NEW SPECIES AND NEW RECORDS OF LICHTWARDTIA ENDERLEIN, 1912 (DIPTERA: DOLICHOPODIDAE) FROM AUSTRALASIAN AND ORIENTAL REGIONS

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Summary. A new material for the Paleotropical genus Lichtwardtia Enderlein, 1912 has been recently collected and identified. Lichtwardtia moseikoi sp. n. from Papua Province of Indonesia and L. nabozhenkoi sp. n. from Bali Province of Indonesia are described. New species differ from other representatives of the genus in morphology of male genitalia mainly. L. formosana Enderlein, 1912 is found for the first time in Malaysia and Thailand, L. hirsutiseta (De Meijere, 1916) in India, L. semakau Grootaert et Tang, 2018 in Thailand, and L. singaporensis Grootaert et Tang, 2018 in Malaysia. Illustrations for L. hirsutiseta male genitalia are provided for the first time. A key for six Lichtwardtia species known from Australasian and Sunda Islands is compiled. Remarks are also given on the possible type locality for doubtful species L. ziczac (Wiedemann, 1824).

Key words: Diptera, Dolichopodidae, Dolichopodinae, taxonomy, new species, fauna, new records, key, Australasia, Oriental Region.

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**INTRODUCTION**

Species of *Lichtwardtia* Enderlein, 1912 are easily recognized by the angular, seemingly broken, zigzag-shaped bend in wing vein $M_{1+2}$, with anteroproximal and posterodistal stump veins (Grichanov & Brooks, 2017), having also long hairs on the apical segment of the arista-like stylus and characteristic male genitalia. This group, with 42 known species (with one unnamed species and two species declared *nomina dubia*) is restricted to the Old World tropics (including 25 Afrotropical, 15 Oriental and 2 Australasian species) (Grichanov, 2017b, 2018, 2019; Tang et al., 2018; this paper). An identification key to 12 Oriental species was provided by Tang et al. (2018). In Orient and Australasia, species of the genus occur in many countries, but being rare in collections.

In this paper, two new species of *Lichtwardtia* from Indonesia (Bali and Papua) are described. The present research gives also new records including *L. formosana* Enderlein, 1912 found for the first time in Malaysia and Thailand, *L. hirsutiseta* (De Meijere, 1916), a new species for India, *L. semakau* Grootaert et Tang, 2018, a new species for Thailand, and *L. singaporensis* Grootaert et Tang, 2018, a new species for Malaysia. Illustrations for *L. hirsutiseta* male genitalia are provided for the first time. A key for six *Lichtwardtia* species inhabiting Australasian and Sunda Islands is compiled. Remarks are also given on the possible type locality of *L. ziczac* (Wiedemann, 1824) (*nomen dubium*).

**MATERIAL AND METHODS**

Material cited in this work is housed at the Zoological Museum of Moscow State University, Moscow, Russia (ZMUM). Specimens have been studied and photographed with a ZEISS Discovery V-12 stereo microscope and an AxioCam MRc5 camera. Genitalia preparations have been photographed with a ZEISS Axiostar stereo microscope and an AxioCam ICc3 camera. Morphological terminology and abbreviations follow Cumming & Wood (2017) and Grichanov & Brooks (2017). The relative lengths of the antennomeres and podomeres should be regarded as representative ratios and not measurements. Body length is measured from the base...
of antenna to the tip of abdominal segment 6. Wing length is measured from the base to the wing apex. The figures showing the hypopygium in lateral view are oriented as it appears in the intact specimens, with the morphologically ventral surface of the genitalia facing upwards, dorsal surface downwards, anterior end facing left and posterior end facing right.

**TAXONOMY**

*Genus Lichtwardtia* Enderlein, 1912

*Lichtwardtia* Enderlein, 1912: 406. Type species: *Lichtwardtia formosana* Enderlein, 1912, original designation.

*Vaalimyia* Curran, 1926: 398. Type species: *Vaalimyia violacea* Curran, 1926 [=*Dolichopus angularis* Macquart, 1842], original designation.

