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Additions and taxonomic remarks on the Eumolpinae (Coleoptera: Chrysomelidae) from Vanuatu and the Solomon Islands

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Abstract

In this work, several species of Eumolpinae from Vanuatu and the Solomon Islands are revised, most belonging to the tribe Typophorini, and patterns of shared species between these archipelagos and Fiji are highlighted. The analysis of these species results in the proposition of several taxonomic acts, including the description of *Eurydemus trispilus* **sp. nov.**, the synonymy of *Dematochroma antipodumoides* Jolivet, Verma and Mille, 2010 = *D. soldatii* Jolivet, Verma and Mille, 2010 **syn. nov.**, the new combination *Rhyparidella buxtoni* (Bryant, 1936) **comb. nov.** from *Rhyparida* Baly, 1861, and the proposition of transferring Fijian and Vanuatuan *Demotina* Baly, 1863 to the genus *Parademotina* Gressitt, 1957 **comb. nov.**, and this genus from Adoxini to Typophorini. The male genitalia and the spermatheca of eleven species are described, in most cases, for the first time, and a provisional generic key of the Eumolpinae from the Solomon Islands and Vanuatu is presented.

***Keywords*:** Biodiversity, islands, Western Pacific, zoogeography

Introduction

The knowledge of the Chrysomelidae of Vanuatu and the Solomon Islands (referring to the archipelago, not to the sovereign state, i.e., including Bougainville Island) is rather fragmentary and has centered its interest, particularly on the Hispinae (Baly, 1887; Maulik, 1929a, 1929b, 1932, 1935; Uhmann, 1930, 1932; Spaeth, 1936, 1937; Pic, 1938; Gressitt, 1957, 1960; Gressitt & Samuelson, 1990), with some isolated works referring to other subfamilies, including Cryptocephalinae, Eumolpinae and Galerucinae (Jacoby, 1904; Bryant, 1936, 1937, 1941, 1943; Malloch, 1939; Samuelson, 1967; Aslam, 1972). Few authors studied the diversity of Eumolpinae in these islands (Baly, 1877; Jacoby, 1898, 1904; Bryant, 1936, 1937; Pic, 1938; Selman, 1963; Gressitt, 1967a; Jolivet et al., 2009). In Vanuatu, these authors described seven species that were accommodated in five genera, including *Dematochroma* Baly, 1864; *Demotina* Baly, 1863; *Eurydemus* Chapuis, 1874; *Rhyparida* Baly, 1861; and *Vitibia* Fairmaire, 1881. In fact, Bryant (1936) reported up to 16 species but only formally described a few. In the case of the Solomon Islands, these contributions mentioned thirteen species in five genera, including *Cleoparida* Gressitt, 1967; *Damelia* Clark, 1864; *Deretrichia* Weise, 1912; *Mouhotina* Lefèvre, 1885; and *Rhyparida* Baly (Table 1).

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Interestingly, the genera reported from the Solomon Islands belong exclusively to the tribe Typophorini (*Damelia* has been alternatively considered in Adoxini or Typophorini; Bryant & Gressitt, 1957; Gressitt, 1969). This tribe is extremely diverse in Papua and Fiji (Gressitt, 1966, 1967a, 1967b, 1969; Bryant & Gressitt, 1957), but it is absent from New Caledonia to New Zealand, except for *Rhyparida foaensis* (Jolivet et al., 2007) in New Caledonia (Gómez-Zurita, 2011). The latter, the only insular Typophorini south from Vanuatu, is identical or at least very similar to the Australian and Papuan species of *Rhyparida* (e.g., *R. lineolata* Gressitt, 1967). It may represent a recent introduction, thus supporting a natural hard boundary in the distribution of South Pacific Eumolpinae tribes, with Typophorini reaching the archipelago of Vanuatu and the Eumolpini taking over from Vanuatu to New Zealand (see Gressitt, 1961). Jolivet et al. (2009) reported that the genus *Dematochroma* of the Eumolpini, present from Vanuatu to Lord Howe and Norfolk islands (Jolivet et al., 2006) and particularly rich in species in New Caledonia, should be present in the Solomon archipelago as well. In fact, Heller (1934) had listed a "*Dematochroma sp.* B" as the only Eumolpinae among the few Chrysomelidae he recorded from the Solomon Islands, but the described pattern does not entirely support this idea. In turn, in the context offered by this zoogeographic pattern, Fiji, with a rich Eumolpinae fauna dominated by Typophorini (Bryant & Gressitt, 1957), would show stronger affinities with Papuan Eumolpinae than with closer archipelagos.

Disentangling these biogeographic patterns requires a solid taxonomic knowledge of the biodiversity in these islands, which is still far from achieved. This work aims at increasing this knowledge thanks to a small collection of Eumolpinae from Vanuatu and the Solomon Islands at the National Museum of Natural History (NMNH, Smithsonian Institution, Washington DC, USA) and the Muséum National d'Histoire Naturelle (MNHN, Paris, France), which contained data for the description of a new species, as well as new records for the archipelago and material to describe the genitalia of several species uncharacterized so far.

Materials and Methods

For this study, we analyzed a small sample of 145 specimens of Eumolpinae from the Solomon Islands and Vanuatu belonging to the NMNH (Washington DC, USA) and MNHN (Paris, France). Species were identified by reference to the original descriptions or generic revisions (Jacoby, 1898; Bryant, 1936, 1937; Bryant & Gressitt, 1957; Gressitt, 1957, 1967a, 1969; Jolivet et al., 2009) and by comparison with high-quality photographs of types, when possible, available at the Natural History Museum (NHM, London, UK) and the Bernice Pauahi Bishop Museum (BPBM, Honolulu, Hawaii, USA). Study of specimens for identification and description of new taxa and dissection of male genitalia and spermathecae were done using a Leica M80 stereomicroscope, and measurements were obtained using a micrometer eyepiece in the same microscope. Dissections of the penis and spermatheca were done on selected males and females previously softened in hot distilled water with a few drops of detergent for 15–30 minutes. Dissected genitalia were

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mounted on the same card as the specimen. Photographs were obtained using a Leica DFC420 digital camera and focus stacking with CombineZP (Alan Hadley, https://combinezp.software.informer.com). For species descriptions, we followed the general nomenclature of Lawrence et al. (2010) for external anatomy, Lindroth (1957) for the male genitalia, and Wagner (2007) for the spermatheca, including the term ramus referring to the slight basal or prebasal enlargement of spermatheca receiving the spermathecal gland.

Results and Discussion

Tribe EUMOLPINI

***Dematochroma antipodumoides* Jolivet, Verma and Mille, 2010**
= [?] *Colaspoides* sp. Bryant, 1936, p. 244.
= *Dematochroma soldatii* Jolivet, Verma and Mille, 2010 **syn. nov.**

Material examined. **NMNH**: 1 male, New Hebrides, 15.v.1943, P.W. Oman; 1 female, New Hebrides, Lamen Island, 0–10 mtrs., Jan. 1976, N.L.H. Krauss; 1 male, New Hebrides, Tanna, Lenakel, 0–100 meters, January 1976, N.L.H. Krauss. **MNHN**: 1 male, Museum Paris, Nouv.-Hébrides, Ile Vaté, Dr. Joly 1902, Mai; 3 males and 4 females, Canal du Second, Museum Paris, Nouv.-Hébrides, Espiritu Santo, Dr. Joly 1902, Juillet; 1 female, Nouvelles-Hébrides, I. Aopa (= Aoba), Muséum Paris, 1934, E. Aubert de la Rüe; 1 male, Nouvelles-Hébrides, I. de la Pentecôte, Muséum Paris, 1934, E. Aubert de la Rüe; 1 female, Nouvelles-Hébrides, I. Erromango, Muséum Paris, 1934, E. Aubert de la Rüe; 1 female, Nouvelles-Hébrides, I. Malekula, Muséum Paris, 1934, E. Aubert de la Rüe; 3 males and 1 female, Nouvelles-Hébrides, I. Tanna, Muséum Paris, 1934, E. Aubert de la Rüe; 1 male, Nouvelles-Hébrides, I. Ambrym, Muséum Paris, 1935-1936, E. Aubert de la Rüe; 1 male, Nouvelles-Hébrides, I. Ambrym, Mts Marum et Bembow, Muséum Paris, 1935-1936, E. Aubert de la Rüe; 1 female, Nouvelles Hébrides, I. Ambrym, Env. de Ranon, Muséum Paris, 1935-1936, E. Aubert de la Rüe; 1 female, Nouvelles Hébrides, I. Epi, Rég. de Ringdone, Muséum Paris, 1935-1936, E. Aubert de la Rüe; 1 female, Nouvelles Hébrides, I. Erromango, Rivière William, Muséum Paris, 1935-1936, E. Aubert de la Rüe; 1 female, Nouvelles Hébrides, I. Erromango, Unapang, Muséum Paris, 1935-1936, E. Aubert de la Rüe; 2 males and 1 female, Nouvelles Hébrides, I. Malekula, Lamap, Muséum Paris, 1935-1936, E. Aubert de la Rüe; 1 female, Nouvelles Hébrides, I. Malekula, Vallée de la Pangkumu, Muséum Paris, 1935-1936, E. Aubert de la Rüe; 3 females, Ile Vaté, N^{es} Hebr., Museum Paris, 1950, Coll. Ch. et J. Primot; 1 female, Nouvelles-Hebrides, Risbec Coll.

