

# A new species of *Systemus* (Diptera: Dolichopodidae) from Wuyishan National Park, China

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**Abstract:** The genus *Systemus* Macquart, 1823 is one of the small genera in the subfamily Medeterinae with 45 known species distributed worldwide. It is reported from Fujian for the first time with one new species from Wuyishan National Park: *Systemus apicifurcatus* Lin, Zhang, Li & Yang **sp. nov.**

**Key words:** Medeterinae; long-legged fly; taxonomy

中国武夷山国家公园合聚脉长足虻属 *Systemus* 一新种（双翅目：长足虻科）

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**摘要:** 合聚脉长足虻属 *Systemus* 是长足虻科中较小的属, 全世界已知 45 种。本文首次报道该属在福建分布, 记述武夷山国家公园 1 新种: 端叉合聚脉长足虻 *Systemus apicifurcatus* Lin, Zhang, Li & Yang **sp. nov.**

**关键词:** 聚脉长足虻亚科; 长足虻; 分类

## Introduction

The genus *Systemus* Loew, 1857 is characterized by the following features: distinctly or much elongated postpedicel, apical or subapical arista, 5–6 strong dorsocentral bristles,  $R_{4+5}$  and  $M_1$  usually bowed subapically (Bickel 1986, 2015; Lin *et al.* 2023). It contains 45 known species distributed across all faunal realms, of which 16 species are from the Neotropical Realm, 12 from the Palearctic, eight from the Oriental, six from the Nearctic, two from the Australasian, and only one from the Afrotropical (Bickel 1986, 2015; Kassebeer 1998; Naglis 2000; Yang & Gaimari 2004; Negrobov 2005; Yang *et al.* 2006, 2011; Grichanov & Mostovski 2009). Eight

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species have previously been reported from China (Lin, Zhang & Yang 2023).

Wuyishan National Park is the only nature reserve in China to be recognized as a World Man and Biosphere Reserve as well as a World Cultural and Natural Dual Heritage site. It is situated in the northwest of Fujian and preserves the most extensive, typical, and complete meso-subtropical native forest ecosystems within the same latitudinal belt of the world, home to an extremely diverse range of species. This genus is newly reported from Fujian with one new species from Wuyishan National Park.

## Material and methods

The specimens were examined and illustrated using a ZEISS Stemi 2000–C Stereo Microscope. Genitalic preparations were made by macerating the apical portion of the abdomen in cold 10% NaOH for about 6 hours. The type specimens are deposited in the Entomological Museum of China Agricultural University (CAU), Beijing.

The following abbreviations are used for bristles: acr — acrostichal bristle (s); ad — anterodorsal bristle (s); av — anteroventral bristle (s); dc — dorsocentral bristle (s); oc — ocellar bristle (s); pd — posterodorsal bristle (s); pv — posteroventral bristle (s); sc — scutellar bristle (s); vt — vertical bristle (s); CuAx ratio — length of dm–cu / length of distal portion of CuA; LI — fore leg; LII — mid leg; LIII — hind leg; hyp — hypandrius; ph — phallus; epl — epandrial lobe; sur — surstylus; cer — cercus.

## Taxonomy

### *Systemus apicifurcatus* Lin, Zhang, Li & Yang sp. nov. (Fig. 1)

Description. Male (Fig. 1A). Body length 3.2 mm. Wing length 3.3 mm.

Head metallic green with pale gray pollinosity; face gradually narrowed downward. Hairs and bristles on head black, but postocular bristles dark yellow except uppermost 4 ones. 1 very long vt, 1 very long oc. Antenna rather long, brown except two basal segments dark yellow; first flagellomere much elongated, basally rather thick and nearly trapezoid, 4.0 times longer than wide, with short dense dark brown pubescence; arista apical, very short, 0.03 times as long as first flagellomere, bare. Proboscis dark brownish yellow with short blackish hairs; palpus dark yellow with short black hairs and 1 long thick black apical bristle.

Thorax metallic green with pale gray pollinosity. Hairs and bristles on thorax black; 6 long dc; 7–8 irregularly biseriate acr short, nearly hair-like; proepisternum with 1 long brownish bristle just above fore coxa. Scutellum with 2 pairs of sc, basal pair short. Legs pale yellow; all coxae pale yellow; all tarsi dark yellow except tarsomere 5 brownish yellow. Hairs and bristles on legs blackish to black except hairs on all coxae dark yellow and bristles brownish. Fore and mid coxae apically with irregular anterior bristles. Hind coxa with 1 outer bristle near base. All femora each with 1 short weak pv at tip. Fore tibia without distinct dorsal bristles, apically with 1 short weak pd and 1 short weak pv. Mid tibia with 3 ad (1 basal pd very long, 2 middle pd short) and 2 pd; apically with 4 bristles (1 av and 1 pv rather long). Hind tibia with 1 ad at base and 6 pd; apically with 5 bristles. Hind tarsomere 1 rather short, with 1 thick black av near apex and 2 weak brown pv, apically with 3 bristles. Relative

lengths of tibia and 5 tarsomeres of legs LI : 5.5 : 2.4 : 1.3 : 1.0 : 0.6 : 0.5; LII : 6.7 : 3.3 : 2.0 : 1.4 : 1.0 : 0.8; LIII : 7.0 : 1.5 : 3.2 : 2.0 : 1.4 : 0.8. Wing hyaline; veins brownish to brown, vein M strongly bent forward apically, veins R and M strongly convergent apically; CuAx ratio 1.0. Squama dark yellow with blackish hairs. Haltere dark yellow.

