
New additions to species genetic characterization of *Merodon clavipes* and *Merodon pruni* (Diptera, Syrphidae) species groups

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Abstract

The *Merodon clavipes* and *Merodon pruni* species groups are two out of 10 established groups within the *M. avidus-nigritarsis* lineage. The both groups were primarily defined by Hurkmans (1988) and then revised by Likov et al. (2020) and Vujić et al. (2021). Likov et al. (2020) presented *M. clavipes* group in a much narrower sense compared to Hurkmans (1988), mentioning only two representatives: *M. clavipes* and *M. velox*. Vujić et al. (2021) added few diagnostic features and appended *M. quadrinotatus* and *M. vandergooti* Hurkmans, 1993 species to previous two species. Within *M. pruni* group, two species were mentioned in Likov et al. (2020): *M. pallidus* Macquart, 1842 and *M. pruni* Rossi, 1790, while the most recently, Vujić et al. (2021) listed four species belonging to this species group: *M. cupreus* Hurkmans, 1993, *M. pallidus*, *M. pruni* and one undescribed taxon from Israel. Here we analysed molecular data based on the sequences of the mitochondrial *COI* gene (cytochrome c oxidase subunit I) in addition to traditional morphological character with the aim to describe the hidden taxonomic complexity of the *M. clavipes* and *M. pruni* taxa. In the employed Maximum Parsimony approach, together with analysed species of the groups, we involved the representatives of previously described *Merodon* lineages by Vujić et al. (2021), as well as species from the groups of the *avidus-nigritarsis* lineage. The analysis based on 72 concatenated nucleotide sequences (612 bp of 5 fragment of *COI* gene and 661 bp of 3 fragment of the gene) revealed all five lineages as clades (Fig. 1). Within the *avidus-nigritarsis* lineage, the both analysed species groups resolved as monophyletic with 100 bootstrap support. Taxon *M. aff. clavipes* from Spain clearly separated (80 bootstrap) from the other analysed species of the groups (*M. clavipes* and *M. velox*), indicated existence of additional new species of the group. Within the *M. pruni* group, previously known variety *Merodon pruni* var. *obscurus* Gil Collado, 1929 proved to be valid species, revealing as separated clade with 99 bootstrap support on obtained MP tree. References: Hurkmans, W. 1988. *Entomologische Berichten*, 48(7), 107-114. Likov, L., et al. 2020. *Contrib. Zool.*, 89, 74-125. Vujić, A., et. al. 2021. *ZooKeys*, 1031, 85-124.

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