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# A new species of *Stolas* Billberg with a radial pattern on the explanate margin of elytra (Coleoptera: Chrysomelidae: Cassidinae: Mesomphaliini)

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Abstract. *Stolas flavoradiata* n. sp. is described from Peru. It belongs to a group of large species with a radial pattern on the explanate margin of elytra. A key to the species with such pattern is given.

Key words: entomology, taxonomy, new species, Peru, Coleoptera, Chrysomelidae, Cassidinae, Mesomphaliini.

## INTRODUCTION

The genus *Stolas* Billberg, 1820 is the most speciose within the tribe Mesomphaliini Chapuis, 1875. It contains 186 species distributed from Mexico to the northern Argentina (Borowiec & Świętojańska 2012). Most species of the genus are large beetles with distinct elytral pattern and sculpture. They have never been revised although several new species were described in recent years (e.g. Borowiec 1998, 1999, 2005, 2007, 2009, 2011, Borowiec & Świętojańska 2010, Borowiec & Takizawa 2011). Very characteristic group of species with very large species with a radial pattern on the explanate margin of elytra, composed of black and yellow to reddish transverse spots occurs in Amazonian and submontane forests from Colombia to Peru. The group comprises *Stolas hermanni* (Spaeth, 1911), *S. quinqefasciata* (Wagener, 1877), *S. pectinata* (Baly, 1872), *S. perjucunda* (Baly, 1872), *S. praetoria* (Spaeth, 1928), and *S. socialis* (Spaeth, 1932). In material studied recently we found a specimen of

this group from the Loreto province in Peru representing a new species. Its description is given below.

Photos were prepared using Nikon SMZ 1500 stereomicroscope and Nikon Coolpix 4500 photo camera, and Helicon Focus software.

## DESCRIPTION

### *Stolas flavoradiata* Borowiec & Stach n. sp.

Etymology

Named after a yellow radial pattern on the explanate margin of elytra.

Type material

Holotype: "PERU, Iquitos, / 1-25.X.2009" (preserved in Insectarium de Montréal, Québec, Canada).

Description

Length: 16.15 mm, width: 14.40 mm, length of pronotum: 4.20 mm, width of pronotum: 7.90 mm, length/width ratio: 1.12, width/length ratio of pronotum: 1.88. Body almost circular but narrower than in the related *Stolas quinquefasciata* and *S. perjucunda*, sides regularly rounded, apex rounded (fig. 1).

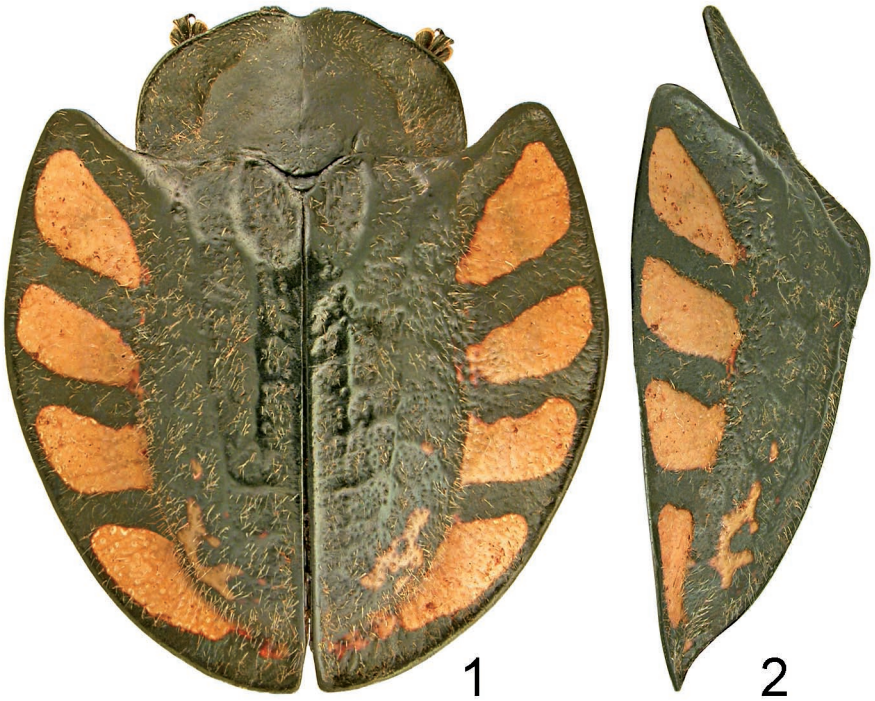
Pronotum uniformly black. Scutellum black. Elytral disc in anterior half completely black, in posterior half with large irregular yellow spot and one or two small, yellow, round spots and up to four very small yellow-reddish spots (small spots spread not symmetrically and left elytron possesses one yellow and four yellow-reddish spots, right elytron only two yellow spots). Explanate margin of elytra black with four yellow, radial spots and small yellow patch close to apical margin of disc. Black margin of elytra narrow, approximately thrice narrower than black radial spots. Head, thorax and abdomen black, last two abdominal sternites on sides with small, transverse yellowish-red spot. Legs black, antennae black only apical margin of two basal antennomeres yellowish-red.