Bryant (1936) was the first author to report a member of the Eumolpini from Vanuatu as an undetermined species collected in Espiritu Santo, which he placed in the genus *Colaspoides* Laporte in 1833. I have not seen the specimen, but it is very likely that it belonged to the same species, also from Espiritu Santo, that would be described many years later by Jolivet et al. (2009) as a member of *Dematochroma*. The latter species is interesting because it would represent yet another example of sexual dimorphism,

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understandably confounding taxonomic decisions for Eumolpinae in this geographic area (Gómez-Zurita, 2017a, 2017b). In this case, Jolivet et al. (2009) proposed two taxa from the same locality and collection event that were named *D. antipodumoides* and *D. soldatii*, which are recognized here as the males and females, respectively, of the same species, therefore resulting in the synonymy: *Dematochroma antipodumoides* Jolivet, Verma and Mille, 2010 = *Dematochroma soldatii* Jolivet, Verma and Mille, 2010 **syn. nov.** The females of *D. antipodumoides* differ from males by presenting lateral rugosities anteriorly on the elytra, which is a common sexual secondary trait of females in this lineage of Eumolpinae (Gómez-Zurita et al., 2017b). This species is widespread in the archipelago, with the original report from Espírito Santo and additional records in this work from the islands of Ambae, Ambrym, Efaté, Epi, Erromango, Malakula and Pentecoste.

The availability of new material of *D. antipodumoides* allowed me to examine the male genitalia and the spermatheca, and they are represented anew, also showing a dorsal view of the apical end of the penis, missing in the original description and generally of major importance to recognize different species. Penis (Fig. 1a) long and slender, regularly curved ventrally from base to apex, and gradually tapering dorsally at apical half; sides slightly concave, widened around ostium and converging to blunt pointed tip; gonopore elongate oval, with short transverse dorsal flap at base. Spermatheca (Fig. 2a) relatively big, slender, with long tubular cornu, round at apex and slightly bent at middle, connected at acute angle with nodulus; nodulus shorter than cornu, slightly dilated medially, with thick prebasal curved insertion of spermathecal duct in the same orientation as cornu, and slightly protruding prebasal insertion of spermathecal gland opposite to duct.

Tribe TYPOPHORINI

Cleoparida salomonensis (Bryant, 1937)

Material examined. **NMNH**: 1 male, Salomo Ins., N. Guinea, F. Monrós Collection 1959, *Cleoparida salomonensis* (Bryant) J. Gómez-Zurita det. 2020; 1 female, Solomon Is., Piva River, Bougainville, 1.vii.1944, B.D. Valentine, F. Monrós Collection 1959, *Cleoparida salomonensis* (Bryant) J. Gómez-Zurita det. 2020; 1 female, Bougainville I., i–vi.5.1944, A.B. Gurney, *Cleoparida salomonensis* (Bryant) J. Gómez-Zurita det. 2020. **MNHN**: 1 female, Salomo Ins., N. Guinea, *Cleoparida salomonensis* (Bryant, 1937) J. Gómez-Zurita det. 2023.

This species was described from Guadalcanal Island, and even though Gressitt (1967a) reported that it had been collected on several islands, he did not indicate which ones. Gressitt (1967a) also mentioned that the species might require subdivision into different subspecies. The current records show that *Cleoparida salomonensis* is also present at least in Bougainville Island, and the penis and spermatheca of the species are figured and described here for the first time. Penis (Fig. 1c) strongly curved nearly at right angle at basal third, nearly straight and slightly flattened dorsoventrally in median part, and

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straight and gradually tapering towards apex after gonopore in lateral view; apex almost semicircular in dorsal view, with narrow edges delimiting broad short oval gonopore basally; dorsal flap covering base of gonopore short and strongly transverse. The penis of *C. salomonensis* differs from all other known species in the apical border regularly curved, without presenting a median tooth, as seen in *C. obrieni* Gressitt, 1967, *C. ribbei* (Jacoby, 1898) (Fig. 1d) or *C. speciosa* Gressitt, 1967. Spermatheca (Fig. 2b) sickle-shaped; cornu tubular, strongly curved basally and feebly bent and gradually narrowing towards apex; nodulus slightly thicker than cornu, strongly bent nearly at right angle at both ends and in opposite directions; ramus short, slightly bulbous, with insertion of spermathecal duct laterally at the apex.

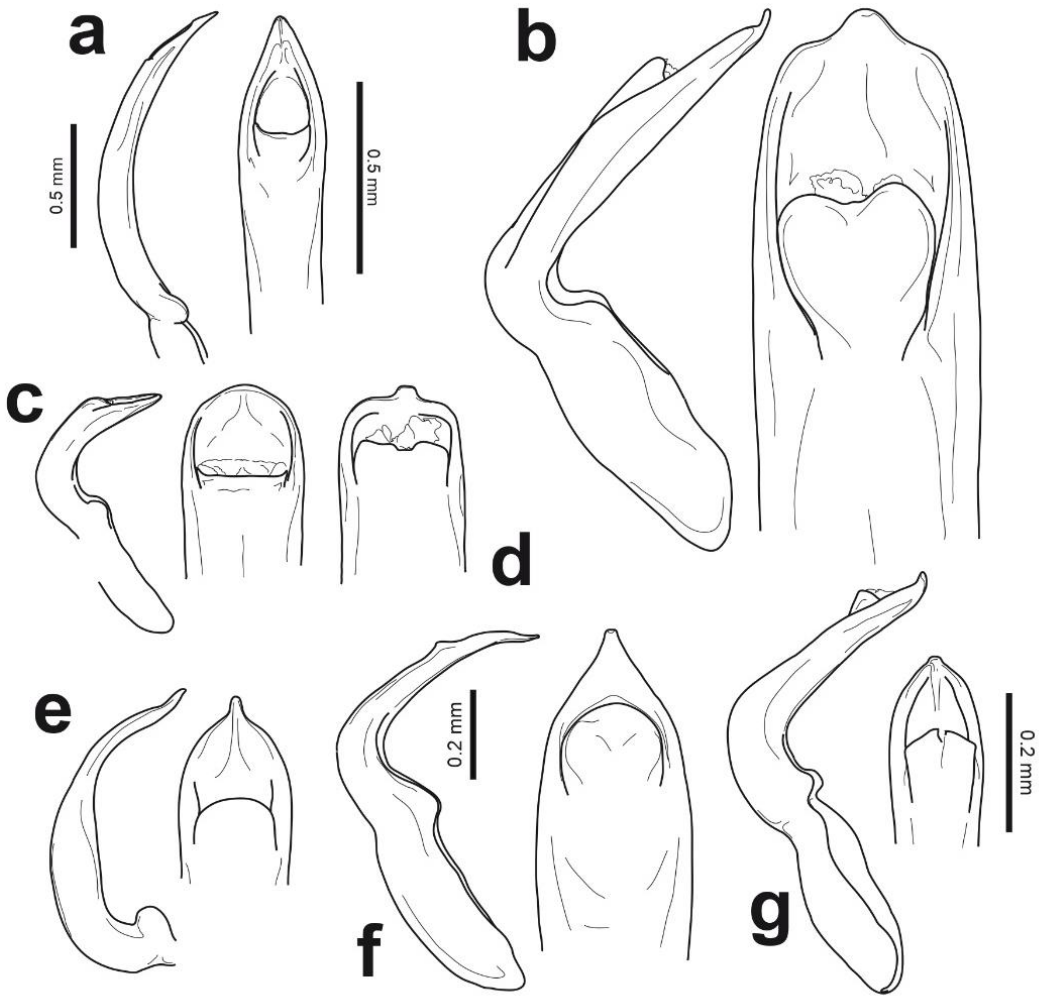

Figure 1. Lateral and dorsal apical view of the penises of *Dematochroma antipodumoides* Jolivet, Verma and Mille (a), *Eurydemus trispilus* **n. sp.** (b), *Cleoparida salomonensis* (Bryant) (c), only dorsal view of apex in *Cleoparida ribbei* (Jacoby) (d), *Demotina difficilis* Bryant (e), *Rhyparidella sp.* from Solomon (f), and *Vitibia testacea* Gressitt (g). Note: scales of a–d and e–g are different.

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Cleoparida obrieni Gressitt, 1967

Material examined. **MNHN**: 1 male, Bougainville, N Guinea, Muséum Paris, Coll. H. Clavareau, 1932; 1 female, Ile de Bougainville, Arch. Salomon.

Cleoparida obrieni Gressitt, 1967 was described from Santa Isabel Island in the Solomon archipelago. The collection in MNHN (Paris, France) has two specimens from Bougainville compatible with most traits characteristic of this species, including the relatively large size (the specimens are 7.0 and 7.2 mm, respectively), relatively smooth pronotum, without callosities and some 13 rows of punctures on elytra, but also the cephalic shape, with raised round lobes anteriorly on frons, or the slightly uneven sides of pronotum (Gressitt, 1967). Gressitt (1967) figured the male genitalia of *C. obrieni* showing a slightly subquadrate apical border with subtrapezoidal small median tooth. The male specimen from Bougainville, however, has the penis most similar to the illustration of the genitalia of *C. speciosa* Gressitt, 1967 in the same work, i.e., with regular round apical border and round median tooth (Fig. 3c). However, *C. speciosa* is an even larger species of *Cleoparida* (> 8.0 mm), and it differs from *C. obrieni* in having more rows of punctures on elytra (about 17) and presenting raised areas on pronotum. I cannot entirely discard that the specimens from Bougainville belong to a new species, different from *C. obrieni* and *C. speciosa*, also because they are rather dark, almost black, with the reddish tinge mentioned in the original description of these species only visible under certain light, while these two species were described as bright reddish with black pronotum. However, the darkening of pinned dry beetle specimens is common in collections owing to oily substances on the cuticle, and the overall fit of the MNHN specimens to the description of *C. obrieni* leaves only little doubt about their identity. The spermatheca (Fig. 2h) dissected from the female specimen is relatively slender, with cornu as long as nodulus, gradually tapering apically to sharp, slightly curved end; nodulus sigmoid, slightly enlarged prebasally and bulbous at base, with slightly prominent ramus opposite to cornu and thin spermathecal duct oriented towards cornu.

