



Research article



A new Oriental species of Gnoristinae (Diptera: Mycetophilidae) from Borneo

Dimitar Bechev¹, Svetlozara Kazandzhieva²

(1) Department of Zoology, University of Plovdiv, Tzar Assen 24, BG4000 Plovdiv, Bulgaria,

dbechev@abv.bg ; <https://orcid.org/0000-0001-5697-1197> 

(2) Regional Museum of Natural History – Plovdiv, 34 Hristo G. Danov Street, BG4000 Plovdiv, Bulgaria,

svetlozara.k@gmail.com ; <https://orcid.org/0000-0001-5018-8951> 

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Abstract: A new species of Mycetophilidae (Diptera), tentatively placed in *Dziedzickia* Johannsen, is herein described as *D. longistyla* **sp. nov.** (Malaysia: Sarawak). The species described herein differs from the two previously known Oriental species included in *Dziedzickia* in having simple antennae, laterotergite with long setae and extended, apically pointed gonostyle. A brief discussion of the relationships among some genera of Gnoristinae is also presented.

Keywords: *Dziedzickia*, fungus gnats, Malaysia, new species, Oriental Region, Sciaroidea

Introduction

Hitherto, 56 recent species have been placed in *Dziedzickia* Johannsen, 1909 (Diptera: Mycetophilidae: Gnoristinae): 40 Neotropical, 6 Nearctic, 5 Afrotropical, 3 Palaearctic and 2 Oriental (Bechev, unpublished database), apparently belonging to different genera (Ševčík et al., 2011). The previously described two Oriental species, remarkable with the presence of pectinate antennae, are tentatively placed in the genus (Ševčík et al., 2011). Here we describe a new species, also tentatively placed in *Dziedzickia* pending a generic revision of the Gnoristinae (see Discussion). The new species differs from the other two Oriental species of *Dziedzickia* in having simple antennae, laterotergite with long setae and gonostyle narrow, extended, apically pointed, with a relatively clearly visible tooth.

Material and methods

The studied material has been collected by S. Kazandzhieva in Kubah National Park, Borneo (Malaysia: Sarawak) in a mixed dipterocarp forest habitat by Malaise trap and was preserved in ethanol. The habitus photos (specimen in alcohol) were taken by a digital camera Canon EOS 750D with Canon 100 mm Macro lens. The terminalia of the specimen were removed and subsequently macerated in 10% warm KOH. Dissections and temporary slides were made in glycerol. The slides were photographed with the Canon EOS 750D fit to the compound microscope. The terminalia were afterwards transferred to microvial with glycerine and stored together with the specimen. The habitus and male terminalia photos were combined using the Helicon Focus 5 software from multiple gradually

focused images. The morphological terminology follows Søli (2017).

The studied material is deposited in Regional Natural History Museum of Plovdiv, Plovdiv, Bulgaria (RNHMP).

Results

Dziedzickia longistyla sp. nov. (Figs 1–7)

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Type material. Holotype: ♂, Malaysia: Sarawak, Kubah National Park, 800 m a.s.l., 1°35'17.9"N, 110°11'31.8"E, 21.7.2019, malaise trap, leg. Kazandzhieva (in ethanol, in RNHMP, Plovdiv, Bulgaria).

Diagnosis. Male antennae simple, flagellomeres 1 to 8 yellow, 9 to 11 brown, 12 to 14 pale brown; laterotergite with long setae; Sc short, ending in R, R_{2+3} absent; tergite 9 short, gonostylus narrow, extended, apically pointed and with a relatively clearly visible tooth. Basic difference from the type species of *Dziedzickia* s. str., *D. marginata* Dziedzicki, 1885, is absence of R_{2+3} . Differs from the other Oriental species included in *Dziedzickia* (*D. bifida* and *D. pectinata*) in having simple antennae, laterotergite with long setae and narrow, extended gonostyle.

Description. Male. Wing length 2.8 mm.

Head. Yellowish. Three ocelli, almost in one line. Laterals separated from eye margin more than their diameter. Scape and pedicel yellow. Flagellomeres 1 to 8 yellow, 9 to 11 brown, 12 to 14 pale brown (Fig. 1). Clypeus ovate, distal part triangular. Mouthparts yellowish, short.

Thorax. Mesonotum and scutellum brown. Pleurae yellow-brownish. Mesonotum with acrostichal, dorsocentral and lateral setae, areas in-between bare. Scutellum with 6 setae. Anteprenotum setose, laterotergite with long setae. Anepimeron with very fine setulae in upper part. Anepisternum, katepisternum and mediotergite bare.

