

On the status and systematic position of the genera *Falsolucidota* Pic, 1921 and *Macrolycinella* Pic, 1922, with notes on *Lopheros* LeConte, 1881 (Coleoptera: Lycidae)

О статусе и систематическом положении родов *Falsolucidota* Pic, 1921 и *Macrolycinella* Pic, 1922, с замечаниями по *Lopheros* LeConte, 1881 (Coleoptera: Lycidae)

Sergey V. Kazantsev
С.В. Казанцев

Donetskaya 13–326, Moscow 109651, Russia. E-mail: kazantss@mail.ru
Россия, 109651 Москва, ул. Донецкая 13–326.

KEY WORDS: Coleoptera, Lycidae, new species, synonymy, taxonomy, Palaearctic, Neotropical, Papuan regions.

КЛЮЧЕВЫЕ СЛОВА: Coleoptera, Lycidae, новые виды, синонимия, таксономия, Палеарктика, Неотропическая, Папуасская области.

ABSTRACT. Three new species, *Macrolycinella dichroma*, *M. bicoloricollis* and *M. bicoloripennis* **spp.n.**, are described from Mexico. The genus *Hemiconderis* Kleine, 1926 **syn.n.** is synonymized with *Falsolucidota* Pic, 1921. *Macrolycinella* Pic, 1922 is re-described, excluded from Calopterini and tentatively placed in Dictyopterini. *Falsolucidota testaceicollis* Pic, 1921 and *Macrolycinella bicolor* Pic, 1922, the type species of, respectively, *Falsolucidota* and *Macrolycinella*, are illustrated. *Aplatopterus* Reitter, 1911 **nom.rev.** is revaluated and *Aplatopterus rubens* (Gyllenhal, 1817), **comb.n.** is transferred from *Lopheros* LeConte, 1881 to *Aplatopterus*. The status of *Eulopheros* Kazantsev, 1995, **stat.n.**, is raised to the genus level. The placement of the genera *Lopheros*, *Aplatopterus* and *Eulopheros* in Erotini is questioned. A key to species of *Macrolycinella* is provided.

РЕЗЮМЕ. Из Мексики описываются три новых вида, *Macrolycinella dichroma*, *M. bicoloricollis* и *M. bicoloripennis* **spp.n.** Род *Hemiconderis* Kleine, 1926 **syn.n.** сводится в синонимы к *Falsolucidota* Pic, 1921. Приводится переописание рода *Macrolycinella* Pic, 1922, который исключается из Calopterini и в предварительном порядке включается в Dictyopterini. Приводятся иллюстрации *Falsolucidota testaceicollis* Pic, 1921 и *Macrolycinella bicolor* Pic, 1922, типовых видов *Falsolucidota* и *Macrolycinella*, соответственно. *Aplatopterus* Reitter, 1911 **nom.rev.** восстанавливается из синонимии, а *Aplatopterus rubens* (Gyllenhal, 1817), **comb.n.** переносится из *Lopheros* LeConte, 1881 в *Aplatopterus*. Повышается статус *Eulopheros*

Kazantsev, 1995, **stat.n.** до родового уровня. Подвергается сомнению принадлежность родов *Lopheros*, *Aplatopterus* и *Eulopheros* трибе Erotini. Приводится определительная таблица видов *Macrolycinella*.

Introduction

The monotypic genus *Falsolucidota* Pic, 1921 with its only species, *F. testaceicollis* Pic, 1921, described from “Roon” (an islet just off Wandammen Peninsula in Irian Jaya, New Guinea) [Pic, 1921–1922], was included in the Lycidae part of the Coleopterorum Catalogus in Cladophorini (now Metriorrhynchini) [Kleine, 1933] and left in Metriorrhynchinae incertae sedis following a revision of this lineage of net-winged beetles [Bocák, 2002].

The also monotypic *Macrolycinella* Pic, 1922 erected to accommodate *M. bicolor* Pic, 1922 from Mexico [Pic, 1921–1922], was placed among the Calopterini by Kleine [1933] and treated as a calopterine taxon by consequent authors [e.g., Blackwelder, 1945; Bocáková, 2003].

Syntypes of the type species of these two genera were found in the Pic collection at the Musée National d’Histoire naturelle à Paris. As these species were introduced without nominating holotypes or mentioning the unicity of specimens, lectotypes are designated for them, in accordance with Article 74 and Recommendation 73F of the International Code of Zoological Nomenclature. The study of the lectotypes demonstrated that *Falsolucidota* is indeed a Metriorrhynchinae taxon, synonymous with *Hemiconderis* Kleine, 1926 **syn.n.**, whereas *Macrolycinella* in fact does not belong in Calopterini.

The following abbreviations are used in this paper: MNHN — Musée National d'Histoire naturelle, Paris; ICM — Insect Center, Moscow.

Material and Methods

For examination specimens, or their copulatory organs, after extraction, were cleared for several hours in room temperature KOH. The cleared material was then placed in microvials with glycerin.

The redescription of *Macrolycinella* is partly based on a KOH treated paratype of *M. dichroma* sp.n., as only one specimen, the Lectotype, of *M. bicolor* Pic, 1922, the type species of the genus, was available, on the one hand, and the external morphological differences between these two taxa appeared to be minimal, on the other. Characters of female genital and abdominal structures were taken from *M. bicoloripennis* sp.n., the only *Macrolycinella* taxon where females have been discovered.

