

A new genus and two new species of Luperini  
(Coleoptera: Chrysomelidae: Galerucinae)  
from Costa Rica

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### Abstract

*Inbioluperus* (new genus), *I. flowersi* (new species), and *I. costipennis* (new species) are all described from Costa Rica.

### Introduction

Within the New World Galerucinae, males of the tribe Luperini may be distinguished from most other groups by the absence of prominent spurs at the base of the aedeagus. Within this tribe, the subtribe Luperina is characterized by the presence of a rectangular, sometimes depressed lobe at the apex of the male abdomen, this lobe sometimes being reduced and represented only as a strong truncation. Within the Luperina, the section Scelidites exhibits well developed epipleura but lacks any sclerotized covering to the apical aedeagal orifice.

While studying the Scelidites of Central America (Clark, 1987), I recently came across examples of two species, both undescribed, which do not fit into any of the known genera. Therefore, a new genus is here described to accommodate these two taxa.

Material examined is deposited in the following collections: Edward G. Riley private collection, College Station, Texas [EGRC]; Florida State Collection of Arthropods, Gainesville, Florida [FSCA]; Instituto Nacional de Biodiversidad, Heredia, Costa Rica [INBio]; Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts [MCZC]; United States National Museum, Washington, D.C. [NMNH]; Shawn M. Clark private collection, Charleston, West Virginia [SMCC].

### *Inbioluperus*, new genus

**Diagnosis.** The presence of a basal bead on the pronotum and the strongly metallic color distinguish this genus from most other Scelidites. *Metacoryna* also exhibits metallic colors and a basal bead, but unlike *Inbioluperus*, the antennae, at least of the males, are strongly modified with some segments being grossly enlarged. Likewise, some species of *Pseudoluperus* and *Scelolyperus* are also metallic with basal beads, but the transverse impression near the basal third of the elytra, so conspicuous in this new genus, is absent or poorly developed. Moreover, unlike the new genus, the front tibiae or other body parts of *Pseudoluperus* and *Scelolyperus* are pale and without metallic luster.

**Description.** Form elongate; prothorax much narrower than elytra; elytra with sides parallel or slightly broadened distally. Color metallic. Dorsal surface lacking conspicuous pubescence.

Head nearly glabrous except for sparse pubescence on clypeus and labrum. Frons short, transverse. Interantennal carina well developed but short, extending posteriorly to a position between middle of antennal fossae. Frontal tubercles strongly, abruptly delimited behind, broadly contiguous mesally, separated from each other by deep median sulcus; deep pit present adjacent to posterior margin, near eye. Vertex lacking median sulcus, but with poorly developed median depression adjacent to frontal tubercles. Eyes narrowly sepa-



**Figure 1.** *Inbioluperus flowersi* (left) and *I. costipennis* (right).

rated from oral fossa, by distance subequal to width of apical article of maxillary palp; interocular distance slightly more than half maximum width of head across eyes. Antennal fossae separated from each other by distance subequal to diameter of fossa, separated from eye by distance subequal to half diameter of fossa. Apical segment of maxillary palp attenuate towards apex. Antennae slender, extending to about middle of elytra, covered with short pubescence; antennomere I shining, weakly alutaceous; II-XI strongly alutaceous; II much shorter than I or III; III slightly shorter than IV; IV-X subequal or gradually decreasing in length towards apex; XI slightly longer than X.

Pronotum slightly broader than long, broadest near anterior third. Prominent seta present at each anterior and posterior angle; anterior and posterior margins fringed with short, closely spaced setae; lateral margin with a few short, inconspicuous setae; disc lacking pubescence. Posterior and espe-

cially lateral margins with well developed carinate beads; anterior margin lacking bead.

Elytra together about 1.5 times as long as broad, conspicuously broader than prothorax. Conspicuous depressions present at mesal margin of humeri and transversely at basal third of elytra, thereby forming prominent humeral and intrahumeral callosities. Surface densely, confusedly punctate; scattered, inconspicuous setae present. Epipleuron well developed, broad near base, gradually narrowed towards apex.

