Notes on the genus *Laccomimus*, with first record for Guadeloupe and clarification of the identity of *Laccophilus perparvulus* Régimbart, 1895 (Coleoptera, Dytiscidae)

by Michaël MANUEL

UPMC Université Paris 06, Institut de Biologie Paris–Seine, UMR 7138 "Évolution Paris–Seine" CNRS UPMC, Case 05, 7 quai Saint-Bernard, F – 75005 Paris <michael.manuel@upmc.fr>

(Accepté le 11.IV.2017)

- Abstract. Specimens of the recently described genus *Laccomimus* Toledo & Michat, 2015, deposited in the Muséum national d'Histoire naturelle (MNHN, Paris) and freshly collected material from Guadeloupe have been studied. *Laccomimus bordoni* Toledo & Michat, 2015, is the first member of the genus to be recorded from Guadeloupe. Data about its distribution and habitat preferences within the archipelago are presented. The studied MNHN material included specimens of *L. improvidus* Toledo & Michat, 2015, from French Guiana (new record) and of *L. bordoni*, *L. alvarengi* Toledo & Michat, 2015, and *L. distinctus* Toledo & Michat, 2015, from Mato Grosso (Brazil). Based on examination of the holotype, *Laccophilus perparvulus* Régimbart, 1895, is established as a junior synonym of *Laccophilus pumilio* LeConte, 1878 (n. syn.), now in the genus *Laccomimus*.
- Résumé. Notes sur le genre Laccomimus, avec première citation de la Guadeloupe et clarification de l'identité de Laccophilus perparvulus Régimbart, 1895 (Coleoptera, Dytiscidae). Des spécimens du genre Laccomimus Toledo & Michat, 2015, provenant de la collection du Muséum national d'Histoire naturelle (MNHN, Paris), ainsi que du matériel collecté récemment en Guadeloupe par l'auteur, ont été étudiés. Laccomimus bordoni Toledo & Michat, 2015, est la première espèce du genre citée de la Guadeloupe. Des données sur sa distribution au sein de l'archipel et son écologie sont fournies. Le matériel étudié du MNHN comprend des spécimens de L. improvidus Toledo & Michat, 2015, de Guyane française (citation nouvelle), et de L. bordoni, L. alvarengi Toledo & Michat, 2015, et L. distinctus Toledo & Michat, 2015, du Mato Grosso (Brésil). D'après l'examen de l'holotype, une nouvelle synonymie est établie : Laccophilus perparvulus Régimbart, 1895, n. syn. de Laccophilus pumilio LeConte, 1878, maintenant dans le genre Laccomimus.

Keywords. - Taxonomy, faunistic, Laccophilini, new synonym, new records, French Guiana, Neotropical region.

The recently created New World genus *Laccomimus* Toledo & Michat, 2015 (tribe Laccophilini) currently comprises 13 species including the type species *Laccomimus pumilio* (LeConte, 1878) (previously classified in the genus *Laccodytes* Régimbart, 1895), eleven species described concomitantly with the new genus (TOLEDO & MICHAT, 2015), and one species described subsequently (BRAGA & FERREIRA-JR, 2016). Within the tribe, adults of this genus are characterised by the elytra strongly attenuated posteriorly, the posterior margin of pronotum medially angulate, the dorsal surface nearly impunctate, the prosternal process broadly trianglular to cordiform and apically simple, the metacoxal lines sinuate and strongly convergent anteriorly, the metatibiae with two apical spurs that are apically simple, and the mesotibial spurs longer than mesotarsomeres I-IV (TOLEDO & MICHAT, 2015; BRAGA & FERREIRA-JR, 2016; MILLER & BERGSTEN, 2016; for the morphology of larvae see MICHAT & TOLEDO, 2015). *Laccomimus* species are small sized (1.8-2.5 mm); they seem to live mainly in lentic habitats but otherwise their ecology is poorly known. They are found in Florida, Central America, the Caribbean, and throughout lowland tropical South America (TOLEDO & MICHAT, 2015; BRAGA & FERREIRA-JR, 2016; MILLER & BERGSTEN, 2016).