Taxonomy

Falsolucidota Pic, 1921

Falsolucidota Pic, 1921: 9.

Type species: *Falsolucidota testaceicollis* Pic, 1922.

Hemiconderis Kleine, 1926 **syn.n.** Type species: *Hemiconderis explicatus* Kleine, 1926.

DIAGNOSIS. *Falsolucidota* is readily differentiated from other Metriorrhynchinae genera by the characters given for *Hemiconderis* [Bocák, 2002].

DISTRIBUTION. Confined to New Guinea.

REMARKS. *Falsolucidota testaceicollis*, the lectotype of which has been studied, is very close and undoubtedly congeneric with *Hemiconderis explicatus*. As the two species are the type species of *Falsolucidota* and *Hemiconderis*, respectively, *Hemiconderis* Kleine, 1926 becomes a junior synonym of *Falsolucidota* Pic, 1921, described five years earlier.

Falsolucidota testaceicollis Pic, 1921

Figs 1–2

Falsolucidota testaceicollis Pic, 1921: 9.

MATERIAL: Lectotype, hereby designated, ♂, “Roon” (printed label), “*Falsolucidota* n.g. *testaceicollis* n.sp.” (Pic’s manuscript label) (MNHN).

DIAGNOSIS. *F. testaceicollis* is most similar to *F. explicatus*, differing by the black scutellum and somewhat more robust proximal portion of the median lobe of the aedeagus (Figs 1–2).

Macrolycinella Pic, 1922

Macrolycinella Pic, 1922: 21.

Type species: *Macrolycinella bicolor* Pic, 1922.

REDESCRIPTION. Alate, elongate. Head transverse, slightly narrowed behind eyes, with clear cuticle. Fastigium ca 85°. Tentorium represented by posterior pits and vertical narrow, almost straight ventral arms attaining to ca. three fifths of head height. Eyes relatively small, spherical. Labrum small, transverse, sclerotized, almost completely exposed.

Mandibles small, evenly curved. Maxillary palps relatively small, 4-segmented, with ultimate palpomere almost parallel-sided, glabrous and flattened distally. Labium consisting of small paired mentum, non-paired prementum and a pair of small 3-segmented palps; ultimate labial palpomere widened and flattened. Gula absent. Antennal prominence inconspicuous, antennal sockets separated by lamina constituting ca. one third of socket width; subantennal and coronal sutures absent. Antenna 11-segmented, moderately long, filiform, with antennomere 2 small, much shorter than antennomere 3; antennomeres 4–11 with short sub-erect pubescence.

Pronotum transverse, ca. 7 times shorter than elytra, with median carina in anterior half, roundish areola in posterior half and obscure lateral carinae; posterior angles small, but acute, anterior angles rounded (Figs 3, 6, 10). Prosternum narrow, V-shaped. Mesothoracic spiracles very short. Mesoventrite transverse, without median suture, separated from mesepisternum by triangular sclerite; mesepimeron conspicuously shorter and narrower than mesepisternum. Mesonotum with scutellum not attaining to anterior margin, mesoscutal halves not divided; scutellum with relatively short postnotal plate, rounded at apex. Elytra long, glabrous, nearly parallel-sided, with four primary costae; interstices with double rows of irregular, mostly elongate cells; pubescence uniform, relatively dense, short and semi-erect. Metanotum transverse, widening anteriorly, with almost straight and subequal in length to allocrista scuto-scutellar ridge; prescutum with short median suture; intrascutal suture small, emerging at distal fourth of scutum; scutellum almost straight posteriorly, with median suture; postnotal plate transverse, oval, without median suture. Metaventrite elongate, with blunt posterior angles; discrimen (metasternal suture) attaining to three fourths. Metendosternite elongate, with minute lateral arms; median and transverse sutures present. Metathoracic wing with elongate anal and wedge cells; wedge cell closed with perpendicular vein; Cu veins merged to M; cu-a brace connecting Cu₂ and A₁ slightly below Cu veins branching point.

Pro- and mesotrochantins subequal in size. Procoxae strongly transverse; mesocoxae subquadrate; metacoxae widely separated. Pro-, meso- and metatrochanters subequal in size and length. Legs moderately long and narrow; trochanters slightly triangular, about twice as short as metacoxae, connected to femora distally; tibiae straight, tibial spurs only slightly longer than adjacent pubescence; tarsi narrow, tarsomeres 3 and 4 with small distal plantar pads; all claws simple. Abdominal spiracles dorsal, located on sternite near its edge.

Male. Spiculum gastrale short and relatively broad (Fig. 7). Aedeagus symmetric, with elongate straight median lobe and short separate parameres; phallobase elongate, with conspicuous median suture (Figs 4–5, 8–9, 11).

Female. Terminal sternite with narrow, moderately long spiculum ventrale (Fig. 12). External genitalia with free narrow valvifers, free sclerotized coxites, median sclerite and long styli; internal genitalia with a pair of accessory glands and moderately long spiral seminal duct (Fig. 13).

