

## Revision of the genus *Tachytatus* (Heteroptera: Lygaeoidea: Rhyparochromidae)

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**Abstract.** The Oriental genus *Tachytatus* Bergroth, 1918 (Hemiptera: Heteroptera: Lygaeoidea: Rhyparochromidae: Rhyparochrominae: Ozophorini), so far monotypic, is revised. The genus and its type species, *T. prolixicornis* Bergroth, 1918 (Philippines), are redescribed and recorded from Malaysia (Sabah) and Indonesia (Sumatra) for the first time. Three new species are described from various Indonesian islands: *T. redeii* sp. nov. from Siberut (Mentawai Islands), *T. celebensis* sp. nov., and *T. longirostris* sp. nov. from Sulawesi. A key is provided to identify the species.

**Key words.** Hemiptera, Heteroptera, Rhyparochromidae, Ozophorini, *Tachytatus*, key, new species, taxonomy, distribution, Indonesia, Malaysia, Oriental Region

### Introduction

The rhyparochromid tribe Ozophorini is of worldwide distribution (SLATER 1964, SLATER & O'DONNELL 1995), with most species occurring in tropical America. The American groups (especially the species-rich genus *Ozophora* Uhler, 1871) were intensively studied (e.g. ASHLOCK & SLATER 1982, SLATER 1995, BRAILOVSKY & CERVANTES 2009). The second most diverse fauna of Ozophorini is that of the Oriental and Australian (Pacific) Regions, with 12 described genera and 74 species. The Papuan Subregion is particularly rich in species: 35 species live in New Guinea and the Solomon Islands. In contrast, only 5 species have been recorded from the Philippines and 10 from the Indo-Malayan Subregion. The fauna of China (11 species) is relatively well known (ZHENG & ZOU 1981). Two modern revisions of larger Ozophorini groups are available, one of the genus *Bryanelllocoris* Slater, 1957 (CHEN & ASHLOCK 1987), and one of the *Primierus* complex (SLATER & ZHENG 1985).

The genus *Tachytatus* Bergroth, 1918 was described by BERGROTH (1918) as monotypic, containing only *T. prolixicornis* Bergroth, 1918 from the Philippines. The subject of the present paper is a redescription of the genus and the type species, and description of three additional new species.

## Material and methods

Examination of the specimens was carried out using a stereoscopic microscope (model: Olympus SZ 11). Genitalia were dissected after boiling in KOH solution and stained with Chlorazol Black E. Measurements were taken using a micrometer eyepiece. Photographs were made by a USB camera (model ALPHA DCM510 5.1Mpixel) with programme ScopePhoto 3.0.4, automontage was made by Alan Hadley's CombineZM. The drawings were made by Katinka Varga.

The text on the labels of the specimens is cited verbatim, the rows are divided with a slash (/), the labels with a double slash (//). The printed text (pr) is not marked except if the preceding text is handwritten (hw).

Abbreviations for depositories:

BMNH	Natural History Museum, London, United Kingdom;
HNHM	Hungarian Natural History Museum, Budapest, Hungary;
IRSN	Royal Belgian Institute of Natural Sciences, Brussels, Belgium;
MFNB	Natural History Museum, Berlin, Germany;
MMBC	Moravian Museum, Brno, Czech Republic;
NHMW	Natural History Museum, Vienna, Austria;
NHRS	Swedish Museum of Natural History, Stockholm, Sweden;
NMWC	National Museum of Wales, Cardiff, United Kingdom;
RMNH	National Museum of Natural History (Naturalis), Leiden, the Netherlands;
TLMF	Tirolese Regional Museum (Ferdinandeum), Innsbruck, Austria.

## Results

### *Tachytatus* Bergroth, 1918

*Tachytatus* Bergroth, 1918: 75. Type species: *Tachytatus prolixicornis* Bergroth, 1918, by original designation.

*Tachytatus*: SCUDDER (1957): 153 (in *Stygnocorini*); SLATER (1964): 1056 (bibliography, in *Ozophorini*).

