

Griburius leonardii, a new species from French Guiana (Coleoptera: Chrysomelidae: Cryptocephalinae)

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Abstract - A new species of *Griburius* Haldeman 1849 is described from French Guiana. In some respects, the new species is similar to *Griburius errans* (Suffrian 1852), distributed in Mexico, but it differs in the details of the dorsal pattern, the narrower interocular distance, and the size.

Key words: new species, Neotropical Region, Pachybrachina, taxonomy.

Riassunto - *Griburius leonardii*, una nuova specie della Guyana francese (Coleoptera: Chrysomelidae: Cryptocephalinae).

È qui descritta una nuova specie di *Griburius* Haldeman 1848 della Guyana Francese. La nuova specie per colorazione dorsale ricorda *Griburius errans* (Suffrian 1852) descritto per il Messico, ma è da quest'ultimo facilmente distinguibile per la presenza di una coppia di macchie gialle ben definite su ciascuna elitra, la distanza interoculare ridotta e le dimensioni sensibilmente inferiori.

Parole chiave: nuova specie, Pachybrachina, Regione Neotropica, tassonomia.

INTRODUCTION

The genus *Griburius* Haldeman 1849 currently includes 135 species, most of them described by the German entomologist Eduard Suffrian. Suffrian's comprehensive monographs on Cryptocephalinae of North America (Suffrian, 1852) and South America (Suffrian, 1866) led to the identification of 102 new species assigned to this genus, a significant advancement considering that only 9 species were known at the time. Other contributions to the knowledge of the genus were made by Stål (1857), LeConte (1868), Crotch (1873), Kirsch (1876), Burmeister (1877), who described 9 new taxa overall, and especially by Martin Jacoby, who in about thirty years, described 25 new species (Jacoby, 1878; 1880; 1889; 1899; 1907). Subsequently, a few

of Jacoby's taxa were listed as synonyms, without any comments, in the catalogues of Clavareau (1913) and Blackwelder (1946). Since the publication of these catalogues, there have been no updates to the taxonomy of the genus, except in recent years when two species were synonymized, and a few others were transferred to the closely related genus *Metallactus* Suffrian 1852 (Sassi, 2018; 2019; 2022). Additionally, five new species were described from Central America (Sassi, 2023a), and the species group to which the type-species belongs, *G. scutellaris* (Fabricius 1808), was revised, resulting in the addition of another new species (Sassi, 2023b). From what has been mentioned, it becomes evident that the knowledge of this challenging and species-rich genus urgently requires a thorough revision according to modern systematic criteria, given that most of the species were originally described based on traits such as the colour pattern, which subsequently proved to be very often unreliable for a correct delimitation of the taxa. Additionally, defining the boundaries of the genus, particularly in comparison to the related and similarly diverse genera *Pachybrachis* Chevrolat 1836 and *Metallactus*, presents notable challenges. However, some traits, when considered cumulatively, seem to allow in most cases the separation of the species currently assigned to the genus *Griburius* from those constituting *Pachybrachis* and *Metallactus*. Among these traits are: the stockier habitus, with the elytra proportionally shorter, and the elytral lateral margin deeply excised, partly exposing the abdomen caudally; the livelier colouration, sometimes characterized by metallic hues; the morphology of the prosternal process, which is broad and flat, with almost parallel sides, while in *Metallactus* and *Pachybrachis* the prosternal process is significantly narrower, with more sinuous margins and with a more or less sunken surface in the median longitudinal tract. However, the group of species delimited using these characters still display an extremely high morphological variability within it. This suggests that this grouping of species cannot be regarded as phylogenetically significant. A thorough review of the entire genus is therefore necessary.

In the present work, a new species is described which can be clearly assigned to the genus *Griburius* based on the meaning currently recognized to this taxon.

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MATERIALS AND METHODS

Measurement and photography of specimens - Examination, dissection, measurements, and drawings were performed using a stereomicroscope Optika SZM with an ocular micrometer. For females, the values are given as ranges (the smallest and the largest studied specimen). Measurements of the only two males available are in fact coincident. The total length (BL) of each specimen was measured from the anterior margin of pronotum to the apex of elytron. The drawing of the right antenna of a male specimen is provided. The photographs illustrating the specimens were obtained with the focus stacking technique using CombineZP Image Stacking Software (Hadley, 2010).

All data are given verbatim as they appear on the labels. Additional comments and details of labels are given in square brackets.

Dissections - The internal structures were studied by dissecting dried specimens after separating the abdomen in water, soaking it in boiling 10% KOH solution for about 30 seconds, keeping it in the same hot solution for five minutes and then washing it in water. Female internal genitalia were kept in microvials in 60% ethanol for the entire period in which the study was conducted, allowing comparisons, and enabling the observation from any desired angle.

