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Three new Leleupidiini from Sarawak

(Coleoptera, Carabidae, Zuphiinae)

By Martin BAEHR

Abstract

Three new species of the Zuphiine genus *Colasidia* BASILEWSKY: *C. angusticollis* sp. n., *C. taylora* sp. n., and *C. brevicornis* sp. n. are described, all from rain forest litter near Kuching, Sarawak. These are the first representatives of the tribe from the Indonesian Archipelago.

Introduction

While checking the unidentified Carabid material of the Australian National insect Collection, Canberra, I discovered three specimens of Leleupidiini, all from the same locality in Sarawak, North Borneo, which apparently represent three new species.

Leleupidiini, firstly described by BASILEWSKY (1951) from Africa, are hitherto very rare in the Indo-Australian region. The first species to be detected there was *Gunvorita elegans* LANDIN, 1955 from Nepal, later on five other species were described from Asia: *Gunvorita indica* DARLINGTON, 1968 and *Gunvorita martensi* Casale, 1985, both from Nepal, *Colasidia malayica* BASILEWSKY, 1954, from Singapore, *Paraleleupidia besucheti* MATEU, 1981 and *Paraleleupidia loebli* MATEU, 1981, both from southern India. From the Australian region DARLINGTON (1971) described two species from New Guinea (*Colasidia papua* and *Colasidia madang*), and BAEHR (1987) one species from northern Australia (*Colasidia monteithi*).

Due to more scrutinized collecting methods it is to be expected that in future the number of species as well as their accurate range will be much better known. Indeed, the one species from Australia (BAEHR 1987), as well as the three species to be described herein have been collected by Berlese extraction from rain forest litter, a habitat, in which certainly several other new species may be expected.

Measurements

Measurements were made under a stereomicroscope using an ocular micrometer. Length has been measured from tip of labrum to apex of elytra, length of head to anterior border of "neck".

Characters

Best characters for separating the species is form of ♂ aedeagus, especially of its apex, as well as shape of pronotum and of head and its appendages. In other respects, the species are rather similar.

Genus *Colasidia* BASILEWSKY

BASILEWSKY 1954, p. 215, fig. 1

DARLINGTON 1971, p. 332, figs 82, 83

MATEU 1981, p. 722, fig. 6

BAEHR 1987, p. 136, fig. 1

Type species: *Colasidia malayica* BASILEWSKY, 1954

On behalf of several character states (e. g. short, moniliform antennae, long mental tooth, coarse puncturation of surface) all three species belong apparently to the Indo-australian genus *Colasidia* BASILEWSKY. It should be noted, however, that the whole tribe Leleupidiini should be revised on the generic level, because the generic concept is rather weak. In future some genera are likely to be included in others as merely subgenera.

Key to species of genus *Colasidia* BASILEWSKY

For the benefit of the reader all known species of *Colasidia* are included in the following key, also those from New Guinea and Australia. Apart from *C. malayica* BASILEWSKY which I know from description only, I have seen the types of all other species.

- | | |
|--|--------------------------------|
| 1. Head parallel or even wider across eyes than across orbits. Posterior part of head strongly rounded | 2 |
| – Head decidedly wider at posterior border or orbits than across eyes. Posterior part of head less rounded, more square | 3 |
| 2. Pronotum wider, c. 0.9 × as wide as long, prebasal sinuosity shorter. 1 antennal segment short, not much longer than 3rd, 3rd segment only slightly longer than 4th. Eyes slightly smaller. New Guinea | C. <i>papua</i> DARLINGTON |
| – Pronotum narrow, c. 0.8 × as wide as long, prebasal sinuosity elongate. Antennae longer, 1st segment c. 1.5 × as long as 3rd, 3rd segment perceptibly longer than 4th. Eyes slightly longer. Sarawak | C. <i>angusticollis</i> sp. n. |
| 3. Eyes very small, at most 1/4 of length of orbits | 4 |
| – Eyes larger, c. half of length of orbits | 6 |
| 4. Head decidedly trapezoidal, as wide as pronotum. Posterior angles only feebly rounded off. Elytral puncturation rather weak. Singapore | C. <i>malayica</i> BASILEWSKY |
| – Head less trapezoidal, narrower than pronotum. Posterior angles somewhat rounded off. Elytral puncturation coarse | 5 |
| 5. Elytra short and wide, c. 2 × as wide as pronotum. Pronotum short, c. as wide as long (0.95 ×). Ratio length/width of head less than 1.75. New Guinea | C. <i>madang</i> DARLINGTON |
| – Elytra elongate, narrow, 1.75 × as wide as pronotum. Pronotum decidedly narrower than long (0.85 ×). Head elongate, ratio length/width over 2. Northern Queensland, Australia. | C. <i>monteithi</i> BAEHR |
| 6. Larger and wider species (c. 4.8 mm long). Pronotum wide, (ratio width/length c. 1). Head wide and short, feebly widened to posterior border (ratio length/width c. 1.4). Antennae longer, 3rd segment decidedly longer than 4th. ♂ aedeagus hooked at apex. Sarawak | C. <i>taylori</i> sp. n. |
| – Smaller and narrower species (c. 4 mm long). Pronotum narrower (ratio width/length c. 0.9). Head longer, narrower, remarkably widened to posterior border (ratio length/width more than 1.5). Antennae short, 3rd segment barely longer than 4th. ♂ aedeagus upturned at apex. Sarawak | C. <i>brevicornis</i> sp. n. |

