ACTA ENTOMOLOGICA MUSEI NATIONALIS PRAGAE
Published 15.vii.2013 Volume 53(1), pp. 339–346 ISSN 0374-1036

Two new species of *Lophoteles* including the first record of this genus in the Oriental Region (Diptera: Stratiomyidae)

Rudolf ROZKOŠNÝ

Department of Botany and Zoology, Faculty of Science, Masaryk University, Kotlářská 2, CZ-611 37 Brno, Czech Republic; e-mail: rozk@sci.muni.cz

Abstract. Two new species of the pachygastrine genus *Lophoteles* Loew, 1858 are described: *L. brevispinus* sp. nov. from the Philippines (Luzon) and *L. longispinus* sp. nov. from Papua New Guinea (Bismarck Archipelago). The first of them represents the first record of this genus in the Oriental Region whereas the other species are known exclusively from the Australasian Region (10 spp.) or Afrotropical and Australasian Regions (*Lophoteles plumula* Loew, 1858). Both new species were compared with *Lonchegaster armata* White, 1914, the type species of the Australasian genus *Lonchegaster* White, 1914, characterized by a similar strong apical spine on the scutellum as both new species of *Lophoteles*.

Key words. Diptera, Stratiomyidae, Pachygastrinae, *Lonchegaster*, *Lophoteles*, new species, Philippines, Papua New Guinea, Bismarck Archipelago

Introduction

Recently, during a study of unidentified Pachygastrinae in several institutions, two new species of *Lophoteles* Loew, 1858 were found, both considerably differing from all the other described species of the genus by having a conspicuous apical spine on the scutellum. The genus *Lophoteles* is distributed almost exclusively in the Australasian Region.

Lophoteles plumula Loew, 1858, the type species of *Lophoteles*, was described from the Marshall Islands and now it is known from the Afrotropical Region (Comoro Islands, Madagascar, Seychelles) and Australasian Region (Belau, Marshall Islands, Micronesia, Northern Marianas and Papua New Guinea). *Lophoteles plumula* was redescribed by Kertész (1914), who added the description of a further species, *L. fascipennis* Kertész, 1914 from Papua New Guinea and doubted Enderlein's (1914) record of "*L. plumula*" from Costa Rica (now known to be *Cosmaromyia argyrostictica* Kertész, 1914). *Lophoteles vittipennis* (Lindner, 1937) was described from Bougainville Island and the Solomon Islands (Lindner 1937), *L. dentata* James,

1948 again from the Solomon Islands (James 1948), and *L. cheesmanae* James, 1950 from Vanuatu (James 1950). Later on, James (1977) described additional 6 species from Papua New Guinea. Summed up, a recent list of the species of *Lophoteles* includes 11 species from which only *L. plumula* has been found also out of the Australasian Region (Woodley 2001).

James (1977) proposed a key for 8 species of *Lophoteles* from New Guinea and the Bismarck Archipelago. The reliable distinguishing characters of additional three species, *Lophoteles vittipennis*, *L. dentata* and *L. cheesmanae* are still not sufficiently known. A complete revision of *Lophoteles* species is thus needed.

Material and methods

Material examined (including material used for a comparison) is deposited in the following institutions:

BMNH Department of Entomology, The Natural History Museum, London, United Kingdom;
BPBM Department of Natural Sciences, Bernice P. Bishop Museum, Honolulu, Hawaii, USA;
FSMU Faculty of Sciences, Masaryk University, Brno, Czech Republic;
ZMUC University of Copenhagen, Zoological Museum, Copenhagen, Denmark.

Comparative material:

Lonchegaster armata White, 1914, male syntype labelled: 'Lonchegaster armata / Tasmania Mangalore 15.12.1911 / Purchased G. H. White 3.7.1917 – 104 / Syntype Lonchegaster armata White det. J. E. Chainey 1982' (BMNH).

Lophoteles plumula: 2 ♀♀, Papua New Guinea, Bismarck Archipelago, Dyual I., Sumuna, 9.iii.1962, Noona Dan Expedition 1961–1962 (ZMUC).

Lophoteles fascipennis: 10 ♂♂ 19 ♀♀, Papua New Guinea, Madang Province, Wannang village, 5°15′S, 145°16′E, 2.v.–12.vii. 2008, V. Novotný & R. Čtvrtečka lgt. (FSMU).

The morphological terms used follow Cumming & Wood (2009).

