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A new species of *Cassida* L. from Malaysia (Coleoptera: Chrysomelidae: Cassidinae)

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Abstract. *Cassida malaysiana*, new species is described from Malaysia. It belongs to the large group of Oriental species classified within the artificial subgenus *Cyclocassida* Chen et Zia, 1961, characterized by simple claws. It differs from all members of the group in unique pattern of dorsum.

Key words: entomology, taxonomy, new species, Coleoptera, Chrysomelidae, Cassidinae, *Cassida*, Malaysia.

The genus *Cassida* Linnaeus, 1758 with 427 described species is the most speciose genus within the subfamily Cassidinae (Borowiec 1999 a, Borowiec and Świętojańska 2010). It was divided into several subgenera but according to Borowiec (2007) most of them are artificial groupings and should be rejected. The genus is distributed in the whole Old World with two native species in North America (Spaeth 1927, Majka and LeSage 2008). Most species occur in tropical Asia and Africa with a great centre of diversity in Madagascar (Borowiec unpublished data). A large number of species (ca. 160) is known from the Oriental region, many of them described recently (Borowiec 1995, 1999 b, 2001, 2002 a, b, 2009; Borowiec and Ghate 2004; Borowiec and Świętojańska 1996, 1997; Borowiec and Takizawa 1991; Sekerka and Borowiec 2008; Świętojańska and Borowiec 2002).

In materials collected by Czech collectors in Malaysia I found a series of specimens representing a new species of the genus *Cassida* of the group with small, circular body and simple tarsal claws. Its description is given below.

Cassida malaysiana n. sp.

Etymology

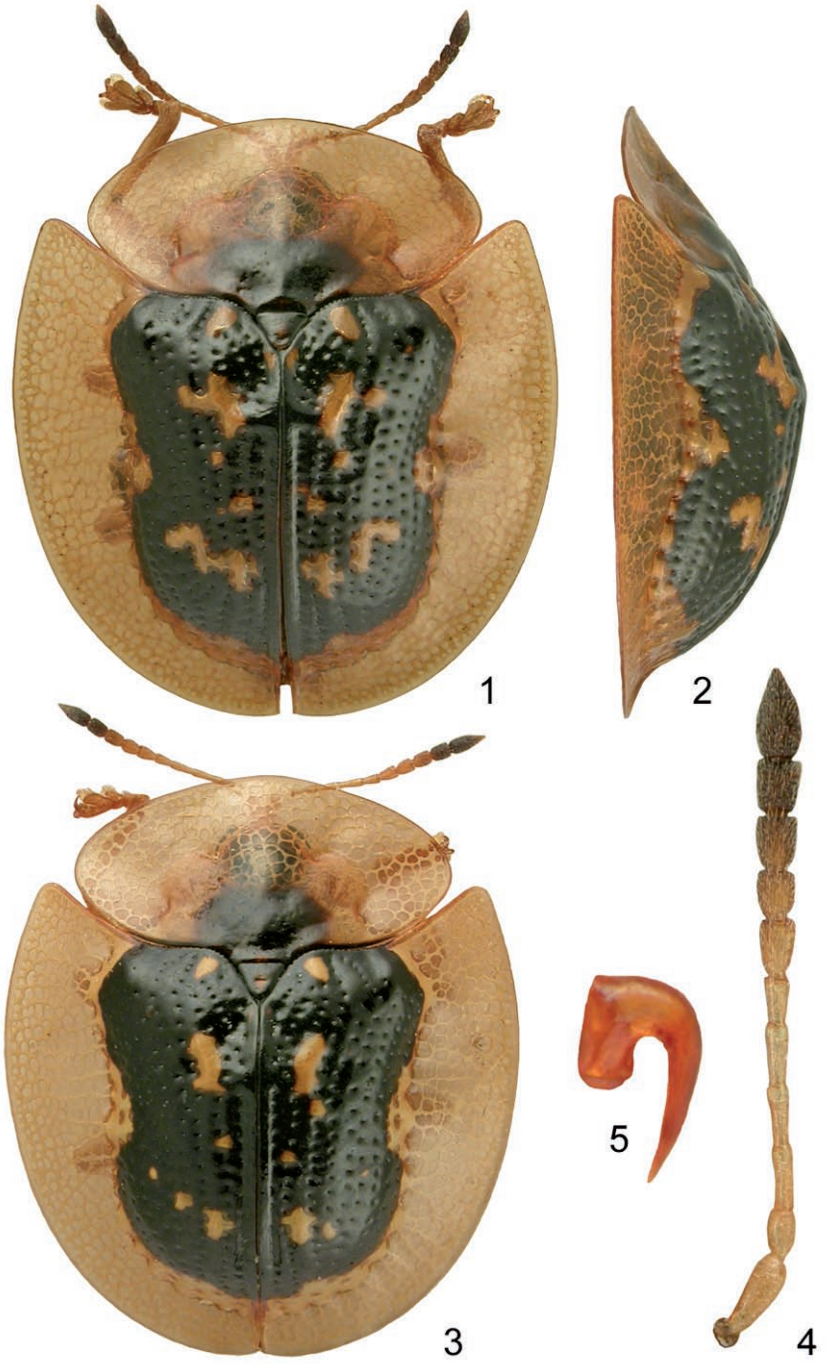
Named after its terra typica.

