

A new species of *Cyrtonota* CHEVROLAT from Peru and note on  
*Cyrtonota balyi* (KIRSCH, 1883)  
(Coleoptera: Chrysomelidae: Cassidinae: Stolaini)

LECH BOROWIEC

Department of Biodiversity and Evolutionary Taxonomy, Zoological Institute, University of Wrocław,  
Przybyszewskiego 63/77, 51-148 Wrocław, Poland,  
e-mail: cassidae@biol.uni.wroc.pl

ABSTRACT. *Cyrtonota ruforeticulata*, species new to science, is described from Peru. It belongs to the group of species with sculpture of elytra forming red reticulation. *Cyrtonota christophori* BOROWIEC, 1998 is synonymized with *Cyrtonota balyi* (KIRSCH, 1883), new synonymy. A key to species of *Cyrtonota* with no metallic colour on elytra is given.

Key words: entomology, taxonomy, new species, new synonymy, Coleoptera, Chrysomelidae, Cassidinae, Stolaini, *Cyrtonota*, Peru, Ecuador, Colombia.

The genus *Cyrtonota* CHEVROLAT, 1837 comprises 60 species distributed in whole Neotropical region from Mexico to Argentina with centre of diversity in mountains of South America (BOROWIEC 1999, BOROWIEC and ŚWIĘTOJAŃSKA 2002). The genus is close to *Stolas* BILLBERG, 1820 and in some classifications *Cyrtonota* has been placed as subgenus of *Stolas* (HINCKS 1952, SEENO and WILCOX 1982). The genera differ only in the structure of antennae: in *Cyrtonota* five basal segments are bare or sparsely pubescent while in *Stolas* only four segments. Genera of the tribe Stolaini, especially from *Stolas* generic group, are characterized by a little number of synapomorphies and most of them have been created basing on various combination of 3-4 characters (number of basal glabrous antennal segments, structure of prosternal collar, degree of sexual dimorphism in structure of antennae and elytra). In my world catalogue of Cassidinae (BOROWIEC 1999) I preserved genus status for most of taxa of the *Stolas* generic group because some taxa from the group are rich in species and the genus *Stolas* sensu lato with more than 330 nominal species appears too much heterogenous and difficult in taxonomical

practice. Although genera of the group have been diagnosed on a few characters they seem coherent and may represent monophyletic lines. The hypothesis needs verification by molecular studies but before that I have treat *Cyrtonota* as independent genus.

In material studied recently I found a new species of the genus *Cyrtonota* CHEVROLAT from Machu Picchu mountain region. It belongs to group of species with elytral sculpture forming red reticulation. A key to species without metallic elytra and/or pronotum is given (partial key to metallic species of *Cyrtonota lateralis* group is available in BOROWIEC and SASSI 1999).

Colour photos of similar species are available in BOROWIEC and ŚWIĘTOJAŃSKA (2002).

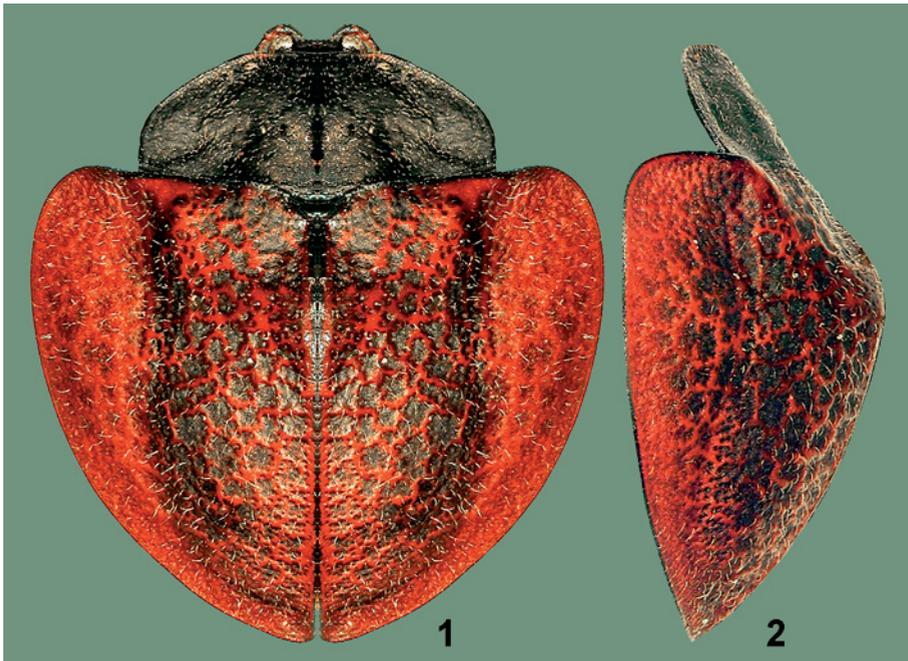
### *Cyrtonota ruforeticulata* n. sp.

