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Bishop Museum Press
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Cover photo: *Strongylophthalmyia mekistocera* Evenhuis, n. sp. from Vietnam.

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Mine's longer than yours: two new *Strongylophthalmyia* Heller (Diptera: Strongylophthalmyiidae) with remarkably long antennal processes[1]

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Abstract. Two new species of *Strongylophthalmyia* from Southeast Asia with extremely long antennal processes—*Strongylophthalmyia narwhal*, **n. sp**. (Thailand) and *S. mekistocera*, **n. sp**. (Vietnam), both belonging to the *coarctata* subgroup of the *punctata* species group—are described and illustrated.

INTRODUCTION

The genus *Strongylophthalmyia* Heller is comprised of 82 species from Europe, Asia, Australia, and North America, with the majority of species being found in the Oriental Region (Evenhuis, 2016; Galinskaya & Shatalkin, 2018). Its close relationship with Tanypezidae and monophyly as a separate family are shown most recently in Lonsdale (2020). Evenhuis (2016) began a world revisionary study on the genus and described 18 new species in just one cohort of a species group found in the Oriental Region. It is estimated that another ~70 species remain to be described in the rest of the species groups that were defined in that paper.

In Southeast Asia where the genus is most diverse, Thailand and Vietnam have produced the most species (Papp *et al*. 2006; Evenhuis 2016; Galinskaya & Shatalkin 2016, 2018). New species continue to be discovered as collecting is conducted in many areas not previously visited by dipterists. This paper describes two more species from this region, both of which exhibit a remarkable evolution of the dorsal process of the flagellomere, which is found only in males of the *Strongylophthalmyia punctata* group. It is hoped that the description of these two striking new species will lead to more collecting and more discoveries of this interesting group of flies.

MATERIAL AND METHODS

Specimens examined were kindly sent to me by Dr. Martin Hauser of the California State Collection of Arthropods at the California Department of Food and Agriculture, Sacramento, California, USA (CSCA). Holotypes are deposited as indicated (either in QSBG = Queen Sirikit Botanic Garden, Chiang Mai, Thailand or VNMN = Vietnam National Museum of Nature, Hanoi, Vietnam). Morphological terminology follows Evenhuis (2016), where it was pointed out that male genitalic features are not always diagnostic, as they are not in the case of these two species, thus are not illustrated.

Confocal photographic images were accomplished by obtaining a series of stacked images using a Leica M165C stereo dissecting scope via the Leica Microsystems LAS Multifocus software (v. 4.12.0) and using Zerene Stacker® stacked focusing software (v. 1.04) (Zerene Systems, LLC, Richmond, Washington, USA) to align and stack-focus each final image.

Figure 1. *Strongylophthalmyia mekistocera*, n. sp., habitus, lateral.

TAXONOMY

Strongylophthalmyia Heller

Strongylophthalmus Hendel, 1902: 179. Type species: *Chyliza ustulata* Zettersedt, 1847 by original designation. [Preoccupied by Mannheim, 1853.]

Strongylophthalmyia Heller, 1902: 226 (new replacement name for *Strongylophthalmus* Hendel).

Lapropsila Meijere, 1914: 24. Type species: *Labropsila polita* Meijere, 1914 by subsequent designation (Henning, 1941: 36).

Strongylophthalmyia mekistocera Evenhuis, n. sp.

(Figs. 1, 3)

Types. Holotype ♂ from **VIETNAM**: Ninh Bình Province: Cuc Phuong National Park, 390 m, 20°21'03"N, 103°35'36"E, 24–28 Mar 2013, S.D. Gaimari, M. Hauser, H.T. Pham, Malaise trap. Paratype ♂ from **VIETNAM**: Vĩnh Phúc Province: Tamdao National Park, Oct–Nov 2011, H.T. Pham, Malaise trap. Holotype in VMNM; paratype in CSCA.

Figure 2. *Strongylophthalmyia narwhal*, n. sp., habitus, lateral.

Diagnosis. This species is easily separated from the congeners by the extremely long and thin dorsal and ventral antennal processes (ca. two times head height). Other species with a bifid antenna (e.g., *S. raricornis* Shatalkin), have very short and thin processes, each no more than the length of the flagellomere height at its base.

Description. *Lengths*: body, 2.7–2.8 mm; wing, 2.0–2.2 mm. **Male** (Fig. 3). *Head*: globular; frons shining black, small brown spot dorsolaterad of antennae; face and gena yellowish brown, silvery pollinose; occiput black, brown posteroventrally; palpus ellipsoid, length two times width; proboscis yellowish brown.