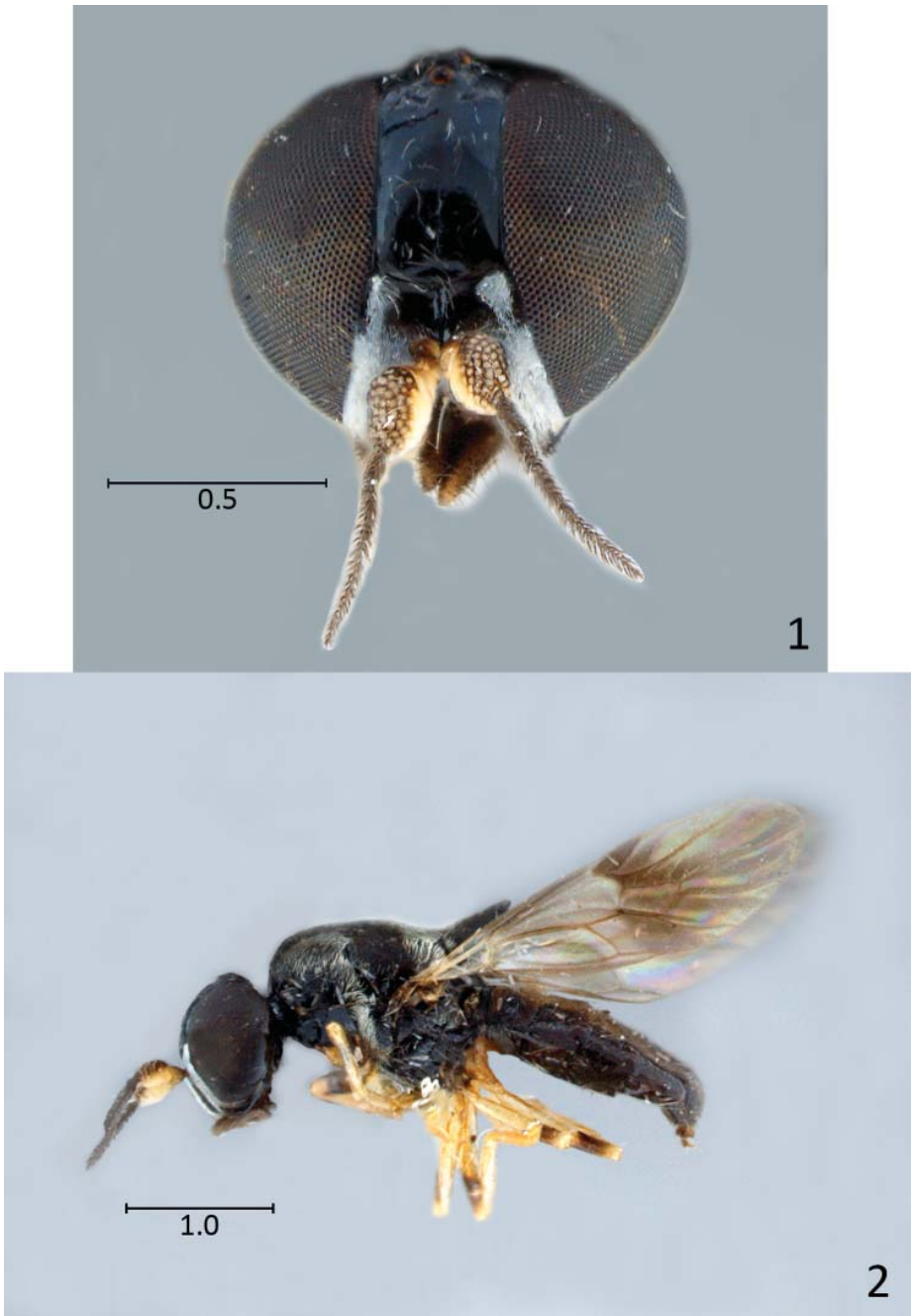
Results

Lophoteles Loew, 1858

Lophoteles Loew, 1858: 110. Type species: *Lophoteles plumula* Loew, 1858, by original designation.

Lophoteles is represented by relatively small, dark species reaching the length up to 4.5 mm. Within the subfamily Pachygastrinae they may be characterised by the following complex of characters: (1) antennal arista densely and relatively long plumose, (2) swollen basal part of flagellum forming with pedicel a short oval or round complex, (3) scutellum margined with small cornicles, in two species projecting into short or long apical spine, (4) vein R_{2+3} starting well before crossvein r-m, (5) vein R_4 present, (6) abdomen much longer than wide, slightly dilated toward the end of tergite 4. The male terminalia have not been illustrated by previous authors and cannot be examined here because only the females or damaged males of the new species were available.

