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## New and remarkable Asian and North African species of *Colletes* Latreille (Hymenoptera: Colletidae)

MICHAEL KUHLMANN<sup>1</sup> & MAXIM YU. PROSHCHALYKIN<sup>2,3</sup>

<sup>1</sup>Department of Entomology, Natural History Museum, Cromwell Road, London, SW7 5BD, UK. E-mail: [m.kuhlmann@nhm.ac.uk](mailto:m.kuhlmann@nhm.ac.uk)

<sup>2</sup>Institute of Biology and Soil Science, Far Eastern Branch of Russian Academy of Sciences, Vladivostok-22, 690022, Russia.

E-mail: [proshchalikin@biosoil.ru](mailto:proshchalikin@biosoil.ru)

<sup>3</sup>Corresponding author

### Abstract

In addition to previous studies on Asian and North African species of *Colletes* Latreille, we here further report records of 25 rarely collected and little known species. Six new species are described: *Colletes comaticus* Kuhlmann, **sp. nov.** (♂, Iran), *C. uzbekus* Kuhlmann & Proshchalykin, **sp. nov.** (♀, Uzbekistan), *C. kazakhus* Kuhlmann & Proshchalykin, **sp. nov.** (♂, Kazakhstan), *C. tibestensis* Kuhlmann, **sp. nov.** (♀, Chad, Sudan), *C. packeri* Kuhlmann, **sp. nov.** (♀, ♂, Thailand, Laos) and *C. jemeniticus* Kuhlmann, **sp. nov.** (♂, Yemen). The female of *C. issykkuli* Kuhlmann 2003 and the male of *C. kaline* Kuhlmann & Proshchalykin 2013 are here described for the first time. New synonymies are established for *Colletes uralensis* Noskiewicz 1936 (= *C. kipyatkovi* Kuhlmann & Proshchalykin 2013, **syn. nov.**) and *C. salsolae* Cockerell 1934 (= *C. omanus* Kuhlmann 2003, **syn. nov.**).

**Key words:** Apiformes, fauna, new species, Oriental Region, Palaeartic Region, taxonomy

### Introduction

In recent years significant progress has been made towards a better knowledge of the species of *Colletes* Latreille from Asia, and in particular the territory of the former Soviet Union (Kuhlmann & Proshchalykin 2011, 2013a, 2014a, b, 2015; Proshchalykin & Kuhlmann 2012, 2013, 2015a, b), China (Niu *et al.* 2013a, b, 2014a, b), and Mongolia (Kuhlmann & Proshchalykin 2013b; Proshchalykin & Kuhlmann 2015c), as comprehensive collections became accessible in Russia and China. Based on specimens from seven collections, the present work aims to complement these studies by providing additional records of some rarely collected and little known Asian and North African species. It also provides descriptions of six new species, the unknown sexes of two species, and establishes two new synonymies. This paper is meant as a further step towards a better documentation of the species of *Colletes* and their distribution patterns in the wider Palaeartic Region and adjacent areas. As previous years have shown, a substantial number of undescribed species can be expected, particularly in the eastern, central and southern Palaeartic Regions where so far relatively little material has been available for study.

### Material and methods

Terminology as well as measurements used in the descriptions follow those of Michener (2007). Puncture density is expressed as the relationship between puncture diameter (d) and the space between them (i), such as  $i = 1.5d$  or  $i < d$ . The following abbreviations were used for morphological structures: T—metasomal tergum, S—metasomal sternum, Bl—body length. Body length was measured from the vertex to the apex of the body. The definition of species groups in *Colletes* follows Noskiewicz (1936) and Kuhlmann *et al.* (2009).