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Paraphyly and low levels of genetic divergence in morphologically distinct taxa: revision of the *Pseudoanthidium scapulare* complex of carder bees (Apoidea: Megachilidae: Anthidiini)

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The Palaearctic complex of anthidiine bees closely related to *Pseudoanthidium scapulare* has long been a source of unresolved taxonomic and systematic issues. Until now, the number of species in the complex and their geographical distributions were largely unclear, thus complicating the compilation of accurate species checklists and hindering conservation efforts. In order to address these issues, we use morphology and mitochondrial cytochrome *c* oxidase subunit I (*COI*) sequences, combined with a thorough examination of the relevant literature and type material, to delimit species within this complex, assign names to species and clarify geographical ranges. An unexpected result was that a certain number of morphologically distinct taxa exhibited low levels of genetic divergence at the *COI* locus, resulting in species paraphyly. A set of ultra-conserved elements (UCEs) was also sequenced in order to further investigate relationships among these taxa. One morphologically distinct species was also paraphyletic using UCE data, hinting at recent species divergences and genetic exchange at zones of contact between morphologically well-differentiated taxa. The results of our study reveal the presence of ten species in this complex, including a previously overlooked species for western continental Europe. A complete diagnosis of the males and females of these species is provided, as are maps detailing the geographic distributions of each. An illustrated identification key to the males and females of each species is presented. Two new species are described, ***Pseudoanthidium kaspareki* sp. nov.** and ***P. rozeni* sp. nov.** New synonymy is established for several species and *Pseudoanthidium palestinicum* and *P. tropicum* are raised to species level. The new combination, ***Icteranthidium floripetum* comb. nov**. is also established. Lectotypes are designated for the following species: *Anthidium eversmanni, A. floripetum, A. frontale, A. karakalense, A. nanum and A. reptans*. Previously unpublished lectotype designations are published here for *A. sinuatum* and *A. tenellum*.

ADDITIONAL KEYWORDS: taxonomic revision – *COI* mtDNA – Palaearctic – species delineation.

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