige Name für *Cryptocheilus fabricii* (Vander Linden, 1827): *Cryptocheilus fabricii* (Vander Linden, 1827) syn. nov. wird mit *C. elegans* (Spinola, 1806) synonymisiert. Beide Taxa unterscheiden sich nur durch die Vorhandensein bzw. Fehlen weißer Flecken auf Tergit 2. Im genetischen Barcoding wurden keine Unterschiede zwischen beiden Taxa festgestellt.

## **Summary**

Christian Schmid-Egger: *Cryptocheilus fabricii* (Vander Linden, 1827) syn. nov. is synonymised with *C. elegans* (Spinola, 1806).

## **Introduction**

*Cryptocheilus fabricii* (Vander Linden, 1827) is a common and widespread spiderwasp species in Europe and Palaearctic Asia. Its distribution area extends east to China. The species is unique and easy to recognize in both sexes among Palaearctic *Cryptocheilus* species by color pattern. It has a red propodeum in combination with white spots on several terga. Abdominal base may be red in some populations. The species shows a large geographical variability in coloration, which is still poorly studied and understood (Figs 1–3). In Western and Central Asia in particular, some forms deviate very clearly from the appearance of European specimens (Schmid-Egger under prep.).

## **Results**

The typical *C. fabricii* with lateral white spots on T2–3 and a medial spot on T4 (T= terga) occurs in Europe from Spain and France to Greece and reaches the north of Brandenburg in eastern Germany. This is also the northern limit of its distribution. Specimens from Brandenburg have abdominal base black, femora red, females also inner eye margin and pronotum with white spots (Fig. 2). Specimens from Alsace in east France have T1 and base of T2 red, legs are black, in females inner eye margin and pronotum is black or pronotum with red spot in lower lateral corner (Fig. 3), to give just one example of two coloration variants from Central Europe.

Surprisingly, *C. fabricii* is missing in southern Switzerland and Upper and Central Italy, where it is replaced by *C. elegans* (Spinola, 1806). The latter is similar in coloration to the red form from of *C. fabricii* in Alsace, but lacks the white spots on T2 (Fig. 1). Morphologically, the two taxa are indistinguishable and absolutely identical. This strange distribution area of *C. elegans* in the midst

of the very widespread and highly variable *C. fabricii* in combination with lack of morphological characters led to the assumption that both are conspecific, and that the difference in colour pattern is geographic variation.

**Fig. 1–3: specimens in coll. Schmid-Egger (photos: Schmid-Egger).**



**Fig. 1: *Cryptocheilus elegans*-♀, typical color form from Wallis (Leuk) in Switzerland.**



**Fig. 2: *C. elegans*-♀, color form from East Germany, Thuringia (Kyffhäuser) formerly *C. fabricii* (location from near of the type area Halle in Saxony of *C. fabricii*).**



Fig. 3: *Cryptocheilus elegans*-♀, color form from France, Alsace (Bollenberg), formerly *C. fabricii*

Genetic studies carried out as part of the “Barcoding Fauna Bavarica” project (Schmid-Egger & Schmidt 2021 for more details) have now also confirmed that both taxa are similar in the mitochondrial COI gen (Fig. 4), which further confirms their similarity. Consequently, *C. fabricii* is synonymised here with *C. elegans*.

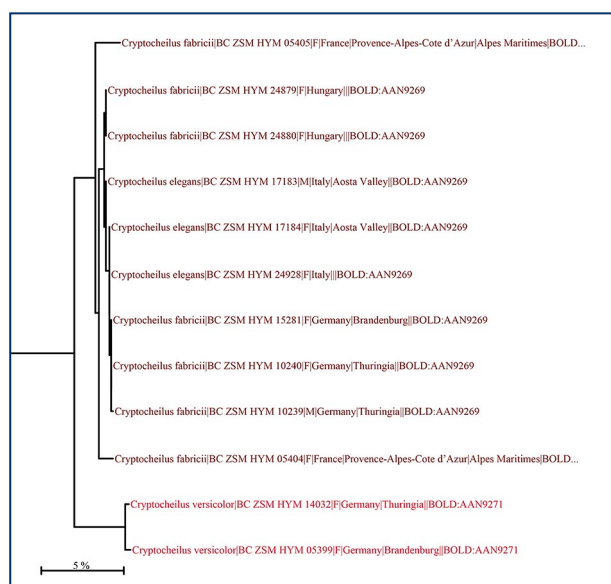


Fig. 4: Neighbor-joining tree of barcodes of *Cryptocheilus elegans* and *C. versicolor* (as outgroup). For methodology see Schmid-Egger and Schmidt (2021). Barcodes of the former *C. fabricii* are still listed under this name for better recognition.

## Taxonomy

### *Cryptocheilus elegans* (Spinola, 1806)

*Pompilus elegans* Spinola, 1806:12, sex not indicated. Liguria (Italy).

*Pompilus fabricii* Vander Linden, 1827:327. Replacement name for *Sphex variegata* by Van der Linden, 1827:327. = **syn.nov.**, because *S. variegata* is a Homonym.

*Sphex variegata* Fabricius, 1793:211, sex not indicated. Halae Saxonum, leg. Dom. Hybner (location currently is Halle in Saxony-Anhalt, Germany).

## Literatur

Schmid-Egger C., Schmidt S. (2021): Unexpected diversity in Central European Vespoidea (Hymenoptera, Mutillidae, Myrmosidae, Sapygidae, Scoliidae, Tiphidae, Thynnidae, Vespidae), with description of two species of *Smicromyrme* Thomson, 1870. *Zookeys* 1062: 49–72.

► <https://doi.org/10.3897/zookeys.1062.70763>

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Jahr/Year: 2024

Band/Volume: [15](#)

Autor(en)/Author(s): Schmid-Egger Christian

Artikel/Article: [53-54](#)