Type material

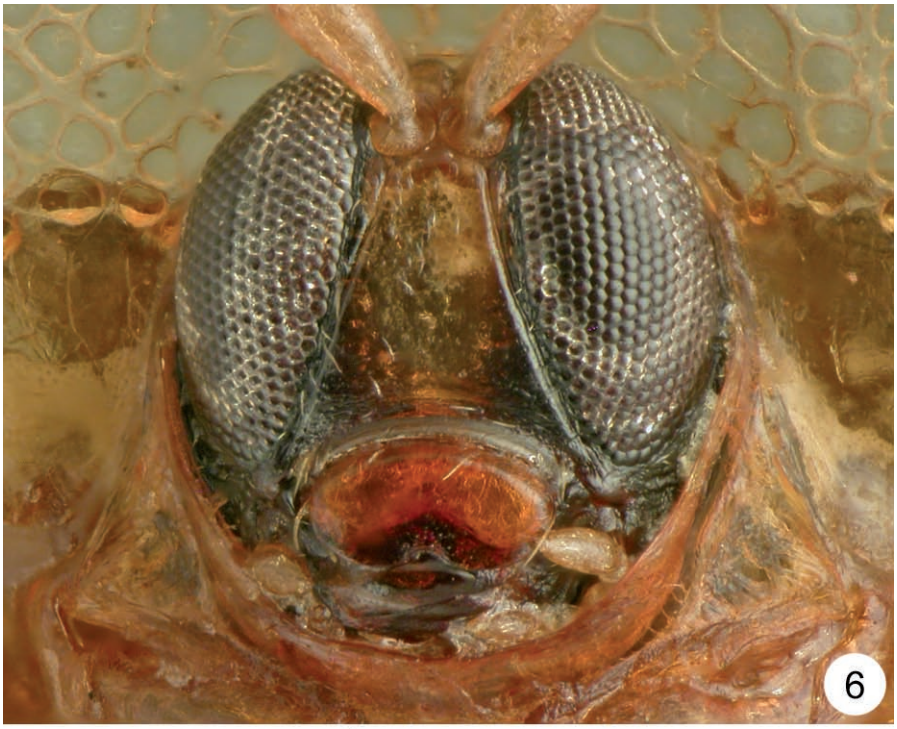
Holotype male: "MALAYSIA West, PAHANG, Cameron Highlands, TANAH RATA, 1200-1500 m, 3.ii.-19.ii.2005, Cechovsky Petr lgt" (preserved in the collection of the Department of Biodiversity and Evolutionary Taxonomy, University of Wrocław, Poland); 3 paratypes: the same data; one paratype: "MALAYSIA W., CAMERON Higlands, TANAH RATA env., 16-17.4.2000, Lgt. M. Snizek"; one paratype: "MALAYSIA-W, Pahang, 30 km E of IPOH, 1600 m, Cameron Highlands, TANAH RATA, ii.2000, P. Pacholátko leg."; 14 paratypes: "MALAYSIA W, KELANTAN, Road between Kampong Raja and Gua Musang, 1400-1700 m, (Ladang Pandrak), 1-28.iv.2006, 4°63' N-101°45' E/4°88' N-101°95' E, Cechovsky Petr lgt. (paratypes preserved in the collection of the Department of Biodiversity and Evolutionary Taxonomy, University of Wrocław, Poland, and in collections of Miroslav Snižek and Lukas Sekerka, both České Budějovice, Czech Republic).