**Redescription.** *Body* elongate, integument with slightly shining greyish pruinosity. A broad transverse fascia along basal margin of pronotum medially extending to transverse furrow; central part of scutellum, clavus at apex of scutellum, a broad fascia on corium at apex of clavus, and apex of corium dull, not pruinose; median part of mesosternum and hind margin of metasternum the same, only with inconspicuous hairs.

**Head** exerted, more or less rhomboid in dorsal view, as long as wide. Eyes rather large, moderately prominent, not pedunculate, not reaching anterior margin of pronotum. Ocelli situated posteriad of hind margin of eyes, as far from eyes as from each other. Antenniferous tubercle close to eye, well developed. Antenna very slender, about as long as or a little longer than body, segments cylindrical (only very slightly widened towards apex), with short, hardly visible hairs. Labium reaching or surpassing middle of mesosternum. Neck narrow and relatively short, about half as wide as head.

**Thorax.** Pronotum distinctly divided into anterior and posterior lobe by well developed transverse impression, lateral margin distinctly emarginate between anterior and posterior lobes, anterior lobe relatively narrow, posterior lobe longer, sloped more strongly than anterior lobe. Pronotal collar slightly convex, lateral margin of pronotum very fine, almost invisible, posterior margin straight. Posterior lobe of pronotum and whole of scutellum with



Figs 1–6. 1–3 – *Tachytatus prolixicornis* Bergroth, 1918, lectotype, female. 1 – dorsal view, 2 – lateral view, 3 – labels. 4–6 – Membrane of *Tachytatus* species: 4 – *T. celebensis* sp. nov., 5 – *T. prolixicornis* Bergroth, 1918, 6 – *T. redeii* sp. nov.

strong, anterior lobe of pronotum with weak and scattered punctures. Scutellum triangular, longer than wide, only slightly protuberant, without Y-shaped elevation. Clavus with four rows of punctures, second row not always reaching base, often with an incomplete fifth row distally. Endocorium with two divergent rows of punctures, another row near apical margin; mesocorium irregularly punctate. Costal margin of corium slightly concave, apical margin hardly convex. Membrane with four veins, not forming cells. Prosternum with decumbent short hairs. Metathoracic scent gland ostiole provided with auriculate peritreme strongly



Figs 7–8. *Tachytatus longirostris* sp. nov., holotype, female (7 – dorsal view, 8 – lateral view).

curved posteriorly, situated close to coxae. Evaporatorium relatively small, occupying only medial half of metapleuron. Legs slender and very long, anterior femur very slightly thickened, more slender than vertex, on inner surface with a few short spines and some long hairs, other femora and tibiae straight, unarmed. First tarsal segment much longer than other two segments together.

**Abdomen.** Suture between abdominal sterna four and five oriented anteriorly, not reaching lateral margin of abdomen. Abdominal trichobothria situated as typical in Ozophorini, all spiracles ventral. Abdomen densely pubescent, and with sparse long hairs (longer than width of femur).

### *Tachytatus prolixicornis* Bergroth, 1918

(Figs 1–3, 5, 10–11)

*Tachytatus prolixicornis* Bergroth, 1918: 76. SYNTYPES: ‘Luzon, Laguna, Los Baños, Mount Maquiling and Mount Banahao; Tayabas, Malinao; Mindanao, Davao.’

*Tachytatus prolixicornis*: SLATER (1964): 1056 (catalogue, in Ozophorini).

**Type material.** LECTOTYPE: ♀ (here designated), ‘Mt. Makiling / Luzon, Baker // (hw) *Tachytatus* / *prolixicornis* / Bergr.’ // (label with red margin) Lectotypus (hw): ‘*Tachytatus prolixicornis* Bergroth, 1918 / desig. Kondorosy, 2013’ (NHRS). Paralectotype: ♂, ‘Mt. Makiling / Luzon, Baker // (hw) *prolixicornis* B. / (pr) det. Bergr. // (hw): *Tachytatus* / *prolixicornis* / Bergr.’ // (label with red margin) ‘Paralectotypus (hw): *Tachytatus prolixicornis* Bergroth, 1918 / desig. Kondorosy, 2013’ (HNHM). Number, sex and location of other syntypes is unknown

