

## A new species of *Promacropoides* Sigwalt (Coleoptera: Scarabaeidae: Rutelinae) from Panamá

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### Abstract

*Promacropoides gloriagaitalis* sp. nov. from Cocle province, Panama is described and illustrated. This formerly monotypic genus was known only from Ecuador. A key to all known species of Rutelini Heterosternina is included.

**Key words:** Coleoptera: Rutelini, Heterosternina, *Promacropoides*, taxonomy, key, Mexico, Central America, Ecuador

### Introduction

The subtribe Heterosternina (Rutelini) was revised by Morón (1983) including 11 species in the genera *Heterosternus* Dupont, *Paraheterosternus* Morón, *Homoio sternus* Ohaus, *Plesio sternus* Morón, *Macropoides* Guérin-Méneville, *Macropoidelimus* Morón and *Parisolea* Bates. Later, the monotypic genera *Elcarmeniella* Franz, *Mesosternus* Morón, and *Parisoleoides* Morón were added to the subtribe by Morón (1987). The genus *Promacropoides* was erected by Sigwalt (1987) to accommodate *P. bertrandi*, a species restricted to a small area of western Ecuador and notable for being the only member of the subtribe Heterosternina known from South America. Morón and Howden (1990) described *Plesio sternus punctatus* from northern Oaxaca, Mexico, and Delgado and Blackaller (1994) described *Homoio sternus canorum* from the mountains of Guanajuato, in central Mexico.

Because some of these species have restricted ecological and geographical distribution, and the adults fly only during a short time each year, the collection of samples may be sporadic or scarce. Many species in this group were for many years represented by few

specimens in collections and were described using short series, sometimes even one pair or a single specimen.

During recent collection trips in the mountains of Panama, D. Curoe obtained a male specimen of a new species of *Promacropoides*, described in this paper. Drawings were made with the aid of a camera lucida and stereomicroscope, and measurements were obtained using a caliper. Holotype is deposited at the Museo de Invertebrados, Universidad de Panama (Panama City) (MIUP).

***Promacropoides gloriagaitalis* Curoe and Morón, new species (Figs. 1–7)**

**Diagnosis.** This species is distinguished from the other *Promacropoides* species by the following combination of characters: anterior border of clypeus widely and deeply sinuated with two strong, acute teeth, prebasal dorsal projection of metatibia with distal, acute tooth, apical half of parameres slightly upturned, elytra reddish yellow with three longitudinal, complete black stripes on each side.

**Description. Holotype. Male:.** Length 35 mm; maximum width at middle of elytra 20.5 mm. *Color and markings* (Fig. 1): dorsal color orange yellow. Head with black edging along clypeal free margins and wider band (1 mm) on frontoclypeal suture with V-shaped salient on the clypeal disc; 2 dots next to each eye. Pronotum with fine black edging along all margins and on disc 3 black spots on each side (2 larger spots on left side are coalescent). Elytron with black sutural margin, epipleuron and 5 jagged, mostly continuous black stripes; third stripe from suture merges with fifth stripe at apical umbone. Pygidium, ventral surfaces and legs black (Fig. 2).

*Dorsal surface:* head, pronotum and elytra glossy to unaided eye, finely rugose with magnification.

*Head:* frontoclypeal suture sinuate. Shallow micropunctures on frons, separated by 1–4 diameters. Reflexed edge of anterior clypeal margin with U-shaped emargination (Fig. 3). Anterior edge of labium deeply sinuate (Fig. 4).

*Pronotum:* widest at posterior angles. Lateral margins arcuate. Fine bead present along anterior and lateral margins only. On disc, scattered micropunctures separated by 3–5 diameters.

*Elytra:* in lateral view, outer elytral margins angulate at level of metacoxae. Apical umbone elongate and moderately prominent. Fine, dark, closely spaced punctures aligned in striae with scattered punctures in interstriae.

*Pygidium:* subtriangular, 1.6 times wider than long, broadly convex, almost vertical and not exposed in dorsal view. Surface entirely, finely granulate with a few long setae along posterior margins.