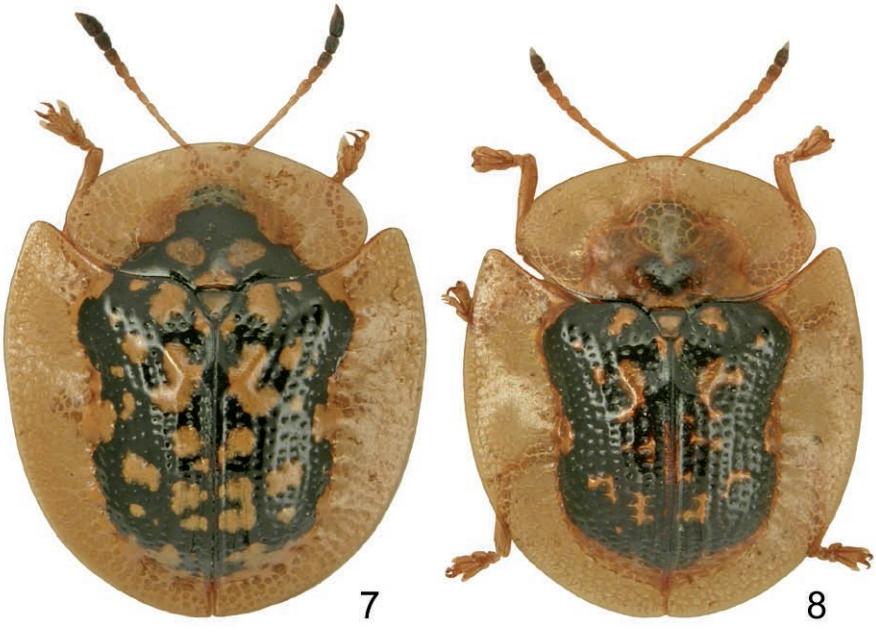
Diagnosis

The new species belongs to the group of small species with circular body and pattern of elytra composed with yellow relief on black backgroud. Eight oriental species have similar size and outline and similarly composed pattern and look at first glance similar to *Cassida malaysiana*: *Cassida flavoguttata* Spaeth, 1914, *C. gentilis* Spaeth, 1926 b, *C. nysea* Spaeth, 1926 a, *C. perplexa* (Chen et Zia, 1961), *C. praensis* Borowiec, 2001, dark form of *C. pseudosyrtica* Medvedev et Eroshkina, 1988, *C. thailandica* Borowiec, 2001, and *C. vietnamica* Medvedev et Eroshkina, 1988. *Cassida flavoguttata* is the most distinct (fig. 14), differs in base of elytra almost as wide as base of pronotum (in *C. malaysiana* base of elytra is distinctly wider than base of pronotum), pronotal black pattern forming two S-shaped spots (one transverse spot), ventrites partly black (uniformly yellow) and last five antennal segments black (at most two and half segments infuscate to black). *Cassida vietnamica* (fig. 13) differs in yellow relief with larger spots, broadly rounded pronotal sides (in *C. malaysiana* narrowly rounded), thorax more or less infuscate (uniformly yellow), pronotal spot at least at base with yellow marking (pronotal spot solid black), and antennae uniformly yellow (at least two last segments infuscate). *Cassida nysea* (fig. 7) differs in pronotal spot very large, trapezial, with three yellow spots inside (in *C. malaysiana* the spot is smaller, transverse, unspotted), elytral relief with more numerous yellow spots, and last three or four antennal segment infuscate to black (at most two and half segments infuscate). *Cassida praensis* (fig. 11) and *C. thailandica* (fig. 12) differ in pronotum immaculate (in *C. malaysiana* with black basal spot) and yellow elytral relief more expanded, occupying half or more space of disc with suture yellow in the middle (black background predominate, suture completely black). *C. gentilis* (fig. 9) and dark forms



1-5. *Cassida malaysiana* n. sp.: 1 – female dorsal, 2 – female lateral, 3 – male dorsal, 4 – antenna, 5 – tarsal claw





6. *Cassida malaysiana* n. sp.: head; 7 – *Cassida nysea*, 8 – *Cassida perplexa*

9 – *Cassida gentilis*, 10 – *Cassida pseudisyrtica*, dark form, 11 – *Cassida praensis*, 12 – *Cassida thailandica*, 13 – *Cassida vietnamica*, 14 – *Cassida flavoguttata*

of *C. pseudosyrtica* (fig. 10) differs in pronotal spots forming brown V-shaped figure (in *C. malaysiana* large, transverse black spot),

yellow elytral relief more expanded, occupying half or more space of disc with suture yellow in the middle (black background predominate, suture completely black), and tarsal claws with basal tooth (*C. gentilis*) or apparently appendiculate (*C. pseudosyrtica*) while in *C. malaysiana* claws are simple. Cassida perplexa looks the most similar, especially by its similar elytral relief (fig. 8) but differs in pronotal spot forming brown V-shaped figure (in *C. malaysiana* large, transverse black spot), acutellum mostly yellow (mostly black), elytral suture in the middle at least narrowly yellow (suture always black), and usually only last antennal segment distinctly infuscate and segment 10 yellow to indistinctly infuscate (last two antennal segments infuscate to black).