Colasidia angusticollis sp. n.

(Figs 1, 4, 7, 10)

Holotype: ♂, Sarawak, Semengoh For. Reserve, 11 mi. SW. Kuching, 28.–31.V.1968. Leafmould berleseate RWT – 68.196, rainforest (ANIC, Canberra).

Diagnosis

Narrow, dark species with large eyes, parallel, posteriorly rounded head, and narrow, elongately sinuate prothorax with slightly projecting anterior angles.

Description

Measurements: Length: 4.1 mm; width of elytra: 1.4 mm; ratio length/width of head: 1.61; ratio width/length of pronotum: 0.8; ratio widest part/base of pronotum: 1.61; ratio width of head/width of pronotum: 0.84; ratio length/width of elytra: 1.52.

Colour: Dorsal surface dark piceous, head yet slightly darker. Labrum, antennae, mouthparts, and legs testaceous, 1st–3rd antennal segments slightly infuscate. Ventral surface of head and prothorax piceous, of abdomen reddish-piceous, posterior border of last abdominal segment and epipleurae yellowish.

Head: Eyes large, almost half as long as orbits. Orbits almost parallel, thus head not widened behind eyes. Posterior border of head widely rounded and rather oblique. Labrum anteriorly slightly excised, mandibles short. Last segment of maxillary palpus narrow, elongate, last segment of labial palpus large, elongate, rather bean-shaped with convex borders. Tooth of mentum triangular, acute, slightly shorter than lateral lobes. Labium truncate. Paraglossae slightly surpassing labium. Antennae rather elongate, almost surpassing middle of pronotum. 1st segment elongate, almost as long as 2nd and 3rd segments together. 3rd segment decidedly longer than 2nd and even 4th segments, terminal segments moniliform. Surface coarsely punctate and hirsute, nitid.

Prothorax: Evidently wider than head, narrow, elongate. Apex slightly excised, anterior angles rounded, but slightly projecting. Lateral borders moderately convex, with shallow, though elongate sinuation in front of posterior angles which are tiny, though strongly projecting denticles. Basal lobe short. Anterior lateral seta at 1st quarter, at widest part of pronotum. Dorsal surface convex with rather shallow prebasal sulcus. Median line inconspicuous. Surface coarsely and fairly densely punctate, hirsute, nitid. Epipleurae smooth, except for some punctures near anterior border.

Elytrae: Fairly wide, much wider than prothorax, rather parallel. Shoulders rounded, though slightly produced, reaching to about posterior angles of pronotum. Sides not much convex, apex rather straight. Surface coarsely punctate in position of striae and strongly hirsute, highly nitid.

Abdomen: Punctate and with rather short, irregular pilosity. Last abdominal segment of ♂ bisetose.

Legs: ♂ anterior tarsus not expanded nor clothed on lower surface.

♂ genitalia: Aedeagus elongate, lower surface straight, apex barely upturned. Internal sac strongly folded and partly sclerotized. For parameres see fig. 10.

♀: Unknown.

Distribution: Sarawak. Known only from type locality.

Habits: Collected in Berlese sample from leaf mould in rainforest.

Colasidia taylori sp. n.

(Figs 2, 5, 8, 11)

Holotype: ♂, Sarawak, Semengoh For. Reserve, 11 mi. SW. Kuching, 28.–31.V.1968, leafmould berleseate, RWT – 68.198, rainforest (ANIC, Canberra).

Diagnosis

Rather large, wide species with large eyes, wide, heart-shaped pronotum, short, posteriorly slightly widened head, and apically hooked aedeagus.