Pronotum narrow, 1.88 times as wide as long, sides in basal half almost parallel then softly converging anterad, anterior margin shallowly emarginate in the middle. Pronotal disc regularly convex, its surface distinctly microreticulate, dull, with extremely fine and sparse punctures and with very thin and shiny median line. Explanate margin distinctly bordered from disc by a sulcus except unbordered short distance at base and in anterior part of the border, its surface microreticulate, dull, with fine and sparse punctures slightly denser in basal half of the margin. Whole surface of pronotum covered with very sparse, short, adherent setae.

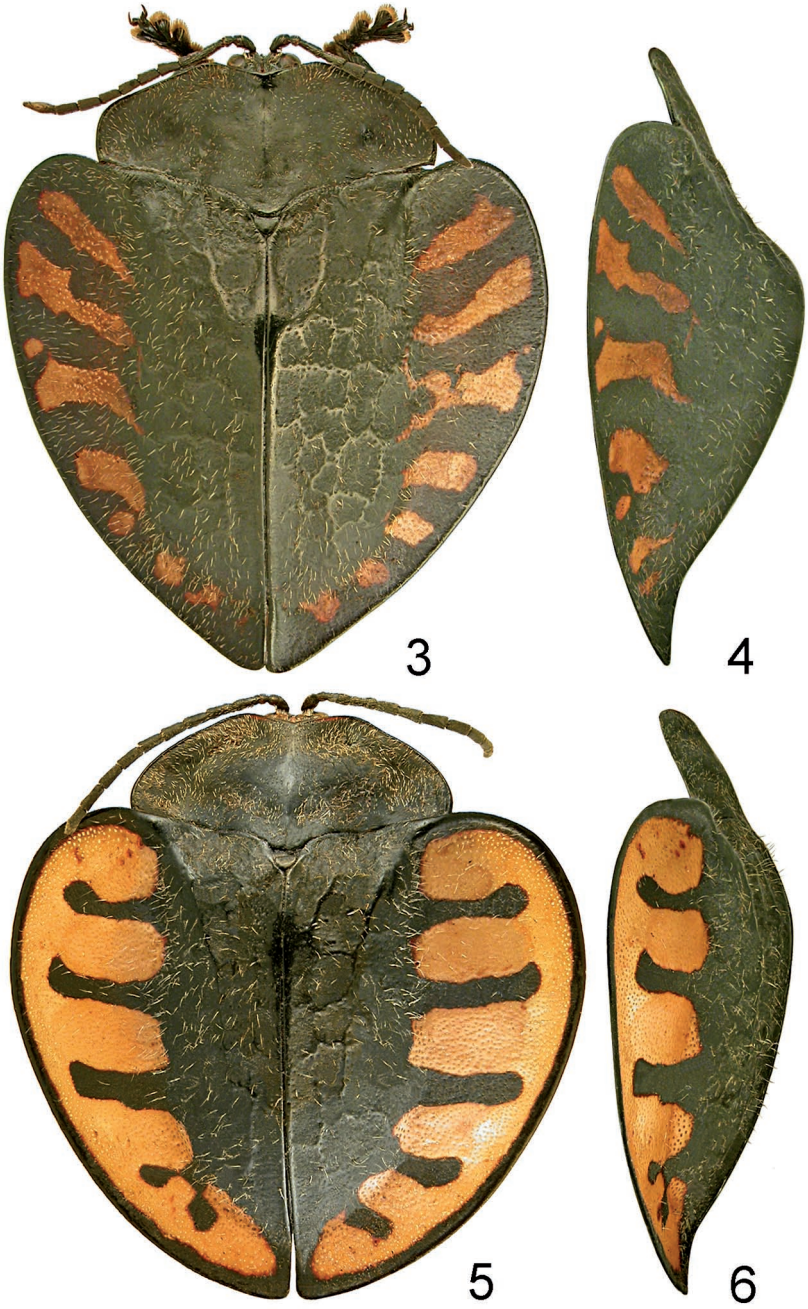
Scutellum semicircular, with transverse sulcus apically. Base of elytra much wider than pronotum, humeri strongly protruding anterad, more protruding than in any species with radial pattern of elytra, but humeral angles rounded. Disc unevenly convex, with well marked and high postscutellar elevation and elytral profile behind the top of