#### ETYMOLOGY

Named after elytral sculpture forming red reticulation.

#### DIAGNOSIS

It belongs to the group of species with elytra not metallic, elytral sculpture forming at least spots with red reticulation, apex of elytra not elongate, and pronotum without spots of extremely dense vestiture. The group presently comprises four species:



1, 2. *Cyrtonota ruforeticulata* n. sp.: 1 – habitus dorsal, 2 – habitus lateral

*C. bondari* (SPAETH, 1928), *C. compulsa* (SPAETH, 1909), *C. gibbera* BOROWIEC, 1989, and *C. ruforeticulata* n. sp. *C. bondari* is the most distinct with red reticulation forming only six spots on elytra while remaining species have the whole elytra reticulate. Both *C. compulsa* and *C. gibbera* are larger than *C. ruforeticulata* with length above 12 mm (less than 11 mm in *C. ruforeticulata*), and have more transverse pronotum with sides rounded posterad thus posterior corners are hardly marked, while in *C. ruforeticulata* pronotum in basal 1/3 is parallelsided and posterior corners are well marked, angulate. *C. compulsa* differs also in bare pronotum and elytra (pubescent in *C. ruforeticulata*) and *C. gibbera* differs in red reticulation of elytra completely impunctate while in *C. ruforeticulata* the reticulation on slope and in humeral area is distinctly punctate. Males of *C. textilis* (BOHEMAN, 1850) and *C. trigonata* (SPAETH, 1901) belonging to the group of species with acuminate elytra at first glance look similar to *C. ruforeticulata* but differ in larger size (length always above 11 mm), more transverse pronotum, and slightly more acuminate apex of elytra (females of both species have distinctly acuminate apex). *C. textilis* differs also in dense and long elytral pubescence and *C. trigonata* differs in bare elytra.

#### DESCRIPTION

Length 10.0-10.6 mm, width 9.2-9.8 mm, length of pronotum 2.8-3.0 mm, width of pronotum 5.7-6.2 mm, length/width ratio 1.08-1.09, width/length ratio of pronotum 2.04-2.07. Body subtriangular, apex of elytra angulate but not acuminate (fig. 1).

