

New and interesting species of ground beetles from Reunion Island (Coleoptera, Carabidae)

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Summary. – The authors report the presence of *Acupalpus vadoni* Jeannel, 1948, on Reunion Island and describe the male characters of *Neocolpodes poussereaui* Deuve, 2007. They also describe *Harpalus poussereaui* n. sp. from Les Makes, Bon-Accueil Forest, a species closely related to *H. brunripes* Dejean, 1829, and *H. pecinai* Hovorka, 2006.

Résumé. – **Espèces de Carabiques nouvelles et remarquables de l'île de la Réunion (Coleoptera, Carabidae).** Les auteurs signalent la présence d'*Acupalpus vadoni* Jeannel, 1948, sur l'île de la Réunion et décrivent le mâle de *Neocolpodes poussereaui* Deuve, 2007. Ils décrivent aussi *Harpalus poussereaui* n. sp. capturé aux Makes, dans la forêt de Bon-Accueil, une espèce proche de *H. brunripes* Dejean, 1829, et de *H. pecinai* Hovorka, 2006.

Keywords. – Carabidae, Harpalinae, Pterostichinae, taxonomy, new species, new record, Reunion Island.

Among the material of carabid beetles recently sent for study to one of the authors (PMG) by Jacques Poussereau, who has devoted much time to investigate the entomological fauna of Reunion Island, a few species of particular interest stood out. Some of which have never been reported from this Island, or were known from only a few specimens, others are new to science. The present contribution is dedicated to the study of these species.

MATERIAL AND METHODS

The examined material is deposited in the following collections: **CGi**, P. M. Giachino collection, Torino, Italia; **CPo**, J. Poussereau collection, Dax, France; **MNHN**, Muséum national d'Histoire naturelle, Paris, France.

The following acronyms have been used: **El**, length of elytra from base of scutellum to apex; **Ew**, maximum width of elytra; **Pl**, length of pronotum along median line; **Pw**, maximum width of pronotum

Indices used in this publication: Pw/Pl and El/Ew.

The photographs are composite images with progressive focusing taken by Luca Toledano (Verona, Italy) with a Nikon DSFi1 digital camera operated by Nikon DS-L2 stand alone remote controller mounted on a Leica Z6 microscope and equipped with a customized motorized stand made by L.T. The images were then processed on a Macintosh Mac Book Pro computer with Helicon Focus ® 3.61 program and optimized with Photoshop® Elements 3.0.

Genus *Acupalpus* Latreille, 1829

Acupalpus vadoni Jeannel, 1948

Material examined. – 1 ♂, La Réunion, Le Tampon, 800 m, lumières, 13.II.2004, *J. Poussereau coll.* (CGi); 1 ♂, La Réunion, Les Hautes-de-Monvert, 2.II.2006, *J. Poussereau coll.* (CPo); 1 ♀, La

Réunion, Trois-Bassins, lumières, 7.I.2009, *J. Poussereau coll.* (CPo); 1 ♀, La Réunion, Takamaka, 770 m, lumières, 22.II.2003, *J. Poussereau coll.* (CPo).

Notes. – This species was originally described from Madagascar by JEANNEL (1948). This is the first time this species is reported from Reunion Island. Examination of the type deposited in MNHN showed that specimens from Reunion Island and from Madagascar refer to the same species.

Genus *Harpalus* Latreille, 1802

Most species in the genus *Harpalus* Latreille, 1802, are concentrated in the Palaearctic and Nearctic Regions and few taxa in the Oriental Region, but several species are known from East and South Africa, Madagascar, Comoros, Mauritius and La Réunion (JEANNEL, 1948; BASILEWSKY, 1951; FACCHINI, 2003). Three species of this genus are known from La Réunion so far. *H. brunripes*, was described by DEJEAN (1829) (type locality: La Réunion). Later, JEANNEL (1948) described *H. rivalsi* (type locality: Plaine des Cafres, La Réunion), that belongs to a different species group, and finally HOVORKA (2006) described *H. pecinai* (type locality: Marquesas, La Réunion, Mado), which belongs to the same species group than *H. brunripes*. Recent explorations resulted in the discovery of an additional new species of this genus from La Réunion.