**NOTES.** See Grichanov (2004) and Yang et al. (2011) for diagnosis of the genus *Lichtwardtia*. Males differ from females usually in such male secondary sexual characters as variously coloured face (partly or mostly metallic, matt black, densely white or yellow pollinose), face length to width ratio; wing sometimes with a colour pattern, with more or less developed costal swelling at R1; rarely modified antenna or podomeres (e.g. dilated last two segments of hind tarsus). Females of close species are practically indistinguishable (Tang et al., 2018). A few Afrotropical species have partly black femora or completely black postocular setae; nevertheless, these characters do not correlate with the hypopygium morphology. The Australasian and Oriental species are rather similar to each other in general habitus, differing reliably in male genitalia. Taking into account a great specific variability of all structures of the hypopygium in all parts of the genus area, *Lichtwardtia* is most probably a monophyletic group of species. See also a key to 12 Oriental species provided by Tang et al. (2018).

**Key to species of Australasian and Sunda Islands (males)**

1. Hind coxa mostly brown or with large dark brown rectangular area; hypandrium simple; apex of phallus with few microscopic denticles ......................................................... 2
   – Hind coxa entirely yellow; hypandrium and phallus various .............................................. 4
2. Cercus elongate triangular, nearly as long as epandrium (Bickel, 2008: Figure 1A); body length 3.7-3.8 mm [New Caledonia, Vanuatu] ......................... *L. melanesiana* (Bickel)
   – Cercus rounded triangular, at most 2/3 as long as epandrium ............................................. 3
3. Hind femur black at apex; ventral surstylus with strong basoventral spine reaching apex of surstylus; postgonite thin and simple; body length 3.8 mm [New Guinea] .......................... .......................................................... *L. moseikoi* sp. n.
   – Hind femur entirely yellow; ventral surstylus without basoventral spine; postgonite broad, deeply bifurcate at apex (Tang et al., 2018: Figure 20); body length 3.8 mm [Borneo Is.; Cambodia, Singapore, Taiwan] ................................. *L. formosana* Enderlein
4. Wing fumous on cross veins; cercus with simple setae; hypandrium simple; apex of phallus with regular ventral row of 7 denticles between dorsal tooth and tip; body length 2.9 mm [Bali Is.] .......................................................... *L. nabozhenkoi* sp. n.
– Wing hyaline or evenly greyish; cercus with some apical setae flattened and truncated; apex of phallus without ventral denticles .......................................................... 5

5. Costa with a swelling before the point where R₁ joins the costa; hypandrium complicated and twisted; phallus with small preapical dorsal tooth and long basodorsal process (Tang et al., 2018: figs 21B, 21D); body length 4.5 mm [Java Is.; India, Sri Lanka] ..............
................................................................................................................. L. hirsutiseta de Meijere

– Costa without swelling; hypandrium with large preapical tooth; phallus simple (Zhang et al., 2009: figs 11–14); body length 4.2 mm [Bali Is.] ....... L. zhangae Tang et Grootaert

DESCRIPTIONS

Lichtwarditia moseikoi Grichanov, sp. n.
http://zoobank.org/NomenclaturalActs/B0687AC0-56A7-49D3-A873-44A77B9E1E5F
Figs 1–8

TYPE MATERIAL. Holotype – ♂, Indonesia: Papua, Merauke env., 8.55° S, 140.43° E, 9–15.XII 2014, leg. N. Vikhrev [ZMUM].

DESCRIPTION. Male. Head. Frons metallic greenish violet, weakly pollinose; face entirely white pollinose; one strong vertical, one short postvertical, a pair of strong occellar setae present; lower postocular setae white; ventral postcranium with 2 long white setae and several light cilia; eyes with short hairs; face glabrous; face almost parallel-sided, narrowest at upper third, slightly widening at clypeus; clypeus angular ventrally in middle, not reaching lower margin of eyes; ratio of its minimal width to height 23/75; antenna mostly yellow-orange; postpedicel black in distal half, subtriangular, slightly longer than high (25/20), right-angular apicodorsally, with short hairs; arista-like stylus middorsal, black, sparsely pubescent, with hairs 2–4 times longer than basal diameter of stylus; length ratio of scape to pedicel to postpedicel to stylus (1st and 2nd segments), 18/11/25/55; palpus small, dirty yellow, with black seta, short light and dark hairs; proboscis brown.

Thorax. Mesonotum metallic dark-blue-violet, weakly brownish pollinose; pleura greenish-black, whitish pollinose; 5 strong dorsocentral setae with several microscopic hairs in front of the 1st pair, 2 rows of acrostichals; proepisternum with 1 strong black seta above fore coxa and several short hairs; scutellum with 2 strong setae and 2 very short lateral hairs.