Cleoparida ribbei (Jacoby, 1898)

Material examined. **NMNH**: 2 males and 1 female, Solomon Islands, Bougainville Island, 1–14 November 1944, D. Schiffer, *Cleoparida ribbei* (Jacoby) J. Gómez-Zurita det. 2020. **MNHN:** 1 male, Treasury, Salomon Isl., Museum Paris, ex Coll. R. Oberthur; 1 female, Ile de Bougainville, Arch. Solomon; 2 males, Bougainville, N. Guinea, Muséum Paris, Coll. H. Clavareau, 1932; 1 male and 1 female, Salomo Archip., Shortlands Ins., C. Ribbe, Muséum Paris, Coll. H. Clavareau, 1932.

The type locality of *Cleoparida ribbei* (Jacoby) is uncertain, but Gressitt (1967a) mentioned that the species was present in several islands of the Solomon archipelago, although not mentioning any by name. Here we can confirm that at least Bougainville and the nearby islets of Treasury and Shortlands are some of these islands. The availability of both males and females in this small series makes it possible to describe the male

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genitalia and the spermatheca of the species for the first time. Penis (Fig. 1d) flattened dorsoventrally, strongly curved ventrally nearly at right angle at basal third; sides almost parallel, subsquare at apical border, with broad round angles and short, slightly transverse median tooth; gonopore short, transverse, covered in basal half by subrectangular dorsal flap. The squarish and mucronate apical profile of the penis of *C. ribbei* is reminiscent of *C. obrieni* Gressitt, otherwise, a larger species, differently colored and currently known from the island of Santa Isabel only (Gressitt, 1967a). Spermatheca (Fig. 2c) stout with well-differentiated parts; cornu thick, subcylindrical at basal half, tapering towards slightly curved acute apex at distal half; nodulus stout, thicker than base of cornu, about twice as long as thick, straight, and at acute angle with cornu; ramus short, bulbous, placed laterally at base of nodulus, opposite to cornu.

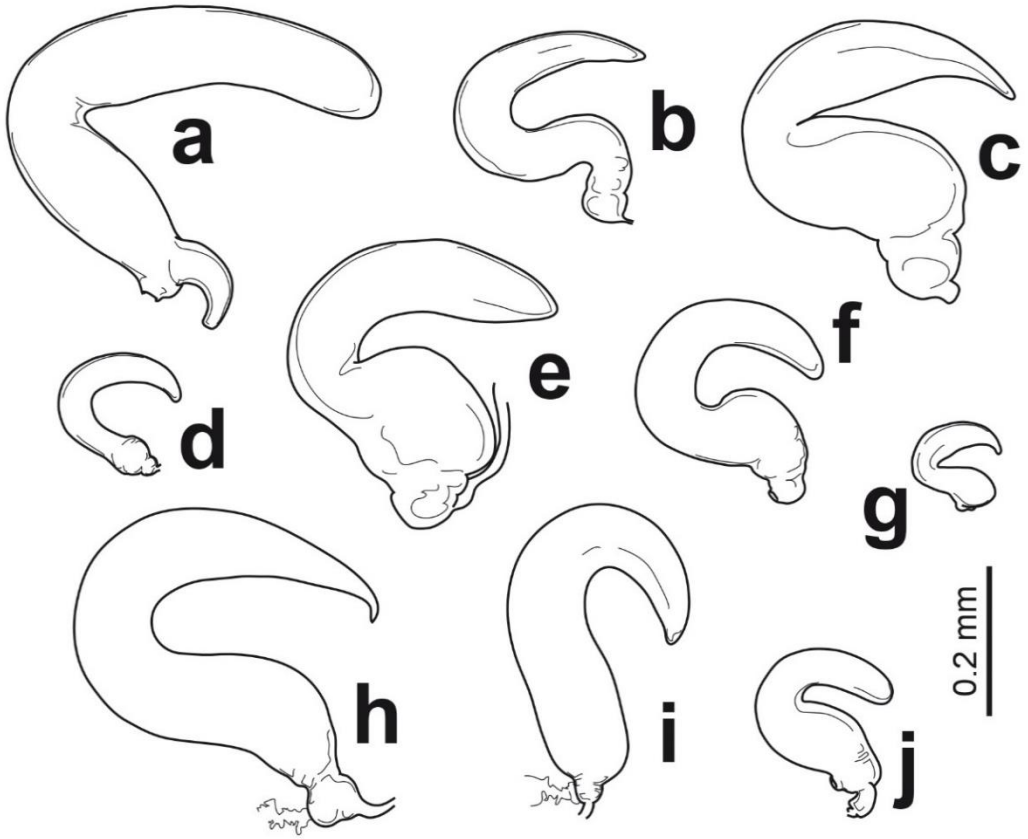

Figure 2. Spermathecae of *Dematochroma antipodumoides* Jolivet, Verma and Mille (a), *Cleoparida salomonensis* (Bryant) (b), *Cleoparida ribbei* (Jacoby) (c), *Demotina difficilis* Bryant (d), *Eurydemus trispilus* **n. sp.** (e), *Rhyparidella sp.* from Solomon (f), *Vitibia testacea* Gressitt (g), *Cleoparida obrieni* Gressitt (h), *Damelia leveri* Bryant (i), and *Rhyparidella buxtoni* (Bryant) (j).

***Damelia leveri* Bryant, 1937**

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Material examined. **MNHN**: 5 males and 1 female, Ile de Bougainville, Arch. Salomon, *Damelia leveri* Bryant, 1937 J. Gómez-Zurita det. 2023.

The genus *Damelia* was originally described from Fiji (Clark, 1864), and it remained monotypic and endemic from this archipelago until the description of four additional species from the Solomon Islands by Bryant (1937). Years later, Gressitt & Bryant (1957) described two additional species from Fiji. *Damelia* belongs to the tribe Typophorini, and it is relatively easily recognizable by having bifid claws, the absence of supraocular furrows, and the pronotum clearly narrower than the base of elytra and devoid of lateral margins. Moreover, the species tend to be metallic on dorsum, in some cases with bright green, blue or bronze tinge. The species *D. leveri* Bryant, 1937 was described from Guadalcanal and characterized by bronze-black colour on dorsum. Here, I examined a short series of specimens that fit well the description of *D. leveri*, including an unusual trait of females, namely the presence of sharp apical processes on elytra, but also the particular shape of the anterior angles of pronotum, which are laterally prominent in this species and relatively smooth in all other known species (M. Geiser, NHM, London, pers. comm.). This series is from Bougainville Island, and they are bright green dorsally with blue tinge in some specimens, which may correspond to local variation of the species.

The availability of these samples allowed for characterizing the male genitalia and the spermatheca of the species. The penis (Fig. 3b) of *D. leveri* is typical of most Typophorini, with tubular part bent at a right angle in basal quarter, before basal hood, rather flattened dorsoventrally; ventral surface markedly concave transversally and the dorsal surface slightly thickened before ostium, with apical end gradually thinning towards apex and slightly recurved dorsally; apical half of penis in dorsal view with sides weakly convergent apically, with apex broad, shortly bilobate, with short median concave incision between lobes; ostium transverse, with broad dorsal flap nearly semicircular basally. The spermatheca (Fig. 2i) of *D. leveri* is very characteristic, like a conventional hook with a long subcylindrical, straight nodulus, with cornu gradually tapering and hooked apically, shorter than nodulus; ramus weakly differentiated at basal end of nodulus, with spermathecal gland attached opposite to cornu and immediately before basal insertion of spermathecal duct.

Parademotina difficilis (Bryant, 1936) comb. nov.

Material examined. **NMNH**: 10 spec., New Hebrides, Lamen Island, 0–10 mtrs., Jan. 1976, N.L.H. Krauss, Demotina difficilis Bryant J. Gómez-Zurita det. 2020.

Demotina difficilis (Fig. 4e, f) was described based on many specimens from several islands, including Erromanga, Santo, and Malekula, but at the time, Bryant (1936) did not provide a description of genital characters. I take the opportunity offered by the specimens from Vanuatu to describe both the penis and the spermatheca of the species and also to facilitate the eventual comparison with specimens from other provenances. Penis (Fig. 1e) relatively small, strongly curved ventrally near base and at apical third at level with gonopore, with apex slightly recurved; sides subparallel, feebly enlarged

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subapically and regularly arched toward apex; apical border with slender, blunt median tooth; gonopore roundish, with transverse, apically convex dorsal flap basally. Spermatheca (Fig. 2d) relatively small, slender, hook-shaped, with cornu tubular, narrowing to apex and moderately curved, connected through a strongly curved intermediate region with straight nodulus, about as thick and long as cornu, bulbous at base; ramus small, bulbous at proximal end of nodulus.