Harpalus poussereaui Facchini & Giachino **n. sp.** (fig. 1-3)

HOLOTYPE: ♂ "La Réunion 974, Coll : *J. Poussereau*, Les Makes, Ft de Bon Accueil, Cadavre tangué [*Tenrec ecaudatus* (Schreber, 1778)], 10.02.2009" (MNHN).

PARATYPE: 1 ♀, "La Réunion 441, Coll : *J. Poussereau*, Les Makes, Ft de Bon Accueil, battage change-écorce [*Aphloia theiformis* (Vahl) Benn.], 4.05.2005" (CGi).

Diagnosis. – Body pitch brown-black, shining; head relatively large, hind angles of pronotum obtuse, wings strongly reduced, elytral striae impunctate, preapical elytral emargination weak, tarsomeres dorsally setose, median lobe of aedeagus with apical plate and inner sac without field of sclerotised spines.

Description. – Total length: 6.7 mm (holotype); body brown-black, shining; legs brown with tarsi light brown, antennae and palpi light brown. Microsculpture almost completely effaced on head (isodiametric) and pronotum (transverse meshes), completely effaced on elytra. Wings strongly reduced. Habitus as in fig. 1.

Head relatively large, smooth, narrower than pronotum, frontal furrows represented by a small pit. Labrum very slightly concave in the middle, with 6 setae, clypeus straight on the anterior margin, with 1 seta on each side. Mentum with tooth, ligula with 2 setae at the apex, slightly shorter than paraglossae. Apical maxillary and labial palpomeres pubescent, constricted toward the apex, penultimate palpomere of labial palpi with more than 2 setae. Eyes quite flat, temples short. Antennae with antennomere 1 short, 2 short, the following subequal in length, short; antennomeres 1-2 glabrous, 3-11 densely pubescent, except the base of the third one.

Pronotum wide (index Pw/Pl = 1.32 in holotype), with lateral gutter narrow; sides slightly rounded, almost linearly constricted toward the base, not sinuate before the basal angles, equally constricted at the anterior margin and the base, maximum width anterior to the middle, basal angles obtuse. Lateral seta anterior to the middle. Anterior angles slightly protruding, rounded. Median furrow shallow. Basal impressions narrow, weakly impressed, one on each side of pronotum. Base completely bordered. Dorsal surface smooth, with only a few microscopic punctures near the basal impressions. Pro-, meso- and metasternum with some isolated short setae, pro-, meso- and metepisterna smooth. Prosternal projection unbordered, with some setae at the apex.

Elytra long (index El/Ew = 1.58 in holotype), glabrous, almost parallel-sided. Basal margin entire, basal margin meeting lateral margin with an obtuse angle. Striae deep, complete, impunctate; intervals smooth, almost flat. Scutellar stria very short, scutellar setigerous puncture present at the base of the



Fig. 1. – *Harpalus poussereaui* Facchini & Giachino n. sp., ♂ holotype. Total length 6.7 mm.

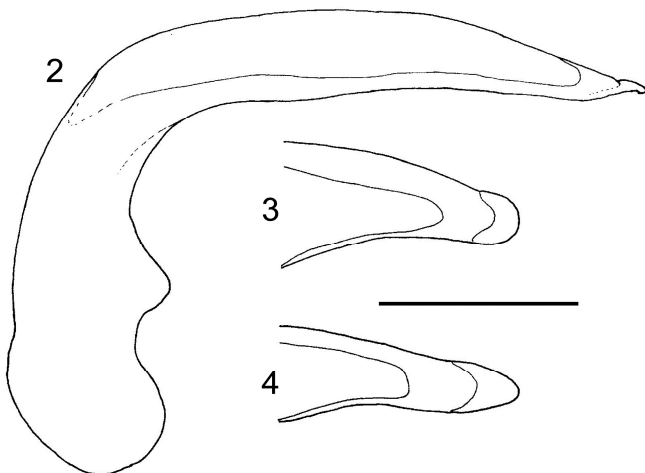


Fig. 2-4. – 2-3, *Harpalus poussereaui* n. sp., holotype, median lobe of the aedeagus in left lateral view (2) and dorsal view, apical part (3). – 4, *H. brunnipes* Dejean from Plaine des Remparts, La Réunion, median lobe of the aedeagus in dorsal view, apical part. Scale: 0.5 mm.

scutellar stria; 1 discal setigerous puncture situated on interval 3. Weak preapical elytral emargination. Umbilicate series composed of 17 setigerous punctures, with no gap between humeral and apical series.