This study reports results from examination of *Laccominus* specimens that could be located in the collection of the Muséum national d'Histoire naturelle (Paris), as well as material collected by the author in 2012 and 2013 in Guadeloupe. Illustrations of habitus and median lobe of aedeagus are provided for some of the species. The genus is newly recorded from Guadeloupe, where field observations provide interesting insights about the ecology of *L. bordoni* Toledo & Michat, 2015. *Laccomimus improvidus* Toledo & Michat, 2015, is newly recorded from French Guiana. The holotype of *Laccophilus perparvulus* Régimbart, 1895, kept in the Muséum national d'Histoire naturelle, in Paris, could be examined. Even if this species is still listed under the genus *Laccophilus* Leach, 1815, in the most recent version of the World Catalogue of Dytiscidae (NILSSON & HÁJEK, 2017), several authors have strongly suspected that it should rather belong to *Laccodytes* (YOUNG, 1954) or, more recently, to *Laccomimus* (TOLEDO & MICHAT, 2015). This assumption is here confirmed and *perparvulus* is shown to be a junior synonym of *L. pumilio*.

MATERIAL AND METHODS

Abbreviations. – CMM, collection of Michaël Manuel, Paris; MNHN, Muséum national d'Histoire naturelle, Paris; hw, hand writing; pr, printed.

Samples were collected in Guadeloupe by the author during two expeditions in November 2012 and August-September 2013, for the latter with participation of two Master students from the *Université Pierre & Marie Curie*, Raphaël Chaillié and Romain Sabroux. Samplings were performed *in situ* (no light traps) using hand sweeping nets (1 mm mesh) (EFE & GB nets, Totnes, UK) and smaller nets (0.5 mm mesh). A particular difficulty in collecting *Laccomimus* is that they tend to jump very promptly out from the net or sorting device, so that special care must be exerted to quickly pick up specimens before they escape (see also citation of Young's letter to Spangler on page 322 of TOLEDO & MICHAT, 2015).

The beetles were studied with a Leica MZ16 stereomicroscope. Photos of habitus and structures were made with an Olympus SZX12 triocular stereomicroscope using a Spot FLEX Color Pixel Shift 64 Mp camera (Diagnostic Instruments Inc., USA) with Spot Basic software. For the habitus pictures, Z-series of about 20 photos were stacked using Helicon Focus Software (Helicon Soft Ltd), then the background was removed in Photoshop. Male genitalia were studied and figured in wet condition. Prior to dissection, Museum specimens were let for a few minutes in warm water for tissue softening. Photos of genitalia were made with an Olympus BX61 microscope using a Q-imaging Camera with Image Pro plus software. Label texts are cited in quotation marks for type material and without quotation marks for non-type material; additional comments are given in square brackets.

RESULTS

Genus Laccomimus Toledo & Michat, 2015

Laccomimus distinctus Toledo & Michat, 2015

Laccomimus distinctus Toledo & Michat, 2015: 310. MICHAT & TOLEDO (2015: 832); NILSSON & HAJEK (2017: 213).

Type locality. – Panama, Canal Zone, Albrook Forest.

Material examined. – **Brazil** (MNHN, collection générale). $2 \, \bigcirc$, "Matto-Grosso, Corumba" [originally on same pin with specimens of *L. bordoni* and *L. alvarengi*, with label bearing following remark: « *Épines des tibias post. simples. Elles sont bifides chez les autres espèces du genre* Laccophilus »; English translation: metatibial spurs simple. They are bifid in other species of the genus *Laccophilus*].

Diagnostic features. – Total length 2.05-2.4 mm. Elytra brown rufous with confuse and often fragmented yellow subbasal band, with narrow darker band along suture, with apical fourth diffusely paler; ventral side mainly testaceous to reddish; prosternal process with blade elongate, apex strongly acuminate reaching mesocoxae; postero-lateral lobes of metacoxal process acutely acuminate (in male) or angled (in female); gonocoxal blade with two denticles; in male, both protarsal claws simple, equal in shape; median lobe of aedeagus in lateral view curved on apical third, the latter flattened, apex with small expansion (see original description for further details and illustrations).

Distribution. – Argentina, Bolivia, Brazil, Colombia, Costa Rica, French Guiana, Panama, Paraguay, Venezuela.

Laccomimus bordoni Toledo & Michat, 2015 (fig. 1, 6, 10-13)

Laccomimus bordoni Toledo & Michat, 2015: 320. Michat & Toledo (2015: 837); Braga & Ferreira-Jr (2016: 99); Nilsson & Hájek (2017: 213).

Type locality. - Venezuela, Higuerote.

