

Genus	Vol. 21(2): 271-277	Wrocław, 30 VII 2010
-------	---------------------	----------------------

Aspidimorpha (s. str.) *karamojana*, a new species from Central Africa
(Coleoptera: Chrysomelidae: Cassidinae)

LECH BOROWIEC¹ & LUKAS SEKERKA²

¹Department of Biodiversity and Evolutionary Taxonomy, Zoological Institute, University of Wrocław, Przybyszewskiego 63/77, 51-148 Wrocław, Poland, e-mail: cassidae@biol.uni.wroc.pl

²Department of Zoology, Faculty of Science, University of South Bohemia, Branišovská 31, České Budějovice, CZ- 370 01, Czech Republic; e-mail: sagrinae@seznam.cz

ABSTRACT. *Aspidimorpha karamojana*, new species is described from NE Uganda. It belongs to the *expansa* group of nominotypical subspecies and is close to *A. adumbrata* SPAETH.

Key words: entomology, taxonomy, new species, Coleoptera, Chrysomelidae, Cassidinae, *Aspidimorpha*, Central Africa.

The large and heterogenous genus *Aspidimorpha* HOPE, 1840 comprises 197 species divided into 10 subgenera distributed in tropical and subtropical parts of the Old World (BOROWIEC 1999, BOROWIEC and ŚWIĘTOJAŃSKA 2010). The most speciose is the nominotypical subgenus with 153 described species, 92 of them known from the Ethiopian region. Both Afrotropical and Oriental species were revised recently (BOROWIEC 1997, ŚWIĘTOJAŃSKA 2001).

BOROWIEC (1997) divided the nominotypical subgenus into 20 species groups. In material studied recently we found specimens of *Aspidimorpha* belonging to the *expansa* species group. Its description is given below.

***Aspidimorpha* (s. str.) *karamojana* n. sp.**

Aspidimorpha adumbrata: BOROWIEC 1997: 206 (part, specimens from Mororo only).

ETYMOLOGY

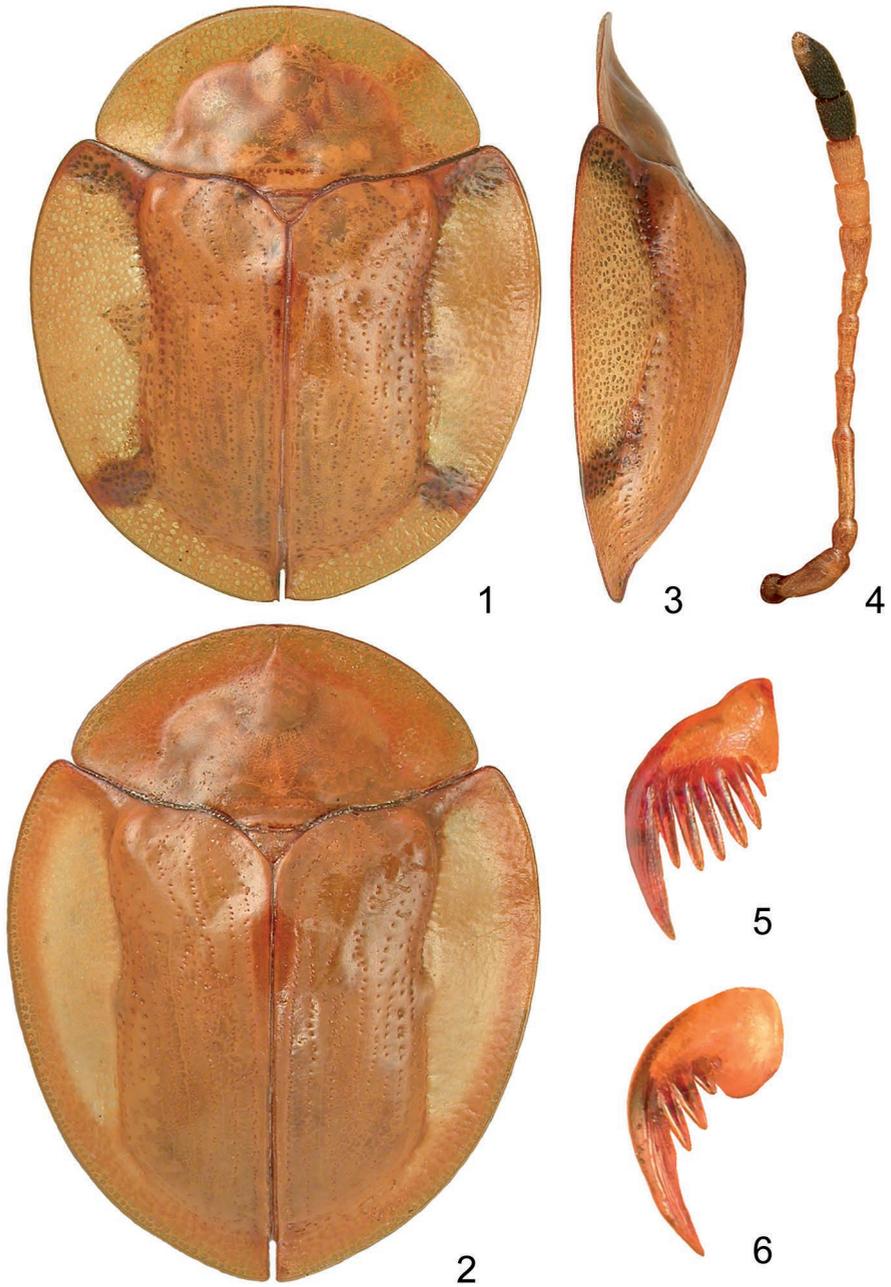
Named after terra typica, Karamoja region in north-eastern Uganda.