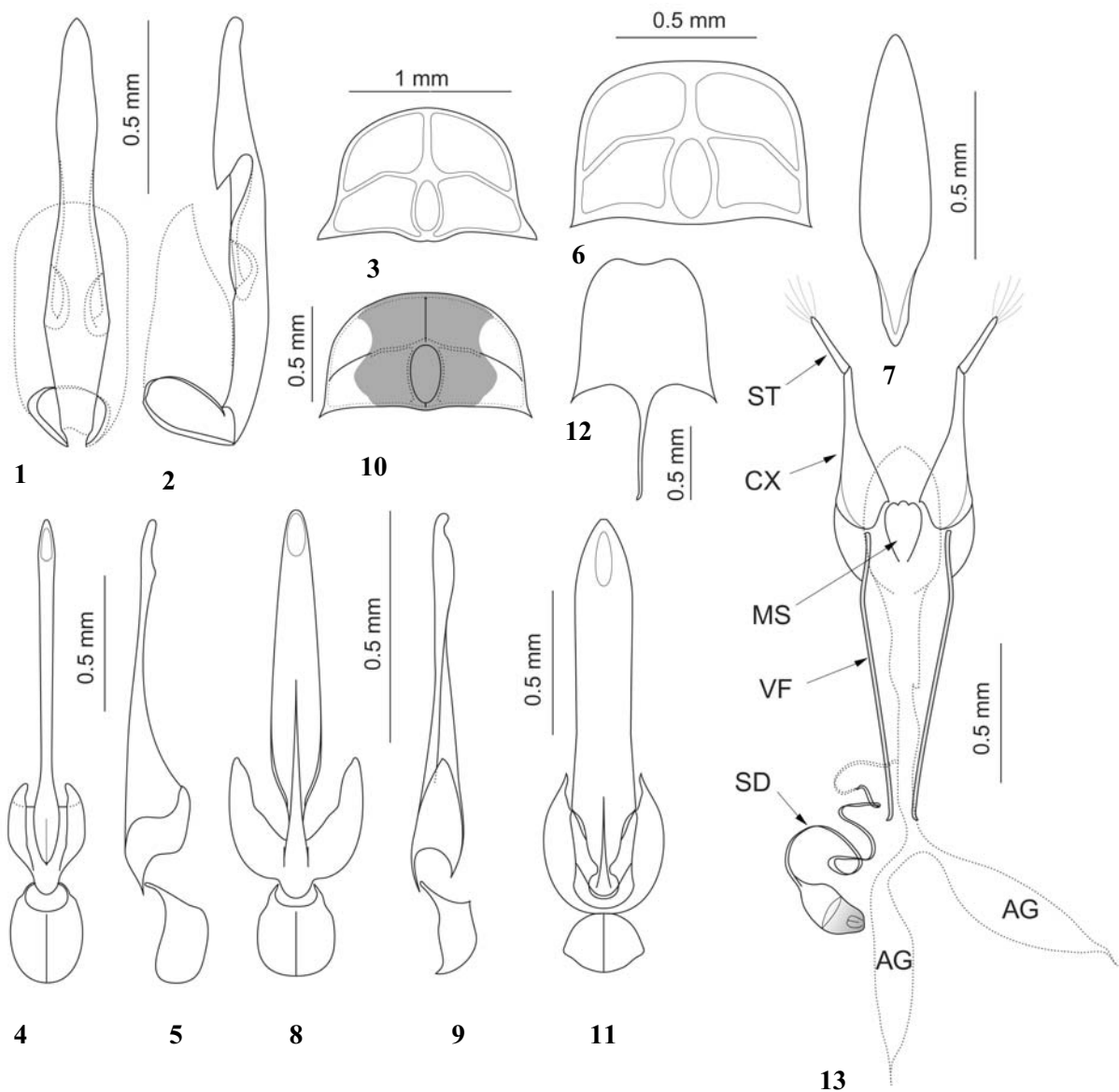
DIAGNOSIS. *Macrolycinella* is readily differentiated from all calopterine genera by the cephalic, labial, thoracic and abdominal structures, which effectively excludes it from Calopterini. However, the genus cannot be attributed with certainty to any of the other tribes, occupying somewhat intermediate position between Platerotini*, Erotini,

* The basis in the genitive (and in all other oblique cases) of the Greek word “Eros”, the second part of the genus name *Plateros*, is Erot-, which is also illustrated by the name of such famous Ancient Greek festival, as Erotia, or Erotidia, celebrated in the city of Thespians in honour of god Eros. It is this basis that, in accordance with the ICZN (4th edition), is to be used for suprageneric names. Therefore, the correct spelling of the tribe derived from *Plateros* would be “Platerotini” (and not “Platerodini”), same as “Erotini” derived from the genus name *Eros*.

Conderini and, perhaps, Dictyopterini. Thus, being rather similar in the male genital armature to platerotine genera *Falsocalleros* Pic, 1933 (= *Pseudoplateros* Green, 1951) and *Neoplateros* Kazantsev, 2006 (Figs 4–5, 8–9, 11), it is readily differentiated from both of them by the presence of pronotal areole and lateral carinae (Figs 3, 6, 10). The aedeagus of *Macrolycinella* is also similar to that of *Eropterus trilineatus* (Melsheimer, 1846), the type species of the erotine genus *Eropterus* Green, 1951, but the pronotal

areole and female abdominal sternites distinguish it either. On the other hand, *Macrolycinella* resembles *Conderis* Waterhouse, 1879, of the tribe Conderini, due to the similar pronotal structure, differing by the very different type of male and female genitalia.