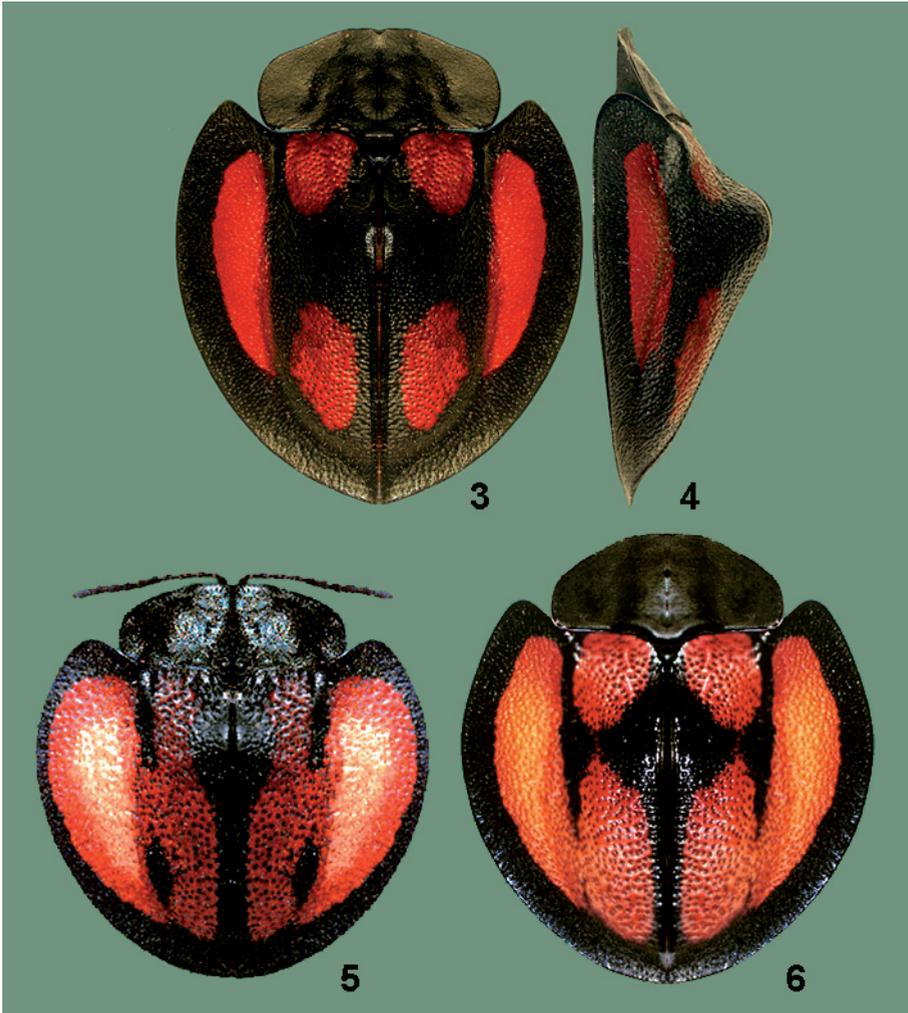
Pronotum black, anterior corners with reddish stripe. Scutellum black. Elytral disc red, punctures in fields of reticulation on disc and explanate margin close to border of disc with brown to black centre and areola. In some fields, especially in anterior part of disc areolae partly or completely coalescent then fields appear completely or mostly brown to black but ground colour of elytra appears red. Ventrites black, two last abdominal sternites on both sides with small reddish spot. Legs black, antennae mostly black only segments 2 and 3 on underside reddish.

Pronotum very broad, 2.04-2.07 times as wide as long, widest at base. Anterior margin distinctly emarginate, anterior corners broadly rounded, sides regularly rounded without lateral angles thus pronotum appears rather semicircular than subtrapezoidal. Disc moderately convex, indistinctly bordered from explanate margin, with narrow median line and two small pits anteriorly. Whole surface of pronotum dull, microreticulate, with fine pricks and sparse, short, adherent to semierect pubescence.

Scutellum almost semicircular, without sulcus. Base of elytra much wider than base of pronotum. Anterior margin of elytra almost straight, thus humeri only slightly protruding anterad, humeral angles broadly rounded. Elytral disc strongly but evenly convex, in profile appears gibbous but not tuberculate (fig. 2). Postscutellar impressions shallow but distinct. Sculpture of elytra forms reticulation on whole surface but in anterior and posterior of explanate margin the reticulation disappears between elytral puncturation. Fields of reticulation small to moderate, between top and margin of disc 6-7 fields. Fields punctate, punctures moderately coarse, in top of disc reticulation is mostly impunctate, on sides of disc, slope, and gradually to margin of disc punctures also encroached to folds of reticulation then reticulation gradually disappears between

irregular puncturation. On top of disc surface of reticulation shiny, on sides gradually dull. Fields of reticulation dull. Whole surface of elytra with sparse, short, semierect to erect pubescence, hair rise not from centre of punctures but very fine pricks on folds of reticulation. Apex of elytral epipleura with dense pubescence.

