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A new species of the genus *Lygistorrhina* Skuse, 1890 (Diptera: Keroplatidae) from Indonesia

Новый вид рода *Lygistorrhina* Skuse, 1890 (Diptera: Keroplatidae) из Индонезии

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KEY WORDS: Diptera, Sciaroidea, Keroplatidae, Lygistorrhininae, *Lygistorrhina*, long-beaked fungus gnats, Indonesia, Oriental region, taxonomy, description, new species.
КЛЮЧЕВЫЕ СЛОВА: Diptera, Sciaroidea, Keroplatidae, Lygistorrhininae, *Lygistorrhina*, Индонезия, Ориентальная область, таксономия, описание, новый вид.

ABSTRACT. A new species of *Lygistorrhina* (*Lygistorrhina*) Skuse, 1890 (Diptera: Keroplatidae) is described from Indonesia. Illustrations of head, wing, and male terminalia are provided; characters to distinguish the new species from known representatives of the subgenus are supplied.

РЕЗЮМЕ. Новый вид рода *Lygistorrhina* Skuse, 1890 (Diptera: Keroplatidae), относящийся к номинативному подроду, описан из Индонезии. Приведены иллюстрации головы, крыла и терминалий самца; указаны признаки, позволяющие отличить новый вид от известных науке представителей подрода.

Introduction

The nominative subgenus *Lygistorrhina* (*Lygistorrhina*) Skuse, 1890 currently includes fourteen described species [Blagoderov *et al.*, 2023], a number which, together with the fifteen known representatives of the New World subgenus *Lygistorrhina (Probolaeus)* Williston, 1896 [Blagoderov, Pollet, 2020; Blagoderov, 2023], represents just a fraction of the much larger number of extant species existing in nature [Stebner *et al.*, 2017]. It should be noted that recent studies have shown a much wider ecological range of Lygistorrhininae which were found in extreme conditions of Yemen [Blagoderov *et al.*, 2023] and at high altitude in Xizang (China) [Yang *et al.*, 2023].

While sorting recent material of exotic fungus gnats in ZMMU, I have discovered a distinct species of *Lygistorrhina* (*Lygistorrhina*) unknown to science which description is given below.

Material and methods

The terminology used here mainly follows Cumming & Wood [2017] and Blagoderov [2017]. Male genitalia were boiled in 10% solution of potassium hydroxide (KOH) for 60 to 90s, neutralised by a 10% solution of acetic acid (CH_3COOH), rinsed in water and then stored in glycerol. Dissected male terminalia were examined with a Nikon SMZ645 binocular microscope and then photographed using an eTREK DCM900 camera on MBI-1 microscope; stacked images were obtained with CombineZP software (Alan Hadley, https://combinezp.software.informer.com/download/).

Examined material consists of a single male specimen stored in alcohol. The material is deposited in the Zoological Museum, Lomonosov Moscow State University (ZMMU).

Taxonomy

Lygistorrhina (*Lygistorrhina*) *purnamai* **sp.n.**
Figs 1–8.

MATERIAL. Holotype ♂, INDONESIA: Bali, Tabanan, Penebel, Pura Luhur Batukaru env., 8.375°S, 115.102°E, 800 m a.s.l., 17.X.2019, D. Gavryushin leg. The condition of the unique male specimen upon examination can be assessed by the following organs or parts missing: two terminal flagellomeres of left antenna, right fore tarsus except for the very base of basitarsus, right hind leg, and left wing except for its basal part. Body with setae mostly rubbed off so only general remarks can be made regarding vestiture.

DESCRIPTION. MALE (Fig. 1). *Head* (Figs 3, 4) reddish brown, oval in lateral view, nearly globular in frontal view, height ca. 0.65 mm, width 0.7 mm. Eyes dichoptic, large, almost hemispherical, ommatidia spherical, of uniform size, interommatidial setae present. Three ocelli on separate mounds,