Abdomen smooth, only slightly pubescent at base; last visible sternite with 2 setae on each side in both sexes.

Legs moderately short; tarsomeres dorsally setose, metatarsomere 1 longer than 2 but shorter than 2 and 3 together; onychium with a few thin setae ventrally. Pro- and mesotarsomeres 1-4 of male dilated, with 2 rows of scale-like bristles ventrally.

Aedeagus (fig. 2-3) medium-sized (1.6 mm), median lobe with ostium slightly displaced on the left side. Apex curved at the left side in dorsal view, with an apical plate; inner sac without field of sclerotised spines.

Parameres short and broad, conchoid, right one smaller.

Etymology. – We are glad to dedicate this new species to Jacques Poussereau who collected the type material of this interesting species.

Distribution. – Known only from La Réunion: Les Makes, Bon Accueil Forest.

Relationships. – This new species is closely related to *H. brunnipes* and *H. pecinai*. It shares with them the tarsomeres dorsally setose, the wings strongly reduced, the head relatively large and the aedeagus with an apical plate. *Harpalus poussereaui* n. sp. is different from *H. pecinai* in that the apex of the median lobe of aedeagus is curved to left side in dorsal view (almost straight in *H. pecinai*), the inner sac of the aedeagus does not have a field of sclerotised spines (present in *H. pecinai*), smaller body size and smaller aedeagus, darker colour, elytral intervals flat. It differs from *H. brunnipes* by elytral striae impunctate (slightly punctate in *H. brunnipes*), elytral intervals flat, weaker preapical elytral emargination, less convex eyes, pronotum with hind angles obtuse (instead of slightly rounded), smaller size of the body and of the aedeagus, and apex of the median lobe of aedeagus more rounded in dorsal view (fig. 2-4). The new species is different from *H. rivalsi* in that the tarsomeres dorsally setose (glabrous in *H. rivalsi*), wings

strongly reduced (normally developed in *H. rivalsi*), head relatively larger, median lobe of aedeagus with an apical plate (lacking in *H. rivalsi*).

Genus *Neocolpodes* Jeannel, 1948

Neocolpodes poussereaui Deuve, 2007 (fig. 5-10)

Material examined. – 1 ♂, La Réunion, Plaine des Cafres, caverne Bateau, piège à viande, 2.IV.2009, J. Poussereau coll. (CPo); 1 ♀, *idem*, piège alimentaire, 24.VII.2007, J. Rochat coll. (CPo); 1 ♀, *idem*, piège à viande, 24.VII.2007, J. Rochat coll. (CGi); 1 ♀, *idem*, piège à viande, 24.VII.2007, D. Martiré coll. (CPo); 1 ♂ and 1 ♀, La Réunion, Saint-Philippe, caverne Citron, piège alimentaire, 17.X.2002, J. Rochat coll. (CPo, CGi).

Neocolpodes poussereaui was described by DEUVE (2007) from two females. Among the material recently sent for study by J. Poussereau, some specimens of this species were collected in the type locality and from another cave. The presence in this material of two males allows us to complete the original description.

Redescription. – Length ♂, 6.48-8.16 mm ; ♀, 5.89-7.62 mm. Dorsal colour testaceous brown, as well as the femora; tibiae, tarsi, antennae, and palpi more or less lighter, yellowish testaceous.

