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A new species of *Diostracus* Loew, 1861 (Diptera: Dolichopodidae) from China with a key to species from the Yunnan Province

Новый вид рода *Diostracus* Loew, 1861 (Diptera: Dolichopodidae) из Китая с определителем видов провинции Юньнань

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Key words: Diptera, Dolichopodidae, Oriental Region, China, *Diostracus*, new species.
Ключевые слова: Diptera, Dolichopodidae, Индо-Малайская область, Китай, *Diostracus*, новый вид.

Abstract. *Diostracus* (*Lagodechia*) *kabaki* **sp. n.** from China is described. *Diostracus filiformis* Zhu, Masunaga, Yang, 2007 from Yunnan and *D. nishiyamai* Saigusa, 1995 from Guizhou, Hunan and Sichuan are associated with the subgenus *Lagodechia* Negrobov, et Tsurikov, 1996, and *D. brevabdominalis* Zhu, Masunaga, Yang, 2007 from Yunnan – with the subgenus *Diostracus* Loew, 1861. A key to species known from the Yunnan Province is provided.

Резюме. Из китайской провинции Юньнань описан *Diostracus* (*Lagodechia*) *kabaki* **sp. n.** *Diostracus filiformis* Zhu, Masunaga, Yang, 2007 из провинции Юньнань и *D. nishiyamai* Saigusa, 1995 из провинций Гуйчжоу, Сычуань и Хунань помещены в подрод *Lagodechia* Negrobov et Tsurikov, 1996, а *D. brevabdominalis* Zhu, Masunaga, Yang, 2007 из провинции Юньнань – в подрод *Diostracus* Loew, 1861. Составлен определитель видов рода, известных из провинции Юньнань.

The genus *Diostracus* Loew, 1861 is known by 100 species described from Nearctic, Oriental and Palaearctic regions, but with rich diversity in high mountains of the Himalayas and Tibetan Plateau. It was recently reviewed by Yang et al. [2011] for the Chinese fauna, Grichanov [2013] for the West Palaearctic fauna (including Pamirs), and Wang et al. [2015] for the Himalayan fauna. Four species were described from the northernmost mountains of Myanmar [Saigusa, 1995]. Three species are known from the Yunnan Province of China [Yang et al., 2011; Grichanov, 2015].

Material and methods

The holotype of the new species is housed at the Zoological Institute of the Russian Academy of Sciences (ZIN, St. Petersburg, Russia). It has been studied and photographed with a ZEISS Discovery V-12 stereo microscope and an AxioCam MRc5 camera. Morphological terminology and abbreviations follow Cumming and Wood [2009]. Body length is measured from the base of the antenna to the tip of genital capsule. Wing length is measured from the base to the wing apex. Male genitalia were macerated in 10% KOH. The figure showing the hypopygium in lateral view (Fig. 5) is oriented as it appears on the intact specimen, with the morphologically ventral surface of the genitalia facing up, dorsal surface down, anterior end facing right and posterior end facing left. A line drawing of the hypopygium is not provided, because it cannot show correctly the shape of appendages in lateral view; instead, the micrographs of hypandrium, phallus, epandrial lobe, surstylus and cercus from various aspects are given (Figs 6–9).

Genus Diostracus Loew, 1861

Diostracus Loew, 1861: 43.

Type species: *Diostracus prasinus* Loew, 1861, by monotypy.

Notes. See Grichanov [2013] for diagnosis of the genus. Grichanov [2013] recognised 4 subgenera of the genus, i.e. *Diostracus* Loew, 1861, *Sphyrotarsus* Mik, 1874, *Lagodechia* Negrobov, Tsurikov, 1996, and *Ozmena* Özdikmen, 2010. Saigusa [1984, 1995] and Wang et al. [2015] distinguished 9 species groups inhabiting Myanmar, Nepal and Tibet. A new species of the genus is described and illustrated here. *Diostracus kabaki* **sp. n.** from the Yunnan Province of China, as well as *D. filiformis* Zhu, Masunaga, Yang, 2007 from Yunnan and *D. nishiyamai* Saigusa, 1995 from Guizhou, Hunan and Sichuan, belong to the subgenus *Lagodechia* comprising now 4 species including *D.* (*L.*) *spinulifer* Negrobov, Zurikov, 1988 from the Caucasus. *Diostracus brevabdominalis* Zhu, Masunaga, Yang, 2007 from Yunnan is associated here with the subgenus *Diostracus*.