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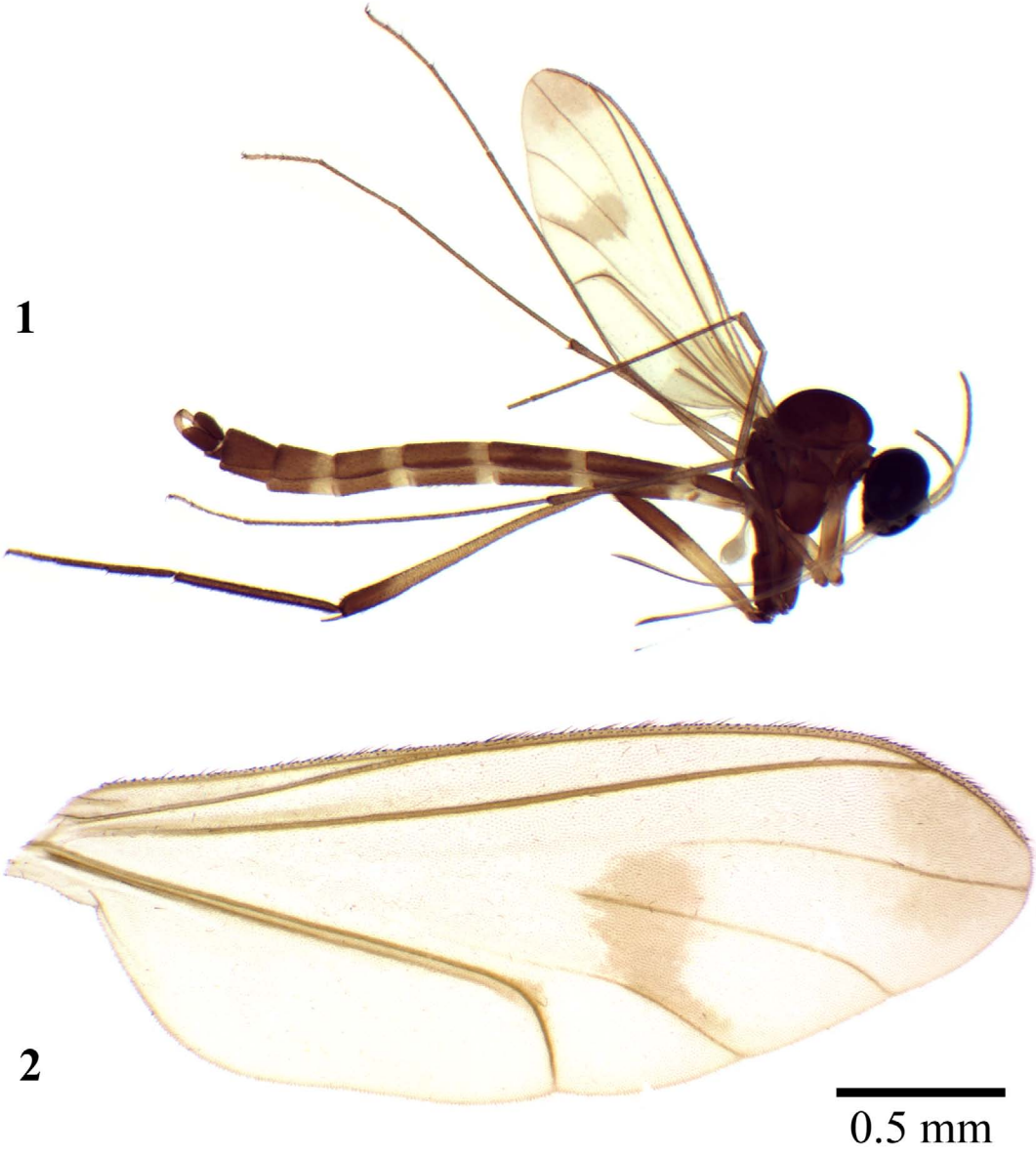
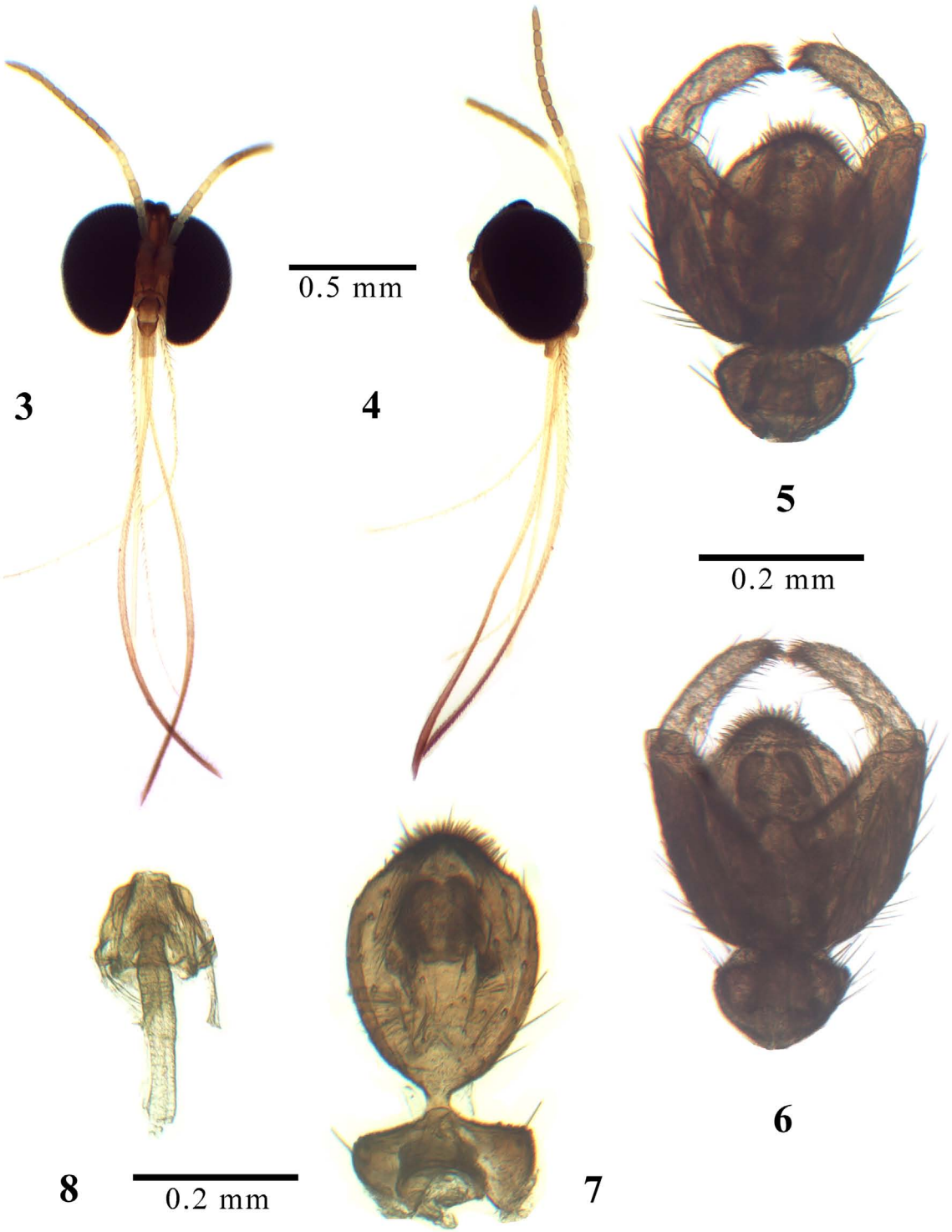


