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New species of *Neuronema* McLachlan, 1869 from China (Neuroptera, Hemerobiidae)

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Abstract

Two new species of *Neuronema* McLachlan are described from China: *Neuronema ypsilum* **sp. nov.**, which was found in Beijing and Shaanxi provinces, and *Neuronema maculosum* **sp. nov.**, which was found in Chongqing and Gansu provinces. Keys are given to identify the species of *Neuronema* in China.

Key words: Hemerobiidae, *Neuronema*, new species, keys, China

Introduction

The genus *Neuronema* McLachlan was erected in 1869 based on the type species *Hemerobius decisus* Walker from India. Tjeder (1936) first described *Neuronema sinensis* and *Neuronema laminata* from Gansu province, China. Presently, thirty species are recorded in the world (Krüger 1922; Navás 1928; Tjeder 1936; Banks 1942; Kimmins 1943; Yang 1964, 1981, 1987, 1988; Nakahara 1971; Monserrat 2000; Yang & Liu 2001; Yan & Liu 2006), with twenty-four species recorded from China, including the two new species in this paper.

Neuronema is characterized by the relatively large body size (body length 10–16 mm); antenna with more than 60 antennomeres; forewing generally large and broad, with proximal humeral trace present, costal flexion line present, crossvein 2sc-r present, anterior radial trace bearing 4–7 Rs (rarely 3); hind margin with a subtriangular, rather indistinct hyaline spot. *Neuronema* may be distinguished from other East Asian hemerobiids by the presence of one or more forewing pre-3ir1 crossveins and a proximal clustering of the Rs radial traces resulting in an elongate R₁ space (Oswald 1993).

Neuronema belongs to the subfamily Drepanopteryginae, and is an endemic genus distributed in China and the adjacent areas of the former Soviet Union to the north, to Japan in the east, and India and Nepal to the southwest (Yang 1964; Oswald 1993; Yan & Liu 2006).

In this paper, two new species of *Neuronema*, *N. maculosum*, **sp. nov.** and *N. ypsilum*, **sp. nov.**, are described from China, with keys for the identification of adults of the Chinese species of the genus. All specimens are deposited in the Entomological Museum of the China Agricultural University (CAU), Beijing.

Material and methods

The specimens were examined under an SZM45-B3 stereomicroscope (Ningbo Sunny Instruments). The terminalia were observed under an Olympus CH-BI45-T compound microscope. Descriptions of coloration are based on observations under the stereomicroscope with direct light on specimens preserved in 75% ethyl alcohol. The abdominal apex with genitalia was cut off and heated in 10% sodium hydroxide for about 10–20 min and then transferred to an excavated slide with glycerin. After examination it was transferred to fresh 75% ethyl alcohol and stored in a microvial.

Wing venation terminology follows Oswald (1993) and Makarkin & Wedmann (2009). Terminology of genitalia follows Oswald (1993).