*Venter:* mesometasternal process stout, subconical, with rounded apex, and produced beyond level of mesocoxae. Sternum with finely granulate anterolateral area covered with dense, short, fine, white setae. Metasternum strongly prominent toward posterior border.

Abdomen shorter than pterothorax (Fig.2). Posterior margins of sternites 2–4 deeply sinuate.



**FIGURE 1.** *Promacropoides gloriagaitalis* Curoe and Morón, sp. nov. Holotype.

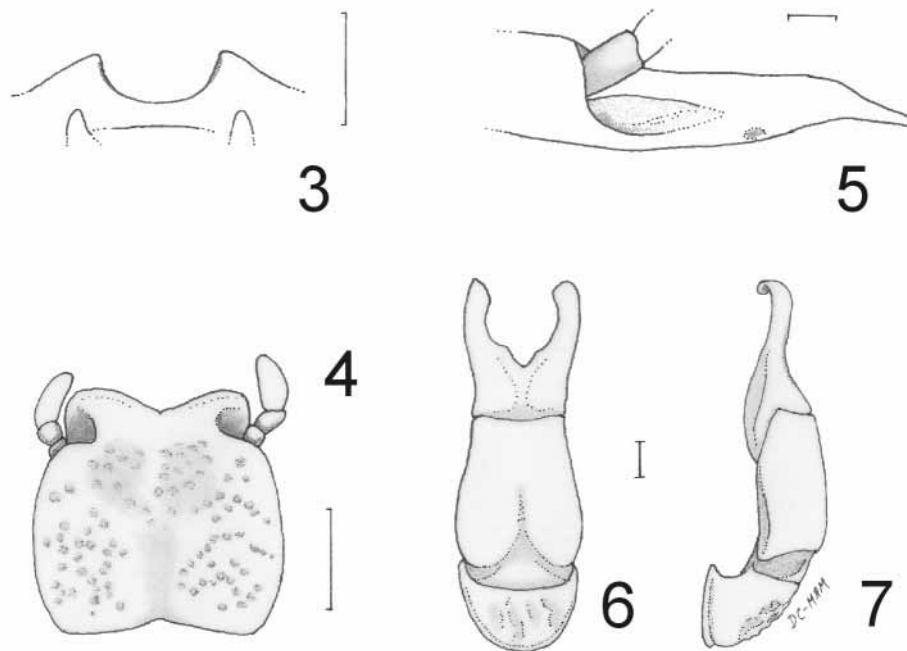


**FIGURE 2.** *Promacropoides gloriagaitalis* Curoe and Morón, sp. nov. Holotype. Lateral view.

*Hind legs:* enlarged. Coxa and trochanter without projections. Femur slightly arcuate and with a long (4 mm) preapical spine on posterior margin. Tibia arcuate with a basal keel on inner-posterior margin ending in a distal tooth directed apically. Inner surface densely setose; setae reddish, long (Figs. 1–2). Apex of tibia (Fig. 5) acute and strongly projected, with a basal, elongate concavity, a medial pit, and a lightly bent tip. Hind spurs absent. Larger tarsal claw bifid.

*Parameres:* medially fused, widely separated and apically curved back (Figs. 6–7).

*Female:* Unknown.



FIGURES 3–7. 3—Clypeus, frontal view; 4—Labium, ventral view; 5—Apex of left hindtibia, distal view; 6—Male genital capsule, dorsal view; 7—same, lateral view. Scale bar 1 mm.

**Material examined** (1 specimen). Holotype male: PANAMA. Cocle province, Cerro Gaital, 850 m, 18 August 2001, Col. D. Curoe (MIUP).

**Habitat.** The specimen was collected at mercury vapor light, but it is possible that the species has diurnal or crepuscular flying habits. The vegetation at the type locality is premontane moist forest (*sensu* Holdridge *et al.* 1971) on an isolated, extinct volcano in Central Panama.

