Species of *Dirhinus* Dalman, 1818 (Hymenoptera: Chalcididae, Dirhininae) from Saudi Arabia: new species and a new record

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Abstract

The species of chalcidid wasps of *Dirhinus* Dalman, 1818 (Hymenoptera: Chalcididae) from Saudi Arabia are reviewed. Seven species are reported from Al Bahah, Asir, Jazan and Riyadh regions, of which three have hitherto been recorded: *D. (Dirhinus) anthracia* Walker, 1846, *D. (Dirhinus) himalayanus* Westwood, 1836 and *D. (Dirhinus) wohlfahrtiae* Ferrière, 1935. One species *D. (Dirhinus) claviger* Bouček & Narendran, 1981 is recorded for the first time from Saudi Arabia (Asir). Additionally, three new species: *D. (Dirhinus) asirensis* sp. nov. (Asir), *D. (Dirhinus) sculpturatus* sp. nov. (Al Bahah, Asir and Riyadh) and *D. (Pareniaca) transversus* sp. nov. (Al Bahah, Asir and Jazan) are described and illustrated. An illustrated key to females of the species of *Dirhinus* from Saudi Arabia is provided.

Key words: Afrotropical, Arabian Peninsula, Chalcidoidea, Dirhinini, hosts, parasitoids

Introduction

*Dirhinus* Dalman (type species *D. excavatus* Dalman, 1818) (Hymenoptera: Chalcididae) is one of the most distinctive genera of the family in that the head bears two or four frontal horns. However, species of this genus are very difficult to separate (Bouček 1988). The genus currently includes 68 described species worldwide (Noyes 2017; Delvare 2017; Delvare & Copeland 2018), of which 16 species are reported in the Afrotropical region. Members of the genus are distributed in all warmer countries of the world: Africa, Australia, Pacific Islands, South Asia, southern Europe and New World (Bouček 1988; Narendran & van Achterberg 2016; Noyes 2017). Recently, Delvare & Copeland (2018) provided a complete character analysis for *Dirhinus* with its subgenera and species groups. They described five new *Dirhinus* species from Kenya that differ from all other species of the subfamily in having four horns instead of two as for other *Dirhinus* and the rest of the subfamily. They were placed in a new species group, the *quadhrhinus*-group. Delvare & Copeland (2018) also discussed the phylogeny of the genus, especially the relationships between the subgenera presently recognized (*Dirhinus sensu stricto*, *Pareniaca* Crawford and *Hontalia* Cameron), and defined and characterized the *anthracia*, *claviger*, *hesperidum*, *himalayanus* and *quadhrhinus* species groups within the subgenus *Dirhinus*.

*Dirhinus* species are ectoparasitoids of muscomorphous Diptera, especially those of synanthropic species (Calliphoridae, Sarcophagidae, Muscidae, Glossinidae), where some *Dirhinus* species are of great help to limit pest populations, this is in addition to the control of certain Tephritidae (Bouček & Narendran 1981; Bouček 1988; Narendran & van Achterberg 2016; Noyes 2017; Delvare 2017).

In the Arabian Peninsula four *Dirhinus* species were previously recorded: *D. (Dirhinus) anthracia* Walker from Saudi Arabia, Yemen (Bouček and Narendran 1981; Narendran 1989) and UAE (Delvare 2017); *D. (Dirhinus) himalayanus* Westwood from Saudi Arabia (Bouček and Narendran 1981; Narendran 1989) and UAE...