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Synopsis of Pselaphinae (Coleoptera: Staphylinidae) of the Mascarene Islands, with description of a new species of *Leiochrotella* Jeannel, 1953 from Réunion

PETER HLAVÁČ¹ & MATÚŠ KOCIAN²

¹Department of Entomology, National Museum, Natural History Museum, Cirkusová 1740, CZ-193 00 Praha 9 - Horní Počernice, Czech Republic. E-mail: peterhlavac@gmail.com

²Department of Ecology, Faculty of Environmental Sciences, Czech University of Life Sciences Prague, Kamýcká 1176, CZ-165 21 Prague 6 – Suchbátka, Czech Republic. E-mail: matusko@matuskocian.cz

Abstract

The new species, *Leiochrotella lequettei* Hlaváč & Kocian, sp. n., is described from Réunion. A synopsis of all Pselaphinae of the Mascarenes (Réunion, Mauritius and Rodriguez) is provided.

Key words: Réunion, Mauritius, Rodriguez, taxonomy

Introduction

The Mascarenes consist of three small, isolated islands, Réunion (2512 km²), Mauritius (1865 km²), and Rodriguez (104 km²) of volcanic origin, lying at the southern edge of the tropics in the Indian Ocean east of Madagascar (Cheke & Hume 2008). While the Mascarenes still support many endemic species, they are also well-known for the large number of species that have become extinct since their discovery by humans. The most famous and widely known is the dodo, *Raphus cucullatus* (Linnaeus 1758).

At present, four supertribes of Pselaphinae have been recorded from the Mascarenes, Clavigeritae (1 genus + 1 species), Euplectitae (3 + 3), Goniaceritae (3 + 6), and Pselaphitae (1 + 1). Faronitae and Batrisitae are absent. In total 11 species in 8 genera of Pselaphinae have been recorded (including the new records in this paper) from the Mascarene Islands, 7 from Réunion, 5 from Mauritius, and to date none have been recorded from Rodriguez. Five species are endemic to either Mauritius or Réunion and one species, *Physopectus gomyi* Leleup, 1969 is known on both islands (Table 1). The list of Pselaphinae of Réunion has been published recently (Lecoq 2017) in the excellent monograph of the beetles of the island (Gomy *et al.* 2017).

The goal of this paper is to provide an annotated catalogue of Pselaphinae of Mascarene Islands, and to document new records of the pselaphines recently collected by the authors on their collecting trip to Réunion in February 2018. Included is a description of a new species of the genus *Leiochrotella* Jeannel, 1953, until now only known from Madagascar.

Material and methods

Specimens prepared for morphological study were examined using a Leica S8APO stereoscopic microscope with diffuse lighting at magnifications of up to 128×. Habitus images were taken with a Canon EOS 5D mark II in combination with a Canon MP-E65 1-5x macro lens. The resulting image was focus stacked by Zerene Stacker and postprocessed by GNU Image Manipulation Program 2.8.

The aedeagus was studied using a Zeiss transmitted-light microscope at magnifications of up to 500X. The aedeagus was dissected and is preserved in Euparal on a plastic card pinned together with the specimen. All drawings were made using a drawing tube.

The head length was measured from the occipital constriction to the anterior margin of the frontal rostrum; head width was measured across the eyes; the elytral length was measured along the suture, width refers to the maximum width of pronotum, elytra, etc. The body length is the combined length of the head, pronotum, elytra, and abdomen. Lengths of the basal and apical parts of the median lobe were measured in dorsal view.

The terminology applied here follows Chandler (2001), except we use 'ventrite' instead of 'sternite' when discussing ventral thoracic structures.

Label data are cited verbatim. All labels of the studied material are printed. All type specimens were provided with the following red printed label: HOLOTYPE or PARATYPE, generic and specific name of the taxon, P. Hlaváč det., 2018.

The material is deposited in the following collections: National Museum, Prague, The Czech Republic (NMPC, Jirí Hájek) and the private collection of Peter Hlaváč (CPH, Prague, The Czech Republic).

The study was carried out under the following research permits: Arrêté No DIR-I-2017-097 issued on 7th June 2017 by Parc national de La Réunion.

Taxonomy

Leiochrotella lequettei Hlaváč & Kocian, sp. n.

(Figs. 1–5)

Material studied: 1♂, HOLOTYPE: La Réunion, 11–22.II.2018, La Grande Montée, 1600m, Col de Bellevue, sifting, -21.166106 S, 55.590797 E, Hlaváč P. & Kocian M. lgt. NMPC. PARATYPES, 1♀: the same data as holotype (CPH).

