

Notes on Species of The Genus *Meristhus* Candèze, 1857 (Coleoptera: Elateridae: Agrypninae) From Pakistan With a Description of a New Species

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Abstract. A new species of the genus *Meristhus* i.e. *Meristhus(s) pakistanicus* described from Pakistan. Taxon is compared with its closet allies and male genitalia illustrated. *M. afghanus* first time recorded from Pakistan. Key to the known species of *Meristhus* from Pakistan also provided.

Key words: Coleoptera, Elateridae, Agrypninae, *Meristhus*, subg. *Sulcimerus*, Pakistan.

INTRODUCTION

Candèze established the genus *Meristhus* in 1857 for those species having a longitudinal carina on scutellum. When he described *M. erinaceus* from Borneo in 1857, he referred to *M. scobinula* Candèze as type species of this genus. Fleutiaux did not designate a type-species for *Sulcimerus*, *Sulcimerus* Fleutiaux is invalid (I.C.Z.N.Art.13(b)), so Arnett is the creator of subgenus *Sulcimerus* (Von Hayek, 1979).

In 1925, Schenkling listed 22 species from the world, later eleven species were transferred to the genus *Rismethus* by Fleutiaux (1947) and Ohira and Becker (1973) described two species from Indian region. Von Hayek (1973) recorded eight species from the World, of which *M. quadripunctatus* Candèze from the Indian border. Vats and Kashyap (1996) described *M. crenulatus* as new to science. *M. sabensis* Wurst *et al.* (2001) recorded from Yemen, whereas *M. crenulatus* (= *Meristhus sikkimensis* nom. Nov. Cate, 2007) was recorded by Mukhopadhyay and Chakraborty (2003) from Sikkim and *Meristhus (Sulcimerus) afghanus* n. sp. was described by Platia and Gudenzi (2002). One species, *M. babai* Kishii (1991) was described from Taiwan, three species of this genus were described by Chakraborty and Chakrabarti

(2006) from West Bengal, whereas Cate (2007) listed four species of the sub-genus *Sulcimerus* from Palearctic region.

Three species of genus *Meristhus* Candèze, 1857, *M (S) afghanus*, *M (S) quadripunctatus* and *M (S) pakistanicus* n.sp have now been recorded from Pakistan. *M. afghanus* and *M. quadripunctatus* from Palearctic and Oriental region, respectively, are already described species whereas the new taxon *M. pakistanicus* n.sp recorded and described from Kalarkahar, Punjab is new to science.

MATERIALS AND METHODS

Preparation for study

For the study of male genitalia, the abdomen was excised at the base and boiled in 10 % KOH solution for about 10 minutes. It was then washed in tap water. The aedeagus was dissected out and examined under glycerin. After studying, the male genitalia were placed in microvials with a drop of glycerin and pinned with the specimens for Natural History Museum, University of Karachi, (NHMUK).

Measurements

Body

Body length is measured along the midline from the anterior margin of the frons to the apex of the elytra; the width is measured across the broadest part of the entire beetle. Beetles were collected from light with hand picking methods.

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Pronotum

The pronotal length is measured along the midline; the width at the broadest part which is most usually located at the hind angles.

Abbreviations

The names of institutions, museums and collections containing study material are abbreviated as follows: CAP, Akhter collection, Department of Zoology, University of Karachi, Karachi-75270, Pakistan; NHMUK, Natural History Museum University of Karachi, Karachi, Pakistan.

RESULTS AND DISCUSSION

As a result of survey three species *M (S) afghanus*, *M (S) quadripunctatus* and *M (S) pakistanicus* n.sp have been collected. Out of these *M (S) afghanus* and *M (S) quadripunctatus* are already known species whereas *M (S) pakistanicus* is a new species. Only collection data of known species is given whereas the new species has been described in detail. A key to species from Pakistan is also added.

SYSTEMATIC ACCOUNT

Family: Elateridae Leach, 1815
Subfamily: Agrypninae Candèze, 1857
Tribe Agrypnini Candèze, 1857
Genus *MERISTHUS* Candèze, 1857

Genus *MERISTHUS* Candèze, 1957

Subgenus *Meristhus* Candèze, 1857:162. Type-species: *Elater lepidotus* Palisot de Beauvois, 1805 by original designation.

Rhaciaspis Arnett, 1952:121. Type-species: *Elater lepidotus* Palisot de Beauvois, 1805 by original designation.

Subgenus *Sulcimerus* Fleutiaux, 1947: 255. Type-species: *Meristhus quadripunctatus* Candèze, 1857 by subsequent designation (Arnett, 1955: 617).

Subgenus *Sulcimerus*. Arnett, 1955: 617. Type-species: *Meristhus quadripunctatus* Candèze, 1857 by original designation.

Type species

Meristhus scobinula Candèze, 1857

Diagnostic characters

Body clothed with scales; head capsule developed, usually entire, frontal carina absent, frons indistinct or rarely concave; margin of mesocoxal cavity not composed by mesepisternum and mesepimeron, propleurae with or without depression for the reception of the anterior tarsi; funicle with 2nd and 3rd cylindrical, not triangular, antennal groove extending beyond the anterior half of the prosterno-pleural suture and deep enough to accommodate the rolled antennae. Propleurae without (*Meristhus* s.str) or with (*Subgenus Sulcimerus*) depressions for the reception of anterior tarsi; prothorax with lateral margin carinate; scutellum with distinct median longitudinal carina, tibial spurs absent, tarsi simple without ventral lobe (Von Hayek, 1973, 1979).