The genus *Demotina* Baly, 1863 is currently classified as part of the tribe Adoxini (e.g., Baly, 1863; Bryant & Gressitt, 1957; Gressitt & Kimoto, 1961; Seeno & Wilcox, 1982; Arnett et al., 2002; Moseyko & Sprecher-Uebersax, 2010). This tribe was characterized mostly by the presence of dense, often scaly pubescence on dorsum, and a cylindrical thorax, often lacking lateral margins (Baly, 1863). Chapuis (1874) placed the genus *Demotina* in his group Léprotites, defined by these two characters, but also the presence of bifid claws, the lack of supraocular grooves, and the anterior border of thoracic sterna straight or concave. The tribe Adoxini has been problematic since its inception ("the subfamily [Adoxinae] is difficult to define with words"; Baly, 1863), although it was considered to "form [...] a very natural group" (Baly, 1863). Authors like Selman (1965) or Flowers (1999) questioned its validity based on the study of external and internal morphological characters, and Gómez-Zurita et al. (2005) proved, based on a molecular phylogenetic study of rRNA sequences, that Adoxini as currently defined is not a monophyletic assemblage. The tribe needs redefinition as well as the traits traditionally used to define it, since they are not synapomorphic. In particular, several species unquestionably belonging to the Typophorini have pubescent dorsum (Moseyko, 2012) or some have a more or less cylindrical thorax without margin separating pronotum and hypomera (there are two possible examples in this work: *Eurydemus* and *Vitibia*). Mentioning the Typophorini here is not of minor importance. This tribe is recognizable, among other things, by a relatively constant and characteristic trait, namely the presence of preapical emarginations on the outer border of middle and hind tibiae, fringed by long, thick setae. The tibiae of the species of *Demotina* found in Vanuatu and Fiji (Bryant, 1936; Bryant & Gressitt, 1957) clearly show this same trait and the same characteristics as seen in typical Typophorini. This strongly suggests that the correct tribal placement of this genus should be the Typophorini and not the Adoxini. This idea is not new, and Bryant (1936) already ranked *Demotina* from Vanuatu with *Rhyparida* and *Basilepta* Baly, 1860 (reported as *Nodostoma* Motschulsky, 1860) in the same group Nodostomini (a junior synonym of Typophorini; Bouchard et al., 2011). Interestingly, Moseyko (2012) described the shape of tibiae as polymorphic in *Demotina*, and species such as *D. modesta* Baly, 1874, imported into North America from Korea or Japan and locally abundant on oaks (Riley et al., 2001) or several species recently described from Vietnam (e.g., Romantsov & Moseyko, 2019), have entire tibiae. In fact, the type species of the genus—*Demotina bowringii* Baly, 1863, from SE China and Hainan (Gressitt & Kimoto, 1961)—have tibiae only slightly narrowed apically (A. Moseyko, pers. comm.). In my opinion, emarginate tibiae accompanied by a particular type of setation represent a solid and complex developmental trait, synapomorphic of a huge and widespread natural group of Eumolpinae, the Typophorini, and it sounds unlikely that it can be switched on and off within a derived group such as a genus. A most parsimonious interpretation of this

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pattern is that species with emarginate tibiae, such as those found in Fiji and Vanuatu, are not congeneric with the type *D. bowringii*, and the species with this feature should be transferred to another genus. Apart from this difference, Moseyko (2012) already noted that elytral structure and punctation differed between Asian and Australopapuan *Demotina* relative to the typically Oceanic species in this genus. The provisional solution adopted here is transferring these Oceanic species to the Fijian genus *Parademotina* Gressitt, 1957. This originally monotypic genus is hardly distinguishable from Fijian *Demotina* except for the relative width of penis, much narrower in the single species belonging to *Parademotina*, *P. aureotincta* Gressitt, 1957 (Bryant & Gressitt, 1957). In turn, this genus, which would now include this species, 17 Fijian, two Vanuatuan and one species shared between archipelagos, shall be considered part of Typophorini comb. nov.

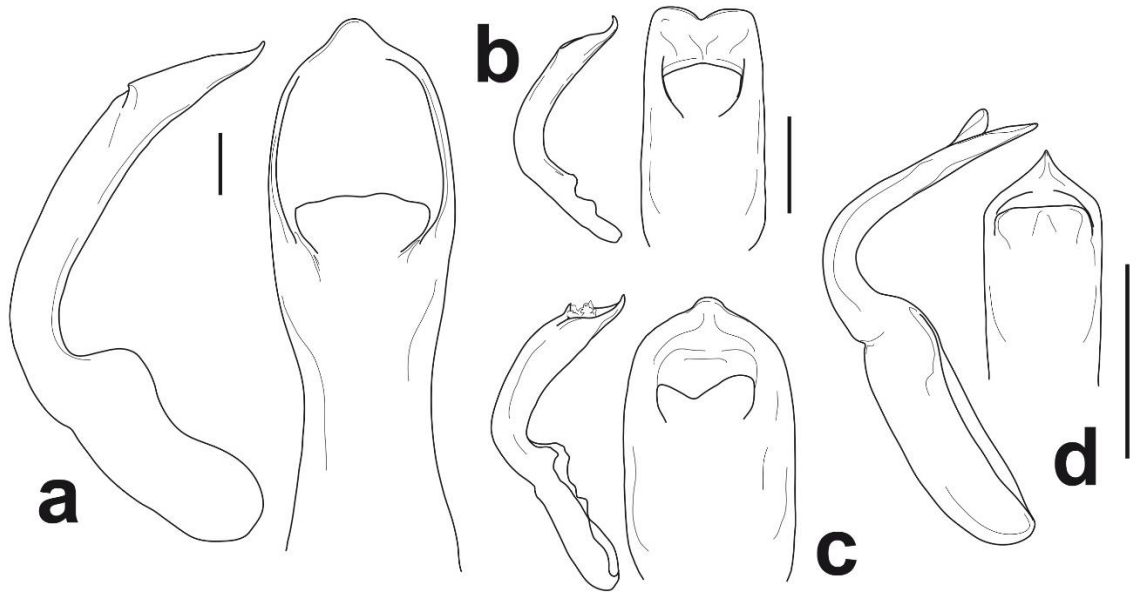

Figure 3. Lateral and dorsal apical view of the penises of *Eurydemus grandis* (Baly) (a), *Damelia leveri* Bryant (b), *Cleoparida obrieni* Gressitt (c), and *Rhyparidella buxtoni* (Bryant) (d). Scale bars = 0.5 mm.

***Eurydemus trispilus* sp. nov.**
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Holotype: male, Solomon Is., Piva River, Bougainville, vi.1944, B.D. Valentine, F. Monrós Collection 1959, HOLOTYPE *Eurydemus trispilus* sp. nov. J. Gómez-Zurita det. 2020 [red label] (NMNH).

Paratypes: 1 female and 1 male, *idem*, PARATYPE *Eurydemus trispilus* sp. nov. J. Gómez-Zurita det. 2020 [red label] (NMNH).

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Other material examined. **MNHN**: 12 males and 5 females, Ile de Bougainville, Arch. Salomon.

Habitus (Fig. 5b). Body elongate oval, with pronotum narrower and about 0.4x as long as elytra, moderately convex, and depressed on dorsum. Head, including labrum, antennomeres 1–3, inner border of fourth antennomere basally, pronotum, scutellum, ground of elytra, most of epipleura, femora, ventral half of protibiae and most of meso- and metatibiae, both ends of onychia (including claws), and ventral surfaces pale red; mandibles, most of fourth antennomere, antennomeres 5–9, large shoulder spot reaching base of elytron and lateral margin but not suture, large spot occupying apical half of both elytra, outer edge of protibiae, large spot around preapical emargination of mesotibiae, smaller spot around preapical emargination of metatibiae, tarsomeres 1–3 and median ring on onychia jet black; antennomeres 10–11 and pygidium dark yellow ocher. Length: 9.1 mm; width: 4.9 mm.

Head hypognathous, convex on vertex and vertical, almost flat on frons; surface smooth, shiny, glabrous, with scattered fine shallow punctures, slightly larger and aciculate above eyes; frontal suture interrupted at middle, very finely indicated between eyes and on vertex; supraocular sulcus fine, weakly impressed; frontoclypeus slightly shorter than wide at apex, subtrapezoidal, more than twice as broad as apex than at base, weakly convex, nearly unpunctured, glabrous, with weak median emargination on short anterior lobe. Labrum transverse, wider than base of frontoclypeus, with round anterior angles and weakly emarginate apical border, finely microreticulated and with relatively large aciculate punctures. Eyes large, moderately convex, dorsoventrally elongated and finely faceted; inner border emarginate with wide obtuse canthus, dorsal lobes separated by distance shorter than longest diameter of eye and wider than separation between antennal insertions. Genae shorter than transverse diameter of eye, unpunctured, glabrous. Last maxillary palpomere elongate, ovoconical. Antennae (Fig. 6a) long, filiform, nearly reaching middle of elytra; antennomeres 1–4 smooth with scattered recumbent long fine setae and antennomeres 5–11 slightly thickened preapically and covered by fine short pubescence; scape subconical, widened toward apex, convex anteriorly, weakly curved and flattened posteriorly; pedicel elongate, slightly clavate, about 2/3 as long as scape; third and fourth antennomeres slender, clavate, slightly over 1.6x longer than pedicel; fifth and sixth antennomeres longest, slightly over 2.3x longer than pedicel; seventh antennomere slightly shorter than previous, slightly over 2.2x longer than pedicel; eighth and ninth antennomeres twice as long as pedicel; tenth antennomere 1.9x as long as pedicel; eleventh antennomere as long as tenth, acute at apex. Pronotum subtrapezoidal, transverse, about 0.7x as long at middle as wide between posterior angles; anterior border semicircular, straight at middle, slightly advanced over frons, feebly concave near advanced anterior angles, unmargined at middle and with progressively wider margin at sides; anterior angle at wide, short convex lobe behind eye, in enlarged fused area of pronotum, hypomera and prosternum, with trichobothrium at middle, slightly over position of lateral border; sides weakly curved, converging anteriorly, unmargined, with hypomeral suture weakly indicated at basal half; posterior border narrower than base of elytra, weakly convex, with short median lobe before

