

New taxa of Lycidae from Samoa, Fiji and Tonga (Coleoptera: Lycidae)

Новые таксоны Lycidae из Самоа, Фиджи и Тонга (Coleoptera: Lycidae)

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КЛЮЧЕВЫЕ СЛОВА: Coleoptera, Lycidae, новая триба, новый род, новый вид, Нотогея.

ABSTRACT. A new tribe, Melanerotini **tr.n.**, a new genus, *Polyneros* **gen.n.**, and a new species, *Melaneros ramsdalei* **sp.n.**, are described from Samoa, Fiji and Tonga. A check-list of Lycidae of Samoa, Fiji and Tonga that also includes a representative of the tribe Calochromini is provided.

РЕЗЮМЕ. С Самоа, Фиджи и Тонга описывается новая триба Melanerotini **tr.n.**, новый род *Polyneros* **gen.n.** и новый вид *Melaneros ramsdalei* **sp.n.**. Приводится список Lycidae Самоа, Фиджи и Тонга, включающий также представителя трибы Calochromini.

Introduction

The fauna of Lycidae of Samoa, Fiji and Tonga, three adjacent archipelagos that lie between Melanesia and Polynesia, Fiji usually included in the former and Samoa and Tonga in the latter, is very unlike all other Melanesian and Polynesian islands, and New Zealand. The difference is that while there are no representatives of Lycidae east of the Solomon Islands, and the only lycid found in New Zealand is an apparently recently introduced from Australia *Porrostoma* Laporte, 1836 species [Kleine, 1933], Samoa, Fiji and Tonga can boast of a relatively rich and peculiar fauna. Most of the lycid species found here are attributed to the endemic genus *Melaneros* Fairmaire, 1877; *Plateros* Bourgeois, 1879 being the second genus registered for the area, and *Calochromus* Guérin-Méneville, 1833 reported from Fiji only two years ago, being the third [Ramsdale, 2007].

Whereas *Calochromus* belongs in the world-wide distributed Calochromini, *Melaneros*, affinities of which were typically defined as unclear [e.g., Bocáková, 2001] turned out to belong to a higher level taxon, presumably a new tribe. Besides, what seemed to be *Plateros* appeared to represent yet another genus of the same lineage as *Melaneros*. Presented below is description of the new tribe, as well as descriptions of the new genus

and a new species of *Melaneros*.

One acronym is used in this paper: ICM — Insect Center, Moscow.

Material and Methods

The material studied was pinned or glued on cardboard triangles. For examination some specimens were relaxed in water, then, for approximately 24 hours, in 10% KOH at room temperature. Certain KOH treated parts of the body, including the aedeagi and ultimate abdominal segments, were placed in microvials with glycerin.

Taxonomy

MELANEROTINI Kazantsev, **tr.n.**

Type genus: *Melaneros* Fairmaire, 1877.

DIAGNOSIS. Melanerotini **tr.n.** may be differentiated from other higher-level lycid lineages by a combination of the head structure, with complete subantennal suture and coronal suture ending in semicircular mid-head suture (Fig. 2), pronotal structure, with conspicuous median carina in anterior portion and conspicuous posterior groove (Fig. 1), short mesothoracic spiracles, regular reticulation of elytral interstices, asymmetric aedeagus with elongate sclerotized inner sac and small elongate phallobase fused to median lobe (Figs 5–6) and membranous coxites of the external female genitalia, with narrow, sclerotized and attached to each other valvifers (Fig. 7).

Due to similarities in the external female genitalia Melanerotini **tr.n.** may seem to be related to Calopterini Kleine, but is readily differentiated by the cranial, labial, and thoracic structure, type of the male genitalia, etc. Melanerotini **tr.n.** also resembles Thonalmini Kleine in certain details of the cranium and pronotum and in the male genitalia (sharing the elongate median lobe with exposed sclerotized ribbon-shaped internal sac), at the same time differing by the regular elytral reticulation, structure of the external female genitalia, phallobase fused with median lobe, etc.

DISTRIBUTION. Samoa, Fiji and Tonga.

Melaneros Fairmaire, 1877

Melaneros Fairmaire, 1877: 173.

Type species: *Melaneros acuticollis* Fairmaire, 1877, subsequent designation by Bourgeois, 1891.

Samoaneros Blaire, 1928: 101, type species: *Melaneros acuticollis* Fairmaire, 1877, original designation.