A cladistic analysis (carried out below) showed that *Macrolycinella* has more affinities with Dictyopterini where, pending a more comprehensive and representative study, it is tentatively placed.



Figs 1–13. Details of *Falsolucidota* and *Macrolycinella* spp.: 1–2 — *F. testaceicollis*; 3–5 — *M. bicolor*; 6–9 — *M. dichroma* sp.n.; 10–11 — *M. bicoloricollis* sp.n.; 12–13 — *M. bicoloripennis* sp.n.; 1–5 — lectotypes, males; 6–11 — holotypes, males; 12–13 — holotype, female; 3, 6, 10 — pronotum; 7 — terminal male ventrite / sternite 9; 1–2, 4–5, 8–9, 11 — aedeagus; 12 — terminal female ventrite / sternite 8; 13 — female genitalia; 1, 3, 6, 10 — dorsal view; 4, 7, 8, 11–13 — ventral view; 2, 5, 9 — lateral view; AG — accessory gland; CX — coxite; MS — median sclerite; SD — seminal duct; ST — stylus; VF — valvifer.

Рис. 1–13. Детали строения *Falsolucidota* и *Macrolycinella* spp.: 1–2 — *F. testaceicollis*; 3–5 — *M. bicolor*; 6–9 — *M. dichroma* sp.n.; 10–11 — *M. bicoloricollis* sp.n.; 12–13 — *M. bicoloripennis* sp.n.; 1–5 — лектотипы, самцы; 6–11 — голотипы, самцы; 12–13 — голотип, самка; 3, 6, 10 — переднеспинка; 7 — верхний вентрит (стернит 9) самца; 1–2, 4–5, 8–9, 11 — эдеагус; 12 — верхний вентрит (стернит 8) самки; 13 — женские гениталии; 1, 3, 6, 10 — сверху; 4, 7, 8, 11–13 — снизу; 2, 5, 9 — сбоку; AG — придаточная железа; CX — коксит; MS — медиальный склерит; SD — семенной проток; ST — грифель; VF — вальвифер.

Macrolycinella bicolor Pic, 1922

Figs 3–5

Macrolycinella bicolor Pic, 1922: 21.

MATERIAL: Lectotype, hereby designated, ♂, “Jalapa, Mexico, F. Schneider” (printed label), “*Macrolycinella* n.g. *bicolor* n.sp.” (Pic’s manuscript labels) (MNHN).

DIAGNOSIS. *M. bicolor* is easily differentiated from congenics by the combination of coloration, with testaceous orange pronotum and black elytra, and narrow median lobe of the aedeagus (Figs 4–5).

Macrolycinella dichroma Kazantsev, sp.n.

Figs 6–9

MATERIAL: Holotype, ♂, Mexico, 25 km SW Col Victoria, Madrono, oak-palm forest, 1000 m, 4.XII.2001, Gasparyan leg. (ICM), paratypes, 3 ♂♂, same label (ICM).

DESCRIPTION. **Male.** Black; pronotum orange testaceous.

Eyes small, interocular distance ca. 5 times greater than eye radius. Antennae attaining to elytral two thirds, with antennomere 3 4.4 times longer than antennomere 2 and subequal in length to antennomere 4.

Pronotum transverse, ca. 1.4 times as wide as long, slightly bisinuate basally, almost straight anteriorly, with almost parallel sides and rounded anterior and small acute posterior angles (Fig. 6). Scutellum slightly narrowing distally, truncate at apex.

Elytra long, 3.4 times as long as wide at humeri, parallel-sided; interstices with very irregular rows of cells.

Aedeagus with relatively broad oval median lobe (Figs 8–9).

Female. Unknown.

Length: 4.5–4.6 mm. Width (humeral): 1.1–1.15 mm.

ETYMOLOGY. The name is derived from the Greek for “two colours”, alluding to the orange-and-black coloration of the new species.

DIAGNOSIS. *M. dichroma* sp.n. differs from *M. bicolor* of similar coloration pattern by the smaller size, smaller eyes and broader median lobe of the aedeagus (Figs 8–9).

Macrolycinella bicoloricollis Kazantsev, sp.n.

Figs 10–11

MATERIAL: Holotype, ♂, Mexico, El Cielo, San Jose, 15 km E Gomes Farrias, 1400 m, 14.XI.1998, Gasparyan leg. (ICM).

DESCRIPTION. **Male.** Black; sides of pronotum and elytral humeri ochre.

Eyes small, interocular distance ca. 2.5 times greater than eye radius. Antennae attaining to elytral five sixths, with antennomere 3 3.0 times longer than antennomere 2 and ca. 1.4 times shorter than antennomere 4.

Pronotum transverse, ca. 1.6 times as wide as long, bisinuate basally, convex anteriorly, with rounded anterior and small acute posterior angles (Fig. 10). Scutellum elongate, parallel-sided.

Elytra long, 3.5 times as long as wide at humeri, widest in distal fifth.

Aedeagus with broad almost parallel-sided median lobe (Fig. 11).

Female. Unknown.

Length: 6.1 mm. Width (humeral): 1.5 mm.

ETYMOLOGY. The name of the new species is derived from the Latin for “with bicoloured thorax”, alluding to the ochre-and-black coloration of its pronotum.