the elevation slightly concave but not as tuberculate as in *S. quinquefasciata* (fig. 2). Postscutellar impressions well marked, bordered by impunctate fold. Elytral surface with two longitudinal, impunctate elevations, first in position of first interval, extending from anterior margin of elytron, then surrounding postscutellar impressions and prolongate slightly behind the half of disc; second elevation in position of third interval, starts at humeral callus and runs along middle of the elytron up to yellow apical spot. Area between longitudinal elevations and between second elevation and margin of disc with large reticulation but elevated borders of cells of the reticulation sometimes disappear, especially on sides of disc and slope. Fields of reticulation with irregular, small, shallow but dense punctures, distance between punctation mostly smaller than puncture diameter. Explanate margin of elytra in the widest part slightly narrower than half width of disc. Surface appears slightly irregular, yellow spots slightly elevated, both yellow and black parts with shallow, small punctation, slightly denser on yellow spots and sparser on black background. Punctures on explanate margin approximately twice smaller than punctures on disc and very shallow. Whole surface of elytra with sparse but long, semierect to erect setae, twice to thrice longer than setae on pronotum. Apex of elytral epipleura with dense pubescence.

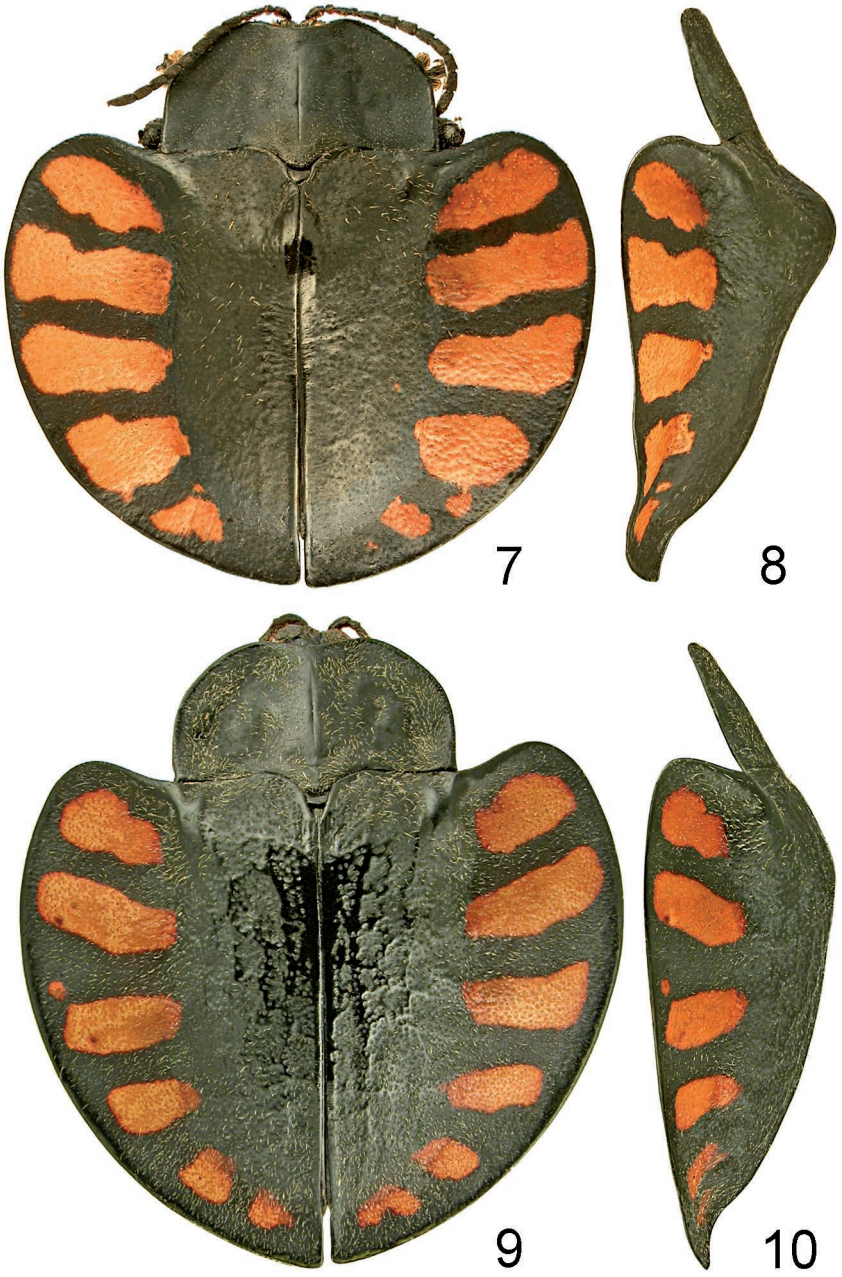
Ventrites typical for the genus *Stolas* Billberg. Clypeal part of head forms elevated, trapezial plate with sparse punctures and microreticulate interspaces. Prosternal process