REDESCRIPTION. Alate, elongate (Fig. 1). Head transverse, narrowed behind eyes, with clear cuticle (Fig. 2). Fastigium right-angled. Tentorium represented by posterior pits and vertical straight robust ventral arms attaining to ca. half of head height. Eyes moderately large, spherical. Labrum transverse, sclerotized, almost completely exposed. Mandibles strongly curved near apices. Maxillary palps relatively long, 4-segmented, with ultimate palpomere axe-shaped and flattened distally. Labium consisting of non-paired mentum, prementum and a pair of small 3-segmented palps; ultimate labial palpomere greatly enlarged, widened and flattened. Gula very short. Antennal prominence inconspicuous, antennal sockets separated by minute lamina; subantennal suture complete; coronal suture ending in semicircular mid-head suture (Fig. 2). Antenna 11-segmented, moderately long, filiform, with antennomere 2 small, much shorter than antennomere 3; antennomeres 4–11 with short decumbent pubescence and longer scarce bristling hairs.

Pronotum ca. 6 times shorter than elytra, with median carina in anterior and narrow triangular groove in posterior half; posterior angles produced posterior-laterally; margins coarsely punctate (Fig. 1). Prosternum narrow, V-shaped, with marked sternal area (Fig. 3). Thoracic spiracles short, not projecting beyond coxae, with additional transverse proximal sclerites. Mesoventrite transverse, without median suture, connected to mesepisternum directly; mesepimeron conspicuously shorter and narrower than mesepisternum. Mesonotum with scutellum attaining to anterior margin, mesoscutal halves not divided; scutellum with inconspicuous post-notal plate (Fig. 4). Elytra long, glabrous, parallel-sided, with four primary costae; interstices with double rows of regular quadrate cells (Fig. 1). Metanotum square, slightly widening anteriorly, with slightly convex scuto-scutellar ridge forming narrow loop and 1.5 times longer than allocrista; prescutum with median suture; intrascutal suture small, emerging at distal fourth of scutum; scutellum almost straight posteriorly, with (*M. acuticollis*) or without (*M. ramsdalei* sp.n.) median suture; postnotal plate semicircular, with median suture at most in posterior fifth. Metaventrite transverse, with acute almost right-angled posterior angles; discrimen (metasternal suture) attaining to three fourths. Metendosternite with small lateral arms; median and transverse sutures present. Metathoracic wing elongate, semi-rectangular, with long anal cell long; wedge cell absent; C vein reaching apical hinge, Sc separating from C at proximal third; RP long; Cu veins merged to M; cu-a brace connecting Cu₂ and A₁ below Cu veins branching point.

Protrochantins conspicuously more prominent than mesotrochantins. Pro- and mesocoxae transverse; metacoxae widely separated. Legs moderately long and narrow; trochanters slightly triangular, about as long as coxae, connected to femora distally; tibiae curved, tibial spurs not longer than adjacent pubescence; tarsomeres 1–4 with plantar pads; all claws with a blunt tooth at base. Abdominal spiracles biforous, located dorsally near the edge of sternite.

Male. Spiculum gastrale long and narrow. Aedeagus asymmetric, with elongate straight median lobe and undeveloped parameres; phallobase small, without median suture, fused to median lobe (Figs 5–6, 8–9); internal sac with exposed sclerotized ribbon-like distal portion (Figs 5–6).



Fig. 1. General view of *Melaneros ramsdalei* sp.n., holotype male.
Рис. 1. Общий вид *Melaneros ramsdalei* sp.n., голотип, самец.

Female. Ultimate ventrite triangular, widely rounded distally; styli large, styli and coxites membranous; valvifers long and narrow, sclerotized, attached to each other; proctiger triangular, widely rounded distally (Figs 7, 10).

DIAGNOSIS. *Melaneros* is readily differentiated from other lycids by the tribal characters. It differs from *Polyneros* gen.n., the second genus of Melanerotini tr.n., by the glabrous elytra with conspicuously more elevated primary elytral costae, as well as by the slenderer aedeagus (Figs 5–6, 8–9) and structure of the external female genitalia with large membranous styli and completely fused valvifers (Figs 7, 10).

DISTRIBUTION. *Melaneros* (Map 1) is registered only from Samoa and Fiji [Blair, 1928].