Lophoteles is especially similar to the Australasian *Saldubella* Kertész, 1916 with 17 species but both genera may be well distinguished by the shape of the basal thickened part of the flagellum (elongate oval and well separated from the scape in *Saldubella*) and the relative length of the plumose arista (usually longer in *Saldubella*) (cf. James 1977).



Figs 1–2. *Lophoteles brevispinus* sp. nov., female head in frontal view (1) and female in lateral view (2).

Figs 3–4. *Lophoteles longispinus* sp. nov., female in lateral (3) and dorsal view (4).

Lophoteles brevispinus sp. nov.

(Figs 1–2)

Type locality. Philippines, Luzon, Mt. Isarog.
Type material. Holotype: ♀, PHILIPPINES, Luzon, Camarines Sur, Mt. Isarog, Pili, 800 m, 1.v.1965, H. M. Torrevillas lgt. (BPBM). Paratypes: 2 ♀♀, the same locality label as the holotype, both in BPBM.

Diagnosis. Head relatively narrow in profile (Fig. 2). Anterior part of thorax not tapered in lateral view (Fig. 2), scutellum in same plane as scutum, at most slightly turned up, apical projection of scutellum shorter than scutellum in middle. Wing streak with diffuse margins. Tibiae and basitarsi of all legs yellow, hind tibia not thickened.

Description. ***Female*** (holotype): Length: body 3.8 mm (without antenna), wing 3.5 mm. *Head* (Fig. 1) 1.7 times higher than long in profile and almost twice broader than long in dorsal view. Ocellar triangle distinctly prominent in profile, face, gena and lower postocular area only very narrow in same view. Frontal vitta about 4.5 times narrower than width of head in dorsal view, almost parallel-sided, shining black but with angulate, silverish white hair spots at eye margin just above antennae. Frontal spots narrowly fused with whitish facial stripes being of same width in upper part. Face densely whitish tomentose except narrow longitudinal median triangle. Antenna inserted slightly below middle of frons in profile, yellow, but scape and upper half of basal thickened flagellomeres brownish and arista black plumose. Scape and pedicel of same length, pedicel and basal four flagellomeres forming short oval complex. Darkened part of this complex with series of pale yellow sensory pits. Pedicel projecting on outer as well as inner side into a subtriangular lobe at base of flagellar complex. Densely plumose last flagellomere only slightly longer than rest of antenna.

Thorax mostly black and shining, only extreme top of postpronotal callus with reddish brown coloration. Anterior part of scutum strongly arched in lateral view, not gradually tapered (Fig. 2). Thoracic pile mostly dark, brownish black and appressed but contrastingly white and slightly longer in prescutellar area. Prealar semi-circular prominence small but distinct. Pleural hairs whitish, scattered and inconspicuous but anepisternum with broad vertical hair band from snow white semi-appressed hairs continuing with similar hair patch in posterior corner of notopleural area. White hair patch on laterotergite less conspicuous. Scutellum with apical projection reaching about half length of scutellum in middle. Scutellum including apical projection slightly upturned above plane of scutum. Lateral margin of scutellum including apical projection with short and apically setose cornicles arranged in 1–2 rows. Wing almost hyaline, with broad but diffuse, slightly brownish transverse streak from brown stigma to posterior wing margin. Halter yellowish brown, basal part of knob more darkened. Legs predominantly yellow, dark brown pattern confined to fore femur (except both ends) and broad preapical bands on mid and hind femora.

Abdomen black, about 1.5 times as long as broad, with maximum width at posterior margin of tergite 4. Abdominal pile inconspicuous, mostly brownish, short and appressed.

Male. Unknown.

Variability. Both female paratypes are slightly larger (body 4.0 and 4.5 mm, wing 3.5 and 3.8 mm) than the holotype. Slight differences were found also in the extent of dark areas on flagellomeres and intensity of darkening of the transverse wing band.

Etymology. The specific name refers to the relatively short (= *brevis* in Latin) apical projection (= *spina* in Latin) on the scutellum; adjective.

Distribution. Only known from the Philippines (Luzon).

Lophoteles longispinus **sp. nov.**

(Figs 3–4)

Type locality. Papua New Guinea, New Britain, Valoka.