Legs mostly yellow; fore coxa yellow, mid coxa black with yellow apex, hind coxa mostly yellow, with large black spot; hind femur black at apex; hind tibia black at apex; tarsis black from tip of basitarsus; femora without long hairs; fore coxa with black hairs and several long apical setae; fore tibia with 1 long and 2 small anterodorsal, 1 long and 1 small dorsal, 1 posterior seta, more than 2 times as long as diameter of tibia, 2 short apical and 1 long posterovernal apical setae; fore tarsus simple, fore basitarsus with short basoventral seta; mid femur with 1 subapical anterior seta; mid tibia with 4 anterodorsal, 2 posterodorsal, 1 anterotrenal and 5 apical setae; hind femur with one anterodorsal preapical seta; hind tibia simple, with 4 anterodorsal, 4 postero dorsal, 1–2 ventral, 3 apical setae; hind basitarsus with 1 basoventral, 1 apical short setae, 1 strong dorsal seta, half as long as basitarsus. Tibia and tarsomere (from first to fifth) length ratio: fore leg: 106/47/22/17/13, mid leg: 133/36/31/20/21, hind leg: 161/60/62/47/31/25.
Wing evenly greyish; costa simple; R1 reaching to first third of wing; R2+3 and R4+5 straight, slightly divergent at apex; ratio of part of costa between R2+3 and R4+5 to this between R4+5 and M1+2, 33/21; M1+2 broken in middle of distal part, joining
costal vein right before wing tip; R4+5 and distal part of M1 parallel; crossveins m-m and dm-m straight, almost perpendicular to corresponding longitudinal veins; ratio of distal part of M1 to m-m to distal part of M1+2 to dm-m to distal part of M4, 74/12/53/34/37; anal vein distinct, almost reaching to wing margin; anal lobe well developed; anal angle obtuse; lower calyptra yellow, with black setae; halters yellow.

Abdomen metallic bronze-black, white pollinose laterally, with black hairs and marginal setae; 8th segment black, with sparse black hairs; epandrium black, small, nearly as long as 5th-6th tergites combined, about 2 times longer than high, swollen basally, slightly narrowed distally, convex ventrally, rounded distally; hypandrium basoventral, narrow, reaching to apex of epandrium, without teeth; phallosoma long, filiform, with 1-2 irregular dorsal rows of about 10 minute denticles at apex; one small epandrial seta at base of hypandrium; distoventral epandrial lobe reduced to 2 small setae far from apex; surstylus yellow, bilobate, with long and narrow lobes; ventral lobe stick-shaped, with 1 broad triangular apical bristle, 1 thick subapical spine and 4 simple subapical setae; dorsal lobe of surstylus clavate, slightly longer than ventral, with small apicoventral projection and few subapical setae; postgonite long and narrow, simple, slightly shorter than surstylus; cercus yellow, black along distal and ventral margins, ovate, 1.3 times longer than wide, weakly dentate distally and ventrally, with double row of straight marginal bristles and setae.

MEASUREMENTS (in mm). Body length 3.8; antenna length 1.0; wing length 3.6; wing width 1.1; hypopygium length 1.3.

Female. Unknown.

DISTRIBUTION. Australasian: Indonesia (Papua).

ETYMOLOGY. The species is named after the Russian entomologist Dr. A.G. Moseiko (St. Petersburg).

DIAGNOSIS. The new species is close to Lichtwardtia formosana Enderlein, differing from the latter in hind femur being black at apex, ventral surstylus bearing strong basoventral spine reaching apex of surstylus, postgonite being thin and simple. Lichtwardtia formosana is distinguished by hind femur being entirely yellow, ventral surstylus having no basoventral spine, postgonite being broad, deeply bifurcate at apex (Tang et al., 2018: Figure 20). In contrast to the Oriental species, the Australasian L. moseikoi sp. n. and L. melanesiana (Bickel) males have rather long and thin surstylus and postgonite. L. moseikoi sp. n. well differs from L. melanesiana in the shape of cercus and in the absence of long basoventral spine on ventral surstylus (Bickel, 2008: Figure 1A).