**Additional material.** **PHILIPPINES:** Luzon: Laguna, Mt. Makiling, 13.–18.xi.1992, H. Zettel lgt. (1 ♂, NHMW); N-Luzon, Ifugao Banaue, vic. Secundärwald [= secondary forests], Reisfelder [= rice fields], 16°54'N 121°06'E, 22.ix.–16.x.1988, 1200 m a.s.l., Cerny & Schintlmeister lgt. (2 ♂♂ 2 ♀♀, MFNB). **MALAYSIA:** SABAH: K. Kinabalu, 31.iii.1969, P. J. L. Roche lgt. (1 ♀, RMNH); Quoin Hill, 15.–22.iv.1973, K. M. Guichard lgt. (1 ♀, RMNH). **INDONESIA:** SUMATRA: Sumatra W., Aceh Selatan prov., Babahrot, 100 m a.s.l., 28.vi.[without year], Klapperich lgt. (1 ♀, TLMF).

**Redescription. Diagnosis.** Body with very fine decumbent pilosity, head, scutellum and anterior (inner) surface of fore femora with long erect hairs. Labium short, not surpassing middle of prosternum. Fore femur with two fine spines. Hairs on hind tibia much shorter than spines of the same segment, latter slightly longer than diameter of tibiae. Male paramere in dorsal and lateral aspects: see Figs 10–11.

**Colouration.** Body brown, head, anterior lobe of pronotum, mesosternum, and sometimes base of scutellum darker; basal half of hemelytra and apex of scutellum paler. Corium with tiny transverse pale stripe behind clavus close to apical margin and with moderately large subapical pale spot continued in darker pruinose part reaching apical margin. Anterior margin of subapical spot directed transversely to costal margin, on costal margin subapical spot at most 1.5 times longer than dark apical part; posterior margin of the pale spot obliquely convex. Membrane mostly pale, with dark base and corial margin (Fig. 5). Antenna: segments I–III stramineous, apex brownish; segment IV dark brown, basal one-fifth pale. Legs: fore and mid femora light honey coloured, hind femur with basal half pale stramineous, apical part brown; tibiae pale stramineous, tarsi pale, apical segment(s) brown.

**Intraspecific variation.** The specimen from Kinabalu has basal one-fourth of antennal segment IV pale. The specimens in NHMW and MFNB have shorter subapical corial spot with transverse hind margin. The MFNB specimens have also dark antennal segment I, brown femora and mostly dark hind tibiae. However, these specimens very probably belong to *T. prolixicornis*, and the male genitalia are not different from genitalia of the paralectotype.

**Measurements** (in mm, ♂♀, n = 8). Body length: 6.50–7.85. Head length: 1.05–1.24, width: 1.05–1.28, interocular space: 0.42–0.55. Lengths of antennal segments: I 0.94–0.97, II 2.11–2.54, III 1.82–1.97, IV 2.23–2.46. Pronotum length: 1.22–1.34, width: 1.48–2.02. Scutellum length: 1.11–1.37, width: 0.77–1.08. Length of claval commissure 1.9. Length of labium 2.03–2.85, labial segments: I 0.78–1.05, II 0.64–0.86, III 0.36–0.50, IV 0.25–0.44.

**Distribution.** Philippines: Luzon (Bergroth 1918), Malaysia: Kalimantan (Sabah) (new record), Indonesia: Sumatra (new record).

### *Tachytatus redeii* sp. nov.

(Fig. 6)

**Type material.** HOLOTYPE: ♀, **INDONESIA:** 'Coll. I.R.SC.N.B. / Mentawai Isls, S Siberut Isl., / Salappa, vi. 2005, 50-100m / leg. St. Jakl / I.G. 31.127' // (label with red margin) Holotypus (hw): 'T. redeii sp. nov. / Varga et Kondorosy, 2013' (IRSN). PARATYPE: ♀, 'INDONESIA, 5.2004 / Siberut isl. / Bojakan, 100 m / S. Jakl lgt.' // (label with red margin) Paratypus (hw): 'T. redeii sp. nov. / Varga et Kondorosy, 2013' (MMBC).