Figs 1–2. *Lygistorrhina purnamai* **sp.n.**: 1 — habitus, male, lateral view; 2 — wing.
Рис. 1–2. *Lygistorrhina purnamai* **sp.n.**: 1 — внешний вид, самец, сбоку; 2 — крыло.

lateral ocelli close to eye margins, directed outwards, median ocellus smaller than lateral ocelli, directed forward. Frons and face narrow, face twice wider than long. Antenna, length about 1.1 mm. Scape short cylindrical, pedicel subglobular, these two segments pale yellow; flagellomeres 14, flagellomeres cylindrical, twice longer than wide, the terminal flagellomere 1.5 times longer than the subterminal one, with tapering apex. Flagellomeres 1–3 weakly brownish, flagellomeres 4–6 pale yellow, the distal half of flagellum (flagellomeres 7–14) more distinctly brown. Clypeus subrectangular, labrum subtriangular. Proboscis greatly elongated, length ca. 2.1 mm; prementum subrectangular, yellow; palpi slender, almost filiform apically, with long setae along the whole length, about one-fourth shorter than labellae; labellae setulose, yellow, slightly expanded and brownish apically, tips acute; hypopharynx yellow, glabrous, shorter than labellae (its delicate tip has been broken off and lost while handling).

Thorax almost globular, length ca. 0.9 mm; mesonotum brown, yellowish laterally, more extensively so behind the suture; scutellum short, strongly convex; pleurae brown, katepisternum yellowish dorsally, posterior surface of laterotergite narrowly darker brown. Antepronotum and lower posterior surface of laterotergite setulose. Laterotergite strongly produced posteroventrally; mediotergite convex, bare.

Legs. Length, fore leg, coxa, ca. 0.6 mm, femur, 0.8 mm, tibia, 1.0 mm, tarsus, 2.4 mm, basitarsus, 1.4 mm; mid leg, coxa, 0.6 mm, femur, 0.8 mm, tibia, 1.1 mm, tarsus, 2.2 mm, basitarsus, 1.2 mm; hind leg, coxa, 0.4 mm, femur, 1.1 mm,



Figs 3–8. *Lygistorrhina purnamai* **sp.n.**: 3 — head, frontal view; 4 — same, lateral view; 5 — male terminalia and abdominal segment 8, dorsal view; 6 — same, ventral view; 7 — tergites 8 and 9, dorsal view; 8 — aedeagal complex, dorsal view.
Рис. 3–8. *Lygistorrhina purnamai* **sp.n.**: 3 — голова, спереди; 4 — то же, сбоку; 5 — терминалии самца и сегмент 8 брюшка, сверху; 6 — то же, сверху; 7 — тергиты 8 и 9, сверху; 8 — эдеагус, сверху.