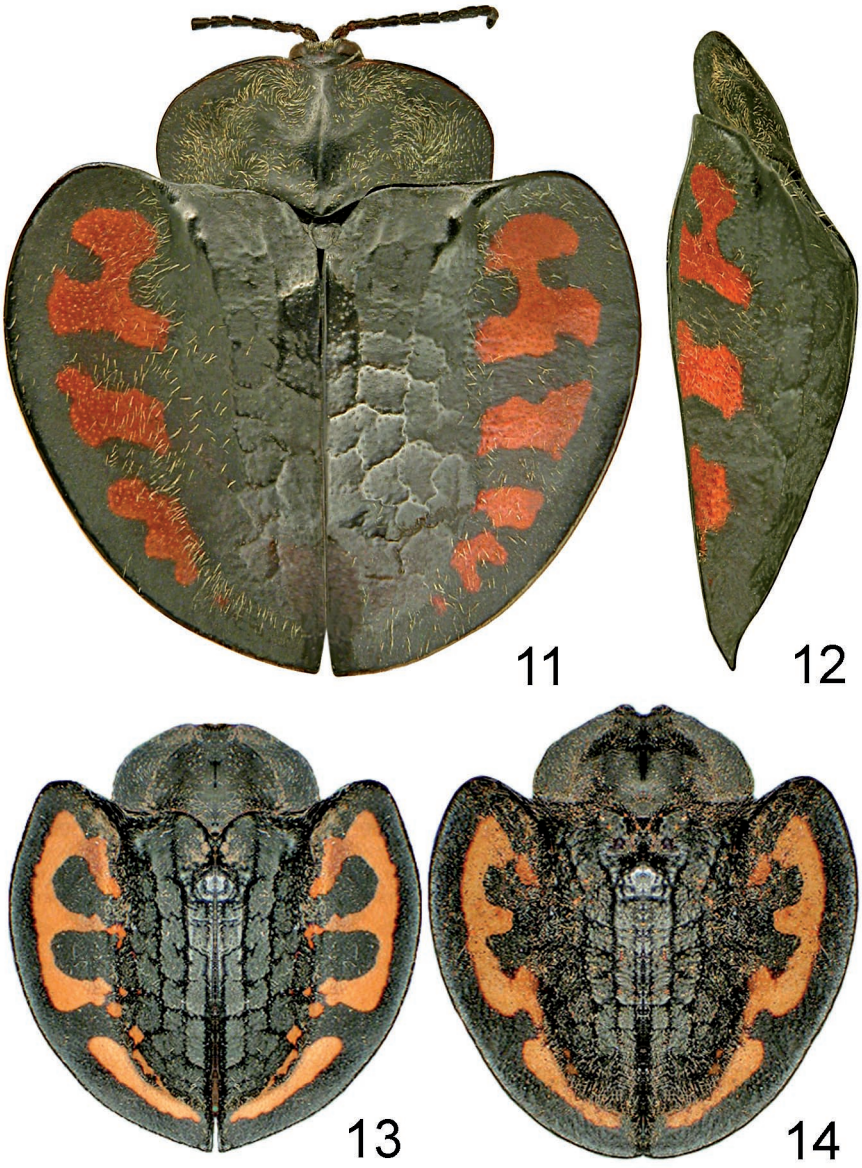

1, 2. *Stolas flavoradiata* n. sp.: 1 – dorsal, 2 – lateral




3, 4. *Stolas hermanni* (Spaeth): 3 – dorsal, 4 – lateral; 5, 6. *S. pectinata* (Baly): 5 – dorsal, 6 – lateral