Description

Length: 4.80-5.40 mm (mean 5.06, n = 15), width: 4.20-4.75 mm (mean 4.50, n = 15), width of pronotum: 3.05-3.65 mm, length of pronotum: 1.65-1.95 mm, length/width ratio: 1.09-1.15, width/length ratio of pronotum: 1.82-2.21. Sexual dimorphism indistinct, males (fig. 3) slightly smaller and stouter than females (fig. 1).

Pronotum yellow, disc at base with large, transverse brownish-black spot (figs. 1, 3). Scutellum black, usually with small, yellow spot at apex. Elytra mostly black with yellow, variable relief: small spot at each side of scutellum, very small spot on suture at apex of scutellum, large irregular spot on sides of top of disc, small spot in the mid length close to suture, large oblique spot on each side of slope. The elevated spot at top of disc often with small additional spot below hind margin, oblique spots on slope sometimes divided into 2 or three independent smaller spots. Marginal interval yellow with broad yellow elevated median fold. Ventrites yellow, sometimes basal corners of clypeus slightly infuscate. Legs uniformly yellow. Antennae mostly yellow, last two antennal segments more or less ifuscate, occasionally also apex of segment 9 slightly infuscate.

Pronotum broadly oval with maximum width approximately in the middle, sides narrowly rounded. Disc moderately convex, on sides separated from explanate margin by distinct impression. Surface of disc shiny, basal part with fine sparse punctures. Surface of explanate margin impunctate, regular, transparent with honeycomb structure. Base of elytra much wider than pronotum (figs. 1, 3), humeri distinctly protruding anterad, angulate. Elytra regularly circular, widest in the middle. Disc moderately convex, with top of convexity in postscutellar area but not tuberculate, elytral outline behind the top straight (fig. 2). Postscutellar impressions distinct, elytral relief forms in postscutellar area more or less regular H-shaped elevation. Elytral punctation coarse and dense, regular but elevated yellow relief impunctate. Punctation in rows dense with distance between punctures smaller than puncture diameter. Marginal row distinct, its punctures in anterior half of the row as coarse as punctures on sides of disc, in posterior half of the row twice coarser than punctures on slope. Intervals narrow, from narrower to as wide as rows, on sides linear. Second interval in posterior half slightly elevated. Marginal interval distinct, distinctly wider than intervals on sides of disc, with well marked lateral fold. Surface of disc shiny. Explanate margin broad, in the widest part as wide as 2/3

width of disc of elytron, moderately declived, extreme margin subhorizontal. Surface of explanate margin regular, impunctate, shiny. Epipleura in both sexes unpubescent, in fresh specimens apex of elytral epipleura with few short, erect setae.

Antennae slim, elongate, length ratio of antennal segments: 100:53:77:67:67:50 :60:53:57:63:100, segment 3 approximately 1.5 times as long as segment 2 and approximately 1.2 times as long as segment 4, segment 10 approximately 1.2 times as long as wide (fig. 4).

Clypeus narrow, slightly wider than long, with well marked clypeal lines converging in triangle. Clypeal plate flat or with shallow impression at apex, smooth and shiny with few small punctures (fig. 6). Labrum shallowly emarginate to 1/6 length.

Claws simple, apical margin of last segment of tarsi slightly reaching behind basal margin of claw but claws do not appear apparently appendiculate (fig. 5).

Remarks

In Chen et al. (1986) system of the genus *Cassida* the new species should be placed in the subgenus *Cyclocassida* Chen et Zia, 1961. Like other members of the subgenus it has small, circular body and simple tarsal claws. According to Borowiec (2007) the group is paraphyletic and many closely related species have been classified within the subgenus *Taiwania* Spaeth, 1913 because of appendiculate or apparently appendiculate tarsal claws.

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REFERENCES

Borowiec, L., 1995. *Cassida timorensis* n. sp. from Timor Is. (Coleoptera: Chrysomelidae: Cassidinae). Genus, Wrocław, **6**: 95-98.