Antenna (Fig. 3)*:* scape and pedicel yellow; flagellomere bifid, yellowish basally, with extremely long, thin, brown processes ca. two times head height, processes appearing multi-segmented: dorsal process (33 segments); ventral process (32 segments), both processes clothed with white hairs; arista one-half length of dorsal process, styliform, bare.

Thorax: shining dark brown; mesonotum and scutellum sparsely clothed with short pale hair-like setulae.

Wing: hyaline; vein R_{2+3} nearly straight, ending in costa beyond level of crossvein dm-cu; crossvein r-m at basal one-third of cell dm; veins R_{4+5} and M_{1+2} straight, slightly converging distally; halter white.

Legs: fore yellow, mid and hind coxae white; femora yellowish white, hind femur with small brown band subapically; tibiae white, tarsi yellow.

Abdomen: tergite I weakly sclerotized, white; tergites II–VI brown, with short sparse brown hairs, these hairs longest on tergites V–VI; sternites brown sternites I–II not laterally, membranous and white-colored.

Figures 3–4. *Strongylophthalmyia* antennae, lateral. 3. *S. mekistocera*, n. sp.; 4. *S. narwhal*, n. sp.

Figure 5. *Strongylophthalmyia narwhal*, n. sp. wing.

Male genitalia. Not dissected; epandrium and surstylus brown, with white hairs; cerci light brown, rounded apically, with long white hairs dorsally.

Female. Unknown.

Remarks. The paratype male has the abdomen much paler brown with the sternites almost all not sclerotized.

Etymology. The species epithet derives from the Greek μέκιστοϛ [= none greater than] + κέρα [= horn]; referring to the extremely long bifurcate antennal processes, which are the longest in the genus. The name is treated as a noun in apposition.

***Strongylophthalmyia narwhal* Evenhuis, n. sp.**
(Figs. 2, 4, 5)

Types. Holotype ♂ from **THAILAND**: Chiang Mai: Chiang Mai: Botanical Garden (QSBG), 18.8955°N, 98.8636°E, 11–25 Jul 2013, M. Hauser, Malaise trap. Holotype in QSBG.

Diagnosis. Using the key in Galinskaya & Shatalkin (2016), this species runs to the Thai *S. pectinigera* Shatalkin, 1996, from which it can be easily separated by the extremely long antennal process (process absent in *S. pectinigera*).

Description. *Lengths*: body, 3.4–4.1 mm; wing, 2.8–3.0 mm. **Male** (Fig. 2). *Head*: globular; frons shining black; face and gena yellowish brown, silvery pollinose; occiput black; palpus ellipsoid, length two times width; proboscis white.

Antenna (Fig. 4)*:* scape and pedicel yellow; flagellomere globular with long, stiff, spike-like central antennal process, length about one and one-fourth times head height,

clothed with brown micropubescence; arista one-third length of dorsal process, styliform, bare.

Thorax: shining dark brown; mesonotum and scutellum sparsely clothed with short pale hair-like setulae.

Wing (Fig. 5)*:* hyaline with faint brown infuscation at apex; vein R_{2+3} nearly straight, ending in costa beyond level of crossvein dm-cu; crossvein r-m at basal one-third of cell dm; veins R_{4+5} and M_{1+2} straight, slightly converging distally; halter white.

Legs: fore yellow, mid and hind coxae white; femora yellowish white, mid and hind femur with brown band subapically; tibiae white, mid tibiae with row of black hairs on apical two-thirds of lateroventral surface; tarsi yellow.

Abdomen: tergite I weakly sclerotized, white; tergites II–VI brown, with short sparse brown hairs, these hairs longest on tergites V–VI; sternites brown sternites I–II not laterally, membranous and white-colored.

Male genitalia. Not dissected; epandrium and surstylus brown, with white hairs; cerci light brown, rounded apically, with long white hairs dorsally.

Female. Unknown.

Remarks. There is a very faint infuscated band in the middle portion of the right wing that is absent in the left wing. Using the key in Galinskaya & Shatalkin (2016), this species would key out in two places depending on how one treats the wing. If treated with the mid band, it runs to the second part of couplet 24, but it does not have the leg or abdominal characters listed for the species *S. basisterna* Galinskaya & Shatalkin. If treated without the mid band, it runs to the first part of couplet 24, where it keys to *S. pectinigera* Shatalkin, but the abdomen is not entirely black as in *S. pectinigera* Shatalkin. In any case, this species differs from wherever it keys out based on the presence of the extraordinarily long antennal process, which are not found in either *S. pectinigera* or *S. basisterna*.

Etymology. The species epithet "narwhal" refers to the long, straight, unicornous dorsal antennal process reminiscent of the cephalic horn of the narwhal. The name is treated as a noun in apposition.

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