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scutellum, finely margined, with margin enlarged and markedly protruding laterally at weakly obtuse posterior angles, with large trichobothrium at angle; surface smooth, glabrous, nearly flat on disc, with two shallow round impressions at sides of disc medially, and strongly convex laterally at anterior half, with dense tiny micropunctation and interspersed sparse small shallow punctures. Hypomera fused laterally and at wide obtuse angle with sides of pronotum, and with sides of prosternum anteriorly (Fig. 7b); surface smooth, unpunctured, glabrous. Anterior border of prosternum concave and finely margined at middle, very short in front of procoxae, and slightly convex, unmargined and fused with anterior border of hypomera and anterior angles of pronotum at sides; lateral arms of prosternum smooth, unpunctured, glabrous; prosternal process subtrapezoidal, narrower anteriorly, as wide at middle as long and slightly wider than transverse diameter of procoxae, enlarged posteriorly to enclose procoxae, with surface smooth, with scattered fine punctures and fine long pale yellow setae. Mesoventrite short, less than half as long as prosternum, transverse, as wide as prosternal process medially, with posterior border weakly tricuspid; surface smooth, with scattered fine punctures and fine long pale yellow setae. Mesepimera and mesanepisterna very finely microreticulated, with scattered shallow fine punctures, and short appressed pale yellow setae near anterior angle of mesepimera. Metaventrite 1.5x longer than prosternum, transverse; anterior process between mesocoxae subtrapezoidal, transverse, weakly biconvex to fit posterior border of mesoventrite, and posterior border between metacoxae shortly excavated, straight with short median notch; discrimen finely impressed, more apparent at posterior half; disc flattened, with fine tranverse scratches and scattered fine punctures with long, posteriorly recumbent fine pale yellow setae, and sides convex, smooth, unpunctured and glabrous. Metanepisterna very finely shagreened, with scattered small shallow punctures and posteriorly appressed short fine translucent setae. Scutellum slightly longer than wide at base, arched with blunt apex; surface smooth, unpunctured and glabrous, slightly depressed on disc. Elytra long, about 0.7x as long as body, with broadly round humeral angle, much wider than base of pronotum, concealed in dorsal view by large, prominent humeri, sides subparallel at basal half, widest more or less at middle, and gradually and regularly curved toward round apex; surface rather evenly convex except for short inner humeral stria and weak transverse posthumeral impression, smooth, shiny, with small fine ordered punctures at basal half, disappearing on posterior black marking; longitudinal arrangements of punctures mostly apparent on pale areas, including scutellar striae of 14–16 punctures and about six inner and two outer striae, of which only fifth complete at basal half of elytron, including on black humeral marking. Outer margin of epipleura folded upward, appearing as shortly explanate margin of elytron, entirely visible from above except at humeral prominence; most of epipleura vertical, entirely visible from side, gradually narrowing posteriorly and reaching sutural angle, smooth, shiny, unpunctured and glabrous. Membranous wings fully developed. Femora long, markedly inflated medially, unarmed in anterior and middle legs and with short acute median ventral tooth in hind legs, surface with fine microreticulation on meso- and metafemora, smooth and glossy on profemora, with sparse very fine punctures and short appressed pale yellow setae. Protibiae slender, very feebly sinuous, slightly enlarged gradually toward apex, with outer edges feebly carinated at basal 3/4; mesotibiae shorter

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than protibiae, straight, with ventral outer edge expanded as large blunt tooth at apical third and as toothed expansion at apex, delimiting wide preapical emargination covered and fringed laterally by dense long golden setae; metatibiae slender, straight, weakly enlarged toward apex, with ventral outer edge expanded as blunt lateral small teeth at apical fifth and at apex, with intervening emargination covered and fringed laterally by long dense golden setae.

Tarsi shorter than corresponding tibiae; first protarsomeres as long as second, nearly as wide at apex, third protarsomeres deeply bilobed, as wide as second protarsomeres at apex, and onychia less than twice as long as third protarsomeres, slender, slightly clavate and bent ventrally, with bifid claws (Fig. 6b); meso- and metatarsi with first tarsomeres as long as and slightly narrower than second, third tarsomeres as wide and as long as second, and onychia twice as long as third tarsomeres (Fig. 6c). First abdominal ventrite about as long as metaventrite, with long, wide anterior intercoxal process, half as long as ventrite, slightly wider than anterior process of metaventrite, and posterior border slightly concave at sides, and surface smooth, with fine scratches, sparse very fine punctures and poteriorly recumbent pale yellow fine setae; second ventrite shorter than anterior process of first ventrite and ventrites 3–4 progressively shorter, slightly concave at posterior border, smooth, glossy, with scttered fine punctures and short appressed fine setae mostly at sides; fifth abdominal ventrite slightly shorter than ventrites 3–4 combined, with wide apical transverse emargination and surface even, smooth, glossy, with scattered fine punctures and short pubescence. Pygidium short, evenly convex, finely rugose with uniformly distributed short appressed fine pale yellow setae and fringe of longer setae at apical margin. Penis (Fig. 1b) strongly curved at right angle at basal quarter, with distal 3/4 straight, gradually compressed dorsally after opening of large elongate ovoid gonopore at apical third; sides subparallel in ventral view, slightly enlarged around gonopore and gradually narrowing apically toward subtrapezoidal apex with round angles and broad median blunt tooth bent dorsally in lateral view; dorsal flap covering base of gonopore long, subcordiform.

Females. Females show no major difference compared to the males, presenting the same color and sculpture, although black markings of the elytra can be larger than in the male holotype, leaving a reduced, leaving a reduced pale and punctured area on the elytra consisting of a narrow diamond-shaped area from scutellum to middle of elytron and a narrow slightly oblique irregular stripe at basal third. Apart from this chromatic feature, which may be polymorphic in the species and not exclusive of females, the only differences can be seen in body size (11.0 mm long; 5.9 mm wide), larger than males (9.1–10.0 mm long, 4.9–5.0 mm wide); tarsi comparatively narrower and shorter (Figs 6b and 6c); and the configuration of abdomen, more convex transversally and with apical emargination of fifth abdominal ventrite less apparent. Spermatheca (Fig. 2e) with long tubular cornu, regularly curved at right angle at basal half and tapering to blunt apex at apical third, nodulus dilated, more than 1.5x broader than cornu, slightly longer than

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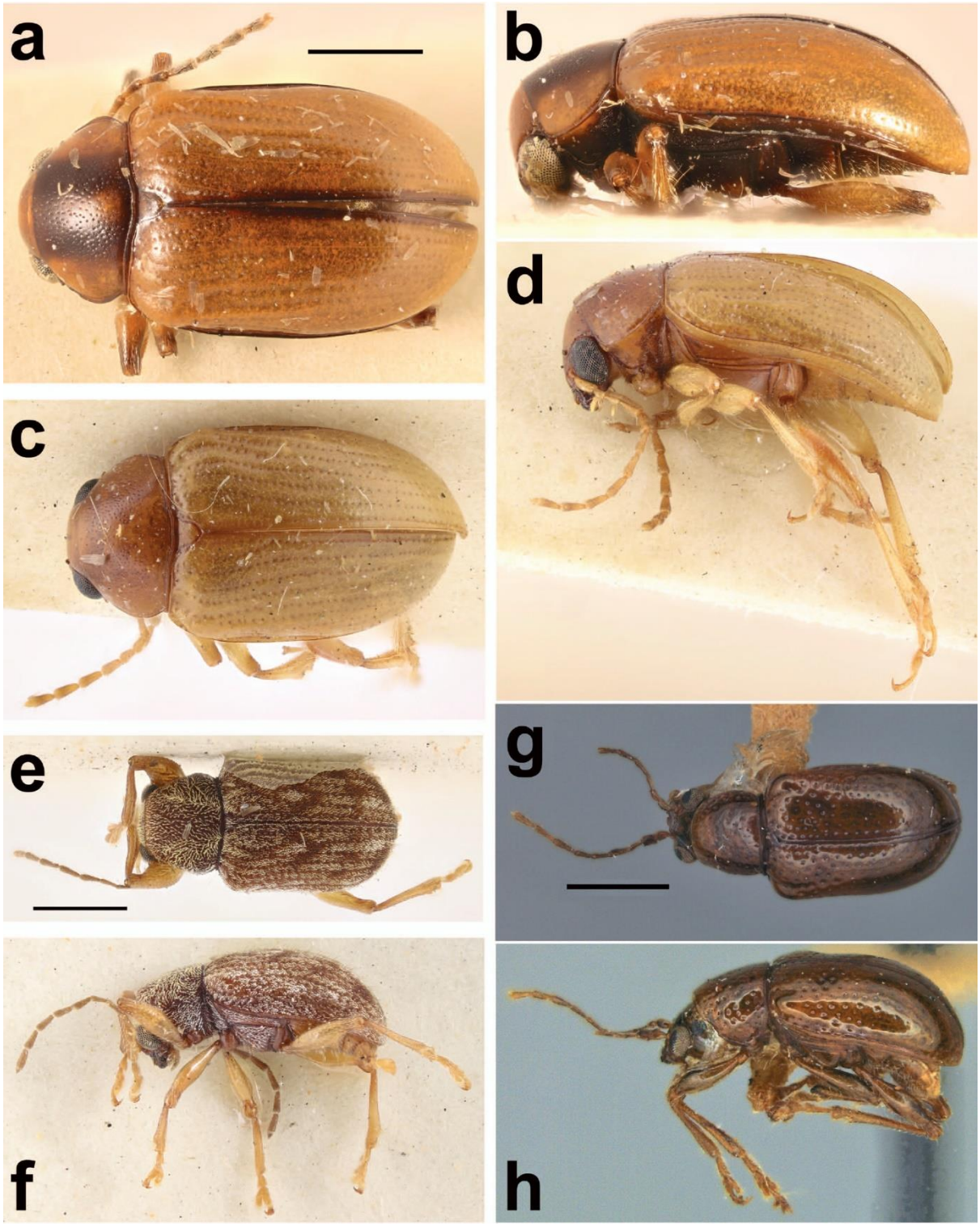

Figure 4. Holotype (a, b) and uniformly pale syntype (c, d) of *Rhyparida buxtoni* Bryant, 1936; holotype of *Demotina difficilis* Bryant, 1936 (e, f); and holotype of *Vitibia testacea* Gressitt, 1957 (g, h). Scale bars = 1.0 mm. [Credit of pictures: a–f: Keita Matsumoto (NHM, London); g–h: James Boone (BPBM, Honolulu).]