Head small, moderately long, tapering backwards, neck longly distinct; eyes small, flat, very poorly convex, not longer than temples. Frons convex and smooth, with shallow pits forming two short parallel impressions directed forward and poorly distinct diverging lines reaching the frontal setae. Clypeus sub-flat, trapezoid, bisetulate. Labrum tongue-shaped, slightly tapered forward, the front edge slightly V-etched. Maxillary palpi with the last article fusiform. Penultimate article of labial palps bisetulate. Antennae thin, pubescent from the fourth article, very long, exceeding, when stretched backwards, the base of pronotum and half of the elytra by five articles in the female and the base of the pronotum by six articles in the male, in which they reach the distal third of elytra; third article longer than the fourth one in female, as long as the fourth one in male.

Pronotum small and narrow, 1.14 times longer than wide in female and about subquadrate in male, poorly tapered forwards and backwards, the greatest width in the middle or slightly before; sides poorly rounded, subrectilinear backwards and before the posterior angles, which are very obtuse but not rounded; base slightly protruding. Anterior angles sub-right, a little sharp but prominent. Front edge slightly curved. Disc moderately convex, smooth, but with some large and weak oblique or transverse stripes. Lateral grooves poorly distinct, wide and flared, margins widely prominent backwards, pits wide and indistinct. Posterior angle with basal seta.

Elytra poorly convex, oval and slightly elongate, humeri marked but rounded, the base beaded. Striae complete, deep and distinctly punctuate; juxtascutellar striole joint with the first stria. At apex, 2nd stria reaches the extension of 7th one, 3rd stria reaches 4th one; much more forwards 5th stria reaches 6th one, resulting in a short recurring stria. There are three discal setae all on 3rd interstria: 1st one against

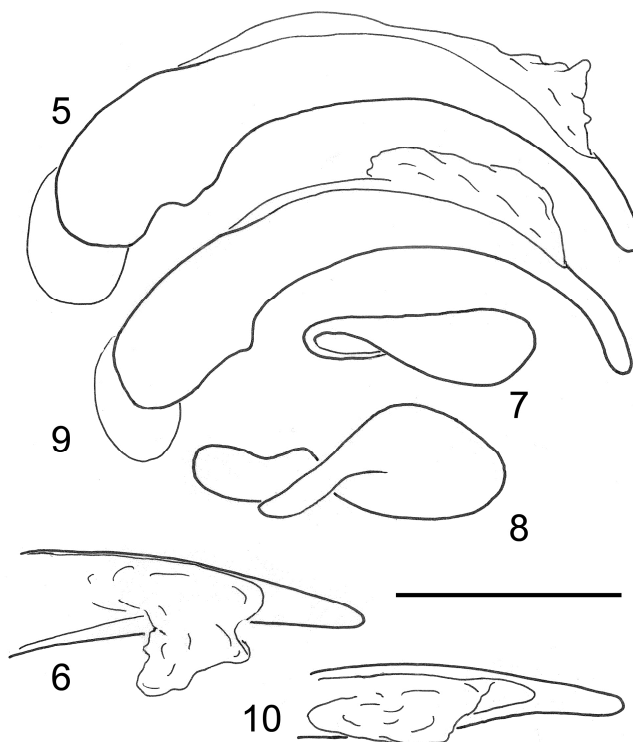


Fig. 5-10. – *Neocolpodes poussereaui* Deuve. – 5-8, From Plaine des Cafres, caverne Bateau, median lobe of the aedeagus in left lateral view (5), dorsal view, apical part (6), right paramere (7) and left paramere (8). – 9-10, From Saint-Philippe, caverne Citron, median lobe of the aedeagus in left lateral view (9), dorsal view, apical part (10). Scale: 0.5 mm.

3rd stria at the basal fourth of the elytra; 2nd one against 2nd stria at a half of the elytra, 3rd one always against 2nd stria at the apical fifth of the elytra. Basal seta present between juxtascutellar stria and 1st stria. Umbilicate series consisting of about twenty setae along the 9th interstria. Elytral apex with a sinuous preapical marginal sinuosity.

Legs of medium length, slender, tarsi glabrous dorsally; protarsi not dilated in male, 4th article of metatarsi approximately symmetrical, somewhat incised but not lobed, 1.5 times shorter than the third one and two-times shorter than the second one.