Wing (Figs 2–3). Hyaline unmarked, membrane covered only with microtrichia, without macrotrichia. Costa produced beyond R_{4+5} to about 1/3 of the distance between the tips of R_{4+5} and M_1 . Sc short,

bare, ending in R. R_1 about 0.6 of length of R_{4+5} . R-m about 2 times as long as Rs, and 1.4 times as long as stem of M-petiole. Sc-r and R_{2+3} absent. Base of Cu-fork before the base of M-fork. CuP as long as CuA-petiole. Setulae present on C, upper side of R, R_1 and R_5 . Other veins bare. Halteres yellow.

Legs. Coxae, femora tibiae and tarsi yellow. Tibial trichia irregularly arranged. Tibial spurs formula 1:2:2. Anterior spurs much shorter than posterior ones. Anteroapical depressed area of fore tibia poorly developed.

Abdomen. Yellow with dark bristles. Tergites 1 to 7 with brown dorsal marks in posterior part, semitriangular in dorsal view and better visible on tergites 1 to 4 (Fig. 2). Sternites yellow, without median sclerotised concave fold.

Terminalia (Figs 4–7). Brown. Tergite 9 short, trapeziform. Cerci placed caudally to tergite 9. Gonocoxites not fused ventrally. Dorsally with apical part rounded, enveloping the base of the gonostylus, and with numerous dark spines and bristles from the inside around the middle. Aedeagus elongate, sclerotized. Gonostylus narrow, extended, apically pointed and with a relatively clearly visible tooth.

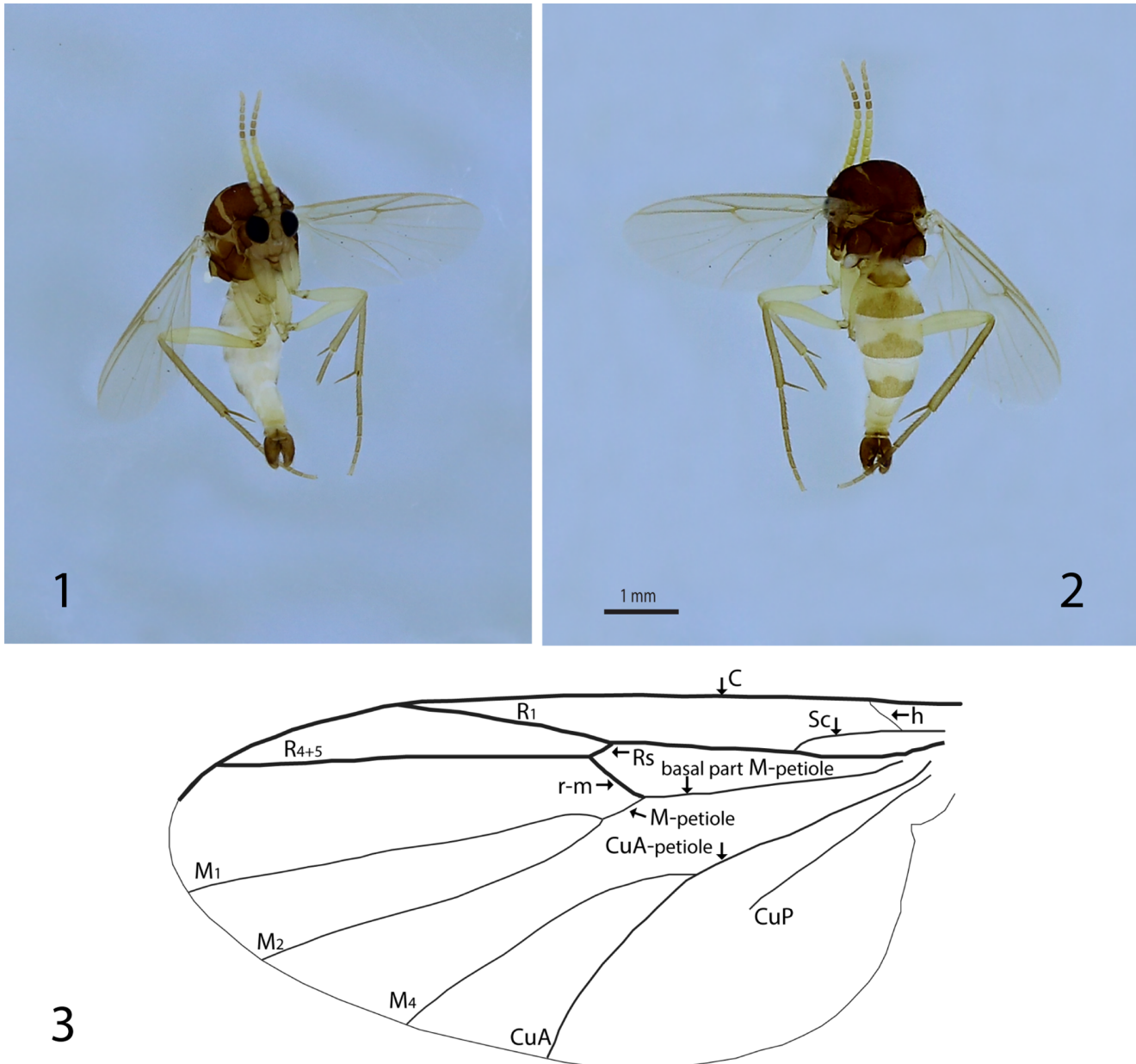
Female. Unknown.