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wide, and ramus short but conspicuous, bulbous, placed laterally at base of nodulus, opposite to curvature of cornu.

Derivatio nominis. The name of the species is a Latinized adjective (m.) derived from the Greek prefix for times three (τρι-, adj.) and the suffix derived from the Greek word meaning spots (σπίλος, n., m.). It refers to the conspicuous three black spots on the conjoined elytra.

Diagnosis. The colour and sculpture of *Eurydemus trispilus* sp. nov. makes it unmistakable with *E. grandis* (Baly, 1861), the other large species of Typophorini widespread in South Pacific archipelagos. *E. grandis* is rather uniformly purplish red with base and apex of femora and tibiae black (Fig. 5a). The punctation of the pronotum of *E. grandis* is slightly stronger than in the new species, and it is much stronger, uniformly striate and with slightly convex intervals on the elytra, compared with elytral punctation of *E. trispilus*, which is mostly obsolete and the surface of elytra is regular. Some exclusive features of the species from Solomon include the eyes not so prominent, separated by a distance slightly longer than antennal insertions, and also the lack of ventral teeth in pro- and mesofemora, only presenting a small acute tooth in metafemora, while *E. grandis* has all femora armed, with particularly large, acute teeth in metafemora.

Distribution. The type and only known locality of this species is the Piva River, a relatively short river flowing from the western slopes of the Bagana volcano to the Empress Augusta Bay in the south central portion of Bougainville.

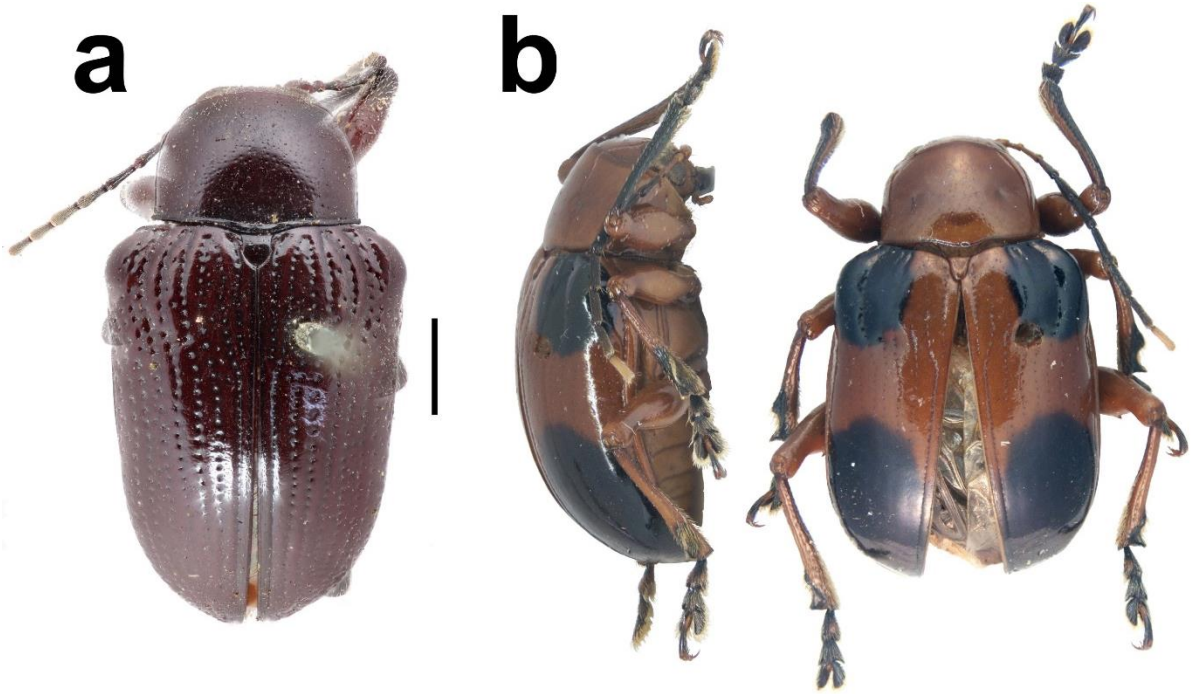

Figure 5. Types of *Rhyparida grandis* Baly, 1861 (a) and *Eurydemus trispilus* sp. nov. (b). Scale bar = 2.0 mm. [Credit of pictures: a: Keita Matsumoto (NHM, London).]

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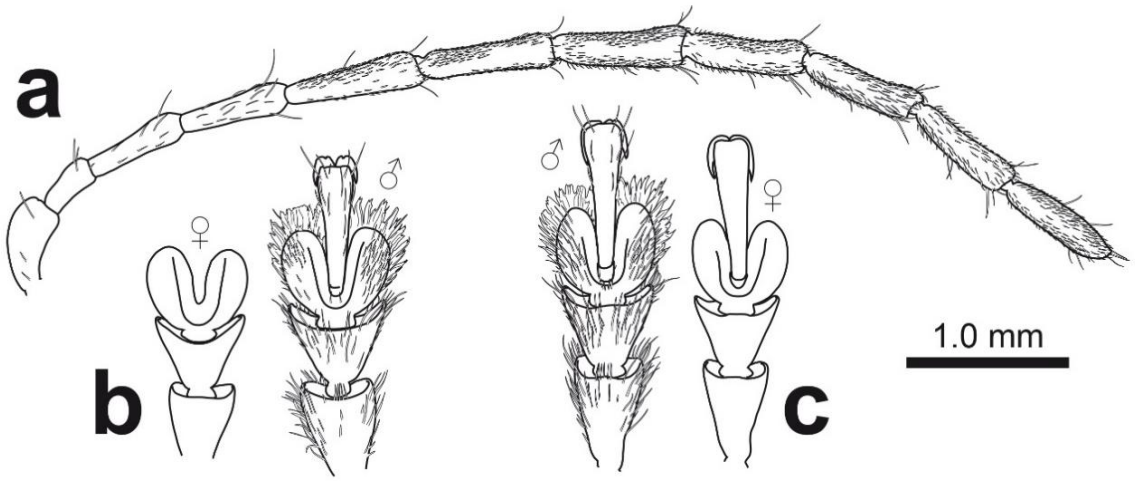

Figure 6. Antennae (a), protarsus (b) and metatarsus (c) of *Eurydemus trispilus* **sp. nov.**

Taxonomic remarks. In part conditioned by some of the instability surrounding *Eurydemus*, and in part because of some traits departing from the species found in Fiji and Vanuatu (see diagnosis), I had some doubts whether the species from Bougainville should be placed in this genus. However, the number and quality of features matching the generic type are too obvious to be ignored and I believe this to be a sound decision. There is some confusion about the meaning and attributions of the genus *Eurydemus* Chapuis, 1874. The genus was erected based on *E. insignis* Chapuis, 1874, a species showing remarkable traits, including its large size (13 mm); large eyes, closer than their shorter diameter; pronotum much narrower than elytra; elytra striate-punctate; presence of a ventral tooth in all femora; and bifid claws (Chapuis 1874). The species was originally reported from Australia, but Fairmaire (1881) cited it from Fiji. More or less contemporaneously, Baly (1878) reached the conclusion that the species he had described years earlier as *Rhyparida grandis* Baly, 1861 from New Caledonia, actually belonged to Chapuis' genus *Eurydemus*, and he also doubted the geographic source that he had reported originally in favour of an Australian origin. The Australian origin of the species, which was also put in doubt by Lea (1915), would be changed again much later, when Bryant & Gressitt (1957) recognized that Baly's species was in fact also found in Fiji. Clavareau (1914) followed Baly (1878) considering *E. insignis* to be a synonym of *E. grandis*, and still listed New Caledonia and Australia as their geographic range, opinions that were to be reversed as already mentioned by Bryant & Gressitt (1957). In the same work where Baly described *E. grandis*, he also described *E. jansoni* Baly, 1878 from western Africa, introducing additional confusion about the taxonomic limits and geographic distribution of the genus. In fact, after Baly introduced the name *Eurydemus* for an African species, several authors reported in the same genus numerous species allied to *E. jansoni* (for a non-exhaustive list, see Selman, 1965; species from Madagascar: Bechyné, 1964). However, Selman (1965) provided an objective list of important anatomical differences between *Eurydemus* Chapuis, which he considered exclusive from Fiji, and the African lineage of *E. jansoni*, for which he proposed the genus *Afroeurydemus*

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Selman, 1965. Some differences between *A. jansoni* (Baly) and *E. insignis* were already evident in the original description of the former, including a much smaller body size (*A. jansoni* is about 4.2 mm long) and relative size of eyes, which were smaller in *E. jansoni* than in *E. insignis*. Selman (1965) was more cautious about Malagasy species, which he proposed to retain tentatively in *Eurydemus*, although admitting that a revision of the group, which has not been done yet, would most likely change this situation (p. 145; Selman, 1965). Thus, following Selman (1965), I suggest treating *Eurydemus* as a South Pacific genus, currently restricted to the archipelagos of Solomon, Vanuatu, and Fiji.