KEY TO THE SPECIES OF *MERISTHUS (SULCIMERUS)* FROM PAKISTAN

1. Pronotum with hind angles broadly truncated with a tooth *M. (S.) quadripunctatus* Candèze
- Pronotum with hind angles broadly truncated without tooth 2
2. Scutellum lobulate, antennae with last article penultimate *M. (S.) pakistanicus* n.sp
- Scutellum rectangular, antennae with last article rounded *M (S.) afghanus* Platia & Gudenzi

1. *Meristhus (Sulcimerus) afghanus* Platia & Gudenzi

Meristhus (Sulcimerus) afghanus Platia and Gudenzi, 2002:78.

Material examined

Pakistan; Sindh, Nosheroferoz; 1 ♂, 1 ♀ ; 03.ix.2006, leg., M.A.Akhter on light (CAP), a new record for Pakistan.

Distribution

Afghanistan and Pakistan.

Remarks

It is very close to *Meristhus (Sulcimerus) quadripunctatus* but can be separated by some

distinguished characters: in *Meristhus (Sulcimerus) afganus* body colour castaneous, antennal length just half of prothorax, pronotum with sides not sinuate, hind angles with distinct corners while in *Meristhus (Sulcimerus) quadripunctatus* body colour chocolate, antennal length $1/3^{\text{rd}}$ of prothorax, pronotum with sides angulate, hind angles with blunt ends.

2. *Meristhus (Sulcimerus) quadripunctatus* Candèze

Meristhus quadripunctatus Candèze, 1857:163.

Material examined

Pakistan: Punjab, Mianwali; 1 ♂; 22.vii.2007, leg., Zubair Ahmed on light. Kalar Khar; 3 ♂, 2 ♀; 22.ix.2007, leg., M.A.Akhter on light (CAP).

Distribution

China, India, Nepal, Taiwan (to eliminate = *babai*) and Pakistan

Remarks

Meristhus (Sulcimerus) quadripunctatus is closely related to *Meristhus (Sulcimerus) afganus*.

3. *Meristhus (Sulcimerus) pakistanicus*, new species (Fig. 1)

Colouration

Entire ferruginous brown, covered with hard, yellow vestiture.

Measurements

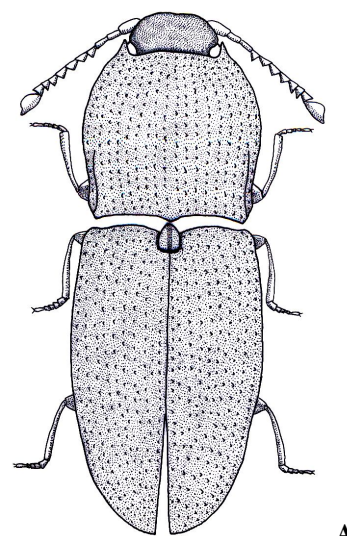
Length 4.62-3.42 mm; width 1.74-1.14 mm

Head

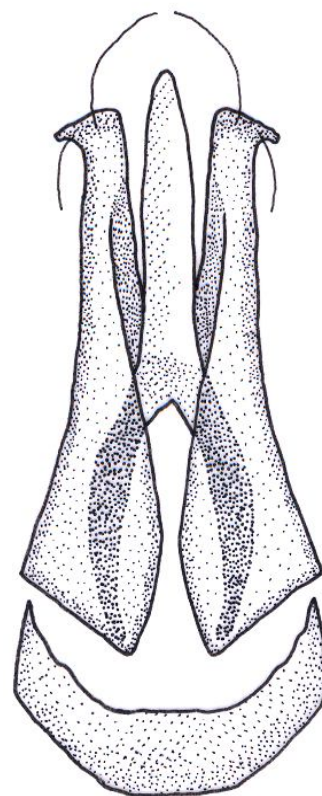
Head small, globose, coarsely punctate, covered with dense hard vestiture; antennae exceeding just half of pronotum, basal segment long, robust, 2nd segment thicker but longer than 3rd, 5th and 10th segments broad apically, last segment penultimate with distinct tip.

Thorax

Pronotum broader than longer, sides crenulate, rounded, hind angles broadly truncated, disc with deep and fine puncture, around sides feebly punctured with hard, suberrect vestiture,



A



B

Fig. 1. *Meristhus (Sulcimerus) pakistanicus*, new species: A, adult male holotype; B, male genitalia. Holotype. Scale line: A, 0.6mm and B, 0.25mm

propleurae with depression for accomodating the anterior tarsi, base of prosternal spine with deep concavity; scutellum lobulate to subrectangular, medially keeled with dense hard vestiture; elytra widest at middle, gradually narrower behind, stria margin with grooved, interstriae with rows of hard, erect vestiture, apices rounded to truncated.

Male genitalia

Aedeagus (Fig. 1B) with maedian lobe slightly emerge between the parameres, narrower long spindle like, apically narrower long tip; parameres with apical margin rounded with laterally distinct spinose, medially narrower, sinuate, dilated posteriorly; two median struts close to each other, hanging in the cavity of basal plate, basal plate broad, sides rounded, base subrounded, feebly sclerotised laterally.

Material examined

Holotype 1♂ - PAKISTAN; Punjab, Kalar Khar; 02.ix.2007, leg., Zubair Ahmed on light of NHMUK. Paratype 1 ♂ - same data as Holotype (CAP).

Distribution

Pakistan

Comparative remarks

Meristhus (Sulcimerus) pakistanicus n.sp, is similar to *Meristhus (Sulcimerus) quadripunctatus* but distinguished by antennae with 2nd segment longer than 3rd segment, propleure with depression for accommodating the anterior tarsi, aedeagus with median lobe slightly emerged between parameres.

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