Clypeus typical for the genus *Cyrtonota* CHEVR., strongly elevated, clypeal plate flat, dull, with several small punctures. Labrum emarginate to 2/5 length. Antennae moderately long length ratio of antennal segments: 100:42:75:75:63:58:58:63:58:58:105. Segment 3 approximately 1.8 times as long as segment 2, segment 4 as long as segment 3, segments 9 and 10 only slightly longer than wide. Prosternal collar moderately long,



3,4. *Cyrtonota balyi* (KIRSCH): 3 – holotype dorsal, 4 – holotype lateral; 5, 6. *Cyrtonota christophori* BOROWIEC: 5 – the palest aberration, 6 – holotype dorsal

sides not angulate. Prosternal process narrow, along middle deeply canaliculate, apex moderately expanded laterally. All claws with large basal tooth typical for the genus *Cyrtonota* CHEVR.

Genitalia not dissected, comparative study on genitalia in some genera of Stolaini provided in my Department of Biodiversity and Evolutionary Taxonomy (partly unpublished) showed that in the genus *Cyrtonota* they are not diagnostic.

#### Type material

Holotype: "PERU, Cuzco, Rio Urubamba, Machu Picchu, 2000 m, 11 IX 1969"; paratype: the same data (both preserved at the Department of Biodiversity and Evolutionary Taxonomy, University of Wrocław, Poland).

### *Cyrtonota balyi* (KIRSCH, 1883)

*Mesomphalia Balyi* KIRSCH, 1883: 207 (TE! in MTD!).

*Pseudomesomphalia Balyi*: SPAETH, 1914: 34.

*Neomphalia Balyi*: SPAETH, 1919: 27.

*Stolas balyi*: BLACKWELDER, 1946: 738.

*Cyrtonota balyi*: BOROWIEC, 1999: 106.

*Cyrtonota christophori* BOROWIEC, 1998: 219, 1999 d: 106, **new synonymy**.

By courtesy of Lukas SEKERKA (Czech Republic) I had an occasion to study holotype of *Cyrtonota balyi* (KIRSCH, 1883) preserved in Dresden Museum and labelled "Columb. Stübel" and in my opinion *Cyrtonota christophori* BOROWIEC, 1998 described recently from Ecuador is only pale aberration of *C. balyi* (KIRSCH). In *C. balyi* ground colour of elytra is black with four red spots on disc and two large spots on explanate margin (figs 3, 4), while in *C. christophori* red spots are partly coalescent and red colour occupies more than half space of elytra (figs 5, 6). Other characters e.g. elytral outline and convexity, elytral puncturation and shape of pronotum look very similar thus both taxa probably represent only extreme colour forms of the same species.

#### KEY TO SPECIES OF *CYRTONOTA* WITHOUT METALLIC ELYTRA

1. Elytral disc at least partly with red reticulation, or completely reticulate, or completely black, or in posterior part red, or with numerous red spots but never with two blood red spots without reticulation ..... 2.
- Elytral disc with two blood red spots, first round at base and second elongate from mid length to posterior 1/5 length. Explanate margin with elongate red band from humeri to posterior 1/3 length. Colombia ..... ***C. balyi* (KIRSCH)**, typical form
2. Apex of elytra elongate or at least in female distinctly acuminate ..... 3.
- Apex of elytra in both sexes rounded or indistinctly acuminate ..... 13.
3. Elytral apex distinctly elongate, forms an elongate process ..... 4.
- Elytral apex acuminate but does not form an elongate process ..... 6.