***Eurydemus grandis* (Baly, 1861)**

Material examined. **MNHN**: 1 female, Nouvelles Hébrides, I. Malekula, Lamap, Muséum Paris, 1935-1936, E. Aubert de la Rüe; 1 female, Nouvelles-Hébrides, I. Malekula, Muséum Paris, 1935-1936, E. Aubert de la Rüe; 1 male, Nouvelles-Hébrides, I. Epi, Rég. de Votlo, Muséum Paris, 1935-1936, E. Aubert de la Rüe; 2 males and 3 females, Nouvelles-Hébrides, I. Epi, Rég. de Ringdone, Muséum Paris, 1935-1936, E. Aubert de la Rüe.

As discussed above, *Eurydemus* is restricted to the archipelagos of Solomon, Vanuatu and Fiji, whereby the species *E. grandis* had been reported from Fiji and Vanuatu, and specifically only from the island of Malakula in the latter (Bryant, 1936; Bryant & Gressitt, 1957). The collection at MNHN (Paris, France) includes a small series from the nearby island of Epi, thus expanding a little the known range of this species—the availability of this material allowed for the description of the penis of the species for future reference. Penis (Fig. 3a) long and slender, bent nearly at right angle close to middle, with tubular intromitent part longer than basal hood, flattened dorsoventrally, with apical end gradually tapering beyond opening of ostium towards slightly curved pointed apex in lateral view; sides slightly constricted in dorsal view before elongate elliptical ostium, with apical end convex and with broad large blunt median tooth; ostium covered basally by short transverse dorsal flap.

***Rhyparidella buxtoni* (Bryant, 1936) comb. nov.**

Material examined. **MNHN**: 1 female, Museum Paris, Nouv.-Hébrides, Ile Vaté, Melé, Dr. Joly 1902, Mai; 1 female, Nouvelles-Hébrides, I. Ambrym, Muséum Paris, 1934, E. Aubert de la Rüe; 1 male, Nouvelles-Hébrides, I. Santo, Muséum Paris, 1934, E. Aubert de la Rüe; 1 male, Nouvelles-Hébrides, I. Malekula, Muséum Paris, 1934, E. Aubert de la Rüe; 2 males and 4 females, Nouvelles-Hébrides, I. Tanna, Muséum Paris, 1934, E. Aubert de la Rüe.

These specimens fit perfectly well the type of *Rhyparida buxtoni* Bryant, including the colour polymorphism referred in the original description of the species (Bryant, 1936), represented by the type with certain areas of its body darkened (Fig. 4a), while most of the specimens in the type series were reported as entirely fulvous (Fig. 4b). When the species was described, it was reported from several islands in the archipelago, including

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Banks, Efaté (= Vaté), Emae (= Mai), Malakula and Tana (Table 1). To these islands, Ambrym and Espírito Santo can be added, confirming that this species has a large, general distribution in the archipelago. Thanks to the availability of both males and females of the species, the male genitalia and the spermatheca can be described here for the first time. The penis (Fig. 3d) of *R. buxtoni* has the typical lateral profile in Typophorini, with long basal hood and tubular part of penis bent at right angle at basal third; penis strongly compressed dorsoventrally in tubular part, with apical 2/3 relatively straight; penis with parallel sides in dorsal view, regularly curved before broadly sinuous apical border with acute median tooth; ostium broad, transverse, with transverse dorsal flap with round angles. Spermatheca small (Fig. 2j), shaped as a question mark, with nodulus slightly longer and thicker than cornu, slightly sinuous and narrower at both ends, constricted at base with short thick conduct curved opposite to nodulus leading to spermathecal duct; ramus not differentiated; cornu slender, cylindrical, strongly curved basally and blunt at apex.

This Typophorini is the likeness of *Rhyparida* Baly, possessing several features of this genus, such as the smooth glabrous dorsum, the presence of a narrow groove above the eyes, the pronotum broader than long, with round sides and anterior trichobothria at level with a distinct lateral margin, lack of ventral teeth on femora (except for minute acute projection in hind femora) and bifid claws. However, it lacks some traits that typically help to recognize *Rhyparida*, namely the large eyes, closer than anterior width of clypeus and the presence of a frontoclypeal suture appearing like an inverted Y (Gressitt, 1969). These differences in facial appearance were recognized by Gressitt (1969) as valuable characters to propose a new genus, *Rhyparidella* Gressitt, in his latest revision of Papuan Eumolpinae. This new genus accommodated fifteen species, nine new and six transferred from other genera, mainly *Rhyparida*. New additions to this genus were by Medvedev (2009), who described seven species, also from New Guinea. The species from Vanuatu (and the one from Solomon; see below) is only placed tentatively in this genus based on facial structure (Fig. 7a). But I have some doubts, first of all because the generic limits of the enormous Typophorini diversity in the Australopapuan region would benefit from an objective revision using phylogenetic criteria to identify which characters are truly relevant in their separation. Particularly, the characters highlighted by Gressitt (1969) to differentiate *Rhyparidella*, being essentially quantitative, may be labile. The second reason for a cautious, tentative classification in *Rhyparidella* has to do with objective differences of the Vanuatu species (and also from Solomon, see below) with typical *Rhyparidella* from New Guinea. These include, for example, the transverse pronotum with regularly curved sides and widest more or less at middle, while most species of *Rhyparidella* have the sides of pronotum strongly bowed posteriorly, thus appearing widest behind middle (Gressitt, 1969). Another differentiating character that may be worth noting is that, with few exceptions, the median lobe of the aedeagus in *Rhyparidella* is relatively broad, also at apex, and it typically shows two prominent anterior projections (Gressitt, 1969; Medvedev, 2009). Conversely, the penis of *R. buxtoni* is markedly acute at apex (and in the species of Solomon it is even more divergent; see below). Finally, most *Rhyparidella* have a slight posthumeral transverse impression, while the elytra in the species from Solomon Island are evenly convex.

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***Rhyparidella* sp.**

Material examined. **NMNH**: 6 males and 1 female, Solomon Islands, Guadalcanal, Honiara, 0–200 m, December 1975, N.L.H. Krauss; 1 female, Solomon Islands, Guadalcanal Is., Central Honiara, night, July 1975, Howard R. Wimmer; 2 males, Solomon Is., Malaita, Auki, 0–100 m, January 1971, N.L.H. Krauss; 2 females, Solomon Islands, New Georgia, Munda, 0–200 m, November 1975, N.L.H. Krauss; 3 males and 1 female, Solomon Is., Nggela, Taroaniara, 0–100 m, i.1971, N.L.H. Krauss.

These specimens from Solomon are very similar to the entirely pale specimens of *R. buxtoni* from Vanuatu and with the same facial structure (Fig. 7a). However, they present markedly different male genitalia and spermatheca (Fig. 1f and 2f), thus clearly representing a different species. Without a revision of the limits and diversity of *Rhyparidella* in the region, I am not confident at the moment to identify or describe this species from Solomon. However, this record of an unidentified species in the Solomon archipelago is still relevant, bridging the gap between New Guinea and Vanuatu. Here I will describe the reproductive structures of males and females of this unidentified species for future reference. Penis (Fig. 1f) strongly curved at right angle at basal third, weakly curved ventrally in lateral view, regularly tapering at apex and increasingly curved and slightly sigmoid at apical 1/5; distal half of penis in dorsal view with side weakly curved, not enlarged around ostium and progressively narrowing toward apex, with a long, narrow median projection truncated at apex; ostium small, round, nearly entirely covered by dorsal flap with round apical border. Spermatheca (Fig. 2f) with long tubular cornu bent and slightly narrowed gradually toward blunt apex, connected laterally to nodulus; nodulus considerably shorter than cornu; ramus short, bulbous, at base of nodulus, with insertion of spermathecal gland opposite to curvature of cornu.

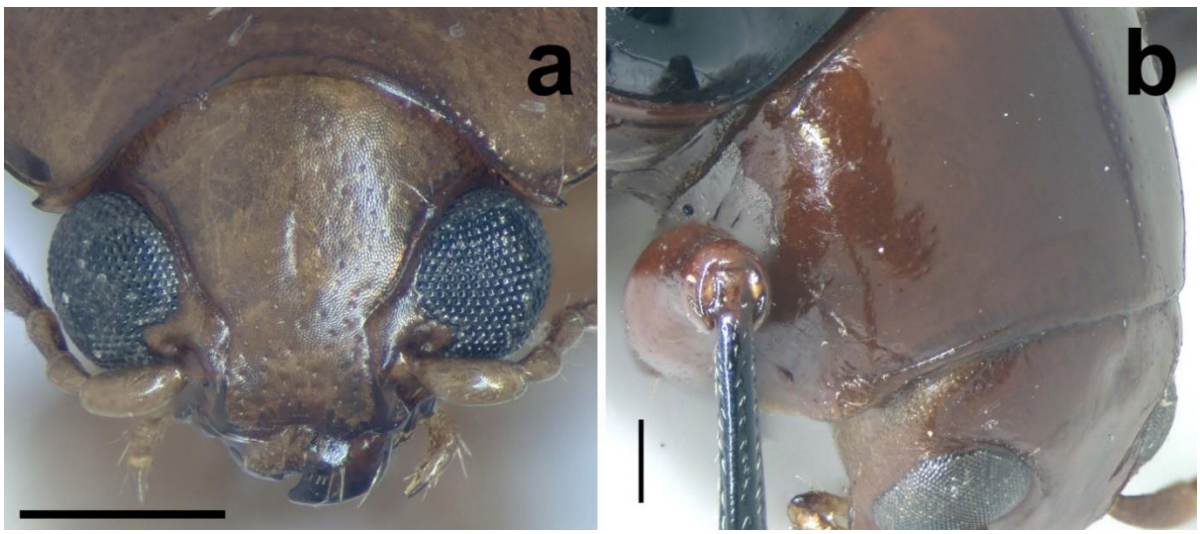

Figure 7. (a) Head of *Rhyparidella sp.* from Guadalcanal, Solomon Islands and (b) dorsolateral view of prothorax of *Eurydemus trispilus* sp. nov. Scale bar = 0.5 mm.