Type material. Holotype: ♀, PAPUA NEW GUINEA, New Britain, Valoka, caught in Malaise trap, 7.vii.1962, Noona Dan Expedition, 1961–1962 (ZMUC). Paratypes: 1 ♂ 1 ♀, PAPUA NEW GUINEA, Bismarck Archipelago, Dyaul Island, Sumuna, 6.iii.1962, Noona Dan Expedition, 1961–1962 (ZMUC). Male paratype with missing abdomen and female paratype without head.

Diagnosis. Head more rounded in profile than in preceding species (Fig. 3). Anterior part of thorax tapered in lateral view (Fig. 3), apical spine on scutellum stout, as long as scutellum, nearly perpendicular to plane of scutum. Legs predominantly brownish, only mid tibiae and tarsi, and last three tarsomeres of hind tarsi contrastingly pale yellow, hind tibia thickened except for base. Wing band well defined with more contrasting lateral margins.

Description. ***Female*** (holotype). Length: body 4.5 mm, wing 3.2 mm. *Head* more rounded than in preceding species, only 1.4 times higher than long in profile and about 1.6 times broader than long in dorsal view. Eye facets uniform, not enlarged in upper part of eyes. Eyes separated by relatively broad frons occupying slightly more than ¼ of head width in dorsal view. Ocellar triangle only slightly prominent in lateral view, vertex beyond it unusually long, about as long as ocellar triangle. Postocular area and gena narrow but visible in profile. Frons shining black, with a pair of whitish tomentose spots at eye margin above antennae. Face deeply emarginate, with short whitish hairs being denser along eye margin. Gena and postgena with narrow whitish hair stripe along eye margin. Antenna yellowish, arista densely black plumose. Pedicel and thickened basal four flagellomeres shaped as almost round complex, this brownish in upper half, yellow sensory pits large, arranged in transverse rows.

Thorax narrowed anteriorly in profile, anterior part of scutum in same plane as pronotum. Scutum black and densely punctate, postpronotal callus reddish brown. Surface pile very short and appressed, mixed from reddish brown and whitish hairs, more white in presutural and prescutellar areas, somewhat longer and almost exclusively white on pleura. Scutellum with long apical spine reaching the length of scutellum in middle. Scutellum almost upright, angle with level of scutum 90–100°. Lower lateral margin of scutellum and its spine bordered by a row of small setose cornicles. Vertical band of dense short whitish hairs on anepisternum less defined than in preceding species. Wing with brownish transverse band from brown stigma to posterior wing margin. Halter yellow, slightly darkened about middle. Legs with femora brownish, also fore and hind tibiae and basitarsi brown, whereas mid tibia and tarsi are contrastingly pale yellow. Compared with preceding species, hind tibia thickened, in middle about twice as thick as hind basitarsus.

Abdomen reddish brown, distinctly clavate, markedly dilated in area of segment 4, only 1.2 times longer than its maximum width. Abdominal pile inconspicous, whitish, short and appressed, denser at base and disc of abdomen. Whitish hairs on venter slightly longer, more distinct on central area.

Male (paratype). Length: body 4.5 mm, wing 3.3 mm. *Head* almost round in profile, only slightly higher than long and about 1.6 times broader than long in dorsal view. Eyes contiguous in long distance, facets in upper two thirds contrastingly large. Ocellar triangle prominent in lateral view, shifted anteriorly and vertex beyond it about as long as ocellar triangle. Upper frons in front of anterior ocellus very small, almost indistinct. Lower frons subtriangular, densely covered with snow white appressed hairs, only narrow mid line more blackish. White pile continuing along eye margin also on face. Face deeply emarginate, shortly white. Gena and postocular area indistinct in lateral view. Antenna with black and densely plumose arista, arista nearly twice as long as rest of antenna. Basal antennal complex as in female, its darkening less contrasting but dense pale sensory pits distinct.

Thorax tapered toward head as in female, anterior part of presutural area of scutum nearly

in same plane as pronotum. Postpronotal callus and narrow subnotopleural line yellowish brown, postalar callus partly brownish. Thoracic pile short, white and mostly appressed, longer on pleura except bare area of anepisternum. Scutellum with long terminal spine as in female but not as upright, angle between prescutellar area and scutellum greater than 90°. Wing and legs as in female including thickened hind tibia.

Abdomen missing.