DIAGNOSIS. *M. bicoloricollis* sp.n. differs from all congenics by the bicoloured pronotum (Fig. 10) and broad median lobe of the aedeagus (Fig. 11).

Macrolycinella bicoloripennis Kazantsev, sp.n.

Figs 12–13

MATERIAL: Holotype, ♀, Mexico, Veracruz prov., N of Jalapa, XI.1998 (ICM).

DESCRIPTION. **Female.** Dark brown; pronotum except at proximal fifth medially and elytral humeri ochre.

Eyes small, interocular distance ca. 2.7 times greater than eye radius. Antennae attaining to elytral two thirds, with antennomere 3 3.0 times longer than antennomere 2 and ca. 1.1 times shorter than antennomere 4.

Pronotum transverse, ca. 1.6 times as wide as long, bisinuate basally, convex anteriorly, with rounded anterior and acute posterior angles. Scutellum elongate, parallel-sided, medially emarginate.

Elytra long, 3.2 times as long as wide at humeri, widest behind middle.

Terminal ventrite (sternite 8) subquadrate, emarginate distally; spiculum ventrale about two thirds sternite length (Fig. 12). External genitalia with almost straight narrow valvifers, valvifers ca. twice as long as coxites; median sclerite elongate, heart-shaped, distally trident (Fig. 13).

Male. Unknown.

Length: 6.9 mm. Width (humeral): 1.8 mm.

ETYMOLOGY. The name of the new species is derived from the Latin for “with bicoloured wings”, alluding to the ochre-and-black coloration of its elytra.

DIAGNOSIS. *M. bicoloripennis* sp.n. differs from the congenics by the combination of ochre pronotum and bicoloured elytra, black with ochre shoulders.

The four known *Macrolycinella* species may be distinguished by the key that follows.

KEY TO *MACROLYCINELLA* SPECIES

1. Elytra uniformly black 2
- Elytra bicoloured, black with ochre shoulders 3
2. Larger, over 6 mm. Aedeagus with narrow median lobe (Figs 4–5) *M. bicolor* Pic
- Smaller, less than 5 mm. Aedeagus with relatively wide median lobe (Figs 8–9) *M. dichroma* sp.n.
3. Pronotum uniformly ochre. External female genitalia with distally trident median sclerite (Fig. 13) *M. bicoloripennis* sp.n.
- Pronotum bicoloured, black with ochre sides (Fig. 10) Aedeagus with broad median lobe (Fig. 11) *M. bicoloricollis* sp.n.

Cladistic analysis

Being aware of the drawbacks of a numerical cladistic analysis [e.g., Kluge, 2000], I applied a cladistic method to help define position of *Macrolycinella*, as the genus seemed to share synapomorphies with several tribes of different lineages, at the same time displaying no apomorphic characters of its own.

For examination of characters both male and female specimens of each taxon were KOH cleared and preserved in glycerin or alcohol. Some characters were double-checked on non-KOH-cleared material. The following taxa were selected for the analysis:

Caenia kirschi Bourgeois, 1880, Calopterini
Calopteron reticulatum (Fabricius, 1775), Calopterini
Conderis signicollis (Kirsch, 1875), Conderini
Dictyoptera aurora (Herbst, 1784), Dictyopterini

- Eropterus trilineatus* (Melsheimer, 1846), Erotini
- Eros humeralis* (Fabricius, 1801), Erotini
- Lopheros (Lopheros) fraternus* (Randall, 1838), Erotini ?
- Lopheros (Lopheros) rubens* (Gyllenhal, 1817), Erotini ?
- Lopheros (Eulopheros) harmandi* (Bourgeois, 1902), Erotini ?
- Macrolycinella dichroma* **sp.n.** (characters of female genital and abdominal structures taken from *M. bicoloripennis* **sp.n.**).
- Plateros flavoscutellatus* Blatchley, 1914, Platerotini
- Platycis minuta* (Fabricius, 1787), Erotini
- Taphes brevicollis* Waterhouse, 1878, Taphini
- Xylobanellus erythropterus* (Baudi di Selve, 1871), Conderini

The following set of characters was used:

1. Ventral arms of tentorium: 0, vestigial; 1, not longer than third of head height; 2, longer than third of head height.
2. Dorsal tentorial spots: 0, present, 1, absent.
3. Coronal suture: 0, present, at least partial; 1, absent.
4. Gula: 0, absent; 1, present.
5. Fastigium: 0, acute; 1, more or less right-angled.
6. Pedicel: 0, longer or equal in length to antennomere 3; 1, shorter than antennomere 3, but elongate; 2, shorter than antennomere 3 and transverse.
7. Ultimate maxillary palpomere: 0, pointed, 1, distally flattened and more or less dilated.
8. Ultimate labial palpomere: 0, pointed, 1, distally flattened and more or less dilated.
9. Prementum: 0, divided into two separate sclerites; 1, single sclerite with median suture; 2, single sclerite without median suture.
10. Pronotum, median suture: 0, complete; 1, incomplete or absent.
11. Pronotum, lateral carinae: 0, present; 1, absent.
12. Pronotum, closed median cell in posterior half: 0, present; 1, absent.
13. Pronotum, fronto-lateral carinae: 0, merging anteriorly forming median cell; 1, parallel; 2, absent.
14. Mesoscutum, posterior process of scutellum: 0, vestigial, with considerable elytro-scutellar dehiscence; 1, functional, locking elytra when folded.
15. Metaventricle, mesosternal triangle: 0, apparent; 1, absent.
16. Metaventricle, discrimen (metasternal suture): 0, reaching anterior margin; 1, not reaching anterior margin.
17. Metendosternite, lateral arms: 0, directed upward; 1, directed downward.
18. Mesothoracic spiracles, orifice: 0, simple; 1, hooded dorsally.
19. Wing venation: wedge cell: 0, present; 1, absent.
20. Wing venation: cu-a brace: 0, located at Cu fork; 1, located distad of Cu fork.
21. Metacoxae, meral suture: 0, conspicuous; 1, vestigial or absent.
22. Tarsomere 1, plantar pad: 0, absent; 1, present.
23. Male paraproct (tergite 9), median suture: 0, present; 1, absent.
24. Male ultimate ventrite (sternite 9): 0, with short (not surpassing distal part of sternite in length) and broad proximal end; 1, with relatively long (surpassing distal part of sternite in length), but rather broad proximal process; 2, with long and narrow proximal process (spiculum gastrale).
25. Aedeagus, symmetry axes of phallobase and (the symmetrical portion of) median lobe: 0, coinciding; 1, not coinciding.
26. Aedeagus, phallobase: 0, without deep ventral incision; 1, without deep ventral incision.
27. Aedeagus, phallobase, median suture: 0, present; 1, absent.
28. Aedeagus, median lobe: 0, symmetric; 1, asymmetric.
29. Aedeagus, parameres: 0, free, not surpassing half length of median lobe; 1, free, considerably surpassing half length of median lobe; 2, vestigial or fused with median lobe.
30. Female ultimate sternite, proximally: 0, slightly convex; 1, with short median dent; 2, with conspicuous spiculum ventrale, but without lateral arms; 3, with long spiculum ventrale and lateral arms.
31. External female genitalia, valvifers: 0, separated from coxites; 1, fused with coxites.
32. External female genitalia, valvifers: 0, distally separated, median sclerite (sternite 10) present; 1, distally fused, but median suture present; 2, distally fused without median suture; 3, distally separated, median sclerite (sternite 10) absent.
33. External female genitalia, sternite 10: 0, paired sclerite; 1, single sclerite; 2, absent.

The character states were found to be distributed among the taxa in the following way:

	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	3	3	3	3		
<i>C. reticulatum</i>	2	0	0	0	1	2	1	1	0	0	1	1	2	0	1	0	1	0	1	1	0	1	1	0	0	0	0	0	0	0	2	2		
<i>C. kirschi</i>	2	0	0	0	1	2	1	1	1	0	1	1	2	0	1	1	0	1	1	1	1	1	1	0	0	0	0	0	0	0	2	2		
<i>C. signicollis</i>	1	0	1	0	1	2	1	1	2	1	0	0	2	1	1	1	1	1	1	1	1	1	0	1	0	1	0	0	1	1	0	1		
<i>D. aurora</i>	2	0	1	0	1	1	1	1	2	1	0	1	0	1	1	1	1	0	0	1	1	1	1	2	0	0	0	0	1	2	0	3	2	
<i>E. humeralis</i>	0	1	1	1	1	0	1	1	0	1	0	0	0	1	0	1	1	0	0	1	0	1	0	1	0	0	0	0	1	3	0	3	2	
<i>E. trilineatus</i>	2	1	1	0	1	1	1	1	2	0	0	1	2	1	1	1	1	0	1	1	0	1	1	1	0	0	0	1	3	0	0	0		
<i>E. harmandi</i>	2	1	1	0	1	1	1	1	1	0	0	1	2	1	1	1	0	0	0	1	1	1	1	1	0	0	0	2	1	0	3	2		
<i>L. fraternus</i>	2	1	1	0	1	1	1	1	2	0	0	1	2	1	1	1	1	0	0	1	1	1	0	1	0	0	0	0	1	0	3	2		
<i>L. rubens</i>	2	1	0	0	1	1	1	1	2	0	0	1	2	1	1	1	1	0	1	1	1	1	1	1	0	0	1	0	1	0	1	2		
<i>M. dichroma</i>	2	1	1	0	1	1	1	1	2	1	0	0	2	1	1	1	0	0	1	1	0	1	1	0	0	0	0	2	0	0	1	1		
<i>P. flavoscutellatus</i>	2	1	0	1	1	1	1	1	2	1	1	1	2	1	1	1	1	0	1	1	1	1	1	1	0	0	1	1	2	0	1	3	2	
<i>P. minuta</i>	2	1	1	1	0	1	1	1	2	0	0	1	1	1	1	1	0	0	1	1	1	1	1	1	0	0	0	1	3	0	3	2		
<i>T. brevicollis</i>	0	1	0	0	0	0	0	0	2	1	0	0	0	1	1	1	0	0	1	0	1	0	1	2	0	0	1	0	1	1	0	0	1	
<i>X. erythropterus</i>	1	1	1	0	1	2	1	1	2	1	0	0	2	1	1	1	1	1	1	1	1	1	1	0	2	0	1	1	0	1	1	0	3	2