4. Red reticulation present in scutellar and humeral part of elytra ..... 5.  
 – Scutellar and humeral part of elytra without red reticulation. Colombia .....  
 ..... *C. moderata* (SPAETH)
5. Apical process of elytra broad. Red reticulation of elytra sparse, elytra appear at first glance black and red, on slope black colour occupies approximately similar space as red colour. Colombia ..... *C. caudata* (BOHEMAN)  
 – Apical process of elytra narrow. Red reticulation of disc dense, elytra appear at first glance mostly red, especially on slope black spots very small and sparse. Colombia .....  
 ..... *C. bergeali* BOROWIEC et SASSI, female<sup>1</sup>
6. Elytral disc completely or partly with red reticulation ..... 7.  
 – Elytral disc without red reticulation, at most with red, punctate spots ..... 10.
7. Red reticulation disposed regularly on whole elytral surface, at most margins of elytra narrowly black ..... 8.  
 – Red reticulation not disposed regularly on whole elytral surface, at least humeral area and anterior margin of explanate margin of elytra black, sometimes also band across 1/3 length of elytra black ..... 9.
8. Elytra bare, lateral margin of elytra narrowly black. Ecuador .....  
 ..... *C. trigonata* (SPAETH)  
 – Elytra with long and dense pubescence, red reticulation extends to lateral margin of elytra. Colombia ..... *C. textilis* (BOHEMAN)
9. Black forms broad band along anterior margin of explanate margin of elytra, elongate band below humerus, and band across 1/3 length of disc. Colombia .....  
 ..... *C. pavens* (SPAETH)  
 – Black forms only band along anterior margin of explanate margin of elytra and elongate band below humerus, no band across disc. Red reticulation more spread and black eyes of net smaller than in previous species. Colombia .....  
 ..... *C. bergeali* BOROWIEC et SASSI<sup>1</sup>
10. Elytral disc completely black or in posterior half red ..... 11.  
 – Elytral disc with punctate, red spots. Bolivia and Peru ..... *C. inspicata* (SPAETH)
11. Elytral disc completely black, red pattern only on explanate margin ..... 12.  
 – Elytral disc in posterior half red, also explanate margin mostly red. Colombia and Peru .....  
 ..... *C. steinheili* (WAGENER)
12. On explanate margin of elytra, before its middle, more or less round, red spot. Ecuador .....  
 ..... *C. deliciosa* (BALY)  
 – One explanate margin of elytra yellowish-red band with small black spots. Peru and Bolivia .....  
 ..... *C. honorata* (BALY)
13. Pronotum with two spots of extremely dense vestiture ..... 14.  
 – Pronotum without spots of extremely dense vestiture ..... 15.
14. Pronotum almost semicircular. Elytra less gibbous. Ground colour of elytra paler, yellowish-brown. Suture completely black. Basal antennal segments yellowish ventrally. Colombia ..... *C. lurida* (SPAETH)

<sup>1</sup> Probably it is only pale form of *C. pavens* (SPAETH).

- Pronotum subtrapezoidal. Elytra more gibbous. Ground colour of elytra darker, brown. Suture only in anterior part black. Antennae uniformly black. Ecuador ..... *C. aurovestita* (SPAETH)
- 15. Elytra completely with red reticulation or with red reticulate spots ..... 16.
- Elytra without red reticulation or red reticulate spots ..... 19.
- 16. Elytra on whole surface with red reticulation ..... 17.
- Elytra with six red reticulate spots: two in postscutellar impression, one in the middle of margin of disc and two on slope. Brazil: Bahia ..... *C. bondari* (SPAETH)
- 17. Length above 12 mm. Pronotal sides rounded posterad, basal corners obsolete ..... 18.
- Length below 11 mm. Pronotum in basal 1/3 length almost parallelsided, basal corners distinct. Peru ..... *C. ruforeticulata* n. sp.
- 18. Elytra strongly gibbous, postscutellar impressions well marked. Large, length c. 14 mm. Pronotum more transverse, width/length ratio 2.25-2.40. Colombia ..... *C. compulsa* (SPAETH)
- Elytra less gibbous, postscutellar impressions hardly marked. Smaller, length c. 12.5 mm. Pronotum less transverse, width/length ratio approximately 1.97. Colombia ..... *C. gibbera* BOROWIEC
- 19. Elytra strongly gibbous in profile ..... 20.
- Elytra regularly convex or only slightly gibbous in postscutellar part ..... 27.
- 20. At least elytra partly red or brown ..... 21.
- Pronotum and elytra completely black. Venezuela ..... *C. punctatissima* (SPAETH)
- 21. Elytra uniformly brown or brown with at most suture, humerus and extreme margin of elytra black ..... 22.
- Elytra with more expanded black or brown markings ..... 24.
- 22. At least elytral margin narrowly black, usually also suture black. Surface of pronotum opaque ..... 23.
- Elytra uniformly brown. Surface of pronotal disc shiny. Peru .... *C. banghaasi* (SPAETH)
- 23. Pronotum black. Colombia and Ecuador ..... *C. kolbei* (SPAETH)
- Pronotum reddish. Ecuador. .... *C. marginata* (KIRSCH)
- 24. Pronotum black. Elytral disc along sides without spots, or with black band or stripe, or with two black spots ..... 25.
- Pronotum reddish-brown. Elytral disc along sides with three black spots. Ecuador ..... *C. montana* BOROWIEC
- 25. Explanate margin of elytra before middle without transverse black spot. Elytra bare or with sparse, short, erect hairs ..... 25.
- Explanate margin of elytra before middle with transverse black spot. Elytra with moderately dense, partly adherent hairs. Peru ..... *C. machupicchu* BOROWIEC
- 26. Black markings of elytra forms broad band along elytral margin and broad band along suture, no black markings along sides of disc. On elytral tubercle black suture only slightly broader than in posterior half of disc. Ground colour of elytra yellowish-brown. Colombia ..... *C. bugaensis* BOROWIEC et SASSI