Material examined. – Guadeloupe (CMM), 1 &, 1 &, Grande-Terre, Port-Louis, 16,XI,2012, Manuel leg., 16°25'10.7"N - 61°31'15.6"W, small marsh east from Port-Louis; 2 ex., Grande-Terre, Port-Louis, 18.XI.2012, *Manuel leg.*, 16°24'04"N - 61°30'9,5"W, ravine Gaschet (stream), close to bridge on road N6; 7 3° , 3 9° , Basse-Terre, Sainte-Rose, 21.VIII.2013, Manuel, Chaillié, Sabroux leg., 16°21'08"N - 61°45'14.3"W, étang du Vieux-Fort (large pond), eastern extremity, under mangrove trees, with much decaying vegetal material; 6 3, 4 9, Basse-Terre, Sainte-Rose, 21.VIII.2013, Manuel, Chaillié, Sabroux leg., 16°21'05.3"N - 61°45'15.8"W, étang du Vieux-Fort (large pond), semi-shaded area under trees with Commelinaceae in the water, 1 9, Grande-Terre, Sainte-Anne, 23, VIII. 2013, Manuel, Chaillié, Sabroux leg., 16°15'25"N -61°24'41''W, alt. 54 m, Grands-Fonds, Pavillon, pond with stony bottom along dried-up brook; $1 \sqrt[3]{29}$, Grande-Terre, Sainte-Anne, 23.VIII.2013, Manuel, Chaillié, Sabroux leg., 16°15'26"N - 61°24'38"W, alt. 53 m, Grands-Fonds, Pavillon, small pools with clear water, with water flowing from the ground; 1 ♂, 1 ♀, Grande-Terre, Sainte-Anne, 29.VIII.2013, Manuel, Chaillié, Sabroux leg., 16°17'24.5"N - $61^{\circ}22'12''W$, Bel-Étang, large pond with dense vegetation, wooded part of the margin; 1 \mathcal{E} , Marie-Galante, Grand-Bourg, 31.VIII.2013, Manuel, Chaillié, Sabroux leg., 15°54'26.3"N - 61°16'27.3"W, alt. 153 m, Saint-Marc, pond in meadow, wooded part of the margin, without helophytes. Brazil (MNHN, collection générale and collection Guignot). 5 ♂, 10 ♀, "Matto-Grosso, Corumba", [including 4 specimens originally on same pin with specimens of L. distinctus and L. alvarengi; see comment above under L. distinctus].

Diagnostic features. – Total length 2.1-2.5 mm. Elytra brown, generally with quite sharply defined pale subbasal band, often fragmented in spots, and with subapical lateral yellow band extending to apex (fig. 1); ventral side mainly brown to dark brown; prosternal process with blade short, apex rounded; postero-lateral lobes of metacoxal process rounded; gonocoxal blade with single medial denticle; outer protarsal claw of males scimitar-shaped; median lobe of aedeagus in lateral view slender but robust, base and distal portion forming very wide angle, then straight, regularly narrowed to apex, ending in bird head-like hook (fig. 6).

Variability. – Specimens from Guadeloupe are on average slightly larger than those from Mato Grosso, Brazil. They are also darker on elytra and ventral surface. In specimens from Guadeloupe, the elytral testaceous drawing is generally well distinct as in fig. 1, but in some specimens it is inconspicuous and the elytra appear almost uniformly dark brown. The apical hook of the median lobe of aedeagus is more robust in specimens from Guadeloupe than in those from Mato Grosso. One male from the latter locality has the apical hook reduced and in another male it is even completely lacking. Otherwise the external morphology and shape of the genitalia are extremely similar, despite large geographic distance between the specimens compared.

Ecology and biology. – In Guadeloupe, this species is rather rare, as it was collected at only 8 of about one hundred sites explored by the author in 2012 and 2013 (note that in two instances, neighbouring sites are represented by a single dot on the map of fig. 13). Specimens of *L. bordoni* were found exclusively in the lowlands, on the three main islands of Basse-Terre, Grande-Terre and Marie-Galante (fig. 13). Among the eight collecting sites, six corresponded to lentic water bodies (e.g. fig. 10 and 11) of various sizes; one was a small, very slowly-flowing stream (fig. 12), and the last one was a small spring close to a partly dried up brook. All but one of the collecting sites were permanent water bodies. The mineral substrate was either invisible (3 sites) or consisted of clay (4 sites) and/or calcareous gravel (fig. 12) with or without stones. The organic substrate (decaying vegetal material) was moderately abundant in half of the sites; in the remaining sites it formed a continuous and deep layer on the bottom. All sites were characterised by eutrophic and neutral to basic waters, either clear (2 sites), moderately turbid (4 sites) or completely opaque (2 sites). Helophytes were present at only one site; aquatic plants were either absent (5 sites) (e.g. fig. 10), sparse (1 site) or abundant (2 sites) (e.g. fig. 11). None of the collecting sites contained plants with floating leaves (such as

Salvinia or Nymphaeaceae), and in none there were visible development of algae. Specimens of *L. bordoni* were generally taken at very shallow depth on the margins of the water bodies.