Ventral portion of prothorax with anterior and posterior fringe of setae, otherwise glabrous. Front coxae very narrowly separated by prosternum; front coxal cavities widely open behind. Mesosternum glabrous or sparsely pubescent; mesopleuron and ventral areas of metathorax and abdomen largely or entirely covered with dense pubescence. Legs densely pubescent; posterior femora only slightly broader than those of front and middle legs, lacking internal extensor apodeme; all

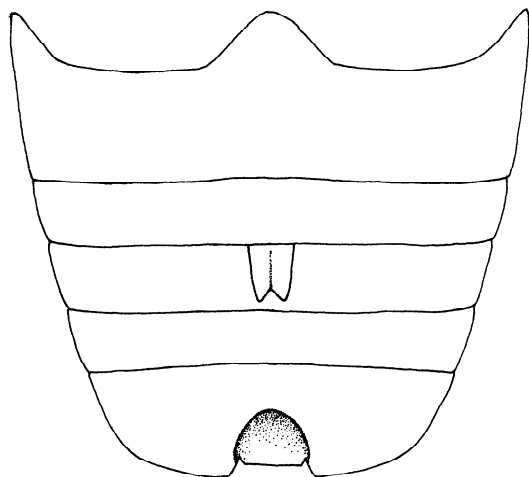


Figure 2. Abdomen of *I. costipennis*, ventral aspect.

tibiae lacking terminal spurs. Abdominal apex of male truncate, with impressed, rectangular lobe. Aedeagus symmetrical, without sclerotized orificial covering or basal spurs.

**Comments.** *Inbioluperus flowersi* is designated as type of this new genus. The generic name honors the Instituto Nacional de Biodiversidad (INBio), which has done much to foster taxonomic studies in Costa Rica.

### Key to species of *Inbioluperus*

1. Elytra costate; pronotum with a distinct impression at either side in basal half; apex of second abdominal segment of male with median appendage ..... *costipennis*, n. sp.
- Elytra without costae; pronotum lacking depressions; abdomen of male normal ..... *flowersi* n. sp.

### *Inbioluperus flowersi*, new species

**Diagnosis.** This species is easily distinguished from *I. costipennis* by the absence of an appendage on the second abdominal segment of the male and by the absence of elytral costae in either sex. The size (4.3-6.4 mm. long), in combination with the

brightly metallic color, distinguish it from most other Costa Rican galerucines.

**Description.** Form elongate oval, prothorax conspicuously narrower than elytra. Dorsal surface lacking obvious pubescence. Color entirely metallic, blue, green, or violet. Length of male 4.5-6.0 mm; length of female 4.3-6.4 mm.

Labrum and distal portions of head pubescent; vertex nearly glabrous. Pronotum evenly convex, widest slightly anterior to middle, 1.2 times as wide as long, 0.6 times as wide as elytra across humeri; pronotal disc minutely punctate, lacking pubescence. Elytra 1.4 times as long as combined width, widest across apical fourth; elytral disc finely, confusedly punctate, with interspaces polished and minutely punctate.

Ventral areas with prothorax, mesosternum, and mesal area of metasternum glabrous; other ventral areas densely pubescent. Apex of female abdomen rounded. Abdomen of male with short rectangular lobe at apex; area in front of lobe impressed. Aedeagus symmetrical, gradually narrowed towards apex.

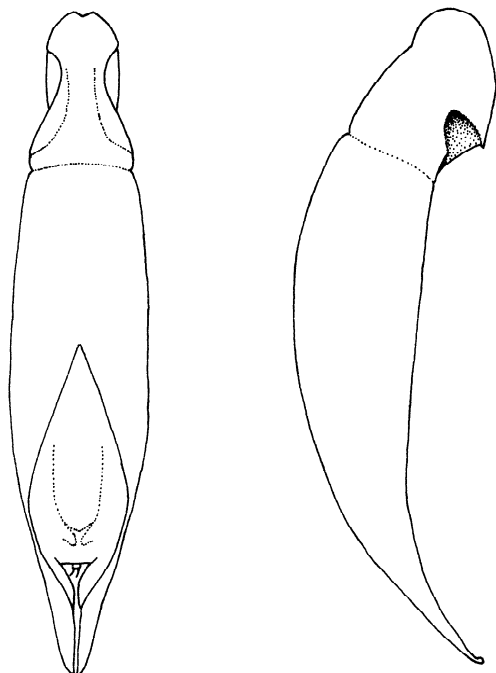
**Material examined.** Male holotype: COSTARICA, Puntarenas, Monteverde, V-26 - VI-3 - 84, E. Riley, D. Rider, D. LeDoux [NMNH]. Nineteen male paratypes, and 22 female paratypes: [same data as holotype; EGRC, FSCA, INBio, MCZC, NMNH, SMCC]; One female paratype: COSTA RICA, Punt. Prv., 6 km. S. Sta. Elena, June 6-7, 1983, J. E. Wappes [EGRC].