Description

Measurements: Length: 4.8 mm; width of elytra: 1.7 mm; ratio length/width of head: 1.42; ratio width/length of pronotum: 1; ratio widest part/base of pronotum: 1.58; ratio width of head/width of pronotum: 0.76; ratio length/width of elytra: 1.49.

Colour: Dark piceous, head and pronotum almost black. Labrum, mouthparts, legs, and antennae yellowish, 1st–3rd segments of antenna slightly infuscate. Lower surface piceous, abdomen slightly lighter than forebody, posterior border of last abdominal segment yellow, epipleurae dark reddish.

Head: Eyes large, c. half as long as orbits. Head short and wide, slightly enlarged behind eyes. Posterior angles rounded, though posterior border almost rectangular. Labrum anteriorly slightly excised. Mandibles short. Maxillary palpus narrow, elongate, last segment elongate. Terminal segment of labial palpus large, rather rectangular. Tooth of mentum quadrate, apex excised, slightly shorter than lateral lobes. Labium apically rather truncate, paraglossae slightly surpassing labium. Antennae fairly elongate, surpassing middle of prothorax. 1st segment slightly shorter than 2nd and 3rd segments together. 3rd segment elongate, c. 1.5× as long as 2nd or 4th segments. Terminal segments moniliform. Surface of head coarsely, but rather sparsely punctate, hirsute, nitid.

Prothorax: Wide, short, strongly heart-shaped, considerably wider than head. Apex slightly excised, anterior angles widely rounded off, not projecting. Lateral borders anteriorly strongly convex, rather deeply sinuate in front of the almost rectangular, not much projecting posterior angles. Base wide, distance from posterior angles to basal lobe wide, oblique. Basal lobe very short. Anterior lateral seta at 1st quarter, shortly in front of widest part of pronotum. Dorsal surface moderately depressed, median line distinct, prebasal sulcus distinct. Surface very coarsely punctate, hirsute, nitid. Epipleurae smooth, except for some punctures near anterior border.

Elytrae: Rather short and wide. Shoulders widely rounded, not projecting. Lateral borders not much convex, fairly parallel. Apex slightly oblique. Surface convex, nitid, coarsely punctate and hirsute at position of striae.

Abdomen: Ventral surface punctate with short, hirsute pilosity. Last abdominal sternite of ♂ bisetose.

Legs: ♂ anterior tarsus not enlarged nor clothed on ventral surface.

♂ genitalia: Aedeagus on upper and lower surface sinuate. Apex hooked. Internal sac folded, with areas of sclerotized teeth and a strong tooth in upper part of orificium. Parameres see fig. 11.

♀: Unknown.

Distribution: Sarawak. Known only from type locality.

Habits: Collected by Berlese sampling from leaf mould in rainforest.

Colasidia brevicornis sp. n.

(Figs 3, 6, 9, 12)

Holotype: ♂, Sarawak, Semengoh For. Reserve, 11 mi. SW. Kuching, 2.–3.VII.1968, rainforest berleseate, R. W. TAYLOR acc. 68.781 (ANIC, Canberra).

Diagnosis

Rather small, convex species with large eyes, posteriorly considerably widened head, short antennae, and apically upturned aedeagus.

Description

Measurements: Length: 3.95 mm; width of elytra: 1.3 mm; rathio length/width of head: 1.51; ratio width/length of pronotum: 0.88; ratio widest part/base of pronotum; ratio width of head/width of pronotum: 0.84; ratio length/width of elytra: 1.52.

Colour: Reddish to light brown. Labrum, mouthparts, legs, and antennae testaceous. Ventral surface reddish, abdomen basally slightly lighter. Apical border of last abdominal sternite yellow. Epipleurae light reddish.

Head: Eyes large, c. half as long as orbits. Head fairly wide, considerably enlarged behind eyes. Posterior angles rounded, though posterior border almost rectangular, transverse. Labrum anteriorly slightly excised, mandibles short. Maxillary palpus narrow, elongate, though terminal segment shorter than in other species. Terminal segment of labial palpus large, rectangular. Tooth of mentum slightly triangular, though apex rather blunt. Labium apically truncate, paraglossae slightly surpassing labium. Antennae short, moniliform, attaining 1st third of prothorax. Basal segment comparatively short, considerably shorter than 2nd and 3rd segments together. 3rd segment short, not much longer than 4th segment. Surface very coarsely, but sparsely punctate, hirsute, nitid.