Lichtwardtia nabozhenkoi Gričanov, sp. n.
http://zoobank.org/NomenclaturalActs/56E9EC17-94E8-4134-B869-503540443585
Figs 9–16

TYPE MATERIAL. Holotype – ♂, Indonesia: Bali Is., Buyan Lake, 8.24° S, 115.14° E, 1220 m, 27.XII 2016, leg. N. Vikhrev [ZMUM].
Figs 9–16. Lichtwardtia nabozhenkoi sp. n. 9 – habitus; 10 – head; 11 – antennae; 12 – wing; 13 – postabdomen; 14 – hypandrium and phallus; 15 – cercus, inner view, surstylus and postgonite; 16 – cercus, outer view.
DESCRIPTION. Male. Head. Frons metallic greenish violet, weakly pollinose; face entirely white pollinose; one strong vertical, one short postvertical, a pair of strong ocellar setae present; lower postocular setae white; ventral postcranium with 2 long white setae and several light cilia; eyes with short hairs; face glabrous; face almost parallel-sided, narrowest at upper third, slightly widening at clypeus; clypeus almost straight ventrally, not reaching lower margin of eyes; ratio of its minimal width to height 21/60; antenna mostly yellow-orange; postpedicel black in distal half, rounded, about as long as high (14/15), with short hairs; arista-like stylus middorsal, black, sparsely pubescent, with hairs 2-4 times longer than basal diameter of stylus; length ratio of scape to pedicel to postpedicel to stylus (1st and 2nd segments), 9/8/14/11/44; palpus small, dirty yellow, with with black seta, short light and dark hairs; proboscis brown.

Thorax. Mesonotum metallic dark-blue-violet, weakly brownish pollinose; pleura greenish-black, whitish pollinose; 5 strong dorsocentral setae with several microscopics hairs in front of the 1st pair, 2 rows of short acrostichals; proepisternum with 1 strong black seta above fore coxa and several short hairs; scutellum with 2 strong setae and 2 very short lateral hairs.

Legs mostly yellow; fore coxa yellow, mid coxa brown-black with yellow apex, hind coxa yellow; tarsi black from tip of basitarsus; femora without long hairs; fore coxa with black hairs and several long apical setae; fore tibia with 1 long and 1 small anterodorsal, 1 long and 1 small dorsal, 1 posterior seta, more than 2 times as long as diameter of tibia, 3 apical setae of about equal length; fore tarsus simple, fore basitarsus with short basoventral seta; mid femur with 1 subapical anterior seta; mid tibia with 3 anterodorsal, 2 posteroventral, 1 anteroventral and 5 apical setae; hind femur with one anterodorsal preapical seta; hind tibia simple, with 3-4 anterodorsal, 3-4 posteroventral, 2-3 ventral, 3 apical setae; hind basitarsus with 1 basoventral, 1 apical short setae, 1 strong dorsal seta, half as long as basitarsus. Tibia and tarsomere (from first to fifth) length ratio: fore leg: 87/39/14/15, mid leg: 116/54/29/22/17, hind leg: 139/53/57/44/26/17.

Wing evenly greyish, slightly fumous on cross veins; costa simple; R1 reaching to first third of wing; R2+3 and R4-5 straight, slightly divergent at apex; ratio of part of costa between R2+3 and R4-5 to this between R4-5 and M1+2, 29/24; M1+2 broken in middle of distal part, joining costal vein right before wing tip; R4-5 and distal part of M1 parallel; crossveins m-m and dm-m straight, almost perpendicular to corresponding longitudinal veins; ratio of distal part of M1 to m-m to distal part of M1+2 to dm-m to distal part of M4, 66/12/44/32/30; anal vein distinct, almost reaching to wing margin; anal lobe well developed; anal angle obtuse; lower calypter yellow, with black setae; halters yellow.

Abdomen metallic bronze-black, white pollinose laterally, with black hairs and marginal setae; 8th segment black, with sparse black hairs; epandrium black, small, nearly as long as 5th-6th tergites combined, 2 times longer than high, swollen basally, narrowed distally, concave ventrally, slightly projected distoventrally; hypandrium basoventral, relatively broad, reaching to distal 4/5 of epandrium, without teeth; phallus thin and long, with aciculate swelling at base of hypandrium,
with regular sparse row of 7-8 strong ventral teeth behind curvation, gradually
decreasing in size towards tip; one minute epandrial seta at base of hypandrium;
distoventral epandrial lobe reduced to 3 long pedunculate setae; surstylus yellow,
bilobate; ventral lobe rounded, with 2 thick spines and few simple setulae; dorsal
lobe of surstylus broad, longer than ventral, with membranous apical projection,
with 2 setae and few setulae; postgonite long, half as long as cercus, forked in distal
third, with narrow pointed lobes; cercus yellow, widely blackened in distal third,
regularly rounded, dentate distally and ventrally, with double row of straight margi-
nal setae.