***Vitibia testacea* Gressitt, 1957**

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Material examined. **NMNH**: 27 spec., Solomon Is., Guadalcanal, Honiara, 0–200 m, i.1974, N.L.H. Krauss, *Vitibia testacea* Gressitt J. Gómez-Zurita det—2020. **JGZ** collection: 2 spec., idem.

The Typophorini genus *Vitibia* Fairmaire, 1881 was proposed for a Fijian species, *V. rufoviolacea* Fairmaire, 1881, noting important anatomical peculiarities, particularly a subquadrate pronotum, narrower than the base of elytra, without anterior angles and with nearly obliterate margins, and also the lack of ventral teeth in femora. In the same study, Fairmaire (1881) speculated that *Rhyparida formosa* Baly, 1877, a species supposedly from Vanuatu, might also belong to his new genus *Vitibia*. Several decades later, apart from the two species covered by Fairmaire (1881), *Vitibia* would prove highly diverse in Fiji, with up to fifteen species (Bryant & Gressitt, 1957). In fact, *V. formosa* (Baly) was also reported from several islands in the Fiji archipelago (Bryant & Gressitt, 1957), suggesting alternative possibilities for the presence of the same species in Fiji and Vanuatu of a genus otherwise endemic to Fiji, including a labeling mistake of Baly's specimen, or a recent introduction. Apart from the important anatomical features highlighted by Fairmaire (1881) in the description of the genus, the revision of the diversity of the genus revealed additional noticeable traits, including a typically small size (<3 mm) and also the presence of a regular series of punctures that become obsolete in posterior half of elytra. The specimens from Guadalcanal fit in every respect the characteristics of *Vitibia*, and they can be keyed out to *V. testacea* Gressitt, 1957 (Fig. 4g, h), an identification that was confirmed based on the characteristic apex of male genitalia with a short blunt median projection, and comparing with pictures of the type. Penis (Fig. 1g) curved in basal third at a right angle, and nearly straight, gradually compressed towards apex; sides slightly enlarged around elongate, elliptic gonopore, and gradually arched towards shortly mucronate apex, slightly recurved dorsally in lateral view; the base of gonopore covered by an elongate dorsal flap, longitudinally membranous at the middle. Spermatheca (Fig. 2g) small, with moderately curved cornu, tapering towards recurved apex, joined at angle with nodulus, slightly shorter than cornu, gradually enlarged and round basally; ramus as slight prebasal enlargement of nodulus, opposite to cornu.

Key to the genera of Eumolpinae in the Solomon Islands and Vanuatu

1. Pygidium with median longitudinal groove dorsally.... 2
 -Pygidium simple, regularly convex dorsally.... 3
2. Body elongate elliptical, compressed dorsally, relatively big (> 5 mm).... *Dematochroma* Baly, 1864
 -Body short elliptical, convex, small (< 5 mm).... *Samuelsonia* Jolivet, Verma and Mille, 2007
3. Claws appendiculate.... *Mouhotina* Lefèvre, 1885
 -Claws bifid.... 4
4. Pronotum without anterior angles and anterior setae borne lower than pronotal margin.... *Deretrichia* Weise, 1912
 -Pronotum with marked anterior angles and setae at level with margin of pronotum.... 5

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5. Frons without groove above eye; pronotum much narrower than base of elytron.... 6
-Frons with groove above eye; pronotum as broad or narrower than base of elytron.... 7
6. Dorsum nearly glabrous, irregular, with tubercles on both pronotum and elytra.... *Damelia* Clark, 1864
-Dorsum scaly-pubescent, relatively smooth.... *Parademotina* Gressitt, 1957
7. Dorsum, at least head, coarsely vermiculate-punctate.... *Cleoparida* Gressitt, 1967
-Dorsum smooth.... 8
8. Prothorax nearly as broad as elytra, distinctly margined.... 9
-Prothorax narrower than elytra, with indistinct margin.... 10
9. Head without Y-suture; interocular space wider than anterior margin of frontoclypeus. ... *Rhyparidella* Gressitt, 1969
-Head generally with facial suture in form of inverted "Y"; interocular space often narrower than anterior margin of frontoclypeus. ... *Rhyparida* Baly, 1861
10. Humerus prominent, large size.... *Eurydemus* Chapuis, 1874
-Humerus not very prominent, small size.... *Vitibia* Fairmaire, 1881

Table 1. Species of Eumolpinae described and reported from the Solomon Islands (SO) and from Vanuatu (VA).

Species	**Type locality**
Cleoparida freycinetiae Gressitt, 1967	SO: Rendova
C. obrieni Gressitt, 1967	SO: Santa Isabel
C. ribbei (Jacoby, 1898)	SO: Solomon Islands
C. salomonensis (Bryant, 1937)	SO: Guadalcanal
C. speciosa Gressitt, 1967	SO: Bougainville
Damelia cyanea Bryant, 1937	SO: Guadalcanal
D. leveri Bryant, 1937	SO: Guadalcanal
D. metallica Bryant, 1937	SO: Malaita, Ulawa
D. salomonensis Bryant, 1937	SO: San Cristobal, Santa Ana
Dematochroma antipodumoides Jolivet et al., 2010	VA: Espiritu Santo
D. soldatii Jolivet et al., 2010	VA: Espiritu Santo
Demotina difficilis Bryant, 1936	VA: Erromango, E. Santo, Malakula
D. flavipes Bryant, 1936	VA: Erromango, Malakula
Deretrichia guadalcanalensis Selman, 1963	SO: Guadalcanal
Eurydemus grandis grandis (Baly, 1861)	VA: Malakula*
Eurydemus grandis var. unistriatus Pic, 1938	VA: Malakula
Mouhotina salomonensis Jacoby, 1904	SO: Florida
Rhyparida bougainvillea bougainvillea Gressitt, 1967	SO: Bougainville
R. bougainvillea pruinosa Gressitt, 1967	SO: Guadalcanal
R. buxtoni Bryant, 1936	VA: Banks, Efaté, Emae, Malakula, Tanna
R. ribbei Jacoby, 1898	SO: Shortland
Vitibia formosa (Baly, 1877)	VA: New Hebrides

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*Described erroneously from New Caledonia, and later assumed with doubts from Australia (Baly, 1878; Lea, 1915), until the species was finally confirmed from Vanuatu and Fiji (Bryant, 1936; Bryant & Gressitt, 1957).

Biogeographic patterns

The Eumolpinae of the Solomons and Vanuatu are dominated by representatives of different genera of Typophorini, which have a marked Papuan and, ultimately, Oriental affinity. This same influence reaches Samoa and Tonga through the island arch that bounds a typically Australian zoogeographic region to the south (Gressitt, 1956). Thus, genera like *Demotina, Deretrichia, Mouhotina* and *Rhyparidella*—and we could consider *Rhyparida* here as well, although it is also very rich in Australian species (Gómez-Zurita, 2011; Reid, 2017)—occur and are particularly diverse in the Oriental and Papuan regions (Clavareau, 1914; Bryant & Gressitt, 1957; Selman, 1963; Gressitt, 1969). Some other Typophorini genera, like the island endemics *Cleoparida, Damelia, Eurydemus* and *Vitibia* confer an oceanic originality to these faunas, but the status of some of these genera is pending revisions. They will likely have phylogenetic affinities with Papuan/Oriental genera, such as with the genera *Rhyparida* and *Cleoporus* Lefèvre, 1884 (e.g. Gressitt, 1967a). Gressitt (1961) proposed that the boundary between what he called continental and oceanic faunas, roughly representing the Oriental/Papuan and Austral regions mentioned above, should be drawn between the Solomons and Vanuatu. The distribution of several genera of the tribe Typophorini seems to reflect this pattern, although the pattern is blurred in Vanuatu on account of the modern mosaic establishment of its current Eumolpinae fauna, with recent immigrant species from surrounding areas, including the Solomons, Fiji, and New Caledonia (Gressitt, 1961). Thus, our current knowledge identifies a non-trivial number of shared species among these archipelagos, including *Eurydemus grandis* and *Vitibia formosa* shared between Fiji and Vanuatu (Bryant & Gressitt, 1957) and *V. testacea* between Fiji and Solomon. Also, *Dematochroma antipodumoides* from Vanuatu is markedly similar to an undescribed species found in New Caledonia, allied to *Dematochroma antipodum* (Fauvel, 1862), already recognized as a highly similar species by Jolivet et al. (2009). Based on this account, three out of seven species of Eumolpinae known in Vanuatu are shared with surrounding archipelagos. These species can be interpreted as recent introductions consistent with the accepted view that, in general terms, the current configuration of these islands is the result of recent emergence already in the Pleistocene (e.g., Crawford & Eggins, 1993; Hamilton et al., 2010). Much work needs to be done to establish the phylogenetic, biogeographic, and temporal links of different groups of organisms in these regions. We have recently started exploring these links for the Eumolpinae, one of the groups of Coleoptera with better representation in South Pacific islands and their continental counterparts (Gressitt, 1961), thus very apt to investigate these biogeographic connections. However, before any serious attempt is made at the biogeographic patterns illustrated by these insects, it is important to clarify basic aspects of their diversity, including their taxonomic status and their ranges, and this work tried to contribute in this direction.

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Competing interests
The author declares that no competing interests exist in the preparation of the manuscript.

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