—, 1999 a. A world catalogue of the Cassidinae (Coleoptera: Chrysomelidae). Biologica Silesiae, Wrocław, 476 pp.

—, 1999 b. *Cassida kinabaluensis* n. sp. from Sabah, Malaysia (Coleoptera: Chrysomelidae: Cassidinae). Serangga, **4**: 1-5.

—, 2001. New records of Asian and Australopapuan Cassidinae, with a description of five new species of *Cassida* from Thailand (Coleoptera: Chrysomelidae: Cassidinae). Genus, Wrocław, **12**: 493-562.

—, 2002 a. Three new species of *Cassida rati* group from Laos (Coleoptera: Chrysomelidae: Cassidinae). Ann. Zool. Warszawa, **52**: 567-572.

—, 2002 b. A new species of *Cassida variabilis* group from Laos (Coleoptera: Chrysomelidae: Cassidinae). Genus, Wrocław, **14**: 121-124.

—, 2007. Two new species of *Cassida* Linnaeus, 1758 (Coleoptera: Chrysomelidae: Cassidinae) from Madagascar and notes on subgenera of the genus *Cassida*. Zootaxa, **1586**: 47-58.

—. 2009. New records of Asian and Australopapuan tortoise beetles (Coleoptera: Chrysomelidae: Cassidinae). Genus, Wrocław, **20**: 435-484.

Borowiec, L., Ghate, H.V., 2004. Two new species of *Cassida* Linnaeus from southern India (Coleoptera: Chrysomelidae: Cassidinae). Genus, Wrocław, **15**: 247-252.

Borowiec, L., Świętojańska, J., 1996. *Cassida mysorensis* n. sp. from India (Coleoptera: Chrysomelidae: Cassidinae). Genus, Wrocław, **7**: 467-470.

—, 1997. Two new species of *Cassida* Linnaeus from the Oriental Region (Coleoptera: Chrysomelidae: Cassidinae). Ann. Zool., Warszawa, **47**: 275-278.

—, 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.

Borowiec, L., Takizawa, H., 1991. Notes on chrysomelid beetles (Coleoptera) of India and its neighboring areas. Part 10. Japan. Journ. Ent., **59**: 637-654.

Chen, S. H., Zia, Y., 1961. Results of the zoologico-botanical expedition to Southwest China 1955-1957 (Coleoptera, Cassidinae). Acta Entomol. Sinica, **10**: 439-451.

Chen, S., Yu, P., Sun, C., Zia, Y., 1986. Coleoptera Hispidae. In: Fauna Sinica, Insecta. Science Press, Beijing, 653 pp. + XV pl.

Linnaeus, C., 1758. Systema Naturae, sive regna tria naturae, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis. Editio Decima, reformata. I. Holmiae, IV + 824 pp.

Majka, C. G., Lesage, L., 2008. Introduced leaf beetles of the Maritime Provinces, 7: *Cassida rubiginosa* Müller and *Cassida flaveola* Thunberg (Coleoptera: Chrysomelidae). Zootaxa, **1811**: 37-56.

Medvedev, L. N., Eroshkina, G. A., 1988. Revizya listoyedov-shchitonosok (Chrysomelidae, Cassidinae) fauni Vietnama. In: Fauna i ekologia nasekomih Vietnama, Nauka, Moskva, 1988: 105-142.

Sekerka, L., Borowiec, L., 2008. Three new species of *Cassida* Linné, 1758 from India and note on *Thlaspida obenbergeri* Spaeth, 1928 (Coleoptera: Chrysomelidae: Cassidinae: Cassidini). Ann. Zool., Warszawa, **58**: 611-620.

Spaeth, F., 1914. Zur Kenntnis der indischen Cassidinen. Deutsch. Entomol. Zeitschr., **1914**: 542-568.

—, 1926 a. Neue Cassidinen des Rijksmuseums in Leiden, des British Museums und meiner Sammlung. Zool. Meded., **9**: 1-15.

—, 1926 b. Mitteilungen ueber die Cassidinen des Prager Nationalmuseums (Col. Chrysomelidae). Sbornik Entomol. Odd. Mus. Praze, **4**: 81-96.

—, 1927. Ueber eine den paläarktischen Arten nahe verwandte neue nordamerykanische *Cassida* **(***Cassida relicta*). Koleopter. Rundsch., **13**: 113-114.

Świętojańska, J., Borowiec, L. 2002. Two new species of *Cassida* L. Spaeth from Borneo (Coleoptera: Chrysomelidae: Cassidinae). Genus,Wrocław, **13**: 357-363.