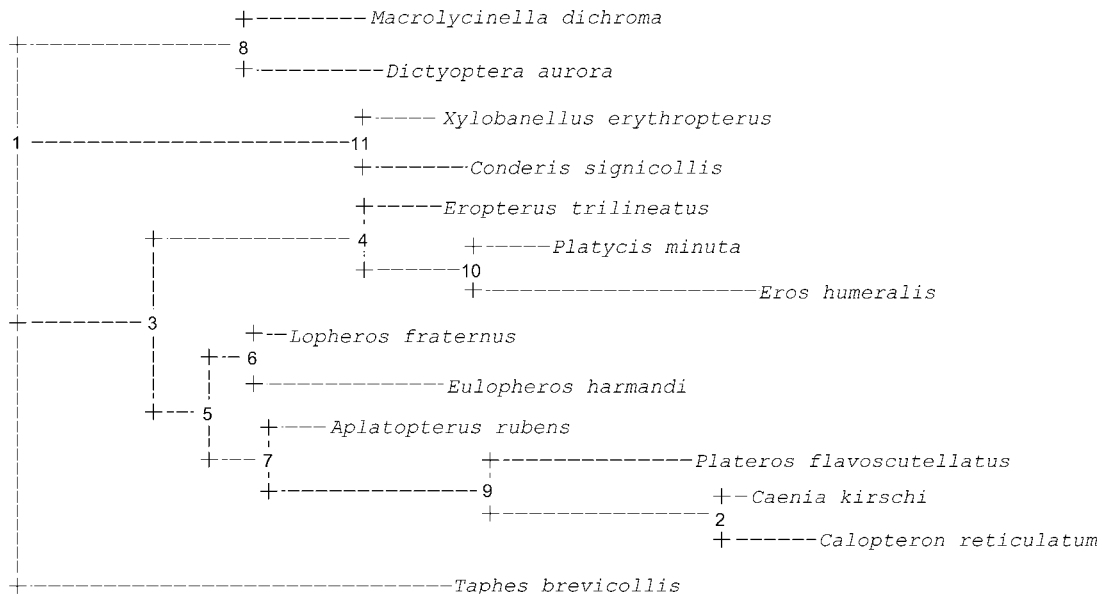


Fig. 14. Most parsimonious cladogram with *Taphes brevicollis* as outgroup.

Рис. 14. Наиболее экономная кладограмма с *Taphes brevicollis* в качестве внешней группы.

Two characters that describe the only unique autapomorphies of the apparent higher level lineages of the regarded taxa, i.e., the deeply incised phallobase of Conderini (character 26) and the lateral arms of spiculum ventrale of Erotini (character 30), were weighted 5 (out of possible 9), all the rest weighted 1.

The analysis of the data matrix by Phylip Pars, version 3.63, with *Taphes brevicollis* as the outgroup resulted in one most parsimonious cladogram demonstrating clades Dictyopterini + Conderini + (Erotini + ((*L. fraternus* + *E. harmandi*) + (*A. rubens* + (Platerotini + Calopterini))) + Taphini (Fig. 14). The Conderini are represented by *C. signicollis* and *X. erythropterus*, Erotini — by *E. humeralis*, *E. trilineatus* and *P. minuta*, Platerotini — by *P. flavoscutellatus* and Calopterini — by *C. reticulatum* and *C. kirschi*. *M. dichroma* is placed in a clade with *D. aurora*, close to Conderini.

The cladogram required a total of 97 steps. Length between 1 and 8 is 6.00; 8 and *M. dichroma* — 3.83; 8 and *D. aurora* — 4.17; 1 and 11 — 9.00; 11 and *X. erythropterus* — 2.17; 11 and *C. signicollis* — 2.83; 1 and 3 — 3.83; 3 and 4 — 5.50; 4 and *E. trilineatus* — 2.17; 4 and 10 — 3.00; 10 and *P. minuta* — 2.17; 10 and *Eros humeralis* — 8.17; 3 and 5 — 1.33; 5 and 6 — 1.00; 6 and *L. fraternus* — 1.00; 6 and *E. harmandi* — 5.00; 5 and 7 — 1.50; 7 and *A. rubens* — 1.50; 7 and 9 — 6.00; 9 and *P. flavoscutellatus* — 5.50; 9 and 2 — 6.17; 2 and *C. kirschi* — 0.67; 2 and *C. reticulatum* — 2.67; 1 and *T. brevicollis* — 11.83.

The analysis repeated with *Caenia kirschi* as the outgroup also yielded one most parsimonious cladogram, with somewhat differently arranged same clades, i.e., *C. reticulatum* + (Platerotini + (*A. rubens* + ((*L. fraternus* + *E. harmandi*) + (Erotini + (Dictyopterini + Conderini

+ Taphini)))) + *C. kirschi*. *M. dichroma* is again placed in a clade with *D. aurora*, close to Conderini and Taphini (Fig. 15).