TYPE MATERIAL

Holotype, male (specimen with spots on marginalia): [Uganda] “van Someren, Mt: Kadam [second “a” letter visible only as dot], Karamoja [first “a” letter turned upside-down] 4 50 [= April 1950]” (preserved at the Natural History Museum, London); allotype, female (specimen without spots on marginalia): the same data (preserved at the Natural History Museum, London); 9 paratypes: the same data, four paratypes with additional label “COM. INST. ENT. COLL. NO. 11740”; 14 paratypes: “van Someren, Mt. Kadam [in 11 specimens second “a” letter not printed] area, Suk. 7 49 [= July 1949]”; two paratypes: “Turkana, 30 4-48, AFR. Moroto, Tord Andersson”; two paratypes: “Uganda, Moroto [in BOROWIEC 1997 wrongly cited as Mororo], 8.X.1952, B. Verdcourt/♂♀ in cop. [ula] ex *Ipomoea hildebrandtii*/*Aspidomorpha biguttata* Ab. candens Sp. ♂♀ det. W.D. Hincks” (paratypes preserved at the Natural History Museum, London, in the collection of the Department of Biodiversity and Evolutionary Taxonomy, University of Wrocław, Poland, and in the collection of Lukas Sekerka, České Budějovice, Czech Republic).

DIAGNOSIS

Aspidomorpha karamojana belongs to the *expansa* species group sensu BOROWIEC (1997). The small group comprises actually only three species: *A. adumbrata* SPAETH, 1917, *A. expansa* SPAETH, 1917, and *A. filiola* BOROWIEC, 1997 characterised by circular to subcircular body, elytral disc depressed or only slightly elevated in postscutellar area, base of elytra not or only slightly wider than pronotum, dorsum uniformly yellow or with small spots only at base of elytra, and explanate margin of elytra not forming gutter. *Aspidomorpha filiola* distinctly differs in very coarse elytral punctation with intervals in sutural part of disc as wide as to slightly narrower than intervals while in *A. karamojana* they are three to five times as wide as rows. Males of *A. filiola* are distinctly slimmer with length/width ratio 1.23 while in *A. karamojana* the ratio is always below 1.20. Both species are separated geographically, *A. filiola* is known only from Zimbabwe while *A. karamojana* only from NE Uganda. *Aspidomorpha expansa* differs in very fine elytral punctation, any row on disc never impressed, and surface of disc completely regular while in *A. karamojana* punctation is slightly coarser, rows at least on sides slightly impressed and surface of disc usually slightly irregular, especially on sides. In *A. expansa* base of elytra is marked with at least four small, black spots, sometimes small black spots occur also along suture and sides of disc while *A. karamojana* has disc always immaculate. *A. adumbrata* is the most similar but differs in ventrites uniformly yellow or only prosternum slightly infuscate (BOROWIEC (1997) noted specimens with partly black thorax but these are here transferred to *A. karamojana*) while in *A. karamojana* ventrites are partly black. Base of elytra in *A. adumbrata* is not or only very slightly wider than base of pronotum while in *A. karamojana* the emargination between pronotum and elytra is always well marked thus body outline in *A. adumbrata* appears more regularly circular than in *A. karamojana*, especially in