**Comments.** The name of this species honors Dr. Wills Flowers whose encouragement and prodding have stimulated considerable interest in the chrysomelid fauna of Costa Rica.

### *Inbioluperus costipennis*, new species

**Diagnosis.** The elytral costae quickly distinguish this species from *I. flowersi*. Moreover, the size (4.6-6.1 mm. long), in combination with the metallic color, separates it from most other Costa Rican galerucines.

**Description.** Form elongate oval, prothorax conspicuously narrower than elytra. Dorsal surface lacking obvious pubescence. Color entirely metallic, largely blue-green but with purple near elytral suture and with copper in lateral portions of elytra.



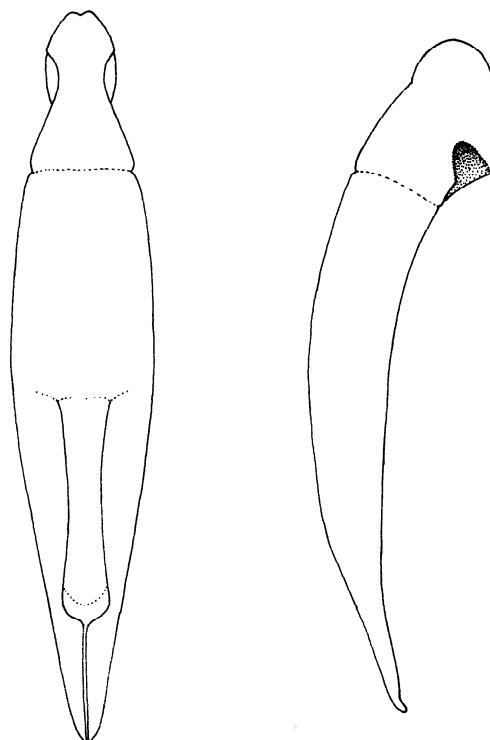
**Figure 3.** *Inbioluperus flowersi*, dorsal and lateral aspects of aedeagus.

Length of male 4.6-5.5 mm.; length of female 6.1 mm.

Labrum and distal portions of head pubescent; vertex nearly glabrous. Pronotum evenly convex, widest slightly anterior to middle, 1.2 times as wide as long, 0.6 times as wide as elytra across humeri; pronotal disc minutely punctate, lacking pubescence. Elytra 1.4 times as long as combined width, widest across apical fourth; elytral disc finely, confusedly punctate, with interspaces polished and minutely punctate.

Ventral areas with prothorax, mesosternum, and mesal area of metasternum glabrous; other ventral areas densely pubescent. Apex of female abdomen rounded. Abdomen of male with short rectangular lobe at apex; area in front of lobe impressed. aedeagus symmetrical, gradually narrowed towards apex.

**Material Examined:** Male holotype: COSTA RICA, Guanac. Pr., Estac. Cacao, 1000-1400 m., SW side Volcan Cacao, 1988-1989, Malaise Tp., GNP Biodiv. Survey, UTM 323300, 375700 [INBio]. Two male paratypes: [same data as holotype; INBio, SMCC].



**Figure 4.** *Inbioluperus costipennis*, dorsal and lateral aspects of aedeagus.

One male and one female paratype: COSTA RICA, Guanac. Pr., Estac. Mengo, 1100 m., SW side Volcan Cacao, Feb. 1989, GNP Biodiversity Survey, W85 28' 10", N10 55' 43" [INBio, NMNH].

### Acknowledgments

I thank the staff of INBio and Edward G. Riley for their willingness to loan specimens and for their permission to redeposit them in various collections. I am especially grateful to John A. Wilcox and David G. Furth for their examination of specimens and their subsequent opinions on systematic affinities. I also thank Laura Torres-Miller for the preparation of line drawings.

### Literature Cited

Clark, S. M. 1987. A revision of the Scelidites in the Western Hemisphere (Coleoptera: Chrysomelidae). Dissertation. Ohio State University, Columbus, Ohio.