Variability. All the type specimens demonstrate well the diagnostc characters of *P. longispinus* sp. nov., the hind tibia is thickened in both sexes. The head of the male paratype, with contiguous eyes, is almost round in profile, only slightly higher than long. Further intraspecific variability was not recorded.

Etymology. The name refers to the long apical spine on the scutellum; adjective.

Distribution. All the type specimens were collected in Papua New Guinea, holotype in New Britain and paratypes in Bismarck Archipelago, Dyaul Island, in common with *Lophoteles plumula*; see James (1977) and comparative material.

Discussion

Both species described here differ from all the known species of *Lophoteles* by having a conspicuous apical spine on the scutellum. Such spine is not rare in different genera of Pachygastrinae throughout the world; e.g., a similar moderately long apical spine was also described in *Lonchegaster* White, 1914, including *L. armata* White, 1914, from Tasmania and *L. decumbens* Hardy, 1933, from Queensland in Australia. The syntypes of *Lonchegaster armata* are deposited in BMNH and one male was examined recently (see Material and methods). Examination confirmed that *Lonchegaster* represents a separate, distinctly different genus with a more rounded head in profile, the disc-shaped flagellum bearing a nearly bare arista, and the almost rounded abdomen. A stout apical spine on the scutellum is almost as long as in *Lophoteles longispinus* sp. nov. though not upright (or nearly so) but lying in an almost horizontal plane. The marginal setose cornicles on the scutellum are not developed. Apparently, the occurrence of such a similar structure on the scutellum in both genera is only a case of homoplasy rather than evidence of a close relationship.

Acknowledgements

My thanks are due to the colleagues who provided material for this study, i.e., N. L. Evenhuis and K. Arakaki (Honolulu), Erica McAlister (London) and T. Pape (Copenhagen). M. Hauser (Sacramento) prepared excellent photo documentation and N. E. Woodley (Washington) generously checked the first version.

References

CUMMING J. M. & WOOD D. M. 2009: Adult morphology and terminology. Pp. 2–50. In: BROWN B. v., BORKENT A., CUMMING J. M., WOOD D. M., WOODLEY N. E. & ZUMBADO M. A. (eds): *Manual of Central American Diptera I.* National Research Press, Ottawa, 714 pp.

ENDERLEIN G. 1914: Dipterologische Studien VIII. Zur Kenntnis der Stratiomyiiden-Unterfamilien mit 2ästigen Media. Pachygasterinae, Lophotelinae und Prosopochrysinae. *Zoologischer Anzeiger* **43(7)**: 289–315.

HARDY G. H. 1933: Miscellaneous notes on Australian Diptera. I. *Proceedings of the Linnean Society of New South Wales* **58(5–6)**: 408–420.

JAMES M. T. 1948: Flies of the family Stratiomyidae of the Solomon Islands. *Proceedings of the United States National Museum* **98**: 187–213.

JAMES M. T. 1950: The Stratiomyidae (Diptera) of New Caledonia and the New Hebrides with notes on the Solomon Islands forms. *Journal of the Washington Academy of Science* **40(8)**: 248–260.

JAMES M. T. 1977: The genera Saldubella and Lophoteles in New Guinea and the Bismarck Archipelago (Diptera, Stratiomyidae, Pachygastrinae). *Pacific Insects* **17(2–3)**: 301–318.

KERTÉSZ K. 1914: Vorarbeiten zu einer Monographie der Notacanthen XXIII–XXXV. *Annales Historico-Naturales Musei Nationalis Hungarici* **12(2)**: 449–557.

KERTÉSZ K. 1916: Vorarbeiten zu einer Monographie der Notacanthen XXXVI–XXXVIII. *Annales Historico-Naturales Musei Nationalis Hungarici* **14(1)**: 123–218.

LINDNER E. 1937: Indoaustralische Stratiomyiiden (Diptera). *Annals and Magazine of Natural History*, *Series* 10, **20**: 370–394.

LOEW H. 1858: Ueber einige neue Fliegengattungen. *Berliner Entomologische Zeitschrift* **2(2)**: 101–122.

WHITE A. 1914: The Diptera-Brachycera of Tasmania. Part I. Families Leptidae, Stratiomyidae, Nemestrinidae & Cyrtidae. *Royal Society of Tasmania: Papers and Proceedings* **1914**: 35–74.

WOODLEY N. E. 2001: A world Catalog of the Stratiomyidae (Insecta: Diptera). *Myia* **11**: (8) + 475 pp.