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Notes on the Galerucini from India and Sri Lanka, with description of *Pyrrhalta warchalowskii* n. sp. from Tamil Nadu state, India (Coleoptera: Chrysomelidae: Galerucinae)

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Abstract. *Pyrrhalta warchalowskii* n. sp. from India (Tamil Nadu state) is described and illustrated. *Mimastra kandyensis* Maulik, 1936 is transferred to the genus *Mimastracella* Jacoby, 1903 (comb. nov.); *Mimastracella pallida* Medvedev, 1972 is proposed as its new synonym. New distributional data of *Mimastracella kandyensis*, *Pyrrhalta aurata* (Maulik, 1936) and *P. ceylonensis* (Jacoby, 1887) are presented and their aedeagi are illustrated for the first time.

Key words: entomology, taxonomy, new species, new synonymy, new combination, Coleoptera, Chrysomelidae, Galerucinae, Galerucini, *Pyrrhalta*, *Mimastracella*, *Mimastra*, India, Sri Lanka.

INTRODUCTION

The tribus Galerucini and especially the genus *Pyrrhalta* belong to the most difficult and taxonomically complicated groups within Galerucinae. Generic relationships between *Pyrrhalta*, *Galerucella* Crotch, 1873 and some other genera are poorly resolved and many authors have different view how to apprehend the generic characters.

For the purpose of this paper, the genus *Pyrrhalta* is defined in the concept of Sprecher-Uebersax & Zoia (2002) and Medvedev & Sprecher-Uebersax (2005): pronotum completely covered with hairs, occiput without a longitudinal groove, gena longer than eyes, labrum with a transverse row of 6-8 hairy pores, hind angles of pronotum placed almost on basal border, epipleura clearly visible at least until the middle, elytra hairy, anterior coxal cavities open.

During my recent stay in BMNH within Synthesys project I had the possibility to examine huge number of the primary types and also to compare them with the nontype material from my and NMPC collections. One species of *Pyrrhalta* proved to be new to science. The new material of other two *Pyrrhalta* allows me to present their aedeagi for the first time. New synonymy in the genus *Mimastracella* is also established.

METHODS

The following abbreviations identify the collections housing the examined material:

BMNH - United Kingdom, London, The Natural History Museum (Sharon Shute);
JBCB - Czech Republic, Brno, Jan Bezděk collection;
NHMB - Switzerland, Basel, Naturhistorisches Museum (Eva Sprecher-Uebersax, Michel Brancucci);
NMPC - Czech Republic, Praha, National Museum (Jiří Hájek).

The exact label data are cited for the type specimens. A double slash (//) divides data on different labels and a single slash (/) divides the data on different rows. The authors´ remarks and complementations are found in square brackets: [p] – preceding data are printed; [h] - handwritten label; [w] - white label; x/y - number of males/number of females.

Pyrrhalta aurata (Maulik, 1936)

Galerucella aurata Maulik, 1936: 219 (Type locality: Nilgiri Hills); Wilcox, 1971: 68.
Pyrrhalta aurata: Kimoto, 1977: 351 (Bhutan, probably erroneous); Kimoto, 2005: 70 (cat., Bhutan, probably erroneous).