Etymology. The specific epithet is derived from Latin, longus [long] and stylus [stylus], referring to the narrow, extended gonostylus.

Notes. Mesonotum of the type specimen cracked. Setae on mesonotum and scutellum broken. Right fore and mid legs, left hind leg and fore tarsomeres absent.

Discussion

Being previously pointed out by several authors (Hutson, 1979; Ševčík & Chandler, 2008; Ševčík et al., 2011), a heterogeneous group of species, apparently belonging to different genera, is placed in *Dziedzickia* sensu lato. The type species of the genus, *Dziedzickia marginata* Dziedzicki, 1885, is distinguished by the presence of the following combination of characters: mediotergite bare, laterotergite haired, C extending beyond apex of R_5 , Sc ending in R, R_{2+3} present, point of furcation of posterior fork distinctly before point of furcation of anterior fork. However, subsequently some authors placed in this genus, also, species with bare laterotergite, Sc ending free or without R_{2+3} ,

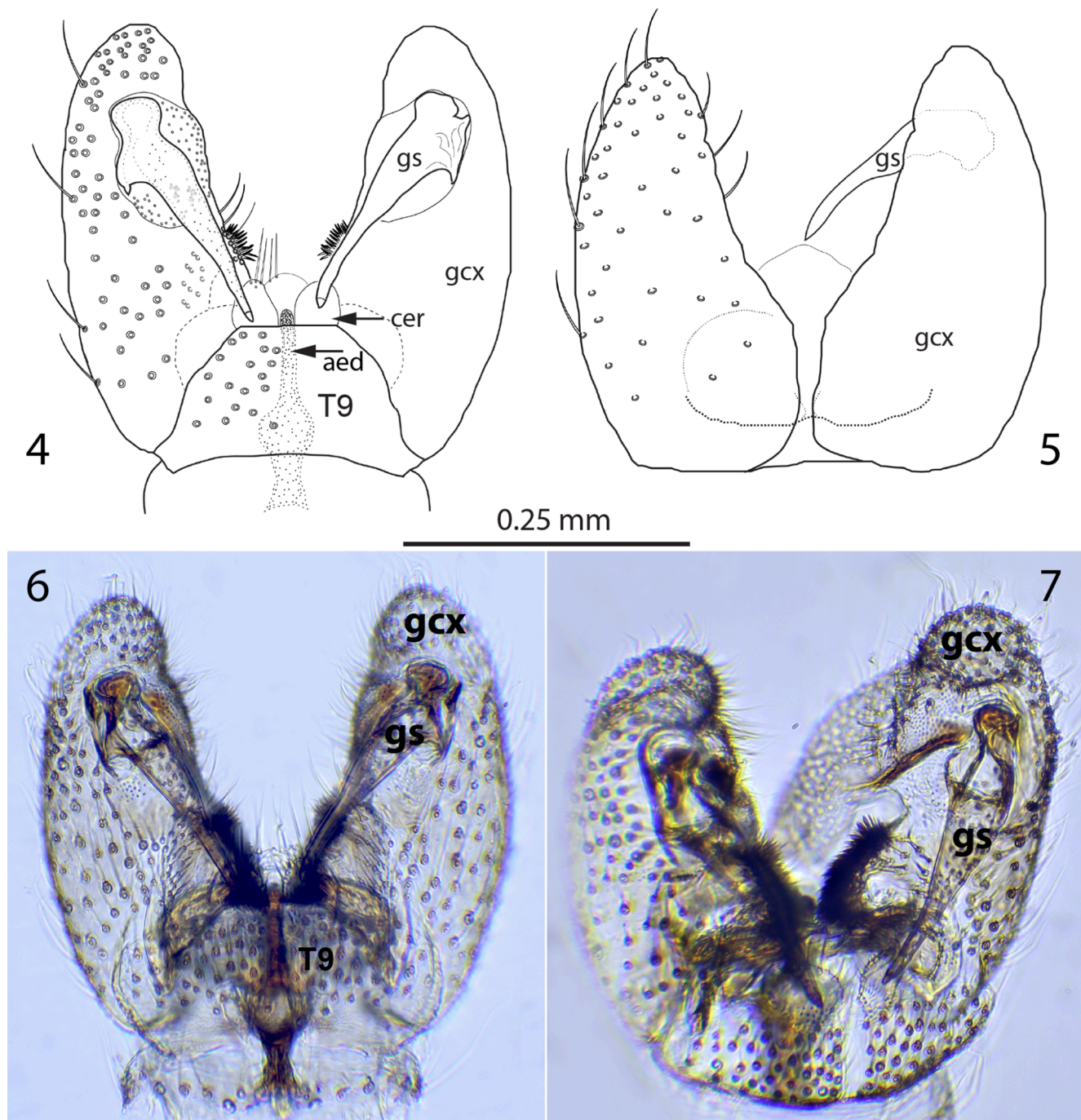


Figs 1–3. *Dziedzickia longistyla* sp. nov.: 1 – habitus, ventral view; 2 – habitus, dorsal view; 3 – wing venation.

apparently belonging to different genera (see Ševčík et al., 2011: 694).

Dziedzickia s. lat. is very similar and shares several characters, mainly of wing venation, with *Hadroneura* Lundström, 1906 and *Palaeodocosia* Meunier, 1904. In *Hadroneura* species with well-documented male genitalia (*kamtshatica* Stackelberg, 1943; *huron* Taber, 2018; *martini* Ševčík, Hippa &

Burdíková, 2021), tergite 9 is densely covered with long setae. In the species of *Palaeodocosia*, tergite 9 is large, and gonostyle has several lobes (see Hutson et al., 1980; Taber, 2017). Because of the absence of long setae coverage on short tergite 9 and the presence of simple gonostyle, as in some Neotropical *Dziedzickia* (see Oliveira, 2009), we place the new species in *Dziedzickia* s. lat. pending a generic