For male genitalia, only the external morphology of the median lobe of the aedeagus have been considered. In the female genitalia, the morphology of the spermatheca was studied and figured. The female rectal apparatus is neither figured nor discussed, because no significant traits can be assessed in comparison with the other species of *Griburius*, given the present poor knowledge of the genus.

Terminology - For terminology of external characters, spermatheca, median lobe of aedeagus see Sassi (2018).

Abbreviations - BL: body length; BW: body width; PL: pronotal length; PW: pronotal width; HT: holotype; PT: paratype.

Specimen depositories - This study was based on adult specimens of *Griburius* which are preserved in museums and collections referred to in the text; the following acronyms were used:

BMNH - Natural History Museum, London, United Kingdom

DSPC - Author's Personal Collection

FSCA - Florida State Collection of Arthropods, Gainesville, U.S.A.

MSNM - Museo di Storia Naturale di Milano, Milan, Italy

Photographs of the types of the species will be also available on the author's website (Sassi & Montagna, 2022) at <http://www.chrysomelidae.it/amer-pachy/>.

RESULTS

Griburius leonardii sp. nov.

Types - Holotype: m#, body, aedeagus and detached abdomen glued on the same card, // "French Guiana: 21 km SE Roura on Kaw Rd., 14.II.2010, J. E. Eger, coll., MV Light" [white label, printed] // "N04° 36.115' W052°

15.972'" [white label, printed] // "*Griburius leonardii* sp. nov. Holotypus D. Sassi des." [red label, printed] // (FSCA). Paratypes: 1m#5f# // "French Guiana: Amazon Nature Lodge 30 km SE Roura on Kaw Rd., 5-19. II.2010 J. E. Eger, coll., 300 m" [white label, printed] // "N04° 33.570' W052° 12.433' UV Light Trap" [white label, printed] // Paratypes are housed in FSCA, MSNM and DSPC. All paratypes provided with additional label: // "*Griburius leonardii* sp. nov. Paratypus D. Sassi des." [red label, printed] //.

Etymology - The species is named after my dear friend Carlo Leonardi, former curator of the Entomological Collections at the Museo di Storia Naturale di Milano on the occasion of his 80th birthday.

Type locality - Roura (Arrondissement of Cayenne, French Guiana, France). (Fig. 1)

Distribution - French Guiana.

Diagnosis - In some respects, the new species is similar to *Griburius errans* (Suffrian 1852), which has recently been revised (Sassi, 2023b). However, the new species differs from *Griburius errans* in the different dorsal colour pattern (Fig. 2), in the remarkably narrower interocular distance, and in the distinctly smaller body, being the overall length (BL) of the aforesaid specimens of about 5 mm.

Description of male - Habitus in Fig. 1a-c (PT). BL = 3.3 mm, BW = 2.2 mm, PL = 1.2 mm, PW = 2.0 mm. Interocular distance 3.0 % of BL.

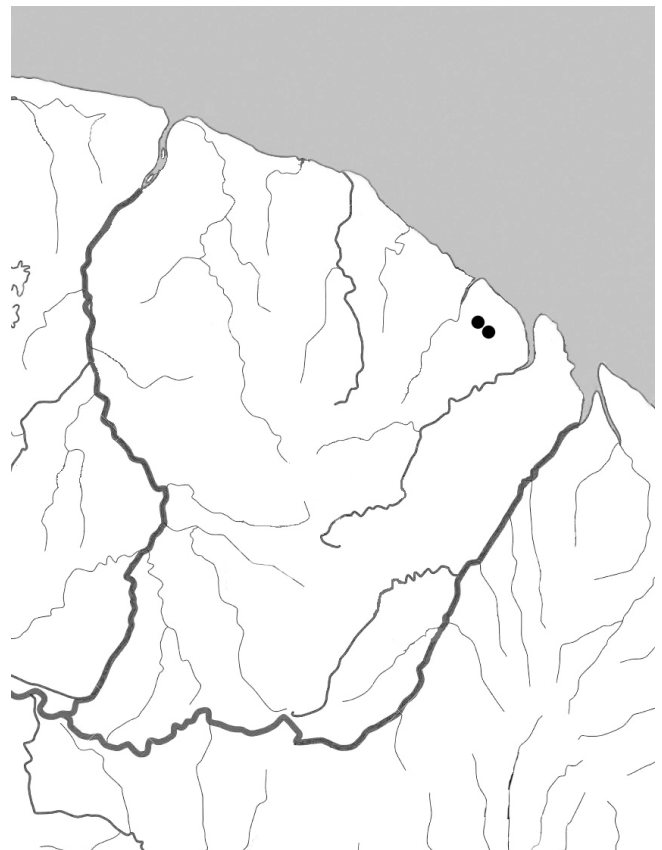


Fig. 1 - *Griburius leonardii* n. sp. Distribution map. / Carta di distribuzione.