MEASUREMENTS (in mm). Body length 2.9; antenna length 0.8; wing length
2.9; wing width 1.0; hypopygium length 0.8.

Female. Unknown.

DISTRIBUTION. Oriental: Indonesia (Bali).

ETYMOLOGY. The species is named after the Russian entomologist Dr. M.V.
Nabozhenko (Rostov-na-Donu).

DIAGNOSIS. The new species is the closest to *L. semakau* Grootaert et Tang
known from Thailand, differing from the latter in evenly greyish wing, which is
slightly fumous on cross veins, and in fine structures of hypopygium. *L. nabozhen-
koi* sp. n. cercus is regularly rounded, widely blackened in distal third, without
hooked setae, without a strong bristle near the dorsal margin on the inside; phallus
with regular sparse row of 7-8 strong ventral teeth behind curvation of phallus,
gradually decreasing in size towards tip. *L. semakau* cercus is nearly triangular, pale
except the black margin, with several hooked bristles and setae distally and with a
single strong middorsal bristle on the inside; phallus with about 20 small dense
irregular denticles on distal half of ventral side (Tang et al., 2018: Figure 9).

NEW RECORDS

*Lichtwardtia cambodiensis* Tang et Grootaert, 2018

MATERIAL EXAMINED. Cambodia: Siem Reap Province, Phnom Kulen
Mts., Preah Ang Thom vicinity, 13.551–570° N, 104.101–110° E, 260–330 m,14–
11.VI 2018, 3♂, leg. N. Priydaq; Siem Reap env., 13.41–48° N, 103.75–104.92° E,
1–7.XI 2018, 1♂, leg. N. Priydaq [ZMUM].

DISTRIBUTION. Type locality: Cambodia: Siem Reap prov., Angkhor, Preah
Khan Temple. Oriental: Cambodia.

*Lichtwardtia formosana* Enderlein, 1912

MATERIAL EXAMINED. Malaysia: Sabah st., Mt. Kinabalu, 5.977º N,
116.579º E, 1430 m, 13–17.II 2014, 1♂, leg. N. Vikhrev [ZMUM]; Thailand:
[Chanthaburi Province], Khao Khitchakut NP, 22.XI 2006, 1♂, leg. N. Vikhrev;
same locality, but 22–24.XII 2007, 2♀, leg. N. Vikhrev; Kanchanaburi Province,
Sai Yok Yai NP, 14.44º N, 98.86º E, 1–4.II 2014, 1♂, leg. N. Vikhrev [ZMUM].
DISTRIBUTION. Type locality: Formosa, Takao. Oriental: Cambodia, China (Taiwan), Singapore. New species for Malaysia (Sabah) and Thailand.

*Lichtwardia hirsutiseta* (De Meijere, 1916)

Figs 17, 18

MATERIAL EXAMINED. **India**: Goa, Bendurdem, Sal River, 15.124° N, 74.033° E, 19.II–4.III 2009, 1♂, 1♀, leg. K. Tomkovich [ZMUM].

DISTRIBUTION. Type locality: Indonesia: Batavia (Djakarta), Semarang, and Salatiga, Java. Oriental: Indonesia (Java), Sri Lanka. New species for India (Goa).

NOTES. The *L. hirsutiseta* habitus of the examined specimen is identical to that described by De Meijere (1916) and figured by Tang *et al.* (2018: Figure 21). However, the holotype genitalia figured were not dissected and macerated, and its dry hypandrium and phallus look similar, but somewhat different from those in studied male from Goa. Additional material is needed to confirm the identity of Indian and Indonesian *L. hirsutiseta*.

Figs 17, 18. *Lichtwardia hirsutiseta* (De Meijere). 17 – hypopygium, right lateral view; 18 – hypopygium, ventral view.

*Lichtwardia polychroma* (Loew, 1864)

MATERIAL EXAMINED. **Cambodia**: Siem Reap Province, Phnom Kulen Mts., Preah Ang Thom vicinity, 13.551–570° N, 104.101–110° E, 260–330 m, 14–11.VI 2018, 1♂, leg. N. Priydak [ZMUM].