A particularly interesting observation is that, in Guadeloupe, *L. bordoni* is clearly a species associated with semi-shaded (fig. 12) to shaded habitats (fig. 10-11) whereas, according to TOLEDO & MICHAT (2015), most other species of the genus (for which there are habitat preference data) seem to prefer habitats exposed to insolation [however, YOUNG (1954) mentioned collects of *L. pumilio* from the heavily shaded edges of a large woods pond in Florida]. Only one of the eight collecting sites was in fully open situation (but with large reeds providing shade to the margins). The place



Fig. 1-9. – *Laccomimus spp.*, morphology. – **1-3**, Habitus, dorsal side (scale bar: 1 mm): **1**, *L. bordoni* Toledo & Michat (δ), étang du Vieux-Fort, Basse-Terre, Guadeloupe, 21.VIII.2013, CMM); **2**, *L. improvidus* Toledo & Michat (δ), Saint-Laurent-du-Maroni, French Guiana, MNHN); **3**, *L. pumilio* (LeConte) (δ) holotype of *Laccophilus perparvulus* Régimbart, MNHN). – **4-5**, *L. perparvulus*, δ) holotype, ventral structures: **4**, prosternal process; **5**, metacoxal process. – **6-9**, Median lobe of aedeagus in lateral view (scale bar: 100 µm): **6**, *L. bordoni* Toledo & Michat (étang du Vieux-Fort, Basse-Terre, Guadeloupe, 21.VIII.2013, CMM); **7**, *L. improvidus* Toledo & Michat (étang du Vieux-Fort, Basse-Terre, Guadeloupe, 21.VIII.2013, CMM); **7**, *L. improvidus* Toledo & Michat (Saint-Laurent-du-Maroni, French Guiana, MNHN); **8**, *L. alvarengi* Toledo & Michat (Corumba, Matto-Grosso, Brazil, MNHN); **9**, *L. pumilio* (LeConte) (holotype of *Laccophilus perparvulus*, MNHN).

that provided the highest number of specimens was a coastal lake called Étang du Vieux-Fort (*ca* 6 km NW Sainte-Rose on Basse-Terre). On 21 August 2013, 20 specimens were collected along the shaded wooded eastern and south-eastern margins of this pond (fig. 10-11), whereas no specimen was found on the exposed southern and western margins (which nevertheless provided an extremely rich and abundant sampling of aquatic adephagans). Similarly, specimens of *L. bordoni* were collected on the shaded but not on the exposed part of the edge of Bel-Étang (north to Sainte-Anne, Grande-Terre); same observation for a pond at Saint-Marc (Marie-Galante).

Finally, the occurrence of adults of this species seems to be seasonal, since the vast majority of specimens were obtained during the expedition of August-September 2013, whereas only four were found in November 2012 and none in May 2012. The latter expedition included a visit to the Étang du Vieux-Fort, with some sampling done at the very same place where numerous specimens were later collected in August 2013. Similarly, observations suggesting marked seasonality were reported by YOUNG (1954) for *L. pumilio* in Florida. In Guadeloupe, *L. bordoni* is the only Hydradephaga species for which I have noticed such apparently seasonal variation in abundance.

Distribution. – Argentina, Bolivia, Brazil, Dominican Republic, Guadeloupe (new record), Haiti, Jamaica, Panama, Paraguay, Venezuela, Virgin Islands.



Fig. 10-13. – Habitat and distribution of *Laccominus bordoni* Toledo & Michat in Guadeloupe. – **10-12**, Examples of habitats: **10**, étang du Vieux-Fort, Basse-Terre, 21.VIII.2013, wooded eastern edge; **11**, étang du Vieux-Fort, Basse-Terre, 21.VIII.2013, wooded southern edge; **12** : ravine Gachet (stream), south of Port-Louis, Grande-Terre, 18.XI.2012. – **13**, Collecting sites (red spots) in Guadeloupe.