***Melaneros ramsdalei* Kazantsev, sp.n.**

Figs 1–7

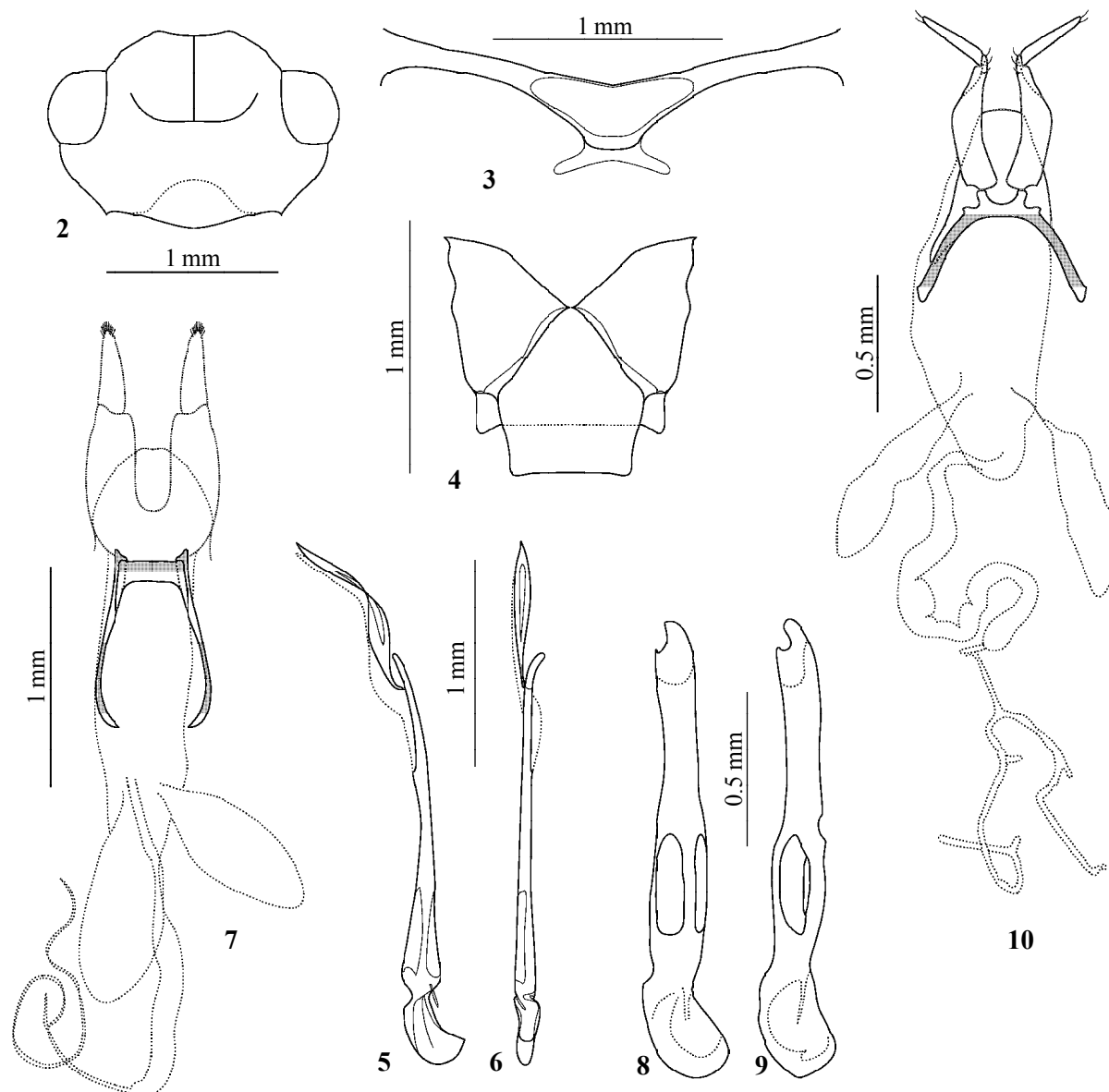
MATERIAL: Holotype, ♂, Samoa, Upolu Is., 2-3.VIII.1980, Zlotin (ICM); paratype, ♀, same label (ICM).

DESCRIPTION. Male. Dark brown; elytra dark violet blue.

Eyes relatively small, interocular distance ca. 2.2 times greater than eye radius. Antennae attaining to elytral three fourths, with antennomere 3 twice as long as antennomere 2 and 2.75 times shorter than antennomere 4.

Pronotum transverse, ca. 1.4 times as wide as long, concave basally, triangularly produced forward anteriorly, with conspicuous blunt anterior and long acute posterior angles (Fig. 1). Scutellum with parallel-sided transverse post-notal plate.