Key to species (males) of *Diostracus* from Yunnan

1. Scape with setae above (subgenus *Diostracus*) 2
– Scape bare above (subgenus *Lagodechia*) 3
2. Arista-like stylus apical; fore basitarsus 1/3 as long as next tarsomere; *dm-cu* sinuate; cercus short and thick ..... *D.* (*D.*) *brevabdominalis* Zhu, Masunaga, Yang, 2007

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– Arista-like stylus dorsal; fore basitarsus longer than next tarsomere; *dm-cu* straight; cercus long and filiform ..... *D.* (*D.*) *campsicnemoides* Grichanov, 2015

3. Fore tarsus with two basal tarsomeres combined as long as tarsomere 3; cercus long and filiform .... *D.* (*L.*) *filiformis* Zhu, Masunaga, Yang, 2007

– Fore tarsomeres gradually decreasing in length distally; cercus short and thick ..... *D.* (*L.*) *kabaki* **sp. n.**

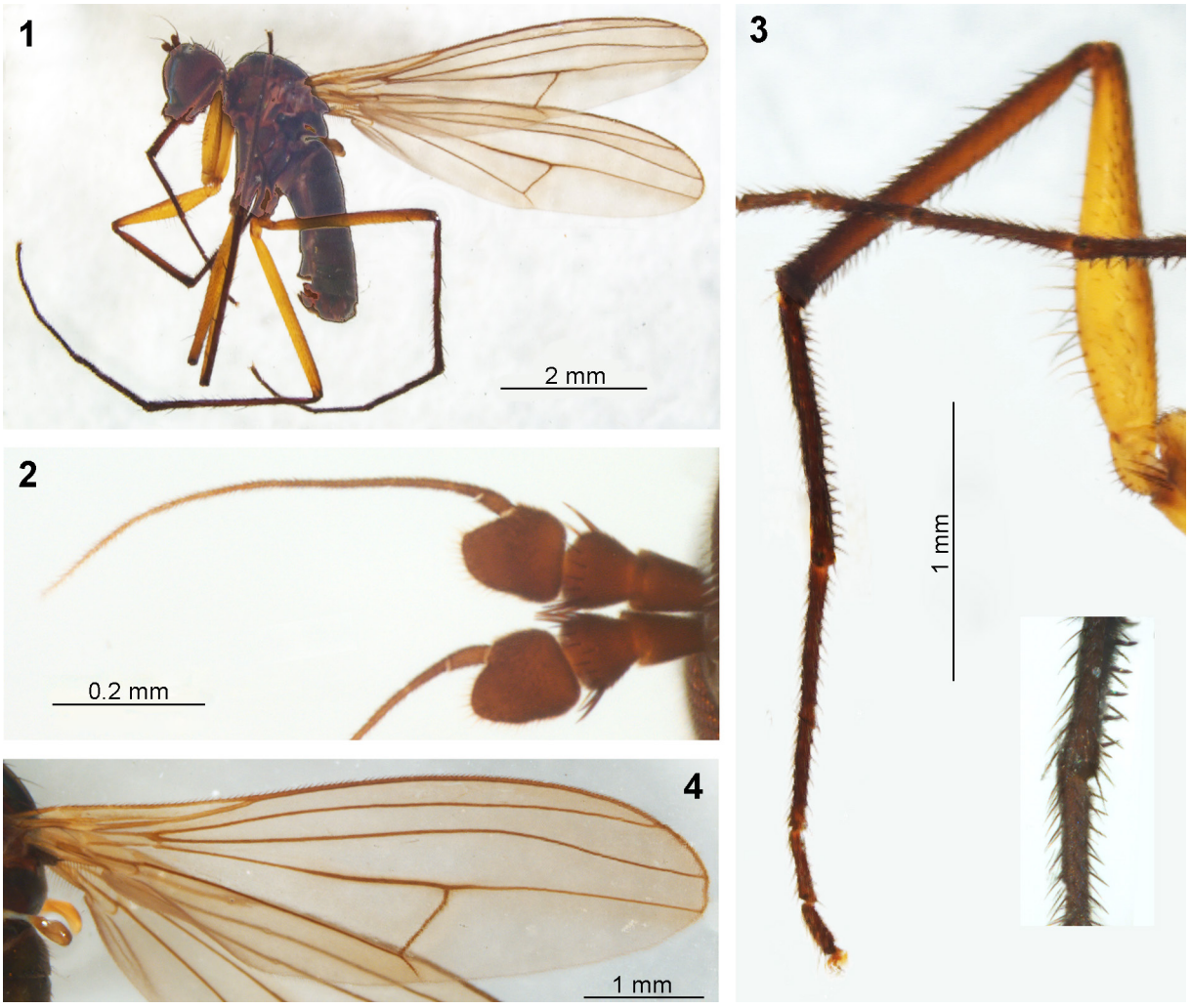
Diostracus (*Lagodechia*) *kabaki* Grichanov, **sp. n.**
(Figs 1–9)