**Taxonomic relationships.** Closely relative *Promacropoides bertrandi* Sigwalt is located in Canar, Ecuador, 1000 km to the south of Cocle, Panama. But as is frequent in the group, differences in the male genitalia are few, and the main distinctive characters are in the male hind legs. *Promacropoides gloriagaitalis* is separated from *P. bertrandi* by the

prebasal, acute, tooth-like projection of the hind tibia. In *P. bertrandi*, it is longer, more rounded (lobate in large males) and more medially situated. The pterosternum is more prominent in *P. gloriagaitalis* (Fig. 2). Ventral parts and legs are reddish brown in *P. bertrandi*.

**Etymology.** This striking and apparently endemic species is named in Latin “glory of Gaital”.

#### Key to species of *Heterosternina* (modified from Morón 1983, 1987)

1. Pronotal basal margin present, complete or interrupted in the middle. (If this margin is absent or feebly marked, the head present pronounced punctures on clypeus and frons) ..... 2
  - Pronotal basal margin absent, only slightly impressed near the posterior angles ..... 10
2. Posterior border of sternites II to IV straight, or slightly sinuated. Elytral punctuation variable. Sexual dimorphism accentuated or slight. Male pygidium almost vertical, without wide postanal border ..... 5
  - Posterior border of sternites II to IV deeply sinuated. Elytral punctuation coarse, deeply impressed. Sexual dimorphism accentuated. Male pygidium oblique, almost horizontal in lateral view, with a wide postanal border.....*Heterosternus* Dupont ...3
3. Males with the apex of elytra strongly projected; hind femur without spines and inner border of hind tibia not setose. Females with a short spine at the apex of each elytron. México (Veracruz, Oaxaca, Guerrero, and Chiapas); Guatemala .....
  - ..... *H. buprestoides* Dupont
  - Males with the apex of elytra rounded; hind femur with spines and inner border of hind tibia setose. Females with the apex of elytra rounded..... 4
4. Posterior half of elytra in both sexes with deep, confluent reticulated punctures. Males with preapical spines on hind femur and curved spines on hind coxa. México (Chiapas); Guatemala and El Salvador ..... *H. rodriguezi* Candèze
  - Posterior half of elytra in both sexes with deep, not confluent punctures. Males with basal spines on hind femur and hind coxa without spines. Costa Rica and Panama .....
    - ..... *H. oberthueri* Ohaus
5. Pterosternum sparsely setose. Elytral punctuation deep, irregular, and coarse. Dorsal color mahogany reddish, with yellow elytral and pronotal margins. Inner border of male hind tibia with dense pad of yellow setae and with a strong spine near the middle. México (Sinaloa, Nayarit, Jalisco, and Michoacán).....
  - ..... *Paraheterosternus luedeckei* (Becker)
  - Pterosternum densely setose. Elytral punctuation fine or moderately coarse. Dorsal color ochreous-yellowish or orange-yellowish. Inner border of male hind tibia with yellow setae but without spines..... 6