DISTRIBUTION. Type locality: Ceylon, Rambodda. Oriental: Cambodia, Sri Lanka.

*Lichtwardia semakau* Grootaert et Tang, 2018

MATERIAL EXAMINED. **Thailand**: around Pattaya, 10–15.1 2006, 1♂, leg. N. Vikhrev; Chon Buri, Ban Kled, beach Sai Kaew, 12.44.5411° N, 100.50.4646° E, 16.XI 2006, 1♂, leg. A.L. Ozerov [ZMUM].

DISTRIBUTION. Type locality: Singapore: Semakau. Oriental: Singapore. New species for Thailand.
**Lichtwardia singaporesis** Grootaert et Tang, 2018

**MATERIAL EXAMINED.** **Malaysia:** Pahang, Temerloh, 3.46° N, 102.42° E, 25–30.XI 2014, 1♂, leg. N. Vikhrev [ZMUM].

**DISTRIBUTION.** Type locality: Singapore: West Coast. Oriental: Singapore. New species for Malaysia (Pahang).

**NOMEN DUBIUM**

**Lichtwardia ziczac** (Wiedemann, 1824)

**MATERIAL EXAMINED.** Holotype ♀, India Orientalis, on pin [the Natural History Museum of Denmark, Zoological Museum, University of Copenhagen].

**DIAGNOSIS.** The female can be associated in future with an unknown male by the following combination of characters unusual for the majority of other species: wing with anterior margin faintly brownish and cross veins brownish seamed (noted by Tang *et al*., 2018); hind femur with brown spot dorsally on apex; anterodistal cross vein (m-m) strongly oblique, not perpendicular to corresponding longitudinal veins.

**NOTES.** *Dolichopus ziczac* was described by Wiedemann (1824) by a female collected in East India (“India Orientalis”). Tang *et al.* (2018) have studied the type in Copenhagen and suggested that the type locality for this species could be everywhere in the Oriental region ranging from Pakistan to New Guinea. However, at the beginning of 19th century, the British East India Company occupied mainly the present-day Bangladesh and some territories in southern and eastern India (see, for example, a historical map “Territories of the British East India Company in 1805” compiled by The Edinburgh Geographical Institute, Imperial Gazetteer of India, Oxford University Press, 1907). The so called Danish India (few settlements within the British East India), where the type was probably collected in the first quarter of 19th century, included the town of Tharangambadi in present-day Tamil Nadu state of India, Serampore in present-day West Bengal, and the Nicobar Islands, currently part of India’s union territory of the Andaman and Nicobar Islands (e.g. Feldbaek, 1978). During the next two centuries, *Lichtwardia ziczac* was reported from many countries including Pakistan, Laos, Myanmar, Philippines, Australia and Solomon Islands, where no other species of the genus are known from. I think the most of these and other records belong to other described or undescribed species, because many *Lichtwardtia* species have rather local distribution. So, the type locality for the species could be somewhere within one of the eastern Indian states. Regarding the Indian fauna of Dolichopodidae, it is rather poorly known. Here I have recorded the second species of the genus from the country, *L. hirsutiseta*, collected from western Indian state Goa (see above). Additional material collected from eastern India can clarify the status of *L. ziczac.*
APPENDIX

Genus Dolichopus Latreille, 1796

Dolichopus howjingleei Olejnicek, 2002

MATERIAL EXAMINED. Vietnam: [Lào Cai Province,] Sa Pa env., 22.321° N, 103.856° E, 1400 m, 19–29.III 2019, 2♂, leg. N. Vikhrev [ZMUM].

DISTRIBUTION. Type locality: China: Taiwan, Taipei. New species for Vietnam.

NOTES. The species is the only Oriental Dolichopus species with two stublike wing veins on vein M_{1+2} (Olejnicek, 2002; Grichanov, 2016), similar to those in Lichtwardtia species. One of the males examined has only one (posterior) stump vein on M_{1+2}. Nevertheless, hind basitarsi of D. howjingleei bears two dorsal setae; this species has short-haired stylus; the overall habitus and especially the hypopygium morphology distinguish clearly D. howjingleei from Lichtwardtia. Epandrial lobes of the Lichtwardtia hypopygium are greatly reduced, usually to simple or pedunculate ventral setae. In contrast, both distoventral and basoventral epandrial lobes are generally large and strongly projected in Dolichopus species.

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