**Description.** Labium reaching mid coxae. Fore femur with two spines and moderately long hairs. Hairs of hind tibia very fine and shorter than tibial spines, spines of hind tibia shorter than diameter of tibia.

**Colouration.** Body blackish brown. Basal half of endocorium paler brown, narrow transverse fascia along hind margin of pronotum, apex of scutellum and corial spots stramineous. Corium with tiny transverse arched pale stripe posteriad of clavus close to apical margin and with large subapical pale spot reaching apical margin. Subapical spot nearly trapezoidal, on costal margin subapical spot at least 2 times longer than dark apical part. Membrane dark (Fig. 6), with tiny spot at apex of corium, pale colourations of veins not connected to each other nor to the large pale apical spot (having straight basal margin). Antennal segment I brown, II–III light brown with dark brown apices, IV blackish brown with basal third stramineous. Legs: femora blackish brown, mid and hind femora pale in basal half, tibiae stramineous, only extreme apex brown, tarsi brown, segment I stramineous.

**Measurements** (in mm). Body length: 7.97–8.68. Head length: 1.44–1.66, width: 1.31–1.37, interocular space: 0.60–0.64. Pronotum length: 1.44–1.62, width: 1.86–2.02. Scutellum length: 1.22–1.24, width: 0.93–1.02, length of claval commissure: 2.25–2.45. Lengths of antennal segments: I 1.22, II 2.51, III 1.88, IV 2.85. Length of labium: 2.98–3.12, labial segments: I 1.02, II 0.97–1.11, III 0.66, IV 0.33.

**Differential diagnosis.** Labium longer than that of previous species, reaching mid coxae. Body slightly longer and darker. Subapical spot of corium larger. Membrane with extensively pale veins. Colouration of antennae and legs also different. Antennal segment III relatively short, about 1.6 times longer than I; 0.67 times shorter than IV (*T. prolixicornis*: III: I 1.9–2.1; ratio III : IV 0.75–0.82).

**Etymology.** The species is named after Dr. Dávid Rédei, the excellent Hungarian heteropterologist, who is despite his young age a very significant and productive researcher of this order, and has been of great help in our work in linguistic and taxonomic matters, too.

**Distribution.** Indonesia: Mentawai Islands (Siberut Island).

### *Tachytatus celebensis* sp. nov.

(Figs 4, 9, 12–14)

**Type material.** HOLOTYPE: ♂, INDONESIA: ‘Sulawesi Utara, / Dumoga-Bone N.P. / June 1985 // tray 3 // Fog 13 / 230m, 11. vii. 85 / BMNH Plot A, // R. Ent. Soc. Lond. / Project Wallace / B.M. 1985-10 // (label with red margin) Holotypus (hw): ‘*T. celebensis* sp. nov. / Varga et Kondorosy, 2013’ (BMNH). PARATYPES: INDONESIA: SULAWESI: same locality as holotype, tray 103, Fog 12, 230 m, 5.V.85, BMNH Plot A, Utara, (1 ♂); same locality as holotype, Utara, May 1985, at light, E. Ent. Soc. London, Project Wallace, B. M. 1985-10, Clark’s Camp 1140m J.H. Martin Coll. // (label with red margin) Paratypus (hw): ‘*T. celebensis* sp. nov. / Varga et Kondorosy, 2013’ (1 ♀); same locality as holotype / May 1985 // tray 92 // Fog 12 / 230 m, 5.v.85 / BMNH Plot A // (label with red margin) Paratypus (hw): ‘*T. celebensis* sp. nov. / Varga et Kondorosy, 2013’ (1 ♂); tray 52, Fog 13, 230m, 11.vii. 85, BMNH Plot A // (label with red margin) Paratypus (hw): ‘*T. celebensis* sp. nov. / Varga et Kondorosy, 2013’ (1 ♂); same locality as holotype, 14-21. February 1985 // Rothamsted light / trap, site 1, / 200 m. H. Barlow // (label with red margin) Paratypus (hw): ‘*T. celebensis* sp. nov. / Varga et Kondorosy, 2013’ (1 ♂) (all BMNH); Sulawesi Utara / Domoga [sic!] Bone N.P., / 0°35’N, 123°52’E / 492 m, 5. ix. 1985. / A. H. Kirk-Spriggs // Light trap / sample / forest // NMW Indonesia / Expedition 1985 / (Project Wallace) / NMW.Z. 1985. 078 // (red marginated label) Paratypus (hw): ‘*T. celebensis* sp. nov. / Varga et Kondorosy, 2013’ (1 ♀, NMWC).