tibia, 2.5 mm, tarsus, 1.8 mm, basitarsus, 0.9 mm. Fore and hind coxae cylindrical, hind coxa subconical, nearly twice wider than fore and hind coxae; fore coxae yellow, anterior surface brownish; mid coxae brown with base yellow; hind coxae brown. Fore and mid femora, tibiae and tarsi slender, yellow, tarsi elongated; hind femora and tibiae thickened, with tibia club-shaped, hind femora yellow with base narrowly brownish and apical half brown, hind tibiae yellow with base very narrowly brownish and apical one-sixth brown; hind tarsi weakly dilated with basitarsus about half as wide as tip of hind tibia. Tibial spurs 1:2:2; spurs partially broken off; spurs on fore and hind legs straight, apparently shorter than width of respective tibiae at apex, lateral spur on hind tibiae slightly curved, longer than width of tibiae. Tibial organ well developed in hind tibiae. Regular rows of tibial vestiture are evident on hind tibiae apically. Tarsal claws of fore and mid tarsi curved with blunt tip, these of hind tarsi weakly curved with subacute tip.

Wing (Fig. 2) hyaline, length about 3.1 mm, ca. 2.9 times longer than wide, the widest near middle, wing membrane covered with dense microtrichia, tinged with yellow, restrictedly patterned with brown; veins brown. Apical third of vein R_1 setulose, other veins bare. Vein *C* extends beyond tip of vein R_5 to two-thirds of the distance between tips of veins R_5 and M_1. Vein *Sc* short, ending free. Veins R_1 and R_5 nearly straight, the former ending near midlength of vein *C*. Visible apical parts of veins M_1 and M_4 weakly sinuous, of vein M_2 slightly curved downwards apically so that veins M_1 and M_2 weakly divergent while veins M_2 and M_4 weakly convergent. Apex of vein *CuA* bent basad at an angle of about 130 degrees. Vein *CuP* well developed. The anterior part of wing brown beyond the tip of vein R_5, the transverse brown area extends over the apical third of vein M_1 reaching half the distance between the tips of veins M_1 and M_2. An additional brown patch starts shortly before the base of the visible part of vein M_1 extending over the base of vein M_2 and to vein M_4, it continues above the latter as a narrow stripe ending close to posterior margin of wing. Lower basal portion of cell r_1 narrowly brownish as well as wing membrane between veins *CuA* and *CuP*. Halteres pale yellow, subequal in length to fore and mid coxae, base of stem setulose.

Abdomen (Fig. 1) greatly elongated, length ca. 4.2 mm, longer than wide, segments 2–3 the longest, tergite 1 brown, sternite 1 yellow, narrowly brown distally; segments 2-6 brown with yellow apical bands, these bands from one-fifth to two-fifths the width of respective segments. Segment 7 completely brown, segment 8 and male terminalia darker brown, gonostyli yellowish. Tergite 8 (Fig. 7) short, transverse, with several strong lateral setae, posterior margin weakly produced medially, sternite 8 much larger, suboval, setose. Male terminalia (Figs 5–8) display the general structure typical for the subfamily; gonocoxites fused basoventrally, with posterior cleft, gonostylus rod-shaped, widened basally, with a basomedial long seta and a subapical tooth-like lobe, tergite 9 longer than gonocoxites, its posterior part large, oval, completely covering cerci and bearing dense spine-like setae apically, apodeme of tergite 9 directed anteriorly, with a rather stout stalk and two arms, aedeagus membranous except for parameres.

FEMALE. Unknown.

DISTRIBUTION. Indonesia (Bali).

ETYMOLOGY. The species is named after Mr. Iputu Eka Purnama (Mengwi, Bali, Indonesia), my host who helped me in so many ways during my stays on the island.

COMPARATIVE NOTES. *Lygistorrhina* (*Lygistorrhina*) *purnamai* **sp.n.** runs to the couplet 10 in the latest key to species of the subgenus [Blagoderov *et al.*, 2023: 156], disagreeing with the two Afrotropical species which fit in there, *Lygistorrhina* (*Lygistorrhina*) *hamoni* Matile, 1996 [Matile, 1996: 30], and *Lygistorrhina* (*Lygistorrhina*) *legrandi* Matile, 1990 [Matile, 1990: 366] which also have non-unicolorous antennae and patterned wings without spot in cubital cell, mostly in details of colouration of antennae and of wing pattern explained above.

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