Laccomimus improvidus Toledo & Michat, 2015 (fig. 2, 7)

Laccomimus improvidus Toledo & Michat, 2015: 319. NILSSON & HAJEK (2017: 213).

Type locality. - Venezuela, Guarico State, ca. 65 km S Las Mercedes.

Material examined. – French Guiana. MNHN, collection générale: 1 \Im , Nouveau-Chantier, collection Le Moult; 2 \Im , Saint-Laurent du Maroni, collection Le Moult [with hand written labels "*L. vitraci* Rég, col. Rég. vid." and, "*L. perparvulus* Rég. = vitraci Rég. in litt."]. MNHN, collection Guignot: 1 \Im [uncertain determination], Cayenne, III. 1937.

Diagnostic features. – Total length 2.0-2.25 mm. Elytra chestnut-brown, with vague testaceous subbasal markings normally fragmented in spots, rarely missing, and with apical fourth more or less gradually paler (fig. 2); ventral side uniformly testaceous to reddish yellow; prosternal process with blade short, apex rounded; postero-lateral lobes of metacoxal process rounded; gonocoxal blade with single medial denticle; outer protarsal claw of males scimitar-shaped; median lobe of aedeagus in lateral view rather robust, base and distal portion forming rather obtuse angle, apex ending in wide, laterally flattened expansion (fig. 7).

Remark. – The female specimen in the Guignot's collection is only tentatively assigned to this species, as females cannot be confidently differentiated from those of similar species.

Distribution. - Venezuela, Guyana, French Guiana (new record), Suriname.

Laccomimus alvarengi Toledo & Michat, 2015 (fig. 8)

Laccomimus alvarengi Toledo & Michat, 2015: 317. BRAGA & FERREIRA-JR (2016: 99); NILSSON & HÁJEK (2017: 213).

Type locality. - Brazil, Mato Grosso, Jacaré, Xingu National Park.

Material examined. – **Brazil**. MNHN, collection générale: $1 \\cite{d}$, Matto-Grosso, Corumba [originally on same pin with specimens of *L. distinctus* and *L. bordoni*; see comment above under *L. distinctus*]. MNHN, collection Guignot: $1 \\cite{d}$, Salobra, Matto-Grosso, I.1955. $1 \\cite{q}$ [uncertain determination], *idem*.

Diagnostic features. – Total length 1.9-2.25 mm. Elytra brown, most commonly with pale subbasal band fragmented in semi-circular spots, and with apical fourth pale, but with strong variability in pattern (see original description); ventral side testaceous; prosternal process with blade short, apex rounded; postero-lateral lobes of metacoxal process rounded; gonocoxal blade with single medial denticle; outer protarsal claw of males scimitar-shaped; median lobe of aedeagus in lateral view with base and distal portion forming distinct angle or curve, distal portion not or only slightly broadened towards midlength, narrowed rather close to apex, ending in small button-like expansion (fig. 8) (variability in median lobe morphology illustrated in original description); left paramere apically strongly sinuate and slightly expanded.

Remark. – The female specimen in the Guignot collection is tentatively assigned to this species based on similarity of external morphology and identity of collecting data with the male specimen present in the same collection, but females of *L. alvarengi* cannot be confidently differentiated from those of similar species.

Distribution. - Argentina, Bolivia, Brazil, Ecuador, Panama, Paraguay, Peru, Suriname.

Laccomimus pumilio (LeConte, 1878) (fig. 3-5, 9)

Laccophilus pumilio LeConte, 1878: 596. Sharp (1882: 821); ZIMMERMANN (1920: 25).

Laccodytes pumilio (LeConte, 1878): YOUNG (1954: 48); LARSON et al. (2000: 59).

Laccomimus pumilio (LeConte, 1878): TOLEDO & MICHAT (2015: 316); NILSSON & HAJEK (2017: 213).

Laccophilus perparvulus Régimbart, 1895: 344, **n. syn.** Young (1954: 48); Toledo & Michat (2015: 302, 325); Nilsson & Hájek (2017: 222).

Laccomimus perparvulus (Régimbart, 1895), n. comb.

Type locality. – USA, Florida, Enterprise.