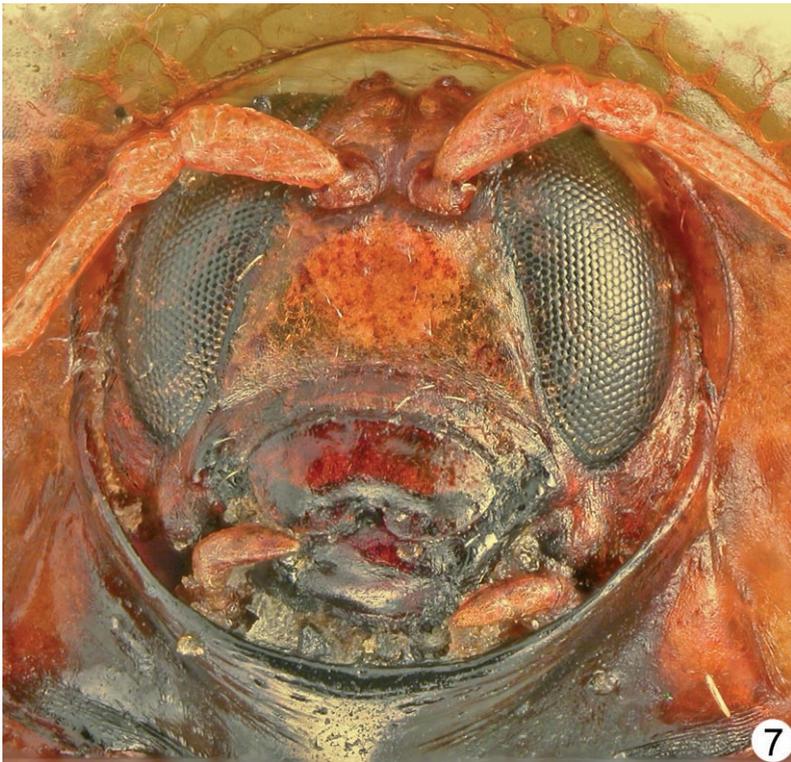
1-5. *Aspidimorpha karamojana* n. sp.: 1 – maculate male dorsal, 2 – immaculate female dorsal, 3 – male lateral, 4 – antenna, 5 – inner margin of tarsal claws, 6 – outer margin of tarsal claws

males. *Aspidimorpha adumbrata* is smaller than *A. karamojana*, mean length of the new species of both males and females is above the largest noted length for *A. adumbrata* (*adumbrata* length 10.20-11.50 mm, *karamojana* 10.55-13.80 mm).

Pale form of *A. biguttata* (FABRICIUS, 1775) with completely reduced pattern on elytral marginalia (= form *candens* SPAETH, 1906) looks very similar to *A. karamojana* but differs in elytral disc more elevated and sutural spot always broader than elevated sutural margin (in *A. karamojana* sutural spot, if present, is very narrow, not wider than elevated sutural margin); females of *A. biguttata* have pubescent apex of elytral epipleura while in *A. karamojana* it is bare; elytral surface of *A. biguttata* is slightly opaque while in *A. karamojana* it is more or less shiny.

DESCRIPTION

Length: male 10.55-12.80 mm (mean 11.63, n = 12), female 12.30-13.80 mm (mean 12.90, n = 12); width: male 8.90-11.10 mm (mean 10.12, n = 12), female 9.90-11.30 mm (mean 10.46, n = 12); width of pronotum: male 6.55-8.15, mm female 7.70-8.30 mm; length of pronotum: male 3.50-4.15 mm, female 3.75-4.25 mm; length/width ratio: male 1.06-1.19, female 1.19-1.31; width/length ratio of pronotum: male 1.87-2.04, female 1.94-2.16. Males (fig. 1) smaller and stouter than females (fig. 2).