Type material examined

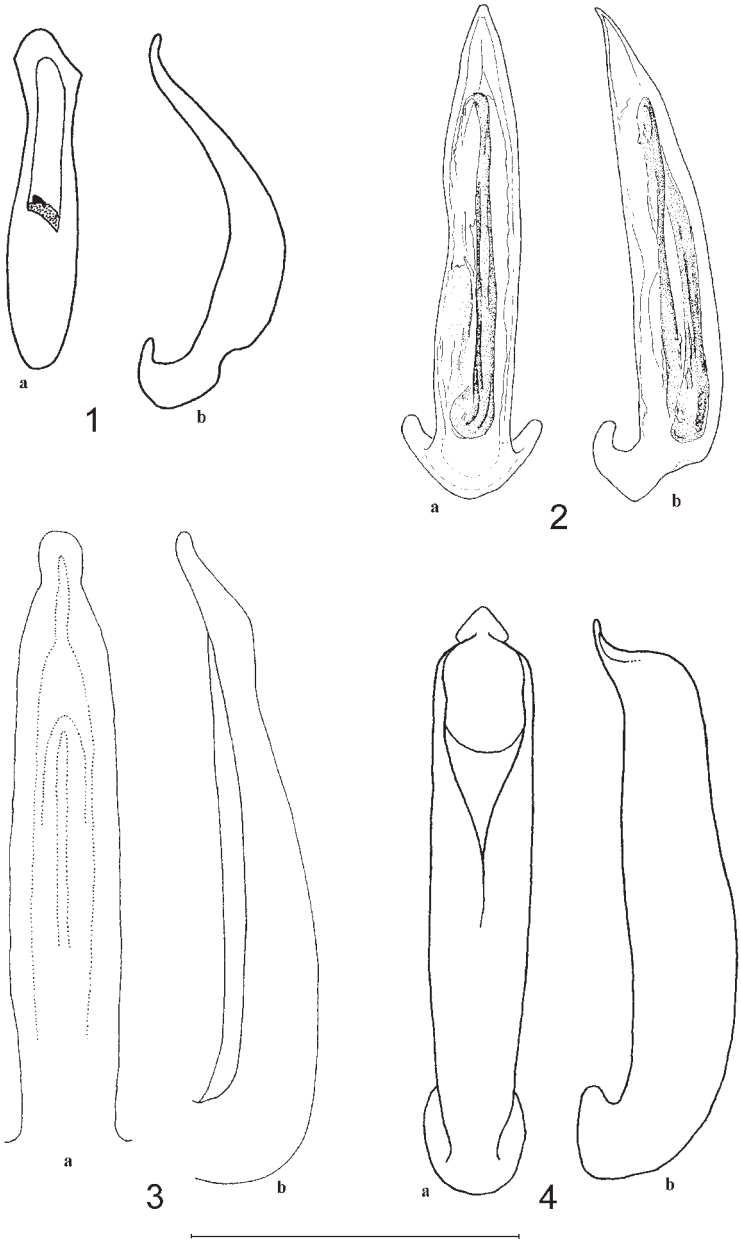
Holotype (unsexed), labelled: „Type [white round label with red collar] // Nilgiri Hills / S. India / T. V. Campbell [w, h] // Galerucella / aurata Mlk. [h] / S. Maulik ~~det.~~ [h] / 1934 [w, h] // Brit. Mus. / 1939- [p] 149 [w, h]“ (in BMNH).

Additional material examined

INDIA: Tamil Nadu state, Nilgiri hills, 10 km SW of Manjoor, Thiashola reserved forest, near Carrington estate, 2100 m, 76°35´E 11°12´N, 14.-19.vi.1999, Z. Kejval & M. Trýzna leg. (55 spec. unsexed, including at least 3 males, in JBCB).

Distribution

India: Tamil Nadu state (Maulik 1936, present paper). The record from Taiwan (Kimoto 1976) refers to *P. ishiharai* Kimoto, 1994 (see Kimoto 1994, Kimoto & Chu 1996). Reported also from Bhutan (Kimoto 1979, 2005) but this record seems to be erroneous and rather probably refer to another *Pyrrhalta* species.



1-4. Aedeagus (a - dorsal view, b - lateral view): 1 - *Pyrrhalta aurata*, 2 - *P. medvedevi* (Sprecher-Uebersax & Zoia orig.), 3 - *P. digambara* (Sprecher-Uebersax & Zoia orig.), 4 - *P. ceylonensis*. Scales: 1 mm for Figs. 1-3, 2 mm for Fig. 4

Comments

The combination in *Pyrrhalta* was firstly published by Kimoto (1976) and repeated by the same autor (Kimoto 1977, 2005). Although these data probably refer to another *Pyrrhalta* species (see Distribution), in fact *Pyrrhalta aurata* belongs to the genus *Pyrrhalta*.