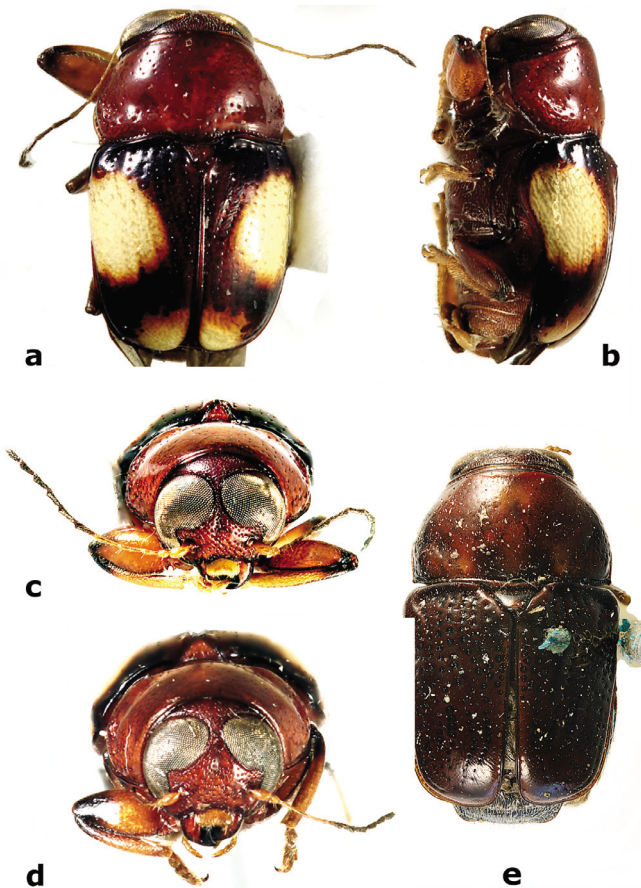


Fig. 2 - a-d) *Griburius leonardii* n. sp. a-c) habitus, PT male in dorsal (a), lateral (b), frontal (c) view. d) PT, female in frontal view; e) *Griburius errans* (Suffrian 1852), habitus, HT female in dorsal view (BMNH). / a-d) *Griburius leonardii* n. sp. a-c) habitus, PT maschio in visione dorsale (a), laterale (b), frontale (c). d) PT, femmina in visione frontale; e) *Griburius errans* (Suffrian 1852), habitus, HT femmina in visione dorsale (BMNH).

Head reddish with few irregular little black patches on frontoclypeal area. Labrum yellow (but black in holotype). Vertex matte, shallowly punctured with fine, recumbent, whitish setae. Surface of frontoclypeal area rather shiny with coarse, well-impressed punctation and scattered setae. Mid-cranial suture not detectable between upper lobes of eyes, forming shallow rounded impression at middle of frontoclypeal border. Upper lobes of eyes very close to each other along midline, but not completely in contact (Fig. 2c). Ocular lines narrow, marked by row of fine shallow punctures, strictly adhering to ocular rim. Ocular canthus with sparse, fine punctation and few short, semi-erect setae. Antennae (Fig. 3e) with antennomeres 3-5 yellow, bright, subcylindrical; antennomeres 6-11 light brownish, dull, more flattened, and more diffusely setose.

Pronotum totally reddish. Pronotal shape roughly elliptical, transverse, with surface markedly flattened on disc, above all towards base. Lateral margins anteriorly narrow, slightly larger along posterior half, angularly curved at middle. Surface moderately shiny with scattered punctation, denser and more impressed on sides and toward base, almost obliterated at middle of disc. Posterolateral impressions evident, marked by rough punctures at