Material. Holotype, ♂: China, Yunnan, N Lanping, 8.8 km SW of Hexi, 26°48′42″N / 99°19′2″E, 2955 m, fir forest, 9.06.2016 (leg. I.I. Kabak, G.E. Davidian) (ZIN).

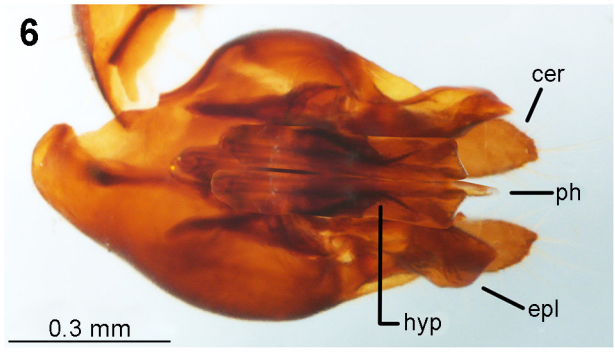
Description. Male (Fig. 1). Head: black, grey pollinose; clypeus slightly shining, 1/5 as wide as head, slightly wider than high; face nearly half as wide as clypeus, not wider than height of postpedicel; ocellar bristles strong, vertical bristle rather short; postvertical bristle slightly longer than upper postocular bristle; upper postocular ciliation black, strong, finer and yellowish below; ventral 1/2 of postcranium clothed with many long dirty yellow hairs; antenna (Fig. 2) black, with glabrous vase-like scape; pedicel with ring of short setae; postpedicel as long as high, rounded distally, with short hairs, with middorsal simple arista-like stylus; basal segment of stylus thickened; length (mm) of scape to pedicel to postpedicel to stylus (1st and 2nd segments), 0.1 : 0.1 : 0.13 : 0.05 : 0.58; palpus ovate, 1.6 times as long as wide, 1/5 as long as eye height, slightly dilated at middle; palpus ovate, black, pollinose, bearing black hairs and setae; proboscis moderately large, brown.