Elytra long, 3.6 times as long as wide at humeri, slightly widened distally; all four primary costae reaching elytral apices; interstices with regular double rows of mostly transverse cells.



Figs 2–10. Details of *Melaneros* spp.: 2–7 — *M. ramsdalei* sp.n.; 8–10 — *M. acuticollis*; 5–6 — holotype male; 2–4, 7 — paratype female; 2 — head; 3 — prosternum; 4 — mesonotum; 5–6, 8–9 — aedeagus; 7, 10 — external female genitalia; 3, 6, 7, 8, 10 — ventral view; 2, 4 — dorsal view; 5, 9 — lateral view [8–10 — after Bocáková, 2001].

Рис. 2–10. Детали строения *Melaneros* spp.: 2–7 — *M. ramsdalei* sp.n.; 8–10 — *M. acuticollis*; 5–6 — голотип, самец; 2–4, 7 — паратип, самка; 2 — голова; 3 — переднегрудь; 4 — мезонотум; 5–6, 8–9 — эдеагус; 7, 10 — наружные женские гениталии; 3, 6, 7, 8, 10 — снизу; 2, 4 — сверху; 5, 9 — сбоку [8–10 — по: Bocáková, 2001].

Female. Ultimate ventrite triangular, rounded distally; styli only twice as short as coxites, valvifers narrow as long as coxites; proctiger strongly narrowed distally (Fig. 7).

Length: 7.4–13.0 mm. Width (humeraly): 1.6–3.4 mm.

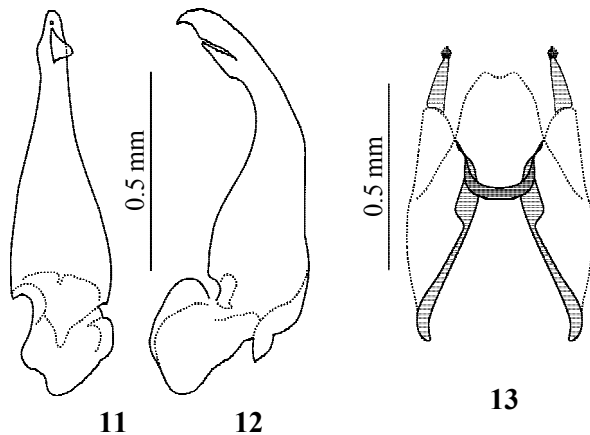
ETYMOLOGY. The species is named after my friend and colleague Alistair Ramsdale (Seattle), who untimely passed away while preparing to revise the Polynesian Lycidae.

DIAGNOSIS. *M. ramsdalei* sp.n. differs from *M. acuticollis* by the produced anterior pronotal margin, regular elytral reticulation (Fig. 1), narrower aedeagus (Figs 5–6) and separated valvifers of the external female genitalia (Fig. 7), easily distinguishable from *M. muiri* Blaire, 1928 the second known species of the genus from Samoa, by coloration.

The *Melaneros* species may be distinguished by the key that follows.

KEY TO MELANEROS SPECIES

1. Dark brown, with dark violet blue elytra 2
- Coloured differently 4
2. Smaller, ca. 5 mm. Pronotal anterior margin rounded (Fiji) *M. praelongus* Fairmaire
- Larger, over 7 mm. Pronotal anterior margin straight or triangularly produced (Fig. 1) 3
3. Pronotal anterior margin straight; elytral reticulation irregular; aedeagus relatively wide (Figs 8–9); valvifers of external female genitalia distally with round median



Figs 11–13. Details of *Polyneros atrovioleaceus*: 11–12 — male; 13 — female; 11–12 — aedeagus; 13 — external female genitalia; 11, 13 — ventral view; 12 — lateral view [11–12 — after Bocáková, 2001].

Рис. 11–13. Детали строения *Polyneros atrovioleaceus*: 11–12 — самец; 13 — самка; 11–12 — эдеагус; 13 — наружные женские гениталии; 11, 13 — снизу; 12 — сбоку [11–12 — по: Bocáková, 2001].

- incision (Fig. 10) (Samoa)
 *M. acuticollis* Fairmaire
 — Pronotal anterior margin triangularly produced (Fig. 1);
 elytral reticulation regular (Fig. 1); aedeagus narrow (Figs
 5–6); valvifers of external female genitalia distally straight
 (Fig. 7) (Samoa) *M. ramsdalei* sp.n.
 4. Fulvous, with antennae (except antennomeres 1–3), tarsi
 and elytra smoky brown (Samoa) *M. muiri* Blair
 — Fuscous, with light external elytral costae (Fiji)
 *M. lugubris* Fairmaire

Polyneros Kazantsev gen.n.