Aedeagus (fig. 5-10) of medium size. Median lobe, in lateral view, long, slender, slightly and regularly curved and tapering regularly from base to apex. Apex, in dorsal view, narrow and elongated, digitiform; long dorsal ostium, reaching the basal fourth of the median lobe. Carina broad and well developed. Parameres as in fig. 7-8.

Notes. – The two specimens, male and female, from the caverne Citron, are much smaller (♂, 6.48 mm; ♀, 5.89 mm) than those collected from the type locality and may appear at first glance to belong to a different species. A detailed analysis of the external characters and the morphology of the aedeagus, together with the fact that a female specimen of smaller size (6.91 mm) is present also within the series from the type locality, leads us to consider this to be simple intra-specific variability.

CORRIGENDUM

In this paper devoted to the Malagasy region fauna, we also take the opportunity to correct some mistakes in the description of a carabid species occurring in Seychelles islands (GIACHINO, 2009). These mistakes were included in the draft manuscript provided in advance from the editor to the author. The part concerning *Pachycallida rufoplagiata* Jeannel (GIACHINO, 2009: 44) must be replaced by the following.

Pachycallida rufoplagiata Jeannel, 1949

Pachycallida rufoplagiata Jeannel, 1949: 970; LORENZ, 2005: 490.

Callidia rufoplagiata (Jeannel); FRITH, 1979: 6.

Distribution. – Madagascar - Aldabra (1979). 23 ex. in light trap (FRITH, 1979).

Description. – Elongate; head and thorax distinctively rounded. Thorax slightly narrower than elytra; elytra subparallel. Shiny; elytra ridged. Pronotum light reddish, elytra green with two reddish spots.

Dark reddish brown; bluish-black; legs dark. Length 9-10 mm.

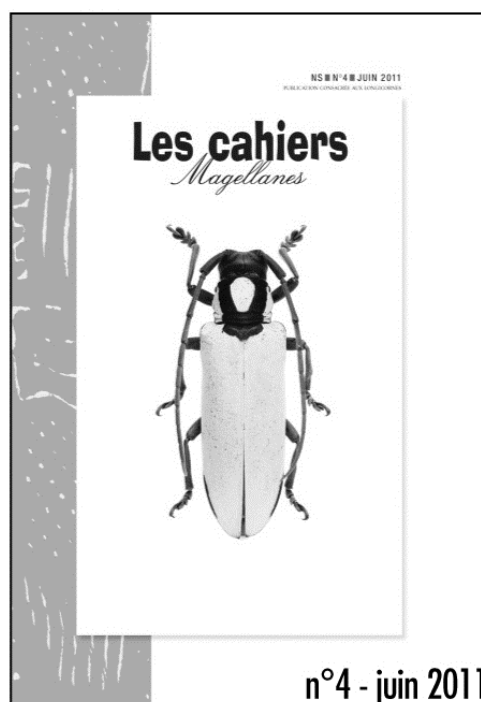
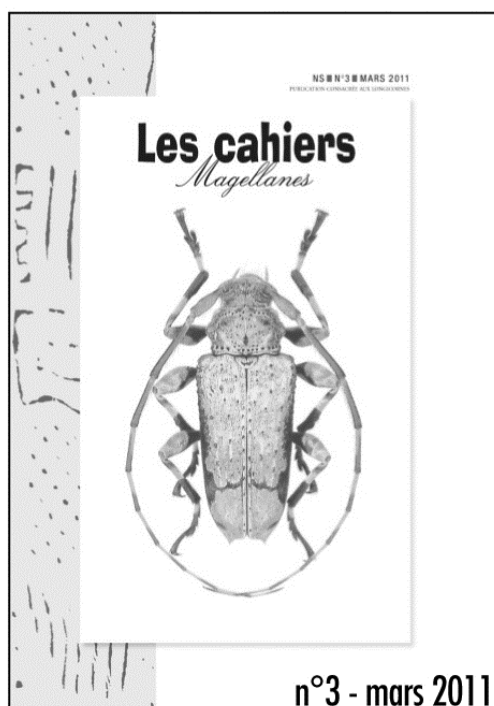
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