6. Clypeal punctuation disperse. Weak sexual dimorphism. Hind femora similar in male and female ..... 7
- Clypeal punctuation coalescent, semireticular at sides. Strong sexual dimorphism. Male hind femur thickened with spine on posterior border ... *Plesio sternus* Morón ... 8
7. Abdominal sternites with many short setae. Male hind tibia with many setae on inner border. Parameres fused on basal half. México (Chiapas); Guatemala; El Salvador; Honduras; and Nicaragua ..... *Mesosternus halffteri* Morón
- Abdominal sternites with scattered short setae. Male hind tibia with few setae on inner border. Parameres not fused on basal half..... *Homoio sternus* Ohaus ... 9
8. Pronotum and elytra with scattered, small, shallow punctures. Male hind trochanter without tooth on outer apex. México (Tamaulipas and Hidalgo)..... *P. setosus* Morón
- Pronotum and elytra with dense, large, deep punctures. Male hind trochanter with tooth on outer apex. México (Oaxaca) ..... *P. punctatus* Morón and Howden
9. Legs dark reddish brown. Head, pronotum and elytra with dense, deep punctures. Male hind femur without tooth like projection near the middle of posterior border. México (Nayarit, Durango and Jalisco) ..... *H. beckeri* Ohaus
- Legs straw yellow, tarsus reddish yellow. Head, pronotum and elytra with scattered, shallow punctures. Male hind femur with tooth like or rounded projection near the middle of posterior border. México (Guanajuato).....  
..... *H. canorum* Delgado and Blackaller
10. Pterosternum and hind coxae with dense vestiture of long setae. Weak sexual dimorphism ..... 11
- Pterosternum and hind coxae with scattered, short setae. Strong sexual dimorphism 13
11. Frons, pronotum and elytra white, or cream yellowish, usually without reddish brown, symmetrical spots or longitudinal stripes. Male hind tibia straight ..... 12
- Frons, pronotum and elytra cream yellowish, with reddish brown spots or longitudinal stripes strongly defined. Male hind tibia curved inward. El Salvador, Guatemala, and Honduras ..... *Elcarmeniella striata* Franz
12. Clypeus rugopunctate. Male middle legs with tibia slightly longer than the length of all tarsal segments combined; tarsal segments 2nd to 4th nearly as long as wide; external tarsal claw deeply cleft, slightly wider than inner claw. México (Hidalgo, Puebla, Veracruz, Oaxaca, Chiapas), Guatemala, El Salvador, Honduras, Nicaragua and Costa Rica ..... *Parisolea pallida* (Candèze)
- Clypeus rugostrigate. Male middle legs with tibia shorter than the length of all tarsal segments combined; tarsal segments 2nd to 4th wider than long; external tarsal claw briefly cleft, much wider than inner claw. México (Chiapas), Guatemala, El Salvador, Honduras, Nicaragua, and Costa Rica..... *Parisoleoides pachytarsis* Morón
13. Anterior border of clypeus sinuate or notched in both sexes ..... 14
- Anterior border of clypeus complete in both sexes. *Macropoides* Guérin-Méneville 16
14. Underside and legs green. Head, pronotum and elytra whitish green, olive green or

- blue green. Male hind coxa with a long spine. México (Hidalgo, Puebla, Veracruz, Oaxaca, Chiapas), Guatemala, Belize, and Honduras..... *Macropoidelimus mniszechi* (Sallé)
- Underside and legs black or reddish brown. Head, pronotum and elytra ivory white, whitish yellow or orange yellow. Male hind coxa without spine..... *Promacropoides* Sigwalt ... 15
15. Dorsal color ivory white or whitish yellow. Each elytron with 2-4 longitudinal rows of dark brown, irregular spots. Anterior border of clypeus widely and shallowly sinuated with 2 weak, rounded teeth. Prebasal dorsal projection of hind tibia with rounded, blade-like form. Ecuador (Azuay and Canar) ..... *P. bertrandi* Sigwalt
- Dorsal color orange yellow. Each elytron with 4 longitudinal black stripes. Anterior border of clypeus widely and deeply sinuated with 2 strong, acute teeth. Prebasal dorsal projection of hind tibia with acute, tooth-like form. Panamá (Coclé) ..... *P. gloriagaitalis* Curoe and Morón
16. Apex of middle tibia with 2 acute spines on external border. Male hind femur with 2 projections on posterior border. .... *M. crassipes* (Horn) ... 17
- Apex of middle tibia with 1 acute spine on external border. Male hind femur with or without 1 projection on posterior border..... 18
17. Populations from Gulf of Mexico and Caribbean Sea coast México (Veracruz) to Honduras. Apex of parameres rounded..... *M. c. crassipes* (Horn)
- Populations from Pacific coast in Mexico (Jalisco to Oaxaca). Apex of parameres narrowed ..... *M. c. occidentalis* Morón
18. Pronotum with large, deep punctures. Pygidium completely reddish brown. Male hind femur without projection on posterior border. México (Chiapas); Costa Rica ..... *M. cribricollis* Ohaus
- Pronotum with scattered, small, shallow punctures. Pygidium reddish brown with yellow stripe along midline. Male hind femur with 1 acute projection on posterior border. México (Hidalgo, Puebla, Veracruz) ..... *M. nietoi* (Guérin-Méneville)

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