Pyrrhalta aurata (Fig. 7) seems to be closely related to small dark brown North Indian and Nepalese *Pyrrhalta* species with uneven elytra: *P. medvedevi* Sprecher-Uebersax & Zoia, 2002 and *P. digambara* (Maulik, 1936). All three species can be easily distinguished by the structure of aedeagus (Figs 1-3). *Pyrrhalta aurata* is the smallest species (3.50-3.90 mm), completely brown, with scutellar area of elytra slightly elevated. While *P. medvedevi* and *P. digambara* are larger (*P. medvedevi* – 4.10 mm, *P. digambara* – 5.50 mm), have vertex and the middle of tibiae and femora with black spots and outline of elytra is continuous, not elevated in scutellar area.

Pyrrhalta ceylonensis (Jacoby, 1887)

Galerucella ceylonensis Jacoby, 1887: 105 (Type locality: Kitukgalle); Weise, 1924: 55 (cat.); Shute, 1983: 256.
Sastra ceylonensis: Maulik, 1936: 261; Kimoto, 2003: 29.
Sastra (*Sastra*) *ceylonensis*: Wilcox, 1971: 51.
Pyrrhalta ceylonensis: Mohamedsaid, 1997: 7.

Type material examined

Syntype (male), labelled: „Type / H.T. [white round label with red collar] // Ceylon. / G. Lewis. / 1910-320 [w, p] // Dikoya. / 3.800-4.200 ft. / 6.XII.81-16.I.82 [w, p] // Galerucella / ceylonensis / Jac. [blue label, h]“ (in BMNH). The colour photo of another one syntype (probably female, not examined) and its labels deposited in Museum of Comparative Zoology at Harvard University are available online at: http://mcz-28168.oeb.harvard.edu/mcztypedb.htm. This syntype bears the following labels: „Ceylon / Lewis [w, h] // ceylonensis / Jac. [blue label, h] // 1st Jacoby / Coll. [w, p] // Type [p] 17 894 [red label, h]“.

Additional material examined

SRI LANKA: Kandy, 4.vii.1902, Dr. Uzel leg. (2/0 in JBCB, 0/1 in NMPC), same data, 5.vii.1902 (3/0 in NMPC); same data, 15.vii.1902 (0/3 in NMPC).

Distribution

Endemic to Sri Lanka.

Comments

This species is well characterised by the very unusual colour pattern of elytra (brown elytra with wide blue-green longitudinal stripe from humerus to apex and very narrow sutural stripe) (Fig. 8). The aedeagus (Fig. 4) is presented for the first time.

Pyrrhalta warchalowskii n. sp.

Etymology

Dedicated to Prof. Andrzej Warchałowski (Wrocław, Poland), excellent specialist in Palaearctic Chrysomelidae.