Pronotum: Moderately wide, slightly heart-shaped, wider than long and considerably wider than head. Surface rather convex. Anterior angles obliquely rounded, not at all projecting, apex barely excised. Lateral borders anteriorly fairly convex, deeply sinuate in front of posterior angles which are small, projecting denticles. Basal lobe short, wide, lateral parts of base adjacent to posterior angles very short. Anterior lateral seta at 1st quarter, just in front of widest part of pronotum. Median line superficial, prebasal sulcus distinct. Lateral channel narrow and shallow. Surface coarsely punctate, hirsute, nitid. Epipleurae smooth, except for some punctures near anterior border.

Elytrae: Rather wide, dorsally convex, laterally evenly rounded. Shoulders rounded, not projecting. Apex transverse. Surface coarsely punctate and hirsute on position of striae, nitid.

Abdomen: Lower surface punctate and with short, hirsute pilosity. Last abdominal segment of ♂ bisetose.

Legs: ♂ anterior tarsus not enlarged nor clothed on lower surface.

♂ genitalia: Aedeagus with lower surface convex, apex elongate and strongly upturned. Internal sac strongly folded and partly sclerotized. Parameres see fig. 12.

♀: Unknown.

Distribution: Sarawak. Known only from type locality.

Habits: Collected by Berlese sampling in rainforest.

Relationships

As the ♂ genitalia of all other described *Colasidia* species are so far unknown, few can be said on the relationships of the three new species. With respect to ♂ genitalia, *C. taylori* exhibits perhaps the most apomorphic character state, whereas *C. angusticollis* seems most generalized. Generally, all three species are perhaps less evolved than at least the Australian *C. monteithi*, which confirms what I supposed on the relationships in my earlier paper (BAEHR 1987). At a general level, any considerations on relationships and biogeographic history of the Leleupidiini in the Indo-australian region must await better knowledge of the actual number of species and their real distribution, which can be achieved by use of such specialized methods like sieving und Berlese extraction of rainforest litter in far more areas.

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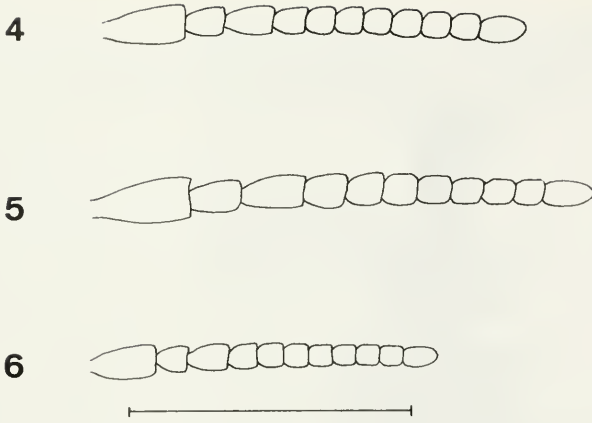
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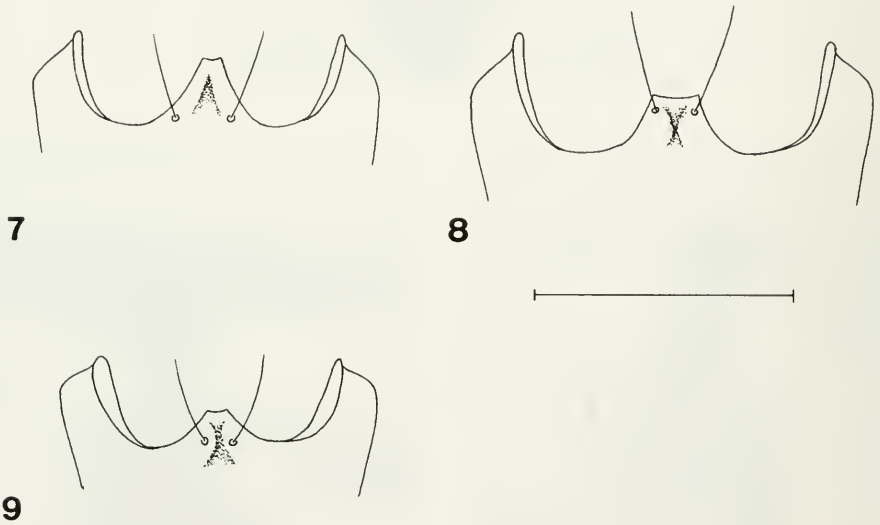
Address of author:
Dr. Martin BAEHR
Zoologische Staatssammlung
Münchhausenstr. 21
D-8000 München 60