7. *Aspidimorpha karamojana* n. sp.: head

Pronotum yellow. Elytra yellow without pattern (fig. 2) or explanate margin on underside with narrow humeral and posterolateral spots (fig. 1), or only diagonal humeral spots present. Sutural spot absent or very narrow not exceeding elevated part of sutural margin. Head yellow, prosternum mostly dark brown to black, occasionally prosternal alae partly yellowish and prosternal process partly yellowish-brown. Mesothorax black. Metathorax mostly black with yellow sides and posterolateral corners. Abdomen varies from uniformly yellow to darkened in the middle of first three sternites, in extreme case central part of the sternites black. Legs uniformly yellow including coxa. Antennae yellow with black two last segments (fig. 4), ventral side of apical part of last segment usually yellow, occasionally 10th segment partly brown or yellow.

Pronotum narrowly semicircular, widest at base (figs. 1, 2). Disc only slightly convex its surface smooth and shiny. Explanate margin horizontal, smooth and shiny. Base of elytra slightly wider than pronotum thus elytral outline is not regularly circular with well marked emargination between base of pronotum and base of elytra (figs. 1, 2), humeri slightly protruding anterad, rounded. Disc slightly unevenly convex in profile, with marked elevation in postscutellar area but without postscutellar tubercle or gibbosity (fig. 3), elytral profile behind the top of disc straight. Elytral punctation fine, on sides twice coarser than in sutural rows, punctures in rows from dense, almost touching each other (especially in sutural row) to sparse with interspaces two to three times wider than puncture diameter (especially on sides of disc), often group in 2-4 together. Rows on sides of disc usually shallowly impressed. Marginal row well marked on whole length, its punctures as coarse as in submarginal row. Intervals broad, in sutural half of disc three to five times, on sides two to three times wider than rows. Surface on whole disc more or less regular, in some specimens on sides of disc slightly irregular but never appears rugose. Lateral fold of marginal interval usually broad but only slightly convex. Explanate margin in widest part in male 0.86 times in female 0.77 times as wide as disc of elytron. Surface of elytra more or less shiny, surface of explanate margin regular, impunctate. Epipleura in both sexes unpubescent.

Antennae long, length ratio of antennal segments: 100:41:118:74:70:56:62:56:56:52:143, segment 3 approximately 2.9 times as long as segment 2, segment 10 approximately 1.2 times as long as wide (fig. 4).

Clypeus broad, 1.8 times as wide as long, clypeal plate mostly flat, with shallow circular impression apically (fig. 7). Labrum narrowly emarginate to 1/5 length.

Claws on inner margin with pecten of 6 teeth, as long as 2/3 length of claw (fig. 5), on outer margin pecten with 3 teeth, as long as 1/3 length of claw (fig. 6).

HOST PLANT

Convolvulaceae: *Ipomoea hildebrandtii* (label data).

REMARKS

In the key to African *Aspidimorpha* s. str. (BOROWIEC 1997: 178) immaculate specimens of the new species runs to couplet 32. and the key is modified as follow:

32. Stouter, Le/Wi ratio in male 1.12-1.23, in female 1.21-1.34, sides rounded (figs 328, 530, 563, 565, 1085, 1087) 33.
- Slimmer, Le/Wi ratio in male 1.27-1.36, in female 1.36-1.43, sides less rounded, almost parallel (figs 342, 710, 1037) 36.
33. Puncturation of disc fine to moderate, intervals in sutural half of disc always wider than rows 34.
- Puncturation of disc very coarse, intervals in sutural half of disc as wide as to narrower than rows. Zimbabwe only *filiola*
34. Larger, length 10.3-12.8 mm. Species outside South Africa (Ethiopia, Kenya, Uganda, Tanzania, Zimbabwe) 35.
- Smaller, length 7.6-10.2 mm. Species exclusively from South Africa *tecta* (*silacea* form)¹
35. Elytral disc depressed, its puncturation very fine, rows not impressed, surface of disc appears smooth and shiny. Base of elytral disc usually with small, black spots (fig. 509) *expansa* (the palest form)
- Elytral disc regularly convex or with slightly marked postscutellar elevation, its puncturation from fine to large, rows partly impressed, surface of disc appears slightly to strongly irregular. Elytral disc always uniformly yellow 35a.
- 35a. Ventrites uniformly yellow or only prosternum partly brown. Base of elytra not or only slightly wider than pronotum *adumbrata*
- Thoracic sterna mostly black. Base of elytra more distinctly wider than pronotum *karamojana*