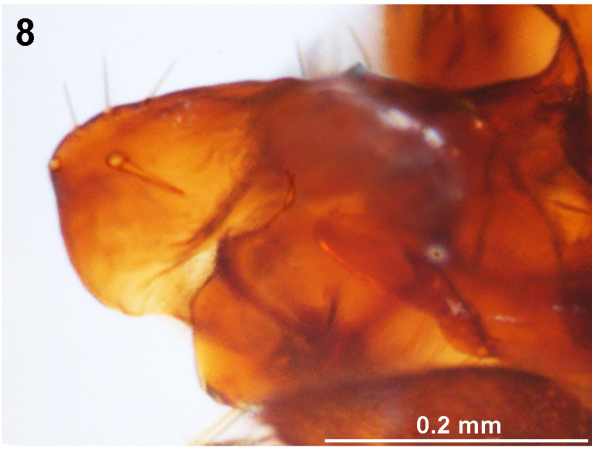
Thorax: violet-black, with grey pollinosity; mesonotum with pair of blackish longitudinal stripes; acrostichals absent; 6 pairs of dorsocentrals (mostly broken); 1 humeral with 1–2 short setae in front, 1 posthumeral, 2 notopleurals, 1 sutural, 1 postsutural, 1 supra-alar, 1 postalar; scutellum with 1 pair of strong scutellars; proepisternum with 1–2 light setae and few yellow hairs on its lower portion; scutellum about 3 times wider than long; postscutellum about 3 times as long as scutellum.

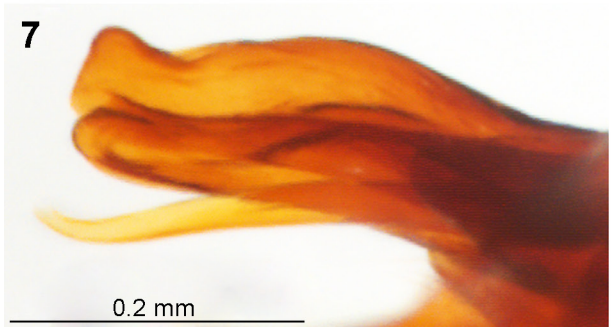
Legs: rather long, with yellow femora, trochanters and fore coxa; mid and hind coxae brown; fore tibia ventrally and all knees brown; otherwise tibiae and tarsi black; fore coxa mainly glabrous, on anterior surface with subapical group of 10–15 short black setae, with some stronger apical setae; fore femur (Fig. 3) simple, moderately thick in basal half, with 1–3 posterior setae at base, posteroventral row of about 5 black erect setae at middle, shorter



Figs 1–4. *Diostracus* (*Lagodechia*) *kabaki* Grichanov, **sp. n.**
1 – habitus; 2 – antenna; 3 – fore leg, with inset showing apex of basitarsus and base of tarsomere 2 of fore tarsus; 4 – wing.
Рис. 1–4. *Diostracus* (*Lagodechia*) *kabaki* Grichanov, **sp. n.**
1 – внешний вид; 2 – усик; 3 – передняя нога, с врезкой, показывающей вершину 1-го и основание 2-го членика передней лапки; 4 – крыло.







Figs 5–9. *Diostracus* (*Lagodechia*) *kabaki* Grichanov, **sp. n.**

5 – abdomen, left lateral view; 6 – hypopygium, ventral view (abbreviations: cer – cercus; epl – epandrial lobe; hyp – hypandrium; ph – phallus); 7 – hypandrium and phallus, lateral view; 8 – epandrial lobe and surstylus, inner view; 9 – cercus, dorso-lateral view.

Рис. 5–9. *Diostracus* (*Lagodechia*) *kabaki* Grichanov, **sp. n.**

5 – брюшко, вид слева; 6 – гипопигий, вид снизу (сокращения: cer – церка; epl – лопасть эпандрия; hyp – гипандрий; ph – фаллус); 7 – гипандрий и фаллус, вид сбоку; 8 – лопасть эпандрия и сурстиль, вид изнутри; 9 – церка, вид сверху-сбоку.

than femur height, 1–2 posteroventral setae at apex, anteroventral row of about 10 brown erect setae, shorter than femur height; fore tibia slightly thickened, bearing 2–3 short dorsal bristles, ventral and posteroventral rows of elongate semi-erect black setulae, denser at distal apex; fore basitarsus long, with ventral and posteroventral rows of semi-erect black setulae, about as long as diameter of tarsomere, of which 6–7 ventral setae in distal half erect and spine-like (Fig. 3); 2nd to 5th tarsomeres simple, bearing simple setulae; 5th segment slightly flattened dorsoventrally; pulvilli not reduced, but small, empodium well developed and

