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## Three new species of the *Merodon nigratarsis* group (Diptera: Syrphidae) from the Middle East

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### Abstract

Descriptions are given of three new species of *Merodon* Meigen (Diptera: Syrphidae) in the *nigratarsis* species group from the Middle East: *Merodon angustus* Vujić et Radenković **n. sp.**, *Merodon hakkariensis* Vujić et Radenković **n. sp.** and *Merodon quadraticus* Vujić et Radenković **n. sp.** In addition, diagnostic characters are given for the *nigratarsis* group and distribution maps are presented for the new species and closely related taxa.

**Key words:** hover flies, *Merodon angustus* n. sp., *Merodon hakkariensis* n. sp., *Merodon quadraticus* n. sp., distribution, Turkey, Israel

### Introduction

The genus *Merodon* Meigen (Diptera: Syrphidae: Eumerini) is distributed in the Palaearctic and Ethiopian regions. In Europe there are more than 100 species recorded (Speight 2012). As a result of recent and current descriptions of new species, *Merodon* has become the largest hoverfly genus in Europe, the majority of the species occurring in southern parts of the continent. This is explained by the high diversity of bulb-forming plants in the Mediterranean region used by *Merodon* species as food sources for their larvae (Ricarte *et al.* 2008; Radenković *et al.* 2011). There is still no key that deals with all European species. Hurkmans (1993) carried out a partial revision of the nomenclature and status of the European *Merodon* fauna. A series of papers on the fauna of the Balkan Peninsula, Aegean Islands and Turkey have been published during last five years (Vujić *et al.* 2007; Ståhls *et al.* 2009; Petanidou *et al.* 2011; Radenković *et al.* 2011; Vujić *et al.* 2011; Ricarte *et al.* 2012). The authors have progressed by dealing sequentially with one small group of closely related species after another, such as *aureus* (Milankov *et al.* 2008a; Francuski *et al.* 2011), *avidus* (Milankov *et al.* 2009), *desuturinus* (Milankov *et al.* 2008b) and *ruficornis* (Milankov *et al.* 2008c; Francuski *et al.* 2009; Vujić *et al.* 2012) groups. They used integrative taxonomy (combined data on adult morphology, wing morphometry and DNA sequences) to explore species delimitation, phylogenetic relationships and biodiversity. In addition to the Balkans, the *Merodon* fauna of the Iberian Peninsula is also well-investigated (Mengual *et al.* 2006; Marcos-García *et al.* 2007; Marcos-García *et al.* 2011).

Study of the *nigratarsis* group has revealed three new species from the Middle East, which are described in the present paper. Hurkmans (1993) recognised 11 monophyletic species groups, among them the *nigratarsis* group, to which he consigned *M. femoratoides* Paramonov and *M. nigratarsis* Rondani, based on apomorphies of the male genitalia. Mengual *et al.* (2006) used a genetic sequence data set (COI, ITS2, 28S) to analyse the relationships of Iberian *Merodon* species from the *aureus*, *albifrons*, *desuturinus* and *nigratarsis* groups. In their paper a broader concept of the *nigratarsis* group was presented. Radenković *et al.* (2011) described new species from the *aureus*, *natans* and *nigratarsis* groups. They gave a diagnosis for the *nigratarsis* group (*sensu stricto*), which included *M. femoratoides*, *M. latifemoris* Radenković and Vujić, *M. nigratarsis* and *M. toscanus* Hurkmans.

Adults of most *Merodon* species have similar flight behaviour. They fly fast and low through sparse ground vegetation, settling on the open on bare ground, stones, or sometimes on foliage close to the ground surface. They usually prefer warm and dry habitats, as is the case in the majority of *nigratarsis* group species, except for *M. alagozicus* Paramonov, *M. crassifemoris* Paramonov and *M. lucasi* Hurkmans that occur beside streams or on wet