**Description.** Labium reaching mid coxae. Fore femur with three (sometimes four) spines and long hairs. Hind tibia with hairs and fine spines; hairs shorter than spines, spines shorter than diameter of tibiae. Male pygophore: see Fig. 14; paramere: see Figs 12–13.

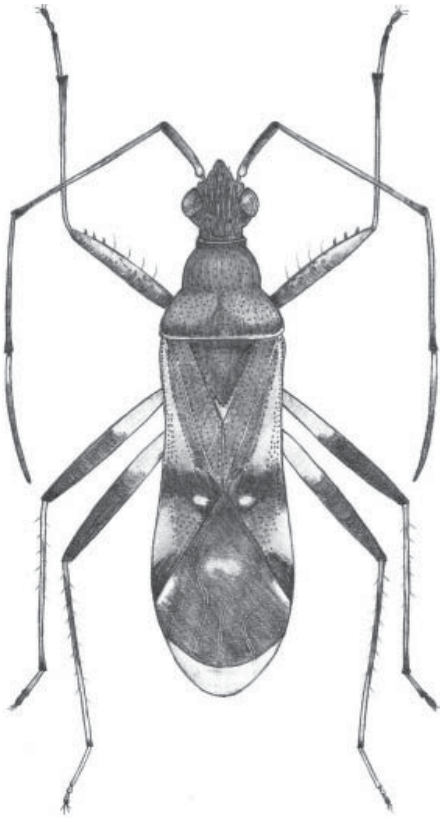


Fig. 9. *Tachytatus celebensis* sp. nov., paratype, female (Orig. K. Varga).

of claval commissure: 2.25–2.37. Lengths of antennal segments: I 0.87–1.10, II 2.65–2.77, III 2.12–2.20, IV 2.45–2.54. Length of labium: 2.89–3.24, labial segments: I 0.88–1.00, II 0.91–1.00, III 0.66–0.77, IV 0.44–0.47.

**Differential diagnosis.** The labium of *T. celebensis* sp. nov. is longer than that of *T. prolixicornis*. Fore femur is armed with at least three spines in contrast to both previous species. Scutellar margin is pale in apical half (other species have only the scutellar apex pale). Colouration of antenna and corium is similar to that of *T. redeii* sp. nov. except for the shorter pale part of segment IV. The membrane is darker, having only two pale stripes in its basal half and a large apical crescent-shaped spot. Hind tibiae bicolourous, while previous species have unicolorous pale or brown hind tibiae. Ratio of antennal segments rather similar to *T. prolixicornis*, strongly different from *T. redeii* (III : I 2.0–2.3; III : IV 0.8–0.9).

**Etymology.** The species is named after the distribution of the type series in Celebes Island.

**Distribution.** Indonesia: Sulawesi.

**Colouration.** Body blackish brown (Fig. 9). Narrow fascia along hind margin of pronotum, apex of scutellum (sometimes also posterior half of lateral margin of scutellum) and basal half of endocorium pale stramineous. Corium with tiny transverse arched pale stripe behind clavus close to apical margin and with large subapical pale spot continuing in darker pruinose part which reaches apical margin. Pale part of subapical spot nearly triangular, on costal margin at least 2 times longer than dark apical part. Membrane dark (Fig. 4), with two small spots (at apex of corium and a transverse one at level of hind border of subapical corial spot) and large apical whitish crescent spot. Antennal segment I dark brown, segments II–III pale brown, apically darker, segment IV blackish brown, basal 1/5–1/4 white. Fore femur blackish brown, inner part apically pale, mid and hind femora basally white, apically dark brown (with dark brown streak on basal part), fore and mid tibiae dark in variable extension, hind tibia with about basal 2/3 dark and pale stramineous apex, tarsi white, apical segment blackish.