Type material examined. – *Laccophilus perparvulus*. HOLOTYPE : \mathcal{O} (MNHN, collection générale), "Mexique" [hw], "Tabacs, *Grouvelle*" [Tobaccos, Grouvelle] [hw], "Muséum Paris,

coll. Maurice Régimbart, 1908" [blue, pr], "Type" [red, pr], "*perparvulus* Rég." [hw], "Holotype, *Laccophilus perparvulus* Régimbart, 1905, Manuel vid. 2017" [red, pr].

Other material examined. – USA. 1 ♀, US, Florida, ca. 12.5 km SW Astor, 7.VIII.2016, 29°06'15.3"N - 81°39'02.1"W, *Manuel & Baca leg.*, marshy edges of lake Buck, Ocala National Forest (CMM).

Diagnostic features. – Total length 2.1-2.35 mm. This species is very similar to *L. alvarengi*, from which it differs by: poorly distinct pale markings on elytra; blade of prosternal process with apex more acuminate; median lobe of aedeagus in lateral view more strongly broadened towards midlength of distal portion; left paramere apically thin and poorly sinuate; and more northern distribution area.

Measurements. – Holotype of *L. perparvulus*: total length, 2.16 mm; total length without head, 2.00 mm; maximum width, 1.12 mm.

Remarks. – The holotype of *Laccophilus perparvulus* clearly belongs to *L. pumilio*, as indicated notably by dorsal colour pattern (fig. 3), testaceous ventral side (fig. 4-5), prosternal process with blade rather broad but distinctly acuminate (fig. 4), postero-lateral lobes of metacoxal process rounded (fig. 5), shape of median lobe of aedeagus (fig. 9) and of left paramere (not shown). TOLEDO & MICHAT (2015) listed a number of differences observed between specimens from Florida and specimens from Cuba, and *L. perparvulus* seems more similar to the latter: elytral pale markings rather distinct (fig. 3), blade of prosternal process only moderately acuminate (fig. 4; similar to figure 68 in TOLEDO & MICHAT, 2015), median lobe of aedeagus with transition between basal and distal portions arched rather than angulated (fig. 9).

Distribution. - USA (Florida), Belize, Guatemala, Cuba, ?Mexico (uncertain, see Discussion).

DISCUSSION

The finding of *L. bordoni* in Guadeloupe is not surprising since this species was already known to occur in more northern islands of the Caribbean and in South America. With this addition and the recent record of *Derovatellus* Sharp, 1882, there are now 12 genera of Dytiscidae recorded from Guadeloupe (PECK *et al.*, 2014; MANUEL, 2015).

The presence of *L. improvidus* in French Guiana was also expected, given previous records of this species from Guyana and Suriname. There are few known specimens of this rare species (*cf.* TOLEDO & MICHAT, 2015: 320), and the picture given in fig. 2 is the first published illustration of its habitus. The only other *Laccomimus* species currently recorded from French Guiana is *L. distinctus*.

L. pumilio was for a very long time known only from the LeConte holotype (see Young, 1954: 48) kept in the USA, which may explain why it remained unknown to French authors, in particular Régimbart and Guignot. All the specimens, now classified in the genus Laccomimus, which I could recover in the MNHN were labelled as "Laccophilus perparvulus Régimbart, 1895". The simple metatibial spurs were not mentioned in Régimbart's description (RÉGIMBART, 1895) but a remark about this character appears on a hand-written label, placed on one of the pins bearing Laccomimus specimens in the MNHN collection. The name "Laccophilus vitraci Rég. in litt.", also appearing on some labels (see above, material examined under L. improvidus), has never been published and is not available. Interestingly, Régimbart described the genus Laccodytes (still valid today) in the very same work where he described Laccophilus perparvulus (in the next page). It was therefore obvious to him that L. perparvulus was not a member of Laccodytes and in that respect he was already of the same opinion than TOLEDO & MICHAT (2015) who recently removed L. pumilio and related species from Laccodytes. Young (1954) was responsible for this transfer of L. pumilio (syn. L. perparvulus) to Laccodytes. He was aware that L. perparvulus was "very similar" to L. pumilio, probably based on Régimbart's description (as it is unclear whether he saw the type of *L. perparvulus*).

