

A New Species of *Melanotus* (Eschscholtz, 1829) With Notes on Other Species of the Genus From Pakistan (Coleoptera: Elateridae)

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Abstract.- A total of 8 species of *Melanotus* was studied from Pakistan, among them a new one, *M. raziae* n. sp., described from Northern Areas (Chilam Chauki, Nanga Parbat, Rama) and compared with its closely allied *M. zethneri*. A checklist of all the species of the genus occurring in Pakistan is drawn up.

Key words: Coleoptera, Elateridae, a new species of *Melanotus*.

INTRODUCTION

The subfamily Melanotinae is easily recognized by the pectinate tarsal claws, but the study of its members is not easy because most species have homogeneous external characters, as to slow down taxonomic work of this group and to propose names, many of which were recognised as synonyms (Lee *et al.*, 1999).

There is some disagreement concerning the rank of the family-group taxon based on *Melanotus*. The latest comprehensive work on the classification of the family (Stibick, 1979) treats the group as a subfamily, position shared with many authors since Schenkling (1927), including those interested in the Palaearctic (Leseigneur, 1972; Rudolph, 1974; Lohse, 1979), Indomalayan (Fleutiaux, 1941) and Nearctic faunas (Arnett, 1962; Blackwelder, 1974). In contrast, others, mainly relying on a particular anatomical feature (structure of the thorax by Gurjeva, 1974; wing venation by Dolin, 1975), retain the classification first proposed by Hyslop (1917) in which the group is regarded as a tribe of the subfamily Elaterinae (Hayek, 1990).

Vats and Chauhan (1991) described seven new species of *Melanotus* Eschscholtz from India. Hashmi and Tashfeen (1992) mentioned only one species, *Melanotus planipennis* Candèze, from Pakistan. Platia and Schimmel (2001) discussed

diagnostic characters of 410 species (358 species belonging to *Melanotus* (*Melanotus*) Eschscholtz, 1829 and 42 species to *Melanotus* (*Spheniscosomus*) Schwarz, 1829 from Oriental region (except Japan and Taiwan) and nine new species (*M. besucheti*, *M. convexiusculus*, *M. loebli*, *M. ocellatus*, *M. pakistanicus*, *M. porioni*, *M. riewei*, *M. wittmeri*, *M. zethneri*) were described from Pakistan. Platia and Schimmel (2002) in the first supplement described further 64 new species, six of which belonging to the subgenus *Spheniscosomus*, from Oriental region (except Japan and Taiwan), and ten new species from Nepal and China in their second supplement (Platia and Schimmel, 2004). Platia (2005) described four new species of *Melanotus*, one from India and three from China.

In the Magyar Természettudományi Múzeum of Budapest a new species of *Melanotus* was discovered. This new taxon is described and illustrated here, and additional faunistic data are given about other species recently collected in Pakistan.

MATERIALS AND METHODS

Body length is measured along the midline from the anterior margin of the frons to the apex of the elytra; width is measured across the broadest part of the entire beetle. Pronotal length is measured along the midline; width at the broadest part which is usually at the hind angles. Measurements and illustrations were made by using ocular grid microscope.

For the study of male genitalia, the abdomen

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was excised at the base and boiled in 10 % KOH solution for about 10 minutes, then washed in tap water. The seven aedeagi (one of the holotype and six of paratypes) were dissected and examined under glycerin. After studying them, male genitalia were placed in microvials with a drop of glycerin and pinned with the specimens preserved in the Magyar Természettudományi Múzeum, Budapest.

Names of institutions, museums and collections containing study material are abbreviated as follows: CAP, Akhter coll., Department of Zoology, University of Karachi, Karachi-75270, Pakistan; CPG, Platia coll., Via Molino Vecchio, 21, I-47030 Gatteo (FC), Italy; and TM, Budapest, Magyar Természettudományi Múzeum.

Melanotus (Melanotus) raziaae, new species
(Fig. 1)

Diagnosis

Close to *M. zethneri*, but with shorter antennae surpassing by only one article the posterior angles of pronotum, the latter narrowing gradually and regularly from base to apex.

Male

Entirely blackish, moderately shiny with antennae and legs ferruginous; covered with dense, recumbent, yellow-fulvous pubescence.

Head with eyes as broad as anterior margin of pronotum; frons flat to gently convex, anterior margin simple, complete, regularly arcuate, directed downwards, not protruding above clypeus; punctures coarse, deep, simple to vaguely umbilicate with so short interstices as to appear contiguous. Antennae (Fig. 1B) exceeding by one article the apexes of posterior angles of pronotum; second and third articles small, subcylindrical, third hardly longer than second, both taken together shorter than fourth; fourth to tenth triangular; fourth-seventh about twice longer than wide; eighth-tenth slender; last subellipsoidal, longer than penultimate.