Type species: *Melaneros atrovioleaceus* Fairmaire, 1877.

DESCRIPTION. Alate, elongate, flattened. Head transverse. Fastigium acute. Eyes small, spherical. Labrum transverse, sclerotized, lying entirely anterior of epistoma. Mandibles narrow, curved inward distally. Maxillary palps slender, 4-segmented, with ultimate palpomere flattened and widened distally. Labium consisting of non-paired prementum and a pair of small 3-segmented palps; ultimate labial palpomere conspicuously widened. Gula short. Antennal prominence bulging, antennal sockets separated by minute lamina. Antenna 11-segmented, moderately long, filiform; antennomeres 3 considerably longer than antennomere 2; pubescence on antennomeres 3–11 relatively short and decumbent, with sparse erect hairs on external surface.

Pronotum transverse, flat, ca. 6 times shorter than elytra, with conspicuous median rib in anterior half, narrow median impression in posterior half and obscure transverse bulges in the middle; posterior angles slightly produced laterally. Prosternum short, V-shaped. Thoracic spiracles elongate, small, not projecting beyond propleuron. Mesoventrite transverse, concave distally, not divided by median suture, but connected to mesopleuron through separate sclerite. Mesonotum with transverse, parallel-sided scutellum. Elytra long, slightly widening distally, with nine equally developed costae attaining to elytral apices; elytral reticulation regular, cells transverse, rectangular; short elytral pubescence uniform. Metaventricle transverse, with acute posterior angles; discri-men almost complete.

Protochantins considerably more prominent than mesotrochantins. Pro- and mesocoxae transverse; metacoxae approximate. Legs slender; trochanters elongate, but more than 6 times shorter than femurs, conical, connected to femora distally; femurs robust, tibiae flattened, tibiae slightly curved, tibial spurs short; tarsomeres 1–4 with plantar pads; claws simple. Abdominal spiracles located dorsally on separate elongate sclerite between sternite and tergite.

Male. Aedeagus asymmetric, with elongate slightly curved median lobe and undeveloped parameres; phallobase strongly asymmetric, without median suture, fused to median lobe (Figs 11–12).

Female. Ultimate ventrite triangular, rounded distally; external female genitalia with membranous coxites and narrow valvifers connected to each other through a separate sclerite; proctiger elongate (Fig. 13).

ETYMOLOGY. The name of the genus is derived from “Polynesia”, in the south-western corner of which Samoa and Tonga are located, and Eros, Greek god of love, son of Chaos, and a genus name in Lycidae. Gender masculine.

DISTRIBUTION. Samoa and Tonga.

DIAGNOSIS. *Polyneros* gen.n. is readily differentiated from *Melaneros* by the pubescent elytra with primary elytral costae not different from secondary ones, location of abdominal spiracles on separate elongate sclerite between sternites and tergites, as well as by the conspicuously more robust aedeagus (Figs 11–12) and relatively small sclerotized styli of the external female genitalia with valvifers connected to each other through an interim sclerite (Fig. 13). It differs from habitually similar *Plateros* by the conspicuous anterior pronotal rib, location of abdominal spiracles on separate elongate sclerites, fused to median lobe strongly asymmetric phallobase of the aedeagus (Figs 11–12) and membranous coxites and narrow connected to each other valvifers of the external female genitalia (Fig. 13).

Polyneros atrovioleaceus (Fairmaire, 1877), **comb.n.** Figs 11–13

Melaneros atrovioleaceus Fairmaire, 1877: 174

MATERIAL: ♀, Samoa, Upolu Is., 2-3.VIII.1980, Zlotin (ICM).

Checklist of Lycidae of Samoa, Fiji and Tonga

MELANEROTINI Kazantsev, 2009 tr.n.

Type genus: *Melaneros* Fairmaire, 1877.

Melaneros Fairmaire, 1877

Melaneros Fairmaire, 1877: 173.

Type species: *Melaneros acuticollis* Fairmaire, 1877, subsequent designation by Bourgeois, 1891
 = *Samoaneros* Blaire, 1928: 101.

Type species: *Melaneros acuticollis* Fairmaire, 1877, original designation

acuticollis Fairmaire, 1877: 173. Samoa: Upolu.

lugubris Fairmaire, 1877: 174. Fiji.

muiri Blaire, 1928: 102. Samoa: Tutuila.