The cladogram required a total of 97 steps as well, lengths being: between 1 and *C. reticulatum* — 2.67; 1 and 9 — 6.17; 9 and *P. flavoscutellatus* — 5.50; 9 and 7 — 6.00; 7 and *A. rubens* — 1.50; 7 and 5 — 1.50; 5 and 6 — 1.00; 6 and *L. fraternus* — 1.00; 6 and *E. harmandi* — 5.00; 5 and 3 — 1.33; 3 and 4 — 5.50; 4 and *E. trilineatus* — 2.17; 4 and 10 — 3.00; 10 and *P. minuta* — 2.17; 10 and *E. humeralis* — 8.17; 3 and 2 — 3.83; 2 and 8 — 6.00; 8 and *M. dichroma* — 3.83; 8 and *D. aurora* — 4.17; 2 and 11 — 9.00; 11 and *X. erythropterus* — 2.17; 11 and *C. signicollis* — 2.83; 2 and *T. brevicollis* — 11.83; 1 and *C. kirschi* — 0.67.

Discussion

Results of the cladistic analysis confirmed the conjecture that *Macrolycinella* cannot be placed in Calopterini. At the same time, the analysis suggested that the genus cannot be attributed to Platerotini, Conderini or Erotini either, the most parsimonious cladograms persistently putting it in one clade with *D. aurora*, thus defining its position in the tribe Dictyopterini. Although Dictyopterini and Taphini may actually represent one lineage with so far unclear autapomorphies [Kazantsev, 2004], *Macrolycinella*, pending a more representative phylogenetic analysis, is tentatively placed in Dictyopterini.

Another conclusion from the analysis carried out above is that *Lopheros* (s.str.) *fraternus*, *L.* (s.str.) *rubens* and *L.* (*Eulopheros*) *harmandi* cannot be attributed to one genus. Although distinguished by one pronotal

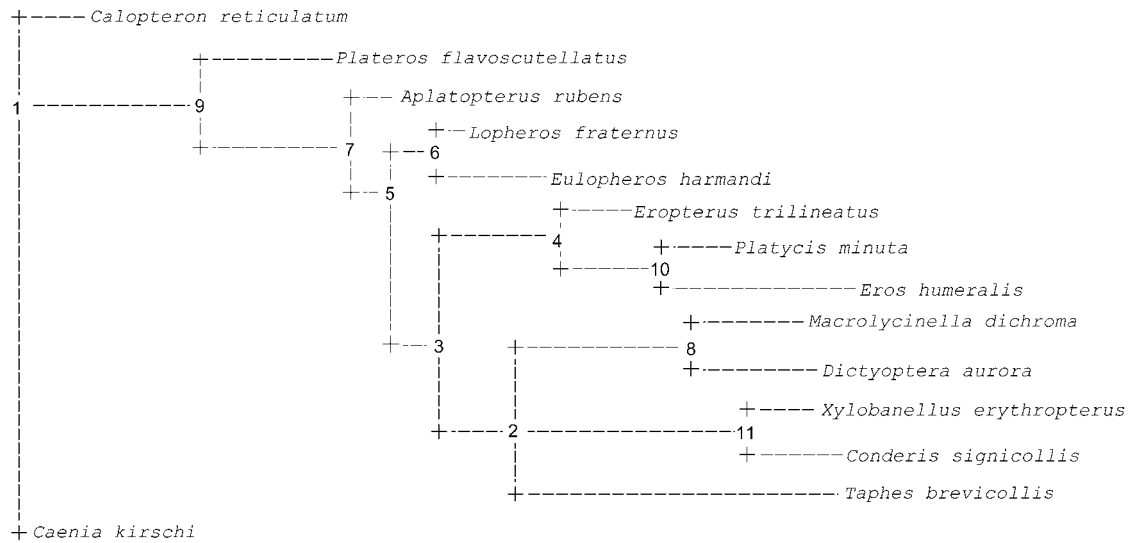


Fig. 15. Most parsimonious cladogram with *Caenia kirschi* as outgroup.

Рис. 15. Наиболее экономная кладограмма с *Caenia kirschi* в качестве внешней группы.

pattern, these taxa are very different in the abdominal and genital structures of both sexes. The analysis confirmed the supposition that the three species are not congeneric. So these species, which are the type species of the respective genus-group taxa, are placed in different genera, *Lopheros* Leconte, 1881, *Aplatopterus* Reitter, 1911 **nom.rev.** and *Eulopheros* Kazantsev, 1995, **stat.n.** as *Lopheros fraternus* (Randall, 1838), *Aplatopterus rubens* (Gyllenhal, 1817), **comb.n.** and *Eulopheros harmandi* (Bourgeois, 1902).

Although *Lopheros* is typically considered to be part of Erotini [e.g., Kazantsev, 2004], in neither of the cladograms do the “*Lopheros*” species make a monophyletic lineage with the indisputable erotine taxa (i.e., *Eros humeralis*, *Eropterus trilineatus* and *Platycis minuta*). In the first cladogram they are placed in clade Platerotini + Calopterini at its root (Fig. 14), in the second — at the root of clade Erotini + (Dictyopterini + Conderini + Taphini) (Fig. 15). This indicates that *L. fraternus*, *A. rubens* and *E. harmandi* quite probably do not belong in Erotini. They may even represent two different lineages, as *A. rubens* always renders the “*Lopheros*” compilation paraphyletic. However, all three of them are left in Erotini incertae sedis, pending further studies specifically targeted at this problem.

ACKNOWLEDGEMENTS. It is my pleasant duty to express gratitude to Dr. J. Menier (Musée National d’Histoire Naturelle, Paris), through whose courtesy I was able to study the syntypes of *Falsolucidota testaceicollis* and *Macrolycinella bicolor* from the Pic collection.

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