
The importance of R4+5 vein shape in cryptic species delimitation - a case study of the *Merodon aureus* species complex (Diptera: Syrphidae)

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Abstract

Cryptic species are morphologically indistinguishable but present genetically distinct lineages. To successfully distinguish them, it is necessary to apply integrative taxonomic approach, a combination of molecular, morphological, ecological and other relevant analyses. Within morphological analysis two approaches are in common use in hoverfly taxonomy: geometric morphometric analysis of wing and surstyle shape. Here, it is tested importance of R4+5 vein shape (one of the diagnostic character for genus *Merodon* Meigen, 1803) in cryptic species delimitation within *Merodon aureus* complex: *Merodon aureus* Fabricius, 1805, *Merodon calidus* Vujić, Ačanski et Šašić, 2019 and *Merodon ortus* Šašić Zorić, Ačanski et Vujić, 2019.

In order to quantify R4+5 vein shape, 20 semilandmarks were digitized along R4+5 vein from the intersection with r-m to the intersection with M1 veins. All three species were separated with high significance on the basis of R4+5 vein shape. Moreover, obtained results were in concordance with results of molecular (COI and 28S rRNA) and geometric morphometric analysis of the entire wing shape from Vujić et al. (2020).

Our results showed that R4+5 vein shape stand out as important character in *Merodon* cryptic species delimitation.

Vujić, A., Šašić Zorić, L., Ačanski, J., Likov, L., Radenković, S., Djan, M., Milić, D., Šebić, A., Ranković, M. and Khaghaninia, S. (2020): Hide-and-see with hoverflies: *Merodon aureus*—a species, a complex or a subgroup?. *Zoological Journal of the Linnean Society*, 190(3): 974-1001.

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