



Descriptions of three new species of the genus *Cheilosia* Meigen from China (Diptera, Syrphidae)

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Abstract

Three species of genus *Cheilosia* (Diptera, Syrphidae: Eristalinae) from China are described as new to science, *Cheilosia bullabucca* Barkalov & Ståhls **sp. n.**, *C. lamproptera* Barkalov & Ståhls **sp. n.** and *C. yunnanensis* Barkalov & Ståhls **sp. n.** We provide species descriptions and keys for their identification. The phylogenetic placements of the taxa was estimated based on their morphological characteristics and by analysing the taxa under parsimony using a mtDNA COI sequence dataset including a comprehensive set of Palaearctic previously generated *Cheilosia* spp. sequences representing all major subgenera. Based on both their morphological affinities and the molecular data. The Chinese taxa were placed in the subgenera *Eucartosyrphus* (*C. bullabucca*), *Cheilosia s. str.* (*C. oblonga*), *Floccocheila* (*C. versicolor*) while *C. yunnanensis* was not resolved as member of *Cheilosia s. str.* based on DNA despite sharing morphological characteristics with the subgenus. As the name *Cheilosia* (*Nephocheila*) *prima* Barkalov & Cheng from China is a junior homonym of *Cheilosia* (*Cartosyrphus*) *prima* Hunter, 1896 from the Nearctic region, for the Chinese species the new name *Cheilosia* (*Nephocheila*) *primaria* Barkalov & Ståhls nomen nov. is proposed.

Key words: hover flies, new taxa, replaced name

Introduction

The predominantly Holarctic genus *Cheilosia* Meigen is one of the most diverse and species-rich genera of the family Syrphidae (Diptera), comprising 347 species in the Palaearctic region. From Asian part of Russia, 61 species have been recorded (Mutin & Barkalov 2014). Most *Cheilosia* flies have a black ground-colour of the body, and with colour of pilosity ranging from black to yellow, white and red. Barkalov (2002) provided an overview of the described subgeneric groupings of *Cheilosia* and their taxonomic status, and described eight new subgenera for the Palaearctic taxa and classified all known *Cheilosia* species and subspecies into subgenera.

The first information about hoverflies of the genus *Cheilosia* from the territory of China was published in the papers of Sack (1927, 1941), Hervé-Bazin (1929, 1930) and Curran (1929). They described altogether 11 new species. Nine new species were also described by Shiraki (1930), and Stackelberg (1963a, b) described two new species from Tibet, bringing the species number to 22. Barkalov & Peck (1994) described two new species from Tibet. In Barkalov & Cheng (1998) six new species were discovered and five Palaearctic species recorded from China for the first time. After studying collections of the Smithsonian Institution (USA, Washington) the list of *Cheilosia* occurring in China was increased with a further nine species, seven of which were described as new to science (Barkalov 1999). As a result of these publications altogether 34 species of the genus *Cheilosia* were listed. Barkalov & Ståhls (2005) published the results of a study of Hervé-Bazin's type material. In this study three species mentioned from the territory of China were synonymized. After a study of the *Cheilosia* materials the senior author conducted at the Institute of Zoology of the Chinese Academy of Sciences, the list of Chinese *Cheilosia* reached 85 species (Barkalov & Cheng 2004), and the same authors estimated that the species number of *Cheilosia* from Chinese territory might reach 120–130 taxa. The present study describes three *Cheilosia* species