Specimens with spots on explanate margin run to couplet 47., and the key is modified as follow:

47. Body depressed to moderately convex. Species outside South Africa 48.
- Body distinctly convex with slightly more elevated postscutellar area (figs 1086, 1088). Species exclusively from South Africa *tecta* (typical form)¹
48. Slimmer species, Le/Wi ratio in male usually above 1.23 in female above 1.30. Body outline usually oval, if body subcircular and Le/Wi ratio in male below 1.23 and in female below 1.30 then elytral disc maculate, with reddish, brown to black spots 49.
- Slimmer species, Le/Wi ratio in male below 1.21 in female below 1.30. Body outline circular to subcircular, elytral disc uniformly yellow or with at most four small black spots at base of elytra 48a.
- 48a. Elytral disc depressed, its puncturation very fine, rows not impressed, surface of disc appears smooth and shiny. Base of elytral disc usually with small, black spots (fig. 509) *expansa* (form with spots on marginalia)
- Elytral disc regularly convex or with slightly marked postscutellar elevation, its puncturation from fine to large, rows partly impressed, surface of disc appears

¹Subsequent study of type material revealed that *A. tecta* (BHN.) is junior synonym of *A. quadrimis* (GYLL.) (SEKERKA 2008) which was tentatively treated by BOROWIEC (1997) as synonym of *A. cincta* (FAB.) nec DEGEER.

slightly to strongly irregular. Elytral disc always uniformly yellow
..... *karamojana* (form with spots on marginalia)

Colour photos of all similar species of *Aspidimorpha* are available in BOROWIEC and ŚWIĘTOJAŃSKA (2010).

ACKNOWLEDGMENTS

We would like to express our sincere thanks to Dr. M. L. BARCLAY (Natural History Museum, London) for the loan of the specimens. The paper was supported by scientific grant of the Zoological Institute, University of Wrocław, 1018/IZ/2010 and grant MSM 600 766 5801 of the Ministry of Education of the Czech Republic.

REFERENCES

- BOROWIEC, L., 1997 b. A monograph of the Afrotropical Cassidinae (Coleoptera: Chrysomelidae). Part II. Revision of the tribe Aspidimorphini 2, the genus *Aspidimorpha* HOPE. Genus (Supplement 8), Biologica Silesiae, Wrocław, 596 pp.
- , 1999. A world catalogue of the Cassidinae (Coleoptera: Chrysomelidae). Biologica Silesiae, Wrocław, 476 pp.
- BOROWIEC, L., ŚWIĘTOJAŃSKA, J., 2010. Cassidinae of the world - an interactive manual (Coleoptera: Chrysomelidae). Permanent electronic publication (open in 2002): www.biol.uni.wroc.pl/cassidae/katalog%20internetowy/index.htm.
- HOPE, F.W., 1840. The Coleopterists Manual. Part 3, London, 191 pp. + 3 pl.
- SPAETH, F., 1917. Neuer Beitrag zur Kenntnis der Ost- und Zentralafrikanischen Cassidinen. Ann. Mus. Nat. Hung., **15**: 422-444.
- SEKERKA, L., 2008. The identity of *Aspidimorpha quadrimis* GYLLENHAL (Coleoptera: Chrysomelidae: Cassidinae). Genus, Wrocław, **19**: 297-299.
- ŚWIĘTOJAŃSKA, J., 2001. A revision of the tribe Aspidimorphini of the Oriental Region (Coleoptera: Chrysomelidae: Cassidinae). Genus (Supplement 11), Biologica Silesiae, Wrocław, 318 pp. + 18 pl.