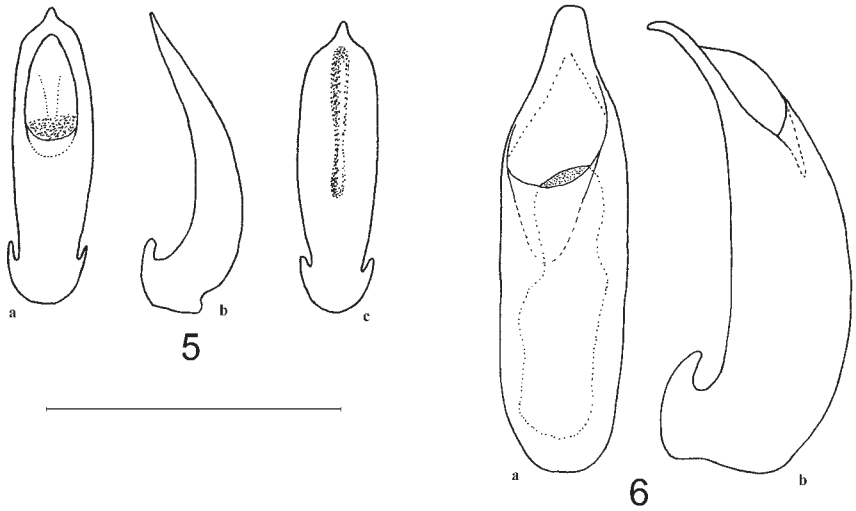
Type material

Holotype (male) and 2 paratypes (females), labelled: „S-India, Tamil Nadu state, / Nilgiri hills, 10 km SW of / Manjoor, 76°35´E 11°12´N, / Thiashola reserved forest [w, p] // near Carrington estate, / ca 2100 m, 14-19.vi.1999, / Z. Kejval & M. Trýzna leg. [w, p]“ (HT in NMPC, 2 PT in JBCB); 13 paratypes (6 males, 7 females), labelled: „H. L. Andrewes / Nilgiri Hills [w, p] // Andrewes / Bequest. / B. M. 1922-221 [w, p]“ (in BMNH). The specimens of newly described species are provided with one red printed label: „HOLOTYPUS [PARATYPUS, resp.], / *Pyrrhalta* / *warchalowskii* sp. n., / J. Bezděk det. 2007“.

Description

Body length of males 3.85-4.10 mm (holotype 4.10 mm); of females 4.00-4.90 mm.

Male (Fig. 9). Body flattened, slightly divergent posteriad, densely pubescent, semiopaque. Head pale brown, vertex with large black spot and anterior margin of postgenae (near of the bases of mandibles) with smal black spot. Antennae black, antennomeres 1 and 2 dark reddish apically. Pronotum pale brown with three large black spots, in male usually widely connected and covering most of pronotal surface, only with all borders pale brown. Scutellum black, with distinctly paler posterior margin. Elytra



5-6. Aedeagus (a - dorsal view, b - lateral view, c - ventral view): 5 - *Pyrrhalta warchalowskii* n. sp. (paratype), 6 - *Mimastracella kandyensis*. Scale: 1 mm

dark metallic green, epipleura and outer elytral margin thinly yellow from humerus to elytral apex, each elytron with yellow discal longitudinal stripe starting aside from humerus and ending before elytral apex. Underside black, prosternum and mesoepimera yellow. Abdomen yellow with more or less darkenned lateral sides of ventrites. Legs pale brown, outer margin of all tibiae darkenned apically, tarsi infuscate.

Labrum narrow, transverse, covered with row of 8 pale setae, anterior margin slightly sinuate in the middle. Anterior part of head lustrous, sparsely covered with pale setae. Antennal insertions and frontal tubercles separated by small shallow groove. Frontal tubercles small, subtriangular, microsculptured, opaque, separated from frons by transverse shallow groove. Frons with feebly indicated furrow in the middle. Vertex dull, densely covered with small confused punctures and short pale hairs. Antennae short, slender, apical antennomeres slightly wider than basal ones, 0.60 times as long as body, length ratio of antennomeres 1 to 11: 11-9-12-11-11-11-10-9-9-9-12.

Pronotum tranverse, 2.15-2.20 times broader than long, widest in the middle, slightly narrowed anteriad and posteriad. Most of surface opaque, densely covered with small confused punctures and pale hairs, slightly depressed; anteroangular area lustrous, not depressed, almost without hairs and sparsely covered with large punctures. Anterior margin slightly concave, posterior margin nearly straight with wide shallow incision in the middle, lateral margins slightly rounded. All margins very thinly bordered. Anterior angles nearly rectangular, posterior ones obtusangulate, all angles with distinct setigerous pore bearing long pale seta. Scutellum short, subtriangular with widely rounded tip, covered with small dense punctures and short pale hairs, semiopaque.

Elytra divergent posteriad, widest at hind quarter, semiopaque. Humeral calli well developed. Elytral surface very densely covered with small confused punctures and short pale hairs. Epipleura distinct, gradually narrowed posteriad and dissapearing before apex. Macropterous. Ventral surface semiopaque, finely punctured and covered with pale hairs. Last ventrite with semicircular incision. Basimetatarsomere short, 0.85 times as long as two following metatarsomeres combined. Claws split.

Female. The black pattern on pronotum distinctly separated to three spots (median and two lateral). The yellow pattern on elytra slightly more extended than in males (mainly lateral stripe is slightly widened), usually also the sutura in scutellar area is somewhat paler. Last ventrite compact, without incision in the middle.