7, 8. *Stolas quinquefasciata* (Wagener): 7 – dorsal, 8 – lateral; 9, 10. *S. perjucunda* (Baly): 9 – dorsal, 10 – lateral




11, 12. *Stolas praetoria* (Spaeth): 11 – dorsal, 12 – lateral; 13, 14. *S. socialis* (Spaeth): two aberrations dorsal

narrow with deep longitudinal sulcus, prosternal collar distinctly protruding anterad, metasternal plates moderately elevated. Surface of abdomen shiny. Antennae moderately long, segment 10 approximately 1.4 times as long as wide.

Last tarsal segments normal, not expanded apically.

### Distribution

Loreto Province in Amazonian part of Peru.

### Comments

*Stolas flavoradiata* belongs to a subgroup of species within the group possessing radial pattern that is characterized by a narrow pronotum, almost parallel sided in the basal half, and complete radial spots. From two similar congeners, *S. perjucunda* and *S. quinquefasciata*, it distinctly differs in the smallest number of yellow radial spots, only four while both relatives have five to six spots. The number of spots is not correlated with the size of the beetle, as *S. flavoradiata* is larger than the smallest specimens of *S. perjucunda* and similar in length to *S. quinquefasciata*. All species differ in elytral convexity. *Stolas quinquefasciata* has large postscutellar tubercle (fig. 8), *S. perjucunda* has the disc almost regularly convex with only slightly marked postscutellar elevation (fig. 10) while *Stolas flavoradiata* is distinctly elevated in postscutellar area but not as tuberculate as *S. quinquefasciata* (figs. 2 and 8). *S. perjucunda* has the disc similarly reticulate to the new species but without distinct longitudinal elevations (fig. 9), while *S. quinquefasciata* has indistinct both reticulation and longitudinal elevations (fig. 7).

### KEY TO SPECIES

1. Pronotum broad, width/length ratio above 2 (2.11-2.43) ……..... …. 2.
–. Pronotum narrow, width/length ratio below 2 (1.65-1.96) …..... ……. 4.
2. Radial black spots complete, reaching the lateral margin of elytra, at most first black radial spot interrupted in the middle (figs. 3, 4, 11, 12) ……..... …… 3.
–. Radial black spots incomplete, not reaching the lateral margin of elytra (fig. 5, 6) …..... *S. pectinata* (Baly)
3. Explanate margin of elytra with six or seven yellow radial spots, all black radial spots complete (figs. 3, 4) ……..... …….. *S. hermanni* (Spaeth)
–. Explanate margin of elytra with three to five reddish radial spots, first black radial spot usually interrupted in the middle (figs. 11, 12) ……..….. *S. praetoria* (Spaeth)
4. Radial black spots complete, reaching the lateral margin of elytra (figs. 1, 2, 7-10) …. 5.
–. Radial black spots incomplete, broad, not reaching the lateral margin of elytra or at most last spot complete (figs. 13, 14) ..... … *S. socialis* (Spaeth)
5. Explanate margin of elytra with five or six yellow and five black radial spots, humeri only slightly protruding anterad (fig. 7-210) ……..…… 6.
–. Explanate margin of elytra with only four yellow and three black radial spots, body narrow, humeri strongly protruding anterad (figs. 1, 2) .... *S. flavoradiata* n. sp.

6. Explanate margin of elytra with five yellow and four black radial spots (fig. 7). Elytral disc with postscutellar tubercle (fig. 8) …..... ..... …… *S. quinquefasciata* (Wagener)
–. Explanate margin of elytra with six yellow and five black radial spots (fig. 9). Elytral disc only slightly elevated in postscutellar area (fig. 10) …..... ..... …… *S. perjucunda* (Baly)

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