- . Black markings of elytra forms except band along elytral margin and band along suture, forms black stripe or two elongate spots along sides of disc. On elytral tubercle black suture expanded and often forms with spots along sides incomplete H-shaped figure. Ground colour of elytra red. Ecuador ..... *C. balyi* (KIRSCH), pale form
- 27. Elytral disc in profile regularly convex, postscutellar impressions barely marked ..... 28.
- . Elytral disc in profile less regularly convex, with more or less marked elevation in postscutellar part, postscutellar impressions shallow but distinct ..... 31.
- 28. Elytral disc without brown transverse band. Elytra black with pale spots or yellowish-red with black spots, occasionally almost uniformly yellowish-red with few small, black spots; suture narrowly black or in anterior aprt with black cordiform spot ..... 29.
- . Elytral disc or both disc and explanate margin in 1/3 length with brown, narrow transverse band. Elytra mostly yellowish, except transverse band at most sides of disc below humerus and transverse spot in posterolateral part of disc brown; suture narrowly brown, never black. Colombia and Peru ..... *C. dissecta* (BOHEMAN)
- 29. Elytra black with pale spots or almost uniformly yellowish-red with few small, black spots. Suture without cordiform spot, in posterior half black. Explanate margin of elytra in the middle without black transverse spot ..... 30.
- . Elytra red with black spots. Suture in anterior part with black cordiform spot in posterior half red. Explanate margin of elytra red, in the middle with black transverse spot. Ecuador ..... *C. poecilaspidooides* (BALY)
- 30. Elytra in pale form yellowish red with suture narrowly black and small black spots on humerus and anterior ¼ length of sides of disc; in dark form elytra black with large pale spots close to scutellum, round spot close to anterior margin of explanate margin of elytra, and large C-shaped spots on slope, sometimes occur large spot in the middle of side of disc and spot behind the middle of explanate margin. Bolivia ..... *C. botanocharoides* BOROWIEC
- . Elytra black, each disc in anterior part close to suture and explanate margin of elytra in anterior part with large circular spot, almost whole posterolateral part of disc and posterior part of explanate margin yellow, only margin of disc and stripe from the margin to slope black divide the apical yellow spot into several parts. Ecuador ..... *C. flavoplagiata* (SPAETH)
- 31. Elytra mostly brown, without spots, except small spot on humerus. Body stout. Pronotum black with two small yellowish-red spots. Peru ..... *C. huallagensis* (SPAETH)
- . Elytra red with black pattern. Explanate margin of elytra with transverse black spot. Body elongate. Pronotum uniformly black. Peru and Ecuador ..... *C. elongata* (SPAETH)

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