Variability. Most males have extended black spot on vertex, head usually behind the frontal tubercles completely black including dorsal half of postgenae. In the darkest males also the interantennal groove, space between antennal insertions and inner margin of eye and almost whole pronotum (with paler posterior margin only) are black.

The shape of aedeagus as in Fig. 5.

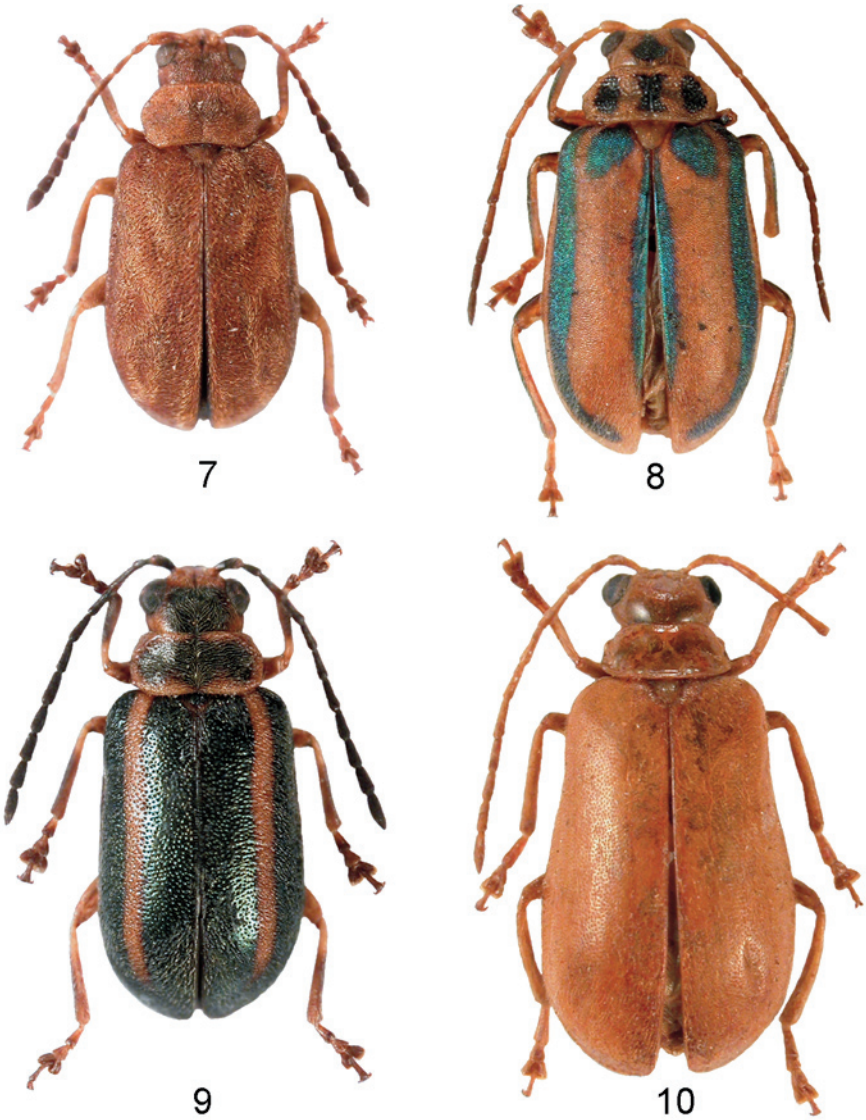
Distribution

India: Tamil Nadu state: Nilgiri hills.