Pronotum hardly broader than long, widest at hind angles, moderately and regularly convex, only with a vestige of median longitudinal depression on the basal sloping; sides gradually and regularly

narrowing from base to apex; posterior angles not divergent with a fine but distinct carina; lateral margins shallow, obsolete in the anterior half; punctures heterogenous, on disc deep, simple, with short intervals, smaller than their own diameters, toward sides gradually denser and coarse, at sides extremity often umbilicate, elongate and contiguous.

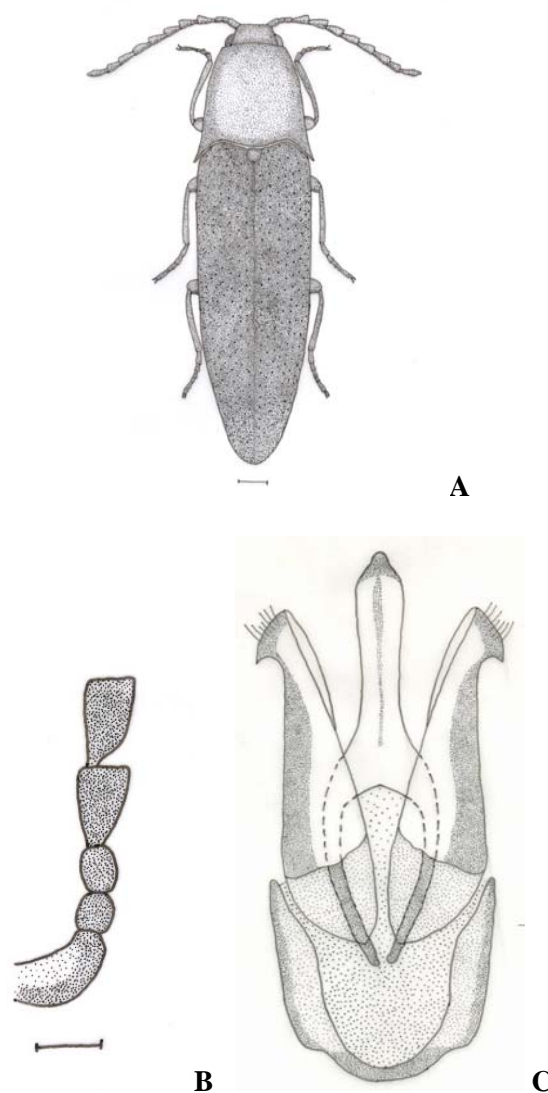


Fig. 1. *Melanotus (Melanotus) raziaae* Holotype; A, habitus; B, antenna; C, aedeagus. Scale lines: A, 1.5 mm; B, and C, 0.6 mm.

Scutellum shield-shaped, flat, densely punctured. Elytra as wide as base of pronotum, sides

gradually narrowing from base to apex; striae shallow and inpunctate at basal sloping, then well marked and distinctly punctured for all its length; interstriae flat, with denser and finer punctures.

Prosternal process immediately bent behind the procoxal cavities, slightly emarginated at apex.

Aedeagus (Fig. 1C) with median lobe longer than parameres, basally broad, gradually narrow at middle, slightly broad apically, then produced into prominent apical tips, parameres with apical margin oblique with long hairs, neck narrow then gradually widened behind, far away from median lobe, median struts just passes into basal plate; basal plate broad, parallel up to base.

Female

Unknown.

Measurements

Length mm 11.5-12.8 ; width mm 3.2-3.8 .

Material examined

Holotype ♂ - Pakistan: Northern Areas, Rama (36°20'99"N, 74°48'19"E), m 3150, 13.VII.1998, G. Csorba and L. Ronkay, at light. (TM). 6 Paratypes ♂♂ - (4) same data as Ht; (1) Northern Areas, Chilam Chauki (35°02'16"N, 75°07'19"E), m 3600, 14.VII.1998. G. Csorba & L. Ronkay (under stones); (1) Himalaya Mts, Nanga Parbat area, Astor, Rama (35°21'N, 74°48'E), m 3300, 17.VI.1998, B. Herczig and G. Fabian. (TM; CPG; CAP).

Etymology

This species takes its name from Razia, the first author's mother.

Comparative remarks

The general appearance of the new species is much the same of *M. zethneri* Platia & Schimmel, both species sharing similar colouration, shield-shaped scutellum, head with eyes as broad as anterior margin of pronotum, pronotum widest at hind angles, median lobe gradually narrow at middle then broad at apex, prominent form of apical tip, parameres widely separated from median lobe. *Melanotus raziae* can be, however, easily separated from *M. zethneri* in having antennae exceeding by

one article the apexes of posterior angles of pronotum, third antennal segment longer than second, striae well marked and distinctly punctured, median lobe from apex to base parallel and equal in width, apical tip continuous with apex of median lobe, parameres in contact with median lobe.