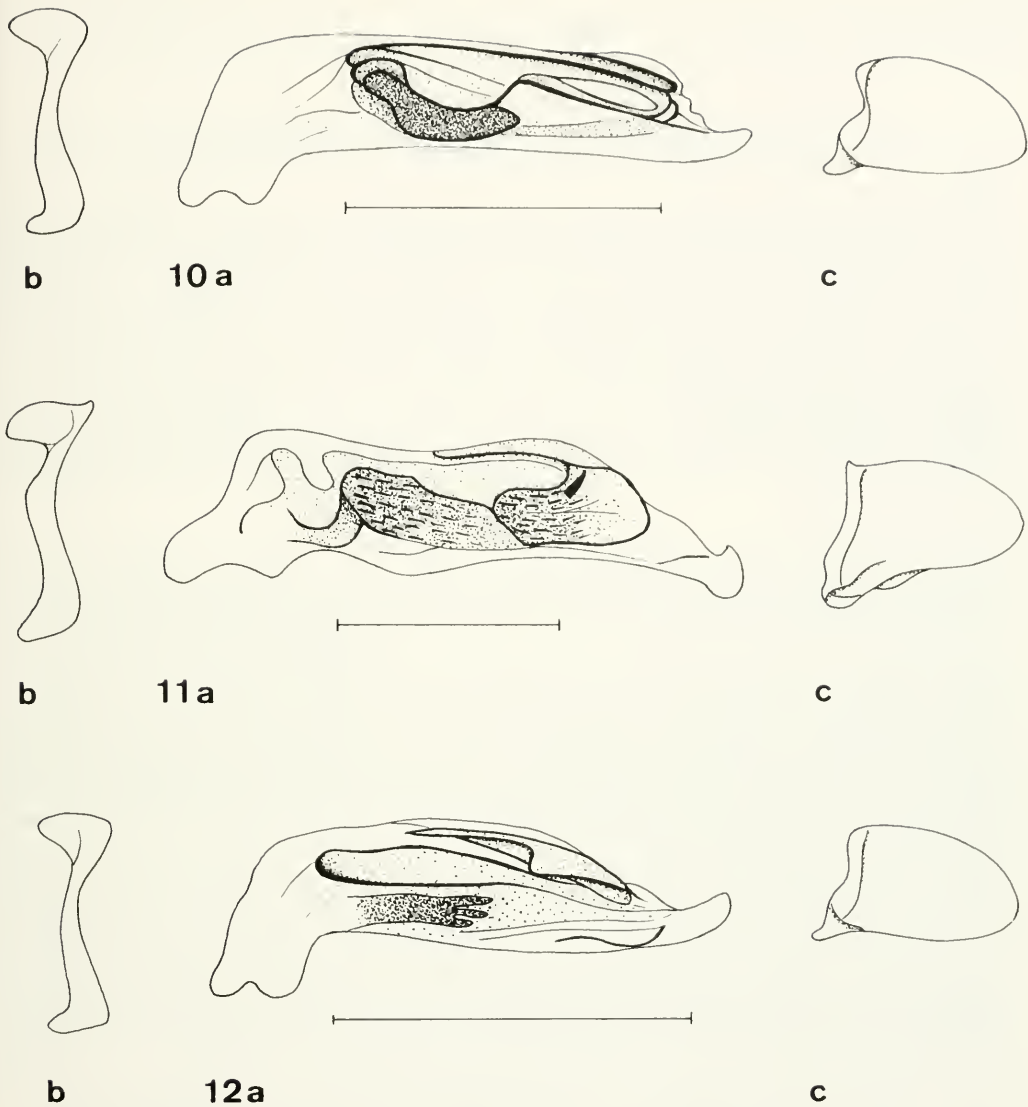
Fig. 1: *Colasidia angusticollis* sp. n., ♂ holotype. Scale: 1 mm.
Fig. 2: *Colasidia taylori* sp. n., ♂ holotype. Scale: 1 mm.
Fig. 3: *Colasidia brevicornis* sp. n., ♂ holotype. Scale: 1 mm.



Figs 4–6: Antennae. 4: *Colasidia angusticollis* sp. n.; 5: *C. taylori* sp. n.; 6: *C. brevicornis* sp. n. Scale: 1 mm.



Figs 7–9: Mentum. 7: *Colasidia angusticollis* sp. n.; 8: *C. taylori* sp. n.; 9: *C. brevicornis* sp. n. Scale: 0.25 mm.



Figs 10–12: ♂ genitalia. a. aedeagus; b. right paramere; c. left paramere. 10: *Colasidia angusticollis* sp. n.; 11: *C. taylori* sp. n.; 12: *C. brevicornis* sp. n. Scale 0.5 mm.

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