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# New species of *Osmylus* Latreille from Henan, China (Neuroptera: Osmylidae)

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## Abstract

Four new species of *Osmylus* Latreille are described from China: *Osmylus biangulus* **sp. nov.**, *O. lucalatus* **sp. nov.**, *O. bipapillatus* **sp. nov.** and *O. pachycaudatus* **sp. nov.** *Parosmylus elegantissimus* (Kozhanchikov, 1951) **comb. nov.** is transferred is transferred from *Osmylus*. A key is given to differentiate species of *Osmylus* in China.

**Key words:** Osmylidae, *Osmylus*, new species, China

## Introduction

The genus *Osmylus* Latreille was erected by Latreille (1802) based on the type species *Osmylus fulvicephalus* (Scopoli, 1763). There are 27 species of *Osmylus* in the Palaearctic and Oriental regions, including the four new species (Banks 1947; Iwata 1928; Kozhanchikov 1951; Krüger, 1912, 1913; Makarkin 1985; McLachlan 1870, 1875; Navás 1910, 1933; New 1988, 1991; Yang 1987, 1988, 1997, 1999). *Osmylus* is characterized by moderate to large body size (body length 15–20 mm); forewing generally large and broad, with many fragmentary marks; two nygmata present at the center of wing and the proximal part of wing between MP and Rs; veins dark brown; only one r-sc cross-vein near the base of wing; costal cross-veins generally bifurcate distally, without interlinking veinlets; Rs with numerous branches, at least two integrated gradate cross-veins; MP forked close to the base, MP2 with many branches. The hindwing resembles the forewing in shape, but with fewer spots. The branches of vein MP are slightly dilated and bent close to the base. The male has scent glands present and generally extend out of the tergite in most species. The 9$^{th}$ tergite has variable-shaped dorsal projections that can be used to identify the different species. Genitalia are composed of a gonarcus and parameres; the gonarcus is variable in shape, consisting of a sclerotized distal part and the membranous remainder, which is articulated with a baculum basally. The parameres are bent medially with a fused base (although the shape is variable in *O. pachycaudatus* **sp. nov.**). The female 9$^{th}$ tergite occasionally has a ventral process, the gonapophysis lateralis is generally fingerlike and articulated with stylus, and the spermatheca is either oval or cylindrical in shape.

In previous works on *Osmylus* most species were proposed based on wing markings (Makarkin 1985; McLachlan 1870, 1875; Navás 1910, 1933; Banks 1947; Yang 1987, 1988, 1997, 1999). However, we find that the wing markings are very similar in shape and pattern and it is difficult to distinguish individual species. After studying the genitalia of many species, we consider that it would be more credible to identify each by the shape of the 9$^{th}$ tergite and genitalia of male, and the spermatheca of female. As descriptions of genitalia are lacking or incomplete in most previously described species, it will be necessary to review the whole genus in future. In this paper we describe four new species (*Osmylus biangulus* **sp. nov.**, *O. lucalatus* **sp. nov.**, *O. bipapillatus* **sp. nov.** and *O. pachycaudatus* **sp. nov.**) that are distinct based on male genitalia.

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