Differential diagnosis

Indian fauna of *Pyrrhalta* is not numerous in comparison with other Asian regions and comprises only seven species: *P. aurata* (Maulik, 1936), *P. darjeelingensis* Kimoto,

1979, *P. digambara* (Maulik, 1936), *P. indica* (Laboissière, 1932), *P. maculata* Gressitt & Kimoto, 1963, *P. meghalayana* Medvedev, 2002 and *P. nila* (Maulik, 1936). However, only *P. aurata* and *P. nila* occur in southern India. All other species are distributed in Himalayan subregion. *P. warchalowskii* n. sp. is characterised by unusualy coloured elytra (opaque metallic with narrow yellow longitudinal stripe) and short body length



7-10. Habitus: 7 - *Pyrrhalta aurata* (3.85 mm), 8 - *P. ceylonensis* (7.20 mm), 9 - *P. warchalowskii* n. sp. (holotype, 4.10 mm), 10 - *Mimastracella kandyensis* (7.75 mm)

(3.85-4.90 mm). There is no similarly coloured *Pyrrhalta* species in South-east Asian fauna. The combination of metallic green and yellow stripes on elytra can be found only in *P. ceylonensis* from Sri Lanka, but the yellow stripe is wide and situated along the suture (Figs 8-9). This species is also longer and has completely different aedeagus than *P. warchalowskii* n. sp. (Figs 4-5).

Mimastracella kandyensis (Maulik, 1936), comb. nov.

Mimastra kandyensis Maulik, 1936: 531 (Type locality: Ceylon: Kandy); Wilcox, 1973: 483; Zhang et al., 2006: 203 (cat.).
Trichomimastra kandyensis: Medvedev, 1974: 799.
Mimastracella pallida Medvedev, 1972: 181 (Type locality: Ceylon: Central Prov.: Kandy). **syn. nov.**

Type material examined

Mimastra kandyensis

Holotype (female), labelled: „Type [white round label with red border, p] // Kandy, / Ceylon, [p] 9-07 [w, h] // 2295 [w, h] // Mimastra / kandyensis Jac. / M. S. [blue label, h] // Jacoby Coll. / 1909-28a. [w, p] // Mimastra / kandyensis M. [h] / S. Maulik ~~det~~. [p] / Type. 1935. [w, h]“ (in BMNH); 1 paratype (female), labelled: „Kandy, / Ceylon, [p] 9-07 [w, h] // 2295 [w, h] // Jacoby Coll. / 1909-28a. [w, p] // kandyensis Jac. ms. [w, h] // PARATYPE / Mimastra / kandyensis Maulik [w, p]“ (in BMNH).

Mimastracella pallida

Holotype (female), labelled: „Ceylon C. P. / Kandy / 10.IX.53 / F. Kaiser [w, p] // Naturhist. / Museum / Basel [yellow label, p] // Holotypus [p] / Mimastracella / pallida L. Medvedev [red label, h]“ (in NHMB).

Additional material examined

SRI LANKA: Kandy, 4.vii.1902, Dr. Uzel leg. (0/1 in NMPC); same data, 5.vii.1902 (1/0 in JBCB); Peradeniya, 7.v.1902, Dr. Uzel leg. (0/1 in NMPC); Ceylon, 1909, E. E. Green leg. (2/1 in BMNH).

Distribution

Sri Lanka. The record of *Sastroides dohertyi* (Maulik, 1936) from Sri Lanka (Kimoto 2003) is doubtful and very probably refer to *Mimastracella kandyensis*.

Comments

The holotype of *Mimastra kandyensis* bears Jacoby´s handwritten label „*Mimastra kandyensis* Jac.“. However, paper with the description has never been published by Jacoby. The description was presented by Maulik (1936) who used Jacoby´s specimens. Maulik himself mentioned in the original description that not all characters are typical for the genus *Mimastra*. In BMNH I have found 5 females from the type series which surprisingly proved not to be *Mimastra* but *Mimastracella* (comb. nov.). Habitus as in Fig. 10.

Mimastracella pallida was described by Medvedev (1972). The type localities of both *Mimastra kandyensis* and *Mimastracella pallida* are the same: Sri Lanka: Kandy. The comparison of the type material of both taxa allows me to synonymize *Mimastracella kandyensis* with *Mimastracella pallida* (**syn. nov.**). Surprisingly, two years after the description of *Mimastracella pallida*, Medvedev (1974) transferred *Mimastra kandyensis* to the genus *Trichomimastra* but this generic combination is evidently false.

Genus *Mimastracella* comprises 13 species and *Mimastracella kandyensis* is the only one representative of this genus known from Sri Lanka.

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