



## A faunal summary of *Simulium* (*Montisimulium*) with descriptions of five new species from China (Diptera: Simuliidae)

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### Abstract

This paper provides the first checklist of the subgenus *Montisimulium* Rubtsov, 1974 of genus *Simulium* from China, which lists 24 Chinese species including 19 known species and 5 new species, *S. (M.) xinzhouense* **sp. nov.**, *S. (M.) poly-prominulum* **sp. nov.**, *S. (M.) schizostylum* **sp. nov.**, *S. (M.) luliangense* **sp. nov.** and *S. (M.) wulaofengense* **sp. nov.**, were collected from Shanxi Province, China. Keys to the species of *S. (Montisimulium)* known to occur in China are also provided.

**Key words:** Simuliidae, *Simulium* (*Montisimulium*), checklist, new species, China

### Introduction

The subgenus *Montisimulium* Rubtsov, 1974, of the genus *Simulium* contains several upland black fly species (elevation=1200–3000 m). There are about 70 species belonging to this subgenus around the world (Crosskey and Howard, 1997; Adler and Crosskey 2010), which are mainly distributed in the Palearctic region, with several species in the Oriental region: central Asia, Russia (Siberia), Mongolia, Burma, Japan, India, Pakistan and China. So far, 19 *Montisimulium* species are reported from China (Liu, Wen and Chen, 2007). In this paper, the authors report an additional 5 new species collected from Shanxi Province, China, and provide morphological descriptions and illustrations of those new species, and give the checklist and the key of Chinese members of the subgenus *Montisimulium*.

### Material and methods

The holotype and paratype specimens of the new species were collected from Province Shanxi, China. Larvae and pupae were collected in 75% ethanol, and some pupae were reared in vials to obtain adults. Dried adults were pinned. The examined specimens were macerated in 10% KOH and dissected for slide mounting. Illustrations of the specimens were made with Adobe Illustrator CS4, a software program for drawing.

The terms for morphological features used here follow those of Crosskey (1969) and Takaoka (2003). The type specimens are deposited in the Department of Biology, Guiyang Medical University, Guiyang, Guizhou Province, China.

### Checklist of Chinese members of the *Simulium* (*Montisimulium*)

This list adopts a similar taxonomic arrangement to that of Crosskey et al. (1996), but differs in providing more detailed information on localities and by noting the known life history stages (♀, ♂, L=larva P=pupa).