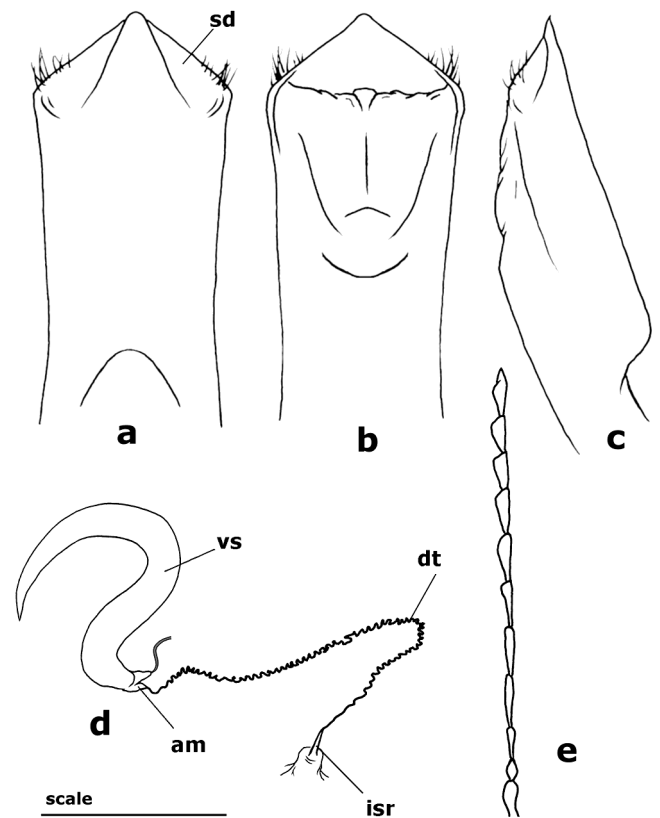


Fig. 3 - *Griburius leonardii* n. sp. 2a-c) median lobe of aedeagus in ventral (a), dorsal (b) and lateral (c) view [0.4 mm]; 2d) spermatheca [0.2 mm]; 2e) antenna [0.8 mm]. am: ampulla of spermatheca; dt: duct of spermatheca; isr: duct insertion on bursa copulatrix; vs: vasculum of spermatheca. Square brackets: length of scale segment. / 2a-c) lobo mediano dell'edeago in visione ventrale (a), dorsale (b) e laterale (c) [0.4 mm]; 2d) spermateca [0.2 mm]; 2e) antenna [0.8 mm]. am: ampulla della spermateca; dt: ductus della spermateca; isr: inserzione del ductus sulla bursa copulatrix; vs: vasculum della spermateca. Trapparentesiquadraè indicatala lunghezza del segmento di scala.

bottom of depression. Pronotal posterior margin thickened along posterolateral impressions.

Scutellum reddish, trapezoidal with apex truncated in almost straight line. Surface minutely and sparsely punctured, with scarce, very short setae.

Elytron reddish with large, rounded, light yellow spot extended from humerus to beyond middle, and from lateral margin to second row of punctures. Further yellow elliptical spot on apex. Ground reddish colour perceptibly darker along basal margin and between yellow spots, resulting in overall three-colour pattern on elytral surface. Suture narrowly brown along apical clivus. Epipleuron reddish, but darker along anterior half. Elytral outline with sides mildly rounded and convergent posteriorly. Lateral margins narrow, simultaneously visible from above only along posterior half. Elytral surface fairly flattened on disc, moderately shiny with fine, very shallow punctation, arranged in regular rows, barely distinct on lighter-coloured areas. Intervals flat. Postscutellar area weakly raised. Humeral callus prominent, impunctate. Epipleuron smooth, impunctate, with slightly convex surface.

Pygidium light brown, matt, covered by sparse coarse punctures and appressed, pale setae.

Ventral parts totally brown. Hypomera, mesoepimera and mesoepisterna almost bare, shiny, with few scattered punctures. Remainder of ventral surface matt, covered with thick, short, regularly distributed setae and fine, shallow punctures. Prosternal process large, with sides almost straight, weakly converging in large, round apex; surface slightly elevated along median section, covered with coarse, well-impressed punctures and sparse, long, semi-erect setae. Legs brown with tibiae and tarsi yellowish and tibio-femoral joint blackish.

Median depression on fifth abdominal ventrite hardly detectable, evenly covered with short setae and small punctures as remainder of ventrite surface. Ventrite posterior margin feebly notched. Median lobe of aedeagus (Fig. 3a-c) parallel-sided with large, triangular apex. Apex almost straight in lateral view. Ventral surface flat, smooth, devoid of significant structures. Setose depressions evident, subtriangular, well separated by large, shallow triangular carina. Setae mostly distinct along external rim of setose depressions.

Female - BL = 3.4–3.8 mm, BW = 2.3–2.5 mm, PL = 1.1–1.3 mm, PW = 2.1–2.3 mm. Interocular distance 2.9–5.3 % of BL.

Females differ in the larger body and the larger interocular distance. Additionally, the black colour on the tibio-femoral joint is more extended, at times reaching the middle of the femora.

The fifth abdominal ventrite in females has a quite large but shallow pit, the bottom of which is matt, impunctate but covered with tiny wrinkles and short, scattered setae.

The vasculum of the spermatheca (Fig. 3d) is not pigmented, with an overall S-shaped outline. The proximal lobe is not swollen at base. The distal lobe is rather long, slender, regularly curved, tapered with an acute apex fairly bent downwards. The ampulla is not pigmented, short, sitting just at the basal apex of the vasculum. The duct insertion on the ampulla is short and not pigmented. The sperm gland insertion is slightly longer than the duct insertion. The duct is uniform in size, slender, regularly coiled along most of its length. The not-coiled portion of the duct near the bursa copulatrix is rather short. The insertion on the bursa copulatrix is not pigmented, slightly thickened, long and straight.

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