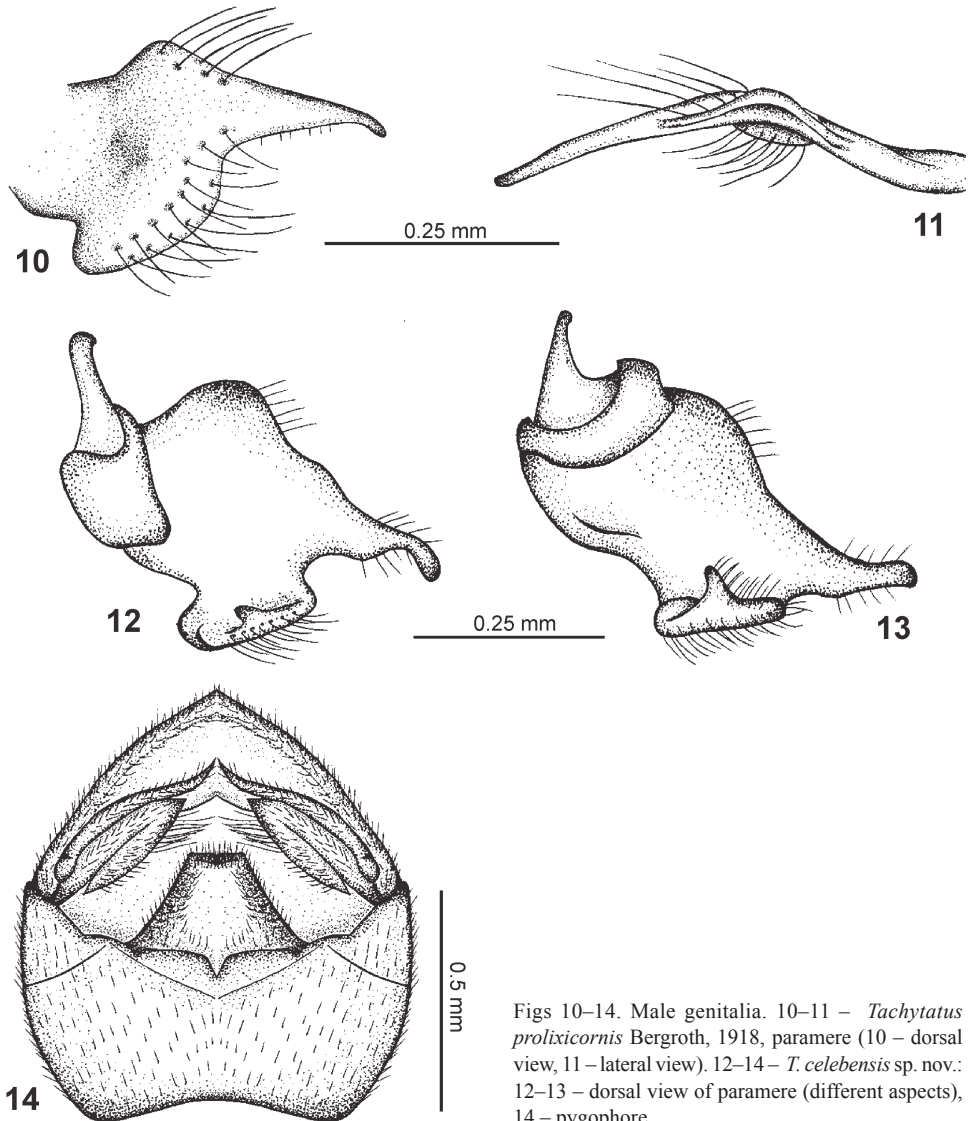
**Measurements** (in mm). Body length: 7.82–8.11. Head length: 1.32–1.34, width: 1.29–1.34, interocular space: 0.55–0.62. Pronotum length: 1.48–1.52, width 1.95–2.00. Scutellum length: 1.25–1.36, width: 1.95–1.10, length

*Tachytatus longirostris* sp. nov.