Description. Body (Figs 1–2) shiny, pale yellowish-brown, maxillary palpi, antennae and legs slightly lighter, yellow. Body length: 1.58–1.66 mm, width 0.59–0.62 mm, dorsum smooth, impunctate, with fine, short and sparse pubescence.

Head dorsally flattened, lacking frontal fovea, with well-defined vertexal foveae, temples long, more than twice as long as length of eyes; eyes very small, weakly protuberant; clypeus long, with about ten long, golden setae; maxillary palpi small, palpomere I pedunculate, about as long as palpomere III, II short, semitriangular, III elongate, about twice as long as wide, apical pseudosegment seta-like, minuscule. Antennae about 0.70 mm long, scape cylindrical, about 1.3 times as long as wide and slightly longer than pedicel, more robust, pedicel about 1.6 times as long as wide, slightly longer than III, antennomere III 1.50 times as long as IV, antennomere V and VI elongate, equal in length, 1.35 as long as IV, antennomere VII elongate, slightly longer than VIII, later quadrate, IX quadrate, as long as VII, more robust than VIII, antennomere X transverse, about 1.2 times as wide as long, terminal antennomere pointed at apex, almost twice as long as wide, three times as long as X and 1.85 times as long as scape. Relative length of antennomeres: 1.0 : 0.9 : 0.8 : 0.5 : 0.7 : 0.6 : 0.4 : 0.4 : 0.4 : 0.6 : 1.9.

Pronotum slightly transverse, about 1.05–1.15 times as wide as long and about 1.08 – 1.13 times as long as head, widest before middle, slightly convergent to base, with two minuscule lateral foveae and minuscule median antebasal fovea, lacking antebasal sulcus.

Venter with short prosternum, prosternal process pointed, prosternal cavities contiguous, hypomerae separated from median part of prosternum by hypomeral carinae, mesoventrite shorter than metaventrite, mesoventrite process pointed, mesocoxae closely separated by narrow isthmus, two mesoventrite carinae present, anterior part of mesoventrite with setae, anterior metaventrite process pointed, posterior metaventrite process wide, concave, disc of metaventrite convex with sparse setae.

Elytra about 1.30–1.35 times as wide as long, lacking basal foveae, lacking sutural striae, discal striae well-defined in anterior half, humeri absent.

Abdomen slightly shorter than elytra, about 1.15 times as wide as long, first visible tergite (IV) slightly longer than second (V), all visible tergites lacking foveae or carinae. First ventrite long, about as long as all other ventrites combined, second ventrite slightly longer than third, fourth and fifth ventrites equal in length, about half length of sixth ventrite.

Legs in male robust with strongly enlarged femora, mesotibiae with preapical spur.

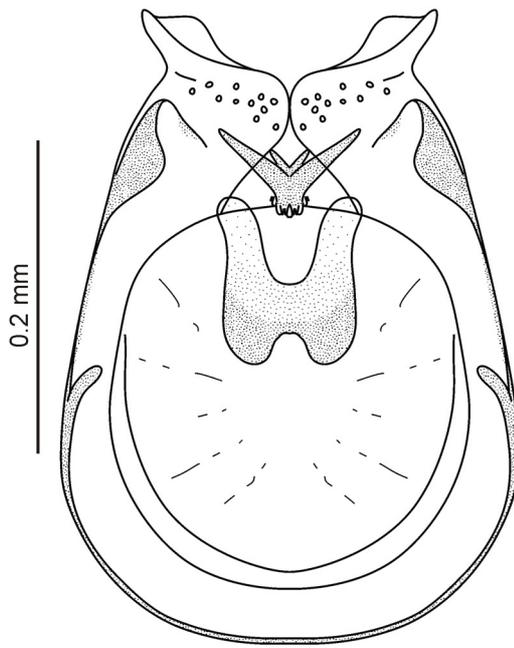
Aedeagus as in Figs 3, 4.



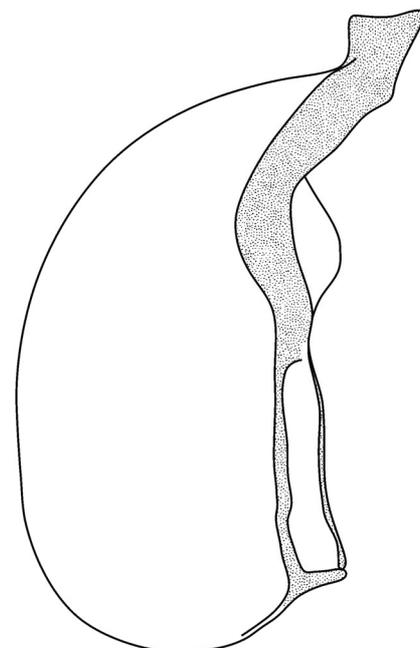
1



2



3



4

FIGURES 1–4. *Leiochrotella lequettei*, male, 1—habitus, 3—aedeagus, dorsal view, 4—aedeagus. *Leiochrotella* sp., female, 2—habitus.