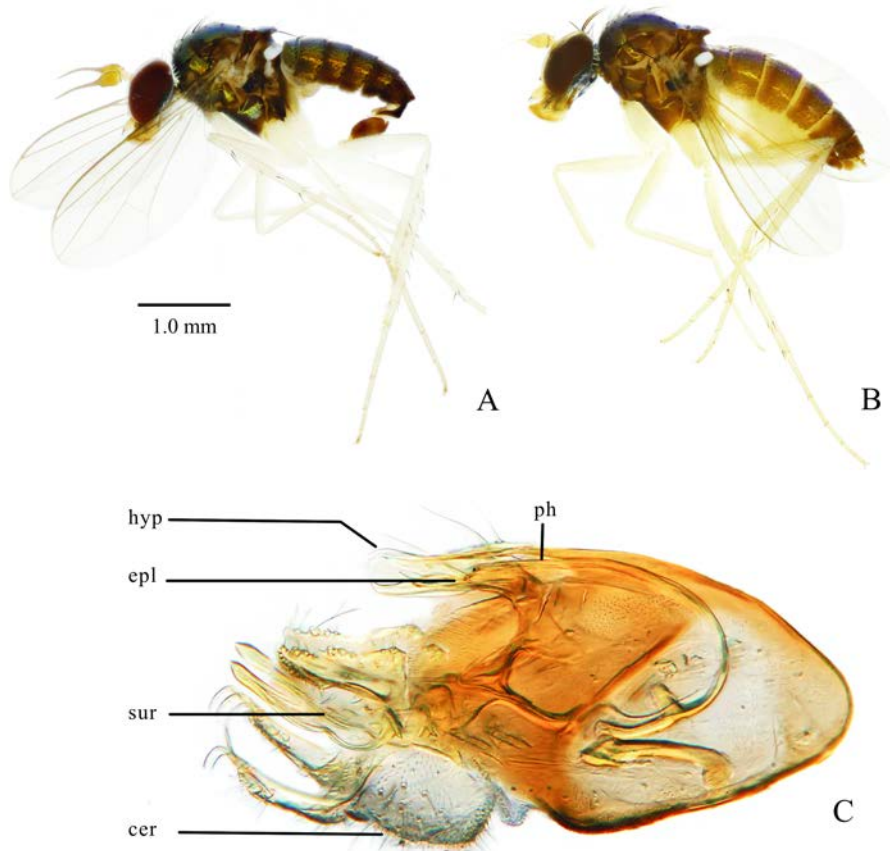


Figure 1. *Systemus apicifurcatus* Lin, Zhang, Li & Yang **sp. nov.** A. Male habitus, lateral view; B. Female habitus, lateral view; C. Male genitalia, lateral view.

Abdomen metallic green with gray pollinosity; hypopygium pale metallic green, but brownish yellow apically. Hairs and bristles on abdomen black.

Male genitalia (Fig. 1C). Epandrium distinctly longer than wide; epandrial lobe thin finger-like, each with one long thin apical bristle; surstylus basally rather thick, apically bifurcated into two finger-like processes, one with dense hairs at tip, the other thick at base and finger-like at tip. Cercus strongly bent, basally very thick, apically finger-like. Hypandrium short and thick, weakly swollen and blunt rounded apically.

Female (Fig. 1B). Body length 3.5 mm. Wing length 2.8 mm. Similar to male, but antenna dark brownish yellow; first flagellomere not elongated, nearly as long as wide.

**Holotype.** ♂, **China**, Fujian, Wuyi Mountain, Xiyuan, 440 m, 02-XI-2022, Malaise trap, Lingfei PENG (CAU). **Paratype.** 1♀, same data as holotype (CAU).

**Etymology.** The specific epithet is from the Latin “apicis” (“apical”) and “furcatus” (“furcate”), referring to the surstylus furcated apically.

Diagnosis. First flagellomere much elongated, basally rather thick and nearly trapezoid, 4.0 times as long as wide. All coxae pale yellow. Vein M strongly bent forward apically, veins R and M strongly convergent apically. Surstylus basally rather thick, apically bifurcated into two finger-like processes.

Remarks. The new species is similar to *S. apicidigitatus* Lin, Zhang et Yang, 2023 from Yunnan, but may be separated from the latter by the male cercus apically thin finger-like without short thin ventral process and surstylus apically bifurcated into two finger-like processes. In *S. apicidigitatus*, the male cercus is weakly thickened with a short thin ventral process apically, and the surstylus is long finger-like apically (Lin, Zhang & Yang 2023).

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