(Figs 7–8)

**Type material.** HOLOTYPE: ♀, INDONESIA: 'Sulawesi Utara / G. Mogogonipa / summit, 1008m. (back side hw) 21. V. 1985 // at light // R. Ent. Soc. Lond. / Project Wallace / B.M. 1985-10 (back side hw) J.H. Martin / coll. // (red marginated label) Holotypus (hw): 'T. longirostris sp. nov. / Varga et Kondorosy, 2013' (BMNH).

**Description.** Head covered with conspicuous silvery hairs. Fore femur with two or three spines and some long hairs. Scutellum with hardly visible short hairs only. Hind tibiae with short inconspicuous hairs, spines longer than hairs but shorter than diameter of tibiae. Labi-



Figs 10–14. Male genitalia. 10–11 – *Tachytatus prolixicornis* Bergroth, 1918, paramere (10 – dorsal view, 11 – lateral view). 12–14 – *T. celebensis* sp. nov.: 12–13 – dorsal view of paramere (different aspects), 14 – pygophore.



um much longer than half of body, reaching abdominal segment V, apex of segment I far surpassing anterior margin of prosternum.

**Colouration.** Body stramineous (Figs 7–8). Head, anterior half of pronotum, scutellum and thoracic sternum reddish brown. Scutellum apically and on posterior half of lateral margin white. Clavus and corium stramineous with brown punctures, small claval spot at apex of scutellum, indistinctly limited transverse band at apex of clavus (including tiny transverse arched pale stripe) and extreme apex of corium brown (pale part on costal margin at least 4 times longer than dark apex). Membrane brown, with stramineous streak reaching from base of costal margin to third vein at one third of inner margin, apex extensively pale with straight basal margin. Antennal segment I brown, segments II–III stramineous, apically dark brown, basal half of segment IV white, apical half dark brown. Legs: femora stramineous, basal half of mid and hind ones white; tibiae pale stramineous, fore tibiae on apex brown, tarsi white, apical segment(s) brown.

**Measurements** (in mm). Body length: 8.20. Head length: 1.28, width: 1.31, interocular space: 0.68. Pronotum length: 1.51, width: 2.02. Scutellum length: 1.48, width: 0.93, length of claval commissure: 2.57. Lengths of antennal segments: I 0.88, II 2.34, III 2.00, IV 2.33. Length of labium: 5.85, labial segments I 1.55, II 1.64, III 2.00, IV 0.66.

**Differential diagnosis.** The greatly elongate labium (reaching abdominal segment V) is diagnostic for this species; labium of all other species does not surpass mid coxae. Body stramineous, contrary to the other known species which are much darker. Antennal segment IV with basal half white (all other species have much shorter white ring). Membrane with broad pale stripe and large apical pale spot, the other species have smaller pale spots and darker membrane.

**Etymology.** The species epithet is a Latin adjective, *longirostris* (= having long rostrum), because its labium is much longer than in any other known species of the genus.

**Distribution.** Indonesia: Sulawesi.

### Key to the species of *Tachytatus* Bergroth, 1918

- 1 Labium long, reaching abdominal segment V. Body stramineous. Antennal segment IV with basal half white. .... *T. longirostris* sp. nov.
- Labium not reaching base of abdomen, body dark, last antennal segment mostly dark. .... 2
- 2 Labium reaching mid coxae. Subapical spot of corium large, at least 2 times longer than dark apex. Apex of antennal segment II dark ..... 3
- Labium short, not surpassing middle of prosternum. Subapical spot of corium smaller, at most 1.5 times longer than dark apex. Apex of antennal segment II with very short pale annulus. .... *T. prolixicornis* Bergroth, 1918
- 3 Fore femur with 3–4 spines. Apical half of margin of scutellum pale. Membrane dark, with two pale stripes in basal half and a large apical crescent-shaped spot. Hind tibiae bicolorous. Antennal segment III relatively long (2.0–2.3 times longer than I, 0.8–0.9 times shorter than IV). .... *T. celebensis* sp. nov.
- Fore femur with 2 spines. Only apex of scutellum pale. Membrane with extensively pale veins and a large apical spot with straight basal margin. Hind tibiae pale. Antennal segment III relatively short (1.66 times longer than I and 0.67 times shorter than IV). .... *T. redeii* sp. nov.

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