Sexual dimorphism. Female (Fig. 2) similar to male, but with slender legs, femora not enlarged, mesotibiae lacking preapical spur.

Differential diagnosis: *L. lequettei* is readily distinguished from its congeners from Madagascar by 1) the presence of minuscule lateral and median pronotal foveae, 2) the absence of basal elytral foveae, 3) the different shape of the aedeagus.

Biology: Both specimens of *L. lequettei* were collected by sifting leaf-litter in a very wet, primeval forest (Fig. 5).

Etymology: Patronymic, named after Benoît Lequette, Le Chef du Service Etudes et la Patrimoine, Parc national de la Réunion, who allowed our collecting trip to Réunion to be possible.

Distribution: Réunion

Annotated catalogue of Pselaphinae of Mascarene Islands

Remark: A detailed list of Pselaphinae with localities of the island Réunion has been published recently by Lecoq (2017).

Clavigeritae

Gomyia monilicornis Célis, 1974

Gomyia monilicornis Célis, 1974: 772

Remarks: The species described from 2 males collected by sifting of very wet trunk (Célis 1974) in Takamaka and has not been found since. Host ant unknown.

Distribution: Réunion.

Euplectitae

Besuchetiozethus densepunctatus Coulon, 1989

Besuchetiozethus densepunctatus Coulon, 1989: 50

Remarks: This species was described from a series of specimens from Sri Lanka, Peradeniya (type locality), and Mauritius, forêt des Macchabées; gorge de la rivière Noire, Flic-en-Flac and Albion (Coulon 1989).

Distribution: Sri Lanka, Mauritius.

Zethopsiola sulcicollis (Raffray, 1897)

Zethopsus sulcicollis Raffray, 1897: 50

Zethopsinus lineatus Jeannel, 1952: 58, synonymy in Coulon, 1989: 208

Zethopsiola sulcicollis: Coulon, 1989: 208

Remarks: This species was described from Natal (Republic of South Africa) and Zanzibar (Tanzania), and is widely distributed in sub-Saharan eastern Africa. The type locality of *Zethopsinus lineatus* Jeannel, 1952 is The Democratic Republic of Congo, Kinanyira.

Distribution: South Africa, Zaire, Zambia, Kenya, Uganda, Tanzania, Zanzibar, Zimbabwe, Comoros (Mohéli), Réunion.

Paraphiliopsis sp.

Material studied: 1♀: La Réunion: 10–22.II.2018, Le Tampon, Dassy, 480 m, on rotten banana, -21.257951 S, 55.487898 E, P. Hlaváč & M. Kocian lgt. CPH.

Remarks: This specimen was collected at light at a vacation house in Tampon. It is tentatively assigned to the madagascan genus *Paraphiliopsis* Jeannel, 1959.

Goniaceritae

Physoplectus gomyi (Leleup, 1969)

Halorabyxis gomyi Leleup, 1969: 144

Remarks: This species was described from la Réunion based on a series of specimens from Ravin des Trois Bassins et Saint-Gilles-les-Bains (type locality), plus 3 males from Souillac in Mauritius. A halophilic species confined to the seashore of both islands.

Distribution: Mauritius, Réunion.

Physoplectus vinsoni (Jeannel, 1954)

Halorabyxis vinsoni Jeannel, 1954: 341

Halorabyxis vinsoni Jeannel: Leleup, 1969: 142 (redescription)

Remarks: this species was described from 6 specimens collected on the eastern part of the beach Trou d'Eau Douce on Mauritius. A halophilic species, type series collected under packets of dried seaweed deposited on the sand (Jeannel 1954).

Distribution: Mauritius.

Leiochrotella lequettei Hlaváč & Kocian, sp. n.

Material studied: 1♂, 1♀: La Réunion, 11–22.II.2018, La Grande Montée, 1600m, Col de Bellevue, sifting, -21.166106 S, 55.590797 E, Hlaváč P. & Kocian M. lgt. (NMPC, CPH).

Distribution: Réunion.

Leiochrotella sp.

(Fig. 2)

Material studied: 1♀: La Réunion, 11–21.II.2018, forest between Plaine de Palmistes—Pont Payet, sifting, 740m, -21.108196 S, 55.663279 E, Hlaváč P. & Kocian M. lgt. (CPH).

Remarks: This species is tentatively assigned to the genus *Leiochrotella* based on its general appearance, although it lacks the minuscule lateral and basal pronotal foveae.

Distribution: Réunion.