ventrally ciliated, claws small, about half as long as 5th segment; mid coxa bearing some apical yellow hairs; mid femur simple, with ventral and anteroventral rows of bristles on basal half, as long as or shorter than diameter of femur, with anterior preapical bristle; mid tibia straight, with 3 anterodorsal and 2 posterodorsal bristles and 6 short ventral setae; mid basitarsus with almost full posterior row of erect setae, slightly longer than diameter of tarsomere; mid tarsus slender, simple, with small claws, pulvilli and empodium; hind coxa bearing short black seta at apex; hind femur long and simple, with short anterior preapical bristle; hind tibia slender, bearing 3 posterodorsal bristles, short setae on anterodorsal and ventral surfaces; hind tarsus slender and simple, without setae; claws, pulvilli and empodium small. Fore podomere length (from tibia to tarsomere 5 mm): 1.58 : 1.03 : 0.59 : 0.37 : 0.27 : 0.23, mid leg: 2.6 : 1.48 : 0.56 : 0.41 : 0.25 : 0.26, hind leg: 2.65 : 1.26 : 0.73 : 0.54 : 0.31 : 0.24.

Wing (Fig. 4): long and narrow, evenly greyish, with brown veins; Sc developed; R_{2+3} and R_{4+5} weakly convex anteriorly, almost parallel in middle half of wing, then divergent distally; R_{4+5} and M_{1+2} almost parallel at wing apex; M_{1+2} almost straight, distinctly thickened on distal half of basal section and immediately behind cross-vein *dm-cu*; ratio of part of costa between R_{2+3} and R_{4+5} to this between R_{4+5} and M_{1+2}, 0.59 : 0.3; ratio of cross-vein *dm-cu* to distal part of CuA_1, 0.72 : 0.3; *dm-cu* almost perpendicular to longitudinal wing axis; calypter yellow, with white cilia; halter yellow with brown knob.

Abdomen (Fig. 5): black, with grey pollinosity, with short black setae; 1st tergum with some yellow hairs and ciliated with black bristles at posterior margin; 2nd tergum normal; 2nd, 3rd and 4th sterna with short white hairs; 4th sternum enlarged; 5th sternum reduced; 6th tergum small, hardly visible, shortly setose; 7th tergum reduced to semicircular arc, with some short setae; 8th segment large, covered with pale hairs; hypopygium (Fig. 6) black, moderately large, with black appendages; hypandrium (Fig. 7) elongated and bifurcated from base, with almost straight and parallel-sided lobes (ventral view); phallus simple; epandrial lobe (Fig. 8) flat and broad, ovate, with rounded apex and setose as figured, covering glabrous surstylus; dorsal and ventral lobes of surstylus flat, fused at base; dorsal lobe of surstylus rounded, smaller than ventral lobe; ventral lobe of surstylus enlarged, with deep distal emargination; cercus (Fig. 9) grey basally, black in distal half; cercus not longer than epandrium, elongate-triangular, with long yellow setae.

Length (mm): body without antennae 5.2, antenna 1, wing 6/1.7.

Female unknown.

Diagnosis. According to Grichanov [2013], the new species belongs to the subgenus *Lagodechia*, which differs from other subgenera in the absence of dorsal setae on antennal scape, presence of 1 pair of long bristles on scutellum, short postpedicel with dorsal stylus [Negrobov, Tsurikov, 1996]. Following the key to Chinese species [Yang et al., 2011], the new species is close to ungrouped *D. nishiyamai* Saigusa, 1995 (here associated with the subgenus *Lagodechia*), which has entirely simple wing, tibiae and tarsi, and oval male cercus. *Diostracus* (*L.*) *kabaki* **sp. n.** has wing vein M_{1+2} distinctly thickened on distal half of basal section and immediately behind cross-vein *dm-cu*; fore tibia slightly thickened, bearing ventral and posteroventral rows of elongate erect and semi-erect setae; mid basitarsus with almost full posterior row of erect setae; and subtriangular cercus.

Etymology. The species is named after the Russian entomologist, Dr. I. Kabak (St. Petersburg, Russia), one of the collectors of the type series.

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