Figs 4–7. *Dziedzickia longistyla* sp. nov., male terminalia: 4 – dorsal view, 5 – ventral view; 6 – dorsal view; 7 – dorsolateral view. Abbreviations: aed = aedeagus; cer = cerci; gcx = gonocoxite; gs = gonostylus; T9 = tergite 9.

revision of the Gnoristinae. According Ševčík (in Ševčík et al., 2011) at least ten additional undescribed species of *Dziedzickia* s. lat. from the Oriental Region exist.

Acknowledgements

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References

- Hutson A.M. 1979 Notes on Sciophilinae (Dipt., Mycetophilidae) with a revision of Palaearctic *Syntemna* Winnertz. Entomologist's Monthly Magazine 114: 131–145.
- Hutson A.M., Ackland D.M., Kidd L.N. 1980 Mycetophilidae (Bolitophilinae, Ditomyiinae, Diadocidiinae, Keroplatinae, Sciophilinae and Manotinae) (Diptera, Nematocera). Handbooks for the Identification of British Insects 9: 1–111.
- Oliveira S.S. 2009 *Dziedzickia* Johannsen e *Schnusea* Edwards (Diptera, Mycetophilidae): diversidade das espécies neotropicais e análise filogenética. Ribeirão Preto, 145 pp. (unpublished dissertation)
- Taber S.W. 2017 A New Nearctic Species of the Fungus Gnat Genus *Palaeodocosia* Meunier. Southwestern Entomologist 42: 995–1002.
- Ševčík J., Bechev D., Hippa H. 2011 New Oriental species of Gnoristinae with pectinate antennae (Diptera: Mycetophilidae). Acta Entomologica Musei Nationalis Pragae 51: 687–696.
- Ševčík J., Chandler P. 2008 *Acomopterella martinovskyi* sp. n., the first Palaearctic record of the genus *Acomopterella* Zaitzev (Diptera: Mycetophilidae). Zootaxa 1968: 58–64.
<https://doi.org/10.11646/zootaxa.1968.1.6>
- Søli G.E.E. 2017 Mycetophilidae (Fungus Gnats). In: Kirk-Spriggs A.H., Sinclair B.J. (eds) Manual of Afrotropical Diptera. Vol. 2. Nematocera & Lower Brachycera. SANBI Publishing, Pretoria, 533–555.