Bythonesiotes puncticollis Jeannel, 1956

Bythonesiotes puncticollis Jeannel, 1956: 281

Remarks: This species was described from one specimen of an unknown sex that was collected in rotten wood on Mont Coccote.

Distribution: Mauritius.

TABLE 1. Summary of Pselaphinae of Mascarenes

Supetribes	Species	Distribution	Réunion	Mauritius	Rodriguez
Clavigeritae	<i>Gomyia monilicornis</i> Célis, 1974	Réunion	1		
Euplectitae	<i>Zethopsiola sulcicollis</i> Raffray, 1897	South Africa, Zaire, Zambia, Kenya, Uganda, Tanzania, Zanzibar, Zimbabwe, Comoros, Réunion	1		
Euplectitae	<i>Besuchetiozethus</i> <i>densepunctatus</i> Coulon, 1989	Sri Lanka, Mauritius		1	
Euplectitae	<i>Paraphiliopsis</i> sp.	Réunion	1		
Goniaceritae	<i>Physoplectus gomyi</i> Leleup, 1969	Mauritius, Réunion	1	1	
Goniaceritae	<i>Physoplectus vinsoni</i> Jeannel, 1954	Mauritius		1	
Goniaceritae	<i>Leiochrotella lequettei</i> sp. n.	Réunion	1		
Goniaceritae	<i>Leiochrotella</i> sp.	Réunion	1		
Goniaceritae	<i>Bythonesiotes puncticollis</i> Jeannel, 1956	Mauritius		1	
Goniaceritae	<i>Bythonesiotes vinsoni</i> Jeannel, 1956	Mauritius		1	
Pselaphitae	<i>Pselaphus</i> sp.	Réunion	1		
TOTAL			7	5	0



FIGURE 5. *Leiochrotella lequettei*, habitat.

***Bythonesiotes vinsoni* Jeannel, 1956**

Bythonesiotes vinsoni Jeannel, 1956: 281

Remarks: Described from one male and one female collected in rotten wood on Mont Coccote together with *B. puncticollis*.

Distribution: Mauritius.

Pselaphitae

***Pselaphus* sp.**

One female was collected on Massif du Piton des Neiges by Gîte, and was taken by sifting (Lecoq 2017).

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References

- Célis, M.J. (1974) Un Clavigérine remarquable de l'île de la Réunion (Coleoptera Pselaphidae). *Revue de Zoologie Africaine*, 88 (4), 771–774.
- Cheke, A. & Hume, J. (2008) *Lost land of the Dodo*. T & AD Poyser, London, United Kingdom, 464 pp.
- Chandler, D.S. (2001) Biology, morphology, and systematics of the ant-like litter beetles of Australia (Coleoptera: Staphylinidae: Pselaphinae). *Memoirs on Entomology International*, 15, 1–560.
- Coulon, G. (1989) Révision générique des Bythinoplectini Schaufuss, 1890 (= Pyxidicerini Raffray, 1903, syn. nov.) (Coleoptera, Pselaphidae, Faroninae). *Mémoires de la Société Royale Belge d'Entomologie*, 34, 1–282.
- Gomy, Y., Lemagnen, R. & Poussereau, J. (2017) *Les Coléoptères de l'île de la Réunion*. Édition Orphie, Saint-Denis, 759 pp.
- Jeannel, R. (1952) Psélaphides recueillis par N. Leleup au Congo belge. IV. Faune de l'Itombwe et de la Forêt du Rugege. *Annales du Musée Royal du Congo Belge*, Série 8vo, 11, 1–295.
- Jeannel, R. (1954) Les Psélaphides de Madagascar. *Mémoires de l'Institut Scientifique de Madagascar*, E: Entomologie, 4, 139–344.
- Jeannel, R. (1956) Un nouveau genre de Psélaphides de l'île Maurice (Col.). *Mauritius Institute Bulletin*, 3 (5), 279–282.
- Lecoq, J.-C. (2017) *Catalogue des Coléoptères de l'île de la Réunion. Staphylinoidea*. In: Gomy, Y., Lemagnen, R. & Poussereau, J. (Eds.), *Les Coléoptères de l'île de la Réunion*. Édition Orphie, Saint-Denis, pp. 156–232.
- Leleup, N. (1969) Position systématique et nouvelle diagnose du genre *Halorabyxis* Jeannel, endémique des Mascareignes. Définition de *H. vinsoni* Jeannel et description d'une espèce inédite (Coleoptera Pselaphidae Bythininae). *Bulletin et Annales de la Société Royale d'Entomologie de Belgique*, 105, 136–145.
- Raffray, A. (1897) Descriptive Catalogue of the Coleoptera of South Africa. Part IV. Family Pselaphidae. *Transactions of the South African Philosophical Society*, 10, 43–130, pls. 16 + 17.