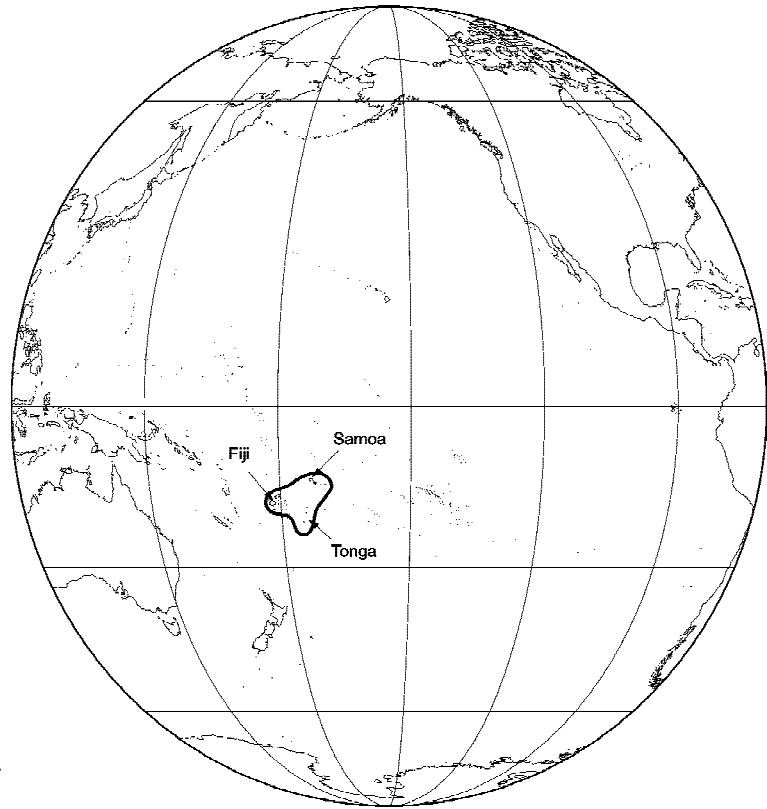
praelongus Fairmaire, 1877: 174. Fiji.

ramsdalei Kazantsev, 2009, **sp.n.** Samoa: Upolu.

Polyneros Kazantsev, 2009, **gen.n.**

Type species: *Melaneros atrovioleaceus* Fairmaire, 1877
atrovioleaceus Fairmaire, 1877: 174. (*Melaneros*). Samoa: Upolu.

quadraticollis Fairmaire, 1877: 174. (*Melaneros*). Tonga.
 = *angustiformis* Fairmaire, 1877: 174 (*Melaneros*)



Map 1. Distribution area of Melanerotini **tr.n.**
 Карта 1. Ареал Melanerotini **tr.n.**

CALOCHROMINI Lacordaire, 1857

Type genus: *Calochromus* Guérin-Méneville, 1833.

Calochromus Guérin-Méneville, 1833

Calochromus Guérin-Méneville, 1833: 158.

Type species: *Calochromus glaucopterus* Guérin-Méneville, 1833.

= *Micronychus* Motschulsky, 1861: 138, type species: *Micronychus bimaculatus* Motschulsky, 1861, by monotypy.
samuelsoni Ramsdale, 2007: 43. Fiji.

Discussion

The morphological characters discussed above place Melanerotini **tr.n.** as a separate lycid lineage, probably adjacent to Thonalmini Kleine, but due to similarities in the external female genitalia it may also prove to be related to Calopterini Kleine. A more exact placement of the new tribe will be possible after the phylogenetic re-analysis of major Lycidae higher level taxa (paper in preparation).

Melanerotini **tr.n.** is confined to Samoa, Fiji and Tonga and is conspicuously absent on all adjacent Melanesian islands, including the Vanuatu Islands, the Solomon Islands and New Caledonia, in the direction of mainland (i.e. Australia), and also in Polynesia and New Zealand. Such distribution pattern suggests relict character of the group's occurrence on these archipelagos and testifies to the possible continental origin of the latter.

On the contrary, the calochromines, the second lycid tribe that occurs in the area, are distributed

world-wide and are registered for Australia, New Guinea and Western Melanesia – the Solomon Islands, some 1100 km northwest of Fiji, being the closest occurrence of another *Calochromus* species [Ramsdale, 2007]. Therefore, presence of *Calochromus* on Fiji may well be explained by its relatively recent over water dispersal from the West (Map 1).

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