



## Revision of the type series of *Empis (Planempis) mandarina* Frey, the type species of *Planempis* (Diptera: Empididae)

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### Abstract

The type series of *Empis (Planempis) mandarina* Frey, 1953, the type species of *Planempis* Frey, from Fukien (Fujian), China and Kambaiti, Myanmar is revised and found to include four species. The lectotype is designated for a Fukien male specimen. Two other species, *E. (Planempis) lindebergi* **sp. nov.** and *E. (Planempis) janssoni* **sp. nov.** are described based on a male syntype, and a male and three female syntypes from Kambaiti, respectively. A species represented by females from Fukien is not conspecific with any of these species and remains unnamed.

**Key words:** Diptera, Empididae, *Planempis mandarina*, new species, China, Myanmar

### Introduction

Frey (1953) founded the subgenus *Planempis* of the genus *Empis* L. based on three new species, *E. (P.) mandarina* Frey, 1953, *E. (P.) holocleroides* Frey, 1953 and *E. (P.) gentilis* Frey, 1953 from eastern Asia, with the former species selected as the type species. In the same paper he described *Empis (Euempis) pan* Frey, 1953 and *E. (E.) latro* Frey, 1953 from Japan, which he later (1954, 1955) assigned to the subgenus *Planempis* based on the peculiar shape of their male genitalia. Frey (1955) also added *E. (P.) microtheca* Frey, 1955, *E. (P.) laccotheca* Frey, 1955 and *E. (P.) seminitida* Frey, 1955, all from Japan to the subgenus. Since then many species of this subgenus have been described and recorded from a wide area ranging from cool-temperate to subtropical regions in eastern Asia (Saigusa 1964, 1992; Shamshev 2002; Wang *et al.* 2010; Liu *et al.* 2012) and one species from Europe (Daugeron & Chvála 2002).

Frey (1953) first characterized the subgenus *Planempis* based on the peculiar shape of the male genitalia (here named “flat-topped type” of male genitalia), of which the dorsal surface of the upper (anterior) process of the male cerci is broad, flattened, strongly sclerotized and often brilliantly polished and in dorsal aspect the inner margins of the two processes enclose an oval window-like space, named the fenestrula (Saigusa 1992). Saigusa (1964) expanded the definition of the subgenus to include most Asian species of *Leptempis* Collin of which the dorsal processes of the male cerci show a transformation series from the more plesiomorphic condition as observed in *Empis (P.) luteipilosa* Saigusa, 1992 to the typical flat-topped type. Many undescribed species of the subgenus have been recognized by the author from throughout eastern Asia, from Japan, Russian Far East (Amur Prov. & Primorsk Territory), Korea to Nepal and Pakistan through Taiwan and the Chinese continent.

The type-series of the type species, *E. mandarina*, was examined and found to consist of at least three species represented by male specimens. As it is important to define the detailed morphological characters of the type species, the type series of *E. mandarina* was revised, a lectotype designated, two new species described from the mixed type series, and female specimens from the type series are noted.

Although beyond the scope of the present paper, the type series of *Empis (Planempis) holocleroides* Frey, 1953 is based also on a mixed type series, with a male specimen from each of Naidaijin, Kyushu, Japan and Kambaiti, N. E. Burma. This correction will be published in a future paper. However, this result together with the heterogeneity of *E. mandarina* indicates that the distributional ranges of species of *E. (Planempis)* are rather narrow in accordance with the distributions of other known species of the subgenus.