Melanotus (Melanotus) hirticornis Herbst, 1806

Material examined

1 ♀ - Pakistan: Kashmir, Azad-Jammu, Garmi distr., Jhelum river, m 1500, 20.VII-10.VIII.2003, V. Gurko (CPG). Known from Nepal, India, China, Taiwan, Western Malaysia, Indonesia: Sumatra, Java. New for Pakistan.

Melanotus (Melanotus) loebli Platia and Schimmel, 2001

Material examined

9 exx. (4♂♂, 5♀♀) - Pakistan: (7) Northwest Frontier Prov., Tathabaya (34°36'48"N, 73°27'01"E), m 2300, 7-9.VII.1998, 22-23.VII.1998, G. Csorba & L. Ronkay, at light; (1) Northwest Frontier Prov., Tathabaya, (34°36'48"N, 73°27'01"E), m 2300, 9-10.IX.1997, G. Fabian, at light; (1) Islamabad, 1 km S Hotel Adventure Inn, m 500, 3.VII.1998, G. Fabian & B. Herczig. (TM).

Melanotus (Melanotus) opicus Candèze, 1900

Material examined.

61 ♂♂ - Pakistan: Northwest Frontier, Tathabaya Prov. (34°36'48"N, 73°27'01"E), m 2200, 22-23.VII.1998, G. Csorba & L. Ronkay, at light. (TM).

Melanotus (Melanotus) porioni Platia and Schimmel, 2001

Material examined

38 exx. (23 ♂♂, 15 ♀♀) - Pakistan: (3) Northern Areas, Rama (36°20'99"N, 74°48'19"E), m 3150, 13.VII.1998, G. Csorba & L. Ronkay, at light; (1) Kashmir, Himalaya Mts, Deosai Mts, Bubin village (35°12'N, 74°59'E), m 3150, 11-13.V.1998, G.M. Laszlo & G. Ronkay; (30) Kaghan Valley, Tathabaya, (34°36'N, 73°26'E), m 2200,

19.V.1998, G.M. Laszlo & G. Ronkay; (1) Northwest Frontier Prov., Ayubia (34°01'75" N, 73°24'03"E), m 2050, 5-6.VII.1998, G. Csorba and L. Ronkay, at light;(2) Northwest Frontier Prov., Tathabaya (34°36'48"N, 73°27'01"E), m 2300, 22-23.VII.1998, G. Csorba and L. Ronkay, at light; (1) Himalaya Mts, Valley of Indus, between Chilas and Dassu, m 1100, 15.V.1998, G.M. Laszlo and G. Ronkay.

Melanotus (Melanotus) riesei Platia and Schimmel, 2001

Material examined

1 ♂ - Pakistan: Northwest Frontier Prov., Tathabaya (34°36'48"N, 73°27'01"E), m 2300, 22-23.VII.1998, G. Csorba & L. Ronkay, at light. (TM).

Melanotus (Melanotus) thomasi Platia and Schimmel, 2001

Material examined

1 ♂ - Pakistan: Northwest Frontier Prov., Tathabaya (34°36'48"N, 73°27'01"E), m 2300, 7-9.VII.1998, G. Csorba & L. Ronkay, at light. (TM). Described from N India (Uttar Pradesh) et Himalaya (without exact data). New for Pakistan.

Melanotus (Melanotus) zethneri Platia and Schimmel, 2001

Material examined

1 ♂ - Pakistan: Northern Areas, Bubin Valley (35°12'64"N, 74°59'07"E), m 3000, 16.VII.1998, G. Csorba and L. Ronkay (pine bark).

Check-list of *Melanotus* species known from Pakistan

1. *Melanotus (Melanotus) besucheti* Platia and Schimmel, 2001
2. *Melanotus (Melanotus) castanipes* (Paykull, 1800)
3. *Melanotus (Melanotus) convexiusculus* Platia and Schimmel, 2001
4. *Melanotus (Melanotus) hirticonis*, Herbst 1806

5. *Melanotus (Melanotus) loebli* Platia and Schimmel, 2001
6. *Melanotus (Melanotus) ocellatus* Platia and Schimmel, 2001
7. *Melanotus ((Melanotus) opicus* Candèze, 1900
8. *Melanotus (Melanotus) pakistanicus* Platia and Schimmel, 2001
9. *Melanotus (Melanotus) planipennis* (Candèze, 1900)
10. *Melanotus (Melanotus) porioni* Platia and Schimmel, 2001
11. *Melanotus (Melanotus) punctosus* (Walker, 1858)
12. *Melanotus (Melanotus) raziae* n. sp.
13. *Melanotus (Melanotus) riesei* Platia and Schimmel, 2001
14. *Melanotus (Melanotus) thomasi*, Platia and Schimmel, 2001
15. *Melanotus (Melanotus) wittmeri* Platia and Schimmel, 2001
16. *Melanotus (Melanotus) zethneri* Platia and Schimmel, 2001.

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