Unfortunately, the geographical origin of the holotype of *L. perparvulus* is unknown, despite the indication "Mexico" associated with the specimen. The latter was part of a large series of beetles isolated by Antoine Grouvelle from commercialised tobaccos, and as Régimbart explains, "*malgré le soin extrême avec lequel M. A. Grouvelle a noté les provenances, il est hors de doute que plusieurs sont erronées, ces provenance étant souvent, pour les tabacs comme pour beaucoup d'autres marchandises, faussées par les introducteurs"* ["despite the extreme care with which Mr A. Grouvelle noted down geographical origins, it is beyond any doubt that several are erroneous, as importers often distort indications about these origins, for tobacco like for many other goods"]. YOUNG (1954) stated (without justifying this assertion) that the type of *L. perparvulus* was possibly Cuban rather than Mexican. This seems likely given some of the morphological features of this specimen (see above, remarks under *L. pumilio*), and considering that Cuba was among the main providers of tobacco for importation to Europe in the 2nd half the XIXth Century. If Cuban populations were once to be described as a species distinct from *L. pumilio*, as envisaged by TOLEDO & MICHAT (2015), *perparvulus* should be considered as a possible available name for that species.

ACKNOWLEDGEMENTS. – I am grateful to Romain Sabroux and Raphaël Chaillié for their substantial contribution to my field work in Guadeloupe in summer 2013, to Hervé Le Guyader for his support to this expedition as director of the UMR7138, to Hervé Magnin (Parc national de la Guadeloupe), and to Stephen Baca for recent joint field work in the US. I thank Antoine Mantilleri for loans of specimens from the MNHN collection.

References

- BRAGA R. B. & FERREIRA-JR N., 2016. Laccomimus xikrin sp. nov. and new records of other species of Laccomimus Toledo & Michat, 2015 (Coleoptera: Dytiscidae: Laccophilinae) from Brazil. Zootaxa, 4154 (1): 96-100.
- LARSON D. J., ALARIE Y. & ROUGHLEY R. E., 2000. Predaceous diving beetles (Coleoptera: Dytiscidae) of the Nearctic Region, with emphasis on the fauna of Canada and Alaska. Ottawa: NRC Research Press, 982 p.
- LECONTE J. L, 1878. Descriptions of new species. In : Hubbard G. H. & Schwarz E. A., The Coleoptera of Michigan. Proceedings of the American Philosophical Society, 17 : 593-626.
- MANUEL M., 2015. Présence de *Derovatellus lentus* (Wehncke, 1876) en Guadeloupe (Coleoptera, Dytiscidae). *Bulletin de la Société entomologique de France*, **120** (4) : 449-450.
- MICHAT M. C. & TOLEDO M., 2015. Phylogenetic relationships and larval morphology of the recently described diving beetle genus *Laccomimus* (Coleoptera: Dytiscidae: Laccophilinae). *European Journal* of Entomology, **112** (4): 831-843.
- MILLER K. B. & BERGSTEN J., 2016. Diving beetles of the world. Systematics and biology of the Dytiscidae. Baltimore : Johns Hopkins University Press, 320 p.
- NILSSON A. N. & HAJEK J., 2017 A world catalogue of the family Dytiscidae, or the diving beetles (Coleoptera, Adephaga). Version 1.I.2017; distributed by the authors from the URL <</p>
- PECK S. B., THOMAS M. C. & TURNBOW JR. R. H., 2014. The diversity and distributions of the beetles (Insecta: Coleoptera) of the Guadeloupe Archipelago (Grande-Terre, Basse-Terre, La Désirade, Marie-Galante, Les Saintes, and Petite-Terre), Lesser Antilles. *Insecta Mundi*, 0352 : 1-156.
- RÉGIMBART M., 1895. Dytiscides trouvés dans les tabacs par les soins de M. Antoine Grouvelle. *Annales de la Société entomologique de France*, **64** : 321-348.
- SHARP D., 1882. On aquatic carnivorous Coleoptera or Dytiscidae. Scientific Transactions of the Royal Dublin Society, (2) 2 : 179-1003.
- TOLEDO M. & MICHAT M. C., 2015. Description of *Laccomimus* gen. n. and eleven new species from the Neotropical region (Coleoptera, Dytiscidae, Laccophilinae). *Zootaxa*, **3990** (3) : 301-354.
- Young F. N., 1954. The water beetles of Florida. Gainesville : University of Florida Press, 238 p.
- ZIMMERMANN A., 1920. Dytiscidae, Haliplidae, Hygrobiidae, Amphizoidae (Vol. 4, pars 71). In : Junk W. & Schenkling S. (eds.), Coleopterorum Catalogus. Berlin : W. Junk, 326 p.